

# ***Knowledge Network Inventory – Reference Material***

---

Version 1.1

9 November 2010

Delivered to: Kirk Andries,  
Climate Change and Emissions Management Corporation (CCEMC)

Authors: Paula McGarrigle, Solas Energy Consulting Inc.  
Karen Haugen-Kozyra, KHK Consulting

**KHK Consulting**  
12207 – 42 A Ave  
Edmonton, Alberta, Canada, T6J 0X5  
Phone: 780-435-4413  
[karenhk62@gmail.com](mailto:karenhk62@gmail.com)

**Solas Energy Consulting Inc.**  
Suite 119, 2138 – 33 Avenue S.W.  
Calgary, Alberta, Canada, T2T 1Z7  
Phone: 403-875-4593  
[pmcgarrigle@solasenergyconsulting.com](mailto:pmcgarrigle@solasenergyconsulting.com)  
[www.solasenergyconsulting.com](http://www.solasenergyconsulting.com)

**Document History**

Version	Date	Comments
1.0	28 October 2010	Initial Draft Release
1.1	09 November 2010	Final Release

**Disclaimer**

The following report was generated for Climate Change Emissions Management Corporation with the purpose of listing the Knowledge Networks for each of the key Strategic Investment Areas.

While this document is believed to contain correct information, Solas Energy Consulting Inc. ("Solas") and KHK Consulting ("KHK") does not make any warranty, either expressed or implied, nor assumes any legal liability or responsibility for accuracy, completeness, methodology, usefulness, reliability or current status of any material contained in this document ("Report"), nor shall Solas or KHK assume any liability with respect to any matter or information referred to or contained in the Report, nor shall any person relying on the Report ("Recipient") or any party to whom the Recipient provides the Report or information have any claim against Solas or KHK arising out of such Report. The interpretation of this or any other data or report related to this project is solely the responsibility of the client.

## Table of Contents

Introduction.....	5
Super Networks .....	6
National Renewable Energy Laboratory (NREL) .....	6
Pacific Northwest National Laboratory .....	20
National Energy Technology Laboratory (NETL).....	21
Idaho National Laboratory .....	25
University of Colorado at Boulder – Research and Sustainable Energy Institute (RASEI) .....	26
Oak Ridge National Laboratory.....	30
Canmet Energy - Natural Resources Canada.....	34
Sandia National Laboratory .....	38
Greening Energy Production – Renewable Energy – Utility Wind .....	40
Greening Energy Production – Renewable Energy – Micro Wind .....	47
Greening Energy Production – Renewable Energy - Solar .....	51
Greening Energy Production – Renewable Energy - Geothermal.....	54
Greening Energy Production – Renewable Energy – Integration of RE into Grids .....	59
Greening Energy Production – Renewable Energy - Hydrogen .....	61
Renewable Energy Policy and Analysis .....	65
Greening Energy Production – Cleaner Energy Production – Conventional Gas .....	67
Greening Energy Production – Cleaner Energy Production – Unconventional Gas .....	70
Greening Energy Production – Cleaner Energy Production - Upgrading .....	73
Greening Energy Production – Cleaner Energy Production - Refining.....	76
Greening Energy Production – Cleaner Energy Production – Transportation of Energy Sources.....	77
Greening Energy Production – Cleaner Energy Production – Coal Processing.....	79
Greening Energy Production – Cleaner Energy Production – Underground Coal Gasification .....	82
Conservation and Efficiency – Industrial Processes .....	84
Conservation and Efficiency – Smart Grid .....	90
Conservation and Efficiency – Waste Heat for Power Generation and On-site Power Generation .....	92
Conservation and Efficiency – Transmission and Distribution .....	98
Conservation and Efficiency - Buildings.....	99
Conservation and Efficiency – Energy Efficiency for Transportation.....	111
Conservation and Efficiency – Sustainable Communities .....	117
Conservation and Efficiency – Battery Storage.....	119
Carbon Capture and Storage – CO2 Compression .....	123
Carbon Capture and Storage – CO2 Transportation .....	126
Carbon Capture and Storage – Geological Storage .....	129

<b>Carbon Capture and Storage – CO2 for Enhanced Oil Recovery .....</b>	<b>136</b>
<b>Carbon Capture and Storage – CO2 for enhanced Coal Bed Methane .....</b>	<b>139</b>
<b>Biological Management – Sequestration of CO2 through Biochar .....</b>	<b>140</b>
<b>Biological Management – Biofuels and Biomass and Waste to Energy.....</b>	<b>143</b>
<b>Biological Management – Methane Capture, Avoidance and Destruction (Non-Energy).....</b>	<b>147</b>
<b>Biological Management – Sequestration of CO2 from Forest Management.....</b>	<b>150</b>
<b>Biological Management – Sequestration of CO2 by Agriculture .....</b>	<b>152</b>
<b>Biological Management – Reduction of GHG by Agricultural Management .....</b>	<b>153</b>
<b>Adaptation – Adaptation Planning.....</b>	<b>160</b>
<b>Adaptation – Adaptation Policy .....</b>	<b>162</b>
<b>Adaptation – Adaptation Risk Management .....</b>	<b>164</b>
<b>Adaptation – Impact of Climate Change on Water .....</b>	<b>173</b>
<b>Adaptation – Impact of Climate Change on Disease.....</b>	<b>176</b>

## Introduction

This document is a supplement to the report entitled Knowledge Networks – Enhancing Knowledge and Engagement. The information contained in this document is from the database that was used to collect information about key knowledge networks that cover the strategic investment areas that the CCEMC is interested in .

The information is organized by Strategic Investment Area, however the super networks are listed in the initial section and then referred to when necessary throughout the document.

The definition of a Knowledge Network was provided by the CCEMC - all potential Knowledge Networks were screened against the definition.

*“an assemblage of qualified individuals who apply their individual and collective knowledge to address a problem/challenge. These networks engage a broad community of individuals that can contribute to strengthening the knowledge base. The power of the entity is in the mobilization of intellectual capacity to address a specific purpose. The outputs include analysis and recommendations on how to address the contribution of the thematic area to emissions management”.*

## Super Networks

For the purposes of this report, Super Networks (SN) are defined as those networks or organizations that span two or more of the CCEMC's strategic investment areas.

### National Renewable Energy Laboratory (NREL)

The following records are extracted from the database and relate to NREL.

---

**Record:** 2053

**Category:** Greening Energy Production, Renewable Energy, Wind – Utility

**Organization:** National Wind Technology Centre - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov/wind/>

**Address:** 1617 Cole Blvd. **Address 2:**  
**City:** Golden **State/Province:** Colorado  
**Country:** USA **Zip/Postal Code:**

**Contact Title:** Director  
**Contact Person:** Fort Felker  
**Phone:** 303-384-6905 **Fax:** **Email:** [fort.felker@nrel.gov](mailto:fort.felker@nrel.gov)

**Funding:** Public/Private **Budget:**  
**Year Founded:** **Reach:** International

#### Network Description

The National Renewable Energy Laboratory's National Wind Technology Center's (NWTC) research covers a wide spectrum of wind energy engineering disciplines, including: atmospheric fluid mechanics and aerodynamics; dynamics, structures, and fatigue; power systems and electronics; and wind turbine engineering applications for wind turbines with capacity ratings of a few hundred kilowatts to several megawatts. Their unique capabilities include:

- Design review and analysis;
- Software development, modeling, and analysis;
- Systems and controls analysis;
- Testing support;
- Utility grid integration assessment; and,
- Wind resource assessment and mapping.

#### Goal / Objectives / Mandate

The mission of the wind energy research conducted at NWTC is to collaborate with industry to further wind technology and to accelerate its commercialization in the marketplace. The NWTC's research has contributed to many wind industry success stories and the development of commercially successful utility-scale wind power plants.

#### Interest in Collaboration

Yes

#### Narrative

NREL's wind energy research and development projects focus on reducing the cost of wind technology and expanding access to wind energy sites. Its specialized technical expertise, comprehensive design and analysis tools, and unique testing facilities help industry overcome challenges to bringing new wind technology to the marketplace. Some of these success stories are described in NREL's Wind R&D Success Stories.

NWTC also works closely with universities and other national laboratories supporting fundamental research in wind technologies, including aerodynamics, aero-acoustics, and material sciences essential in the development of new blade technologies and advanced controls, power electronics, and testing to further refine drive-train topology.

NWTC works with industry to:

- Reduce the cost of wind turbine technology;
- Increase wind energy system reliability and operability;
- Lower risk and validate performance and design;
- Improve power transmission and grid integration issues;
- Mitigate wind plant siting and environmental issues; and,
- Expand wind energy market.

Current research projects focus on:

- Large wind turbine research;
- Mid-size wind turbine research;
- Small wind turbine research;
- Utility grid integration
- International research collaborations; and,
- Environmental impacts research.

Information and Outreach: The NWTC's wind energy research capabilities are ahead of the curve. The center's experienced staff, unique research capabilities, and specialized state-of-the-art equipment provide industry partners and stakeholders with technical support from the design table to the marketplace.

NREL's R&D projects are funded in part by the U.S. Department of Energy's Wind Energy Technologies Program.

---

**Record:** 2054

**Category:** Greening Energy Production, Renewable Energy, Wind - Micro

**Organization:** National Wind Technology Center (NWTC) - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov/wind/>

**Address:** 1617 Cole Blvd.

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Title:** Centre Director

**Contact Person:** Fort Felker

**Phone:** 303-384-6905

**Fax:**

**Email:** [Fort\\_Felker@nrel.gov](mailto:Fort_Felker@nrel.gov)

**Funding:** Public

**Budget:**

#### **Network Description**

NREL supports continued market expansion of small wind turbines by funding manufacturers through competitive solicitations (i.e., subcontracts and/or grants) to refine prototype systems leading to commercialization. NREL also provide certification of turbines to ensure that they meet international standards for small turbines.

#### **Goal / Objectives / Mandate**

Supporting market expansion of small wind turbines by refinement of prototype systems, field testing and certification.

#### **Interest in Collaboration**

Yes, NREL will work with industry, government and academia to further development of small wind.

**Narrative**

One of the barriers for the small wind market is the lack of small wind turbine systems that are independently tested and certified. To help industry provide consumers with more certified small wind turbine systems, the National Renewable Energy Laboratory and the U.S. Department of Energy (NREL/DOE) launched the Independent Testing project in 2007.

The resultant test data may be used by the Small Wind Certification Council (SWCC), a non-profit organization formed with support from the DOE, AWEA, state energy offices, and turbine manufacturers to certify small wind turbine systems. Learn more about SWCC's independent certification from NREL's small wind Webinars. Test data could also be submitted to international certification agents as partial input for international certification. Small wind turbines that are tested and certified will give consumers greater confidence that the systems they install will perform within specified wind regimes as advertised by the manufacturer.

**Field Verification Project**

The mission of the Field Verification Project (FVP) was to enable U.S. industry to complete the research, testing, and field verification needed to fully develop advanced wind energy technologies that lead the world in cost-effectiveness and reliability. The project, completed in 2003, included cost-shared research with industry partners to lead to the development of advanced technology wind turbines and support for projects that verify performance of wind turbine technologies in actual operational applications. FVP provided small wind turbine (less than or equal to 100 kW) manufacturers with opportunities to operate and monitor their turbines under a range of distributed power applications and environments throughout the United States. This experience helped U.S. companies validate and improve the performance and reliability of their wind turbine technology while expanding regional experience with wind energy technologies.

**Affiliates / Affiliates area of expertise**

Small Wind Certification Council (SWCC)  
International Electrotechnical Commission (IEC)  
American Wind Energy Association (AWEA)

---

**Record:** 2057

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Organization:** National Renewable Energy Laboratory

**Web site:** <http://www.nrel.gov>

**Address:** 1617 Cole Boulevard

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Person:** Craig Turchi

**Phone:** 303-384-7565

**Fax:** 303-384-7495

**Email:** [craig\\_turchi@nrel.gov](mailto:craig_turchi@nrel.gov)

**Funding:** Private/Public

**Budget:** 10M

**Year Founded:**

**Reach:** International

**Network Description****Goal / Objectives / Mandate**

Perform research and development on concentrating solar power, and to oversee the use and distribution of U.S. government funding given to private sources for research and development (grant monitoring and reporting).

**Interest in Collaboration**

Yes



**Narrative**

Program areas include: thermal energy storage, hybridization (50% fossilfuel-50% solar power), parabolic trough, power tower, linear Fresnel, dish engine, and dish sterling. Functions provided include: applied research, technology evaluation, demonstration, knowledge dissemination, sharing best practices, incentive/policy mechanism assessment for deployment.

All information is shared publicly through conferences, presentations, reports, etc.

Upcoming milestones include thermal energy storage (power towers-decrease costs, troughs-increase costs), and dispatchable energy storage.

Impacts expected include life cycle analyses on trough plant; Moulton Salt-source for salt has a big impact on climate change, big impact on enabling technology.

Strengths include heavily research focused; the facilities are much larger than PV facilities and therefore could have a greater impact.

Constraints include: Permitting is a barrier, CSP plants use water for cooling, slowness of response, bureaucracy-paperwork, the lack of energy storage in the plants currently being deployed (the technology is there, it is just not being utilized); there are no commercial operation testing standards and testing facilities like those that exist for photovoltaics.

**Meeting Frequency**

Depends on the group.

**Membership Requirements**

All members are required to be research oriented. The primary categories include:

1. Solar Energy Industry Association-Research Entities, Developers, Private Members
2. Solar Paces-International Group, members are countries.

**Other Networks in this space**

Research labs in Europe; DLR (Germany-Space and Air Research Facility), Australia "CSIRO", Italian lab "ENEA"; Spanish and French lab (CENER)

**Affiliates / Affiliates area of expertise**

Other national labs, Argonne National Lab- areas of expertise include standard development, Certifications of readiness for operation

**Record:** 1890

**Category:** Greening Energy Production, Renewable Energy, Solar Photovoltaics

**Organization:** National Center for PhotoVoltaics - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov/pv/>

**Address:** 1617 Cole Boulevard

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Title:** Director

**Contact Person:** Dr. Ryne Raffaelle

**Phone:** 303-384-7950

**Fax:** **Email:** [ryne.raffaelle@nrel.gov](mailto:ryne.raffaelle@nrel.gov)

**Funding:** Private/Public

**Budget:** USD100Million

**Year Founded:**

**Reach:** International

**Network Description**

The National Center for PhotoVoltaics' (NCPV) photo-voltaic research and development (R&D) emphasizes innovative research, thin-film development, manufacturing R&D, and systems development and reliability. We

conduct this research in collaboration with universities and solar industry through research partnerships and direct support of the NREL Solar Program. Historical strengths include: solar cell expertise, next-generation solar cell concepts, training grounds for PV specialists, and unimpeachable measurements and collaborations. Recent accomplishments include: 25 R&D 100 Awards in the general area of PV, which includes high efficiency cells, thin films, measurement and characterization techniques, testing and manufacturing.

### **Goal / Objectives / Mandate**

The National Renewable Energy Laboratory's (NREL) PV research is focused on decreasing the nation's reliance on fossil-fuel generated electricity by lowering the cost of delivered electricity and improving the efficiency of PV modules and systems. NREL's PV research contributes to these goals through fundamental research, advanced materials and devices, and technology development. The NCPV focuses on innovations in PV technologies that drive industry growth in PV manufacturing in the US. NCPV's charge is to accelerate PV as a viable energy option in the U.S.

### **Interest in Collaboration**

Yes, the NCPV was created to enhance communication, catalyze strategic partnerships and serve the PV industry as the primary place to come to access the wealth of knowledge and facilitation within the DOE system.

### **Narrative**

Information compiled is both proprietary and public; however, the vast majority is public. This knowledge network covers applied research, technology evaluations, demonstration, knowledge dissemination, sharing best practices and also policy evaluation.

### **Meeting Frequency**

Ongoing, open meetings year round.

### **Affiliates / Affiliates area of expertise**

More than 90 current academic, industrial, national lab, and federal partners. Includes: TPPs, Incubator, Pre-Incubator, Universities, Industrial and Next Gen.

**Record:** 2058

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** National Renewable Energy Laboratory

**Web site:** [www.nrel.gov/geothermal](http://www.nrel.gov/geothermal)

**Address:** 1617 Cole Boulevard

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Title:**

**Contact Person:** Neil Snyder

**Phone:**   **Fax:**   **Email:**

**Funding:**

**Budget:** 6M, DOE Fiscal Year 2011 55M

**Year Founded:**

**Reach:** International

### **Network Description**

On the electricity generation side, National Renewable Energy Laboratory Geothermal Technologies (NREL-GT) is currently conducting research on:

how to make use of low temperature (<150 degree) geothermal resources, organic Rankin cycle units, and DOE-structured technical support to demonstrate projects (analysis), NREL-GT brought geothermal into the fold for DOE consideration. On the direct use side, NREL-GT partnered with John Lund at the Institute of Technology based

in Kalamth. On the heat pump side, NREL-GT is doing a demonstration project with IKEA in Denver and, at Fort Bliss, are instrumenting units at Rocky Mountain, as well as are working on the value proposition for geothermal.

### **Goal / Objectives / Mandate**

Geothermal development in Guam, Hawaii, and Indonesia

### **Interest in Collaboration**

Yes, CRADA mechanisms, ORMAT CRADA, have an existing MOU with the Rocky Mountain Oil Field Testing Center in Casper Wyoming.

### **Narrative**

Upcoming milestones include: the IKEA demonstration project, development of the low temperature geothermal technology.

Impacts expected: Geothermal has a place in reducing carbon emissions, especially if the low temperature technology can be developed.

Strengths include: NREL-GT is small and well connected and shares a lot of information.

Constraints include:-funding, size of the group (limited number of people participating in the market), dollars, NREL-GT currently has a single customer so they need to diversify. The DOE has veto power over NREL-GT research; heat pump technology is viewed as already commercialized and therefore R&D dollars are not flowing to it. There is no good roadmap to the future that has a clear defined plan.

### **Meeting Frequency**

Regularly - depends on the group or division.

### **Membership Requirements**

Membership is open to all. NREL's general mission is to share information. The geothermal program is a small program and members are required to share information to foster the development of the industry. There is much information shared among members. The northern Europeans are heavily involved with underground thermal storage and energy systems integration withing facilities; they publish white papers, do peer review and present papers at conferences.

### **Other Networks in this space**

Geothermal Resources Council. Overseas, the Australians are doing a lot with enhanced geothermal systems; Germany, Switzerland, France, and Indonesia have strong groups; the Gysers project run by the California Energy commission.

### **Affiliates / Affiliates area of expertise**

Annual Geothermal resources council - an education and trade organization out of Washington DC.

**Record:** 2041

**Category:** Greening Energy Production, Renewable Energy, Integration of Renewable Energy into Grids

**Organization:** Electricity, Resources and Building Systems Integration- National Renewable Energy Laboratory (NREL)

**Web site:** [http://www.nrel.gov/eis/erbsi\\_center.html](http://www.nrel.gov/eis/erbsi_center.html)

**Address:** 1617 Cole Blvd.

**City:** Golden

**Country:** USA

**Address 2:**

**State/Province:** Colorado

**Zip/Postal Code:** 80401-3305

**Contact Title:** Director, Electricity, Resources and Buildings Systems Integration

**Contact Person:** Dr. David Mooney

**Phone:** 303 384-6782

**Fax:** **Email:** david.mooney@nrel.gov

**Funding:** Private/Public                      **Budget:** \$65 Million  
**Year Founded:**                                      **Reach:** National

### **Interest in Collaboration**

NREL collaborates through a variety of mechanisms, including Cooperative Research and Development Agreements (CRADAs) CRADAs are agreements between the Federal government and third party participants to work together on a mutually beneficial project. Each partner in the CRADA applies agreed upon resources, such as personnel, equipment, or facilities. While participant dollars may be used to fund portions of the government's effort, the government may not use Federal funds to support the participant.

### **Narrative**

The Electricity, Resources, and Building Systems Integration Center's grid integration and optimization activities are associated with large-scale deployment of renewable energy, energy efficiency, and demand control technologies. These activities are performed by a diverse group of engineers and scientists, and contribute to advances in resource measurement and forecasting, concentrating solar power, thermal systems, solar photovoltaics, wind energy, vehicle-to-grid, and commercial and residential buildings technologies in the areas of:

- Generation: The Center's generation research and development includes resource measurements for optimal renewable energy generation plant siting, as well as research and development in concentrating solar power (CSP) technology.
- Transmission: The Center's transmission R&D focuses on wind and large-scale CSP systems interconnected at transmission voltages and provides data, analysis, and techniques to accelerate industry adoption of new wind turbines and CSP. Transmission efforts also include utility operations modeling and transmission planning to optimize access to renewable energy resources.
- Distribution: Distribution R&D focuses on solar photovoltaic (PV) implementation, distributed wind, and vehicle-to-grid technologies that interconnect at the distribution level. It includes distributed energy testing and certification, interconnection standards and codes, interconnection and control technologies, energy management and grid support applications, and distributed energy regulatory and institutional issues.
- End use applications: The Center also has extensive capabilities in the areas of commercial and residential building technology R&D and whole-building modeling and optimization. Buildings research includes solution development for zero net-energy buildings through whole-building design, integrated PV, and integrated solar thermal technologies. Buildings R&D in the Center accelerates the use of advanced technologies in the built environment and reduces energy consumption in this sector.

This knowledge network has recently completed two studies on grid integration of renewable energy. The program will be completing followup questions from the interconnection studies already completed. Additional work will be completed on modelling conventional generators and additional sensitivities on demand profiles. This network has recently build an Energy Systems Integration Facility for US\$135 million of 180,000 square feet. This will be used to demonstrate electrical grid simulators and interaction with PV systems. The program will also look at 1547 IEEE standards that allow ride-through for distribution systems.

The knowledge network also looks at integration of storage into the electricity system. This includes the value of storage, regulation, smoothing , peak shifting and technology evaluation.

Most Department of Energy knowledge networks are program-specific; however, the integration of renewable energy into grids tends to fall between the cracks in the program and must piece together funding from programs.

### **Other Networks in this space**

IEEE  
National Green Building Council  
Home Builders Association  
EPRI

### **Affiliates / Affiliates area of expertise**

NREL's electric infrastructure systems research supports the U.S. Department of Energy Solar Program, Wind Program, and Office of Electric Delivery and Energy Reliability. Other affiliates include the Utility Wind Integration

Group, GE, IBM, and technology review committees within NREL. Affiliates include government, utilities such as SMUD, SCE, and others, Laboratories and academics from universities, IEEE, the National Green Building Council and Home Builders Association, Midwest ISO, Cal ISO and ERCOT.

---

**Record:** 2056

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** National Renewable Energy Laboratory

**Web site:** [http://www.nrel.gov/vehiclesandfuels/project\\_hydrogen.html](http://www.nrel.gov/vehiclesandfuels/project_hydrogen.html)

**Address:** 1617 Cole Boulevard

**Address 2:**

**City:** Golden

**State/Province:** CO

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Title:**

**Contact Person:** Bob Remick

**Phone:** 303-275-3830

**Fax:** 303-275-3840

**Email:** [Robert\\_remick@nrel.gov](mailto:Robert_remick@nrel.gov)

**Funding:**

**Budget:** 18M plus additional from biotech and electric

**Year Founded:**

**Reach:** International

### **Goal / Objectives / Mandate**

The NREL' Advanced Vehicle and Fuel Research group's mandate includes anything related to hydrogen fuel cell, including performing analysis and development, case studies, a H2A production model, cash flow modeling, business cases, and emissions modeling

### **Interest in Collaboration**

yes

### **Narrative**

Most of funding is from the US federal government, including the Department of Energy, Department of Defense, Department of Transportation. Specific program area of focus: fuel cells for stationary and transportation uses; anaerobic digestion; methanol fuel cell fork lifts for materials handling; cell tower backup energy; fleet analysis of hydrogen fuel cell deployment and tracking the efficiency and use of those vehicles; fundamental research on reducing the cost and amount of platinum used in the fuel cells. Specifically, they have developed a sophisticated power model that takes into account the impact of federal and state standards, and the output is the cost of the power. The group's work is considered market transformation work. The DOE is identifying opportunities for stationary fuel cells, the focus of which will be on: applied research, technology evaluation, demonstration, knowledge dissemination, sharing best practices, and incentive policy mechanism assessment for deployment. Successes include: The cost of energy model helps prove the economic case for the hydrogen fuel cell. Assisting with the commercialization of the technology.

Upcoming goals: Developing a go/no go evaluation tool for new technologies, managing the fuel cell R&D.

Assisting with commercialization due to incentives going away in 2016. Hydrogen must begin to stand on its own merit.

Impacts include: If hydrogen is properly commercialized it can have tremendous impacts in all areas-notably the replacement of automobiles and power production.

Strengths include: Strong partnerships with private industry in the commercialization stage (through the heavy front-end research and development stage).

Constraints include: Most information has to be shared with the public, but in certain cases, it is tough to get information. The cost incentives are going away.

### **Meeting Frequency**

Varies from program to program-weekly, monthly and quarterly.

**Membership Requirements**

Members include auto manufacturers, electric utilities, The California Energy Commission, Texas Future Fuel, NFPA, ISO, RISO (Netherlands), Areva (in France, for hydrogen storage), Daimler (auto fuel cells); Excel energy for a wind-to-hydrogen program.

Most information is shared publicly, but not all technology is public

**Other Networks in this space**

EERC-North Dakota coal , Sandia National Laboratory (Los Alamos, New Mexico) California Fuel Cell Partnership, National Hydrogen Association (NHA)

**Affiliates / Affiliates area of expertise**

UC Irvine Transportation Analysis, 22 independent universities

Greening Energy Production – Renewable Energy – Policy and Analysis

---

**Record:** 2043

**Category:** Greening Energy Production, Renewable Energy, Integration of Renewable Energy into Grids

**Organization:** Strategic Energy Analysis Centre - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov/analysis/>

**Address:** 1617 Cole Blvd.

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401-3305

**Contact Title:** Director

**Contact Person:** R. Newmark

**Phone: Fax: Email:**

**Funding:** Private/Public

**Budget:** \$35 million

**Year Founded:**

**Reach:** International and National

**Network Description**

The Strategic Energy Analysis Centre's (SEAC) mission is to increase the understanding of the current and future characteristics, roles, and interactions of government, markets, and technology; and to use that understanding to inform technology, program, policy, and market decisions as energy-efficient and renewable energy technologies advance from concept to commercial application.

**Goal / Objectives / Mandate**

Analysis at NREL aims to increase the understanding of the current and future characteristics, roles, and interactions of government, markets, and technologies. The acquired understanding is used to inform technology, benefits, market, policy, and program decisions as energy efficient and renewable energy technologies advance from concept to commercial application. Their objective is to provide credible objective data analysis that is technology agnostic.

**Interest in Collaboration**

NREL seeks to establish partnerships with universities, research institutions and think tanks, and industry leaders that leverage complementary capabilities and resources in advancing the understanding of energy efficiency and renewable energy technologies. We also co-produce publications with many of these groups. Funding is 95% from the Department of Energy and 5% from private sources, mostly corporations.

**Narrative**

The major milestones for the group in the couple coming years includes research and development on the use of biomass resources in the US, which is an industry-sponsored activity, release of the Renewable Electric Future Study, and participating in technical review panels of industry projects. SEAC is a non-partisan analysis group: it only publishes study results, but does not participate in crafting any messages.

SEAC expects to influence climate change by informing others of information to lead to decisions on public policy and investments in climate change mechanisms. SEAC research assists policy makers in developing policy at the appropriate scale and in the appropriate investments.

SEAC's strengths include analysis in the form of energy economic modeling, which considers the particular resource, the associated policies, the cost of the technologies, and the output of the resource to present future scenarios. It provides credible analytics and advice to decision makers.

**Meeting Frequency**

depends on the particular group

**Membership Requirements**

Members are required to be experts in international climate policy issues, must have a deep understanding of renewables and energy efficiency and be open to major collaborations.

**Other Networks in this space**

The Council on Competitiveness (CCS, A China-U.S. Bilateral partnership for climate change); the Center for Strategic Analytic Standards; the Western Governor's association, NARUC (the Public Utility Commission's national group); the University of Colorado, and the Greenhouse Gas Neutrality Council

**Affiliates / Affiliates area of expertise**

Current partnerships include:

American Gas Foundation

Antares Group, Inc.

Arthur D. Little

AWS Scientific

Center for Clean Air Policy

Center for Energy and Environmental Policy (CEEP - University of Delaware)

Center for Resource Solutions

Center for Transportation Analysis

Distributed Utility Associates

ECONorthwest

Electric Power Research Institute (EPRI)

Electrotek

Energetics

Energy Resources International (ERI)

Environmental Resources Management (ERM)

Exeter Associates

Harvard University

ICF Consulting

International Resource Group

Iowa State University

Lawrence Berkeley National Laboratory

National Energy Technology Laboratory

North Carolina Solar Center

Northeast-Midwest Institute

Oak Ridge National Laboratory (ORNL) Energy Efficiency and Renewable Energy Program

OnLocation, Inc.

OnSite Energy Corporation

Pacific Northwest National Laboratory  
Princeton Energy Resources International  
RAND Corporation  
Renewable Energy Policy Project (REPP)  
Resources for the Future  
Sandia National Laboratories  
SENTECH  
Stanford Energy Modeling Forum  
Stratus Consulting  
Synapse Energy Economics  
Tellus Institute  
Twenty-First Century Strategies

---

**Record:** 2052

**Category:** Conservation and Efficiency, Energy Efficiency, Smart Grid

**Organization:** Electric Infrastructure Systems Research - National Renewable Energy Laboratory (NREL)

**Web site:** [http://www.nrel.gov/eis/smart\\_grid.html](http://www.nrel.gov/eis/smart_grid.html)

**Address:** 1617 Cole Blvd.

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:**

**Contact Title:** Director

**Contact Person:** Steven Hauser

**Phone:** **Fax:** **Email:**

**Funding:** Public

**Budget:** USD 2 Million

### **Network Description**

NREL leads the development of IEEE P2030 Draft Guide for Smart Grid Interoperability of Energy Technology and Information Technology Operation with the Electric Power System (EPS), and End Use Applications and Loads, a document that provides guidelines for Smart Grid interoperability and addresses terminology, characteristics, functional performance and evaluation criteria, and the application of engineering principles for Smart Grid interoperability of the electric power system with end use applications and loads. The guide discusses alternate approaches to good practices for the Smart Grid.

NREL maintains a national database of Smart Grid and government-sponsored projects on the SmartGrid.gov web site, a resource for consumers and stakeholders to find the tools and resources they need to understand the Smart Grid and the range of Smart Grid technologies, policies, and solutions.

### **Goal / Objectives / Mandate**

NREL researches Smart Grid technologies and develops Smart Grid standards. The Smart Grid is an automated electric power system that monitors and controls grid activities, ensuring the two-way flow of electricity and information between power plants and consumers and all points in between. The Smart Grid has an increased ability to sense, monitor, and, in some cases, control (automatically or remotely) how the system operates or behaves under a given set of conditions. In its most basic form, implementation of a smarter grid is adding intelligence to all areas of the electric power system to optimize our use of electricity.

### **Interest in Collaboration**

Yes, There are several alternatives for working with NREL, Cooperative Research and Development Agreements (CRADAs). This is the most widely used means of industrial collaboration.



Participate in subcontracted research. More than half of NREL's budget supports DOE-directed research conducted by large and small private companies, universities, research institutes, and consultants.

Pay NREL to conduct research without your collaboration through Work for Others (WFOs) or Sponsored Research. This is an effective way for industry to take advantage of NREL's expertise and unique research facilities.

Work with NREL researchers through mentored research internships and fellowships for undergraduate and graduate students.

#### **Narrative**

NREL Smart Grid program was a key part of the writing of the ARRA Title 13 on Smart Grid Demonstration projects. The program at NREL focuses specifically on standards, technical integration, demand side management as well as renewable energy integration and battery storage.

#### **Other Networks in this space**

Galvin Electricity Commission, Galvinpower.com

Smart Grid Demand Response

Smart Grid Coalition

EPRI

IEEE

#### **Affiliates / Affiliates area of expertise**

Gridwise Alliance

Global Smartgrid Federation.org

International Smart Grid Action Networks

smartgrid.gov

National Regulatory Utility Commissioners

**Record:** 2047

**Category:** Carbon Capture and Storage, Biological Management, Biofuels

**Organization:** National Bioenergy Center - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov>

**Address:** 1617 Cole Blvd.

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401-3305

**Contact Title:** Center Director

**Contact Person:** Dr. Mike Cleary

**Phone:** 303-384-6825

**Fax:** 303-384-6103

**Email:** [mike.cleary@nrel.gov](mailto:mike.cleary@nrel.gov)

**Funding:** Private/Public

**Budget:** USD40Million

**Year Founded:**

**Reach:** International

#### **Network Description**

NREL is the lead national laboratory of the virtual National Bioenergy Center, which supports and co-ordinates the nation's biomass research activities.

Through biomass research, NREL is developing technologies to convert biomass, plant matter such as trees, grasses, agricultural residue, algae, and other biological material to fuels. These biofuels will reduce our nation's dependence on foreign oil, improve our air quality, and support rural economies. Biomass capabilities and projects at NREL are focused on the following.

Biomass characterization

Biochemical conversion

Thermochemical conversion

Chemical and catalyst science  
Integrated biorefinery processes  
Microalgal biofuels  
Biomass process and sustainability analyses.

**Goal / Objectives / Mandate**

NREL supports the U.S. Department of Energy's Office of the Biomass Program in its research and development and analysis efforts with the objective of meeting:

A near-term goal to demonstrate a modeled, cost competitive, biochemically derived ethanol price, USD 1.33 to USD 1.49 per gallon, by 2012.

A longer-term goal to demonstrate biofuels technologies that can contribute to the production of 36 billion gallons of biofuels per year by 2022 and 60 billion gallons of biofuels per year by 2030 by making intermediate products that are compatible with existing refinery infrastructure and blend with existing refinery design after 2012.

**Interest in Collaboration**

Yes, collaboration is done through collaborative research and development agreements.

**Narrative**

NREL's biomass facility focuses mostly on conversion and compositional analysis.

NREL has a pilot facility that can be used for demonstration of biomass to biofuels and also analytical capabilities.

NREL's biomass projects are designed to advance the production of liquid transportation fuels from biomass.

Researchers explore biomass characterization, biochemical and thermochemical conversion processes, the chemicals and catalysts that optimize conversion, and how the steps of the process integrate with one another.

Additionally, the viability of algae as a feedstock is a reemerging area of research. Analysts support the research and development by studying market needs, technoeconomic drivers, and partnership opportunities for the commercialization and deployment of biofuels.

**Other Networks in this space**

National Advanced Biofuels Consortium

Colorado Collaboratory (NREL and three Colorado Universities)

**Affiliates / Affiliates area of expertise**

Dupont

Oakridge National Laboratory

Idaho National laboratory

Pacific Northwest National Laboratory

Sandia National Laboratory

---

**Record:** 2045

**Category:** Conservation and Efficiency, Energy Conservation, Community Design

**Organization:** Integrated Deployment Projects - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov>

**Address:** 1617 Cole Blvd.

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401

**Contact Title:** Executive Manager of Integrated Development Projects

**Contact Person:** Mary A. Werner

**Phone:** 303-384-7511

**Fax:** 303-275-4068

**Email:** [mary.werner@nrel.gov](mailto:mary.werner@nrel.gov)

**Funding:** Public

**Budget:**

**Year Founded:**                      **Reach:** International

### **Network Description**

The National Renewable Energy Laboratory's (NREL) Integrated Deployment program supports the US DOE's strategy to accelerate market adoption of alternative energy solutions to power our homes, businesses and vehicles. NREL's comprehensive approach provides the catalyst to transform the way we use energy in local communities, cities, and states by identifying opportunities, building partnerships, and establishing a foundation for the implementation of energy efficiency and renewable energy technologies.

Program areas within Integrated Deployment Projects include the following:

The Hawaii Initiative, Alaska Initiative, Rebuilding After Disaster, Polar Projects, Energy Development in Island Nations, and Net Zero Energy Military Bases

### **Goal / Objectives / Mandate**

NREL leads the effort to change how energy is used to power buildings and vehicles worldwide by helping identify and eliminate barriers to clean energy technology deployment. NREL takes a portfolio approach that explores the full range of technology options to help develop and implement innovative energy performance solutions.

NREL's applies the following key technology areas, including:

Biomass

Buildings and electricity

Fuels and vehicles

Geothermal

Solar

Wind.

NREL works to advance the widespread adoption of these technologies through a variety of resources that facilitate energy project planning and inform technology deployment decisions. We also help communities and organizations execute clean energy projects and initiatives by providing in-field energy project assistance, including technical assessments and project planning.

### **Interest in Collaboration**

Collaboration is the key element for the Integrated Deployment initiative program at NREL.

### **Narrative**

The Deployment and Industry Partnerships organization leads NREL's efforts to accelerate broad market adoption of renewable energy and energy efficiency technologies to meet local and regional needs and advance national energy goals. We partner with key players in industry, government, and the non-profit sector to build capacity to implement sustainable energy solutions.

Within this organization, the Integrated Applications Office provides a technology-neutral approach to evaluating opportunities for communities, campuses, buildings, facilities, and regions to address energy and environmental goals. Similarly, the State, Local, and Tribal Initiatives group focuses on the special needs of these communities to implement sustainable energy projects.

A deeper focus on specific technologies takes place in the Sustainable Electricity and Buildings and Sustainable Fuels and Vehicles groups.

Additional Deployment and Industry Partnerships program target partnerships with key industry groups and small businesses.

### **Meeting Frequency**

An example of the meeting frequency is the Hawaii initiative where they meet weekly with local authorities as part of the steering committee, that is composed of the DOE, representatives from the Hawaii state and the DOE.

## Pacific Northwest National Laboratory

The following records are those pertaining to Pacific Northwest National Laboratory

**Record:** 2075

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for Transportation

**Organization:** Pacific Northwest National Laboratory

**Web site:** [http://energyenvironment.pnl.gov/sectors/energy\\_eere.stm](http://energyenvironment.pnl.gov/sectors/energy_eere.stm)

**Address:** Pacific Northwest National Laboratory

**Address 2:** 902 Battelle Boulevard

**City:** Richland

**State/Province:** WA

**Country:** USA

**Zip/Postal Code:**

**Contact Title:**

**Contact Person:**

**Phone:** 888-375-7665

**Fax:**

**Email:** [inquiry@pnl.gov](mailto:inquiry@pnl.gov)

### Goal / Objectives / Mandate

Provides the facilities, unique scientific equipment, and world-renowned scientists/engineers to strengthen U.S. scientific foundations for fundamental research and innovation.

**Record:** 2070

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 for Enhanced Oil Recovery

**Organization:** Pacific Northwest National Laboratory

**Web site:** [http://energyenvironment.pnl.gov/sectors/energy\\_eere.stm](http://energyenvironment.pnl.gov/sectors/energy_eere.stm)

**Address:** Pacific Northwest National Laboratory

**Address 2:** 902 Battelle Boulevard

**City:** Richland

**State/Province:** WA

**Country:** USA

**Zip/Postal Code:**

**Phone:** 888-375-7665

**Fax:**

**Email:** [inquiry@pnl.gov](mailto:inquiry@pnl.gov)

### Network Description

PNNL currently has approximately 4,700 staff members and a business volume of \$881 million. The William R. Wiley Environmental Molecular Sciences Laboratory, a DOE Office of Science national scientific user facility, is located on PNNL's Richland campus. PNNL operates a marine research facility in Sequim, and has satellite offices in Seattle and Tacoma, Washington; Portland, Oregon; and Washington, D.C.

### Goal / Objectives / Mandate

- Provides the facilities, unique scientific equipment, and world-renowned scientists/engineers to strengthen U.S. scientific foundations for fundamental research and innovation
- Prevents and counters acts of terrorism through applied research in information analysis, cyber security, and the non-proliferation of weapons of mass destruction
- Increases U.S. energy capacity and reduces dependence on imported oil through research of hydrogen and biomass-based fuels
- Reduces the effects of energy generation and use on the environment

## National Energy Technology Laboratory (NETL)

The following records are those pertaining to the National Energy Technology Laboratory (NETL)

**Record:** 1221

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** National Energy Technology Laboratory (NETL)

**Web site:** <http://www.netl.doe.gov/>

**Address:** 626 Cochrans Mill Road

**Address 2:** P.O. Box 10940

**City:** Pittsburgh

**State/Province:** PA

**Country:** USA

**Zip/Postal Code:** 15236-0940

**Contact Person:** Office of Technology Transfer

**Phone:** **Fax:** **Email:** [techtransfer@netl.doe.gov](mailto:techtransfer@netl.doe.gov).

**Funding:** Public

**Budget:**

**Year Founded:** 1910

**Reach:** U.S. National

### Network Description

The National Energy Technology Laboratory (NETL), part of DOE's national laboratory system, is owned and operated by the U.S. Department of Energy (DOE). NETL supports DOE's mission to advance the national, economic, and energy security of the United States.

Solicits applications from technology developers, and others, for the development of innovative energy technologies.

### Goal / Objectives / Mandate

NETL has expertise in coal, natural gas, and oil technologies, contract and project management, analysis of energy systems, and international energy issues. NETL implements a broad spectrum of energy and environmental research and development (R&D) programs that will return benefits for generations to come, including:

- Enabling domestic coal, natural gas, and oil to economically power homes, industries, businesses, and transportation; and
- Protecting our environment and enhancing our energy independence.

In addition to research conducted on-site, NETL's project portfolio includes R&D conducted through partnerships, cooperative research and development agreements, financial assistance, and contractual arrangements with universities and the private sector. Together, these efforts focus a wealth of scientific and engineering talent on creating commercially viable solutions to national energy and environmental problems.

### Interest in Collaboration

Different types of formal agreements exist to allow collaboration, partnering, and designation of intellectual property ownership between NETL and outside entities. NETL actively seeks opportunities to form partnerships with the private sector, academia, and other government entities to develop and commercialize new energy and environmental technologies through Cooperative Research and Development Agreements (CRADAs).

CRADAs are agreements between the Federal government and third party participants to work together on a mutually beneficial project. Each partner in the CRADA applies agreed upon resources, such as personnel, equipment, or facilities. While participant dollars may be used to fund portions of the government's effort, the government may not use Federal funds to support the participant.

### Other Networks in this space

NREL - National Renewable Energy Laboratory

---

**Record:** 1221

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** National Energy Technology Laboratory (NETL)

**Web site:** <http://www.netl.doe.gov/>

**Address:** 626 Cochrans Mill Road

**Address 2:** P.O. Box 10940

**City:** Pittsburgh

**State/Province:** PA

**Country:** USA

**Zip/Postal Code:** 15236-0940

**Contact Person:** Office of Technology Transfer

**Phone: Fax:**      **Email:** [techtransfer@netl.doe.gov](mailto:techtransfer@netl.doe.gov).

**Funding:** Public

**Budget:**

**Year Founded:** 1910

**Reach:** U.S. National

### **Network Description**

The National Energy Technology Laboratory (NETL), part of DOE's national laboratory system, is owned and operated by the U.S. Department of Energy (DOE). NETL supports DOE's mission to advance the national, economic, and energy security of the United States.

Solicits applications from technology developers, and others, for the development of innovative energy technologies.

### **Goal / Objectives / Mandate**

NETL has expertise in coal, natural gas, and oil technologies, contract and project management, analysis of energy systems, and international energy issues. NETL implements a broad spectrum of energy and environmental research and development (R&D) programs that will return benefits for generations to come, including:

- Enabling domestic coal, natural gas, and oil to economically power homes, industries, businesses, and transportation; and
- Protecting our environment and enhancing our energy independence.

In addition to research conducted on-site, NETL's project portfolio includes R&D conducted through partnerships, cooperative research and development agreements, financial assistance, and contractual arrangements with universities and the private sector. Together, these efforts focus a wealth of scientific and engineering talent on creating commercially viable solutions to national energy and environmental problems.

### **Interest in Collaboration**

Different types of formal agreements exist to allow collaboration, partnering, and designation of intellectual property ownership between NETL and outside entities. NETL actively seeks opportunities to form partnerships with the private sector, academia, and other government entities to develop and commercialize new energy and environmental technologies through Cooperative Research and Development Agreements (CRADAs).

CRADAs are agreements between the Federal government and third party participants to work together on a mutually beneficial project. Each partner in the CRADA applies agreed upon resources, such as personnel, equipment, or facilities. While participant dollars may be used to fund portions of the government's effort, the government may not use Federal funds to support the participant.

### **Other Networks in this space**

NREL - National Renewable Energy Laboratory

---

**Record:** 1223

**Category:** Conservation and Efficiency, Energy Efficiency, Waste Heat for Power Generation

**Organization:** National Energy Technology Laboratory (NETL)

**Web site:** <http://www.netl.doe.gov/>

**Address:** 626 Cochrans Mill Road

**Address 2:** P.O. Box 10940

**City:** Pittsburgh                      **State/Province:** PA  
**Country:** USA                      **Zip/Postal Code:** 15236-0940

**Contact Person:** Office of Technology Transfer  
**Phone:** **Fax:**      **Email:** techtransfer@netl.doe.gov.

**Funding:** Public                      **Budget:**  
**Year Founded:** 1910                      **Reach:** U.S. National

### **Network Description**

Institution of the U.S. Department of Energy

Solicits applications from technology developers and others, for the development of innovative energy technologies.

### **Interest in Collaboration**

Different types of formal agreements exist to allow collaboration, partnering, and designation of intellectual property ownership between NETL and outside entities.

NETL actively seeks opportunities to form partnerships with the private sector, academia, and other government entities to develop and commercialize new energy and environmental technologies through Cooperative Research and Development Agreements (CRADAs).

CRADAs are agreements between the Federal government and third party participants to work together on a mutually beneficial project. Each partner in the CRADA applies agreed upon resources, such as personnel, equipment, or facilities. While participant dollars may be used to fund portions of the government's effort, the government may not use Federal funds to support the participant.

### **Other Networks in this space**

NREL - National Renewable Energy Laboratory

---

**Record:** 1989

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** National Energy Technology Laboratory

**Web site:** [http://www.netl.doe.gov/technologies/carbon\\_seq/index.html](http://www.netl.doe.gov/technologies/carbon_seq/index.html)

**Address:** 626 Cochran's Mill Road                      **Address 2:** P.O. Box 10940  
**City:** PITTSBURGH                      **State/Province:** PA  
**Country:** United States                      **Zip/Postal Code:** 15236-0940

**Contact Title:** Media and Public Information

**Contact Person:** David J. Anna

**Phone:** 412-386-4646      **Fax:**      **Email:**

**Funding:** Public                      **Budget:**

### **Goal / Objectives / Mandate**

NETL is committed to addressing the challenges put forth by the National Energy Policy. These challenges are: Enhancing America's energy security, improving the environmental acceptability of energy production and use, increase the competitiveness and reliability of US energy systems and ensure a robust US energy future.

### **Narrative**

The National Energy Technology Laboratory or NETL is part of the DOE's national laboratory system and is owned and operated by the US Department of Energy (DOE). NETL supports the DOE's mission to advance the national, economic and energy security of the US.

NETL's Carbon Sequestration Program is helping to develop technologies to capture, separate, and store carbon dioxide in order to reduce GHG emissions without adversely influencing energy use or hindering economic growth.

The Carbon Sequestration Program involves three key elements for technology development:

1. Core research and development
2. Infrastructure
3. Global Collaborations

Core research and development (R&D): is driven by industry's technology needs and segregates those needs into focus areas to more effectively obtain solutions that can be tested and deployed in the field. Core R&D element contains five focal areas for applied research and carbon sequestration technology development:

1. Capture
2. Geologic Storage
3. Monitoring, Verification, and Accounting
4. Simulation and Risk Assessment
5. Carbon dioxide Use/Reuse.

Core R&D is driven by technology needs and is accomplished through laboratory and pilot-scale research aimed at developing new technologies and new systems for GHG mitigation.

Infrastructure: this component includes the Regional Carbon Sequestration Partnerships (RCSPs) and other large-volume field tests where validation of various CCS technology options and their efficacy are being confirmed. This element includes large scale projects and the Regional Carbon Sequestration Partnerships which is a government/industry cooperative effort tasked with developing guidelines for the most suitable technologies, regulations, and infrastructure needs for CCS in different regions of the US and Canada. The RCSPs began the Characterization Phase in 2003, during this phase potential sites for pilot-scale testing were identified, and during the current validation phase, pilot scale carbon dioxide injections are being conducted. In 2008 the RCSP began to move into their final Development phase during which large-volume sequestration tests were being done to demonstrate the potential to store hundreds of years of carbon dioxide emissions. The technologies are being validated at test sites in the U.S and Canada, and ongoing data collection is confirming geologic and terrestrial sequestration capacity and effectiveness. The RCSP are mechanisms used to develop the regional framework to progress the development of new technologies and benefits that will include human capital, stakeholder networking, regulatory and policy development, visualization knowledge centers, best practices manuals and public outreach and education.

Global Collaborations: benefit from technology solutions developed in the Core R&D and Infrastructure elements and in turn feed back lessons learned to Infrastructure and Core R&D from the international demonstration projects and partnerships. Lessons learned from the Infrastructure element are also feedback to Core R&D to guide future research and development of technologies. This last element of the program as well as the DOE participating in international projects along with other international efforts to advance CCS such as the Carbon Sequestration Leadership Forum (CSLF), North American Energy Working Group, and Asian-Pacific Partnership. The CSFL is an international group that is focused on the development of improved, cost effective technologies for the separation and capture of CO<sub>2</sub>, transport of CO<sub>2</sub>, and long-term safe storage of CO<sub>2</sub>. The purpose of CSFL is to make these technologies available internationally and to identify and address wider issues relating to CCS, such as regulatory and policy options. US technological advances and expertise in sequestration are also being shared in initiatives such as the Australian Otway Basin Project, the European Union funded CO<sub>2</sub>-SINK project in Germany, the Algerian In Salah industry-scale CO<sub>2</sub> storage project, and the IEA GHG Weyburn-Midale CO<sub>2</sub> Monitoring and Storage Project in Canada.

For all geological please refer to the Plains CO<sub>2</sub> Reduction (PCOR) Partnership:

<http://www.undeerc.org/PCOR/region/terrestrial/default.aspx>

Carbon Sequestration Regional Partnerships include the following seven partners:



Big Sky Regional Carbon Sequestration Partnership (Big Sky):<http://www.bigskyco2.org/>  
 Plains CO2 Reduction (PCOR) Partnership: <http://www.undeerc.org/PCOR/region/terrestrial/default.asp>  
 Midwest Geological Sequestration Consortium (MGSC):<http://www.sequestration.org/>  
 Southeast Regional Carbon Sequestration Partnership (SECARB): <http://www.secarbon.org/>  
 Southwest Regional Carbon Sequestration Partnership (SWP):<http://www.southwestcarbonpartnership.org/>  
 West Coast Regional Carbon Sequestration Partnership (WESTCARB):<http://www.westcarb.org/>

### Membership Requirements

This is a government agency- membership is not applicable.

### Other Networks in this space

Carbon Sequestration Leadership Forum (CSLF), North American Energy Working Group, and Asian-Pacific Partnership

## Idaho National Laboratory

The following records are extracted from the database and relate to Idaho National Laboratory.

---

**Record:** 2061

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** Idaho National Laboratory

**Web site:** [https://inlportal.inl.gov/portal/server.pt/community/geothermal/422/geothermal\\_energy\\_main\\_page/3451](https://inlportal.inl.gov/portal/server.pt/community/geothermal/422/geothermal_energy_main_page/3451)

**Address:** 2525 Fremont Avenue

**Address 2:**

**City:** Idaho Falls

**State/Province:** Idaho

**Country:** USA

**Zip/Postal Code:** 83415

**Contact Person:** Greg Mines

**Phone:** 208-526-0260

**Fax:**

**Email:** [Greg.Mines@inl.gov](mailto:Greg.Mines@inl.gov)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1974

**Reach:** National

### Network Description

Since 1974, the Idaho National Laboratory (INL) has been a key laboratory in executing the DOE Geothermal Program, investigating and developing geothermal resource technologies for both direct use and electricity generation, particularly those resources considered marginally economical. Working closely with NREL and other national laboratories, the INL ensures availability of national recognized geothermal leadership to implement a successful national program.

### Goal / Objectives / Mandate

The mission of the Idaho National Laboratory (INL) Geothermal Program is to work in partnership with U.S. industry to establish geothermal energy as an economically competitive contributor to the U.S. energy supply.

### Interest in Collaboration

Yes

### Narrative

Working with both the states and the DOE, INL has assumed leadership in optimizing the region's geothermal resources. INL is the lead laboratory for the DOE Geothermal Energy Program's geoscience research, focused on characterization and management of geothermal reservoirs. INL also coordinates the international geothermal program and performs research and development activities on many of the other major activities in DOE's

Geothermal Program, including heat cycle, enhanced geothermal systems, and exploration programs. In addition, INL is a key participant in GeoPowering the West, which is targeted at reducing cost and increasing deployment of geothermal electric and direct-use applications in the western US.

## University of Colorado at Boulder – Research and Sustainable Energy Institute (RASEI)

The following records are extracted from the database and relate to RASEI

**Category:** Greening Energy Production, Renewable Energy, Wind – Utility

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Record:** 2030

**Category:** Greening Energy Production, Renewable Energy, Wind – Utility

**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute

**Web site:** [http://rasei.colorado.edu/index.php?id=353&pid=353&page=Wind\\_Energy&parent=64](http://rasei.colorado.edu/index.php?id=353&pid=353&page=Wind_Energy&parent=64)

**Address:**

**City:** Boulder

**Country:** USA

**Address 2:**

**State/Province:** Colorado

**Zip/Postal Code:**

**Phone:** 303-492-0284

**Fax:**

**Email:** [info@rasei.edu](mailto:info@rasei.edu)

**Funding:** Private/Public

**Budget:**

### Network Description

Producing electricity from wind energy is a proven technology and deployment of wind turbines is growing rapidly around the world. However, there is still considerable room for improvement in wind energy technology that will lower costs and improve the durability of turbines. CU-Boulder researchers together with collaborators from several federal laboratories are studying a variety of issues associated with the production and utilization of electricity from wind. Some of the most exciting projects involve new measurements of key properties of wind (such as turbulence) in real time so that the information can be used to develop new ways to optimize the control of wind turbines.

The Research and Sustainable Energy Institute's Wind Energy Program includes research in the following:

- Atmospheric sciences
- Measurement of wind environment
- Simulation of wind fields and turbine response
- Numerical weather prediction
- Model development and validation
- Turbine modeling
- Wind farm modeling
- Control of wind energy systems
- Individual turbine control
- Wind farm design and control
- Electrical systems
- Grid modeling
- Power converters
- Turbine testing
- Testing and certification of field turbines and turbine components

### Goal / Objectives / Mandate

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for

producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

#### Interest in Collaboration

This is part of the Joint Institute, lead by NREL and involving four other universities. (See Joint Institute entry.)

#### Narrative

RASEI's efforts focus on interdisciplinary energy research, training the next generation of energy professionals, and the development of market-ready leading-edge technologies

**Record:** 2029

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute

**Web site:** <http://rasei.colorado.edu>

**Address:**

**City:** Boulder

**Country:** USA

**Address 2:**

**State/Province:** Colorado

**Zip/Postal Code:**

**Phone:** 303-492-0284

**Fax:**

**Email:** [info@rasei.edu](mailto:info@rasei.edu)

**Funding:** Private/Public

**Budget:**

#### Network Description

The University of Colorado at Boulder - Research and Sustainable Energy Institute is part of the Joint Institute that is led by the National Renewable Energy Lab (NREL). Please see listing on the Joint Institute for further information.

#### Goal / Objectives / Mandate

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

#### Interest in Collaboration

The Joint Institute is led by NREL and encompasses five different universities. Collaboration is key for the Joint Institute with government and industry.

#### Narrative

RASEI's efforts focus on interdisciplinary energy research, training the next generation of energy professionals, and the development of market-ready leading-edge technologies.

**Record:** 2033

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute

**Web site:**

[http://rasei.colorado.edu/index.php?id=350&pid=350&page=Hydrogen\\_Production\\_and\\_Utilization&parent=64](http://rasei.colorado.edu/index.php?id=350&pid=350&page=Hydrogen_Production_and_Utilization&parent=64)

**City:** Boulder

**Country:** USA

**State/Province:** Colorado

**Zip/Postal Code:**

**Contact Title:****Contact Person:****Phone:** 303-492-0284    **Fax:**    **Email:** info@rasei.edu**Network Description**

Researchers at CU-Boulder are investigating new hydrogen-storage materials and new inexpensive catalysts for producing hydrogen through solar water-splitting.

Other areas of research include:

Photoprotection of photosynthesis and pPlants Stress tolerance for sustainability of H<sub>2</sub>

Oxidation of organic films by OH radicals

Membranes for gas separations and fuel cells

Energy efficient membrane separation

Nuclear fission to create hydrogen for fuel

Water oxidation catalysis

Solar thermal disassociation of methane using an aerosol flow reactor

Production of ceramic oxides for fuel cell applications

Carbon and boron polymer derived ceramics for H<sub>2</sub> storage

Catalyst for hydrogen generation for micro-fuel cells

**Goal / Objectives / Mandate**

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

**Interest in Collaboration**

This initiative is part of the Joint Institute that works with a five universities.

**Narrative**

RASEI's efforts focus on interdisciplinary energy research, training the next generation of energy professionals, and the development of market-ready leading-edge technologies

---

**Record:** 291**Category:** Conservation and Efficiency, Energy Efficiency, Smart Grid**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute (RASEI)**Web site:** [http://rasei.colorado.edu/index.php?id=328&pid=328&page=Smart\\_Grid&parent=64](http://rasei.colorado.edu/index.php?id=328&pid=328&page=Smart_Grid&parent=64)**Address:** Box 27, RGNT 1B28**Address 2:** 2055 Regent Drive**City:** Boulder**State/Province:** CO**Country:** USA**Zip/Postal Code:** 80309-0027**Contact Title:** Director for Research**Contact Person:** Roberta Ann Klein**Phone:** 303-492-0284**Fax:** 303-492-3200**Email:** roberta.klein@colorado.edu**Network Description**

Joint effort between the University of Colorado at Boulder and NREL. This is part of the Joint Institute. See Joint Institute listing for information.

**Goal / Objectives / Mandate**

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for

producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

RASEI's efforts focus on interdisciplinary energy research, training the next generation of energy professionals, and the development of market-ready leading-edge technologies.

#### **Interest in Collaboration**

This is part of the Joint Institute that is led by NREL and is very much interested in collaboration.

#### **Affiliates / Affiliates area of expertise**

NREL

---

**Record:** 2028

**Category:** Carbon Capture and Storage, Biological Management, Biofuels

**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute

**Web site:** [http://rasei.colorado.edu/index.php?id=347&pid=347&page=Biofuels\\_and\\_Biorefining&parent=64](http://rasei.colorado.edu/index.php?id=347&pid=347&page=Biofuels_and_Biorefining&parent=64)

**City:** Boulder

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:**

**Contact Title:** Energy Innovator

**Phone:** 303-492-0284

**Fax:**

**Email:** [info@rasei.edu](mailto:info@rasei.edu)

**Funding:** Private/Public

**Budget:**

#### **Network Description**

In 2007, faculty from CU-Boulder's Department of Chemical and Biological Engineering assumed a leadership role in developing a new statewide center to explore the possibility of obtaining transportation fuels and other valuable chemicals from plant materials. The Colorado Center for Biorefining and Biofuels has research projects ranging from increasing growth of plants or algae to turning those plants into fuels. Of growing importance are issues of land and water use associated with generating biofuels on a scale that is commensurate with global consumption, as well as air quality issues.

feedstock engineering

biochemical engineering

thermochemical engineering

process engineering

product engineering

system engineering

Please see Joint Institute for additional information.

#### **Goal / Objectives / Mandate**

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

#### **Interest in Collaboration**

Member of the Joint Institute, led by NREL and has four other universities.

#### **Narrative**

RASEI's efforts focus on interdisciplinary energy research, training the next generation of energy professionals, and the development of market-ready leading-edge technologies.

---

**Record:** 2068

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for new Buildings

**Organization:** University of Colorado at Boulder - Research and Sustainable Energy Institute (RASEI)

**Web site:** [http://rasei.colorado.edu/index.php?id=348&pid=348&page=Energy\\_Efficient\\_Buildings&parent=64](http://rasei.colorado.edu/index.php?id=348&pid=348&page=Energy_Efficient_Buildings&parent=64)

**Address:** Box 27, RGNT 1B28

**Address 2:** 2055 Regent

**City:** Boulder

**State/Province:** CO

**Country:** USA

**Zip/Postal Code:** 80309-0027

**Phone:** 303-492-0284

**Fax:** 303-492-3200

**Email:** [roberta.klein@colorado.edu](mailto:roberta.klein@colorado.edu)

#### **Network Description**

Several recent studies have shown that the most immediate and cost effective strategies for reducing energy consumption and green house gas emissions involve improving efficiency of energy use in commercial and residential buildings. For several decades, CU-Boulder has been a leader in research on energy efficiency in buildings and in training students how to design or renovate buildings to take advantage of this research. CU also has demonstrated strength in developing energy efficient electronics.

- Sustainable building design
- building thermal performance and energy efficiency
- heating, ventilating, and air conditioning (HVAC) systems
- smart building systems for control and operations
- indoor contaminant transport, control, and mitigation
- lighting design and systems
- passive solar modeling
- zero energy building design
- renewable energy applications for buildings
- efficient building materials
- efficient electrical systems
- appliance efficiency

#### **Goal / Objectives / Mandate**

The Renewable and Sustainable Energy Institute (RASEI), an interdisciplinary joint research effort between the University of Colorado at Boulder and the National Renewable Energy Laboratory (NREL), is advancing solutions for producing energy economically from low-carbon sources, decreasing reliance on foreign oil, reducing greenhouse gas emissions, and using energy more efficiently to meet the global energy challenge.

#### **Interest in Collaboration**

This is part of the Joint Institute that is led by NREL and is very much interested in collaboration.

#### **Narrative**

This is part of the Joint Institute that is led by NREL. Please see listing on the Joint Institute for further information.

## **Oak Ridge National Laboratory**

The following records are extracted from the database and relate to Oak Ridge National Laboratory

**Record:** 1330

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Organization:** Oak Ridge National Laboratory - Energy Efficiency and Electricity Technologies Program

**Web site:** [http://www.ornl.gov/sci/eere/research\\_solar.shtml](http://www.ornl.gov/sci/eere/research_solar.shtml)

**Address:**

**Address 2:**

**City:**

**State/Province:** TN

**Country:** USA                      **Zip/Postal Code:**

**Contact Title:** Director, Sustainable Electricity

**Contact Person:** Thomas J. King, Jr.

**Phone:** 865-241-5756

**Fax:** 865-576-7572

**Email:** kingtj@ornl.gov

**Funding:** Public

**Budget:**

#### **Network Description**

Oak Ridge National Laboratory (ORNL) delivers key support to the US Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) programs through three broad areas of research and development. Sustainable electricity is aligned under the Energy Efficiency and Electricity Technologies Program. ORNL's sustainable electricity program develops technologies to create a cleaner environment. This program addresses challenges in renewable generation, electricity distribution and end-use in buildings to ensure our nation's energy security through cost effective solutions while mitigating and reducing environmental impacts.

Sustainable manufacturing is aligned under ORNL's Office of Energy Materials, which manages the EERE Industrial Technologies Program at ORNL. Sustainable manufacturing draws on the laboratory's world-class leadership in materials science R&D to develop and implement the materials, processing, devices, and implementation strategies needed to increase industrial energy efficiency. The program partners with industry to translate the discoveries of science into real-world energy solutions. The program's R&D portfolio includes advanced energy materials, energy efficient processes, nanomanufacturing and combined heat and power (CHP).

Sustainable mobility research and development helps bridge basic science with technology maturation and application. ORNL Energy Efficiency and Electricity Technologies Program efforts address issues related to the vehicle and fuel, the mobility of passengers and freight, and the country's transportation infrastructure, with more than half supporting EERE programs.

The ORNL Sustainable Campus Initiative is an Oak Ridge National Laboratory-wide effort. Its goal is to integrate energy and resource efficiency, cutting-edge technologies, operational and business processes, and behavior to achieve sustainability.

#### **Goal / Objectives / Mandate**

Aligned under the Energy Efficiency and Electricity Technologies Program, ORNL's sustainable electricity program develops technologies to create a cleaner environment, a stronger economy, and a more secure future for our nation. The program is committed to expanding energy resource options and to improving efficiency in every element of energy production and use, and to ensuring a reliable and secure grid that fully integrates central generation with distributed resources, manages power flows, and meets the nation's need for increasing electric power.

---

**Record:** 1329

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** Oak Ridge National Laboratory - Energy Efficiency and Electricity Technologies Program

**Web site:** <http://www.ornl.gov/sci/eere/>

**Contact Title:** Director

**Contact Person:** Ron Graves

**Phone:** 865-946-1226

**Fax:** 865-946-1354

**Email:** gravesrl@ornl.gov

**Funding:** Private/Public

**Budget:**

**Year Founded:**

**Reach:** National

#### **Network Description**

The Oak Ridge National Laboratory (ORNL) delivers key support to DOE's Office of Energy Efficiency and Renewable Energy (EERE) programs through three broad areas of research and development.

Sustainable electricity is aligned under the ORNL Energy Efficiency and Electricity Technologies Program. ORNL's sustainable electricity program develops technologies to create a cleaner environment. This program addresses challenges in renewable generation, electricity distribution and end-use in buildings to ensure our nation's energy security through cost effective solutions while mitigating and reducing environmental impacts.

Sustainable manufacturing is aligned under ORNL's Office of Energy Materials, which manages the EERE Industrial Technologies Program at ORNL. Sustainable manufacturing draws on the laboratory's world-class leadership in materials science research, development and demonstration (RD&D) to develop and implement the materials, processing, devices, and implementation strategies needed to increase industrial energy efficiency. The program partners with industry to translate the discoveries of science into real-world energy solutions. The program's R&D portfolio includes advanced energy materials, energy efficient processes, nanomanufacturing and combined heat and power (CHP).

Sustainable mobility research and development helps bridge basic science with technology maturation and application. Efforts address issues related to the vehicle and fuel, the mobility of passengers and freight, and the country's transportation infrastructure, with more than half supporting EERE programs.

The ORNL Sustainable Campus Initiative is an organization-wide effort. Its goal is to integrate energy and resource efficiency, cutting-edge technologies, operational and business processes, and behavior to achieve sustainability.

### **Interest in Collaboration**

Some of their programs partner with industry to translate the discoveries of science into real world energy solutions. This can be done through agreements or partnerships.

### **Narrative**

Oak Ridge National Laboratory (ORNL) is a multi-program science and technology laboratory managed for the US Department of Energy by the UT-Battelle, LLC. Scientists and engineers at ORNL conduct basic and applied research and development to create scientific knowledge and technological solutions that strengthen the nation's leadership in key areas of science, including: increasing the availability of clean, abundant energy, restoring and protecting the environment, and contributing to the national security of the US.

The EERE's Vehicle Technologies program, through ORNL, conducts significant research concerning advanced power electronics and electric machines, fuels utilization, advanced combustion engines, vehicle systems, policy and decision maker support, data collection, modeling, operations analysis, advanced materials and energy storage.

The EERE's Fuel Cell Technologies Program, through ORNL, is actively developing materials, components, and processes for fuel cell systems, materials for hydrogen delivery, new methods for hydrogen production, novel technologies for hydrogen storage, and R&D for modeling the transition to a hydrogen economy.

### **Affiliates / Affiliates area of expertise**

US DOE, US Department of Transportation, Department of Defense, Department of Homeland Security, Environmental Protection Agency, Industry.

---

**Record:** 1333

**Category:** Conservation and Efficiency, Energy Efficiency, Transmission and Distribution of Power

**Organization:** Oak Ridge National Laboratory - Electric Transmission and Distribution

**Web site:** <http://www.ornl.gov/sci/oetd/>

**Address:** P.O. Box 2008

**Address 2:**

**City:** Oak Ridge

**State/Province:** TN

**Country:** USA

**Zip/Postal Code:** MX6195

**Contact Title:** Electric Delivery Technologies Program Manager

**Contact Person:** Thomas King Jr.

**Phone:** 865-241-5756

**Fax:** 865-574-6073

**Email:** [kingtjrr@ornl.gov](mailto:kingtjrr@ornl.gov)



**Funding:** Private/Public                      **Budget:**  
**Year Founded:**                                      **Reach:** National

### Network Description

Oak Ridge National Laboratory (ORNL) performs technology research, development, and demonstration (RD&D) in partnership with U.S. industry and universities in support of the U.S. Department of Energy (DOE) Office of Electricity Delivery and Energy Reliability (OE) mission to modernize the electric grid, enhance the security and reliability of the energy infrastructure and facilitate recovery from disruptions to the energy supply. The areas they focus on are High Temperature Superconductivity, Visualization and Controls, Infrastructure Security, Distributed Systems Integration, Transformers, Dielectrics and Insulation, Power Electronics and Energy Storage.

### Interest in Collaboration

ORNL work with government and industry and universities.

### Narrative

ORNL has developed several research facilities under the Power Delivery Research Center that provide test beds to demonstrate the reliable operation of advanced grid components. These facilities fulfill a need identified by utilities and reported in the National Transmission Grid Study. The specific recommendation calls for the "DOE to develop national transmission-technology testing facilities that encourage partnering with industry to demonstrate advanced technologies in controlled environments."

The Power Delivery Research Center is a collaborative effort among government and industry partners and is a multi-facility center for testing and evaluating critical transmission systems and technologies.

The following facilities comprise the PDRC:

- Powerline Conductor Accelerated Testing
- Distributed Energy Communication and Controls
- High Temperature Superconductivity Cable Test Facility
- Superconductivity Testing Facilities
- VERDE Analysis and Modeling Lab
- Power Electronics Test Facility

**Record:** 2016

**Category:** Carbon Capture and Storage, Biological Management, Biomass and Waste to Energy

**Organization:** Oak Ridge National Laboratory (ORNL)

**Web site:** <http://www.ornl.gov/>

**Address:** P.O. Box 2008, 1 Bethel Valley Road

**Address 2:**

**City:** Oak Ridge

**State/Province:** TN

**Country:** United States

**Zip/Postal Code:** 37831

**Contact Person:** Dr. Renae Speck

**Phone:** 865-576-4680

**Fax:** 865-576-9241

**Email:** [speckrr@ornl.gov](mailto:speckrr@ornl.gov)

**Funding:** Public

**Budget:** 1.4 Billion dollars

**Year Founded:** 1943

**Reach:**

### Goal / Objectives / Mandate

Oak Ridge National Laboratory's bioenergy research and development (R&D) supports DOE's Office of Energy Efficiency and Renewable Energy's Biomass program, as well as DOE's, working with industry, academia and national labs on a balanced portfolio of research in biomass feedstocks and conversion technologies.

### Interest in Collaboration

Usually done through contractual arrangements for sponsoring R&D and commercialization. For CCEMC's interests, the Technology Outreach office focuses on how to move scientific understanding and technology understanding into the marketplace (see below). This might require a new kind of arrangement which could be explored.

### **Narrative**

Oak Ridge National Laboratory (ORNL) is a multi-program science and technology laboratory managed for the US Department of Energy by the UT-Battelle, LLC. Scientist and engineers at ORNL conduct basic and applied research and development to create scientific knowledge and technological solutions that strengthen the nation's leadership in key areas of science; increase the availability of clean, abundant energy; restore and protect the environment; and contribute to the national security of the US.

There is no biological management of greenhouse gases but there is work on Bioenergy, Energy Efficiency, Energy, Clean Energy, Renewables as in solar, wind, and hydro energy. At ORNL there is a broader focus on renewable material and climate change. ORNL looks at basic science which is the bulk of their work and a strong demonstration and development aspect. Oakridge assists with the commercialization of the technology. The Technology outreach program is associated with each division within ORNL and they will assist with the how to move the technology towards the marketplace.

The contact for the Technology Outreach program is: Ms. Renee Speck, Senior Commercialization Manager who will return on October 18th, 2010. The current contact is Ms. Sarah Davis. The Technology Outreach program is a type of partnership that assists with technology transfer and associated activities such as, technology licensing and how to manage the technology portfolio. ORNL also collaborates with sponsored research where a company may pay to have research done or collaborative research. The Technology Outreach Program will also assist with the economic development of a technology along with the legal aspects of intellectual property which the legal department of ORNL will assist with. The Technology Outreach program can also request a market study and assess for technology readiness.

The Technology Outreach office is open to engaging with CCEMC and its needs in a couple of ways. An NDA or MOU for work they do related to market studies, technology readiness level, technology performance assessments, technology transfer reports etc. in their program areas.

### **Membership Requirements**

Do not have memberships per se. They enter into contractual arrangements for R&D with companies who want to engage their groups of scientists to do applied research etc. Any IP developed can be transferred through a Commercial Transfer of Technology to the company who invested in the work.

### **Other Networks in this space**

Climate Change Science Institute which was formed by Oak Ridge National Laboratory to co-ordinate and develop efforts in Climate change science. Please refer to the following weblink: <http://climatechangescience.ornl.gov>  
The second organization of interest would be the BioEnergy Science Center (BESC). BESC is a multi-institution research organization focused on alternative energy, specifically biofuels in which Oak Ridge National Laboratory is the lead organization. The web address is: <http://bioenergycenter.org>

## **Canmet Energy - Natural Resources Canada**

The following records are extracted from the database and relate to CanmetENERGY – Natural Resources Canada

---

**Record:** 3

**Category:** Greening Energy Production, Renewable Energy, Solar Photovoltaics

**Organization:** Canmet Energy - Natural Resources Canada

**Web site:** <http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/>

**Address:** 580 Booth Street, 13th floor

**Address 2:**

**City:** Ottawa

**State/Province:** Ontario

**Country:** Canada      **Zip/Postal Code:** K1A 0E4

**Contact Title:**

**Contact Person:**

**Phone:** 613-995-0947      **Fax:**      **Email:** canmetenergy@nrcan.gc.ca

**Funding:** Public

**Budget:**

**Year Founded:** 1907 (renamed 1975)

**Reach:** National

**Goal / Objectives / Mandate**

Canmet ENERGY is the Canadian leader in clean energy research and technology development. With over 450 scientists, engineers and technicians and more than 100 years of experience, CanmetENERGY is Canada's knowledge centre for scientific expertise on clean energy technologies. CanmetENERGY supports Natural Resources Canada's priorities to promote the sustainable and economic development of Canada's natural resources, while improving the quality of life of Canadians. Work with the energy industry, academia and environmental stakeholders on cost-shared basis through in-house work and funding support. CanmetENERGY has world-class energy research centres of expertise based in Devon, Alberta, Ottawa, Ontario and Varennes, Quebec.

**Narrative**

Canmet Energy shares information through publications, events and online resources. The agency focuses on renewables, buildings and communities, clean fossil fuels, bioenergy systems, industrial processes, oil sands and transportation. More specifically:

- Renewables: wind, solar thermal, solar, small hydro, marine energy, and smart grid;
- Buildings and communities: Housing, energy efficiency, communities, HVAC and energy systems;
- Clean fossil fuels: Clean coal, carbon capture and storage (CCS), fuels and emissions assessment, integrated multi-pollutant control, combustion system optimization, industrial combustion processes, and gasification;
- Bioenergy systems: Biomass, biofuels, biomass to gas, and CHP;
- Industrial processes: Industrial energy systems, industrial systems optimization;
- Oil sands: Environmental challenges, extraction and tailings, water management, multiphase systems, bioprocessing, upgrading oil sands and heavy oil, future fuels and emissions; and,
- Transport: Advanced fuels, hybrid and electric vehicles, hydrogen and fuel cells.

**Meeting Frequency**

Canmet ENERGY holds events throughout the year.

---

**Record:** 80

**Category:** Greening Energy Production, Cleaner Energy Production, Upgrading

**Organization:** Canmet Energy - Natural Resources Canada

**Web site:** [http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/about\\_us/devon/partners.html](http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/about_us/devon/partners.html)

**Address:** 580 Booth Street, 13th floor

**Address 2:**

**City:** Ottawa

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** K1A 0E4

**Phone:** 613-995-0947

**Fax:**

**Email:** canmetenergy@nrcan.gc.ca

**Funding:** Public

**Budget:**

**Year Founded:** 1907 (renamed 1975)

**Reach:** National

**Network Description**

**Goal / Objectives / Mandate**

Canmet ENERGY is the Canadian leader in clean energy research and technology development. With over 450 scientists, engineers and technicians and more than 100 years of experience, CanmetENERGY is Canada's knowledge centre for scientific expertise on clean energy technologies. CanmetENERGY supports Natural Resources Canada's priorities to promote the sustainable and economic development of Canada's natural resources, while improving the quality of life of Canadians. Work with the energy industry, academia and environmental stakeholders on cost-shared basis through in-house work and funding support. CanmetENERGY has world-class energy research centres of expertise based in Devon, Alberta, Ottawa, Ontario and Varennes, Quebec.

**Narrative**

Canmet Energy shares information through publications, events and online resources. The agency focuses on renewables, buildings and communities, clean fossil fuels, bioenergy systems, industrial processes, oil sands and transportation. More specifically:

- Renewables: wind, solar thermal, solar, small hydro, marine energy, and smart grid;
- Buildings and communities: Housing, energy efficiency, communities, HVAC and energy systems;
- Clean fossil fuels: Clean coal, carbon capture and storage (CCS), fuels and emissions assessment, integrated multi-pollutant control, combustion system optimization, industrial combustion processes, and gasification;
- Bioenergy systems: Biomass, biofuels, biomass to gas, and CHP;
- Industrial processes: Industrial energy systems, industrial systems optimization;
- Oil sands: Environmental challenges, extraction and tailings, water management, multiphase systems, bioprocessing, upgrading oil sands and heavy oil, future fuels and emissions; and,
- Transport: Advanced fuels, hybrid and electric vehicles, hydrogen and fuel cells.

**Meeting Frequency**

Canmet ENERGY holds events throughout the year.

---

**Record:** 75

**Category:** Conservation and Efficiency, Energy Conservation, Community Design

**Organization:** Canmet Energy - Natural Resources Canada

**Web site:** <http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/>

**Address:** 580 Booth Street, 13th floor

**Address 2:**

**City:** Ottawa

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** K1A 0E4

**Phone:** 613-995-0947

**Fax:**

**Email:** [canmetenergy@nrcan.gc.ca](mailto:canmetenergy@nrcan.gc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 1907 (renamed 1975)

**Reach:** National

**Goal / Objectives / Mandate**

Canmet ENERGY is the Canadian leader in clean energy research and technology development. With over 450 scientists, engineers and technicians and more than 100 years of experience, CanmetENERGY is Canada's knowledge centre for scientific expertise on clean energy technologies. CanmetENERGY supports Natural Resources Canada's priorities to promote the sustainable and economic development of Canada's natural resources, while improving the quality of life of Canadians. Work with the energy industry, academia and environmental stakeholders on cost-shared basis through in-house work and funding support. CanmetENERGY has world-class energy research centres of expertise based in Devon, Alberta, Ottawa, Ontario and Varennes, Quebec.

**Narrative**

Canmet Energy shares information through publications, events and online resources. The agency focuses on renewables, buildings and communities, clean fossil fuels, bioenergy systems, industrial processes, oil sands and transportation. More specifically:

- Renewables: wind, solar thermal, solar, small hydro, marine energy, and smart grid;
- Buildings and communities: Housing, energy efficiency, communities, HVAC and energy systems;
- Clean fossil fuels: Clean coal, carbon capture and storage (CCS), fuels and emissions assessment, integrated multi-pollutant control, combustion system optimization, industrial combustion processes, and gasification;
- Bioenergy systems: Biomass, biofuels, biomass to gas, and CHP;
- Industrial processes: Industrial energy systems, industrial systems optimization;
- Oil sands: Environmental challenges, extraction and tailings, water management, multiphase systems, bioprocessing, upgrading oil sands and heavy oil, future fuels and emissions; and,
- Transport: Advanced fuels, hybrid and electric vehicles, hydrogen and fuel cells.

### Meeting Frequency

Canmet ENERGY holds events throughout the year.

**Record:** 73

**Category:** Conservation and Efficiency, Energy Conservation, Alternative low energy demand lighting

**Organization:** Canmet Energy - Natural Resources Canada

**Web site:** <http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/>

**Address:** 580 Booth Street, 13th floor

**Address 2:**

**City:** Ottawa

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** K1A 0E4

**Contact Title:**

**Contact Person:**

**Phone:** 613-995-0947

**Fax:**

**Email:** [canmetenergy@nrcan.gc.ca](mailto:canmetenergy@nrcan.gc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 1907 (renamed 1975)

**Reach:** National

### Goal / Objectives / Mandate

Canmet ENERGY is the Canadian leader in clean energy research and technology development. With over 450 scientists, engineers and technicians and more than 100 years of experience, CanmetENERGY is Canada's knowledge centre for scientific expertise on clean energy technologies. CanmetENERGY supports Natural Resources Canada's priorities to promote the sustainable and economic development of Canada's natural resources, while improving the quality of life of Canadians. Work with the energy industry, academia and environmental stakeholders on a cost-shared basis through in-house work and funding support. CanmetENERGY has world-class energy research centres of expertise based in Devon, Alberta, Ottawa, Ontario and Varennes, Quebec.

### Narrative

Canmet Energy shares information through publications, events and online resources. The agency focuses on renewables, buildings and communities, clean fossil fuels, bioenergy systems, industrial processes, oil sands and transportation. More specifically:

- Renewables: wind, solar thermal, solar, small hydro, marine energy, and smart grid;
- Buildings and communities: Housing, energy efficiency, communities, HVAC and energy systems;
- Clean fossil fuels: Clean coal, carbon capture and storage (CCS), fuels and emissions assessment, integrated multi-pollutant control, combustion system optimization, industrial combustion processes, and gasification;
- Bioenergy systems: Biomass, biofuels, biomass to gas, and CHP;

- Industrial processes: Industrial energy systems, industrial systems optimization;
- Oil sands: Environmental challenges, extraction and tailings, water management, multiphase systems, bioprocessing, upgrading oil sands and heavy oil, future fuels and emissions; and,
- Transport: Advanced fuels, hybrid and electric vehicles, hydrogen and fuel cells.

### Meeting Frequency

Canmet ENERGY holds events throughout the year.

## Sandia National Laboratory

The following records are extracted from the database and relate to Sandia National Laboratory

---

**Record:** 2063

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** Sandia National Laboratory

**Web site:** <http://www.sandia.gov/geothermal/home>

**Address:** Sandia National Laboratories

**Address 2:**

**City:** Albuquerque

**State/Province:** New Mexico

**Country:** USA

**Zip/Postal Code:** 87185

**Contact Title:** Geothermal Research Manager

**Contact Person:** Doug Blankenship

**Phone:** 505-284-1230

**Fax:**

**Email:** [dablan@sandia.gov](mailto:dablan@sandia.gov)

**Funding:** Private/Public

**Budget:**

**Year Founded:**

**Reach:**

### Network Description

Sandia is one of the US national laboratories. Sandia focuses on geothermal that is subsurface in its orientation. The historical focus of the drilling research has been directed at significantly expanding the nation's utilization of geothermal energy. The focus on geothermal-related drilling research is the search for practical solutions to challenges associated with tapping the most intense sources of heat, typically found well below the earth's surface in very severe environments.

### Goal / Objectives / Mandate

Sandia's work in drilling technology is aimed at reducing the cost and risk associated with drilling in harsh, subterranean environments.

### Interest in Collaboration

Technology partnerships are possible with Sandia. Sandia has many and varied collaborations with industry, small businesses, universities and government agencies on emerging technologies directly support our primary mission for the US DOE. Sandia uses a variety of agreement mechanisms to develop new partnerships with industry, state and local governments, and universities. Goals of the partner or sponsor, coupled with funding sources for the agreement and Sandia's strategic business objectives, are used to determine the most appropriate partnering mechanism.

### Narrative

Because a large portion of the cost and risk of generating electricity from geothermal sources is associated with drilling and completing exploration, production, and injection wells. Sandia's primary focus has been on the development of improved drilling and completion technologies such as diagnostics while drilling, high-temperature electronics, advanced drill bit technologies, and well-bore integrity technologies to reduce and mitigate problems associated with loss of circulation.

We also actively work on advanced drilling concepts to provide economical access to deeper and hotter resources in the future. Most of these research projects are conducted in cooperation with geothermal operators and companies within the well service industry. On a cost-per-foot basis, geothermal drilling is among the most expensive type of drilling performed, and Sandia's work in this area has created natural synergies that benefit other industries and agencies (such as oil and gas and Department of Defense) requiring drilled access to the underground.

## Greening Energy Production – Renewable Energy – Utility Wind

### Super Networks include the following:

National Wind Technology Centre – National Renewable Energy Laboratory  
University of Colorado at Boulder – Research and Sustainable Energy Institute

**The following knowledge networks are also in the area of Utility Wind.**

**Record:** 1908

**Category:** Greening Energy Production, Renewable Energy, Wind – Utility

**Organization:** LREE: Laboratoire de recherche en énergie éolienne

**Web site:** <http://www.uqar.ca/lree/>

**Address:** 300 allée des Ursulines

**Address 2:**

**City:** Rimouski

**State/Province:** Quebec

**Country:** Canada

**Zip/Postal Code:** G5L 3A1

**Contact Title:** Director

**Contact Person:** M. Adrian Ilinca

**Phone:** 418-723-1986, ext.1460

**Fax:** 418-724-1879

**Email:** [adrian.ilinca@uqar.qc.ca](mailto:adrian.ilinca@uqar.qc.ca)

**Year Founded:** N/A

**Reach:** regional, provincial and national

### Network Description

The LREE (Wind Energy Research Laboratory) aims to participate in the wind industry development through research and teaching. The laboratory specializes in all aspects of wind energy while focusing on regional development and collaborations with local, regional and national industries.

### Goal / Objectives / Mandate

LREE's goals are:

- To consolidate the expertise acquired in small wind turbines in order to transfer and apply the knowledge to big wind turbines through research;
- To provide technical expertise regarding wind farm installation and management.

LREE's activities include:

- Multidisciplinary research in wind energy;
- Adaptation and development of wind turbines in northern climates;
- Distributed and isolated power production; and,
- Planning and management of wind energy projects.

### Interest in Collaboration

Yes, certainly. The LREE already collaborates with the Pembina Institute through Tim Weis's involvement in both organizations. LREE welcomes many international students and its training can be made available in English.

### Narrative

The LREE has developed an expertise focused on small wind turbines (<100 kW), as well as coupled wind-diesel and compressed air storage systems, both of which allow for an optimal use of diesel fuel. The LREE developed this expertise because it is difficult to compete with European experience on bigger wind turbines. The laboratory focuses also on northern climate adaptation and studies wind projects social and environmental impacts, including noise production, through lab and field studies.



LREE entered in a partnership with the Wind Energy Technocentre to use the Technocentrd's newly installed 2 MW wind turbines.

LREE is struggling with Hydro-Quebec's current lack of interest for wind energy and wind-diesel coupling systems, and this slows down many LREE projects.

Information is shared among partners through conferences, publications, and web-based communications for international project collaborations.

### Membership Requirements

University research centre, no membership. Collaboration on a project basis

### Other Networks in this space

Institutions (Quebec):

- Centre Quebecois de Recherche et de Developpement de l'Aluminium
- Ecole Polytechnique de Montreal
- Ecole de Technologie Superieure
- Environnement Canada
- Institut de Materiaux Industriels de Boucherville
- Laboratoire International des Materiaux Anti-givre
- Technocentre Eolien de Gaspé
- McGill University

Private (Quebec):

- Audace Technologie
- CRERQ (Cooperatives Regroupees en Energie Eolienne du Quebec)
- Controle RK
- Environment International

Collaborations elsewhere in Canada

- Atlantic Wind Test Site
- Cite Collegiale d'Ottawa
- Pembina Institute
- Universite de Moncton
- University of Manitoba
- University of Nouveau-Brunswick

International collaborations:

- Ecole centrale de Lyon (France)
- Institute of Energy Technology, Aalborg University (Denmark)
- NERA - Office National d'etudes et de recherches Aeronautiques (France)
- RISOE (Denmark)
- Universite d'Alep (Syria)
- Universite d'Artois (France)
- Universite de Bacau (Romania)
- Universite Dunarea de Jos, Galati (Romania)
- Universite du Havre (France)
- Universite Libanaise de Beyrouth (Lebanon)
- Universite Polytechnique de Bucarest (Romania)
- UTBM - Universite Technologique de Belfort Montbeliard (France)

---

**Record:** 1817

**Category:** Greening Energy Production, Renewable Energy, Wind - Utility

**Organization:** AMDEE - La Asociacion Mexicana de Energia Eolica A.C.

**Web site:** <http://www.amdee.org>

**Address:** Oficinas AMDEE                      **Address 2:** Jaime Balmes 11 L-130F, Col. Los Morales Polanco  
**City:** Mexico                                      **State/Province:** D.F.  
**Country:** Mexico                              **Zip/Postal Code:** C.P. 11510

**Contact Title:** Media Contact  
**Contact Person:** Jorge Landa  
**Phone:** +52 55 5395-9559 **Fax:**      **Email:** [jlanda@amdee.org](mailto:jlanda@amdee.org), [gerencia@amdee.org](mailto:gerencia@amdee.org)

**Year Founded:** N/A                              **Reach:** National (Mexico)

#### Network Description

AMDEE is the Mexican wind industry association. It includes more than 40 companies involved in the development of the wind industry (manufacturers of equipment, turbines and wind component, and service providers).

#### Goal / Objectives / Mandate

The goal of La Asociacion Mexicana de Energia Eolica A.C (AMDEE) is to understand and improve public and private systems of decision that influence the planning and implementation of programs that help to promote, develop, install, sell and operate wind energy systems. The objective applies to sites where wind energy projects are to be installed for the benefits of the federal government, the Comision Federal de Electricidad (Mexican public utility), states and municipalities, land owners and communities, and areas off the grid.

#### Membership Requirements

Private companies (fees required, not disclosed)

**Record:** 1886

**Category:** Greening Energy Production, Renewable Energy, Wind - Utility

**Organization:** NWCC National Wind Coordinating Collaborative

**Web site:** <http://www.nationalwind.org/>

**Address:** c/o RESOLVE                              **Address 2:** 1255 23rd Street NW, Suite 875  
**City:** Washington                                      **State/Province:** DC  
**Country:** USA                                      **Zip/Postal Code:** 20037

**Contact Title:** Outreach Coordinator  
**Contact Person:** James Damon  
**Phone:** 202-965-6383      **Fax:** N/A **Email:** [jdamon@resolv.org](mailto:jdamon@resolv.org)

**Funding:** Public                                      **Budget:** N/A  
**Year Founded:** 1994                              **Reach:** National (USA)

#### Network Description

The National Wind Coordinating Collaborative (NWCC) is a consensus-based collaborative comprising representatives from the utility, wind industry, environmental, consumer, regulatory, power marketer, agricultural, tribal, economic development, and state and federal government sectors to support the development of an environmentally, economically, and politically sustainable commercial market for wind power. Facilitation and administrative support for the NWCC is provided by RESOLVE, a non-profit collaboration organization, in partnership with Kearns and West's specialists in collaborative facilitation and communication. The NWCC is funded by the U.S. Department of Energy's Wind and Water Technologies Program.

**Goal / Objectives / Mandate**

NWCC provides a neutral forum for a wide range of stakeholders to pursue the shared objective of developing environmentally, economically, and politically sustainable commercial markets for wind power in the United States:

Activities:

- Identifies issues that affect the use of wind power;
- Establishes dialogue on key and current topics and catalyzes activities that build consensus among its stakeholders; and,
- Addresses critical challenges in the areas of transmission, wildlife and habitat impacts, siting, power markets, and other aspects of wind development.

**Meeting Frequency**

- The Steering Committee convenes monthly conference calls to share information and receive updates on and evaluate NWCC projects and activities
- Business meetings are convened annually or bi-annually
- NWCC has active transmission and wildlife working groups
- NWCC hosts periodic seminars on technical siting issues

**Membership Requirements**

No requirements, no fees. Members identified as industry, developer, transmission provider, environmental NGO (ENGO), academia/research, utility, federal or regional agency, state or local agency.

**Other Networks in this space**

National Conference of State Legislatures  
Western Governors' Association  
American Wind Energy Association, and many others

**Affiliates / Affiliates area of expertise**

Wind energy  
Land use  
Wildlife and environment  
Energy policy

**Record:** 1857

**Category:** Greening Energy Production, Renewable Energy, Wind - Utility

**Organization:** Wind Energy TechnoCentre/TechnoCentre eolien

**Web site:** <http://www.eolien.qc.ca>

**Address:** 37 rue Chretien

**Address 2:**

**City:** Gaspé

**State/Province:** Quebec

**Country:** Canada

**Zip/Postal Code:** G4X 1E1

**Contact Title:** Communications Director

**Contact Person:** Caroline Sarley #224

**Phone:** 1-888-EOLIENS/(418) 368-6162

**Fax:** (418) 368-4315

**Email:** [info@eolien.qc.ca](mailto:info@eolien.qc.ca)

**Funding:** Private/Public

**Budget:** N/A

**Year Founded:** 2000

**Reach:** Provincial (Quebec)

**Network Description**

The TechnoCentre eolien (Wind Energy TechnoCentre) is a not-for-profit organization receiving funding from both the Canada and Quebec governments. Its primary goal is to contribute to the birth of a true wind energy network in Quebec, by way of the Gaspé Peninsula, the Magdalen Islands and the MRC de Matane. Founded in 2000, the Wind Energy TechnoCentre helps raise public and government awareness regarding the contribution of the emerging wind energy industry to regional economic development.

Every year, the Wind Energy TechnoCentre makes numerous presentations to audiences of all kinds, from students to entrepreneurs seeking to take advantage of wind energy-related business opportunities to local employment centers. The Wind Energy TechnoCentre is often invited to speak publicly on the industry's evolution or on the various wind farm projects proposed in Quebec. In addition, the organization regularly participates in government committees mandated to make sure the industry meshes as harmoniously as possible with other land uses, and to identify ways to make the most of wind energy-related economic benefits.

The Wind Energy TechnoCentre offers a variety of services, including:

- Networking
- Event organization
- Information outreach:
- Media review
- Presentations
- Strategic documentation
- Web site
- Economic development, such as assistance for business creation, diversification and consolidation
- Financial support, such as business plans, networking with potential investors, and feasibility studies.

#### **Goal / Objectives / Mandate**

"Foster the emergence of a competitive wind energy industry"

The mission of the Wind Energy TechnoCentre is to contribute to the region's economic growth and industrial renewal by developing a made-in-Quebec industrial network that can compete on North American and world stages.

Areas of focus:

- Promote wind energy
- Support the development of manufacturing, production and service businesses connected to the wind energy sector
- Provide technological and commercial intelligence
- Foster the development and transfer of wind energy know-how
- Speak to organizations and political authorities involved in the wind energy sector.

#### **Interest in Collaboration**

Yes, any mutually beneficial collaboration will be considered

#### **Narrative**

The Wind Energy TechnoCentre has a couple of departments. One is the R&D department, which focuses its activities on wind turbine adaptation in cold climates. The TechnoCentre recently acquired and installed two wind turbines that will make possible operation and maintenance testing, and characterization, along with instrument measurements validation. This project entailed a significant level of investment, complete with technical staff hiring and training, and analysis software. The TechnoCentre conducts research on combined wind, diesel and solar energy production systems, plus microgrids for isolated areas.

Another department is active in helping companies involved in the wind industry to develop. The Wind Energy TechnoCentre's business activities and offer support in different certification processes. Suitable transportation infrastructure other than road (such as train, boat) is seen as instrumental in developing export markets for wind energy products manufactured (e.g. fibre glass turbine blades) in the region after the Quebec government required so in its previous wind power calls for tenders. This department also studies environmental and human impacts of wind energy development. A daily Quebec press review is conducted and presented to interested stakeholders. The Wind Energy TechnoCentre has developed a unique expertise in northern climate characterization and assessment of wind turbines. The 4th congress in June 2010 attracted 225 delegates from throughout the province

of Quebec, the US and Europe. This was seen as an important success given that the TechnoCentre is located in Gaspé, far away from major urban centres.

Information is shared within members through e-newsletters, the annual congress, and committee sessions. One of the committee works on development the ACCORD excellence niche (Quebec government) in wind energy attributed to the Gaspé Peninsula region.

### **Meeting Frequency**

Organizes the Quebec Wind Energy Industry Conference (4th year in 2010) in June  
Seminars and workshops  
Committees

### **Membership Requirements**

Member levels consist of: Student, Individual, Corporate and Strategic memberships.

Member list:

3Ci energie eolienne  
AAER Inc.  
Activa Environnement  
Association Canadienne de l'Energie Eolienne  
BBA  
Bio-Lubrifiants de la Cote Est Inc.  
Black and McDonald  
Boralex inc.  
Borea Construction  
BPR Inc.  
Brule, Marquis and associes  
Cable ALCAN  
Carbone d'Amerique  
Cartier anergie aolienne  
Cegep de Matane  
Cegertec inc.  
Centre hydraulique HYDREP inc.  
Chambre canadienne allemande de l'industrie et du commerce Inc.  
CLD d'Avignon  
CLD du Rocher-Perce  
Commission scolaire des Chic-Chocs  
Composites VCI Matane Inc  
Dir. Regionale Emploi-Qc  
EBC inc.  
Ecole de technologie superieure  
Electro Saguenay Itee  
Enercon Canada Inc.  
Energie Northland Power Quebec sec  
Eocycle Technologies  
Eoelectric Inc.  
EOLIENNES DE L'ERABLE,INC  
Fonds regional de solidarite FTQ Gaspesie-Iles-de-la-Madeleine  
GENIVAR  
Groupe Collegia  
Groupe Delom inc  
Helimax Energie  
Invenergy Wind Canada  
KR Vent inc.  
Kwatroe Consultants Inc

LBA Strategies Conseils inc.  
Le Groupe Ohmega Inc.  
LM Wind Power Blades (Canada) Inc.  
MARMEN ENERGIE INC.  
MRC d'Avignon  
PESCA Environnement inc.  
PSB CHALEURS INC.  
PTS Electricque Ltee  
RES  
SADC DE GASPE  
SADC Rocher-Perce  
Saint-Laurent Energies inc.  
Techeol Inc  
TechnoCentre eolien  
Technostrobe  
Telecon inc.  
Venterre NRG  
Ville de Gaspé  
Ville de Matane  
Westburne

**Other Networks in this space**

Associations promoting wind energy:  
American Wind Energy Association  
Association quebecoise de la production d'énergie renouvelable  
Canadian Wind Energy Association  
Danish Wind Industry Association  
European Wind Energy Association  
Greenpeace  
Association de la Recherche Industrielle du Quebec  
Public and para-public agencies:  
Natural Resources Canada  
Canada Economic Development  
Ministere des Ressources naturelles et de la Faune  
Ministere du Developpement économique, Innovation et Exportation  
Hydro-Quebec  
Hydro-Quebec Self-generation  
Bureau d'audiences publiques sur l'environnement

**Affiliates / Affiliates area of expertise**

Wind energy, wind farm development and management, environment, renewables

## Greening Energy Production – Renewable Energy – Micro Wind

### Super Networks include the following:

National Wind Technology Centre – National Renewable Energy Laboratory  
Additional knowledge networks are listed below.

---

**Record:** 1722

**Category:** Greening Energy Production, Renewable Energy, Wind - Micro

**Organization:** WEICAN: Wind Energy Institute of Canada

**Web site:** <http://www.weican.ca/>

**Address:** 21741 Route 12

**Address 2:**

**City:** North Cape

**State/Province:** Prince Edward Island

**Country:** Canada

**Zip/Postal Code:** COB 2B0

**Contact Title:** CEO

**Contact Person:** Scott Harper

**Phone:** 902-882-2746

**Fax:** 902-882-3823

**Email:** [scott.harper@weican.ca](mailto:scott.harper@weican.ca)

**Funding:** Private/Public

**Budget:** N/A

**Year Founded:** early 1980s

**Reach:** National (Canada)

### Network Description

Wind Energy Institute of Canada (WEICan) is a leader in wind energy research and development in Canada and has enjoyed this role for more than 25 years since operations began in the early 1980s. Consequently we play a key role nationwide in advancing the development of wind energy through research, testing, innovation and collaboration.

WEICan is a highly collaborative organization and adopts both a responsive and proactive approach in dealing with its various partners. WEICan works with the private sector, universities, colleges and other research institutions as well as the federal and provincial governments. WEICan is also engaged in a number of collaborative ventures with partners from the United States and overseas.

### Goal / Objectives / Mandate

WEICan's objectives and mandate include the following:

Testing and demonstration of wind systems of any size. Tests may be conducted at WEICan facilities in PEI or at any location in North America.

Research and innovation undertaken across a broad spectrum of activities: distributed generation, small wind turbines, wind-diesel systems for remote and off-grid applications and wind-hydrogen applications. (current projects)

Research and development. Given Canada's current position as a small player in the global wind energy industry, defining a market that enables Canada to truly excel in its area of specialization is critical. Research and development work is and will continue to be, targeted toward niche areas where Canadian companies can be world leaders.

- Technical consultation and assistance:

- Training and public education:

WEICan works closely with CanWEA to ensure that joint efforts do not result in duplication.

**Interest in Collaboration**

Yes. Details to be discussed with Scott Harper, WEICan CEO

**Narrative**

WEICan receives a significant funding from Natural Resources Canada, the Atlantic Canada. Opportunities Agency (ACOA) and the PEI government. Specific projects with the industry are funded by partners through service contracts. WEICan focuses its activities on small wind turbine project start-up (that is, provide expertise and reduce cost of operating a wind farm), testing leading to certification, wind data analysis, and integrated systems (wind-hydrogen, wind-diesel).

National collaborations include a contract with the Saskatchewan Research Council for wind monitoring. WEICan has also undertaken international contracts Japan universities on wind turbine testing.

A main current challenge of WEICan is to guaranty its core funding. As the organization has grown from small to medium-size (12 permanent staff + coop interns), it would like to grow further and hire more staff as the demand for its services is high, but budget limits are an issue. Since WEICan works with communities and small-scale wind turbines and projects, there is less money available compared to utility-scale wind projects.

---

**Record:** 1906

**Category:** Greening Energy Production, Renewable Energy, Wind - Micro

**Organization:** LREE: Laboratoire de recherche en energie eolienne

**Web site:** <http://www.uqar.ca/lree/>

**Address:** 300 allee des Ursulines

**Address 2:**

**City:** Rimouski

**State/Province:** Quebec

**Country:** Canada

**Zip/Postal Code:** G5L 3A1

**Contact Title:** Director

**Contact Person:** M. Adrian Ilinca

**Phone:** 418-723-1986, ext.1460

**Fax:** 418-724-1879

**Email:** [adrian\\_ilinca@uqar.qc.ca](mailto:adrian_ilinca@uqar.qc.ca)

**Funding:**

**Budget:** N/A

**Year Founded:** N/A

**Reach:** regional, provincial and national

**Network Description**

The LREE (Wind Energy Research Laboratory) aims to participate in the wind industry development through research and teaching. The laboratory specializes in all aspects of wind energy while focusing on regional development and collaborations with local, regional and national industries.

**Goal / Objectives / Mandate**

LREEs goals are:

- To consolidate the expertise acquired in small wind turbines in order to transfer and apply the knowledge to big wind turbines through research; and,
- To provide technical expertise regarding wind farm installation and management.

LREE's activities include:

- Multidisciplinary research in wind energy;
- Adaptation and development of wind turbines in northern climates;
- Distributed and isolated power production; and,
- Planning and management of wind energy projects.



**Interest in Collaboration**

Yes, certainly. The LREE already collaborates with the Pembina Institute through Tim Weis's involvement in both organizations. LREE welcomes many international students and its training can be made available in English.

**Narrative**

The LREE has developed an expertise focused on small wind turbines (<100 kW), as well as coupled wind-diesel and compressed air storage systems, both of which allow for an optimal use of diesel fuel. The LREE developed this expertise because it is difficult to compete with European experience on bigger wind turbines. The laboratory focuses also on northern climate adaptation and studies wind projects social and environmental impacts, including noise production, through lab and field studies.

LREE entered in a partnership with the Wind Energy Technocentre to use the Technocentrd's newly installed 2 MW wind turbines.

LREE is struggling with Hydro-Quebec's current lack of interest for wind energy and wind-diesel coupling systems, and this slows down many LREE projects.

Information is shared among partners through conferences, publications, and web-based communications for international project collaborations.

**Membership Requirements**

University research centre, no membership. Collaboration on a project basis

**Other Networks in this space**

Institutions (Quebec):

- Centre Quebecois de Recherche et de Developpement de l'Aluminium
- Ecole Polytechnique de Montreal
- Ecole de Technologie Superieure
- Environnement Canada
- Institut de Materiaux Industriels de Boucherville
- Laboratoire International des Materiaux Anti-givre
- Technocentre Eolien de Gaspé
- McGill University

Private (Quebec):

- Audace Technologie
- CRERQ (Cooperatives Regroupees en Energie Eolienne du Quebec)
- Controle RK
- Environment International

Collaborations elsewhere in Canada

- Atlantic Wind Test Site
- Cite Collegiale d'Ottawa
- Pembina Institute
- Universite de Moncton
- University of Manitoba
- University of Nouveau-Brunswick

International collaborations:

- Ecole centrale de Lyon (France)
- Institute of Energy Technology, Aalborg University (Denmark)
- NERA - Office National d'etudes et de recherches Aeronautiques (France)
- RISOE (Denmark)

- Universite d'Alep (Syria)
- Universite d'Artois (France)
- Universite de Bacau (Romania)
- Universite Dunarea de Jos, Galati (Romania)
- Universite du Havre (France)
- Universite Libanaise de Beyrouth (Lebanon)
- Universite Polytechnique de Bucarest (Romania)
- UTBM - Universite Technologique de Belfort Montbeliard (France)

**Affiliates / Affiliates area of expertise**

Small and big wind turbines/farms.

## Greening Energy Production – Renewable Energy - Solar

### Super Networks include the following:

University of Colorado at Boulder - Research and Sustainable Energy Institute  
 Oak Ridge National Laboratory - Energy Efficiency and Electricity Technologies Program  
 National Renewable Energy Laboratory  
 CanmetENERGY – Natural Resources Canada

### The following Knowledge Networks are also operating in the area of Solar.

**Record:** 1828

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Organization:** American Solar Energy Society

**Web site:** <http://www.ases.org/>

**Address:** 2400 Central Ave

**Address 2:** Suite A

**City:** Boulder

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80301

**Contact Title:** Executive Director

**Contact Person:** Bradley D. Collins

**Phone:** 303-443-3130

**Fax:** 303-443-3212

**Email:** [bcollins@ases.org](mailto:bcollins@ases.org)

**Funding:** Private/Public

**Budget:** \$3,500,000

**Year Founded:** 1954

**Reach:** National (USA)

### Network Description

Established in 1954, the non-profit American Solar Energy Society (ASES) is the nation's leading association of solar professionals and advocates. Its mission is to inspire an era of energy innovation and speed the transition to a sustainable energy economy. ASES is the U.S. chapter of the International Solar Energy Society, and advances education, research and policy in the US.

ASES leads national efforts to increase the use of solar energy, energy efficiency and other sustainable technologies in the U.S. It publishes the award-winning SOLAR TODAY magazine, organize and present the ASES National Solar Conference and lead the ASES National Solar Tour, the largest grassroots solar event in the world. The 2009 National Solar Tour comprised 237 individual tours in 3,200 communities, including 5,500 buildings, from coast to coast.

ASES is in charge of the following events/publications: Solar Today Magazine, National Solar Conference, National Solar Tour. ASES Technical Divisions include: Solar Electric Division, Solar Buildings Division, Sustainability Division, Solar Thermal Division, Renewable Fuels and Sustainable Transportation Division, Resource Applications Division, Clean Energy and Water Division, Small Wind Division, and Concentrating Solar Power Division.

Last year ASES published the groundbreaking Green-Collar Jobs report, which showed that renewable energy and energy efficiency sectors generate more than 9 million jobs and \$1 trillion in annual revenue in the U.S. The second report, Tackling Climate Change in the U.S., demonstrated how renewable energy and energy efficiency can provide the carbon emissions reductions needed to mitigate climate change.

ASES is now supported by more than 13,000 members across the nation, energy professionals and grassroots supporters, who work together to help create a sustainable energy economy. Combined with ASES's regional chapters in 40 states and as the U.S. section of the International Solar Energy Society, it is a key part of a powerful, collaborative network, because the need for renewable energy is clear. Fossil fuels are putting the U.S. economy and environment at risk. Energy costs are volatile. Pollution and climate change threaten our children's future. Even the security of our nation is at risk as the U.S. continues to buy fuel from turbulent regions. The time for change is now.

**Goal / Objectives / Mandate**

The mission of ASES is to speed the transition to a sustainable energy economy. It helps members stay informed and succeed in a rapidly changing industry. Together with its members, ASES are building a solar-powered, energy efficient nation.

**Membership Requirements**

ASES is a membership-based non-profit organization. Membership categories are the following:  
Member, Professional Member, Supporting Member, Business Member

**Other Networks in this space**

State chapters of the ASES

---

**Record:** 1864

**Category:** Greening Energy Production, Renewable Energy, Solar Thermal

**Organization:** Florida Solar Energy Center

**Web site:** <http://www.fsec.ucf.edu/en/>

**Address:** 1679 Clearlake Road

**Address 2:**

**City:** Cocoa

**State/Province:** Florida

**Country:** USA

**Zip/Postal Code:** 32922-5703

**Contact Title:** Assistant Director, Communications

**Contact Person:** Sherri Shields

**Phone:** 321-638-1019

**Fax:** 321-638-1010

**Email:** [sherri@fsec.ucf.edu](mailto:sherri@fsec.ucf.edu)

**Funding:** Private/Public

**Budget:** US\$10 million per annum

**Year Founded:** 1975

**Reach:** National (USA)

**Network Description**

The Center's 150-member staff includes 95 professionals with expertise in engineering, energy research, building science, energy and policy analysis, and education and training. The remainder of the staff consists of technical and administrative support personnel and university student assistants.

The Policy Advisory Board is made up of representatives from the solar industry, educators, builders, developers, utilities, large retailers, and not-for-profit and non-governmental organizations.

Research at FSEC is based on field monitoring, computer simulations and controlled experiments in highly instrumented laboratories. These research efforts are developed in partnership with industry, non-profit organizations, private sponsors and national laboratories. Results are published and widely disseminated through national and local media, as well as the Internet.

FSEC annually receives US\$3 million in operating funds from the University of Central Florida, and also performs contracted research and training for external sponsors. The value of FSEC contracts and grants ranges from \$8 million to \$12 million annually. Total funding since FSEC's inception in 1975 exceeds \$130 million.

Accreditation plays an important part in providing quality research and product data to our customers. In December of 2003, PowerMark Corporation (PMC) accredited FSEC with the authority to certify photovoltaic modules power ratings. The centre's photovoltaic laboratory quality system and operational procedures have also been accredited by the American Association for Laboratory Accreditation (A2LA) in August 2001, per the requirements of ISO/IEC 17025:2005, General Requirements for the Competence of the Testing and Calibration Laboratories (2000). We are currently inactive in meeting A2LA accreditation requirements. For complete list of our accredited testing methods, search for "FSEC" on the A2LA Web site.

FSEC has 44 patents presently licensed to industry.

A list of organization's patents and awards is available online:

<http://www.fsec.ucf.edu/en/about/achievements/index.htm>

The FSEC share technical information through a host of web sites:  
[http://www.fsec.ucf.edu/en/about/other\\_sites.htm](http://www.fsec.ucf.edu/en/about/other_sites.htm)

**Goal / Objectives / Mandate**

As the global community grows, so does the need for energy. With the peak production of oil approaching, new and innovative energy solutions will be needed. The mission of the Florida Solar Energy Center (FSEC) is to research and develop energy technologies that enhance Florida's, and the nation's, economy and environment, and to educate the public, students and practitioners on the results of the research.

The FSEC was created by the Florida Legislature in 1975 to serve as the state's energy research institute. The main responsibilities of the center are to conduct research, test and certify solar systems and develop education programs.

As Florida's energy research institute—with a 35-year history of unique expertise, experience and infrastructure—the FSEC is leading research and development efforts to bring its vision of energy independence to fruition.

**Interest in Collaboration**

Yes, assuming the research/collaboration funding is provided by the CCEMC.

**Narrative**

FSEC researchers (95 professionals) are heavily involved in collaborative work, they focus significantly on getting the word out through both scientific publications and public outreach.

The current FSEC director is also University of Central Florida's VP of research and commercialization, which helps linking research projects and industry projects. The FSEC develops collaborative projects with many other US research labs, including DEO, SANDIA, and Berkeley. The FSEC currently conducts research on solar panels testing for durability and efficiency for a private company. Similarly, testing for seven types of water heating systems is underway, with three of these systems being solar.

A long-term goal of FSEC is to bring a PV panel manufacturing facility in Florida.

One of the challenges that Florida solar systems consumers face is the capital depletion of State of Florida rebate program. Many consumers bought solar systems assuming they would be partly reimbursed, but they cannot get a rebate this year. For this reason, consumers are partly losing faith in the viability of solar energy, as system prices are still high and some companies misrepresent the industry in saying the rebates are still available. FSEC's priority is to implement energy efficiency first, then thermal, and after solar PV.

**Membership Requirements**

University Research Center, no membership, partners only

**Other Networks in this space**

Southeast Green Power Network (SEGP)  
Southern Energy Efficiency Center  
The Space Coast Clean Cities Coalition

## Greening Energy Production – Renewable Energy - Geothermal

### Super Networks include the following:

Idaho National Laboratory  
 Sandia National Laboratory  
 National Renewable Energy Laboratory

The following Knowledge Networks are also working in the area of Geothermal Energy.

**Record:** 2064

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** Lawrence Berkley National Laboratory, Earth Sciences Division Geothermal Program

**Web site:** [http://esd.lbl.gov/research/programs/er/research\\_areas/geothermal\\_energy.html](http://esd.lbl.gov/research/programs/er/research_areas/geothermal_energy.html)

**Address:** 1 Cyclotron Road

**Address 2:** MS 90-1116

**City:** Berkely

**State/Province:** California

**Country:** USA

**Zip/Postal Code:** 94720

### Contact Title:

**Contact Person:** Mack Kennedy

**Phone:** 510-486-6451

**Fax:**

**Email:** BMKennedy@lbl.gov

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1977

**Reach:**

### Network Description

The Earth Sciences Division (ESD) is situated at the Lawrence Berkley National Lab. The ESD research and operations activities are supported at a level of more than \$30Million a year, with a total of nearly 300 employees, UC faculty, guests and students. ESD is organized into five departments, six programs and, in addition to access to Berkeley's major facilities, has its own facilities and centres, which support researchers in conducting computational modelling, rock physics, isotope geochemistry, systems biology, microbial ecology, and field work in the subsurface, atmosphere and ocean.

### Goal / Objectives / Mandate

Two main objectives include 1) reducing uncertainties associated with finding, characterizing and evaluating geothermal resources, and 2) developing and understanding the enhancement of permeability of fluid flow to significantly increase production (enhanced geothermal systems). The ultimate purpose is to lower the cost of geothermal energy for electric power generation and direct uses (such as, agricultural and industrial applications, and aquaculture). The program encompasses theoretical, laboratory, and field studies, with an emphasis on multidisciplinary approaches to solving the problems at hand. Researchers seek to transform fundamental scientific concepts, which are derived through basic research studies, into tangible products that can be directly applied by the geothermal industry worldwide.

### Narrative

Berkely Lab is one of the US National Labs. The Earth Sciences Division supports research in geothermal, nuclear waste and geosciences. Fundamental research is in hydrogeology and reservoir engineering, geophysics and geomechanics, geochemistry, microbial ecology, and environmental engineering. ESD's mission is to address local, national and global problems focusing on fundamental, crosscutting science common to many energy resource problems and environmental issues.

---

**Record:** 2035

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** Geothermal Resources Council

**Web site:** <http://www.geothermal.org/grc.html>

**Address:** P.O. Box 1350, 2001 Second Street, Suite 5

**Address 2:**

**City:** Davis

**State/Province:** CA

**Country:** USA

**Zip/Postal Code:** 95617-1350

**Contact Title:** Executive Director

**Contact Person:** Curt Robinson

**Phone:** 530-758-2360

**Fax:** 530-758-2839

**Email:** [crobinson@geothermal.org](mailto:crobinson@geothermal.org)

**Funding:** Private

**Budget:** N/A

**Year Founded:** 1970

**Reach:** International

### Network Description

With the experience and dedication of its diverse, international membership bolstering a 30-year track record, the Geothermal Resources Council (GRC) has built a solid reputation as one of the world's premier geothermal associations. The GRC serves as a focal point for continuing professional development for its members through its outreach, information transfer and education services.

The GRC is governed by a 20-member Board of Directors, elected by the general membership to two-year terms. To provide continuity, half of the Board is elected every year. All GRC members are eligible for election to the Board of Directors.

GRC operating funds are derived from its Annual Meeting; corporate contributions; government grants and contracts; workshops; membership dues and contributions; and publication sales and advertising.

### Goal / Objectives / Mandate

The Geothermal Research Council (GRC) is a tax-exempt, non-profit, educational association 501(c)(3). Formed in 1970, the GRC was incorporated in the state of Washington in 1972, and in California in 1981. With members in 30 plus countries, the GRC actively seeks to expand its role as a primary professional educational association for the international geothermal community. The goals of the GRC are to:

- Encourage worldwide development of geothermal resources through the collection and timely distribution of data and technological information;
- Promote research, exploration and development of geothermal energy in ways compatible with the environment;
- Serve as a public forum for the world geothermal community, providing transfer of objective and unbiased information on the nature of geothermal resources and techniques of geothermal development; and,
- Cooperate with national and international academic institutions, industry and government agencies to encourage economically and environmentally sound development and utilization of geothermal resources.

### Interest in Collaboration

Yes, details to be discussed in the future

### Membership Requirements

The GRC serves as a focal point for continuing professional development for its members through its outreach, information transfer and education services. GRC membership is open to any person, organization, agency or company. Membership opportunities include:

- Individual: Regular, Student and Benefactor. Students with an interest in geothermal resources and development are encouraged to join the GRC;
- Corporate: Company/Institutional, Supporting, Sustaining and Patron. GRC Corporate Members include major developers of geothermal energy in the United States and around the world; and,
- Retired: Over 65 years of age and retired. Retired GRC Members include many geothermal industry pioneers.

**Other Networks in this space**

Geothermal Energy Association  
 Geothermal Education Office (GEO)  
 Geysers Geothermal Association (GGA)  
 Geothermal Association of Imperial County (GAIC)  
 International Geothermal Association (IGA)  
 ANSA News Agency  
 Bulgarian Geothermal Association  
 California Department of Conservation  
 California Energy Commission, Geothermal Energy  
 California Energy Institute  
 California Geothermal Energy Collaborative  
 Canadian Geothermal Energy Association  
 Department of Energy: Geothermal Technologies Legacy Collection (Library)  
 DSIRE: Database of State Incentives for Renewables and Efficiency  
 Eco20-20: Renewable and Non-Renewable Energy  
 Energy Planet-Directory of Renewable Energy  
 Environmental Protection Agency  
 Environmental Support Solutions  
 Geothermal Energy Association  
 Geothermal Pioneers  
 IEA Geothermal Energy  
 IEA International Energy Agency  
 International District Energy Association  
 International Geothermal Association  
 National Renewable Energy Laboratory  
 New Energy Portal  
 New Zealand Geothermal Association  
 Nicholls Countryside Construction Limited  
 Ontario Solar Academy  
 Renewable Energy Bug-Directory  
 The Geothermal Energy Blog  
 The World Bank  
 U.S. DOE, Energy Efficiency and Renewable Energy Network (EREN)  
 U.S. Department of Energy, Energy Information Administration  
 U.S. Geological Survey  
 World Energy Council

**Affiliates / Affiliates area of expertise**

Geothermal Energy

---

**Record:** 2062

**Category:** Greening Energy Production, Renewable Energy, Geothermal

**Organization:** Rocky Mountain Oilfield Testing Center

**Web site:** <http://www.rmotc.doe.gov/index.html>

**Address:** 907 N. Poplar, Suite 150

**Address 2:**

**City:** Casper

**State/Province:** Wyoming

**Country:** USA

**Zip/Postal Code:** 82601

**Contact Title:** Director of RMOTC



**Contact Person:** Clarke Turner

**Phone:** 307-233-4800

**Fax:** 307-233-4851

**Email:** clarke.turner@rmotc.doe.gov

**Funding:** Private/Public

**Budget:**

**Year Founded:**

**Reach:** Regional

### **Network Description**

The Rocky Mountain Oilfield Testing Center (RMOTC) is an energy testing center that partners with industry to test new ideas and products that lead to increased recovery or reduced operating costs. RMOTC's test site is a 10,000-acre U.S. Department of Energy facility located within Naval Petroleum Reserve No. 3 (NPR-3), also known as Teapot Dome Oil Field, about 35 miles north of Casper, Wyoming. RMOTC is also doing geothermal testing. With the existing geologic structure at RMOTC, promising potential existing for enhanced geothermal system testing. The field also has two reliable water resources for supporting low-temperature geothermal testing. RMOTC can support multiple field-scale geothermal testing and demonstration and has the capability to provide project management off site.

### **Goal / Objectives / Mandate**

RMOTC supports the goals of the National Energy Policy, the Office of Fossil Energy, and the U.S. Department of Energy. Each and every project contributes in some way to the nation's energy security, economic growth, or technology leadership. Technologies tested at RMOTC are found in applications worldwide. The Interstate Oil and Gas Compact Commission (IOGCC), the Independent Petroleum Association of America, the National Stripper Well Association, and the Rocky Mountain Oil and Gas Association are among those that support the unique capabilities offered by RMOTC to industry, government, and academia.

### **Interest in Collaboration**

RMOTC welcomes all inquiries for energy-related field test projects including reservoir production, facilities, exploration, environmental, and more. RMOTC engineers and project managers can provide the facility specifications and/or reservoir data necessary to determine how RMOTC can meet your field test requirements. To become a test partner, RMOTC will assist interested parties with the following steps:

Step 1: Develop a Project Proposal

Step 2: Design a detailed project plan as a Joint Work Statement

Step 3: Determine funding arrangement for your project

### **Narrative**

Independent oil producers leverage technologies tested at RMOTC by evaluating new recovery processes before application. Inventors test, evaluate, demonstrate, and transfer new technologies to the oil and gas industry. Environmental companies explore ways to prevent and manage environmental risks. National laboratories and government organizations field test theoretical laboratory assumptions in a real-world setting. Universities teaching theory in the classroom demonstrate the real-life application in the field and conduct leading-edge research.

RMOTC research and outreach activities include:

- The link between development and getting the technology to the industry.
- The opportunity to field test, document, and demonstrate benefits of the technology.
- Acceptance of the risks of production loss in a producing well.
- A large geologic database, facilities, and support staff.
- Professional staff with operating expertise and equipment to tweak ideas on-site during the test, in a real-world situation, rather than a simulated laboratory test.
- Adaptability to simulate offshore operations or renewable resources.

RMOTC has no vested interest in any specific technology, only in supporting the energy industry by increasing production, decreasing costs, and lessening the environmental footprint. RMOTC provides a neutral, real-world test environment that is unparalleled in the energy industry. Many small companies, universities, and others have the opportunity to field test new tools and techniques so they can bring them to the marketplace. Because

RMOTC's field test site is also an operating oil field, partners are able to provide their technologies in a production environment while receiving neutral feedback and keeping any proprietary information confidential.

The mission of the RMOTC program is to ensure American's energy security by working with industry and academia to develop technologies that increase production, improve recovery, lower costs, and reduce environmental impact.

RMOTC was formed as the Rocky Mountain Oilfield Testing Center to address the needs of industry, academia, and other government agencies for a place to field test new tools and technologies for oil and gas exploration and production. As America's energy resources diversify, RMOTC strives to fulfill the testing and demonstration needs of both traditional and non-traditional energy providers.

## Greening Energy Production – Renewable Energy – Integration of RE into Grids

The following super network is involved in Integration of RE into Grid.  
National Renewable Energy Laboratory.

The following record is for Utility Wind Integration Group who is active in this area, but not considered a super network.

**Record:** 1911

**Category:** Greening Energy Production, Renewable Energy, Integration of Renewable Energy into Grids

**Organization:** Utility Wind Integration Group

**Web site:** <http://www.uwig.org/>

**Address:** Utility Wind Integration Group

**Address 2:** PO Box 2787

**City:** Reston

**State/Province:** Virginia

**Country:** USA

**Zip/Postal Code:** 20195

**Contact Title:** Conference and Communications Coordinator

**Contact Person:** Sandy Smith

**Phone:** 865-218-4600, ext. 6141

**Fax:** 865-218-8999

**Email:** [sandy@uwig.org](mailto:sandy@uwig.org)

**Funding:** Private/Public

**Budget:** N/A

**Year Founded:** 1989

**Reach:** North American

### Network Description

The Utility Wind Integration Group (UWIG), previously the Utility Wind Interest Group, was established in 1989 to provide a forum for the critical analysis of wind technology for utility applications and to serve as a source of credible information on the status of wind technology and deployment. The group's mission is to accelerate the development and application of good engineering and operational practices supporting the appropriate integration of wind power into the electric system. This will be accomplished through the coordinated efforts and actions of its members in collaboration with The U.S. Department of Energy, its National Renewable Energy Laboratory, and utility research organizations.

UWIG currently has over 150 members spanning the United States, Canada, and around the world including investor-owned, public power, and rural electric cooperative utilities, transmission system operators, and associate member corporate, government, and academic organizations.

### Goal / Objectives / Mandate

The mission of the UWIG is to accelerate the development and application of good engineering and operational practices supporting the appropriate integration of wind power into the electric system. This will be accomplished through the coordinated efforts and actions of UWIG members in collaboration with wind industry stakeholders, including federal agencies, trade associations, and industry research organizations.

In order to meet these objectives, UWIG aims to:

- Provide a forum for the critical analysis of wind technology for utility applications, and through this forum to provide current credible information on the status of wind technology and deployment worldwide;
- Continue to create and deliver products and services that meet the individual and collective needs of members;
- Articulate the needs and requirements of electric utilities for wind power to be considered as a viable generating option;
- Enhance the credibility of and identify opportunities for wind power application in the electric utility sector;

- Provide guidance to the industry, state, and national wind development programs, including those of the U.S. Department of Energy and EPRI; and,
- Encourage member involvement in the national wind program activities.

### **Interest in Collaboration**

UWIG undertakes collaborative research on topics related to the operation of wind generation on utility power systems.

### **Narrative**

#### Education and Training

UWIG conducts technical workshops on wind energy integration issues and serves as a source of technical information on wind energy topics. UWIG offers spring and fall technical workshops, a workshop on forecasting applications, and a special topical workshop. UWIG also co-sponsors a short course on the integration and interconnection of wind plants onto utility power systems. This multi-day course features an internationally recognized faculty and covers all facets of wind plant integration and interconnection. Events are open to members and nonmembers, with members receiving discounted rates for registration.

#### Information Transfer

UWIG operates user groups for information transfer, providing members with information and insights not available elsewhere. UWIG's Turbine Operations and Maintenance Users Group is the only independent, vendor-neutral forum for sharing of turbine and plant operational experiences and issues.

#### Research and Development

UWIG undertakes collaborative research on topics related to the operation of wind generation on utility power systems.

#### UWIG Acts on the National Scene

UWIG represents utility interests on wind energy issues as a key stakeholder in the National Wind Coordinating Collaborative (NWCC) as well as the US. Department of Energy's Office of Energy Efficiency and Renewable Energy and Office of Electricity Delivery and Energy Reliability. UWIG provides technical subject matter expertise to the Federal Energy Regulatory Commission (FERC) and North American Electric Reliability Corporation (NERC).

### **Meeting Frequency**

Annual meetings

Regular Technical Workshops

Webinars and seminars

### **Membership Requirements**

Membership is open to utilities and other entities that have an interest in wind generation. Membership levels include: Utility, Corporate and Academic/Government Members/Individual Consultants Members (fee required). Utility members have voting privileges, are represented on the UWIG Board of Directors, and can participate in all technical meetings, business meetings, and workshops. UWIG has a considerable number of members, as listed online at: <http://www.uwig.org/UWIGmembers.htm>.

### **Other Networks in this space**

Not specified

### **Affiliates / Affiliates area of expertise**

US Department of Energy.

IEEE

Federal Energy Regulatory Commission (FERC)

North American Electric Reliability Corporation (NERC)

EPRI

## Greening Energy Production – Renewable Energy - Hydrogen

The following super network is involved in Hydrogen.

National Renewable Energy Laboratory.

Oak Ridge National Laboratory

The following Knowledge Networks are also working in the area of Hydrogen.

**Record:** 2037

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** NSERC Hydrogen Canada (H2Can)

**Web site:** <http://www.h2can.ca/>

**Country:** Canada                      **Zip/Postal Code:**

**Contact Title:**     Managing Director

**Contact Person:** Dr. Andrie V. Tchouvelev

**Phone:** 905-696-7007     **Fax:**     **Email:** [atchouvelev@h2can.ca](mailto:atchouvelev@h2can.ca)

**Funding:** Private/Public                      **Budget:**

**Year Founded:**                      **Reach:** National

### Network Description

This is a pan-Canadian research network, grouping 28 leading researchers, including seven NSERC chair holders, from 13 universities, four NRC institutes, and one NRCan laboratory, located in seven different provinces. The network includes internationally recognized scientists and engineers whose activities cover all aspects of the scientific program. The research activities are divided into three themes: production and purification, storage and infrastructure, and safety.

### Goal / Objectives / Mandate

NSERC Hydrogen Canada's (H2Can) mission is to help Canada maintain a global leadership in a core technology of the 21st century by generating a critical mass in terms of resources, effort and competencies to address and resolve some of the remaining technical barriers to the introduction and commercialization of hydrogen energy technologies.

Its scientific program strives to address both the short-term goals of industry (lowering costs by improving current technologies) and its long-term goals (technology innovation and development of new processes and new materials) by:

- 1) Improving and developing cleaner sustainable methods to produce pure, high quality hydrogen at lower cost either from waste or renewable resources;
- 2) Increasing the energy density of hydrogen applications by improving and developing storage strategies that are practical and economical for both near and long-term applications; and,
- 3) Developing efficient and safe infrastructure strategies to facilitate the deployment of hydrogen energy technologies.

### Narrative

In September 2008, NSERC awarded \$5 million in research funds to H2CAN for five years. This amount is leveraged at a ratio of 4:1 through related R&D activities by network researchers and facilities currently available at participating institutions. Total industrial partners contributions represent 50% of the overall network budget.

### Affiliates / Affiliates area of expertise

University of Alberta, National Research Council Canada, University of Victoria, University of Calgary, Queens, RMC, University of Waterloo, CANMET Energy Technology Centre, McMaster University, The Canadian Neutron Beam Centre, Strategic Institute of Molecular Sciences, University of Ottawa, Concordia, University of New Brunswick, INRS, UQTR, University of Manitoba, BC Hydro, Canadian Hydrogen and Fuel Cell Association, Palcan, BCTransit, ANGSTROM, Lignol Innovations, Institute for Fuel Cell Innovation, PowerTech, Greenleaf, SacreDavey Group, SOFC Canada, Hydrogen Centre of Expertise Inc., Hydro Quebec, Air Liquid, Ressources Naturelles et Faune Quebec, SIM Composites, Atlantic Hydrogen, HSM Systems.

---

**Record:** 2038

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** National Research Council Institute for Fuel Cell Innovation (NRC-IFCI)

**Web site:** <http://www.nrc-cnrc.gc.ca/eng/ibp/ifci.html>

**Address:** 4250 Wesbrook Mall

**Address 2:**

**City:** Vancouver

**State/Province:** British Columbia

**Country:** Canada

**Zip/Postal Code:** V6T 1W5

**Phone:** 604-221-3000

**Fax:** 604-221-3001

**Email:** [info.ifci-iipac@nrc-cnrc.gc.ca](mailto:info.ifci-iipac@nrc-cnrc.gc.ca)

### Network Description

The National Research Council of Canada's Institute for Fuel Cell Innovation (NRC-IFCI) is Canada's premier applied research organization dedicated to supporting Canada's fuel cell and hydrogen industry. NRC-IFCI works independently and in partnership with universities, government agencies and companies on projects focused on the research, development, demonstration and testing of hydrogen and fuel cell systems. This mandate delivers on Government of Canada climate change and innovation priorities and responds to Canada's Fuel Cell Commercialization Roadmap, which identified critical areas of research necessary for Canadian industry to overcome cost, performance and reliability challenges of hydrogen and fuel cell technologies. NRC-IFCI activities are also in line with the province of British Columbia's Hydrogen and Fuel Cell Strategy. NRC-IFCI's physical location on the UBC campus emphasizes federal support for B.C.'s Hydrogen fuel cell cluster, the largest concentration of expertise of its kind in the world.

### Goal / Objectives / Mandate

NRC-IFCI's R&D program is aimed at advancing fuel cell science and technology and accelerating the commercialization of these technologies.

### Narrative

NRC-IFCI brings together the people, experience and technology required to ensure a thoroughly planned and fully functional research facility focused on meeting the industry's specific needs and ensuring compliance with various guidelines, regulations, standards, and codes.

ICFI has dedicated researchers and engineers that specialize in the operation of highly technical facilities for the hydrogen and fuel cell industry. Their unique skills and specific expertise pull together the varied aspects of project design into coherent, state-of-the-art facilities that focus on perfecting technical processes and providing a forward looking, flexible, and innovative workplace.

---

**Record:** 1885

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** IRH: Institut de Recherche en Hydrogène de l'Université du Québec à Trois-Rivières

**Web site:** <http://www.irh.uqtr.ca>

**Address:** Université du Québec à Trois-Rivières

**Address 2:** 3351, Boul. des Forges C.P.500

**City:** Trois-Rivières

**State/Province:** Quebec

**Country:** Canada      **Zip/Postal Code:** G9A 5H7

**Contact Title:** Director

**Contact Person:** Richard Chahine

**Phone:** 819.376.5011 x3588

**Fax:** N/A **Email:** Richard.Chahine@uqtr.ca

**Funding:** Public

**Budget:** N/A

**Year Founded:** 1994

**Reach:** Provincial (Quebec), national (Canada) and international

### **Network Description**

The Institut de Recherche en Hydrogène (IRH) is a Canadian leader on hydrogen research. It aims for excellence in research and development, technical training of human resources, and the establishment of strong partnerships with stakeholders (companies, governments, universities and other national and international institutions) involved in hydrogen and renewable energies.

IRH is an active member within the H2CAN Network: the Director of IRH also serving as the Director of H2CAN.

### **Goal / Objectives / Mandate**

The mission of the IRH is to promote the science and technology required to implement sustainable energy systems using hydrogen, particularly relating to the storage, safety and use of hydrogen. The IRH multidisciplinary team includes 60 members and possesses advanced instrumentation, allowing for characterization and synthesis of nanoporous materials and hybrids, evaluation of full cells, of combustion engines and renewable energy systems.

IRH research and development activities go from material sciences to the development of systems and demonstration projects and focus on four themes: production, storage, safety, and use. The institute is particularly interested in developing advanced materials to foster the competitiveness of hydrogen and integrated systems using renewables.

### **Interest in Collaboration**

Yes, the IRH is interested in establishing mutually beneficial partnerships.

### **Narrative**

IRH's areas of expertise involve the storage of hydrogen from integrated solar and wind power systems, biomass conversion into biofuels, and hydrogen storage safety.

IRH has many partnerships with private companies and other stakeholders within the H2CAN Network, through its NSERC Industrial Research Chair in Hydrogen Purification, Transport and Storage, the Quebec Network for Hydrogen Fuel Cells (Réseau Québécois sur les Piles à Combustible et l'Hydrogène: PACH2), AUTO21 and the US Department of Energy.

The H2CAN Network brings together 22 researchers from 16 universities along with 20 companies. The successes of IRH in the last few years has revolved around hydrogen storage using nanoporous materials, a field that IRH has helped pioneer. The integrated solar and wind energy storage system through hydrogen is another success, along with the development of a hydrogen combustion engine and associated power conditioning system.

The information is shared among members through scientific publications, conferences and reports

Development of hydrogen technology and its outreach has a few challenges, the main ones being that the products and systems need to be cost-effective, safe and reliable before they are adopted by the end user. Besides that, the automotive industry is reluctant to change its way of doing business, and the current infrastructure does not allow for hydrogen distribution, thereby representing a hurdle in disseminating the technology at a cost effectively.

**Meeting Frequency**

Specific meetings with partners. Some seminars and workshops offered

**Membership Requirements**

Partnerships only, no memberships.

**Other Networks in this space**

H2CAN Network

NRC Institute for Fuel Cell Innovation

---

**Record:** 2073

**Category:** Greening Energy Production, Renewable Energy, Hydrogen

**Organization:** Canadian Hydrogen Fuel Cell Association

**Web site:** <http://www.chfca.ca>

**Address:** 4250 Wesbrook Mall

**Address 2:**

**City:** Vancouver

**State/Province:** B.C.

**Country:** Canada

**Zip/Postal Code:** VT 1W5

**Phone:** 604-822-9178

**Fax:** 604-822-8106

**Email:** [info@chfca.ca](mailto:info@chfca.ca)

**Year Founded:** 2009

**Reach:**

**Network Description**

The Canadian Hydrogen Fuel Cell Association (CHFCA) represents the sectors' collective voice and works to raise awareness of hydrogen and fuel cells. They are a national non-profit association providing services and support to Canadian corporations, governments and educational institutions promoting, developing, demonstrating, and deploying hydrogen and fuel cell products and services in Canada.

**Goal / Objectives / Mandate**

CHFCA's objectives include:

- Raising the profile of the Canadian hydrogen and fuel cell sector in Canada and around the globe;
- Enhancing the sector's profile with Canadian governments;
- Promoting the economic, environmental and social benefits of hydrogen and fuel cell technologies and products;
- Facilitating demonstration projects that allow hydrogen and fuel cells companies to test and perfect their technologies and real-world environments;
- Providing communications, information sharing and networking between member organizations through conference, events, annual meetings and planning sessions; and,
- Supporting the development of regulations, codes and standards that support the safe and widespread application of hydrogen and fuel cell products.

**Affiliates / Affiliates area of expertise**

Members cover most types of hydrogen and fuel cell technologies, components, systems supply and integration, fuelling systems, fuel storage and engineering and financial services.



## Renewable Energy Policy and Analysis

The National Renewable Energy Laboratory is a super network working in this area. The Joint Institute is also part of this super network, but is listed below. There are no other knowledge networks available in this area in Canada or the US.

**Record:** 2042

**Category:** Greening Energy Production, Renewable Energy, Policy and Analysis

**Organization:** Joint Institute for Strategic Energy Analysis - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.jisea.org>

**Address:** 1617 Cole Blvd

**Address 2:**

**City:** Golden

**State/Province:** Colorado

**Country:** USA

**Zip/Postal Code:** 80401-3305

**Contact Title:** Executive Director

**Contact Person:** Doug Arent

**Phone:** 303-384-7502

**Fax:**

**Email:** [doug.arent@nrel.gov](mailto:doug.arent@nrel.gov)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 2009

**Reach:** currently National

### Network Description

The Joint Institute for Strategic Energy Analysis (JISEA) provides leading-edge strategic energy analysis, realized through teams drawn from the founding partners and a network of national and global affiliates. JISEA examines complex energy issues at the confluence of technology, policy, markets and finance that are beyond the reach of any single institution.

The Joint Institute offers

- A unique combination of leading technology, policy, market and financial analysis capabilities, perspectives and knowledge assets to further the understanding of complex energy issues for which considerable uncertainty remains.
- A credible and transparent resource for objective analysis conducted globally and across multiple disciplines, treating all energy resource and technology options on an equitable basis.
- A single source for strategic energy analysis beyond what is currently available through any existing single institution.

### Goal / Objectives / Mandate

The strategic intent is to move global energy systems toward a sustainable future through trans-disciplinary development of objective and credible data, tools and analysis that inform the energy dialogue and guide energy investment and policy decisions.

The vision for JISEA is to become a leading global institute to inform the transformation of the energy economy towards a sustainable future. The program focus is on analysis of the global transformation of energy systems (inclusive of physical infrastructure, policies, markets, institutional and legal structures and behavior) to simultaneously address environmental, economic, security and social issues.

### Interest in Collaboration

The institute welcomes individuals and institutions that wish to provide funding to support seminal analysis or the general operations of the institute, or funding to provide support to a tailored research project, contributions of data and other source material to help build a solid foundation of relevant energy data and information or recommendations of key topics for study that could be considered by the Joint Institute in its program planning.

**Narrative**

Transformational impacts of JISEA focus on a) foundational trans-disciplinary research, b) innovative exploratory analysis, and c) tailored and focused studies that provide seminal thought leadership, global innovation and education as well as market insights.

Core program areas include:

**Policy and Finance:** JISEA provides an understanding of the increasingly dynamic policy and financial market environments—local to global—and translates critical analysis into information for decision makers. JISEA’s research capabilities draw upon diverse expertise to address complex policy and financial market interactions and to produce credible, independent analysis that covers the landscape of critical issues and impacts.

**Energy Technology and Infrastructure Evolution:**JISEA conducts analysis examining the interplay among energy supply and demand technologies, integrated delivery systems, and market dynamics. It also examines the interfaces that exist across industries, economies and markets, and combines its many capabilities to inform technologists, investors and policymakers; and,

**Quantitative, integrated and comprehensive analysis:** JISEA addresses critical issues related to the transformation of the global energy economic system by including and integrating geospatial data analysis, technology development trajectories and policy, and economic opportunities and barriers.

Key programs include:

**Innovative Research Awards:** Exploratory collaborative research, which is multidisciplinary in approach, encompasses an integrated systems perspective, considers the implications of findings in economic, social and environmental terms, is applicable at local, domestic and international scales, and leads to significant global impacts on energy sector transformation.

**Scoping Studies:** Targeted meta-analysis, case study and research road-mapping to enable robust program development in critical areas including:

- Evaluation of possible US Transportation Energy Futures that address climate, security, geopolitics, competitiveness issues via thorough examination of services, behaviour, revolutionary technologies and systems integration, demographics and climate impacts and adaptation;
  - GHG accounting frameworks;
  - US electric sector futures that re-examine legal, regulator and jurisdictional issues in relation to technology advances, policy, finance and economics, including a comprehensive analysis of natural resources and human-energy system tradeoffs;
  - Improving integrated climate/energy modeling that works with global teams of integrated assessment modelers to incorporate geospatially fine-scale resource data and model parameterization for clean energy technologies, and create global network of analytic researchers to advance the data, tools and methods to evaluate clean energy systems and prospective contributions to 2100; and,
- US biomass resource analysis that poses inherent competition of limited resources given limited bioresources, RFS requirements, and potential GHG reductions in the power sector. This study reviews the impacts of different use pathways and how competition changes geographically.

**Meeting Frequency**

The organization basically consists of virtual research teams of three to five individuals for a project. The meeting frequency is project specific and based on the particular research project.

**Affiliates / Affiliates area of expertise**

Leading analysis centres across the globe provide specialized and complementary capabilities for particular studies, assist in examining complex energy issues at the confluence of technology, policy, markets and finance that are beyond the reach of any single institution.

Masachussets Institute of Technology (MIT), Stanford University, University of Colorado, Colorado School of Mines and Colorado State University.

## Greening Energy Production – Cleaner Energy Production – Conventional Gas

**Super Networks operating in the area of Conventional Gas are listed below:**

National Energy Technology Laboratory (NETL)

**The other listings are knowledge networks also operating in this area.**

**Record:** 1643

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** Union of Concerned Scientists (UCS)

**Web site:** <http://www.ucsusa.org/>

**Address:** Two Brattle Sq.

**Address 2:**

**City:** Cambridge

**State/Province:** MA

**Country:** USA

**Zip/Postal Code:** 02238-9105

**Phone:** 617-547-5552

**Fax:** 617-864-9405

**Email:**

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1969

**Reach:**

### Network Description

#### Goal / Objectives / Mandate

The Union of Concerned Scientists is the leading science-based non-profit working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and to secure responsible changes in government policy, corporate practices, and consumer choices.

#### Membership Requirements

Join the Union of Concerned Scientists to help advance science-based solutions to curb global warming, reduce the threat of nuclear weapons, generate clean and renewable energy, produce more fuel-efficient cars, and much more.

Your tax-deductible gift enables us to:

- \* Produce and deliver technical analyses and consumer information to policy-makers, corporations, and the public so they can make informed decisions.

- \* Educate and mobilize scientists, economists, and citizens to advocate for practical solutions to problems impacting our health, environment, and security.

- \* Expose and challenge corporations who mislead the public and interfere in government science.

The Union of Concerned Scientists is rated a four-star charity by Charity Navigator and is a Better Business Bureau accredited charity.

---

**Record:** 1546

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** Sustainable Development Technology Canada (SDTC)

**Web site:** <http://www.sdtec.ca>

**Address:** 45 O'Connor Street, Suite 1850

**Address 2:**

**City:** Ottawa **State/Province:** Ontario  
**Country:** Canada **Zip/Postal Code:** K1P 1A4

**Phone:** **Fax:** **Email:** info@sdtc.ca

**Funding:** **Budget:** \$1.05 billion (one-time grant)  
**Year Founded:** 2001 **Reach:** National

### **Network Description**

Purpose of SDTC is to provide funding for demonstration and diffusion of sustainable development technologies that have passed the research and development stage but are unable to acquire project funding due to lack of established demonstrable results. SDTC accomplishes this through the administration of two funds: the \$550 SD Tech Fund, which supports technologies with climate change, clean air, clean water and/or clean soil benefits, and the NextGen Biofuels fund, a \$500 million fund dedicated to supporting the development of large-scale facilities for the production of commercial-ready next-generation biofuels.

### **Goal / Objectives / Mandate**

SDTC's mission is to act as the primary catalyst in building a sustainable development technology infrastructure in Canada. The Foundation reports to Parliament through the Minister of Natural Resources Canada. It works closely with an ever-growing network of stakeholders and partners to build the capacity of Canadian clean-technology entrepreneurs, helping them form strategic relationships, formalize their business plans, and build a critical mass of sustainable development capability in Canada.

### **Interest in Collaboration**

We foster and encourage innovation and collaboration among private, academic and public-sector partners. Would likely be very interested in discussing potential collaboration with CCEMC. As part of its mandate, SDTC supports its funded companies in identifying and securing sources of funding for the demonstration and commercialization of their technologies, both during and after the company's project participation with SDTC.

### **Narrative**

As stated on SDTC's profile, SDTC bridges the gap in the innovation chain by fast-tracking groundbreaking clean technologies through development and demonstration, in preparation for commercialization. They are governed by a 15 member board of directors, seven appointed by the Government of Canada and the other eight by the members of SDTC. Proposed projects go through three phases of review before funding is allocated. All of the funded projects are listed on the web site, as are highlighted project case studies.

### **Meeting Frequency**

Quarterly Board meetings, and annual Board and public meetings.

### **Membership Requirements**

As a condition of SDTC funding, SDTC requires its projects to assemble consortia of partners who have the necessary capabilities to achieve market entry.

### **Other Networks in this space**

CETAC-West  
BC ICE  
BC Bioenergy Network  
Numerous other provincial initiatives in development

---

**Record:** 1183

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** Natural Gas Supply Organization (NGSA)

**Web site:** <http://www.ngsa.org>

**Address:** 1620 Eye St., N.W.                      **Address 2:** Suite 700  
**City:** Washington                              **State/Province:** D.C.  
**Country:** USA                                  **Zip/Postal Code:** 20006

**Contact Title:** President  
**Contact Person:** R.Skip Horvath  
**Phone:** 202-326-9300    **Fax:**    **Email:**

**Funding:** Private                      **Budget:**  
**Year Founded:** 1965                      **Reach:**

### **Goal / Objectives / Mandate**

The mission of the Natural Gas Supply Organization (NGSA) is to ensure a competitive natural gas market that is supported by appropriate regulations. Through various legislative and regulatory policy initiatives, NGSA seeks to maintain competitive markets, improve downstream efficiencies and to foster increased supply to U.S. markets. NGSA also supports a balanced energy future, one which ensures a level playing field for all market participants and eliminates inappropriate regulatory barriers to supply. NGSA endorses the findings of the National Petroleum Council's 2003 study, Balancing Natural Gas Policy, which calls for increased energy efficiency and conservation, immediate development of new resources, sustained and enhanced infrastructure, greater flexibility in fuel-switching and fuel choice, and more efficient markets.

The association's long-standing relationship with the Executive Branch, the Federal Energy Regulatory Commission (FERC), Capitol Hill, and with other industry trade groups enables NGSA to effectively represent its membership on regulatory and legislative issues about natural gas. Moreover, because of our strong presence in Washington, D.C.. The NGSA is often looked to by legislators, regulators and members of the news media as industry leaders.

### **Membership Requirements**

Natural gas producers. Dues are graduated and are based on natural gas production.

## Greening Energy Production – Cleaner Energy Production – Unconventional Gas

**Record:** 695

**Category:** Greening Energy Production, Cleaner Energy Production, Unconventional Gas

**Organization:** Canadian Society for Unconventional Gas (CSUG)

**Web site:** <http://www.csug.ca/>

**Address:** Suite 420, 237 - 8 Ave. S.E.

**City:** Calgary

**State/Province:** AB

**Country:** Canada

**Zip/Postal Code:** T2G 5C3

**Contact Title:** President

**Contact Person:** Mike Dawson

**Phone:** 403-233-9298

**Fax:**

**Email:** [mdawson@csug.ca](mailto:mdawson@csug.ca)

**Funding:** Private

**Budget:**

**Year Founded:** 2002

**Reach:** Canada and international trade missions

### Network Description

The Canadian Society for Unconventional Gas (CSUG) wishes to be the "go-to" organization for unconventional gas matters. They provide field trips, work shops, seminars and technical information to their members and the public. They provide advocacy towards governments and regulators. They have 135 members now, half of which are exploration and production companies, with the balance from the service sector and other associations. have a web site that contains much technical and general information about unconventional gas.

CSUG provides the media with information about these unconventional gas sources and strives to increase communication between the unconventional gas industry and the provincial and federal governments, stakeholders and First Nations.

To help increase awareness about unconventional gas, CSUG offers presentations at open houses, luncheons, forums, workshops, field trips and conferences, all of which are often technical in nature. In addition, the organization develops materials for a wider audience, with an emphasis on the importance of the unconventional gas industry, its history, operations and best practices.

### Goal / Objectives / Mandate

CSUG is a formal not-for-profit society, registered in the Province of Alberta in 2002. The organization has since been extremely active in encouraging the growth of the unconventional gas industry, particularly in focusing on:

- Natural gas from coal;
- Tight gas sands and carbonates;
- Shale gas; and,
- Gas hydrates.

Shortly after becoming a registered society, the need to provide communication and education to the public and other stakeholders became apparent. In response to this need, CSUG developed a communications plan, with the following primary objectives:

- Educate the media about unconventional gas sources by providing them with the materials necessary to more accurately report the facts and issues surrounding the resource. This includes countering erroneous information reported by media via a zero-tolerance program.
- Increase the dialogue between the unconventional gas industry and the federal and provincial governments.
- Increase the amount, and improve the quality and consistency of communications with stakeholder groups.
- Improve and streamline communication to/from CSUG member companies.

- Design and introduce new administrative communication elements to reduce response time and increase effectiveness of all communication activities.

### **Interest in Collaboration**

Yes

### **Narrative**

The precursor to CSUG was the Canadian Coalbed Methane Forum, an association of corporations and individuals interested in coalbed methane (CBM) resources in Canada. The forum (which was active for over 10 years) created the Annual Coalbed Methane Conference as a tool to collaborate with peers to discuss technology and research development of the resource. By the year 2000, the oil and gas industry was showing increased activity and interest in CBM resource development and its technologies. It became apparent that the Forum needed to become a more formal entity, to effectively provide more broad-based information sharing regarding technology development.

The Society is composed of a volunteer working Board of Directors with support from: a Society President, a Vice President, a Manager of Operations and Public Affairs, two Committee and Initiative Assistants, a Communications Assistant, and an Administrative Analyst. The Board is also supported by the work of several committees and sub-committees.

The Mission is to facilitate the factual and collaborative exchange of unconventional gas knowledge and challenges among government, regulators, industry and public stakeholders for the exploration and production of the resource in an environmentally sensitive and economical manner.

The mandate of the CSUG is to transfer knowledge by utilizing the following tools:

- Coordinating technical luncheons, forums, workshops, field trips, and conferences.
- Providing a conduit to increase dialogue between the unconventional gas industry and the federal and provincial governments.
- Developing materials for the public and the industry that provide overview information on processes and operations.
- Supplying and/or presenting information to the general public and landowners.
- Responding to governmental regulatory challenges by providing input, data, and area expertise through our membership.
- Providing the media with a credible source of information on the history, operations, and best practices of the industry.

### **Meeting Frequency**

Monthly meetings for three key committees: (1) Technical, (2) Communications, and (3) Regulatory Framework. The Executive Board of Directors meets six times a year. CSUG also holds an annual technical conference with 1,000 attendees.

### **Membership Requirements**

CSUG invites all individuals and companies to join and encourages the participation of government members, First Nations and stakeholders. Likely members could include:

- Exploration and production (E&P) companies;
- Service companies;
- Government agencies;
- Consultants; and,
- Special interest groups who want to help shape a successful unconventional gas industry in Canada.

### **Other Networks in this space**

CNGI, CAPP, Canadian NGV Alliance, CGA, CEPA

---

**Record:** 1428

**Category:** Greening Energy Production, Cleaner Energy Production, Unconventional Gas

**Organization:** Petroleum Technology Alliance Canada (PTAC)

**Web site:** <http://www.ptac.org>

**Address:** 500 - Fifth Avenue S.W., Suite 400      **Address 2:**  
**City:** Calgary      **State/Province:** Alberta  
**Country:** Canada      **Zip/Postal Code:** T2P 3L5

**Contact Title:** President  
**Contact Person:** Dr. Soheil Asgarpour  
**Phone:** 403-218-7700      **Fax:** 403-920-0054      **Email:** [info@ptac.org](mailto:info@ptac.org)

**Year Founded:** 1995      **Reach:**

### **Network Description**

The Petroleum Technology Alliance Canada (PTAC) is a not-for-profit association that facilitates collaborative research and technology development to improve the financial, environmental and safety performance of the Canadian hydrocarbon energy industry. This industry consortium brings together those interested in advancing petroleum technology and collaboratively share and conduct studies on items of mutual interest. These studies have included enhanced oil recovery (EOR) technologies and various CO2 capture transportation and sequestration initiatives.

### **Goal / Objectives / Mandate**

The mission statement and purpose of PTAC, Petroleum Technology Alliance Canada, is:

"Facilitating Innovation, Collaborative Research and Technology Development, Demonstration and Deployment for a Responsible Canadian Hydrocarbon Energy Industry"

The purpose of PTAC is to provide a mechanism that facilitates collaboration on R&D to the benefit of those involved. PTAC acts as a matchmaker between those that have problems or opportunities and those that have potential R&D solutions. PTAC brings stakeholders together to identify areas where R&D will make a difference, and to launch specific projects to address these problems or opportunities. PTAC promotes industry participation in the resulting R&D and assists with securing funding from a variety of sources. PTAC also facilitates the transfer of commercial technologies from other industrial sectors for application in the hydrocarbon energy industry.

### **Interest in Collaboration**

The PTAC is fundamentally about collaboration.

### **Narrative**

PETAC is a not-for-profit association that facilitates collaborative research and technology development to improve the financial, environmental and safety performance of the Canadian hydrocarbon energy industry.



## Greening Energy Production – Cleaner Energy Production - Upgrading

Super networks operating in this area include the following:  
CanmetENERGY – Natural Resources Canada.

The following is records of other knowledge networks operating in this area.

**Record:** 340

**Category:** Greening Energy Production, Cleaner Energy Production, Upgrading

**Organization:** Alberta Chamber of Resources

**Web site:** <http://www.acr-alberta.com/PROJECTS/OilSandsTechnologyRoadmap/tabid/81/Default.aspx>

**City:** Edmonton

**State/Province:** AB

**Country:** Canada

**Zip/Postal Code:** T5J 3S4

**Contact Title:** Climate Change Committee Chair

**Contact Person:** Wishart Robson

**Phone:** 403-699-5357

**Fax:**

**Email:** [admin@acr-alberta.com](mailto:admin@acr-alberta.com)

**Funding:** Private

**Year Founded:** 1935

### Goal / Objectives / Mandate

As a resource-based cross-sectoral industry association, the Alberta Chamber of Resources provides leadership for the orderly and responsible development of our natural resources.

### Narrative

The Alberta Chamber of Resources (ACR) was initially established to be a liaison between the hard-rock mining industry in the north and the firms that it served. Today, the ACR is a key point of contact for government and other stakeholders in the resource development area. The ACR continues to function as an agent for change and has been influential in the areas of public education, worker safety, oil sands development, mineral exploration and environmental protection.

Vision 2030: Canada's oil sands will be a world leader in adding value to its products for its customers. The industry will employ technologies and processes to produce products that are at the lowest possible cost, that have reduced energy inputs, and that minimize the environmental, health and safety impacts associated with oil sands production and conversion.

ACR sponsored the Oil Sands Technology Roadmap initiative. The intention of this initiative was to produce a roadmap that will help lead the implementation of a vision of the industry that is competitive, economical and respectful of its environmental footprint, while also achieving the production goal of five million barrels per day by 2030.

In looking ahead to 2030, the roadmap evaluated the challenges and concerns facing the industry in achieving these goals and analyzed potential technology directions to address these challenges. Once the technologies were identified, the roadmapping process worked backwards to identify gaps and develop a plan to arrive at the destination.

Part of the roadmapping process involves the design of collaborative research projects that will be necessary to develop the identified technologies. The end result of the roadmapping process was a written document, which has proven very useful for a variety of purposes such as strategic planning, establishing research directions, and setting of government policy.

The final Oilsands Technology Roadmap is available at: [http://www.acr-alberta.com/Portals/0/projects/OSTR\\_report.pdf](http://www.acr-alberta.com/Portals/0/projects/OSTR_report.pdf)

**Membership Requirements**

The ACR has four levels of membership:

- Group I - Major companies involved in resource exploration and/or development;
- Group II - Small companies involved in resource exploration and/or development, or supporting companies largely dependent on resource development;
- Group III - Supporting companies moderately dependent upon resource development; and,
- Group IV - Individuals (such as, retirees, sole practitioners, etc)

For more information on fees, membership structure and the ACR Membership Application Form, visit the following web site: <http://www.acr-alberta.com/Portals/0/Templates/ACR%20Application.doc>

For a list of members, visit the following web site: <http://www.acr-alberta.com/ABOUTTHEACR/Members/tabid/109/Default.aspx>

---

**Record:** 346

**Category:** Greening Energy Production, Cleaner Energy Production, Upgrading

**Organization:** Alberta Innovates - Energy and Environment Solutions

**Web site:** [www.albertainnovates.ca](http://www.albertainnovates.ca)

**City:** Edmonton

**State/Province:** Alberta

**Country:** Canada

**Zip/Postal Code:**

**Contact Person:** Eddie Isaacs

**Phone:** 403-297-5219

**Fax:**

**Email:** [bio@albertainnovates.ca](mailto:bio@albertainnovates.ca)

**Funding:** Public

**Budget:**

**Year Founded:**

**Reach:** Alberta

**Network Description**

Alberta Innovates is creating a system of innovation that will excite all stakeholders, from scientists involved in basic research to businesses and entrepreneurs who want to invest in ideas and transform them into products and services to be marketed globally.

**Goal/Objectives/Mandate**

As a global leader in technology and research on oil sands and heavy oil, Alberta is at the forefront of technologies such as gasification, upgrading, carbon capture and storage, advanced recovery, water use, tailings management and alternative energy. This unique world expertise has fostered Alberta's commitment to the "science of solutions" related to all areas of energy and the environment. As a result, our researchers, entrepreneurs, and businesses are setting global standards for reducing environmental impacts and supporting the development of greener communities.

In our work, we apply scientific rigour in assessing and selecting technologies and partners that will advance best-available global technologies. Some of our most innovative collaborations are pursuing the next wave of solutions, including expanding the range of renewable energy technologies, such as waste-to-biofuels, geothermal and hydrogen systems.

In keeping with Alberta's commitment to open innovation, Alberta Innovates - Energy and Environment Solutions ensures that all non-proprietary knowledge on clean energy technology is shared to help speed up technology development worldwide. Together, we can enhance the economic, environmental and social well-being of all: Albertans, Canadians, and those beyond our borders.

Alberta Innovates - Energy and Environment Solutions builds on the strengths and successes of the former Alberta Energy Research Institute (AERI) and now includes the Alberta Water Research Institute.

**Interest in Collaboration**

Yes. Alberta Innovates is the technical arm of the Alberta Energy and Alberta Environment.

**Narrative**

Alberta Energy Research Institute has now become a part of Alberta Innovates Energy and Environment Solutions. Alberta Innovates-Energy and Environment Solutions (AIEES) is the lead agency for energy and environmental research in Alberta. As the lead agency for energy and environmental research and innovation in Alberta, Alberta Innovates-Energy and Environment Solutions is focused on the next twenty years of energy and environmental innovation.

Alberta Innovates currently works with CCEMC on many projects. They invest in technology and can evaluate projects technically. They favour forward looking technologies in energy, environment and renewable and emerging resources. Alberta Innovates can cite many examples of successes from gasification and separation to tailings and CCS technologies.

### **Meeting Frequency**

Project-specific workshops are held. Reports are published on web sites, although some are proprietary for a period of time if partially privately funded.

### **Membership Requirements**

Alberta Innovates - Energy and Environment Solutions is a dynamic catalyst for developing innovative, integrated ways to convert our natural resources into market-ready, ecologically responsible energy. Our collaborators include large companies and consortia, such as Helmholtz Association, Opti-Nexen, and Pratt and Whitney Rocketdyne.

### **Other Networks in this space**

Under the banner of Alberta Innovates, the Alberta government has created new organizations that are building on Alberta's strengths in the health, energy and environment, technology and bio sectors.

The new agencies are funded by the Alberta government to be catalysts of innovation. They are well connected. They are increasing accessibility and nurturing partnerships. They are empowering people to find solutions to some of society's greatest challenges, like climate change, pine beetle kill, bovine spongiform encephalopathy (BSE), water and soil conservation, and health research challenges from Alzheimer's disease to West Nile Virus.

Other networks include:

Biorefining Network (University of Alberta)

Carbon Management Canada (University of Calgary)

### **Affiliates / Affiliates area of expertise**

Alberta Innovates - Energy and Environment Solution's partners include:

- Alberta Ministry of Energy
- Alberta Ministry of Environment
- Alberta Ministry of Finance and Enterprise
- Alberta Innovates Corporations and Board

Alberta Innovates - Energy and Environment Solution's major programs include:

- Alberta Ingenuity Center for Oil Sands Innovations: The Imperial Oil-Alberta Ingenuity Centre for Oil Sands Innovation has a mission to generate breakthrough technologies that will revolutionize the productivity and sustainability of oil sands operations.
- Alberta Ingenuity Centre for In Situ Energy (AICISE): AICISE brings together many of the world's leading innovative scientists, industry and other partners to develop more efficient, cost-effective and environmentally sustainable processes and practices for in situ (in place) recovery and upgrading of Alberta's oil sands resource, with extremely low to zero environmental impacts.
- AACI Research Program: The AACI program enables industry to minimize its risk and development costs and maintain technology leadership and in developing technology required for field applications.
- The National Center for Upgrading Technology (NCUT): The National Centre for Upgrading Technology (NCUT) is Canada's premier Canada-Alberta science and technology organization for upgrading bitumen and heavy oil into synthetic crude oil. NCUT's activities seek to develop new and improved bitumen and heavy oil upgrading technologies that are less energy intensive, produce fewer greenhouse gas emissions, and result in higher quality, cleaner fuels at lower costs.

## Greening Energy Production – Cleaner Energy Production - Refining

**Record:** 1243

**Category:** Greening Energy Production, Cleaner Energy Production, Refining

**Organization:** National Petrochemical and Refiners Association (NPRA)

**Web site:** <http://www.npra.org/about/>

**Address:** 1667 K Street, NW, Suite 700

**City:** Washington

**State/Province:** D.C.

**Country:** USA

**Zip/Postal Code:** 20006

**Contact Title:** President

**Contact Person:** Charles T. Drevna

**Phone:** 202-457-0480

**Fax:** 202- 457-0486

**Email:** [info@npra.org](mailto:info@npra.org)

**Funding:** Private

**Budget:**

### Meeting Frequency

NPRA holds 11 meetings annually as well as several workshops. Meeting registration for an upcoming meeting opens approximately 90 days before the meeting. Both meeting registration and housing are available through NPRA's web site.

### Membership Requirements

NPRA has three categories of membership - Regular, International Manufacturing, and Associate. Membership is corporate in classification, with employees of member organizations, and their subsidiaries, entitled to the benefits of NPRA membership. All applications are vetted by the NPRA Executive Committee.

## Greening Energy Production – Cleaner Energy Production – Transportation of Energy Sources

**Record:** 479

**Category:** Greening Energy Production, Cleaner Energy Production, Transportation of energy sources

**Organization:** CALSTART

**Web site:** <http://www.calstart.org/Homepage.aspx>

**Address:** 48 S Chester Ave

**Address 2:**

**City:** Pasadena

**State/Province:** California

**Country:** USA

**Zip/Postal Code:** 91106

**Contact Person:** Fred Silver

**Phone:** (626) 744-5687 **Fax:** **Email:** [calstart@calstart.org](mailto:calstart@calstart.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1992

**Reach:** Global

### Network Description

CALSTART is a member-supported organization of more than 140 firms, fleets and agencies worldwide dedicated to supporting a growing high-tech, clean transportation industry that cleans the air, creates jobs, cuts imported oil, and reduces global warming emissions. CALSTART provides services and consulting to spur advanced transportation technologies, fuels, systems and the companies that make them.

### Goal / Objectives / Mandate

CALSTART works with business, fleets, and government to develop and implement clean, efficient transportation solutions. We believe that economic and environmental improvement must go hand-in-hand. CALSTART achieves this by focusing on four key activities that together provide the unique combination to support a growing industry:

- 1) Technology commercialization
  - Cleaner, more efficient vehicles
  - Cleaner, lowercarbon fuels
  - Integrated mobility
- 2) Consulting: Clean Transportation Solutions Group
  - Clean, efficient ports
  - Green fleet planning
  - Member support
- 3) Industry services
  - Member services
  - Information and knowledge sharing
  - Conferences and events
- 4) Policy
  - California Secure Transportation Energy Partnership (CalSTEP)
  - State policies and incentives
  - Member guidance

### Other Networks in this space

CALSTART began in 1992 with 40 member companies and organizations and officially opened a Burbank facility.

---

**Record:** 1648

**Category:** Greening Energy Production, Cleaner Energy Production, Transportation of energy sources

**Organization:** Union of Concerned Scientists (UCS)

**Web site:** <http://www.ucsusa.org/>

**Address:** Two Brattle Sq.                      **Address 2:**  
**City:** Cambridge                                **State/Province:** MA  
**Country:** USA                                  **Zip/Postal Code:** 02238-9105

**Phone:** 617-547-5552      **Fax:** 617-864-9405                      **Email:**

**Funding:** Private/Public                      **Budget:**  
**Year Founded:** 1969                        **Reach:**

#### **Goal / Objectives / Mandate**

The Union of Concerned Scientists (UCS) is the leading science-based non-profit working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and to secure responsible changes in government policy, corporate practices, and consumer choices.

UCS accomplishes this by:- Producing and delivering technical analyses and consumer information to policy-makers, corporations, and the public so they can make informed decisions.

- Educating and mobilizing scientists, economists, and citizens to advocate for practical solutions to problems impacting our health, environment, and security.
- Exposing and challenging corporations who mislead the public and interfere in government science.

#### **Membership Requirements**

What began as a collaboration between students and faculty members at the Massachusetts Institute of Technology in 1969 is now an alliance of more than 250,000 citizens and scientists. UCS members are people from all walks of life: parents and businesspeople, biologists and physicists, teachers and students. Membership is open to all members of the public.

## Greening Energy Production – Cleaner Energy Production – Coal Processing

**The following super networks are actively involved in Coal Processing technology:**  
National Energy Technology Laboratory (NETL)

The following knowledge networks are also active in the area of coal processing.

**Record:** 1050

**Category:** Greening Energy Production, Cleaner Energy Production, Coal processing

**Organization:** International Institute for Energy Conservation (IIEC)

**Web site:** <http://www.iiec.org/>

**Address:** 161 Portage Avenue East, 6th Floor

**Address 2:**

**City:** Winnipeg

**State/Province:** Manitoba

**Country:** Canada

**Zip/Postal Code:** R3B 0Y4

**Contact Title:** President

**Contact Person:** Nitin Pandit

**Phone:** 204-958-7700

**Fax:** 204 958-7710

**Email:** [iiecdc@iiec.org](mailto:iiecdc@iiec.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1984

**Reach:** North America and Internationally

### Network Description

The International Institute for Energy Conservation's (IIEC) is a non-governmental (NGO), not-for-profit organization with offices located in Africa, Asia, Europe, Latin America, and North America. Established in 1984, the IIEC fostered the implementation of energy efficiency in developing countries and countries that were in transition. The IIEC has full time local staff at all of the offices that all have extensive knowledge and experience in the areas of energy, transportation and environmental activities that are within their region along with a cultural understanding of each area. The IIEC has technical capabilities such as, designing of policies, program implementation and support for institutions that mainstream energy efficiency in the entire value chain of energy systems and use. The approach of IIEC is to focus upon implementation which results in developing policies that is done with the input from policymakers, industry, bilateral, and multilateral institutions. The institute champions global sustainable development through innovation, research and relationships that span the entire world. It is devoted to the ongoing communication of its findings as it engages decision-makers in business, government, non-government organizations and other sectors.

### Narrative

For the past two decades the IIEC has been providing solutions to problems that have resulted from rapidly increasing energy demand in the developing and industrialized countries. The IIEC has established a key group of providers that have novel solutions that has the flexibility to working simultaneously with multilateral institutions such as, governments, academia, research organizations, Industry, and non-government organizations. Through IIEC's global offices the partnerships with the, public, private sectors, NGO's, community groups, universities, and takeholders assist with the development, implementation and the evaluation of the energy efficiency polices, programs and projects. Since these activities are often multi-disciplined in nature, the partnerships formed enable the IIEC to provide the following areas of service:

1. End-Use Energy Efficiency
2. DSM Planning and Evaluation
3. Energy Efficiency Standards and Labeling
4. Renewable Energy

- 5. Environmental Management
- 6. Water Resource Management
- 7. Climate Change and Energy Policy
- 8. Transport Planning

Through the offices in Europe (London, South Africa, Latin America, Thailand, Philippines, and India), the IIEC has built in country capacity for addressing comprehensive and practical means of mainstreaming sustainable energy solutions to commercial buildings, industrial, power, water, wastewater, infrastructure, and the transportation sectors.

**Record:** 1053

**Category:** Greening Energy Production, Cleaner Energy Production, Coal processing

**Organization:** International Institute for Environment and Development (IIED)

**Web site:** <http://www.iied.org/general/about-iied/about-iied>

**Address:** 3 Endsleigh Street

**Address 2:**

**City:** London

**State/Province:**

**Country:** England

**Zip/Postal Code:** WC1H 0DD

**Phone:** 44-0-20-7388-2117

**Fax:** 44-0-20-7388-2826

**Email:** [info@iied.org](mailto:info@iied.org)

**Funding:** Private/Public

**Budget:** 8.8 million British Pounds in 2006/2007

**Year Founded:** 1971

**Reach:** North America and Internationally

### Network Description

The International Institute for Environment and Development (IIED) is an independent international research organization, that specializes in linking local to global. Working in the following regions: Africa, Asia, Caribbean, Central and South America, Middle East, and the Pacific; where the IIED works with the world's most vulnerable people to ensure they have a voice in the policy arenas that affects them.

The IIED advises governments, businesses and international development agencies with documents that are published and available to the public.

### Goal / Objectives / Mandate

The mission of IIED is to build a fairer more sustainable world, using evidence, action, and influence in partnership with others.

### Interest in Collaboration

### Narrative

In 1971, the International Institute for Environment and Development (IIED) was launched by economist and policy advisor Barbara Ward. This was the first organization to link the environment with development. The IIED had a key role in the Stockholm Conference of 1972, the Brundtland Commission of 1987, the 1992 Earth Summit and the 2002 World Summit on Sustainable Development. The IIED has five areas of focus:

1. Climate Change
2. Governance
3. Human Settlements
4. Natural Resources
5. Sustainable Markets

Partnerships are key to how the IIED works; as the engagement of partnerships keep the IIED's approach fresh and dynamic. The forging of alliances with individuals, organizations, to global institutions ensures that both national and international policies reflect the needs of the marginalised people.

### Other Networks in this space

The following alliances that IIED works with are:



The Poverty and Conservation Learning Group (PCLG)  
Shack/Slum Dwellers International (SDI)  
The Latin American Center for Rural Development (Rimisp)  
Up in Smoke  
The Ring

The IIED has an active role with the following international networks:  
Organization for Economic Co-Operation and Development (OECD)  
ENVIRONET  
The International Union for the Conservation of Nature (IUCN)

## Greening Energy Production – Cleaner Energy Production – Underground Coal Gasification

**Record:** 577

**Category:** Greening Energy Production, Cleaner Energy Production, Underground coal gasification

**Organization:** CIGI (Centre for International Governance Innovation)

**Web site:** <http://www.cigionline.org/>

**Address:** 57 Erb St. West

**Address 2:**

**City:** Waterloo

**State/Province:** ON

**Country:** Canada

**Zip/Postal Code:** N2L 6C2

**Contact Title:** Vice President of Programs and Acting Executive Director

**Contact Person:** Thomas A. Bernes

**Phone:** 519-885-2444

**Fax:** 519-885-5450

**Email:**

**Funding:** Private/Public

**Budget:**

**Year Founded:** 2001

**Reach:**

### Network Description

The Centre for International Governance Innovation (CIGI) is an independent, non-partisan think tank that addresses international governance challenges. Led by a group of experienced practitioners and distinguished academics, CIGI supports research, forms networks, advances policy debate, builds capacity, and generates ideas for multilateral governance improvements. Conducting an active agenda of research, events and publications, CIGI's interdisciplinary work includes collaboration with policy, business and academic communities around the world.

### Goal / Objectives / Mandate

CIGI strives to identify and generate ideas for global change by studying, advising and networking with scholars, practitioners and governments on the character and desired reforms to multilateral governance issues. Through conferences, workshops, publications, public events and technology, CIGI aims to raise capacity to effect change in public policy both in Canada and around the world. CIGI gratefully acknowledges the support of the Government of Canada and the Government of Ontario.

### Narrative

The Centre for International Governance Innovation (CIGI) is an international think tank, founded in 2001. CIGI's main purpose is to address international governance challenges through world-class research. CIGI strives to identify and generate ideas for global change by studying, advising and networking with scholars, practitioners and governments on the character and desired reforms to multilateral governance issues. Through conferences, workshops, publications, public events and technology, CIGI aims to raise capacity to effect change in public policy both in Canada and around the world. CIGI gratefully acknowledges the support of the Government of Canada and the Government of Ontario.

---

**Record:** 1741

**Category:** Greening Energy Production, Cleaner Energy Production, Underground coal gasification

**Organization:** World Coal Institute

**Web site:** <http://www.worldcoal.org/coal/uses-of-coal/underground-coal-gasification/>

**Address:** 5th Floor, Heddon House                      **Address 2:** 149 - 151 Regent Street  
**City:** London    **State/Province:**  
**Country:** UK    **Zip/Postal Code:** W1B 4JD

**Phone:** 44 (0) 20 7851 0052                      **Fax:** 44 (0) 20 7851 0061    **Email:** info@worldcoal.org

**Funding:** Private    **Budget:**  
**Year Founded:** 1985    **Reach:**

**Network Description**

The World Coal Institute is a global industry association comprising the major international coal producers and stakeholders

**Membership Requirements**

Membership is open to companies and not-for-profit organizations with a stake in the future of coal from anywhere in the world, with member companies represented at Chief Executive level.

## Conservation and Efficiency – Industrial Processes

**Record:** 1666

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for industrial processes

**Organization:** United Nations Industrial Development Organization (UNIDO) - Energy and Climate Change Branch

**Web site:** <http://www.unido.org/index.php?id=1000474>

**Address:** Room DC1-1118

**Address 2:** 1, United Nations Plaza

**City:** New York

**State/Province:** NY

**Country:** USA

**Zip/Postal Code:** 10017

**Phone:** 212-963-6890

**Fax:** 212-963-7904

**Email:** [office.newyork@unido.org](mailto:office.newyork@unido.org)

**Funding:** Public

**Budget:**

### Network Description

The responsibility of UNIDO's Energy and Climate Change Branch is to promote access to energy for productive uses while at the same time supporting patterns of energy use by industry that mitigate climate change and are environmentally sustainable.

This involves promoting energy efficiency and the adoption of renewable energy sources in the formal industrial sector, enhancing energy access primarily in rural areas as the fundamental means to reduce rural poverty, and championing industrial energy perspectives in the global debates about climate change and other energy-related global trends. In addition, the branch acts as the focal point within UNIDO for UN-Energy and the United Nations Framework Convention on Climate Change (UNFCCC).

**Record:** 1135

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for industrial processes

**Organization:** Major Economies Forum on Energy and Climate

**Web site:** <http://www.majoreconomiesforum.org/>

**City:** Washington

**State/Province:** DC

**Country:** USA

**Zip/Postal Code:**

**Phone:** 202-647-4875

**Fax:** 202-647-0191

**Email:** [mef\\_secretariat@state.gov](mailto:mef_secretariat@state.gov)

**Funding:** Public

**Budget:**

**Year Founded:** 2009

**Reach:** Global

### Network Description

The Major Economies Forum on Energy and Climate (MEF) was launched on March 28, 2009. The MEF is intended to facilitate a candid dialogue among major developed and developing economies, help generate the political leadership necessary to achieve a successful outcome at the December (2009) UN climate change conference in Copenhagen, and advance the exploration of concrete initiatives and joint ventures that increase the supply of clean energy while cutting greenhouse gas emissions.

The MEF has established a global partnership to drive transformational low-carbon, climate-friendly technologies. The global partnership will dramatically increase and coordinate public sector investments in research, development, and demonstration of these technologies, with a view to doubling such investments by 2015, while recognizing the importance of private investment, public-private partnerships and international cooperation, including regional innovation centers.

**Goal / Objectives / Mandate**

Drawing on global best practice policies, the partnership will undertake to remove barriers, establish incentives, enhance capacity-building, and implement appropriate measures to aggressively accelerate deployment and transfer of key existing and new low-carbon technologies, in accordance with national circumstances.

The global partnership will advance actions on:

- advanced vehicles;
- bioenergy;
- carbon capture and storage;
- cross-cutting R&D;
- energy efficiency in buildings;
- energy efficiency in industry;
- high-efficiency and low-emissions coal technologies;
- marine energy;
- smart grids;
- solar energy; and,
- wind energy.

**Narrative**

The Major Economies Forum on Energy and Climate (MEF) was launched on March 28, 2009 as a partnership of 17 major economies. The MEF is intended to facilitate a candid dialogue among major developed and developing economies, help generate the political leadership necessary to achieve a successful outcome at the December 2009 UN climate change conference in Copenhagen, and advance the exploration of concrete initiatives and joint ventures that increase the supply of clean energy while cutting greenhouse gas emissions.

**Membership Requirements**

Members are national governments of the 17 major economies: Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the United Kingdom, and the United States.

**Record:** 1827

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for traditional Energy Sector

**Organization:** AQME: Association Quebequoise pour la Maitrise de l'Energie

**Web site:** <http://www.aqme.org>

**Address:** 255, boul. Cremazie Est                      **Address 2:** suite 750  
**City:** Montreal    **State/Province:** Quebec  
**Country:** Canada    **Zip/Postal Code:** H2M1L5

**Contact Title:** President and CEO

**Contact Person:** Jean Lacroix

**Phone:** 514-866-5584, #225                      **Fax:** N/A **Email:** [jlacroix@aqme.org](mailto:jlacroix@aqme.org)

**Funding:** Private    **Budget:** N/A

**Year Founded:** 1985                                      **Reach:** Provincial (Quebec)

**Network Description**

AQME is a meeting place for stakeholders in the energy control industry. Energy efficiency is at the core of the organization's mandate, with sustainable development in mind. The AQME has about 800 members and is a neutral, independent, private organization.

**Goal / Objectives / Mandate**

AQME's goals are as follows:

- Share experience in the field of energy control;
- Disclose technical and economical data to its members, along with research and inquiry results related to the field;
- Inform members of available subsidies and other relevant funding programs;
- Make submissions to government departments, other organizations and companies;
- Develop and offer new products and services in order to meet the needs of members;
- Promote the rational use of energy; and,
- Facilitate networking and business opportunities.

The AQME helps also small and medium energy businesses in Quebec to get involved in international markets by providing risk management, and other business and legal services.

### **Interest in Collaboration**

General interest shown to work with small and medium businesses involved in energy efficiency and carbon emissions reduction, but priority will be given to develop partnerships with Quebec-based organizations. Details of any future partnerships are to be discussed with the President and CEO, Jean Lacroix.

### **Narrative**

AQME is primarily involved with small to medium-sized businesses to help reduce their energy consumption and carbon emissions. AQME hires engineers and project managers to work on specific projects with those businesses. Some recent projects involved heat and electricity recovery from biomass waste.

The information is shared among members through: the Annual Congress in May, the training centre, the documentation centre, social events (such as luncheons, golf tournaments and happy hour), the association journal "La Maitrise de l'Energie", newsletters, and specific energy projects performed in industries.

Hydro-Quebec sponsors a program through the AQME for companies receiving a special rate aimed at reducing the companies' electricity usage. The program looks at all sources of energy consumption (such as heating, lighting, equipment power usage, and so on) in order to identify possible savings.

### **Meeting Frequency**

Annual Congress in May

Working Committees (buildings, Energia competition, annual conference, annual golf tournament, big industries, efficient partners, recommissioning, next generation)

### **Membership Requirements**

Individual, corporate and government organization memberships (fees required)

### **Other Networks in this space**

Reseau d'Expertises en Maitrise de l'Energie (Network of Energy Management Expertise)

<http://www.aqme.org/rem.aspx>

### **Affiliates / Affiliates area of expertise**

Research and development in energy efficiency. Publication and documentation centre.

**Record:** 1050

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for Traditional Energy Sector

**Organization:** International Institute for Energy Conservation (IIEC)

**Web site:** <http://www.iiec.org/>

**Address:** 161 Portage Avenue East, 6th Floor

**Address 2:**

**City:** Winnipeg

**State/Province:** Manitoba

**Country:** Canada

**Zip/Postal Code:** R3B 0Y4

**Contact Title:** President

**Contact Person:** Nitin Pandit**Phone:** 204-958-7700**Fax:** 204-958-7710**Email:** iiecdc@iiec.org**Funding:** Private/Public**Budget:****Year Founded:** 1990**Reach:** North America and Internationally**Goal / Objectives / Mandate**

The International Institute for Sustainable Development (IISD) is a non-partisan, charitable organization specializing in policy research, analysis and information exchange. Through its head office in Winnipeg, Manitoba and its branches in Ottawa, Ontario; New York, NY; and Geneva, Switzerland IISD applies human ingenuity to help improve the well being of the world's environment, economy and society.

The institute champions global sustainable development through innovation, research and relationships that span the entire world. It is devoted to the ongoing communication of its findings as it engages decision-makers in business, government, non-government organizations and other sectors.

IISD is proud of its diverse, multi-talented team of over 100 staff and associates located in over 30 countries.

Through its dynamic portfolio of programs and projects, the institute has partnered with over 200 organizations worldwide.

As a registered charitable organization in Canada, the institute has 501 (c) (3) status in the U.S. IISD receives core operating support from the Government of Canada, as provided through the Canadian International Development Agency, the International Development Research Centre, Environment Canada and the Province of Manitoba. The institute also receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

**Interest in Collaboration**

No contact.

**Narrative**

IISD works in the following areas:

- Adaptation and risk reduction
- Climate change and energy
- Economics and sustainable development
- Environment, conflict and peacebuilding
- Foreign Investment for sustainable development
- Governance for sustainable development
- Internet and technology
- International trade
- Measurement and assessment
- Natural resources
- Networks and partnerships
- Sustainable markets
- Tomorrow's sustainable development leaders

---

**Record:** 1184

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for Industrial Processes

**Organization:** Energy Solutions Center

**Web site:** <http://www.energysolutionscenter.org/>

**Address:** 400 N. Capitol Street NW

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** USA

**Zip/Postal Code:** 20001

**Contact Title:** Director, Industrial Solutions

**Contact Person:** Mr. Richard Biljetina

**Phone:** 202-824-7150    **Fax:**    **Email:** biljet@att.net

**Funding:** Private/Public

**Budget:**

### **Network Description**

The Energy Solutions Center is a technology commercialization and market development organization representing energy utilities, municipal energy authorities, and equipment manufacturers and vendors. The mission of the center is to accelerate the acceptance of and deployment of new energy-efficient, gas-fueled technologies that enhance the operations and productivity of commercial and industrial energy users, and improves comfort and reliability for residential energy users.

The ESC and its members identify, evaluate, and prioritize new market opportunities and then implement market development initiatives designed to move products from R&D success to broad market acceptance.

The Energy Solutions Center is a 501(c)6 technology commercialization and market development organization representing 31 energy utilities, 13 municipal energy authorities, and 30 equipment manufacturers and vendors. The mission of the center is to accelerate the acceptance of and deployment of new energy-efficient, gas-fueled technologies that enhance the operations and productivity of commercial and industrial energy users, and improves comfort and reliability for residential energy users.

### **Goal / Objectives / Mandate**

The Energy Solutions Center, is a technology commercialization and market development organization representing energy utilities, municipal energy authorities, and equipment manufacturers and vendors. The mission of the center is to accelerate the acceptance of and deployment of new energy-efficient, gas-fueled technologies.

### **Narrative**

The Energy Solutions Center is a technology commercialization and market development organization representing energy utilities, municipal energy authorities, and equipment manufacturers and vendors. The mission of the center is to accelerate the acceptance of and deployment of new energy-efficient, gas-fueled technologies that enhance the operations and productivity of commercial and industrial energy users, and improves comfort and reliability for residential energy users.

The ESC and its members identify, evaluate, and prioritize new market opportunities and then implement market development initiatives designed to move products from research and development success to broad market acceptance.

The Energy Solutions Center is a 501(c)6 technology commercialization and market development organization representing 31 energy utilities, 13 municipal energy authorities, and 30 equipment manufacturers and vendors. The mission of the center is to accelerate the acceptance of and deployment of new energy-efficient, gas-fueled technologies that enhance the operations and productivity of commercial and industrial energy users, and improves comfort and reliability for residential energy users.

### **Membership Requirements**

Members are generally energy-related companies and organizations, specifically energy utilities, municipal energy authorities, and equipment manufacturers and vendors. A list of corporate members and affiliate members is available at: <http://www.energysolutionscenter.org/about/members.asp>

### **Other Networks in this space**

American Gas Association

Gas Technology Institute

Natural Gas Technology Centre (Canada)



Natural Gas Vehicle Institute

---

**Record:** 547

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for Industrial Processes

**Organization:** Center for Energy Efficiency and Renewable Energy (CEERE)

**Web site:** <http://www.ceere.org/>

**Address:** 160 Governors Drive

**Address 2:**

**City:** Amherst

**State/Province:** MA

**Country:** USA

**Zip/Postal Code:** 01003

**Contact Title:** Energy Efficiency Partnership

**Contact Person:** Dr. Chad Nelson

**Phone:** 413-545-2853

**Fax:**

**Email:** [nelson@ecs.umass.com](mailto:nelson@ecs.umass.com)

**Funding:** Private/Public

**Budget:**

### **Network Description**

CEERE is a University of Massachusetts College of Engineering Organization.

### **Goal / Objectives / Mandate**

It is widely recognized that the environmental impact from energy production and waste is a threat to a sustainable future. The Center for Energy Efficiency and Renewable Energy (CEERE) has as its mission to explore, develop, and promote economical solutions to the complex relationship between energy and the environment. To this end, CEERE utilizes a model that includes: research, programs, policy, planning, and information transfer. Research activities are an important basis for technology development and knowledge transfer. Located at a major northeast university, our research capabilities extend beyond modern laboratories and classrooms. Many of our activities involve private sector partners, state and federal agencies, and the local community. While CEERE dedicates many of resources to medium- and long-term research initiatives, spin-off and contract activities with short-term deliverables make up a significant part of the organization's project activity. CEERE's research laboratories provide training and experience for scientists and engineers of the twenty-first century. The center is a major hub of federal and state programs, servicing the energy and production capacity of all major industries. Technology development, testing, assessment, and verification programs run from CEERE's laboratories provide real-world solutions for implementing energy efficiency and environmental quality improvement. The capacity to develop useful planning and policy models requires the ability to ask the right questions. Application of state-of-the-art science and engineering is combined with a keen understanding of local, state, and regional issues. It also requires knowledge of the past and a vision for the future. CEERE's approach combines these key components, resulting in workable consensus-building platforms. Effective communication is the key to delivering results that make a difference. The center is committed to publicly promoting all of its activities to maximize knowledge transfer and change towards sustainability.

## Conservation and Efficiency – Smart Grid

The following super networks are working in the area of Smart Grid,  
University of Colorado at Boulder – Research and Sustainable Energy Institute (RASEI)  
Electric Infrastructure Systems Research - National Renewable Energy Laboratory (NREL)

**Record:** 2067

**Category:** Conservation and Efficiency, Energy Efficiency, Smart Grid

**Organization:** Gridwise Alliance

**Web site:** [http://www.gridwise.org/gridwisealli\\_about.asp](http://www.gridwise.org/gridwisealli_about.asp)

**Address:** 1155 15th Street, NW                      **Address 2:** Suite 500  
**City:** Washington                                      **State/Province:** DC  
**Country:** USA                                      **Zip/Postal Code:** 20005

**Contact Title:** Chair

**Contact Person:** Guido Bartels

**Phone:** 202-530-9740      **Fax:** (202) 530-0659      **Email:**

**Funding:** Public

**Budget:**

**Year Founded:** 2003

**Reach:** National

### Network Description

The GridWise Alliance is the forum for these new ideas and concepts. It is a vehicle for expanding the sphere of stakeholders, and engaged leaders of industry government and our community. In this forum, all stakeholders can work cooperatively to move our industry-age electric grid into the information age. Whether you are a policy maker or energy producer, regulator or researcher, vendor, or technology provider, we welcome your participation in this revolutionary undertaking - one that is critical to ensuring our nation's prosperity, national security and public health and safety in decades and centuries.

### Goal / Objectives / Mandate

Mission is to transform the electric grid to achieve a sustainable energy future.

Aggregate to achieve optimal representation in the membership from across the entire electricity value chain. Collaborate and ensure active member participation through working groups, urgent action teams and other collaborative modes. Strengthen and support the relationship with other stakeholders including key state and federal policymakers. Cultivate broad outreach and continued collaboration with complementary organizations in the US and abroad.

Educate and provide compelling collateral materials on various areas of smart grid including original research. Establish and maintain the Alliance's leadership position as a resource on smart grid through communications and other related efforts. Develop smart grid evaluation criteria for legislators, regulators and media.

#### Policy

Influence national vision for smart grid through the advocacy of well-reasoned smart grid policies at the federal, state, and local levels.

Influence agency interpretation of smart grid policies.

### Interest in Collaboration

Collaboration is key to the GridWise Alliance.

### Narrative

The GridWise Alliance, founded in 2003, has developed into an organization that represents a broad range of the energy supply chain from utilities to large tech companies to academia to venture capitalists to emerging tech companies. This variety of stakeholders gives the Alliance a unique diversity of perspectives which enables interactive dialogue between members. Being a consensus based organization; the assortment of opinions produces deliberate and highly reflected upon resolutions to key issues.

---

**Record:** 2055

**Category:** Conservation and Efficiency, Energy Efficiency, Smart Grid

**Organization:** Smart Grid Resource Centre - Electric Power Research Institute (EPRI)

**Web site:** [http://my.epri.com/portal/server.pt?open=512&objID=210&mode=2&in\\_hi\\_userid=2&cached=true](http://my.epri.com/portal/server.pt?open=512&objID=210&mode=2&in_hi_userid=2&cached=true)

**Address:** 3420 Hillview Avenue

**Address 2:**

**City:** Palo Alto

**State/Province:** California

**Country:** USA

**Zip/Postal Code:** 94304

**Contact Title:** President

**Contact Person:** Michael Howard

**Phone:** 650-855-2121

**Fax:**

**Email:**

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1973

**Reach:** International

#### **Network Description**

The Electric Power Research Institute, Inc. (EPRI) conducts research and development relating to the generation, delivery and use of electricity for the benefit of the public. An independent, non-profit organization, EPRI brings together its scientists and engineers as well as experts from academia and industry to help address challenges in electricity, including reliability, efficiency, health, safety and the environment. EPRI also provides technology, policy and economic analyses to drive long-range research and development planning, and supports research in emerging technologies. EPRI's members represent more than 90 percent of the electricity generated and delivered in the United States, and international participation extends to 40 countries. EPRI's principal offices and laboratories are located in Palo Alto, Calif.; Charlotte, N.C.; Knoxville, Tenn.; and Lenox, Mass.

## Conservation and Efficiency – Waste Heat for Power Generation and On-site Power Generation

The following super networks are active in the area of Waste Heat for Power Generation and On-Site Power Generation:

National Energy Technology Laboratory (NETL)

The following knowledge networks are also active in this area.

**Record:** 1127

**Category:** Conservation and Efficiency, Energy Efficiency, On-Site Generation

**Organization:** WADE (World Alliance of Decentralized Energy)

**Web site:** [http://www.localpower.org/abt\\_mission.html](http://www.localpower.org/abt_mission.html)

**Address:** 1513 16th Street NW

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** USA

**Zip/Postal Code:**

**Contact Title:**

**Contact Person:**

**Phone:** +1 202-667-5600 **Fax:** +1 202-315-3719 **Email:** [info@localpower.org](mailto:info@localpower.org)

**Year Founded:** 1997

**Reach:** International

### Network Description

WADE works to accelerate the worldwide development of high efficiency cogeneration, on-site power and decentralized renewable energy systems that deliver substantial economic and environmental benefits. In an effort to raise the profile of cogeneration as a climate change mitigation strategy in the 1997 UNFCCC climate change negotiations, the International Cogeneration Alliance was founded. In 2002 the group changed its name to WADE and broadened its scope to include all manner of DE technologies. Also has worldwide WADE chapters with each dedicated to a country.

This knowledge network provides links to different power authorities, energy groups, partnerships etc. on their web site.

### Goal / Objectives / Mandate

- 1) To provide its members and supporters with value added market intelligence, information and business opportunities;
- 2) To bring about effective power sector reform which eliminates barriers to DE and creates real market opportunity for DE;
- 3) To co-ordinate the creation and monetization of high quality carbon credits from DE projects;
- 4) To compile global data on all aspects of DE development;
- 5) To support the establishment of DE groups in every country.

### Narrative

Information is shared through released papers, committee meetings, publications and online resources.

### Meeting Frequency

Promotes worldwide energy conferences and workshops

### Membership Requirements

WADE offers differentiated membership rates based on the annual DE related turnover of the supporting member. Annual membership fee based on category. Ranges from 200-9500 (pounds).

### **Affiliates / Affiliates area of expertise**

#### National Affiliates:

Arctic Energy Alliance, Canada  
 Association of Power Producers of Ontario, Canada  
 Calgary Technologies Inc. (CTI), Canada  
 Canadian American Business Council, USA/Canada  
 Canadian GeoExchange Coalition, Canada  
 Canadian Solar Industries Association, Canada  
 Canadian Wind Energy Association, Canada  
 Centre for Distributed Energy and Power, Australia  
 The Clearlight Foundation  
 COGEN Chezk, Czechslovakia  
 COGEN Europe, Belgium  
 COGEN India, India  
 COGEN Portugal, Portugal  
 COGEN Nederland, the Netherlands  
 COGEN Rio, Brazil  
 COGEN SP, Brazil  
 COGENA - Italian Cogeneration Association  
 Cogeneration Study Committee, China  
 Delta State Government, Nigeria  
 Electro-Federation of Canada, Canada  
 Futuregreensolutions, UK  
 Institute for Sustainable Energy, Environment and Economy, Canada  
 International Energy Agency, France  
 Petroleum Technology Association of Canada, Canada  
 The Polish Economic Chamber of Renewable Energy ( PIGEO), Poland  
 Pollution Probe, Canada  
 Quality Urban Energy Systems of Tomorrow (QUEST), Canada  
 Savona Campus, University of Genoa, Italy  
 UK CHP Association, UK  
 US CHP Association, USA

#### Corporate Affiliates:

Alberta Research Council, Canada  
 Alterna Energy, Canada  
 BluePower, Canada  
 Bob Hawkesworth, Canada  
 Borden Ladner Gervais LLP, Canada  
 Capstone Turbines Corporation, USA  
 Caterpillar, USA  
 Canadian Gas Association, Canada  
 Chevron, USA  
 Combustion, Energy and Steam Specialists, UK  
 Cummins Power Generation, USA  
 Dalkia, France  
 Detroit Diesel-Allison Canada East, Canada  
 DDACE Power Systems, Canada  
 Ecolity Corporation, Canada  
 EMF Technical Services, Canada  
 Enercon Engineering, USA

Energy Capital, Singapore  
 Enersource, Canada  
 Enmax Power, Canada  
 FuelCell Energy, USA  
 GE Energy  
 GE Jenbacher, Canada  
 Geomatika Information Systems, Canada  
 ICF International, USA  
 Jigsaw Homes Inc, Canada  
 Lakeland College, Canada  
 Malcolm and Associates, Canada  
 Marubeni Power International, Japan  
 Mitcon Consultancy Services, India  
 MiVenture, Canada  
 Municipality of Chatham-Kent, Canada  
 New Energy Corporation, Canada  
 Northwest Territories

---

**Record:** 1038

**Category:** Conservation and Efficiency, Energy Efficiency, District Heating

**Organization:** International Energy Agency

**Web site:** <http://www.iea.org/>

**Address:** 9, rue de la Federation 75739 Cedex 15

**Address 2:**

**City:** Paris

**State/Province:**

**Country:** France

**Zip/Postal Code:**

**Contact Person:** Tom Kerr

**Phone:** (+33 1) 40-57-67-84

**Fax:** (+33 1) 40-57-65-09 **Email:** [info@iea.org](mailto:info@iea.org)

**Funding:** Public

**Budget:** 26 Million Euros

**Year Founded:** 1973-74

**Reach:** International

### **Goal / Objectives / Mandate**

The member countries of the International Energy Agency (IEA) seek to create conditions in which the energy sectors of their economies can make the fullest possible contribution to sustainable economic development and to the well-being of their people and of the environment. In formulating energy policies, the establishment of free and open markets is a fundamental point of departure, though energy security and environmental protection need to be given particular emphasis by governments. IEA countries recognize the significance of increasing global interdependence in energy. They therefore seek to promote the effective operation of international energy markets and encourage dialogue with all participants.

In order to secure their objectives, member countries therefore aim to create a policy framework consistent with the following goals:

- 1) Diversity, efficiency and flexibility within the energy sector are basic conditions for longer-term energy security: the fuels used within and across sectors and the sources of those fuels should be as diverse as practicable. Non-fossil fuels, particularly nuclear and hydro power, make a substantial contribution to the energy supply diversity of IEA countries as a group;
- 2) Energy systems should have the ability to respond promptly and flexibly to energy emergencies. In some cases this requires collective mechanisms and action: IEA countries co-operate through the Agency in responding jointly to oil supply emergencies;

- 3) The environmentally sustainable provision and use of energy are central to the achievement of these shared goals. Decision-makers should seek to minimize the adverse environmental impacts of energy activities, just as environmental decisions should take account of the energy consequences. Government interventions should respect the "polluter pays" principle where practicable;
- 4) More environmentally acceptable energy sources need to be encouraged and developed. Clean and efficient use of fossil fuels is essential. The development of economic non-fossil sources is also a priority. A number of IEA member countries wish to retain and improve the nuclear option for the future, at the highest available safety standards, because nuclear energy does not emit carbon dioxide. Renewable sources will also have an increasingly important contribution to make;
- 5) Improved energy efficiency can promote both environmental protection and energy security in a cost-effective manner. There are significant opportunities for greater energy efficiency at all stages of the energy cycle from production to consumption. Strong efforts by governments and all energy users are needed to realize these opportunities;
- 5) Continued research, development and market deployment of new and improved energy technologies make a critical contribution to achieving the objectives outlined above. Energy technology policies should complement broader energy policies. International co-operation in the development and dissemination of energy technologies, including industry participation and co-operation with non-member countries, should be encouraged.
- 6) Undistorted energy prices enable markets to work efficiently. Energy prices should not be held artificially below the costs of supply to promote social or industrial goals. To the extent necessary and practicable, the environmental costs of energy production and use should be reflected in prices;
- 7) Free and open trade and a secure framework for investment contribute to efficient energy markets and energy security. Distortions to energy trade and investment should be avoided;
- 8) Co-operation among all energy market participants helps to improve information and understanding, and encourages the development of efficient, environmentally acceptable and flexible energy systems and markets worldwide. These are needed to help promote the investment, trade and confidence necessary to achieve global energy security and environmental objectives;

The "Shared Goals" were adopted by IEA Ministers at their 4 June 1993 meeting in Paris.

#### **Interest in Collaboration**

Yes, as outlined in the "Goal/Objectives/Mandate" section below.

#### **Narrative**

The IEA is funded by 28 member countries. National contributions are based on a formula that takes account of the size of each member's economy. The largest contributor is the United States, which provides nearly 25 percent of the budget, followed by Japan.

Information is shared through conferences, events, publications, workshops and online resources. The IEA focuses on coal, CO<sub>2</sub> capture and storage, cleaner fossil fuels, climate change, electricity, emissions trading and CDM, energy efficiency, energy indicators, energy market reform, energy policy, energy projections, energy security, environment, fusion power, greenhouse gases, G8/G20, industry, natural gas, non-OECD Countries, oil, renewable energy, sustainable development, technology, technology roadmaps, and transport.

#### **Meeting Frequency**

Multiple events on various issues in different locations worldwide.

#### **Membership Requirements**

Countries only.

#### **Affiliates / Affiliates area of expertise**

The Standing Group on Emergency Questions (SEQ): Responsible for all aspects of IEA oil emergency preparedness and collective response to supply disruptions.

The Standing Group on the Oil Market (SOM): Monitors and analyses short- and medium-term developments in the international oil market to help IEA Member countries react promptly and effectively to changes in market conditions.

The Standing Group on Long-Term Co-operation (SLT):- Encourages co-operation among IEA member countries to ensure their collective energy security, improve the economic efficiency of their energy sector and promote the environmental protection in provision of energy services. The SLT has established an expert body: the Working Party on Energy Efficiency.

The Standing Group for Global Energy Dialogue (SGD): Responsible for work with countries and regions outside of the IEA membership, including China, Russia and India. Many SGD projects draw upon both regional and sectoral expertise and are carried out jointly with other IEA divisions.

The Committee on Energy Research and Technology (CERT): Co-ordinates and promotes the development, demonstration and deployment of technologies to meet challenges in the energy sector. The CERT has established four expert bodies:

- 1) The Working Party on Fossil Fuels;
- 2) The Working Party on Renewable Energy Technologies;
- 3) The Working Party Energy End-Use Technologies; and,
- 4) The Fusion Power Co-ordinating Committee.

The IEA provides a framework for more than 40 international collaborative energy research, development and demonstration projects known as Implementing Agreements.

**Record:** 723

**Category:** Conservation and Efficiency, Energy Efficiency, Waste Heat for Power Generation

**Organization:** International District Energy Association (IDEA)

**Web site:** <http://www.districtenergy.org/>

**Address:** 24 Lyman Street, Suite 230

**Address 2:**

**City:** Westborough

**State/Province:** MA

**Country:** U.S.A.

**Zip/Postal Code:** 01581

**Contact Title:** President

**Contact Person:** Robert P. Thornton

**Phone:** 508-366-9339

**Fax:** 508-366-0019

**Email:** [rob.idea@districtenergy.org](mailto:rob.idea@districtenergy.org), [idea@districtenergy.org](mailto:idea@districtenergy.org)

**Funding:** Private

**Budget:**

**Year Founded:** 1909

**Reach:** International

### Network Description

IDEA represents approximately 1200 members, who include district heating and cooling executives, managers, engineers, consultants and equipment suppliers from 25 countries. Association members operate district energy systems owned by utilities, municipalities, hospitals, military bases and airports throughout North America and around the world. The largest district heating system in the United States, owned by Consolidated Edison of New York, is an IDEA member, as is the nation's largest district cooling system, Thermal Chicago.

### Goal / Objectives / Mandate

The International District Energy Association (IDEA) fosters the success of its members as leaders in providing reliable, economical, efficient and environmentally sound district energy services. It promotes energy efficiency and environmental quality through the advancement of district heating, district cooling, and cogeneration (also known as combined heat and power or CHP) and actively lobbies to secure favorable policies, legislation and regulations for district energy.

The goals of the IDEA are to:

- Facilitate networking and exchange of information among members;



- Enhance educational opportunities for district energy professionals;
- Assist members in marketing the benefits of district energy services; and,
- Secure favorable policies, legislation and regulations for district energy.

### **Interest in Collaboration**

Yes, definitely. Robert Thornton is well aware of ENMAX activities in Alberta. IDEA is associated with the Canadian District Energy Association (CDEA). The two organizations are jointly preparing the 102nd IDEA Annual Conference and Trade Show: District Energy/CHP (combined heat and power) 2011 in Toronto next June.

### **Narrative**

Information is shared through conferences and online resources. Specific technologies include district energy, CHP, district cooling and district heating.

Established in 1909, IDEA is an industry association and advocacy arm that has 1300 members from 27 countries. IDEA promotes the deployment of district energy systems, including back pressure turbines, high efficiency chillers and cooling towers. Those technological concepts require a significant amount of data collection and analysis, and involve a broad spectrum of technologies.

The International Energy Agency and the Intergovernmental Panel on Climate Change have identified district energy as a strategic program to be implemented to reduce emissions through thermal storage and deep water lake cooling. IDEA heralds that district energy is a proven system - either through combined heat power (CHP) system, biomass energy, or lake cooling - and it produces dramatic savings.

Information is shared among members through conferences, webinars, newsletters, briefings and magazines ("District Energy"). IDEA's web site is also an important communications channel.

The main challenges that IDEA faces are a "broken [US] Congress," which makes policy advocacy a daunting task, the success of the fossil industry, and reaching to an informed public. The US federal government dithers at the operational level, but there is some progress made at the institutional level, with more universities getting involved with implementing district energy on their campus.

IDEA is happy with some individual policy at state-level (such as Massachusetts and New Jersey) and installed CHP facilities at Cornell and other university campuses. IDEA has been able to encourage the U.S. Green Building Council to introduce new guidance on buildings connected to district energy. IDEA also encouraged the LEED organization to reward more points for CHP and district energy. IDEA has limited resources to implement its program, but district energy is gaining recognition as an energy efficiency solution.

IDEA is currently backing a bi-partisan bill that will include a production tax credit for thermal energy produced thereby putting thermal energy on an equal par with renewably produced electricity.

### **Meeting Frequency**

Annual conferences and various events. See description below.

### **Membership Requirements**

Membership applicants need to fill out a form and pay a fee. The fee varies depending on membership category, which could be one of:

- Utility: \$1,300.00 - 13,350.00
- Individuals: \$100.00
- Service providers: \$525.00 - 1550.00
- Other categories

### **Other Networks in this space**

National district energy associations

### **Affiliates / Affiliates area of expertise**

District Heating, Combined Heat and Power

## Conservation and Efficiency – Transmission and Distribution

The following super networks are active in the area of transmission and distribution:

Oak Ridge National Laboratory - Electric Transmission and Distribution

Pacific Northwest National Laboratory

CanmetENERGY – Natural Resources Canada

The following knowledge networks are also active in this area.

**Record:** 1815

**Category:** Conservation and Efficiency, Energy Efficiency, Transmission and Distribution of Power

**Organization:** AIEQ (Association des industries électriques du Québec)

**Web site:** <http://www.aieq.net>

**Address:** 2000, Mansfield, suite 320

**Address 2:**

**City:** Montréal

**State/Province:** Quebec

**Country:** Canada

**Zip/Postal Code:** H3A2Y9

**Contact Title:** President

**Contact Person:** Daniel Laplante

**Phone:** 514-281-0615

**Fax:** 514-281-7965

**Email:** [dlaplante@aieq.net](mailto:dlaplante@aieq.net)

**Funding:** Private

**Budget:** N/A

**Year Founded:** 1916

**Reach:** Provincial

### Network Description

AIEQ is a not-for-profit organization connecting companies and stakeholders working in the electricity industry: builders, designers, manufacturers, researchers, networks administrators, engineers, electricity producers and distributors, etc.

AIEQ aims to:

- 1) be the advocate of the electricity industry in Quebec;
- 2) promote the exchange of any information of interest within his members and the electricity industry;
- 3) help the development of its members and promote their interests;
- 4) promote a rational resource utilization with sustainable development in mind.

### Goal / Objectives / Mandate

AIEQ's mandate is to:

- Facilitate the sustainable development of the electricity industry and electricity trading with neighbour provinces/states;
- Promote investments in electricity transportation and distribution;
- Support the development of a friendly regulatory framework;
- Obtain carbon credits for renewables; and,
- Help to develop the industry workforce.

### Interest in Collaboration

Yes, AIEQ has publicly announced its intention to develop Canadian and American partnerships, as energy efficiency and GHG reduction is a world problem, and AIEQ can act on North American solutions.

### Membership Requirements

Annual fees are as follows:

Corporate: \$500,000 - \$150,000

Institutional: \$630

## Conservation and Efficiency - Buildings

The following super networks have an emphasis no Conservation and Efficiency - Buildings  
University of Colorado at Boulder - Research and Sustainable Energy Institute (RASEI)

The following Knowledge Networks also work in this area.

**Record:** 1898

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for Buildings

**Organization:** Sustainable Buildings Industry Council

**Web site:** <http://www.sbicouncil.org>

**Address:** 1112 16th Street NW Suite 240

**Address 2:**

**City:** Washington

**State/Province:** D.C.

**Country:** USA

**Zip/Postal Code:** 20036

**Contact Title:** Executive Director

**Contact Person:** Bud DeFlaviis

**Phone:** 202-628-7400

**Fax:** 202-393-5043

**Email:** [bdeflaviis@sbicouncil.org](mailto:bdeflaviis@sbicouncil.org), [sbic@sbicouncil.org](mailto:sbic@sbicouncil.org)

**Funding:** Private

**Budget:** Not known

**Year Founded:** late 70s

**Reach:** National (USA)

### Network Description

SBIC's long-standing commitment to better buildings began back in the late 1970s with a focus on energy efficiency and renewable energy use. By the 1990s, SBIC was working with GSA, DoD, EPA and DOE to develop the Sustainability Principles for Executive Order 13123: Optimize Site Potential, Minimize Energy Use and Use Renewable Energy Strategies, Conserve and Protect Water, Use Environmentally Preferable Products, Enhance Indoor Environmental Quality, and Optimize Operations and Maintenance Practices. This activity coincided with SBIC expanding its reach to cover the broader issues of sustainability (not just energy). SBIC conceptualized the Whole Building Design Guide ([www.wbdg.org](http://www.wbdg.org)), along with our partners at NAVFAC, GSA, DoD and other federal agencies.

### Goal / Objectives / Mandate

**Mission:** To unite and inspire the building industry toward higher performance through education, outreach, advocacy and the mutual exchange of ideas.

**Vision:** To dramatically improve the long-term performance and value of buildings by advancing a whole building approach to design, construction and operation.

### Interest in Collaboration

No specific interest excepted on per building project basis.

A SBIC staff could act as consultant to provide knowledge/expertise and use a member services/products to develop a building

### Narrative

SBIC offers principally training (Whole Building Design Guide and other books, ENERGY-10 software: A Powerful Energy Simulation Tool for Buildings and Homes, and workshops) and consulting services to builders and users based on a holistic approach that goes beyond energy efficiency. This approach, recognized as a strength of the organization, is called Beyond Green and includes accessibility, water conservation, aesthetics, cost considerations, functionality, safety and security, occupant health/productivity, historic preservation, and environmental performance.

SBIC forms broad consensus among its members so that no particular agenda is pushed by a single member.

SBIC has developed programs that apply to Residential, K-12 School Buildings, Small Commercial Buildings, and Federal and Large Commercial Buildings.

### Meeting Frequency

Networkings events

### Committees:

Awards Committee

Technical Committee

Schools Committee

Marketing and Promotions Committee

Policy Committee Nominations Committee

### Membership Requirements

SBIC membership is open to organizations, trade associations, companies and individuals. Many of the original founding members have supported the work of the Council for over 25 years. Non-profits, architects, engineers, home builders, utilities, consultants, product and material manufacturers, suppliers, universities, professors, students, other building-related professionals and interested individuals all participate in the Council's mission.

Businesses: \$500 to \$7,000

University/not-for-profit organizations: \$500

Individuals: \$100

### Other Networks in this space

High-Performance Buildings Caucus of the U.S. Congress: <http://www.hpbccc.org/>

### Affiliates / Affiliates area of expertise

Same as for the SBIC

**Record:** 2066

**Category:** Conservation and Efficiency, Energy Efficiency, Conservation for New Buildings

**Organization:** Centre for Sustainable Building Research

**Web site:** <http://www.csbr.umn.edu/about.html>

**Address:** 1425 University Avenue SE, Suite 115

**Address 2:**

**City:** Minneapolis

**State/Province:** MN

**Country:** USA

**Zip/Postal Code:** 55455

**Contact Title:** Director

**Contact Person:** John Carmody

**Phone:** 612-624-1351

**Fax:** 612-626-7424

**Email:** [carmo001@umn.edu](mailto:carmo001@umn.edu)

**Year Founded:**

**Reach:** Regional

### Network Description

The Centre for Sustainable Building Research's mission is to lead and support, through research, outreach and education, the transformation of the regional built environment to provide for the ecological, economic and social needs of the present without compromising those of the future. The Center for Sustainable Building Research is a place for organizing and effectively growing the research and outreach missions of the College of Design. Working with other research entities within the university as well as public and private organizations is critical to CSBR's mission. CSBR serves as a resource for State of Minnesota, the design professions, the building industry, and the general public.

**Goal / Objectives / Mandate**

Conduct and share the research needed to transform the built environment toward sustainability.  
 Provide assistance and outreach to those working to transform the built environment toward sustainability.  
 Educated stakeholders in methods for transforming the built environment toward sustainability.  
 Promote organizational excellence through effective leadership, management, and the establishment of a stable, sustainable base of funding to support our work.

**Record:** 1873

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for Buildings

**Organization:** The Heating, Refrigerant, AC, Institute of Canada (HRAI)

**Web site:** <http://www.hrai.ca>

**Address:** 2800 Skymark Avenue, Building 1, Suite 201      **Address 2:**

**City:** Mississauga      **State/Province:** Ontario

**Country:** Canada      **Zip/Postal Code:** L4W 5A6

**Contact Title:** President

**Contact Person:** Warren Heeley

**Phone:** 1-800-267-2231/905-602-4700, #227

**Fax:** 905-602-1197

**Email:** [hraimail@hrai.ca](mailto:hraimail@hrai.ca)

**Funding:** Private

**Budget:**

**Year Founded:** 1969

**Reach:** National (Canada)

**Network Description**

Founded in 1968, the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) is a non-profit national trade association of manufacturers, wholesalers and contractors in the Canadian heating, ventilation, air conditioning and refrigeration (HVACR) industries.

More than 1,000 member companies provide products and services for indoor environments and essential refrigeration processes. HRAI also has more than 200 associate members including utilities, municipalities, educational institutions, consultants, manufacturers' representatives and related trade organizations.

HRAI advocates a safe, responsible and fair industry where indoor environment systems are designed, installed and serviced by qualified professionals in order ensure efficient and energy-conscious operation. The association's activities are directly related to the needs and requests of its membership and include education and training programs, industry meetings, up-to-date industry information, technical support, government and industry advocacy, statistics and trends, and a biennial national trade show.

HRAI offers leadership and training programs (SkillTech Academy) for the advancement of its members' business and technical excellence, promotes a code of ethics for consumer protection and safety, and provides consumers with useful information and a database of members in good standing to support an informed buying process.

Through its membership requirements and consumer feedback processes, HRAI is committed to a safe, responsible and fair industry that is environmentally-responsible and sustainable.

**Goal / Objectives / Mandate**

HRAI's Mission: To serve the HRAI Membership and HVACR industry in Canada by:

- 1) Coordinating a strong national membership;
- 2) Representing the industry to its publics;
- 3) Providing quality member/customer services;
- 4) Educating and training industry members; and
- 5) Facilitating industry solutions.

**Interest in Collaboration**

Yes, but projects within HVAI's mandate

**Narrative**

The HVAI does not do any research, but offers training through its SkillTech Academy. It also reaches out to its members through his monthly newsletters and its magazine.

HVAI is involved significantly in standards writing at the provincial, national and international level and one of its focuses is to raise appliances efficiency levels to advance energy savings.

HVAI has been working for more than ten years on taking back ozone depleting agents contained in appliances with the Refrigerant Management Canada (RMC) program.

Keeping the pace and be ahead of the regulatory agenda that is fast moving at the provincial, national and international levels is the main issue that the HVAI faces.

**Meeting Frequency**

Different committees meet regularly

**Membership Requirements**

HRAI Associate Member Categories: Annual fees vary depending on the category: \$320 to \$860:

Association-Trade Press, Buildings, Buying Group-Consolidator, Commercial, Consultant, Educational Institution, Fuel and Energy Supplier, Government and Enforcement Agency, Manufacturer Representative: Agent and Manufacturer Representative: Distributor

**Other Networks in this space**

Air-Conditioning, Heating, and Refrigeration Institute (USA) <http://www.ahrinet.org>

---

**Record:** 721

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for Buildings

**Organization:** International District Energy Association (IDEA)

**Web site:** <http://www.districtenergy.org/>

**Address:** 24 Lyman Street, Suite 230

**Address 2:**

**City:** Westborough

**State/Province:** MA

**Country:** U.S.A.

**Zip/Postal Code:** 01581

**Contact Title:** President

**Contact Person:** Robert P. Thornton

**Phone:** 508-366-9339

**Fax:** 508-366-0019

**Email:** [rob.idea@districtenergy.org](mailto:rob.idea@districtenergy.org), [idea@districtenergy.org](mailto:idea@districtenergy.org)

**Funding:** Private

**Budget:**

**Year Founded:** 1909

**Reach:** International

**Network Description**

IDEA represents approximately 1200 members, who include district heating and cooling executives, managers, engineers, consultants and equipment suppliers from 25 countries. Association members operate district energy systems owned by utilities, municipalities, hospitals, military bases and airports throughout North America and around the world. The largest district heating system in the United States, owned by Consolidated Edison of New York, is an IDEA member, as is the nation's largest district cooling system, Thermal Chicago.

**Goal / Objectives / Mandate**

The International District Energy Association (IDEA) fosters the success of its members as leaders in providing reliable, economical, efficient and environmentally sound district energy services. It promotes energy efficiency and environmental quality through the advancement of district heating, district cooling, and cogeneration (also known as combined heat and power or CHP) and actively lobbies to secure favorable policies, legislation and regulations for district energy.

The goals of the IDEA are to:

- Facilitate networking and exchange of information among members;
- Enhance educational opportunities for district energy professionals;
- Assist members in marketing the benefits of district energy services; and,
- Secure favorable policies, legislation and regulations for district energy.

### **Interest in Collaboration**

Yes, definitely. Robert Thornton is well aware of ENMAX activities in Alberta. IDEA is associated with the Canadian District Energy Association (CDEA). The two organizations are jointly preparing the 102nd IDEA Annual Conference and Trade Show: District Energy/CHP (combined heat and power) 2011 in Toronto next June.

### **Narrative**

Information is shared through conferences and online resources. Specific technologies include district energy, CHP, district cooling and district heating.

Established in 1909, IDEA is an industry association and advocacy arm that has 1300 members from 27 countries. IDEA promotes the deployment of district energy systems, including back pressure turbines, high efficiency chillers, and cooling tower. Those technological concepts require a significant amount of data collection and analysis, and involve a broad spectrum of technologies.

The International Energy Agency and the Intergovernmental Panel on Climate Change have identified district energy as a strategic program to be implemented to reduce emissions through thermal storage and deep water lake cooling. IDEA heralds that district energy is a proven system - either through combined heat power (CHP) system, biomass energy, or lake cooling - and it produces dramatic savings.

Information is shared among members through conferences, webinars, newsletters, briefings and magazines ("District Energy"). IDEA's web site is also an important communications channel.

The main challenges that IDEA faces are a "broken [US] Congress," which makes policy advocacy a daunting task, the success of the fossils industry, and reaching to out an informed public. The US federal government dithers at the operational level, but there is some progress made at the institutional level, with more universities getting involved with implementing district energy on their campus.

IDEA is happy with some individual policy at state-level (such as Massachusetts and New Jersey) and installed CHP facilities at Cornell and other university campuses. IDEA has been able to encourage the U.S. Green Building Council to introduce new guidance on buildings connected to district energy. IDEA also encouraged the LEED organization to reward more points for CHP and district energy. IDEA has limited resources to implement its program, but district energy is gaining recognition as an energy efficiency solution.

IDEA is currently backing a bi-partisan bill that will include a production tax credit for thermal energy produced by putting thermal energy on an equal par with renewably produced electricity.

### **Meeting Frequency**

Annual conferences and various events. See description below.

### **Membership Requirements**

Membership applicants need to fill out a form and pay a fee. The fee varies depending on membership category, which could be one of:

- Utility: \$1300.00 - \$13 350.00
- Individuals: \$100.00
- Service providers: \$525.00 - \$1550.00
- Other categories

**Other Networks in this space**

National district energy associations

---

**Record:** 2065**Category:** Conservation and Efficiency, Energy Conservation, Conservation for New Buildings**Organization:** Concordia Center for Building Studies**Web site:** <http://cbs.encs.concordia.ca/>**Address:** Concordia University, Rm: EV-6.145**Address 2:** 1455 de Maisonneuve Blvd. West**City:** Montreal**State/Province:** Quebec**Country:** Canada**Zip/Postal Code:** H3G 1M8**Contact Title:** Director**Contact Person:** Dr. R. Zmeureanu**Phone:** 514-848-2424 Ext 3203**Fax:** 514-848-7965**Email:** [zmeur@bcee.concordia.ca](mailto:zmeur@bcee.concordia.ca)**Funding:** Private/Public**Budget:****Year Founded:** 1997**Reach:** National**Network Description**

The Centre for Building Studies (CBS) is a research centre whose goal is to conduct research that contributes to the building construction industry and that leads to buildings that are more energy efficient, comfortable, healthy, safe, and responsive to their inhabitants. The Centre for Building Studies is a research centre constituted of members who share a common interest to carry out research to contribute in the building construction industry and whose concerted actions lead to the betterment of the building (products, processes and performance), culminating in definitions for buildings of the future. These buildings will be more energy efficient, comfortable, healthy, safe and responsive to inhabitants with innovative combination of traditional and advanced construction materials as well as intelligent controls. The design of these buildings will concentrate on total performance over their life cycle by using computer-aided techniques that take into consideration factors such as wind, noise, solar energy, pollutants, and occupancy; their construction will be safe, efficient and economical.

**Goal / Objectives / Mandate**

To identify research needs in the building industry and conduct the fundamental and applied research required.

To foster multidisciplinary collaboration for the advancement of knowledge of buildings.

To document and disseminate research results and interact with industry and government to ensure that these results are speedily put to use; to cooperate in the production of standards, building code provisions, and patents.

**Interest in Collaboration**

Concordia is interested in cooperating with industry in collaborative research projects such as those involving product development or improvement, energy conservation in buildings and, more generally, optimal use of sustainable technologies in buildings; to provide technical assistance in problem solving for all involved in the building industry.

**Narrative**

To develop and operate special experimental and computational facilities to support the research programs of the Centre.

To gather, develop, and disseminate information to industry and government in a manner useful to the owners designers, contractors, building managers, manufacturers, and users of building products and facilities, to assist in product evaluation and certification.

The Centre for Building Studies was originally established as an academic unit in 1977 to conduct research in building engineering and to administer educational programs developed as a result of this research initiative. The research program in the Centre was initially funded through a Negotiated Development Grant obtained from NRC



(now NSERC) by a group of researchers in Civil Engineering; funding for a Masters program was obtained by the same group from the Ministry of Education of Quebec. In 1997 the CBS and the Department of Civil Engineering (CE) were restructured into the Department of Building, Civil and Environmental Engineering to administer the academic programs in BE and CE. The CBS remains an active research centre within the Department and continues to act as a knowledge generating engine for the discipline of building engineering. In co-operation with industry, government agencies, and other institutions, the Centre continues to make significant contributions to the planning, design, construction, operation, and renovation of the built facilities and to participate in the development of educational programs for the Department.

**Record:** 474

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for retrofitted buildings

**Organization:** Canada Green Building Council

**Web site:** <http://www.cagbc.org>

**Address:** 47 Clarence Street Suite 202

**Address 2:**

**City:** Ottawa

**State/Province:** Ottawa

**Country:** Canada

**Zip/Postal Code:** K1N 9K1

**Phone:** 613-241-1184

**Fax:** 613-241-4782

**Email:** [info@cagbc.org](mailto:info@cagbc.org)

**Year Founded:** 2003

**Reach:** National

#### Network Description

The Canada Green Building Council (CaGBC) was created in 2003 to further the expansion of green building in Canada. The Canadian Green Building Council is dedicated to promoting the LEED rating system. The CaGBC aims to support the performance improvement of 100,000 buildings and 1,000,000 homes across Canada by 2015, with a verified 50% reduction in energy and water use from a 2005 baseline. They do this through market based solutions and provision of tools to industry and partners.

#### Goal / Objectives / Mandate

To advance environmentally responsible design, construction and operation of our built world. The Council will work to:

- Change industry standards;
- Develop best design practices and guidelines;
- Advocate for green buildings; and,
- Develop educational tools to support its members in implementing sustainable design and construction practices.

#### Interest in Collaboration

#### Narrative

Information is shared through publications, online postings, workshops, and a national conference. Several programs are in place to meet their aims.

#### Meeting Frequency

Provides Courses, Programs, Workshops and has multiple chapters throughout Canada.

**Record:** 426

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for retrofitted buildings

**Organization:** BC Sustainable Energy Association

**Web site:** <http://www.bcsea.org/>

**City:** Victoria

**State/Province:** BC

**Country:** Canada      **Zip/Postal Code:** V8Z 4B9

**Contact Title:**

**Contact Person:** Peter Ronald

**Phone:** 250-744-2720      **Fax:**      **Email:** info@bcsea.org or pronald@BCSEA.org

**Funding:** Private

**Budget:**

**Year Founded:** 2003

**Reach:** Provincial

**Network Description**

The British Columbia Sustainable Energy Association, or BCSEA, is a non-profit association of citizens, professionals and practitioners committed to promoting the understanding, development and adoption of sustainable energy, energy efficiency and conservation in British Columbia.

**Goal / Objectives / Mandate**

Vision is a future in which all of BC's energy comes from clean, renewable, efficient sources. Their mission is to facilitate the transition to a sustainable energy future through education, advocacy and tangible community projects.

**Narrative**

The BCSEA relies on donations, membership fees, grants and other forms of revenue to maintain its core operations and deliver its programs. They strive to diversify revenue sources and keep administration and overhead costs low. Information is shared at local chapters, meetings, events, conferences and online resources. The BCSEA has hundreds of individual, business and agency members. They have regular chapter meetings, an actively updated web site and regular electronically circulated publications. They have initiatives such as SolarBC, 100, 000 Solar Roofs, the Climate Change Game, Climate and Energy Solutions Webinars, Clean Energy Classrooms, Green Landlords Project, Building Stock Retrofit Program, Vision 2030 and Sustainable Energy Policies and Sustainable Energy Solutions for BC.

**Meeting Frequency**

Local chapters throughout B.C. Promotes events and conferences in British Columbia. (i.e Cangea)

**Membership Requirements**

Varies from individual to organization sign-ups. Different fees associated with them. Must fill out form and pay fee.

**Affiliates / Affiliates area of expertise**

Canadian Renewable Energy Association (CanREA)

Canadian Solar Industries Association (CanSIA)

Canadian Wind Energy Association (CanWEA)

Climate Action Network Canada (CANet)

KyotoPLUS

Livable Region Coalition (LRC)

NorthWest Energy Coalition (NWECC)

Oil Free Coast Alliance

Organizing for Change: Priorities for Environmental Leadership (OFC)

---

**Record:** 739

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for retrofitted buildings

**Organization:** IEA Energy Conservation in Building and Community Design

**Web site:** <http://www.ecbcs.org/>

**Address:** 1200 Montreal Road (M-20)

**Address 2:**



## IEA Buildings-Related Implementing Agreements

- \* IEA Buildings-Related Implementing Agreements

## Other IEA Links

- \* Solar Power and Chemical Energy Systems Programme (SolarPACES)
- \* Wind Turbine Systems
- \* Coal Research
- \* Greenhouse Gas R&D Programme (GHG)
- \* Future Building Forum

---

**Record:** 1232

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for retrofitted buildings

**Organization:** National Institute of Building Sciences

**Web site:** <http://www.nibs.org/>

**Address:** 1090 Vermont Avenue NW, Suite 700

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** USA

**Zip/Postal Code:** 20005

**Phone:** 202-289-7800

**Fax:** 202-289-1092

**Email:** [nibs@nibs.org](mailto:nibs@nibs.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1974

**Reach:** National

### Goal / Objectives / Mandate

The Institute's public interest mission is to serve the nation by supporting advances in building science and technology to improve the built environment.

### Narrative

Information is shared through online resources and events. The NIBS has Whole Building Design Guide which is a web-based portal providing government and industry practitioners with one-stop access to up-to-date information on a wide range of building-related guidance, criteria and technology from a 'whole buildings' perspective.

### Meeting Frequency

Has the Whole Building Design Guide Program.

<http://www.wbdg.org/about.php>

### Membership Requirements

Individuals are eligible to become either public interest or industry sector members. Sustaining and contributing organizations may designate up to five individuals to be institute members. The membership classifications are defined as follows:

Institute Member-Public Interest

Open to any individual employed by, or otherwise affiliated with government, consumer organizations, non-profit research and educational organizations, or the media; and architects, professional engineers or other design professionals who are not employees of nor have a financial interest in corporate organizations that produce, sell, distribute or install building products or materials; and retirees (from public interest or industry sector).

Annual Dues: \$75 (US)

Institute Member-Industry

Open to any individual not qualifying for membership in the "public interest sector" and including persons employed by or otherwise associated with construction, labor organizations, home builders, building or construction contractors; producers, distributors or manufacturers of building products; trade and professional associations; organizations engaged in real estate, finance or research and testing of building products; and code and standards organizations.

Annual Dues: \$150 (US)

Sustaining Organization

Open to any corporation, trade or professional association, government agency, non-profit organization, individual or others desiring to provide additional support for and participation with the Institute to achieve the goals and objectives established by U.S. Congress (Public-Law 93-383). Sustaining organizations may designate up to five individuals from their organization to be Institute Members.

Annual Dues: \$1000 (US)

Contributing Organization

Organizations making an exceptional membership commitment to the Institute are afforded the same rights and privileges as sustaining organizations and such other rights and privileges as authorized by the Board of Directors.

Annual Dues: \$5000 (US)

**Record:** 1249

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for retrofitted buildings

**Organization:** National Research Council Canada - Institute for Research in Construction

**Web site:** <http://www.nrc-cnrc.gc.ca/eng/ibp/irc/sbe/index.html>

**Address:** 1200 Montreal Road, Bldg. M-58                      **Address 2:**

**City:** Ottawa    **State/Province:** Ontario

**Country:** Canada    **Zip/Postal Code:** K1A 0R6

**Contact Title:**

**Contact Person:** info@nrc-cnrc.gc.ca

**Phone:** 1-877-672-2672    **Fax:** 613-952-9907                      **Email:**

**Funding:** Private/Public    **Budget:**

### Network Description

NRC-IRC is looking buildings and urban infrastructure from the aspect of a Sustainable Built Environment (SBE), that should achieve the three objectives of environmental compatibility, economic viability and social responsibility. The program focuses on:

- residential, institutional, and commercial buildings
- urban road, tunnels, and concrete bridges
- water distribution and sewage networks

### Goal / Objectives / Mandate

NRC-IRC's Strategic Plan for introduced new initiatives to reorganize and expand activities addressing sustainability and climate change, to align more clearly with current industry and government priorities. The first stage was to identify a few key technology needs for SBE, and to seek stakeholder consensus on priority research issues.

NRC-IRC has begun to reorganize its cross-program multi-disciplinary competencies and linkages to other NRC initiatives, to focus significant resources to deal with identified priorities:

NRC-IRC's Centre for Sustainable Infrastructure Research in Regina will be a key player and example in this area.

As outlined in the rationale for the research focus, research and technology transfer activities will be focused on three overlapping themes:

Climate Change

"Green" Buildings

Life Cycle Performance

**Interest in Collaboration**

NRC does collaborative work in the form of any of the following agreements: Service Agreements ("Fee-for-Service" or "FFS"), Collaborative Research Agreements, Contracting-Out (Procurement), Contribution Arrangements and License Agreements.

**Narrative**

Projects being

GIS-based maintenance management of building facades

High-performance building envelope systems North of 60

High-performance thermal insulation systems for buildings

Supplementary cementing materials

## Conservation and Efficiency – Energy Efficiency for Transportation

Super Networks Operating in this area include the following:  
Pacific Northwest National Laboratory

**Record:** 2051

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for Transportation

**Organization:** Electric Mobility Canada

**Web site:** <http://www.emc-mec.ca>

**Address:** Electric Mobility Canada, Suite 309, 9-6975 Meadowvale Town Centre Circle

**Address 2:**

**City:** Mississauga

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** L5N 2V7

**Contact Title:** Executive Director

**Contact Person:** Al Cormier

**Phone:** 416-970-9242

**Fax:** 905 858 9291

**Email:** [al.cormier@emc-mec.ca](mailto:al.cormier@emc-mec.ca)

**Year Founded:** N/A

**Reach:** National (Canada)

### Network Description

Electric Mobility Canada is a national membership-based not-for-profit organization dedicated exclusively to the promotion of electric mobility as a readily available and important solution to Canada's emerging energy and environmental issues. EMC is now Canada's dominant clean transportation industry association.

Electric Mobility is defined as including all surface transportation, including off-road vehicles using electric drive technologies provided by:

- Battery operated (including ultra capacitors)
- Grid connected (tethered)
- Hybrid
- Fuel Cells

### Goal / Objectives / Mandate

The mission of Electric Mobility Canada is to establish electric mobility, in all its forms, as the primary solution to Canada's growing transportation energy issues and to assist its members in the fulfillment of their mandates.

The Vision for Electric Mobility Canada is a Canadian society that accepts electric mobility, in all its forms, as the first choice for the transport of persons and goods. This has been achieved through collaborative efforts between government at all levels and the private sector supported by an informed public faced with increasing energy costs and concerned about the impacts of burning fossil fuels on the environment and quality of life.

Our goals are to:

1. Raise public understanding of the larger issues affecting transport and create and maintain a positive image for the electric mobility industry.
2. Define and establish the government and industry partnerships necessary to introduce electric mobility technologies as appropriate to achieve societal, economic, and transport objectives.
3. Identify the actions required by industry and government agencies to accelerate the implementation of electric mobility. These actions could include research, funding, incentives, demonstrations, policies, regulations, etc.
4. Secure funding and the necessary partnerships for an on-going research program to deal with technical and other issues related to the advancement of electric mobility.
5. Provide members with current intelligence about the environment in which they do business, and develop strategies to assist them in successfully managing relevant issues.
6. Maximize member access to information on technical and operational matters.

7. Assist members to improve the efficiency, effectiveness, and overall competitiveness of their services and products.
8. Maintain strong ties with other transportation industry stakeholders.

### Interest in Collaboration

Yes

### Narrative

Electric Mobility Canada's current main project is implementing the Electric Vehicle Technology Roadmap for Canada (evTRM), a project that involves more than 50 people and 5 groups within the implementation committee. The evTRM involves developing technologies, policies, regulations in order to accelerate the introduction of electric traction vehicles in Canada.

The main challenge EMC is facing is coordinating all his projects with limited resources, and selling the idea of the suitability of electric vehicles to officials in Ottawa, as well as pushing regulations forward.

### Membership Requirements

Our membership includes:

- Private sector companies engaged in the sale or distribution of vehicles or components or the delivery of professional services. These members represent all modes of surface transportation from bicycles to trains.
- Providers of electric energy at the provincial and local levels
- Managers of fleets from private sector companies, governments agencies and others
- Related associations, societies, research centres, labour organizations
- Individual supporters

**Record:** 125

**Category:** Conservation and Efficiency, Energy Efficiency, Energy Efficiency for transportation

**Organization:** CNTA (Centre National du Transport Avancé)

**Web site:** <http://cnta.ca>

**Address:** 128, rue de la Gare

**Address 2:**

**City:** Saint-Jerome

**State/Province:** Quebec

**Country:** Canada

**Zip/Postal Code:** J7Z2C2

**Contact Title:** Administrative Director

**Contact Person:** Yves Gagnon

**Phone:** 450-431-5744

**Fax:** 450-431-6403

**Email:** [ygagnon@cnta.ca](mailto:ygagnon@cnta.ca)

**Funding:** Private/Public

**Budget:** N/A

**Year Founded:** 1996

**Reach:** Provincial (Quebec)

### Network Description

The National Center of Advanced Transportation, formerly known as CEVEQ (Centre d'Expérimentation des Véhicules Electriques), is an independent non-profit centre that offers businesses, governments and municipalities to ease the entry to market for electrical and hybrid vehicles by supporting innovation, experimentation and promotion of products and services.

### Goal / Objectives / Mandate

The mission of the CNTA is to promote hybrid or electric vehicle (EV) usage (car, bus, truck, bike, boat, etc.) in order to provide environmental, industrial, and power benefits.

The objectives of CNTA are to:

- Leave better technologies and systems for a healthier environment for future generations;



- Contribute to the development of a network of excellence for the development of advanced transportation;
- Promote sustainable urbanization that responds to questions raised by mobility in cities;
- Increase transfers of technology and expertise with other regions of the world, particularly France; and,
- Promote the manufacture and introduction to the market of efficient and non-polluting means of transportation, individual and public.

**Interest in Collaboration**

Collaboration through Electric Mobility Canada, as CNTA mandate is provincial.

**Narrative**

CNTA's goals are to develop new methods to transform traditionally powered vehicles and equipment to electricity power. Prototypes are developed and integrated in collaboration with industrial partners. CNTA works closely with its clients and partners to adapt existing products to very specific needs, and thus offers different types of services, including project management and product certification.

CNTA's recent successes include the development in 2007 of the electricity-powered Ecolobus for Quebec City 400th anniversary. Eight buses were produced from an original Italian model. CNTA and its partner, Posi-Plus Technologies, have also developed recently electrical giraffes [editor's note: are we sure that "giraffe" is the correct term?] used for electrical grid maintenance. CNTA currently works on adapting a 23-seat minibus to electrical power.

CNTA's board of directors includes industrial, university and government partners. Its scientific committee meets four times a year. It serves as a sharing and networking place.

Pierre Lavallee, CNTA general director, helped in the founding of Electric Mobility Canada (<http://emc-mec.ca/en/home.php>) and is an EMC board member. (CCEMC partnership is more likely with EMC, as CNTA has a provincial mandate.)

A short list of achievements and abstracts is available online and includes the following:

- Electric minibus tested in Quebec City (French only);
- Accord Laurentides - Advanced land transportation (French only);
- Evaluation of Segway HT;
- Assessment of Low-Speed Electric Vehicles;
- Electric Bike 2000.

**Meeting Frequency**

Four times per year

**Membership Requirements**

No members, but partners.

**Other Networks in this space**

Electric Mobility Canada

**Affiliates / Affiliates area of expertise**

Electric and hybrid vehicle

Technical services (design, fuel conversion, testing)

---

**Record:** 2044

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for Transportation

**Organization:** Centre for Transportation Technologies and Systems - National Renewable Energy Laboratory (NREL)

**Web site:** <http://www.nrel.gov/vehiclesandfuels/ctts.html>

**Address:** 1617 Cole Blvd.                      **Address 2:**  
**City:** Golden                                      **State/Province:** Colorado  
**Country:** USA                                      **Zip/Postal Code:** 80401-3393

**Contact Title:** Center Director  
**Contact Person:** Barbara Goodman  
**Phone:** 303-275-4455    **Fax:** 303-275-3765                      **Email:** barbara.goodman@nrel.gov

**Funding:** Private/Public                      **Budget:** USD35 Million  
**Year Founded:**                                      **Reach:** National

### **Network Description**

NREL's advanced vehicles and fuels research area has a diverse team of engineers and scientists that have research expertise in many aspects of advanced transportation systems, including vehicle components, systems development and optimization, vehicle simulation, fuels research and development, fleet evaluations, emissions, and air quality. They work with manufacturers, fleets, and consumers by providing technical assistance, tools, and information to make informed decisions and solve operational problems.

Their engineers and scientists employ state-of-the-art laboratory capabilities and techniques to help industry with prototype development to move it to the marketplace. All our laboratory facilities offer unique testing and validation equipment. In addition, their modeling and analysis capabilities and tools help us make intelligent choices about efficient strategies to advance vehicles and fuels.

### **Goal / Objectives / Mandate**

At NREL, the Center for Transportation Technologies and Systems (CTTS) works toward developing advanced vehicle and fuel technologies and moving them from research and development to the marketplace. Our mission is to reduce the nation's dependence on foreign oil supplies, while improving air quality, by developing and demonstrating innovative technologies that allow alternative fuels and advanced vehicle systems to supply a significant portion of the nation's transportation needs. National goal of reducing oil consumption by 30% by the year 2030.

Program areas included Advanced Vehicles, Fuels Performance, and Ethanol

The following projects are currently being worked on:

NREL's advanced vehicles and fuels research projects support our mission to reduce the nation's dependence on foreign oil and improve air quality by developing and demonstrating innovative advanced vehicle systems and fuels technologies.

Our work brings innovation and technical value through partnerships with light, medium, and heavy vehicle manufacturers, equipment suppliers, fuel providers, and others who are working to develop and commercialize advanced technology and alternative fuel vehicle systems and fuels that meet our nation's energy and environmental goals.

Advanced Heavy Hybrid Propulsion Systems

Advanced Petroleum Based Fuels

Energy Storage

Fleet Test and Evaluation

Fuel Cells and Hydrogen

Hybrid Electric and Fuel Cell Vehicles

New Fuels Technology Impacts

Nonpetroleum-Based Fuels

Power Electronics

ReFUEL Laboratory

Regulatory Support

Safety, Codes, and Standards

Secure Transportation Data

Technology Integration

Vehicle Ancillary Loads Reduction  
Vehicle Systems Analysis

**Interest in Collaboration**

Interaction with industrial, university, and government partners is key to moving advanced vehicle and fuels technologies into the marketplace and the U.S. economy. There are a variety of ways to get involved with NREL's advanced vehicle and fuels research activities:

Work collaboratively with NREL through a variety of Technology Partnership Agreements. NREL can assist you in selecting which agreement is most appropriate for your research project.

Gain access to the Center for Transportation Technologies and Systems expertise and specialized research facilities through an Analytical Services Agreement (ASA).

In addition, NREL's patented transportation technologies are available for commercialization and NREL's world-class advanced vehicle and fuels laboratory facilities are available to industrial, university, and government researchers.

**Narrative**

CTTS' diverse team of engineers and scientists are focused in three groups. Expertise is also provided to the Center from the NREL managers of the Vehicle Technologies, Fuel Cell Technologies, Weatherization and Intergovernmental, and Biomass Programs.

The Advanced Vehicle Systems Group conducts research and development on vehicle ancillary loads reduction, vehicle systems analysis, energy storage, power and propulsion systems, and advanced power electronics. NREL supports these research and development areas through program planning and technical oversight as well as experimentation, modeling and analysis, development, and demonstration of advanced vehicle enabling technologies.

The Technology Integration and Utilization Group evaluates the performance of new vehicle and fuel technologies as they move into commercial use, and works with industry to develop technical solutions and support to overcome problems that may result. Analysis of market and industry trends helps shape future technical programs and identify promising opportunities. Information in print and electronic format helps educate users and enable informed decision-making.

The Fuels Performance Group applies its expertise in fuels, lubricants, and emission control system technologies to guide relevant research and development in support of activities such as the Advanced Petroleum Based Fuels project. NREL also works on renewable fuels and lubricants, alternative fuel vehicle, engine, and infrastructure research and development, demonstration, and deployment. NREL has an on-site facility (the ReFUEL laboratory) to support fuels research as well as the capabilities to evaluate the environmental impacts of conventional and advanced vehicles.

The program director indicated that one of the issues with the funding is that it is typically an annual or competitive process and programs lose momentum. They are looking for long-term sustained funding.

**Other Networks in this space**

MIT, UC Davis, Other National Labs. South West Research Institute in San Antonio.

**Affiliates / Affiliates area of expertise**

FORD, GM, TOYOTA, HONDA, CARB, Oakridge National Lab, CEC, Oil Industry

---

**Record:** 2

**Category:** Conservation and Efficiency, Energy Conservation, Conservation for Transportation

**Organization:** Oak Ridge National Laboratory (ORNL)

**Web site:** <http://www.ornl.gov/sci/ees/etsd/index.shtml>

**Address:** P.O. Box 20008

**City:** Oakridge

**Country:** USA

**Address 2:**

**State/Province:** Tennessee

**Zip/Postal Code:** 37831-6168

**Contact Title:** Laboratory Director

**Contact Person:** Dr. Thomas E. Mason

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1943

**Reach:** National

### **Network Description**

Oak Ridge National Laboratory is the Department of Energy's largest science and energy laboratory. It is managed in partnership with the University of Tennessee and Battelle. ORNL has six major mission roles: neutron science, energy, high-performance computing, systems biology, materials science at the nanoscale and national security. The Energy and Transportation Science Division offers four distinct research centers, a) Building Technologies Research and Integration, Power Electronics and Electrical power Systems Research, Fuels, Engines and Emissions Research as well as Center for Transportation Analysis.

Industry can enter into a working agreement with ORNL and DOE pays the lab costs. ORNL also has informal partnerships and collaborations where information is exchanged or staff are exchanged.

### **Goal / Objectives / Mandate**

The mission of the Energy and Transportation Science Division is to develop and deploy knowledge and technology that enables the transformation of our energy systems in a manner that allows America to achieve energy independence, energy security, global economic leadership and environmental sustainability.

### **Narrative**

Oak Ridge National Laboratory (ORNL) is a multi-program science and technology laboratory managed for the US Department of Energy by the UT-Battelle, LLC. Scientist and engineers at ORNL conduct basic and applied research and development to create scientific knowledge and technological solutions that strengthen the nation's leadership in key areas of science; increase the availability of clean, abundant energy; restore and protect the environment; and contribute to the national security of the US.

ORNL works under partnerships of the following types:

Cooperative Research and Development Agreement (CRADA), Licensing Agreements, and Material Transfer Agreement and other forms.

### **Membership Requirements**

Must enter into an agreement with the ORNL

### **Affiliates / Affiliates area of expertise**

Department of Energy, National Renewable Energy Laboratory

## Conservation and Efficiency – Sustainable Communities

The following super networks have emphasis on the areas of sustainable communities:

Integrated Deployment Projects - National Renewable Energy Laboratory (NREL)

CanmetENERGY – Natural Resources Canada

**Record:** 1036

**Category:** Conservation and Efficiency, Energy Conservation, Community Design

**Organization:** International Centre for Sustainable Cities

**Web site:** <http://sustainablecities.net/>

**Address:** 205-1525 West 8th Avenue

**Address 2:**

**City:** Vancouver

**State/Province:** BC

**Country:** Canada

**Zip/Postal Code:** V6J 1T5

**Phone:** 604-569-0965

**Fax:** 604-569-0975

**Email:** [info@icfg.ca](mailto:info@icfg.ca)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1993

**Reach:** International

### Network Description

A network of more than 40 cities and communities around the world who share their learning and best practices on long-term integrated sustainability planning through exchanges and events.

### Goal / Objectives / Mandate

Sustainable Cities is a small catalytic organization that tackles the daunting challenges of urban sustainability. Headquartered in Vancouver, Canada, with an active network of over 40 cities in 14 countries, Sustainable Cities is a think tank and a "do tank," delivering results through practical demonstration projects and peer learning networks, and scaling those lessons out through affiliations and high-profile events.

Plus provides the following services/support for its members:

- Assists cities to improve their planning processes by helping prioritize short term strategies and goals within a long-term context;
- Generates knowledge through sharing experiences, tools and innovations among diverse member cities and communities through peer exchanges and a web-based network.
- Assists with developing and applying practical long-term planning models, tools and techniques; and,
- Shares experiences with benchmarks, measurable indicators and action plans.

### Narrative

The Sustainable Cities: PLUS Network catalyzes action on urban sustainability through integrated long-term planning and demonstration projects in cities around the world. Member cities of the PLUS Network commit to building on their existing planning process through the use of a long-term lens. While each city's approach is different, the process typically includes developing 50 to 100 year visions, with 30 year strategies, and five year implementation plans. Each city or region identifies at least one immediate demonstration project that will revitalize and renew the community. Members participate in regular peer exchanges, which give them opportunities to share their work and learn from one another's experiences related to city and community planning issues.

PLUS Network helps cities to be resilient in the face of economic, ecological and social shocks and stresses. The PLUS Network conducts member surveys to evaluate the services it provides to members and to understand better how learning about urban sustainability among cities can be enhanced.

The PLUS Network facilitates professional sharing which helps communities avoid costly mistakes as they benefit from one another's lessons. The benefits of the PLUS Network reach beyond member cities and have positive impacts and financial gains for industries and businesses that support sustainable initiatives. Working together to tackle urban issues ensures that planners and policy makers address the economic, social and environmental needs of developers, businesses and future residents.

The International Centre for Sustainable Cities (ICSC) in Vancouver, Canada, serves as Secretariat for the PLUS Network. The PLUS Network also counts on its Members Steering Committee and an International Panel of Advisors, a team of consultants from citiesPLUS, the IGU competition, The Natural Step and others, who provide regular support to the Network.

### Meeting Frequency

Members meet face-to-face every two years and recount their successes and setbacks. These meetings are often in conjunction with high-profile international events, such as the World Urban Forum. The next Biennial Conference is scheduled for 2010.

### Membership Requirements

Members consist of cities and communities.

**Record:** 675

**Category:** Conservation and Efficiency, Energy Conservation, Community design

**Organization:** Community Research Connections (CRC)

**Web site:** <http://www.crcresearch.org/>

**Address:** 2005 Sooke Road

**Address 2:**

**City:** Victoria

**State/Province:** British Columbia

**Country:** Canada

**Zip/Postal Code:** V9B 5Y2

**Contact Title:** Professor, School of Environment and Sustainability

**Contact Person:** Ann Dale

**Phone:** 250-391-2600 x4117

**Fax:** 250-391-2587

**Email:** [ann.dale@royalroads.ca](mailto:ann.dale@royalroads.ca)

**Funding:** Private

**Budget:**

**Year Founded:**

**Reach:** National

### Network Description

Governance for Sustainable Development

Gender and Sustainable Development

### Goal / Objectives / Mandate

CRC research is dedicated to building civic literacy and useful knowledge for integrated decision-making around critical public policy issues, particularly sustainable community development. CRC is committed to timely research dissemination, sharing our intellectual capital on the ground, and to creating novel e-communities of commitment, passion and excellence around sustainable community development.

## Conservation and Efficiency – Battery Storage

**Record:** 307

**Category:** Conservation and Efficiency, Energy Conservation, Power storage (on-site and battery)

**Organization:** California Energy Storage Alliance (CESA)

**Web site:** <http://storagealliance.org/index.html>

**Address:** 2150 Allston Way, Suite 210

**Address 2:**

**City:** Berkeley

**State/Province:** CA

**Country:** U.S

**Zip/Postal Code:** 94704

**Contact Title:** Co-Founder and Director

**Contact Person:** Janice Lin

**Phone:** 510-665-7811

**Funding:** Private

**Budget:**

**Year Founded:** 2009

**Reach:** State Only

### Network Description

Members Include:

Executive/Steering Committee Members: Altair Nano, East Penn International, Beacon Power, Chevron, Fluidic Energy, Ice Energy, and Xtreme Power.

Associate Members: A123 Systems, Deeya Energy, EnerSys, International Battery, Prudent Energy, PVT Solar, RE Store Energy Systems, Samsung SDI, and Suntech.

General Members: Debenham Energy LLC, EnerVault, Powergetics, Primus Power, Seed Sunverge, and Sustain X.

Friends Include: Joint Venture Silicon Valley Network, and Energy Storage.

### Goal / Objectives / Mandate

California Energy Storage Alliance (CESA) is committed to the rapid expansion of energy storage to promote growth of renewable energy and a more reliable and secure electric system.

### Interest in Collaboration

Yes. Policy work is critical. Trying to change status quo. Only source of funding is membership fees. Would be happy to work with CCEMC. Members collaborate at meetings and share information.

### Narrative

CESA is committed to the rapid expansion of energy storage to promote growth of renewables. CESA represents industry and stakeholders, focuses on developing the energy storage market, and organizing industry stakeholders to make investments. CESA recently contributed to the passage of the first ever new law passed on energy storage (AB 2514), which will be implementing over the next few years.

Information is shared through committees, meetings and online resources. CESA has excellent relationships with renewable energy industry, decision makers, and utilities. The organization is constrained financially, as members fees are the only source of funding. Working to change policy status quo to optimize renewable assets by focusing on energy storage.

### Meeting Frequency

Based on membership. Email list, monthly call lasts one hour, subgroups meet when needed, and every two years meet in person.

### Membership Requirements

Executive Member/Steering Committee:

- Participate in Founding Member Steering Committee, set organizational charter/policy and priorities;
- Ability to lead key committee efforts;
- Ability to participate in meetings with key stakeholders in the legislature at the CPUC, CEC and Attorney General's Office;
- Participate on all policy calls;
- Prominence on CESA web site, including direct link to company homepage; and,
- Access to members-only information, minutes from CESA monthly policy calls and regular announcements.

**Associate Member:**

- Participate on all policy calls;
- Prominence on CESA web site, including direct link to company homepage; and,
- Access to members-only information, minutes from CESA monthly policy calls and regular announcements.

**General Membership:**

- Listed on CESA web site; and,
- Access to members-only information, minutes from CESA monthly policy calls and regular announcements.

**Other Networks in this space**

Texas Energy Storage Alliance

**Record:** 774

**Category:** Conservation and Efficiency, Energy Conservation, Power Storage (on-site and battery)

**Organization:** Electricity Storage Association

**Web site:** <http://www.electricitystorage.org/ESA/home/>

**Address:** 1155 15th Street, NW, Suite 500

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** U.S

**Zip/Postal Code:** 20005

**Phone:** **Fax:** **Email:** [info@electricitystorage.org](mailto:info@electricitystorage.org)

**Year Founded:** 1991

**Reach:** National

**Goal / Objectives / Mandate**

The Electricity Storage Association (ESA) is an international trade association established to foster development and commercialization of energy storage technologies. Their mission is to promote the development and commercialization of competitive and reliable energy storage delivery systems for use by electricity suppliers and their customers. To accomplish this, ESA has identified the following objectives:

- Promote the commercial application of energy storage technologies as solutions to power and energy problems;
- Co-ordinate and attract international interest and involvement in energy storage;
- Provide a forum for technical and commercial information exchange between suppliers, customers, and researchers.

**Meeting Frequency**

Conferences, workshops, seminars. Annual meeting.

**Membership Requirements**

ESA members represent

- Electric utilities, ESCOs, IPPs;
- Technology developers involved with advanced batteries, flywheels, CAES, pumped hydro, supercapacitors and component suppliers, such as power conversion systems; and,
- Researchers committed to advancing the state of the art in energy storage solutions.



---

**Record:** 796

**Category:** Conservation and Efficiency, Energy Conservation, Power storage (on-site and battery)

**Organization:** Energy Storage Council

**Web site:** <http://www.energystoragecouncil.org/>

**Address:** 3963 Flora Place, 2nd Floor

**Address 2:**

**City:** St. Louis

**State/Province:** MO

**Country:** USA

**Zip/Postal Code:** 63110

**Phone:** 314-363-4546

**Fax:**

**Email:** [info@energystoragecouncil.org](mailto:info@energystoragecouncil.org)

**Reach:** National

### Network Description

Coalition to Advance Renewable Energy through Bulk Storage (<http://www.carebs.org/>)

### Goal / Objectives / Mandate

The Energy Storage Council was founded to promote the research, development and deployment of storage technologies as well as to raise awareness of the importance of storage for the future of America's electricity supply and energy security.

ESC believes that energy storage is the "sixth dimension" of the new electricity value chain (along with fuels/energy sources, generation, transmission, delivery, and customer energy services) and the critical link in making electricity work better.

ESC's objectives are to ensure that the benefits of energy storage are fully realized by identifying, creating and executing programs that integrate energy storage into the national and state legislative agendas for energy production and delivery, environmental management, infrastructure, commerce, and national security.

### Narrative

Information is shared through online publishings, articles and presentations. Technology reviewed includes large-scale pumped-hydro storage and compressed air energy storage (CAES) to smaller technologies such as batteries, flywheels and electrochemical capacitors.

---

**Record:** 1487

**Category:** Conservation and Efficiency, Energy Conservation, Power storage (on-site and battery)

**Organization:** Energy Storage Systems - US Department of Energy

**Web site:** <http://www.sandia.gov/ess/index.html>

**Address:** Sandia National Laboratories

**Address 2:**

**City:** Livermore

**State/Province:** California

**Country:** U.S

**Zip/Postal Code:** 94551-0969

**Contact Title:** Energy Storage Systems Program Manager

**Contact Person:** Dr. Imre Gyuk

**Phone:** 202-586-1482

**Fax:** 202-586-5860

**Email:** [imre.gyuk@hq.doe.gov](mailto:imre.gyuk@hq.doe.gov)

**Funding:** Private

**Budget:**

**Year Founded:**

**Reach:** National

### Network Description

The DOE-ESS Program works in conjunction with the following organizations:

- Electricity Storage Association (ESA)

- Energy Storage Council (ESC)
  - Institute of Electrical and Electronic Engineers (IEEE) - Working Group Areas
  - IEEE - Power Electronics Society (PELS)
- Center for Power Electronics

**Goal / Objectives / Mandate**

The goal of the ESS program is to develop advanced energy storage technologies and systems, in collaboration with industry, to increase the reliability, performance and competitiveness of electric generation, transmission and use in utility tied and off-grid systems.

**Interest in Collaboration**

The Department of Energy Energy Storage System (DOE-ESS) Research Program collaborates with a variety of technology transfer partners from industry, utility companies, academia, and government agencies. These collaborations include cost-shared R&D projects, development of codes and standards, and information dissemination activities.

The collaborations include federal projects with the US Coast Guard and the US Navy. State programs include the California Energy Commission (CEC), the New York State Energy Research and Development Agency (NYSERDA), and others.

**Narrative**

Energy storage technologies being explored by the ESS project include the following.

Specific battery technologies include:

- Lead-acid batteries,
- Li-ion (lithium ion) batteries,
- Metal-air batteries,
- NaS (sodium sulfur) battery,
- VRB (vanadium redox flow) battery,
- ZnBr (zinc bromine flow battery),
- Flywheels.

Specific Power Conversion System projects include:

- An advanced power converter system using high temperature and high power density SiC devices;
- High power density (100 kW) silicon carbide (SiC) three-phase inverters;
- Large area silicon carbide;
- GTO thyristor development;
- Development and validation of advanced energy management control algorithms for short - or long-term energy storage;
- Advanced power devices and converters;
- Scale model demonstration of storage in customer-driven microgrids;
- High temperature fully programmable power controller for high density power electronics; and,
- Power electronics reliability.

Information is shared through events, conferences, workshops and updates on their web site.

**Meeting Frequency**

Will present updates on R&D from time to time. Promotes other related events.

**Affiliates / Affiliates area of expertise**

The DOE-ESS program is part of the Office of Electricity Delivery and Energy Reliability.

## Carbon Capture and Storage – CO2 Compression

**Record:** 1041

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Compression

**Organization:** International Energy Agency (IEA)

**Web site:** <http://www.iea.org/index.asp>

**Address:** 9, rue de la Federation 75739 Cedex 15

**Address 2:**

**City:** Paris

**State/Province:**

**Country:** France

**Zip/Postal Code:**

**Contact Title:**

**Contact Person:** Tom Kerr

**Phone:** (+33 1) 40-57-67-84

**Fax:** (+33 1) 40-57-65-09

**Email:** [info@iea.org](mailto:info@iea.org)

**Funding:** Public

**Budget:** 26 Million Euros

**Year Founded:** 1973-74

**Reach:** International

### Network Description

Spans countries.

### Goal / Objectives / Mandate

The member countries of the International Energy Agency (IEA) seek to create conditions in which the energy sectors of their economies can make the fullest possible contribution to sustainable economic development and to the well-being of their people and of the environment. In formulating energy policies, the establishment of free and open markets is a fundamental point of departure, though energy security and environmental protection need to be given particular emphasis by governments. IEA countries recognize the significance of increasing global interdependence in energy. They therefore seek to promote the effective operation of international energy markets and encourage dialogue with all participants.

In order to secure their objectives, member countries therefore aim to create a policy framework consistent with the following goals:

- 1) Diversity, efficiency and flexibility within the energy sector are basic conditions for longer-term energy security: the fuels used within and across sectors and the sources of those fuels should be as diverse as practicable. Non-fossil fuels, particularly nuclear and hydro power, make a substantial contribution to the energy supply diversity of IEA countries as a group.
- 2) Energy systems should have the ability to respond promptly and flexibly to energy emergencies. In some cases this requires collective mechanisms and action: IEA countries co-operate through the Agency in responding jointly to oil supply emergencies.
- 3) The environmentally sustainable provision and use of energy are central to the achievement of these shared goals. Decision-makers should seek to minimize the adverse environmental impacts of energy activities, just as environmental decisions should take account of the energy consequences. Government interventions should respect the "polluter pays" principle where practicable.
- 4) More environmentally acceptable energy sources need to be encouraged and developed. Clean and efficient use of fossil fuels is essential. The development of economic non-fossil sources is also a priority. A number of IEA member countries wish to retain and improve the nuclear option for the future, at the highest available safety standards, because nuclear energy does not emit carbon dioxide. Renewable sources will also have an increasingly important contribution to make.

- 5) Improved energy efficiency can promote both environmental protection and energy security in a cost-effective manner. There are significant opportunities for greater energy efficiency at all stages of the energy cycle from production to consumption. Strong efforts by governments and all energy users are needed to realize these opportunities.
- 5) Continued research, development and market deployment of new and improved energy technologies make a critical contribution to achieving the objectives outlined above. Energy technology policies should complement broader energy policies. International co-operation in the development and dissemination of energy technologies, including industry participation and co-operation with non-Member countries, should be encouraged.
- 6) Undistorted energy prices enable markets to work efficiently. Energy prices should not be held artificially below the costs of supply to promote social or industrial goals. To the extent necessary and practicable, the environmental costs of energy production and use should be reflected in prices.
- 7) Free and open trade and a secure framework for investment contribute to efficient energy markets and energy security. Distortions to energy trade and investment should be avoided.
- 8) Co-operation among all energy market participants helps to improve information and understanding, and encourages the development of efficient, environmentally acceptable and flexible energy systems and markets worldwide. These are needed to help promote the investment, trade and confidence necessary to achieve global energy security and environmental objectives.

The "Shared Goals" were adopted by IEA Ministers at their 4 June 1993 meeting in Paris.

#### **Interest in Collaboration**

Yes, as outlined in the "Goal/Objectives/Mandate" section below.

#### **Narrative**

The IEA is funded by 28 member countries. National contributions are based on a formula that takes account of the size of each member's economy. The largest contributor is the United States, which provides nearly 25 percent of the budget, followed by Japan.

Information is shared through conferences, events, publications, workshops and online resources. The IEA focuses on coal, CO<sub>2</sub> capture and storage, cleaner fossil fuels, climate change, electricity, emissions trading and CDM, energy efficiency, energy indicators, energy market reform, energy policy, energy projections, energy security, environment, fusion power, greenhouse gases, G8/G20, industry, natural gas, non-OECD Countries, oil, renewable energy, sustainable development, technology, technology roadmaps, and transport.

#### **Meeting Frequency**

Multiple events on various issues in different locations worldwide.

#### **Membership Requirements**

Countries only.

#### **Affiliates / Affiliates area of expertise**

The Standing Group on Emergency Questions (SEQ)- Responsible for all aspects of IEA oil emergency preparedness and collective response to supply disruptions.

The Standing Group on the Oil Market (SOM)- Monitors and analyses short- and medium-term developments in the international oil market to help IEA Member countries react promptly and effectively to changes in market conditions.

The Standing Group on Long-Term Co-operation (SLT)- Encourages co-operation among IEA member countries to ensure their collective energy security, improve the economic efficiency of their energy sector and promote the environmental protection in provision of energy services. The SLT has established an expert body: the Working Party on Energy Efficiency.

The Standing Group for Global Energy Dialogue (SGD) - Responsible for work with countries and regions outside of the IEA membership, including China, Russia and India. Many SGD projects draw upon both regional and sectoral expertise and are carried out jointly with other IEA divisions.

The Committee on Energy Research and Technology (CERT)- Co-ordinates and promotes the development, demonstration and deployment of technologies to meet challenges in the energy sector. The CERT has established four expert bodies:

- 1) The Working Party on Fossil Fuels;
- 2) The Working Party on Renewable Energy Technologies;
- 3) The Working Party Energy End-Use Technologies; and,
- 4) The Fusion Power Co-ordinating Committee.

The IEA provides a framework for more than 40 international collaborative energy research, development and demonstration projects known as Implementing Agreements.

**Record:** 1901

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Compression

**Organization:** Southwest Research Institute (SWRI)

**Web site:** <http://www.swri.org>

**Address:** 6220 Culebra Road

**Address 2:** P.O. Drawer 28510

**City:** San Antonio

**State/Province:** Texas

**Country:** USA

**Zip/Postal Code:** 78228-0510

**Contact Title:**

**Contact Person:**

**Phone:** 210-684-5111

**Fax:**

**Email:**

**Funding:** Private/Public

**Budget:** 564 Million

#### **Goal / Objectives / Mandate**

Mission: Benefiting government, industry and the public through innovative science and technology.

Research areas include:

Aerospace Electronics and Information Technology

Applied Physics

Applied Power

Automation and Data Systems

Chemistry and Chemical Engineering

Engine, Emissions and Vehicle Research

Fuels and Lubricants Research

Geosciences and Engineering

Mechanical Engineering

Signal Exploitation and Geolocation

Space Science and Engineering

Training, Simulation, and Performance Improvement

## Carbon Capture and Storage – CO2 Transportation

**Record:** 1034

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Transportation

**Organization:** Integrated CO2 Network

**Web site:** <http://www.ico2n.com/>

**Address:** P.O. Box 38

**Address 2:** 112 - 4th Avenue SW

**City:** Calgary

**State/Province:** Alberta

**Country:** Canada

**Zip/Postal Code:** T2P 2V5

**Contact Title:** Director, Strategy and Technology

**Contact Person:** Robert Craig

**Phone:** 403-693-1989

**Fax:**

**Email:** [rcraig@ico2n.com](mailto:rcraig@ico2n.com)

**Funding:** Private

**Budget:**

**Year Founded:**

**Reach:**

### Network Description

ICO2N consults with and shares information with many levels of government in Canada, to encourage the development of the appropriate fiscal and regulatory frameworks that will be necessary for timely development of CCS in Canada. In addition, in the early stages of CCS development and deployment, a partnership between governments and industry is required to ensure the necessary development capital is available.

ICO2N has developed numerous working alliances and partnership with organizations around the world.

ICO2N has worked with and shared information and learnings with researchers (Petroleum Technology Alliance of Canada, Alberta Innovates, University of Calgary), environmental organizations (The Pembina Institute), and other Canadian and international groups (Carbon Management Canada, Global CCS Institute, Carbon Sequestration Leadership Forum) to share and integrate findings to advance CCS.

ICO2N will continue to work with stakeholders, government and industry partners to help resolve the necessary questions and develop the essential support mechanisms needed to grow a robust CCS system that will provide a significant contribution to reducing CO2 emissions in Canada.

### Goal / Objectives / Mandate

ICO2N stands for Integrated CO2 Network, a proposed carbon capture and storage (CCS) system for Canada. The companies participating in the ICO2N carbon capture and storage initiative represent a cross-section of Canadian industry that is committed to helping Canada meet its climate change objectives while supporting economic growth.

Once constructed, this proposed Canadian CCS system will move carbon dioxide (CO2) captured from multiple industrial sites via pipeline to storage sites deep underground. Studies indicate the ICO2N carbon capture and storage proposal has the potential to reduce Canada's CO2 emissions by 20 million tonnes, the equivalent of annually removing four million cars from the road.

### Narrative

ICO2N is the Integrated CO2 Network, a group of Canadian companies representing multiple industries, including coal and the oil sands. All ICO2N member companies have a strong interest in and a commitment to develop Carbon Capture and Storage in Canada. In the past five years the group has been working to accelerate CCS deployment as a means of reducing CO2 emissions, and fundamentally transforming the way Canada can develop and use its fossil fuel energy resources in a sustainable way. ICO2N has completed extensive technical, economic and policy analysis on CCS, and developed its own unique economic model of large-scale CCS in Canada. ICO2N works with multiple levels of government, industry partners, academia and environmental organizations to advance CCS as a tool to ensure clean and secure energy future, and is an advocate for the development of integrated CCS infrastructure.

**Membership Requirements**

Organizations that are participating in the ICO2N CCS initiative represent a cross-section of Canadian industry committed to helping Canada meet its climate change objectives while supporting economic growth. Membership is open but you must contact ICO2N.

**Other Networks in this space**

ICO2N Partnerships include the following:

Researchers:

Petroleum Technology Alliance of Canada, Alberta Innovates, University of Calgary

Environmental organizations:

The Pembina Institute

Other Canadian and international groups:

Carbon Management Canada, Global CCS Institute, Carbon Sequestration Leadership Forum.

**Record:** 654

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Geological Storage

**Organization:** CO2 Capture Project (CCP)

**Web site:** <http://www.co2captureproject.org/aboutus.html>

**Email:** [info@co2captureproject.org](mailto:info@co2captureproject.org)

**Funding:** Private/Public

**Year Founded:** 2000

**Network Description**

Since its inception, CCP participants have undertaken more than 150 projects to increase understanding of the science, engineering, application and economics of CCS with research institutions, universities and commercial organizations. In addition, member organizations have contributed the results of proprietary research as well as data obtained from existing CO2 capture and geological injection and storage operations and demonstrations globally, which are shared with the wider academic and industrial community through technical conferences and publications.

CCP activities are carried out through the close co-operation and shared decision-making of four broad teams of technical advisors: Capture, SMV (storage, monitoring and verification), Policy and Incentives, and Communications. These teams are composed of technologists and global experts from CCP member companies and external organizations that investigate advances, monitor development of the technologies and policies, look for ways to integrate the best technology advances from the program, and present results at technology forums and industry and academic conferences.

The program is led by and operates through an executive board composed of representatives from each full member organization which selects from the many opportunities for technology improvements and funds those developments. An advisory board, composed of experts from academia, consulting organizations and other independent bodies, also reviews and recommends changes to the program and potential new areas for exploration on an annual basis.

A commitment to all stakeholders:

The members of the CCP also believe that the challenges associated with addressing global climate change require solutions that are economically and socially acceptable to stakeholders from industry to government to NGOs and consumer groups.

As such, the CCP holds a series of meetings and updates for a variety of key stakeholders such as regulators, policy makers and NGOs that take place in the Europe and America (North and South). This ensures that the program meets the needs of those stakeholders while addressing concerns or questions and, critically, demonstrating that CCS is an effective carbon mitigation option that can be implemented here and now through ongoing education and engagement.

**Goal / Objectives / Mandate**

In order to help make CCS a practical reality and utilised in many different industries and applications around the world, the CCP aims to accomplish the following goals:

- Increase technical and cost knowledge associated with CO<sub>2</sub> capture technologies and confirm that geological storage of CO<sub>2</sub> is a secure and viable means of reducing greenhouse gas emissions;
- Reduce CO<sub>2</sub> Capture costs by 20-30% through choosing improved technologies;
- Identify and understand practices surrounding geological storage of CO<sub>2</sub>; encouraging public awareness and understanding;
- Develop consistent technological standards for the evaluation of storage sites. Compose a set of proposed standards for storage, monitoring, verification, and closure that will allow credit from emissions-trading; and,
- Co-operate with interested parties to share information about both capture and storage demonstrations.

**Narrative**

The CO<sub>2</sub> Capture Project (CCP) is a partnership of the world's leading energy companies, working with academic institutions and government organizations to research and develop technologies to help make CO<sub>2</sub> capture and geological storage (CCS) a practical reality for reducing global CO<sub>2</sub> emissions and tackling climate change.



## Carbon Capture and Storage – Geological Storage

**Record:** 654

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Geological Storage

**Organization:** CO2 Capture Project (CCP)

**Web site:** <http://www.co2captureproject.org/aboutus.html>

**Email:** [info@co2captureproject.org](mailto:info@co2captureproject.org)

**Funding:** Private/Public

**Year Founded:** 2000

### Network Description

Since its inception, CCP participants have undertaken more than 150 projects to increase understanding of the science, engineering, application and economics of CCS with research institutions, universities and commercial organizations. In addition, member organizations have contributed the results of proprietary research as well as data obtained from existing CO2 capture and geological injection and storage operations and demonstrations globally, which are shared with the wider academic and industrial community through technical conferences and publications.

CCP activities are carried out through the close co-operation and shared decision-making of four broad teams of technical advisors: Capture, SMV (storage, monitoring and verification), Policy and Incentives, and Communications. These teams are composed of technologists and global experts from CCP member companies and external organizations that investigate advances, monitor development of the technologies and policies, look for ways to integrate the best technology advances from the program, and present results at technology forums and industry and academic conferences.

The program is led by and operates through an executive board composed of representatives from each full member organization which selects from the many opportunities for technology improvements and funds those developments. An advisory board, composed of experts from academia, consulting organizations and other independent bodies, also reviews and recommends changes to the program and potential new areas for exploration on an annual basis.

A commitment to all stakeholders:

The members of the CCP also believe that the challenges associated with addressing global climate change require solutions that are economically and socially acceptable to stakeholders from industry to government to NGOs and consumer groups.

As such, the CCP holds a series of meetings and updates for a variety of key stakeholders such as regulators, policy makers and NGOs that take place in the Europe and America (North and South). This ensures that the program meets the needs of those stakeholders while addressing concerns or questions and, critically, demonstrating that CCS is an effective carbon mitigation option that can be implemented in the here and now through ongoing education and engagement.

### Goal / Objectives / Mandate

In order to help make CCS a practical reality and utilised in many different industries and applications around the world, the CCP aims to accomplish the following goals:

- Increase technical and cost knowledge associated with CO2 capture technologies and confirm that geological storage of CO2 is a secure and viable means of reducing greenhouse gas emissions;
- Reduce CO2 Capture costs by 20-30% through choosing improved technologies;
- Identify and understand practices surrounding geological storage of CO2; encouraging public awareness and understanding;
- Develop consistent technological standards for the evaluation of storage sites. Compose a set of proposed standards for storage, monitoring, verification, and closure that will allow credit from emissions-trading; and,
- Co-operate with interested parties to share information about both capture and storage demonstrations.

**Narrative**

The CO2 Capture Project (CCP) is a partnership of the world's leading energy companies, working with academic institutions and government organizations to research and develop technologies to help make CO2 capture and geological storage (CCS) a practical reality for reducing global CO2 emissions and tackling climate change.

---

**Record:** 1033

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Geologic Storage

**Organization:** Integrated CO2 Network

**Web site:** <http://www.ico2n.com/>

**Address:** P.O. Box 38

**Address 2:** 112 - 4th Avenue SW

**City:** Calgary

**State/Province:** Alberta

**Country:** Canada

**Zip/Postal Code:** T2P 2V5

**Contact Title:** Director, Strategy and Technology

**Contact Person:** Robert Craig

**Phone:** 403-693-1989

**Fax:**

**Email:** [rcraig@ico2n.com](mailto:rcraig@ico2n.com)

**Funding:** Private

**Network Description**

ICO2N consults with and shares information with many levels of government in Canada, to encourage the development of the appropriate fiscal and regulatory frameworks that will be necessary for timely development of CCS in Canada. In addition, in the early stages of CCS development and deployment, a partnership between governments and industry is required to ensure the necessary development capital is available.

ICO2N has developed numerous working alliances and partnership with organizations around the world.

ICO2N has worked with and shared information and learnings with researchers (Petroleum Technology Alliance of Canada, Alberta Innovates, University of Calgary), environmental organizations (The Pembina Institute), and other Canadian and international groups (Carbon Management Canada, Global CCS Institute, Carbon Sequestration Leadership Forum) to share and integrate findings to advance CCS.

ICO2N will continue to work with stakeholders, government and industry partners to help resolve the necessary questions and develop the essential support mechanisms needed to grow a robust CCS system that will provide a significant contribution to reducing CO2 emissions in Canada.

**Goal / Objectives / Mandate**

ICO2N stands for Integrated CO2 Network, a proposed carbon capture and storage (CCS) system for Canada. The companies participating in the ICO2N carbon capture and storage initiative represent a cross-section of Canadian industry that is committed to helping Canada meet its climate change objectives while supporting economic growth.

Once constructed, this proposed Canadian CCS system will move carbon dioxide (CO2) captured from multiple industrial sites via pipeline to storage sites deep underground. Studies indicate the ICO2N carbon capture and storage proposal has the potential to reduce Canada's CO2 emissions by 20 million tonnes, the equivalent of annually removing four million cars from the road.

**Narrative**

ICO2N is the Integrated CO2 Network, a group of Canadian companies representing multiple industries, including coal and the oil sands. All ICO2N member companies have a strong interest in and a commitment to develop Carbon Capture and Storage in Canada. In the past five years the group has been working to accelerate CCS deployment as a means of reducing CO2 emissions, and fundamentally transforming the way Canada can develop and use its fossil fuel energy resources in a sustainable way. ICO2N has completed extensive technical, economic and policy analysis on CCS, and developed its own unique economic model of large-scale CCS in Canada. ICO2N

works with multiple levels of government, industry partners, academia and environmental organizations to advance CCS as a tool to ensure clean and secure energy future, and is an advocate for the development of integrated CCS infrastructure.

### Membership Requirements

Organizations that are participating in the ICO2N CCS initiative represent a cross-section of Canadian industry committed to helping Canada meet its climate change objectives while supporting economic growth. Membership is open but you must contact ICO2N.

### Other Networks in this space

ICO2N Partnerships include the following:

Researchers:

Petroleum Technology Alliance of Canada, Alberta Innovates, University of Calgary

Environmental organizations:

The Pembina Institute

Other Canadian and international groups:

Carbon Management Canada, Global CCS Institute, Carbon Sequestration Leadership Forum.

---

**Record:** 1080

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Geologic Storage

**Organization:** International Performance Assessment Centre for Geologic Storage of CO2 (IPAC-CO2)

**Web site:** <http://www.ipac-co2.com/IpacCo2/Pages/Overview.aspx>

**Address:** 120-2 Research Drive

**Address 2:**

**City:** Regina

**State/Province:** Saskatchewan

**Country:** Canada

**Zip/Postal Code:** S4S 7H9

**Contact Title:** Manager of Corporate Communications

**Contact Person:** Joe Ralko

**Phone:** 306-337-8460

**Fax:**

**Email:** [joe.ralko@ipac-co2.com](mailto:joe.ralko@ipac-co2.com)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 2008

**Reach:**

### Network Description

IPAC-CO2 was created through the efforts of Royal Dutch Shell, the Government of Saskatchewan and the University of Regina. The Government of Saskatchewan and Royal Dutch Shell contributed \$5 million each to launch IPAC-CO2. The University of Regina, with over 20 years of experience in CCS, is providing a base for the Secretariat.

This global community of practice will tie together a network of organizations on virtually every continent.

Regional centers and networks have been established through partnerships with research-providing organizations in eight countries on six continents.

### Goal / Objectives / Mandate

The International Performance Assessment Centre for the geologic storage of Carbon Dioxide, known as IPAC-CO2, was established in 2008 to fill a gap in the understanding and assessment of risk and performance in the Carbon Capture and Storage (CCS) chain. It is a not-for-profit research and development organization committed to providing independent, objective information, best practices, advice and assessments to governments and industry. As an independent, non-aligned organization, IPAC-CO2 assesses and advises on CCS projects around the world.

In addition to evaluating performance and risk issues, and assessing proposed projects, IPAC-CO2 will:

- Network internationally to share and build on the findings of other academic and public organizations and institutions with CCS expertise;
- Interact with key stakeholders to identify emerging issues and ensure effective and acceptable risk assessment techniques are developed, applied and communicated;
- Create communications to inform the public and build broad acceptance of CCS;
- Develop a pool of qualified personnel in the areas of performance and risk assessment.

#### **Narrative**

IPAC-CO2 is a not-for-profit research and development organization committed to providing independent, objective information, best practices, advice and assessments to governments and industry. As an independent, non-aligned organization, IPAC-CO2 assesses and advises on CCS projects around the world.

#### **Meeting Frequency**

#### **Membership Requirements**

Not a membership-driven organization.

#### **Other Networks in this space**

Integrated CO2 Network (ICO2N)

**Record:** 2018

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 Geologic Storage

**Organization:** Carbon Management Canada (CMC)

**Web site:** <http://www.carbonmanagement.ca>

**Address:** Social Sciences 556, 2500 University Drive NW

**Address 2:**

**City:** Calgary

**State/Province:** AB

**Country:** Canada

**Zip/Postal Code:** T2N 1N4

**Contact Title:** Director of Communications

**Contact Person:** Ruth Klinkhammer

**Phone:** 403-210-7879

**Fax:**

**Email:** [ruth.klinkhammer@cmc-nce.ca](mailto:ruth.klinkhammer@cmc-nce.ca)

**Funding:** Public

**Budget:** \$50 million over 5 years

**Year Founded:** 2010

**Reach:** Nationally

#### **Network Description**

Carbon Management Canada consists of 100 researchers at 21 Canadian universities. The Canadian University Network Members are:

- Carleton University
- Dalhousie University
- McGill University
- Memorial University
- Ecole Polytechnique de Montreal
- Institut National de la Recherche Scientifique (INRS)
- Queen's University
- St. Francis Xavier University
- Simon Frasier University (SFU)
- University Laval
- University of Alberta
- University of British Columbia
- University of Calgary
- University of New Brunswick

- University of Ottawa
- University of Regina
- University of Saskatchewan
- University of Toronto
- University of Victoria
- University of Waterloo
- University of Western Ontario

### Goal / Objectives / Mandate

To reduce the environmental impact of fossil fuel industries in Canada and the world. To achieve this objective, Carbon Management Canada Inc. actively seeks out and engages researchers, industries, and governments to develop and implement game-changing, innovative technologies and policies.

### Interest in Collaboration

CMC is open to any collaboration or partnership with other organizations, particularly with federal and provincial governments and industry.

### Narrative

CMC (Carbon Management Canada) is a federally and provincially funded organization that is a part of a federal program known as the Networks of Centers of Excellence that funds academia researchers. Currently, CMC consists of 70 academic researchers in 21 universities to look a "greener" technologies. The current reach is nationally (Canada only) as there is a requirement for all funded projects that a Canadian must be the lead. However, they may be some international collaboration on the project as long as it is a Canadian researcher that is the research lead.

Since this program is so new (created in June of 2010) they are currently working on a web site in which they hope to build a blog to communicate to the network members.

Carbon Management Canada funds work in four broad areas:

1. Production of game-changing technologies to recover and process fossil fuels that will reduce CO<sub>2</sub> emissions;
2. Find novel methods and technologies to capture and store all forms of carbon;
3. Discover safe, secure methods of storage of CO<sub>2</sub> underground; and,
4. Create policy and regulatory frameworks that allow for the deployment of publicly accepted technologies.

### Membership Requirements

Not a membership organization funding program.

**Record:** 2071

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO<sub>2</sub> Geologic Storage

**Organization:** Global CCS Institute (GCCSI)

**Web site:** <http://www.globalccsinstitute.com>

**Address:** Level 2, 64 Allara Street

**Address 2:**

**City:** Canberra

**State/Province:** Queensland

**Country:** Australia

**Zip/Postal Code:** ACT 2601

**Contact Title:** Chair of the Board

**Contact Person:** Russell Higgins

**Phone:** +61 2 6175 5300 **Fax:** +61 2 6162 1928 **Email:**

**Funding:** Private/Public

**Budget:**

**Year Founded:** 2008

**Reach:** Global

### Network Description

The Global CCS Institute is an initiative to accelerate the worldwide development and implementation of carbon capture and storage (CCS) technologies. The Global CCS Institute will support commercial scale CCS projects, with the aim of reducing carbon pollution both domestically and internationally. It will facilitate demonstration CCS projects, as well as the identification and support of necessary research.

Announced by the Australian Government in September 2008, the Global CCS Institute was formally launched in April 2009 and became an independent legal entity in July 2009.

### Interest in Collaboration

The Global CCS Institute is establishing close collaborative partnerships (some involving financial commitments) with organizations, such as the International Energy Agency (IEA), Carbon Sequestration Leadership Forum (CSLF), World Bank, Asian Development Bank, Clinton Foundation and The Climate Group. Once these partnerships are in place the Global CCS Institute will begin building strategic alliances with other stakeholders.

### Narrative

Recognizing the important contribution CCS can make in ameliorating climate change, the Australian Government has committed AUD\$100 million annual funding for the Global CCS Institute. This will ensure the ongoing success of this independent authority on CCS.

Already the Global CCS Institute has received unprecedented international support, with more than 20 national governments and over 80 leading corporations, non-government bodies and research organizations signing on as foundation members or collaborating participants.

Unique experience and expertise:

The Global CCS Institute will draw together information, knowledge and expertise to build a much-needed central base.

It will play a pivotal role in facilitating the development and deployment of safe, economic and environmentally sustainable commercial-scale CCS projects.

The Global CCS Institute will advise on the technologies that will capture, transport and store emissions, and provide expert insight on the costs and benefits of carbon solutions and the operational and legislative requirements needed to achieve success.

It will work collaboratively with governments, non-government bodies and the private sector to build confidence in CCS and help drive the international momentum needed to provide a solution to the urgent problem of climate change.

The Global CCS Institute is both unique and essential, as we take critical steps towards a global low emission future.

**Record:** 1221

**Category:** Greening Energy Production, Cleaner Energy Production, Conventional Gas

**Organization:** National Energy Technology Laboratory (NETL)

**Web site:** <http://www.netl.doe.gov/>

**Address:** 626 Cochran's Mill Road

**Address 2:** P.O. Box 10940

**City:** Pittsburgh

**State/Province:** PA

**Country:** USA

**Zip/Postal Code:** 15236-0940

**Contact Title:**

**Contact Person:** Office of Technology Transfer

**Phone:** **Fax:** **Email:** [techtransfer@netl.doe.gov](mailto:techtransfer@netl.doe.gov)

**Funding:** Public

**Budget:**

**Year Founded:** 1910

**Reach:** U.S. National

### Network Description

The National Energy Technology Laboratory (NETL), part of DOE's national laboratory system, is owned and operated by the U.S. Department of Energy (DOE). NETL supports DOE's mission to advance the national, economic, and energy security of the United States.

Solicits applications from technology developers, and others, for the development of innovative energy technologies.

**Goal / Objectives / Mandate**

NETL has expertise in coal, natural gas, and oil technologies, contract and project management, analysis of energy systems, and international energy issues. NETL implements a broad spectrum of energy and environmental research and development (R&D) programs that will return benefits for generations to come, including:

- Enabling domestic coal, natural gas, and oil to economically power homes, industries, businesses, and transportation; and
- Protecting our environment and enhancing our energy independence.

In addition to research conducted on-site, NETL's project portfolio includes R&D conducted through partnerships, cooperative research and development agreements, financial assistance, and contractual arrangements with universities and the private sector. Together, these efforts focus a wealth of scientific and engineering talent on creating commercially viable solutions to national energy and environmental problems.

**Interest in Collaboration**

Different types of formal agreements exist to allow collaboration, partnering, and designation of intellectual property ownership between NETL and outside entities. NETL actively seeks opportunities to form partnerships with the private sector, academia, and other government entities to develop and commercialize new energy and environmental technologies through Cooperative Research and Development Agreements (CRADAs).

CRADAs are agreements between the Federal government and third party participants to work together on a mutually beneficial project. Each partner in the CRADA applies agreed upon resources, such as personnel, equipment, or facilities. While participant dollars may be used to fund portions of the government's effort, the government may not use Federal funds to support the participant.

**Other Networks in this space**

NREL - National Renewable Energy Laboratory

## Carbon Capture and Storage – CO<sub>2</sub> for Enhanced Oil Recovery

The following super networks have a focus on CO<sub>2</sub> for enhanced Oil Recovery and Carbon Capture and Storage Pacific Northwest National Laboratory

The following knowledge networks also have a focus on this area:

**Record:** 2072

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO<sub>2</sub> for Enhanced Oil Recovery

**Organization:** Petroleum Technology Research Center

**Web site:** [http://www.ptrc.ca/eor\\_overview.php](http://www.ptrc.ca/eor_overview.php)

**Address:**

**Address 2:** 6 Research Drive

**City:** Regina

**State/Province:** Saskatchewan

**Country:** Canada

**Zip/Postal Code:** S4S 7J7

**Phone:** 306-787-7497

**Fax:** 306-798-0408

**Email:**

**Year Founded:** 1998

**Reach:** National

### Network Description

PTRC is a not-for-profit research and development organization with offices and laboratories in Regina Saskatchewan, Canada. Founded in 1998 by Natural Resources Canada Saskatchewan Industry and resources, Saskatchewan Research Council and the University of Regina, with support from the western Canadian oil and gas industry.

Highlights:

- 1) Managing of the world's largest CO<sub>2</sub> Storage Project, the Weyburn-Midale CO<sub>2</sub> Project;
- 2) Managing potentially the world's largest avoided CO<sub>2</sub> emissions project, the Joint Implementation of Vapour Extraction (JIVE) Project;
- 3) Managing Saskatchewan's first integrated CO<sub>2</sub> capture, transport, injection and storage project in a deep saline formation, Aquistore;
- 4) Advancing enhanced oil recovery (EOR) technologies through the STEPS Business-Led Network or Centres of Excellence, the main research providers of which include the Saskatchewan Research Council and the University of Regina; and,
- 5) Understanding Saskatchewan's subsurface through the Saskatchewan Phanerozoic Fluids and Petroleum Systems Project.

### Narrative

Since 1998, the PTRC has managed its EOR research program, providing leading-edge technology and innovation for our public and private sector partners. In January 2009, that research excellence was acknowledged when the Canadian Federal Government, through its Networks of Centres of Excellence program awarded the PTRC \$10.5 million to significantly expand and enhance existing (EOR) research. The Government of Saskatchewan also increased its already substantial ongoing financial support and "Sustainable Technologies for Energy Production Systems, was born.

Weyburn-Midale was launched in 2000. This is an eight-year \$80 million international project that studies CO<sub>2</sub> injection and storage underground in depleted oil fields. The project's final phase is building on the successes of the first phase (2000 - 2004) to deliver the framework necessary to encourage implementation of CO<sub>2</sub> geological storage on a worldwide basis. The project is operated in conjunction with \$2 billion commercial CO<sub>2</sub> floods in Saskatchewan, where huge volumes of the gas are captured from an industrial source and injected to revive oil production. Cenovus's Weyburn field and Apache's Midale field, located in southeast Saskatchewan, Canada, host this world-leading project studying CO<sub>2</sub> geological storage.



Aquistore is a project designed to capture carbon dioxide from Consumer's Co-operative Refinery in Regina, compress the captured CO<sub>2</sub>, and transport it by pipeline to a site where it will be injected to be permanently stored.

The Joint Implementation of Vapour Extraction (JIVE) Project is a \$40 million initiative with a goal to develop, demonstrate and evaluate solvent vapour extraction processes for enhanced oil recovery from heavy oil reservoirs in western Canada.

**Affiliates / Affiliates area of expertise**

Natural Resources Canada  
Saskatchewan Research Council  
Saskatchewan Ministry of Energy and Resources  
University of Regina

---

**Record:** 853

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO<sub>2</sub> for Enhanced Oil Recovery

**Organization:** Saskatchewan Carbon Dioxide EOR and Storage Initiative – Government of Saskatchewan

**Web site:** <http://www.er.gov.sk.ca/Default.aspx?DN=9eb5e74d-ba2c-486d-8796-ad6008f69180>

**Address:** 300, 2100 - 11th Avenue                      **Address 2:**  
**City:** Regina    **State/Province:** SK  
**Country:** Canada                                      **Zip/Postal Code:** S4P 3Z8

**Contact Title:** Director, Energy Development and Climate Change Branch

**Contact Person:** Howard Loseth, P.Eng.

**Phone:** 306-787-3379      **Fax:**      **Email:** [hloseth@ir.gov.sk.ca](mailto:hloseth@ir.gov.sk.ca)

**Funding:** Public

**Goal / Objectives / Mandate**

The Saskatchewan Carbon Dioxide EOR and Storage Initiative will provide funding toward the replication of two successful and profitable multi-hundred million dollar EOR investments at other oilfields (Midale and Weyburn). This initiative will also assist SaskPower's proposed clean coal electric generating plant and TransCanada Energy's proposed polygeneration project by establishing a new market for carbon dioxide that would be captured from these proposed facilities and other potential sources of carbon dioxide.

**Narrative**

The Saskatchewan Carbon Dioxide EOR and Storage Initiative has two distinct components:

1) Initial evaluation phase: Preparation of engineering, economic, administrative, and legal information required to assess the different barriers to implementing carbon dioxide EOR in oil fields in Saskatchewan.

Engineering information will include parameters such as the thickness and extent of the reservoir, the quality of the oil, reservoir pressure, reservoir porosity and permeability, and current oil and water production rates. The engineering information can be used to forecast the potential increase in production that would result from implementing a carbon dioxide EOR project and the associated costs, revenues, and payback period associated with the investment.

Legal information will be prepared to assist in the assessment of the options that are available to encourage diverse mineral and working interest owners within an oil field to collaborate and co-operate (including sharing the costs) in the implementation of a carbon dioxide EOR project.

2) Field pilot phase: Energy and Resources will work with industry and the federal government to jointly cost-share the design and implementation of new pilot projects in two or more Saskatchewan oil fields. The pilot projects would be undertaken to demonstrate the technical and economic potential of EOR in these reservoirs.

The pilot projects would include reservoir characterization studies, pilot project design, the drilling and injection of carbon dioxide in a small number of test wells with these smaller reservoirs for a suitable period of time,

monitoring of performance of the EOR projects, and evaluation of the technical and economic feasibility of proceeding with full scale EOR projects based on the results of the pilots.

**Record:** 406

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 for Enhanced Oil Recovery

**Organization:** Alberta Research Council (ARC)

**Web site:** <http://www.arc.ab.ca/areas-of-focus/carbon-conversion-capture-and-storage/carbon-storage/co2-enhanced-oil-recovery/>

**Address:** 3608 - 33 St. NW

**Address 2:**

**City:** Calgary

**State/Province:** Alberta

**Country:** Canada

**Zip/Postal Code:** T2L 2A6

**Contact Title:** Manager

**Contact Person:** David Reynolds

**Phone:** 403-210-5308

**Fax:**

**Email:**

**Funding:** Public

**Budget:**

**Year Founded:** 1921

**Reach:** International

#### **Network Description**

ARC employs over 600 scientists, engineers, and professional staff that operate in five facilities located in Edmonton, Calgary, Vegreville and Devon. Our customers have access to leading edge expertise, equipment and facilities. We offer a variety of flexible working arrangements to meet our customers' needs including joint ventures, consortia and strategic partnerships.

ARC is a not-for-profit corporation that is wholly owned by the province of Alberta and governed by an eight-member board of directors drawn from the private, public, and higher education sectors.

## Carbon Capture and Storage – CO2 for enhanced Coal Bed Methane

**Record:** 405

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 for enhanced Coal Bed Methane

**Organization:** Alberta Research Council (ARC)

**Web site:** <http://www.arc.ab.ca/areas-of-focus/carbon-conversion-capture-and-storage/carbon-storage/co2-enhanced-coal-bed-methane/>

**Address:** 3608 - 33 St. NW

**Address 2:**

**City:** Calgary

**State/Province:** Alberta

**Country:** Canada

**Zip/Postal Code:** T2L 2A6

**Contact Title:** Manager

**Contact Person:** David Reynolds

**Phone:** (403) 210-5308 **Fax:** **Email:**

**Funding:** Public

**Budget:**

**Year Founded:** 1921

**Reach:** International

### Network Description

ARC employs over 600 scientists, engineers, and professional staff that operate in five facilities located in Edmonton, Calgary, Vegreville and Devon. Our customers have access to leading edge expertise, equipment and facilities. We offer a variety of flexible working arrangements to meet our customers' needs including joint ventures, consortia and strategic partnerships.

ARC is a not-for-profit corporation that is wholly owned by the province of Alberta and governed by an eight-member board of directors drawn from the private, public, and higher education sectors.

---

**Record:** 1313

**Category:** Carbon Capture and Storage, Carbon Capture and Storage, CO2 for enhanced Coal Bed Methane

**Organization:** Society of Petroleum Engineers (SPE) One Petro

**Web site:** <http://www.onepetro.org/mslib/servlet/onepetropreview?id=SPE-114790-MS&soc=SPE>

**Email:** [lib\\_subscribe@onepetro.org](mailto:lib_subscribe@onepetro.org)

**Funding:** Private

**Year Founded:** 2007

### Network Description

OnePetro is a multi-society effort that reflects participation of many organizations. The Society of Petroleum Engineers (SPE) is operating OnePetro on behalf of the participating organizations. SPE provides the computers and technology on which OnePetro operates and provides Customer Service support.

### Goal / Objectives / Mandate

OnePetro.org is a multi-society library that provides a simple way to search for and access a broad range of technical literature related to the oil and gas exploration and production industry. From one place, you can search and buy documents from many different professional societies, or similar organizations, that serve the oil and gas industry.

## Biological Management – Sequestration of CO<sub>2</sub> through Biochar

**Record:** 1978

**Category:** Carbon Capture and Storage, Biological Management, Sequestration of Carbon through Biochar/Biocoal

**Organization:** US Composting Council (USCC)

**Web site:** <http://www.compostingcouncil.org/>

**Address:** 1 Comac Loop 14 B1

**Address 2:**

**City:** Rokonkoma

**State/Province:** NY

**Country:** United States

**Zip/Postal Code:** 11779

**Phone:** 631-737-4931

**Fax:** 631-737-4939

**Email:**

**Year Founded:** 1990

**Reach:**

### Goal / Objectives / Mandate

The US Composting Council is dedicated to the development, expansion and promotion of the composting industry based upon sound science, principals of sustainability, and economic viability. The organization will achieve this by: encouraging and guiding research, promoting best composting practices, establishing standards, educating professionals and the public and enhancing product quality and markets.

### Narrative

The US Composting Council is involved in research, training, public education, composting and compost standards, expansion of compost markets and the enlistment of public support.

The USCC provides resources, educational materials, training, networking, and career advancement opportunities for professionals and all those affiliated with the composting and organics recycling industry. USCC members include compost producers, marketers, generators of organic residues, policy makers, regulators, equipment manufacturers, product suppliers, academic institutions, public agencies, non-profit groups and consulting/engineering firms.

The USCC is the only national organization in the US that is dedicated to the development, expansion and the promotion of the composting industry.

### Membership Requirements

Membership ranges from \$50 to \$10 000 dollars depending if you are a business, either large or small, government, universities, non-profits, individuals that are voting and non-voting status.

### Other Networks in this space

Compost industry network, job board, online forum, links to resource pages.

**Record:** 2015

**Category:** Carbon Capture and Storage, Biological Management, Sequestration of Carbon through Biochar/Biocoal

**Organization:** Sustainable Development Technology Canada (SDTC)

**Web site:** [http://www.sdtec.ca/index.php?page=home&hl=en\\_CA](http://www.sdtec.ca/index.php?page=home&hl=en_CA)

**Address:** 45 O'Connor Street, Suite 1850

**Address 2:**

**City:** Ottawa

**State/Province:** ON

**Country:** Canada

**Zip/Postal Code:** K1P 1A4

**Contact Title:** Stakeholder Relations Coordinator

**Contact Person:** Jay Strauss

**Phone:** 613-234-6313 ext 353

**Fax:**

**Email:** [j.strauss@sdtec.ca](mailto:j.strauss@sdtec.ca)

**Funding:** Public                      **Budget:** 500 million from Dec 31, 2007 to March 31, 2015  
**Year Founded:** 2001                      **Reach:** Nationally in Canada

### Goal / Objectives / Mandate

SDTC's mission is to act as the primary catalyst in building a sustainable development technology infrastructure in Canada. The Foundation reports to Parliament through the Minister of Natural Resources Canada. Besides just funding groundbreaking technologies. SDTC works closely with a network of stakeholders and partners to build the capacity of Canadian clean-technology entrepreneurs, in the form of strategic relationships, formalizing business plans and building of a critical mass of sustainable development capability in Canada.

### Interest in Collaboration

[http://www.sdtec.ca/index.php?page=sdtec-portfolio-projects&hl=en\\_CA](http://www.sdtec.ca/index.php?page=sdtec-portfolio-projects&hl=en_CA) (Please click on the portfolio tab then the location tab and this will bring up all projects based on the provinces and to get a detailed description of the project and all the participants).

### Narrative

Sustainable Development Technology Canada (SDTC) is a not-for-profit foundation that finances and supports the development and demonstration of clean technologies which provide solutions to issues of climate change, clean air, water quality and soil, and which deliver economic, environmental and health benefits to Canadians.

SDTC operates two funds aimed at the development and demonstration of innovative technological solutions. The \$550 million SD Tech Fund(tm) supports projects that address climate change, air quality, clean water, and clean soil. The \$500 million NextGen Biofuels Fund(tm) supports the establishment of first-of-kind large demonstration-scale facilities for the production of next-generation renewable fuels.

To date, SDTC has completed sixteen funding rounds and allocated a total of \$478 million to 195 projects. That amount has been leveraged with an additional \$1.2 billion in funding from other project partners for a total project value of \$1.6 billion. Approximately 80% of SDTC's portfolio is on clean energy production, power generation, transportation or energy utilization / energy efficiency.

Specifically for Alberta, SDTC has invested \$61 million into 23 Alberta projects, with a total project value of \$223 million. The projects are in some of Alberta's key sectors including energy exploration and production, power generation and agriculture.

### Membership Requirements

This is a not-for-profit foundation that is established by the Government of Canada (arms length)

**Record:** 446

**Category:** Carbon Capture and Storage, Biological Management, Sequestration of Carbon through Biochar/Biocoal

**Organization:** International Biochar Initiative

**Web site:** <http://www.biochar-international.org/>

**Address:** 640 Brook Run Dr

**Address 2:**

**City:** Westerville

**State/Province:** OH

**Country:** United States

**Zip/Postal Code:** 43081

**Contact Title:** Communications Director

**Contact Person:** Thayer Tomlinson

**Phone:** 914-693-0496

**Fax:**

**Email:** [info@biochar-international.org](mailto:info@biochar-international.org)

**Funding:** Private

**Year Founded:** 2006

**Reach:** Global

### Goal / Objectives / Mandate

The mission of the International Biochar Initiative (IBI) is to promote the development of biochar systems that follow cradle-to-cradle sustainability guidelines. In pursuit of this:

- Support the generation, review and dissemination of information on all aspects of biochar; and,
- Develop sustainability guidelines and monitor and evaluate biochar projects and systems against these guidelines.

#### **Interest in Collaboration**

IBI would be open to a collaboration or partnership opportunity but would like to request additional information about the CCEMC

#### **Narrative**

IBI has publications and organizes annual international conferences and regional conferences. It also provides a host of resources, such as a Biochar Extension Service, Research and Education.

IBI is funded 80 percent by foundations and 20 percent by private membership. This organization is underfunded and has limited resources from their lack of funding. There are presently five part-time staff members and there are more requests for education and support than IBI can currently assist with. Currently, IBI is working on establishing an internationally accepted definition of biochar and working on standards for biochar. IBI also works on policy and education of biochar from a local to international level. There is no proprietary information based on the general information regarding biochar, but in instances of project-level information there may be some proprietary information.

Information is distributed in three streams:

1. IBI's main web site.
2. Attendance of regional or national conferences where materials are sent.
3. International conferences that are held on an annual basis.

IBI has experienced successful growth since inception. In 2007, the first international biochar conference was held with 110 members in attendance. The 2010 International Biochar Conference is expecting 3500 members to be in attendance. As well, there are now 30 regional chapters in Canada and the US. There is a support for these regional chapters with the recognition of all chapters in the newsletter and the web site.

#### **Meeting Frequency**

Annually for both regional and international groups.

#### **Membership Requirements**

IBI has four levels of membership:

- Sustaining - \$1000 and more
- Sustaining month - Giving \$100 per month
- Regular - \$60 per year
- Student - \$30 per year

#### **Other Networks in this space**

Biochar Extension Service  
Research and Education  
Biochar in Schools  
Biochar media  
Regional biochar groups  
Project profiles

## Biological Management – Biofuels and Biomass and Waste to Energy

The following super networks have focus areas on Biofuels, Biomass and Waste to Energy:

National Bioenergy Center - National Renewable Energy Laboratory (NREL)

University of Colorado at Boulder - Research and Sustainable Energy Institute

Oak Ridge National Laboratory (ORNL)

The following knowledge networks also work on Biofuels, Biomass and Waste to Energy.

**Record:** 2034

**Category:** Carbon Capture and Storage, Biological Management, Biomass and Waste to Energy

**Organization:** Canadian Biomass Innovation Network (CBIN)

**Web site:** <http://www.cbin.gc.ca/linlie-eng.php>

**City:** Ottawa

**State/Province:** ON

**Country:** Canada

**Zip/Postal Code:**

**Contact Title:** CBIN Program Coordinator

**Contact Person:** Nicole Richer

**Phone:** 613-947-5660

**Fax:**

**Email:** [nricher@nrcan.gc.ca](mailto:nricher@nrcan.gc.ca)

**Funding:** Public

**Reach:** Nationally in Canada

### Goal / Objectives / Mandate

The goal is to continually ensure the availability of knowledge, technology and enabling policy required to support the development of a sustainable Canadian bioeconomy.

### Narrative

The Canadian Biomass Innovation Network (CBIN) was formed to facilitate collaboration across government, industry, and academic stakeholders to build a vibrant research and development base to support bio-innovation in Canada. CBIN is harnessing the potential for bio-resources, bio-energy, bio-products and bio-processes to help Canadian industry meet efficiency, sustainability and climate change challenges. The program is intended to deliver new concepts, new technologies and novel integrated approaches to feed downstream programs of the innovation chain, such as TEAM, APF Science and Innovation and SDTC.

Two sub committees of the CBIN are:

1) Science and Technology (S&T) Portfolio Committee: which focuses on developing and advancing next generation technologies for bioenergy, biofuels, and industrial bioproducts. This committee also co-ordinates, plans and manages bioenergy, bioproducts and sustainable energy-related research, development and demonstration (RD&D) across the federal government.

2) Natural Resources Canada's Office of Energy Research and Development (NRCan-OERD) is responsible for the coordination of RD&D activities, including the managing and funding of CBIN.

The following federal funding programs managed by OERD are supporting CBIN and overseen by the S&T Portfolio Committee are:

- The Program of Energy Research and Development (PERD), this program has been in operation for over 30 years and is the most enduring interdepartmental horizontally managed Science and Technology (S&T) program in the federal government; and,

- The ecoENERGY Technology Initiative (econ ETI) was announced in January 2007, funds to RD&D to support the next generation energy technologies are needed to break through to emissions-free fossil fuel production and using energy from other clean sources, such as renewables and bioenergy. This program will end in March 2011.

The S&T portfolio Committee will manage bioenergy projects under the Renewable Energy and Clean Energy Systems Demonstration Projects of NRCan's Clean Energy Fund.

The CBIN's S&T Portfolio Committee currently oversees four areas of S&T activity:

- 1) Sustainable feedstocks
- 2) Biomass conversion
- 3) Bioplexes and biorefineries
- 4) Governance, sustainability and performance measurement tools

**Membership Requirements**

This is a funded federal government program.

**Other Networks in this space**

Please refer to the following link for the detailed lists of funded projects sponsored by CBIN:<http://www.cbincib.gc.ca/pro/index-eng.php>.

---

**Record:** 1976

**Category:** Carbon Capture and Storage, Biological Management, Biomass and Waste to Energy

**Organization:** Rand Corporation

**Web site:** <http://www.rand.org/ise/environ/>

**Address:** 1200 South Hayes Street

**City:** Arlington

**Country:** United States

**Address 2:**

**State/Province:** VA

**Zip/Postal Code:** 22202-5050

**Contact Title:** Director

**Contact Person:** Keith Crane

**Phone:** 703-413-1100 ext 5520

**Fax:** 703-413-8111

**Email:** [kcrane@rand.org](mailto:kcrane@rand.org)

**Funding:** Private/Public

**Budget:** 262 237

**Year Founded:** 1948

**Reach:**

**Network Description****Goal / Objectives / Mandate**

The RAND Corporation is a non-profit institution that helps improve policy and decision making through research and analysis. RAND focuses on the issues that matter most such as health, education, national security, international affairs, law and business, the environment, and more. With a research staff consisting of some of the world's preeminent minds, RAND has been expanding the boundaries of human knowledge for more than 60 years.

**Narrative**

RAND has several divisions that contain a number of specialized centers, projects and programs that are within RAND's mission and focus.

The following list are all of the divisions; RAND Arroyo Center, RAND Education, RAND Europe, RAND Health, RAND Institute for Civil Justice, RAND infrastructure, Safety and Environment, RAND Labor and Population, RAND National Security Research Division, RAND Project AIR FORCE, Multi-Divisions Centers and Projects, International Programs, RAND Child Policy, RAND Gulf States Policy Institute, RAND Qatar Policy Institute, RAND Research Disciplines, Pardee RAND Graduate School, RAND Journal of Economics.

[http://www.rand.org/pubs/online/energy\\_environment/](http://www.rand.org/pubs/online/energy_environment/)

**Membership Requirements**

This is a non-profit institution

**Other Networks in this space**

Public use databases and research tools



---

**Record:** 2022

**Category:** Carbon Capture and Storage, Biological Management, Biomass and Waste to Energy

**Organization:** The AgSTAR Program (United States Environmental Protection Agency)

**Web site:** <http://www.epa.gov/agstar/>

**Address:** 1200 Pennsylvania Ave NW **Address 2:**

**City:** Washington **State/Province:** DC

**Country:** United States **Zip/Postal Code:** 20460

**Contact Person:** Kurt Roos

**Phone:** 202-343-9041 **Fax:** **Email:** roos.kurt@epa.gov

**Funding:** Public

**Budget:**

**Year Founded:** 1994

**Reach:** United States and internationally

### Goal / Objectives / Mandate

The AgSTAR program is an outreach program that is designed to reduce methane emissions from livestock waste management operations by the promotion of the use of biogas recovery systems.

### Narrative

The AgSTAR program provides an array of information and tools that assist producers in the evaluation and implementation of the following systems:

Conducting farm digester extension events and conferences

Providing "How -To" project development tools and industry listings

Conducting performance characterizations for digesters and conventional waste management systems

Operating a toll free hotline

Providing farm recognition for voluntary environmental initiatives

Collaborating with federal and state renewable energy, agricultural and environmental programs

---

**Record:** 2019

**Category:** Carbon Capture and Storage, Biological Management, Sequestration of Carbon by Agricultural/Landscape Management

**Organization:** 25 x 25

**Web site:** <http://www.25x25.org/>

**Address:** 1430 Front Avenue **Address 2:**

**City:** Lutherville **State/Province:** MD

**Country:** United States **Zip/Postal Code:** 21093

**Contact Title:** Media Relations

**Contact Person:** Bill Eby

**Phone:** 514-940-8990 **Fax:** **Email:** beby@25x25.org

**Funding:** Private

**Budget:** Not disclosed

**Year Founded:** 2004

**Reach:** United States

### Goal / Objectives / Mandate

25x25's vision is that by the year 2025, America's farms, forests and ranches will provide 25 percent of the total energy consumed in the United States, while continuing to produce safe, abundant and affordable food, feed and fibre. 25x25's action plan calls for supportive policies in each of the following five areas:

Increasing production of renewable energy

Delivering renewable energy to markets  
Expanding renewable energy markets  
Improving energy efficiency and productivity  
Strengthening conservation of natural resources and the environment

**Narrative**

25x25 is a renewable energy initiative backed by organizations and individuals united by a common interest in making America's energy future more secure, affordable and environmentally sustainable.

25x25 is an advocacy group that is focused on the educational aspects of renewable energy sources. This is a very diverse group for which the operational budget is dependent on private donations. 25x25 was first created by the Turner Foundation as the Energy and Future Coalition, which dealt with energy and climate issues. They are primarily focused on local issues within the United States, where currently there is a focus on renewables. Yes, they would be interested in establishing a partnership with CCEMC.

**Meeting Frequency**

Meetings are not scheduled regularly, as this is an advocacy group with a large membership.

**Membership Requirements**

Open to anyone

## Biological Management – Methane Capture, Avoidance and Destruction (Non-Energy)

**Record:** 2023

**Category:** Carbon Capture and Storage, Biological Management, Methane Capture, Avoidance and Destruction (Non-Energy)

**Organization:** Methane to Markets

**Web site:** <http://www.methanetomarkets.org/>

**Address:** Sir John Carling Building, 960 Carling Ave

**Address 2:**

**City:** Ottawa

**State/Province:** ON

**Country:** Canada

**Zip/Postal Code:** K1A 0C6

**Contact Title:** Canadian Contact

**Contact Person:** Ray Desjardins

**Phone:** 613-0759-1522

**Fax:**

**Email:** [desjardins@agr.gc.ca](mailto:desjardins@agr.gc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 2004

**Reach:** international

### Network Description

The Methane to Markets partnership will complement and support partners' efforts implemented under the United Nations' Framework Convention on Climate Change.

The Administrative Support Group (ASG) of Methane to Markets is currently hosted by the U.S. Environmental Protection Agency, who serve as the principal partnership coordinator and provide support of the following areas:

- Organizing partnership meetings and events;
- Processes membership requests;
- Acting as an information clearing house;
- Developing general outreach materials, including the web site; and,
- Facilitating communication among the committees and the Project Network.

The Administrative Support Group reports directly to the steering committee and co-ordinates with the technical subcommittees and assists with their needs.

A steering committee, Administrative Support Group, and subcommittees are formed under the organization. Subcommittees will focus on the following areas:

Agriculture  
Coal Mining  
Landfills  
Oil and Gas Systems  
Wastewater Treatment

The steering committee may establish additional subcommittees, working groups, or enlarge the scope of existing subcommittees in other focal areas as agreed. Each of the subcommittees will create and support a project network.

The steering committee's role is to govern the overall framework, policies and procedures of the partnership; annually review progress of the initiative; and provide guidance to the Administrative Support Group and subcommittees. The steering committee will be required to meet at least once per year, in which times and

locations will be determined by the appointed representatives. All decisions made by the steering committee will be based on consensus.

Under each subcommittee of the five identified areas, a project network will be created and function as an informal mechanism to facilitate communication, project development and implementation, an private sector involvement. The role of The Project Network will be key in the reaching out to and organizing the private sector, governmental and non-governmental organizations. The Project Network will be comprised of representatives from local governments, the private sector, the research community, development banks, and other governmental and non-governmental organizations. Organizations that are interested in becoming partners in The Project Network will be asked to sign and submit a Project Network Membership Agreement.

### **Goal / Objectives / Mandate**

The original focus of Methane to Markets was the marketing of methane, but has shifted to the quantification and accounting of methane and GHG's along with working on the technological issues.

The goal of the Methane to Markets is to create a voluntary, non-binding framework for international co-operation to reduce methane emissions and to advance the recovery and use of methane as a valuable clean energy source to increase energy security. The partnership will focus upon the development of strategies and markets for the abatement, recovery and use of methane through technology development, demonstrations, deployment and diffusion, implementation of effective policy frameworks, identification of ways and means to support investment, and removal of barriers to collaborative project development and implementation.

The Methane to Markets Partnership is an international public-private initiative that advances cost effective, near term methane recovery and use as a clean energy source for four sectors:

- Agriculture
- Coal mines
- Landfills
- Oil and Gas systems

### **Narrative**

The Methane to Markets partnership is an international initiative that assists in the advancing of cost-effective, near term methane recovery and use as a clean energy source. The goal of the Methane to Markets is to reduce global methane emissions to enhance economic growth, strengthen energy security, improve upon air quality, improve upon industrial safety, and to reduce greenhouse gas emissions.

The Methane to Markets Partnership serves as a framework with the goal of achieving global methane reductions from anthropogenic methane emissions through partnerships amongst developed countries, developing countries, and countries with economies in transition in coordination with the private sector, researchers, development banks, and other relevant governmental and non-governmental organizations.

In 2004, 14 countries came together to launch Methane to Markets and there was a recognition of the importance of the role of methane in global warming and the potential use of methane as a clean energy source. In addition to engaging partner governments and private sector entities, the Methane to Markets partnership brings together technical and market expertise, financing and the technology that is needed for methane capture and project development around the world.

### **Membership Requirements**

The steering committee may invite other national government entities to join the partnership through the endorsement of the terms of reference.

Please refer to the following weblink for the Project Network Membership Agreement, this agreement can be completed online: <http://www.methanetomarkets.org/participate/networkmembers.aspx>

**Other Networks in this space**

Since the inception of the Methane to Markets Partnership back in 2004, this has served as an important international initiative to focus global attention on the importance of the reduction of methane emissions. Subsequently the governments of the United States and Mexico are proposing to build on the successes of the Methane to Markets Partnership by launching a new Global Methane Initiative (GMI). The GMI will build on the established structure and the success of the Methane to Markets Partnership that is outlined and supported by a revised terms of reference that was recently negotiated in New Delhi, India (<http://www.methanetomarkets.org/gmi/>).

**Affiliates / Affiliates area of expertise**

Areas of expertise or project development include:

- Agriculture
- Coal mining
- Landfills
- Oil and Gas Systems with a focus upon methane
- Wastewater treatment

## Biological Management – Sequestration of CO<sub>2</sub> from Forest Management

**Record:** 2040

**Category:** Carbon Capture and Storage, Biological Management, Sequestration of Carbon from Forest Management Activities

**Organization:** Saskatchewan Research Council (SRC)

**Web site:** [http://www.src.sk.ca/html/about\\_src/src\\_history/index.cfm](http://www.src.sk.ca/html/about_src/src_history/index.cfm)

**Address:** 125-15 Innovation Boulevard

**Address 2:**

**City:** Saskatoon

**State/Province:** SK

**Country:** Canada

**Zip/Postal Code:** S7N 2X8

**Contact Title:** Senior Research Scientist

**Contact Person:** Dr. Mark Johnson

**Phone:** 306-933-8175

**Fax:** 306-993-7817

**Email:** johnston@src.sk.ca

**Year Founded:** 1947

### Goal / Objectives / Mandate

The SRC's mission is to help the Saskatchewan people by strengthening the economy with quality jobs and a secure environment. This can be achieved through research, development, and the transfer of innovative scientific and technological solutions, applications and services. The SRC's mandate it to consider matters that relate to research, development, design, consultation, innovation, and investigation in, and commercialization of, the natural and management sciences, pure and applied, as they affect the welfare of the province.

### Narrative

The Saskatchewan Research Council was established in 1947 by the province of Saskatchewan. The SRC's mission is to help the Saskatchewan people by strengthening the economy with quality jobs and a secure environment. This can be achieved through research, development, and the transfer of innovative scientific and technological solutions, applications and services. The SRC's mandate is to consider matters that relate to research, development, design, consultation, innovation, and investigation in, and commercialization of, the natural and management sciences, pure and applied, as they affect the welfare of the province.

The SRC has five business divisions:

Agriculture, Biotechnology and Food

Alternative Energy and Manufacturing

Energy

Environment and Forestry

Mining and Minerals

The SRC has over 110 000 square feet of bench scale laboratories and pilot scale facilities, and employs over 350 skilled employees. The SRC is home to several state of the art laboratories. Some of these labs primarily offer commercial services, while dedicated branch labs primarily support contract research. There are seven labs:

Bioprocessing laboratory

Environmental Analytical Laboratories

Fermentation Pilot plant

GenServe Laboratories

Geoanalytical Laboratories

Petroleum Analytical Laboratories

Pipe Flow Technology Center

There are 12 staff members that are apart of the adaptation and Climate Change Impacts section. Dr. Mark Johnson is focused on the forestry aspect of climate change.

**Other Networks in this space**

SRC interacts with PARC where forestry is co-ordinated by the SRC and Agriculture as well. The SRC forestry work has two types of work, the Applied Research and the Policy Research which works closely with the forestry network and members are exclusively involve. Canadian Forestry is very technically lacking in the policy relm as it does not incorporate innovation. Members are researchers from universities and the Federal Research Institute.

**Affiliates / Affiliates area of expertise**

Agriculture-Biotechnology and Food  
Alternative Energy and Manufacturing  
Energy  
Energy Conservation  
Environment and Forestry  
Mining and Minerals

## **Biological Management – Sequestration of CO<sub>2</sub> by Agriculture**

There are no Knowledge networks in the area of sequestration of CO<sub>2</sub> by Agriculture



## Biological Management – Reduction of GHG by Agricultural Management

The following super networks are involved in reduction of GHG by Agricultural Management:

National Energy Technology Laboratory

The following Knowledge Networks are also involved in this area.

**Record:** 2020

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** World Resources Institute (WRI)

**Web site:** <http://www.wri.org/>

**Address:** 10G Street NE Suite 800

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20002

**Contact Title:**

**Contact Person:** Florence Daviet

**Phone:** 202-729-7822

**Fax:**

**Email:** [fdaviet@wri.org](mailto:fdaviet@wri.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1983

**Reach:** Global

### Goal / Objectives / Mandate

In WRI there are four key programmatic goals:

**Climate protection:** to protect the global climate from further harm due to emissions of GHG and help humanity and the natural world adapt to unavoidable climate change.

**Governance and Access:** to empower and support institution to foster environmentally sound and socially equitable decision-making.

**Markets and Enterprise:** to harness markets and enterprise to expand economic opportunity and protect the environment.

**People and Ecosystems:** to reverse rapid degradation of ecosystems and assure their capacity to provide humans with needed goods and services.

To achieve institutional excellence and support and enhances WRI's ability to achieve results.

### Interest in Collaboration

Possibly dependent upon the areas of interest

### Narrative

The World Resources Institute is an organization that is funded from government, foundations, and sometimes corporations (for a specific project). There is no membership and the WRI focuses on research and policy. There are four major program areas:

1. Climate and Energy: within this program there are four areas
  - i. International Climate Agreement
  - ii. US legislation and state programs related to climate change
  - iii. Partnerships with large organizations/corporations to reduce their carbon footprint. Assist with their research and development
  - iv. Greenhouse Gas Protocol for reporting and accounting for large corporations
2. Markets and Enterprise: there is a focus on Climate and water and how it affects the financial institutions such as climate risks and the impacts it has on investments made by the banks.

3. Governance Programs: in terms of climate change to assist the developing countries with large financial flows coming from the developed countries. This is achieved with the collaboration of institutions and civil society organizations worldwide to ensure that decisions surrounding natural resources reflect the environmental values as well the the people's rights and interests.

4. Ecosystems Program: examines how ecosystems and human well-being are linked. There is a forest monitoring program in the developing countries and Russia to examine how deforestation is affecting the ecosystem.

The WRI is not a lobbying organization, rather an organization that is called upon for their expertise in various areas. There are approximately 170 employees and two major offices - one in Washington DC and the other in China. Most work is with partnerships in the developing countries. The WRI is a part of other networks such as the Access Initiative for global NGO's, Climate in Action Program in the US and is a part of the US CAP (looking at domestic cap and trade in the US).

It is difficult to highlight all the successes of WRI but the GHG protocol for corporate accounting is an internationally accepted standard that large corporations are using for corporate accounting of their GHG's. As well the WRI has provided technical expertise to RGGI, WCI and EPA.

### Meeting Frequency

There is no meeting frequency as there are no memberships publicly.

### Membership Requirements

This is an organization with no membership

**Record:** 1974

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** Canadian Environmental Network (RCEN)

**Web site:** <http://www.cen-rce.org/eng/index.html>

**Address:** 39 McArthur Avenue, Level 1-1                      **Address 2:**

**City:** Ottawa    **State/Province:** ON

**Country:** Canada    **Zip/Postal Code:** K1L 8L7

**Contact Title:** Communications Coordinator

**Contact Person:** Robert Henri

**Phone:** 613-728-9810, ext. 229      **Fax:** 613-728-2963      **Email:** robert@cen-rce.org

**Funding:** Public    **Budget:**

**Year Founded:** 1977    **Reach:** Nationally in Canada

### Network Description

The RCEN consists of 600 ENGOs, many of which are part of 11 provincial and territorial affiliate networks (all of the provinces and the Yukon Territories).

### Goal / Objectives / Mandate

The RCEN is an independent, non-partisan organization. RCEN's primary role is to support environmental NGOs (ENGOs) by providing them with valuable networking, communication and coordination services. The organization also provides opportunities for ENGO representatives to participate in federal government meetings, conferences, workshops and consultations through a transparent, bilingual and democratic delegate selection process.

### Narrative

For more than thirty years, the Canadian Environmental Network (RCEN) has been facilitating networking between environmental organizations and others who share its mandate - To protect the earth and promote ecologically

sound ways of life. The RCEN works directly with concerned citizens and organizations striving to protect, preserve and restore the environment.

The Canadian Environmental Network is a non-partisan organization that is funded by the federal government. There are approximately 600 members, consisting of ENGOs, and 11 regional networks noted as caucuses that produced their own reports. The Canadian Environmental Network's primary focus is to interface between the government and the environmental groups as a facilitator. Its strength lies in the diversity provided by the members, who are situated in rural, urban and aboriginal communities, along with scientists, academics and environmental practitioners. Each of the 11 regional networks/caucuses meet on an annual basis. The RCEN is primarily focused on issues within Canada but also there is some international work being done.

#### **Meeting Frequency**

The RCEN holds a yearly general assembly. Further, each of the 11 regional networks/caucuses meet on an annual basis.

#### **Membership Requirements**

Restricted to environmental groups, ENGOs and related NGOs.

#### **Other Networks in this space**

RCEN consists of 11 regional networks.

#### **Affiliates / Affiliates area of expertise**

There is a vast number of experts within this organization that sits on various issues or caucuses that are engaged in various meetings with the federal government. Depending on the issue the caucus that has the expertise will be engaged with that specific issue.

**Record:** 1986

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** PEW Center on Global Climate Change

**Web site:** [http://www.pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/regional\\_initiatives.cfm](http://www.pewclimate.org/what_s_being_done/in_the_states/regional_initiatives.cfm)

**Address:** 2101 Wilson Blvd Suite 550

**Address 2:**

**City:** Arlington

**State/Province:** VA

**Country:** United States

**Zip/Postal Code:** 22201

**Contact Title:** VP Markets and Business Strategy

**Contact Person:** Janet Peace

**Phone:** 703-516-0602

**Fax:** 703-s841-1422

**Email:**

**Funding:** Private

**Budget:** 4-10 Million

**Year Founded:** 1988

**Reach:** North America and International

#### **Network Description**

PEW Center's Business Environmental Leadership Council (BELC) was created with the belief that business engagement is necessary in the development of efficient, effective solutions to the climate problem.

The PEW Center is also a founding member of the US Climate Action Partnership (USCAP), which consists of 23 major businesses and five non-governmental organizations.

#### **Goal / Objectives / Mandate**

The Pew Center on Global Climate Change was established in 1998 as a non-profit, non-partisan and independent organization. The Center's mission is to provide credible information, straight answers, and innovative solutions in the effort to address global climate change.

Working on an issue that is often polarized and politicized, the Pew Center provides a forum for objective research and analysis and for the development of pragmatic policies and solutions. Now in its tenth year, the Pew Center has become a leading voice for sensible action to address the most pressing global environmental problem of the 21st century.

#### **Interest in Collaboration**

Possibly

#### **Narrative**

The PEW Center is a privately funded organization that focuses on climate policy. The PEW Center has approximately 30-35 staff members and 46 large corporate members, for whom there are no membership dues. The PEW Center is involved with the US Climate Action Partnership (US CAP); its efforts take various forms, such as economics, government relations, policy research group. When technical experts are required for a project, they are contracted by the PEW center.

The PEW center also provides publications (such as fact sheets, briefing notes, working papers and white papers, briefs, analytic reports and testimony), reports, articles, and speeches.

#### **Membership Requirements**

This is not a membership driven organization

**Record:** 1988

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** Center For Climate Strategies

**Web site:** <http://www.climatestrategies.us/>

**Address:** 1899 L Street, Suite 900

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20036

**Contact Title:** Communications Director

**Contact Person:** June Taylor

**Phone:** 302-587-4178

**Fax:** 202-540-9122

**Email:** [jtaylor@climatestrategies.us](mailto:jtaylor@climatestrategies.us)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 2004

**Reach:** North America

#### **Network Description**

The CCS has several levels of knowledge networks working in the areas of: transportation/land use; power sector, alternative energy; residential, commercial and industrial sources.

For an example of a recently completed analysis for the state of Michigan, please refer to:

<http://www.climatestrategies.us/ewebeditpro/items/O25F22418.pdf>

#### **Goal / Objectives / Mandate**

The Center for Climate Strategies (CCS) is a not-for-profit that helps governments and their stakeholders tackle climate change issues by bringing together networks of experts, and building consensus-based actions through collaboration and advanced technical assistance. Since 2004, CCS has partnered with over 40 US states and territories (as well as Mexican states and Canadian provinces), dozens of government officials, the Western

Climate Initiative, and over 1,500 stakeholders through high level, high visibility projects to address complex and difficult issues related to climate change.

### **Interest in Collaboration**

Interested in collaboration with the CCEMC in some of the strategic carbon management strategies. Expert networks and technology options could be arranged. Contact Tom Peterson, President and CEO to discuss options.

### **Narrative**

The CCS is a public purpose, non-partisan, non-profit partnership organization that was formed in 2004 and is funded by private foundations, donors and governments at the program and project levels. CCS is headquartered in Washington, DC with over 30 national and field experts across the U.S, Canada and Mexico.

Team members have extensive qualifications in environmental science, public policy, economics, management, business, law, education, communications, and finance. Many have experience as public officials, high-level policy advisors, and academic, non-profit, community, and business leaders. The Washington office consists of six staff members but also has a network of policy specialists that assist for various projects.

The CCS has more than 30 policy specialists that have played a major role in almost all the state and regional climate policy planning processes since 2000, and participated in key studies and departmental initiatives. A list of the projects and partners that the CCS has been involved with since 2004 to present is available at:

<http://www.climatestrategies.us/template.cfm?FrontID=5958>

Climate Mitigation Actions:

CCS is involved with intensive stakeholder and technical work group collaboration with state climate action plans. These plans are designed to reduce state greenhouse gas (GHG) emissions through a wide range of policies and programs in the following areas:

- Energy efficiency and conservation
- Clean, advanced, and renewable energy supply
- Transportation and land use improvements
- Forest and farm conservation
- Waste management
- Industrial process improvements

For an example of the kinds of strategy, policy, management and technology option analysis the CCS does, please refer to the Michigan State Study:

<http://www.climatestrategies.us/ewebeditpro/items/O25F22418.pdf>

CCS is also involved with cross-cutting issues, such as consumer awareness and education with respect to climate change. CCS has its own network of experts. CCS has assisted in the facilitation of climate change strategies for various states in the US. Each state has its key experts for the sectors and all stakeholders. Often these discussions can range from 30 to 70 stakeholders at each forum, during which the CCS facilitates a consensus on the issues that are discussed at length.

Along with the stakeholder groups that are involved with the creation of climate change strategies, there is a technical working group that will assist with the creation of the strategies. The technical group consists of academics, environmentalists, and industry experts. The technical working group does not vote on the strategies; rather, it assists in providing the correct information for the stakeholders to base their decisions on.

Currently, the CCS is working with the US Department of Energy on a stimulus program regarding clean energy, such as identifying what creates the most jobs and what is the cleanest fastest way to achieve clean energy. In the past, the CCS has worked with the Western Climate Initiative (WCI).

The primary goals of the CCS include:

1. Facilitating climate change action in the US as well as in China and Mexico;
2. Developing an inventory of local GHG;
3. Bringing together stakeholders and options that are available to each area or project to develop carbon management strategies for jurisdictions.

CCS will provide both the technical and cost effectiveness analysis of each project.

CCS follows a specific analytical format, which is made up as follows:

1. Conduct quantitative inventory of GHGs;
2. Provide policy options that fit the jurisdiction (such as, building codes, renewable portfolio standards, etc);

3. Provide C-suite management options, including technology options; and,
4. Conduct a cost benefit analysis of major options.

As well, the CCS is now providing a macroeconomic analysis that will look at the state GDP, income and job impacts, and look at the cost effectiveness of different policy options over time along with the cost savings over time.

The CCS provides a variety of skills and services such as:

- Start-up planning
- Cost sharing and resource assistance
- Project management and coordination
- Planning process design
- Public participation
- GHG emissions inventories and forecasts
- Climate policy design
- Economic analysis and modeling
- Policy implementation
- Finance and resource assistance
- State and federal policy integration
- Reports and issue briefs
- Information and education

### **Meeting Frequency**

### **Membership Requirements**

As a 501(c)3 organization (that is, a tax-exempt not-for-profit), CCS depends on private funding in addition to government grants. Individuals may gain membership by making a donation.

---

**Record:** 1995

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** Coalition on Agricultural Greenhouse Gases (C-AGG)

**Web site:** <http://www.c-agg.org/>

**Contact Title:** Executive Director

**Contact Person:** Debbie Reed

**Phone:** 202-547-0309    **Fax:**    **Email:** [dreed@drdassociates.org](mailto:dreed@drdassociates.org)

### **Goal / Objectives / Mandate**

The Coalition on Agricultural Greenhouse Gases (C-AGG) is a group of agricultural producers, scientists, methodology experts, carbon investors and project proponents that is fostering a fact-based discourse on the development and adoption of methodologies and protocols for GHG emission reductions and carbon sequestration associated with agriculture. It aims to achieve this by:

- Identifying key research, data, or modeling needs that must be addressed in order to develop sound protocols;
- Prioritizing potential agricultural GHG protocols, based on considerations of technical feasibility, emissions reductions, and project developer interest and recommending their development and adoption by relevant standard-setting bodies, registries and agencies; and,
- Creating a series of methodologies, or perhaps modules, for agricultural GHG projects and encouraging their adoption by the appropriate agencies.

**Record:** 2005

**Category:** Carbon Capture and Storage, Biological Management, Reduction of GHG by Agricultural Management Practices.

**Organization:** American Farmland Trust

**Web site:** <http://www.farmland.org/programs/environment/solutions/BMP-challenge.asp>

**Address:** 1200 18th Street NW, Suite 800                      **Address 2:** National Office

**City:** Washington    **State/Province:** DC

**Country:** United States                                      **Zip/Postal Code:** 20036

**Contact Title:** Managing Director, Agriculture and the Environment

**Contact Person:** Jimmy Daukas

**Phone:** 202-378-1242      **Fax:**      **Email:** [jdaukas@farmland.org](mailto:jdaukas@farmland.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1980

**Reach:** United States

### **Network Description**

American Farmland Trust work with federal, state, and local leaders and communities to develop legislation, implement policies and execute programs that keep farmers on their land and protect the environment.

### **Goal / Objectives / Mandate**

The mission of American Farmland Trust is to help farmers and ranchers protect their land, produce a healthier environment, and build successful communities.

### **Narrative**

1980: A group of concerned farmers founded the American Farmland Trust (AFT).

1981: Farmland Protection Policy Act enacted in the 1981 Farm Bill.

1982: Four states authorized purchase of development rights/purchase of agricultural conservation easements (PDR/PACE) programs.

1985: AFT publishes "Soil Conservation in America: What Do We Have to Lose?"

1987: AFT publishes the first "Farming on the Edge" report.

1988: AFT helps Pennsylvania enact it's state PDR program.

1991: AFT holds its first National conference on farmland protection.

1992: AFT opens it Center for Agriculture in the Environment (CAE) in partnership with Northern Illinois University

1994: AFT creates the Farmland Information Center (FIC)

1996: AFT's efforts lead to the creation of a national farmland protection program in the 1996 Farm Bill.

1997: Publication of "Saving American Farmland: What Works", AFT's comprehensive guidebook for farmland protection.

2002: the federal Farm and Ranch Lands Protection Program is launched.

2005: 27 states and more than 50 local governments authorize PDR/PACE programs.

2008: 2008 Farm Bill passes with many important improvements for conservation, renewable energy, farm safety net, and local foods.

2008: Long-time AFT president Ralph Grossi retires and Jon Scholl becomes the new president.

### **Meeting Frequency**

American Farmland Trust does not appear hold regular meetings.

### **Affiliates / Affiliates area of expertise**

Farmland Protection, Agriculture and Environment (clean water, climate change, solutions, policies), Growing Local, Federal Farm Policy, Ste Issues and Programs, Steward of the Land.

## Adaptation – Adaptation Planning

**Record:** 2039

**Category:** Adaptation and Knowledge, Adaptation, Climate change Adaptation planning

**Organization:** Pacific Institute for Climate Solutions

**Web site:** <http://www.pics.uvic.ca/research/>

**Address:** Sedgewick Bldg C132, 3800 Finnerty Road

**Address 2:**

**City:** Victoria

**State/Province:** BC

**Country:** Canada

**Zip/Postal Code:** V8P 1A1

**Contact Title:**

**Contact Person:**

**Phone:** 250-853-3595

**Fax:** 250-853-3597

**Email:** [pics@uvic.ca](mailto:pics@uvic.ca)

**Funding:** Public

**Budget:** 4.5 million (operating 1st year) 90 M endowment

**Year Founded:** 2008

**Reach:** British Columbia, Canada and internationally

### Network Description

The PICS Climate Solutions Network is designed to facilitate communication and collaboration amongst the researchers, scientist, policy-makers and other stakeholders in the climate change field. This network allows for climate change researchers to connect with experts in other fields so that they are able to address the interdisciplinary nature of climate change solutions. Please refer to the following link:

<http://www.pics.uvic.ca/research/>

### Goal / Objectives / Mandate

Partnering with governments, the private sector, other researchers and civil society to undertake research on, monitor, and assess the potential impacts of climate change and to assess, develop and promote viable mitigation and adaptation options to better inform climate change policies.

### Narrative

In 2008 the BC government announced that the government will fund \$94.5 million to create the Pacific Institute for Climate Solutions (PICS) that is led by the University of Victoria in collaboration with the University of British Columbia, Simon Fraser University and the University of Northern British Columbia. The mission of PICS is to partner with governments, the private sector, other researchers and civil society to undertake research, monitor and assess the potential impacts of climate change and to assess, develop and promote viable mitigation and adaptation options to better inform climate change policies and actions.

**Record:** 2060

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Planning

**Organization:** Saskatchewan Research Council

**Web site:** [http://www.src.sk.ca/html/research\\_technology/environment/climatology/index.cfm](http://www.src.sk.ca/html/research_technology/environment/climatology/index.cfm)

**Address:** 15 Innovation Blvd, Saskatoon

**Address 2:**

**City:** Saskatoon

**State/Province:** Saskatchewan

**Country:** Canada

**Zip/Postal Code:** S7N 2X8

**Contact Title:** Sr. Research Scientist, Environment, Ecosystems and Forestry

**Contact Person:** Mark Johnston

**Phone:** 306-933-8175

**Fax:** 306-933-7817

**Email:** [johnston@src.sk.ca](mailto:johnston@src.sk.ca)



**Reach:** Across Canada

**Goal / Objectives / Mandate**

Mark Johnston and his network of ecologists are modeling forest ecosystems to find their vulnerabilities to climate change. They are using this research to develop decision making tools that will help forest managers (i.e. forest companies) and policymakers (federal and provincial governments) find the best way to adapt forests to Earth's changing climate.

**Interest in Collaboration**

Mark Johnston and his colleagues would be open to providing free consultation and advice. If a larger project is needed, then a small contract may be needed. SRC is very open to collaboration.

**Narrative**

Two components of SRC's and Mark Johnston's work:

1. Forest Management - working with provincial and federal governments (decision makers) on forest impacts assessments and adaptation/policy implementation options analysis.
2. Forest Industry - incorporating adaptation impacts and strategies into long-term forest management agreements.

CCFM Climate Change Task Force Report - much of his work is featured on the CCFM.org web site. Publicly available.

[http://www.ccfm.org/pdf/TreeSpecies\\_web\\_e.pdf](http://www.ccfm.org/pdf/TreeSpecies_web_e.pdf) - Produced Report on Canada's Tree Populations and their Vulnerability to Climate Change.

Major Projects:

National forest climate change project funded by the Canadian Council of Forest Ministers

Prairie forest climate change project funded through Natural Resources Canada's Regional Adaptation

Collaboratives initiative

## Adaptation – Adaptation Policy

**Record:** 2008

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Policy

**Organization:** OURANOS Consortium on Regional Climatology and Adaptation to Climate Change

**Web site:** <http://www.ouranos.ca/en/>

**Address:** 550 Sherbrooke West, West Tower 19th floor  
**City:** Montreal **State/Province:** Quebec  
**Country:** Canada **Zip/Postal Code:** H3A 1B0

**Address 2:**

**Contact Title:** Director of Adaptation and Impacts

**Contact Person:** Alain Bourque

**Phone:** 514-282-6464 ext 230

**Fax:** 514-282-7131

**Email:** [bourque.alain@ouranos.ca](mailto:bourque.alain@ouranos.ca)

**Funding:** Public

**Budget:** 12 000 000 per year

**Year Founded:** 2001

**Reach:**

### Goal / Objectives / Mandate

Ouranos mission is to acquire and develop knowledge on climate change, its impact and related socioeconomic and environmental vulnerabilities, in order to inform decision makers about probable climate trends and advise them on identifying, assessing, promoting and implementing local and regional adaptation strategies.

### Narrative

Ouranos was created in 2001 and is a private non-profit organization with 18 regular and affiliated members. There are a network of some 250 scientists and professional with a total estimated resource of \$12 million per year. There are approximately ten programs with approximately over 40 projects. Ouranos acts jointly with many Quebec and organizations across Canada.

Ouranos was created in 2001 as a joint initiative by the Quebec government, Hydro-Quebec and Environment Canada, with the financial support of Valorisation-Recherche-Quebec.

There are 14 members

Quebec government departments:

Securite publique

Developpement durable, Environnement et Parcs

Ressources naturelles et Faune

Affaires municipales et Regions

Transports

Agriculture, Pecheries et Alimentation

Developpement economique, Innovation et Exportation

Sante et Services sociaux

Hydro-Quebec

Environment Canada

Universite du Quebec a Montreal

Universite Laval

McGill University

Institut national de la recherche scientifique (INRS)

Four affiliated members:

Ecole de technologie superieure (ETS)

Manitoba Hydro

Universite du Quebec a Rimouski (UQAR)

Ontario Power Generation (OPG)

**Membership Requirements**

This is an incorporated non-profit organization

**Other Networks in this space**

Scientific programs consisting of Climate Sciences (Climate Simulations, Hydroclimatic Analyses, Climate Scenarios) Impacts and Adaptation ( Northern Environment, Energy Resources, Forestry Resources, Maritime Environment, Water Resources), Social and Environmental Impacts (Health, Transportation, Infrastructure and Safety, Agriculture, Economy and Society, Natural Ecosystem and biodiversity). They also have various publications ranging from information about Ouranos, Climate Change, Project fact sheets, Scientific publications and a list of published articles.

**Affiliates / Affiliates area of expertise**

Ouranos is a consortium that brings together some 250 scientists and professionals from different disciplines which focuses on two main themes: Climate Sciences, Impacts and Adaptation.

Climate Sciences: focuses on developing knowledge, providing simulation data and climate scenarios required for impact and adaptation studies. Processing and validation of results that are obtained through relevant and adequate hydroclimatic analyses. The Climate Sciences are classified in three groups: Climate Simulations, Climate Scenarios and Hydroclimatic Analyses.

Impacts and Adaptation: looks at quantifying the impacts of climate change on the environment, the public and socio-economic activity, assessing the vulnerabilities of systems and the identification and the making of recommendations to decision makers to what the best approach would be to adapting to climate change.

## Adaptation – Adaptation Risk Management

**Record:** 1460

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Resources for the Future (RFF)

**Web site:** <http://www.rff.org>

**Address:** 1616 P Street NW Suite 600

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20036

**Contact Title:** Director of Communications

**Contact Person:** Peter Nelson

**Phone:** 202-328-5191

**Fax:** 209-239-3460

**Email:** [nelson@rff.org](mailto:nelson@rff.org)

**Funding:** Private/Public

**Budget:** 13 102 222

**Year Founded:** 1952

**Reach:** United States and internationally

### Goal / Objectives / Mandate

RFF has five defined focus areas: Energy and Climate, Regulating Risks, Transportation and Urban Land, The Natural World, Human Health

### Narrative

<http://www.rff.org/documents/RFF-DP-09-03.pdf>

<http://www.rff.org/RFF/Documents/RFF-Rpt-Adaptation-NeumannPrice.pdf>

Updates and notices can be sent directly by e-mail when you sign up on their web site or available on their blog. For more than 50 years, RFF has pioneered the application of economics as a tool to develop more effective policy about the use and conservation of natural resources. Its scholars continue to analyze critical issues concerning pollution control, energy and transportation policy, land and water use, hazardous waste, climate change, biodiversity, ecosystem management, public health, and the environmental challenges of developing countries. In 1979, RFF was instrumental in the founding of the Association of Environmental and Resource Economists (AERE), which was established as a means of exchanging ideas, stimulating research, and promoting graduate training in resource and environmental economics. AERE currently has more than 800 members from more than thirty nations, drawn from academic institutions, the public sector, and private industry. It is the publisher of two academic periodicals, the Journal of Environmental Economics and Management and the Review of Environmental Economics and Policy.

RFF has numerous publications ranging from discussion papers to issue briefs, resource articles, journal articles and reports.

### Membership Requirements

No membership requirements as this is a non-profit organization that operates on individual, corporate, private foundations and government agencies for funding which goes directly to their research and public education activities.

### Affiliates / Affiliates area of expertise

Energy and Climate

Regulating Risks (environmental performance and costs)

Transportation and Urban Land

The Natural World (ecosystem, effects on plants and animals at risk)

Human Health

Most RFF researchers hold doctorates in economics, but others hold advanced degrees in engineering, law, ecology, city and regional planning, American government, and public policy and management, among other

disciplines. In addition to its research staff, RFF has a development office, a communications office, a book publishing operation, and various research support functions, including a specialized library.

---

**Record:** 1350

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Prairie Adaptation Research Collaborative (PARC)

**Web site:** <http://www.parc.ca/>

**Address:** Suite 120-2 Research Dr.                      **Address 2:**

**City:** Regina    **State/Province:** SK

**Country:** Canada                                      **Zip/Postal Code:** S4S 7H9

**Contact Title:**

**Contact Person:** Dave Sauchyn

**Phone:** 306-337-2299      **Fax:** 306-337-2301      **Email:** [sask@parc.ca](mailto:sask@parc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 2000

**Reach:** Regional

### **Network Description**

Project-based network. Lots of opportunities for partnerships. Have over 50 projects on their project list, engaging experts in various locales.

### **Goal / Objectives / Mandate**

The Prairie Adaptation Research Collaborative is a partnership of the governments of Canada, Alberta, Saskatchewan and Manitoba mandated to pursue climate change impacts and adaptation research in the Prairie Provinces. Our objective is to generate practical options to adapt to current and future climate change. We are also charged with fostering the development of new professionals (i.e. grad students) in the emerging science of climate change impacts and adaptation. Our target audience is decision and policy makers - and we facilitate processes to engage stakeholders and decision makers in adaptation actions.

The Regional Assessment Collaborative or RAC is the latest undertaking. It is a user-driven research model, meaning the work is defined by the policy community (governments) and for every \$1 spent, NRCAN matches it by a \$1 (for up to \$35M in three years for the Prairie Provinces).

### **Narrative**

PARC wrote the Prairies Chapter of NRCAN's National Assessment on Climate Change.

There are several PARC special publications on the web site such as, Climate Scenarios for Saskatchewan, Saskatchewan's Natural Capital in a Changing Climate: An Assessment of Impacts and Adaptation.

There are numerous research publications according to the sectors (Agriculture, Communities and Socio-Economic Research Projects, Earth Sciences, Energy, Forestry and Biodiversity Research Projects, General Policy, Scenarios, Water Resources).

PARC's program areas are: Climate Science Research (they have access and can run all the Global Circulation Models), Climate variability (water resource impacts on agriculture and forestry sector, municipal infrastructure, parks and protected areas. These are converted into Knowledge Products.

A new plain-language book will be published by PARC on CRC Press called "The New Normal: The Canadian Prairies in a Changing Climate" (a trailer is on YouTube by the same name).

PARC was involved with the Saskatchewan government's web site 'SaskAdapt' - which houses a user interface that translates the modeling into knowledge about Climate Change and adaptation - options and strategies for various sectors.

Each of their projects results are summarized into a Summary Document Series for policy makers/decision makers. Constraints - attracting bright minds to Saskatchewan and Regina. Capacity constraints.

**Membership Requirements**

Those agencies and organizations who manage resources - land, air, water, infrastructure (every level of government).

**Other Networks in this space**

Saskatchewan Ministry of Environment, University of Regina, Climate Change Central, Natural Resources Canada, Environment Canada, Agriculture and Agri-food Canada, Manitoba Hydro, Saskatchewan Ministry of Energy and Resources, Alberta Environment, Smart Science Solutions, Government of Canada, Government of Manitoba, Prairie Farm Rehabilitation Administration.

**Record:** 1362

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** PEW Center on Global Climate Change

**Web site:** <http://www.pewclimate.org/>

**Address:** 2101 Wilson Blvd Suite 550

**Address 2:**

**City:** Arlington

**State/Province:** VA

**Country:**

**Zip/Postal Code:**

**Contact Title:** VP Markets and Business Strategy

**Contact Person:** Janet Peace

**Phone:** 703-516-4146

**Fax:** 703-841-1422

**Email:**

**Funding:** Private/Public

**Year Founded:** 1988

**Goal / Objectives / Mandate**

The Center's mission is to provide credible information, straight answers, and innovative solutions in the effort to address global climate change.

**Narrative**

[http://www.pewclimate.org/docUploads/Adaptation\\_0.pdf](http://www.pewclimate.org/docUploads/Adaptation_0.pdf)

<http://www.pewclimate.org/hottopics/adaptation>

<http://www.pewclimate.org/publications/report/adapting-to-climate-change-call-for-federal-leadership>

[http://www.pewclimate.org/docUploads/State-Adapation-Planning-02-11-08\\_0.pdf](http://www.pewclimate.org/docUploads/State-Adapation-Planning-02-11-08_0.pdf)

**Membership Requirements**

No membership requirements as the PEW center is a public charity that is solely supported by grants and contributions from individuals and charitable foundations.

**Record:** 1412

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Government of Canada Policy Research Initiative (PRI)

**Web site:** [http://policyresearch.gc.ca/page.asp?redir=on&pagenm=rp\\_sd\\_pub2&project=SD](http://policyresearch.gc.ca/page.asp?redir=on&pagenm=rp_sd_pub2&project=SD)

**Country:** Canada

**Zip/Postal Code:**

**Contact Person:** Marissa Martin

**Phone:** 613-995-3696

**Fax:** 613-995-6006

**Email:** [questions@pri-prp.gc.ca](mailto:questions@pri-prp.gc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 1996

**Reach:** Provincial and Federal

**Network Description**

PRI works in conjunction with multiple ministries of the federal government. The PRI will continue to play a significant role in connecting research efforts across departments by catalyzing and convening knowledge and by creating capacity both to communicate policy-makers' needs to researchers and to enable policy-makers to apply resulting research to policy development.

**Goal / Objectives / Mandate**

PRI's vision is to promote excellence in government policy research and the use of evidence in every stage of the policy cycle. It accomplishes this by:

- Creating and promoting collaborations, including technology enabled communities;
- Identifying emerging trends and policy issues;
- Acquiring and generating relevant research from a wide variety of research sources to support early-stage policy work; and,
- Developing tools that help in framing, managing and measuring of federal policy priorities.

**Narrative**

The Policy Research Initiative (PRI) is a policy research organization for the whole of the federal government specialized in early stage work on issues involving several federal departments. The PRI bridges the span between the policy research community inside and outside of government and the policy development community within government on issues likely to arise as policy priorities for the federal government over the coming three to five years. Its core mandate is to advance research on emerging issues, and to ensure both effective communication to researchers of the policy research priorities of policy-makers and effective use of research findings in the development of policies.

PRI activities are overseen by a Steering Committee of Deputy Ministers. The Committee is composed of the Deputy Minister of Human Resources and Skills Development (Chair), the Deputy Secretary of Plans and Consultation at the Privy Council Office, the chairs of four policy committees (listed below) of the Coordinating Committees of Deputy Ministers (CCDM) as well as several other Deputy Ministers.

**Membership Requirements**

Not a membership-based organization.

**Record:** 528

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Climate Ontario

**Web site:** <http://www.climateontario.ca/>

**Address:** Willet Green Miller Center, Laurentian University, 933 Ramsey Lake Road

**Address 2:**

**City:** Sudbury

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** P3E 6B5

**Contact Title:**

**Contact Person:** Al Douglas

**Phone:** 705-675-1151, ext 1506

**Fax:**

**Email:** [adouglas@mirarco.org](mailto:adouglas@mirarco.org)

**Funding:** Public

**Budget:** \$600,000

**Year Founded:**

**Reach:** Provincial/Regional

**Network Description**

Regional

**Goal / Objectives / Mandate**

The mandate of the Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR) is to:

1. Effectively communicate the science of climate change, including its current and future impacts;
2. Encourage the development and implementation of adaptation strategies in order to reduce climate vulnerability and increase resiliency;
3. Create and foster partnerships with stakeholder groups;
4. Support the work of Ontario's expert panel on climate change adaptation within the Province of Ontario and beyond.

The Centre will also be a hub for climate change impacts and adaptation activities, events and resources.

To accomplish these ends, the Centre will:

1. Hold stakeholder workshops across the province;
2. Enhance existing and foster new relationships with a variety of stakeholder groups;
3. Host and create a web site with pertinent and up-to-date information on climate change impacts and adaptation;
4. Develop and disseminate resource material pertaining to climate change impacts, vulnerabilities and adaptation;
5. Populate a reference database containing climate change articles, books and other reports;
6. Support and facilitate adaptation planning and action through integration of climate change into decision-making processes at the community level.

**Interest in Collaboration**

Yes, there would be a great potential for collaboration between the CCEMC and OCCIAR.

**Narrative**

Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR) is a university-based resource hub for researchers and stakeholders searching for information on climate change impacts and adaptation. The centre communicates the latest research on climate change impacts and adaptation collaborates with partners across Canada to encourage adaptation to climate change and aids in the development of tools to assist with the municipal adaptation.

Funding for OCCIAR is provincial and project-based funding at present. OCCIAR is viewed as a consulting firm that provides the resources and expertise for adaptation, which is mostly community and sectoral based. OCCIAR is based out of Laurentian University and is a not-for-profit organization.

OCCIAR has a total of five divisions that are involved with climate change, two of the other divisions that would be of interest to CCEMC are the energy and GHG divisions. The contacts for these areas have been forwarded the information pertaining to CCEMC by Mr. Al Douglas. Mr. Douglas has indicated that Drs' Millar and Spiers would be the appropriate contacts, as they are the ones that lead the energy, renewable and carbon management group and the environmental monitoring and rehabilitation group respectively within MIRARCO.

Currently Dr. Spiers is conducting research dealing with crop production on mine tailings leading to their use in the production of biofuels and Dr. Millar has ongoing work through the European Union investigating low-carbon technology applications for the European coal mining sector.

The contact information for Dr. Graeme Spiers - Director of the Center of Environmental Monitoring

Tel: 705-675-1151 ext 2014

e-mail: gspiers@miarco.org

Dr. Dean Millar Director of EVO

Tel: 705-675-1151 ext 5071

e-mail: dmillar@miarco.org



**Meeting Frequency**

Not found on web site

**Membership Requirements**

Requires a brief explanation of how your applicant organization is involved in climate impacts and adaptation, and why it is interested in becoming involved.

**Affiliates / Affiliates area of expertise**

C-CIARN sectors breakdown according to the various industries, such as agriculture, coastal zone, fisheries, forest, health, landscape hazards, and water resources.

**Record:** 13

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Natural Resources Canada Climate Change Impacts and Adaptation Division (CCIAD)

**Web site:** <http://adaptation.nrcan.gc.ca/>

**Address:** 601 Booth Street

**Address 2:**

**City:** Ottawa

**State/Province:** Ontario

**Country:** Canada

**Zip/Postal Code:** K1A 0E8

**Contact Title:**

**Contact Person:**

**Phone:** 613-992-8302

**Fax:** 613-947-0126

**Email:** [adaptation@nrcan.gc.ca](mailto:adaptation@nrcan.gc.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 1988

**Reach:** Federal, Regional, Municipal

**Goal / Objectives / Mandate**

The Climate Change Impacts and Adaptation Division encompasses two main activities, which are:

- 1) The Regional Adaptation Collaboratives (RAC) program, which allows for collaboration amongst different levels of government, private sector entities, and community organizations on complex adaptation issues that address federal, sectoral, or regional priorities. The objective of this program is to equip the decision makers with the information and advice that is required to make policy, operational, and management changes that respond to regional opportunities and threats from a changing climate; and,
- 2) The Tools for Adaptation program, which will develop adaptation tools to support decision-making on where and how to adapt to a changing climate.

**Narrative**

Publications and sites of interest:

[http://adaptation.nrcan.gc.ca/assess/2007/index\\_e.php](http://adaptation.nrcan.gc.ca/assess/2007/index_e.php)

[http://adaptation.nrcan.gc.ca/perspective/agri\\_4\\_e.php](http://adaptation.nrcan.gc.ca/perspective/agri_4_e.php)

[http://adaptation.nrcan.gc.ca/perspective/index\\_e.php](http://adaptation.nrcan.gc.ca/perspective/index_e.php) -see various chapters on agriculture, water, etc.

[http://www.c-ciarn.ca/index\\_e.html](http://www.c-ciarn.ca/index_e.html) (archives of all the products of C-CIARN which is no longer in existence)

**Record:** 132

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** Climate Impacts Group

**Web site:** <http://cses.washington.edu/cig>

**Address:** 3737 Brooklyn Ave NE

**Address 2:**

**City:** Seattle

**State/Province:** WA

**Country:** United States

**Zip/Postal Code:** 98105

**Contact Title:** Program Administrator

**Contact Person:** Adrienne Karpov

**Phone:** 206-616-5350

**Fax:** 206-616-5775

**Email:** cig@u.washington.edu

**Funding:** Public

### **Goal / Objectives / Mandate**

The Climate Impacts Group (CIG) engages in climate science in the public interest, working to understand the consequences of climate variability and climate change for the US Pacific Northwest (PNW). CIG's unique focus is on the intersection of climate science and public policy, performing basic research aimed at understanding the consequences of climate fluctuations in the PNW and promoting the application of this information in regional decisions.

### **Interest in Collaboration**

Could enter into research partnership with CCEMC. CIG focuses on water and hydrology (Columbia River Basin), forestry and fisheries impacts. In each of these areas, CIG conducts modeling impacts, outreach, vulnerability assessments, and adaptation strategies - building decision support tools.

### **Narrative**

CIG assessment examines climate impacts on four diverse, yet connected, natural systems of the PNW (water, forests, salmon, and coasts). They are funded by the NOAA (National Oceanic and Atmospheric Administration), which operates under the United States Department of Commerce. The focus of CIG is on decision and policy makers for possible adaptation strategies in the PNW and Western States/provinces. Their decision support tools and analysis are all publicly available.

The Climate Impacts Group (CIG) is an internationally recognized interdisciplinary research group studying the impacts of natural climate variability and global climate change. Research at the CIG considers climate impacts at spatial scales ranging from local communities to the entire western US region, with most work focused on the Pacific Northwest (PNW). Through research and interaction with stakeholders, the CIG works to increase community and ecosystem resilience to fluctuations in climate.

The CIG focuses on the intersection of climate science and public policy/resource management. We perform fundamental research on climate and climate impacts and work with planners and policy makers to apply this information to regional decision making processes. Key areas of the group's collective expertise include but are not limited to: downscaling global climate model data; regional climate modeling; hydrologic modeling; water resources and terrestrial/aquatic ecosystem modeling and impacts assessment; coastal impacts assessment; climate change vulnerability assessment and adaptation planning; and outreach and education.

The CIG is part of the Center for Science in the Earth System at the University of Washington's Joint Institute for the Study of the Atmosphere and Ocean (JISAO).

### **Membership Requirements**

Membership is largely academically based, with faculty and staff from University of Washington. Research in natural climate variability in PNW and Western States (applicability to Western Canada in the non-arctic zone).

### **Affiliates / Affiliates area of expertise**

CIG is a part of the Joint Institute for the Study of the Atmosphere and Ocean (JISAO) and the Center for Science in the Earth System (CSES).

---

**Record:** 1057

**Category:** Adaptation and Knowledge, Adaptation, Climate Change Adaptation Risk Management

**Organization:** IISD (International Institute for Sustainable Development)

**Web site:** <http://www.iisd.org/adaptation>

**Address:** 75 Albert Street, Suite 903                      **Address 2:**  
**City:** Ottawa    **State/Province:** Ontario  
**Country:** Canada    **Zip/Postal Code:** K1P 5E7

**Contact Title:** Research and Learning Resources Manager  
**Contact Person:** Marlene Roy  
**Phone:** 204-958-7724    **Fax:** 204-958-7710    **Email:** mroy@iisd.ca

**Funding:** Private/Public                      **Budget:**  
**Year Founded:** 1990                      **Reach:** North America and Internationally

### **Network Description**

#### **Goal / Objectives / Mandate**

The IISD promotes change towards sustainable development through research and through effective communication of findings. IISD engages decision-makers in government, business, NGOs and other sectors to develop and implement policies that are simultaneously beneficial to the global economy, the global environment and the social well-being.

#### **Interest in Collaboration**

Unknown

#### **Narrative**

The International Institute for Sustainable Development (IISD) is a non-partisan, charitable organization specializing in policy research, analysis and information exchange. Through its head office in Winnipeg, Manitoba and its branches in Ottawa, Ontario; New York, NY; and Geneva, Switzerland IISD applies human ingenuity to help improve the well being of the world's environment, economy and society.

The institute champions global sustainable development through innovation, research and relationships that span the entire world. It is devoted to the ongoing communication of its findings as it engages decision-makers in business, government, non-government organizations and other sectors.

IISD is proud of its diverse, multi-talented team of over 100 staff and associates located in over 30 countries.

Through its dynamic portfolio of programs and projects, the institute has partnered with over 200 organizations worldwide.

As a registered charitable organization in Canada, the institute has 501 (c) (3) status in the U.S. IISD receives core operating support from the Government of Canada, as provided through the Canadian International Development Agency, the International Development Research Centre, Environment Canada and the Province of Manitoba. The institute also receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

The International Institute for Sustainable Development (IISD) began in 1988 when the Canadian Prime Minister announced Canada's plans to establish an international institute that was dedicated to advancing sustainable development at the United Nations. In 1990, then Manitoba's Premier and the Canadian Environment Minister signed an agreement officially created IISD. Today, IISD is a non-partisan, charitable organization that specializes in policy research, analysis and information exchange. The IISD champions global sustainable development through innovation, research and relationships that reach globally. This is achieved with ongoing communication of IISD's findings when it engages decision-makers in business, government, non-government organizations and other sectors.

The Adaptation and Risk Reduction program area deals with policy only, and the Climate Change program deals with international and North American mitigation policy. The IISD has a tool for Adaptation called CRISTAL, this is a local tool used in the development of adaptation policy. The IISD often provides recommendations on policy and there is some technical support that is available. The IISD does not partner with the private sector, but rather with NGO's and primary net working partners.

The contact person for the Climate Change Program is: Mr. Johh Drexhage, who is based in Ottawa, his e-mail address is: jdrexhage@iisd.ca, and his contact number is: 613-238-9820.

IISD works in the following areas:

- Adaptation and risk reduction
- Climate change and energy
- Economics and sustainable development
- Environment, conflict and peacebuilding
- Foreign Investment for sustainable development
- Governance for sustainable development
- Internet and technology
- International trade
- Measurement and assessment
- Natural resources
- Networks and partnerships
- Sustainable markets
- Tomorrow's sustainable development leaders

IISD works in the following areas:

- Adaptation and risk reduction
- Climate change and energy
- Economics and sustainable development
- Environment, conflict and peacebuilding
- Foreign Investment for sustainable development
- Governance for sustainable development
- Internet and technology
- International trade
- Measurement and assessment
- Natural resources
- Networks and partnerships
- Sustainable markets
- Tomorrow's sustainable development leaders

#### **Other Networks in this space**

There are several Networks and Communities these are;

1. The Canadian Sustainability Indicators Network
2. Conflict-Sensitive Conservation (CSC)
3. CRiSTALTool
4. The Oookpik Network
5. SDplanNet-Asia & Pacific
6. The Sustainable Coffee Partnership
7. The Trade Knowledge Network

## Adaptation – Impact of Climate Change on Water

**Record:** 1275

**Category:** Adaptation and Knowledge, Adaptation, Impact of Climate Change on Water and Water Management

**Organization:** National Round Table on the Environment and the Economy (NTRTEE)

**Web site:** <http://www.nrtee-trnee.com/eng/issues/climate.php>

**Address:** 344 Slater Street Suite 200

**Address 2:**

**City:** Ottawa

**State/Province:** ONtario

**Country:** Canada

**Zip/Postal Code:** K1R 7Y3

**Contact Title:** Communications Advisor

**Contact Person:** Tony Begin

**Phone:** 613-992-4781

**Fax:** 613-992-7385

**Email:** [begin@nrtee-trnee.ca](mailto:begin@nrtee-trnee.ca)

**Funding:** Public

**Budget:**

**Year Founded:** 1988

**Reach:** Federal

### Goal / Objectives / Mandate

The NRTEE (National Round Table on the Environment and the Economy) works to enhance the understanding and adoption of sustainable ways of life. Relying on our unique convening role, we develop and promote viable policy recommendations for all sectors of our society and for all regions of Canada.

NRTEE specifically does the following: Undertake exhaustive research on priority issues, bring divergent interests together, rally the brightest minds in the country, release and disseminate the results of our work nationally and internationally, advise the federal government and key stakeholders.

### Narrative

<http://www.nrtee-trnee.com/eng/publications/changing-currents/chapter5-changing-currents-eng.php> - Water Scarcity

<http://www.nrtee-trnee.com/eng/publications/true-north/chapter1-true-north-eng.php> - Adaptation

### Meeting Frequency

NRTEE members meet four times a year to review research, approve reports and agree on new priorities for action.

### Membership Requirements

There are representatives from industry, environmental trail blazers, labour leaders, community champions, accomplished citizens and public sector experts.

---

**Record:** 955

**Category:** Adaptation and Knowledge, Adaptation, Impact of Climate Change on Water and Water Management

**Organization:** United States Global Change Research Information Office (GCRIIO)

**Web site:** <http://www.gcrio.org>

**Address:** Information Office, Suite 250, 1717 Pennsylvania Ave NW

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20006

**Contact Title:**

**Contact Person:**

**Phone:** 202-223-6262

**Fax:**

**Email:** [information@gcrio.org](mailto:information@gcrio.org)

**Funding:** Public

**Year Founded:** 1993

**Goal / Objectives / Mandate**

The US Global Change Research Information Office (GCRIO) provides access to data and information on climate change research, adaptation/mitigation strategies and technologies, and global change related educational resources on behalf of the various US Federal Agencies that are involved with the US Global Change Research Program.

**Narrative**

GCRIO acts as a clearing house for selected key documents and reports that are either generated or sponsored by the US Government or by a specific Federal Agencies. GCRIO also provides high-level User Services for the inter-agency Global Change Data and Information System (GCDIS). GCRIO also provides outreach services on a Federal, state and local level along with international target audiences that include governments, institutions, researchers, educators, students and the general public. The GCRIO web site provides access to selected bibliographic data bases; web sites at the participation Federal Agencies; relevant environmental data, catalog, and library systems; and a section that deals with environmental education.

**Record:** 600

**Category:** Adaptation and Knowledge, Adaptation, Impact of Climate Change on Water and Water Management

**Organization:** Climate Institute

**Web site:** <http://www.climate.org>

**Address:** 900 17th Street NW Suite 700

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20006

**Contact Title:** International Liason

**Contact Person:** John Micheal Cross

**Phone:** 202-552-4723

**Fax:** 202-737-6410

**Email:** [jmccross@climate.org](mailto:jmccross@climate.org)

**Funding:** Private/Public

**Budget:**

**Year Founded:** 1987

**Reach:** North America and Internationally

**Goal / Objectives / Mandate**

Goals of the Climate Institute are to:

- Catalyze innovative and practical solutions for climate change adaptation, mitigation, and climate stabilization;
- Contribute to scientific research and communicate the results of that research in an accurate and comprehensive manner;
- Create partnerships among policymakers, scientists, the public and environmental institutions at the local, national and international levels to address the climate challenge more effectively; and,
- Provide objective and comprehensive information on climate change risks and potential responses.

**Narrative**

The Climate Institute has been in a unique position to inform key decision-makers, heighten international awareness of climate change, and identify practical ways of achieving significant emissions reductions. This has been done through several different media including symposia, conferences, roundtables, and special briefings. These have been carried out not only in the U.S., Canada, Australia, Japan and Europe but also in as many as 30 developing countries, providing expert advice through ministerial and head-of-state briefings and at sessions with business executives and private citizens.

The Climate Institute has achieved this by tapping into its vast network of experts and alliances in the US and internationally. In all its efforts, the Institute strives to be a source of objective, reliable information. The Institute

has distinguished itself as a world leader in promoting global climate balance with practical and cooperative approaches.

A Board of Directors elected annually governs the activities of the Climate Institute. The Institute's Board is made up of academic, business, environmental and scientific leaders from nine nations. An equally diverse network makes up the Institute's Board of Advisors, which plays a critical advisory role in the Institute's deliberations. The Climate Institute receives financial support from membership, private and corporate contributions, grants, and contractual services for government agencies, non-profit organizations, and publication sales. The Internal Revenue Service recognizes the Climate Institute as an eligible non-profit organization under Section 501(c)(3) of the U.S. Internal Revenue Code. Accordingly gifts, contributions and grants to the Climate Institute may be tax deductible under U.S. federal or state law to individual or corporate donors.

For the past six years the Climate Institute has also championed the idea of coordinated strategies for climate and air quality. In September 1999, it convened a North American Symposium in Mexico City to map strategies for climate and air quality protection measures to be carried out in a harmonized manner. Mexico City has already begun to implement such a strategy and on May 9, 2002, became the first US state to enact such a law.

Since 1998, the Climate Institute has worked closely with a number of small island nations to enhance their capacity to respond to climate change. This effort has evolved into a Global Sustainable Energy Islands Initiative (GSEII) helping several island nations to transform their energy systems to less carbon-based and less expensive energy. In January 2006, at the Mauritius meeting of island state leaders, the Institute announced that it was broadening this initiative to encompass work on coastal protection, adaptation and emergency preparedness. This Endangered Islands Campaign will seek to enhance the capacity of island states to transform their energy systems and become more resilient to withstand the adverse impacts of climate change. It will match them with expertise from institutions in North and South, and encourage religious and civic groups, colleges and universities in the US, Canada, Australia and the UK to provide carbon offsets and technical assistance to island nations and other developing countries pioneering in climate protection measures.

#### **Membership Requirements**

No membership requirements, this is a non-profit organization that relies on donations from the public.

#### **Affiliates / Affiliates area of expertise**

The Climate Initiative is affiliated with the following groups:

- Mexico and Latin America Climate Protection Programs
- Island Program
- Global Sustainable Energy Island Initiative (GSEII)
- Endangered Island Campaign (EIC)
- Black Carbon Reduction Program
- Tribal College Climate Protection Program
- Climate Capacity initiative for Financial Institutions
- Education and Outreach Program

## Adaptation – Impact of Climate Change on Disease

**Record:** 970

**Category:** Adaptation and Knowledge, Adaptation, Impact of Climate Change on disease and insect outbreak

**Organization:** United States Global Change Research Program

**Web site:** <http://www.globalchange.gov/>

**Address:** Suite 250 1717 Pennsylvania Ave NW

**Address 2:**

**City:** Washington

**State/Province:** DC

**Country:** United States

**Zip/Postal Code:** 20006

**Contact Title:**

**Contact Person:**

**Phone:** 202-223-6262

**Fax:** 202-223-3065

**Email:**

**Funding:** Public

**Budget:**

**Year Founded:** 1989

**Reach:** Nationally and globally

### Goal / Objectives / Mandate

To build a knowledge base that informs human responses to climate and global change through coordinated and integrated federal programs of research, education, communication, and decision support

### Narrative

USGCRP (US Global Change Research Program) has 13 departments and agencies that participating in what was known as the US Climate Change Science Program from 2002 to 2008. The program is steered by the Subcommittee on Global Change Research under the Committee on Environment and Natural Resources, overseen by the Executive Office of the President, and facilitated by and in Integration and Coordination Office.

During the past two decades, the United States, through the USGCRP, has made the world's largest scientific investment in the areas of climate change and global change research. Since its inception, the USGCRP has supported research and observational activities in collaboration with several other national and international science programs.

These activities led to major advances in several key areas including but not limited to:

Observing and understanding short- and long-term changes in climate, the ozone layer, and land cover;

Identifying the impacts of these changes on ecosystems and society;

Estimating future changes in the physical environment, and vulnerabilities and risks associated with those changes; and

Providing scientific information to enable effective decision making to address the threats and opportunities posed by climate and global change.

These advances have been documented in numerous assessments commissioned by the program and have played prominent roles in international assessments such as those of the Intergovernmental Panel on Climate Change.

Program results and plans are documented in the program's annual report, *Our Changing Planet*.

The U.S. Global Change Research Program (USGCRP) coordinates and integrates federal research on changes in the global environment and their implications for society. The USGCRP began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990 (P.L. 101-606), which called for "a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change."

For detailed Publications and Assessment reports they can be accessed on the web at:

<http://www.globalchange.gov/publications>