



# ENERGY SAVINGS FOR BUSINESS

*Investing to keep businesses competitive*



## **CES On-Site Generation and Renewables Checklist**

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Version 1.0



# Table of Contents

INTRODUCTION .....	3
GUIDANCE ON APPLICATIONS .....	3
STEP 4 OF PRE-PROJECT APPLICATION .....	4
SOLAR PV.....	4
COMBINED HEAT AND POWER (CHP).....	8
GEOHERMAL (GSHP).....	12
WASTE ENERGY RECOVERY ORGANIC RANKINE CYCLE.....	15
SOLAR PRE-HEATING OF INTAKE AIR.....	18
STEP 5 OF PRE-PROJECT APPLICATION .....	19
POST-PROJECT APPLICATION.....	21

## INTRODUCTION

This document is intended as a guide to support the submission of accurate and complete On-Site Generation and Renewables project applications. All applicants with On-Site Generation and Renewables projects should ensure the application meets the CES Eligibility Requirements set out in the Participant Terms and Conditions, Contractor Code of Conduct and Eligible Measures List. The applicant must submit the requested documentation and answer the questions contained within this document.

This checklist includes guidance for what needs to be entered in each input field at Step 4 and Step 5 of the Application process. Step 5 specifically describes which documents need to be uploaded and their purpose.

## GUIDANCE ON APPLICATIONS

The following sections provide guidance on On-Site Generation and Renewables applications, ensuring that they are complete, accurate and comprehensive.

The applicant and/or contractor will also need to provide the following information in Step 4 and Step 5 of the application submission, as further described in the tables below.

## STEP 4 OF PRE-PROJECT APPLICATION

### SOLAR PV

**All applicants with Solar PV measures that meet the Eligibility Requirements for size, solar yield and output. (see the Measures List for full details) must submit the requested documentation and answer the following questions:**

*It is recommended that a solar PV modelling software be used to answer some of the questions below. Examples of software include:*

- *NREL's PV Watts*
- *RETScreen*
- *pvPlanner*
- *Solar Pro*
- *Helioscope*

To calculate the proposed system's performance three scenarios would be considered:

#### Scenario 1: Application

Parameters as provided in the application would be used to generate the total yield.

#### Scenario 2: Base Case

Parameters as provided in the application except the modelled system loss would be set to 20% and the total yield would be calculated.

#### Scenario 3: Optimal Case

Parameters as provided in the application would be used except the following which would be set to the values as indicated against each to calculate the solar yield for this scenario:

- Azimuth: 180°
- Tilt: Latitude of Location
- Modelled System Losses: 20%

It is understood that other parameters will influence the optimal yield for a location, but these three parameters have been chosen for ease of calculation, and as an approximation.

The project's base case yield will be compared to the optimal case yield and it must be at least 75% of the optimal case yield to be eligible.

If the system has multiple arrays, each array can be submitted as its own measure.

The applicant and/or contractor will also need to provide following information in the Step 4 and Step 5 of the pre-project application submission as provided below.

Field	What to Enter	How Data or Input Provided is Used
Quantity	Enter the number of Solar PV systems being installed	<ul style="list-style-type: none"> <li>• Calculate eligible incentive</li> <li>• Post-project QA/QC</li> </ul>
Is it retrofit or new construction?	Enter retrofit if the project is being installed on an existing building or the solar PV project is providing power to existing equipment Enter new construction if it is being installed on new building or the solar PV project is providing power to new equipment	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Is it a New PV System or Expansion of an Existing System?	Select new project if it is a new solar PV project, not connected to any existing solar PV projects Select expansion to existing system if it is an expansion to existing system	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Status of the interconnection application	Select Not applied, Applied or Approved. In either case submit the Form A along with all the documents submitted to the wire service provider for the approval at Step 5 of the application submission.	<ul style="list-style-type: none"> <li>• You will receive a conditional approval if “Applied” or “Not Applied” and should have the approval by the post-project submission</li> <li>• A pre-approval can not be granted, and incentive reserved if the interconnection application has not been applied for</li> </ul>
Interconnection Form A Application	Upload both the interconnection application and the supporting documents including the single line diagram if all the documents can be combined. If they cannot be combined, upload the supporting documents in Step 5 (see below)	<ul style="list-style-type: none"> <li>• Confirmation that application has been submitted</li> </ul>
Latitude	Enter the values with decimal places	<ul style="list-style-type: none"> <li>• Confirm facility address/location</li> <li>• Used in PV Watts modelling</li> </ul>

Field	What to Enter	How Data or Input Provided is Used
Longitude	Enter the negative value with decimal places	<ul style="list-style-type: none"> <li>• Confirm facility address/location</li> <li>• Used in PV Watts modelling</li> </ul>
DC system size (in kW)	Enter the DC system size in kW considering the panels/modules	<ul style="list-style-type: none"> <li>• Incentive calculation</li> <li>• Cross-referenced to Interconnection Application and Form</li> <li>• Cross-referenced to panel/module specification sheets uploaded</li> <li>• Used in PV Watts modelling</li> </ul>
Module type	Select either Standard, Premium or Thin Film	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> <li>• Used in PV Watts modelling</li> </ul>
Array type	Select any one of the following: Fixed – Open Rack Fixed – Roof Mount 1-Axis Tracking 1-Axis Backtracking 2-Axis Tracking	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> <li>• Used in PV Watts modelling</li> </ul>
Modelled Total System Losses (%)	Account for all the possible system losses and enter value in percentage	<ul style="list-style-type: none"> <li>• Used in PV Watts modelling</li> <li>• Evaluate if reasonable based on location and surroundings</li> </ul>
Tilt (deg)	Enter tilt of the panels/modules with respect to the ground	<ul style="list-style-type: none"> <li>• Used in PV Watts modelling</li> <li>• Evaluate if reasonable based on location and surroundings</li> </ul>
Azimuth (deg)	Enter the azimuth	<ul style="list-style-type: none"> <li>• Used in PV Watts modelling</li> <li>• Evaluate if reasonable based on location and surroundings</li> </ul>
System Diagram	Upload the site/panel/module layout diagram	<ul style="list-style-type: none"> <li>• Used to check orientation of panels/modules</li> <li>• Used to confirm number of panels/modules</li> </ul>
Retail Electricity Rate (\$/kWh)	Enter the average value you are using for your project payback calculations	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> <li>• Used in PV Watts modelling</li> <li>•</li> </ul>
January – December AC Energy (kWh)	Enter in the first year's values from your solar modelling analysis of typical conditions	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> <li>• Used in PV Watts modelling</li> </ul>
Panel Specification Sheet	Upload the panel/module specification sheet	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>

Field	What to Enter	How Data or Input Provided is Used
	Indicate/circle which specific panel/ module is being used for project	<ul style="list-style-type: none"> <li>• Ascertain warranty information (if provided on specification sheet)</li> </ul>
Inverter Specification Sheet	Upload the Inverter specification sheet Indicate/circle which specific Inverter is being used for project	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> <li>• Warranty information (if provided on specification sheet)</li> </ul>
Application Comments	Enter in any additional information	<ul style="list-style-type: none"> <li>• Reviewer will read any additional information provided</li> </ul>
Equipment and Material Costs	Enter equipment and material costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>
Labour Costs	Enter labour costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>
Design Costs	Enter design costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>

## COMBINED HEAT AND POWER (CHP)

- CHP systems less than 4 MWe – 50% to less than 60% of System Efficiency
- CHP systems less than 4 MWe – 60%+ System Efficiency

**Application Tip:** Please complete the Overall CHP System Efficiency calculation outlined in the table below before you select the measure.

Field	What to Enter	How Data or Input Provided is Used
Quantity	<p>Enter the number of measures being installed. For CHP, this should be “1”.</p> <p>If more than 1 system is being installed, we suggest submitting a second application.</p>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Is it Retrofit or New Construction?	Select if the building/facility is being retrofitted with CHP or whether it is a new construction building or construction.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Prime Mover	<p>Select from the list prime mover type:</p> <ul style="list-style-type: none"> <li>• Internal Combustion Engine</li> <li>• Turbine Driven</li> </ul>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Status of Interconnection Application	<p>Select from the list the status of Interconnection Application:</p> <ul style="list-style-type: none"> <li>• Not Applied</li> <li>• Applied</li> <li>• Approved</li> </ul>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Interconnection Form A Application	Upload both the interconnection application and the supporting documents including the single line diagram if all the documents can be combined. If they cannot be combined, upload the supporting documents in Step 5 (see below).	<ul style="list-style-type: none"> <li>• Confirmation that application has been submitted.</li> </ul>
Use of Thermal Energy	<p>Select from the list the use of thermal energy generated:</p> <ul style="list-style-type: none"> <li>• Hot Water</li> <li>• Space Heating</li> <li>• Process Heating</li> <li>• Combination</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>



Engineering Firm	Enter the name of the Engineering Firm responsible for the approval of the system design.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Engineer Name	Enter the name of the Engineer.  <i>The engineer will need to be a professional engineer licensed to practise in Alberta.</i>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Building Type	Select from the list the building type: <ul style="list-style-type: none"> <li>• Office</li> <li>• Private School</li> <li>• Retail</li> <li>• Theater</li> <li>• Warehouse</li> <li>• Private Healthcare</li> <li>• Industrial</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Facility Area (Sq Ft)	Enter the facility area in square feet.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Facility Annual Hours of Operation	Enter the facility annual hours of operation.  <i>Please note that this is not the estimated annual hours of operation for the CHP system itself.</i>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Annualized Electric Energy Load Profile	Upload a document showing the estimated monthly, daily, or hourly electricity load for the building/facility.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Annualized Thermal Energy Load Profile	Upload a document showing the estimated monthly, daily, or hourly thermal load for the building/facility.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
CHP Project Description	Please describe your CHP system and include location within the facility, any civil or structural (such as concrete pad) undertaken, intertie locations for electrical and thermal points, and description of waste heat rejection equipment like radiators.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
CHP Electrical Rated Capacity (kW)	Please enter the size of the CHP system in kW.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>

CHP Usable Thermal Rated Capacity (MMBtu/h)	Please enter the capacity of the CHP system in MMBtu/h that is usable within the facility	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Single Line Electrical Drawing	Please upload the single line electrical diagram.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
P&ID Drawing	Please upload the P&ID (piping and instrumentation diagram) drawing.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Annual Electrical Energy Output (kWh)	Please enter the estimated annual electrical energy output of the CHP system in kWh.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Usable Annual Thermal Energy Output (MMBtu)	Please enter the estimated annual thermal energy used within the facility from the CHP system in MMBtu.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
System Annual Operating Hours	Enter the estimated hours the CHP system runs for each year.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Gen Set Specification Sheet	Upload the specification sheet for the CHP. Indicate/circle which specific equipment is being used for project (as applicable).	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Heat Recovery Specification Sheet	Upload the specification sheet for the CHP. Indicate/circle which specific equipment is being used for project (as applicable).	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Is Overall CHP System Efficiency over 60%?	Select either "Yes" and "No".	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Overall CHP System Efficiency	This is a calculated value and is intended to estimate the annualized system operating efficiency. This is not intended to reflect the peak design efficiency. The calculation is as follows in the row below:	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
What to Enter: Overall CHP System Efficiency Calculation		

Numerator: The sum of the annual electrical energy produced by the CHP system plus the sum of the annual usable thermal energy transferred to the facility.

*During the review process, the provided load profiles and building/facility information is reviewed to understand the energy requirements for the facility. Note: thermal energy transferred to the facility does not include waste heat rejected outdoors.*

Denominator: The annual input fuel energy into the CHP system plus input electrical energy for parasitic loads

*During the review process, the information provided regarding the CHP electrical and thermal capacity, the energy output and the operating hours of the CHP system are checked.*

The annualized overall CHP system operating efficiency is the numerator divided by the denominator.

Is CHP System Utilization Factor over 85%?	Select either "Yes" or "No".	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
System Utilization Factor	<p>This is a calculated value.</p> <p>The calculation is as follows:</p> <p>Numerator: The annual hours at any load that the CHP system runs.</p> <p>Denominator: 8760</p> <p>The System Utilization Factor is the numerator divided by the denominator.</p>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Equipment & Material Costs	Enter equipment and material costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Labour Cost	Enter labour costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Design Cost	Enter design costs and include all other costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>

## GEOTHERMAL (GSHP)

Additional information may be requested through an Information Request (IR) to ascertain specifics of the system if not provided in the system design report.

Field	What to Enter	How Data or Input Provided is Used
Quantity	Enter the number of systems being installed. The default should be "1".	<ul style="list-style-type: none"> <li>• Used to calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Is it Retrofit or New Construction?	<p>Select "Retrofit" if the project is being installed on an existing building or the GSHP project is providing heating and cooling to an existing building.</p> <p>Select "New Construction" if it is being installed on a new building or the GSHP project is providing power to new equipment.</p>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Building Type	<p>Select from the list the building type:</p> <ul style="list-style-type: none"> <li>• Office</li> <li>• Private School</li> <li>• Retail</li> <li>• Theater</li> <li>• Warehouse</li> <li>• Private Healthcare</li> <li>• Industrial</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Building Size (Sq ft)	Enter the building size in square footage.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Existing, Proposed or Back-Up Heat Source	<p>Select from the list the existing heat source (if retrofit project) or proposed heat source (if new construction and GSHP not used):</p> <ul style="list-style-type: none"> <li>• Electrical Resistance</li> <li>• Natural Gas</li> <li>• Air Source Heat Pump</li> <li>• Propane</li> <li>• Oil</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
DHW Existing or Proposed Fuel Source	<p>Select from the list the Domestic Hot Water (DHW) existing or proposed fuel source:</p> <ul style="list-style-type: none"> <li>• Electrical Resistance</li> <li>• Natural Gas</li> <li>• Oil</li> <li>• Propane</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>

What Efficiency Measures are in the Building?	If you are implementing other efficiency measures before you design your GSHP project, please select those from the list: <ul style="list-style-type: none"> <li>• Standard (ASHRAE 90.1)</li> <li>• Energy Recovery Ventilation</li> <li>• Upgraded Glass and Insulation</li> <li>• Energy Recovery Ventilation and Upgraded Glass</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> <li>• Post-project QA/QC.</li> </ul>
Total Capital Costs for Efficiency Measures Selected (\$/sq ft)	Enter the total capital costs for efficiency measures selected in the previous field.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Soil Thermal Conductivity	Select from the list the Soil Thermal Conductivity: <ul style="list-style-type: none"> <li>• Low (20%)</li> <li>• Medium-High (20% +)</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Borefield Spacing	Select from the list the borefield spacing: <ul style="list-style-type: none"> <li>• 15' Spacing</li> <li>• 20' Spacing</li> <li>• 25' Spacing</li> </ul>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
GSHP Efficiency	Select from the list the GSHP efficiency: <ul style="list-style-type: none"> <li>• Standard (&lt;3.5)</li> <li>• Medium (3.5 - 4.3)</li> <li>• High (&gt;4.3)</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> <li>• Post-project QA/QC.</li> </ul>
GSHP COP	Enter the Coefficient of Performance (COP) for the Geothermal system.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
GSHP Capacity (Tons)	Enter the rated capacity of the geothermal system in tons.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> <li>• Calculate eligible incentive.</li> </ul>
Drilling Cost Estimate (\$/sq)	Enter the estimated cost of drilling.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> </ul>
Conventional Equipment Cooling Efficiency (EER or COP) (Optional)	Enter the efficiency of the alternative cooling equipment. For retrofit, it would be the existing equipment. For new construction, it would be the building code.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Conventional Equipment Cooling Efficiency	Select from the list the system type: <ul style="list-style-type: none"> <li>• Standard for Direct Expansion (DX)</li> <li>• Medium for Air Cooled Chiller</li> <li>• High for Water Cooled Chiller</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Conventional Equipment Heating Efficiency (%) (Optional)	Enter the efficiency of alternative cooling equipment. For retrofit, it would be the existing equipment. For new construction, it would be the building code.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Conventional Equipment Heating Efficiency	Select from the list the conventional equipment heating efficiency: <ul style="list-style-type: none"> <li>• Standard for 75%</li> <li>• Medium for 85%</li> <li>• High for 95%</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>

Electricity Price (\$/kWh)	Enter the electricity cost in \$/kWh.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Heating Fuel Price (\$)	Enter the cost of heating fuel price in \$.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Heating Fuel Units	Select from the list the heating fuel cost units: <ul style="list-style-type: none"> <li>• Electricity – kWh</li> <li>• Gas – GJ</li> <li>• Oil or Propane – Gallons</li> </ul>	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Heat Pump Specification Sheet	Upload the specification sheet for the heat pump along with the warranty information.  Indicate/circle which specific equipment is being used for project.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
In-Ground Items Specification Sheet	Upload the specification sheet for the in-ground items along with the warranty information.  Indicate/circle which specific equipment is being used for project.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
System Design Report	Upload the system design report approved by an engineer licensed in Alberta. The System Design Report must include an annualized system sizing analysis providing the thermal load calculations, other system sizing considerations, approved borefield location and layout, equipment specifications, facility integration within existing equipment, requirements for additional (backup) heat sources and economic analysis.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Energy Model Output	Upload the modelled energy output of the system. Include Hourly energy loads of the building based on proposed building construction, occupancy and mechanical system design. There should be several iterations of the energy model clearly showing efficiency measures used to balance energy loads to and from the ground.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Field Site Plan/Layout	Upload a site layout plan clearly showing the site and location of proposed system.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Equipment & Material Costs	Enter equipment and material costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate incentive cap.</li> <li>• Post-project QA/QC.</li> </ul>

Labour Cost	Enter labour costs as indicated on the invoice / final quote including drilling costs.	<ul style="list-style-type: none"> <li>• Calculate incentive cap.</li> <li>• Post-project QA/QC.</li> </ul>
Design Cost	Enter design costs and include all other costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate incentive cap.</li> <li>• Post-project QA/QC.</li> </ul>

## WASTE ENERGY RECOVERY ORGANIC RANKINE CYCLE

- WER ORC – 25% Utilization
- WER ORC – 50% Utilization

**Application Tip:** Please complete the system efficiency calculation outlined in the table below before you select the measure.

Field	What to Enter	How Data or Input Provided is Used
Quantity	Enter the number of measures being installed. For WER ORC, this should be "1".	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Rated Generator Capacity (kW)	Enter the size of the generator in kW.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Working Fluid	Enter the working fluid for the system.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Describe Thermal Energy Waste Source	Describe the device, location and system from where the thermal energy is coming.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Mass Flow Rate of Waste Heat (kg/hr)	Enter the annual average mass flow rate for the waste heat source fluid (e.g., flue gases).	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Temperature of Waste Heat	Enter the annual average temperature in degrees Celsius for the waste heat source fluid.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Annual Electrical Energy Output (kWh)	Please enter the estimated annual electrical energy output of the ORC system in kWh.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
ORC Equipment Specification Sheet	Please upload the specification sheet for the ORC equipment.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Gen Set Specification Sheet	Please upload the specification sheet for the generator.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
P&ID Drawing	Please upload the P&ID (piping and instrumentation diagram) drawing.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Single Line Electrical Drawing	Please upload the single line electrical diagram.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Process Flow Diagram	Please upload the process flow diagram.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>

Site Layout Diagram	Please upload the site layout diagram.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Engineering Firm	Enter the name of the Engineering Firm responsible for the approval of the system design.	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Engineer Name	Enter the name of the Engineer.  <i>The engineer will need to be a professional engineer licensed to practise in Alberta.</i>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> <li>•</li> </ul>
Status of Interconnection Application	Select from the list the status of Interconnection Application: <ul style="list-style-type: none"> <li>• Not Applied</li> <li>• Applied</li> <li>• Approved</li> </ul>	<ul style="list-style-type: none"> <li>• Post-project QA/QC.</li> </ul>
Interconnection Form A Application	Upload both the interconnection application and the supporting documents including the single line diagram if all the documents can be combined. If they cannot be combined, upload the supporting documents in Step 5 (see below).	<ul style="list-style-type: none"> <li>• Confirmation that application has been submitted.</li> </ul>
Building Type	Select from the list the building type: <ul style="list-style-type: none"> <li>• Office</li> <li>• Private School</li> <li>• Retail</li> <li>• Theater</li> <li>• Warehouse</li> <li>• Private Healthcare</li> <li>• Industrial</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Facility Area (Sq Ft)	Enter the facility area in square feet.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Facility Annual Hours of Operation	Enter the facility annual hours of operation.  <i>Please note that this is not the estimated annual hours of operation for the WER ORC system itself.</i>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Waste Energy Recovery ORC System Annual Hours of Operation	Enter the WER ORC annual hours of operation.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>



Annualized Electric Energy Load Profile	Upload a document showing the estimated monthly, daily, or hourly electricity load for the building/facility.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Annualized Thermal Energy Load Profile	Upload a document showing the estimated monthly, daily, or hourly thermal load for the building/facility.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
System Utilization Factor	<p>This is a calculated value.</p> <p>The calculation is as follows:</p> <p>Numerator: The annual hours that the WER ORC system runs.</p> <p>Denominator: 8760</p> <p>The System Utilization Factor is the numerator divided by the denominator.</p>	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Electricity Price (\$/kWh)	Enter the electricity cost in \$/kWh.	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Gas Price (\$/m <sup>3</sup> )	Enter the gas price in \$/m <sup>3</sup> .	<ul style="list-style-type: none"> <li>• Used for estimating energy savings achieved.</li> </ul>
Equipment & Material Costs	Enter equipment and material costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Labour Cost	Enter labour costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>
Design Cost	Enter design costs and include all other costs as indicated on the invoice / final quote.	<ul style="list-style-type: none"> <li>• Calculate eligible incentive.</li> <li>• Post-project QA/QC.</li> </ul>

## SOLAR PRE-HEATING OF INTAKE AIR

Field	What to Enter	How Data or Input Provided is Used
Quantity	Enter the number of Solar PV systems being installed	<ul style="list-style-type: none"> <li>• Calculate eligible incentive</li> <li>• Post-project QA/QC</li> </ul>
SRCC Performance Data Sheet	Please upload the SRCC Performance Data Sheet	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Lowest Efficiency Value from SRCC Performance Data Sheet at any Wind Speed and Air Flow Rate	From the SRCC Performance Data sheet, please enter the lowest efficiency value	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Make-Up Air Unit Total CFM	Please enter the total CFM from the make-up air units	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Percentage of Outside Air Intake	Please enter the percentage of outside air intake	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Annual Operating Hours of Make-Up Air Units	Please enter the annual operating hours	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Estimated Air Flow (CFM/sqft)	Please enter the estimated air flow expected to come through the solar pre-heating system	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Schematic Diagram	Please upload a schematic diagram of the system and the building	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
SRCC OG-100 Certificate	Please upload the SRCC OG-100 certificate	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Total Installed Area of Solar Air Heating Technology (Wall Cladding) (sqft)	Please enter the square footage that the technology will cover	<ul style="list-style-type: none"> <li>• Post-project QA/QC</li> </ul>
Equipment and Material Costs	Enter equipment and material costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>
Labour Costs	Enter labour costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>
Design Costs	Enter design costs as indicated on the invoice/ quote	<ul style="list-style-type: none"> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>

## STEP 5 OF PRE-PROJECT APPLICATION

Document	What to Enter	How Data or Input Provided is Used
Cost Quote	Quote or invoice should be itemized to include quantity, brand and model numbers for equipment. Costs should be indicated separately for: <ul style="list-style-type: none"> <li>• Equipment and Material</li> <li>• Labour</li> <li>• Design and Others</li> <li>• Taxes</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-reference against provided costs</li> <li>• Calculate incentive cap</li> <li>• Post-project QA/QC</li> </ul>
Electricity Bill for Facility	Upload the electricity bill for the facility	<ul style="list-style-type: none"> <li>• Ascertain rate class</li> </ul>
Warranty Documents (only for Solar PV)	Showing compliance with the four warranty requirements <ul style="list-style-type: none"> <li>• 20 year power performance</li> <li>• 10 year panel/ module</li> <li>• 10-year inverter</li> <li>• 1 year workmanship</li> </ul>	<ul style="list-style-type: none"> <li>• Checking compliance with warranty requirements</li> </ul>
Single Line Diagram (only for Solar PV)	Upload the Single Line Diagram that supports the Interconnection Application and Form A	<ul style="list-style-type: none"> <li>• Review Interconnection Agreement application and confirm application was supported with single line diagram</li> </ul>
Attestation from the Eligible Contractor (only for Solar PV)	A document that attests the following: <ul style="list-style-type: none"> <li>• Project can be completed, and all Project Completion Documentation can be submitted by March 31, 2024</li> <li>• PV system equipment is commercially available in Canada as of the start date of the Eligible Project</li> </ul>	
Executed Contract (only for Solar PV)	A signed contract between the Participant and Eligible Contractor	
Confirmation of Non-Refundable Deposit	Within 2 months of receiving the Pre-Approval Notice, written confirmation that a	

	non-refundable deposit has been paid by the Participant to the Eligible Contractor or a third party for the Project	
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## POST-PROJECT APPLICATION

Note that as the post-project application, you will be required to confirm that nothing has changed from the pre-project application unless a change approval was accorded.

For documents, you will need to provide evidence of the following:

- Interconnection Agreement Approval
- Electrical and Installation Permits
- Invoice for Project Costs
- Proof of Payment for Project Costs
- Occupancy Permit (for new construction or major renovation projects)
- Conditions stated in the Notice of Pre-Approval

Participant may be subject to a QA/ QC check and may be asked for additional documentation and facilitate a site visit.