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DISTRIBUTED-GENERATION APPLICATION GUIDELINE

(Version 1.0)

Month day, 2013

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1. Introduction and purpose

In June 2013, the government of Alberta revised the [Hydro and Electric Energy Regulation](#). The objective of the amendments was to streamline the application process for all small power plant proponents, with a generating capacity of less than one megawatt (MW), speeding up the application process. Those owners are directed to enter into an operating agreement with the wire owner to whom they are to be connected. Details of the change can be found in the AUC Bulletin [2013-16](#).

This guideline is primarily intended to provide an overview of the application process involved in becoming a distributed generator.

If a prospective power plant owner plans to generate electric energy and the power plant capacity rating is less than one MW, the applicant may proceed without filing an application with the Alberta Utilities Commission (AUC) if the following three requirements are met:

- No person is directly and adversely affected.
- The power plant complies with AUC Rule 012: *Noise Control* (AUC Rule 012).
- There is no effect on the environment.

This guideline includes information on the principle bodies involved in the distributed generation application process, contact information for each wire service provider (WSP) (see [Section 3](#)), a checklist for small DG power plant applications (see [Appendix A](#)) and a step-by-step summary on how to correctly complete the AUC's Form A – Generation project (less than 1 MW) notice of application (see [Appendix B](#)).

2. Differences between micro-generation and distributed generation

Before proceeding further, it is necessary to distinguish the differences between distributed

generation (DG) and micro-generation (MG). The major differences are as follows:

	DG	MG
Fuel sources	Could be renewable or non-renewable resources	Must be renewable resources or alternative energy
Generation capacity	Contact local distribution company	Less than one megawatt
Compensation method	Receive cash (based on pool prices) from the AESO for electricity generation	Receive credits from retailer. Credits are shown on monthly electricity bill.
Metering	DG owner is responsible for the metering cost and meter data provisions	Once MG status is approved, the wire service provider is responsible for cost of installing an appropriate meter and collect electricity data.
Pool participant	Must register with the AESO to become a pool participant	Not required to register with the AESO, but need to notify retailer of becoming a MG customer

3. Principle bodies

For a guide on the process of how to become a market participant, please reference the Alberta Electric System Operator (AESO) website using the following link:

<https://www.aeso.ca/download/listedfiles/Guide-for-Distribution-Connected-Generation.pdf>

Due to different practices among WSPs, each WSP in Alberta has created its own specific instructions and supporting documents on how to become a distributed generator in its regions. Prospective DG proponents are encouraged to contact the WSP directly regarding the specific procedures in their service area. The follow table provides links for each WSPs:

Company name	Contact information	Additional information
ATCO Electric Ltd.	Webpage: http://www.atcoelectric.com/Services/Business-to-Business/Power-Producers/ For specific regional contacts please visit the Key Accounts Department on ATCO's website: http://www.atcoelectric.com/Services/Business-to-Business/Key-Accounts-Representatives	Please visit ATCO Electric's website for more information on their step-by-step application process, forms, interconnection agreement, fees breakdown and background information.
ENMAX Power Corporation	Webpage: https://www.enmax.com/Power/Our+Services/Technical+Specs+and+Guidelines/Generator+Guidelines.htm Email: generationinterconnection@enmax.com Telephone: 403-514-3610	ENMAX's website ask proponents to refer to the information contained in two documents; the ENMAX Power Distributed Generation Interconnection Guideline, and the ENMAX Power Distributed Generation Interconnection Application. Please go to ENMAX's website for more detailed information and to view a copy of the documents mentioned above.
EPCOR Distribution & Transmission Inc.	Webpage: http://www.epcor.com/efficiency-conservation/pages/generating-your-own-energy.aspx (this link is to the page for Edmonton as an example) Email: distgen@epcor.com	On the EPCOR Distribution & Transmission Inc. main page choose your region and then go to the Efficiency & Conservation tab and click on generating your own energy. EPCOR has developed an informational document for distributed generation (http://www.epcor.com/efficiency-conservation/Documents/Distributed-Generation-Edmonton.pdf) For more information, a comprehensive application guideline and technical requirements please visit EPCOR's website.
FortisAlberta Inc.	Webpage: http://www.fortisalberta.com/business/generators/distributed%20generation/Pages/default.aspx Email: generation@fortisalberta.com Telephone: 1-855-333-9473	Please visit FortisAlberta's website for more information on their application process, forms, interconnection agreement, common questions and background information.

Company name	Contact information	Additional information
The City of Red Deer	Webpage: http://www.reddeer.ca/City+Government/City+Services+and+Departments/Electric+Light+and+Power/default.htm Email: elecutil@reddeer.ca Telephone: 403-342-8274	Please contact the City of Red Deer for more information on their distributed generation application process.
The City of Lethbridge	Webpage: http://www.lethbridge.ca/living-here/Utilities-Waste-Recycling/Pages/Residential-and-Commercial-Servicing.aspx Email: ElectricDesignMailbox@lethbridge.ca Telephone: 403-320-4886	Please contact the City of Lethbridge for more information on their distributed generation application process.
Rocky REA	Webpage: http://www.rockyrea.com/index.php Email: rockyrea@rockyrea.com Telephone: 403-845-4600 or Toll free at: 888-845-4616	Please contact Rocky REA for more information on their distributed generation application process.
Alberta Federation of REA (AFREA)	Webpage: http://www.afrea.ab.ca/ Telephone: 780-417-3396 or Toll Free at: 1-877-717-3496 (in Alberta only)	Please contact AFREA for more information on their distributed generation application process.
EQUUS REA	Webpage: http://www.equs.ca/services/DistributedGenerator.html Area offices: North Area Office (Onoway) 1-888-627-4011 Central Area Office (Innisfail) 1-877-527-4011 South Area Office (Claresholdm) 1-888-565-5445	Please contact EQUUS REA for more information on their distributed generation application process.
Battle River REA	Webpage: http://www.battleriverrea.com/main.asp Email: brrea@battleriverrea.com Telephone: 780-672-7738	Please contact Battle River REA for more information on their distributed generation application process.

4. Guidelines for filing Form A, Generation project (less than 1 MW) notice

The following guidelines provide detailed information to help applicants complete the project notice form as easily as possible. Please provide this form to your WSP, along with any additional

forms and information they need, when you make application for your DG.

A. APPLICATION IDENTIFICATION

Name

Enter the name you want to appear in legal documents.

Company name (if applicable)

Enter the company name you want to appear in legal documents if a company is responsible for owning and operating the DG.

Address

Enter the street address for your home residence or company address.

Phone

Enter a weekday phone number.

Email address

Enter your personal or company email address. Be sure that the email address can safely receive DG documentation without risk of being blocked by junk-mail blockers.

Consultant name (if applicable)

Enter the name of the person or company who has aided you in completing your DG application, if applicable. The consultant will be regarded as the second line of contact in the event we cannot reach you and/or need any clarification.

Consultant address

Enter your consultant's current business mailing address including postal code.

Consultant phone

Enter your consultant's day time phone number including area code.

Other interested parties

Enter the names and contact information of any other parties who may have a say in the functioning, legalities or aesthetics of the DG. This could include a neighbour, property owner or business partner.

B. PROJECT DESCRIPTION

Legal land description

In rural areas enter the legal land description. Legal land description is a term used to describe sections of land you have title to for the purpose of government records. This information may be found on your land title, tax assessment or mortgage agreement.

If you have an urban address, enter the lot, block and plan numbers for your DG location. If you have a rural address enter the quadrant, section,

township, range and meridian location of land as per the example below.

Example:

Quadrant	Section	Township	Range	Meridian
SW	18	57	7	W4

The example above uses the rural address for the Southwest quarter of Section 18, Township 57, Range 7, and west of the Fourth Meridian. It would be shown as **SW18-57-7-W4**.

If you do not have this information contact your local taxation office or an Alberta registries agent for help. Your street (civic) address will be required to perform a search. Searches can be done for most urban areas with the exception of most condominiums. There is a nominal fee for this search.

Site ID

Enter your site identification number. Site identification numbers are required for each electrical installation in Alberta. You can find your site ID number on your electric utility bill.

New utility installations require obtaining a new site ID. Contact your WSP and inform them that you are planning a DG project. You will be required to complete a site ID form. Your building permit number and/or electrical permit number may be required to complete the site ID form.

See contact link in [Section 3](#) for a list of WSPs.

Service address

Enter the service address where you plan on installing the DG.

Retailer name

This section is not applicable for DG applicants.

Notifying your energy retailer about your DG

This section is not applicable for DG applicants.

Generator type

Select 'Other' and provide specific details on the generator type.

Application notices are limited to one DG project. If you are installing more than one DG you must submit a separate application notice for each.

Generator to utility interface

Electrical equipment, appliances, tools, machines and lights connected to the wiring in your home, farm or business using alternating current (AC) power supplied by your energy retailer and delivered by your WSP.

Interconnection of an alternative energy system to the utility grid will require a particular type of interface. The type of interface you choose will depend upon your type of generator.

Non-inverter

This is a special interface that is mated to an induction or a synchronous generator. It causes the generator to behave like a certified grid-connected inverter where it is certified to shut off automatically during outages on the electrical distribution system, and contains islanding detection and shut down equipment in the highly unlikely case that an electrical island occurs.

Induction

An induction generator is a type of electricity generator that converts rotational energy into electricity and requires an external voltage source to energize its windings.

Synchronous

A synchronous generator is a type of electricity generator that converts rotational energy into electricity independent of any external voltage source.

Generator rated capacity (kW)

Enter the rated capacity of your generator. Your equipment will identify the kilowatt (kW) capacity on its name plate.

Demand (kVA)

This is the maximum amount of apparent electrical energy consumed and measured in kilovolt-amperes (kVA). The kVA of your generator will be identified on your equipment.

Customer annual usage (or kWh)

A kilowatt hour (kWh) is the basic unit of electricity energy. When you buy electricity from your utility company it is sold to you at a certain rate per kWh. The kWh amount will be identified on each monthly electrical bill. Add the kWh amount identified on

each monthly bill for the year to get your total annual usage.

Voltage level of connection

Your equipment supplier or electrical contractor will provide you with the required voltage level of connection. For example, a house always uses 120 or 240 volts. DG owners are responsible for ensuring that the voltage levels at the point of interconnection are maintained.

Single or three phase

Single or three phase relates to how power is delivered to your site. Enter whether your electrical energy is delivered using single or three phase voltage and current timing.

Contact your WSP for confirmation if needed. See [Appendix C](#) for a list of WSPs.

Is the electricity produced to be used primarily by the generator owner?

If the electrical energy you generate is for personal home or farm use, to reduce your electricity bills, select 'Yes'. If the energy is intended for commercial operation or primarily for sale to the electrical market, select 'No'.

If you are applying for a non-MG project, are you selling electricity to the AESO?

If the electrical energy you generate is for personal home or farm use, to reduce your electricity bills, select 'No'. If the energy is intended for commercial operation or primarily for sale to the electrical market, select 'Yes'.

Does your generator unit satisfy Anti-Islanding Clause CSA C22.2 No. 107.1? **

In order to meet the anti-islanding clause, your DG must meet specific electrical safety codes and product performance standards. Safety and performance standards are required to ensure the safety, power quality and interconnection aspects of your DG so it doesn't compromise the safety and electrical power quality of the utility grid.

The nameplate on your DG equipment and its installation manual should identify the following code: CSA C22.2 No.107.1. If this code is labelled on your equipment, select 'Yes'. If this code is not identified, select 'No'.

What is anti-islanding?

Anti-islanding is a function that shuts down the operation of a DG during an emergency or utility power outage. Its purpose is to protect WSP line workers from accidentally working on energized electrical distribution lines.

What is islanding?

An electrical island is where a portion of the WSPs electrical distribution system that contains both electrical loads and electrical generators is isolated from the remainder of the distribution system, but remains energized.

The safety concern is that if an electrical outage occurs (perhaps in the event of a major storm), a DG could continue to unintentionally supply electrical power to the island. While a WSP can be sure that all of its own energy feeds are either shut down or isolated from the area that needs work, an island created by a DG can be out of their control.

The principal concern is that a WSP line worker will come into contact with a line that is unexpectedly energized. Although line workers are trained to test all lines before working on them, all measures and precautions must be taken to ensure the removal of all risk.

How does anti-islanding work?

Technology developed for grid-connected DGs is now specifically designed so that there is practically no chance of an island stemming from a DG. Grid-connected inverters monitor the utility line and cease to deliver electrical energy to the grid in the event that an outage occurs.

Large DGs need to follow additional Canadian Electrical Code regulations. Contact your electrical contractor and WSP for details.

Meets MG renewable energy definition?

This section is not applicable for DG applicants.

Requested in service date (YY-MM-DD)

Enter the start date of operation for your DG.

C. SUPPORTING DOCUMENTS

Provide all the supporting documentation needed by your WSP, along with the AUC application notice and the WSP's separate application form. Please contact your WSP for information on the documentation they require. A complete list of WSPs can be found in Section 3.

Appendix A – Checklist for small DG power plant applications

To assist in the application process, the AUC has identified a number of criteria and questions that should be considered by persons wishing to construct a power plant with a capacity of less than one megawatt. It is not possible to anticipate every possible factor, and for more detailed information it is recommended that the proponent contact their WSP, but this checklist attempts to identify the most common scenarios to provide guidance to prospective power plant owner.

No.	Issue to consider	Process step
1.	Is the power plant capacity rating one megawatt or greater? (The power plant rating consists of the cumulative rating of all generating units at a site.)	<p>If yes, file a power plant application with the AUC, unless you are seeking exemption from Section 11 of the <i>Hydro and Electric Energy Act</i> which states:</p> <p style="padding-left: 40px;">No person shall construct or operate a power plant unless the Commission, by order, has approved the construction and operation of the power plant.</p> <p>If you believe your project should be exempt from Section 11, as stated above, under Section 13(1) and (2) of the <i>Hydro and Electric Energy Act</i>:</p> <p style="padding-left: 40px;">13(1) Sections 9, 10 and 11 do not apply to a person generating or proposing to generate electric energy solely for the person's own use, unless the Commission otherwise directs.</p> <p style="padding-left: 40px;">(2) Notwithstanding subsection (1), a person generating or proposing to generate electric energy solely for the person's own use shall, if required by regulation to do so, immediately notify the Commission of the use or proposed use and provide any details of the generation and use that the Commission requires.</p> <p>please make a Power Plant Exemption application to the AUC.</p>
2.	<p>If your power plant has a capacity rating of less than one megawatt, application to the AUC is only needed if:</p> <ul style="list-style-type: none"> (a) the construction or operation of the small power plant, as the case may be, <ul style="list-style-type: none"> (i) does not directly and adversely affect any person, and (ii) does not have any adverse environmental impact, (b) the small power plant is constructed or operated, as the case may be, in compliance with AUC Rule 012: <i>Noise Control</i>, and (c) the person constructing or proposing to construct or operate the small power plant has entered into an operating agreement with the owner or operator of the transmission line or electric distribution system to which the small 	<p>If the answer is 'yes' to any of these questions, please file an application with the AUC using our Digital Data Submission (DDS) system, located on the E-filing tab on our website.</p> <p>Select:</p> <ul style="list-style-type: none"> • Fac-Elec Power Plant (application category) • Power Plant or Power Plant Exemption (type)

	power plant is or is to be connected relating to the connection. <i>As per Section 18(2) of the Hydro and Electric Energy Regulation.</i>	
3.	Is the electricity produced by the power plant solely for the applicant's own use?	<p>If yes, please provide details to your WSP that confirm the generator is for your own use, and not connected to the Alberta Interconnected Electric System.</p> <p>If no, please ensure that you have entered into, or will be entering into, an interconnection agreement with your WSP</p>
4.	Does your power plant comply with AUC Rule 012?	<p>If yes, please contact your WSP for their specific supporting document requirements to show that your DG projects complies with the requirements of AUC Rule 012.</p> <p>If no, please make an application to the AUC for review, or alter your DG project in such a way as it will comply with AUC Rule 012.</p>
5.	Does your power plant meet all applicable environmental regulation requirements?	<p>If yes, please contact your WSP for their specific supporting document requirements to show that your DG projects complies any applicable environmental requirements.</p> <p>If no, please submit an application to the AUC with details regarding any adverse environmental impacts.</p>
6.	Does your power plant comply with AUC Rule 007?	<p>If yes, please contact your WSP for their specific supporting document requirements to show that your DG projects complies the requirements of AUC Rule 007.</p> <p>If no, please submit an application to the AUC providing details regarding the type of notification or consultation performed, and the results, including any objections received and any unresolved objections.</p>

Appendix B – Form A, Generation project (less than 1 MW) notice

< Enter Wire Service Provider Name Here >

Check one of the following boxes to identify your project:

- Micro-generation project - Less than 1 MW (project meets micro-generation requirements)
 Are you an existing micro-generation customer? Yes , existing capacity: ____ kW; No
- Non micro-generation project - Less than 1 MW

APPLICANT IDENTIFICATION			
Name:		Company name:	
Address:		City:	
Province:	Postal code:	Phone:	Fax:
Email address:		Preferred method of contact: Email <input type="checkbox"/> Mail <input type="checkbox"/> Fax <input type="checkbox"/>	
Consultant name:		Consultant phone:	
Consultant address/city/province/postal code:			
Other interested parties:			
PROJECT DESCRIPTION			
Legal land description:		Site ID:	
Service address:		Retailer name:	
If this is a MG project, have you notified your retailer about your project? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Generator Type: Solar <input type="checkbox"/> Wind <input type="checkbox"/> Hydro <input type="checkbox"/> Biomass <input type="checkbox"/> Fuel cell <input type="checkbox"/> Other <input type="checkbox"/> Specify:			
Generator to utility interface: Inverter <input type="checkbox"/> Non-Inverter <input type="checkbox"/> Induction <input type="checkbox"/> Synchronous <input type="checkbox"/>			
Generator rated capacity (kW):	Demand (kVA):	Customer annual consumption (kWh):	
Voltage level of connection:		Phase: Single <input type="checkbox"/> Three <input type="checkbox"/>	
Is the electricity produced to be used primarily by the generation owner? Yes <input type="checkbox"/> No <input type="checkbox"/>			
If you are applying for a non-MG project, are you selling electricity to the AESO? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Does your generator unit satisfy Anti-Islanding Clause CSA Standard C22.2 107.1? Yes <input type="checkbox"/> No <input type="checkbox"/>			
If you are applying for a MG project, does your generator meet MG Regulation's Renewable/Alternative Energy Definition? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Requested in service date (YY-MM-DD):			
SUPPORTING DOCUMENTS ATTACHED:			
Electric single-line diagram attached: Yes <input type="checkbox"/> No <input type="checkbox"/>		Site Plan: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Has an electrical permit been obtained? Yes <input type="checkbox"/> Not yet <input type="checkbox"/>			
Have you met all applicable municipal and zoning requirements, including noise rules? Yes <input type="checkbox"/> No <input type="checkbox"/> Please specify: _____			
* Have you met the requirements stated in AUC Rules 007 and 012? Yes <input type="checkbox"/> No <input type="checkbox"/> Please specify: _____			
* Have you met all applicable environmental requirements? Yes <input type="checkbox"/> No <input type="checkbox"/> Please specify: _____			
* Are you aware of any outstanding objections from nearby landowners or residents regarding your project? Yes <input type="checkbox"/> Please specify: _____ No <input type="checkbox"/>			
Applicant signature:		Date of application:	

WIRE SERVICE PROVIDER USE ONLY:	
Wires owner's application reference #:	AESO asset ID (if any):
Date received:	Interconnection Line:
Approval: Yes <input type="checkbox"/> No <input type="checkbox"/> Reason(s) for disapproval:	
Interconnection agreement signed? Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable <input type="checkbox"/>	
Meter type: Interval <input type="checkbox"/> Cumulative <input type="checkbox"/>	Substation number:
Meter Installed Date:	

*Note: If you have not met the requirements of the AUC Rules (i.e. 007 and 012, including environment) or have objections from nearby landowners and residents, you MUST apply to the Commission for approval.

Appendix C – Contact and source information

Alberta Department of Energy (DOE)

<http://www.energy.gov.ab.ca>

Alberta Department of Energy (DOE) key initiatives

[Alberta Energy: Alberta Energy Publications](#)

Alberta Electric System Operator (AESO)

www.aeso.ca

Alberta Federation of Rural Electrification Associations

<http://www.afrea.ab.ca/>

Alberta Utilities Commission (AUC)

www.auc.ab.ca

ATCO Electric Ltd.

<http://www.atcoelectric.com/>

AUC Rule 007, Checklist for small power plant applications and exemptions

<http://www.auc.ab.ca/acts-regulations-and-auc-rules/rules/Pages/Rule007.aspx>

AUC Rule 007

<http://www.auc.ab.ca/acts-regulations-and-auc-rules/rules/Documents/Rule007.pdf>

AUC Rule 012

<http://www.auc.ab.ca/acts-regulations-and-auc-rules/rules/Documents/Rule012.pdf>

Battle River REA

<http://www.battleriverrea.com/main.asp>

ENMAX

<http://www.enmax.com/home.html>

EQUUS REA

<http://www.equs.ca/>

FortisAlberta Inc.

<http://www.fortisalberta.com/residential/Pages/default.aspx>

Government of Alberta

www.alberta.ca

Rocky REA

<http://www.rockyrea.com/index.php>

The City of Lethbridge

<http://www.lethbridge.ca/default.aspx>

The City of Red Deer

<http://www.reddeer.ca/City+Government/City+Services+and+Departments/default.htm>