

Small Distribution-Connected Generation Resources in Alberta

Within Alberta, electric distribution systems are operated by utility companies and are the portion of the electric system that operates at 25 kilovolts or less. These distribution systems are used to deliver electricity from the Alberta interconnected electric system to an end-use customer. A Distributed Energy Resource is any resource that is connected to and can supply energy to an electric distribution system. This includes distribution-connected generation resources and energy storage. This report focuses on distribution-connected generation resources, which are typically connected to a distribution system at customer locations.

Distribution-connected generation, if it qualifies, can be designated as micro-generation. For the purposes of this report, resources that are not designated as micro-generation will be referred to simply as distributed generation. This report has a section containing a brief description of each class of generation. In addition, there is data on the number of sites and total installed capacity broken out by energy source.

Micro-Generation

Distributed generation may qualify as micro-generation under the [Micro-generation Regulation](#). To qualify as micro-generation, a generating unit must use renewable or alternative energy sources, be intended to offset consumer load, and have a nameplate capacity that does not exceed 5,000 kW. Electricity may be generated from solar, wind, hydro, fuel cells or biomass. Other sources may be permitted if they have current EcoLogo certification or their greenhouse gas intensity is lower than the regulated limit. Micro-generators producing electricity in excess of on-site load receive credits for what they feed to the electricity grid.

Distributed Generation

Distributed generation that does not fall under the micro-generation regulation may use any energy source and be of any size (subject to the approval of the distribution system owner). Resources of 5,000 kW and greater must register as a pool participant with the AESO. They also receive payment from the AESO at the hourly pool price for electricity supplied to a distribution system. Distributed generation resources smaller than 5,000 kW have the option to register with the AESO.

This report only contains data on resources that have a nameplate capacity of less than 5,000 kW and are registered with the AESO.

Current Micro- and Small Distributed Generation in Alberta

The table and figures below provide the number of sites and installed capacity of both micro-generation sites and distributed generation sites with a nameplate capacity of less than 5,000 kW.

Table 1: Micro-generation and Small Distributed Generation by Energy Source

September-2020	Micro-generation		Distributed Generation		Total	
	Number of Sites	Installed Capacity (kW)	Number of Sites	Installed Capacity (kW)	Number of Sites	Installed Capacity (kW)
Biomass	1	1,692	6	13,453	7	15,145
Gas	5	382	25	65,805	30	66,187
Gas Cogen	6	1,098	6	18,280	12	19,378
Hydro	1	73	5	9,400	6	9,473
Other	12	1,340	2	2,065	14	3,405
Solar	5,938	80,272	1	990	5,939	81,262
Solar/CHP/Battery Storage	1	105	0	0	1	105
Solar/Wind	34	284	0	0	34	284
Wind	55	1,359	25	30,425	80	31,784
Total	6,053	86,605	70	140,418	6,123	227,023

Figure 1: Micro-Generation Development in Alberta

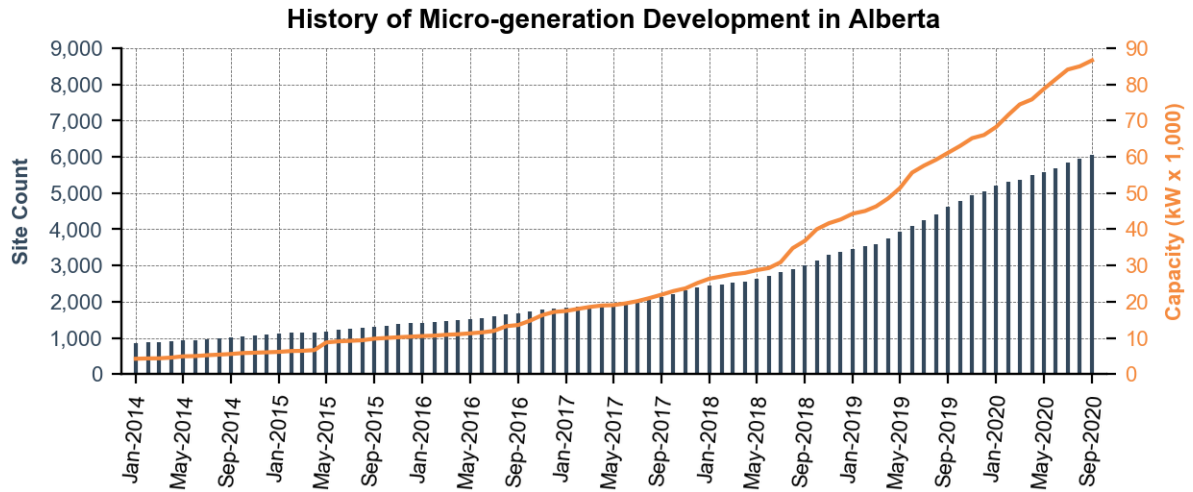
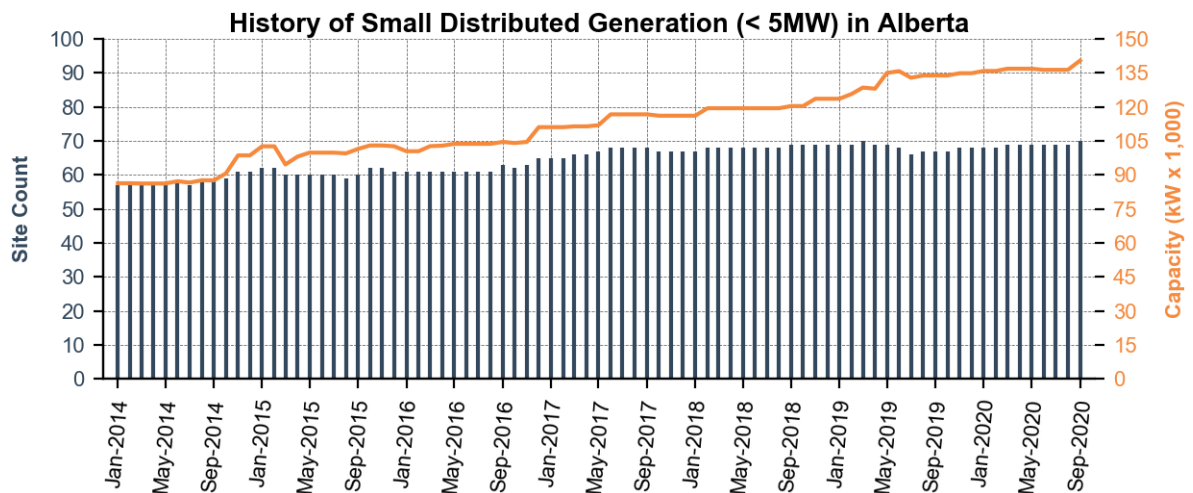


Figure 2: Small Distributed Generation Development in Alberta



Additional Information

The report is updated on a quarterly basis. Data is as-of the last day of the stated month.
 Comments or questions can be directed to manalysis@aeso.ca
 Further information on micro-generation can be found on the [Alberta Utilities Commission](http://www.albertautilities.com) website.

Disclaimers

The information contained in this document is for information purposes only, and the AESO is not responsible for any errors or omissions. Further, the AESO makes no warranties or representations as to the accuracy, completeness or fitness for any particular purpose with respect to the information contained herein, whether express or implied. Consequently, any reliance placed on the information contained herein is at the user's sole risk.
 Capacity: Represents the generator rated capacity (kW) as reported by the Wire Service Provider (WSP).
 Type: Represents the generator type as reported by the WSP.