

## Micro-Generation Protocol (Distributed Renewable Energy Generation)



### Summary

- Carbon offset payments are a possibility for small scale solar and wind power production
- One offset project has been registered
- The potential return is around a cent per kWh at current carbon prices

### Introduction

Alberta has a micro-generation regulation in place that to encourage small solar or wind power generation that feeds back into the electrical grid. As of May 10, 2017 there was almost 2000 micro-generation installations: With a carbon offset protocol approved in 2013, [open.alberta.ca/publications/9781460107942](http://open.alberta.ca/publications/9781460107942), this activity has the possibility of generating additional income through carbon offsets.

### Carbon Amounts from Micro-generation

The carbon yield is set at just under a kilogram (0.64) per kilowatt hour (kWh) for 2018. [open.alberta.ca/publications/2368-9528](http://open.alberta.ca/publications/2368-9528) So an install that produces 12,000 kWh/year would give  $0.64 \times 12,000 = 7680 \text{ kg} = 7.68 \text{ tonnes}$ .

As an example of how much income this may translate to, the current net price of carbon to the farmer under the Conservation Cropping protocol (minus aggregation fees) is \$15.00/tonne. Assuming  $\$15.00/\text{tonne} \times 7.68 \text{ tonnes}$  would equal \$115.20 for carbon from that size of install, about a cent per kWh.

## Basic Qualifications and Record Keeping

In order to qualify for these carbon offsets, installations have to be less than one megawatt, the ownership of the carbon has to be agreed upon, and government incentives for the renewable equipment cannot have been used. Power production records are needed and may be well suited to the offset system as they are produced by almost all solar systems, usually kept either by the installation company or the distribution company. Meter accuracy may be an issue, as the protocol specifies sealed meters and data loggers with 95% accuracy.

## Update

Progress has been slow, reasons given being small amount of supply, low carbon prices, and uncertainties around certification requirements. However one project has generated offsets as of 2018: [www.csaregistries.ca/albertacarbonregistries/eor\\_project.cfm?id\\_prj=724](http://www.csaregistries.ca/albertacarbonregistries/eor_project.cfm?id_prj=724).

## Related Green Income

The main source of income from micro-generation is the energy generated. This is credited on the bill, minus the delivery charges, etc. At present there is no federal/provincial/municipal subsidy (feed-in tariff) for micro-generation in Alberta.

For businesses, the tax write off on solar equipment is accelerated, up to 50% Capital Cost Allowance per year:

[www.cra-arc.gc.ca/tx/bsnss/thrtpcs/nt-ft/q1-eng.html](http://www.cra-arc.gc.ca/tx/bsnss/thrtpcs/nt-ft/q1-eng.html)

The Farm Energy and Agri-Processing Program (FEAP) can cost-share with energy efficiency improvements like insulation, lighting, heating, refrigeration, and ventilation:

[www.agriculture.alberta.ca/feap](http://www.agriculture.alberta.ca/feap)

If the offset income is foregone, then the On-Farm Solar Photovoltaics Program can cost-share the price of a solar system, at 56 to 75 cents per W:

[www.agriculture.alberta.ca/solar](http://www.agriculture.alberta.ca/solar)

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For more information contact the Ag-Info Centre at 310-FARM (3276) or Paul Jungnitsch at 780-427-3801

The information contained here is the interpretation of Alberta Agriculture and Forestry. Alberta's carbon offset system is managed by Alberta Environment and Parks. Offset projects must comply with the most recent quantification protocols and program requirements published by Environment and Parks at: [https://www.alberta.ca/alberta-emission-offset-system.aspx?utm\\_source=redirector](https://www.alberta.ca/alberta-emission-offset-system.aspx?utm_source=redirector)