

South Saskatchewan Regional Plan Strategy 1.9 & 1.10 Reporting

1.9 *Ensure policies are in place to promote and remove barriers to **new investments in renewable energy** (that is, wind, biofuels, solar, hydro) production.*

1.10 *Invest in the development, demonstration and deployment of **renewable and alternative energy technologies** targeted to improve Alberta's overall energy efficiency. This will include support for the application of new technologies and support on-going research and development in partnership with other institutions.*

Alberta Agriculture and Forestry (AF) delivered approximately 25 programs under the Growing Forward 2 (GF2), with a diverse range of goals and targets, including biosecurity, livestock welfare, water management, and environmental stewardship. The GF2 programs were mainly grant programs that reimbursed a certain percentage of costs of the producers and processors for activities or investments that met specific criteria.

On-Farm Energy Management Program

AF's On-Farm Energy Management (OFEM) Program under the GF2 was a \$3 million per year initiative designed to help producers conserve energy and reduce carbon emissions. It was open to any Alberta producer, and offered cost-sharing incentives (grant: 35 per cent; applicant: 65 per cent) up to \$50,000 on the purchase of equipment that improved an operation's energy efficiency. The program was started in 2009 with growing interest and uptake, and regularly spent its full allocation of funds. Upon completion of the GF2 in March, 2018, this program is going to continue as a provincial program under the Climate Leadership Plan. Some projects funded under this program are as follows:

- A greenhouse in the Medicine Hat area installed energy curtains and thermal energy storage which is expected to result in ~35,100 tons of Green House Gas (GHG) emission reduction over the life of the project.
- A greenhouse near Lethbridge installed a combined heat and power generation unit for on-farm energy needs which is expected to result in ~14,400 tons of GHG emission reduction over the life of the project.
- A Hutterite colony near Drumheller installed lighting and insulation in a new workshop building that is expected to result in ~5,850 tons of GHG emission reduction over the life of the project.
- A potato storage building near Taber improved ventilation system that is expected to result in ~4,140 tons of GHG emission reduction over the life of the project.

Land Use

On-Farm Solar Photovoltaics Program

The On-Farm Solar Photovoltaics Program was launched in February 2016 and continued till March 2018 under the GF2. Upon completion of the GF2, it is expected to continue as a provincial program under the Climate Leadership Plan.

Under the GF2, it was a \$1.5 million per year initiative that offered up to \$50,000 incentive (45 cents per watt) to producers for incorporating solar panels into their operation. Indicators for the Solar Photovoltaics Program included how many solar systems were installed, how many kilowatts of power were installed, and calculated carbon offsets resulting from solar power that displaced grid power. Examples of projects funded under this program include:

- Testing Heat Recovery Ventilation technology: a technology that was successfully used in Holland in saving energy, and can potentially be used in intensive livestock operations in Alberta.
- Funding industry attempts at realizing Net Zero Energy barns in Alberta. This project was undertaken to determine the feasibility of Alberta layer, hog, and dairy barns lowering their energy footprint enough to become net-zero operations, whereby they generate as much energy as they consume.
- Measuring the heat input of a solar wall in a broiler chicken barn near Standard, AB. This technology can potentially replace fossil fuel heat with solar heat, and this project was undertaken to quantify the amount of heat replaced.

Irrigation Efficiency Program

The Irrigation Efficiency Program under the GF2 had a budget of \$1.5 million per year. Its objective was to help producers improve their energy and water usage through better irrigation equipment which increased the sustainability of water resources on their operations. The program assisted producers with the purchase of new low pressure center pivot irrigation systems or with upgrades of existing high pressure center pivot irrigation systems. Eligible upgrades included modern electronic control panels, variable-rate irrigation technologies, and high-efficiency sprinkler nozzles. The program was open to producers in Alberta who completed a Long-Term Irrigation Management Plan. Funding provided was 40 per cent of the cost of eligible equipment upgrades to a maximum of \$5,000, or \$15,000 for an upgrade from a gravity or side-wheel irrigation system to a new low pressure center pivot system.