

Overview – Proposed Swan Hills Synfuels Bickerdike Gas to Clean Fuels (GCF) Project

- Synfuels is developing a clean energy conversion facility in the Bickerdike area, about 12 km SW of the Town of Edson, Alberta, Canada.
- The Facility will convert sweet methane natural gas into finished gasoline, ready for use in vehicles, indistinguishable from petroleum-based gasoline.
- We call this process Gas to Clean Fuels, or GCF. The GCF Facility will also make a small amount of LPG – propane and butane.
- The gasoline produced from the GCF will contain no sulphur which will reduce harmful tailpipe emissions and improve air quality.
- Natural gas producers will be able to realize oil-based netbacks for their natural gas resources through attractive tolling arrangements.
- The first phase, GCF 1, will produce about 800 m³/d of gasoline (800,000 litres/d), enough to fuel a typical days drive of 100,000 cars and trucks on Alberta’s roads.
- The capital cost of the first phase is estimated to be approximately \$950 million.
- We plan to follow up with three subsequent identical phases, to take total site gasoline conversion capacity to 3200 m³/d. Phases 2, 3 and 4 planned to be operational every 2-3 years after the start of Phase 1. The exact timing of the additional phases will be dependent on market conditions.
- The Facility will use established and proven processes, similar to what is being done elsewhere in the world (natural gas to methanol, methanol to gasoline), such as in New Zealand and China.
- Construction of the first phase is expected to take about 2 years and employ about 500-750 construction workers at the peak.
- The first phase is estimated to employ about 50-100 full-time people and operate for 40+ years.
- By using natural gas to make gasoline, we are adding value to Alberta’s natural gas by upgrading this natural gas here at home into valuable finished products, such as gasoline for use by Albertans, and increasing and diversifying the available gasoline supplies in western Canada.

- We have initiated public consultation, and have been conducting environmental studies and preliminary engineering work. We plan to file regulatory applications in 2015. We anticipate starting construction in 2016, with start-up in 2018.
- The GCF process is very efficient and produces minimal air emissions. Air emissions from the Facility, such as oxides of nitrogen, particulate matter, and greenhouse gases such as carbon dioxide, will derive from the combustion of sweet natural gas, or other fuel gases similar to sweet natural gas. Emissions will meet regulatory requirements.
- The Facility will need fresh water for cooling and other uses and will be designed to reuse and recycle as much water as practicable. The majority of the water used will be evaporated back into the environment. We are looking at municipal and industrial waste water, groundwater, or surface water as possible sources to meet the fresh water demand of the Facility.
- The Facility location is on Crown land that is surrounded by and close to industrial development, which will help reduce the overall footprint by limiting the additional new rights-of-way required for the transportation and energy infrastructure connections such as railways, roads, high voltage electricity transmission lines, and pipelines. The site is next to the CN Mainline and the CN Foothills Subdivision line, Highway #47, and high voltage electricity transmission lines and substation, and near the Talisman Edson gas plant and Edson Forest Products mill. There are also existing third-party sour gas wells and pipelines within the proposed development area, which are not part of the Facility. The area proposed for the plant site is on land recently clear cut by an unrelated forest products company as part of their timber harvest plans.