Energy and energy transition are central to Alberta’s history. Coal mining began in the 1870s and by the mid 1940s, Alberta coal provided half of Canada’s energy needs. Starting with the 1947 Leduc discovery, conventional oil rapidly replaced coal and production steadily increased until the mid 1970s. Facing a slow decline in conventional oil and gas production as assets reach the end of their productive lives, investment moved to the massive oil sand resources. The legacy of aging and abandoned infrastructure throughout Alberta has been recognized as a major liability; however, with Alberta’s world-class solar and wind resources there is potential to capitalize on existing infrastructure to generate renewable energy.

PhotoVoltaic (PV) technology is rapidly advancing to take advantage of solar power as a renewable energy source. Unfortunately, in order to reduce costs, utility-scale solar projects demand an economy of scale that requires significant land acreage and expensive transmission system upgrades. Recognizing Alberta contains more than 155,000 inactive well leases (occupying more than 300,000 acres), that much of this land is in the best solar areas, and many sites are connected to the distribution network, it seemed natural to investigate using these inactive leases as a foundation for “small-scale” (less than 1 MW per site) solar development. Although this concept is not a solution for all of Alberta’s oil and gas liabilities, converting ten percent of Alberta’s abandoned leases to solar would result in more than 6,000 MW of generation capacity with the potential to produce over 8,000,000 MWh per year, while saving more than 4,500,000 Tonnes of GHG emissions.

The RenuWell energy transition project has developed through several years of consultation with the Alberta Energy Regulator to ensure the process would not lead to a shedding of oil and gas liabilities. As the process evolved, it became clear it offers significant advantages to the environment and to industry. In terms of the environment, re-using existing infrastructure for solar development preserves land for agriculture and natural ecosystems. Recognizing value in the existing infrastructure may accelerate well abandonments, and the electricity produced by the solar projects replaces power generated by burning fossil fuels. For the oil and gas industry, solar generation on inactive leases can lower power costs associated with production of the remaining reserves or in powering remediation systems.

This presentation will describe the status and path forward of the project, and will discuss the obstacles to implementation and how they may be addressed through collaboration and dialogue.

Keith Hirsche

Keith Hirsche is a fourth generation Albertan and second generation in the oil and gas industry. His geoscience research career focused on improving recovery from oil and gas fields in Alberta and internationally. He played key roles in several industry and government funded research consortia including integration specialist for the IEA/PTRC Weyburn CO2 sequestration pilot, manager for an Alberta Research Council Joint Venture Project, geoscience support for in-situ thermal recovery pilots and manager for two consortia-based software development projects. Most recently, he served as a member of the Independent Technical Panel that investigated CNRL’s Primrose Flow To Surface events under a mandate from the Alberta Energy Regulator.

In 2003, while visiting extended family in Denmark, he was introduced to renewable energy technology. Shortly afterwards, Keith founded Elemental Energy Inc. to explore how conventional and renewable energy systems can be combined for a more sustainable future. Since early 2016, he has worked extensively with key stakeholders to realize the potential of utilizing abandoned oil and gas sites as a foundation for solar energy development.

In addition to his technical experience, Keith is also trained in group facilitation and conflict management.