Put the brakes on

The 2000s saw unprecedented growth in the Canadian oil and gas industry, followed by collapse due to the financial crisis. It remains to be seen whether recovery and increased oil prices can create enough demand for projects to overcome the hurdles to new ventures.

Spurred by supply shocks, peak oil fears and political instability, a constellation of emerging advanced recovery technologies and high prices has recently opened up a range of secondary petroleum reserves for development. The changing scene has vaulted Canada to its current status as the number one supplier of oil to the US. Since the end of 2008, however, the speed of exploration and recovery projects has slackened considerably from the breakneck pace of five years ago. Economic factors, environmental concerns and reams of red tape have slowed progress on some of the most ambitious projects to a near crawl – from the Mackenzie Valley natural gas pipeline to operations in Alberta's vast oil sands deposits.

Of course one of the most significant influences on Canada's oil and gas industry has been the ongoing global financial crisis. Slackening demand due to scaled down industrial activity and general conservation efforts in the US led to price declines in 2008 and 2009 that were nearly as dramatic as the hikes of 2007. With lower prices, exploration and building efforts nearly came to a standstill as firms enacted cost-saving measures to remain viable. The slowdown was especially hard on Canada because so much of the country's reserves are in resources like bituminous sands, shale and heavy crude, which were only profitable to begin with because of the price hikes.

Alberta's oil sands have been controversial ever since they came to be seen as a petroleum resource. On one hand, Canada has the most extensive oil sands deposits in the world – a potential source of synthetic crude that could last for centuries. These resources accounted for 44 percent of the country's total petroleum supplies in 2007. On the other hand, oil sands require a great deal of water and energy for extraction. The government has authorised operators to remove as much as 1.5 percent of flow from the Athabasca River. Bituminous sands must also be chemically treated through processes such as hydrocracking and hydrogenation before shipment to refineries for distillation into synthetic crude.

Beyond the expenses of extraction, oil sands production is controversial for its significant impact on the local environment. Most of the deposits at the Athabasca oil sands are located near the surface and are extracted through open pit mining. To accomplish this, the overlying forest must be cleared with accompanying harm to wildlife. In response, the government requires that firms present reclamation plans for land after extraction. Water pollution is another significant problem, as water and steam used to produce oil from the sands is collected in ponds filled with toxic tailings (the by-product of the process). These ponds have been one of the principle sources of controversy among environmentalists. Current reclamation techniques rely on the settling of toxic sediments for dredging. The Canadian Association of Petroleum Producers estimates total well-to-pump carbon dioxide emissions for oil sands 1.3-1.7 times higher than that of traditional crude oil.

Topics associated with oil sands development are not wont for attention. The Pembina Institute has devoted an entire website to cataloguing the disadvantages of oil sands development, including articles investigating the impact of oil tailings on local birds and fish. Only high oil prices and dwindling crude stocks would seem to justify spending 10 times more in production cost than that of Saudi light crude to develop what is generally regarded as one of the dirtiest petroleum sources. Without the economics to back such development, the justification for such high levels of resource consumption and environmental impact can become untenable.

The downturn has also impacted natural gas projects in Canada. One instance is the Mackenzie Valley gas pipeline. A brainchild of the 1970s energy crises, the Mackenzie stalled in 1974 when Justice Thomas Berger recommended a 10-year moratorium due to the project's expected impact on indigenous people and the environment. The First Nations communities living in the affected region were of particular concern. In the intervening years investment groups settled with the First Nations, offering a one-third share in revenues from the completed pipeline. Unfortunately, despite securing these agreements, the global financial crisis has now dried up any enthusiasm for development at this time. ■

IN FIGURES

ANNUAL GREENHOUSE GAS EMISSIONS FROM THE OIL SANDS

29.5 million tonnes