McArthur Basin Shale Gas Play

Project overview

Imperial Oil and Gas holds a 100% interest in 59,000 km² (14.6 million acres) of prospective shale gas exploration acreage, comprising seven contiguous tenements in the McArthur Basin in Australia’s Northern Territory. Multiple well tests and core holes have encountered oil, gas and liquids across the Basin including in and immediately adjacent to Imperial Oil & Gas’s tenements. Work undertaken by the company demonstrated that the Central Trough of the McArthur Basin, of which Imperial Oil & Gas holds 80%, shows similarities to basins in Oman, Siberia and Southern China which contain resources of billions of barrels of oil equivalent. Imperial Oil & Gas estimates a P(50) (unrisksed) Prospective Resource of 11 TCF gas and 222 MMBO (2238 MMBOe).

The company has identified 33,867 km² (8.4 million acres) of shale target zones for prospective resource identification, including the Velkerri, Kyalla, Barney Creek and Wollogorang formations and considers these targets to be of sufficient scale to be a major development project for an incoming industry major. 2D seismic acquisition is planned for 2019 in EP187 in preparation for future stratigraphic and core well drilling.

Geology and exploration activity to date

The McArthur Basin comprises mostly mid-Proterozoic sedimentary rocks, forming a platform cover sequence that overlies the eastern edge of the North Australian Craton. Imperial Oil and Gas’s permits lie in the north-eastern section of the Basin. These organic-rich sediments contain plentiful hydrocarbons, which are the organic remains of single celled algae that were the only life form at the time. Imperial Oil and Gas’s acreage covers 80% of the petroleum-prospective central trough of the onshore McArthur Basin. The area has been subject to limited historical drilling, with a 1979 mineral core hole having ignited and sustained a 6 m high yellow smoky gas flare for approximately 6 months, producing an estimated 0.5 Bcf at 6 mmscf/d, which demonstrated the presence of a petroleum system. Gas analysis revealed C1-C7. Imperial Oil and Gas drilled four exploration core holes on granted acreage in 2014, and has undertaken field reconnaissance on three of the application permits to assess water quality, study flora and fauna, plan logistics for future seismic surveys and to inspect key rock outcrops.
Infrastructure

Imperial Oil and Gas’s 59,000 km² acreage covers 80% of the petroleum prospective central trough of the onshore McArthur Basin. The northern portion of the acreage is within 80 km of the service centre of Nhulunbuy and the Port of Gove. EP187 is located on the Carpentaria Highway. This existing sealed road and an existing gas pipeline through the tenement offer reduced drilling costs and allow for near-term commercialisation.

Business overview

- The company believes that the capacity of LNG processing infrastructure on Australia’s East Coast and in the Northern Territory greatly exceeds current gas supply. The recent large buildout of LNG processing plant in Queensland has contributed to a substantial domestic gas shortfall, and plant expansions could double installed capacity. The Northern Territory is also advantageously located to fulfill rising LNG demand in Asia.
- Early commercialisation opportunities exist for the development of discoveries, by way of an existing gas pipeline through EP187, which could supply gas to either the large McArthur River lead-zinc mine, or to supply existing or expanded LNG processing facilities in the Northern Territory capital of Darwin. There is a Right of Way in place to build a new, larger pipeline alongside the existing pipeline.
- Imperial Oil & Gas has initiated discussions with mining companies in the immediate area to pursue local gas provision opportunities.

Project status and development timeline

- The company’s initial exploration, appraisal and development target will be the Velkerri shale formation in EP187, with 231 line-km 2D seismic planned in 2019 to delineate the size of the formation and identify drilling targets. An initial drilling program will comprise stratigraphic wells and a core well to confirm hydrocarbon content and rock characteristics. Imperial Oil & Gas considers the target to be of sufficient scale to be a major development project for an incoming industry major.
- The grant of the company’s 29 remaining exploration permit applications and subsequent exploration activities will occur once agreements have been negotiated with traditional landowners. Imperial Oil & Gas has a long and successful track record of negotiating such agreements, having conducted 26 on-country meetings since 2010. The company was one of the first companies to be awarded an exploration permit on Aboriginal Land in the Northern Territory.

Investment sought

Imperial Oil and Gas is seeking a joint venture partner willing to support the next stage of its exploration programs.

Resource estimates

Imperial Oil and Gas has announced a P50 Unrisked Undiscovered Prospective Resource Estimate for its Northern Territory tenements of 11 TCF gas and 222 million barrels of oil/condensate.