



ECONOMIC CONTRIBUTION OF CHEVRON IN AUSTRALIA





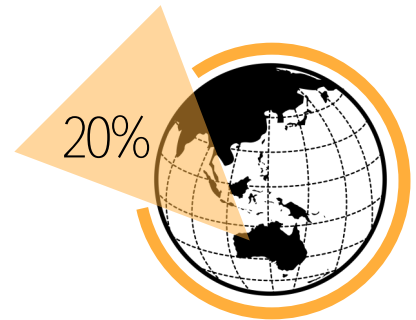
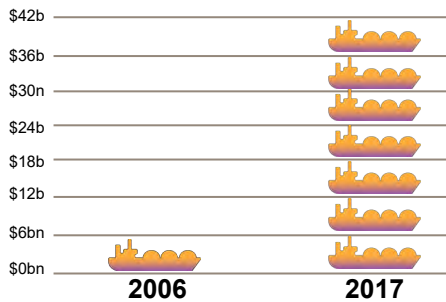
The LNG industry's emergence

ACIL Allen was engaged by Chevron Australia to undertake a study on the forecasted economic impact of Chevron's projects in Australia projected over the 2016 to 2050 period.

This study comes at a time when the emergence of the LNG industry has had a transformational impact on the economies of Western Australia and Australia. There are 21 LNG trains in Australia, processing part of the nation's vast natural gas reserves into export cargos that are sent across the world and domestic gas for WA consumers.

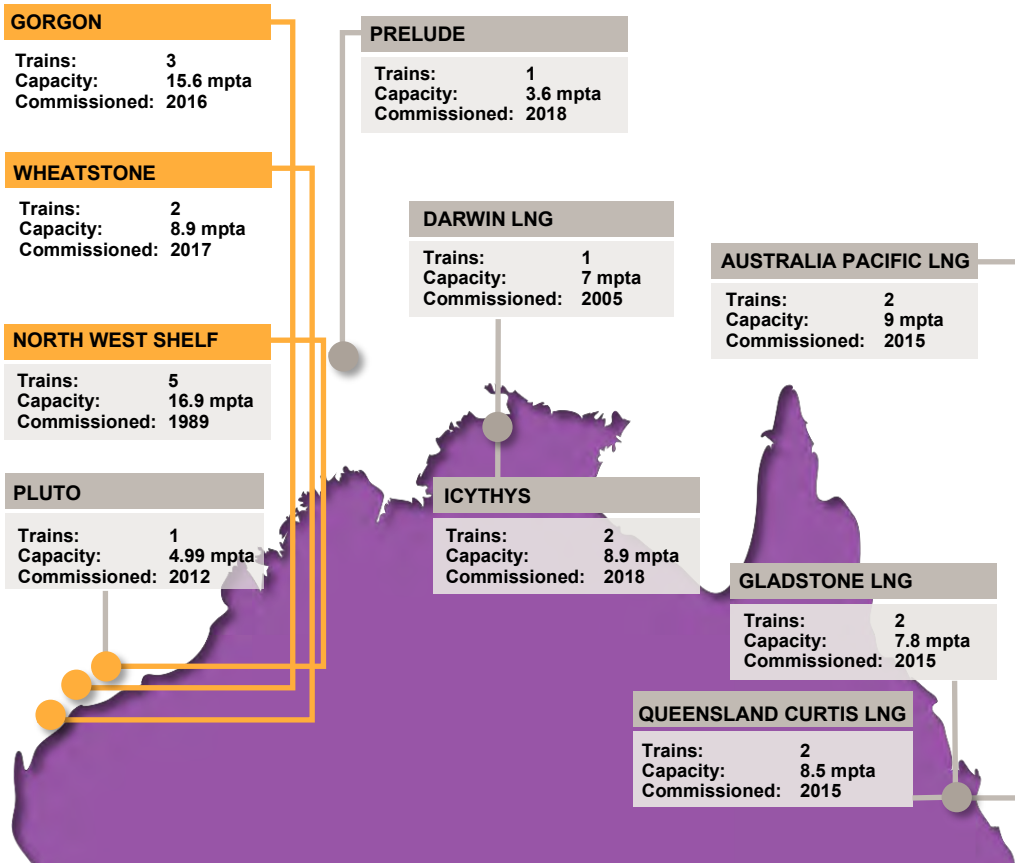
Of these, Chevron is a joint venture partner on 10 of these trains and is operator of the Gorgon (3 LNG trains) and Wheatstone (2 LNG trains) projects.

The direct economic impact of the LNG industry has been extraordinary, and it will only grow over time as current and potential future developments reach full production. But limiting the LNG industry to its direct economic impact would sell its value short — the industry plays a significant role across many aspects of the Australian economy and the community more generally.



It is estimated that by 2019, **LNG exports will have increased seven fold** from 2006, which will make it Australia's second largest export by value.

WA will be producing **20 per cent of the world's LNG** by 2020.



Impact of Chevron in Australia

The overall impact of Chevron's operations in Australia has been estimated based on the total impact of the Gorgon, Wheatstone and North West Shelf projects, along with Chevron's Australian Business Unit operations over the study period from 2016 through to 2050.

Total **exports of \$18.9bn** are estimated to be generated from Chevron's projects each year, which is equivalent to:



Combined total exports of goods from **South Australia**, the **Northern Territory** and **Tasmania**.



Australia's total **agriculture, forestry and fishing exports** in 2016-17.



Chevron's projects are expected to boost Australia's **GDP by 687bn** between 2016 and 2050, which is equal to **3x the size of the WA economy** in 2016-17.



Chevron's operations in Australia are estimated will **generate 2,603 direct and indirect FTE jobs per annum**, 90% of which will be located in WA.



Output of \$19.6bn each year

expected to result from Chevron's total operations will be twice the output from WA's manufacturing industry in 2016-17.



Average annual **payroll tax payments of \$94m to the WA government** is enough to fund **6 new primary schools each year** to 2050.



Chevron is forecast to become one of Australia's largest tax paying organisations through its projects. **Payments to all levels of government from Chevron's projects are estimated will total \$239bn** and at an average of \$6.9bn per annum.

This will be enough to build **3 new 60,000 seat Optus Stadiums each and every year to 2050**.



Gorgon LNG Project

Gorgon is one of the world's largest LNG projects and the largest single resource project in Australian history. The project is located on Barrow Island – a Class A Nature Reserve – and comprises three LNG trains and a domestic gas plant.

The project has a forecast productive life of over 40 years, and will be an important pillar of the Australian, Western Australian and Pilbara economies for decades to come as it continues to meet growing global demand for natural gas.

Gorgon is estimated to produce on average over 360,000 barrels of oil equivalents per day, with the majority going to international markets in the form of LNG and condensate exports, as well as supplying WA's domestic gas market. The Gorgon Project is operated by Chevron Australia and is a joint venture of the Australian subsidiaries of Chevron (47.3 per cent), ExxonMobil (25 per cent), Shell (25 per cent), Osaka Gas (1.25 per cent), Tokyo Gas (1 per cent) and JERA (0.417 per cent).



Gorgon is expected to generate **835 direct and indirect FTE jobs** per annum over the study period, with nearly **80% of these jobs located in WA.**



Gorgon's **real income impact of \$92bn** between 2016 and 2050 is forecast to increase the standard of living for all Australians. The average annual real income impact of \$2.6bn is equivalent to an **increase in the annual earnings of every WA full time worker of \$2,888 each year.**



During its peak, Gorgon is forecast to average production of over **460,000 barrels of oil equivalents per day**, enough to provide power to **27 million homes a year.**



Gorgon is estimated to boost **Australia's GDP by \$390bn** between 2016 and 2050.



Australia's **export earnings is expected to receive a boost of \$386bn** between 2016 and 2050 from the Gorgon project.



Payments to governments is forecast to total \$139bn between 2016 and 2050 at an **average of \$5.4bn per annum.** These payments will primarily be in the form of company taxation payments paid directly as a result of the Gorgon project, and indirectly by businesses across the country that benefit from the economic stimulus created by the Gorgon project.



Wheatstone LNG Project

Wheatstone is one of Australia's largest resource developments and the nation's first LNG hub – providing greater security of energy supply as well as significant economic benefits such as employment, government revenue and local business opportunities.

The project has a forecast productive life of over 25 years, and will be an important pillar of the Australian, Western Australian and Pilbara economies for decades to come as it continues to meet growing global demand for natural gas.

Wheatstone is estimated to produce on average over 220,000 barrels of oil equivalents per day, with the majority going to international markets in the form of LNG and condensate exports, as well as supplying WA's domestic gas market.

Wheatstone is a joint venture between Australian subsidiaries of Chevron (64.14 per cent), Kuwait Foreign Petroleum Exploration Company (KUFPEC) (13.4 per cent), Woodside Petroleum Limited (13 per cent), and Kyushu Electric Power Company (1.46 per cent), together with PE Wheatstone Pty Ltd, part-owned by JERA (eight per cent).



Wheatstone is expected to generate **739 direct and indirect FTE jobs per annum** between 2016 and 2050, with nearly **85% of these jobs located in WA.**



Wheatstone's **real income impact of \$30bn** between 2016 and 2050 is expected to increase the standard of living for all Australians. The average annual real income impact of \$1bn is equivalent to an **increase in the annual earnings of every WA full time worker of \$1,138 each year.**



During its peak, Wheatstone is forecast to average production of over **280,000 barrels of oil equivalents per day**, enough to provide power to more than **16 million homes a year.**



Wheatstone is estimated to boost **Australia's GDP by \$134bn** between 2016 and 2050.



Australia's **export earnings is expected to receive a boost of \$125bn** between 2016 and 2050 from the Wheatstone project.



Payments to governments is forecast to total \$43bn between 2016 and 2050 and at an **average of \$2.1bn per annum.** These payments will primarily be in the form of company taxation payments paid directly as a result of the Wheatstone project, and indirectly by businesses across the country that benefit from the economic stimulus created by the Wheatstone project.



North West Shelf Project

As Australia's very first LNG project, the North West Shelf project has been contributing to the economic development of Australia for decades.

The North West Shelf project is one of the world's largest LNG producers, supplying oil and gas to Australian, Western Australian and international markets from huge offshore gas, oil and condensate fields in the Carnarvon Basin off the north-west coast of Western Australia.

North West Shelf is estimated to produce on average over 180,000 barrels of oil equivalents per day, with the majority going to international markets in the form of LNG, with the remainder supplying WA's domestic gas market.

The NWS project is operated by Woodside and is an equal joint venture between six international companies; BHP, BP Developments Australia, Chevron, Japan Australia LNG, Shell Australia and Woodside.



North West Shelf is expected to generate **1,012 direct and indirect FTE jobs per annum** between 2016 and 2050, with nearly **95% of these jobs located in WA.**



North West Shelf's **real income impact of \$57bn** between 2016 and 2050 is forecast to increase the standard of living for all Australians. The average annual real income impact of \$2bn is equivalent to an **increase in the annual earnings of every WA full time worker of \$2,080**



During its peak, North West Shelf is expected to average production of over **500,000 barrels of oil equivalents per day**, enough to provide power to nearly **30 million homes a year.**



North West Shelf is estimated to boost **Australia's GDP by \$157bn** between 2016 and 2050.



Australia's export earnings is forecast to receive a boost of **\$160bn** between 2016 and 2050 from the



Payments to governments is expected to total \$50bn between 2016 and 2050 and at an **average of \$2.3bn per annum.** These payments will primarily be in the form of company taxation payments paid directly as a result of the North West Shelf project, and indirectly by businesses across the country that benefit from the economic stimulus created by the North West Shelf project.



Chevron and local industry

Once operational, the Gorgon and Wheatstone projects will still have significant operational and capital spending commitments over their productive lives, which will generate ongoing benefits to local industry.

TOTAL MARINE TECHNOLOGY

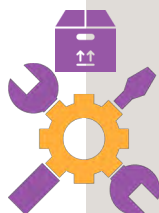
In order to meet the unprecedented scale and complexity of the Gorgon Project, Chevron has awarded contracts to WA businesses that have provided technological advancements or purpose-built solutions for Chevron. One such business is Total Marine Technology (TMT), which specialises in the development of sub-sea technology, and was awarded a \$30 million, three-year contract to build and maintain two Remote Operated Vehicles that supported the drill rig for Gorgon's development wells. All the design, engineering and the majority of manufacturing was done in WA and the vehicles were built using local components. The Gorgon contract was TMT's largest ever in terms of value and scope.

CIVMEC

"The Gorgon Project has been a very exciting project for Civmec and has assisted in developing many of our capabilities. This Project has truly been a major part of the Civmec story over the past five years."
Pat Tallon, Chief Executive Officer

NTC CONTRACTING

In 2017, Chevron awarded local Onslow business NTC Contracting a new civil and earthworks services contract that will see the company provide services to Wheatstone for up to five years. NTC Contracting has been able to adapt its business model to meet the requirements of the Wheatstone project as it moves from construction to operations. According to Jason Varcoe, the Managing Director of NTC Contracting, *"the Wheatstone Project has helped to increase business capabilities and standards, particularly from a health, environment and safety perspective. We now have the ability to be a first-tier contractor and work directly for companies such as Bechtel and Chevron. Our work on the Wheatstone Project has helped position NTC as a core Pilbara-based contractor, capable of first-tier contracts. The new contract represents success for both NTC Contracting and the town of Onslow."*



Through construction and operations, **Gorgon and Wheatstone is expected to purchase goods and services from local business valued at over \$100bn.**

During **construction**, the Gorgon project has purchased goods and services from local businesses valued at \$45bn, and the Wheatstone project has purchased goods and services to the value of \$22bn.

During **operations**, the Gorgon and Wheatstone projects is forecast to purchase goods and services valued at \$1 billion per annum from local Australian businesses.



To date, the Gorgon and Wheatstone projects have **awarded over 1,000 contracts to local Australian businesses.**



Chevron in the community

Chevron has significantly increased its contribution to the Western Australian community over its 60 year local history – particularly in recent years as it commenced construction and the operation of the Gorgon and Wheatstone projects. Chevron’s contribution extends beyond the headline indicators, having an important presence in the WA community.

Chevron’s community efforts focus on the key areas of health, education, economic development and the environment. In 2017, Chevron contributed nearly \$3.5 million including \$1.5 million on health, \$1.1 million on education, nearly \$300,000 on economic development and nearly \$630,000 on other investments. These community investments include Scitech, the Chevron City to Surf for Activ and the Fiona Wood Foundation which benefit many Western Australians. Chevron also makes significant contributions to the communities in which it operates.

ABORIGINAL SCHOOL SCHOLARSHIP PROGRAM

The Chevron Aboriginal School Scholarship Program (ASSP) provides scholarships of up to four years to Aboriginal students studying at secondary school. Since the program was launched in 2015, 33 students have received scholarships towards high school tuition and study supplies. In 2017, 16 students received scholarships.

The ASSP is part of Chevron’s Education-2-Employment Pathways program that provides potential for graduates to transition into Chevron ABU’s Aboriginal Traineeship or Cadetship Programs and progress into full time work with Chevron. In addition to financial support, scholarship recipients are allocated a Chevron mentor and each term students visit the Perth office to experience 'a day in the life' of a Chevron employee.

PROMOTING ABORIGINAL LEADERSHIP

Chevron Australia is partnering with the inaugural WA Aboriginal Leadership Institute to help bring together current, future and emerging Aboriginal leaders from across the State. The Western Australian Aboriginal Leadership Institute (WAALI) aims to overcome Aboriginal disadvantage by building leadership and governance capacities amongst Aboriginal people, and inspiring participants to affect meaningful change within their families and communities.

Chevron Australia is proudly partnering with WAALI to expand its successful Yorga Djenna Bidi program – an Aboriginal Women’s Leadership program designed by Aboriginal women, for Aboriginal women. The Yorga Djenna Bidi pilot program (meaning women’s movement or women’s journey), commenced in 2015 with 40 women successfully completing the five-month program in the years following. The Western Australian Aboriginal Leadership Institute will also offer a range of programs focusing on key areas of development such as financial literacy, personal development, reconciliation and performance management.



Chevron has helped build the social infrastructure in Onslow, with **\$250m** invested in hospitals, schools and recreation facilities.



Through the Global University Partnership Program, Chevron has formal and direct links to universities and fosters academic excellence, research capacity and builds key relationships for future research and development opportunities.



Chevron into the future

Through Chevron's investment, Western Australia has emerged as a global leader in LNG. Chevron's role extends beyond its projects, and is actively engaged in a range of partnerships that build local research and development and engineering capability, which will help build and diversify WA's economy now and into the future.

“...industry – with the support of government and the community – must continue investing for the future. To keep the trains filled with gas, these new facilities require ongoing multi-billion dollar investments...new wells, subsea equipment, platforms and pipelines, not to mention the long-term operations and maintenance equipment, skills and capabilities.”

Nigel Hearne, Managing Director Chevron Australia.



Ongoing capital and operation expenditure to maintain the production profiles of Gorgon, Wheatstone and North West Shelf over the study period is forecast to generate:



\$12bn in additional GDP



\$14bn in additional income



An additional **393 direct and indirect FTEs** per annum



\$5bn in additional tax payments



Between 2016 and 2050 Chevron's **Australian corporate headquarters in Perth** is estimated to generate:



Output of **\$6bn**



Incomes of **\$8bn**



Employment of **289 direct and indirect FTEs** per annum



Taxation payments of **\$3.4bn**



Chevron will play a crucial role in powering the WA economy in the decades to come through its supply of domestic gas. Chevron's projects will have the **capacity to supply 50% of WA's domestic gas supply by 2027.**

Through the emerging interest in research and development for oil and gas industries in Perth, **the city has developed as a global hub for scientific and technological innovation in the oil and gas sector**, particularly in the areas of subsea exploration and production technologies, marine service, petroleum-related research, Front End Engineering and Design (FEED), geophysical surveying and command and control automated technologies.





KEY ASSUMPTIONS:

In undertaking this assessment, the following assumptions have been made:

- The study period is from 2016 to 2050
- All values are expressed in real dollar terms with a base year of 2017
- All values are expressed in Australian dollars
- Capital and operational expenditure forecasts have been based on estimates provided by Chevron Australia
- Production forecasts are based on estimates provided by Chevron Australia
- LNG prices have been based on forecast Brent Crude Oil prices, sourced from the US Energy Information Administration (EIA).
- Domestic gas prices have been sourced from the Australian Energy Market Operator (AEMO) between 2018 and 2027, and thereafter ACIL Allen bench-marked domestic gas prices against LNG import prices in Japan
- Employment forecasts are based on estimates provided by Chevron Australia
- The taxation estimates are based on the taxation laws at the time the study was undertaken. This excludes Petroleum Resource Rent Tax (PRRT), which was not modelled.

In undertaking this study, ACIL Allen has used its computable general equilibrium model, *Tasman Global*, which is a powerful tool for undertaking economic impact analysis at the regional, state, national and global level. *Tasman Global* is a large-scale computable general equilibrium model which is designed to account for all sectors within an economy and all economies across the world. ACIL Allen uses this modelling platform to undertake industry, project, scenario and policy analyses. The model is able to analyse issues at the industry, global, national, state and regional levels and to determine the impacts of various economic changes on production, consumption and trade at the macroeconomic and industry levels.

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