The economic contribution of Queensland's oil and gas industry

Australian Petroleum Production & Exploration Association

8 September 2021

Building a better working world

The oil and gas industry helps grow the Queensland economy

Queensland's oil and gas industry has grown rapidly over the last decade, driven by investment in onshore gas development and LNG production

- Queensland's Bowen and Surat basins contain Australia's major coal seam gas (CSG) resources. The rise in global gas demand in the late 2000s led to the development of a number of LNG export projects:
  - Queensland Curtis LNG (2014)
  - Gladstone LNG (2015)
  - Australia Pacific LNG (2015).
- Driven by the emergence of the CSG industry, over $80 billion has been invested in oil and gas projects in Queensland since 2010.
- Strong investment, coupled with advancements in production technologies, have led to an almost four-fold increase in Queensland gas production over the decade.
  - CSG production has risen by more than 500% over the decade with almost 30% of Australia's LNG production now occurring in Queensland.
  - LNG exports reached 1400 PJ in 2020.
  - The expansion of natural gas production is supporting broader business growth, including in new gas-fired electricity generation and energy-intensive manufacturing.
- The rapid development of Queensland's LNG industries has generated wealth, boosted tax revenues and delivered high paying jobs to the State.

The industry's economic impact over the last 10 years…

$106 billion
added to the Queensland economy over the decade

3% per annum
average annual contribution to Queensland economic output over the decade

$13 billion
in taxes paid over the decade

36,000 workers
full time workers on average over the decade

The investment outlook for Queensland's oil and gas industry remains strong

The potential economic impact from currently proposed oil and gas investments in Queensland over the next two decades are examined under two growth scenarios

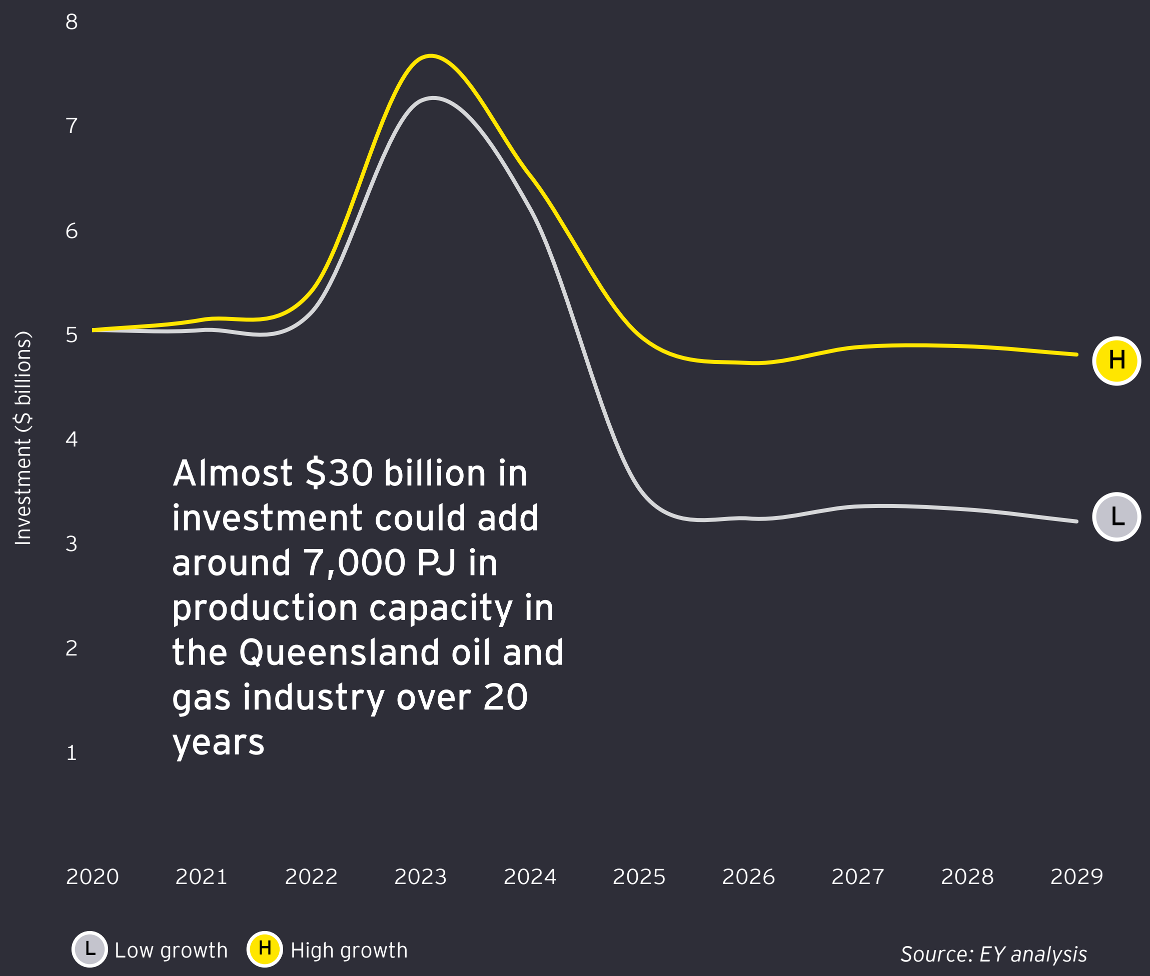
L **Low growth** – Includes investment and production for Queensland oil and gas projects which are currently under development or have a high level of investor commitment.

H **High growth** – Building on the low growth pathway, this scenario captures investment and associated production yields for oil and gas projects in Queensland that are prospective but have yet to secure firm commercial commitments.

Investment scenarios reflect known information about new gas projects. The analysis does not consider global or domestic demand for gas or any potential impacts of future climate change policy.

Some key oil and gas projects in the pipeline

- Surat Gas Project (Arrow Energy)
- Western Surat Gas Project (Senex)
- Glenaras Gas Project (Galilee Energy Limited)



Source: EY analysis

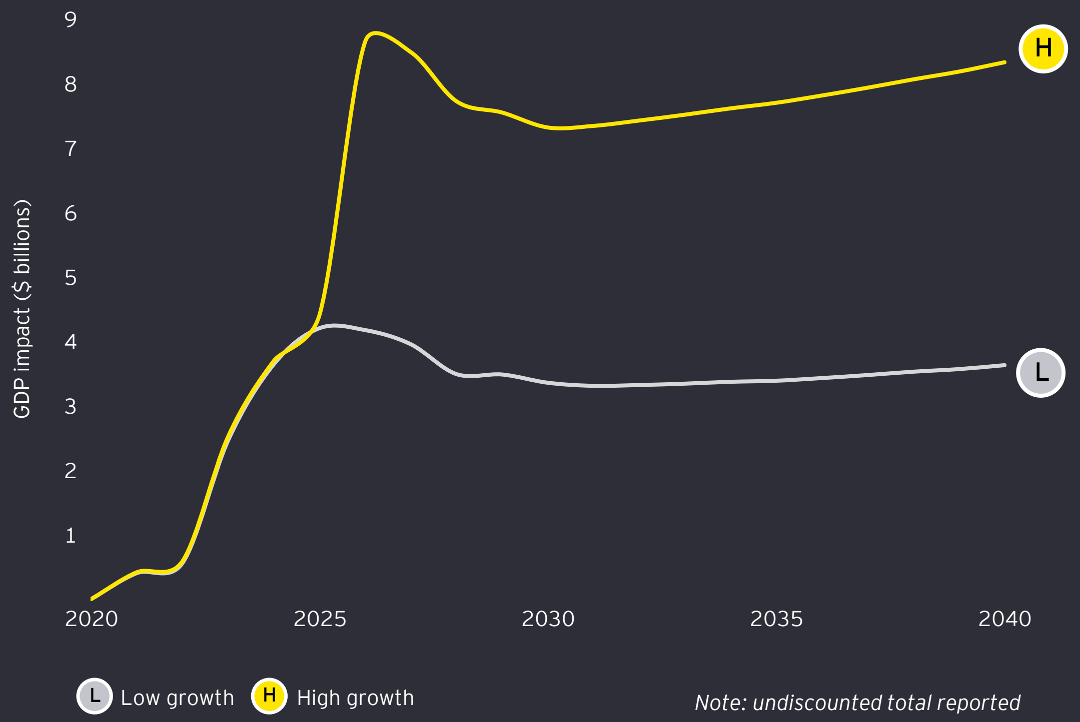
New oil and gas investment delivers major economic payoffs

Industry investment boosts Queensland's productive potential and lifts economic outcomes

- Identified projects provide an immediate economic stimulus during their construction and delivery phase, leading to a sustained uplift in output as new projects commence production.
  - During the near term capital installation phase, economic output may increase by $51.4 billion under a high-growth scenario and $29.7 billion under a low-growth scenario.
- From 2025, the potential benefits of additional production – under both growth scenarios – can be felt throughout the economy.
- Going forward, there are significant returns under a high-growth scenario reflecting the ambitious nature of the investment which looks to open-up and capitalise on new gas provinces.
  - Queensland's economic output could be $8.7 billion higher in 2026 – this represents almost 2.5% of the current Queensland economy.
  - In fact, under this 'step-change' growth trajectory, the economic impact is estimated to be 230% higher than the low-growth scenario in 2040.
  - Other parts of the economy also benefit from a reduction in gas prices and an increase in productivity.

The 20-year economic impact …

L	Low growth	$64.0 billion
H	High growth	$129.3 billion



Note: undiscounted total reported
Source: EY analysis

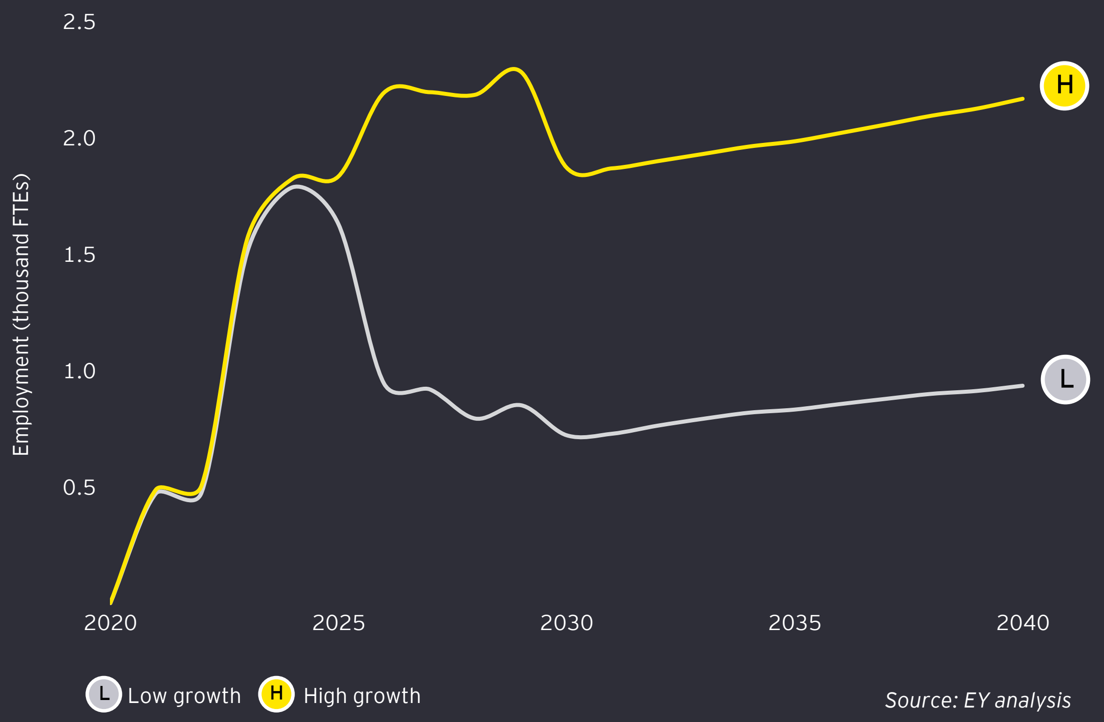
Delivering more jobs for Queensland

Increased investment in the oil and gas sector generates significant high-paying jobs in Queensland

- The demand for workers rises during the construction phase as businesses invest in additional capital.
  - The benefits of this investment are particularly pronounced in the short-term, with almost 2200 extra full-time jobs estimated to be created in 2026 under a high growth scenario.
  - Under a low-growth investment pathway, more than 1700 full-time workers could be employed in 2024.
- As projects transition to production, the employment impacts continue to build and there is a permanent uplift in skilled, high paying jobs in Queensland.
  - Throughout Queensland, the broader business sector benefits from lower gas prices – these efficiencies help to create more jobs throughout the economy.
- Capital formation is a strong driver of productivity growth which increases wages.

The number of jobs created in 2040 ...

L	Low growth	900 FTEs
H	High growth	2200 FTEs



Source: EY analysis

Building fiscal resources and supporting consumers

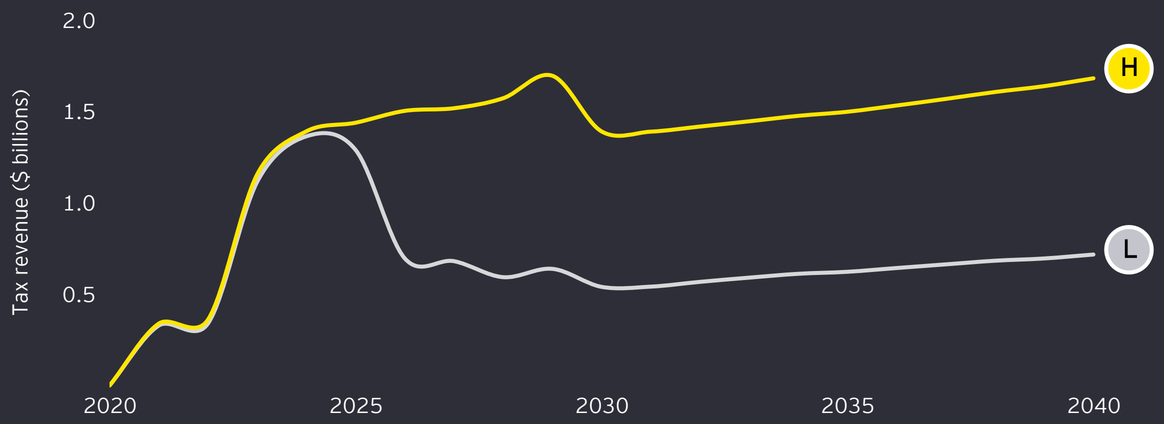
Oil and gas investment and production grows the tax base

- The oil and gas industry makes a valuable fiscal contribution to the Queensland and national economies through a range of tax payments.
  - Taxes and charges paid by the industry in Queensland include royalties, excise duties, company tax and indirect taxes.
- Over the next 20 years, new gas projects in Queensland could generate $27.6 billion in taxes under a high-growth scenario and $13.9 billion under a low-growth pathway.
- Industry investment also induces activity in other parts of the economy, boosting tax contributions from other sectors.

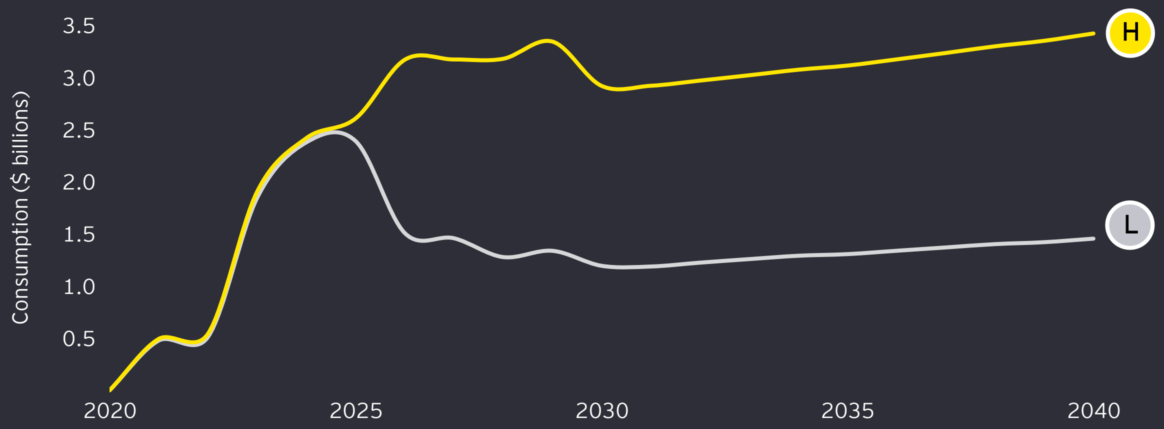
Higher employment and wages raises household consumption throughout Queensland

- Over a 20-year period, consumption could increase by $27.6 billion under a low-growth path and about $55.3 billion under a high-growth trajectory.
  - The boost to consumption follows a similar pathway to employment, peaking during the construction phase of the new developments.
  - There is a potential sustained uplift in consumption over the long term which supports all Queenslanders.

Government tax take over time



Consumption over time



L Low growth H High growth

Note: undiscounted total reported
Source: EY analysis

Unleashing the industry’s potential could help drive the economy

Potential annual benefits under a high-growth investment pathway …

More tax revenue

▲ $1.4 billion

This could help fund

20 primary schools

and

25 police stations

and

30 fire stations

and

1000+ teachers

and

1000+ nurses

Higher economic output

▲ $6.5 billion

More jobs

▲ 1900 FTEs

Increased consumption

▲ $2.8 billion

Note: figures reported as an average over the 20-year period. Employment is a snapshot in 2040. Tax revenue goes to the State and Federal Government.

Source: EY analysis.

Technical appendix

Methodology and approach

Our methodology – Estimating the industry's historical contribution

Constructing the economic structure of Queensland oil and gas sector

A structural economic profile was developed using:

- Historical investment profile based on data from the Department of Industry, Science, Energy and Resources' 'Resources and Energy Quarterly' reports
- Historical production profile based on data from APPEA and EnergyQuest
- ABS Australian National Accounts Input-Output table
- Spatial disaggregation of the Queensland economy

Input-output modelling estimated the flow-on effects of the industry to the state economy

- IO modelling estimates how the economic impacts of a market activity affect the broader Queensland economy.
- Input-output (IO) multipliers were used to quantify the oil and gas industry's total economic contribution in Queensland (i.e. the direct and indirect impacts).

Key limitations of IO modelling

- IO modelling does not consider supply constraints, price changes or structural changes in the economy.
- The method also considers average economic effects rather than marginal effects – this means that IO models do not account for economies of scale, unused capacity or technological change.

Other limitations

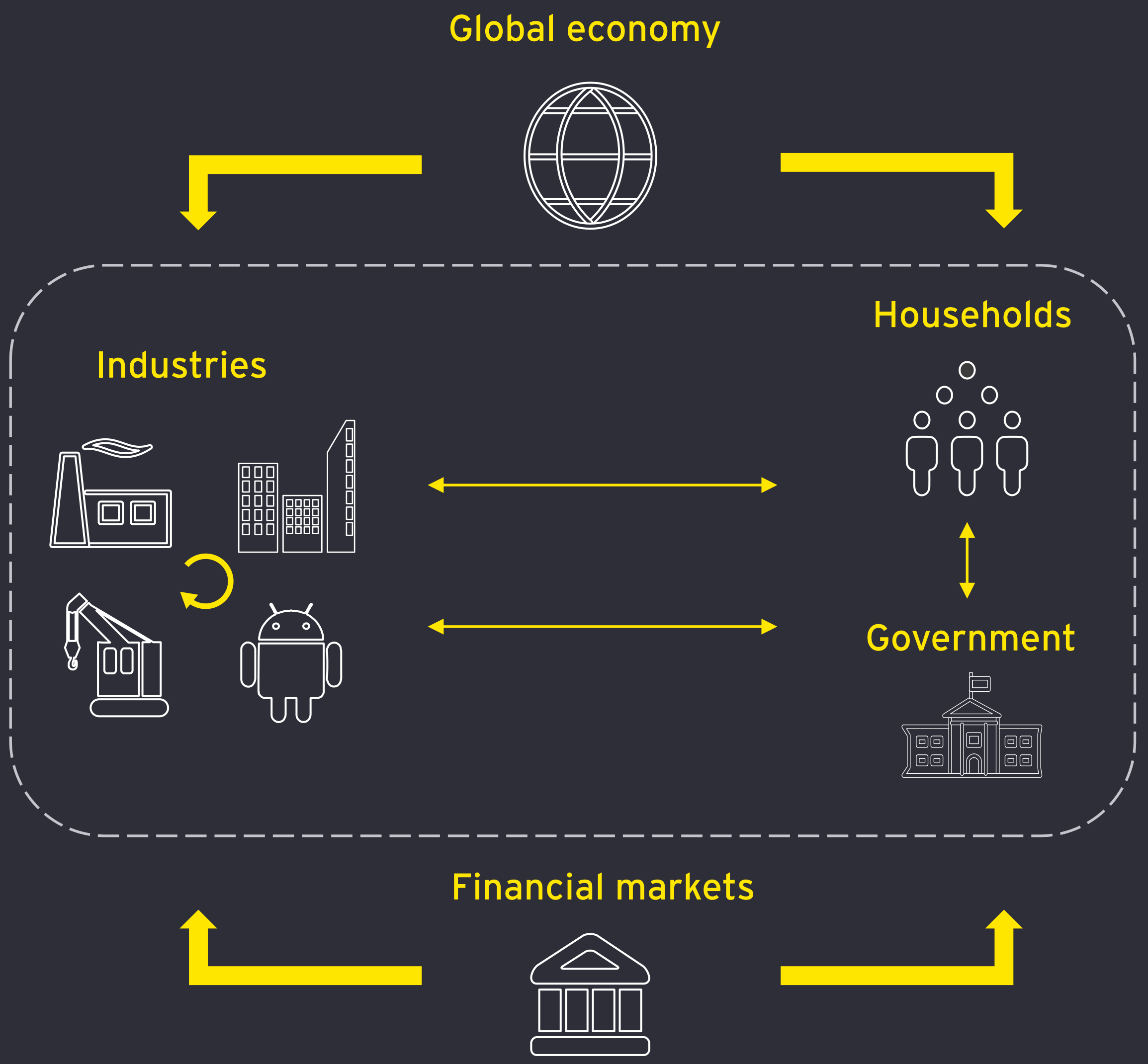
- The investment scenarios reflect known, publicly available information about new oil and gas projects in Queensland.
- EY has not separately analysed the global or domestic demand for gas, or considered any potential impacts of future climate change policy.

Our whole-of-economy model to examine potential industry impacts

EYGEM is EY's in-house, state of the art Computable General Equilibrium (CGE) model. It is a large scale, dynamic, multi-region, multi-commodity model of the world economy.

The model provides a rich and realistic representation of how changes in one part of the economy flow through to other parts.

- **Comprehensive regional analysis** – The model contains 141 distinct regions, with the ability to disaggregate these into sub-national regions for highly granular economic analysis.
- **Rich sectoral detail** – All sectors of the economy are integrated into the model, with 65 discrete sectors. These can be further refined for specific industries.
- **Time dynamics** – Solving year-on-year over a flexible periods, the model can assess short term policy initiatives and decades-long reforms or investments.
- **Market tested and strong academic foundations** – A model has a lineage that has been applied globally across the public and private sector.



Sources

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- Australian Bureau of Statistics (2021), *Australian National Accounts Input-Output Tables 2018-19*
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- EY analysis (2020), *Australian oil and gas investment outlook database*
- Queensland Government Statistician's Office (2021), *Economic activity – Queensland state accounts*

Release notice

Ernst & Young was engaged on the instructions of the Australian Petroleum Production & Exploration Association ("APPEA") to examine the economic contribution of the oil and gas industry and the investment pipeline in Western Australia, Queensland and the Northern Territory ("Project"), in accordance with the Engagement Agreement dated 25 May 2021.

The results of Ernst & Young's work, including the assumptions and qualifications made in preparing the report, are set out in Ernst & Young's report dated 08 September 2021 ("Report"). The Report should be read in its entirety including the transmittal letter, the applicable scope of the work and any limitations. A reference to the Report includes any part of the Report. No further work has been undertaken by Ernst & Young since the date of the Report to update it.

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