appea

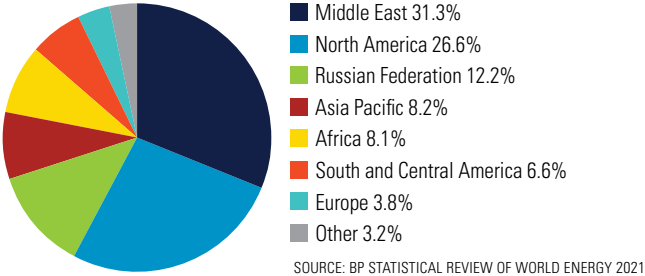
Key Statistics 2023

australian petroleum production & exploration association limited

World supply of oil and liquefied natural gas (LNG)

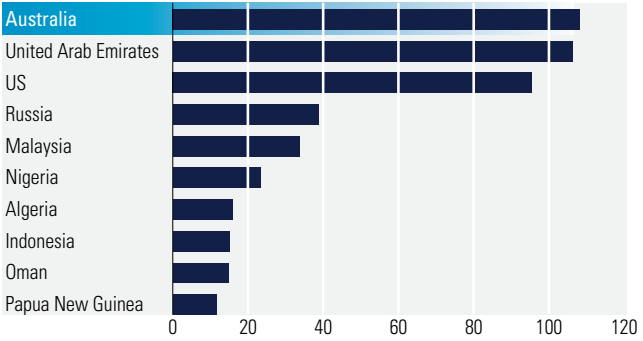
World oil supply averaged 89.9 million barrels a day in 2021, an increase of 1.6%, or over 88.5 million barrels a day compared to 2020.

Share of world oil supply 2021



SOURCE: BP STATISTICAL REVIEW OF WORLD ENERGY 2021

Top 10 LNG exporting countries 2021 (billion cubic metres)

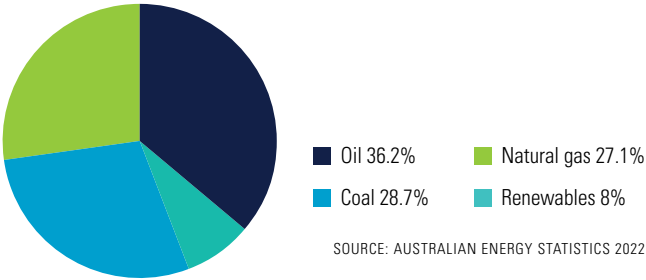


SOURCE: BP STATISTICAL REVIEW OF WORLD ENERGY 2021

Energy use in Australia

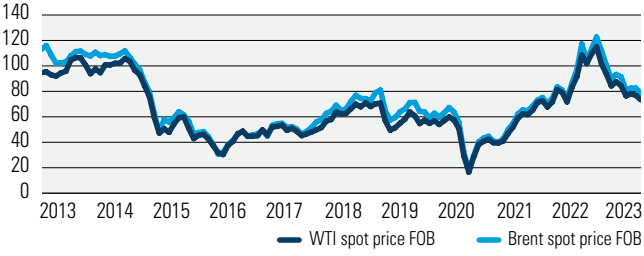
In 2020–21 oil remained the largest energy source in Australia, providing over 36% of all energy consumed. Natural gas accounted for over 27% of primary energy. Coal remained flat at around 28%. Renewables increased to 8% from 7% in 2019–20. There was a recovery in oil prices during the first half of 2022 as the effects of the COVID-19 pandemic diminished and economies continued to recover. However, prices receded in late 2022 and early 2023 as economic headwinds began emerging in the global economy. Both WTI and Brent prices were down over a third from their peaks in 2022.

Share of primary energy consumption 2020–21



SOURCE: AUSTRALIAN ENERGY STATISTICS 2022

Oil price (US$ per barrel)

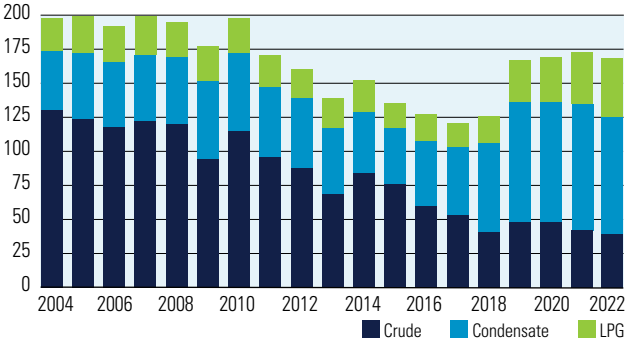


SOURCE: US ENERGY INFORMATION ADMINISTRATION

Australian petroleum liquids production

Australian petroleum liquids production fell in 2022 by 2.5% to 168 million barrels compared to around 172 million barrels in 2021. Western Australia and the Northern Territory are the largest producers of petroleum liquids.

Australian petroleum liquids production (millions of barrels)



SOURCE: APPEA PRODUCTION STATISTICS (UNTIL 2013), ENERGYQUEST (2014 ONWARDS)

Production of petroleum liquids by state/territory (millions of barrels)

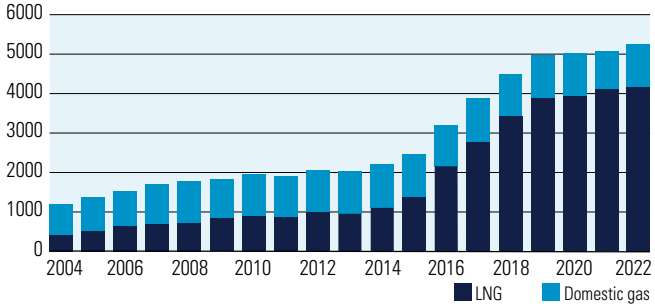
	Oil		Condensate		LPG	
	2021	**2022**	2021	**2022**	2021	**2022**
New South Wales	–	–	–	–	–	–
Northern Territory	0.2	**0.2**	28.8	**27.6**	18.4	**22.5**
Queensland	–	–	–	–	–	–
South Australia	8.4	**6.5**	1.9	**1.6**	3.0	**2.5**
Tasmania	–	–	0.2	**0.2**	0.3	**0.1**
Victoria	1.8	**3.1**	7.4	**6.3**	8.4	**9.6**
Western Australia	31.2	**29.9**	54.8	**49.7**	7.6	**8.4**
Total	**41.6**	**39.7**	93.1	**85.4**	37.7	**43.1**

SOURCE: ENERGYQUEST. Note: includes production from Commonwealth waters adjacent to each state or territory and excludes production from the JPDA.

Australian production of natural gas

Australian natural gas production (domestic use and LNG) increased in 2022 compared with 2021. The war in Ukraine caused significant disruptions in energy markets, with initial price spikes followed by reordering of energy markets with moderation of prices more recently. The Resources and Energy Quarterly forecasts Australian LNG export volumes to remain strong out to 2027–28.

Total domestic natural gas production and LNG exports (billion cubic feet)



SOURCE: DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

Production of natural gas by state/territory (billion cubic feet)

	Conventional gas production		Coal seam gas		LNG exports	
	2021	**2022**	2021	**2022**	2021	**2022**
New South Wales	–	–	4	**4**	–	–
Northern Territory	469	**449**	–	–	413	**412**
Queensland	8	**8**	1,433	**1,386**	1,249	**1,218**
South Australia	87	**76**	–	–	–	–
Tasmania	7	**4**	–	–	–	–
Victoria	306	**338**	–	–	–	–
Western Australia	2,746	**2,918**	–	–	2,386	**2,542**
Total	3,623	**3,793**	1,437	**1,390**	4,048	**4,172**

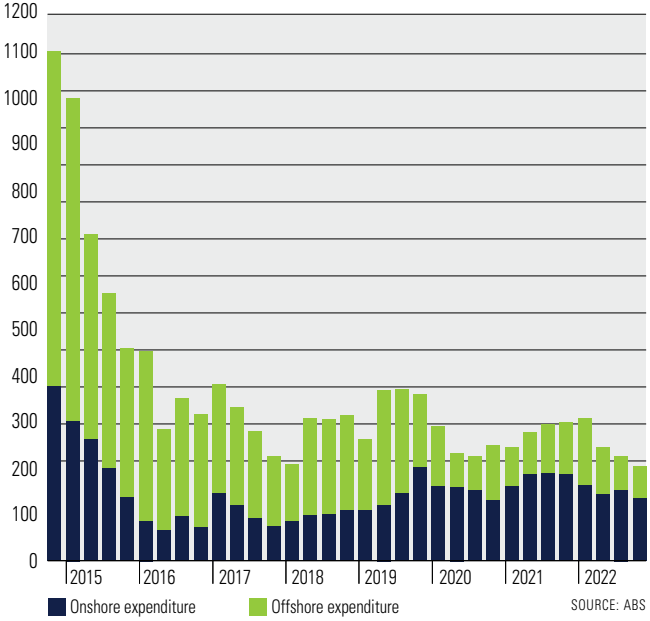
SOURCE: ENERGYQUEST. Note: includes production from Commonwealth waters adjacent to each state or territory and excludes production from the JPDA.

Petroleum exploration: Australia

Oil and gas exploration is vital for Australia's energy security. Sustainable growth of Australia's oil and gas industry depends on continuous exploration. Production cannot occur without first locating new resources.

Key variables driving exploration decisions include: available and prospective acreage; capital availability; exploration costs; and the ability to commercialise discovered resources. Petroleum exploration declined 64 per cent over the past decade with offshore exploration showing the largest decline.

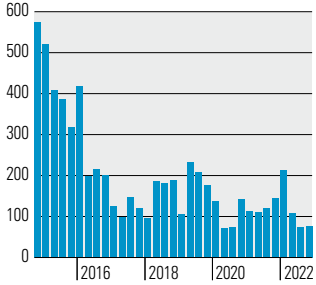
Quarterly exploration expenditure (A$ millions)



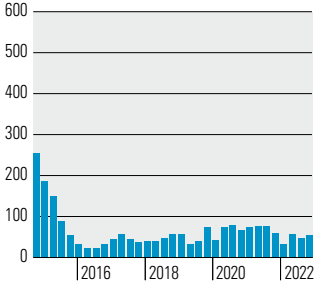
SOURCE: ABS

Petroleum exploration: states

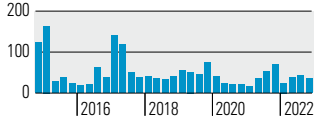
Western Australia (A$ millions)



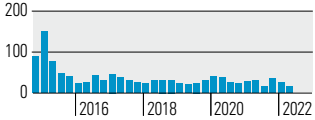
Queensland (A$ millions)



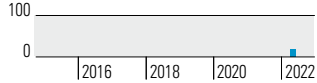
Northern Territory (A$ millions)



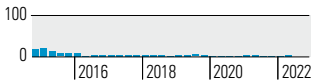
South Australia (A$ millions)



Victoria (A$ millions)



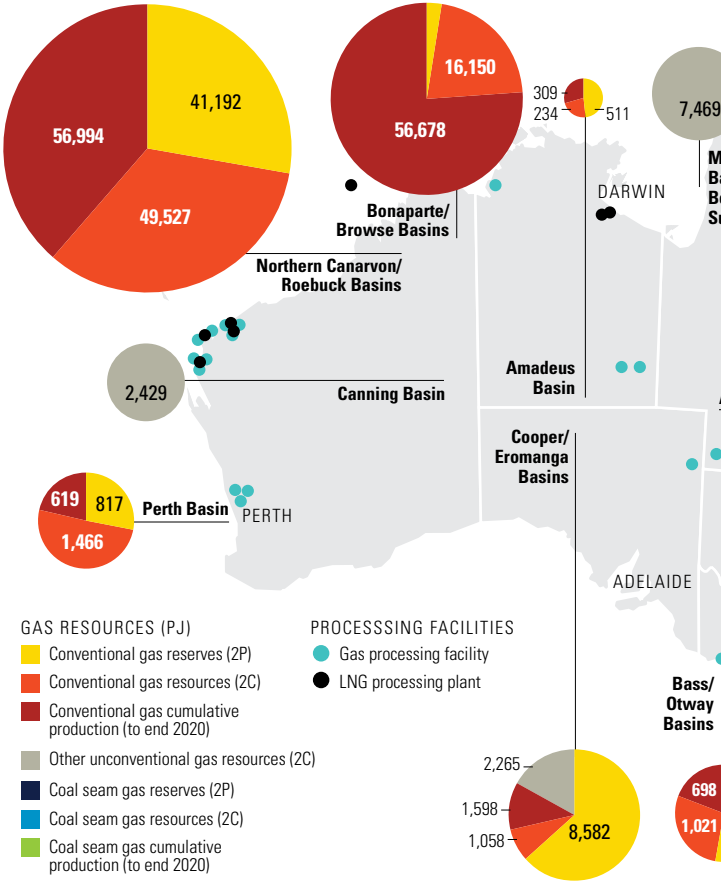
New South Wales (A$ millions)



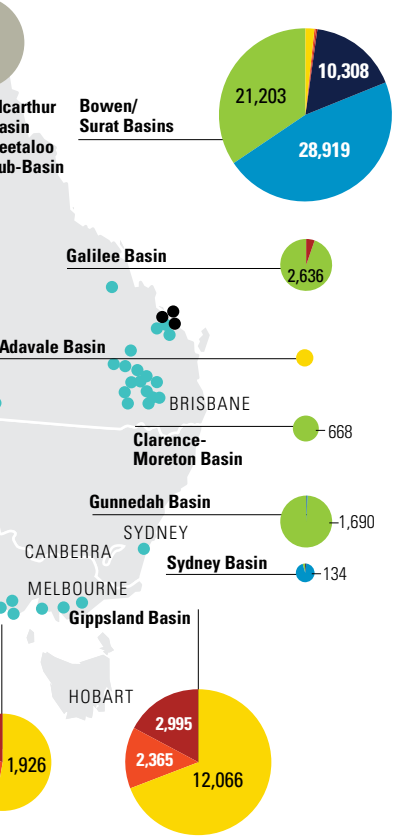
Tasmania

Data not available for publication but included in totals where applicable, unless otherwise indicated.

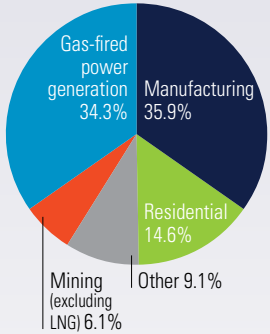
Gas production and reserves



Gas use by sector



Domestic gas supply

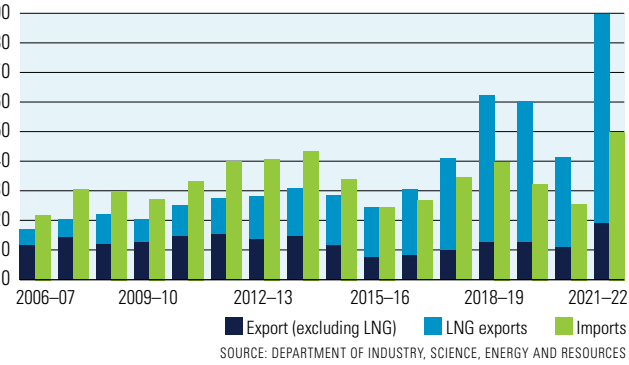


Gas fired electricity generation and manufacturing accounted for the majority of gas use in the Australian economy, using 34.3% and 35.9% of the total respectively.

Trade: oil, gas, petroleum products

Australia exports and imports significant quantities of petroleum and petroleum related products. In 2021–22, Australia recorded a trade surplus in oil and gas of almost $40 billion—up substantially from the $15.9 billion surplus recorded in 2020–21. LNG exports continue to make a significant contribution to the Australian economy with export earnings forecast to increase to $91 billion in 2022–23. This forecast is off the back of high global energy prices caused by Russia's invasion of Ukraine. Looking forward, energy prices are expected to soften as global energy markets reorganise and supply constraints ease.

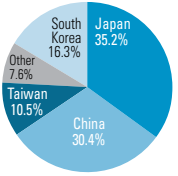
Trade in oil, gas and petroleum products (A$ billion)



SOURCE: DEPARTMENT OF INDUSTRY, SCIENCE, ENERGY AND RESOURCES

Oil and gas imports and exports and LNG export markets 2021–22

	Imports (A$bn)	**Exports** (A$bn)
Bunkers	–	3.1
Crude	8.7	14.0
LNG	–	70.6
LPG	–	1.5
Products	41.1	0.4
Total	**49.8**	**89.6**

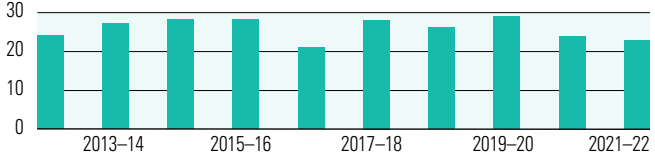


SOURCE: DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES, ABS

Employment and safety

The oil and gas extraction sector in Australia employed around 23,000 in 2021–22. Employment has been steady across the last decade. Across the industry's value chain it supports around 80,000 jobs.

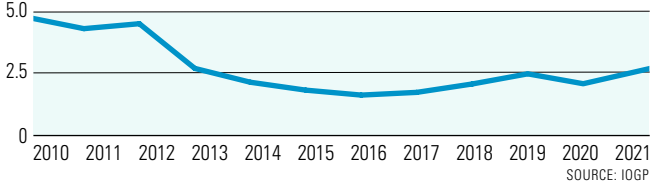
Annual employment in the gas extraction sector in Australia ('000s)



SOURCE: DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES, ABS

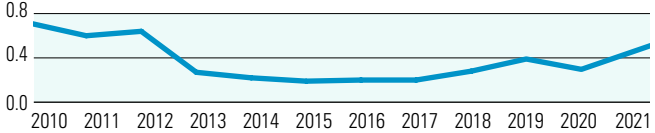
The International Association of Oil and Gas Producers (IOGP) collects global safety data from both the onshore and offshore petroleum industry. See below trends in total recordable injury frequency rate (TRIFR)—the number of recordable injuries (fatalities + lost work day cases + restricted work day cases + medical treatment cases) and the lost time injury frequency rate (LTIFR).

Australian TRIFR (per million hours worked)



SOURCE: IOGP

Australian LTIFR (per million hours worked)

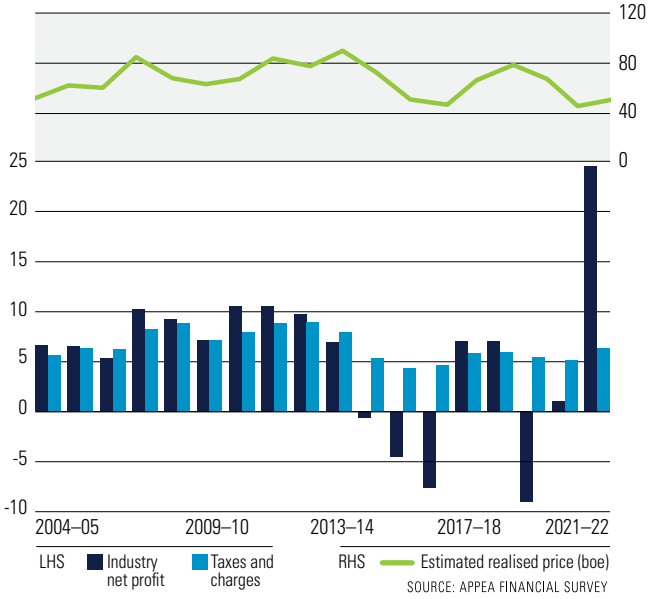


SOURCE: IOGP

Economic contribution: taxation

APPEA's 35th Financial Survey revealed Australians will benefit from a significant industry contribution to government revenues in 2022–23. The industry will deliver $16.27 billion to governments from the payment of corporate income tax, royalties, rents, and other industry-specific fees. These taxation receipts could fund the construction of around 11 new public hospitals, 160 new schools or cover annual public health care for 1.67 million Australians. This is in addition to the $45 billion the industry will spend on Australian goods and services this financial year.

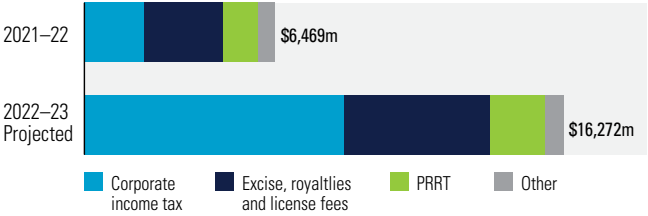
Industry taxes paid, profit (before) taxes, average realised price (A$/bbl)



SOURCE: APPEA FINANCIAL SURVEY

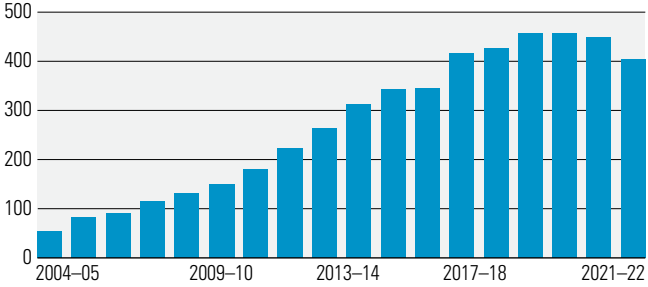
Revenue from Australia's oil and gas industry continues to fund critical government spending on infrastructure, health, and education, with this financial year's contribution rising significantly from the $6.46 billion paid directly to state and federal governments in 2021–22.

Gas industry contribution to state and federal governments (A$m)



SOURCE: APPEA FINANCIAL SURVEY

Industry assets (A$ billion)



SOURCE: APPEA FINANCIAL SURVEY

Snapshots

Carbon capture utilisation and storage

Global

Globally 35 commercial CCUS facilities capture almost 45MtCO_2 per year.

Around 300 more projects are at various stages of development.

200 new capture facilities are slated to be online by 2030, capturing 220MtCO_2 per year.

Australia

Australia stores 1.6 million tonnes of CO_2 per year, set to increase to 3.3–5MtCO_2 in 2024.

According to the IEA, 25–30 projects in Australia are at various stages of development, which together—subject to project economics and regulatory approvals—could store in the order of 50MtCO_2 per year.

SOURCE: INTERNATIONAL ENERGY AGENCY

Hydrogen

Global

In 2021, global hydrogen demand was at 94Mt. Less than 1% of this is met by low-carbon hydrogen sources. Of the low-carbon hydrogen produced in 2021, 95% was produced from fossil fuels with CCUS and 5% produced using electrolysis. The IEA says if all projects currently in the pipeline were realised, by 2030 production of low-emission hydrogen could reach 16–24Mt per year: 9–14Mt electrolysis based and 7–10Mt fossil fuel based with CCUS.

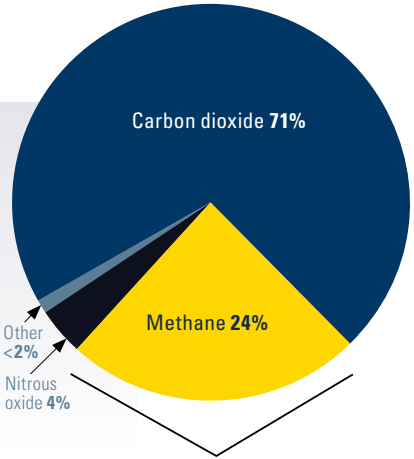
Australia

Australia currently does not produce any commercial volumes of low-carbon hydrogen—either renewables or natural gas with CCUS. The DCCEEW *State of Hydrogen 2022 Report* identifies 48 active major low-carbon hydrogen projects, with an anticipated hydrogen production capacity of around 5MtH_2 per year.

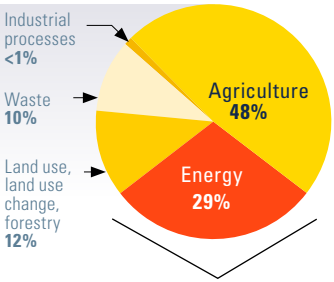
SOURCE: DCCEEW STATE OF HYDROGEN 2022

Methane

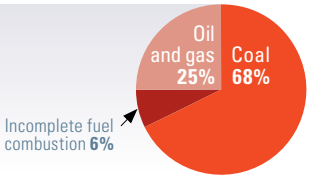
Australian greenhouse gas emissions in 2019 were 529Mt, 24% from methane



29% (37Mt) of Australia's methane emissions were from the energy sector



25% of the energy sector's methane emissions were from the oil and gas industry—1.74% of Australia's total emissions



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GLOSSARY

CSG	coal seam gas
JPDA	Joint Petroleum Development Area zone in the Timor Sea
LNG	liquefied natural gas
LPG	liquefied petroleum gas
bcf	billion cubic feet
mmbbl	million barrels
mt	million tonnes
PJ	petajoules
tcf	trillion cubic feet

PHOTOS: Front cover courtesy Chevron
Back cover courtesy Exxon

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