

# What's going on in the gas industry?

*JCIPP*  
*May 2022*

## What's going on in the gas industry?

Quite a bit:

- Community protests
- Investor concerns
- Energy transition
- Hydrogen and renewables
- European gas supplies
- LNG spot market
- Energy market consolidation

Situation is changing rapidly

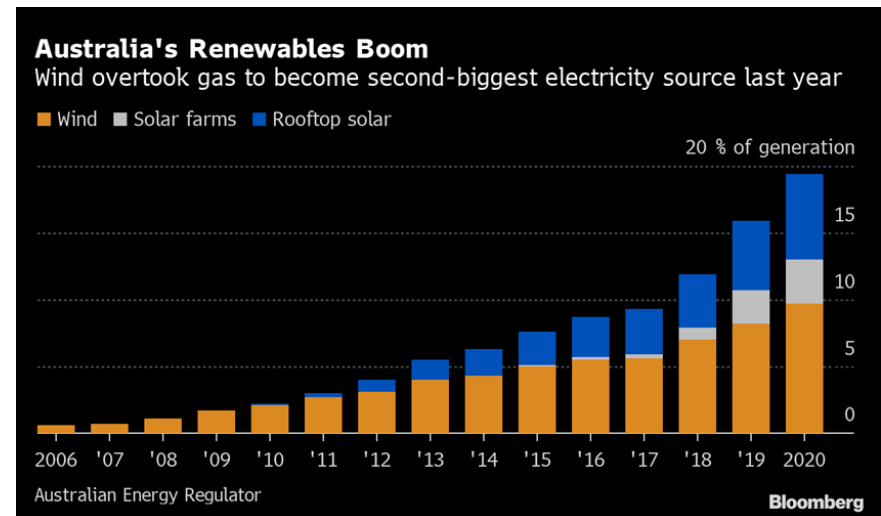
# Is the gas industry doomed?



- Community protests
- COP26
- Corporate ESG focus



- Strong focus on renewables
- Still a long way to go
- Is hydrogen the saviour?
- How realistic is this in the medium term?
- How much are we prepared to pay?



*Total renewables 20% of generation*

Figure 1: New projects proposed in Australia in November and December 2020



Source: Rystad Energy RenewableCube

# Hydrogen

- Substantial activity in hydrogen projects
- Significant government funding
- Hydrogen Council calling on government to provide \$ 10 billion of funding
- Hydrogen cluster established by NERA – oil and gas growth centre
- Debate over green credentials of competing hydrogen technologies

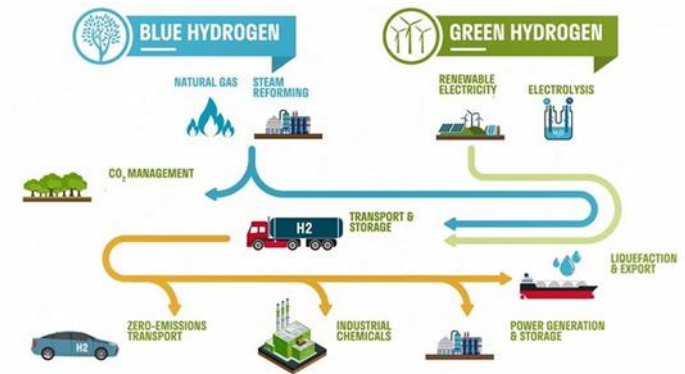


Figure 4: Snapshot of Australian demonstration projects and research infrastructure

## 23 Hydrogen-specific demonstration projects and research facilities around Australia

### WA

- Hazer Group Pilot Plant – Hazer Group and MinRes
- Australian Resources Research Centre – CSIRO and Curtin Uni
- Clean Energy Innovation Hub – ATCO
- Renewable Hydrogen/Ammonia – Yara and ENGIE
- Murchison Renewable Hydrogen Project – Siemens, Hydrogen Renewables Australia

### SA

- Hydrogen Park SA (HyP SA) – AGIG and Siemens
- Port Lincoln Green Hydrogen Plant – Hydrogen Utility (H2U) and Thyssenkrupp
- Crystal Brook Energy Park – Neoen

### NSW

- Fire and Explosion Testing Services (FETS) – University of Newcastle
- Jemena's Power to Gas trial – Jemena
- ARC Training Centre for The Global Hydrogen Economy – University of New South Wales

### ACT

- Government Fleet and Refuelling station – ActewAGL, Neoen, Megawatt Capital, Hyundai

### VIC

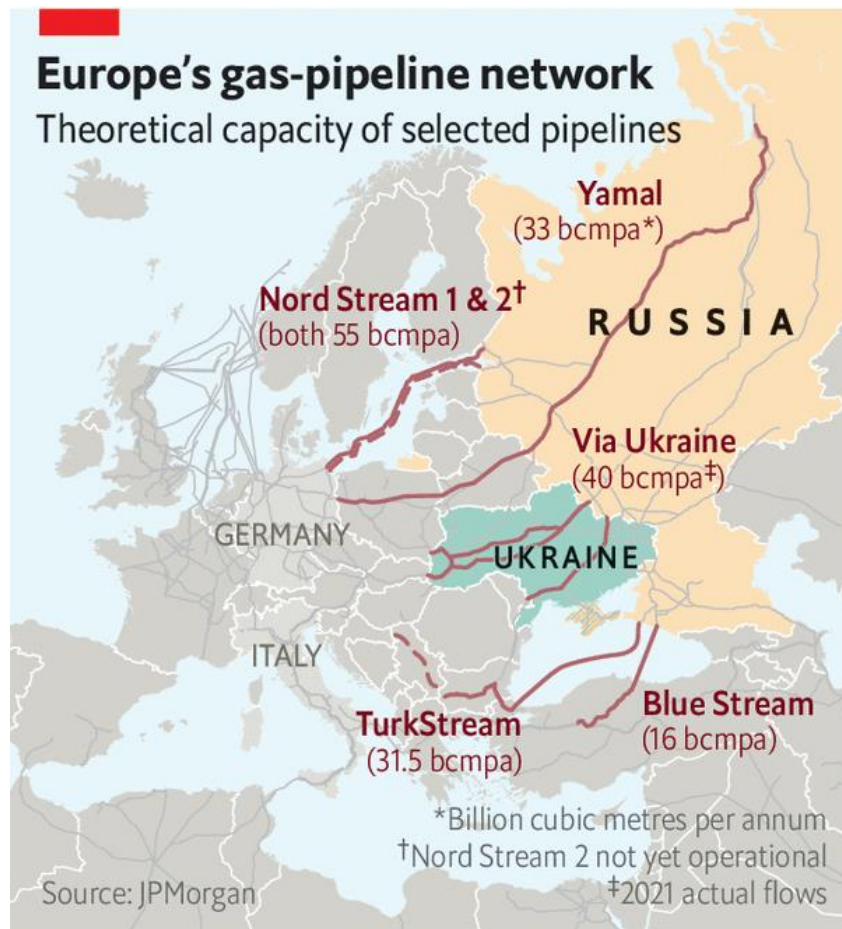
- Centre for Hybrid Energy Systems (CHES) – CSIRO
- Hydrogen Energy Supply Chain (HESC) – Kawasaki Heavy Industries (KHI), J-POWER, Iwatani Corporation, Marubeni Corporation, Shell and AGL
- Toyota Australia Hydrogen Centre – Toyota Australia



### QLD

- Sir Samuel Griffith Centre renewable hydrogen microgrid – Griffith University
- National Hydrogen Materials Reference Facility (NHMRF) – Griffith University
- Queensland Centre for Advanced Technology (QCAT) – CSIRO
- Renewable Hydrogen Production and Refuelling Project – BOC
- Gladstone Advanced Biofuels Pilot Plant – Northern Oil & AFC Energy
- Redlands Renewable Hydrogen Plant – Queensland University of Technology
- Renewable Hydrogen Microgrid – Daintree Renewable Energy Inc
- Renewable Ammonia Plant – Dyno Nobel

# European gas supply

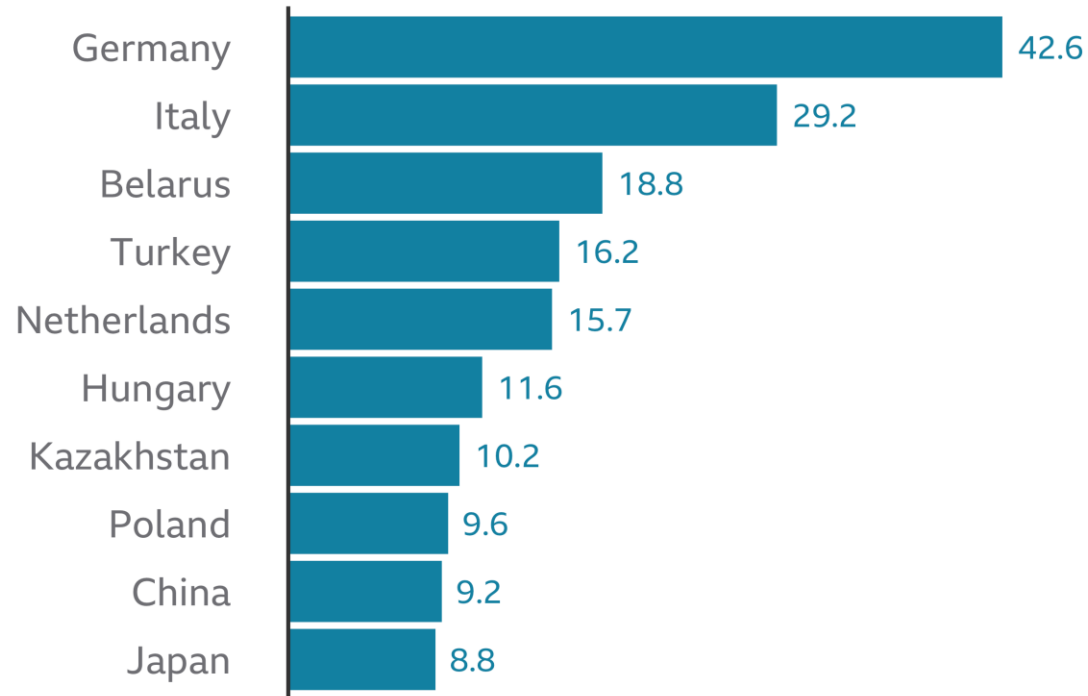


The Economist



## Russia's gas exports

Countries by billion of cubic meters imported from Russia



Source: IEA, Data for 2020

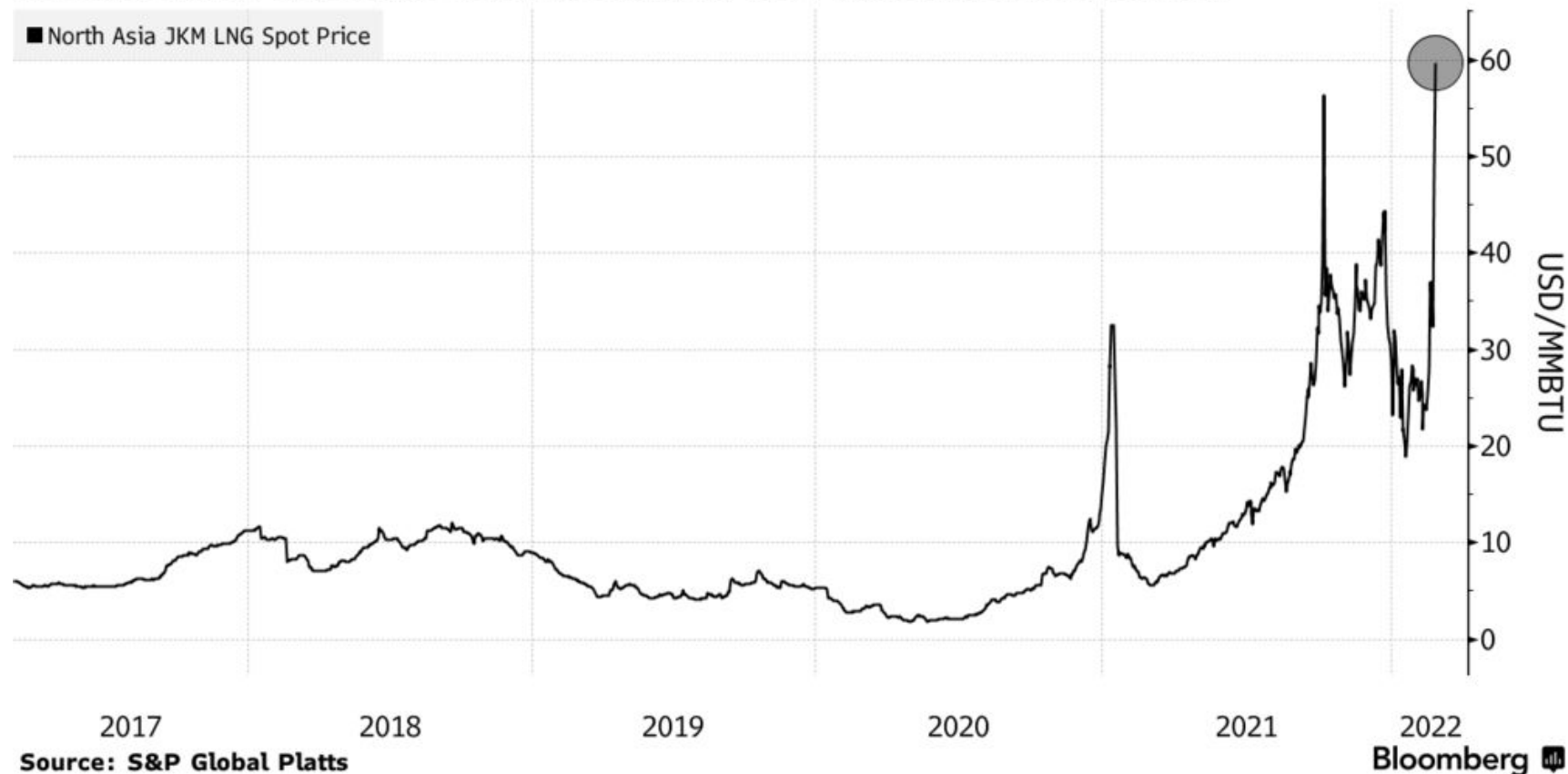


# LNG spot market going crazy

Jeanette Roberts Consulting

## All-Time High

Russia supply concerns send North Asia LNG spot price to a record



- Consolidation underway in the Australian/regional energy market
- Now a gap between major ASX players and juniors
- Creating organisations of scale, also influence?

deral/morrison-hails-bhp-woodside-deal-as-example-to-the-world-on-climate-20210818-p58juc

Politics Federal Paris Agreement

Print article

## Morrison hails BHP-Woodside deal as 'example to the world' on climate



**Jacob Greber**  
Senior correspondent

Aug 18, 2021 - 5:35pm

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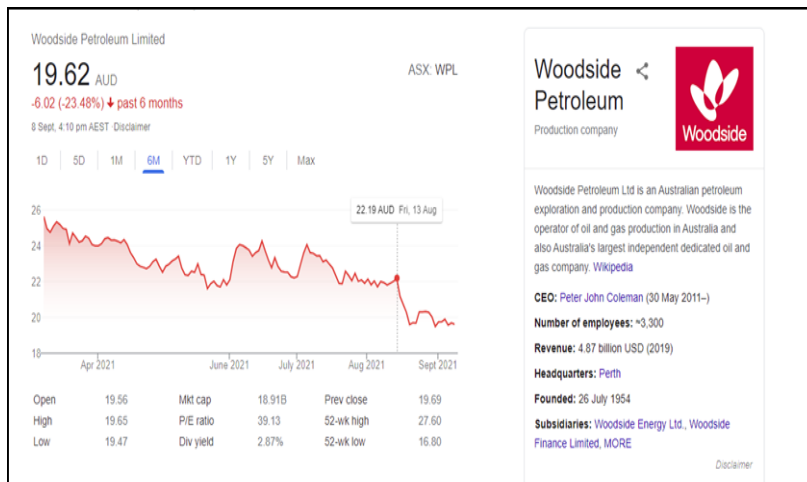
BHP and Woodside's [blockbuster oil and gas divestment](#) has been endorsed by Scott Morrison as an example to the world of Australian companies finessing the low-carbon transition, even as a Greens senator warns shareholders are buying into worsening [legislative and social-licence](#) risk.

"As I was saying to [Woodside chairman] Richard Goyder last night, I think this provides another point of example – whether it's in that sector, in the petroleum sector or whether it's in our mining sector or in our agricultural sector – about the transformations that Australian companies are achieving as they go down their path of being profitable on energising Australian industry and at the same time reducing emissions," the Prime Minister told reporters on Wednesday in Canberra.

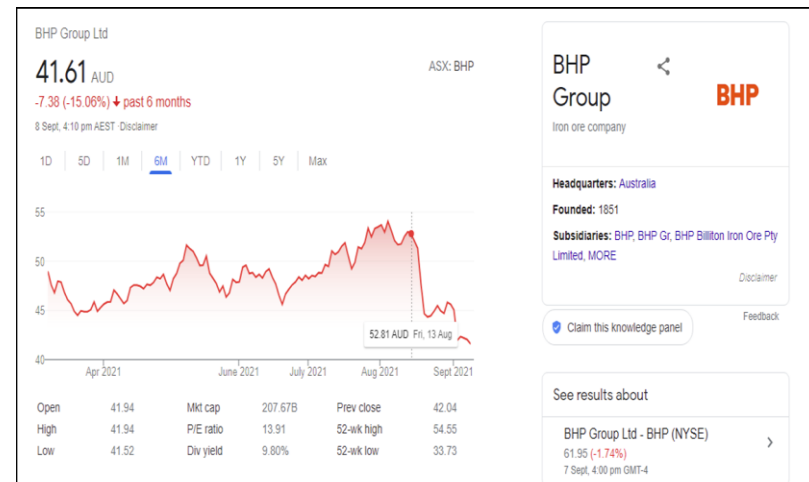
# Woodside/BHP merger

Jeanette Roberts Consulting

## Woodside/BHP merger announced 17 August 2021, after stock market close

























Woodside share price



BHP share price

# Woodside/BHP merger

Largest oil and gas companies by market cap  
companies: 237 total market cap: \$6.253 T

Rank	Name	Market Cap	Price	Today	Price (30 days)	Country
1	 Saudi Aramco 2222.SR	\$2.334 T	\$11.68	1.04%		 S. Arabia
2	 Exxon Mobil XOM	\$347.73 B	\$82.29	0.04%		 USA
3	 Chevron CVX	\$307.55 B	\$156.53	-0.61%		 USA
4	 Shell SHEL	\$200.56 B	\$53.05	-1.36%		 UK
5	 PetroChina PTR	\$136.88 B	\$47.41	0.79%		 China
6	 TotalEnergies TTE	\$129.71 B	\$47.61	-1.37%		 France
7	 ConocoPhillips COP	\$118.79 B	\$91.32	-0.37%		 USA
8	 Equinor EQNR	\$118.30 B	\$36.19	4.75%		 Norway
9	 BP BP	\$100.26 B	\$28.35	-1.32%		 UK

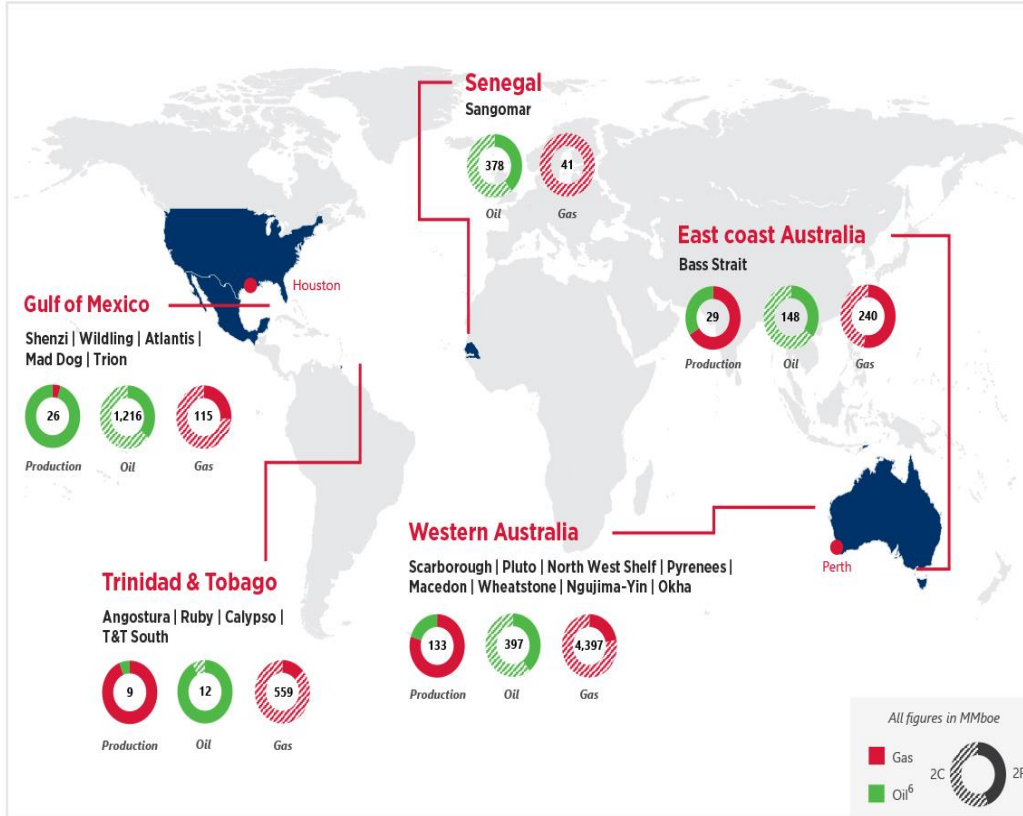
- Woodside/BHP market cap AUD 41 bn (USD 29 bn)
- A long way off the majors, but still significant

# Woodside/BHP merger

**~200 MMboe**  
2021 production<sup>1</sup>  
**Top 10 independent<sup>2</sup>**

**10.6 Mt**  
LNG production<sup>3</sup>  
**Top 10 global<sup>4</sup>**

**2,023 MMboe**  
2P reserves<sup>5</sup>  
**8,356 MMboe**  
2C resources<sup>5</sup>



**~\$8 per boe**  
Portfolio unit  
production cost<sup>1</sup>

**\$4.7 billion**  
2021 EBITDA<sup>1</sup>

**Strong alignment**  
towards Scarborough  
FID  
**Attractive near-term**  
GOM developments

1. Combined Woodside and BHP for the 12 months to 30 June 2021, not giving effect to any pro forma adjustments. Includes Algeria production of 3 MMboe. Neptune production volume is included in GOM but divested in May 2021.  
 2. Source: Wood Mackenzie Corporate Benchmarking Tool production forecasts as at 31 July 2021. Woodside analysis.  
 3. Equivalent to 95 MMboe.  
 4. Source: LNG Output, Wood Mackenzie LNG Tool, Q2 2020 data set. Woodside and BHP 12 months to 30 June 2021. Woodside analysis.  
 5. Combined portfolio. Woodside as at 31 December 2020, updated by ASX announcement dated 15 July 2021 and adjusted for half-year production to 30 June 2021. BHP as at 30 June 2021. Total 2P reserves and 2C resources also include Sunrise, Myanmar, Liard and Algeria which are not shown on the map above. BHP volumes for NWS and Greater Scarborough are based on Woodside estimates.  
 6. Oil includes crude, condensate and NGLs.

# Woodside/BHP merger

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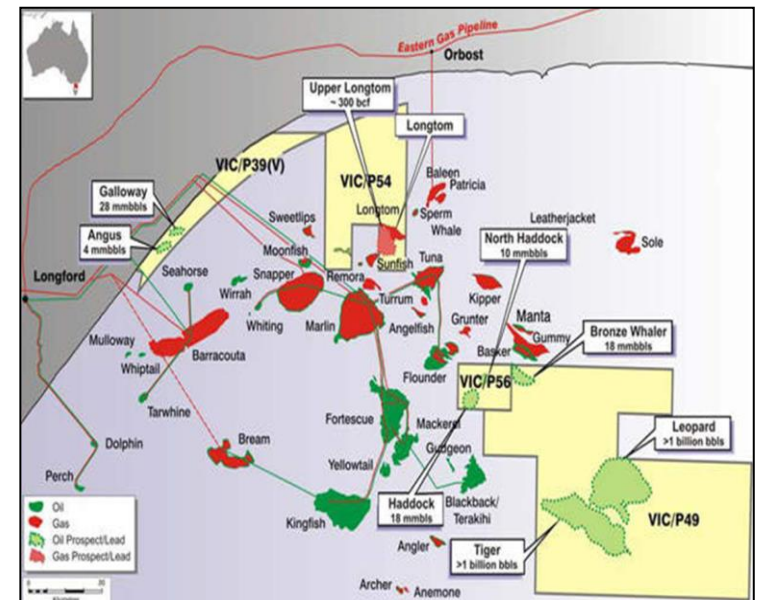
- Merger brings international portfolio in GOM, Trinidad and Tobago etc
- Woodside has really bad experience with international operations
- The merger doubles the size of Woodside in one hit
- As well, it creates a far more complex organisation
- But the real killer is taking on BHP's decommissioning liability.



*Mad Dog field, GOM*

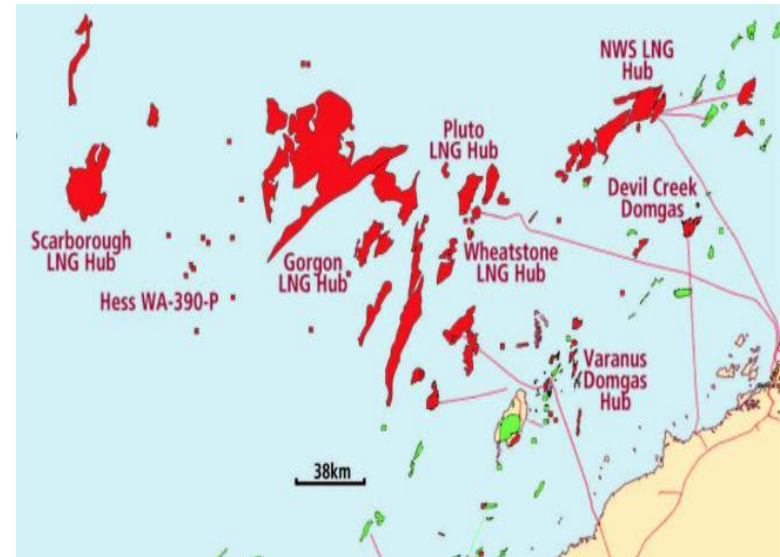
# Bass Strait Decommissioning Jeanette Roberts Consulting

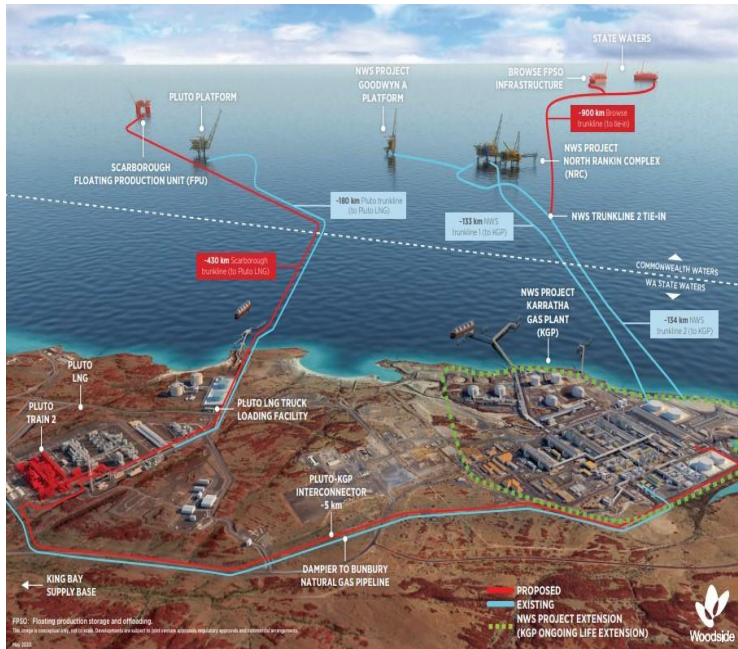
- Woodside will take on BHP's Bass Strait assets
- The assets have been in operation for 53 years
- The decommissioning liability is horrendous
- Regulator NOPSEMA is stepping up pressure for decommissioning of the assets





- FID 22<sup>nd</sup> November 2021
- With BHP acquisition, Woodside now has 100% of project
- Woodside is trying to sell down equity
- 11.1 TCF
- Very sweet gas (0.1 % CO<sub>2</sub>)
- CAPEX \$ 12 bn





## Concept:

- Not-normally-manned (NNM) floating production unit
- 430 km offshore
- 950 m water depth
- New Train 2 at Pluto onshore plant in Karratha

# Santos/Oil Search merger

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- Santos has acquired Oil Search.
- After 92 years, Oil Search ceases to exist
- Oil Search has a long history in PNG and has been very involved in social development
- Former MD, Peter Botten voted against the merger



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## OPINION

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Santos chief executive: Kevin Gallagher Photo: APPEA

### OPINION: Sad exit for PNG's national champion

Santos will celebrate, but there will be sadness in PNG

9 December 2021 21:40 GMT UPDATED 9 December 2021 21:40 GMT

By [Russell Searancke](#) in [Wellington](#)

The champagne bottles will be chilling at Santos headquarters in Australia as it prepares to celebrate the acquisition of Oil Search, but it will be a sad exit for the trailblazing Papua New Guinea national hero.

Full credit to Santos, which saw the opportunity and pounced, but of course it happened so soon after legendary founding managing director Peter Botten had retired.

Would the takeover have happened if Botten were still in charge? Definitely not, Oil Search sources tell Upstream.



Botten had good relations with his shareholders and was particularly attentive to his PNG shareholders. If a takeover made sense, at the very least his shareholders would have received a better price, sources tell us.

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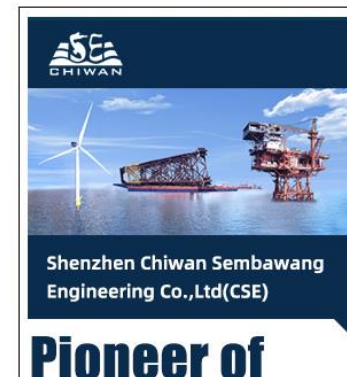
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- This is Santos' third major acquisition since Kevin Gallagher took over as CEO in 2016
- The Oil Search acquisition is significantly larger than previous deals.

## Santos acquisitions:



Quadrant 2018  
**USD 2.15 bn**



Conoco Phillips' assets 2019  
**USD 1.46 bn**



Oil Search 2021  
**USD 15.4 bn**

# Santos/Oil Search merger Jeanette Roberts Consulting

## With Oil Search, Santos gets:

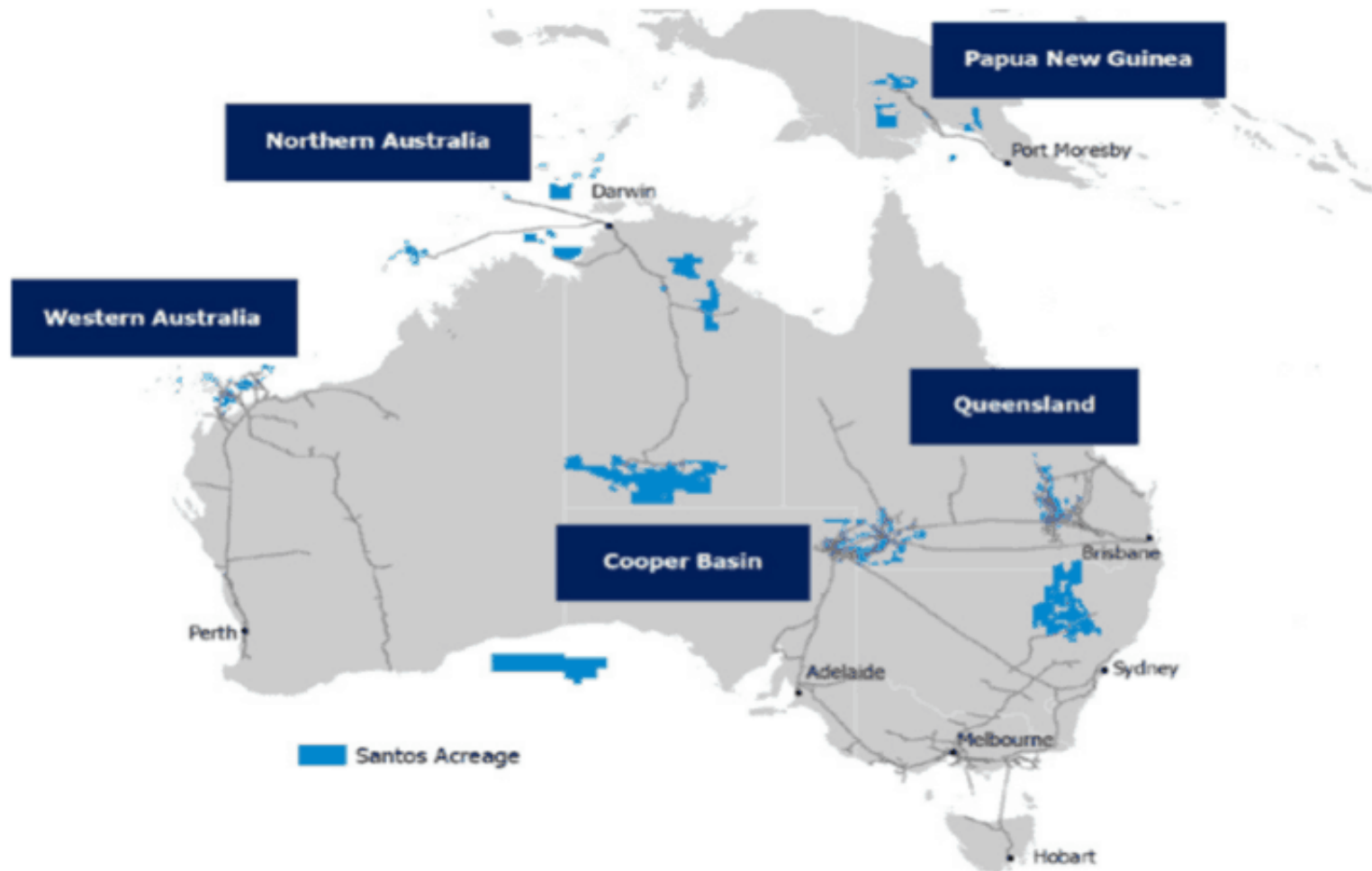
- An international portfolio. Currently their operations are primarily Australian.
- Further exposure to PNG, a country Oil Search knows exceptionally well, but Santos less so
- Pikka project in Alaska – likely to be sold?

## It's a very big step up for Santos

- 8% drop in Santos' share price on announcement of Oil Search bid.

# Santos/Oil Search assets

Jeanette Roberts Consulting





- Total and Exxon Mobil are main players in PNG, but Oil Search has been there since 1929
- Oil Search has been very engaged in social development in PNG
- Recently there have been tensions with the PNG government



## *Is the gas industry really doomed?*

Realistically no

- Europe needs to replace Russian gas for the foreseeable future
- Australia services a huge North Asian market that requires energy
- Access to gas for heating has the potential to become a humanitarian crisis in the northern winter
- Access to gas for industrial use becomes an economic crisis

*Will the energy transition happen as quickly as expected/hoped?*

Unfortunately not

- Whilst renewables generation has increased very significantly, it is still only 20% of total generation

*Is hydrogen our saviour?*

Substantial activity is underway

- But there is still a long way to developing a globally competitive industry
- Whilst subsidies or other forms of financial support may be useful in the short term, it is a really bad idea in the long term

## *What is the outlook for the LNG market?*

Very, very difficult to predict

- Europe uses a huge amount of Russian gas
- Whilst this creates a market opportunity for major producers such as Australia, it has the potential to be a very, very significant economic and humanitarian issue for the northern winter
- The LNG spot price has gone crazy as a result
- Excessive volatility creates a very unstable market

## *Is this a good thing?*

Could be much better for BHP than Woodside

- A huge step up for Woodside
- Creates a much more complex business
- Woodside has been unsuccessful in previous international expansions
- BHP rids itself of the horrendous Bass Strait decommissioning liability

## *Is this a good thing?*

Probably yes

- Santos has been very successful with its recent acquisitions.
- However this is a big step up
- Good synergies with Santos' business
- End of an era for Oil Search after 92 years in PNG

## *What's going on in the gas industry?*

Quite a bit

- Major changes on a number of key fronts
- Arguably excessive market volatility
- Volatility creates uncertainty
- Also creates opportunity for astute players who have sufficient resources and degrees of freedom



## *Strategic Energy Insights*