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OIL & GAS

SPECIAL REPORT

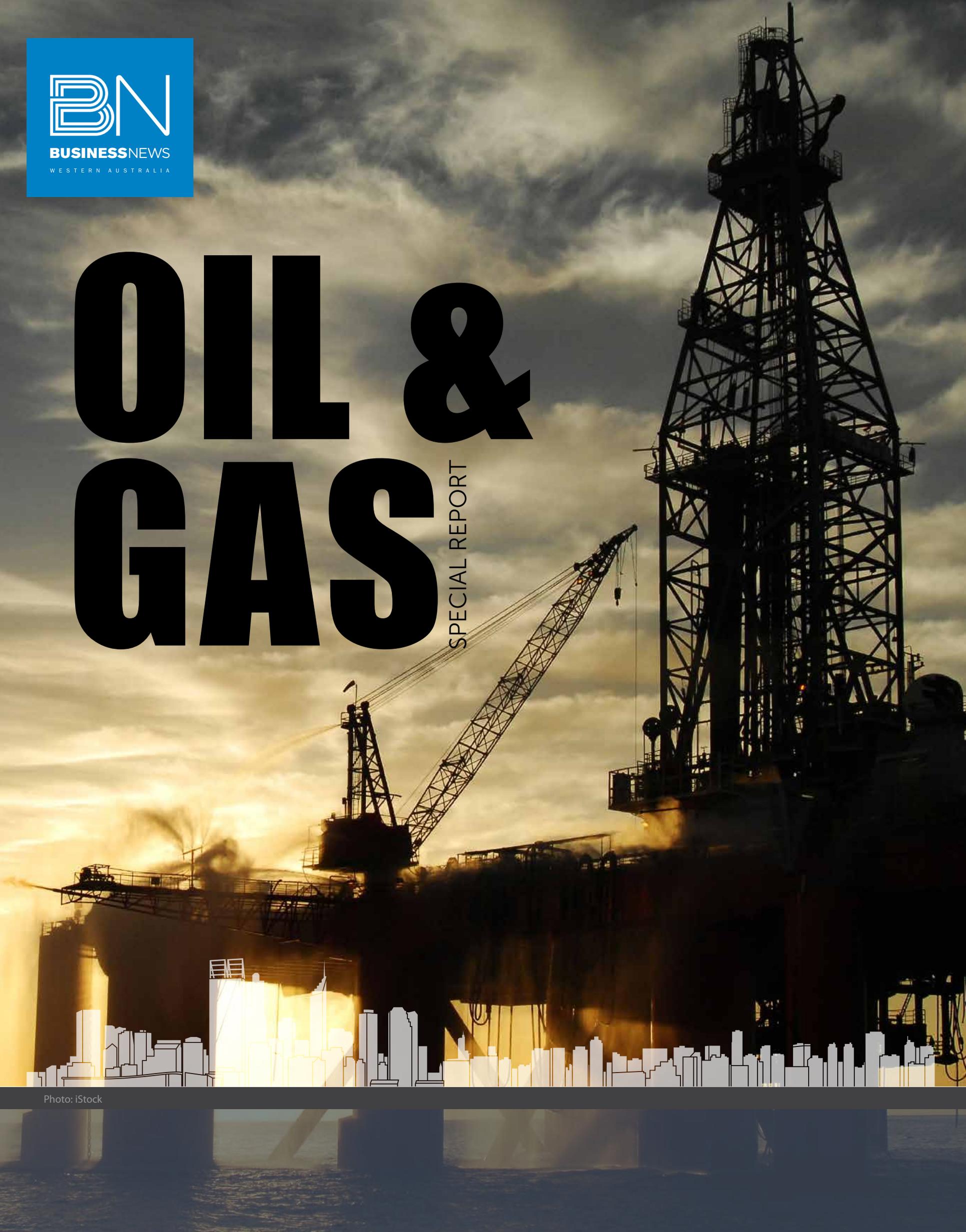


Photo: iStock

Key takeaways

- Carbon policy changes bring uncertainty for projects
- Momentum building for oil and gas with many contracts awarded for front-end engineering and design work
- Woodside's three projects account for the majority of capital expenditure in the pipeline
- \$75 million of possible investment into LNG marine capability (page 17)



DOUBLING: Woodside plans to build a second LNG train at the Pluto plant near Karratha. Photo: Woodside

Contracts, challenges for \$6

Major new contracts show the momentum building for \$60 billion of oil and gas projects in WA, but the issue of carbon policy once again created an obstacle.



Matt McKenzie

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6-PAGE FEATURE

IN what has become a familiar sticking point for industry and investors in Western Australia, uncertainty over carbon emissions policy has again emerged to cloud the government's agenda and give project developers pause.

The latest political and economic headache emerged early this month, when the Environmental Protection Authority released new guidelines calling for a net zero emissions policy.

3tcf BAROSSA GAS RESERVES

The ruling applied to new developments that would emit more than 100,000 tonnes of carbon dioxide a year, and any projects that might be referred to the authority, such as Gorgon and Wheatstone.

The EPA cited ongoing national emissions policy uncertainty as the impetus to take action.

The state government rapidly moved to reject the EPA guidelines, arguing it was not obliged to adopt it.

The EPA later withdrew the policy and promised to consult industry, but added that it did not resile from the need to reduce WA's greenhouse gas emissions.

Research by Macquarie Bank suggested the proposal would cut the net present value of new WA projects by between \$US2.7 billion and \$US10 billion,

depending on the assumptions around the price of purchasing offsets.

Browse, for example, will produce about 11.7 million tonnes per annum of emissions, Macquarie estimated.

The most recent spot price in Australia's carbon credit market was about \$15 a tonne, but the entire supply of credit units is forecast to be about 14mt for this financial year.

"Operations that haven't missed promises to regulators are grandfathered, but new projects or changes/additions to old ones must be compliant going forward," Macquarie said.

"In the interim, we believe that policy uncertainty, unease amongst joint venture partners, and pressure from investor groups is highly likely to delay Browse, and potentially even Scarborough."

However, Macquarie also said the EPA's position was a solid compromise.

Work by consultancy Reputex for the Conservation Council of Western

Australia in November modelled abatement costs under potential policy changes.

A low side 15mtpa scenario would have offsets priced about \$15/t leading to a cost of \$225 million annually across the industry, while a high case scenario needing 60mtpa of offsets might cost \$100 each, adding up to about \$6 billion annually.

Woodside Petroleum chief operating officer Meg O'Neill said Woodside would need to begin ramping down trains at the Burrup Hub if the state did not settle on an emissions policy that would enable its \$36 billion of LNG backfill projects to get under way.

That comprises Scarborough, which will connect to a new second train at Pluto, and Browse (see table), which will be piped long distance to use excess capacity at the North West Shelf Venture's Karratha facility from the mid 2020s.

Woodside is working towards a final investment decision for Scarborough by 2020, and appointed front end engineering

Oil and gas projects are pumping

Project Name	Owner/developer	Cost estimate (\$)	Location	Product
COMPLETED				
Ichthys	Inpex	57bn	Browse Basin	LNG
Prelude FLNG	Shell	14bn	Browse Basin	LNG
Greater Western Flank - 2	Woodside Petroleum	2bn	Carnarvon Basin	LNG
Bayu-Undan Infill	ConocoPhillips	900m	Timor Sea	LNG
Wheatstone domgas	Chevron	ND	Onslow	Gas
Van Gogh oil infill	Santos	ND	Carnarvon Basin	Oil
ONGOING				
Gorgon stage 2	Chevron	5bn	Carnarvon Basin	LNG
Greater Enfield	Woodside Petroleum	2.6bn	Carnarvon Basin	Oil
LIKELY				
Browse	Woodside Petroleum	21bn	Browse Basin	LNG
Scarborough LNG	Woodside Petroleum	15bn	Carnarvon Basin	LNG
Pluto Train 2	Woodside Petroleum	(Combined with Scarborough)	Karratha	LNG
Barossa Gas	ConocoPhillips	6.2bn	Timor Sea	LNG
Equus	Western Gas	5bn	Carnarvon Basin	Gas
Jansz/lo (Gorgon) compression	Chevron	<4bn	Carnarvon Basin	LNG
Crux	Shell	2bn	Browse Basin	LNG
Julimar phase 2 - Wheatstone	Chevron	500m	Carnarvon Basin	LNG
Pluto North & Pyxis infill	Woodside Petroleum	130m	Carnarvon Basin	LNG
Waitsia expansion	Mitsui & Co	100m	Dongarra	Gas
Pluto/NWSV - Interconnector	Woodside Petroleum	ND	Karratha	LNG
POSSIBLE				
Burrup Urea Plant	Perdaman Industries	4.3bn	Karratha	Urea
Clio/Acme	Chevron	4bn	Carnarvon Basin	LNG
Burrup Petrochemical Plant	Coogee, Mitsubishi Corporation, Wesfarmers	1.3bn	Karratha	Petrochemicals
Karratha Hydrogen	Yara Pilbara	200m	Karratha	Hydrogen
Dorado	Santos	ND	Carnarvon Basin	Oil

Source: BNiQ Search Engine

obn of oil and gas project

“ We believe that policy uncertainty, unease amongst joint venture partners, and pressure from investor groups is highly likely to delay Browse, and potentially even Scarborough - Macquarie Bank

and design contractors for each development in the past six months.

Ms O'Neill said a quick resolution was needed.

“We're in a very fast timeline, and any uncertainty creates risk,” Ms O'Neill told last week's Australasian Oil & Gas Exhibition and Conference.

There was further confusion over how any changes might apply to projects in Commonwealth waters, given gas is being piped back to a land based processing plant, Ms O'Neill said.

Browse will be particularly problematic because the gas has a high carbon

dioxide content, according to Wood Mackenzie analyst David Low, while the legacy Karratha trains that will process it would also likely have higher emissions.

Action

With the exception of the carbon roadblock, local oil and gas businesses have been busy with plans, although it will be some time before work is under way on the ground.

There are 18 projects in the pipeline with a value of more than \$60 billion between them.

Much of that is attributable to Woodside, although Chevron, Shell and ConocoPhillips are advancing big developments.

Chevron gave the green light to the Gorgon stage two project in April last year, estimated to be worth about \$5 billion.

The development included infill wells and subsea work at the Gorgon and Jansz-Lo fields.

The second serious backfill development is the Jansz-Lo Compression project, which will extend the life of wells in those fields by pressurising the gas.

Norwegian contractor Aker was selected for engineering work earlier this month.

The Jansz-Lo compression project will be the first time a subsea compression system has been used outside of Norway, with the usual model requiring a semi-submersible platform.

Speaking at the AOG conference, Chevron general manager of major capital

projects Jeff Schmoll was bullish about the flow-through for local jobs.

“It will provide significant local opportunities for front-end engineering and design,” Mr Schmoll said

“These opportunities include all onshore components as well as potential scopes across local engineering, project management, fabrication, onshore construction, subsea installation and support.”

A third Chevron gas project under consideration, the Clio-Acme development, will be linked via a new pipeline across the Carnarvon Basin into the Woodside Petroleum-operated Burrup Hub.

Clio-Acme reportedly holds 3.5 trillion cubic feet (tcf) of gas.

Mr Schmoll touted that project as the next chapter of collaboration in the Carnarvon Basin, with Chevron to build a pipeline across the basin that would make smaller gas fields, owned by third parties, economic.

Continued on next page

Oil and gas contracts

Contractor	Developer	Project	Service	Award date
Aker	Chevron	Jansz/Io Compression	Feed	Mar 19
Subsea Engineering Associates	Woodside Petroleum	Scarborough	Intecsea subcontract - digital pipeline engineering	Mar 19
Wood	Shell	Crux	Feed	Feb 19
KBR	Shell	Crux	Feed	Feb 19
Ausgroup	Chevron	Gorgon	Maintenance	Feb 19
OneSubsea Australia	Chevron	Julimar phase 2	Subsea hardware	Jan 19
Diamond Offshore General	Chevron	Julimar phase 2	Drilling and rig services	Jan 19
McDermott	Woodside Petroleum	Scarborough	Floating production vessel Feed	Jan 19
Subsea Integration Alliance	Woodside Petroleum	Scarborough	Riser, flowline Feed	Jan 19
Saipem Australia	Woodside Petroleum	Scarborough	Trunkline engineering Feed	Jan 19
WorleyParsons- Intecsea	Woodside Petroleum	Scarborough	Trunkline engineering Feed	Jan 19
UGL	Chevron	Gorgon & Wheatstone	Maintenance and turnaround	Jan 19
Multiplex	Woodside Petroleum	Karratha Fifo camp	Build, own, operate FIFO camp	Nov 18
Compass Group	Woodside Petroleum	Karratha Fifo camp	Build, own, operate FIFO camp	Nov 18
SNC Lavalin	Perdaman	Karratha urea	EPC development	Nov 18
Bechtel	Woodside Petroleum	Pluto	Feed & Construction	Oct 18
Subsea Engineering Associates	Woodside Petroleum	Scarborough	Trunkline engineering define phase	Oct 18
KBR	Woodside Petroleum	Browse	Concept definition for 2 FPSO vessels	Oct 18
Wood	Woodside Petroleum	Scarborough	Concept definition FPSO, risers	Aug 18
Zenith Energy	Chevron	Barrow Island	Build, own, operate power station	Aug 18
Technip	Chevron	Gorgon Stage 2	Subsea installation	Jul 18
WorleyParsons	Chevron	Gorgon & Wheatstone	Brownfield engineering	Jun 18
Technip/Samsung/Modec	ConocoPhillips	Barossa	FPSO- Feed competition	Jun 18
WorleyParsons- Intecsea	ConocoPhillips	Barossa	Subsea infrastructure	Jun 18
Baker Hughes GE	Chevron	Gorgon Stage 2	Well completion equipment, subsea production systems	Jun 18
ABB	Inpex	Ichthys	Support services, power	May 18

Source: Company announcements

From previous page

Gas would be piped to Karratha to be processed under a tolling arrangement.

"An interconnected gas gathering system means more gas getting to the right place and the right location, when it's needed, and provides the flexibility to bring on long-term domestic gas because of the development of hydrocarbon fields that might otherwise languish," Mr Schmoll said.

The three projects together will involve about \$12 billion in capital spending, Chevron has estimated.

Shell has its own backfill project planned for the Prelude FLNG facility, at the Crux field.

Crux has around 2tcf of gas reserves and will require five wells.

A final investment decision is expected in 2020, with start-up due in 2025.

Wood Group and KBR have been selected for engineering work at Crux.

ConocoPhillips and Santos are both working on backfill projects for the Darwin LNG plant, with an infill development at Bayu-Undan recently completed.

Next on the agenda to backfill Darwin will be the Barossa field, with an investment decision flagged as early as the final quarter of this year.

Barossa holds about 3tcf of gas, and will cost about \$US4.4 billion to build, consultancy Wood Mackenzie has estimated.

Modec and a consortium of Technip-FMC and Samsung Heavy Industries were selected for an engineering

“ For the construction phase, we anticipate that local supply chain opportunities would increase after we reach final investment decisions - Meg O'Neill

competition designing the floating production platform in June, while WorleyParsons Intecsea was selected for subsea engineering.

Santos's annual report shows the design work and long lead contracts were worth about \$50 million.

Woodside has let a large number of contracts.

In October, the company selected US-based Bechtel for engineering and construction work at Pluto train two, and KBR was selected for Browse concept definition work.

McDermott International, Subsea Integration Alliance, Saipem Australia and WorleyParsons Intecsea were all awarded engineering work for Scarborough in January, while Wood Group was chosen for engineering work on the floating production platform in August.

Woodside's Ms O'Neill said the company would be holding supplier briefings in coming months.

"For the construction phase, we anticipate that local supply chain opportunities would increase after we reach final investment decisions," she said.

"Some specialist components that require global capabilities not currently

available in WA, such as the offshore floating facilities and LNG train modules, would need to be constructed overseas.

"But we want to maximise opportunities for WA businesses and build local capability."

Woodside also made moves on phase two of the Julimar/Brunello gas development, which links into Chevron's Wheatstone plant, appointing OneSubsea Australia and Diamond Offshore for engineering.

Despite the big surge in engineering work, the number of engineers in the state's top 10 engineering businesses increased only 1.4 per cent, according to BNiQ Search Engine data (page 18).

That follows a 22 per cent increase in the year to March 2018.

Higher staffing numbers were reported by GHD, increasing by 130 people to 480, and Clough (although the number was not available for publication).

GHD remains in third position on the list, while Clough rose one spot to be in fourth place.

One further deal that will affect the list is WorleyParsons' acquisition of Jacobs Engineering's energy, chemical and resources division, which will be completed in coming weeks.

A combined entity would still not be large enough to take Wood Groups' crown as number one on the BNiQ list, however, with that company reporting 920 engineers in WA.

Winners of ongoing operational contracts included ABB, which was selected for offshore support services and power at Inpex's Ichthys, a deal worth about \$200 million.

Optimism

Deloitte Australian oil and gas leader Bernadette Cullinane told *Business News* there was strong global activity in LNG, with recent project sanctions in Canada, the US and Qatar.

"After a dearth of LNG final investment decisions over the past several years, 2019 is going to be a big year," Ms Cullinane said.

"(In Australia) there will be brownfield expansions of existing facilities, and many new, perhaps more creative approaches of how to keep existing facilities filled.

"With the possible exception of Pluto LNG train two, we probably won't see a new LNG train for at least the foreseeable future in Australia, but that doesn't mean that there isn't a lot of activity."

She was confident many projects would happen.

"The majority of them will go forward and will provide that next wave, a lower-cost wave, of LNG production than what we've had in the past decade," Ms Cullinane said.

A further trend was the emergence of smaller scale projects.

"There will be more floating LNG projects, outside Australia," she said.

One Perth-based business hoping to bring that trend to WA is Western Gas, which plans to use a floating liquefaction plant to pump gas from the Equus field in the Carnarvon Basin.

The facility would be moored off Ashburton and would produce 2mtpa of LNG.

The project is expected to cost \$US3.5 billion and a final investment decision is planned for 2020, with first gas targeted for 2024.

Western Gas selected Baker Hughes, a GE company and McDermott International, as master contractors in December, with front-end engineering and design work under way.

Finish line

A series of projects has been completed in the past 12 months, including Inpex's Ichthys.

Ichthys was originally slated to cost \$US34 billion but came in at either \$US40 billion (according to Inpex) or \$US45 billion, according to joint venture partner Total.

The two had a December disagreement about how to account for post-production capital.

Shell's Prelude is also effectively complete although commissioning work is still under way.

Woodside, Evol aim to fuel ships boom

Tougher emissions standards for ships and a growing need for remote power options for miners could both be a boost for the domestic LNG market.



EVOLUTION: Nick Rea says the tide is turning as more large shipping companies take up the LNG fuel option. **Photo: Gabriel Oliveira**

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TWO major Perth businesses could invest up to \$75 million in LNG marine fuel capability if moves to increase usage within the shipping industry prove successful.

That potential demand growth comes as tougher international emissions standards for shipping, including reduced sulfur requirements, lead the industry to explore LNG in place of more common diesel engines.

Woodside Petroleum is driving the market locally as it works with the Pilbara's

"In 2018, Woodside participated in joint industry projects to assess the feasibility for LNG to be used as a fuel for bulk carriers transporting iron ore from the Pilbara.

"In 2019, we will undertake activities to support final investment decision on an LNG bunkering vessel to supply this market."

A truck fuelling facility built at the Pluto LNG plant will soon be operational.

Wesfarmers subsidiary Evol LNG will also evaluate potential opportunities as demand grows, with a bunker barge and shoreside storage costing about \$5 million to be explored.

Evol manager LNG and wholesale Nick Rea told *Business News* he anticipated solid

The International Maritime Organisation's regulatory changes plan to cut sulfur oxide emissions 85 per cent by 2020, and carbon emissions by 70 per cent over a longer period.

Mr Rea said about 80 ports worldwide were building bunkering capacity.

"We can bunker LNG in Fremantle using the truck-to-ship method," he said.

"That's good, it's low cost, it's convenient, it's more suited for smaller requirements.

"It certainly can get the ball rolling."

Perth's LNG Marine Fuel Institute chief executive Walter Purio said shipping businesses had three options to reduce sulfur content – using distillates, LNG, or buying diesel scrubbers.

Many companies were using scrubber technology to retrofit existing vessels, but Mr Purio said LNG was competitive for new builds.

"There's about a 20 per cent (cost more than) the normal capital expenditure of a diesel ship," he said.

"But your fuel costs are significantly less, the wear and tear on your pumps is significantly less."

Increased use of LNG as a marine fuel would also improve Australia's security of energy supply, support the coastal shipping industry and benefit public health globally, he said.

Mr Purio called for the federal government to work with the IMO to implement

an even tighter emissions standard in Australia, known as an emissions control area.

That would mean heavier restrictions on alternative fuels.

Both Mr Rea and Mr Purio presented at the Australasian Oil & Gas conference last week.

Remote

Evol LNG's main existing business is providing LNG for remote power generation.

Mr Rea said six mine sites were clients, including Saracen Mineral Holdings' Carosue Dam, Mineral Resources' Mount Marion and Doray Minerals' Deflector.

"We've now got quite a good value proposition," he said.

The company worked with remote power providers such as Kalgoorlie Power Systems and Zenith Energy.

Mr Rea said there was a good pipeline of further opportunities on the horizon, particularly from gold and lithium projects.

Trucking LNG to remote sites was most competitive for mines away from pipeline gas and on (or beyond) the fringe of the power grid, he said, and it could compete with diesel within about 1,000 kilometres of a production facility.

“It's not a huge wave just yet, but companies are now thinking about how to take advantage,

bringing capability in – Bernadette Cullinane

big miners to explore shifting their carriers to LNG fuel.

The company will make a decision this year on building an LNG bunkering vessel for ship refuelling, an investment that may cost as much as \$70 million.

"We are a strong advocate for use of LNG as a marine fuel," the company said in its annual report.

"In 2018, LNG represented more than 90 per cent of the fuel used in our shipping fleet.

growth in demand driven by marine fuel.

The company operates a 175-tonnes-per-day liquefaction plant in Kwinana.

"We're seeing lots of take up by large shipping companies," Mr Rea said.

"CMA CGM have ordered nine ultra-large container ships, being delivered in the next couple of years.

"Carnival Corporation, the largest cruise liner, they've got LNG fuel ships on order.

"The tide is turning."

BNiQ SEARCH Woodside Petroleum

There are **1,841** results from our index of **97,940** articles, **9,757** companies and **35,831** people

Rank	Change from previous year	Company name	Senior executive and title	Year est. in WA	Total staff in WA	No. of engineers in WA	Offices a) WA b) interstate	Current projects (top 5 only)	Location of Head Office
1	—	Wood	Mr Ralph Ellis President, Operations Services, Asia Pacific	1978		920	a) 2 b) 3	Bayu Undan maintenance services (CloughAMEC JV), Gruyere EPC (Civmec JV), Woodside Brownfield EPCM services, ConocoPhillips engineering services, Caltex Maintenance Services	Scotland, UK
2	—	WorleyParsons	Ms Marni Oaten Director Operations, Australia	1978	880	650	a) 3 b) 16	Woodside EPCM, Chevron ABU Support, Wheatstone CMS, Alcoa Brownfields, Tanami Expansion Project	Sydney, NSW
3	—	GHD	Mr Sheldon Krahe Manager, Western Australia	1975	700	480	a) 5 b) 42	Forrestfield Airport Link, Metropolitan Road Improvement Program, Horizon Power's Pilbara Power Program, Department of Defence SEA 5000, Main Roads Asset Management Support Services	Sydney, NSW
4	↑	Clough	Mr Peter Bennett Chief Executive Officer	1919	787	NFP	a) 1 b) 3	BHP South Flank Non Process Infrastructure, Nui Power POM Power Station, Water Corporation Beenyup Advanced Water Recycling Plant (Stage 2), Rio Tinto Oyu Tolgoi, INPEX Ichthys Hook-up and commissioning	Perth, WA
5	↑	Jacobs Engineering	Mr Richard Hayers ANZ Vice President & Regional Director, Buildings and Infrastructure	1990	500	230	a) 1 b) 5	Great Northern Highway upgrade (JV), Alcoa Engineering Services, BHP Engineering Services, Woodside Engineering Services	Dallas, USA
6	↓	AECOM	Mr John Macaulay Group Director, Western Australia	1947	300	200	a) 1 b) 14	NorthLink Stage 2, Metropolitan Roads Improvement Alliance, METRONET, Perth Stadium Station	Brisbane, QLD
7	—	SNC-Lavalin	Mr Garry Ford Senior Vice President, Oil & Gas, Asia Pacific	1989	850	190	a) 2 b) 4	Ichthys: SMP and E&I. Chevron: Onshore & Offshore telecoms maintenance & support; Clean TeQ Sunrise Project. Roy Hill: Senior Lenders Technical Advisor; Forrestfield Airport Link - Independent Safety Assessments	Montreal, Canada
8	—	WSP	Mr Alan Rimmer Regional Director, WA	1962	190	165	a) 1 b) 10	Forrestfield Airport Link, MRWA Panel, Dept of Housing RAESP, Iluka unnamed project, Elizabeth Quay Ritz Carlton	Canada
9	↑	Fluor Australia	Mr Russell Ayres General Manager - Asia Pacific/ Europe/Africa, Mining & Metals	1950	155	153	a) 1 b) 3		Irving, USA
10	↓	MSP Engineering	Mr Peter McSweeney Managing Director (since 2007)	1969	280	150	a) 1	Tianqi Lithium \$700m lithium hydroxide plant - Stages 1 and 2 (Kwinana), Talison Lithium \$320m CGP2 chemical grade processing plant (Greenbushes), Talison Lithium FEED for CGP3 chemical grade processing plant (Greenbushes)	West Perth, WA
11	↓	Hatch	Mr Philippe Felton Operations Manager, WA	1987	200	150	a) 1 b) 5	Key clients: Chevron Australia, Rio Tinto, BHP Billiton, South32, Cameco and Tronox	Toronto, Canada
12	↓	LogiCamms	Mr Chris O'Neill Chief Executive Officer	1993		140	a) 1 b) 5	Rio Tinto Iron Ore electrical infrastructure upgrade, Chevron Gorgon Asset Management services, APA group Mondarra gas storage facility upgrade, ConocoPhillips Operational Readiness Services	Brisbane, QLD
13	↓	Aurecon	Mr Daniel Bree Regional Director, WA & NT	1950	230	NFP	a) 2 b) 20		Docklands, Victoria
14	↓	Calibre	Mr George Nuich Head of Mining and Minerals	1998	300	NFP	a) 5 b) 17	Rio Tinto Yandi Oxbow, Rio Tinto Rail Haul, Samsung Roy Hill, Subiaco Oval Redevelopment, Rio Tinto AutoHaul	Perth, WA
15	↑	Monadelphous	Mr Rob Velletri Managing Director	1972	3,621	127	a) 8 b) 12		Perth, WA
16	↓	Arup	Mr Alistair Avern-Taplin Office Leader and Buildings WA Leader	1969	160	120	a) 1 b) 11	Optus Stadium, Perth Airport T1 Domestic and T1 Forecourt, Great Northern Highway, Capital Square, Elizabeth Quay	Sydney, NSW
17	↓	Technip Oceania	Mr Christophe Malaurie Senior Vice President Onshore/ Offshore Asia-Pacific	1995	284	NFP	a) 1	Inpex Ichthys, Shell Prelude, Woodside Greater Enfield	Paris, France
18	↓	CPC Engineering	Mr Glen Weir Chief Executive	1970	350	110	a) 6		West Perth, WA
19	↓	Wood & Grieve Engineers	Mr Jose Granado Chief Executive Officer	1961	186	105	a) 3 b) 3	Garden City & Innaloo Shopping Centres, Ritz Carlton and The Towers at Elizabeth Quay, New Museum for WA, Waterbank	Perth, WA
21	↑	Aerison	Mr Giuseppe Leone Executive Director	1988	450	100	a) 2 b) 1		West Perth, WA
22	↓	Georgiou Group	Mr John Georgiou Executive Chair	1977	410	100	a) 3 b) 2	Perth Airport Skybridge, Marina East Apartments, Great Northern Highway Bridge, Metropolitan Roads Improvement Alliance, Hollywood Hospital Expansion	Osborne Park, WA
23	↑	Laing O'Rourke	Mr Stuart Crofts Regional Director, Western Region	2006	NFP	NFP	a) 3 b) 8	Main Roads: NorthLink WA Central Section, Public Transport Authority: Perth Stadium Station and East Perth Station Upgrade, BHP: Low Level Bridges	Sydney, NSW

23
RANKED BY NO. OF WA ENGINEERS
150

All information compiled using surveys, publicly available data and contact with industry sources. Other companies may be eligible for inclusion. If you believe your company is eligible, please email claire.byl@businessnews.com.au. WND: Would Not Disclose, NFP: Not For Publication, N/A: Not Applicable or Not Available.

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BNiQ SEARCH Oil and gas



There are **3,425** results from our index of **97,940** articles, **9,757** companies and **35,831** people

JV hones mine drilling technology

31 Jan 2019 by Delia Price

technology company Qteq will use a \$2.8 million federal grant to bring oil and gas technology into the mining ... Qteq chief technology officer Tim Hopper said the company had been working to incorporate oil and gas ... Australia. "This joint venture's concept is to bring oil and gas technology into the mining space," Dr Hopper ...

Govt agency, contractor fined over worker death

28 Feb 2019 by Business News

Regulation Infrastructure Specialist oil and gas services company 3B Survey has bucked the gloomy mood in the ... established oil and gas facilities is seen as the main growth driver. Mr Cooper said he could also see plenty ... the oil and gas sector reflected the greater focus on safety since the Piper Alpha disaster in the ...

BGC changes sale plans, seeks new CEO

28 Feb 2019 by Mark Beyer

Deals Mining Property Specialist oil and gas services company 3B Survey has bucked the gloomy mood in ... modification work on established oil and gas facilities is seen as the main growth driver. Mr Cooper said he ... survey techniques in the oil and gas sector reflected the greater focus on safety since the Piper Alpha ...

Elevating Australia- setting the standards for the Oil & Gas industry

26 Feb 2019 by AOG

oil and gas industry from collaboration and standardization. The World Economic Forum reports that the ... being pursued through the International Oil and Gas Producers Association, successfully delivered ... Organisation's Technical Committee for oil and gas, petrochemicals and energy. Australia's participation is ...

Calima gears up for key testing of Montney wells

12 Feb 2019 by Matt Birney

drilling of the second horizontal well at its Canadian Montney oil and gas play and is now preparing to ... the most active oil and gas play in Canada. It has estimated remaining reserves of a jaw dropping 449 ... hydrocarbons to flow in greater quantities. The Montney is also thicker than most unconventional oil and gas ...

Energy shares sell-off sparks ASX dive

11 Mar 2019 by AAP

appeared spooked by news the world's largest wealth fund plans to sell its stakes in oil and gas ... investments in energy explorers and producers, although it will keep shares in integrated oil and gas ...

Bhagwan wins Melbourne contract

12 Mar 2019 by Mark Beyer

Australia's northern coast but with the downturn in oil and gas activity, it has been looking to diversify. ...

Sky and Space eyes Indonesian telco market

28 Feb 2019 by Matt Birney

and gas and plantation sectors. Managing Director Meir Moalem said: "CTN is a newly established ... expressions of interest in Sky and Space's offering from some of their existing clients within the mining, oil ...

Strike tacks on oil target to Perth Basin well

05 Mar 2019 by Matt Birney

Erregulla-1 and West Erregulla-1 previously drilled in the 1970s and 1990s. Significant oil and gas shows were ...