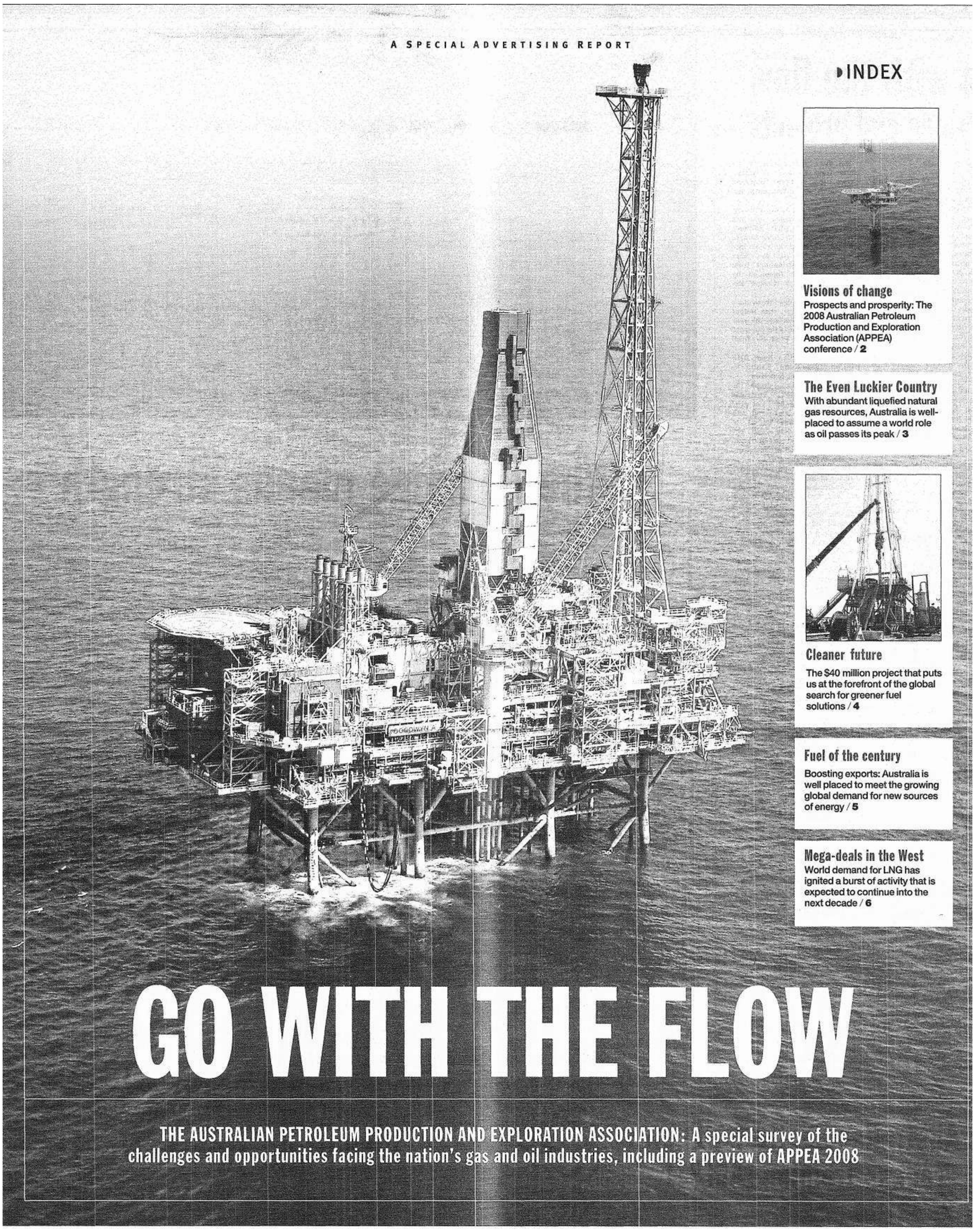

INDEX

Visions of change
Prospects and prosperity: The 2008 Australian Petroleum Production and Exploration Association (APPEA) conference / **2**

The Even Luckier Country
With abundant liquefied natural gas resources, Australia is well-placed to assume a world role as oil passes its peak / **3**

Cleaner future
The $40 million project that puts us at the forefront of the global search for greener fuel solutions / **4**

Fuel of the century
Boosting exports: Australia is well placed to meet the growing global demand for new sources of energy / **5**

Mega-deals in the West
World demand for LNG has ignited a burst of activity that is expected to continue into the next decade / **6**

GO WITH THE FLOW

THE AUSTRALIAN PETROLEUM PRODUCTION AND EXPLORATION ASSOCIATION: A special survey of the challenges and opportunities facing the nation's gas and oil industries, including a preview of APPEA 2008

By NIGEL WILSON

National Energy Writer

CRUDE oil prices at more than $US100 a barrel are producing good times for the Australian oil and gas sector. Even so, high prices are not yet producing sustainable increases in domestic oil production and the surge in global gas prices has boosted fears that Australian gas molecules will be captured to fuel burgeoning markets in North Asia.

Much of the past year has been focussed on huge developments in Australia's coal seam methane sector, which holds immense promise as a major source of domestic gas well into the second half of the century.

At last count, four LNG plants based on CSM have been proposed for the Port of Gladstone in Queensland, taking the count of proposed LNG developments in Australia to around 15.

The latest proposal, linking one of the world's biggest merchant LNG suppliers, BG plc, with rapidly expanding CSM developer and producer, Queensland Gas Company, brings a new dynamic to Australian LNG developments.

Up until now, Australian LNG proposals have been backed by long-term customer supply contracts which have underpinned developments up to 25 years.

Not so with the BG/QGC plan that will see Bowen Basin CSM converted into LNG and sold into BG's world-wide merchant supply network.

Currently, the two operating export LNG facilities, the North West Shelf joint venture's Burrup Peninsula plant and ConocoPhillips' Wickham Point operation in Darwin, are capable of supplying around 14 million tonnes of LNG to export markets each year.

At the end of this year, the Woodside-operated Shelf project will commission its fifth production train, taking NWS project output alone to 16 million tonnes a year. Wickham Point is searching for new gas supplies so that it can go ahead with expansion. As the much-reported national LNG export target is around 60 million tonnes by the end of next decade, with the aim of becoming the world's second or third largest LNG supplier, intensive work is underway to develop new projects to meet that goal.

Woodside's $12 billion Pluto development – the fastest LNG project to be committed anywhere in the world – is under construction, with a target first shipment date of 2010, slightly more than five years since the Pluto reservoir was discovered.

A second Pluto development is in preliminary planning stage, while Chevron has decided to develop an LNG plant with an initial five million tonnes annual output from its Wheatstone reservoir east of Pluto but north of Barrow Island.

Chevron and its partners, ExxonMobil and Shell, are still progressing the Gorgon LNG project based on Barrow Island, with the latest engineering studies expected to be completed next year for a three-train, 15 million tonnes-a-year development.

BHP Billiton still has Pilbara LNG at Onslow on the books based on the Scarborough reservoir deep in the Indian Ocean, even though its California LNG receival terminal, for which the project was originally proposed, has been kyboshed by US regulatory authorities.

Japanese group INPEX, increasingly embattled by Western Australian Government environmental concerns and native title issues, is now investigating transporting Ichthys gas from the western Timor Sea by a huge pipeline to Darwin to supply an eight million tonnes-a-year plant.

And in the Browse Basin north of Broome, any number of developments could be considered, depending on the eventual decision of the Western Australian and Federal Governments on

Continued next page ▶

Go with the flow

Prices and projects

▶ From previous page

the location of an LNG hub, designed to halt piecemeal LNG developments that might harm the Kimberley coast.

Already, preliminary contracts worth many billions of dollars have been signed with potential Browse LNG producers without a formal project being announced.

LNG aside, there has been concern that domestic gas needs, particularly in WA, might not be met.

But exploration by Apache, Chevron and Woodside in the past year appears to have confirmed that there are sufficient gas reservoirs available to meet WA's demands for decades to come.

Admittedly, the stimulation to exploration resulted not from the WA Government's controversial domestic gas reservations policy, which requires land-based LNG projects to quarantine 15 per cent of their reserves for domestic use, but from the realisation that gas prices are global and not regional.

An increase in gas contract prices in WA from around $2.30 a gigajoule to more than $7.50 in the past year – in line with the movement in gas prices globally – indicates that domestic gas discoveries and extraction can be profitable.

In an industry that has a global cost structure, it is unrealistic to expect gas supplies can be supplied at under global prices.

Strenuous exploration and development activity is not isolated to the far north or Queensland.

Esso BHP, operator of the Bass Strait fields in the Gippsland Basin, has flagged that latest calculations show they will be contributing significantly to Australia's oil and gas scene for the next three decades.

And the Basker Manta Gummy development in Bass Strait has shown that a small innovative approach can lead to bigger things with the newly restructured ownership of Nexus, Beach and two Japanese companies creating an asset value of more than $1.2 billion.

Gas discoveries in the Timor Sea with potential for both LNG and methanol development, alongside the long-awaited steady production from Woodside's Otway gas project near Port Campbell and the continuing success of the BassGas operation in Gippsland round out an active year for gas.

Oil in 2007 was a different animal, even though Australia's oil production increased for the first year since 2000.

Energy self-sufficiency continues to decline.

Figures published by industry analyst EnergyQuest show the Australian petroleum sector grew strongly in 2007 as a result of sustained high oil prices, surging global demand for LNG and higher domestic demand for gas-fired generation.

According to EnergyQuest's Graeme Bethune, the most significant area of growth is coal-seam methane production, which climbed 40.2 per cent to 113 petajoules, or 17.4 per cent of total east coast gas production.

While oil production fell 7.8 per cent quarter-on-quarter, it grew 3.2 per cent for the year to December, the first annual rise since 2000.

Year-on-year production increased from Woodside's Enfield oil field off the West Australian coast, Basker/Manta in Bass Strait and from the two new West Australian fields, BHP Billiton's Stybarrow and AED's Puffin.

But there were production declines from Cossack, Mutineer/Exeter, the offshore Gippsland Basin fields, and at Laminaria and Woollybutt.

Dr Bethune points out two new big domestic oil fields, Apache's Van Gogh and BHP Billiton's Pyrenees, both off Western Australia, are scheduled to come into production in the next two years with smaller contributions from Woollybutt South (operated by ENI) and Montara (Coogee Resources).

Woodside remains Australia's biggest oil producer, with output scheduled to increase later this year after the completion of the purchase of Shell's North West Shelf oil assets.

But oil production from BHP Billiton, Esso and Santos is expected to continue to decline.

Dr Bethune said that despite the higher production, Australia remained only 53 per cent self-sufficient in petroleum overall, with a petroleum trade deficit of $7.6 billion (including LNG exports) in 2007 as a result of having to buy more refined product from overseas to meet rising demand.

Belinda Robinson, executive director of industry peak council, the Australian Petroleum Production and Exploration Association (APPEA), warned only in March that the nation's production of crude oil and condensate was forecast to drop to just 32 per cent of the country's needs in less than a decade.

Australia's crude oil and condensate production has declined from almost 100 per cent in 2000, to slightly more than 60 per cent now.

Without any major new discoveries, Ms Robinson said, production would fall to just 32 per cent by 2017. Such a fall would result in the current annual $13.7 billion petroleum trade deficit more than doubling to $28 billion.

APPEA argues Australia still has potential for new discoveries with less than one quarter of the nation's 50 potentially hydrocarbon-bearing basins having been explored.

"If we are to rein in our burgeoning trade deficit in petroleum, we need to find more oil and the most promising areas are the high-risk 'frontier' sedimentary basins," Ms Robinson said.

As an industry lobby group, APPEA is looking keenly to the new Federal Government resources minister, Martin Ferguson, to address the apparent disconnect between high oil prices and onshore exploration.

The Rudd Government has indicated it is working towards the early introduction of flow-through share schemes to encourage resources sector exploration.

Flow-through share schemes, in which individual investors receive tax relief for their investment in companies that have specific exploration budgets, have been promoted as an offset to the low level of exploration spending in Australia.

But Mr Ferguson has indicated also that he wants to see more domestic gas use and is considering changes to the retention lease system to encourage earlier use of gas reservoirs.

Colin Beckett, APPEA's chairman and Chevron's Greater Gorgon Area manager, says the next two to three years will be a watershed for the energy industry in Australia with new policies having an impact on all aspects of exploration, production, delivery and energy use.

"IF WE ARE TO REIN IN OUR **BURGEONING TRADE DEFICIT** IN PETROLEUM, WE NEED TO FIND MORE OIL AND THE **MOST PROMISING AREAS** ARE THE HIGH-RISK FRONTIER SEDIMENTARY BASINS"

Belinda Robinson
APPEA Director