

Plugging the gap

As falling production and rising energy imports start to take their toll on the wider economy, it is clear Indonesia needs to reshape its oil and gas regime to attract much-needed upstream investment. But is the incoming president up to the challenge? Damon Evans reports

THE recent announcement that US major Chevron will delay its \$12 billion deep-water project in Indonesia does not bode well for the former Opec member.

Above all, it highlights one of the greatest challenges facing the incoming president, Joko Widodo, when he takes office this month.

The archipelago, home to one of Southeast Asia's fastest-growing economies, faces a crippling energy crunch. The upstream oil and gas sector has to provide 47% of total primary energy needs in 2025, or 3.7 million barrels of oil equivalent per day (boe/d). Analysts estimate a 2.5 million boe/d shortfall of supply in 2025.

Muted activity in exploration drilling and disappointing reserves replacement rates suggests the government desperately needs to spur investment. Failure to do so could entail disastrous consequences for the rest of the economy.

Still, Indonesia's energy crisis is nothing new. The world's fourth most-populous nation forfeited its Opec membership in 2008, when it finally accepted its changing role from oil exporter to net importer. More recently, its exports of liquefied natural gas (LNG) have waned too.

Indonesia was once the world's largest exporter of LNG but is now ranked number four, and will increasingly need to import the fuel to meet expanding demand at home.

And as energy imports climb, the country's domestic fuel subsidy bill, the largest in the region at an absolute cost of almost \$32 billion in 2013, continues to rise. It will need to be reined in.

Yet without drastic action it's hard to see how the country will slow the ever-widening energy demand-supply gap, Lukman Mahfoedz, president of the Indonesian Petroleum Association (IPA), wrote in a recent article for the *Jakarta Post*.

Oil production continues to fall. It hit 788,000 barrels a day (b/d) in July 2014 or half of the 1.65 million b/d peak production seen in 1977, while demand stands at 1.5 million b/d, almost twice domestic output.

Gas production is forecast to reach 7 billion cubic feet a day (cf/d) in 2015, falling to around 6.3 billion cf/d by the end of the decade unless new developments are sanctioned, data from energy research consultancy Wood Mackenzie shows.

Demand for gas is 4 billion cf/d and expected to rise.

But Indonesia's prospects of narrowing its energy deficit are slim. Chevron's Indonesia Deepwater Development (IDD) project, as well as several other billion-dollar schemes, remains stalled largely because of the uncertain investment environment and political flux.

Other developments waiting in the wings include Inpex's Abadi floating LNG project, BP's Tangguh LNG expansion, Total's continued investment in its Mahakam Block, and potentially, exploitation of the huge East Natuna (Natuna D-Alpha) field, which together with Chevron's IDD scheme, could generate over \$30 billion of new investments.

But unless Indonesia starts providing greater incentives for pure exploration drilling, it will not increase reserves

or see sustained incremental production gains, Angus Graham, a strategist at Asean-focused private investor Risco Energy, told *Petroleum Economist*.

Indonesia's reserve replacement ratio – a dismal 47% for oil with gas starting to dip to 90% in 2013 – is telling.

Still, there is hope for the oil and gas sector. Incoming president Widodo, or Jokowi, as he is more commonly known, could be the reform-minded leader Indonesia needs to help its economy, as well as its energy business, take off. Political analysts point to Jokowi's ability as governor of Jakarta to deliver results, absent of historical hang-ups and constraints.

The son of a timber collector who was raised in a

Figure 1: Energy demand and supply

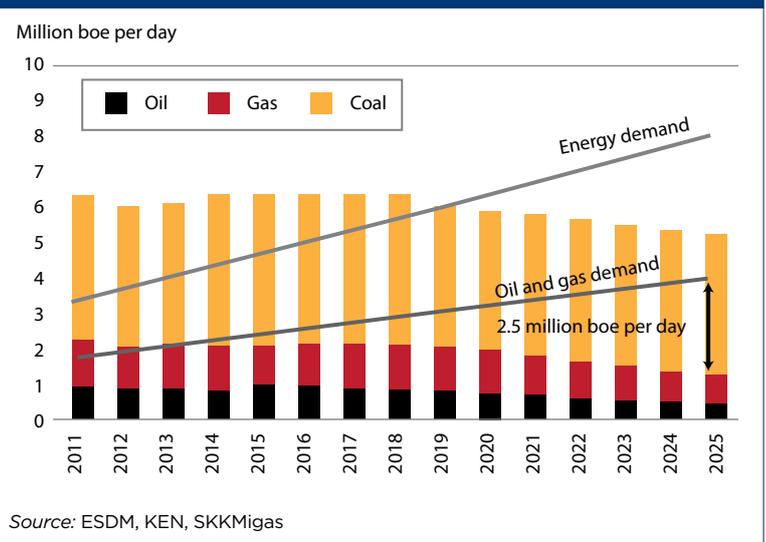
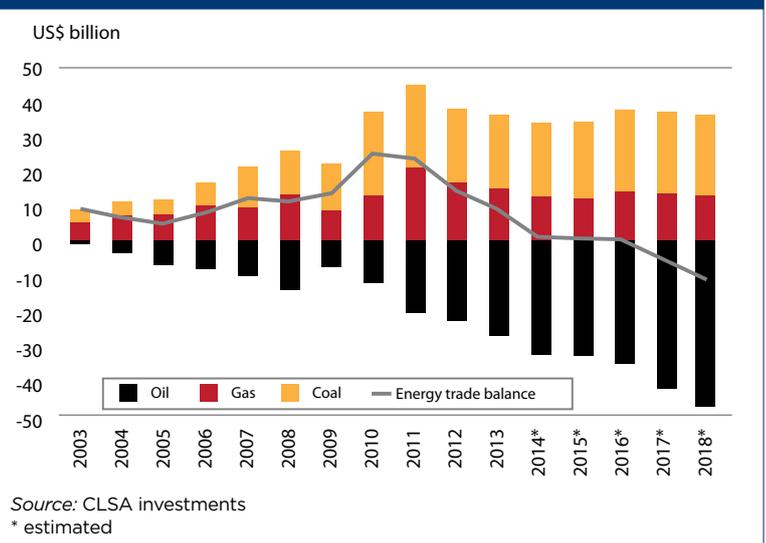


Figure 2: Net energy deficit by fuel type



riverbank shack, Jokowi won a clear majority of votes over Prabowo Subianto, a retired army general and former son-in-law of Suharto, the authoritarian president who ruled Indonesia for 32 years.

But the incoming president's ability to implement much-needed reforms remains uncertain.

The old guard that controls the legislative parliament appears determined to obstruct Jokowi's ambitious plans and avenge defeat in the presidential election.

"If pure politics plays out, the same way as the past few months, the political division will generate some difficulty for Jokowi. But of all the sectors, oil and gas is most immune," Shamim Razavi, an Indonesian-based oil

and gas expert at law firm Norton Rose Fulbright, told *Petroleum Economist*.

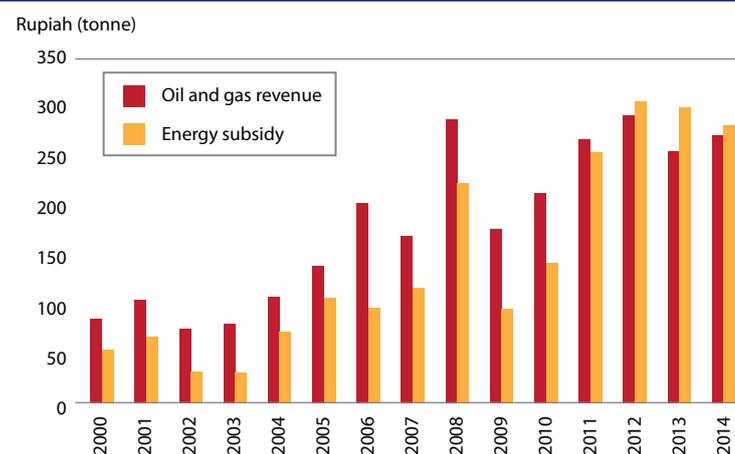
Besides juggling factional demands in parliament, the new president will need to ensure that his energy reforms avoid major convulsions.

Ravazi adds: "Oil and gas is the most unlikely to be subject to unwelcome experimentation because if they (the new Jokowi government) get it wrong, it would spell economic disaster."

The incoming president aims to cut the fuel subsidy bill and reduce energy imports by encouraging stronger domestic production.

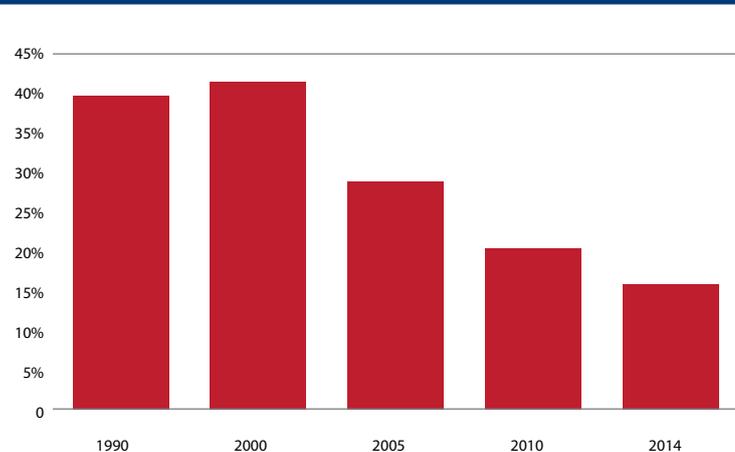
To do this, Jokowi plans to encourage investment in mature fields, streamline the regulatory approvals process, and offer incentives to spur exploration.

Figure 3: Oil and gas revenues versus subsidies



Source: CLSA

Figure 4: Oil and gas as percentage of total government revenue



Source: CLSA

Gas is the answer

His proposal to accelerate the switch from oil to gas domestically would also help cut Indonesia's reliance on costly oil imports. But will need major investment in new pipeline and gas distribution networks.

Encouragingly, both sides of the presidential campaign recognise the pressing need to improve the oil and gas regime, as well as arrest declining production – now around 2.2 million boe/d.

Jokowi and Prabowo's support for reform, although their proposed methods differ, is not surprising given the hard economic facts. Indonesia keeps growing and needs fuel. Earnings from hydrocarbon production have bolstered state coffers for decades, but their share is ebbing.

In 2012, the energy sector provided roughly 16% of gross domestic product, while oil and gas alone contributed 16% of state revenues – down from 40% in 1990.

Relatively higher oil prices, coupled with rising demand, mean revenues from energy production end up being spent on fuel subsidies, rather than providing any material benefits, such as healthcare, education or infrastructure for the nation's 250 million people. As hydrocarbon output falls, so do revenues.

In turn, rising energy imports means a fatter subsidy bill, which has dragged down the wider economy and weakened the country's currency.

It's a circular problem, magnified by the denomination of oil and gas imports in US dollars.

In the past, declining oil production might have been embarrassing, but it was not a real priority for the government. But now the wider public is increasingly aware of the economic effects of declining energy output.

And that suggests the government might do something about it, says Risco Energy's Graham.

Given Jokowi has pledged economic expansion of more than 7% a year by 2017 – the minimum level needed to absorb the 2 million youths entering into the workforce every year – it's almost certain the government will act, at least on subsidies, which are draining the budget.

Media reports suggest the incoming president is pondering making savings of between 48 trillion to 144 trillion rupiah (\$4 billion to \$11.9 billion) by removing fuel

subsidies from petrol and diesel which would see pump prices rise between 1,000 to 3,000 rupiah.

But with the presidential elections over, it is crucial that the government stimulates investment in the upstream sector too.

The IPA estimates that exploration must increase at least threefold to meet half of the demand-supply gap in 2025. But exploration during the first half of 2014 was not encouraging – only 40 exploration wells were drilled out of a planned 130.

Procrastination among local officials, as well as excessive bureaucracy, are largely to blame for the shortfall, according to upstream regulator SKKMigas.

Even so, Indonesia does not only suffer from muted activity in drilling wells.

Where exploration does take place, the results are poor by regional and global standards.

Between 2004 to and 2013, Indonesia found 3 billion barrels of oil equivalent (boe) of new reserves, compared to between 2 billion and 3 billion boe in Malaysia, 7 billion boe in Vietnam, and 6 billion boe in Brunei.

Tempting investors

Indonesia needs to attract more exploration dollars – capital which is globally mobile. But the Asean region is not particularly compelling on an international basis. And regionally, Thailand, Malaysia and the smaller Philippines are relatively more attractive to investors.

Indonesia lags near the bottom, Risco Energy's *Bottom of the Barrel* report finds.

Malaysia is not necessarily more geologically attractive, but the potential margins from energy investments are a good deal better, says Graham.

"Malaysia, for all its other issues, is a stand-out at adjusting its fiscal terms relative to the changing risk-reward proposition offered by the rest of the world. Indonesia is not", he adds.

Over the past decade, Indonesia has seen a rise in above-ground risk, as its regulatory and operating environments have become increasingly unpredictable, a further deterrent to investors.

The simplest way Indonesia could entice foreign capital is to revise its fiscal regime, but financial incentives for investors can touch a raw nerve, and for many foreign companies, it is not simply a matter of subsidies and tax breaks.

Major underlying risks remain, such as dealing with extra permitting for land and procurement, tax issues, and interference from other ministries.

Politics too plays a major role. Nationalist elements claim that the provision of better terms to investors, particularly foreigners, would be squandering the country's wealth.

But observers retort that if Indonesia's incentives were really that generous, then foreign investors would be rushing into the sector. But they aren't.

Nonetheless, with parliamentarians carving out more influence as democracy gains traction, there is guarded optimism that improvements will be made in the oil and gas regime, changes that will be needed to encourage the influx of essential foreign expertise.

A study from Wood Mackenzie shows that 75% of the country's potential resources lie offshore in the deep and shallow frontier waters of eastern Indonesia.

Locating and exploiting these deposits will need both technical expertise, skilled workers and deep pockets.

Indonesia may yet deliver on its strong potential for energy projects, reckons Andrew Harwood, an Asian-based upstream specialist at Wood Mackenzie. But

this will only happen if the new president brings greater certainty to the investment climate, improves the regulatory environment, makes swifter decisions and provides greater transparency.

Real incentives to stimulate new exploration activity, will also be essential, Harwood adds.

Indonesia's upstream sector, despite being mature, could offer big rewards, with nearly half of its discovered resources yet to be produced, Wood Mackenzie said in a report last year.

Moreover, the archipelago with its 17,000 islands spanning nearly 2 million square kms has Southeast Asia's highest remaining reserves – estimated at around 28 billion boe.

Of that, 10 billion is under development, while a further 2 billion boe shows development potential.

Indonesia also has access to the bulk of the region's deep-water exploration acreage, large tracts of which remain unexplored.

Still, explorers burned \$1.9 billion between 2009-2012 on sub-commercial discoveries in its frontier waters, highlighting the huge risks involved.

Although the government has attempted to compensate with better fiscal terms, some exploration and production companies have already scaled back their activities in Indonesia, or left the country altogether.

This is partly down to greater capital discipline in boardrooms, but also an indication of the perceived attractiveness of Indonesia compared to other opportunities around the globe.

Maintaining equilibrium

The challenge for Jokowi will be in striking a balance between Indonesia's need for greater control of its upstream industry and at the same time provide worthwhile opportunities for international investors, Harwood told *Petroleum Economist*.

One of Jokowi's key tasks must be a review of the existing oil and gas legislation to provide regulatory clarity, sanctity of contracts and enhanced fiscal terms for investors.

Of major interest to investors will be the extent to which Jokowi's government has the political will to implement proposed reforms, or whether opposition elements stymie the new president's policies, observers add.

The incoming president has downplayed the prospect of deadlock, adding that he expects to control a majority in parliament within six months.

Although strong doubts persist about Jokowi's ability to deliver reform, his direct control of the upstream regulator will give him critical sway over the stalled development projects representing tens of billions of dollars of potential investment and some 10 billion boe of possible production.

Although the hold-ups have a political aspect, the delays are largely administrative, and could be resolved without lengthy political manoeuvring, says Norton Rose Fulbright's Razavi.

"He can take the hard decisions, which have been difficult to deal with over the past year or so, given the political flux".

Indeed, the industry is hopeful of greater boldness and clarity on decision making for these projects. And Jokowi should be able to deliver, despite a legislative tussle, by stamping his authority on the upstream regulator.

Overall, one thing is for sure, if it's business as usual, oil companies will not be accelerating their investments. And given it takes an average of over 15 years to develop a discovery in Indonesia, time is of the essence. ●



Indonesia weighs up its LNG options

Damon Evans
SINGAPORE

INDONESIA is considering importing US liquefied natural gas (LNG) and is weighing up overseas investment opportunities as it tries to plug the gap between falling domestic output and rising demand.

With development projects stalling at home, domestic LNG demand is expected to hit 8 million tonnes per year (t/y) by 2020, up from around 1.5 million tonnes this year, according to forecasts from energy research firm Wood Mackenzie.

The recent announcement that US major Chevron will delay its \$12 billion Indonesia Deepwater Development (IDD) project will exacerbate the former Opec member's demand for imported LNG, Zhi Xin Chong, an Asian LNG specialist at Wood Mackenzie told *Petroleum Economist*.

Missed deadlines

National oil company Pertamina had expected to begin receiving gas from the IDD project as early as 2016. But with potential delays of two to three years, Pertamina expects to cover the shortfall with more LNG imports, possibly an extra 1.5 million t/y, the company's general manager for LNG trading, Arief Basuki, told Reuters.

"The (demand) number is getting bigger and bigger. Today we are targeting more than 5 million tonnes of LNG by 2020," he said.

With gas demand expanding at around 10% per year, demand for LNG could also increase further if Indonesia can bring more liquefaction capacity and pipelines on line to carry gas to markets.

Indonesia, the world's fourth-biggest LNG exporter, is increasingly turning to gas for industrial power generation, as well as a transport fuel.

But industrial buyers will not be able to procure LNG directly, as state-owned companies Pertamina, gas distributor PGN and utility PLN, are the only companies with government approval to import LNG.

Indonesia's LNG demand, the bulk of which stems from West Java, is forecast to hit 2 million t/y by 2015. For now, volumes are supplied from the local liquefaction plants – Bontang and Tangguh – with

domestic contracts totalling about 2.5 million t/y extending to 2020.

But by 2018, Indonesia will have to import LNG. To bolster supplies, Pertamina, which hopes to take a leading role in managing Indonesia's LNG portfolio, has already sealed two contracts, due to start in 2018 and 2020, to buy a total of 1.52 million t/y of LNG from US-based Cheniere Energy's Corpus Christi plant.

Pertamina is hoping to secure further offtake contracts as it targets total imports of at least 3.5 million t/y between 2018 and 2020. It is negotiating with another US-based LNG project to fix an additional import deal for 1 million t/y, it said.

The company's vice-president of LNG, Didik Sasongko Widi, added Pertamina is trying to buy a stake in a US shale-gas producer and will eventually seek to buy into US LNG export terminals.

By doing this, Pertamina first aims to shore up LNG supply, before moving upstream to mitigate its price risk, and finally tying up the value chain by investing in liquefaction.

It is also assessing investment opportunities in unconventional gas projects in Canada and South America, intending to acquire much-needed technical skills to develop Indonesia's potentially significant coal-bed methane and shale-gas resources.

Taking stakes in producing LNG projects in East Africa, Australia and Asia is also an option, Didik said.

The country, once the largest LNG producer in the world, has seen its LNG exports fall 40% since 1999, when it supplied one-third of global consumption.

It has been limiting the amount of gas available for export as production waned and consumption climbed. Total LNG production will be 17 million t/y in 2014 and will only reach 21 million t/y at most by 2020, said Chong.

The potential for an increase in LNG exports looks bleak as the country's business and operating environment has deterred operators from making further investments to boost gas production, he added.

Existing export contracts cannot be reallocated for domestic use. And expiring contracts cannot be extended for more than one year at a time, depending on the pace of domestic demand expansion.

Didik believes the government will

not sanction new gas exports if a development can sell LNG at \$10 per million British thermal units (Btu) locally.

Indonesian industry is willing to pay for the gas and is ready to compete with regional LNG prices which hover between \$15-\$16/million Btu, he said.

For the past two years, the government has been storing spare volumes of LNG in case demand picks up suddenly. If demand is met, then this spare LNG can be sold into the short-term markets.

The Arun LNG export complex in Aceh, northern Sumatra, stopped producing LNG in October and is being converted into a receiving and regasification terminal.

The six-train plant – owned by Pertamina, along with minority partners ExxonMobil and Japan Indonesia LNG Company – had been operating since 1977. It will become Indonesia's first land-based receiving and regasification plant.

Primary source

With first LNG shipments expected to arrive from BP's Tangguh project in eastern Indonesia next year. It will also become the main terminal for Indonesia's first LNG imports, expected to come from the US in 2018.

Arun will have an import capacity of 3 million t/y, as well as extra tanks that can be used by third parties as part of an open-access storage system.

Another land-based import terminal, Bojonegara, in West Java, is due to start up by the end of 2018. Initial capacity would be 3.5 million t/y, rising to 7 million t/y in 2020.

Further floating storage and regasification units (FSRUs) will be needed around Java as the island is densely populated, making it difficult to build pipelines.

Scattered demand in eastern Indonesia, where it is tricky to ship gas by pipeline, will likely see small-scale LNG take off as well.

Pertamina believes several integrated small-scale projects will prove to be both more reliable and more economic compared to a traditional stand-alone facility. Small-scale LNG would also tie in nicely with floating LNG production, which can be used to develop smaller stranded gas fields, which would otherwise be uneconomic. ●