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Saudi Aramco: why oil exports are no longer enough
Publication date: 29 October 2019
Saudi Aramco: why oil exports are no longer enough

Saudi Aramco, by some accounts the most valuable company in the world, has made no secret of its ambitions to become a global giant in natural gas. By increasing gas production and acquiring large stakes in international gas projects, it aims to dramatically boost production for its domestic market and begin exporting gas within the next ten years. As the sole supplier of natural gas to the kingdom of Saudi Arabia, Aramco hopes to attract USD 150 billion in investment to grow production from 14 Bcf/day to 23 Bcf/day over the decade.

The state-owned giant, currently the world’s ninth largest producer of natural, is known for its main export product - oil. Yet it has also set itself the goal of becoming a major player in natural gas on the world stage. Having traded its first LNG cargo in April 2019 and made its first major venture into producing LNG through Port Arthur in May, Aramco aims to become a major gas exporter and trader, via either pipeline or LNG, with the goal of establishing a profitable international gas business by 2030.

The domestic situation

Saudi Arabia has experienced astronomical economic and population growth over the past 50 years. Its GDP has risen exponentially over that time, increasing nearly 200-fold from just over USD 4 billion in 1968 to more than USD 780 billion in 2018. Its population has grown from around 4 million in 1960 to around 33 million today, while its growing need for water from desalination plants, which currently account for approximately 25% of Saudi Arabia’s energy demand, grows by 14% each year.

This rapid growth has seen Saudi Arabia’s demand for energy grow at a similarly expeditious pace. Dr Ellen Wald, academic and author of a recently published book on the kingdom, explains that Saudi Arabia has undergone “a massive modernisation in a very small-time frame, so it’s understandable that their electricity needs have grown exponentially.”

Historically, Saudi Arabia generated most of its electricity by burning crude oil, of which Aramco offered a cheap and plentiful supply. Yet for both Aramco and Saudi Arabia, there’s a clear economic impetus to switch from oil to gas in its power sector. Aramco can charge over ten times as much for a barrel of oil on international markets as it can within Saudi Arabia. “If [Saudi Arabia] can get natural gas and substitute for oil in the power sector, and then export that oil at full price overseas, then that makes all the sense in the world,” says Dr Jim Krane, a research fellow in energy studies at the Rice University’s Baker Institute. “A barrel of oil sells for less than six dollars in Saudi Arabia and sells for ten times as much outside the Saudi border.”

Essentially, every barrel of oil burned in Saudi Arabia represents a loss to Saudi Aramco of around USD 50. As a state-owned firm, Aramco has an obligation to provide cheap fuel to Saudi Arabia’s industry and power sector, so increased demand for energy within Saudi Arabia has hit Aramco’s coffers. These losses act as a major incentive to reduce the amount of oil burned for electricity generation within Saudi Arabia.
Meanwhile, any financial loss to Saudi Aramco also represents a loss to the kingdom of Saudi Arabia, which derives most of its revenue from its state-owned oil firm. As of 2018, Aramco provides 50% of its revenues, plus any additional payments via dividends, to the Saudi government.

The lost revenue comes as Saudi Arabia hopes to raise huge amounts of money for Vision 2030, an ambitious economic diversification plan which is set to see hundreds of billions invested in a range of projects, the biggest of which is a USD 500 billion scheme to build a 26,500 square kilometre smart city called Neom.

While the government hopes to generate a significant sum through the much-anticipated Saudi Aramco IPO, the rest will have to be raised using more familiar methods. For Saudi Arabia, this means generating revenue by exporting oil.

The Vision 2030 investment programme also comes amid Saudi Arabia’s costly intervention in Yemen. Launched in 2015, the war has seen a Saudi-led coalition fight Yemen’s Houthi rebels at the cost of billions of dollars a year, leaving Saudi Arabia in desperate need of funds.

Legitimacy in peril

Financial issues pose a direct existential threat to the Saudi regime and its ruling family, the House of Saud.

“The Saudi monarchy’s main source of legitimacy is patronage,” says Krane. “If patronage funds are in short supply, the government’s in trouble. It needs to have plenty of cash to keep its people happy. When the cash runs out it’s not easy to keep people happy.”

In 2018, the petroleum sector accounted for 42% of Saudi Arabia’s GDP, 90% of the country’s exports, and 87% of the government’s budget, meaning increasing oil export revenue is the country’s primary fundraising mechanism.

As such, Saudi Arabia has taken a two-pronged approach in averting losses as it seeks to replace oil in the power mix while limiting growing demand for power.

Starting in 2016, Saudi Arabia introduced reforms which saw the government raise electricity prices for consumers, and the price of feedstocks for industry, with the aim of reducing demand for crude oil within the kingdom.

Higher electricity prices have stemmed demand growth. According to BP’s statistical review of world energy, Saudi Arabia’s energy consumption grew from 184 mtoe in 2008 to 259 mtoe in 2015. Following the implementation of the reforms, the country’s consumption has levelled out, with consumption even dropping by 1.4% between 2017 and 2018. Energy demand dropped from 263 mtoe in 2017 to 259 mtoe the following year.
“[The] reforms that Mohammad bin Salman imposed in 2016 and 2018 have been a lifesaver for the kingdom,” says Krane. “That’s the best thing they could have done for the climate or for this whole issue they’re having in substituting oil for gas.”

The government’s plan, first enacted in the 1970s, to replace crude oil with natural gas in the power sector, meanwhile, has been largely successful. In 2017 the country generated 64% of its electricity burning gas compared to 36% burning oil. In 1990, the ratio was 51% natural gas compared to 49% oil. Lately, the kingdom has also sought to replace oil burn with solar power.

However, despite the kingdom’s best intentions, renewables and nuclear power still make up a miniscule share of the country’s total power. As noted in a US Energy Information Administration (EIA) report from 2017, Saudi Arabia’s electricity generation capacity consists of 59.6% natural gas, 40.3% oil, and 0.1% solar, meaning renewable energy currently provides just a tiny proportion of the country’s power.
As such, in replacing crude oil, gas is the obvious choice. Indeed, Aramco CEO Amin Nasser has pledged that Saudi Arabia will generate 70% of its electricity from gas by 2028, with the rest coming from nuclear energy and renewables.

“They’ve got the infrastructure, they’ve got the resource,” says Krane. “They can use it for baseload they can use it for peak. It’s a no-brainer for them.”

Wald agrees. “Saudi Aramco always thinks in term of the long term, and in the long term they see natural gas as the best way to power the kingdom,” she tells Gas Matters.

Still, as demand levels out, Saudi Arabia is increasingly likely to invest more heavily in solar power, as the country is given the breathing room to build infrastructure for renewables, while also granting Saudi Aramco the breathing room to explore new gas fields and bring them online.

**Aramco’s gas ambitions**

With 5.9 Tcm of proved reserves, Saudi Arabia has the world’s fourth biggest gas reserves and is the ninth biggest gas producer across the globe, producing 112 Bcm/y. However, most of Saudi Arabia’s gas supply comes from associated reserves, meaning its gas supply is linked to the amount of oil it produces. This is problematic for a kingdom with separate plans for oil and gas. While Saudi Arabia hopes to steadily increase production of gas over a long period of time, the country may want to either restrict or boost oil production at any one time, depending on market conditions. As such, Saudi Arabia now aims to develop its reserves of non-associated gas.

“The big prize for Aramco is non-associated gas,” says Krane. “They want gas that they can produce independently of oil. Their oil production goes up and down all the time because of OPEC and because they constrain the supply to keep the price up. They don’t want their natural gas production to depend on oil production. They want it to be independent. It’s a domestic resource. They use it domestically.”
In seeking to boost production of non-associated gas, Aramco has turned its focus towards unconventional reserves, as it explores fields in Northern Arabia, the South Ghawar area, and the Jafurah Basin east of Ghawar. Baker Hughes, an energy technology company, estimates Saudi Arabia has unconventional gas reserves of 645 Tcf, more than double the 285 Tcf held in its conventional reserves. Aramco CEO Amin Nasser has pledged to boost sales of unconventional gas to 3 Bcf/day in the next ten years, a 25% increase on current levels of unconventional gas production.

### Going public: a modernisation milestone

| After months of delay and several failed attempts to float, Saudi Aramco finally launched its initial public offering (IPO) on 3 November 2019, achieving a major milestone in the company's modernisation efforts. Aramco's management values the firm at USD 2 trillion, a number which has in the past proved a sticking point for international financiers, who believe the true valuation is closer to USD 1.2-1.5 trillion. The listing will take place on the Tadawul (Saudi Arabia's stock exchange) for the first part of the sale of a reported 1-2% of the firm. Aramco offered no further details of a mooted second international listing. The final share price, the size of the share offering and the total percentage of Aramco for sale at this offering will be announced on completion of the book-building process. The significance of this milestone for Aramco – and for Saudi Arabia – should not be underestimated. In order to facilitate this public offering, the notoriously secretive Aramco has been taking its first steps towards transparent business reporting, on Sunday publishing its second-ever set of results. The listing has also pushed the Tadawul to open up to global markets. |

Still, demand for natural gas within Saudi Arabia continues to outpace supply. As Krane points out, Saudi Arabia has been “continually” short of natural gas. “It just does not produce enough for its own domestic needs,” he says.

Importing natural gas via pipelines would seem a simple solution to meeting demand. Yet, while most of the kingdom’s neighbours are short of gas, political spats have so far prevented Saudi Arabia from getting natural gas from its more resource-rich neighbours in the Gulf Cooperation Council (GCC), such as Qatar. Logistically, a pipeline from gas-rich Qatar would be an obvious choice but the widening political gap between the rival states has rendered a cross-border pipeline between the two countries an impossibility.

Saudi Arabia’s troubles with its neighbours have led to the kingdom exploring LNG as a means of meeting rising demand for gas. According to Wald, Saudi Arabia has considered importing LNG, simply because, as she says: “Every bit of natural gas they burn, that’s another barrel of oil they can export. If they can get down to zero crude burn, that’s profitable.”
But Saudi Arabia’s natural gas ambitions aren’t limited to domestic production prowess. Saudi Aramco is also aiming to become a major player in global gas, and had initially planned to invest in Novatek’s Arctic LNG 2 project, which is now fully subscribed, as well as US LNG export projects. The company is also rumoured to be considering an investment in Turkmenistan’s proposed Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline.

So far, only one deal has come to fruition: in May 2019, the company signed a Heads of Agreement (HoA) for a 20-year deal with New York-listed, natural gas infrastructure firm Sempra Energy for 5 mtpa of LNG offtake from phase 1 of the Port Arthur LNG export project in Texas. At the same time Saudi Aramco suggested it would make a 25% equity investment in the project, suggesting it “could be one of the largest LNG export projects in North America” with potential to expand capacity to 45 mtpa. While still non-binding, the deal, which would allow Aramco access to cheap and abundant US shale gas, suggests Saudi Aramco is serious about LNG.

As one industry source notes, Saudi Aramco’s ambition to become a major LNG player could see the company’s home market “could be one of their outlets.” But the company, which predicts significant global growth in LNG, is also backing it as a good long-term commercial decision. “With global demand for LNG expected to grow by around 4% per year, and likely to exceed 500 million metric tons a year by 2035, we see significant opportunities in this market and we will continue to pursue strategic partnerships which enable us to meet rising global demand for LNG,” the company said in May.

The path ahead

As the biggest, most profitable, and as suggested by Krane, “most efficient” energy company in the world, Saudi Aramco’s gas ambitions, if realised, could transform the global gas industry. Yet Aramco’s dreams of becoming a globally significant LNG player are still a long way off. However, as a firm not beholden to the short-sighted whims of shareholders, Aramco is privileged in its ability to think long-term.

Saudi Arabia will continue to focus on increasing the share of gas in its power mix, as it aims to boost exports of oil. Yet, amid the threat of climate change and collapsing demand for oil, Aramco is hedging its bets on LNG. - LG