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ISSUE BRIEF

The Saudi Aramco-SABIC Merger: How Acquiring SABIC Fits into Aramco's Long-Term Diversification Strategy

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In August 2018, Saudi Aramco[1] announced that it would merge with Saudi Arabian Basic Industries Company (SABIC)[2] by purchasing 70 percent of the company from the Public Investment Fund (PIF) of Saudi Arabia, the kingdom's sovereign wealth fund (SWF). On March 27, 2019, Aramco, Saudi Arabia's state-owned oil company, signed a formal agreement that stated a purchase price of $69.1 billion.[3] Aramco has, meanwhile, ramped up its efforts to privatize through an initial private offering (IPO) on the Tadawul stock exchange in Riyadh on December 4, 2019. If Aramco is to join the ranks of publicly traded international oil companies (IOCs), it must be transparently managed and must diversify in order to resemble other IOCs in word and deed. Aramco has made great strides towards transparency through the release of two prospectuses: one in April 2019, prior to the issuance of $12 billion in bonds, and another on November 8, 2019, prior to the floating of its shares. Its acquisition of SABIC, a highly respected chemical company, represents a move towards diversification.

This issue brief studies SABIC's importance to energy and chemical businesses worldwide, and it raises questions about whether the merger

1 This paper will use "Saudi Aramco" and "Aramco" in reference to the same company, whose legal name is the Saudi Arabian Oil Company.

2 Ed Crooks and Anjli Raval, "Saudi Aramco's CEO Defends SABIC Deal," *Financial Times*, September 24, 2018, https://www.ft.com/content/0d5981dc-bf8c-11e8-95b1-d36dfef1b89a.

3 "Saudi Aramco Signs Share Purchase Agreement to Acquire 70% Majority Stake in SABIC From Public Investment Fund," SABIC, March 27, 2019, https://www.sabic.com/en/news/17819-saudi-aramco-signs-share-purchase-agreement-to-acquire-70-majority-stake-in-sabic-from-public-investment-fund.

Saudi Energy Minister Prince Abdulaziz bin Salman speaks during a news conference in Jeddah, Saudi Arabia September 17, 2019. *REUTERS/Waleed Ali*

with Aramco will require a substantial reorganization of SABIC—along with accompanying concerns about both the workforce and jobs. Finally, it analyses the relationship between Aramco and SABIC, and what the merger's implications will be for the intricate relationship between the various bureaucracies and the leadership in Saudi Arabia.

On September 14, 2019, Iran attacked Aramco's oil-processing facilities at Abqaiq.[4] The damage from the attack cut Aramco's production capacity by two to three million barrels/day (b/d) for a few days. The attack occurred almost two weeks after a series of decrees issued by Saudi Crown Prince Mohammad bin Salman (MBS) removing Saudi Minister of Energy Khalid Al-Falih from his position at the head of the Ministry of Energy, which was previously the Ministry of Energy, Industry, and Mineral Resources, as well as from the board and chairmanship of Aramco. Al-Falih was replaced at the ministry by Prince Abdulaziz bin Salman, and at Aramco by Governor of the PIF Yasir Al-Rumayyan. In spite of these significant events, the new leaderships at Aramco and the ministry have proceeded with the IPO of Aramco, albeit on a diminished scale. On the other hand, these developments should not directly affect the Aramco-SABIC merger. However, the shifts in leadership will have lasting implications for Aramco's future strategy and direction, and they throw the tensions between Saudi technocrats and MBS into sharp relief, highlighting the importance of understanding the dynamics between SABIC, Aramco, and the PIF.

SABIC

SABIC was established by royal decree in 1976 and its aim was to help diversify Saudi Arabia's dependence on crude oil. At the time, natural gas produced in the kingdom was associated with the extraction of crude oil and, in fact, was an impediment to oil exports, since natural gas must be removed before oil can be shipped. Most of it was flared on the spot. The kingdom soon realized that the natural gas should be collected and used to provide industrial opportunities as well as benefit citizens by providing low-cost electricity and desalinated seawa-

4 Ben Hubbard, Palko Karasz and Stanley Reed, "Two Major Saudi Oil Installations Hit by Drone Strike, and U.S. Blames Iran," *New York Times*, September 15, 2019, https://www.nytimes.com/2019/09/14/world/middleeast/saudi-arabia-refineries-drone-attack.html.

ter. SABIC was tasked with using natural gas to produce chemicals, thus adding value to the kingdom's main basic product: crude oil. In 2018, SABIC had total sales of $45 billion, with a net profit of $8.5 billion on total assets of $85 billion and equity of $59 billion.[5] In just over forty years, SABIC has become the world's fourth-largest chemical company in terms of sales.[6]

There has been a division of labor in the kingdom's chemical industry between Aramco and SABIC. Aramco mostly produces chemicals from the liquid products obtained from crude oil, mainly naphtha, which are then transformed by Aramco's joint ventures—Sadara Chemical Company and Petro Rabigh. For its part, SABIC processes the various gases—mainly methane, ethane, propane, and butane—into hundreds of chemicals, including fertilizers.

SABIC is organized into four business divisions: petrochemicals, agri-nutrients, metals, and specialty chemicals. Each division manages SABIC's interests in the 123 joint ventures it has established both in the kingdom and overseas.

At the time it was established, SABIC had no homegrown knowledge of chemical manufacturing and so it developed chemical production lines in joint ventures with foreign partners. SABIC became a holding company for numerous plants to make products for export that were marketed by their venture partners. SABIC uses the methane in natural gas to make methanol and ammonia, which is then transformed into urea. This turned the kingdom into a major exporter of fertilizers. SABIC also uses ethane and propane to produce a number of chemical products including MEG, glycols, polymers like HDPE, LDPE, LLDPE, polypropylene polycarbonates, etc. It built a 5-million-tons/year (t/y) steel industry using German technology for direct reduction of iron ore into steel using methane.

Eventually, SABIC developed a number of research centers. It has become mostly independent of foreign venture partners, bringing its own products and technology to world markets and registering thousands of patents for its own technology. SABIC continued its expansion within the kingdom, but also abroad, buying substantial production lines from international companies. It became the largest producer of ethylene in Europe with plants in Germany, the Netherlands, and Ireland. The company, which based all its productions in the kingdom on the supply of natural gas from Aramco at prices well below world markets, became a chemical company like all the others in Europe and the United States, which use natural gas and crude oil-based liquids like naphtha bought locally at world prices. Aramco only recently started growing its liquids-based chemicals; SABIC mastered these skills over the past twenty years in European and Asian markets.

Perhaps the most striking part of SABIC's evolution was its approximately $11.6-billion purchase of General Electric Co.'s GE Plastics business in 2007.[7] This purchase turned SABIC into a household name in the chemical industry. GE's advanced chemicals were mainly used by the automobile industry worldwide. The purchase provided SABIC with advanced research and plants in thirty-five countries, and put the company on par with the world's biggest players, like BASF. SABIC now runs thirty-nine plants alone or in joint ventures and has a substantial presence in seventy-two countries; 85 percent of its sales are abroad, of which 39 percent are in Asia and 23 percent in Europe.[8]

Within Saudi Arabia, SABIC developed ventures with local companies. For example, it partnered with Ma'aden, a mining company, to develop a world-class phosphate industry to produce the high-value fertilizer diammonium phosphate (DAP), which is made from phosphoric acid and ammonia. Ma'aden provides the phosphoric acid, which is made through reactions between sulfuric acid and rock phosphate, while SABIC manufactures ammonia. Thus, in the joint venture with Ma'aden, SABIC is part producer of high-value DAP, one of the largest in the world. It is worth noting that Aramco is involved in the entire production chain. Aramco provides the sulfur that is used by Ma'aden to produce sulfuric acid and the methane used by SABIC to produce ammonia.

Another development for SABIC is its joint venture with Aramco to research, build, and operate a crude-oil-to-

5 *Saudi Basic Industries Corporation (SABIC) and Its Subsidiaries: Interim Condensed Consolidated Financial Statements for the Three Months Period and Year Ended 31 December 2018 and Independent Auditor's Review Report*, audited by Ernst & Young & Co., SABIC, January 27, 2019, https://www.sabic.com/assets/en/Images/SABIC-Q42018-Condensed-Interim-Financial-Statements-signed_tcm1010-17336.pdf.

6 Alexander H. Tullo, "C&EN's Global Top 50 chemical companies of 2017," *Chemical & Engineering News*, July 30, 2018, https://cen.acs.org/business/finance/CENs-Global-Top-50-chemical/96/i31.

7 Lina Saigol and Francesco Gurrera, "Sabic to acquire GE unit for $11.6bn," *Financial Times*, May 21, 2007, https://www.ft.com/content/676e04b8-06f7-11dc-93e1-000b5df10621.

8 *Saudi Arabian Oil Company Base Prospectus*, Saudi Arabian Oil Company, April 1, 2019, https://www.rns-pdf.londonstockexchange.com/rns/6727U_1-2019-4-1.pdf.

chemicals (COTC) production line, one of the world's first. Aramco is already developing portions of the technology in joint ventures with various foreign partners like Technip, Axens,[9] and Chicago Bridge & Iron Company. The $20-billion venture, to be based in Yanbu on the Red Sea, will process 400,000 b/d of oil to produce about 9 million t/y of chemicals.[10] This process would allow Aramco to bypass refining to transform crude oil directly into various chemicals, which will greatly increase the value added to each barrel of oil.

As part of the merger, SABIC will be able to bring to the deal its de facto control of Saudi Kayan, a Saudi chemical company. Saudi Kayan produces some of the most advanced and high-value chemicals in the SABIC group.

SABIC has a reputation of being a savvy borrower and issuer of both debt and equity. The company has always been popular with Saudi investors. Today, the Saudi public owns 30 percent of its shares through the Tadawul stock exchange in Riyadh. SABIC has always been able to pay generous dividends of 20 percent of the par value of the shares, which is the price most shareholders paid to acquire them at flotation, making the company one of the most coveted by the kingdom's investors. The PIF holds the balance of the shares: 70 percent.[11] SABIC has issued three billion shares, which are trading in a narrow range at about $32.5 a share, for a capitalization of about $98 billion,[12] valuing PIF's share to be bought by Saudi Aramco at about $70 billion, close to the agreed-upon acquisition price of $69.1 billion. As of December 5, 2019, however, the share price had decreased to $24. Should the shares be marked to market on the Saudi Aramco balance sheet, this would translate to a loss for Saudi Aramco of about $18 billion.[13]

Notwithstanding SABIC's activities in fertilizers and metals, it is still mainly a chemical company. In 2018, chemicals and specialty chemicals represented about 88 percent of its sales[14] and 93 percent of total profits,[15] while fertilizers represented less than 3 percent of its sales and 5 percent of profits, and metals were 6 percent of its sales, but lost money.

However large and profitable SABIC may be, it pales in comparison to Aramco, which in 2018 had $355.94 billion in sales and $111.071 billion in net income after taxes and royalties paid to the state.[16] Aramco is very profitable in that its cost of production is reputed to be less than $6/barrel on sales at above $60/b presently, while SABIC's profits, considered in the industry to be quite competitive, are at 15 percent of sales. SABIC, like most chemical companies, has high costs of labor and feedstock.

Aramco's Strategy: Transparency

In January 2016, long before the announcement of Aramco's merger with SABIC, MBS declared that Aramco would be privatized with a goal of issuing 5 percent of its equity to the public to raise $100 billion.[17] The funds would be earmarked for transfer to the PIF to use in its investment strategy of buying high-tech, non-oil related firms locally and overseas to diversify the Saudi economy. The privatization effort turned out to be much more complicated than expected, as the financial markets insisted that Aramco provide full disclosure of all its activities, assets, liabilities, profits, and losses, a mammoth task for a company with sales of over $355 billion, numerous joint ventures, and without any previously published data.

Part of the conundrum for Aramco was the necessity to disclose how much the company gives the state to fund the national budget. In 2017, Aramco announced that it would pay the state 50 percent of its net profits. This was lower than the previously estimated 85 percent of profits and more in line with payments made by other national oil companies. On the other hand, Aramco disclosed that it would also pay a royalty of 20 percent of oil sales to the state for the use of

9 Robert Brelsford, "Aramco signs deal to advance crude-to-chemicals technology," *Oil & Gas Journal*, February 4, 2019, https://www.ogj.com/articles/print/volume-117/issue-2/general-interest/aramco-signs-deal-to-advance-crude-to-chemicals-technology.html.

10 Robert Brelsford, "Aramco, SABIC select location for crude-to-chemicals complex," *Oil & Gas Journal*, November 1, 2018, https://www.ogj.com/articles/2018/11/aramco-sabic-select-location-for-crude-to-chemicals-complex.html.

11 "Saudi Basic Industries Corp.," Tadawul, accessed March 12, 2019, https://www.tadawul.com.sa/wps/portal/tadawul/market-participants/issuers/issuers-directory/company-details/!ut/p/z1/04_Sj9CPykssy0xPLMnMz0vMAfIjo8zi_Tx8nD0MLIy83V1DjA0czVx8nYP8PI0MDAz0I4EKzBEKDEJDLYEKjJ0DA11MjQzcTfW99KPSc_KTIGZlIJQUWKkaqBqUJKYklpfmqBroRyXn5xYk5lUGV-Ym5QMVGRkYGuiHEzK1IDsop6zSUREAqh9qDw!!/.

12 Ibid.

13 Ibid., accessed December 5, 2019

14 *Growing Through Transformation: Annual Report 2018*, SABIC, 2019, https://www.sabic.com/assets/en/Images/SABIC-AR-English-2018_tcm1010-18629.pdf. 2018 Petrochemical & Specialties sales represented $40.4 billion, $8.9 billion net income.

15 *Saudi Arabian Oil Company Base Prospectus: Global Medium Term Note Programme*, London Stock Exchange, April 1, 2019, https://www.rns-pdf.londonstockexchange.com/rns/6727U_1-2019-4-1.pdf. Percentages computed from the US$ figures.

16 Ibid.

17 Samantha Gross, "The Saudi Aramco IPO is a game-changer for the Saudi economy," Brookings Institution, June 6, 2017, https://www.brookings.edu/blog/markaz/2017/06/06/the-saudi-aramco-ipo-is-a-game-changer-for-the-saudi-economy/.

A view shows the installation reconstructed after the attack at Saudi Aramco oil facility in Khurais, Saudi Arabia October 12, 2019. *REUTERS/Maxim Shemetov*

the oil fields.[18] This arrangement kept its contribution to the state fairly even, but now fully known to the world markets.

Until the spring of 2019, financiers and the financial press had raised concerns about lending to or buying shares of Aramco because of the company's lack of transparency even beyond the funds it was providing to the state. In order to issue publicly traded bonds or sell equity shares on the world's financial markets, Aramco would have to provide independently audited financial statements of its extensive operations and audited disclosures of the oil resources to which it has access. On April 1, 2019, the company eventually issued a 450-page prospectus for the issuance of the "Global Medium Term Note Programme."[19] This prospectus provides investors with audited statements on financial results and on oil reserves[20] and goes a long way towards satisfying investors.

In late November 2019, Saudi Aramco issued a second prospectus with updated information on its own figures and those of SABIC. It then decided to limit the IPO to 1.5 percent of the capital, down from the original 5 percent announced in 2016. Furthermore, Saudi Aramco decided to float shares only on the Tadawul stock market in Riyadh. This decision came on the heels of intense criticism of the Kingdom in the international press for numerous issues, ranging from a perceived overvaluation of the company to the country's human rights record. The placement of shares proceeded on the Tadawul exchange at the price of SAR32 ($8.53) per share. The company successfully

18 Ellen R. Wald, "Saudi Aramco Is The Most Profitable Company In The World, But Where Is All The Money Going?," *Forbes*, April 1, 2019, https://www.forbes.com/sites/ellenrwald/2019/04/01/saudi-aramco-is-the-most-profitable-company-in-the-world-but-where-is-all-the-money-going/#3002571b57d8.

19 *Saudi Arabian Oil Company Base Prospectus*.

20 Ibid. The oil and gas reserves were audited by DeGolyer & MacNaughton of Dallas, Texas. Total reserves for oil, liquefied petroleum gas (LPG), and natural gas were estimated at 256.890 billion barrels equivalent.

raised $25.6 billion, but it will not attempt to raise more from the international markets for the time being.

Aramco's Strategy: Diversification

Prior to Khalid Al Falih's dismissal as chairman of Aramco, the company had stated its intent to expand into natural gas. This was part of a strategy to become an IOC-like company, albeit the largest IOC in the world. BP, Total, Shell, and even ExxonMobil describe themselves as energy companies, while in the past they were merely "oil companies." These companies, as well as Aramco, view natural gas as the most important fuel of the near future. IOCs have seen the writing on the wall and know that, in the long term, renewable energy will dominate. But before this happens at a scale large enough to displace fossil fuels and oil, in particular, natural gas will provide a cleaner source of energy to bridge energy demand from coal into renewables. Natural gas is also a primary feedstock for the chemical industry. Most of the ethylene and propylene production in the United States and Russia comes from natural gas. SABIC's production in Saudi Arabia is 100 percent based on natural gas. Saudi Arabia is rich in gas, but not rich enough to be an international player. To remain the dominant player in the hydrocarbon business, Aramco needs to become as dominant in gas as it is today in crude oil and petroleum products. Only then can it be compared favorably to ExxonMobil, Chevron, Shell, Total, or BP. Al-Falih, the former minister, announced at the Atlantic Council Global Energy Forum in Abu Dhabi in January 2019[21] that Aramco would pursue a strategy to become more international in the natural gas industry worldwide. This was reiterated by Aramco's CFO Khalid Al-Dabbagh in August 2019.[22] This is an important change to the kingdom's energy policy, as until now Aramco had not been involved upstream outside the kingdom.

As Aramco seeks greater diversification, there is a business logic in its wanting to benefit from SABIC's experience and technologies in chemicals. The merger announcement also comes at a time when Aramco is greatly expanding its own chemical and refining downstream operations.

Aramco's merger with SABIC fits with a strategy to make the Saudi oil giant like most other large international oil companies, except much bigger. Indeed, all IOCs have a very large presence in the downstream as well as the upstream and increasingly seek to become dominant in the natural gas business and in the downstream thereof. SABIC will provide Aramco a major boost in its presence in the chemical industry in Saudi Arabia and worldwide. Khalid Al Falih had devised a strategy to expand overseas, get into the natural gas market—both shale-based and traditional, and extensively grow its downstream chemical business at home and abroad. This strategy ultimately would allow Aramco to be viewed by the markets as being comparable to—or even more significant than—ExxonMobil and would allow it to be valued at the same multiple of earnings as most other IOCs in the world. For example, ExxonMobil, which is the largest of the IOCs involved in upstream, downstream (refining and chemical processing), and all the way to distribution, sees its shares valued on average at a P/E—price-to-earnings ratio, otherwise called a "multiple"—per share of about twenty-four.[23]

Today, in the upstream, Aramco operates the largest oil fields in the wo rld and is the largest producer of crude oil. It has the ninth-largest reserves and eighth-largest production of natural gas,[24] much of it associated with its crude oil production. However, it does not export or import any gas, nor does it use large volumes of gas for downstream production activities. Until now, the natural gas produced has been gathered and processed in large plants[25] and then sold to utility companies for water desalination and electricity production, or to a lesser extent to SABIC for transformation into chemicals and fertilizers.

In the downstream, Aramco is the fourth-largest refiner in the world, with a stated intent to increase its capacity to 10 million barrels per day (b/d) from 4.9 million b/d today.[26] Aramco has important investments in chemicals, but it is still relatively small in this segment which it owns

21 Former Saudi Energy Minister Khalid Al-Falih, "An Update On Saudi Vision 2030 & The Oil Market," (remarks and discussion, Atlantic Council Global Energy Forum in Abu Dhabi, United Arab Emirates, January 12, 2019), https://www.youtube.com/watch?v=uxgBpFITFGw&list=PLrmyxz4euJD-SkLq4N13ssYDUbeNfuCMR&index=13.

22 Harry Weber, "Saudi Aramco talks up global gas ambitions in inaugural investor conference call," *S&P Global Platts*, August 12, 2019, https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/081219-saudi-aramco-talks-up-global-gas-ambitions-in-inaugural-investor-conference-call.

23 Jean-François Seznec, "Saudi Aramco's downstream push will increase its value," EnergySource, March 19, 2018, https://www.atlanticcouncil.org/blogs/energysource/saudi-aramco-s-downstream-push-will-increase-its-value.

24 *BP Statistical Review of World Energy 2019*, BP, June 2019, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf.

25 "Saudi Targets Major Gas Gains, But LNG Imports Loom," Middle East Economic Survey, December 15, 2017, http://archives.mees.com/issues/1727/articles/55407. Most of the gas in Saudi Arabia is produced as associated gas to the crude oil. However, Saudi Aramco has developed two large offshore dry gas fields: Hasbah and Arabiya. All the gas is treated in large gas plants, the main ones being Wasit, Midyan, and Fadhili.

26 *Saudi Arabian Oil Company Base Prospectus*.

An investor walks past a screen displaying stock information at the Saudi Stock Exchange (Tadawul) in Riyadh, Saudi Arabia June 29, 2016. *REUTERS/Faisal Al Nasser*

in joint ventures with foreign companies that are fully responsible for design, operations, and marketing. Hence, the addition of SABIC will make Aramco a major player not only in the kingdom, but worldwide based on Saudi management and technology.

Aramco joining the same league as the world's largest IOCs will require hundreds of billions of dollars to diversify and expand the company worldwide. Thus, it appears Aramco would have to use internally any funds raised by the IPO. When first announced by MBS in 2016, the crown prince valued Aramco at $2 trillion, and thus the 5 percent to be sold to the public at $100 billion. This amount, at the time, was expected to be paid to the PIF to fund a portion of its $400-billion planned expansion in non-oil related industries, in line with its purview to diversify the kingdom's assets. However, as the IPO is taking a great deal longer than expected, the Saudi leadership may have considered the sale of some of its existing holdings as an effective way for the PIF to rapidly raise funds.[27]

The PIF's largest investment is the ownership of 70 percent of SABIC.[28] The merger also offers benefits to Aramco as it provides it with a quick expansion of its chemical business, which it is seeking to develop as part of its downstream strategy. However, at the time of the announcement it was not quite clear how Aramco would finance the transaction. Aramco decided to borrow substantial funds in international financial markets prior to the IPO, announcing in January 2019 that it would borrow between $10 billion and $12 billion[29] to finance its immediate requirements for the acquisition of the PIF's stake in SABIC. In April 2019, Aramco released the aforementioned prospectus to sell short- and medium-term bonds to be floated on the world markets. However, the memorandum did not specify that the bonds are issued for the SABIC acquisition per se. Instead, it said

27 Michael Paolo Jamias, "Saudi Arabia's sovereign wealth fund aims to expand assets to $400B by 2020," *S&P Global*, March 28, 2018, https://www.spglobal.com/marketintelligence/en/news-insights/trending/svs5nwfqymffu61zwx4vya2.

28 Prior to 2017, the PIF owned only 67.5 percent of SABIC, while the General Organization for Social Insurance (GOSI), the state-managed retirement fund of employees in the kingdom, owned 2.5 percent. In 2019, the Tadawul stock exchange reports (Tadawul.com.sa, listing # 2010) that the PIF now owns 70 percent of the shares and does not list GOSI. Thus, it is likely that the PIF bought GOSI shares sometime in 2018.

29 Former Saudi Energy Minister Khalid Al-Falih, "An Update On Saudi Vision 2030 & The Oil Market."

they were issued for "general corporate purpose," leaving the door open for Aramco to use it for its own investment plans. In any event, the $12 billion raised by this bond offering would only cover one-seventh of the amount needed to acquire SABIC.

The Aramco-SABIC Merger: Common Ground, Synergies, and Lack Thereof

SABIC is a chemical company, while Aramco is mainly an oil company. As discussed earlier, Aramco is increasing its presence in advanced chemicals, mainly through its newly opened $20-billion investment, Sadara Chemical Company, a joint venture with DowDuPont. Undoubtedly, Sadara Chemical Company is already contributing a great deal to Aramco's balance sheet, and many of the chemicals it is producing, such as urethanes, are extremely advanced and different from those produced by SABIC. Many of the chemicals, such as amines, polycarbonates, and glycol, are as advanced as the specialty chemicals produced by SABIC's affiliate Saudi Kayan. Hence, SABIC's slate of chemicals, especially the most advanced chemicals, will add a great deal to Aramco's.

Within Saudi Arabia, SABIC obtains all of its feedstock from Aramco. SABIC's productions of methanol, ammonia, and urea are very competitive because they have the advantage of being based on methane sold to it by Aramco at $1.25/million British thermal units (MMBtu), certainly the cheapest methane gas anywhere in the world. By the same token, all of SABIC's productions based on ethane are competitive, due to a price of $1.57/MMBtu offered by Aramco, making it the lowest-priced ethane in the world.[30] The kingdom's Council of Ministers decided the prices of methane and ethane in 2015. These prices were probably based on the cost to Aramco, not prices on the international markets. The price set in 2015, in spite of being low, was, in fact, a major increase as until then prices had been set at $0.75/MMBtu for both methane and ethane. The local Saudi price for propane, an important feedstock, especially for high-value advanced chemicals, is defined by a formula based on the price in Japan minus a 30 percent discount to reflect the value of local long-term contracts. In reality, however, there are no internationally agreed prices for these gases. Each market prices itself in light of the local demand, the cost of exports, and the alternative uses for the gas. For example, today the price of methane in the United States is staying mainly below $2.3/MMBtu. This is very low compared to the amount paid by Europeans for Russian gas, which oscillated between $9.4/MMBtu in September 2018 and $7.21/MMBtu in January 2019.[31]

While Saudi prices for natural gas feedstocks are low, Saudi production costs are also very low. So one can argue that the Saudis are not dumping (i.e., selling below cost) in an international trade sense. On the other hand, the low natural gas prices allow SABIC and all other users of natural gas in the kingdom to have extremely low production costs. However, the low cost at which SABIC gets its feedstock (methane, ethane, etc.) means that when Aramco takes over SABIC and the cost of feedstock is consolidated, the oil company will not see any cut in its overall costs, thereby negating one of the main potential synergies of the deal.

Traditionally, when chemical companies merge or buy each other's divisions, some of the products are the same and thus production facilities can be rationalized and oftentimes closed to make place for the most efficient ones within the merged firms. A number of the products made by Aramco's affiliates—Sadara Chemical Company and Petro Rabigh—like HDPE, LDPE, LLDPE, and some amines, are already manufactured by SABIC. Hence, a consolidation of companies may bring a consolidation of production lines, which would likely result in a rationalization of facilities and personnel.

Unforeseen Consequences of the Aramco-SABIC Merger

SABIC and Aramco have been successful in providing jobs and training to Saudis. In fact, Saudis make up between 85 percent and 90 percent of their employees on the shop floors and in the engineering and management departments. Rationalizing some large production lines could lead to significant layoffs of highly skilled and highly paid Saudis. This would go against MBS's Vision 2030 plan, which aims to create well-paid, high-quality technical jobs for Saudis.

Some of SABIC's affiliates have advanced products and could help Aramco move in the downstream in an even more sophisticated way and perhaps allow it to expand from and/or bypass its present dependence on foreign companies like DowDuPont, Sumitomo Corporation, or new partners it will pair up with in refineries being developed overseas.

30 Ben Gonzalez, "The Impact of Saudi Ethane Price Increases on Competitiveness," *S&P Global Platts*, January 19, 2016, https://tinyurl.com/yyd5dcds.

31 "Commodity Prices: Russian Natural Gas," IndexMundi, accessed March 16, 2019, https://www.indexmundi.com/commodities/?commodity=russian-natural-gas.

Besides the advanced chemical products, there appear to be two additional advantages that SABIC may bring to Aramco's push in chemicals. One is SABIC's large research department, which has issued 12,291 patents.[32] Aramco is also very strong in research and development, but mainly in the oil upstream. As such, it would appear that a merger will greatly help Aramco expand its research to all the aspects of modern IOCs, including chemicals.

A merger would also provide Aramco with an existing, extensive, and successful worldwide marketing organization. Advanced chemicals require specialized sales efforts. The chemical industry refers to such efforts as "technical sales." These require a large number of salespeople with extensive knowledge of the industry, intimate understanding of the clients' technical requirements, and deep experience in chemical manufacturing. All this takes many years to build. By getting access to SABIC's sales organization, Aramco will be able to hit the ground running in its existing and future chemical productions and reduce its dependence on its joint venture partners. Furthermore, as it develops its downstream activities in Asia, Aramco's industrial productions from its new and planned refineries in China, South Korea, India, Malaysia, or Indonesia will be able to draw on SABIC's experience and people. Even in Europe and the United States, SABIC has large sales organizations that would benefit any of Aramco's growth in natural gas markets and downstream refining.

Financial Review

SABIC Acquisition as Part of an Overall Investment Strategy

Aramco has agreed to pay $69.1 billion to the PIF for SABIC, close to today's market value of its shares. Even for a company like Aramco, estimated at $1.7 trillion during the December 4, 2019, IPO,[33] this is a large amount.[34] Al-Falih, then-chairman of Saudi Aramco and minister of energy, together with the company's president, Amin Nasser, had announced increases in the company's total refining capacity over 10 million b/d at a cost of $100 billion[35] and in the downstream chemicals in these refineries. While in government, Al-Falih had announced that Aramco would build a sizable natural gas portfolio[36] in Russia, the United States, and Australia. Altogether, these investments aim to turn Aramco into the largest integrated oil and gas major in the world. Thus, even without the acquisition of SABIC, Aramco would require hundreds of billions of dollars.

Aramco could probably raise a large amount of money if it were to sell equity shares to the markets worldwide. The proposed IPO of 5 percent of Aramco's shares could have raised $100 billion and another $20 billion for each additional percentage point. However, as mentioned, it did not raise more than $25.6 billion, and it is unlikely to raise more soon. Hence, it is difficult to see how Saudi Aramco will manage to raise the funds it needs for its diversification, while providing funds to the PIF for the latter's grand projects, and continuing to fund 85 percent of the country's budget and pay over $75 billion in dividends to shareholders in 2020.[37]

Structure of the Payment to PIF by Saudi Aramco

It was mentioned[38] in 2016 that the proceeds of the Aramco IPO would go to the PIF. It was, however, never very clear how this would happen, since the PIF does not own any Aramco shares. The Saudi Ministry of Energy, Industry, and Mineral Resources (MOE)[39] became the new owner of the Aramco shares issued in December 2017, when Aramco became a corporation.[40] Thus, for the IPO proceeds to go to the PIF, the MOE would have had to donate the funds to the PIF, which opens a bureaucratic can of worms. Would the transfer be merely a gift or an acquisition of an ownership interest in the PIF? It could also open a discussion on transparency. If Aramco is expected to be transparent to be accepted by the world financial markets, the PIF would

32 "Facts and Figures," SABIC, accessed October 3, 2019, https://www.sabic.com/en/about/corporate-profile/facts-figures.

33 Jean-François Seznec and Samer Mosis, *The Financial Markets of the Arab Gulf: Power, Politics and Money*, (New York: Routledge, 2019), Chapter 6.1.

34 Kate Kelly and Stanley Reed, "Saudi Aramco to Raise $25.6 Billion in Biggest I.P.O. Ever," *The New York Times*, December 5, 2019, https://www.nytimes.com/2019/12/05/business/energy-environment/saudi-aramco-ipo.html.

35 Anthony Dipaola, "Saudi Looks to Petrochemicals for Its Next Big Projects," *Bloomberg*, October 10, 2018, https://www.bloomberg.com/news/articles/2018-10-10/saudis-look-past-crude-with-100-billion-in-downstream-projects.

36 "Saudi Arabia on the Hunt for Global Oil and Gas," *Energy Monitor Worldwide*, February 13, 2019.

37 The possibility of Saudi Aramco selling more than 5 percent of its capital was rejected out of hand by a high-ranking Saudi financial official in a private meeting with the author in Washington, DC, in March 2019. The official argued that the cost of selling equity, in the long run, would be much higher than the cost of interest on added debt.

38 Paul Warner Dobson, "Saudi Arabia's Vision 2030," Headline Hamster, October 2, 2019, http://www.headlinehamster.com/2016/10/saudi-arabias-vision-2030.html.

39 As disclosed to the author in 2018 by a senior Saudi official who had intimate knowledge of the deal and the oil/chemical business in the kingdom.

40 On September 7, 2019, the Saudi Ministry of Energy, Industry and Minerals was split into two entities, the Ministry of Energy and the Ministry of Industry. It is not clear which ministry owns the shares.

be required to be transparent as well. It is quite clear to observers of the Saudi state investment scene that the PIF does not want to be transparent. The PIF is under the control of its chairman, MBS, who seeks to direct the type of investments deemed necessary under Vision 2030, a plan that he spearheads and implements without extensive discussions or consensus building.

Rather than resolve these controversial transparency questions, the PIF and MBS appear to have decided that they could sell the PIF's holding of SABIC shares, thereby providing Aramco with a valuable asset. This seems to fit Aramco's plan of becoming an integrated international company, while paying a large sum of money to the PIF for its investment needs. Of course, this puts the burden of financing the transaction on Aramco. It has been reported that Aramco would borrow the amount needed to merge with SABIC.[41] However, borrowing $70 billion is not an easy task and may be too big even for the large appetite of the big financial companies. From a purely credit quality standpoint, for a company that has $294 billion in assets, financed for 75 percent by equity,[42] and a potential capitalization of $1.7 trillion, increasing borrowings close to $70 billion would be deemed acceptable by banks and investors. However, the sheer amount needed may make borrowings more difficult as lenders and their regulators—the Federal Reserve of the United States or the Bank of England—may balk at having their financial firms and commercial or investment banks have too big a risk in one country, especially one situated in a highly unstable neighborhood.

Aramco and its financial advisers were careful not to commit to use the proceeds of the April bond issue for the purchase of SABIC, even though the markets were expecting it. The bonds will be used for "general corporate needs."[43] Further, and most important, Aramco and SABIC have agreed on an installment purchase structure that will somewhat limit the amount of cash that Aramco needs to borrow from the markets. Aramco will give the PIF promissory notes for 64 precent of the acquisition value: $44.22 billion. The PIF can transfer the notes as it deems fit, although Aramco has the right of first refusal. Hence, should the PIF need cash rapidly it can discount the notes to the markets, or more likely transfer the notes to the Saudi Arabian Monetary Authority (SAMA), the Saudi central bank, and receive immediate payment at no or little cost, albeit at a decline in the country's cash reserves. Aramco's right of first refusal implies that it could repurchase its own note using its own cash in hand or by borrowing more from the international markets. This procedure allows Aramco to have to "only" fund one-third of the transaction up front, i.e., $24.88 billion, which it can do by drawing on its extensive cash on hand[44] and/or by more borrowings above and beyond the $12 billion obtained after the issuance of the prospectus in April 2019.

Why Cash, Why Now?

From a purely financing standpoint, and as is done in most large acquisitions worldwide, it would have made sense for Aramco to issue new shares and exchange them for the SABIC shares owned by the PIF, letting the PIF become a small shareholder of the oil giant. Using the valuation of Aramco at $1.7 trillion, $70 billion in shares would represent only 4.1 percent of the capitalization of the company.

It is also somewhat surprising that the PIF would actually give up its ownership of SABIC, which is undoubtedly its best-known investment, on which it receives dividends of over 20 percent per year of the amount invested. Originally, in the late 1970s, the PIF became SABIC's shareholder when Saudi technocrats were pushing for the rapid industrialization of the kingdom to diversify away from mere crude oil production. Started under the leadership of Khalid Al-Gosaibi and then truly developed by SABIC Vice Chairman and Chief Executive Officer Mohamed Al-Mady, the company grew aggressively to become what it is today. The leadership has changed and its new leadership seems to emphasize managing what it has rather than continuing to grow. This change may, in part, be explained by the fact that the owner, the PIF, is no longer interested in what it now views as stodgy industries—such as chemicals—and focuses instead on developing its portfolio of advanced, high-tech companies like Tesla or Uber, or high-risk, high return firms like SoftBank, not to mention new projects like the robot city of Neom.

If the PIF were to borrow money from the world markets to fund its investment programs, it could not get as favorable terms as Aramco. The fact that the PIF is opaque would not satisfy the credit requirements of the large international organizations. The PIF is owned by the state, and like all other state-controlled companies, would not borrow under the guarantee of the Ministry of Finance (MOF) and thus not be seen as a sovereign risk. Hence, the lack of transparency would most likely negatively impact any rating it would re-

41 Simon Kerr, Andrew Englad, and Anjli Raval, "Saudi Aramco appoints banks to lead bond sale ahead of Sabic deal," *Financial Times*, February 14, 2019, https://www.ft.com/content/320e4838-304c-11e9-ba00-0251022932c8.

42 *Saudi Arabian Oil Company Base Prospectus*. Computed from the consolidated audited figures.

43 Ibid.

44 Ibid. As disclosed in the audited statements of September 30, 2019. Prospectus dated November 9, 2019.

SABIC's manufacturing facility in Wilton, Teesside, United Kingdom, the world's largest low-density polyethylene (LDPE) plant. April 26, 2010. *Flickr/PressReleaseFinder*

quire for borrowing, resulting in a substantial premium over the terms obtained by the newly transparent cash-flow and asset-rich Aramco. Hence, there is some advantage to the kingdom to have Aramco borrow money at the best rates and then transfer this to the PIF through the sale of SABIC.

SABIC-Saudi Aramco Post-Acquisition Structure

SABIC's real value to Aramco is in advanced specialty chemicals and advanced plastics. These chemicals and plants are valuable and would allow the newly merged production lines to compete better than SABIC alone with giants like BASF, Bayer, DowDuPont, or large Asian chemical firms. Also, as mentioned above, a major value for Aramco will be SABIC's excellent marketing division—among the best in the industry. Aramco would gain much leverage by selling its own products with the help of SABIC's team.

If Aramco were to take a hard-nosed approach to its new investment, as any large energy company would, it could maximize its return on investment by rationalizing the whole of SABIC, not just a few product lines as seen above. It could seek to resize the company to fit more exactly within its own goals and vision. For example, Aramco could work with Ma'aden to take some of SABIC's assets. Ma'aden is a large company, originally started as a mining company to extract gold, phosphate, and bauxite. It expanded downstream into becoming a large aluminum company in a joint venture with Alcoa and a world-class phosphate-based fertilizer company in a joint venture with SABIC.

SABIC today is somewhat hamstrung by its metals division, a business that is not part of Aramco's purview. It uses a great deal of natural gas, sorely needed by Aramco and the kingdom as a whole for power, desalination, and high-value chemicals. However, in an international market saturated with steel, the metals division is not profitable. It would make corporate sense for Aramco to sell the metals division, perhaps also to Ma'aden, which is controlled by the PIF. Under Vision 2030, mining is one of the main industries to be developed to create jobs. Ma'aden itself does not have any steel investments but owns the joint venture with Alcoa producing 650,000 t/y of aluminum—a process that is fully integrated from the mining of the ore to the smelting of the metal. SABIC is also a large investor in Aluminium Bahrain B.S.C. (Alba), the aluminum company of Bahrain. Ma'aden could, therefore, become a major metals company, along the lines of industrial acquisitions in the West. SABIC's agri-nutrient division making mostly urea is not very profitable and not in the line of businesses that Saudi Aramco has been pursuing. Therefore, it would make some sense for Saudi Aramco to sell both the agri-nutrient and metals divisions, which could perhaps raise up to $10 billion and thus help pay down some of the debt incurred by Saudi Aramco under the merger.[45]

There may be some value in SABIC's commodity chemicals like its European ethylene assets and polymer businesses such as LDPE, LLDPE, and HDPE, which have low profit margins. These assets could be sold to the private sector in Saudi Arabia or to international companies. The sale would raise a few billion dollars and save much management time and efforts.

Merger and Bureaucratic Battles

Early in talks about floating shares of Aramco, there was a thought that the PIF could become the main shareholder of the oil company, just as it is the main owner of SABIC and Ma'aden. However, SAMA and the MOF are in charge of funding the kingdom's budget and finance the commonly occurring deficits of the state. They manage the kingdom's cash reserves, a large percentage of which is kept in short-term US Treasury bills. Their ability to manage the kingdom's finances is dependent on receiving revenues from oil sales—the 15 percent royalty on Aramco's oil sales and 50 percent tax on its profits from the upstream operation and 20 percent from the downstream operation. Both SAMA and the MOF would likely be reluctant to depend on the PIF's goodwill to pass on the funds it would earn as the owner of Aramco to finance the kingdom's treasury without starting major internal bureaucratic battles. Thus it is most likely that the technocrats in the MOF, SAMA, and the MOE have fought hard to stop the PIF from becoming a shareholder of Aramco.

SAMA and the MOF have traditionally acted as the bulwark against high-risk high-return schemes that ultimately could destroy the kingdom's nest egg. It is not likely that the technocratic structure of the MOF or SAMA will agree to part with $100 billion or more from the $496.8 billion cash reserve it presently controls[46] to fund the PIF, which in turn would be likely to invest in high-tech, high-risk investments like Tesla, Uber, or Neom.

It appears that the two bureaucratic factions compromised or at least got an arbitrage from the Saudi leadership in 2017, which consisted of having the PIF receive only 5 percent of the sale of the IPO shares. However, as seen above, this can create difficult legal and financial problems. A second compromise and/or arbitrage may have been obtained from the leadership whereby the PIF could sell its shares of SABIC to Saudi Aramco and thus raise substantial amounts of money for its own investments in high-tech while providing an asset with good synergy with Aramco.

Conclusion

Aramco's acquisition of SABIC has many advantages for both companies and will provide Aramco with much-needed homegrown technical knowledge of and infrastructure in the advanced chemical industry. Until now, Aramco relied solely on foreign partners to grow this segment of its activities. With SABIC's extensive advanced productions, know-how, and networks, Aramco can become a world-class player in the chemical industry and thus be at par with the world's largest energy firms. SABIC's advanced chemical lines will likely serve Aramco well, but SABIC also has divisions and product lines that would be major distractions to the management. A proper rationalization of SABIC's product lines into Aramco will create substantial redundancies within both companies and cost the kingdom a number of well-paid jobs at a time when the state's main concern is to create such jobs for young, educated Saudis. This important issue will, undoubtedly, be studied extensively by Aramco and the MOE, as well as at the highest levels of the Saudi government. Nevertheless, it will create tension within the well-educated, well-paid middle class in the country, which has until now greatly benefitted from the oil and downstream economy.

The financing of SABIC's purchase is structured to minimize the impact on Aramco. Nevertheless, $69 billion is not a small sum, especially at a time when Saudi energy policy seeks to transform Aramco into an ExxonMobil on steroids and the largest IOC in the world. Under the new leadership of Saudi Aramco, the Al Falih strategy may be curtailed to take much of Saudi Aramco's cash and credit for PIF's own projects, restricting Saudi Aramco to its traditional upstream and downstream efforts. Hence, it would forfeit its vision of becoming like an IOC and would have to limit its growth in worldwide natural gas refining with chemical operations.

45 This amount is a very rough estimate, based on valuing them at about three times their sales, as is often the case in acquisitions.

46 "Monthly Statistics," Saudi Arabian Monetary Authority, accessed October 3, 2019, http://www.sama.gov.sa/en-US/EconomicReports/Pages/MonthlyStatistics.aspx. The foreign currency reserves of the kingdom are disclosed monthly. The figure totals the deposits in foreign currencies abroad and the foreign securities held by the bans, as per table #9 in the August 2019 bulletin.

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