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King Abdullah Petroleum Studies and Research Center

# The Impact of China's Oil Cap Pathway on Saudi Arabia's Economic Transition

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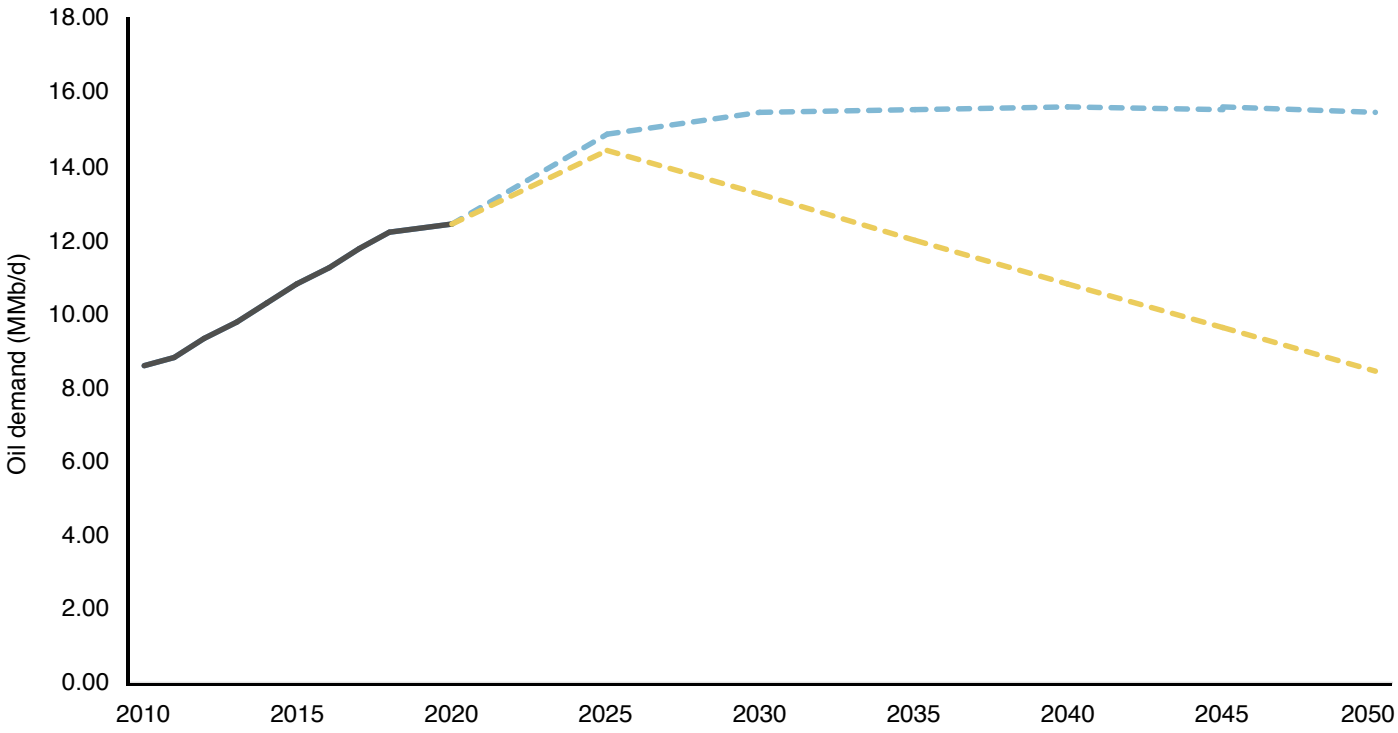
# Introduction

On October 15, several leading Chinese research institutes released a joint study, “Research on China's Oil Consumption Peak and Cap Plan” (ERI 2019). It analyzes China’s future oil demand and the policy instruments it could use to cap its use of oil. The latter would help China to manage domestic environmental pollution and limit global warming to 1.5 degrees Celsius (°C) above pre-industrial levels. According to this report, China’s oil demand could peak at 14.5 million barrels per day (MMb/d) by 2025, before declining to 12 MMb/d by 2035 and to 8.5 MMb/d by 2050. This fall would be contingent on the country driving structural changes in the transport sector and industrial development, increasing the efficiency of end-use sectors, and developing alternative fuels and materials through integrated efforts at all levels (Figure 1).

The oil cap pathway illustrated in this study presents a steep cut in China’s oil use from 2030 to 2050, diverging from many other forecasts which see oil consumption plateauing after 2030 (IEA 2019) or continuing to grow until 2040 (OPEC 2018) or 2050 (EIA 2019). These differences are largely from uncertainties surrounding three factors: to what extent China could enforce policy changes, how fast new technological solutions could be used, and how the market adapts to new ways of consuming energy and producing goods.

China taking drastic measures in pursuing an oil cap pathway would affect global energy markets. Would this pathway reduce energy collaboration between China and Saudi Arabia? And how might this impact Saudi Arabia’s economic transition?

**Figure 1.** The future pathway of China’s oil demand.



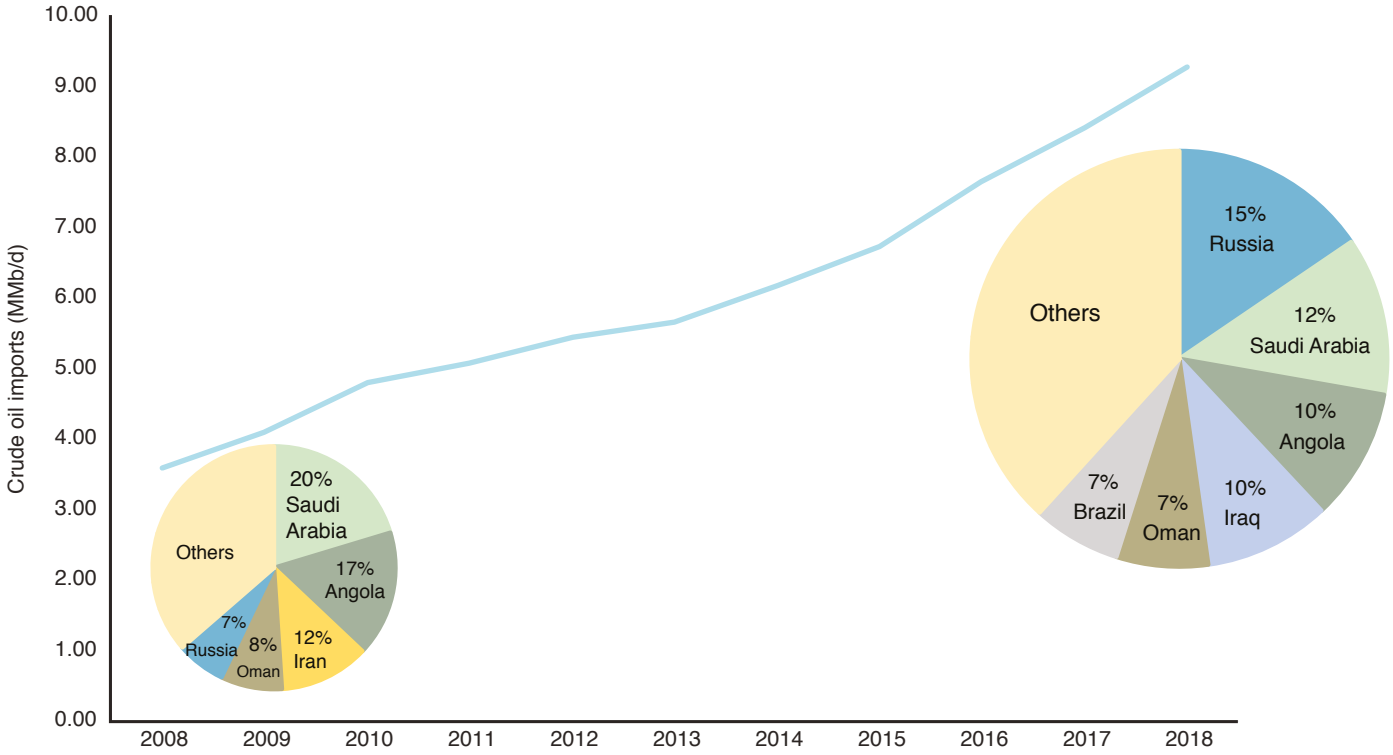

Source: ERI (2019).

## Impacts on the oil trade

China's reliance on crude oil imports has grown quickly from 50% in 2008 to 73% in 2018, during which time its annual crude oil consumption surged from 7 MMb/d to 12.6 MMb/d. Although the share of Saudi Arabian oil in China's total crude oil imports declined from 20% to 12% from 2008-2018, crude exports from Saudi Arabia to China remained stable at around 1 MMb/d (Figure 2). In 2019, Saudi Arabia's crude oil exports to China have reached a record high of 1.9 MMb/d after the United States Iranian sanctions waivers were withdrawn in May.

The stability of the oil trade between Saudi Arabia and China has reflected the needs of both countries to secure their economic growth. Under the framework of China's Belt and Road Initiative (BRI) and Saudi Arabia's Vision 2030, cooperation between both countries has quickly extended from the oil trade to the investment in and construction of new industrial chains and new energy plants. Increased political trust, improved people-to-people exchange and more integrated economic cooperation could enhance the oil trade between the two countries. The comprehensive and strategic partnership established between China and Saudi Arabia could largely alleviate any potential negative impacts from global geopolitical and market dynamics, including any fall in Chinese demand.

**Figure 2.** China's crude oil imports and major trading partners.




Source: KAPSARC analysis based on CEIC data.

## Impacts on the petrochemicals trade

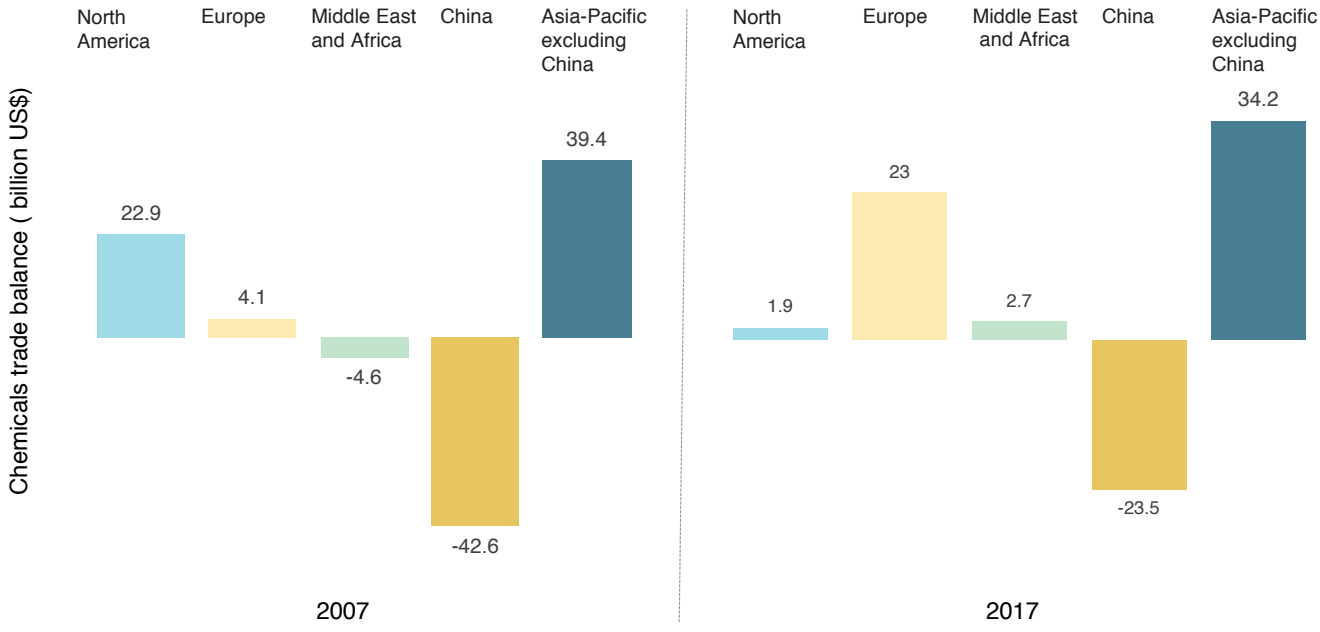
Falling demand for oil from transport, China's largest oil consuming sector in the last decade, could be bad news for oil producers. Under the oil cap pathway, two thirds of oil cuts would come from fuel switching and efficiency improvements in the transport sector, leading to a decline in transport oil use in total final oil consumption, from 57.7% in 2017 to 33% by 2050.

Oil use in the petrochemicals sector might present a different story. Even under the oil cap pathway, China's rising demand for petrochemicals would drive oil demand for use in domestic petrochemicals production, growing its share in total final oil consumption from 15.3% in 2017 to 42.4% by 2050. The petrochemicals sector would see rapid growth in oil consumption, from 1.4 MMb/d in 2017 to 3.8 MMb/d by 2035, with a slight decline to 3.6 MMb/d by 2050 (ERI 2019).

It will be crucial for China to adjust its foreign trade policy if it is to manage the growth of oil demand for use in its petrochemicals sector. Reducing its exports of petrochemical products and increasing imports of basic petrochemical materials would help China improve its energy security and environmental quality.

This suggested change would obviously have a positive impact on the petrochemicals trade between China and Saudi Arabia. China is the largest trading partner for Saudi Arabia in chemicals, representing 25% of total chemical exports from the Kingdom. Saudi Arabia is the third largest trading partner for China in chemicals, accounting for 8.3% of its total imports. China's chemical imports from Saudi Arabia have grown substantially, from 0.3 million tonnes in 1992 to 10 million tonnes in 2017 (GPCA 2019). This trend of growing imports from the Kingdom could be maintained even if China continued to decrease its chemicals trade deficit, as

**Figure 3.** Chemicals trade balance (US$ billions) by region, 2007 and 2017.




Source: Deloitte (2019).

it has done over the last ten years (Figure 3). It is almost impossible to achieve the oil cap pathway if China continues to pursue a high level of self-sufficiency in major basic chemicals. Instead, a closer partnership between Saudi Arabia and China could be more favorable, stimulating Saudi Arabia's petrochemical exports and meeting future demand from China for petrochemicals in a safer way.

## Investments for transition

The investment landscape of China's petrochemical production facilities will change when its economy shifts toward consumption-driven growth. Lifestyle changes and new industrial development will drive the growth of specialty chemicals and more sophisticated chemical products. For example, the growing demand for online grocery shopping has resulted in an increasing demand for food packaging materials, and the high penetration of electric vehicles is increasing the demand for new battery materials. Meanwhile, environmental regulations on industrial production and plastics recycling have become stricter. New national standards are being enforced to improve industrial energy productivity and reduce pollutants.

Like many other international players, Saudi chemical producers could expand their businesses by investing in China's local production facilities. Saudi Arabia's overseas production grew 6.4% per year from 2007-2017. Its overseas capacity will reach 34 million tonnes by 2027, with around 22 million tonnes in China (GPCA 2019). However, Saudi chemical producers will likely have to take a more proactive approach in managing the challenges of these strategic and structural changes in China. This will include developing new technologies and processes to increase the efficiency and yield of chemical production for a wide variety of products, and designing innovative ways to recover and repurpose plastic waste.

Collaborative efforts between Saudi Arabia and China will play a prominent role in shaping the future of the petrochemicals sector. Saudi Arabia has started to develop new slates of chemical products in the Kingdom by making significant investments in developing downstream industries and high-value chemicals. Increasing Chinese investment in these projects would be a win-win for both countries. Moreover, jointly developing new capacity along the BRI economies to serve the global market would make strategic sense for both countries.

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