

Data Insight

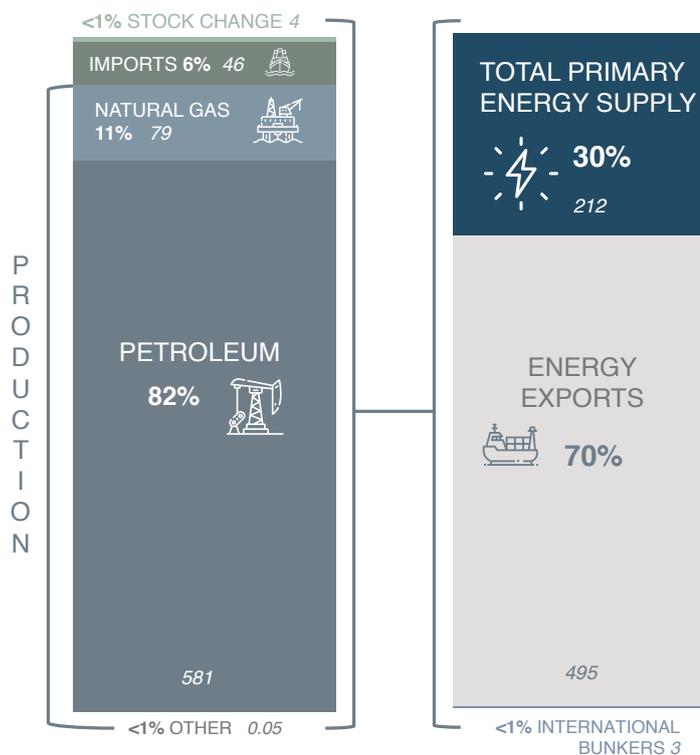
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Charting Saudi Energy Flows

KAPSARC has developed an energy flow chart for Saudi Arabia. The graphic provides a comprehensive view of the Kingdom’s energy profile, breaking down energy supply by source, sector, and electric power.

In 2018 (the latest year of data available),¹ Saudi Arabia produced 660 megatonnes of oil equivalent (Mtoe) of primary energy. In the same period, the Kingdom imported approximately 46 Mtoe and exported 495 Mtoe, making the country one of the largest net exporters of energy in the world.

Figure 1: Primary Energy in Saudi Arabia (Mtoe).



Source: KAPSARC, IEF.

¹ KAPSARC in conjunction with the International Energy Forum (IEF) collected and compiled this dataset to create “KAPSARC Saudi Arabia Energy Balances.” Originally measured in different units, the dataset was converted to megatonnes of oil equivalent. This KAPSARC-IEF energy balance consolidation exercise of publicly available datasets was largely successful, and sees a consistency among other reports within a 5% margin. There are opportunities for further improvements, especially on the granularity of energy consumption. For more information and to access the dataset visit the KAPSARC Data Portal: <https://apps.kapsarc.org/appboard/ebalance>

Petroleum is the largest source of energy in Saudi Arabia, satisfying 63% of the country's primary energy needs (Figure 2). The transport and electric power sectors are the largest consumers of oil in the Kingdom. A significant amount of petroleum also goes to 'non-energy use,' including fuels used for chemical feedstocks and non-energy products. For example, Saudi Arabia has a large petrochemical industry, which uses both petroleum and natural gas as raw materials to produce various synthetic products.

Saudi Arabia consumes all its natural gas domestically. The industrial sector uses about one quarter of total Saudi gas, primarily to power chemical and petrochemical facilities. However, it is the electric power sector that uses the bulk of natural gas, with the country making increasing efforts to transition away from burning petroleum for electricity generation. These efforts help free up more crude oil for export and for greater non-energy use within the Kingdom, which will lead to changes in the energy flows depicted in this chart.

The chart is likely to see other significant changes in the coming years. Saudi Arabia has an enormous potential for solar power generation. Just last year the Kingdom connected its first utility-scale solar photovoltaic project to the national grid, and there are several other projects in the pipeline. There are also major plans for wind power, with the 400-megawatt Dumat Al Jandal project soon to become the country's first wind farm. The Kingdom also intends to develop a large amount of green hydrogen for a variety of feedstock and energy uses, with one plant already under construction in Neom.

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