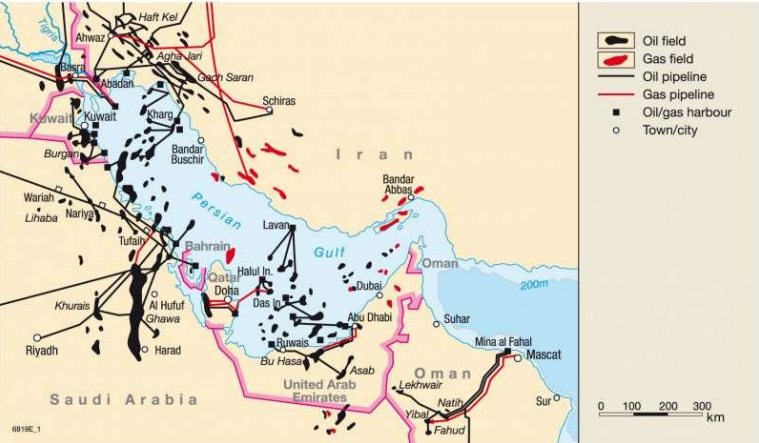


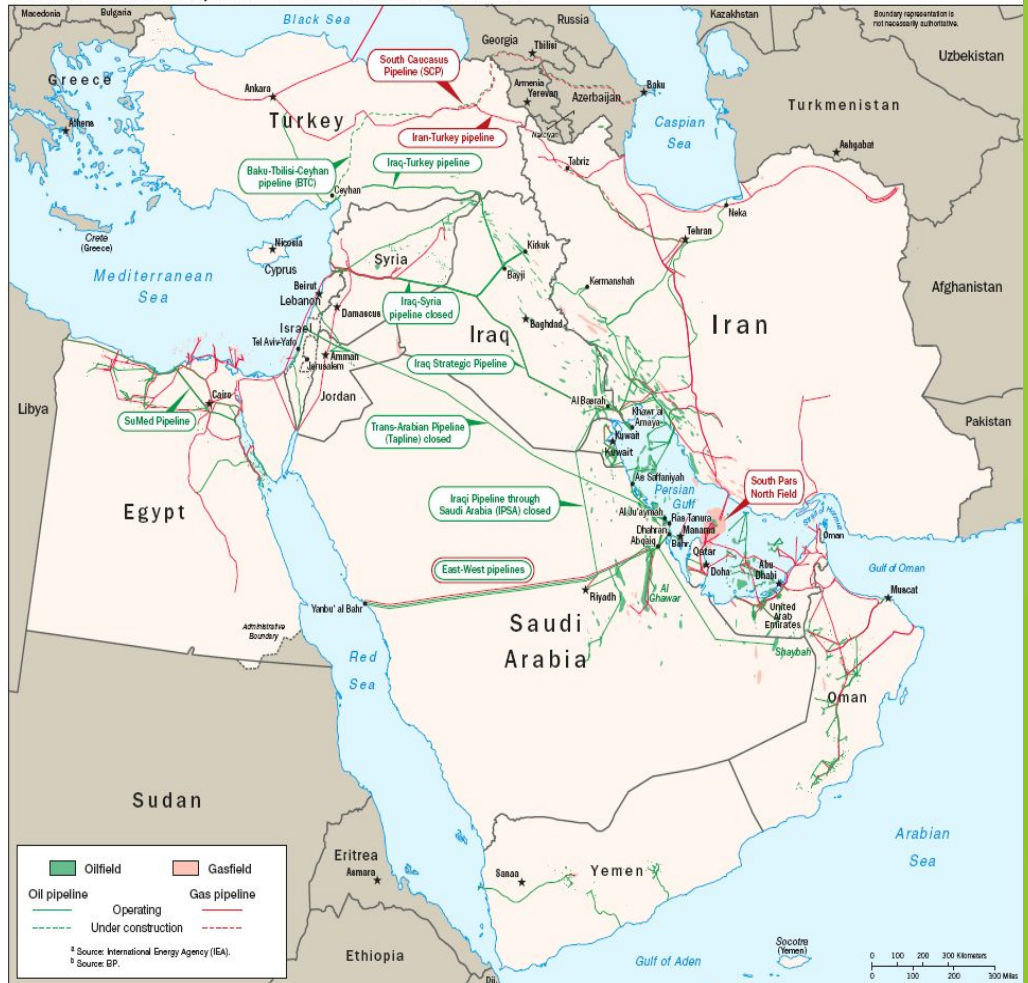
# The Gulf War: Oil and Transportation

By Katherine Zorina, Aglaya Belyshkina, Chloe Becker

The Persian Gulf contains around 674 billion barrels of proven oil reserves, representing approximately two thirds of proven, conventional world oil reserves, and 1,923 Tcf of natural gas reserves (35% of the world total).



**Selected Oil and Gas Pipeline Infrastructure in the Middle East**



<sup>1</sup> Source: International Energy Agency (IEA).  
<sup>2</sup> Source: BP.

# Background of the Conflict

- The Gulf War, which began on August 2nd, 1990, and lasted until February 28th, 1991, was a coalition war involving 35 nations in response to Iraq's invasion of Kuwait.
- The conflict began when Iraq's leader Saddam Hussein delivered a speech, in 1990, accusing Kuwait of stealing crude oil from the Rumaila Oil Field which run along their shared border. Hussein demanded that Kuwait and Saudi Arabia reimburse \$30 billion of Iraq's debt; furthermore, he insisted Kuwait and Saudi Arabia conspired to lower oil prices in exchange for favors of western nations.
- Following the speech, Iraq began building troops at Kuwait's border. On August 2nd, 1990 Hussein ordered the invasion of Kuwait.
- In response, 2/3rds of the 21 members of the Arab League criticized Iraq's actions and turned to members of NATO for help.

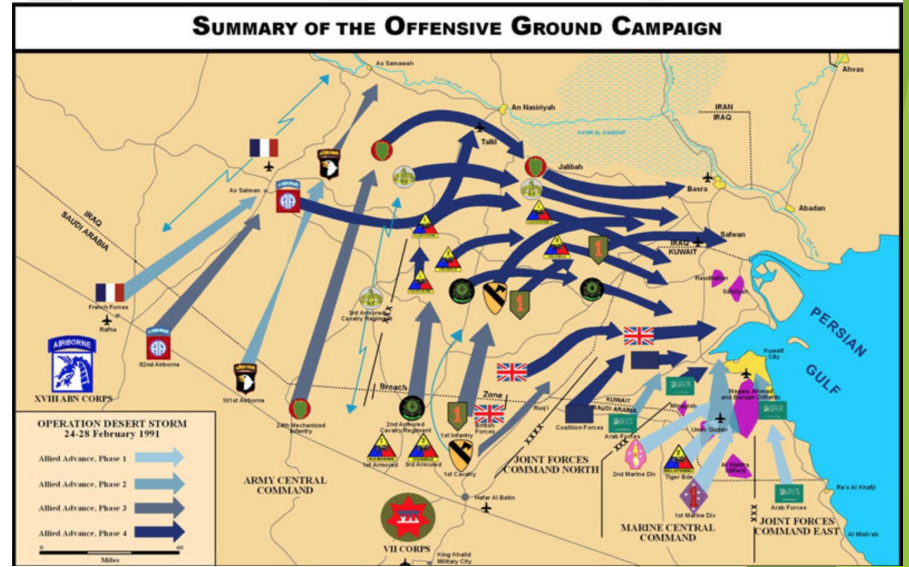
# Geography - Geoeconomics - Geopolitics



- Geographical Position
  - The Rumaila Oil Field is a giant oil field located in southern Iraq, just 32 km from oil field is estimated to be the third largest in the world and the largest in Iraq.
- Geoeconomical Significance
  - It is believed that the field contains 17 billion barrel of crude oil and accounts for roughly 12 percent of Iraq's oil reserves.
- Geopolitical Significance
  - Due to the close proximity of Kuwait and Iraq, Iraq was able to accuse Kuwait of stealing crude oil. Much of the world is dependent on oil from the Gulf. Thus, if Hussein were to raise oil prices, there would be mass effects on the world economy.

# Main parties

- Iraq
- Kuwait
- Nato Forces
  - The United States
  - The United Kingdom
  - USSR
  - Yemen
  - Palestine Liberation Organization



# Significant Interests of the Main Parties: NATO Forces

- The primary reason for international involvement in the Gulf war was oil. However, it is better to look at oil as a tangible aspect, the loss of which, causes a number of intangible effects.
  - Oil provides about 40 percent of American energy, and nearly 45 percent of this oil is imported.
  - Roughly  $\frac{1}{4}$  of this oil is imported from the Persian Gulf, thus less than five percent of American energy come from the Gulf.
  - 37 percent of Japanese oil comes from the Gulf.
  - The Gulf is also responsible for roughly a third of the world energy.
- The effects of losing oil from the Gulf would significantly raise oil prices for everyone, including all the NATO countries.
  - Higher prices may work like a tax on the world economy, producing inflation and shrinking demand.

# Saudi Arabia

- biggest oil producer from 2003 to 2012
- has low production costs
- has proven oil reserves of about 266 billion barrels
- will probably maintain its position as a top-three oil producer for the foreseeable future
- SA oil and gas industry is controlled by Saudi Aramco, which is itself controlled by Saudi Arabia's Ministry of Petroleum and Mineral Resources and the Supreme Council for Petroleum and Minerals.

# Iran

- produced about 3.4 million barrels of oil per day in 2014
- Prior to 2012, Iran produced more than 4 million barrels of oil per day for eight consecutive years.
- Most of the recent production downturn can be attributed to the effects of international economic sanctions
- July 2015 - came to an agreement with the permanent members of the U.N. Security Council and Germany on the Joint Comprehensive Plan of Action (JCPOA), in which Iran agreed to strict limits on its nuclear program in exchange for the removal of international economic sanctions

# Iraq

- produced nearly 3.4 million barrels of oil per day in 2014
- has achieved production gains in every year since 2005, two years after the start of the Iraq War.
- challenges that could limit progress toward these goals, including political instability, continuing violence and inadequate infrastructure.



# United Arab Emirates

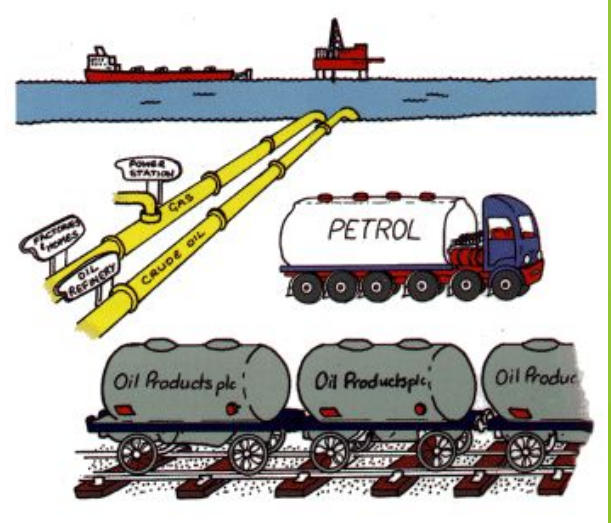
- produced nearly 3.5 million barrels of oil per day in 2014 to rank as the world's sixth-biggest producer.
- The state-owned Abu Dhabi National Oil Company (ADNOC) controls oil production operations in Abu Dhabi under the direction of the emirate's Supreme Petroleum Council.
- companies, which are involved in oil production: BP plc, Royal Dutch Shell plc, Total S.A. and Exxon Mobil Corporation.

# Kuwait

- produced almost 2.8 million barrels of oil per day in 2014
- International oil companies have long been denied access to Kuwait because the Kuwaiti constitution does not allow foreign companies ownership stakes in Kuwaiti natural resources, or the revenues associated with those resources

# OIL TRANSPORTATION

Getting oil to market is a process that requires various transportation and storage technologies, usually referred to as “midstream”. Oil is often produced in remote locations away from where it will be consumed; therefore, transportation networks have been built to transport the crude oil to refineries where it is processed and to ship the refined products to where they will be consumed (like a gas station). Storage facilities are used to balance supply and demand of oil and refined products.



# Oil is normally transported by one of four options:

Pipeline – the most commonly used form of oil transportation is through oil pipelines. Pipelines are typically used to move crude oil from the wellhead to gathering and processing facilities and from there to refineries and tanker loading facilities. Pipelines require significantly less energy to operate than trucks or rail and have a lower carbon footprint.



# Oil is normally transported by one of four options:

Rail – Oil shipment by train has become a growing phenomenon as new oil reserves are identified across the globe. The relatively small capital costs and construction period make rail transport an ideal alternative to pipelines for long distance shipping. However speed, carbon emissions and accidents are some significant drawbacks to rail transport.



# Oil is normally transported by one of four options:

Truck – while the most limited oil transportation method in terms of storage capacity, trucks have the greatest flexibility in potential destinations. Trucks are often the last step in the transport process, delivering oil and refined petroleum products to their intended storage destinations.



# Oil is normally transported by one of four options:

Ship – where oil transport over land is not suitable, oil can be transported by ship. A typical 30,000-barrel tank barge can carry the equivalent of 45 rail tank cars at about one-third the cost. Compared to a pipeline, barges are cheaper by 20-35%, depending on the route. Tank barges traditionally carry petrochemicals and natural gas feedstocks to chemical plants. The drawbacks are typically speed and environmental concerns.



While there are various transportation options for oil, the decision of which method to use usually comes down to cost and location.

- Short distance transportation is usually done by feeder or distribution pipelines and, in some cases, trucks.
- When land routes are unavailable, tankers are the only option for delivering oil to market.
- Short distance transport can be achieved using railway, trucks, or pipelines.

Trucks are less efficient than other methods, but their particular advantage is that they provide direct travel from the source to the destination. Direct transportation is also a benefit of pipelines and tankers. In contrast, railway cars must be detached and processed at stations. Moreover, they may require jumping through multiple routes, making the process more complex from an administrative standpoint



An important issue that oil transportation and storage methods face are spills and inadvertent emissions. Spills from tankers can pollute coastal environments, while spills from rail and pipelines can pollute wildlife habitats or populated areas depending on the location. Spills or gas leaks from storage tanks have the same harmful effects.



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