FACTS GLOBAL ENERGY

Opportunities In Iran's Upstream Sector Post-Sanctions

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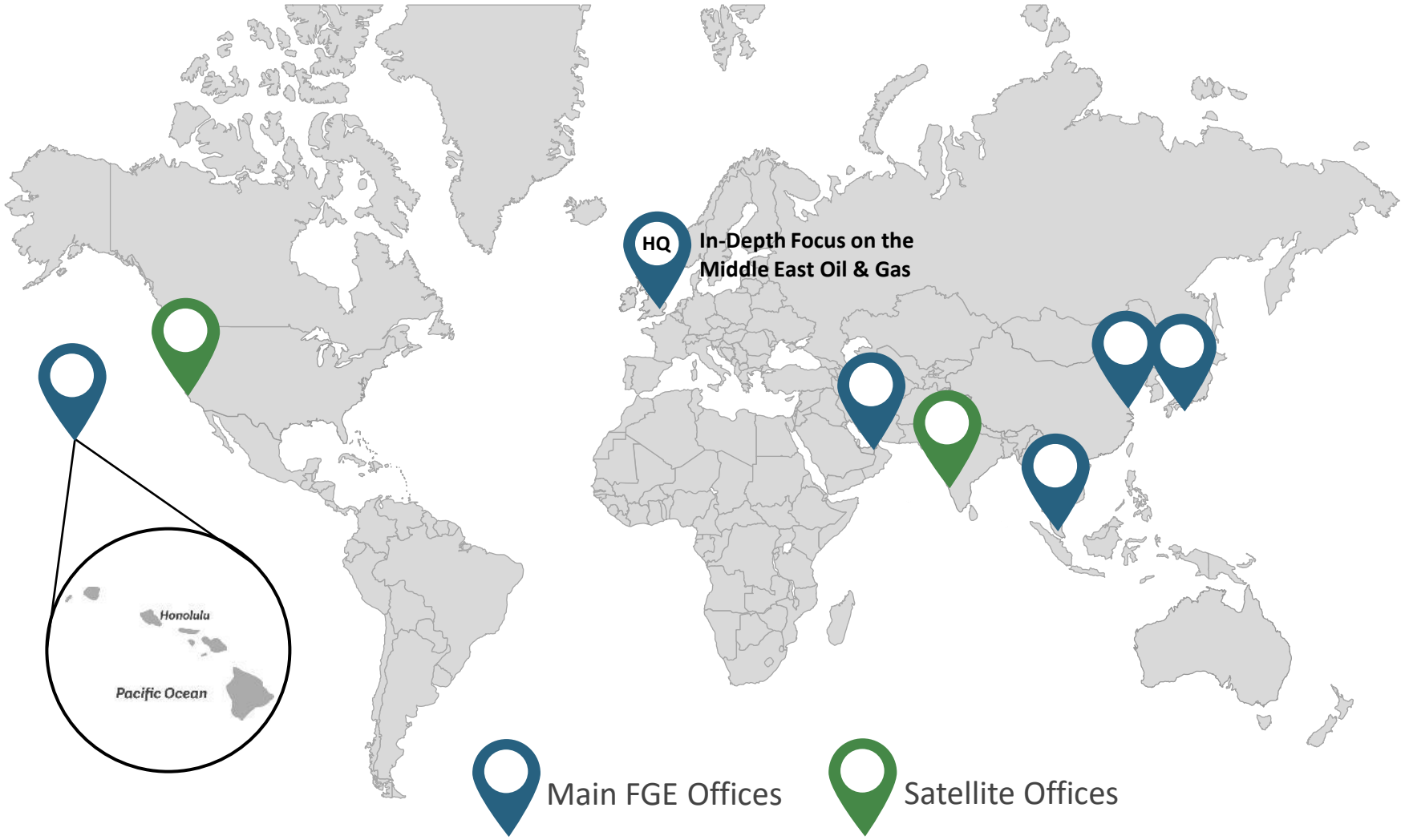

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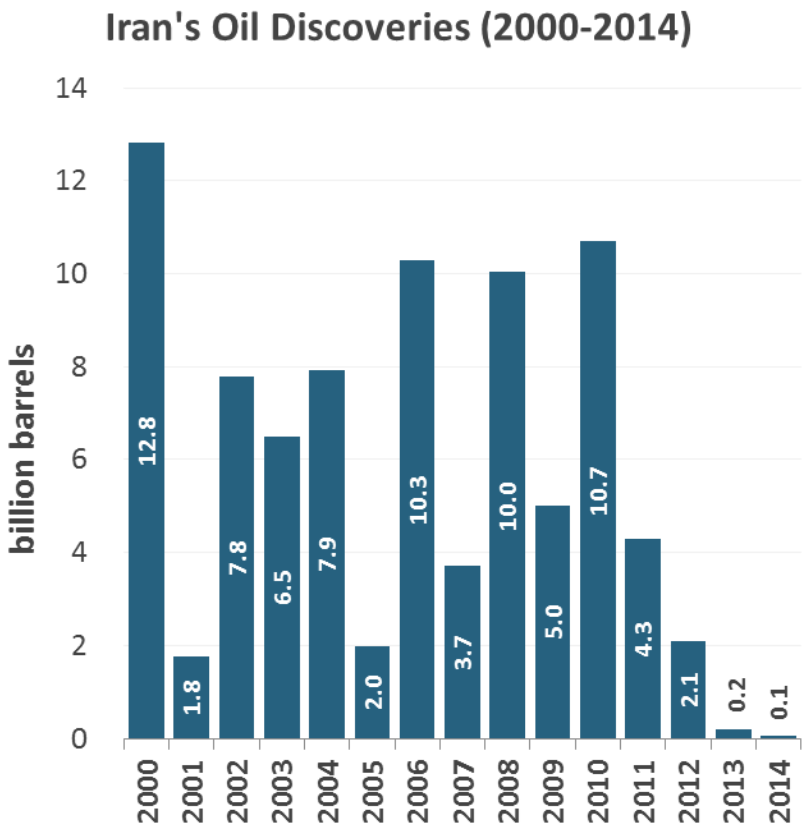
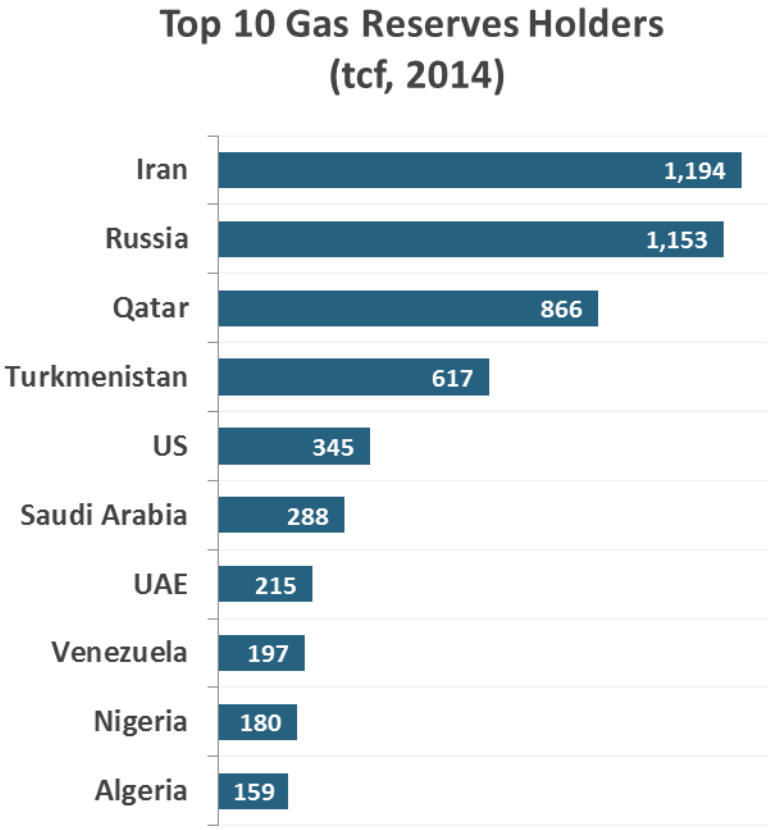
Looking for oil but finding more gas!

Iran's oil remaining reserves are estimated at 157 billion barrels.

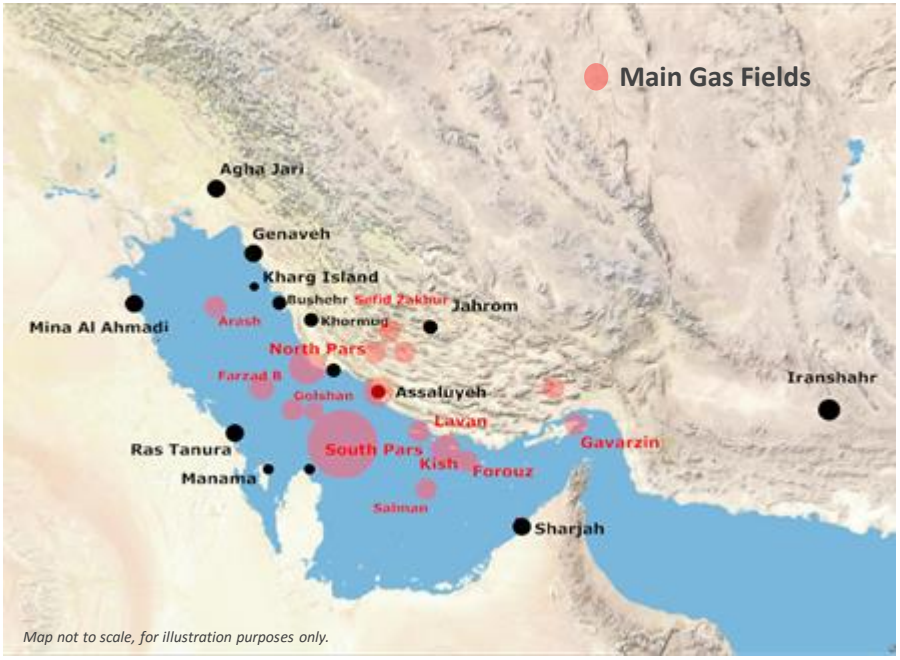




Iran as a Gas Province in the Middle East

- Massive reserves could cover almost all gas requirements in the region by short-distance (150-250 km) pipelines.

- The typical success rates from wildcat drilling in the world are generally 30-35%, but Iran has recorded a success rate of 79% in exploration.



Sizable Gas Discoveries in the Past 10 years:

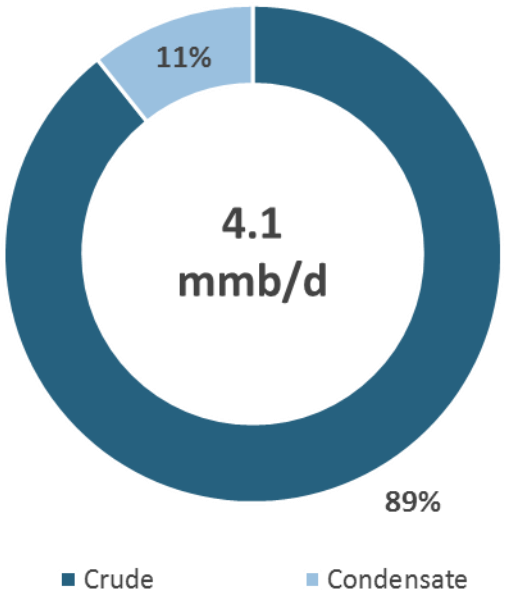
- December 2011: Sardar Jangal (up to 50 tcf)
- January 2011: Khayyam
- June 2010: Forouz
- February 2010: Halegan
- 2008: Farzad-B
- 2007: Sefid Zakhur
- 2006: Kish

Iran's Giant Gas Fields:

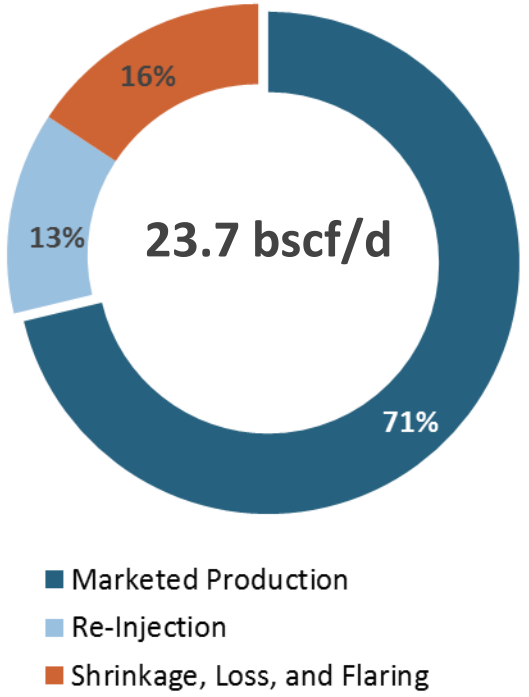
- South Pars: 450 tcf
- Kish: 70 tcf (undeveloped)
- North Pars: 50 tcf (undeveloped)
- Golshan: 42 tcf (undeveloped)
- Tabnak: 30 tcf
- Forouz: 28 tcf (undeveloped)
- Kangan: 20 tcf
- Khangiran: 17 tcf
- Aghar: 15 tcf
- Farzad-B: 13 tcf (undeveloped)
- Nar: 13 tcf
- Halegan: 12 tcf (undeveloped)
- Sefid Zakhur: 11 tcf (undeveloped)
- Lavan: 9.5 tcf (undeveloped)
- Khayyam: 9 tcf (undeveloped)

Iran's Oil & Gas Production Capacity

Iran's Oil Production Capacity (2014)



Iran's Gross Gas Production (2014)



Overview of the Existing Sanctions on Iran

Which sanctions will remain and which will be removed?

EU Sanctions

- Sanctions on crude oil imports from Iran (Jan 2012).
- Sanctions on SWIFT (March 2012).
- Strengthened sanctions on natural gas, gas derivatives, and shipping (Oct 2012).

UN Sanctions

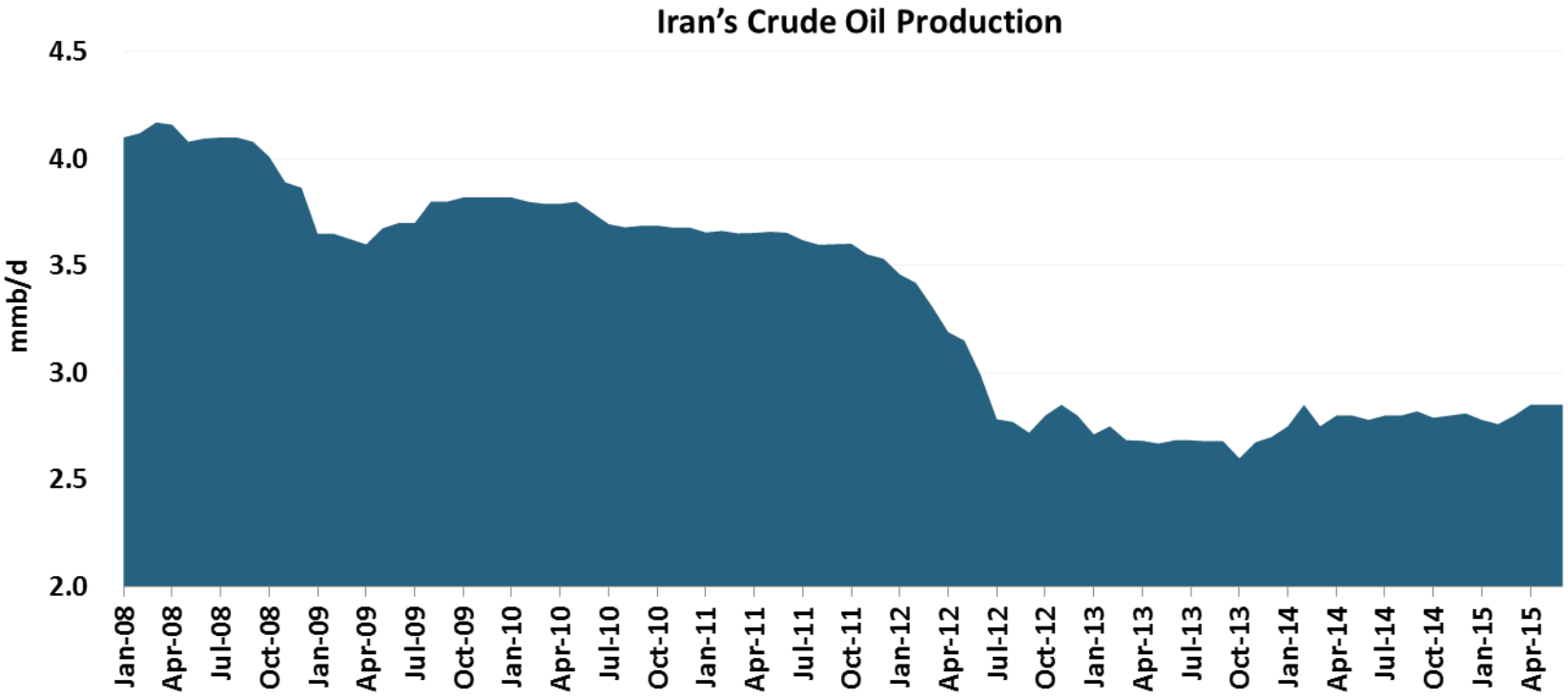
- 6 resolutions during 2006-2010.
- Only two resolutions targeted the Iranian banking and shipping sectors.

The United States has imposed restrictions on activities with Iran under various legal authorities since 1979.

US Sanctions

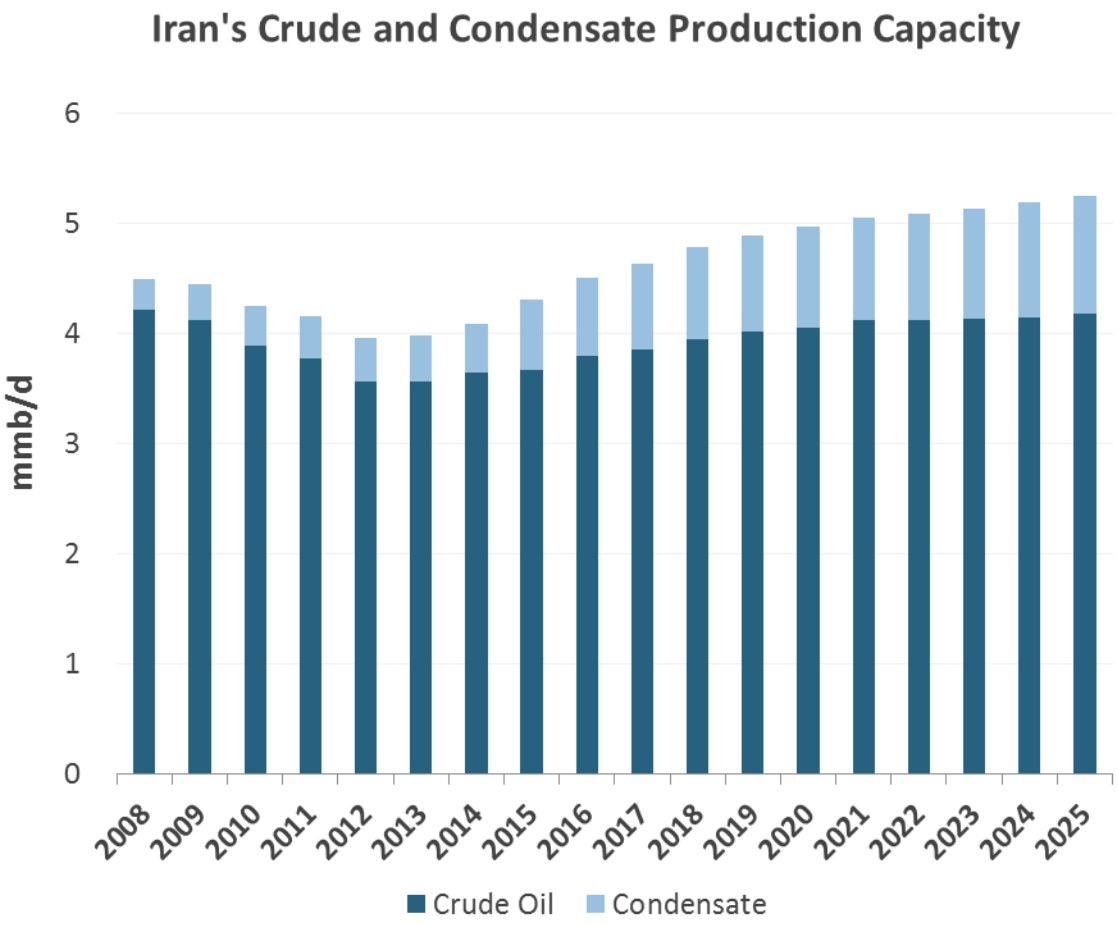
- Sanctions prohibiting US involvement in petroleum development in Iran (Mar 1995).
- Sanctions on trade with Iran and/or any investment by US companies in Iran (Aug 1997).
- Sanctions on Iranian banks (2006-2008).
- US Sanctions on trading of refined products (2010).
- Sanctions on Iran's Central Bank (2012).
- Sanctions imposed on countries purchasing Iranian oil (2012).

Iran's Crude Production Pre- and Post-Sanctions



- It is likely that we will see roughly 500 kb/d of Iran's oil and condensate returning to global markets by 1Q 2016. Iran could reach pre-sanction levels of production by the end of 2016.

Iran’s Crude and Condensate Supply Outlook



- Iran has ambitious goals to increase its crude oil production capacity to around 5 mmb/d by the end of this decade. The West Karoun fields are currently producing only 100 kb/d of oil, but Iran is convinced some 700 kb/d of oil will be supplied from these fields by 1Q 2018.
- Iran requires some US$280 billion of investments in all sectors of the oil industry.
- When sanctions are lifted, Iran will encourage foreign investments in its oil fields through more attractive upstream contracts.

Completed Buyback Projects with IOCs

Company	Project	Value (US$ million)	Year
Total	Sirri A&E	600	1995
Total/Gazprom/Petronas	South Pars Phases 2&3	2,000	1997
Total & Agip	Droud	540	1998
Shell	Soroush and Norouz	800	1999
Total/Bow Valley/Agip	Balal	170	1999
Eni	South Pars Phases 4&5	1,900	2000
Eni	Darquain	550	2001
Statoil	South Pars Phases 6-8	300	2002

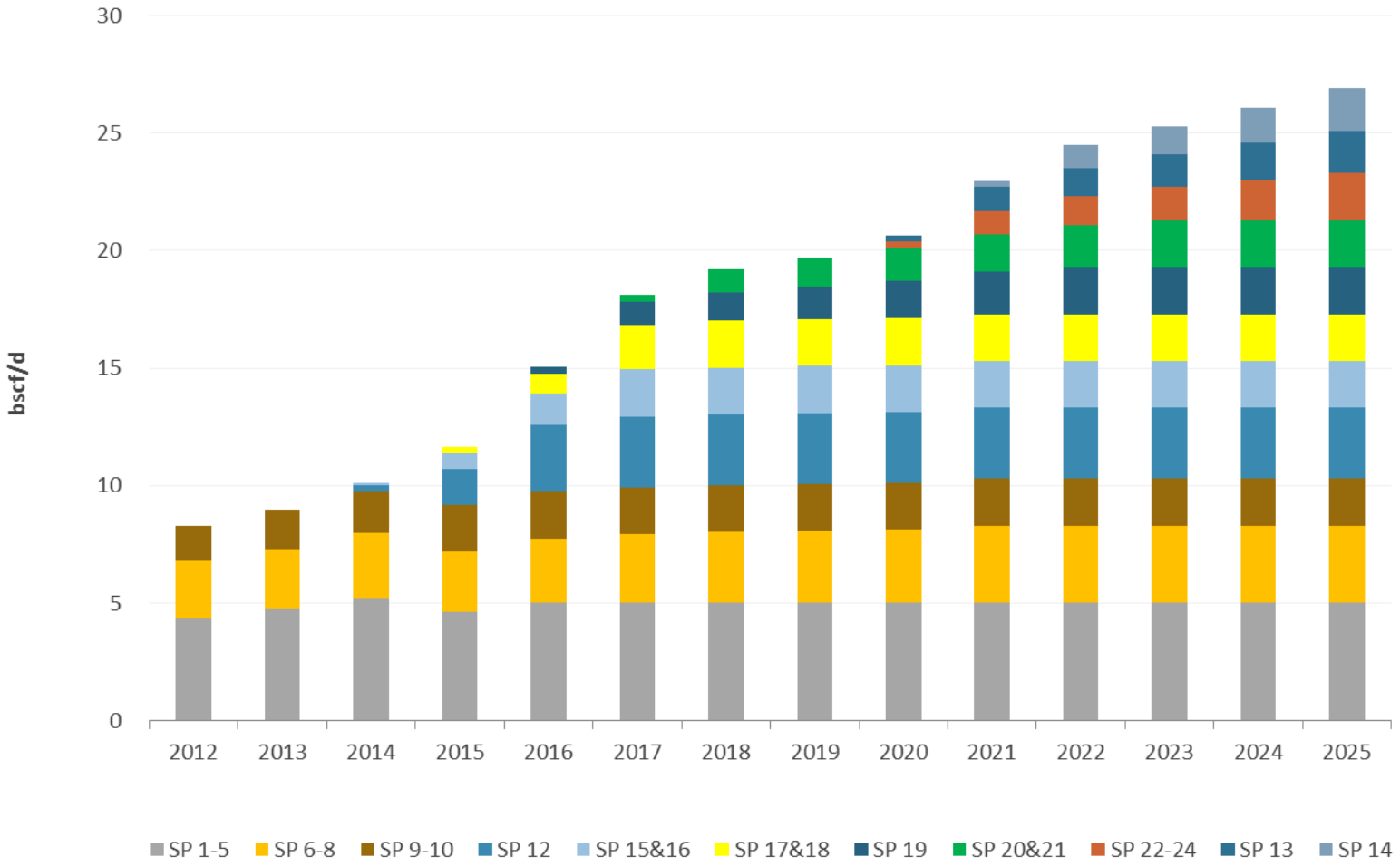
Between 2004 and 2010, Iran signed several buyback contracts with foreign companies for exploration and development of oil and gas fields but almost all of them except the development contracts for Yadavaran and Azadegan North were cancelled due to the US and EU sanctions.

Key Features to the IPC Model

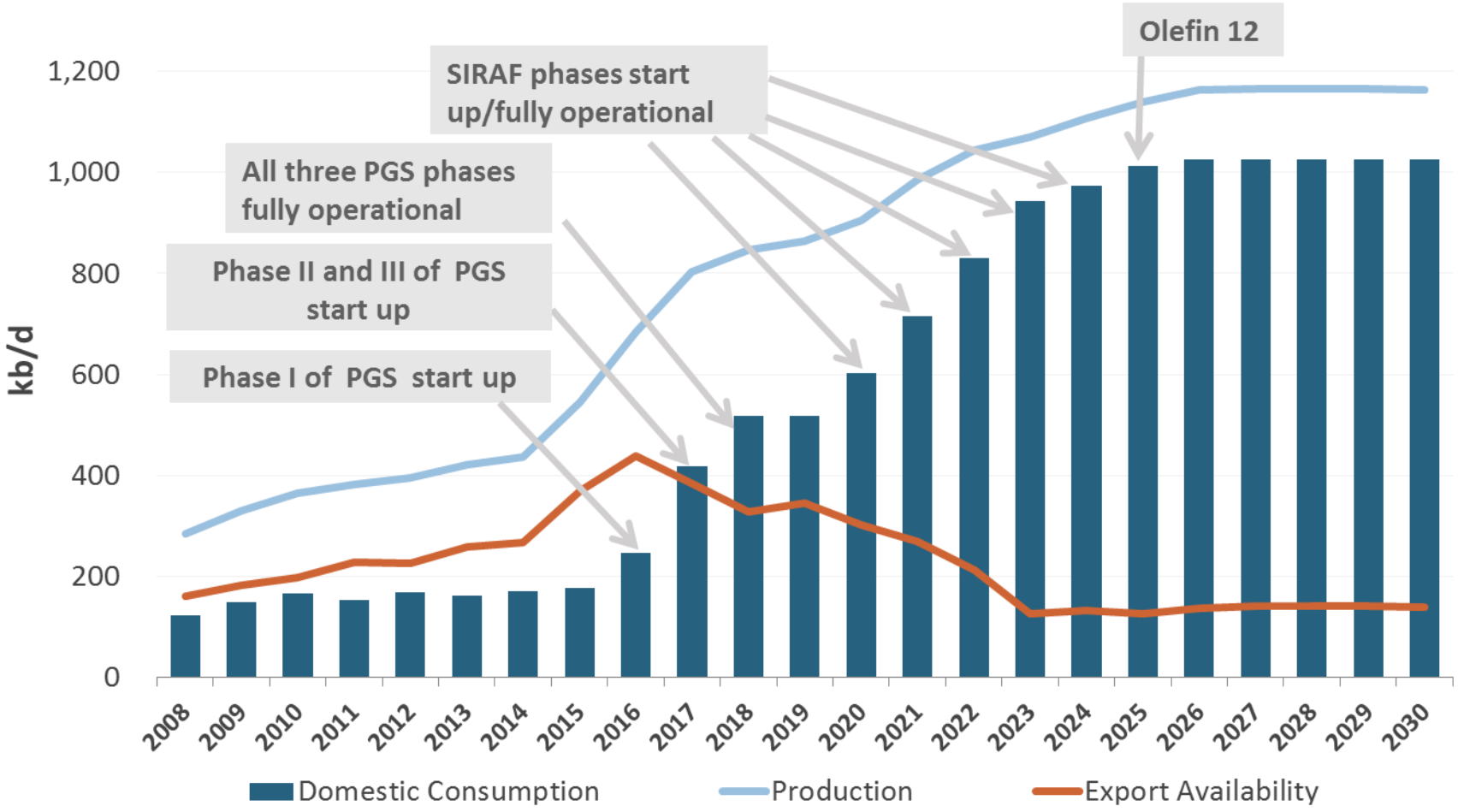
The IPC basically is a risk service integrated exploration, development, and production contract that combines features from both typical-style service contracts and production-sharing agreements (PSA).

- Partnership (IPC requires a JV-type cooperation agreement between operator and NIOC).
- Flexible development plan.
  - Annual work program and adjustable budget as opposed to the fixed capped costs.
- Long-term cooperation (Unlike previous buy-back contracts, which were typically designed for 5-8 years, the IPCs will have a longer period of 30-35 years).
- Longer-term cooperation in case of IOR/EOR (A special fee is defined to compensate the contractor for its further investment and technical know-how and activities extended to EOR operations).
- Balanced risk and reward (The IPC model formulates the contractor rewards in US$/bbl and US$ per mmscf/d terms):
  - Flexible reward with regard to extreme oil price fluctuations
  - Flexible fee with respect to the risk involved with each region/field

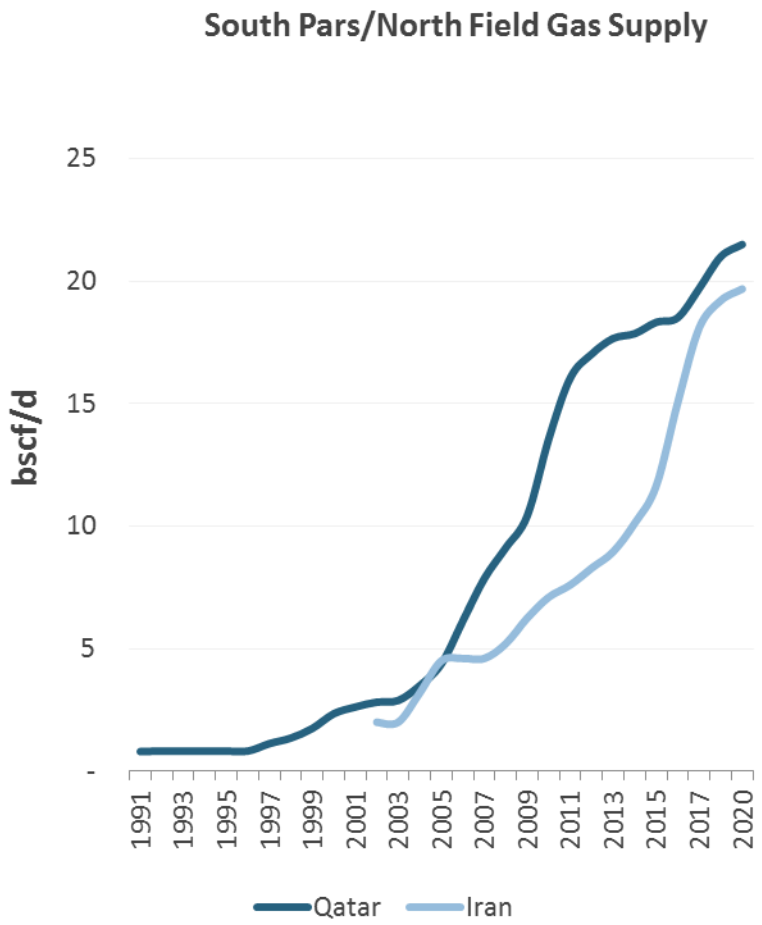
South Pars Gas Production Outlook

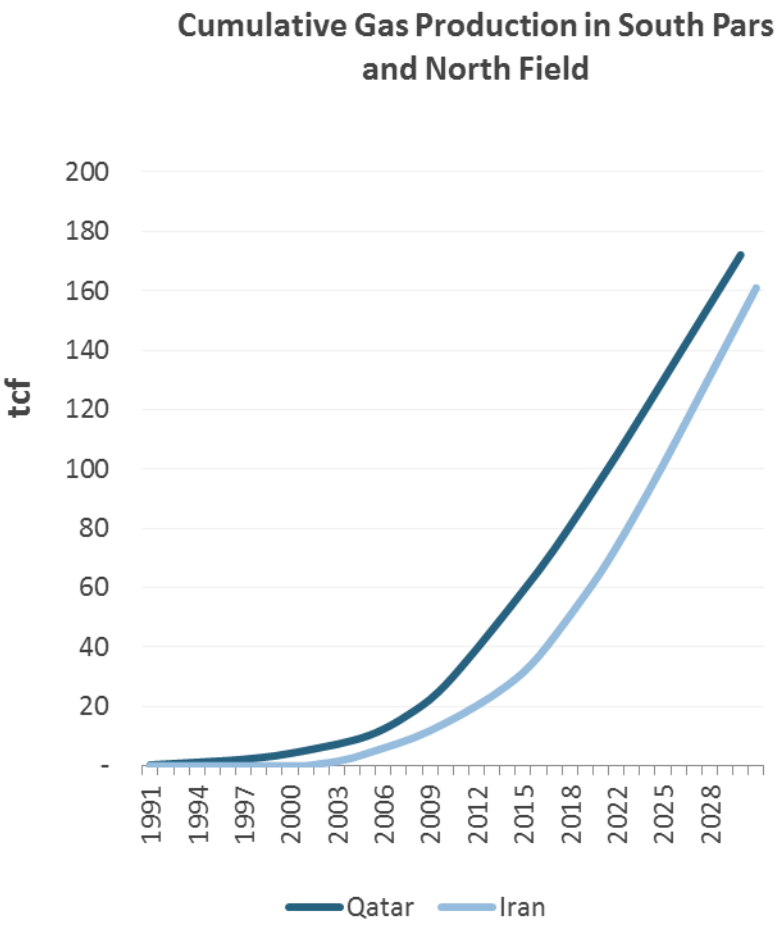


Iran's Condensate Supply/Demand Outlook

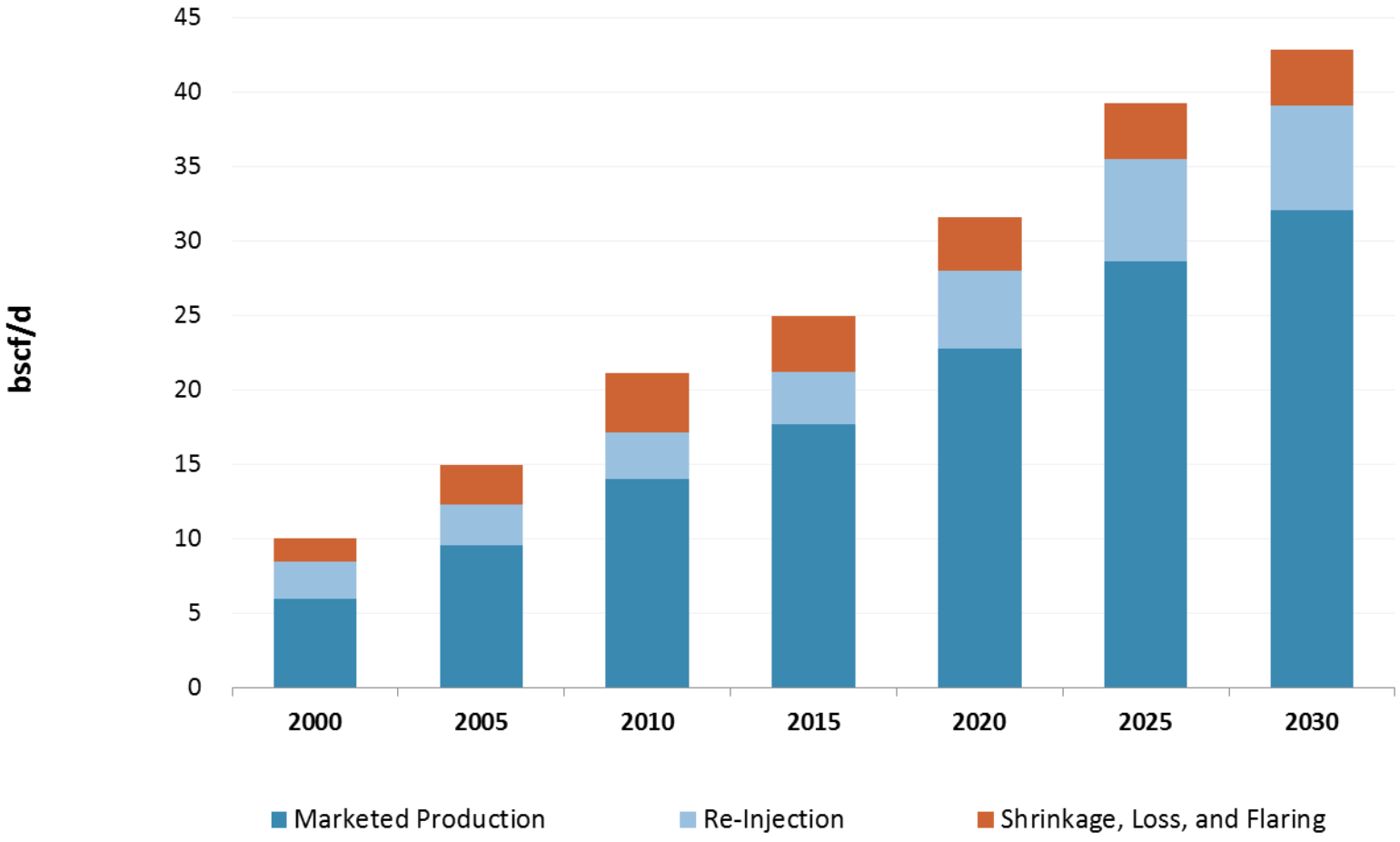


Will Iran Overtake Qatar in Gas Production From the Shared Field?

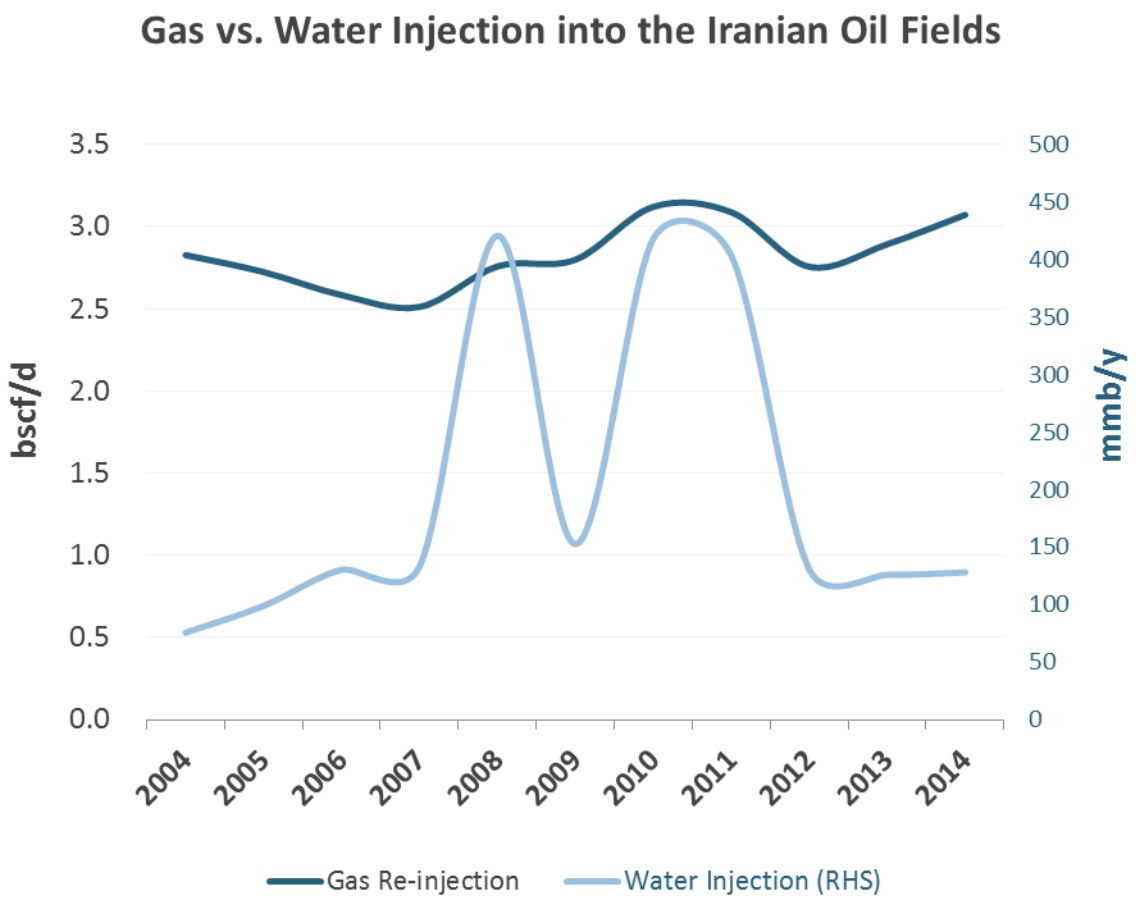




Iran's Gas Production Outlook



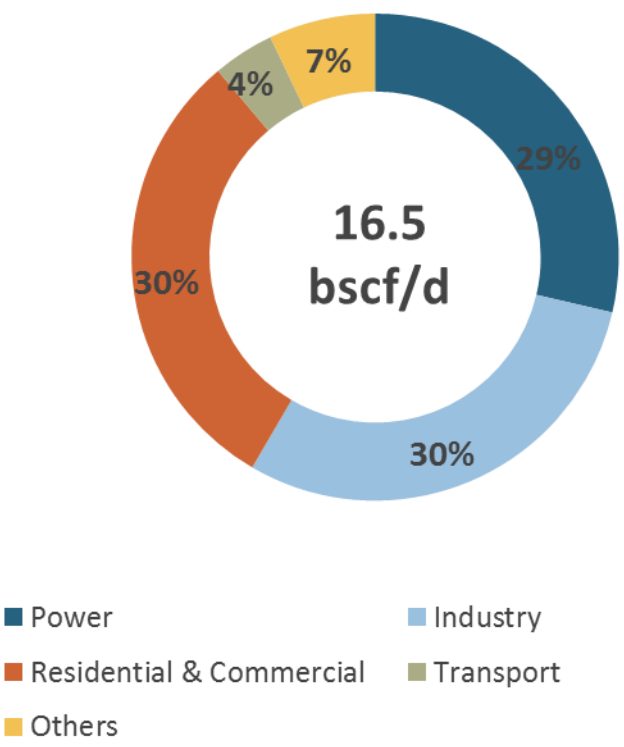
Gas Re-injection or Water Injection?



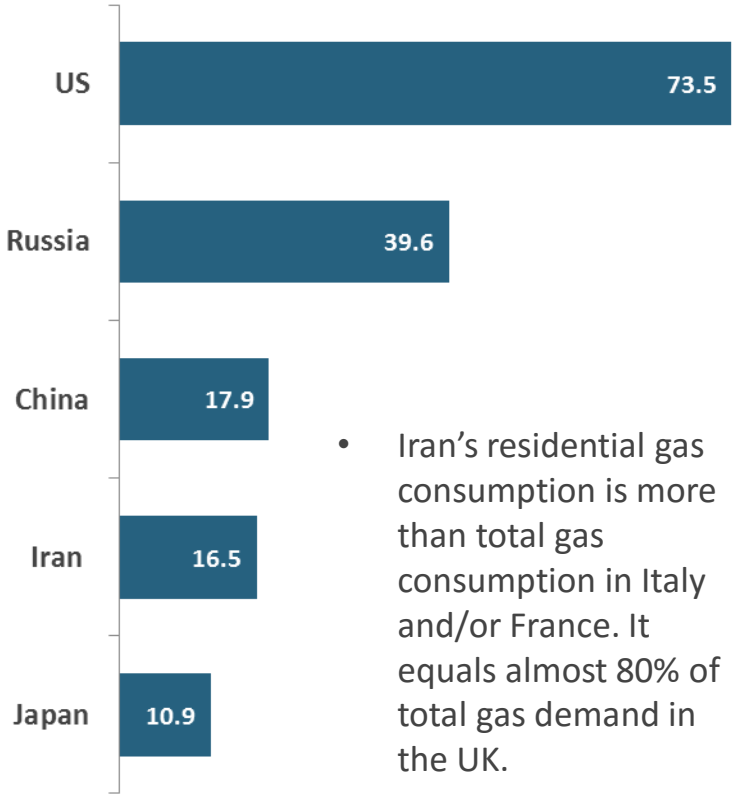
- NIOC's reservoir engineers believe that gas re-injection into fractured carbonate reservoirs, which account for approximately 90% of Iran's oil fields, are a better option than other methods such as water injection.
- The recovery factor of re-injected gas is usually 60-80% of the injected volumes; hence, after oil recovery, 60-80% of the gas will be available for re-use, which means gas re-injection could be similar to large (albeit long term) gas storage for the country.

Iran's Gas Consumption

Iran's Gas Demand by Sector (2014)

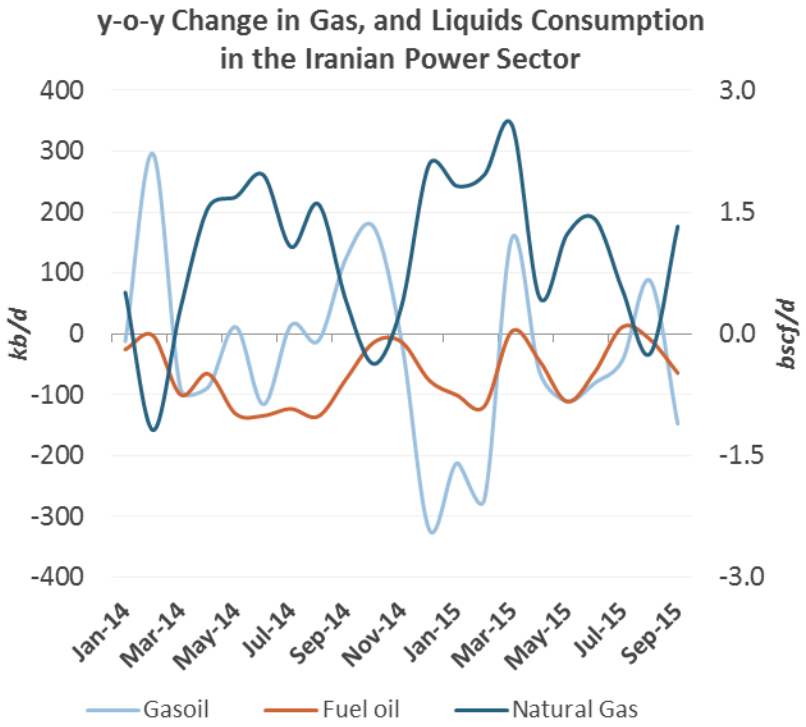


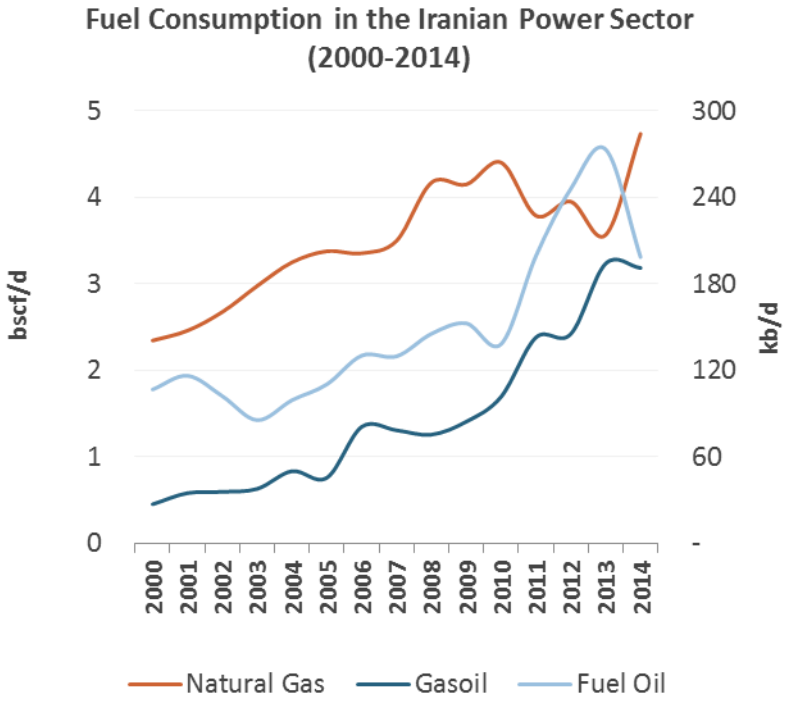
World's Top 5 Gas Consumers (bscf/d, 2014)



- Iran's residential gas consumption is more than total gas consumption in Italy and/or France. It equals almost 80% of total gas demand in the UK.

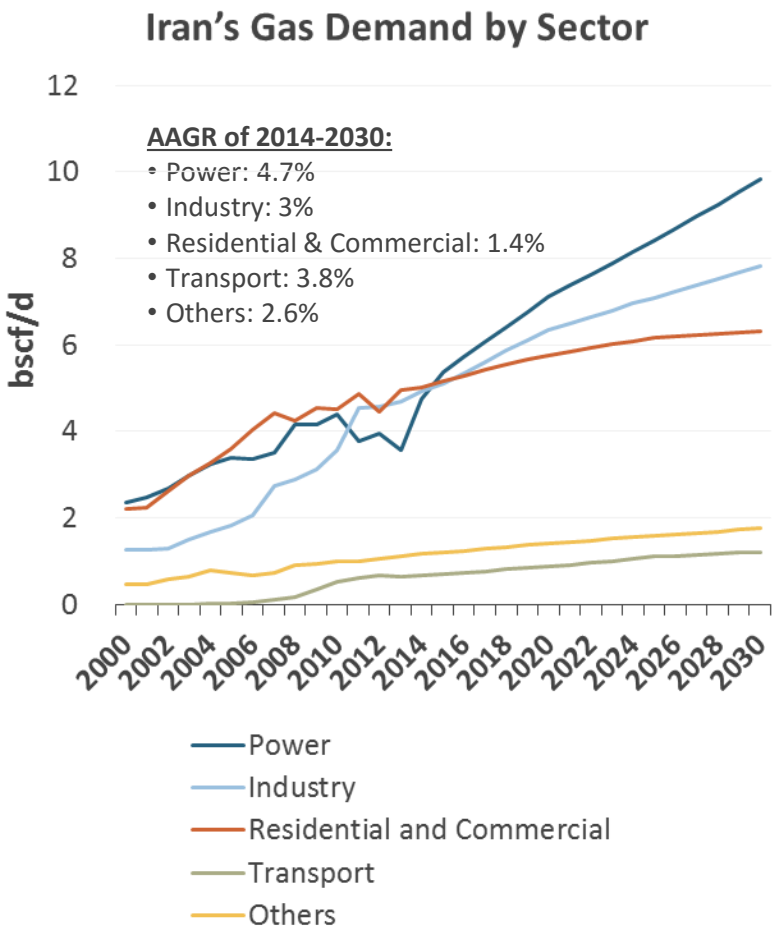
Fuel Consumption in the Iranian Power Sector

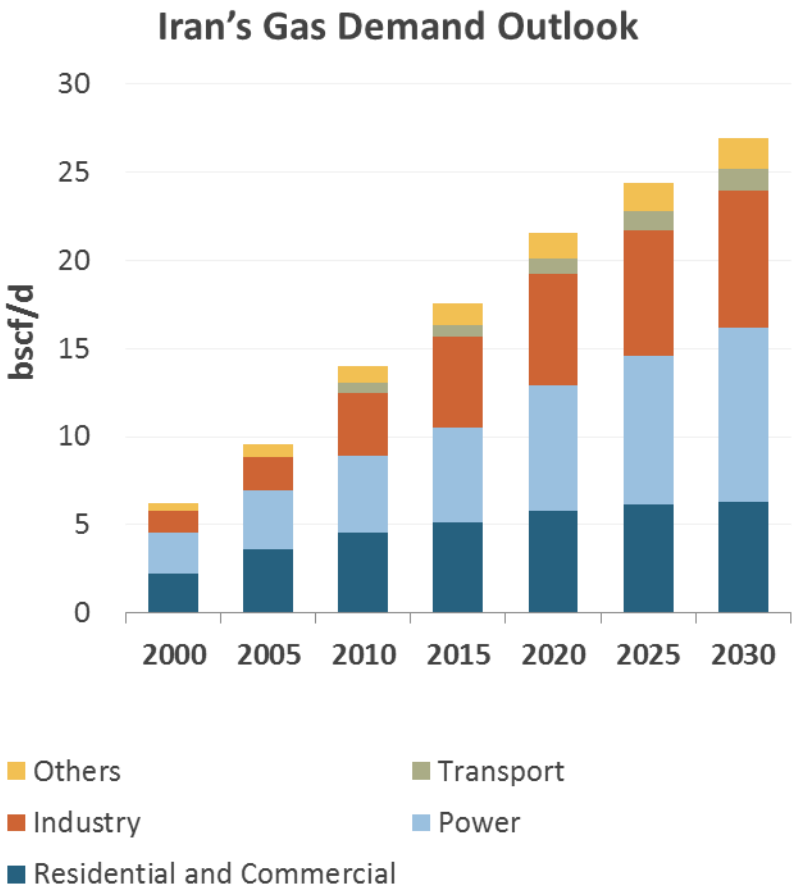




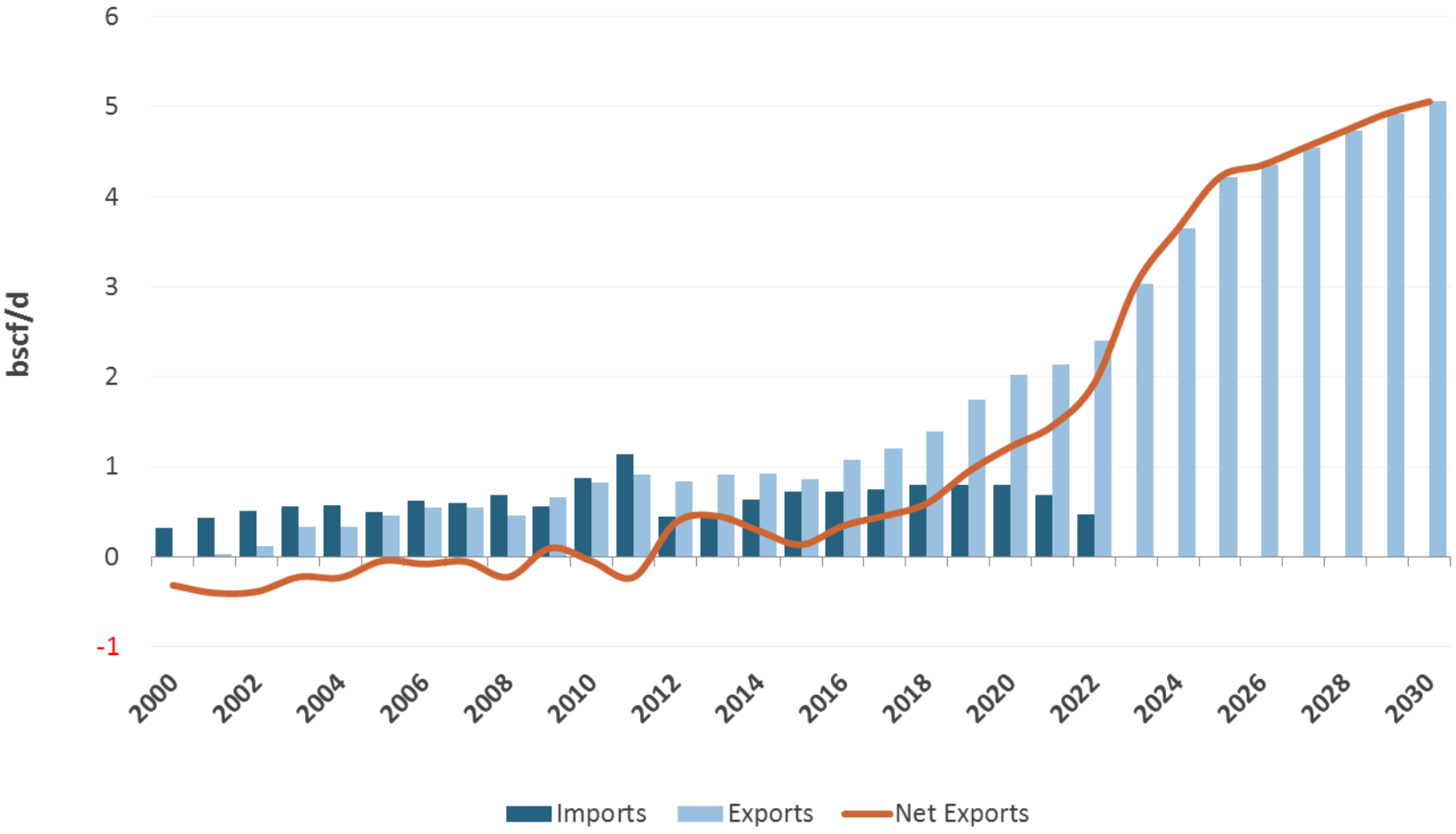
- Major shift in Iran's fuel mix currently: rapidly rising gas supplies replacing large volumes of gasoil and fuel oil, with gasoil/fuel oil use falling by 20-30% y-o-y.
- Total products demand in Iran has been falling by 10-15% vs. year earlier in recent months.

Iran's Gas Demand Outlook

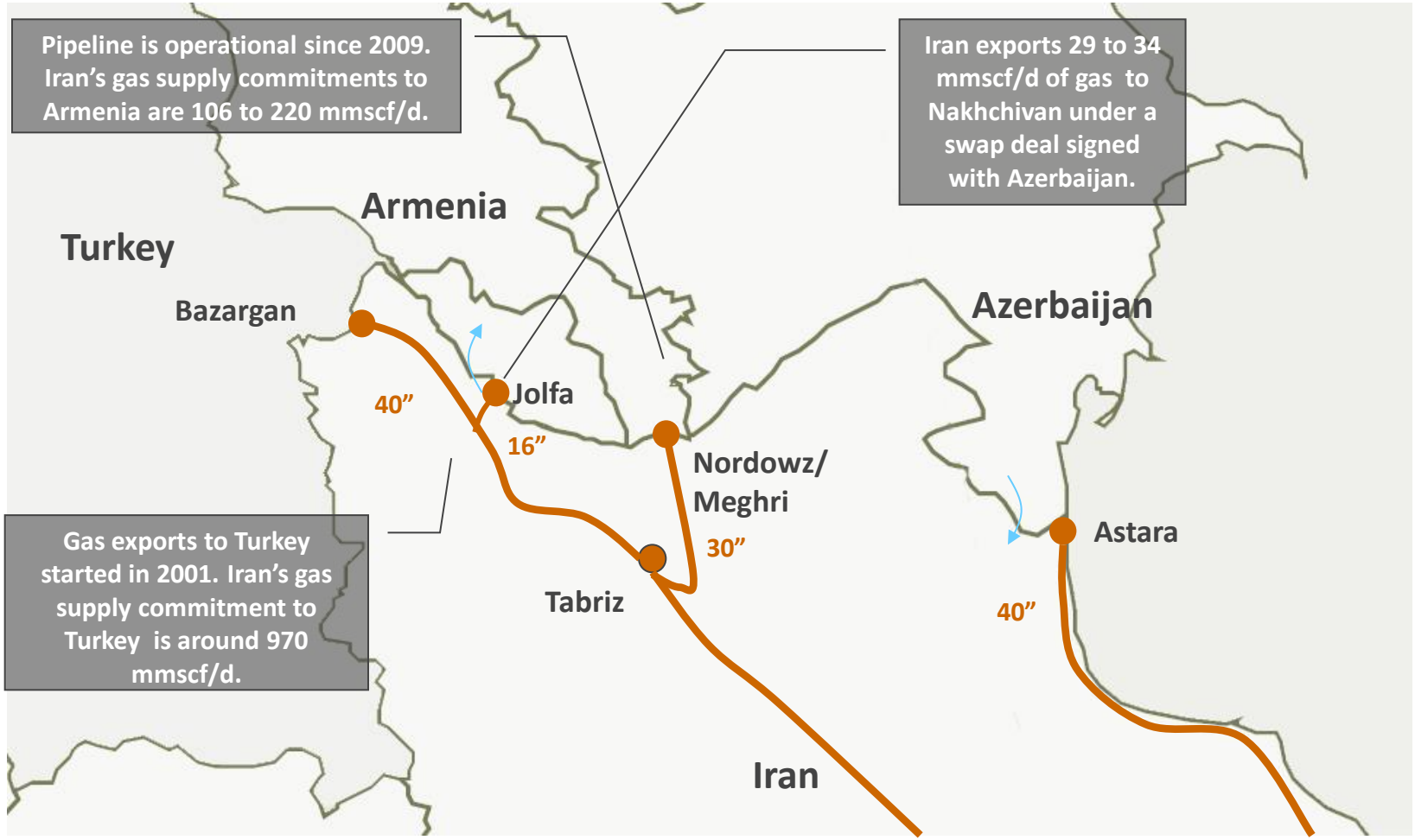




Iran's Gas Exports/Imports Outlook



Operational Export Pipelines



Iran's Pipeline Gas Exports to the UAE

How can the Existing Infrastructure be Used?

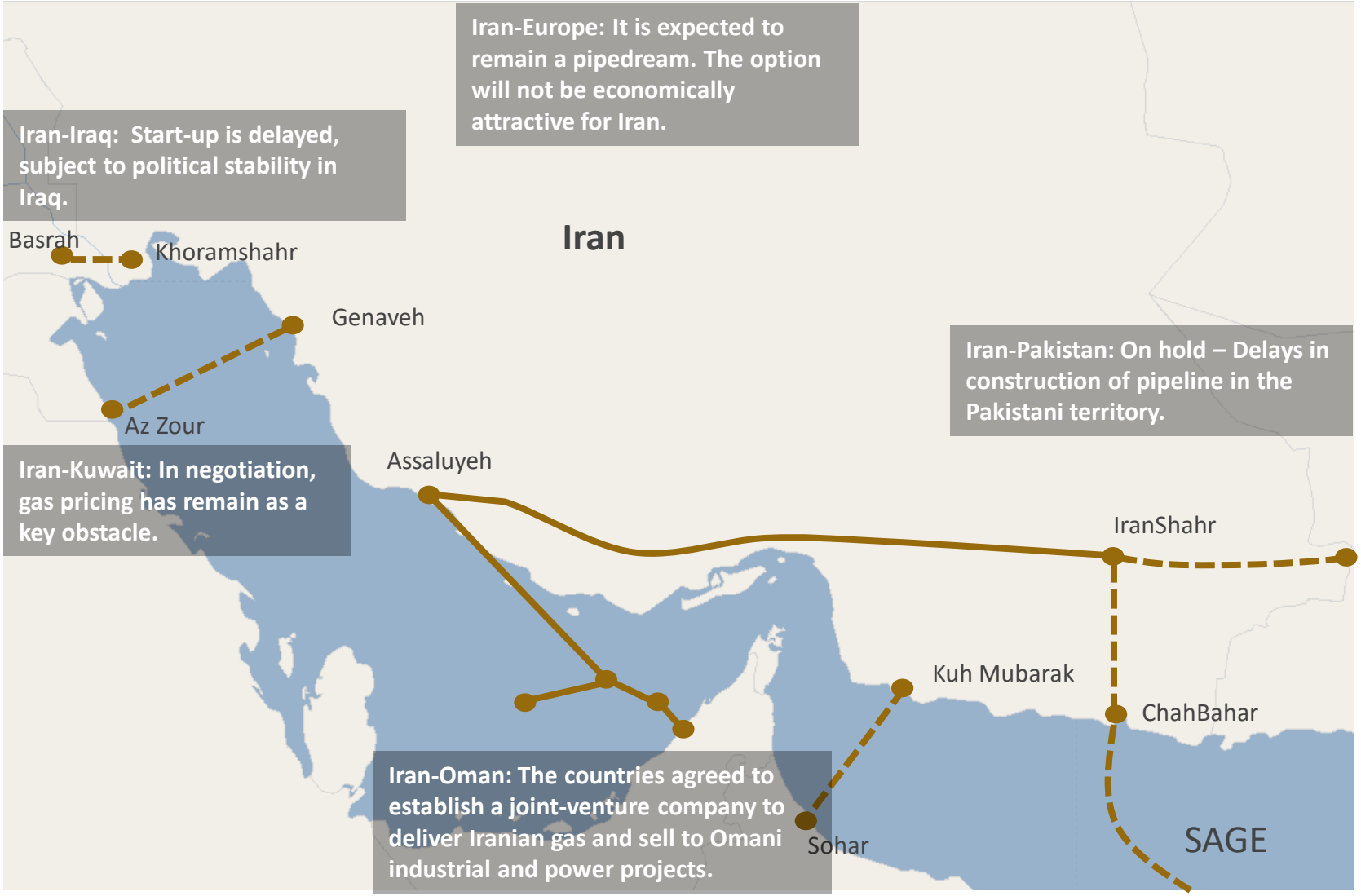
Existing infrastructure

- Pipelines:
  - Salman-Sirri gas (155 km, 30 inch)
  - Sirri to Mubarak
  - Sirri to Assaluyeh (287 km, 30 inch)
  - Mubarak to Saja'a
- Gas Processing at Saja'a

Latest Status:

- Initial outcome from arbitration: contract is valid and NIOC has to supply gas.
- Iran's penalty for breach of contract can be huge.
- Several buyers from Abu Dhabi and Dubai are interested in using the existing infrastructure for importing gas into their Emirates.

Other Regional Pipelines



Will Iran Export LNG?

- Iran has come to the conclusion that it should do away with its large LNG export ambitions. But, it may all be too late. Iran's LNG plans are now focused on one project—Iran LNG.
- Although the project is on hold, Iran spent nearly US$2.5 billion on this project. However, Iran cannot access the US or European liquefaction technology and complete the project until the sanctions are lifted.
- Iran LNG may be an attractive project for foreign companies, if the sanctions are lifted. The project has some basic infrastructure such as a utility section, storage tanks, etc. Some construction work has been done on the gas processing facilities. The only missing piece of the puzzle is construction of a liquefaction train, which in theory can be done in 3-4 years.

Conclusion

- The new upstream contract framework seems more attractive vs. previous buyback contracts. Royal Dutch Shell Plc, BP, Total, Eni and other companies have emphasized their interest to return to Iran.
- It is likely that we will see roughly 500 kb/d of oil from Iran returning to global markets by 1Q 2016. Iran could reach pre-sanction levels of production by the end of 2016. Beyond that Iran will require substantial investments to increase its crude production capacity.
- Iran's condensate is expected to increase rapidly, but Iran's zero export policy would happen sooner or later, assuming all the splitter projects and South Pars projects materialize. The balance may change slightly, but the path is set for Iran's condensate export availability to disappear some time between 2020 and 2025.
- Iran has vast oil resources, but it is a natural gas prone country. Prospects for natural gas production and regional pipeline exports are limitless.
- Iran is seriously looking at the pipeline export options to Oman, the UAE, Kuwait, and at a later time to Bahrain. The pipeline export policy is the cornerstone of Iran's gas export policy.
- On the LNG front, two more options are being considered. Utilization of Qalhat LNG in Oman, where 2 million tonnes of spare capacity exists, as well as the possible use of Das Island, Abu Dhabi, after the completion of the ADGAS-TEPCO contract.

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