Gas Production and Consumption Outlook and It`s Relationship with Energy Consumption Intensity and Dedication Excessive Gas Panel

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Personal Information

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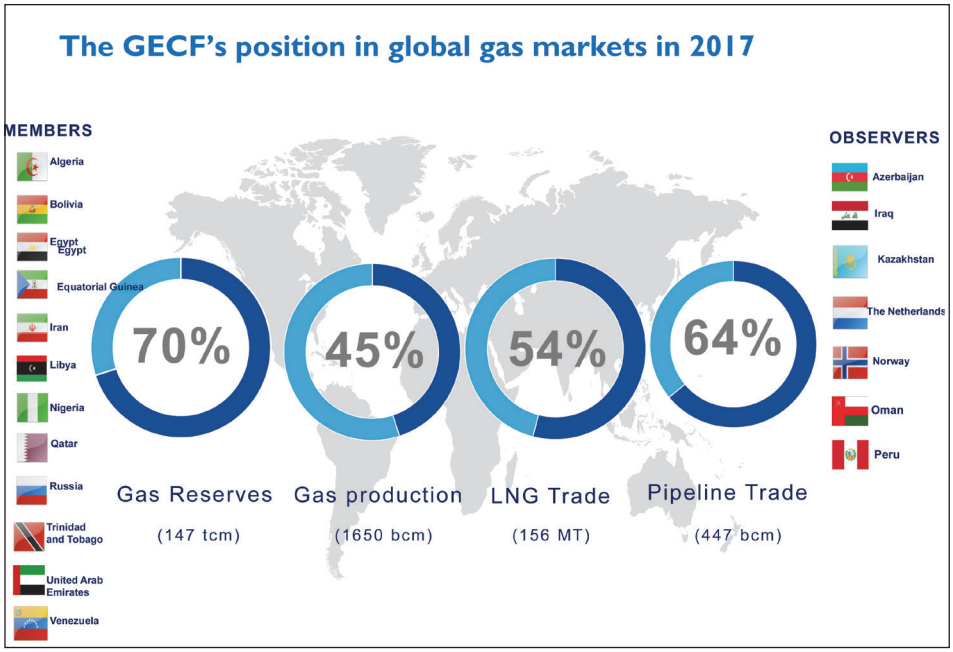
Where are the Opportunities & Threats for Natural Gas Industry?

Mahdjouba Belaifa

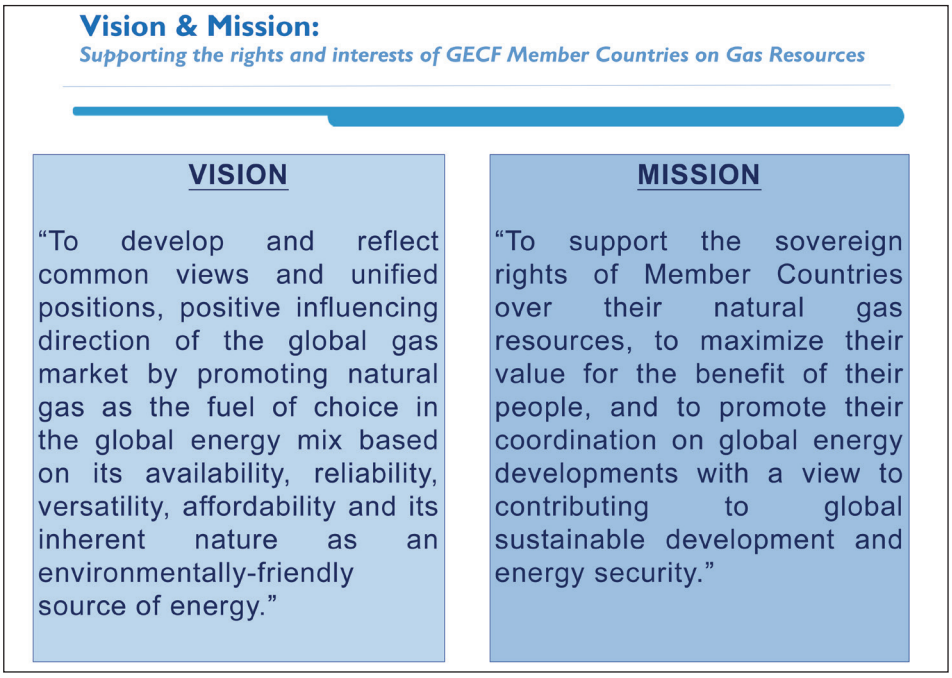
Thank you very much your excellence ladies and gentlemen. Good afternoon. I am very pleased to be here today and I would like to thank the government of the Islamic Republic of Iran for inviting the GECF and associating us to debate on energy issues and on gas market particularly.

In this presentation, I would like to share with you our views on natural gas industry, the challenges and the opportunities. I am not going to go through full slide in my presentation but physically it recovers the main features of natural gas and the challenges with the focus on the role of Iran as a member of GECF in the gas market and also few words about how we see the role of natural gas in sustainable development goals and the challenges for investment with some concluding remarks.

First of all, allow me to give some updated information about the GECF. I'm quite sure that everybody in the room knows what is GECF (Gas Exporting Country Forum) but please consider it is as a refresh memory with updated figures. GECF is a governmental organization which covered with the 19 member countries and observers. GECF seats on 70 percent of the global proven gas reserves, contribute to 45 percent of the global natural gas production, and in terms of trade, the GECF is dominating the global market with the 64 percent in terms of pipeline trade, and 54 percent in terms of LNG trade.



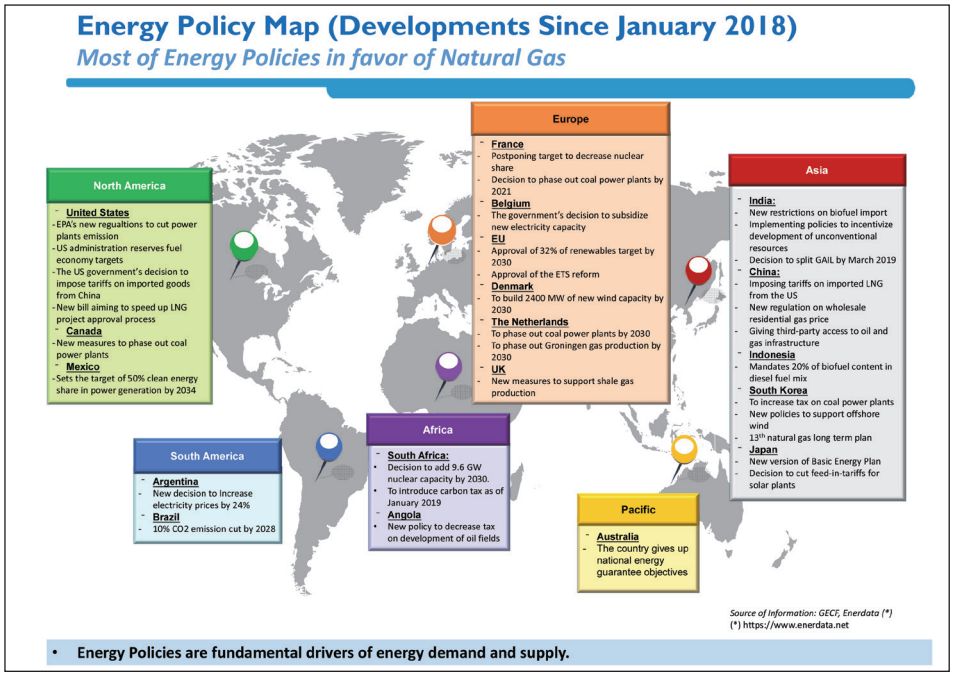
What is the vision and mission of the GECF? Based on the long term strategy which was adapted last year on the ministerial meeting in Moscow, basically the vision is about developing common views and promoting natural gas as a fuel of choice for sustainable development based on availability, reliability, versatility, affordability and its inherent nature as environmentally friendly source of energy. The mission is about supporting the sovereign rights of member countries as the main strategy of the organization, maximizing the value for the benefit of the people, and promotion of the coordination on global energy developments with the view to contributing to the global sustainable development and energy security.



I invite you to a journey to the gas market. First of all, we look at the drivers of gas demand which the main ones are the economic growth and the energy policies. Regarding the economic growth, we have seen that the world economy growth has been around 3.7 to 3.9 percent in the last year, depending on the source of estimate: IMFOCD or World Bank. However, we see its downside risk based on the uncertainty on protectionism policies, as well as sanctions. We saw recently that OECD reviewed down their forecast for the economic growth by 0.1 percent.

The second driving factor is the energy policy. In the below slide we summarize the main development of energy policies occurred since January 2018. There are some policies that look in favor of natural gas but others that may be against. For example, China is pushing an aggressive policy for coil to gas reaching in order to tackle the air quality. This year

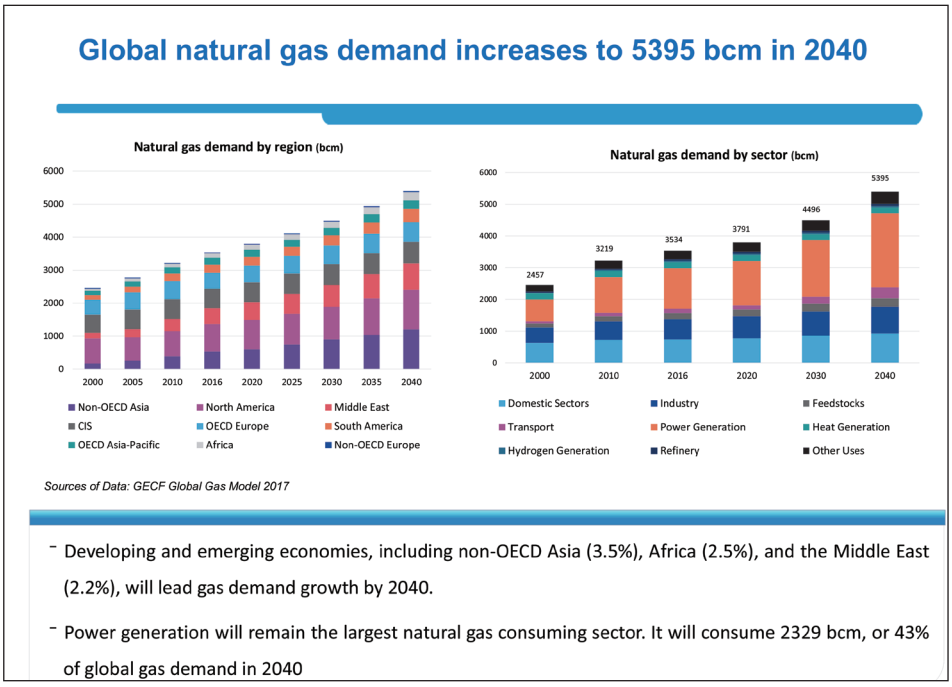
the government is pushing and funding the coil to gas conversion boiler projects in order to ensure the usage of clean fuel in the heating sector specially in winter period. Another policy that would be in favor of natural gas is the policy of phasing out of coil power plant in France and Netherlands, and also the production of carbon tax in South Africa. These policies could open a bigger room for natural gas expansion. However, they also downside risk for the gas demand such as postponement of the nuclear reduction share in France, or a massive extension renewable resulting from big subsidies.



In terms of gas consumption, we see that it has grown significantly by 4 percent in 2017 in compare to 2016 and has reached to around 3.8 trillion cubic meter. This growth is mostly driven by non OECD economies, notably China that its gas consumption is increasing by 15 percent which was not expected in the previous forecast to reach 260 PCM. In

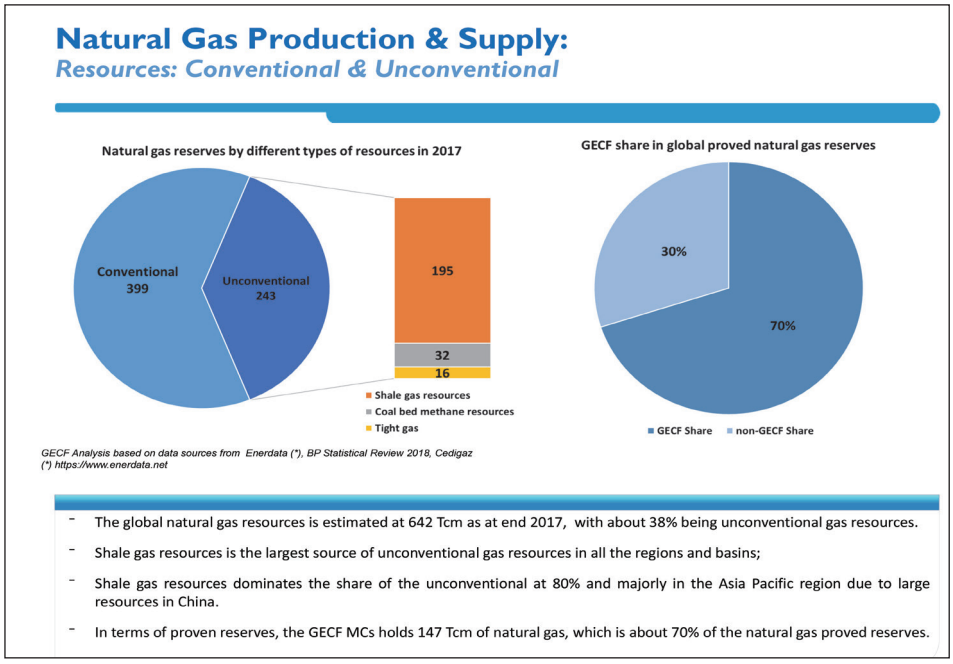
2018 and 2019, we see further growth due to economic conditions, competitive prices, as more volumes of LNG are expected to come to the market and more coil to gas reaching policies in Asian market notably China, South Korea and India.

Regarding the long term view in terms of the natural gas demand, there is the same trend of the driving factors until 2040 meaning that non OECD Asia will lead the growth in addition to Middle East and the Africa. The global natural gas consumption in our global gas outlook is expected to increase by 53 percent by 2040, from 3.5 trillion cubic meter to 5.4 trillion cubic meter.

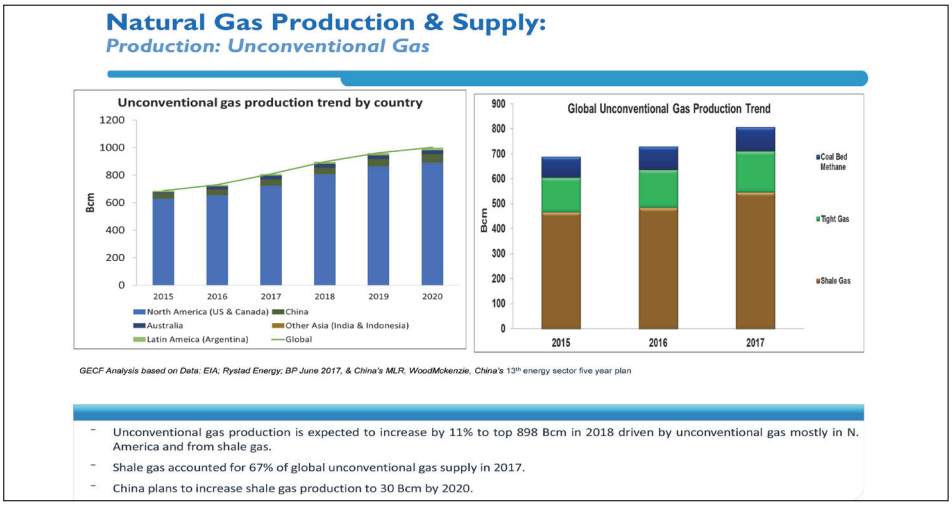


Now, we are focusing on the supply side; starting by the conventional and unconventional natural gas resources. The global natural gas resource is estimated 642 trillion cubic meter at the end of 2017. Unconventional gas resources are 38 percent of the global natural gas resources which 80 percent of them are Shale gas resources. GECF countries have a massive

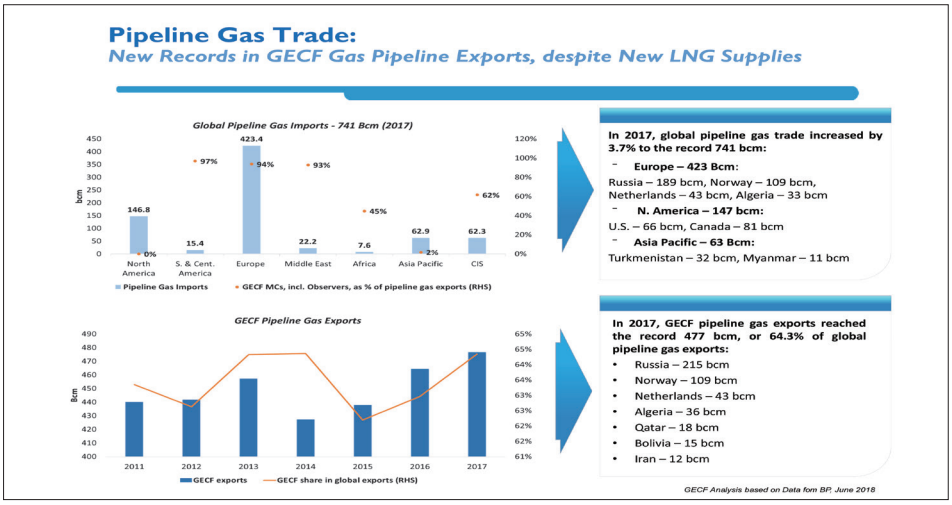
unconventional gas resource. Based on the current estimates, GECF countries in addition to the dominance in terms of proving gas reserves of 70 percent in the world, they have also high potential to increase their presence in unconventional market.



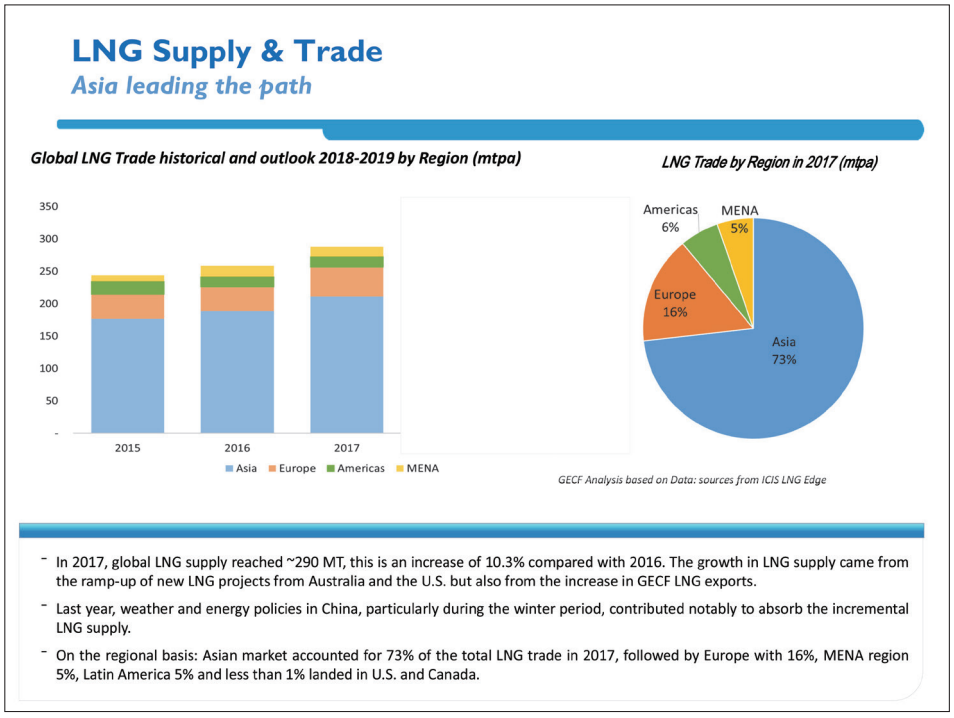
Natural gas production increased by around 4 - 3.8 percent and it reached approximately 3.8 TCM in 2017, driven mostly by GECF growth driven by Russia, Iran, Nigeria and Egypt. Regarding the zoom on unconventional gas production, we expected to rise by end of this year 11 percent up to around 900 TCM driven by unconventional gas mostly in North America and notably from Shale gas. Outside the US, we are monitoring the development of unconventional gas worldwide, China which is producing currently 10 TCM of Shale gas is planning to produce 30 TCM of Shale gas by 2020 in their 35-year plan. However, based on the current rate production and the previous plan, China missed the target due to the sector of Shale formation in the country.



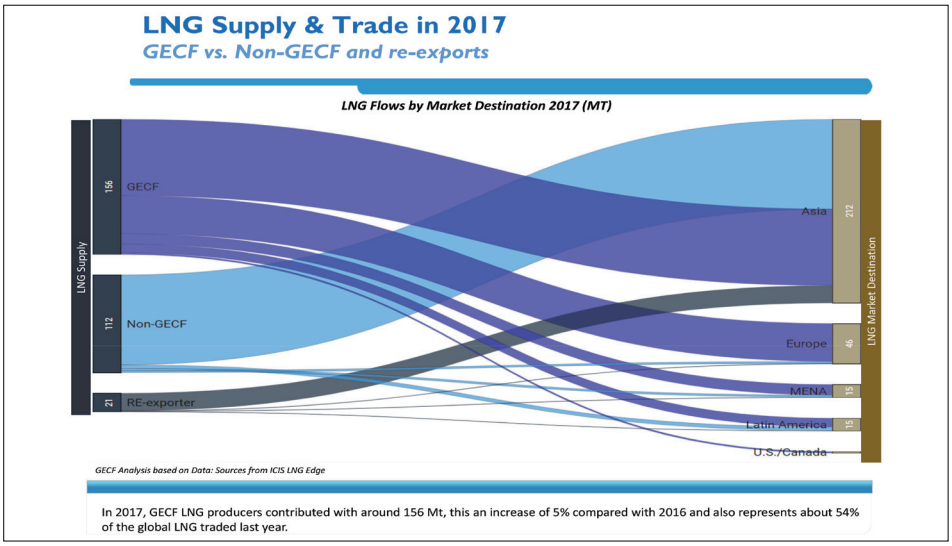
Regarding the pipeline trade; GECF reached a new record in pipeline export despite the increase of the LNG export from non GECF countries. In 2017, Russia, Norway, Netherland and Algeria increased their export to Europe. The gas export also increased from Iran and Bolivia. Also from non GECF countries, US increased its export to Mexico thanks to the availability of the transporter pipelines.



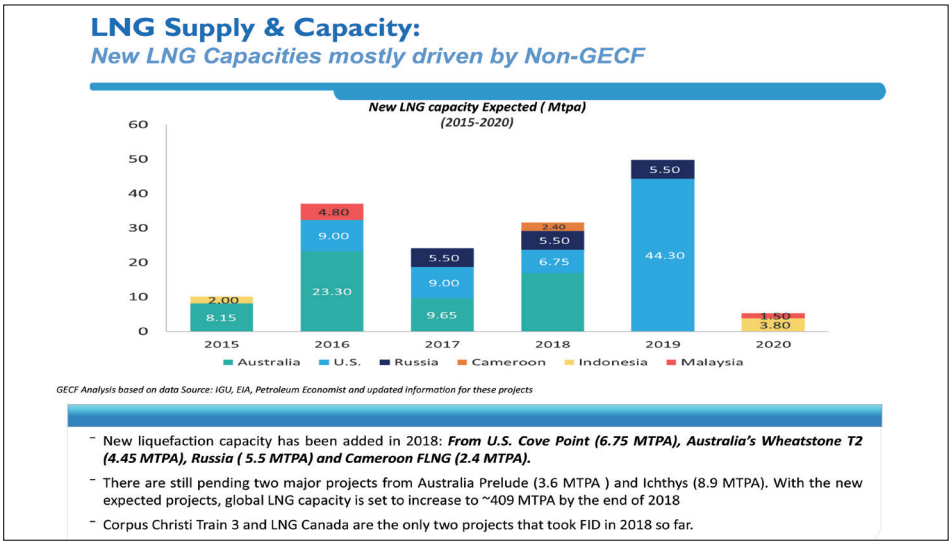
In 2017, the LNG trade average was 200 million tons, recording growth of more than 10 percent compare with the previous year. This was mostly driven by non GECF LNG production from US and Australia, but also we had a member country, Russia, which added a new LNG capacity. In terms of market, Asia is leading in importing by representing 70 percent of the global LNG trade.



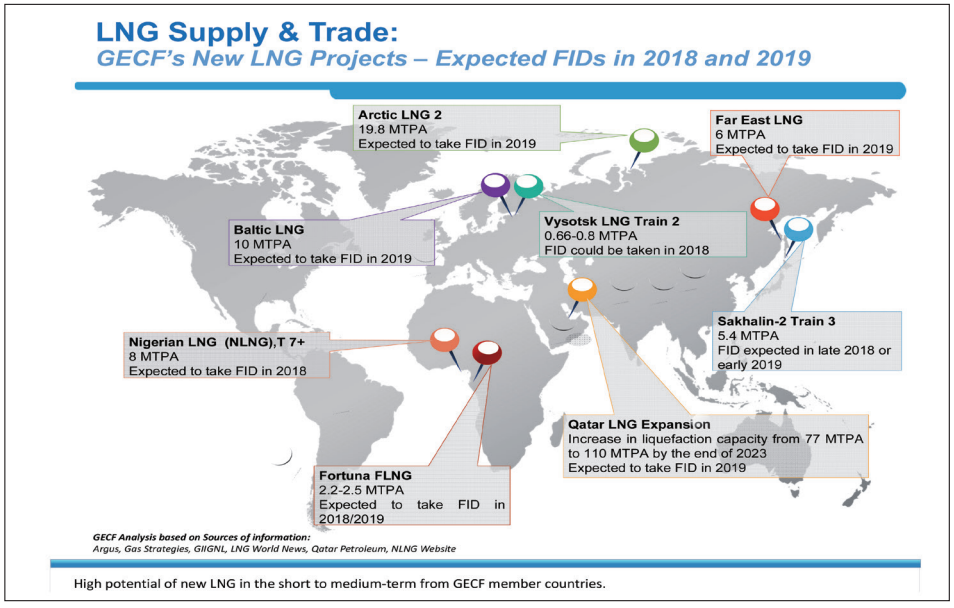
In the next slide, we try to summarize how the GECF is performing in terms of LNG trade. GECF is dominating in most of the markets. There is almost no market in North America since the US is becoming an exporter. In Latin America, GECF is dominating. There is a competition in Asia due to the LNG from Australia which is its natural market.



LNG capacities as I mentioned mostly driven by non-GECF countries. In 2017, we expected around 24 to 32 million tons of new LNG capacities coming to the market. Next year, expected capacities to come are around 50 million tons.



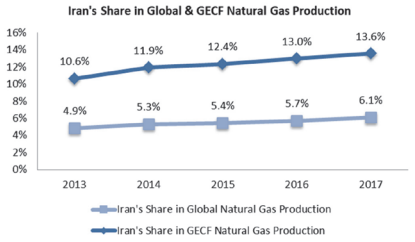
Below map provides the new LNG projects from which are expected in FID by 2019 and State production in the window of 2023 to 2024 coming from Nigeria, Russia, and Qatar. This map is dynamic as soon as member countries take decision to go for FLNG and LNG, it will be updated and Iran has great potential to be added to the map.

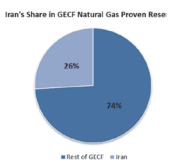


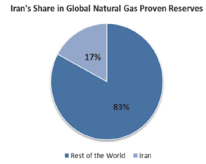
Now I come to Iran's role in gas industry as a GECF member. I think I cannot say better than what was said yesterday and today about the potential of Iran and its role in the gas industry. Iran sits on more than 25 percent of the global conventional gas reserves, comparing to GECF that contributes to 26 percent of the proven natural gas reserves. And Iran's share of production is constantly increasing. Also, it contributes to the 13.6 percent of GECF production in 2017 within incremental production of more than 20 BCM in 2017. Iran started gas exporting to turkey and Iraq in 2017. Iran has a political attitude towards gas plan in the country to satisfy the growing gas demand but also to be present in the market via directly LNG or pipe gas or also via petrochemicals provided other values.

Iran Gas Industry: The Present and The Prospects

- Iran holds more than 25% of the world conventional gas reserves at the end of 2017.
- It sits on 26% percent of GECF proven natural gas reserves at the end of 2017.
- Iran's share in GECF natural gas production increased from 10.6% in 2013 to 13.6% in 2017.
- South Pars: Largest gas project in the world
- Iran was the second source of global natural gas production increase in 2017 (with an incremental production of 20 Bcm in 2017).
- Iran's natural gas exports to Turkey takes place within a framework of 25 years contract for 10 Bcm/year.
- Also the gas export to Iraq started in 2017.
- The first underground natural gas storage facility commissioned in 2012 in Iran.







Iran Gas Industry: The Present and The Prospects

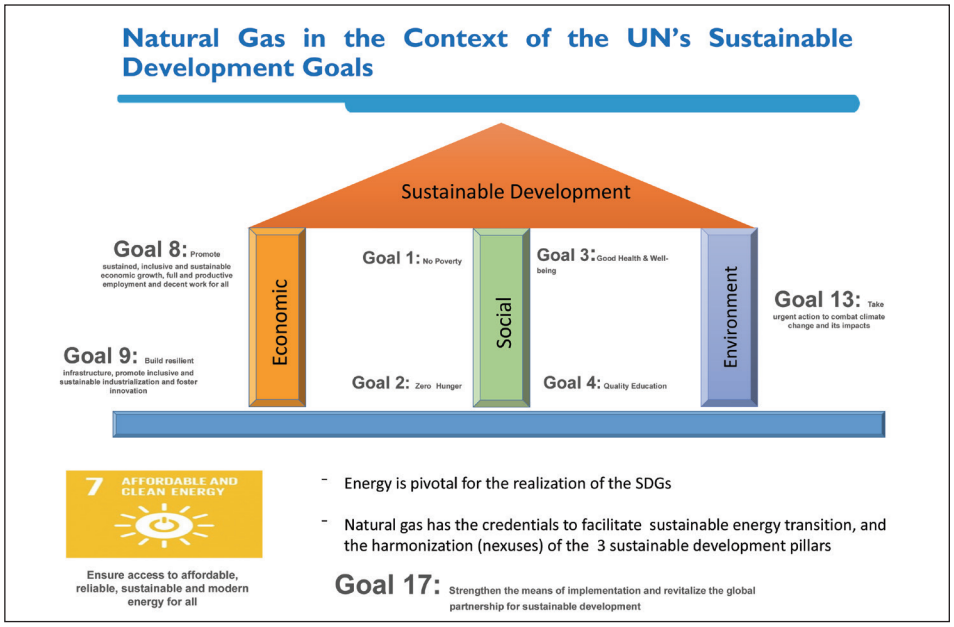
Iran: Rich Gas Resources holder

- Iran has recently implemented energy policies to substitute pollutant fuels by natural gas especially in electricity sector.
- The country is implementing energy conservation policies to improve its energy intensity.
- The share of natural gas in country's energy mix reached around 70%.
- Iran's Energy consumption has almost doubled since 2000
- Iran has one of the world's largest natural gas distribution networks. The gas transmission network comprises of 3600 km of pipeline.
- More than 90% of households have access to piped natural gas as clean, affordable and sustainable source of energy.
- Iran has great potential to become transit country for Central Asian of Caucasus gas, and
- A great potential to become an important player in the global gas market (LNG and pipeline exports)

Source: GECF, Enerdata report (*)

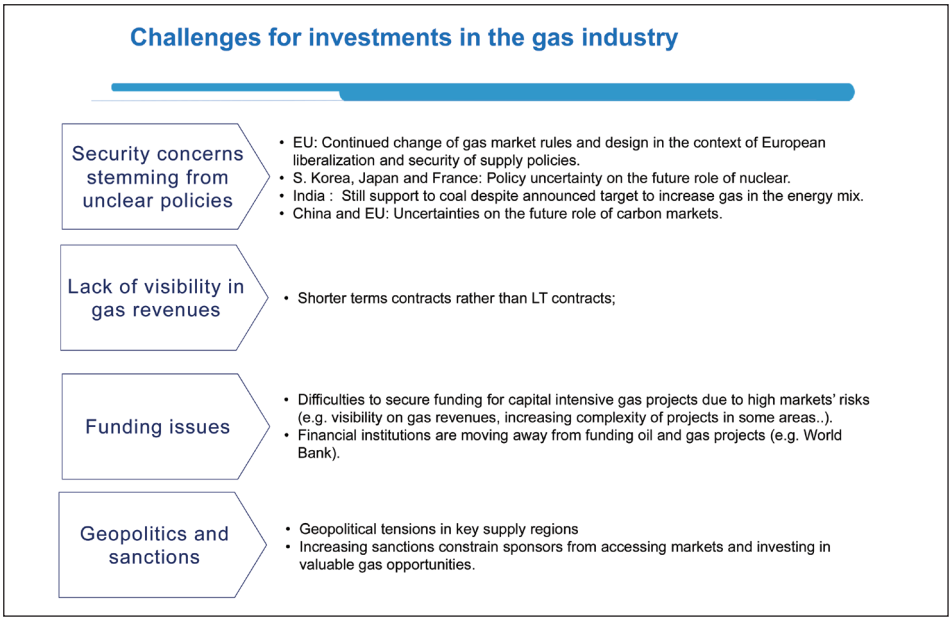
(*) https://www.enerdata.net

Now, we discuss about how we see natural gas in the context of United Nation SDGs. In our model, we always see that natural gas is a fuel of choice for sustainable development. In this regard, we see that the natural gas is very compatible and is a response to the sustainable development goals; it helps eradicating poverty and hunger, it helps improving the health conditions and the wellbeing, it helps also to offset the challenges of climate, and it is actually thanks to its credential, respond to the three pillars of sustainable development: economic, social, and the environment.



Now, allow me to talk a little about the challenges for investment in the gas industry. We had a workshop in GECF where we discussed with member countries and we came up with these challenges which have been actually retreated during this tow-days discussion. First is the lack of energy policies which doesn't provide clarity for the investors to bring the gas to the demand centers. The lack of visibility in gas reviews in a sense that short

term contracts are less bankable than long term contracts. Also, geopolitical issues and sanctions which hinder the development of investment in the upstream along the gas value change and prevent the sponsors form acting in markets.



In conclusion, the natural gas continues to play great role in the future energy mix which will be present in our 26 percent of the global energy mix by 2040. Natural gas is becoming more competitive due to the new players. From GECF point of view, cooperation is the core value of the forum. We have seen cooperation among member countries and there are some key success stories recently achieved; for example: the contract between Venezuela and China to supply gas for Venezuela in LNG facilities in Tobago, contract between Algeria and Bolivia, the feasibility study for Bolivia to export LNG from the Peru, Iran and Iraq agreement for additional natural gas supply, several agreements between Iran and Russia to cooperate in natural gas development plan, and also Iran-Oman agreement

to blockify Iran's gas in Oman LNG facilities.

Iran has the potential to position itself strongly to the market via FLNG, LNG or pipeline and this could be trough financing upstream projects, expanding pipeline exporting to regional markets, investment in LNG and FLNG projects, and also solidify its partnership with key markets such as China, India and Pakistan. GECF will continue to ensure the sustainable supply to its partners and its clients.

Thank you very much for your attention.

Concluding Remarks & Possible Recommendations

- Natural gas will continue to play a great role in the future global energy mix (26% of global energy mix in 2040);
- Gas market is becoming more competitive;
- Natural gas faces important investment challenges that hinder its development of sustainable supply
- To overcome investment challenges, GECF is promoting cooperation and dialogue between gas producers and consumers
- The GECF is still a dominant player of gas market in terms of reserve, production and pipeline gas & LNG trade.
- Cooperation among GECF Member Countries is a core value to preserve its position as a leading supplier on the gas market.
- Iran, with a gigantesque gas reserves and R/P of more than 100 years, has a huge potential to become an important player in the global gas market;
- GECF will continue to support the world with gas supply for its sustainable development.