



THE MIDDLE EAST TO INDIA DEEPWATER GAS PIPELINE A Favourable Situation For All

AUGUST 2017



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The Associated Chambers of Commerce and Industry of India

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The Associated Chambers of Commerce and Industry of India

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MESSAGE

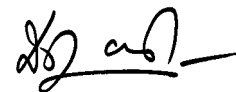
Natural gas is emerging as the preferred fuel of the future years, in view of it being an environmentally friendly and economically attractive fuel. India's energy policy above all focuses on securing energy sources to meet the needs of its growing economy. Unfortunately, India has not succeeded in this effort to build Transnational Gas Pipelines from the neighbourhood, inspite of efforts for the last two decades. Since many years there is an endeavour to build a deepwater gas pipeline through a safe route, avoiding Pakistan and using 'cleaner' fuel than coal.

The advantage of having gas through pipelines are primarily long time gas supply/purchase contract, made at fair price, enabling new capital investment in projects of gas receiving countries. Building of such gas pipeline also offer vast multibillion dollar business opportunities and the resultant employment generation and increase in trade with Gas supplying country for other products too.

The present study is an in-depth study of the geopolitical complexities of the Middle East region, a major source of hydrocarbon and the implication of laying transnational pipeline.

We acknowledge and place on record the commendable work undertaken by Shri Sugato Hazra in preparing this report.

We trust that the study will enhance awareness amongst various stakeholders and the recommendations / suggestions evolved to be considered in the overall interest of the economic development.



(D S Rawat)

EXECUTIVE BRIEF

Iran's South Pars gas field is one of the largest gas fields in the world, which is also in close proximity to India.

India is an old ally for Iran. Both the countries stood by each other in times of need and have had good economic relationships throughout.

While Iran is looking to market its oil, India is a growing market for natural gas. However, lack of infrastructure is an impediment. South Asia Gas Enterprise (SAGE) has already undertaken a techno-economic viability study to set up the energy infrastructure.

Decision making is needed at the highest level in both the countries to facilitate setting up of techno-economically viable and lucrative undersea pipeline.

REPORT

During the year 2016-17, India consumed 55,534 MMSCM (million standard cubic meter) of natural gas. Out of this 24,686 MMSCM was imported. India imports LNG and gasifies the same for domestic use. India is now the fourth largest natural gas importer, mainly from Qatar - the world's largest gas exporter.

It is estimated that Iran and Qatar have second largest natural gas reserves. Sanctions were imposed on Iran. Now that sanctions have been lifted Iran is exploring marketing opportunities to exploit natural gas reserves as demand for natural gas is growing globally.

Iran's South Pars gas field is one of the largest gas fields in the world, which is also in close proximity to India.

Indo-Iran Relation and Role of US sanctions

India and Iran had cordial bilateral relationship, even during the prolonged war between Iran and Iraq. But the degree of business relation was frozen largely due to India's reluctance to deviate from the international geo-political agreement and growing Indo-US bilateral relation.

Post Iranian revolution in 1979, relations between the US and Iran were strained. US imposed economic sanctions against Iran, the scope of which was further expanded in 1995 to include firms dealing with the Iran government. On Iran's refusal to suspend its uranium enrichment program, the UN Security Council imposed sanctions in 2006. India adhered to the UN resolution and prohibited direct or indirect export and import of items, materials, equipment, goods and technology which could facilitate Iran's uranium enrichment program, reprocessing or heavy water related activities, or development of nuclear weapon delivery systems in Iran.

It expanded the list in 2011 adding more items that were additionally listed in IAEA and UN Security Council documents. India, however, had been importing 400,000 barrels per day of oil from Iran. Iran was India's second largest supplier of oil, second only to Saudi Arabia. The then Prime Minister Dr. Manmohan Singh advocated dialogue rather

than coercion. He admitted to “problems” with Iran’s nuclear programme but asserted India’s close economic relationship with Iran, being an important source of energy for India.

In February 2012 while on a visit to EU, Dr. Manmohan Singh had indicated India’s aversion to a conflict in the Middle East, keeping in view large presence on Indian workers (over 60 lakh) in the Gulf countries. He also raised the issues of frequent disruptions to payment system between India and Iran in trade of products outside the sanction, e.g. oil. While the payment route to Iran was cut off by the West nations, India looked at new avenues for payment of approximately Rs. 5,000 crore worth of crude it imported every month from Iran. India’s stance over sanction was somewhat vacillating, for instance after the European Union’s sanctions came into effect on July 1, 2012, New Delhi allowed MRPL and other companies to import crude from Iran in ships arranged by Tehran and on a CIF basis. However, this was revoked within few days.

India’s failure to adopt a firm position despite occasional support extended to Iran, remained a sore point in Indo-Iran relationship. Recently in an interview Iran’s envoy to India, Gholamreza Ansari, said that Chabahar port was not exclusive to any one country. The development of Iran’s gas deposit at Farzad B should be seen in this context.

Farzad B and Indian interest

Farzad-B was discovered by the OVL- led consortium in the Farsi block in 2008. It has an in-place gas reserve of 21.7 tcf, of which 12.5 tcf is recoverable. The project executed by OVL-led consortium, including Oil India and IOC, has till date costed over USD 80 million. OVL and IOC each hold 40% interest in license to develop the block, and 20% in Oil.

Iran’s envoy Gholamreza Ansari said in a media interview, “The work on Farzad B began before the sanctions, and now it is the post-sanction period. It was expected that India would settle issue before sanctions, but that did not happen. During the sanctions, it was understandable that India did not want to challenge the US. Now that the President of Iran, Shri Hassan Rouhani and India’s Prime Minister Shri Narendra Modi have met in Ufa, issues on Farzad B, should be discussed and concluded. The procedure should be expedited.

It is felt that since sanctions have been lifted, Iran is playing hardball over award of rights to develop Farzad-B gas field in the Persian Gulf to OVL - the overseas arm of state-owned Oil and Natural Gas Corp (ONGC). OVL, as operator of the Farsi offshore exploration block, has drilled an exploration well on the block. The resulting discovery, Farzad B, is located in the middle of the Persian Gulf between the Iranian port of Bushehr and Dammam, on Saudi Arabia's Gulf coast. Fam said Monday that Farzad B's development had been prioritized because it was a "joint field" straddling an international border. About 80% of the field lies in Iranian territorial waters with the rest in Saudi waters, where it is known as the Hasbah field. Iran is concerned that if Saudi Aramco gets a head start on developing its side of the joint field, most of the gas would be exploited by Saudi Arabia.

Aramco has already drilled wells in Hasbah and started gas production. In July 2016, Larsen & Toubro, India confirmed that Aramco has awarded L&T and Emas Chiyoda Subsea a \$1.6 billion contract for the second phase of Hasbah's development. Saudi Arabia's energy ministry and state-owned Aramco have set domestic gas development as a priority sector as the country.

Iran, with significantly larger gas reserves than Saudi Arabia, also consumes roughly as much gas as it produces but is keen to exploit its export potential. It is also keen to ramp up condensate output, used domestically as petrochemicals feedstock and to blend with crude for export.

India has been in talks with Iran over Farzad B since April 2016, when its oil minister, Dharmendra Pradhan, met his Iranian counterpart Bijan Zanganeh to carry forward negotiations after the sanctions were lifted. In October, India sent a top oil ministry official to hold follow-up discussions on the future engagement of OVL in the Iranian gas field with Hossein Zamaninia, Iran's deputy minister of petroleum.

Meanwhile Managing Director, National Iran Oil Company and Deputy oil minister Ali Kardor said the technical model presented by India was almost finalized, but agreement on financial framework pending odds over the gas price, is yet to be concluded. He added that Farzad B would be developed under an engineering, procurement, construction and financing contract, to be awarded in a competitive international tender process, if talks with India did not come to an agreement.

ONGC Videsh Ltd (OVL), the overseas arm of India's biggest oil and gas explorer intends to spend more than \$3 billion on Iran's Farzad-B natural gas block. OVL submitted a revised plan to the Iran government for the block, which the company will be able to develop within five years. India has been weighing investments in Iran worth up to \$20 billion. In addition to oil and gas exploration, India has considered petrochemical plants, gas-processing facilities and port expansions, including the industrial hub of Chabahar. This interest was shared by Indian Oil Minister Dharmendra Pradhan during a visit to Tehran in 2016. The new plan of OVL, filed with Iranian Offshore Oil Company (IOOC), excludes liquefaction facilities to turn the gas into LNG for ease of shipping and export. Indian Foreign Secretary, Mr. Jaishankar also visited Tehran in this connection. It is believed that sale of Natural Gas through various/options routes was discussed too.

Geo-political situation

There is no denying the mutual interest of India and Iran over the development of Farzad B gas find. Iran needs to develop fast so as to protect its interest from neighbouring Saudi Arabia which has already started pumping gas from the adjacent block falling within its territorial water. In addition Iran needs to develop its domestic economy hit by the impose sanctions earlier.

For India there is an urgent need to diversify its source of hydrocarbons. It was a state-owned Indian company that drilled gas at Farzad B. OVL was the only company which had submitted a proposal for developing the field.

Iran needs to sell the gas for which the country needs infrastructure. One option is to set up liquefaction plant at a nearest port say Chabahar, which is being developed with international support and India is major stake holder. India has shown interest to build LNG terminal, fertilizer plant, and petrochemical facilities in the Chabahar SEZ. Iran needs foreign investment since the drop in petro prices resulted in fall in export value of petroleum by 76% from \$114,751 million in 2011 to \$27308 million in 2015. Iran's current account surplus is dwindling.

The challenge is that currently the closely guarded Technology for gas liquefaction is mainly with US/European Cos., who have so far denied sharing this technology with Iran, for various reasons.

During Prime Minister Modi's visit to Tehran in 2016, India committed \$500 million towards the Chabahar port project. Along with Afghanistan, India signed a trilateral agreement for the construction of key road and rail links connecting the port. But soon after PM Modi's visit to Tehran, Iran's envoy ruled out exclusivity for India in Chabahar project. Retired Iranian diplomats at the government-backed Tehran think tank, the Institute for Peace and International Studies, said other countries were welcome to bid for future phases. They brushed aside suggestions that China's inclusion in Chabahar would be a cause of concern for India. They are of the view that India and China must find ways of "changing mindset" and not use Iran's development as a pawn in the battle for regional supremacy. Iranian commentators said that Indian Prime Minister Modi's visit to Iran in 2016 took place after many other major international players. Chinese President Xi Jinping was the first major leader to visit Tehran once its new nuclear deal with world powers including the US, Germany and Russia was signed. Many in Tehran argue that Iran faces fewer problems with the Chinese, eager to edge India out of its regional sphere of influence. Iran's strategic heft, due mainly to oil and gas power, has long been a major consideration for India's foreign policy. Yet, it was only after the landmark nuclear deal between the P5+1 and Iran in 2015 under the Obama administration, and the subsequent lifting of Iran's international pariah status that India finally inched forward on the much-awaited Chabahar port project, 13 years after it was first agreed upon. But today, America's threat to review the very deal that brought Iran back into acceptability poses a conundrum for Delhi that is eager to both ensure warm ties with the new US President, as well as continue its strategic and economic engagement with Iran.

Geopolitically India finds itself in a tight spot. Over and above these issues, general sentiments that India has "problems with the Islamic world, and Iran is an Islamic state", increase sharply in election time. Iran had a Presidential election on May 19, and the Ayatollah backs hardliners who accuse President Rouhani of pandering to foreign interests, especially to modernize its oil and gas sector. Even President Rouhani reiterated support for "trusted brother" Pakistan as he announced the completion of the Iranian section of a pipeline to carry natural gas to Pakistan.

Iran has nearly 10 percent of global oil and over 18 percent of global gas reserves. India on the other hand, has pursued aggressive diplomatic engagements with other oil and gas rich countries in the gulf - Saudi Arabia, Qatar and other GCC countries, and can

offset the shortfall from Iranian crude by increasing imports from Saudi Arab, Qatar and GCC Countries. India's new diplomatic initiative, including Prime Minister Modi's visit to Israel, will be dissected carefully in Iran's diplomatic circle.

Clearly Indo-Iran bilateral relation at this juncture is not very encouraging. Neither is Iran coming close to Pakistan despite Iran showing interest in reviving Iran-Pakistan pipeline. Earlier this was proposed as Iran-Pakistan-India pipeline but did not progress due to lack of interest from India. Pakistan, in the meantime has concluded several Deals for supply of LNG on short and medium term basis, at very attractive prices. Hence the Iran-Pakistan gas pipeline project is currently on cold storage.

Iran – post election

President Hasan Rouhani's landslide victory in the Presidential elections was largely in the interest of Iran. Rouhani came to power in August 2013 and managed to end his country's isolation and succeeded in lifting of sanctions. The sanctions have been lifted, but low oil prices are thwarting Iran's recovery. But political system of Iran is so structured as to maintain the power of the clergy and their allies, the Islamic Revolutionary Guards Corps (IRGC). At the top is Supreme Leader Ayatollah Ali Khamenei who has a veto on virtually everything. The legislature has two wings – the lower house or Consultative Assembly and the upper house, the Guardian Council. The Council has 12 members, of which half are clergy chosen by the Supreme Leader and the other half are jurists chosen by the lower house. The Guardian Council has a veto on all legislations. The Supreme Leader is elected for life by an Assembly of Experts, a group of 88 top clergymen who are elected once in eight years through direct voting. Evidently the Council is more conservative than required in an era of global business. President Rouhani, therefore, will look for deals which will help Iran economy.

The deep-water pipeline is an option which can help both Iran and India. So far this has not formed part of negotiations between the countries. Experts rightly point out oil and gas are mere commodities but more important for Indo-Iran relationship is connectivity. The proposed 1300/1400 KM pipeline is one such critical link to link Iran to India directly (or via Oman).

Prime Minister Modi and President Rouhani, both committed to development of their respective countries, need to explore this option and sign an agreement. Investment for such a win-win transaction will be many since geo-political complexity is eliminated by the resolve of two popular national leaders.

Additionally this pipeline route can also bring Turkmenistan/Qatar gas to India, through gas swap arrangements.

Prime Minister Modi can engage with President Trump suitably to warm up Washington on such a deal. After all economic growth is a primary tool to neutralize ultra-nationalist forces and help globalizing a country. In addition Indo-Iran link will help Washington in dealing with muscle flexing of China. For President Trump there are good reasons to encourage an Indo-Iran undersea pipeline.

Pipeline around the World

Pipeline is viewed as the most efficient means to transport natural gas from one destination to another upto a distance of 2500 / 3000 Kms. Cost of transport through pipeline is cheaper than liquefying and transporting as LNG. But for even longer distances pipelines turn costly. China, for instance, imports 335 mmscmd of NG through transnational pipelines. In 2011, China operationalized 8,700-kilometre-long natural gas pipeline, which is the world's longest. The line linked Turkmenistan with southern China, boosting supplies to the China's booming industrial zones in Shanghai, Guangzhou and Hong Kong. The pipeline starts in Huoerguosi on the China-Kazakhstan border, 670 km northwest of Urumqi, capital of Xinjiang Uygur Autonomous Region. The annual natural gas transportation capacity of the pipeline is expected to be 30 billion cubic meters. It is designed to provide stable gas supply for at least 30 years.

China also imports gas through pipelines from Russia / Myanmar/ CIS for distances of 3000 – 4000 Kms.

Pipelines are most dependable means of transporting Natural Gas and Crude oil. One of the longest NG pipeline, the Trans-Mediterranean (Transmed) is 2,475km-long and transports natural gas from Algeria to Italy via Tunisia and Sicily. Built in 1983 it was one of the longest international gas pipeline systems and has the capacity to deliver 30.2bcm/y (billion cubic metres per annum) of natural gas.

Russia has linked entire Europe through gas pipelines for more than 20 years.

In contrast India imports LNG and has built four liquefaction terminals of which one in Kochi does not have gas transportation pipeline. There are some other LNG terminals on drawing board or under construction.

The only transnational NG pipeline that India has taken part is the Turkmenistan-Afghanistan-Pakistan- India (TAPI) pipeline project. Announced in May 2002, India joined the consortium in 2008. Six years later in 2014 TAPI Pipeline Company Limited (TPCL) was incorporated. Shareholders agreement was signed in December 2015 - India, Pakistan, Afghanistan each having 5% stake with Turkmenistan holding the remaining 85%. The pipeline will carry natural gas from Galkynysh fields in Turkmenistan to Fazilka in India – a distance of 1814 km – and carry 90 MMSCMD of gas. India would get 38 MMSCMD of that.

According to a report commissioned by ADB the pipeline would cost US\$ 15 billion. But TAPI is still on drawing board and may not see any progress for many years to come, due to security / political issues with Afghanistan/Pakistan.

Given the political volatility in the region any pipeline on land from the natural gas producing regions to India faces insurmountable political risk. A large part of the geography – In Afghanistan and Pakistan – are breeding ground of terrorism. Any project, howsoever attractive that seems on business point of view, will find it difficult to reach financial closure. No wonder TAPI is on drawing board with even gas price not worked out yet. The peace pipeline between Iran and Pakistan is also facing hurdle. India had not even evinced much interest due to weak administration of the pipeline route. Natural gas pipeline from the gas rich West Asia has eluded India due to hostile neighbor which also has a very weak governance system. The option that New Delhi has is laying deep-water pipelines, in spite of technical challenges .

Similar Projects

There are several such projects.

- The Langed pipeline (originally known as Britpipe) is an underwater pipeline transporting Norwegian natural gas to the United Kingdom. Before the completion

of the Nord Stream pipeline, it was the longest subsea pipeline in the world. The pipeline runs 1,166 kilometres (725 mi) through the North Sea from the Nyhamna terminal in Norway via the Sleipner Riser platform in the North Sea to Easington Gas Terminal in England. The pipeline is designated to bring natural gas from the Ormen Lange gas process terminal to the UK, but through the connector at Sleipner Riser it provides also an opportunity to send gas through Gassco's existing network to continental Europe. Total cost of the project was US\$ 2.8 billion.

- The Nord Stream offshore pipeline operated by Nord Stream AG runs from Vyborg compressor station at Portovaya Bay along the bottom of the Baltic Sea to Greifswald in Germany. The length of the subsea pipeline is 1,222 kilometres. The pipeline has two parallel lines, each with capacity of 27.5 billion cubic metres (970 billion cubic feet) of natural gas per year. Pipes have a diameter of 48 inches, the wall thickness of 1.50 inch.
- The South Stream/TurkStream Projects to supply gas to Europe directly, are also making good progress, due to rapid advances in laying deepwater pipelines.

Encouraged by the success of such pipelines and to avoid geo-political conflict Italy, Israel, Greece and Cyprus pledged in April 2017 to move ahead with the world's longest undersea gas pipeline from the eastern Mediterranean to southern Europe, with support from the European Union. Once completed as planned, the US\$6.2 billion pipeline will take gas from Israel and Cyprus's recently discovered offshore gas reserves to Europe, potentially reducing European dependence on Russian energy at a time of ongoing tensions. The proposed pipeline will be technologically challenging – it will be the longest and the deepest. Conceived at a time when gas prices are low, the business plan will have to take the future movements of gas prices.

Indo-Iran Gas undersea Pipeline

Under water gas pipelines have been taking shape to avoid geo-political issues which are turning many potential pipelines unviable – TAPI and Peace pipelines are two examples. Gas buyers look for uninterrupted supply from nations which will not politicize the sale of crucial energy source. In case of Israel-Cyprus-Italy-Greece pipeline plan both Israel and Cyprus are viewed as reliable partners. Both these countries also will

look for stable buyers. The conditions which pushed these four nations to go for a challenging project are applicable in case of India and Iran also.

If one looks at the geo-political tensions which are hurting Indo-Iran collaboration, these are all external to the bilateral relation between the two old civilizations. Iran needs to make operational its new gas finds. India needs reliable supplier of natural gas. A deep-water natural gas pipeline to evacuate the gas from Farzad B offshore well to India will be bilateral since the same can avoid passing through territorial claim from any other countries in the region. For India this will be an assured source and for Iran an assured buyer – a buyer which did not drop Iran even during the sanction period.

Chabahar port or Kuh-e-Mubarak would serve as point of origin to proposed 1300 Km long Iran-Oman-India pipeline to transport natural gas. The Oman-Iran-India pipeline or Middle-East to India deep-water natural gas pipeline (MEIDP) may have two potential start points - at Ras al Jafan in Oman and Chabahar in Iran. The 1300 km long deep-water pipeline may terminate near Porbandar in Gujarat. It can then be connected to India's national gas grid.

Viability of Indo-Iran Deep-water Pipeline

Drawing parallels with the planned Israel-Cyprus-Greece-Italy (Eastern Mediterranean) NG pipeline to evacuate gas from the developing field in Israel and Cyprus Indo-Iran NG pipeline can also be planned. The Eastern Mediterranean pipeline is proposed to be at depth of 3200 meter and the length will be 1880 km. Indo-Iran pipeline need to be shorter – just about 1300 km. It can also include Oman which is a gas rich country. Such a pipeline (MEIDP) will provide Oman and Iran to have a ready access to a growing gas consuming market.

Two potential start points for Iran-Oman-India pipeline can be Chabahar or Kuh-e-Mubarak in Iran and Ras al Jafan in Oman. The entire route will be outside territorial water of either Saudi Arabia or Pakistan. Iran does not share good rapport with Saudi Arabia and India has issues with Pakistan. By keeping the maximum depth of the MEIDP pipeline at 3450 meter it will not affect movement of heavy cargo vessels in the busy Arabian sea. Like the Eastern Mediterranean pipeline MEIDP can use 24 inch internal diameter pipes with wall thickness of 32.9 to 41.5 mm.

Gas Qty. – 31.1 mmscmd

Preliminary techno-economic viability of the MEIDP project has already been done. Initial technical study was done by Inter Sea Ltd (Worley Parsons Group) and later by Peritus International Ltd of UK and Engineers India Ltd (EIL) of India. There was reconnaissance survey in the Arabian Sea by FUGRO, Germany. Based on these SBI Capital Markets Ltd assessed the financial viability of the MEIDP project. EY have also done an assessment of this Project, with favourable result.

The indicative project cost is US\$ 5.2 billion. This can be funded by debt and equity at 4:1 ratio. Roughly equity can be US\$ 1.2 billion and remaining US\$ 4 billion can be the debt component. Assuming an IRR of 12-13% the estimated cost of gas transmission will work out to US\$ 2.25 to 2.5 per MMBTU. This is much less than the total cost to be incurred if the gas is liquefied, shipped and then re-gasified. An indicative estimate is as under:

Gas Supplier (Iran) is committing to supply as for 25/30 years, under long term gas supply / purchase contract, which will also enable setting up of greenfield projects using gas, as per prevalent international norms.

	Cost in US\$ per MMBTU		
	Indo-Iran Pipeline	Pipeline link to Oman	LNG Import Cost
Gas price at Port	3	3	3-4
Liquefaction cost	-	-	3
3rd party transit fee	-	0.25 to 0.5	-
Transport cost	2.25/2.50	2.50 – 2.75	0.5
Re-gasification	-	-	1
Landed cost in India	5.22 –5.50	5.75-6.25	7.50- 8.50

The cost of landed gas through an under-sea pipeline will be at least US\$2 cheaper than importing LNG in the longer term estimated at USD one billion appx. savings annually per pipeline.

Cost of transport of LNG by ship will vary as per demand and availability of ship. While in case of transport through pipeline it is a dedicated infrastructure where cost will be fixed over the period of contract of 25/30 years

As regards capital expenditure it was benchmarked with similar projects in other parts of the world. It has been assumed as US\$ 110,000 per inch km for 26/28 inch diameter pipe.

SBI Capital Markets have done a financial assessment of Project.

Tariff for gas transport will depend on the project IRR. In the table above transport cost through pipeline will be US\$2.25 per MMBTU if the project IRR is kept at 14%. In any case the cost of transportation will be much less than importing LNG to India. The economy of gas transportation has resulted in most of the countries opting for laying pipelines wherever it is feasible. Between Indian and Iran a pipeline under the international water is technologically feasible and economically viable and can be financed with low interest cost/soft loans of 25 – 30 years tenure.

Impact on LNG Business

Natural gas pipelines are being set up across gas producing and consuming geographies. LNG business is thus facing competition. India remains a good market for those engaged in LNG sector.

An undersea pipeline between India-Iran-Oman will connect the producers and consumers of gas directly. This will bypass all geo-political issues.

It will also lead to more gas-to-gas competition & creating a genuine gas hub, as in Europe /USA etc.

In fact the pipelines in Europe for carrying gas from Russia came up to avoid such geo-political issues only. There are many – between Russia and Ukraine for example. Israel too will like to transport its gas to consumers like Italy without much diplomatic concerns.

Point to note is that 72% of LNG trade takes place in Asia. India is among the fastest

developing market. The other big market, China, has been busy setting up several pipelines to transport gas.

Evidently the LNG lobby will like the Indian Ocean region to remain a conflict zone to serve their business interests. India therefore must take a stronger and more pro-active approach to build a least one transnational gas pipeline in next 5 years.

Currently 2500 MW gas based Power generation capacity is idle, due to non-availability of low priced gas (and LNG being unaffordable).

No new fertilizer plants are being set up for same reason.

Preliminary survey of feasibility

There are several Indian steel plates & steel pipe manufacturers and construction companies which will gain sizeable business from the proposed pipeline. The same applies for Iran also. Both the countries have been looking for opportunities to boost economic growth.

Indian manufacturers like Jindal SAW/ Tata and Welspun have the capacity to supply required steel pipes for laying the pipeline. Steel may also be sourced from Nippon Sumitomo/JFE, Europipe and even Chinese companies. Both India and Iran can guide sourcing of material based on the best interests of their respective economies.

Laying of pipeline under sea needs specialized companies. There are top three European companies who have the expertise to handle such projects. These are Allsea (Switzerland), Siapem SPA (Italy) and Heerema Marine Contractors (Netherlands). They all have recently acquired/built mega-pipe-lay Barges each costing more than a billion dollars to lay ultra deepwater pipelines.

SAGE (South Asia Gas Enterprise) has already made preliminary Survey and finalized tentatively the pipeline route. In collaboration with Global sponsors and contractors SAGE completed preliminary techno-economic survey. It needs now to take up FEED study and related Ocean Surveys. SAGE has signed MOUs and Agreements to co-operate with several reputed companies.

Pipe Mills	Installation Contractors	Engineering & Consultancy	Buyers and Suppliers
Tata Steel	Allseas (Switzerland/ Netherlands)	Peritus Intl Ltd (UK)	GAIL
Welspun		Engineers India Ltd	IOC
JindalSaw	SaipemSpA, Italy	Intecsea, Delft, Netherlands	GSPC
PCK (China)	Heerema Marine Contractors (HMC), Netherlands	(Worley Parson Group)	Oman Ministry of Oil & Gas
JFE Japan		SBI Caps	National Iranian Gas Export Company (NIGEC)
Europipe, Germany		FUGRO Geo Consulting, UK/ Germany	

Equity contribution can come from Iran/ Oman and India. Apart from private investment, long term soft loans can be accessed from Indian Banks, Multilateral Agencies, Export-Import Banks and also Foreign Currency Borrowing. Since the project will be the first of its kind from the gas rich Middle-East to India, one of the fastest growing economy in Asia, it will not pose any problem for the project to reach financial closure.

What will be required is an agreement among the respective Governments of Iran, Oman and India for comfort of International Investors/Financers due to longer duration of the Project. The lenders will look for equity participation of these countries.

Summing up the Benefits

The proposed Middle East to India Deepwater Gas Pipeline (MEIDP) pipeline supports 'Make in India' initiative of the Indian Government and offers several advantages as under:

- Bypassing the conflict zones in the region and creating an efficient infrastructure for economic usage of resources available

- Cheaper transport cost of pipeline will help the countries to trade in volumes and make optimum use of a critical global resource
- Since a pipeline is a direct connect between two countries the problems arising out of geo-political conflicts can be avoided – under sea pipelines in Europe, for instance, multiplied to avoid conflict zones
- A direct pipeline will ensure uninterrupted flow of gas, which is economically advantageous both for the buyer and the seller of gas over 25/30 years duration.
- Even in case of future issues arising out of global conflicts no sanctions can impact the direct infrastructure laid – like it did impact Indian import of crude from Iran during the UN sanction period.
- Both for the gas supplier and the buyer – Iran and India in this case – a pipeline will ensure that transactions between the countries do not get affected due to any externalities – commitment of both the countries being long term even investors will be inclined to stake or lend to the project.

This initiative needs Govt of India/ MoPNG's support.



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ASSOCHAM initiated its endeavour of value creation for Indian industry in 1920. Having in its fold more than 400 Chambers and Trade Associations, and serving more than 4,50,000 members from all over India. It has witnessed upswings as well as upheavals of Indian Economy, and contributed significantly by playing a catalytic role in shaping up the Trade, Commerce and Industrial environment of the country.

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MEMBERS – OUR STRENGTH

ASSOCHAM represents the interests of more than 4,50,000 direct and indirect members across the country. Through its heterogeneous membership, ASSOCHAM combines the entrepreneurial spirit and business acumen of owners with management skills and expertise of professionals to set itself apart as a Chamber with a difference.



Currently, ASSOCHAM has more than 100 National Councils covering the entire gamut of economic activities in India. It has been especially acknowledged as a significant voice of Indian industry in the field of Corporate Social Responsibility, Environment & Safety, HR & Labour Affairs, Corporate Governance, Information Technology, Biotechnology, Telecom, Banking & Finance, Company Law, Corporate Finance, Economic and International Affairs, Mergers & Acquisitions, Tourism, Civil Aviation, Infrastructure, Energy & Power, Education, Legal Reforms, Real Estate and Rural Development, Competency Building & Skill Development to mention a few.

INSIGHT INTO 'NEW BUSINESS MODELS'

ASSOCHAM has been a significant contributory factor in the emergence of new-age Indian Corporates, characterized by a new mindset and global ambition for dominating the international business. The Chamber has addressed itself to the key areas like India as Investment Destination, Achieving International Competitiveness, Promoting International Trade, Corporate Strategies for Enhancing Stakeholders Value, Government Policies in sustaining India's Development, Infrastructure Development for enhancing India's Competitiveness, Building Indian MNCs, Role of Financial Sector the Catalyst for India's Transformation.

ASSOCHAM derives its strengths from the following Promoter Chambers: Bombay Chamber of Commerce & Industry, Mumbai; Cochin Chambers of Commerce & Industry, Cochin; Indian Merchant's Chamber, Mumbai; The Madras Chamber of Commerce and Industry, Chennai; PHD Chamber of Commerce and Industry, New Delhi.

Together, we can make a significant difference to the burden that our nation carries and bring in a bright, new tomorrow for our nation.

D. S. Rawat

Secretary General

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The Associated Chambers of Commerce and Industry of India

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ASSOCHAM OVERSEAS 28 OFFICES



The pictorial presentation of the world map does not purport to be the political and geographical maps of the world and India and is not drawn to scale. This is only indicative.

ASSOCHAM International Department