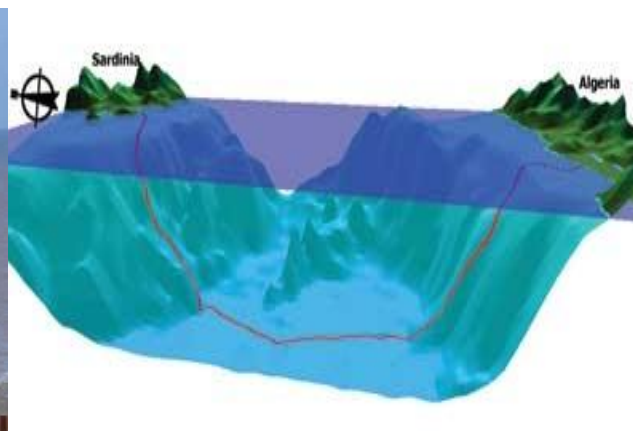


MIDDLE EAST TO INDIA DEEP-WATER GAS PIPELINE PROJECT



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AGENDA

PROJECT PROFILE

PROJECT DESCRIPTION

FINANCIAL DESCRIPTION

DRIVERS/ DEMAND

PROJECT NEEDS

AGENDA

PROJECT PROFILE

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FINANCIAL DESCRIPTION

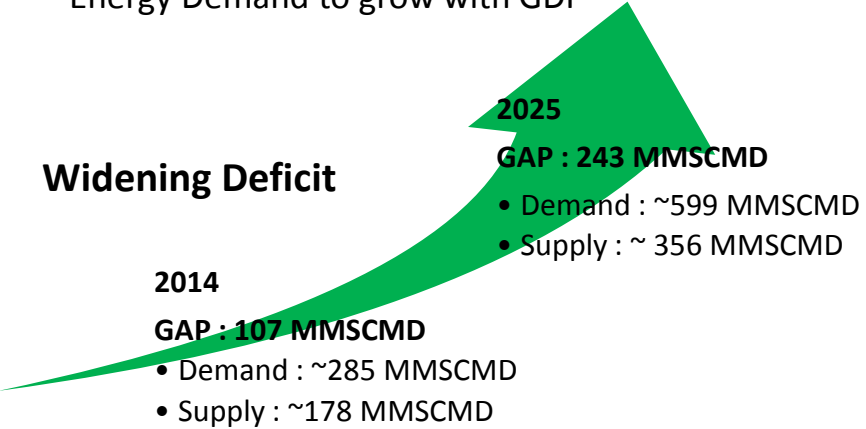
DRIVERS/ DEMAND

PROJECT NEEDS

BACKGROUND- Project Genesis

INDIA'S ENERGY SCENARIO

- 4th Largest Energy Consumer in the World
NG constitutes 8% of India's Energy Basket
NG consumption increased by 8% p.a. over last decade
- Strong projected economic growth
6.4% for FY 16 (Source IMF)
- Energy Demand to grow with GDP



Source: Industry Research

Need of Transnational Pipelines as Long Term Solution to address India's increasing Energy Gap

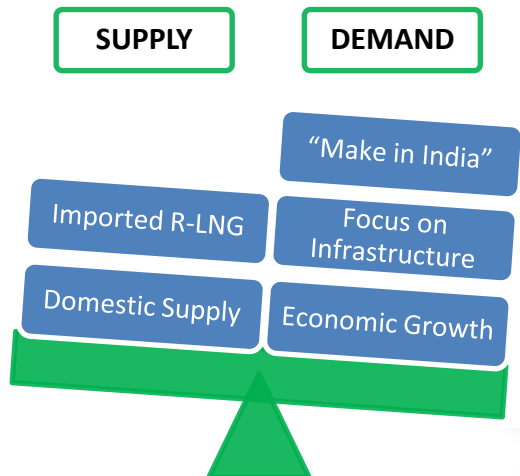
CURRENT SOURCES OF SUPPLY

DOMESTIC

- NOCs; Private Fields; Coal Bed Methane
- Declining/ lower than expected production

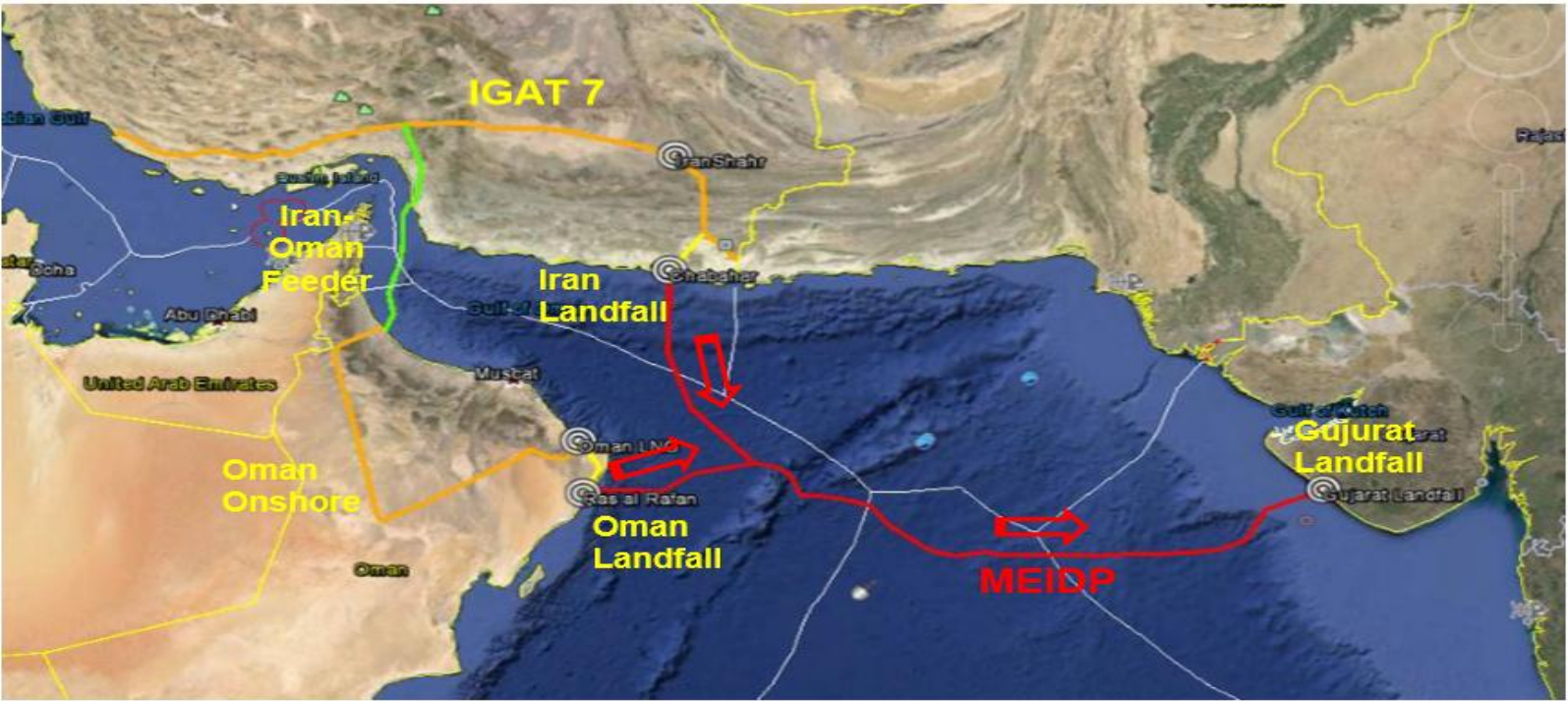
IMPORTED (R-LNG)

- High Landed Cost
- Contracts with Qatar, USA & Australia
- Limited RLNG Terminals on West Coast, viz. Dahej, Hazira, Dabhol, Kochi
- Projected increase in LNG Terminal Capacity from 66 (2014) to 207 (2025) MMSCMD
- Limited affordability of R-LNG



MEIDP PROJECT- Introduction

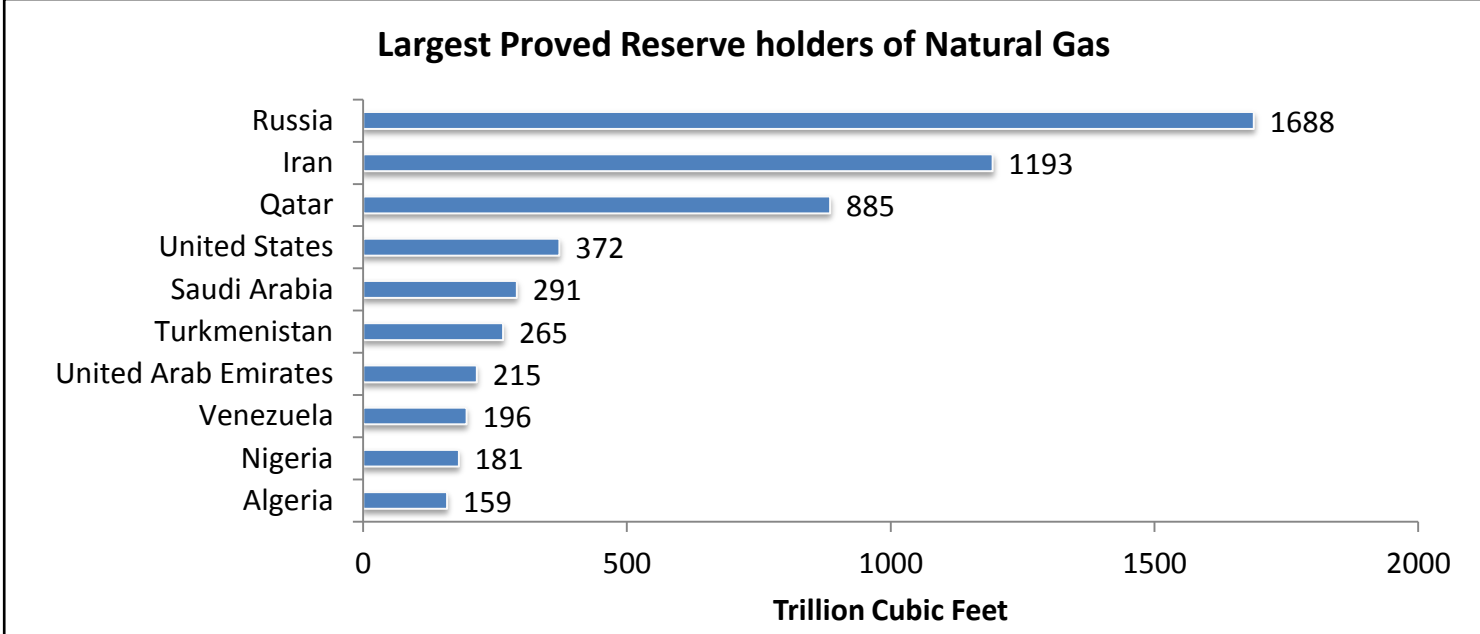
Project	Middle East to India Deep- water Pipeline Project
Sponsor	Proposed by South Asia Gas Enterprise Pvt Ltd (SAGE)
Proposal	Transportation from Middle East to India
Proposed Route	Middle East Port to Porbandar Port (South Gujarat) in India, via Arabian Sea



Source: SAGE

MIDDLE EAST- Gas Available in Abundance

- Over 2000 TCF of Natural Gas is held by the countries with which India has trading relationships
- High success rate of natural gas exploration at 79% viz. a viz. World Avg. of 30%- 35%
- Gas Rich Middle East Countries looking for new export markets
- Onshore Cross Country Gas Pipeline have significant Geo- Political Issues



Source: Oil & Gas Journal, January 2014

**Middle East Countries have abundant gas for export;
Need Significant Demand & Reliable Infrastructure to commercially exploit the gas reserves**

AGENDA

PROJECT PROFILE

PROJECT DESCRIPTION

FINANCIAL DESCRIPTION

DRIVERS/ DEMAND

PROJECT NEEDS

MEIDP PROJECT- Specifications & Timeline

Specifications

- Length: ~1300 km
- Max Depth: ~ 3500 meters
- Internal Diameter: 24"; Wall Thickness: 32.9 mm -40.5 mm
- Flow Rate: 1.1 BSCFD (31.1 MMSCMD)

Project Implementation Timeline

5 Years (including 2 Years of Construction Period)



Project Cost: ~USD 4.5 Bn (Indicative)

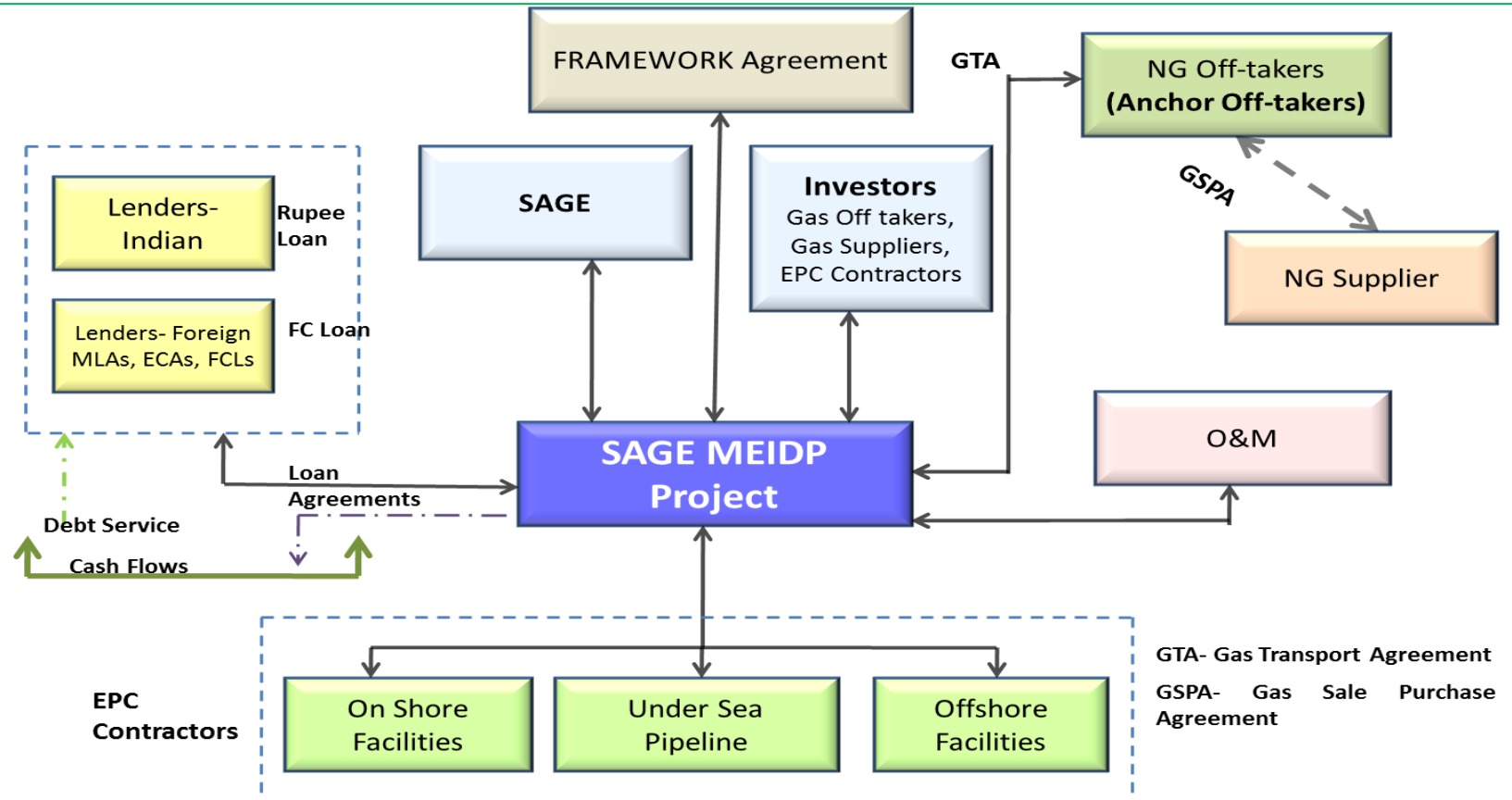


Tariff Calculation

Based on Target Return on Equity; Estimated Tariff ~ 2- 2.25 USD/MMBtu

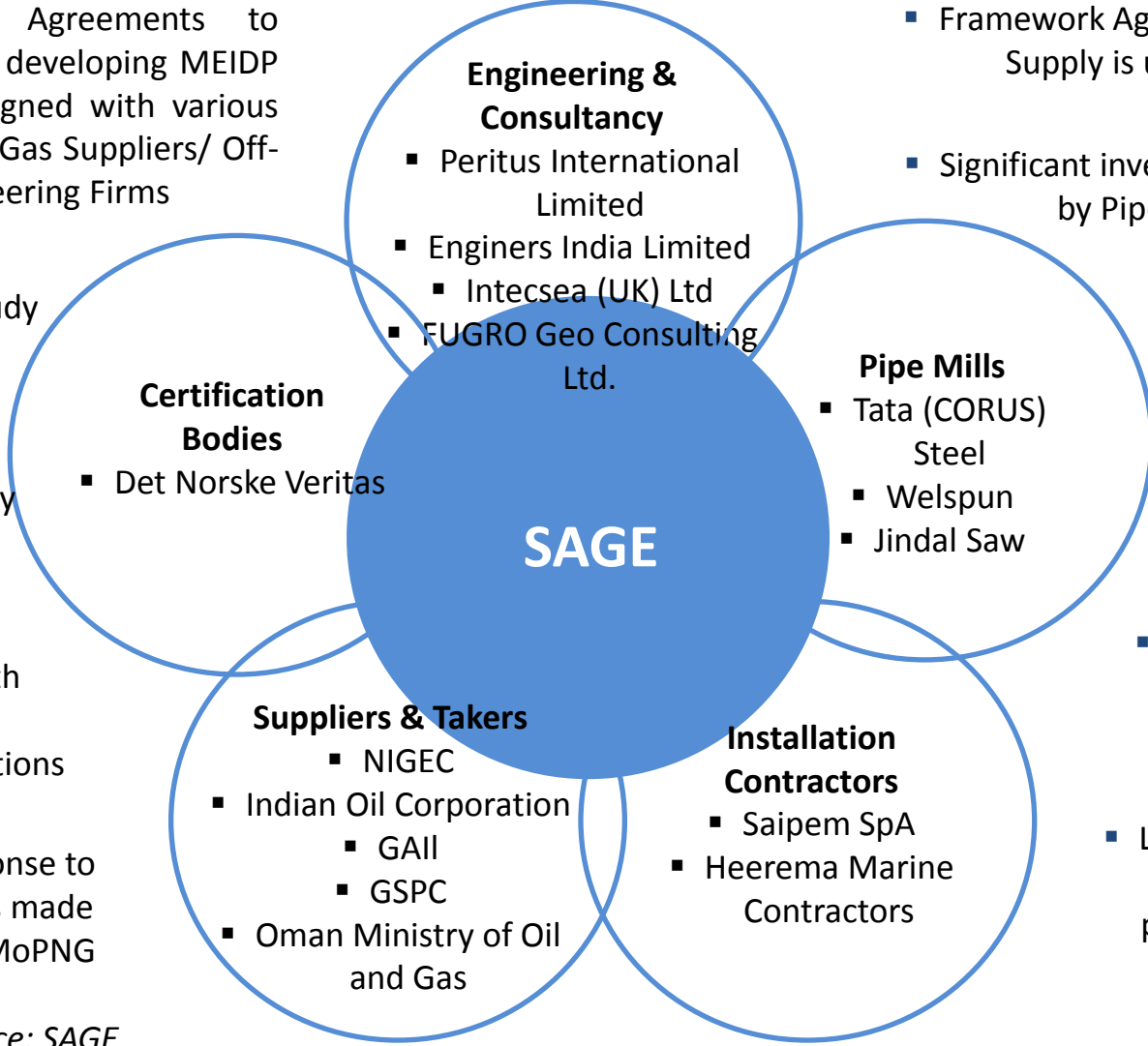
PROJECT STRUCTURE- Proposed

Offshore SPV to be incorporated based on tax implications of different geographies in the world



MEIDP PROJECT- Working in Partnership

- MoUs and Agreements to Cooperate in developing MEIDP have been signed with various agencies like Gas Suppliers/ Off-takers, Engineering Firms
- Feasibility Study completed
- Initial Route Survey already carried out
- Discussions underway with Potential Gas Supplying Nations
- Positive response to Presentations made to MEA and MoPNG



- Framework Agreement for Gas Supply is under discussion
- Significant investments in R&D by Pipe Manufacturers
- Technology available to manufacture pipelines as per Project Specifications
- Discussion held with Installation Contractors
- Laying Vessels for building the pipeline available

Source: SAGE

TYPICAL PROJECT IMPLEMENTATION PHASES (1/2)

Phase I

- **Inter Government Agreement (IGA)**
 - Commitment to Cooperate between Gas Seller & Buyer Countries;
 - Sale & Purchase Commitment
- **Gas Pipeline Framework Agreement (GPFA)**
 - Project Development Principles; Foundation for Host Agreements (HA)

Phase II

- **Heads of Agreement (HoA)**
 - Between Commercial Entities of respective countries; Basis for Commercial Agreements
- **Gas Sales & Purchase Agreement (GSPA)**
 - Commercial Terms viz. quantity, price, Take or Pay obligations etc.

Phase III

- **Appointment of Transaction Advisor**
 - Assist in structuring pipeline consortium
- **Identifying Consortium Lead**
 - Provides technical expertise, Project Execution, Operational know-how and Financing
 - Reputed & Experienced International Company.
- **Consortium Agreement**
 - Sets up Consortium & provides Shareholder rights & responsibilities
- **SPV Formation**
 - Build pipeline on DBFO Basis
 - Led by Consortium Lead with Equity participation of each Country

TYPICAL PROJECT IMPLEMENTATION PHASES (2/2)

Phase IV

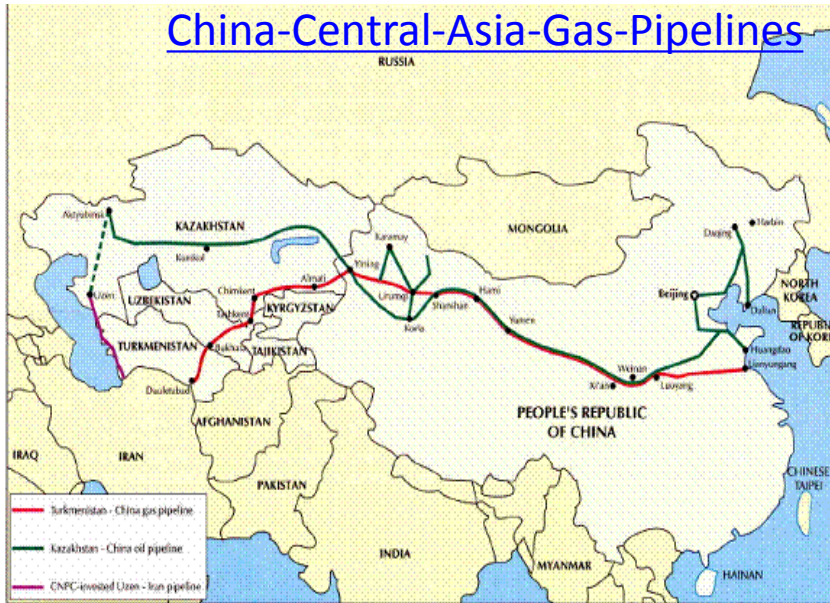
- **Host Country Agreements (HCA)**
 - Between Consortium & each host Government;
 - Sets up rights for the Consortium(land, taxes, people etc.)
- **Transportation Agreements**
 - Between SPV & Gas buyer Companies
 - Transportation between delivery point & re-delivery point
 - Sets out terms viz. Tariff, Ship or Pay obligations, Capacity Reservation, Quantity etc.
- **Securing Project Financing**
- **Award of EPC Contract**

Phase V

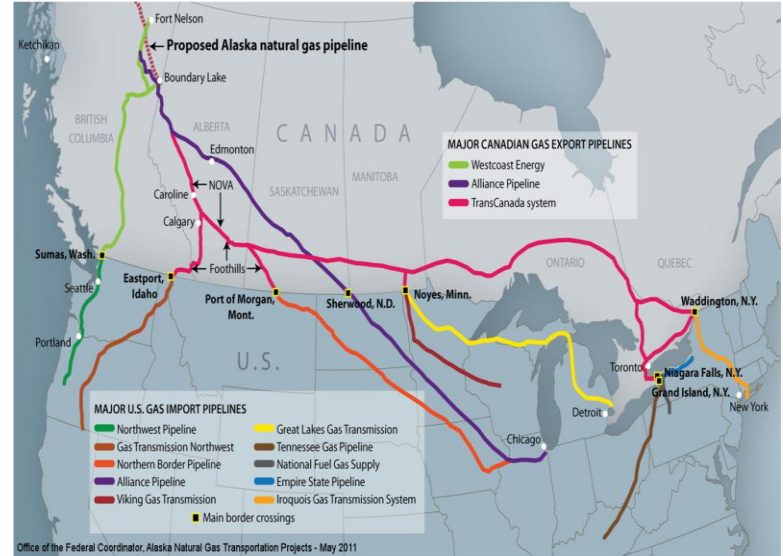
- **Construction**
- **Testing & Commissioning**
- **First Delivery**

Transnational Gas Pipelines

China-Central-Asia-Gas-Pipelines

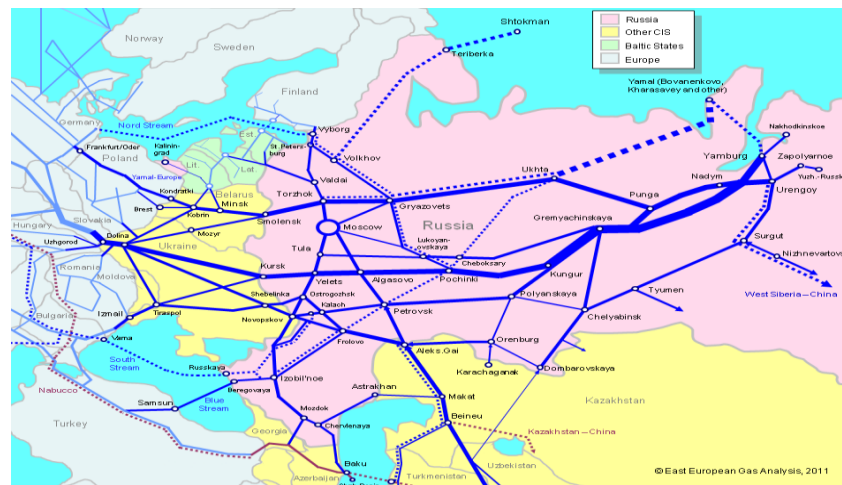


MAJOR CANADA, U.S. EXPORT-IMPORT GAS PIPELINES

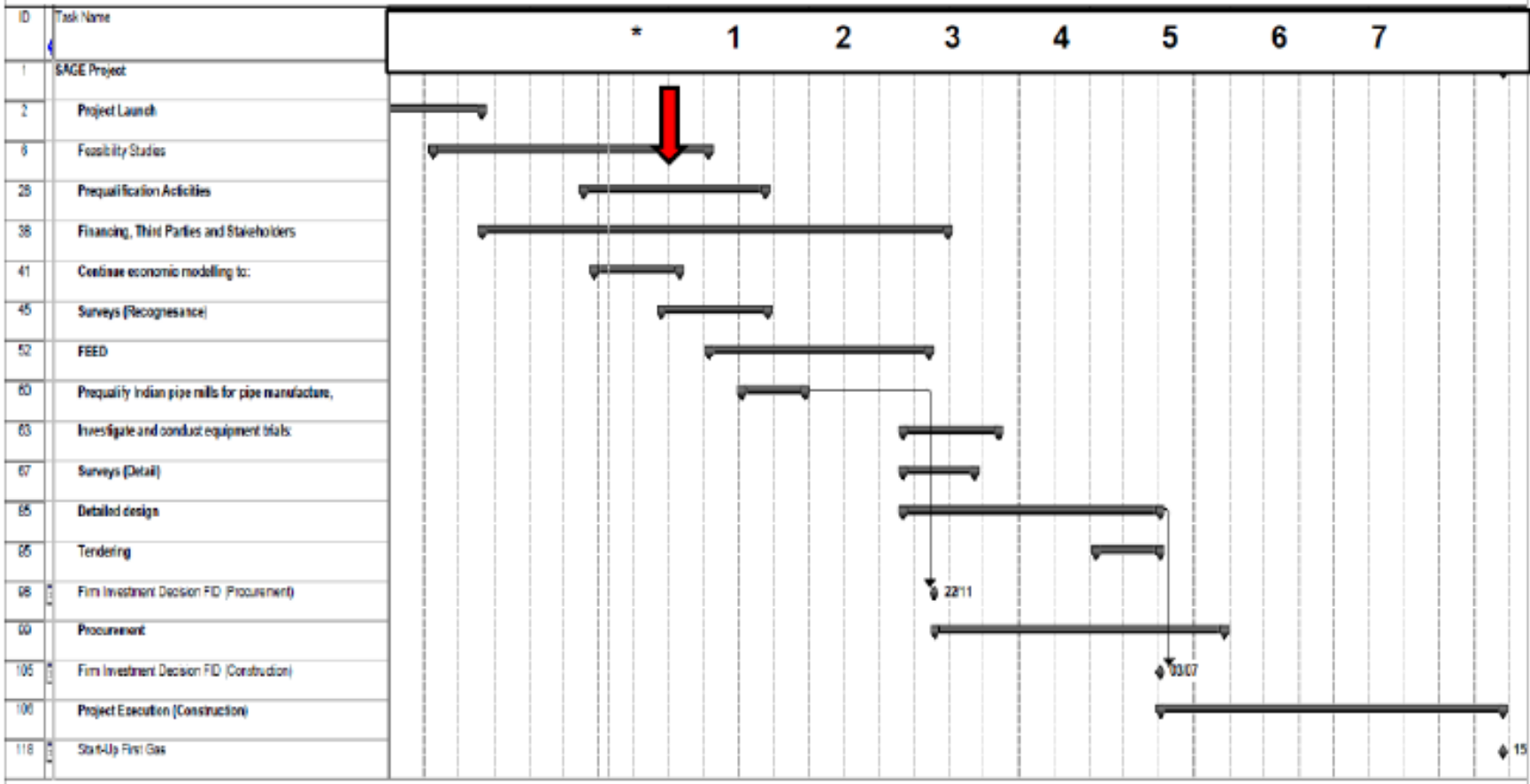


FSU PIPELINES

- Russia
- Europe
- Other CIS



MEIDP PROJECT- Implementation Timeline



Source: SAGE

Pre- FEED to 1st Gas is a 7 Years Undertaking
On fast track: FEED to 1st Gas could be 5 Years

MEIDP PROJECT- *Present Status*



Progress so far

- Feasibility Study completed- by Peritus International Ltd
- Financial Advisory Services- by SBICAP
- Indian Gas Market Assessment- by CRISIL
- Reconnaissance Survey- by FUGRO
- Significant amount invested by SAGE
- Significant investments in R&D by Pipe Manufacturers
- Ongoing discussions with Gas Suppliers
- Presentations made to MEA, MoPNG- Gol
- MoUs signed b/w SAGE and agencies like NIGEC, SAIPEM, WELSPUN, EIL, GAIL
- Availability of Laying vessels for construction
 - Castor ONE, Aegir- already in field
 - Pioneering Spirit (due in 2015) & AC 6000- under construction



Source: SAGE

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FINANCIAL STRUCTURE- *Proposed*



Mix of following Sources to Optimize the Cost of Debt

- **Rupee Term Lending (RTL)**
Long Tenor Debt from Indian Banks;
Tenor: 15- 20 years
- **Export Credit Agency (ECAs)**
From Countries of Material Suppliers/ EPC Contractors; Tenor: 12- 15 years
- **External Commercial Borrowing (ECBs)**
Banks/FIs; Tenor: 7- 10 years
- **Multi- Lateral Agencies**
Long Term Funds for Infrastructure projects;
Tenor: 12- 15 years

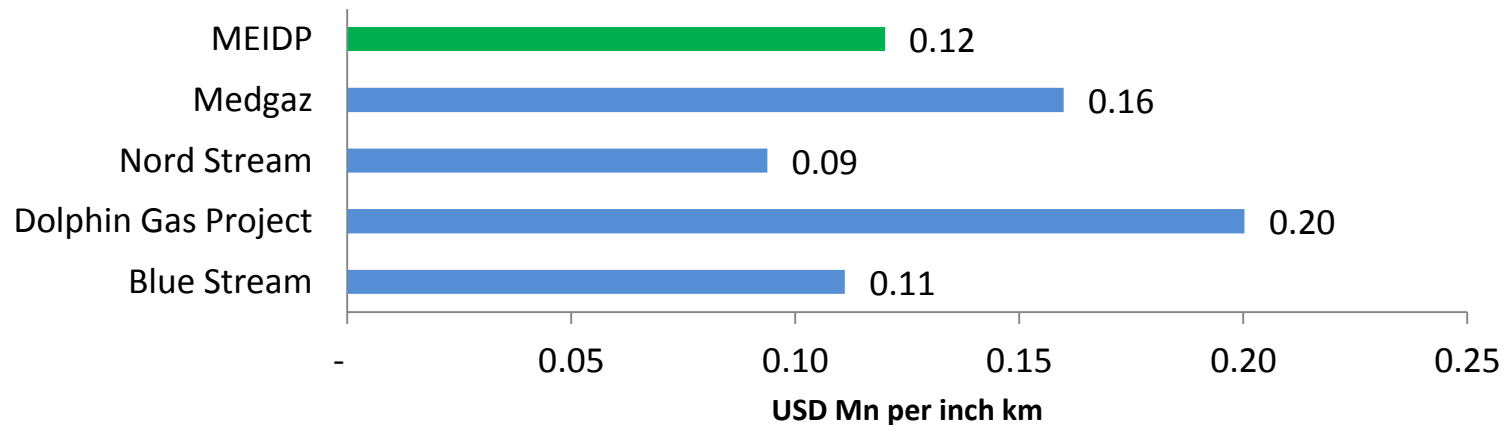
- SAGE & Associates
- Strategic Investment by Gas Suppliers/Gas Off-takers
- Investment by EPC Contractors involved in Project Implementation
- Other Financial Investors

The Means of Finance would be finalized based on the location of the Borrowing Entity & Appetite of Funding Agencies

PROJECT COST- Benchmarking

Pipeline	Year	Description	Length (km)	Diameter (inch)	Cap- Ex (USD Mn)	Cap- Ex (USD Mn/ inch/km)
MEIDP	Proposed	Middle East to India	1300	28	4500	0.12
Medgaz	2011- 12	Algeria to Spain	210	24	806	0.16
Nord Stream	2011	Russia to Germany	1222	48	5500	0.09
Dolphin Gas Project	2009	Qatar to UAE	364 (offshore)	48	3500	0.20
Blue Stream	2005	Russia to Turkey	1200	24	3200	0.11

Source: Public Domain/ Research Publications



Project Cost of the MEIDP Pipeline is in line with Latest Pipeline Projects

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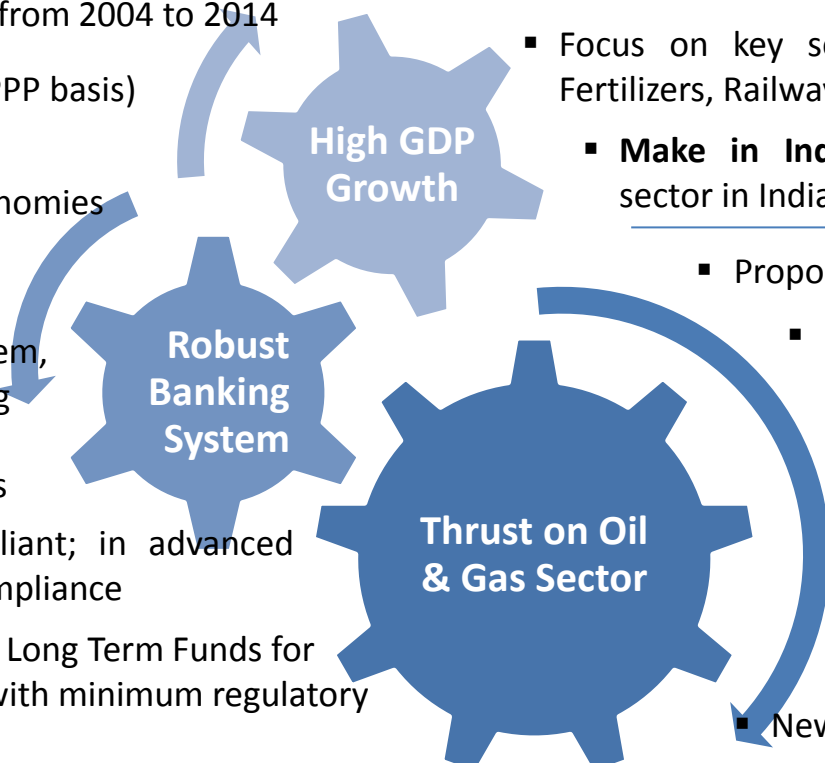
FINANCIAL DESCRIPTION

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PROJECT NEEDS

INDIA- An Overview of the Economy

- Largest Democracy by Population
- One of the world’s fastest growing economies
- GDP growth ~7% p.a. from 2004 to 2014
- 3rd Largest Economy (PPP basis)
USD 7.3 Trillion in 2014
- Among 10 Largest Economies (Nominal basis):
USD 2 Trillion in 2014
- Matured Banking System, established Accounting Standards & Risk Management Practices
- Basel I and II Compliant; in advanced stage for Basel- III Compliance
- Banks allowed to raise Long Term Funds for Infrastructure Sector with minimum regulatory pre-emption
- Banks lend for Long Term with Flexible Structuring
- Opening up sectors to Foreign Investment (both FDI and FII)
- Investment of over USD 1 Trillion planned for Infrastructure Sector in the 12th Five- Year Plan (2012-17)
- Focus on key sectors like Oil & Gas, Power, Fertilizers, Railways, Roads & Defence
- **Make in India:** To develop manufacturing sector in India (*Energy Consumption to increase*)
 - Proposed 15,000 km Gas Pipeline Grid
 - Extensive Gas Grid Network to increase the usage of Gas (*both domestic & imported*)
 - Focus on accelerating production and exploitation of Coal Bed Methane (CBM) reserves; Revive aged or closed wells.
 - New Investments in Fertilizer Sector
 - Policy on price of Natural Gas for Fertilizer Sector



Strong Projected Economic Growth: 6.4% for FY 16 (Source IMF)
Energy Demand to grow with GDP

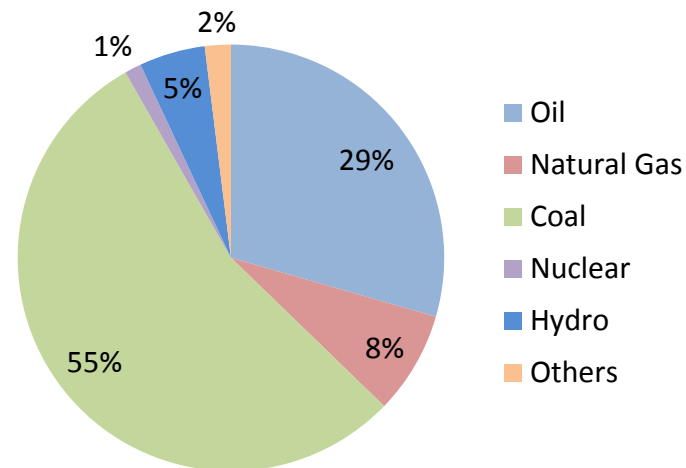
INDIAN GAS MARKET- *An Overview*

- India- 4th largest energy consumer in the World
- Energy demand expected to grow with economic growth
- Coal and Oil- primary source of energy in India, however
- Growth in NG consumption by 8% p.a. from 2000 to 2012
- In CY2013 NG constituted 8% share of Indian Energy Basket

Sources of Gas in India

- **Domestic:** NOCs; Private Fields; CBM
- **Imported:** Imported RLNG

Energy Consumption in India- CY2013

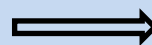


Source: BP Statistics 2014 (MMSCMD)

Particulars	2014	2016	2018	2020	2025
Demand					
Total Demand	285	357	426	491	599
Supply					
Domestic	112	126	133	138	149
Imported	66	104	132	168	207
Total Supply	178	220	265	306	356
Deficit	107	137	161	185	243

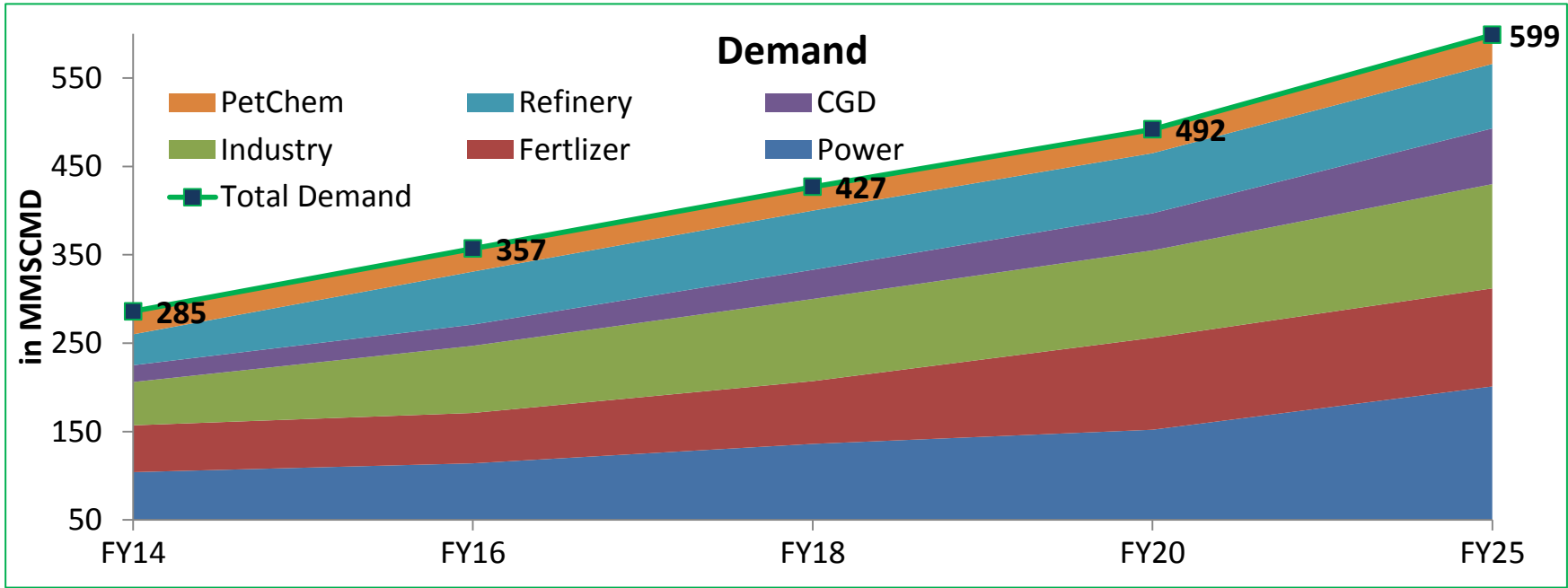
Source: Industry Research

- Insufficient Domestic Sources
- Insufficient capacity of RLNG



Supply Deficit

INDIAN GAS MARKET- Supply Deficit... Opportunity



Source: Industry Research

- Bulk of the gas demand is derived from Power and Fertilizer sectors followed by Industry
- RLNG partly bridges the gap, however high cost renders it unaffordable for key sectors (Power & Fertilizer)
- Pipeline Gas from nearby Countries will further contribute to meet the supply deficit
- Moreover it will be affordable by major demand centres such as Fertilizer and Industrial sector

Increasing Demand & Affordability - Key for success of Transnational Gas Pipeline

GAS INFRASTRUCTURE- Current & Future



- Existing Pipelines**
- A : HVJ - Hazira Vijaipur Jagdishpur PL (GAIL)
 - B : GERP - Part of HVJ PL (GAIL)
 - C : DUPL/DPPL - Dahej – Uran – Dabhol PL (GAIL)
 - D : E-W PL - East West PL (RGITL)
 - E : VKPL - Vijaipur Kota PL (GAIL)
 - F : Regional Networks
 - G : DBNL- Dadri Nangal PL (GAIL)
- Proposed Pipelines**
- H : Chainsa – Jhajjar – Hisar (GAIL)
 - I : DBPL - Dabhol Bangalore PL (GAIL)
 - J : KKMBPL – Kochi Bangalore Mangalore PI (GAIL)
 - K : CBMPL – Chennai Bangalore Mangalore PL (RGITL)
 - L : CTPL – Chennai Tuticoin PL (RGITL)
 - M : MaBPL – Mallverum Bhilwara PL (GSPC)
 - N : MBPL / BSPL – Mahesana Bhatinda Srinagar PL (GSPC)
 - O : JHPL – Jagdishpur Haldia PL (GAIL)
 - P : KHPL – Kakinada Haldia PL (RGITL)
 - Q : KCPL – Kakinada Chennai PL (RGITL)
 - R : Surat – Paradip (GAIL)
 - S : Shahdol – Phulpur
 - T : Ennore - Nagapattinum
- Existing LNG Terminals** ★
- Upcoming/ Planned LNG Terminals** ★

Source: Industry Research

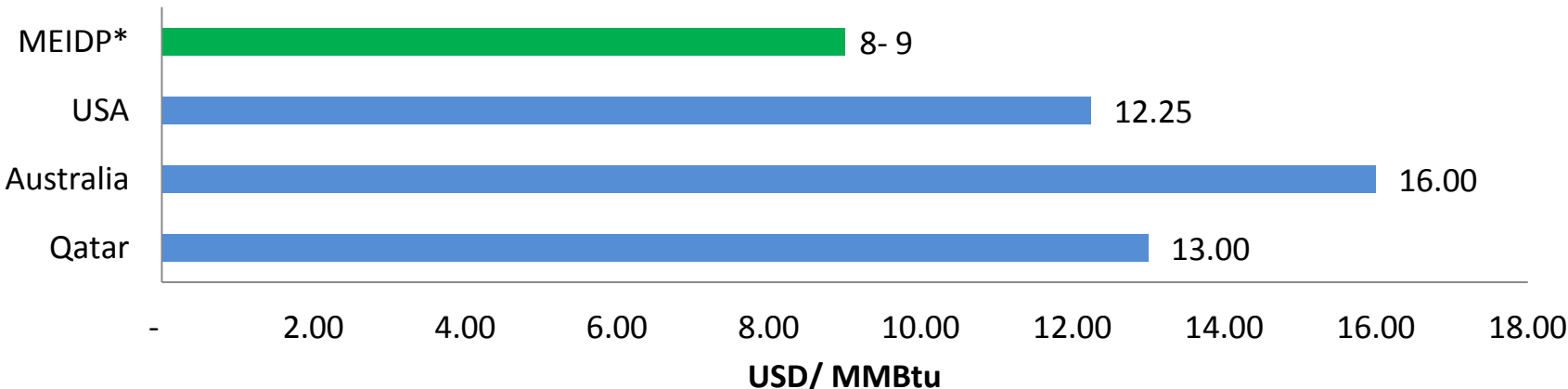
Limited Capacity of Existing & Proposed LNG Terminals

Well developed Gas Grid for transportation of Gas to the Demand Centres

MEIDP PROJECT- Landed Cost Economics

- The Landed Cost of Long Term Gas through MEIDP Pipeline is estimated at 8- 9 USD/MMBtu
- Landed Cost of LNG as per existing Contracts with USA, Australia and Qatar at existing LNG Terminals is higher than that proposed for MEIDP

Landed Cost of RLNG



*Includes Compression Terminal Receiving Price assumed @6- 7 USD/MMBtu and Transit Tariff @ 2 USD/MMBtu

Source: Public Domain / Research Publications

MEIDP- Long Term Affordable Solution for Price Sensitive Indian Gas Market

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PROJECT DESCRIPTION

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DRIVERS/ DEMAND

PROJECT NEEDS

MEIDP PROJECT- *Investment Proposal*



- Considerable progress made in terms of initial feasibility, surveys, finalisation of route, etc.
- Project acknowledged by various key stakeholders
- Significant Investment by the Sponsor to bring the Project to Current Stage

PROJECT ACTIVITIES HAVE GAINED MOMENTUM

NEXT STEP

Onshore & Offshore FEEDs + Detailed Geo-Physical Survey to be carried out

Estimated Investment of ~USD 50 Mn to complete the FEED & Detailed Surveys

Sponsor seeks Partners for Seed Equity Investment in the Project

MEIDP PROJECT- *Value Proposition (1/2)*

Increasing Demand due to GDP Growth

- India is a significant demand centre with widening demand- supply gap
Energy demand is strongly correlated with growing economy
- Need of Transnational Pipelines as Long Term Solution to address India's increasing Energy Gap

Competitive Price & Affordability

- Cost effective vis.- a- vis. RLNG
RLNG involves additional cost of ~ 3.5- 4 USD/ MMBtu towards liquefaction and re-gasification
- MEIDP- Long Term Affordable Solution for Price Sensitive Indian Gas Market
Low Cost Gas through MEIDP makes it affordable to Power & Fertilizer Sectors

Abundant Gas in Middle East

- Adequate supply of gas is ensured as the Middle East Region has gas in abundance
Gas Sourcing Risk stands mitigated

Technical Feasibility

- Deep Water pipeline technology is available for implementing project at depth ~3500m (*Favourable terrain for the proposed route of the pipeline*)
- Sub- sea Pipelines: One of the safest & reliable mode for gas transportation.

MEIDP PROJECT- *Value Proposition (2/2)*

Steady Cash Flow

- Long Term Contracts between Gas Suppliers & Gas Off- takers would result in steady cash flow

Attractive Valuations

- Significant progress achieved; Project in advanced stage for FEED
- Investment at this Juncture would provide higher returns at a later stage
Valuations will improve post FEED

Low Geo- Political Risk

- Reduced political risk viz. a viz. other proposed transnational pipelines
The proposed route avoids possible conflict in international waters

Government Acknowledgement

- MoUs signed with various PSUs; Positive Outlook for the Project

Increasing focus on Transnational Pipelines

- Emphasis on transnational pipelines in the region
Provides impetus to India to have such arrangement

THANK YOU



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