FSRUs: Accommodating Emerging Markets Gas and Power Needs

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Who We Are:

- Pioneer and industry leader of floating LNG terminal solutions
- Owner and operator of largest fleet of FSRUs in the world, mooring systems, pipelines and related fixed infrastructure tailored to specific customer needs
- Developed and operated 11 floating regas terminals globally
- Over 28 cumulative years providing regasification services without a single day off-hire
- Over 1,000 STS transfers to date

EXCELERATE ENERGY PROJECTS:

- Gulf Gateway®
  - USA – 2005
- Guanabara Bay
  - Brazil – 2014
  - Bridging Solution, 2012
- Northeast Gateway
  - Deepwater Port®
  - USA – 2008
- Aguirre Offshore GasPort®
  - Puerto Rico – 2018
- Bahia Blanca GasPort®
  - Argentina – 2008
- GNL Escobar
  - Argentina – 2011
- Teesside GasPort®
  - UK – 2007
- Hadera Gateway
  - Israel – 2012
- Mina Al-Ahmadi GasPort®
  - Kuwait – 2009 - 2013
- Hadera Gateway
  - Israel – 2012
- Northeast Gateway
  - Deepwater Port®
  - USA – 2008
- Mina Al-Ahmadi GasPort®
  - Kuwait – 2009 - 2013
- Bahía Blanca GasPort®
  - Argentina – 2008
- Teesside GasPort®
  - UK – 2007
- Jeddah Gateway
  - Saudi Arabia – 2012
- Jebel Ali LNG Terminal
  - Dubai – 2015
- Port Qasim
  - Pakistan – 2015
- Aguirre Offshore GasPort®
  - Puerto Rico – 2018
- Sumit LNG
  - Bangladesh – 2019
- Mina Al-Ahmadi GasPort®
  - Kuwait – 2009 - 2013
- Hadera Gateway
  - Israel – 2012
- Northeast Gateway
  - Deepwater Port®
  - USA – 2008
- Mina Al-Ahmadi GasPort®
  - Kuwait – 2009 - 2013
- Bahía Blanca GasPort®
  - Argentina – 2008
Floating LNG Solutions

- Excelerate delivers comprehensive energy solutions, rather than a purely chartering model
- In addition to the FSRU, the design of fixed infrastructure and project structure play critical factors
- Project solutions are tailored to meet the specific requirements of the customers and markets we develop
- With this unique expertise, Excelerate can execute projects across a broad spectrum
Floating Regas has expanded to 22 terminals around the world with requirements evolving with the industry.

WHERE HAVE WE COME FROM...

EARLY ADOPTERS
- Short-term charter contracts
- Open / Closed Loop
- Dual contract approach

ARGENTINA

CONTRACT FLEXIBILITY
- “Bridge-to-Permanent” model
- Longer term charter with flexible options
- High sendout peaking facility

BRAZIL

INTEGRATING INFRASTRUCTURE
- EPCIC of infrastructure
- Infrastructure and FSRU under single O&M
- Local Permitting

ABU DHABI

... AND WHERE ARE WE HEADED?

FULL INTEGRATION OF FLOATING REGAS TERMINAL
- Full integration of services as customers seek “one stop” solution
- Service under single Terminal Use Agreement (TUA) contract
- Increase in IPPs as customer with growing interest in LNG-to-Power
- Increasingly complex credit and project finance structures
- Increased participation in local operations and stakeholder engagement
- Continued technical and operational innovation

Success requires companies with established FSRU credentials (design, construction and operation), but capable of dealing with the challenges of a local business (EPC, taxes, local regulation, unions).
Development in Emerging Markets

Emerging Markets may be characterized by:

- Rapidly growing economies and demand for energy (especially for power generation)
- Inadequate physical and institutional infrastructure
- Lacks access to dependable clean sources of energy
- Subsidies and price protection policies
- Access to capital is challenging
- Focus on transparent procurement policies
- Bureaucratic approval processes
- Political sensitivity to fuel imports due to perceived impact on energy dependency
FSRUs in Emerging Markets: Growth Drivers

Current market dynamics favors Floating Regas solutions for emerging markets:

- Rapidly rising demand for power
- Increased liquidity and flexibility in LNG supply markets
- Favorable FSRU shipbuilding environment
- Historically low interest rates
- Increasing financial support from ECAs and Multilaterals
- Low commodity price cycle
- Advancement in power generation technology
- Increased environmental focus
Gas-to-Power vs. Floating Regas Opportunities

Source: IEA, GE Global Gas-to-Power

NORTH AMERICA

CARIBBEAN
~65%
+3%

LATIN AMERICA
Selected: Chile, Argentina, Colombia, Venezuela
14%
+4%

SUB-SAHARA AFRICA
(ex RSA)
35%
+5%

GCC
35%
+4%

INDONESIA
26%
+6%

Percent Share (%) of oil generation 2013
Electricity demand growth rate 2014 to 2020

Source: IEA, GE Global Gas-to-Power

Regions with active FSRU Development

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LNG-to-Power: Project Components

- FSRU
- Marine Infrastructure
- Port Services
- Permits

FSRU PROJECT EXECUTION

LNG SUPPLY

GAS SALES

POWER GENERATION

- Local Tax & Law
- Financing
- Stakeholder Management
Traditional TCP vs. Integrated Model

TRADITIONAL TCP MODEL:
Traditional TCP vs. Integrated Model

INTEGRATED MODEL:

- FSRU Owner
- Lenders
- EPC Contractor
- TERMINAL COMPANY
  - PSP
  - EPC
- Local Regulators
- Port Services Contractor
- REGAS OFFTAKER
  - LNG SPA
  - GSA
- IPP
- Electric Company
- LNG Supplier
  - PPA
- Permits, Compliance, and Stakeholder Engagements
Integrated Model Case Study: Moheshkhali Floating LNG (MLNG)

The MLNG Terminal represented many firsts:

• 1st Fully integrated turnkey floating terminal solution
• 1st floating LNG project co-developed and financed by the IFC
• 1st floating LNG terminal to be fully permitted, constructed, implemented and operated through a single contract and company – Excelerate Energy
Project Overview

- Excelerate’s scope in the project includes:
  - FSRU
  - Marine infrastructure
  - Port services
  - Raising Capital
  - Permits and Government Authorizations
  - Stakeholder engagement

- Advantages to Petrobangla
  - Single interface and point of responsibility
  - One of the most competitive tariffs in the region
  - Fast-tracked solution
  - Enhanced operations in challenging environment
  - Highest international standards for safety, environment and social impacts
MLNG will be the world’s first fully integrated turnkey floating LNG terminal whereby all services will be provided under a single contract by a single provider – Excelerate Energy.
Success Factors in Emerging Markets

• Streamline political framework and approval process
• Engage industry experts early in the process
• Structure project components with consideration to market participants
• Provide available technical data for site location and conditions
• Efficiently run procurement procedures
• Implement a holistic approach to evaluating solutions and bids
• Structure contractual framework conducive to raising foreign investment
• Garner government support for prohibitive regulations