



KPMG GLOBAL ENERGY INSTITUTE

# Steps towards developing a successful LNG Import Terminal – an ASEAN perspective

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# EXECUTIVE SUMMARY

Against a backdrop of escalating energy demand, anxiety over energy security and rising environmental concerns, LNG is set to play a critical role in ASEAN's future energy ecosystem.

**Asia currently accounts for approximately 72 percent of global LNG consumption and, despite the diversity of the region's LNG markets, that proportion is poised to grow steadily.**

The markets of North Asia (Japan, Korea and Taiwan) are mature and well established and will remain major buyers of LNG, albeit their growth will be limited. China and India are emerging LNG demand powerhouses, making significant investments into LNG infrastructure. In parallel with their economic growth, countries in ASEAN such as Thailand and Singapore, have become new LNG market entrants with a growing appetite for further LNG supply, while the Philippines and Vietnam are planning to become LNG importers in the near future. In regard to the LNG export countries in ASEAN, Brunei will maintain its status as a significant LNG exporter. By contrast, as the markets of Malaysia and Indonesia augment and oil and gas supply declines, there is a changing dynamic in these countries, with both focusing on supplying their domestic demand.

Going forward, for the countries in ASEAN to realise their LNG needs, they need to build a 'fit-for-purpose' LNG import terminal infrastructure so as to be able to diversify their future

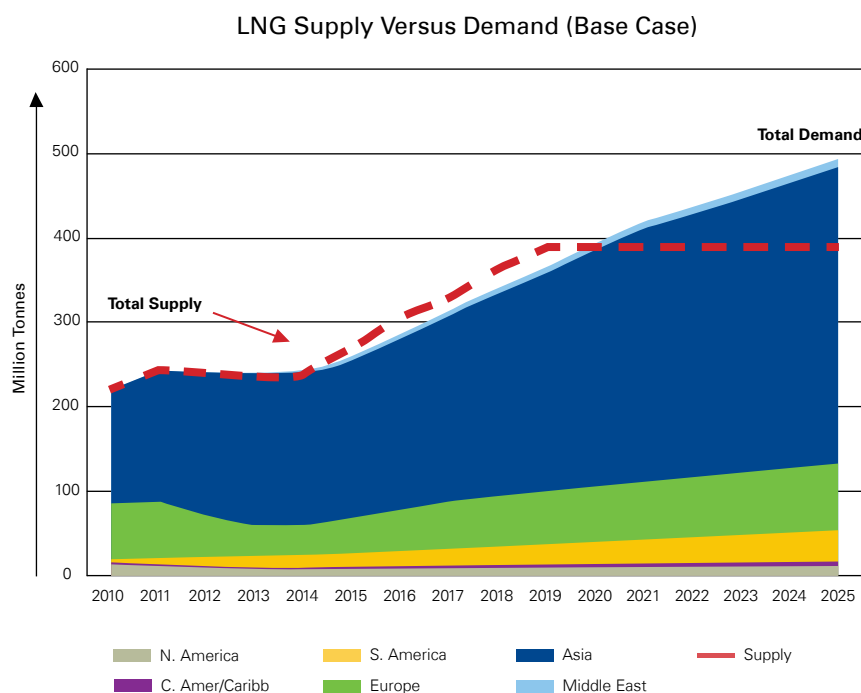
LNG supply options and capture the new waves of LNG output which will come on stream in the next few years.

**This publication highlights the fundamental building blocks needed to develop an LNG import terminal into a commercial success.** It defines the scope of 'project delivery' for an LNG import terminal and outlines the 'road map' and deliverables needed to transition a new project from

its conceptual stage through to its Final Investment Decision (FID), and manage its successful implementation thereafter.

The publication is targeted towards companies looking to enter or diversify into the LNG regasification business, and it will help investors understand the range of considerations that need to be accounted for in order to confidently reach FID on a new LNG import terminal that is commercially viable and able to attract funding.

## Asian LNG supply and demand forecast



Existing liquefaction capacity, plus LNG plants under construction  
(Assumes liquefaction plants run at 90% capacity)

Source: Platts Conference, Singapore, 2015

## LNG: The ASEAN Context

### ASEAN: A rapidly growing LNG demand engine

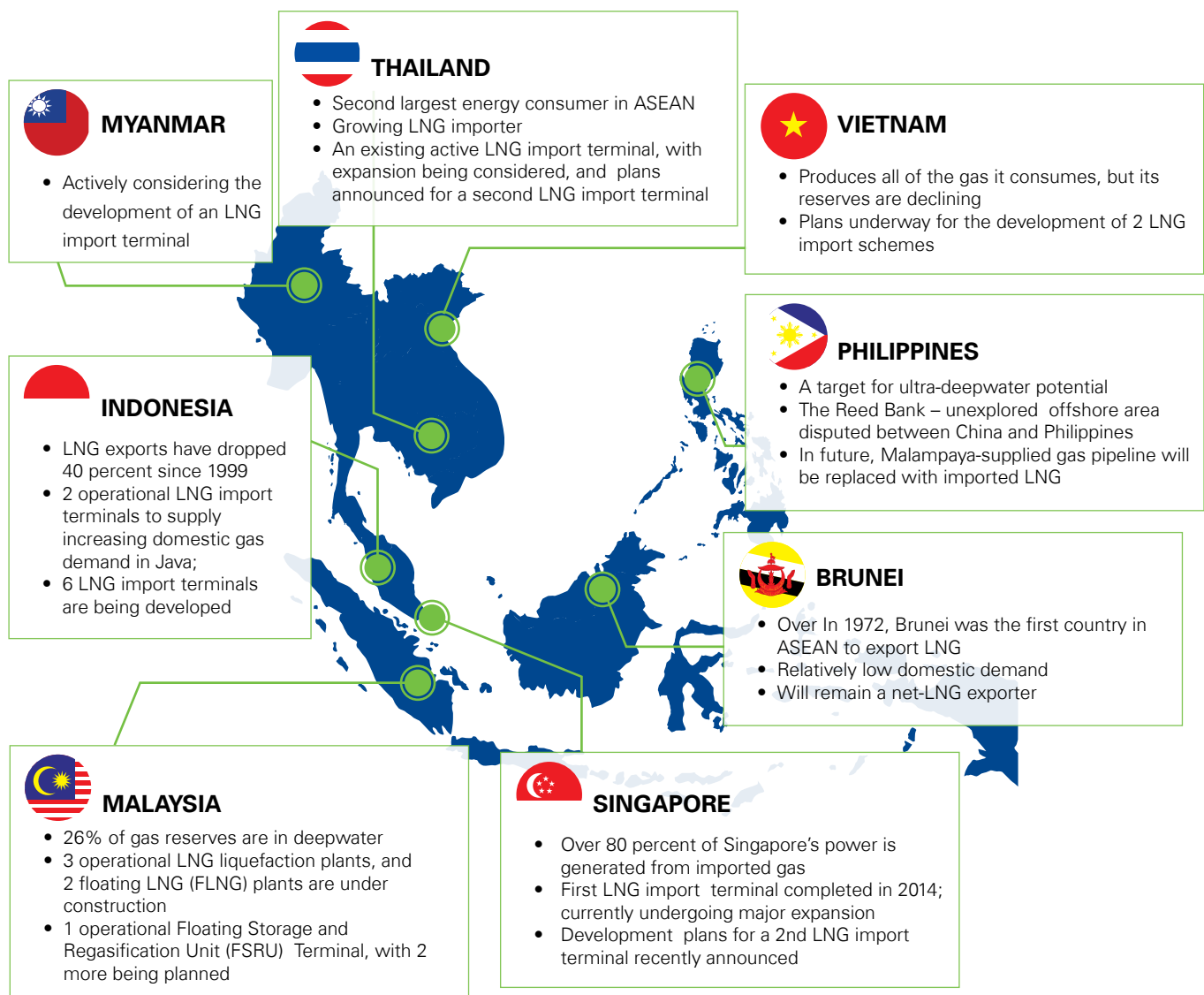
ASEAN, poised to become a single economic bloc with the formation of the ASEAN Economic Community (AEC) by 2015, is suffering an acute energy security challenge.

The region's combined GDP exceeds US\$2 trillion, greater than that of India. Economic momentum, combined with the region's youthful

and expanding population of over 600 million, translates into intensifying energy consumption for ASEAN. The International Energy Agency expects the region's energy demand to grow 80 percent by 2035. Yet, domestic oil and gas supplies are falling sharply, placing the region's energy security in jeopardy.

LNG, increasingly perceived as a bridge fuel between fossils fuels and

renewables, is at the very centre of meeting ASEAN's rising energy demands. The continuing development of LNG import terminals in the region has in part been driven by the ambition of Southeast Asian countries to diversify gas and LNG procurement to abate energy security fears. If the region wants to meet its long-term energy needs, fit-for-purpose LNG import terminals must be strategically established.



## LNG Import Terminal Project Delivery 'Getting it Right'

*The appropriate **delivery strategy** will drive **project commercial structure, capital cost, quality of design, construction, future operations and maintenance, and effective project completion***

### Defining Project Delivery:

Developing a robust project delivery strategy will have a significant impact on the success of an LNG import terminal project.

It is important to acknowledge that project delivery is not only about the type of the contract used to manage the risks inherent in a large

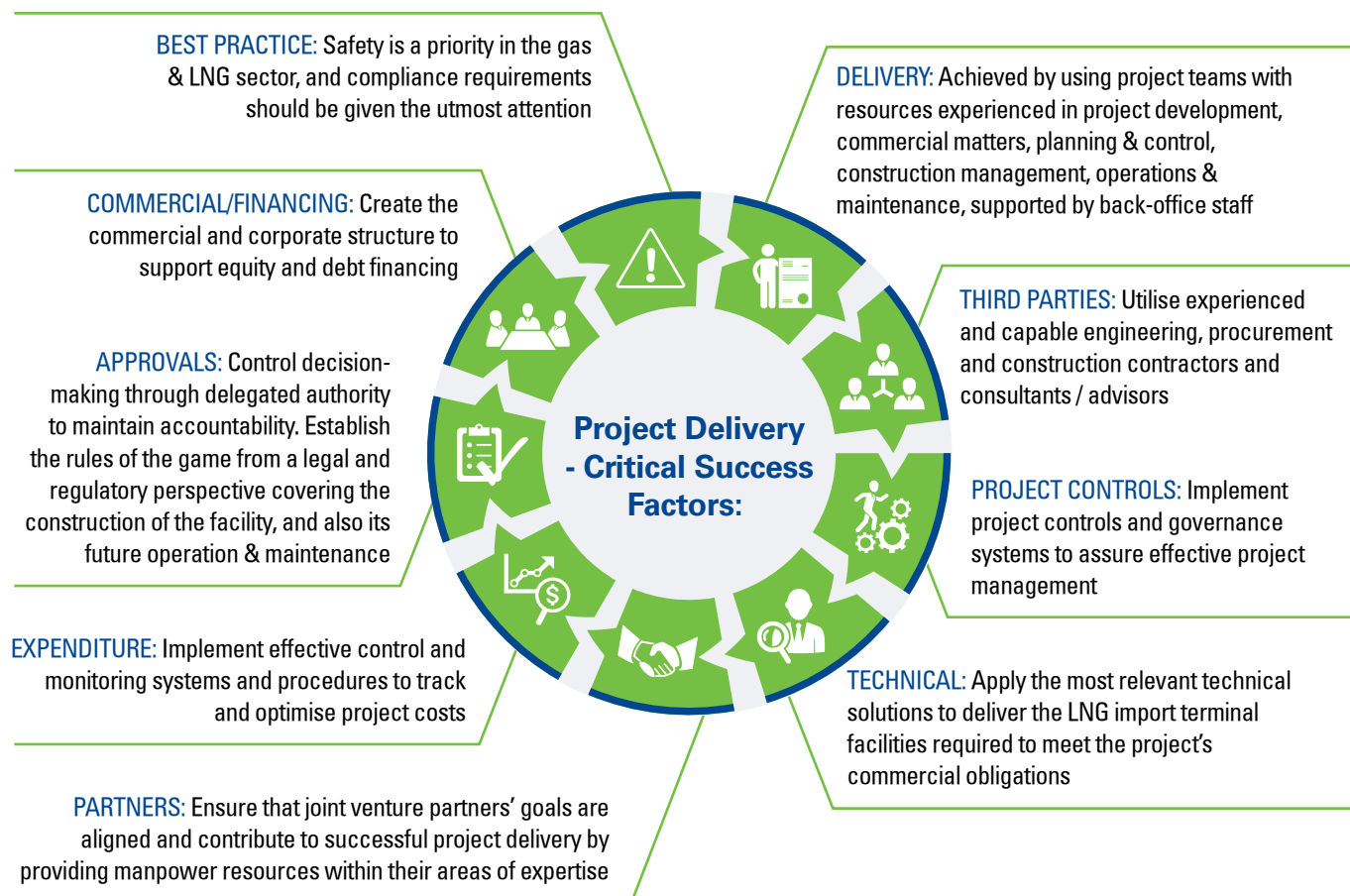
capital project, or the organizational structure of the project team. There are many inter-related aspects of implementing and completing a quality project– taking into account workplace safety, the timeline, the budget and the environmental impact.

Moreover, it is about taking a 'life-cycle' approach to make sure that

the final asset can be operated and maintained over the long term to deliver high reliability and availability to its customers.

Successful project delivery is built on lessons from previous LNG import terminal projects, assessing and understanding what was done right and replicating the successes.

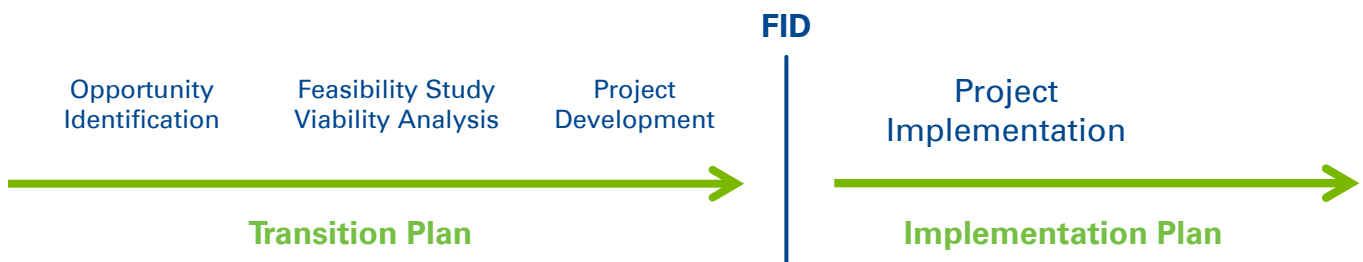
### Project Delivery - Critical Success Factors:



## Final Investment Decision: 'Transition Plan'

Successful Project Delivery requires a **Transition Plan** to develop the project towards its **Final Investment Decision (FID)** and thereafter an **Implementation Plan** to complete the project.

### Framework for Project Delivery



### Key Steps

- 1** **Clearly define the business model** – At the 'Opportunity Identification' stage, establish the strategic objectives that are going to be business drivers for the development of an LNG import terminal.
- 2** **Partners?** – To enhance the successful development of the LNG import terminal project and mitigate risk, identify and select partners that bring expertise to the venture.
- 3** **Outline key considerations** – During 'Feasibility Study / Viability Analysis', identify the work activities, timelines, resources, budgets, approvals etc. and establish the 'Transition Plan' required for successful project delivery.
- 4** **'Transition Plan' to FID** – Use this plan to guide the development of the LNG import terminal project, and adjust, if necessary, should business circumstances or market drivers change.
- 5** **Project Resources** – Ensure that experienced and capable manpower resources are deployed into the project development team and complement this with the selective use of third party contractors, consultants / advisors.

### Implementation Journey: 'Key Challenges'

The implementation of an LNG import terminal project presents complex risks and many challenges. An 'Implementation Plan' with project structures, policies, processes and systems in place, provides the required level of oversight, project management and control that is critical to effectively manage internal and external risks and enable the project to be delivered **safely; on time; on budget**.

Successful project implementation requires and combination of the following:

1. Strong reputation for **safety management** and, **environmental, social** and **financial** sustainability
2. Adequate **project controls, policies** and **procedures**
3. Clear and defined **project ownership** and **objectives**
4. Robust **project monitoring** and **risk management** policies
5. Ensure **operational hand-over requirements** are adequately developed
6. Invest in **key resources** with the relevant major **project experience**
7. Align **procurement** and **contracting** strategy with the organization's risk appetite and capability

## Our Global LNG Advisory Competitive Advantages

For today's oil and gas companies, dealing with complexity has become a competitive challenge. Global competition, new stakeholders and environmental concerns introduce new layers into business decisions.

KPMG member firms are some of the leading providers of professional services to the LNG sector. We recognize the importance of sharing our industry insights with clients.

### KPMG member firms offer 6 competitive advantages to clients:

1	<b>Major Projects Advisory:</b> Managing capital projects, contract processes and providing assurance are the focus of our Major Projects Advisory groups. Risks can be mitigated through tools and methodologies that address demand planning, supply and inventory management, strategic sourcing and contract management.
2	<b>Global Infrastructure Advisory:</b> Over 150 KPMG member firms offer Global Infrastructure Advisory services which encompass project structuring, raising development phase equity, transaction advisory, development of country/project specific contractual frameworks and progressing these to support bankability. This includes advising in gas and power purchase and sales agreements, and advisory support during procurement and financing of capital projects.
3	<b>Business Process Improvement:</b> Designing or improving current business processes, including implementing technology focusing on logistics, supply chain and procurement management, raw material vulnerability by shifting away from commodity petrochemical products and towards speciality products. Producers that focus on specialty chemicals such as life sciences are more exposed to technological prowess, than raw material costs.
4	<b>KPMG's Global Network:</b> Local practices are supported by experts from across our global network who can advise clients on implementing governance and risk management processes, and ensure compliance with legislation, including taxation.
5	<b>Organisational Effectiveness:</b> Business readiness for LNG, operations excellence, trading, entity establishment, and tax advice.
6	<b>Relationship Management:</b> Relationship management between international oil companies (IOCs) and national oil companies (NOCs) are critical to ensure there is a balance between political and commercial objectives i.e. royalty and taxation, security of supply, cost allocation, employment and infrastructure development

## Our Global Energy Centers

KPMG member firms offer global connectivity. We have 18 dedicated Global Energy Centers in key locations around the world, working as part of our global network. The Centers are located in Abu Dhabi, Beijing, Berlin, Budapest, Calgary, Dallas, Houston, Johannesburg, London, Melbourne, Moscow, Paris, Perth, Rio de Janeiro, São Paulo, Singapore, Stavanger and Tokyo.

These Centers enable KPMG professionals to transfer

knowledge and information globally quickly and openly. Our member firms share observations and insights, debate new emerging issues and discuss what is on member firms' clients' management agendas.

The Centers also produce regular surveys and commentaries on issues affecting the sector, business trends, changes in regulations and the commercial, risk and financial challenges of doing business.

### KPMG member firms 18 Energy Centers



## What sets KPMG apart

Our **business model** enables our network of **industry experts** to work side by side with **business leaders** to help develop and deliver strategies for solutions using highly **specialized teams** tailored to the specific **business needs** of **member firm clients**.



**The KPMG Global Energy Institute (GEI):**

Launched in 2007, the GEI is a worldwide knowledge-sharing forum on current and emerging industry issues. This vehicle for accessing thought leadership, events, webcasts and podcasts about key industry topics and trends provides a way for you to share your perspectives on the challenges and opportunities facing the energy industry – arming you with new tools to better navigate the changes in this dynamic arena. A regional focus to the GEI provides decision makers with tailored insight within the North and South America, Asia Pacific and Europe, Middle East & Africa regions.

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**The KPMG Global Energy Conference (GEC):**

The GEC is KPMG's premier event for executives in the energy industry. Presented by the KPMG Global Energy Institute, these conferences are held in both Houston and Singapore and bring together energy executives from around the world in a series of interactive discussions with industry luminaries. The goal of these conferences is to provide participants with new insights, tools and strategies to help them manage industry-related issues and challenges.

For more information please visit [kpmg.com/energyaspac](http://kpmg.com/energyaspac)



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