



# Governmental Roles in Mega-Project On-Time Delivery Risk

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## National regulatory approaches differ substantially

- As an SME in Process, HSE & Operational Technology, view regulations through a prism of “HSE” and design standards
- i.e. Health, Safety & Environmental impact on site workers in construction and operation, also upon the local community
- Governmental regulations focus initially on permitting, then onto good design, startup, operating permits, then decommissioning
- Some countries have a systematic framework for the design and commissioning. One approach is known as a “[Safety Case](#)”
- Other countries rely on a suite of industry sector regulations and standards, with the impact challenge of changes to any of these

## How regulatory frameworks can impact project siting

- For mega-projects an **ESIA** is often the first regulatory step
- *Environmental & Sociological Impact Assessment* is public
- Check out World Bank [Environmental & Social Framework](#)
- Some countries are timely with ESIA, others can take years
- Responding to public comments needs staff technical skills
- ESIA process has public records, some groups may litigate
- Community liaison staff are vital, living in the targeted area
- Objections, even if not factual, could force a site relocation
- Companies might choose another country, if irreconcilable

## How regulatory standards can impact project design

- **HSE standards** are prominent in process study and in FEED: know if standards are “performance-based” or “prescriptive”
- **Technical standards** dominate the EPC phase of a project
- Official “**permit to construct**” may dictate specific regulations: consider making a case for freeze on all standards changes
- Note some EPC companies embed regulations within their own standards but may lack change management review & updates
- Many standards have become global, but some countries adopt them with local variation, and have their own naming scheme

## How project approaches can impact commissioning

- Many mega-project owner teams impose their own means of ensuring safe, timely commissioning of plant units and startup
- **Pre-commissioning** reviews and **end-to-end system checks** help ensure that design and HSE requirements were all satisfied
- Typically, government regulations do not control this phase, unless “permit to operate” requires this to be documented
- **Knowledge and data transfer** from EPC to owner is difficult to ensure is complete – not all details, but necessary information
- **Operations and Maintenance procedures** are built upon EPC documents, but should be more visual with action-step layout

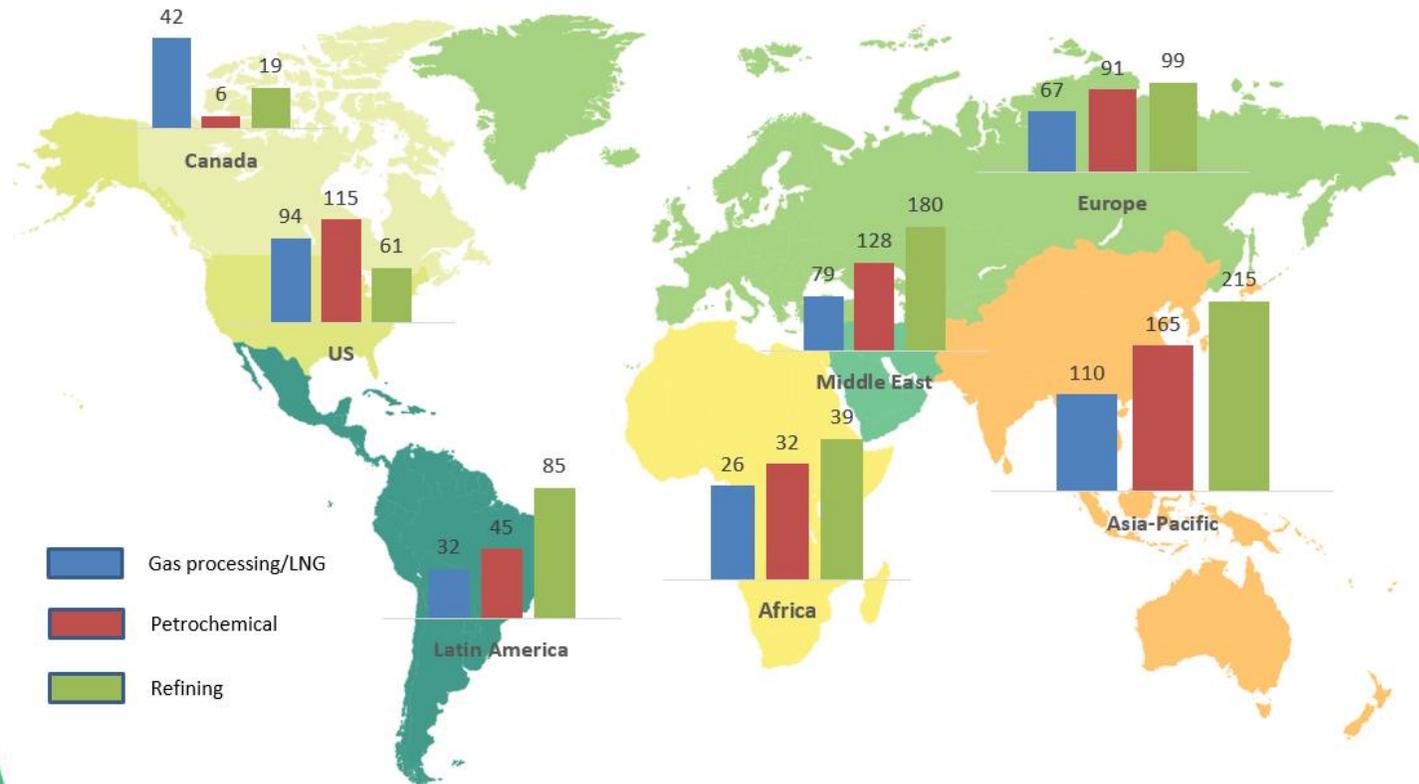
## How regulations can impact hand-over and start-up

- Many LNG project contracts have EPC firm responsible for the initial cool-down through to stable operation for defined period
- But some governments require the operator to take on the site responsibility at “mechanical completion”; i.e. prior to gas entry
- On a mega-project, the handover is typically unit by unit, with close attention to **SIMOPS** (simultaneous operations), and to **PTW** (Permit To Work): a phase of higher construction risk
- Some countries mandate competence-assessed training for all operations & maintenance staff, plus orientation for all the plant staff about safe evacuation, responsibilities to community

## How regulations impact operations, permit renewals

- Inspection requirements may be set every “N” years, which depends on which system: electrical, relief, shutdown, etc.
- There is a voluntary move to “asset integrity” management systems that focus on maintenance history & performance
- In those countries which require operating permit renewal, the requirements can differ widely e.g. O&M procedure review, MOC (Management of Change) for any design changes
- Some countries have “[life extension](#)” requirement, for an aging asset to be allowed to operate beyond its design life. In the UK, requires each SME to state what upgrades would be needed

# Types of HPI projects currently active across the globe



- Data 4Q 2017
- Published in "[HPI Market Data Book](#)"
- Data source is "[Construction BoxScore](#)"
- *Not all of the announced projects will get to "FID"*