Gas Networks Ireland

Commercial Case

April 2024

Private & Confidential

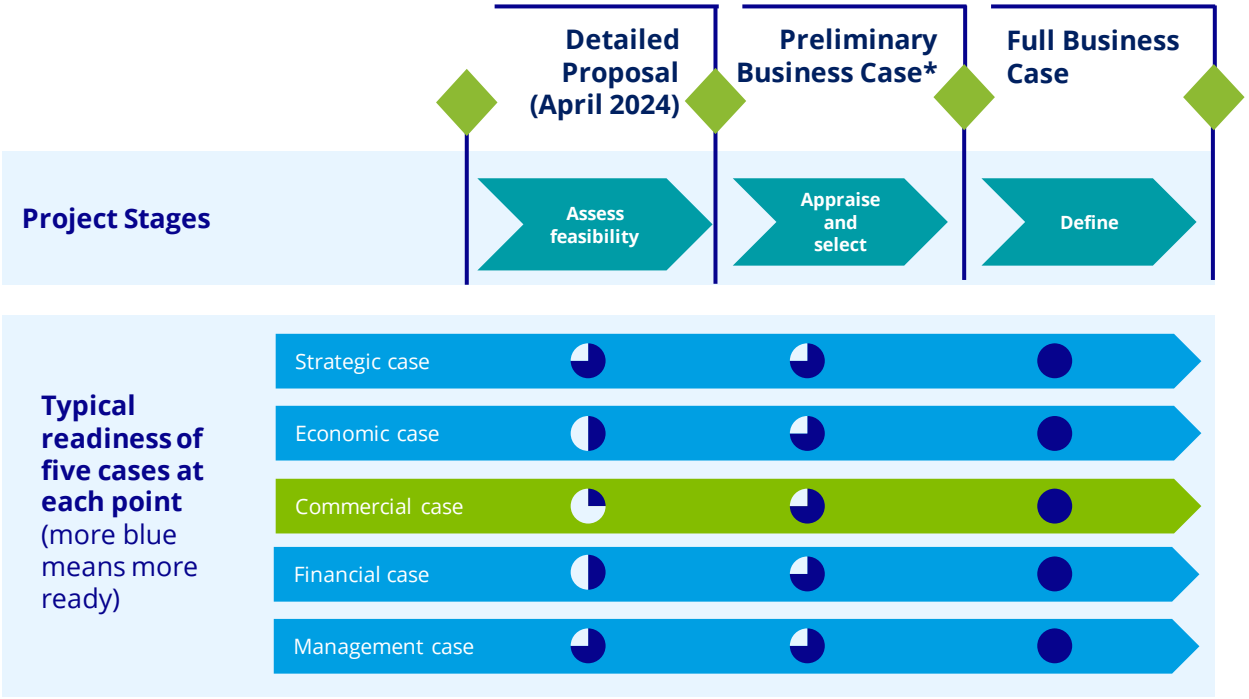
Commercial Case: Table of Contents

Introduction

3.1 Introduction

Business Case structure:

- The business case has been prepared in compliance with both the Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case, December 2023[1] and the Infrastructure and Projects Authority's Infrastructure Business Case five-cases model. The business case includes: strategic, economic, commercial, financial and management cases – the five dimensions of the case.
- The Project is currently at the Preliminary Business Case stage, which if approved, will enable the Project to proceed to Final Business Case, where detailed design and procurement activities will determine the final scope, cost and schedule for the project.
- At Preliminary Business Case stage the Commercial Case should:-
  - Provide initial thought to the potential commercial and procurement arrangements for the preferred option;
  - Assess market interest;
  - Demonstrate that the project is commercially viable;
  - Set out the approach to contract packaging strategy, procurement strategy, and the allocation of risks.



Source: *Infrastructure Project Authority (2022) Project Routemap*[2]

*Target for Government submission in June

[1]Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here
[2]UK Government Infrastructure and Projects Authority (2021),Project Routemap Handbook. Available here

3.1 Introduction

The Commercial Case sets out that the Strategic Gas Emergency Reserve Project:

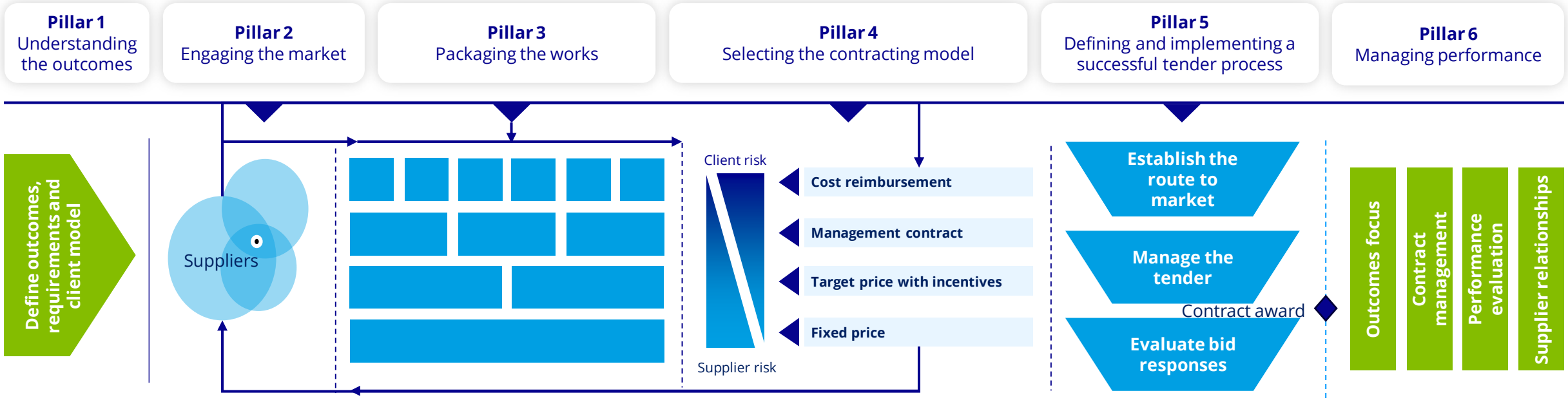
- Will comply with the:
  - Infrastructure Guidelines[3](the set of rules and procedures that ensure that standards are upheld across the Irish public service).
  - Guidelines for the use of Public Private Partnerships (PPP), December 2019[4], published by the Department of Public Expenditure and Reform.
  - Capital Works Framework Model.
- Has undertaken extensive initial market engagement and will undertake further engagement and market testing of key assumptions underpinning the procurement strategy.
- Will enable GNI to be an 'intelligent customer' which means that GNI will be clear with expectations, work with the whole supply chain and industry, and most importantly, build trust-based relationships with the supply chain and partner organisations.
- Has an emerging contracting and procurement strategy (with 'traditional', PPP and PP JV being considered).
- Will further develop the contract selection process and apply an appropriate risk allocation approach.
- Has a plan to establish the route to market.
- Will use standard forms of contract where possible.
- Will implement internationally recognised best practice and Irish guidance in relation to procurement and contracting approach.

[3] Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here
[4] Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here

3.2 Model for Effective Procurement

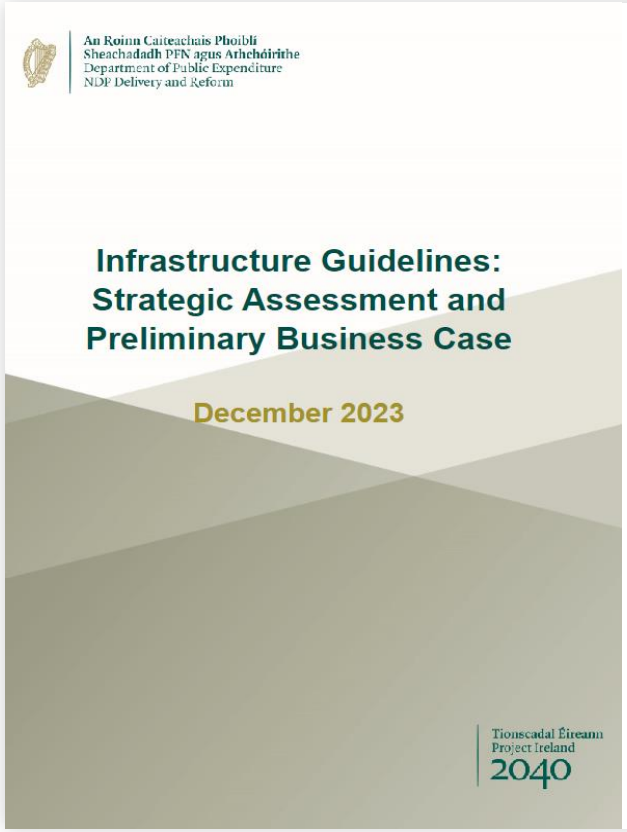
- Procurement[5] is one of the eight modules which sit alongside the Routemap handbook. The procurement module of Routemap[6] is comprised of the six pillars set out below. These pillars summarise the characteristics of effective procurement and each of these will be addressed in the procurement strategy.
- These six pillars underpin effective project procurement. If one pillar is missing or out of balance, project procurement will likely be ineffective or inefficient.
- It is expected that the procurement approach will evolve as the project progresses towards the final business case.

The diagram below provides an overview of the stages of procurement, highlighting some of the key activities GNI will need to undertake.



[5]UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here
[6]UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here

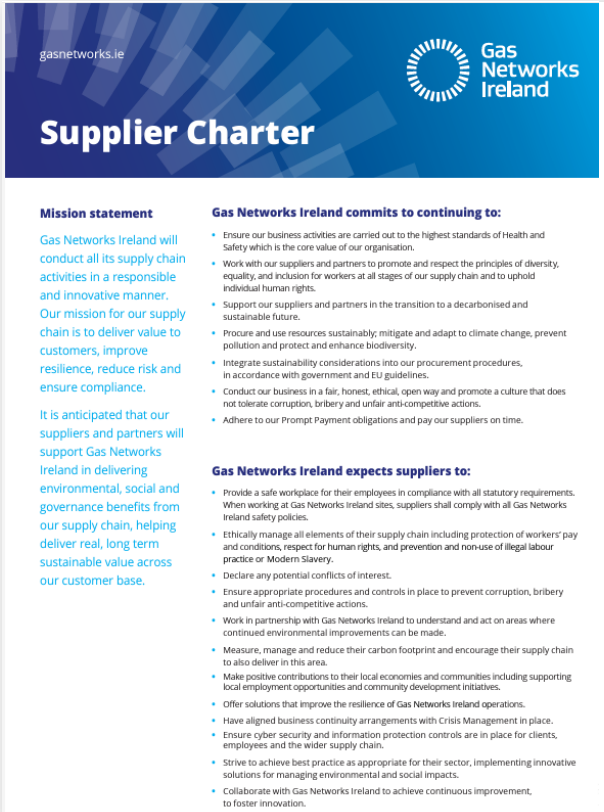
3.3 Pillar 1: Understanding the Outcomes



- GNI has considered the procurement strategy requirements for all phases of the project including approaches to construction, implementation management, and operation and maintenance needs. This approach complies with the "Infrastructure Guidelines: Strategic Assessment and Outline Business Case"[7].
- GNI has followed the guidance as stated in Routemap and the desired outcomes are clear, concise and measurable, as set out in this document (see also Strategic Case and Management Case).
- The Project will create a contracting environment that delivers a sustainable, resilient and effective relationship between GNI and its supply chain. It will be focused on outcomes that create long-term value for all.
- GNI will implement recommendations from previous projects in relation to procurement.
- Detailed consideration of the allocation and transfer of risk in the context of benefits realisation has been included in this document and the Risk Management Plan.
- Market evaluation includes economic, environmental and social metrics.
- Capacity and capability reviews are implemented as part of the Routemap process.

[7]Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here

3.4 Pillar 2: Engaging the Market



gasnetworks.ie

Gas Networks Ireland

Supplier Charter

Mission statement

Gas Networks Ireland will conduct all its supply chain activities in a responsible and innovative manner. Our mission for our supply chain is to deliver value to customers, improve resilience, reduce risk and ensure compliance.

It is anticipated that our suppliers and partners will support Gas Networks Ireland in delivering environmental, social and governance benefits from our supply chain, helping deliver real, long term sustainable value across our customer base.

Gas Networks Ireland commits to continuing to:

- Ensure our business activities are carried out to the highest standards of Health and Safety which is the core value of our organisation.
- Work with our suppliers and partners to promote and respect the principles of diversity, equality, and inclusion for workers at all stages of our supply chain and to uphold individual human rights.
- Support our suppliers and partners in the transition to a decarbonised and sustainable future.
- Procure and use resources sustainably; mitigate and adapt to climate change, prevent pollution and protect and enhance biodiversity.
- Integrate sustainability considerations into our procurement procedures, in accordance with government and EU guidelines.
- Conduct our business in a fair, honest, ethical, open way and promote a culture that does not tolerate corruption, bribery and unfair anti-competitive actions.
- Adhere to our Prompt Payment obligations and pay our suppliers on time.

Gas Networks Ireland expects suppliers to:

- Provide a safe workplace for their employees in compliance with all statutory requirements. When working at Gas Networks Ireland sites, suppliers shall comply with all Gas Networks Ireland safety policies.
- Ethically manage all elements of their supply chain including protection of workers' pay and conditions, respect for human rights, and prevention and non-use of illegal labour practice or Modern Slavery.
- Declare any potential conflicts of interest.
- Ensure appropriate procedures and controls in place to prevent corruption, bribery and unfair anti-competitive actions.
- Work in partnership with Gas Networks Ireland to understand and act on areas where continued environmental improvements can be made.
- Measure, manage and reduce their carbon footprint and encourage their supply chain to also deliver in this area.
- Make positive contributions to their local economies and communities including supporting local employment opportunities and community development initiatives.
- Offer solutions that improve the resilience of Gas Networks Ireland operations.
- Have aligned business continuity arrangements with Crisis Management in place.
- Ensure cyber security and information protection controls are in place for clients, employees and the wider supply chain.
- Strive to achieve best practice as appropriate for their sector, implementing innovative solutions for managing environmental and social impacts.
- Collaborate with Gas Networks Ireland to achieve continuous improvement, to foster innovation.

- In line with the GNI Supplier Charter[8] we have engaged early with the supply chain to inform the development of clear, appropriate, outcome-based requirements.
- A desktop market analysis has been undertaken to assess critical factors associated with market capacity and capability.
- There is interest from the market in delivering the project. Both the FSRU and salt cavern technology is evolving, and our engagement will ensure we remain appraised of market changes.
- It is currently envisaged that the supply chain will comprise of a mixture of national and international economic operators.
- Global demand for FSRUs is at an all-time high, having grown substantially due to events over the past two years. Continued close monitoring of future FSRU orders will be required to ensure that GNI is aware of any trends associated with longer lead-in times due to high demand.
- Initial engagement has identified the need for additional analysis of lease versus buy options for FSRUs.
- Due diligence will be undertaken across the potential supply chain to assess the supply chain's economic and financial standing.

[8]Gas Networks Ireland (2023), Supplier Charter. Available here

3.4 Market Engagement

A variety of market engagement methods have been used as summarised below:

- Direct engagement with economic operators,
- Direct engagement with transmission / storage / LNG system operators across Europe who have experience in delivery and operation of LNG and storage facilities. Their experience has been considered as part of the Commercial Case.
- System Operators approached include Gasunie, KN Energies, Grain LNG, Dragon LNG, National Gas (GB), Fluxys, and Mutual Energy,
- Deep dive into publicly available information:
  - Public tender portals.
  - Annual reports from relevant businesses,.
  - Brochures, case studies, publicly available research papers.
- Market engagement has taken place with major FSRU owners. There are approximately 50 FSRU's in operation globally with several more coming into operation over the next twelve months. Our engagement to date has been with commercial operators who represent approximately 80% of the FSRU market.

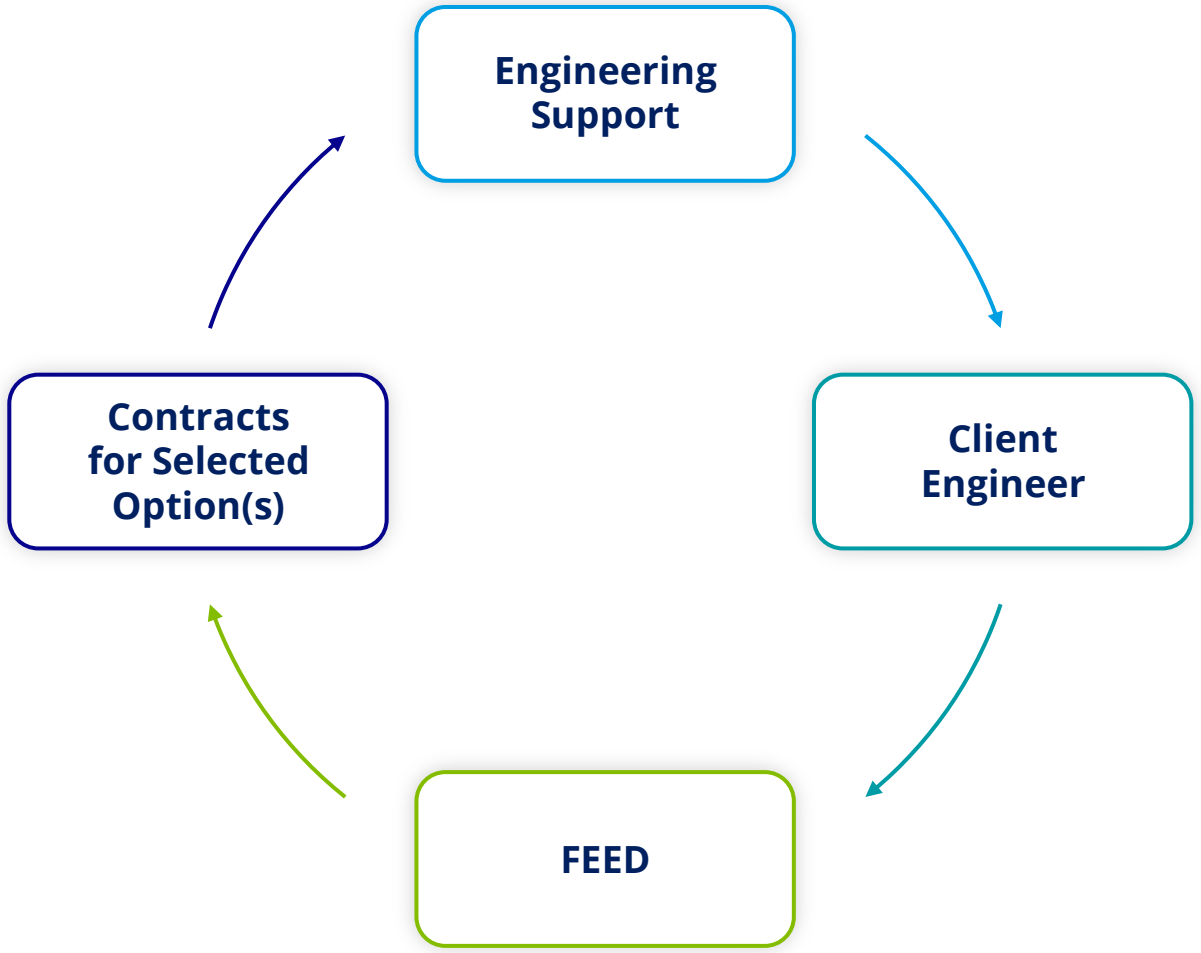
Engagement with Vessel Suppliers

[redacted]	Vessels
[redacted]	10
[redacted]	9
[redacted]	10 (incl. 2 JV with [redacted])
[redacted]	7 (incl. 2 JV with [redacted])
[redacted]	5
Total	**39**

3.5 Pillar 3: Packaging the Works

An initial review of the emerging procurement strategy against similar international projects has confirmed the need for development and testing of a packaging strategy. This process is set out in this section.

- The contract packaging strategy is designed to align with the Project's Strategic Objectives, and desired outcomes and benefits.
- A range of packaging strategies have been assessed by scoring potential procurement approaches using the Project's 'critical success factors'.
- The design stage will include detailed analysis of interfaces between the packages.
- The scope has been split into practical and deliverable packages, informed by market engagement, the risk approach, and the client model and current level of capability.
- The process is described in Appendix C.

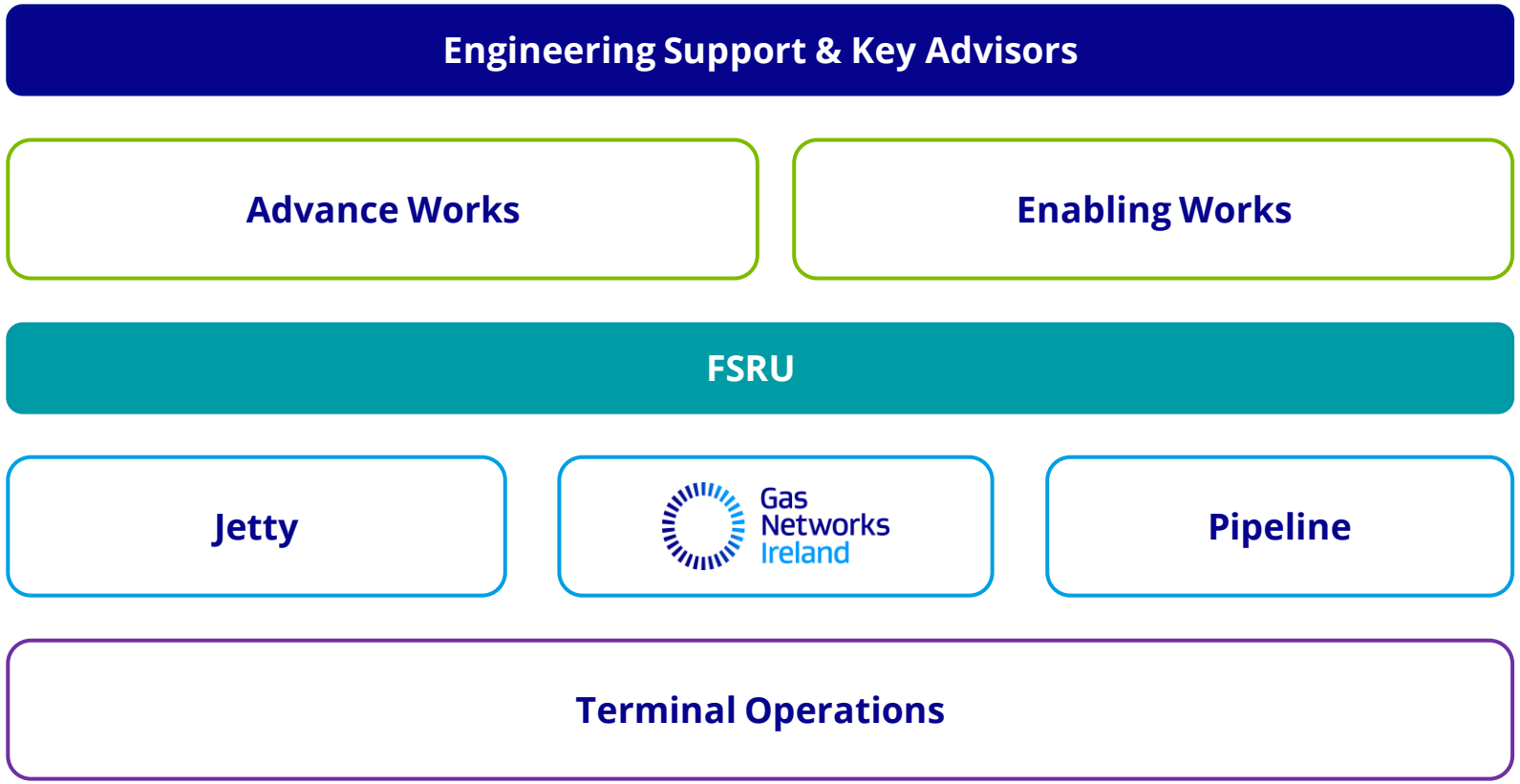


3.5 Delivery Options: Overview of Procurement Routes

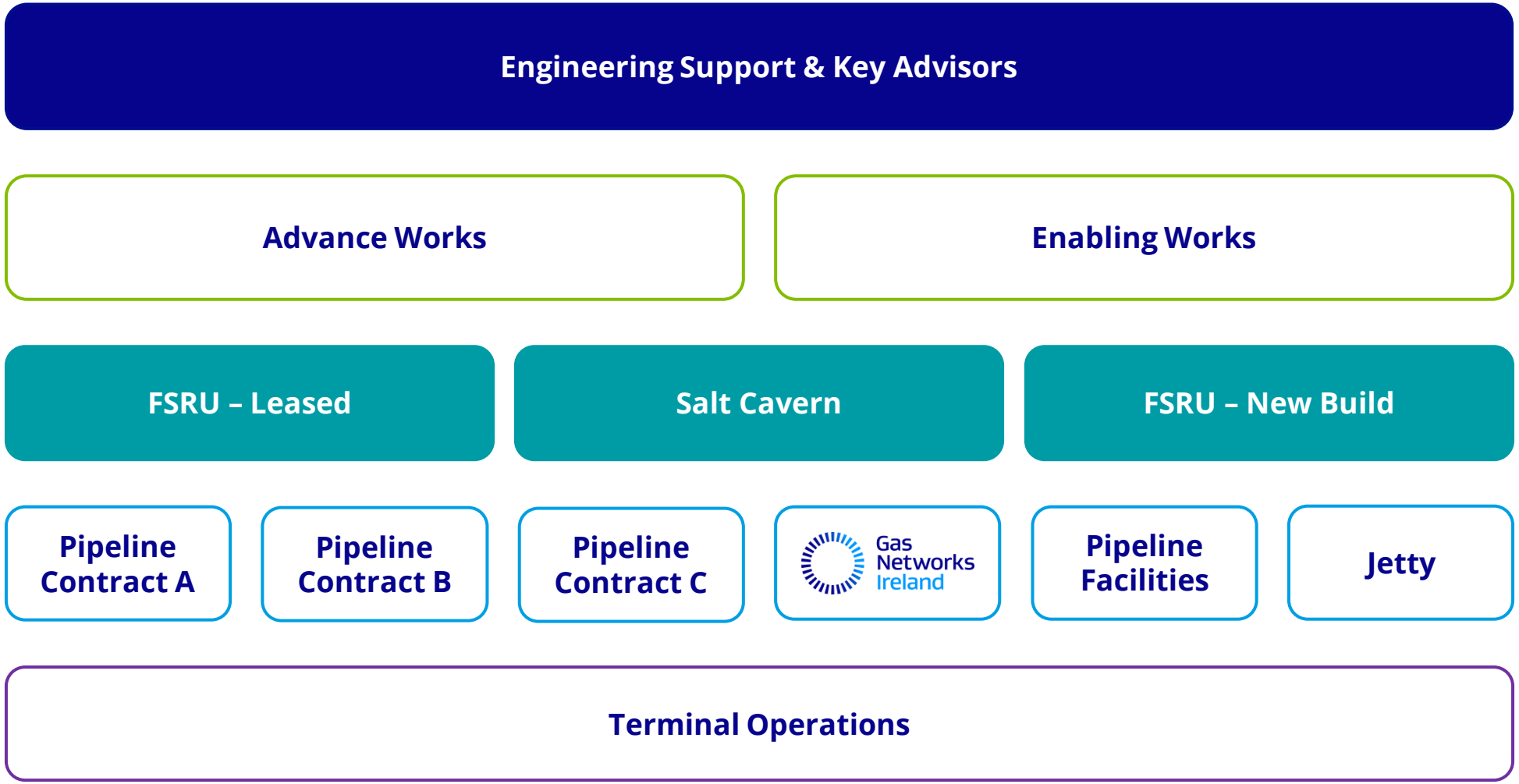
Four procurement option concepts were assessed as part of the options appraisal using the Project's 'critical success factors'. The assessment has considered the potential packaging of components of the technology options (e.g. FSRU, marine infrastructure, landside infrastructure, pipelines). The analysis has informed our planning for the subsequent stages of market testing that will be undertaken.

1 Traditional	GNI procures each individual package of the selected option on "design-bid-build" or "design & build" basis to various economic operators
2 Public Private Partnership (PPP)	GNI enters into an agreement with one or more private partners (who may be a mixture of contractors, operators, financers) who will be responsible for delivering selected option
3 Public Private (PP) Joint Venture	Contracted party is an entity owned by both GNI (assumes that GNI would have more than fifty percent equity) and private shareholders and is responsible for the delivery of the selected option
3 Hybrid	GNI procures the selected option via a mixture of traditional and/or PPP and/or Joint Venture

3.5 Packaging Strategy (Emerging N-1 Solution)



3.5 Packaging Strategy (Emerging Full GB Outage Solution)



3.6 Risk Allocation

- Risk allocation between the client and supply chain will be clearly defined using international best practice such as the well-established 'Abrahamson Principles'.
- The following typical contractual risks provide an indication of the potential allocation approach to be used. The procurement methodology will involve extensive market engagement to determine the most appropriate risk allocation.

Extent of GNI Risk Exposure

Low ← → High

PPP	Hybrid	PP JV	Traditional
GNI would transfer the risk to the PPP and the PPP would be responsible for the risk for all elements of the Project.	GNI would take on a mixture of risk in the event of a mix between PPP (e.g. FSRU) and traditional (e.g. pipeline).	GNI could potentially hold equity (>50%) in the PP JV and therefore be responsible for a high proportion of the risk.	GNI would take responsibility for risk.

The Abrahamson Principles

To achieve a fair and equitable allocation of risk in a construction project, a risk should be allocated to a party if:

- The risk is within the party's control;
- The party can transfer the risk (for example, through insurance) and it is economical to deal with the risk in this way;
- The main economic benefit of controlling the risk accrues to the party;
- It is in the interests of efficiency to place the risk on the party; and/or
- When the risk occurs, the loss falls on the party in the first instance and, applying the preceding principles, there is no basis to transfer the loss to the other party (or it is impractical to do so).

3.6 Contractual Risk Allocation and Flow to Procurement Model

Contractual Risk Allocation Table	Potential Allocations		
	GNI	Shared	Supply Chain
Finance			
Force Majeure			
Protestors (prior/during construction)			
Design			
Objections / challenges			
Changes in legislation			
Weather			
Long lead procurement			
Currency fluctuation			
Safety and environmental			
Ground conditions			
Appropriate Performance Specification			

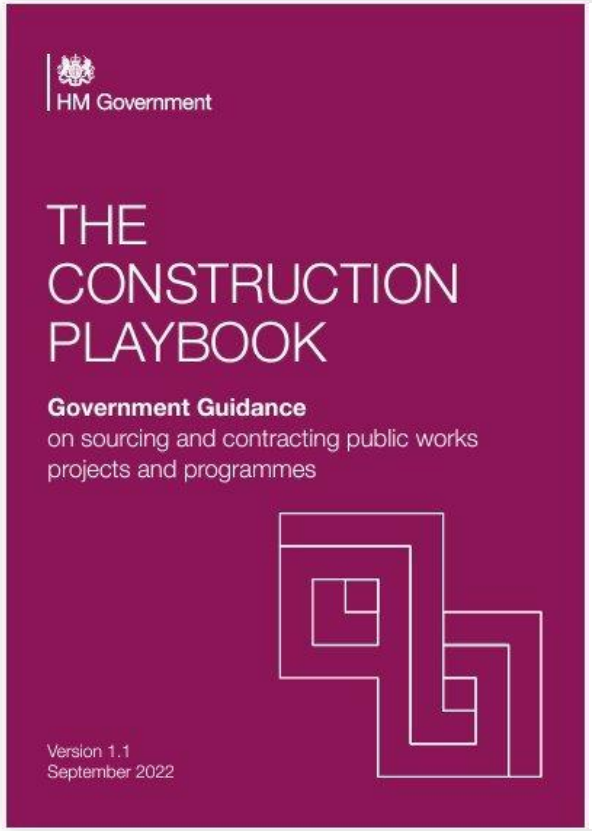
The preferred risk allocation will then need to be considered in relation to other criteria to determine the preferred contracting model. Other criteria could be supplier innovation, capacity for variations and separation of design and management.

GNI will make use of frameworks, it is common to provide all of the contract types to enable the most appropriate selection based upon the relative scale or complexities of projects within the portfolio.

Contracting Model	Procurement Model	Example Decision Criteria		
		Degree of Collaboration	Market Maturity	Incentivisation
Fixed Price	Design and Build	Scoring based on client model and the degree of client integration sought	Scoring based on perceived market maturity and ability to accept risks given the complexity of the project	Scoring based on stress testing the models for suppler incentivisation
Fixed Price	Traditional			
Target Price with Incentives	Design and Build			
Target Price with Incentives	Traditional			

Source: Adapted from UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Risk Management UK Model

3.7 Pillar 4: Selecting the Contracting Model

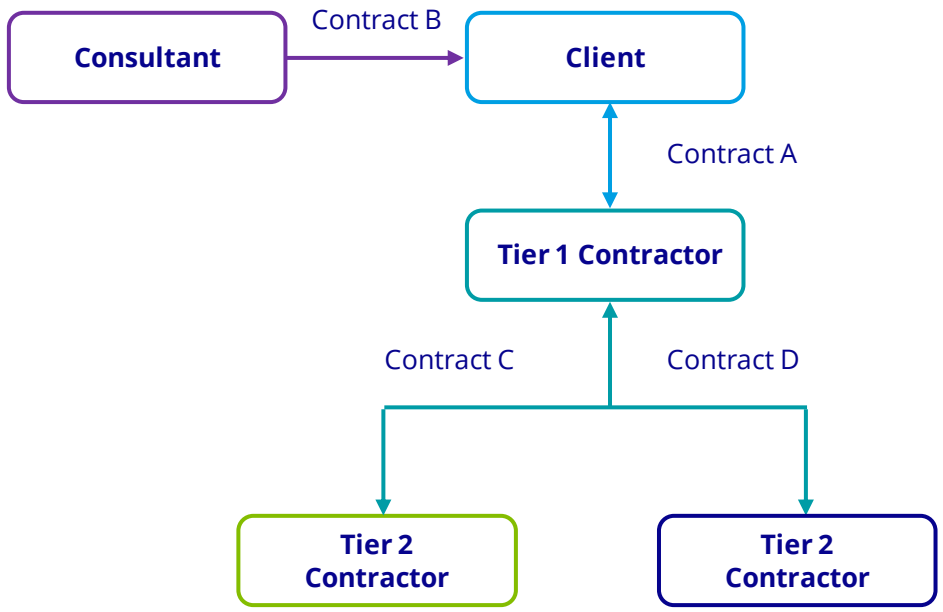


- GNI will establish a contracting model which delivers a sustainable, resilient and effective relationship with its supply chain. This should create long-term value for all. GNI will create contracting environments which promote collaboration, increase efficiency and drive a focus on delivery. We will make use of international guidance such as the UK's Construction Playbook[9].
- GNI will assess suitability for a PPP and will comply with the "Guidelines for the use of Public Private Partnerships (PPP)"[10] December 2019 published by Department of Public Expenditure and Reform.
- We have examined international standard industry forms of contract to assess available options. Where appropriate, industry standard forms of contract (NEC4 or IChemE or FIDIC) will be used to promote market participation and ensure that the supply chain is familiar with the terms of engagement.
- Our analysis has shown that FSRU owners will be selective in terms of the contractual risk which they are willing accept. This, combined with the demand for FSRUs, and the project-specific technical requirements, will limit GNI's ability to influence the contractual terms and conditions for the supply of an FSRU.
- For some elements of the work, GNI will leverage its existing frameworks as appropriate as these are an efficient method to procure works and achieve good alignment with GNI's standard processes.
- Our approach will align with the guiding principles from the Capital Works Framework Model. It should be noted that international forms of contract will be required for some of the major components.
- Dispute resolution techniques will be utilised to ensure that disputes are avoided to the extent possible (escalation, conciliation, etc).

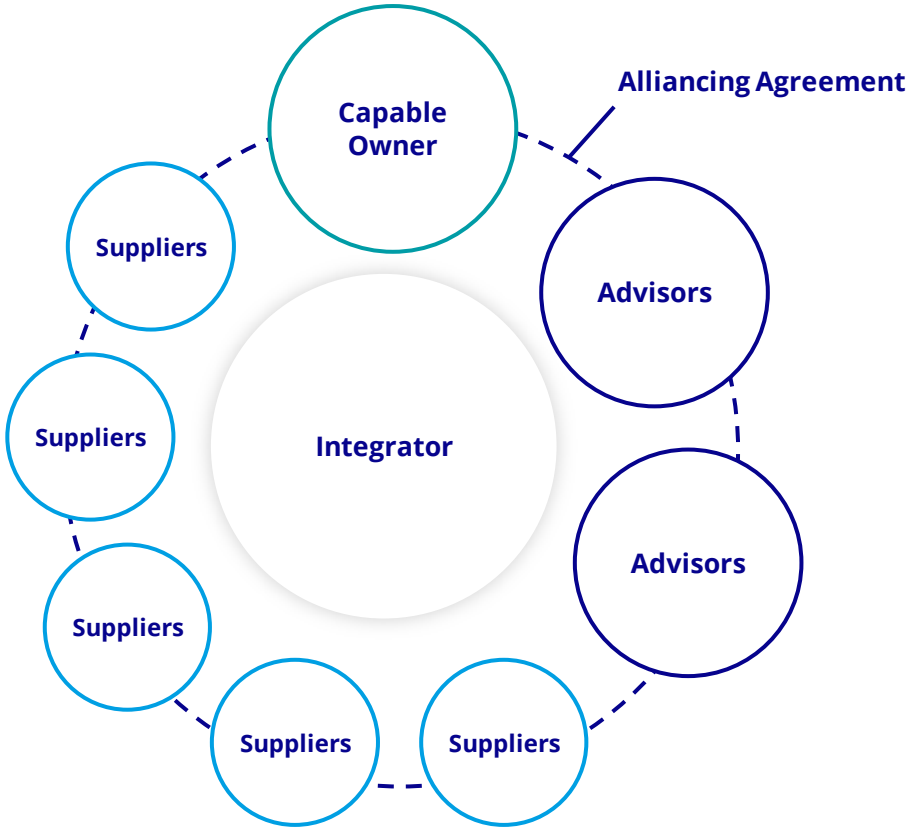
[9]HM Government (2022),The Construction Playbook. Available here.
[10]Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here

3.7 Pillar 4: Selecting the Contracting Model

Traditional Contract Relationships



Alliancing promotes collaboration



3.7 Typical Forms of Contract for Selected Option(s)

Various potential standard forms of contract will be considered for use – a typical overview is summarised below.

FSRU

- Lease Agreement (BIMCO, etc or bespoke)
- DB+OM (Newbuild)

Pipeline

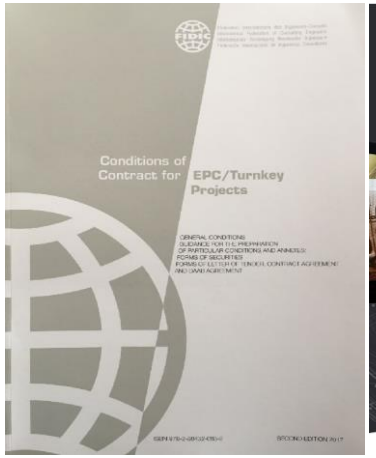
- Bespoke GNI
- NEC4
- FIDIC
- IChemE

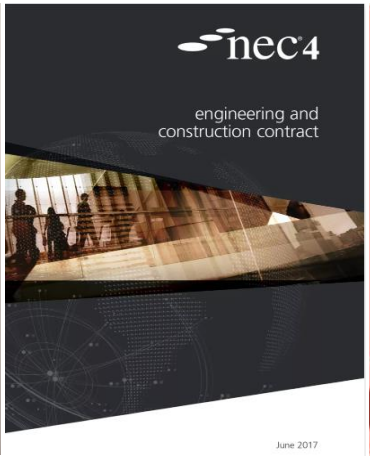
Jetty & Ancillary Works

- Bespoke GNI
- NEC4
- FIDIC
- IChemE

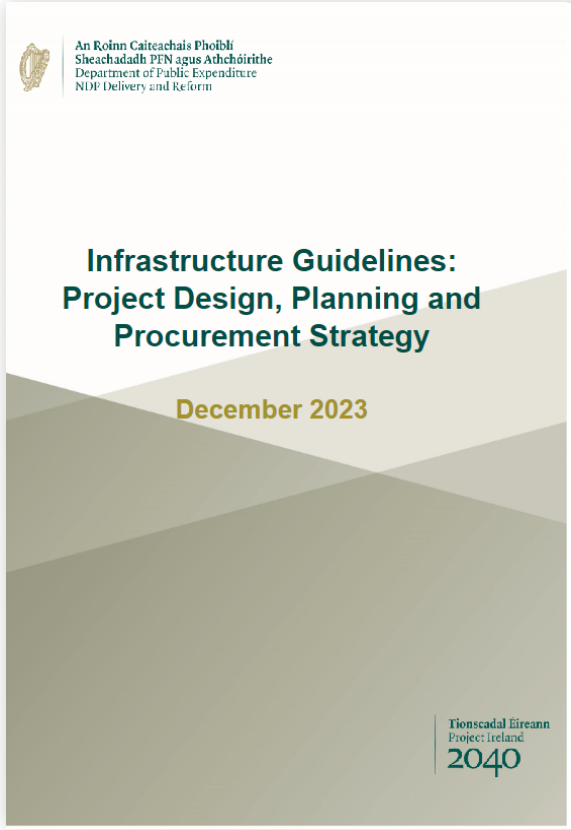
Jetty & Ancillary Works

- Commercial Agreement
- Pipeline & facilities
  - NEC4
  - FIDIC
  - IChemE





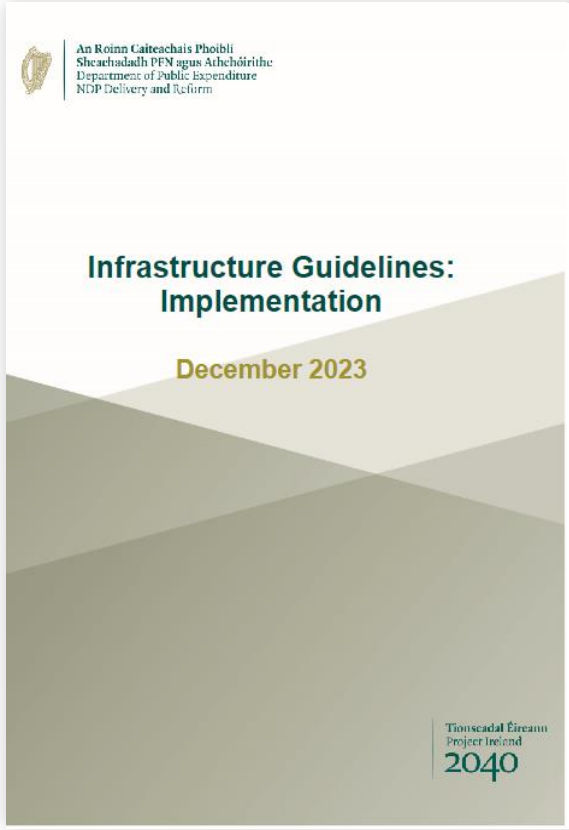
3.8 Pillar 5: Defining and Implementing a Successful Tender Process



- Contracts will be awarded in accordance with the provisions of the EU Public Procurement Directive 2014/24/EU[11]. This directive was implemented into Irish law by the European Union (Award of Public Authority Contracts) Regulations (S.I. No. 284 of 2016)[12].
- The tender process (and timings for investment decisions) is critical for the achievement of the accelerated and accelerated with risk schedules. This will require important changes from the business-as-usual schedule.
- Initial investigation has identified procurement routes and these will be developed further in the next stage. GNI will utilise existing frameworks for some packages and will initiate a new procurement process for remaining packages.
- Any tender process will comply with EU public procurement legislation together with GNI's procurement procedures.
- A strong evaluation of behavioural and cultural fit will be considered and capability gaps will be identified and addressed through training.
- The tender process will be guided by the Capital Works Management Framework (Suitability Assessment Questionnaire).

[11] European Union (2014), EU Public Procurement Directive 2014/24/EU. Available here
[12] S.I. No. 284/2016 - European Union (Award of Public Authority Contracts) Regulations 2016. Available here

3.9 Pillar 6: Managing Performance



- There will be a clear handover plan from the procurement team to the delivery team.
- GNI will explore the use of an integrated project management team which will promote collaboration and reduce the risk associated with unclear lines of responsibility.
- Engagement with other TSOs will be instrumental in ensuring the performance of the supply chain can be benchmarked.
- GNI will identify key performance indicators ("**KPIs**") with clear guidance on how they will work and how they will be monitored.
- A clear on-boarding strategy will be adopted to integrate the supply chain into the Project.

13

[13]Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Implementation. Available here

3.10 Next Steps

The targeted progress against each of the Routemap Procurement Pillars[14] is identified below. At Preliminary Business Case ("PBC") stage not all aspects are resolved, and further analysis will resolve the remaining items and inform the Full Business Case ("FBC").

Pillar 1: Understanding the Outcomes

Develop impact of funding, financing and assurance on procurement options; compile lessons learned from previous projects.

Pillar 2: Engaging the Market

Carry out further consultation with FSRU owners and civil engineering contractors; progress due diligence; finalise supply chain map; test packaging and contracting strategy; undertake further engagement on operation service options.

Pillar 3: Packaging the Works

Undertake detailed analysis and refined definition of packages; review GNI management, technical, commercial, operation support to ensure that it supports the packaging.

Pillar 4: Selecting the Contracting Model

Test contracting strategy; select the form of contracts; identify how the parties will report on and monitor the project performance; plan for delivery; review digital systems.

Pillar 5: Defining and Implementing a Successful Tender Process

Finalise procurement route; design and test tender processes; implement tender process.

Pilar 6: Managing Performance

Identify KPIs which will be used to monitor performance; identify client-supplier relationship management.

IPA Project Routemap: Procurement	PBC	FBC
Pillar 1: Understanding the Outcomes		
Pillar 2: Engaging the Market		
Pillar 3: Packaging the Works		
Pillar 4: Selecting the Contracting Model		
Pillar 5: Defining and Implementing a Successful Tender Process		
Pillar 6: Managing Performance		

[14] UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here

Appendix C1

Routemap: Procurement Module

Pillar 1: **Understanding the Outcomes** 1

- Define your project's business case outcomes and benefits, including the wider economic, environmental and social impacts that result as a by-product of delivery. Devise a procurement strategy that drives these outcomes and benefits.
- Design the procurement strategy as an integral part of the wider project delivery strategy, and make sure it aligns with existing organisational commercial and risk strategies and any ESG criteria (if applicable).
- Understand the project's current capability to implement the procurement strategy. Consider if there is a need to engage specialist support.

Pillar 2: **Engaging the Market** 2

- Undertake desktop market analysis exercises to understand constraints and capacity challenges, including other projects that may be competing for the same goods or services.
- Engage the market progressively as the procurement strategy is developed to:
  - Understand their appetite, health, capability, and capacity to deliver the project outcomes
  - Test key components such as risk allocation, incentivisation and level of effort required to complete the tender
  - Learn about their drivers, concerns and emerging technologies.

Pillar 3: **Packaging the Works** 3

- Break the scope into practical and deliverable packages, informed by market engagement, the risk approach, and the client model and current level of capability. Clearly define interfaces between suppliers and requirements for multi-contract collaboration.
- Test the packaging strategy with the market progressively to ensure sizing and scope is attractive and will generate competition. For programmes or portfolios, standardise specifications and utilise longer-term contracts with pipeline commitments of spend to give the market certainty and make it commercially viable to invest in innovation.
- Assess if there would be benefit from adopting a category management approach by grouping spend for similar activities or products to enable efficiencies.

Pillar 4: **Selecting the Contracting Model** 4

- Determine the desired degree of integration between the client and supply chain. This will inform your contracting model, tender process and risk allocation.
- Choose the contract model for allocating risk between the client and the market, communicating how it responds to market feedback. Stress test the model including incentivisation mechanisms to avoid unintended consequences.
- Ensure the model aligns with each party's risk appetite, their ability to manage risks and the client model. Clearly define roles and responsibilities.

Pillar 5: **Defining and Implementing a Successful Tender Process** 5

- Consider all available routes to market including existing frameworks and new procurements. Allow enough time for potential suppliers to prepare high quality bids, targeting early engagement with them where appropriate to develop potential solutions.
- Ensure the route aligns with the chosen packaging strategy and contracting model and is compliant with regulations. Design the tender process to maximise knowledge transfer, establish ways of working and develop capability to enable an efficient mobilisation.
- Develop and test the evaluation criteria against target outcomes, focusing on overall value rather than solely cost. Assess the desired behaviours and cultural alignment. Evaluation criteria should reflect any relevant ESG criteria.

Pillar 6: **Managing Performance** 6

- Develop a plan to build the capability needed to manage your obligations and responsibilities effectively within the contract.
- Quantify and measure success including how the procurement strategy contributes to the overall outcomes.
- Establish a plan for supplier performance management that drives and incentivises the desired behaviour and outcomes. Capture and apply lessons learned throughout the life of the project.
- Ensure that any relevant ESG criteria are tracked and reported on.

[15]UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here

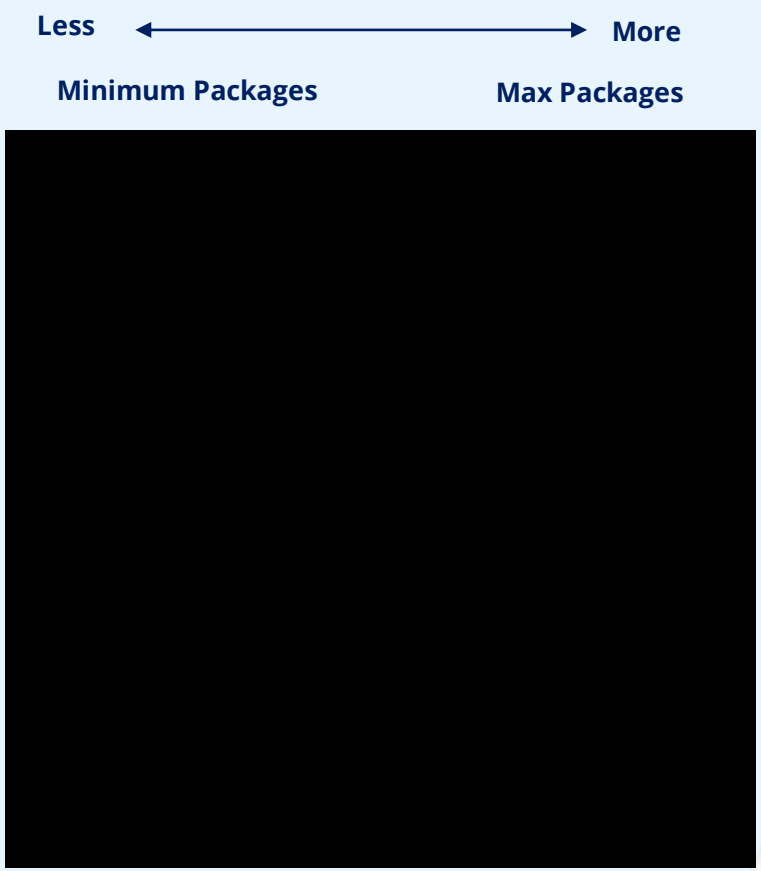
Pillar 3: Packaging the Works – Considerations

Geography vs Asset Classes	Would this package be business-wide, regional or based on asset type?
Scope for Build Off-Site	Is there a low, medium or high likelihood that this package can be built off site?
Interdependency / Integration / Complexity	Does this package have a low, medium or high integration requirement with other packages and as such what is the level of complexity?
Whole Life Consideration	What is the impact on whole life outcomes?
Long Lead Items	Does the packaging approach allow early contracting of critical long-lead items?
Safety Specific Considerations	In delivery of the package are there any unusual safety considerations?
Design Ownership and Transfer	Who will own the design and will there be a transfer – if so when will this happen?
Outcome Based Specification	As a discrete package could it be specified in output terms ?
Optimum Procurement Model	Notwithstanding package size and integration what would the optimal procurement strategy be?
Size/Volume (€m)	Package value – what would be the optimum size for the market based on risk and capacity?
Risk Allocation	Who is best placed to manage the risk? How will it impact resourcing?
Likely Market Appetite	Is there likely to be market interest and sufficient competition?
Market Capacity	Is there good capacity in the market to deliver the scope or very few suppliers / organisations with the capability?
Sub-tier Model	Will sub-tier suppliers be procured directly by the client or through a first tier?

Pillar 3: Packaging Risk Considerations

Considerations:

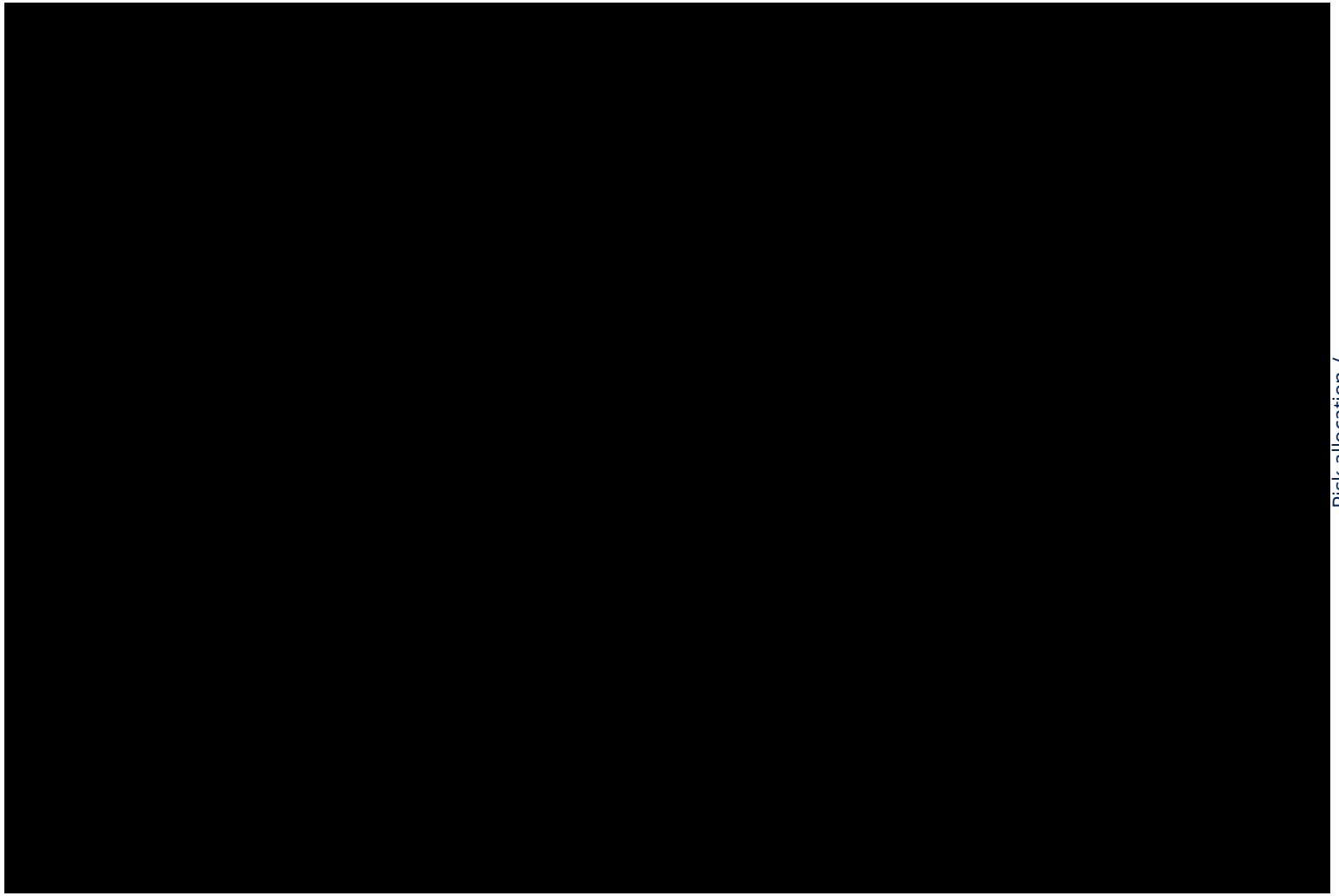
- Interface risk allocated to GNI
- Number of suitably sized contractors (€m)
- GNI control of schedule
- Market capacity and capability
- Required GNI capacity and capability
- Interdependency/Integration/Interface complexity
- Ability to select Specialised Suppliers
- Scope for innovation
- Effort for inter-contract collaboration
- GNI risk exposure associated with commissioning, handover, and operation

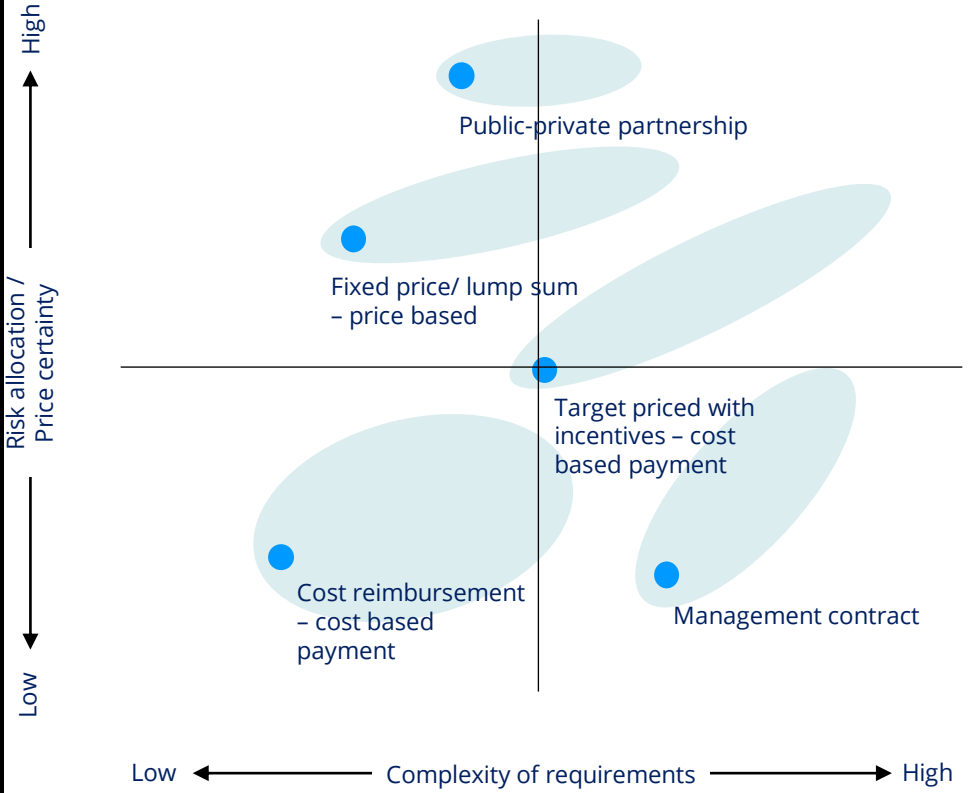


Rationale:

- Fewer packages=fewer interfaces for GNI
- Larger packages have high financial burden
- More packages gives GNI more flexibility
- Market appetite seeks balanced approach
- Fewer packages requires fewer GNI resources
- More interfaces and dependencies
- General firms required for large packages
- Balanced packages enhance innovation
- Fewer packages simplifies collaboration
- Linking commissioning and operation to construction reduces risk to GNI

Pillar 4: Selecting the Contracting Model





Considerations for PPP

GNI will comply with the "Guidelines for the use of Public Private Partnerships (PPP)"[16] December 2019 published by the Department of Public Expenditure and Reform.

- A PPP approach is being considered and a PPP Procurement Assessment (which addresses a number of key issues in detail) will be developed if a PPP is to be used.
- There are four distinct functions in the context of a PPP which will be examined in more detail once the market appetite for PPP has been tested:
  - The project appraisal function
  - The approval function
  - The procurement and delivery function, and
  - The audit function.

Further detailed market engagement is required to determine the feasibility of PPP options given the specialist market element (FSRU suppliers).

[16]Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here

Appendix C2
Miscellaneous

Appendix C2: References

1. Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here
2. UK Government Infrastructure and Projects Authority (2021),Project Routemap Handbook. Available here
3. Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here
4. Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here
5. UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here
6. UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here
7. Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Strategic Assessment and Preliminary Business Case. Available here
8. Gas Networks Ireland (2023), Supplier Charter. Available here
9. HM Government (2022), The Construction Playbook. Available here
10. Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here
11. European Union (2014), EU Public Procurement Directive 2014/24/EU. Available here
12. S.I. No. 284/2016 - European Union (Award of Public Authority Contracts) Regulations 2016. Available here
13. Department of Public Expenditure NDP Delivery and Reform (2023), Infrastructure Guidelines: Implementation. Available here
14. UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here
15. UK Government Infrastructure and Projects Authority (2021), Project Routemap Handbook, Procurement UK Model. Available here
16. Department of Public Expenditure and Reform (2019),Guidelines for the use of Public Private Partnerships. Available here

Appendix C2: Project Acronyms (1/2)

Acronym	Description
ABP	An Bord Pleanála
ACER	Agency for the Cooperation of Energy Regulators
AGI	Above Ground Installation
ALARP	As Low As Reasonably Practicable
AMP	Asset Management Plan
ARC	Audit & Risk Committee
BAT	Best Available Techniques
BAU	Business as Usual
BIM	Building Information Management
BIMCO	Baltic and International Maritime Council
BOG	Boil Off Gas
CAP	Climate Action Plan
CAPEX	Capital Expenditure
CBA	Cost Benefit Analysis / Assessment
CBCA	Criteria Based Content Analysis
CEPA	Cambridge Economic Policy Associates
CLO	Community Liaison Officer
CoDG	Cost of Disruption of Gas
COMAH	Control of Major Accident Hazards
CPO	Compulsory Purchase Order
CRU	Commission for Regulation of Utilities
CSF	Critical Success Factors
CSO	Central Statistics Office
D&A	Depreciation & Amortisation
DAERA	Department of Agriculture, Environment and Rural Affairs
DB+OM	Design Build + Operate Maintain

Acronym	Description
DECC	Department of the Environment, Climate and Communications
DG COMP	Directorate General for Competition
DHLGH	Department of Housing, Local Government and Heritage
DofE	Department of Energy (Northern Ireland)
DofF	Department of Finance (Northern Ireland)
DPENDR	Department of Public Expenditure, NDP Delivery and Reform
DPER	Department of Public Expenditure and Reform
EAC	Expenditure Approvals Committee
EC	European Commission
EGIG	European Gas Pipeline Incident Group
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EP	Equator Principles
EPA	Environmental Protection Agency
EPC	Engineer Procure Construct
EPO	Emerging Preferred Option
EPRS	Emergency Pipeline Repair System
ESBN	ESB Networks
ESG	Environmental Social and Governance
ESG	Energy Security Group
ESP	Engineering Services Provider
FBC	Final Business Case
FEED	Front End Engineering Design
FFO	Funds From Operations
FID	Final Investment Decision

Acronym	Description
FIDIC	International Federation of Consulting Engineers
FSRU	Floating Storage and Regasification Unit
FTE	Full Time Equivalent
GB	Great Britain
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HSA	Health and Safety Authority
HVO	Hydrogenated Vegetable Oil
IAAP	Integrated Assurance and Approvals Plan
IBP	Integrated Business Planning
IC	Interconnector
IChemE	Institution of Chemical Engineers
IEA	International Energy Agency
IED	Industrial Emissions Directive
IoM	Isle of Man
IPA	Infrastructure and Projects Authority (UK)
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
LNG	Liquefied Natural Gas
LNGC	Liquefied Natural Gas Carrier
LSO	LNG System Operator
MAC	Maritime Area Consent
MARA	Maritime Area Regulatory Authority
MSCM	Millions of Standard Cubic Metres
MSm	Mega Standard Cubic Metres

Appendix C2: Project Acronyms (2/2)

Acronym	Description
NDP	National Development Plan
NEC4	New Engineering Contract 4
NGEM	Natural Gas Emergency Manager
NGEP	National Gas Emergency Plan
NI	Northern Ireland
NPF	National Planning Framework
NPV	Net Present Value
NPWS	National Parks and Wildlife Service
NSO	National Strategic Objective
O&M	Operation & Maintenance
OJEU	The Official Journal of the European Union
OOM	Order Of Magnitude
OPEX	Operating Expenditure
PDA	Planning and Development Act 2000 (as amended)
PID	Piping Instrumentation Diagram
PLT	Project Leadership Team
PMO	Project Management Office
PP JV	Public-Private Joint Venture
PPP	Public-Private Partnership
PRAM	Project Risk Analysis and Management
PSO	Public Service Obligation
QA	Quality Assurance
QRA	Quantitative Risk Assessment
QSRA	Quantitative Schedule Risk Analysis
RAB	Regulated Asset Base

Acronym	Description
RACI	Responsible Accountable Consulted Informed
RAG	Red, Amber, Green
RCF	Reference Class Forecasting
RED	Renewable Energy Directive (EU) 2023/2413
RES	Renewable Energy Source
ROI	Republic of Ireland
RPE	Real Price Effect
RTP	Route to Procurement
S&P	Standard & Poor's
SBC	Strategic Business Case
SCRT	SCR + CRT (Selective Catalytic Reduction + Continuous Regenerating Technology)
SDG	Sustainable Development Goal
SEM	Single Electricity Market
SGER	Strategic Gas Emergency Reserve
SGERP	Strategic Gas Emergency Reserve Project
SGR	Sustainable Growth Rate
SID	Strategic Infrastructure Development
SME	Small and Medium-sized Enterprises
SNIP	Scotland-Northern Ireland Pipeline
SNP	South North Pipeline
SoLR	Supplier of Last Resort
SoS	Security of Supply
SRO	Senior Responsible Owner
SWOT	Strengths, Weaknesses, Opportunities, Threats
TBC	To Be Completed

Acronym	Description
TEG	Temporary Emergency Generation (Act)
TOC	Table of Contents
TPA	Third Party Access
TPER	Total Primary Energy Requirement
TSO	Transmission System Operator
UGS	Underground Gas Storage
VfM	Value for Money
VoLL	Value of Lost Load
WACC	Weighted Average Cost of Capital