INTERNATIONAL JOURNAL OF SOCIAL SCIENCE, EDUCATIONAL, ECONOMICS, AGRICULTURE RESEARCH AND TECHNOLOGY (IJSET) | ISSN (E): 2827-766X
Website:https://ijset.org/| Volumes 5 No. 6 (2026)

STRATEGIC BUSINESS MODEL ANALYSIS FOR INTERNATIONAL LNG TRADING MARKET BUSINESS ENTRY OF NGC

Gerra Maulana[1], Pri Hermawan[2]
[1,2]Institut Teknologi Bandung
Email : maulana.gerra@gmail.com, prihermawan@sbm-itb.ac.id

Received: 08/05/2026 | **Revised** : 15/05/2026 | **Accepted:** 07/06/2026 | **Published** :18/06/2026

Abstract

PT National Gas Company Tbk (NGC), as Indonesia's Subholding Gas under One Energy Group, faces a structural inflection point. Although revenue remained broadly stable, the company's full-year net profit fell by about 37 percent year-on-year, from approximately USD 340 million in 2024 to USD 215 million in 2025. This margin compression reflects a structural mismatch between maturing upstream pipeline supply in western Indonesia, the company's growing reliance on LNG to backfill domestic demand, and the price ceilings imposed by the Specified Natural Gas Price regulation on certain industrial sectors. To re-anchor growth, NGC's Gas Supply & LNG Trading (GSLT) division has begun engaging in international LNG trading, however, the company's initial 2023–2024 entry under early counterparty arrangement has produced volatile financial outcomes and material legal exposure. An unstructured trading posture is therefore unsustainable, and a structured analytical evaluation of business model alternatives is required. This research addresses three interconnected questions: (1) what factors influence a company's ability to engage effectively in LNG trading; (2) how common LNG trading business models differ in their key characteristics and trade-offs; and (3) which business model represents the most suitable strategic fit for NGC given its internal capabilities, external risks, and corporate planning constraints. The study adopts a combine qualitative and quantitative methodology, anchored in the Kepner–Tregoe Decision Analysis logic and operationalised through an integrated analytical framework combining Resource-Based View and VRIO for internal analysis, PESTEL and Porter's Five Forces for external analysis, business model archetype mapping, and Multi-Criteria Decision Analysis (MCDA) using the Analytic Hierarchy Process to rank alternative business models. Primary data come from semi-structured interviews with 12 respondents: 6 internal NGC stakeholders and 6 external stakeholders. Secondary data include NGC's RJPP (Long-Term Corporate Plan) 2025–2035 LNG Trading projection, FY 2024 and 2025 financial disclosures, regulatory instruments, and industry reports. The internal analysis identifies NGC as fundamentally asset-strong but capability-constrained, physical infrastructure and the embedded role as Indonesia's national gas aggregator are valuable, rare, and difficult-to-imitate resources, whereas trading capability, front-to-back-office structure, financial-risk hedging, and shipping control are underdeveloped. The external analysis identifies a mixed environment of opportunity and constraint. The MCDA evaluation, weighted by managerial-judgement criteria of strategic fit, financial robustness, risk exposure, capability requirement, implementation complexity, policy alignment, and time-to-market, ranks the hybrid asset-backed portfolio model as the most suitable strategic posture for NGC, ahead of utility/single-buyer, asset-backed integrated, pure portfolio, and merchant-trader archetypes. The ranking is robust under three sensitivity scenarios (One Energy Group–NGC novation completion, restrictive LNG export–import permits, and base-case continuity). The research recommends a phased implementation, a 0–12-month foundation phase to consolidate trading governance and front-to-back-office structures, a 1–3-year anchor build-out integrating novated One Energy Group LNG cargoes and securing shipping and regasification optionality, and a 3–5-year regional scale-up serving Southeast Asia's emerging. The framework is intended as a decision-support tool to be revisited as market conditions, regulatory frameworks, and NGC's capability base evolve.

Keywords: LNG trading, business model, VRIO, MCDA, strategic fit

Introduction

Background

Energy demand has been rapidly increasing since the Industrial Revolution (late 18th century). The energy demand of the industrial sector, the growth of urban centres and population has seen an unprecedented increase in energy consumption in all sectors. Over 100 years the need has been fulfilled by the traditional use of fossil fuels, particularly coal and oil. But the persistent reliance on these fuels has led to large environmental problems, especially the emission of greenhouse gasses, air pollution and the fast progress of climate change. The energy sector is one of the major sources of global CO_2 emissions, emitting over 70% of human-caused greenhouse gases (GHGs) (IPCC, 2023).The global energy system is in the process of a structural change towards cleaner and more sustainable energy sources over the past two decades. In developing nations where energy demand is rising, particularly in the emerging markets, the literature on energy policy emphasizes the importance of not relying only on renewable electricity for reliable provision of energy services (Sovacool, 2021).

The concept of a transition fuel has emerged as a basic principle of global energy discussion in this context. The natural gas is playing an important strategic role due to its relatively low carbon intensity, clean combustion profile and flexibility in operation. Natural gas releases approximately 40-50% less CO_2 than coal in power generation, much less sulphur dioxide and particulate matter, and can be rapidly ramped up and down to adapt to the variability of renewables. Natural gas has been recognized as a “bridge fuel” that can contribute to decarbonization of the energy system without influencing the stability and cost effectiveness of the energy system (Atilhan et al., 2021; Stern, 2020). Natural gas is a strategic fuel, yet has physical and transportational limitations. Unlike Oil, natural gas cannot be conveniently loaded and stored on board a ship, and has to be carried by pipeline infrastructure. The structural constraint may restrict the accessibility and flexibility of natural gas supply, particularly for markets that are not typically connected to major natural gas pipelines.

To overcome these challenges, the global gas industry developed Liquefied Natural Gas (LNG). With the help of special LNG tankers, natural gas may be transported over long distances without pipeline infrastructure by liquefying it. Today, LNG trade has gone into a new and very different era, due to the development of LNG infrastructure and global supply chains. Until recently, the LNG market was based on inflexible, long-term, point-to-point contracts to justify huge capital projects for liquefaction and regasification facilities. But in the last 10 years, the LNG market has been structurally changing towards more flexibility, liquidity and transparency. Spot and short-term trading in LNG has surged in recent years, making up over 35% of all LNG transactions, and the market is now in the hands of a variety of new participants, ranging from portfolio players and independent traders (IEA, 2024; GIIGNL, 2023). LNG is no longer a “commodity,” but rather a dynamic energy product that can be traded on a global basis, due to the introduction of destination-flexible contracts, the use of hub indexed pricing, and the growing number of LNG ships.

The transition opens up a variety of strategic opportunities, among them, for NGC. While Indonesia's largest downstream and midstream gas company, NGC has existing infrastructure, market experience and institutional capacities which can be utilised to enter into international LNG trading. As markets become increasingly liquid for LNG, barriers for large international oil and gas companies are falling. Furthermore, Indonesia's location in Asia that's currently the world's fastest growing LNG demand center, makes the relevance of regional and global LNG trade more relevant. This entry would help to diversify NGC's business portfolio but would also increase supply security and commercial flexibility, and would ensure NGC's alignment with the global energy transition trends with the presence of LNG as one of the balancing factors.

Company Profile

PT National Gas Company Tbk (NGC) is the largest natural gas infrastructures and distributors company in Indonesia. NGC is an integral part of the country's process of building modern energy networks, with a key role in providing natural gas availability, accessibility, and reliability throughout the country. As a publicly listed company and appointed Subholding Gas of PT One Energy Group, NGC is responsible to operate and integrate Indonesia's natural gas value chain including the transmission, distribution and midstream infrastructure, commercial and retail services. company operations span multiple segments within the natural gas value chain, such as, gas transmission, gas distribution, LNG infrastructure & regasification, and gas trading & retail services. NGC is the natural gas company that is charged with moving the gas integrated ecosystem in Indonesia. This involves access to supply, midstream solutions optimization, gas use expansion and national energy transition goals.

OPEN ACCESS

Business Issue

Comparing its full-year financial results, the company's net profit fell by about 37% year-on-year, from approximately USD 340 million (Rp 5.52 trillion) in 2024 to USD 215 million in 2025, even as revenue remained broadly stable. This is due to a decrease in pipeline gas supply from the current upstream contracts. As a result, to meet consumer needs, the company shifts to using LNG as it supplies regularly since late 2024, which results in higher COGS values, but this also shifts the demand curve due to higher prices, hence lowering the demand quantity overall. This condition is affected by government regulations that cap gas prices for certain industries, resulting in very low domestic price flexibility (Kepmen ESDM 76/2025).

The stagnancy and limitation of NGC existing business forces the company to consider another emerging business that has potential to become a revenue booster in the future (improve the existing business for NGC).Therefore, the company tries to pursue other opportunities that can be done to maintain growth in areas that are still in line with the current business. One of the opportunities is to engage in international LNG trading. NGC has the opportunity to become a well-established player as domestically it has its own growing industrial demand, also supported by its ownership of LNG infrastructure through affiliates and subsidiaries.

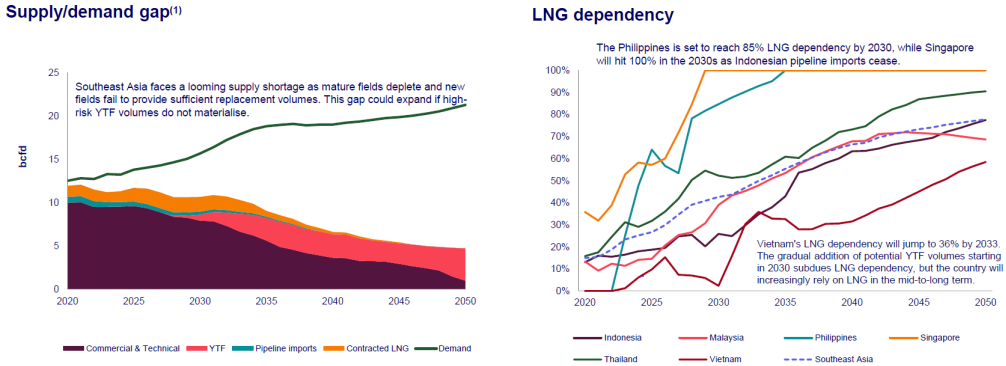

Figure 0. Forecast of Southeast Asian Growing LNG Dependency by Year

This is also affirmed by external dynamics where Southeast Asia's LNG dependency is expected to hit 50% as early as 2033, with Thailand, Vietnam, and Philippines as the major emerging importer, thus provides a great opportunity to be taken and more capital to gain in the pacific market with China's and India's growing needs (WoodMackenzie, 2025). NGC LNG Trading business started in the 2023-2024 period as a pure trader and is generating significant revenue in just a couple of years. However, there is a limited stable and sustainable business scheme from the activities that have been running, this is also exacerbated by high business risks that cause legal problems for the company due to unpolished and unsteady business strategies.

NGC is aiming to access the international LNG market but needs to analyse the most effective and suitable business model for the enterprise. But, internal strengths, positioning of assets and external risks hamper decision making. An analysis should be done to see what type of business scheme and strategies should be used for this, and if it is fit and feasible.

Research Questions and Research Objectives

Research Questions

1. What are the factors that influence the company's ability to engage effectively in LNG trading?
2. How do common LNG business models differ in their key characteristics and criterias?
3. What is the most suitable strategic business model and the best strategic fit for the company to enter the international LNG market when aligned with the company's long-term growth, considering internal capabilities and external risks?

Research Objectives

1. Identify and map the company's internal & external strengths, weaknesses, & infrastructure readiness relevant to trading.
2. Assess and review different between LNG business models characteristic and analysis each its strengths and weaknesses,
3. Compare business models and develop a multi-criteria decision framework (MCDA) to evaluate and rank the business models based on strategic fit. Determine the most suitable strategic business model for entering the international LNG market, considering internal capabilities, external risks, and infrastructure leverages.

Research Scope and Limitation

This study is limited to one company, PT NGC, as Subholding Gas of One Energy Group. The objective is on the internal decision-making process for evaluating and determining most suitable LNG business model for NGC within the context of trading in the international LNG Market, considering its own internal capability and external fitness. The results are not necessarily applicable to other companies or industries, but the framework can be applied conceptually to other companies as a case study. The criteria weighting and condition applied is part of the input into the decision making process and is dependent on managerial judgement which could include personal bias. In the context of this research, the criterias, conditions and alternatives are moving and the framework that has been developed should be regarded as a decision support tool to be updated as the markets and the aims change.

Literature Review

Theoretical Foundation

Internal & External Factor

This research is integrated by combining theoretical approaches to identify the factors affecting the effectiveness of a company in LNG trading. It draws from relevant strategic-management frameworks that can be used to analyse the sector's internal resources/capabilities of firms and their environment, and from sector-specific literature on LNG supply chains and trading networks, to identify sector-relevant capabilities and constraints. This dual approach was used here to obtain a generally valid analysis, based on sound theory and a contextually valid analysis based on a practical consideration of LNG business.

Internal Capability & Resource Analysis

The foundation of analyzing internal capability in this research is based on the Resource-Based View (RBV) concept. RBV stipulate that firms differ fundamentally because they possess different bundles of resources and capabilities, and that these differences can lead to sustained competitive advantage when certain conditions are met (Barney, 1991). According to RBV, resources include all assets, capabilities, organizational processes, knowledge, and information under the firm control , tangible or intangible , which enable the firm to conceive and implement strategies that improve efficiency or effectiveness.

To operationalize RBV in empirical and strategic analysis, the study employs the VRIO Framework, a four-criteria model evaluating each resource or capability along four dimensions : Value, Rarity, Imitability, and Organization. The VRIO tool can be used to systematically analyse the resources and capabilities of the firm to see if this will lead to a sustainable competitive advantage in the LNG trading environment. This is even more pertinent as LNG trading is a mix of commodity distribution and pipeline based gas supply, necessitating a mix of specialized infrastructure, supply-chain orchestration, trading skills and risk management. The RBV, and VRIO in particular, has been widely validated across industries as relevant for explaining competitive advantage and firm performance (Barney, 2001).

External & Environmental Analysis , Macro / Market Context

The macro environment for LNG trading encompasses factors such as global supply and demand balance, geopolitical stability or risk, infrastructure and logistics conditions (transportation, shipping, terminals), technological developments, regulatory and environmental policies, and broader economic cycles. These factors influence the availability, price, and risk profile of LNG cargoes , all of which affect whether a company can sustainably trade LNG. A recent comprehensive review of global natural gas and LNG markets identifies several of these factors as core determinants of LNG market price and trade viability : these include technological advancement, geographical positioning and transportation costs, overall supply–demand dynamics, and geopolitical factors (Asa, 2025).

These macro level variables are not within the control of one company and therefore, should be thoroughly examined as part of the LNG trading entry evaluation process. Externals analysis methods (such as macro-environment scanning – PESTEL) are widely used in the literature on strategic-management (applied in energy/gas sectors). In the context of a wider commercialization strategy, Fachira (2024) suggests an external environment analysis (PESTEL) that will assist companies to consider external factors related to the product like politics, economy, technology, environment, and regulations. Furthermore, industry-level risk assessments show how geopolitical risks can have a significant impact on energy trade flows and market stability (Li, 2021). Therefore, a combination of macro-environment analysis and assessment of conditions in the industry gives a more comprehensive picture of external conditions that influence the viability of LNG trading.

OPEN ACCESS

LNG Business Models

LNG Trading Business Models

In the context of this research, "LNG business models" refer specifically to LNG trading business models on how companies structure their activities, risk-taking, and asset positions to buy, move, optimize, and sell LNG across markets. Conceptually, LNG trading business models can be seen as a specialised application of commodity-trading business models, where value is created by exploiting price differentials, optionality, logistics flexibility, and information advantages rather than by simply owning physical assets.

From a general commodity-trading perspective, McKinsey describes trading firms' business models as combinations of: (i) market access and analytics, (ii) risk-taking and hedging, (iii) logistics and asset optimisation, and (iv) client solutions, with different firms emphasizing different combinations of these elements (Rechtsteiner, 2023). Transposed to LNG, the trading business model is therefore defined by how a player combines contract portfolios, shipping/logistics capabilities, access to infrastructure, and risk appetite to capture value from the global LNG market. Recent industry and policy studies show that a few archetypal LNG trading business models have emerged as the market has liberalised and spot/short-term trading has grown:

- **Portfolio Player / Aggregator Model**
  Portfolio players hold diversified portfolios of long-term and short-term LNG supply contracts from different sources, combined with shipping, storage, and regas capacities, and diversified offtake positions. They "aggregate" supply and demand and use portfolio optimisation to continuously reallocate cargoes across markets according to price signals, often acting as both buyer and seller. Hashimoto defines LNG portfolio players as companies owning portfolios of LNG supply contracts and associated logistics that allow them to respond flexibly to market signals, thereby promoting market liquidity and flexibility (Hashimoto, 2018).
- **Asset-backed Producer / Integrated Trading Model**
  Major integrated oil and gas companies and NOCs traditionally started from equity LNG production and then built trading capabilities on top, marketing their own production plus third-party volumes (Hatoum, 2020). Their business model is asset-backed trading by monetizing equity gas and liquefaction capacity while using trading desks to optimise flows, hedge price risk, and arbitrage between contract and spot markets. McKinsey and other consultancies note that "world-class LNG optimisation" for such firms requires a front-to-back trading operating model and integrated risk systems (Boccara, 2020).
- **Independent Merchant / Trading House Model**
  LNG markets are dominated by LNG merchants with little upstream risk and solid balance sheets, appetite and expertise in logistics, known as the global commodity trading houses (Hatoum, 2020). They are based on buy-sell margins and arbitrage, occasionally with the involvement of chartered shipping services, time spread-location spread and risk hedging trades, and an optionality portfolio of infrastructure investments (e.g., regasification terminal and FSRUs).
- **Utility / Single-Buyer Trading Model**
  Some power and gas companies or state-owned single buyers introduced the concept of LNG trading desk to manage their own LNG demand portfolio and sometimes to trade to the surplus volumes. Japanese utilities are increasingly turning to LNG trading markets for the ability to sell excess volumes and to manage volume and price risks, as they are increasingly having to rely on LNG trading markets to sell over-procured LNG under long-term contracts, as highlighted by KPMG (2017).
- **Emerging Hybrid / Portfolio-plus-Infrastructure Model**
  Some of the analysis suggests that recent investments in regas facilities, power plants and distribution systems by some LNG traders and LNG portfolio investors, in emerging markets, to create new demand and offtake. The hybrid model is to own and operate strategic infrastructure assets in the markets where it can earn a trading margin and capture downstream value, and to mitigate market risk by securing captive/semi-captive demand (IEEFA, 2024).

Determining Best LNG Business Model

The third research question is about the differences between the various LNG trading business models in response to different internal and external factors, and how these factors need to be taken into account to make an optimal strategic choice. This is a concept in terms of two interrelated ideas:

- The notion of strategic fit – the alignment between a company's internal capabilities and the external market environment; and
- The use of multi-criteria decision analysis (MCDA) to systematically evaluate and rank competing business model options against multiple, often conflicting, criteria.

These ideas, along with others, provide a structured approach to evaluating the options for the LNG trading business model, as well as to justifying a chosen business model by offering clear arguments backed up by evidence. Strategic fit in strategic management theory refers to the consistency between the resource/capabilities of the firm and opportunities/constraint of the outside environment. It is closely related to the resource-based view (RBV) theory that says competitive advantage is created by the exploitation of a firm's internal capabilities in accordance with the external market conditions. From strategic-fit perspective, LNG trading business models should be assessed from the viewpoints of how each model leverages the company's strengths and fits the external LNG context.

Multi-criteria decision analysis (MCDA) is a set of methods that has been developed to assist decisions where there are several criteria and many of these criteria are conflicting. In addition to being a tool that optimises on a single metric (e.g., cost), MCDA is a tool that also allows decision makers to structure a problem, define a list of criteria and sub-criteria, assign weights to the different criteria, and then rank or score the different options (Wieckowski, 2023). In the energy sector, the decisions were largely taken in the presence of uncertainty and compromise between the economic, technical, environmental and social aspects, which resulted in the use of multi-criteria decision analysis methods such as Analytic Hierarchy Process (AHP), TOPSIS, VIKOR, PROMETHEE, and hybrid fuzzy methods (Sahabuddin, 2021).

The most popular MCDA techniques used to make energy decisions are those using AHP, which are a technique that dictates the structure of the decision as a hierarchy of goals, criteria, sub-criteria, and alternatives, followed by the application of pairwise comparisons to determine weights and scores. Energy planning and energy project selection have been the domain of numerous studies which have accentuated the flexibility and robustness of AHP in solving multi-criteria problems (Salvia, 2019). There are also many other methods like TOPSIS which is widely used for ranking the alternatives by comparing with an “ideal” and an “anti-ideal” solution, and are frequently used along with AHP for weighting (Sadjadi, 2017). Specific MCDA method can be selected based on frameworks that specify the suitability of a variety of MCDA methods based on characteristics of a problem (Aasa, 2025).

MCDA Applications in LNG and Oil & Gas Contexts

There are already existing documents that demonstrate that MCDA is relevant to gas and LNG related decisions, and in this case, not just for trading business models. Karayel (2019) employs AHP and TOPSIS in this study [24] to determine the LNG natural gas suppliers for Turkey based on the LNG price, its supply security, contract flexibility, and political risk. This is an example of the ability of MCDA to structure complex decisions regarding LNG procurements, where many technical, economic and geopolitical considerations come into play. A recently published paper introduces an innovative multi-criteria decision framework for the selection of export markets for LNG and naphtha, utilizing Fuzzy Delphi, Best-Worst Method (BWM) and Fuzzy TOPSIS, which not only identifies and weighs the criteria (market risk, profitability, logistics, policy risk) but also ranks the export market options (Aghazadeh, 2025).

Conceptual Framework

This research adopts the Kepner-Tregoe (KT) Situation Analysis as the initial conceptual framework to assess NGC strategic move into international LNG trading. The KT framework ensures that NGC’s entry into international LNG trading is strategically justified, competitively positioned, and financially resilient (Kepner & Tregoe, 2013). The conceptual framework is illustrated in Figure below.

OPEN ACCESS

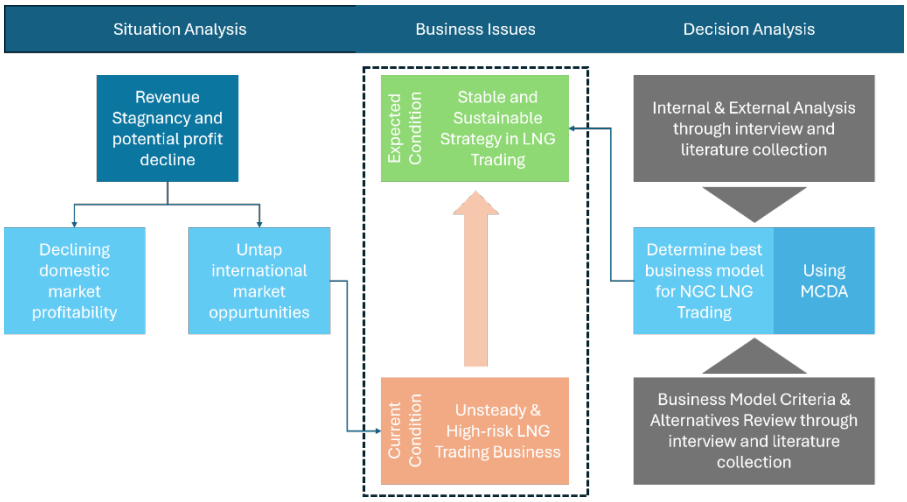

Figure 0. Conceptual Framework of NGC Business Issue

Research Methodology

This study combines qualitative and quantitative approaches. This is intended to obtain a better understanding and results in line with the research's aims while maintaining objectivity. In general, the research design can be seen in the diagram on the next page. The research is initiated based on several research questions that have been presented in the previous chapter. The first part will determine the external and internal factors of the company that influence the selection of the LNG Trading business model. The evaluation is carried out by conducting primary data collection from interviews and several secondary data from existing literature. Further analysis is performed using the SWOT (Gurel, 2017), PESTEL (Aguilar, 2010) and VRIO (Barney, 1991) models in a qualitative manner.

The second part will proceed to the stage of identifying the characteristics and advantages of the selected business models, The choice of business models that will be evaluate shall refer to the coding results from the interviews in the first section, which will then be aligned with common practices in the international LNG market based on benchmarking and literatures review.

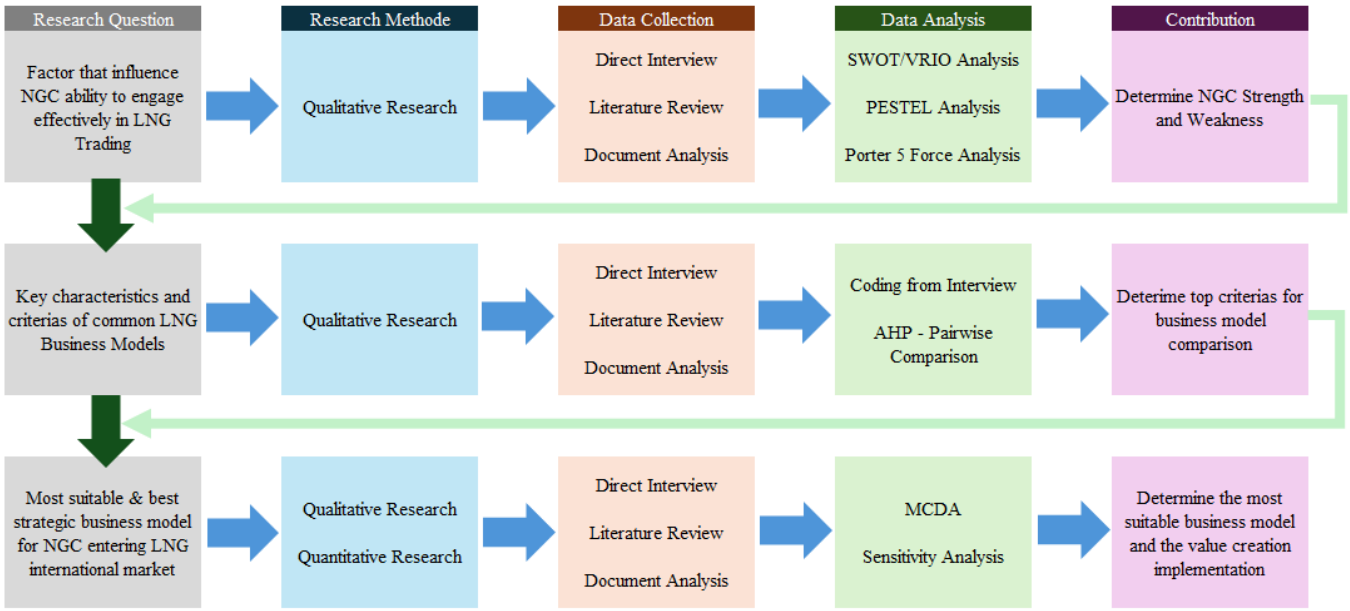

Figure 0. Research Design Mapping

As we have the alternatives and criterias from former section above, tools use for the next part will be AHP as a form of Multi-criteria Decision Analysis framework. AHP will be run through a simulation, conducting systematic comparison between each model in certain criterias condition. Result from simulation will not be directly determine

as the best and optimal option for the implementation stage, but further adjustments will be done to ensure the integrity of the results. A sensitivity analysis will be conducted on each business model under conditions that may currently occur in the company's LNG trading business activities.

Data Collection Method

This study uses both primary and secondary data. Primary data is obtained directly by the author from respondents and data sources to meet specific information needs. The methodology used to meet these inquiries are carried out through interviews to obtain perspectives openly, questionnaires to categorize answers in a more focused manner, and group discussions with stakeholders may be carried out if possible.
Meanwhile, secondary data can be grouped into regulatory data and government papers, technical and commercial documents, reports and studies from third parties or other research, as well as other accountable information. The categorization of the data collected can be seen in the image below.

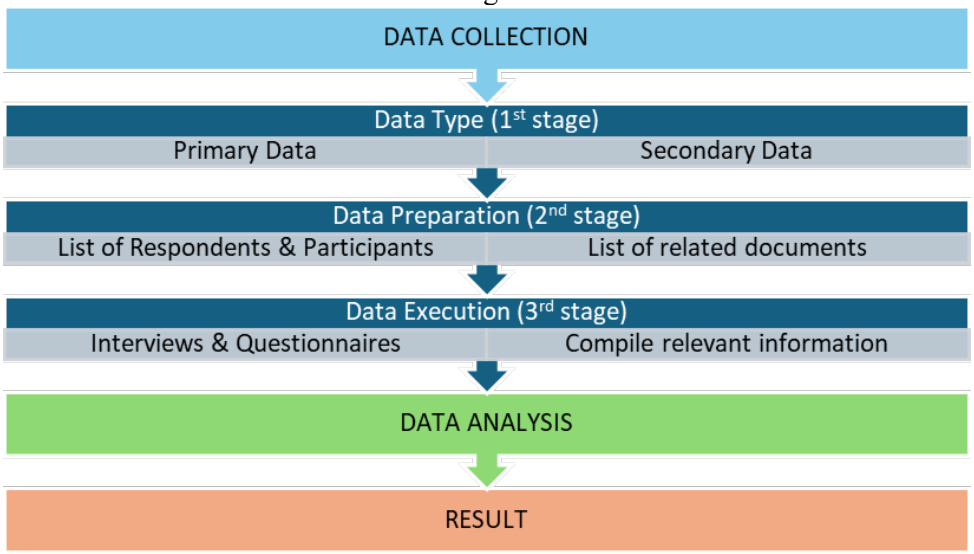

Figure IV. Data Collection Stages

PRIMARY DATA

The primary data used in this research shall be collected directly by the author from the desired sources, thereby avoiding bias and irrelevance to the writing requirements. The type and source of data were prepared and selected to be fully in line with the objectives of the research. There were two methods of collecting material data used, which are interviews and questionnaires. Then, if possible, data from accountable group discussions will also be added.

SECONDARY DATA

This type of data has been collected by other person/group/entity and validated by authorized personnel or organizations. Author uses the data to make correlation and as a supporting statement to the analysis that has been gathered from primary source. Secondary data is very useful when the condition is beyond author reach to collect. Combination between primary and secondary data shall emphasize greater point of view and build more clear relationships among datasets and information. Below are lists of secondary data incorporated in this research.

Data Analysis Method

This article presents a research on sequential data analysis. The first parts will be qualitative data analysis, which is carried out using the results of interviews, questions and discussions along with the literature data analysis from some reports. In the next step of the decision making process of the best business model to be adopted, quantitative and qualitative approach is combined, by applying Analytical Hierarchy Process (AHP), MCDA. MCDA can, in practice, be a structured decision-making tool that scores, weights and aggregates financial metrics, market risks and strategic fit to provide NGC with a transparent and evidence-based means of justifying which LNG business model is the best for providing value, scalability and risk resilience. Finally, using the quantitative approach the author will evaluate the performance and research the sensitivity of each business model and come to a more certain conclusion with which business model to compare the others. The technique that will be employed is sensitivity analysis, gives NGC a chance to test how strong its LNG trading strategy is when compared to other events or changes

OPEN ACCESS

out of NGC's control. The analysis numerically measures the value created, risk and financial outcomes for scenarios, such as the scenario of the novation of One Energy Group's gas business, and liberalisation of LNG trade.

Results and Discussion

This chapter was composed from the results of the internal and external analyses and the business model archetype mapping, as well as the multi-criteria decision analysis, into a coherent strategic recommendation, which is organised in the following three subchapters. The analytical results of NGC's internal strengths and weaknesses as well as VRIO mapping are presented in Tables below.

Table I. Synthesis of NGC's Strengths and Weaknesses by Resource Dimension

Resource Dimension	Strengths	Weaknesses
Physical	Diverse domestic LNG, gas sources, and pipeline network Owned/contracted regasification terminals (FSRU Southern Sumatera, FSRU Western Java, and Aceh Terminal)	No direct ownership of liquefaction plant limited global logistics capability No controlled shipping fleet Limited reload and storage capability
Human	Capable team with professional profiles LNG operational knowledge long-term contract experience	Trading manpower limited mixed depth of trading experience uneven contract-management capability (the early-entry counterparty lesson)
Financial	Strong financial backing as part of One Energy Group/BUMN	Limited pricing flexibility under HGBT conservative SOE risk appetite no active hedging mechanism
Organisational	Strong aggregator role established holding/subholding network partnership track record	No front–middle–back-office trading structure weak risk-management system; trading culture nascent

Table II. NGC VRIO Framework Analysis

Category	Resource	Valuable	Rare	Inimitable	Organised	Competitive Implication
Tangible	Pipeline network and regasification footprint	Yes	Yes	Yes	Partially	Potential SCA, contingent on trading organisation
Tangible	Aceh hub strategic location	Yes	Yes	Yes	Partially	Potential SCA
Tangible	Financial backing (One Energy Group Group)	Yes	No	No	Yes	Competitive parity
Intangible	Domestic aggregator network	Yes	Yes	Yes	Yes	Sustainable competitive advantage
Intangible	LNG operational knowledge	Yes	Partly	No	Yes	Temporary competitive advantage
Intangible	Long-term contract management capability	Yes	No	No	Yes	Competitive parity
Intangible	Advanced LNG trading capability and risk systems	Yes	No (gap)	No (gap)	No (gap)	Below parity—capability gap
Intangible	Front–middle–back-office trading structure	Yes	No (gap)	No (gap)	No (gap)	Below parity—capability gap

The external environment of NGC's ability to enter into LNG trading is influenced by a variety of political, economic, socio-cultural, technological, ecological and legal factors. This subsection clarifies these points regarding NGC's situation, constraints and opportunities, by examining literature and responses from interview. The Porter's 5 Forces result are presented in table below.

Table III. Porter's Five Forces in LNG Trading—NGC-Specific Assessment

Force	Intensity	NGC-Specific Condition	Strategic Implication
Industry Rivalry	High	Competing with global portfolio players (Shell, BP, TotalEnergies), Asian utilities, and merchant houses (Vitol, Trafigura, Glencore) with stronger capabilities and broader portfolios (the global price-reporting agency, 2026); BP, the Japanese trading house, Mitsubishi, and Kogas all conduct trading through dedicated entities (E4, E5, E6)	NGC should avoid direct competition in pure trading; focus on niches in which NGC's anchor demand and infrastructure are decisive
Supplier Power	Moderate–High	Limited control over LNG sources, dependence on One Energy Group-allocated volumes and selected international counterparts. Regulation confirms surplus volumes are tendered, not allocated (Permen ESDM 6/2016) and long-term contracts with maturity risk (I4, I6, I7)	Need for supply security through long-term contracts, novated cargoes (a Gulf NOC supplier, TEGPNA, an Australian LNG producer-derived), and diversified sourcing (a Gulf NOC supplier, a Gulf NOC supplier)
Buyer Power	High	Buyers (anchor utilities, industrial customers, emerging Southeast Asian importers including Filipina/a Philippine NOC buyer, a Chinese downstream buyer, a global trading-house buyer) demand flexibility, competitive pricing, and short-term cargoes; domestic buyers operate under regulated price caps	Margin pressure; need for value-added strategy through flexible delivery, regas access, and volume aggregation
Threat of New Entrants	Moderate	Entry technically easier than in the past due to geopolitical condition (E1), liberalization, and FSRUs (I5), but capability and capital requirements remain high, the arbitration case demonstrates the legal-risk barrier for inexperienced entrants (I4, I6, I7)	Capability building is critical to defend share; NGC's incumbent advantages in Indonesia are durable but not impenetrable
Substitutes	Moderate–High	Renewables and coal alternatives in long term; in medium term, LNG remains the principal flexible alternative; the global energy consultancy (E6) anticipates softer-but-not-collapsing prices through early 2030s	LNG viable in medium term; long-term substitution risk justifies the development of a model with conservative or hedged exposure

The strategic implication of the internal analysis is supported by the industry analysis: in a pure trading role, NGC's is structurally exposed to the forces (rivalry, supplier power, buyer power) in the industry, whereas an asset-based role and/or a hybrid one between the role of anchor buyer, infrastructure and aggregator role, reduces several of these forces.

I.1.1 NGC Business Model vc LNG Business Model Archetypes

Table IV.4 maps NGC's current posture against the archetypes and assesses the degree of fit derived from the RBV/VRIO and PESTEL analyses, supplemented by Business Model Canvas characterisation (Osterwalder & Pigneur, 2010).

OPEN ACCESS

Table 0. Comparison of LNG Trading Business Model Archetypes against NGC's Current Position

Dimension	Portfolio Player	Asset-Backed Integrated	Independent Merchant	Utility / Single-Buyer	Hybrid Asset-Backed Portfolio	NGC Current Position
Source of value	Optionality across diversified portfolio	Asset utilisation + arbitrage	Buy-sell margin and arbitrage	Demand portfolio management	Combined optionality + asset margin	Aggregator + infrastructure margin (limited optionality)
Asset base	Heavy, integrated	Heavy upstream	Light	Heavy demand-side	Heavy hybrid	Heavy domestic infrastructure, no liquefaction
Risk appetite	Medium–high	Medium	High	Low–medium	Medium	Low–medium (conservative; SOE constraint per E3)
Organisational requirement	Front-to-back trading + analytics	Asset and trading dual structure	Trading-centric, lean	Procurement-centric, evolving	Integrated front-to-back + assets	Infrastructure operations dominant; trading nascent
Capital intensity	Very high	Very high	Moderate	Moderate–high	High	High (asset-heavy)
Geographic focus	Global	Global, basin-anchored	Global, opportunistic	Domestic, then surplus trading	Regional anchored, expanding	Domestic anchor, beginning international
Regulatory tolerance	Moderate–high	Moderate	High	Low	Moderate	Low (state-linked)
Time-to-market	Long	Long	Short–medium	Medium	Medium–long	Medium
Fit to NGC	Aspirational, multi-year journey	Possible if novation and asset access expand	Mismatch with NGC's risk profile and governance (the early-entry counterparty lesson)	Partial fit, conservative	Best fit given NGC's anchor demand, infrastructure, and conservative risk profile	—

Multi-Criteria Decision Analysis (Via AHP)

To formalise the comparison, MCDA is operationalised through the Analytic Hierarchy Process. The decision goal is the selection of the LNG trading business model with the highest strategic fit for NGC. The criteria are derived from the strategic-fit literature (internal–external alignment), and archetype mapping, and from the explicit criterion requests made by interview respondents. The respondent-specified criteria are consolidated into the seven principal criteria shown in Table IV.5, the more granular sub-criteria are operationalised in the scoring step.

Table V. MCDA Criteria for LNG Trading Business Model Selection

Criterion	Definition	Origin
C1. Strategic fit with internal capability	Degree of alignment with NGC's RBV/VRIO strengths and weaknesses; includes infrastructure feasibility (I5, I8) and capability requirement	Strategic-fit literature; I3, I5
C2. Financial robustness	Expected risk-adjusted return; access to financing; resilience to volatility; includes hub utilisation contribution (E4)	E4 (hub utilisation)
C3. Risk exposure	Market, contractual, legal, and counterparty risk; downside in stress scenarios; includes downside risk to the state (E3), legal exposure (I4, I7), counterparty risk (I6), geopolitical sensitivity (E5), market-cycle sensitivity (E6)	I4, I6, I7, E3, E5, E6
C4. Capability requirement	Speed and cost of building the trading and risk capabilities required	I2, I6
C5. Implementation complexity	Number, sequencing, and dependency of actions required; includes back-to-back legal architecture (I4)	I4, I7
C6. Policy / regulatory alignment	Compatibility with domestic allocation, pricing, and energy-security objectives; includes national allocation alignment	I3, E3
C7. Time-to-market and scalability	Speed at which a contributing model can be deployed and grown	I2, I3

Criterion weights are derived through pairwise managerial-judgement comparisons, consistent with AHP practice (Saaty, 1980). The weighting reflects the priority that NGC's leadership and external stakeholders place on strategic fit (highest weight), financial robustness, and risk exposure, with capability requirement and implementation complexity providing secondary constraints, and policy alignment and time-to-market acting as filtering criteria.

Table VI. Criterion Weights (Managerial-Judgement-Informed)

Criterion	Weight
C1. Strategic fit	0.22
C2. Financial robustness	0.18
C3. Risk exposure	0.16
C4. Capability requirement	0.12
C5. Implementation complexity	0.10
C6. Policy alignment	0.12
C7. Time-to-market and scalability	0.10
Total	**1.00**

Following standard AHP practice, the five candidate business models are then pairwise-compared against one another under each criterion in turn, and a local priority vector for the alternatives is derived for every criterion by the same eigenvector (column-average) method used for the criteria, each comparison carrying its own consistency ratio (all seven at or below 0.017, within tolerance). The pairwise judgements are formed from, and cross-checked against, a comparative five-point scoring of the models on each criterion (1 = poor fit, 5 = excellent fit), which draws on the comparative archetype mapping and on the qualitative judgement supported by interview findings. For criteria that are "lower-is-better" (risk exposure, capability requirement, implementation complexity), the score is recorded inversely so that 5 means low risk or low requirement.

OPEN ACCESS

Table VII. AHP Synthesis: Local Priorities and Global Priorities of the Business Model Alternatives

Alternative \ Criterion	C1	C2	C3	C4	C5	C6	C7	Global priority	Rank
	0.2437	**0.1968**	**0.1629**	**0.0984**	**0.0843**	**0.1213**	**0.0927**		
A1. Pure Portfolio	0.1902	0.2222	0.1347	0.1250	0.1111	0.1947	0.2000	**0.1758**	**4**
A2. Asset-Backed Integrated	0.2188	0.2222	0.2550	0.2500	0.2222	0.2197	0.2000	**0.2271**	**2**
A3. Independent Merchant	0.1094	0.1111	0.0717	0.1250	0.2222	0.1098	0.2000	**0.1231**	**5**
A4. Utility / Single-Buyer	0.1902	0.2222	0.2693	0.2500	0.2222	0.2561	0.2000	**0.2269**	**3**
A5. Hybrid Asset-Backed Portfolio	0.2915	0.2222	0.2693	0.2500	0.2222	0.2197	0.2000	**0.2471**	**1**
Total								**1.000**	

Table above reports the resulting local priorities and the synthesised global priorities. The global priority of each model is then obtained by synthesis, the sum across criteria of the criterion weight multiplied by the model's local priority under that criterion, while the same ratings are also combined directly as a criterion-weighted sum to provide a corroborating cross-check.

The local priorities are combined with the criterion weights and the resultant Hybrid Asset-Backed Portfolio (A5) has a global priority of 0.247, followed by Asset-Backed Integrated (0.227) and Utility/Single-Buyer (0.227) priorities (equal second), followed by Pure Portfolio (0.176) and Independent Merchant (0.123) priorities. The ranking is based on the results of the qualitative interviews: NGC's anchor demand and infrastructure and its aggregator role give it a natural asset-backed basis which on the other hand is counterbalanced by its still emerging trading role and its conservative approach to risk-taking, which is why the pure trading or pure portfolio posture is not possible.

Sensitivity Analysis

The AHP-based MCDA ranks A5 Hybrid Asset-Backed Portfolio first. The margin between the recommended alternative and the next-best alternative is around 0.0201, sufficient to determine rank order, but small enough to warrant explicit robustness testing before the recommendation is committed to a multi-year implementation plan. Sensitivity analysis is a recognised requirement for any AHP-based strategic decision (Saaty, 1980; Triantaphyllou, 2000). Three complementary techniques are applied in this study to test the robustness of the recommendation: (i) scenario-based sensitivity comparing the alternatives under structurally distinct external conditions; (ii) one-at-a-time (OAT) deterministic perturbation of each criterion weight while holding the others proportionally constant; and (iii) Monte Carlo simulation of joint random perturbation across all criterion weights simultaneously. Each technique answers a different robustness question, and the three together provide a comprehensive assessment of whether the recommendation can withstand realistic weight uncertainty.

Scenario-Based Sensitivity

To The MCDA ranking is tested under three scenarios that capture the principal sources of uncertainty for NGC's strategic context. The scenarios are derived from the regulatory and corporate-development factors and from interview themes regarding the principal forward-looking risks..

- Scenario S1—One Energy Group–NGC gas business novation completes.
  The novation increases NGC's access to long-term LNG supply contracts and structurally enlarges the asset-backed portfolio. Weights on strategic fit and financial robustness rise, weights on capability requirement and implementation complexity fall as a portion of the trading apparatus migrates with the novated portfolio.
- Scenario S2—Restrictive LNG export–import permit conditions persist.
  Cross-border trading flexibility is constrained, consistent with the current licensing stance under which import permits are not routinely granted. Weights on policy alignment and risk exposure rise; the scope for pure portfolio or merchant strategies narrows further, the Utility/Single-Buyer model becomes a closer competitor because its conservative posture and policy alignment are advantageous when permits are restrictive.
- Scenario S3—Base case (continuity).
  Weights remain and no further alignment or adjustment to each value on the table. Table below reports the resulting weighted totals under each scenario

Table VIII. Sensitivity of MCDA Ranking under Scenarios

Alternative	Base (S3)	Novation (S1)	Export–Import (S2)
A1 Pure Portfolio	0.1758	0.1515	0.1428
A2 Asset-Backed Integrated	0.2271	0.2554	0.2346
A3 Independent Merchant	0.1231	0.1214	0.1299
A4 Utility / Single-Buyer	0.2269	0.2045	0.2419
A5 Hybrid Asset-Backed	**0.2472**	**0.2673**	**0.2508**

Under all three scenarios, A5 (Hybrid Asset-Backed Portfolio) remains the highest-ranked alternative, with a particularly strong gain under the novation scenario (S1). A4 (Utility / Single-Buyer) becomes a closer competitor under S2 because its conservative posture and policy alignment are advantageous when permits are restrictive. A3 (Independent Merchant) is dominated under all scenarios. The robustness of A5 across scenarios is the principal evidence that NGC's most defensible posture is a hybrid model rather than a pure archetype.

One-at-a-time Deterministic Sensitivity

Table below presents the OAT sensitivity results sorted by impact magnitude (range of A5's global priority across the ±30% perturbation). Across all fourteen scenarios (seven criteria, two directions), A5 Hybrid Asset-Backed Portfolio retains rank 1. The minimum A5 global priority across all perturbations is 0.2429 (when C1 Strategic Fit is decreased by 30%), and the maximum is 0.2514 (when C1 is increased by 30%).

Table IX. A5 global priority under ±30% weight perturbation

Criterion	Baseline weight	A5 GP @ −30%	A5 GP @ +30%	Impact range	A5 rank
C1 Strategic fit	0.2437	0.2429	0.2514	0.0086	1
C2 Financial robustness	0.1968	0.2490	0.2453	0.0037	1
C7 Time-to-market & scalability	0.0927	0.2486	0.2457	0.0029	1
C3 Risk exposure	0.1629	0.2459	0.2485	0.0026	1
C6 Policy / regulatory alignment	0.1213	0.2483	0.2460	0.0023	1
C5 Implementation complexity	0.0843	0.2478	0.2465	0.0014	1
C4 Capability requirement	0.0984	0.2471	0.2473	0.0002	1
Baseline (no perturbation)	—	—	—	**A5 GP = 0.2472**	**1**

OPEN ACCESS

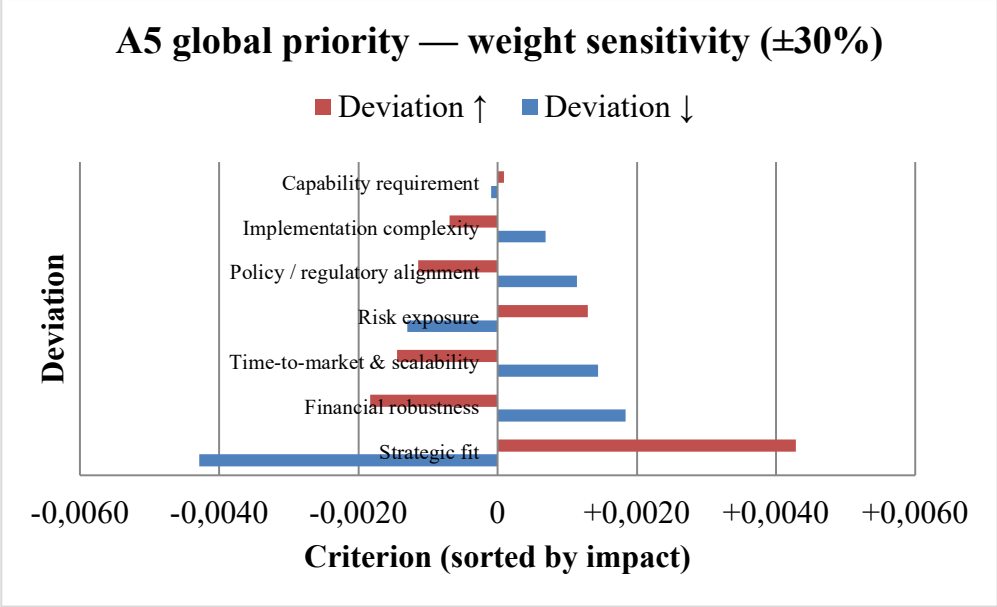

Figure V. Tornado diagram of OAT sensitivity for A5 global priority

Figure above visualises the same data sorted by impact magnitude. C1 Strategic Fit dominates the sensitivity ranking with an impact range of 0.0086, more than twice the next-largest contributor. This reflects A5's pronounced local-priority advantage on. When the weight on Strategic Fit is increased, A5's lead widens; when it is decreased, A5's lead compresses, but does not disappear.

Monte Carlo Joint Sensitivity

While OAT analysis captures the influence of individual weight perturbations, it does not represent the realistic situation in which all criterion weights are simultaneously uncertain. Monte Carlo simulation addresses this by jointly perturbing all weights according to a probabilistic model and observing the resulting distribution of global priorities and ranks. The Monte Carlo simulation confirms and strengthens the OAT findings. A5 Hybrid Asset-Backed Portfolio is ranked first in 100.0% of the 10,000 simulation runs. The narrow distribution centred on the baseline value indicates that joint weight perturbation produces relatively contained movement in the global priority.

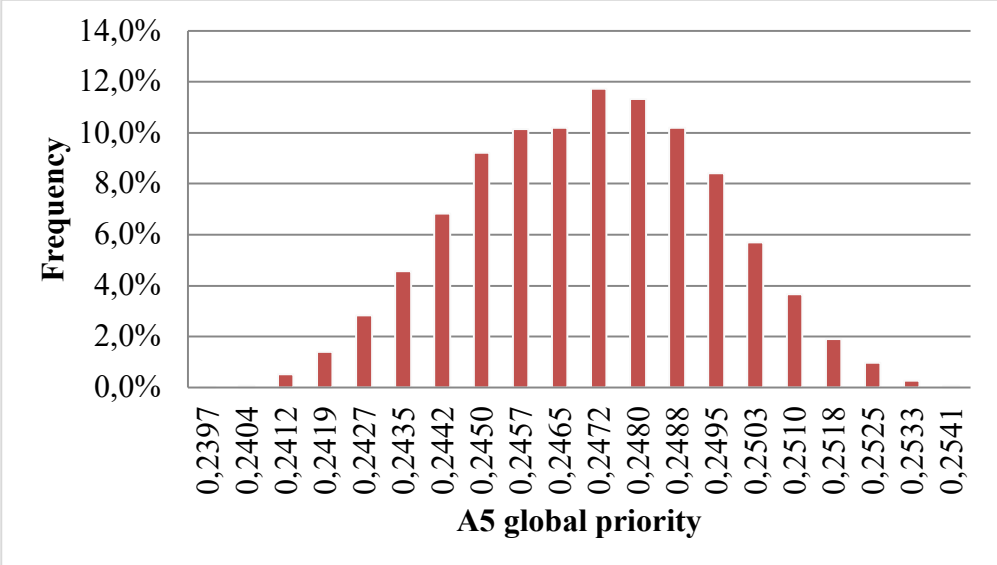

Figure VI. A5 global priority distribution (Monte Carlo, 10,000 runs)

Table below reports the rank distribution for each alternative across the 10,000 simulation runs. A5 Hybrid Asset-Backed Portfolio occupies rank 1 in every run, with no observed rank reversal under joint random weight perturbation. The second-rank position is shared between A2 Asset-Backed Integrated (55.5%) and A4 Utility/Single-Buyer (44.5%), reflecting the virtual tie between them at baseline. A1 Pure Portfolio and A3 Independent Merchant occupy ranks 4 and 5 in all runs, reinforcing the position that these archetypes are not viable for NGC under the criterion weights derived from the interview-validated AHP.

Table X. Rank distribution across 10,000 Monte Carlo runs

Alternative	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
A1	0.0%	0.0%	0.0%	100.0%	0.0%
A2	0.0%	55.5%	44.5%	0.0%	0.0%
A3	0.0%	0.0%	0.0%	0.0%	100.0%
A4	0.0%	44.5%	55.5%	0.0%	0.0%
A5	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Strategic Logic of Hybrid Asset-Backed Portfolio Model

Based on the analysis, the following three propositions are formulated which are the basis of the strategic logic for the recommended model.

- Proposition 1 :
  Instead of developing new capabilities, NGC should capitalise on and monetise what it has to offer.
- Proposition 2 :
  A consideration could be made to match the risk appetite with NGC with respect to governance.
- Proposition 3 :
  The Policy of NGC must be aligned with the National Energy Policy and not be in conflict with it.

The hybrid approach differs significantly from the pure trader approach which NGC had taken when they entered in 2023-2024 under an early entry counterparty contract. It sees the infrastructure (FSRUs, access to terminal, potential of the hub at Aceh) as strategic assets that would be used up and not sunk costs. It takes domestic anchor demand as a "cushion" to offset the effects of short-term international jobs which are more flexible on job duration and volatility on the market cycles. It's a method of exchanging skills that it is not necessarily a competitive advantage that one throws at a global game played win/win, but it is one that utilizes best the company's current structural position. Secondly, the trading function should be carried out by an offshore affiliate in a separate entity and the commercial losses that are an inevitable part of a trading book should not be considered as state loss under any law, which allows the trading function to operate at the decision speed and risk-bearing capacity required of international LNG markets. It enables the entire hybrid model to be structurally sound even if the commercial terms are good; it is the very foundation of the whole hybrid model.

Target Operating Model

The hybrid model can be achieved through a three-element target operating structure similar to that of best-in-class players of LNG projects like the front-to-back-office structure proposed by Boccara et al (2020) This corporate-legal structure makes the following operating model possible.

- Front Office
  The front office combines origination (developing value-adding LNG purchase contracts), marketing (developing value-adding sales contracts and customer relationships), and trading and optimisation (short-term spot trading, pricing and optimisation, portfolio strategy). Within NGC, the GSLT function should serve as the center of this function, with internal anchor links for domestic offtake and for One Energy Group-sourced volumes.
- Middle Office.
  The middle office provides risk reporting and measurement, logistics management, risk management (price, volume, counterparty, country), and data and research. NGC currently lacks a dedicated mid-office function and establishing one is among the most important capability investments. Risk management requires not only systems (price-risk and exposure-management software) but also governance about policies on hedging, position limits, and counterparty exposure, and more importantly cultural change toward disciplined risk-taking.
- Back Office.
  The back office covers financial reporting, accounting, IT support, legal, and HR. Existing NGC corporate functions can support these requirements with appropriate extensions, particularly in trading-specific accounting (mark-to-market, fair-value hedging) and trading-specific legal (master sale and purchase

OPEN ACCESS

agreements, ISDA-equivalent arrangements for LNG, dispute-resolution mechanisms in international forums). The early-entry counterparty arbitration case illustrates the cost of inadequate back-office legal architecture, hence a dedicated trading-specific legal function is no longer optional.

Conclusion and Recommendation

Conclusion

The research investigated the strategic decision facing PT National Gas Company Tbk (NGC) regarding its entry into the international LNG trading market. The decision context is one in which NGC's traditional pipeline-anchored business is structurally constrained by upstream supply decline, regulated domestic pricing, the structural rise in LNG procurement cost, and the geographic mismatch between Indonesia's remaining gas reserves and its principal demand centres. The global LNG market simultaneously offers an opportunity to diversify revenue and to reposition the firm as a regional energy player. NGC's initial entry under the early-entry counterparty demonstrated that an unstructured pure-trader posture produces revenue but also commercially unstable and legally exposed outcomes—an outcome that NGC cannot sustain. The research therefore evaluated five candidate business models through a structured analytical framework integrating RBV/VRIO, PESTEL, Porter's Five Forces, business model archetype mapping, and MCDA via AHP, anchored in the Kepner–Tregoe Decision Analysis logic, and informed by interviews with twelve respondents (six internal NGC stakeholders and six external counterparts).

The analysis reveals that there are various internal and external factors that have a material effect in NGC's effectiveness in LNG trading. Parts of the key internal elements include the resource baseand the manner in which the resources are packaged and used. NGC's advantages are the network of pipelines, regasification footprint, the role of domestic aggregator and financial support from One Energy Group Group as well as the operating experience of LNG. The main weaknesses of NGC are the absence of liquefaction ownership, lack of controlled shipping for trading, limited reload and storage facilities, lack of an active front to back office trading structure, and limited training in the middle ranks of the organization. The external factors include the Indonesia energy policy, the gas allocation rules, LNG hub pricing, JKM and TTF benchmarks , Brent slope, socio-cultural and energy-transition trends, the environmental policy, the legal policy, and the acute geopolitical situation, including the war in Iran, the production disruption in Qatar, and the Strait of Hormuz tensions. The RBV/VRIO and PESTEL/Porter's Five Forces provided the key internal and external insights, with NGC determined as being asset-strong/capability-constrained.

Boccara et al. (2020), Hatoum et al. (2020), Hashimoto (2021) and IEEFA (2024) documented five archetypes in the LNG industry literature, namely: the Portfolio Player, Asset-Backed Producer / Integrated Trader, Independent Merchant / Trading House, Utility / Single-Buyer, and Hybrid Asset-Backed Portfolio. Both the practitioner programme and the interviews revealed that the practitioners share similar archetypes, with all twelve respondents agreeing that a hybrid was suitable for NGC. The archetypes vary in five fundamental areas: source of optionality and creation of value, risk appetite and risk-management philosophy, level of asset backing versus pure contract/balance-sheet model, organisational structure and resources, and client and market orientation. These dimensions are more or less salient in each archetype, and the bundle of resources and capabilities suggested by each archetype are different.

The MCDA evaluation, conducted through AHP-style criterion weighting and alternative scoring, ranked the Hybrid Asset-Backed Portfolio model as the highest-fit business model for NGC, with the highest global priority (0.247) in the AHP synthesis, an equivalent first place to the ratings-based cross-check — ahead of Asset-Backed Integrated and Utility/Single-Buyer (each about 0.227), then Pure Portfolio (0.176) and Independent Merchant (0.123). The criterion weights are derived through the AHP eigenvector method with an acceptable consistency ratio (CR = 0.013), and the ranking is robust under sensitivity analysis across three plausible scenarios. NGC's most defensible strategic posture is not to compete head-to-head as a pure trader against established global incumbents but to anchor its international LNG trading business on the structural strengths it already possesses, layering a disciplined portfolio-trading and risk-management apparatus on top of an asset-backed core. This approach addresses the immediate financial pressure from the deteriorating margins in the domestic business, responds to the structural shift toward LNG-based supply, replaces the unstable pure-trader posture with a model that fits the firm's resources, governance environment, and long-term ambitions.

Recommendation

The Board and Executive leadership of NGC should adopt the Hybrid Asset-Backed Portfolio as the Board's and Executive's international LNG trading posture and allocate resources to the implementation of the staged approach described in previous sections. Adoption should be well supported with a clear risk appetite statement which

would contain position limits, Value-at-Risk, counterparty exposure, hedge coverage ratio, policy alignment, and should provide the trading function with a clear mandate to operate within. The implementation should be owned by The Group Head of GSLT (I2) as Programme Owner, Board level sponsored and then reported back to the Board regularly. In the GSLT division, the focus is on speeding up the front–middle–back-office architecture identified as the operating standard of credible LNG trading in the literature (Boccara et al., 2020), and used by established Asian trading houses like BP Singapore, and the East Asia trading house through dedicated entities. The architecture should be based on a structurally separate offshore entity; Singapore is recommended as the incorporation jurisdiction for the tax treaty network; and the applicability of the business judgment rule (BJR) within the One Energy Group group itself.

REFERENCES

Aghazadeh, H. (2025). Innovative multi-criteria decision framework for LNG and naphtha export market selection: Integrating fuzzy Delphi, BWM and TOPSIS. Pesquisa Operacional, 45, e289569.

Aguilar, F. J. (1967). Scanning the business environment. Macmillan.

Amaya, A. (2022). Role of internal resources on the competitive advantage building in a knowledge-intensive organisation in an emerging market. ResearchGate. https://www.researchgate.net/publication/361422673

Asa, A. R., & Nautwima, J. P. (2025). Factors influencing natural gas and LNG market prices in the global energy economy: A comprehensive review. International Journal of Innovation and Economic Development, 11(1), 21–33. https://doi.org/10.18775/ijied.1849-7551-7020.2015.111.2003

Bain & Company. (2020). LNG markets reward upstream and downstream expansion (W. Hatoum, J. Jaulin, A. Kaakeh, & M. Short). Bain & Company.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. Journal of Management, 27(6), 643–650.

Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. Human Resource Management, 37(1), 31–46.

Barney, J. B., Hesterly, W. S., & Rosemberg, M. (2007). Administração estratégica e vantagem competitiva. Pearson Educación.

Belton, V., & Stewart, T. J. (2002). Multiple criteria decision analysis: An integrated approach. Kluwer Academic Publishers.

Black, J. A., & Boal, K. B. (1994). Strategic resources: Traits, configurations, and paths to sustainable competitive advantage. Strategic Management Journal, 15(S2), 131–148.

Boccara, B., Sims, P., Maranan, J., & Bontron, A. (2020). Winning the race for world-class LNG optimization capabilities. McKinsey & Company.

Deloitte. (2016). LNG at the crossroads: Identifying key drivers and questions for an industry in flux. Deloitte.

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. Management Science, 35(12), 1504–1511.

Karayel, H. (2019). Selection of the Best LNG Natural Gas Supplier with Multi-Criteria Decision-Making Techniques: Turkey Example in Current Conditionsi. Journal Of Emerging Economies And Policy 2019 4 (1) 13–30. http://dergipark.org.tr/joeep

Fachira, I. (2024). Recommended LNG Commercialization Strategyto Maintain Business Sustainability in the GlobalLNG Market: A Case Study of PPTETS. European Journal of Business and Management Research Vol 9, Issue 2 April 2024. DOI : 10.24018/ejbmr.2024.9.2.2083

GIIGNL. (2023). The LNG industry annual report 2023. International Group of Liquefied Natural Gas Importers.

Government of Indonesia. (2017). Presidential Regulation No. 22/2017 on the National Energy General Plan. State Secretariat.

Gürel, E., & Tat, M. (2017). SWOT analysis: A theoretical review. Journal of International Social Research, 10(51), 994–1006.

Hashimoto, H. (2021). Fast-growing LNG market in the ASEAN region. Institute of Energy Economics, Japan, in collaboration with ERIA.

Hatoum, W., Jaulin, J., Kaakeh, A., & Short, M. (2020). LNG markets reward upstream and downstream expansion. Bain & Company.

Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. (1999). Theory and research in strategic management: Swings of a pendulum. Journal of Management, 25(3), 417–456.
IDN Financials. (2025, April 30). PGAS net profit slumped 49% in Q1 2025 as cost of revenue surge. https://www.idnfinancials.com/news/54160/
IEEFA. (2024). LNG portfolio players' growing footprint in emerging Asian markets. Institute for Energy Economics and Financial Analysis.
Indo Premier. (2025, March 26). Financial statements full year 2024 of PGAS. https://www.indopremier.com/ipotnews/
Intergovernmental Panel on Climate Change. (2023). Climate change 2023: Synthesis report. IPCC.
International Energy Agency. (2024). World energy outlook 2024. IEA.
International Gas Union. (2023). World LNG report. International Gas Union.
Investing.com. (2025, May 21). NGC Q1 2025 presentation: Revenue growth amid rising costs, strategic projects advance. https://www.investing.com/news/company-news/
Kepner, C. H., & Tregoe, B. B. (2013). The new rational manager: An updated edition for a new world. Princeton Research Press.
Kothari, C. R. (2004). Research methodology: Methods and techniques (2nd ed.). New Age International.
KPMG. (2017). LNG trading and the changing role of utilities. KPMG.
Li, F. (2021). Does Geopolitics Have an Impact on Energy Trade? Empirical Research on Emerging Countries. Sustainability, 13, 5199. https://doi.org/10.3390/su13095199.
Liu, L. (2025). Geopolitical Challenges and Natural Gas Supply. Economic Analysis Letters, 4(1) 45-55. doi: 10.58567/eal04010006
Lubis, A. (2022). Resource Based View (RBV) in improving company strategic capacity. Research Horizon. https://journal.lifescifi.com/index.php/RH/article/view/85
Mironova, I. (2025). The risk of portfolio-dominated offtake structures in U.S. LNG contracting. Cedigaz. https://www.cedigaz.org/the-risk-of-portfolio-dominated-offtake-structures-in-u-s-lng-contracting/
Molnar, G. (2026). Liquid gold: The qualitative transformation of global LNG trade [LinkedIn post]. International Energy Agency (IEA). https://www.linkedin.com/feed/update/activity:7401169519278411776/
Murcia, N. N. S., Ferreira, F. A. F., & Ferreira, J. J. M. (2022). Enhancing strategic management using a "quantified VRIO": Adding value with the MCDA approach. Technological Forecasting & Social Change, 174, 121251.
Osterwalder, A., & Pigneur, Y. (2010). Business model generation: A handbook for visionaries, game changers, and challengers. Wiley.
Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. Strategic Management Journal, 14(3), 179–191.
Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industries and competitors. Free Press.
Rahmatullah, A. (2023). Analisis RBV (Resources Based View) untuk menentukan keunggulan bersaing perusahaan pada UD. Tiga Putra. Journal of Economics and Entrepreneurship (Pubmedia). https://economics.pubmedia.id/index.php/jeae/article/view/23
Raza, S. A. R. M. (2026). Enabling new LNG markets: Principles from a decade of building gas-to-power and LNG platforms [LinkedIn post]. JERA. https://www.linkedin.com/posts/shahrukh-ali-raza-mirza_leadership-energy-lng-activity-7413498472265613313-2T5s/
Pressbooks. (2022). Research methods in social sciences. Pressbooks.
Rechtsteiner, R., et al. (2023). The future of commodity trading. McKinsey & Company. https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/the-future-of-commodity-trading
Rothaermel, F. T. (2021). Strategic management (5th ed.). McGraw-Hill Education.
Saaty, T. L. (1980). The analytic hierarchy process: Planning, priority setting, resource allocation. McGraw-Hill.
Sadjadi, S. J., & Karimi, S. (2017). Project ranking in oil and gas using TOPSIS. Journal of Industrial Engineering International, 13(2), 173–186.
Sahabuddin, M. R., & Khan, I. (2021). Multi-criteria decision analysis methods for energy sector's sustainability assessment: A systematic review. Energy Strategy Reviews, 35, 100629.
Sakinah, M. (2021). Internal and External Environment Analysis on The Performance of Provincial Office of Indonesian Food and Drug Authority in Manado. Journal of International Conference Proceedings (JICP) Vol. 4 No. 2, 181-189. https://doi.org/10.32535/jicp.v4i2.1240.
Santos, R. (2026). The evolving global LNG market: Supply growth, contract flexibility, hub interconnectivity, and hedging strategy [LinkedIn post]. BP.

Salvia, M., et al. (2019). Promoting smartness among local areas in a Southern Italian region: The Smart Basilicata Project. Renewable and Sustainable Energy Reviews, 116, 109435.
Simply Wall St. (2026, March 16). National Gas Company (:PGAS) – Stock analysis. https://simplywall.st/stocks/id/utilities/idx-pgas/
Singh, Y. K. (2006). Fundamental of research methodology and statistics. New Age International.
the global price-reporting agency. (2025). LNG market briefing—Jakarta, June 2025. the global price-reporting agency Commodity Insights.
the global price-reporting agency. (2026). LNG market outlook—April 2026. the global price-reporting agency Commodity Insights.
Sovacool, B. K., et al. (2021). New frontiers and conceptual frameworks for energy justice. https://www.researchgate.net/publication/315437838_New_frontiers_and_conceptual_frameworks_for_energy_justice
Teece, D. J. (2010). Business models, business strategy and innovation. Long Range Planning, 43(2–3), 172–194.
Tran, N., Goulding, J., & Shiers, D. (2020). The challenges of implementing tangible and intangible resources in real estate. Journal of Property Investment & Finance, 38(3), 257–272.
Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5(2), 171–180.
Wieckowski, J., Kizielewicz, B., Shekhovtsov, A., & Salabun, W. (2023). RANCOM: A novel approach to identifying criteria relevance based on inaccuracy expert judgments. Engineering Applications of Artificial Intelligence, 122, 106114.
the global energy consultancy. (2025). APAC gas and LNG markets briefing for NGC—2 July 2025. the global energy consultancy.
Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. Long Range Planning, 43(2–3), 216–226.