REPORT

The global gas game

Trends and strategies for success in the natural gas market

Roland Berger

Management summary

Demand for natural gas remains high and it will continue to play a vital long-term role in power generation, industry, space heating and maritime fuel, driven by its cost competitiveness and dispatchability.

Yet the gas game has fundamentally changed. Shifting trade flows, heightened geopolitics and shrinking regional price gaps are rewriting the rules for every market participant:

- Large, multi-billion-dollar gas pipelines, though important for inland distribution, are facing higher risks as the gas market expects greater flexibility.
- Due to a growing shift to LNG, which provides flexibility in securing gas, liquefaction and regasification terminal capacities are expanding.
- The LNG market is also seeing a higher share of short-term/spot contracts.
- Geopolitics will boost or dampen supply and demand in some regions. For instance, China has the potential to become a large global "swing trader" and the EU's full ban on Russian gas by 2027 will mean every member state will have to secure their own gas/LNG, increasing their exposure to LNG markets.

Not every country or company is dealt the same hand. Long-term exporters, emerging importers, integrated portfolio players, utilities and others all face radically different risks and opportunities. Governments need to secure gas at the right price. Exporters are trying to control higher volatility. Integrated players are seeking to optimize total portfolio value. Utilities need to better manage their exposure. Infrastructure owners are positioning assets in a more flexible, contested world. Choosing the right strategy is now make-or-break.

In this report, we condense our experience to define strategies for both governments and companies to navigate the evolving gas market. This includes no-regrets moves applicable to all players, such as reducing gas dependence, and specific strategies for different country and company archetypes, such as mature importers. We conclude that those who move fastest to embrace flexibility – shifting to dynamic, liquid, arbitrage-driven portfolios – will be the real winners of the global gas game.

Cover: Felix Cesare/iStock

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Fast facts

Natural gas accounts for almost 25% of global primary energy supplies, generating around $1.3 trillion in revenues annually.

Gas markets are increasingly interconnected, short-term and more flexible. About 50% of gas volumes have hub-linked pricing.

Gas traders/suppliers will want to build optionality and flexibility throughout their portfolios by securing destination-flexible contracts that enable redirection of cargoes to the highest-value markets.

1 Why natural gas is here to stay

Continued high demand means natural gas will remain critical for power generation, industry uses, heating and marine fuel

Natural gas has become the pre-eminent feature of the global energy and industrial feedstock landscape in the past decades, and it looks set to retain this position. Proven global reserves of natural gas have nearly tripled since the early 1980s, according to the US Energy Information Administration (EIA). And demand is expected to remain strong, as an established infrastructure has developed around natural gas (for example, pipelines, liquefaction terminals, regasification terminals, storage, etc.) and it benefits from economies of scale, ensuring reliability for power generation. Moreover, natural gas is frequently a more cost-effective solution compared to other decarbonization alternatives.

With natural gas here to stay, the purpose of this study is to analyze its current role and future importance and assess the strategies available to countries and industry players that will allow them to best navigate the gas market in the decades ahead.

KEY APPLICATIONS OF NATURAL GAS

In this first chapter we consider the primary applications of natural gas: power generation, industrial uses, space heating and marine fuel.

1.1/ Power generation

Natural gas is a key fuel for power generation worldwide, increasingly replacing coal-fired power plants. Gas-fired power plants provide baseload with efficient combined-cycle gas turbines (CCGT) and reliability with peaking power plants that allow them to firm, or stabilize, intermittent renewables.

Advancements in scale and technology have enhanced the cost efficiency of natural gas for electricity generation. New US CCGT plants achieve heat rates of 6,475-6,550 Btu/kWh, compared to 6,950-7,475 Btu/kWh for older plants, according to the 2025 Levelized Cost of Energy (LCOE) study by the financial services company Lazard. Gas plants also benefit from simple pipeline logistics, unlike coal's complex supply chains, and their dispatchability and fast ramp-up make them more reliable than wind and solar power. In this section we compare the LCOE of natural gas with other sources of power generation.

METHODOLOGY

Our analysis is based on LCOE. LCOE is an "all-inclusive" metric that facilitates comparison of different types of generators by cost per produced MWh. It assesses the CAPEX of a power plant, the debt costs and O&M costs across a project duration period, as well as the yearly MWh generated by the power plant, on an NPV basis.

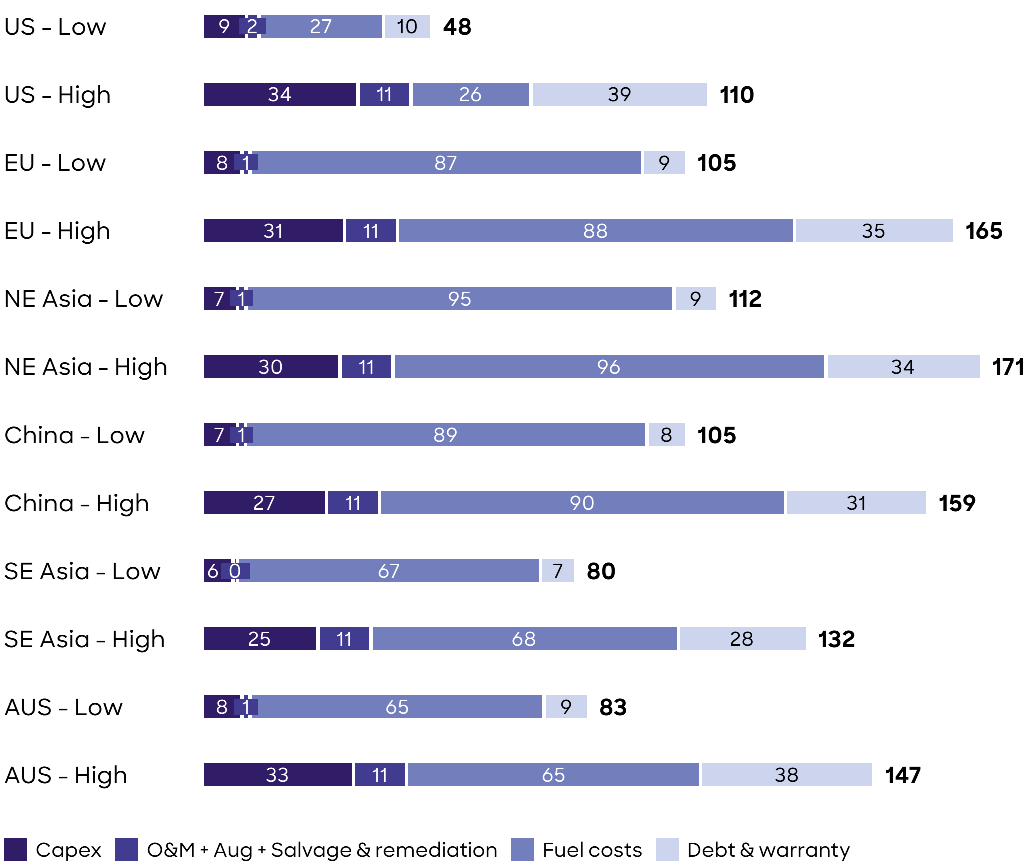
In our analysis, "firming assets" have been considered: Solar and wind projects are assumed to have access to a four-hour lithium-ion energy storage system, the costs of which are reflected in the LCOE. CCGTs are considered firmed by nature. For CCGTs, we considered new builds, assuming an efficient gas turbine in line with the latest Lazard LCOE study assumptions.

To allow like-for-like cost comparisons, we assume that capacity factors are consistent across regions, and that project durations are all equal to 20 years. The low case corresponds to facilities with high utilization (90 % capacity factor), while the high case corresponds to facilities with a 30 % capacity factor. Capacity factors have an immediate impact on the LCOE in terms of how CAPEX and fixed O&M are amortized. Lastly, results are shown on a non-subsidized basis, pre-tax.

HOW GAS-FIRED POWER COSTS COMPARE

The LCOE associated with operating a modern CCGT varies between 48 USD/MWh (low case, USA) and 171 USD/MWh (high case, Northeast Asia). Natural gas prices are the largest components, representing between 20 % and 85 % of the LCOE. Upfront capital and debt are the other main components, meaning a project's capacity factor has a critical impact on LCOE. ▶ A

A CCGT LCOE across regions, 2025 [USD/MWh]



Source: Roland Berger

> **"Security of gas supply is high on the agenda. LNG is expected to contribute to more flexibility in the market. "**
>
> **Dieter Billien, Partner**

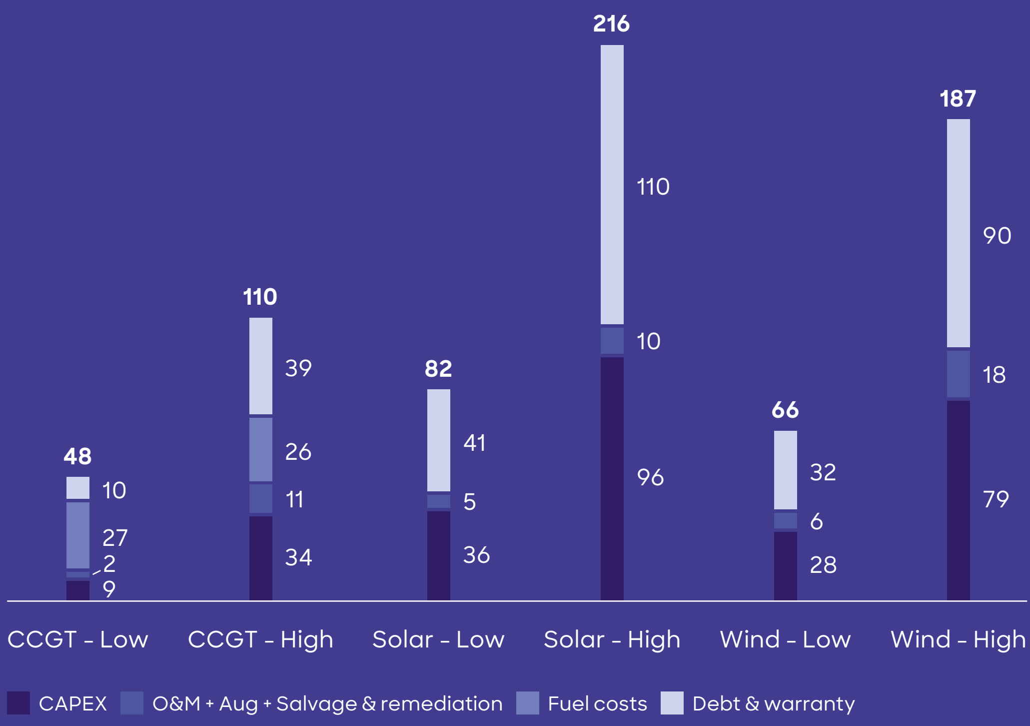
In the US, assuming a gas price of 3.45 USD/MMBtu, the pre-tax, unsubsidized LCOE for a CCGT ranges between 48 and 110 USD/MWh. For comparison, firmed solar is 82-216 USD/MWh and firmed wind 66-187 USD/MWh. The capacity factor is the most important parameter affecting renewables' profitability, estimated at 30% (low case) to 20% (high case) for firmed solar, and 55% (low case) to 30% (high case) for firmed wind. Engineering, procurement and construction (EPC) costs are also a major factor influencing renewables' LCOE through the upfront capital needed: high EPC costs in the US hurt the competitiveness of renewables, especially for hybrid projects (storage plus generation) that require specialized EPC contractors. ▶ B

In Western Europe, higher gas prices (we assume 11.6 USD/MMBtu) make CCGT less competitive compared with renewables. The unsubsidized LCOE for a CCGT ranges between 105 and 165 USD/MWh, against 76-200 USD/MWh for firmed solar and 62-175 USD/MWh for firmed wind. Gas prices have the most dramatic impact on CCGT, representing 82% and 53% of the LCOE in the low and high cases, respectively. Meanwhile, renewables enjoy comparatively lower LCOE than in the US due to lower construction costs. ▶ C

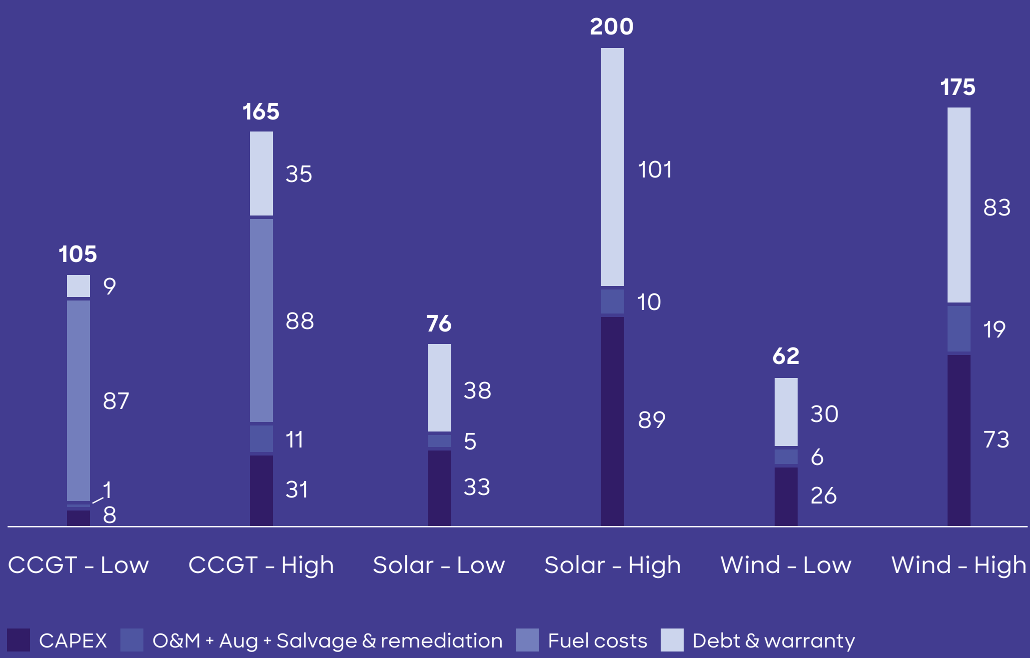
Similarly, in the Asia Pacific (APAC) region, high gas prices yield CCGT LCOEs of 80-112 USD/MWh for the low cases and 132-171 USD/MWh for the high cases. In Northeast Asia (Japan, South Korea), fuel costs can represent up to 85% of the LCOE for a CCGT, making gas prices of around 12 USD/MMBtu (which we assumed for the calculations – subject to global gas prices) particularly costly for utilities and ratepayers. In contrast, CCGTs in Southeast Asia and Australia, where gas prices are lower (we assume 8.5 USD/MMBtu), have an LCOE that is 22-28% lower than in Northeast Asia. ▶ D, E, F, G

The analyses show that CCGTs have competitive LCOEs in regions where natural gas prices are low.

B Firmed LCOE in the US, 2025 [USD/MWh]



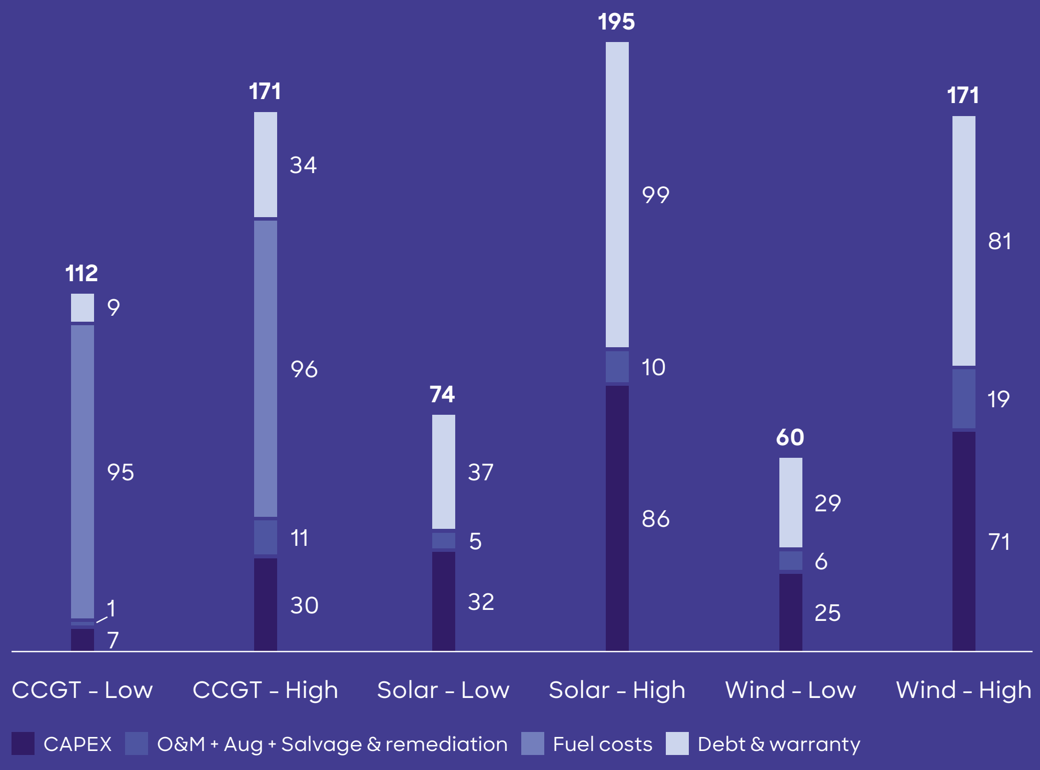
C Firmed LCOE in Western Europe,[1] 2025 [USD/MWh]



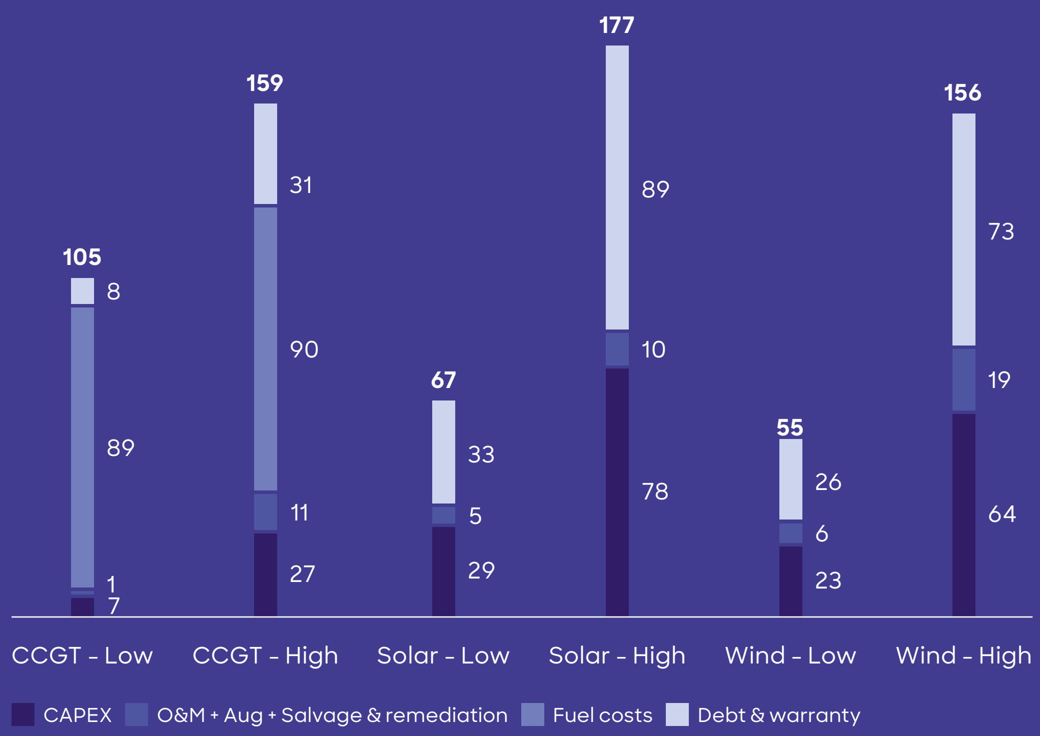
1 Here, Western Europe includes: Germany, France, Netherlands, Austria, Switzerland, Belgium, United Kingdom, Ireland, Italy, Portugal, Spain, Denmark

Source: Roland Berger

D Firmed LCOE in Northeast Asia, 2025 [USD/MWh]

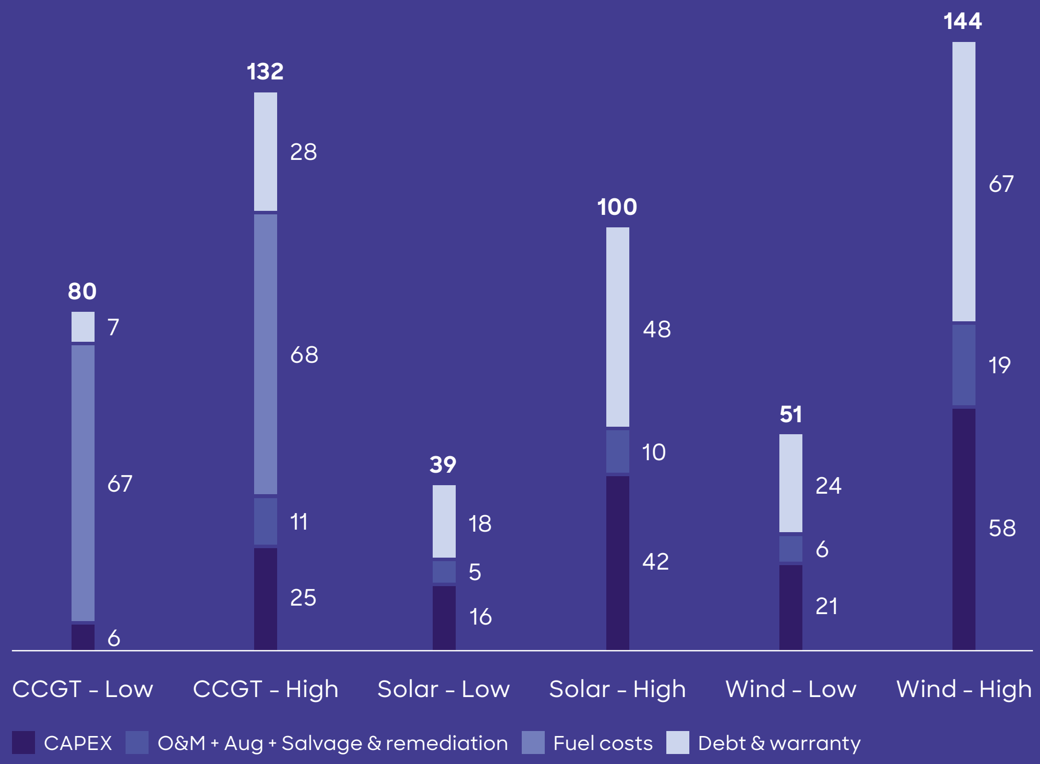


E Firmed LCOE in China, 2025 [USD/MWh]

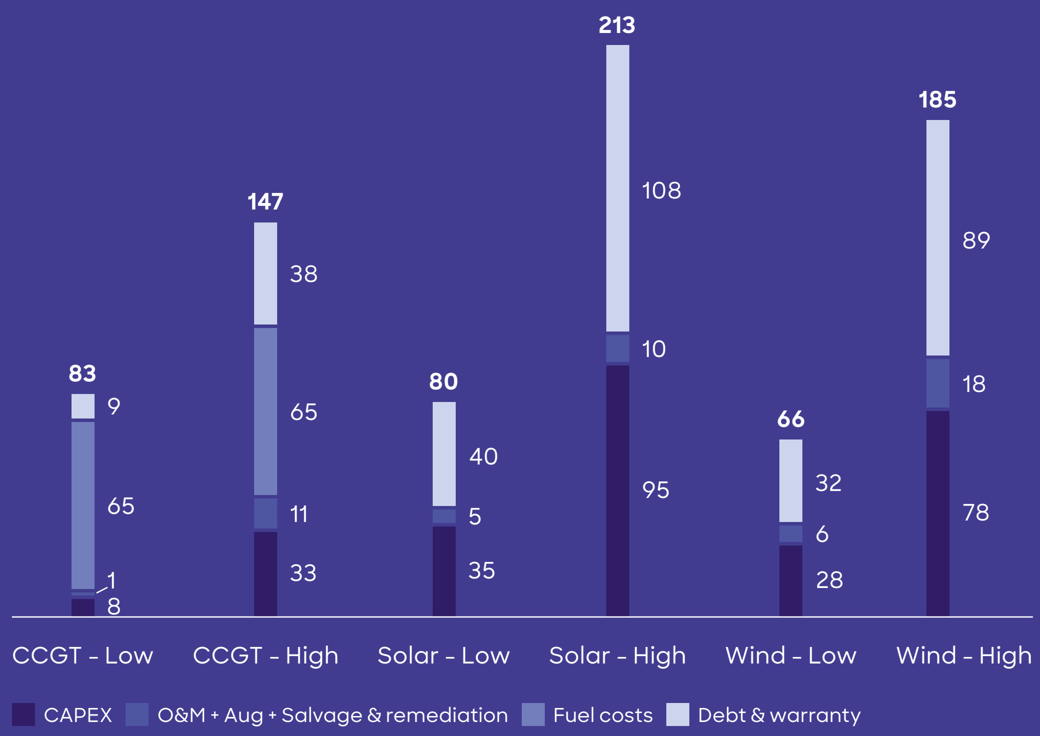


Source: Roland Berger

F Firmed LCOE in Southeast Asia, 2025 [USD/MWh]



G Firmed LCOE in Australia, 2025 [USD/MWh]



Source: Roland Berger

NATURAL GAS AS A DECARBONIZER IN POWER GENERATION

In addition to cost competitiveness, natural gas also offers several emission-reduction qualities. Natural gas-fired power generation emits significantly less CO_2 (53 kg/MMBtu) than coal (91-113 kg/MMBtu), but comes with higher methane emissions along the lifecycle.

Biomethane, also known as renewable natural gas (RNG), offers an option to further decarbonize natural gas-fired power. Typically produced via the anaerobic digestion of organic materials, RNG is chemically identical to natural gas, uses existing gas infrastructure and can achieve a negative carbon-intensity score. Blending 30 % RNG with natural gas in CCGT can potentially result in net-zero emissions,[1] supporting cost-effective decarbonization and firming intermittent renewables.

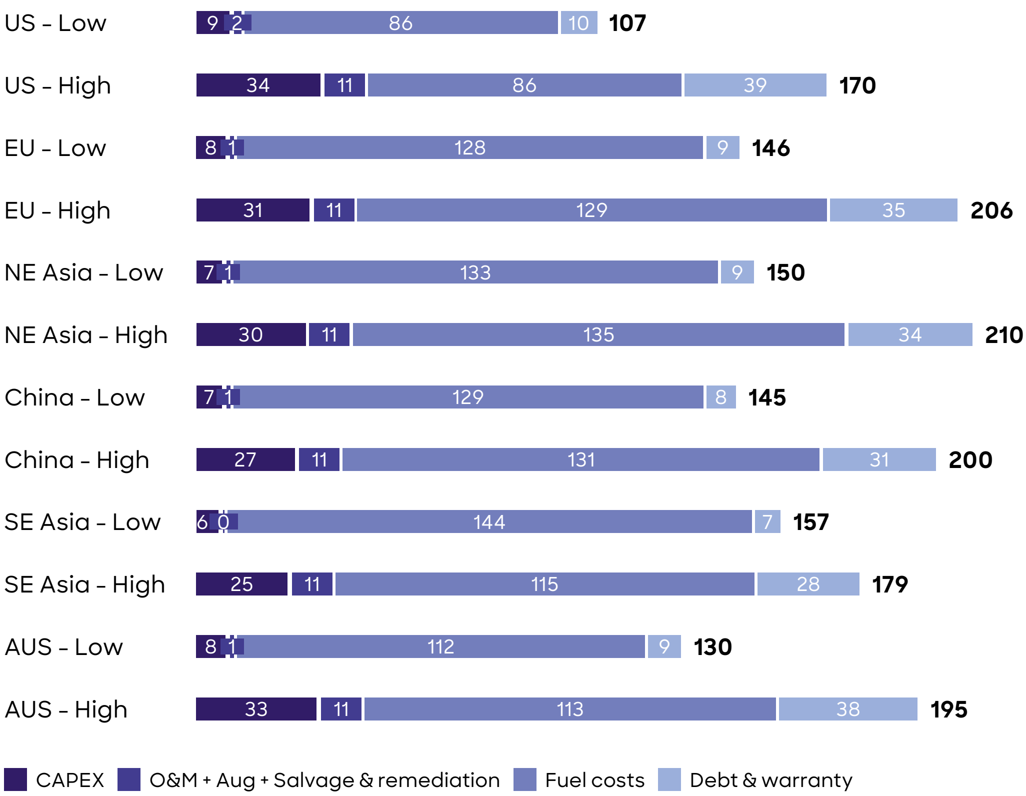
For example, in the US, decarbonizing a CCGT with a 30 % blend of carbon-negative RNG at 30 USD/MMBtu increases the LCOE by around 60 USD/MWh. But this remains below the cost of sourcing electricity from the grid in areas such as CAISO[2] and PJM.[3] This makes RNG particularly appealing to decarbonize behind-the-meter generation for carbon-conscious customers, like tech companies and data centers. In other parts of the world where gas prices are higher, a similar RNG blend allows net zero to be achieved with an LCOE increase of 22-56 %. ▶ H

1 The 30 % blend reaches net zero when avoided methane emissions are considered.

2 CAISO = California Independent System Operator.

3 PJM = Pennsylvania-New Jersey-Maryland Interconnection.

H CCGT LCOE, 30 % blend of carbon-negative RNG at 30 USD/MMBtu, 2025 [USD/MWh]



Source: Roland Berger

1.2/ Industrial uses

The industrial sector is a significant consumer of natural gas, characterized by relatively stable demand patterns even in regions subject to seasonal fluctuations. This consistency stems from its integral role in core manufacturing and production processes, from heating and steam generation to its use as a chemical feedstock.

Shifting away from natural gas presents substantial hurdles for industrial users, given its deep integration with broader economic activities. Complete substitution is often infeasible due to the multifaceted technical and operational requirements inherent in industrial applications, as illustrated in the chart below. ▶ I

I Natural gas use cases, reliant products and replacement risks by industrial application

	I Direct process heat	II Industry power & steam	III Chemical feedstock	IV Chemical co-product and auxiliary
Gas use cases	• Gas is the main fuel for generating process heat • Gas has advantageous properties for process heat, which is essential for certain production processes	• Gas is used for generation of industry power, as well as steam • Power and steam are often used in co-generation set-ups	• Methanol is a building block for chemical chains and polymers, e.g., POM, PMMA, PUR • Ammonia is used in fertilizers and cooling; derivatives like melamine in furniture and selected auto use cases	• Gas is used to produce hydrogen (H_2), e.g., in refineries for desulfurization and cracking • Without gas, there is not enough H_2, which triggers a domino effect on other chemicals
Products reliant on gas	• All industries, particularly chemicals, glass & ceramics, metal & machinery, auto (indirectly)	• All industries, particularly pulp & paper, chemicals, refining, iron & steel	• Auto parts, e.g., PUR for seats, dashboards; PMMA for windows/light covers; POM under the hood	• Naphtha could be imported, but then it is more expensive • Certification challenges • Green H_2 at scale will remain highly challenging
Why replacing gas is difficult	• Alternative energy systems require redesign of the entire energy concept	• Power comes from the grid, but gas is also used there • Steam cannot be transported	• Import of methanol and ammonia possible but expensive • Certification challenges • No gas means risk of production disruption	• Auto, fuels, materials & packaging industry • In auto: PP for bumpers, dashboards; PE in fuel tanks

Source: Roland Berger

CASE STUDY

The automotive industry

With its complex and diversified supply chain structure, the automotive industry provides a good example of the extent to which a sector can be reliant on natural gas.

The material composition of a typical passenger car includes metals, plastics, glass and other materials, each requiring distinct manufacturing processes that are heavily reliant on energy inputs, particularly natural gas. ▶ J

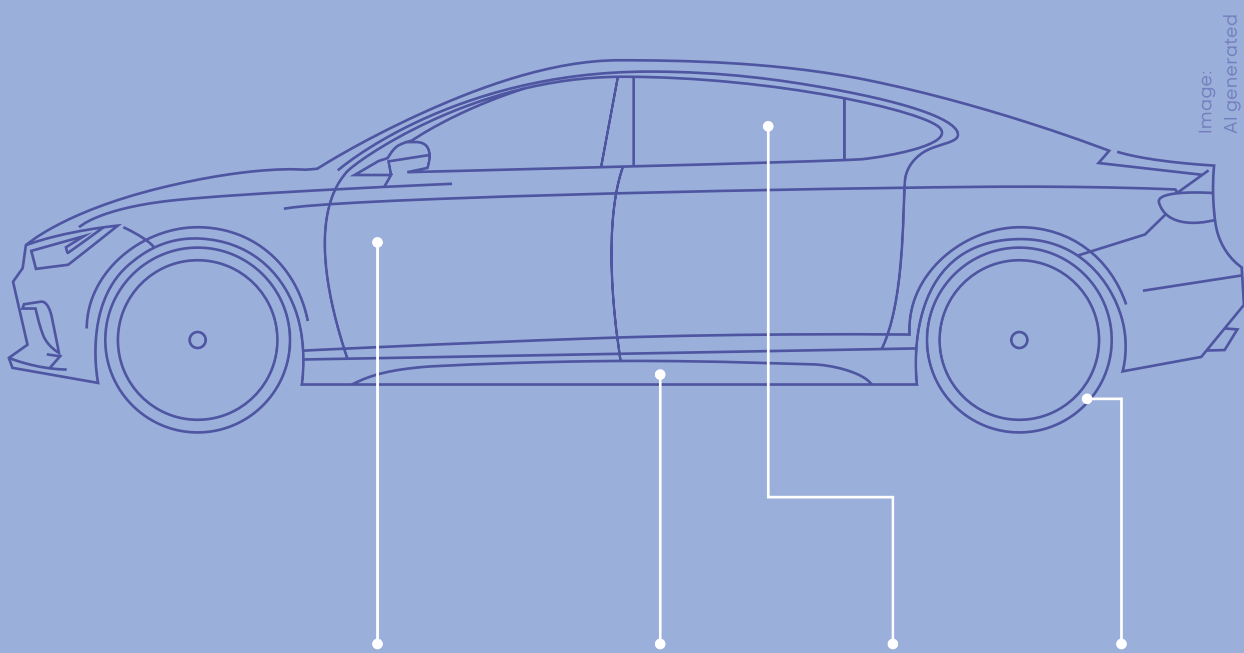
Natural gas serves as a critical energy carrier in the processing of metals, underpinning key auto production steps. For instance, modern high-strength steel variants necessitate precise heat treatment to achieve desired mechanical properties, making natural gas difficult to replace due to its reliability and thermal efficiency in industrial furnaces. In metals recycling, natural gas plays a pivotal role in powering energy-intensive processes such as smelting and refining, enabling the efficient recovery and reprocessing of scrap materials into usable forms for automotive applications.

Meanwhile, the production of plastics and glass involves significant natural gas consumption, particularly in the synthesis of foundational feedstock materials. Essential chemical building blocks, such as ethylene and methanol, rely on gas-intensive processes for their creation, forming the backbone of plastics manufacturing. However, the subsequent stages of plastics production and processing require comparatively limited amounts of natural gas, as energy demands shift toward other inputs or technologies.

"Economic and industrial activity is strongly correlated with natural gas demand for power, heat, and chemicals. Complex supply chains like in the automotive sector are reliant on natural gas."

Walter Pfeiffer, Partner

J Role of natural gas in production of key automotive materials



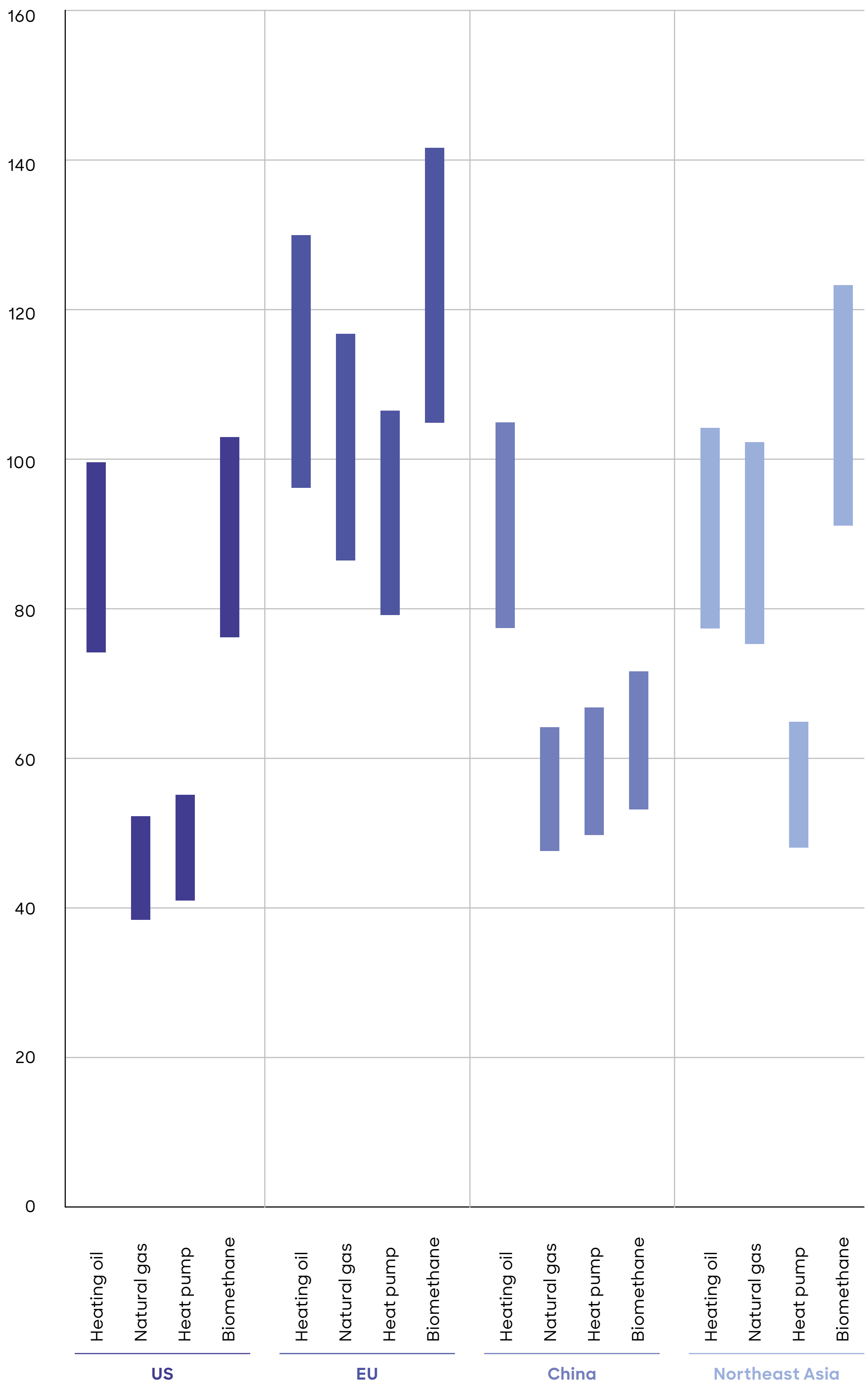
Key materials in cars[1]	Metals				Plastics	Glass	Other
%	**72**	62	8	2	19	2	8
Direct process heat							n/a
Power & steam							n/a
Chemical feedstock							n/a
Co-product & auxiliary							n/a
Reliance	Steel rolling mills with gas Alu processing with gas Metal recycling with gas				Feedstocks	Gas essential	n/a

Reliance: High, Medium, Low

1 Typical passenger car in Europe

Source: Audi, Ducker, Roland Berger

K Space heating costs by region and heating type, 2025 [USD/MWh]



Source: Roland Berger

1.3/ Space heating

Gas is most commonly thought of as a source of warmth. But how cost effective is it compared to other existing and emerging heat sources? We compared space heating costs for natural gas, heating oil, heat pumps and biomethane (RNG) across different regions. Our analysis reveals that natural gas boilers maintain a cost advantage over heating oil in terms of operational expenses. However, they are increasingly being matched or surpassed by modern air-source heat pumps, which offer competitive running costs. ▶ K

Air-source heat pumps have emerged as a cost leader in building heating especially in residential segments, driven by their high efficiency, which allows them to remain economical even when electricity prices are up to twice those of natural gas.

However, heat pumps rely on grid electricity, where natural gas is expected to remain a significant component of the energy mix. This underscores the continued interdependence of heating technologies and fossil fuel inputs.

The use of low-carbon alternatives to natural gas would ameliorate the issues with heat pumps. However, the transition to such sources faces significant hurdles, limiting their scalability for space heating. For example:

Biomethane (RNG)

In the right locations (dense livestock belts) production costs can be near or even below prevailing fossil gas prices. But sufficient volumes of feedstocks (biogas from manure, etc.) can be economically challenging to secure and transport. Modeling by the European Biogas Association shows that even the EU's 2030 production target of 35 billion cubic meters (bcm) would cover barely 10 % of current gas demand in the bloc. Since those limited volumes carry a high verified "green carbon" value, they are expected to flow first to sectors with no easy alternative (high-temperature industrial heat, heavy transportation, chemical feedstocks) rather than to building boilers that can switch to heat pumps.

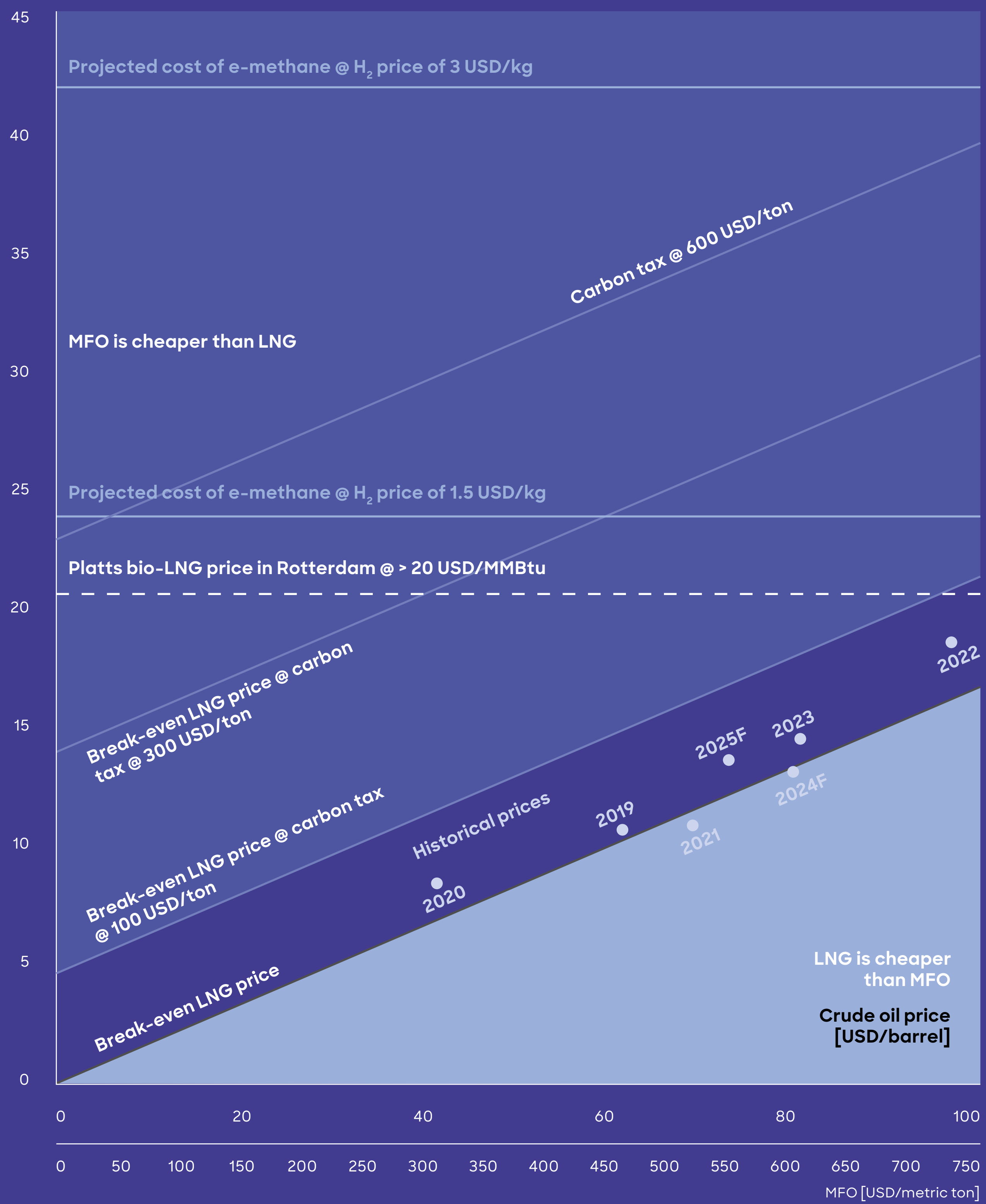
Green hydrogen

Electrolytic hydrogen today costs 4-10 USD/kg (120-300 USD/MWh) and is unlikely to drop below 2-3 USD/kg this decade. Early supply will be scarce and will also first flow to hard-to-abate applications (steel, ammonia, long-haul transportation). Blending a small amount into distribution grids reduces emissions by only single digits. Even though there is still strong regulatory support and interest, green hydrogen is still economically less attractive and installations are sub-scale.

E-methane

Synthetic methane made from green hydrogen and captured CO_2 is forecasted to cost 23-110 USD/MMBtu (approx. 78-375 USD/MWh) in 2030. This puts e-methane's costs far above today's retail gas prices, reflecting the energy losses in turning electricity to hydrogen and then to methane.

L Switching dynamics of MFO, LNG and alternatives based on marginal costs



Source: World Bank, Roland Berger

In short, even where biomethane can match fossil gas prices, its limited feedstock base points it toward higher-value industrial uses. Green hydrogen and e-methane face the same prioritization pressure plus prohibitive costs. Heat pumps and direct electrification remain the lowest-cost option , but power coming from the grid will still need natural gas as an energy source.

1.4/ Marine fuel

International Maritime Organization (IMO) regulations are reshaping the global shipping fuel landscape. Sulfur content caps are already enforced, and escalating greenhouse gas reduction mandates will follow soon, despite net-zero framework adoption delays. Fuel choice for vessel operators is therefore becoming a critical strategic decision

To evaluate price competitiveness, we compared marine fuel oil (MFO) costs under varying carbon penalty scenarios against liquefied natural gas (LNG), bio-LNG, and e-bunker fuels (including e-methane, e-methanol and e-ammonia). The analysis calculated LNG prices that would break even with MFO prices to encourage switching to LNG. ▶ L

COMPARISON OF MARINE FUEL COSTS

Based on these comparisons, LNG vessels have similar costs to those running on MFO. Historical data since 2022 reveals that LNG and MFO bunker costs have converged significantly, marking a pivotal shift where both fuels now operate within a narrow economic band. But the introduction of carbon penalties dramatically shifts the balance in favor of LNG. As a lower-emission alternative, LNG gains a clear cost advantage over MFO, with savings sufficient to offset the higher upfront investment in LNG bunkering structure and dual-fuel propulsion systems.

Bio-LNG has emerged as a biofuel of interest. Near-term constraints center on feedstock aggregation and production scale-up. According to newly released Rotterdam bio-LNG bunker assessments from S&P Global Platts, prices are expected to start at 20 USD/MMBtu or higher, depending on verified greenhouse gas savings. Our modeling indicates that a CO_2 penalty of approximately 300 USD/ton would be required for bio-LNG to achieve cost parity with MFO.

E-bunker fuels, such as e-methane, e-methanol and e-ammonia, are frequently cited as long-term decarbonization pathways. Yet the persistent challenge of high green hydrogen production costs has proven more formidable than anticipated. Even at a green hydrogen price of 3 USD/kg, e-bunker fuels are typically two to three times more expensive than MFO. A CO_2 penalty exceeding 600 USD/ton (which itself seems to be a distant prospect) would be needed for cost competitiveness. An even more optimistic scenario is achieving 1.50 USD/kg for green hydrogen, in which case the CO_2 penalty remains expensive at around 300 USD/ton.

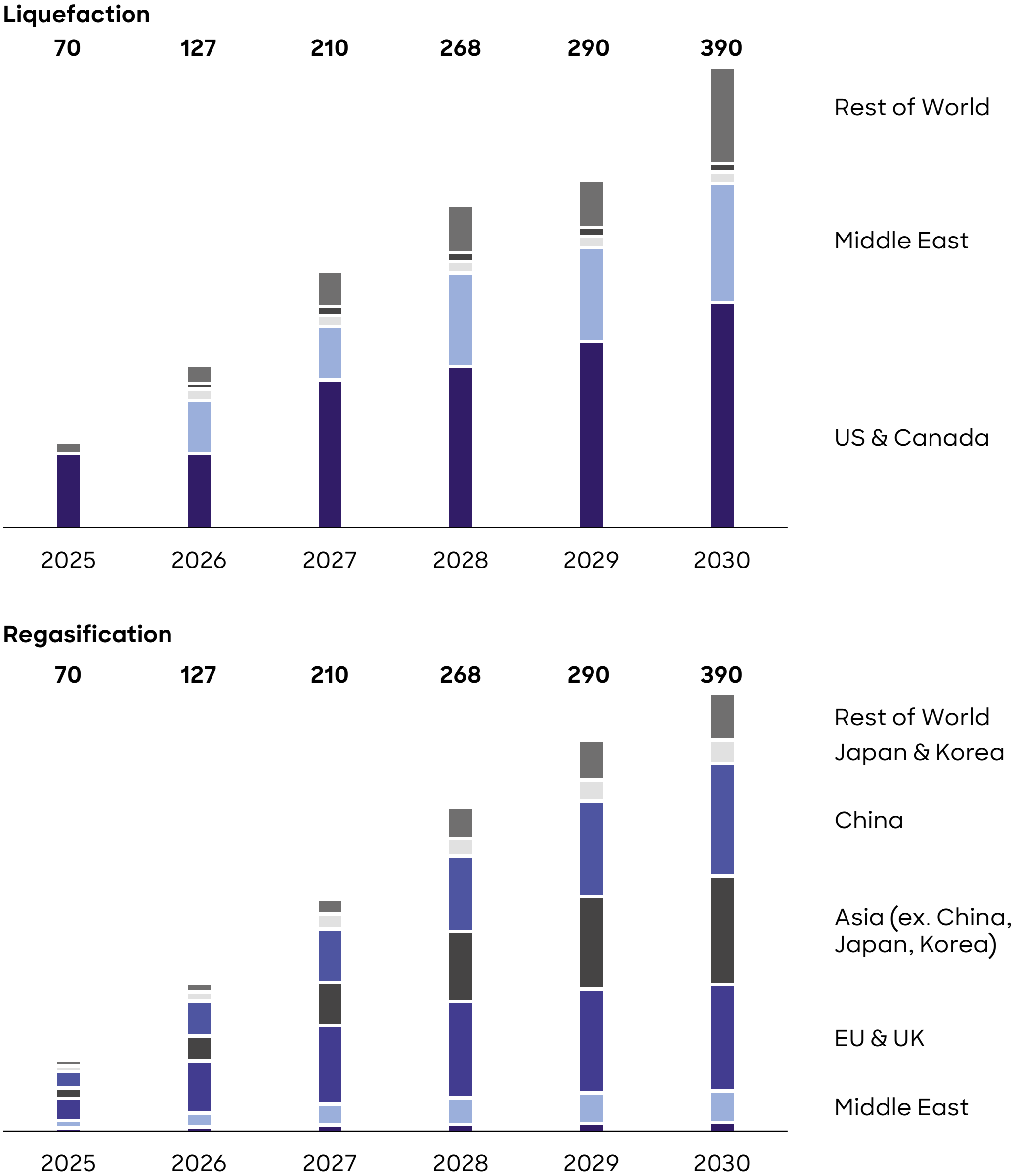
2

How to win the gas game

No-regrets moves – from reducing demand to improving trading agility and securing strategic infrastructure – are the key to success for all players

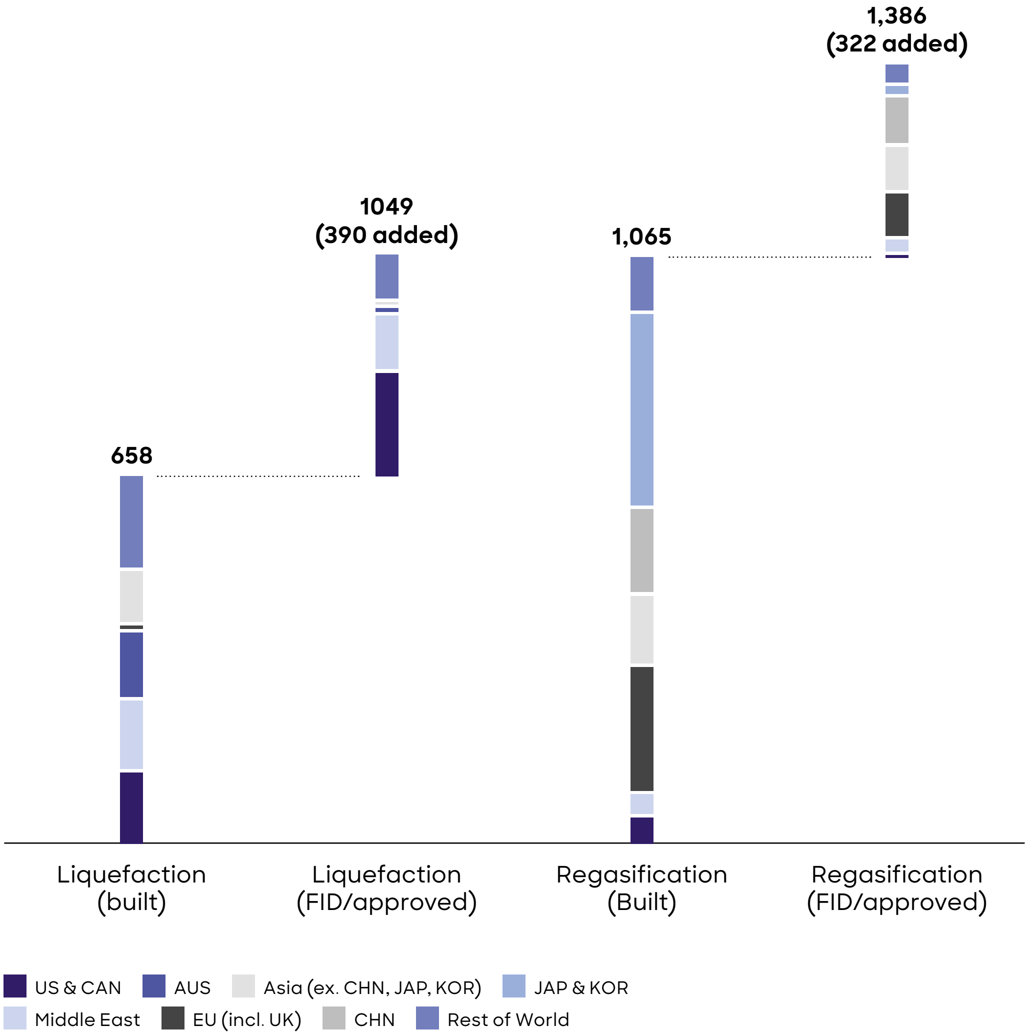
Natural gas remains vital for power generation, industrial applications, heating and maritime fuel. However, how will the future market of gas/LNG differ from the past 20 years? In this chapter, we assess the trends, archetypes and uncertainties that will influence the next 20 years, and define strategies to help countries and companies master them.

L Timeline of approved capacity additions [bcm/yr, cumulative]



Source: IEA, IGU 2025 World LNG Report, S&P Global, Roland Berger

M Global liquefaction and regasification capacity overview, 2024 [bcm/yr]



Source: Roland Berger

2.1/ Future trends

WE SEE FIVE KEY TRENDS IN THE GLOBAL GAS GAME:

Trend 1: More LNG and more government backing

Given its importance, security of gas supply is high on the agenda. Therefore, more LNG than pipeline gas is expected to ensure more flexibility. Regasification capacity (onshore and floating types) currently exceeds liquefaction capacity, leading to underutilization of regasification terminals in key markets. Access to regasification terminals is treated as a national security priority. Several European countries and East Asian importers also now view third-party access rules through a different prism when "strategic" volumes are at stake.

On the supply side, the project pipeline remains impressive on paper – roughly 1,500 bcm/year of potential new liquefaction capacities have been announced. However, cost inflation, permitting delays, local content requirements and tightening ESG capital constraints point to possible delays in actual construction. ▶ L, M

N Key natural gas hubs and average market prices, 2024 [USD/MMBtu]

Source: Global LNG Hub, Roland Berger

Governments are increasingly playing a role in ensuring security of supply. Mandatory storage obligations have been dramatically strengthened, with several EU member states planning higher than 90 % fill levels ahead of winter, for example. Meanwhile, proposals for government-owned or mandated LNG floating storage, regional reserve fleets and coordinated drawdown mechanisms are under active discussion in both Europe and North Asia.

Trend 2: Asia's domination of LNG demand will grow

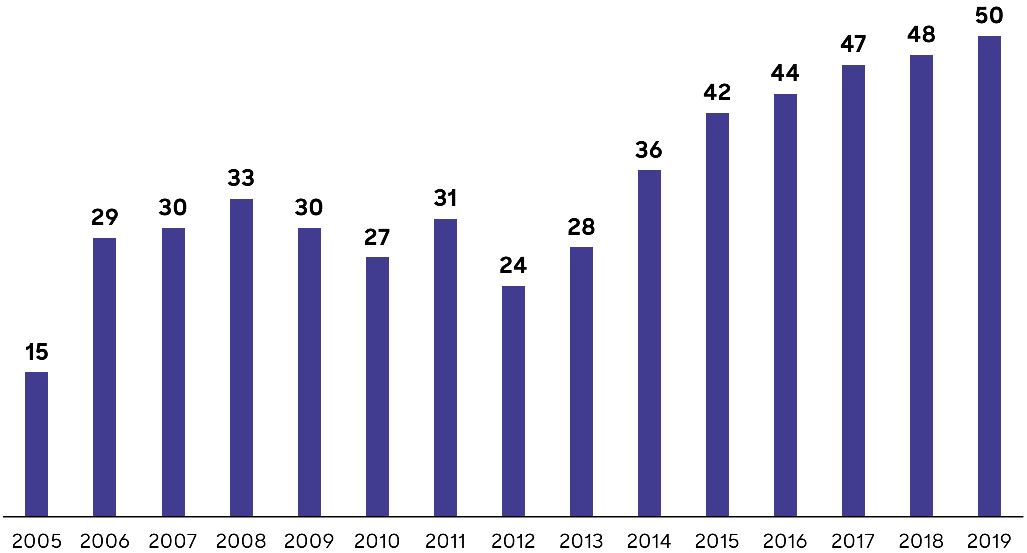
For the past decade, Asia has been the engine of global LNG demand growth. That trend is not only continuing – it is accelerating. China is one of the largest importing countries, yet the most dynamic growth is now coming from South and Southeast Asia, driven by coal-to-gas switching in power and industry.

Trend 3: The gas game will become increasingly global

LNG's rapid growth over pipeline gas is transforming natural gas from regional silos into a truly global commodity. Markets are now highly interconnected as price correlations between Henry Hub, TTF and JKM improve. As LNG becomes the marginal supply source, regional premiums are shrinking fast. Full convergence remains impossible due to shipping and policy factors, but sustained large price gaps belong to the past. ▶ N

Energy security threats will mean that long-term gas contracts will remain important. Yet demand-side uncertainty has never been higher: Renewables deployment introduces increasing intermittency and gas-fired power provides stability, while weather-sensitive heating and industrial loads amplify consumption swings. The result is recurring surplus gas inventory, particularly in markets lacking geological storage (most of Asia). Sophisticated trading, flexible contract clauses and liquid paper markets have become essential tools for managing excess gas and ensuring supply security. ▶ O

O Volume share of natural gas by hub-based pricing [bcm %]



Source: Global LNG Hub

P LNG market structure evolution

Current model

I
Buyers and sellers enter into SPAs; contracts are take-or-pay, and usually destination-restricted

II
Gas is liquified according to contract schedule; cargo lifting slots are planned in advance

III
Gas is shipped to destination terminal on pre-planned schedule that can be closely aligned to contract terms

IV
Regasification. and delivery to downstream and process repeated on same schedule, limited liquidity

Structure

Contract length	Bilateral, 10-20-year contracts allowing producers to expand production with guaranteed volumes
Pricing mechanism	Oil-indexed pricing common, especially in Asia, reducing transparency and link to market fundamentals
Contract flexibility	Cargos are typically destination-restricted and non-tradable, limiting buyers' ability to participate in secondary trading
Market participants	Limited number of integrated suppliers and buyers; trade is dominated by producers and large utilities
Infrastructure & hubs	Fragmented structure and lack of regional trading hubs, minimal hub-based balancing or storage capacity

Emerging model

I
Contracts with destination flexibility, short-term volume, open to route and timing optimization

II
High liquefaction capacity allows for flexible production-to-terminal flows and standardization

III
Dynamic, fungible shipping logistics for trading vs. simple fulfillment, with rerouting common

IV
Regasification. terminal functions as virtual trading point for hub pricing; cargos can be resold, deferred, swapped or traded as part of portfolio

Structure

Contract length	Shift toward short-term/spot trades, with flexible contracts and re-tradable cargos forming a larger share of total volumes
Pricing mechanism	Hub-based transparent pricing (e.g., JKM, TTF, Henry Hub) becoming dominant, with active derivatives markets for hedging and financial settlement
Market participants	Emergence of portfolio players, traders and financial intermediaries similar to the oil market, increasing depth and competition
Infrastructure & hubs	Development of interconnected LNG hubs and storage capacity that enables physical balancing and virtual trading

Source: Roland Berger

Furthermore, while the LNG market is currently dominated by bilateral contracts, it is expected to evolve toward a more dynamic "liquidity first" model. Tankers are increasingly redirecting cargoes in real time to the highest-value hubs rather than fixed destinations. Rigid take-or-pay clauses and destination restrictions in legacy contracts are creating growing friction and value leakage. As a result, shorter-term and flexible contracts are gaining share rapidly, enabling portfolio players to optimize flows and capture arbitrage. ▶ P

Trend 4: Natural gas as a diplomatic/geopolitical tool
Natural gas has become a cornerstone of geopolitical strategy. In a world of trade wars, sanctions and energy alliances, gas flows are routinely leveraged in negotiations, from LNG diplomacy with Europe to Russia's pipeline leverage and China's long-term deals across Central Asia. This politicization heightens security-of-supply concerns, motivates diversification of gas/LNG supplies and drives pricing beyond weather or demand cycles.

Trend 5: Growing interest in zero/low-carbon gas
Use of zero- and low-carbon gases, such as biomethane, is rising to meet net-zero ambitions. Yet scaling these up means addressing critical bottlenecks (as outlined in chapter 1): limited sustainable feedstocks, high capital and energy costs, and immature certification regimes.

So how will governments balance short-term affordability and security with long-term decarbonization goals? And how will companies (producers, traders, utilities) manage a profound shift in terms of their gas portfolios? We explore possible solutions in the following sections.

2.2/ Country archetypes and strategies

To better understand how countries are navigating the global gas game, we have grouped them into four distinct archetypes: long-term gas exporters; current exporters, future importers; mature economy importers; emerging market importers. Each archetype is deploying both universal (no-regrets moves) and archetype-specific strategies, as outlined below.

No-regrets moves
Although there are many differences between archetypes, a clear set of no-regrets moves emerges that applies to all countries. These strategic imperatives hold true regardless of resource endowment, import dependence, decarbonization ambition or geopolitical exposure.

The no-regrets moves can be grouped into three categories. The first is reducing gas dependency where there are better zero/low-carbon alternatives. For example:

- In power generation, prioritized energy types will lean toward hydro and geothermal (where geography allows), scale solar and wind paired with battery storage and sustainable bioenergy (within ecological limits), and accelerate nuclear (small modular reactor) deployment.
- In space heating, heat pumps are expected to be rolled out at scale, with acknowledgment that there are performance constraints in colder climates.

Second, countries will continue targeted investments in gas structure, including in regasification terminals (both fixed and floating types) for importers, and strategic pipelines where they enhance security and flexibility. The risk of these assets becoming "stranded" is low given the enduring importance of gas. Gas pipelines are highly efficient, multi-decade assets that retain value through biomethane blending or future hydrogen-ready upgrades – making them far more adaptable than dedicated hydrogen networks.

Third, countries are exploring ways to decarbonize the gas molecule itself via biomethane scale-up, CCS-equipped production and coupling with negative-emission technologies. This pathway preserves the benefits of existing infrastructure, economies of scale and dispatchability while progressively reducing emissions.

STRATEGIES BY ARCHETYPE

In addition to the universal no-regrets moves, national gas strategies will diverge significantly based on individual circumstances, with each archetype characterized by fundamentally different strategic objectives (see graphic) and probable gas strategies, listed below. ▶ Q

Q Strategic objectives by country archetype

Archetype	**Long-term gas exporters**	**Current exporters, future importers**	**Mature economy importers**	**Emerging market/ high-growth importers**
Description & examples	• Countries with significant gas reserves and likely to be exporters in longer term • E.g. Qatar, Russia, US, Iran	• Countries that have historically been gas/LNG exporters but will likely become importers in the next 20 years • E.g. Malaysia	• Developed countries that have historically been gas/LNG importers with steady imports • E.g. Europe, Japan, South Korea	• Countries with high growth that import gas • E.g. China, India, Brazil
Strategic objectives	• Leverage gas for domestic value-add • Leverage gas as strategic/ geopolitical asset	• Exploit national resources • Delay becoming an importer (due to concerns related to security of supply/ competitiveness impact)	• Reduce gas demand with renewables and energy efficiencies • Build import flexibility and diversification to foster resilience	• Ensure competitiveness from diverse energy types, incl. renewables • Ensure low-cost gas supply
			European countries	

Source: Roland Berger

Strategies for long-term gas exporters

- Harness natural gas as a catalyst for domestic value creation (e.g., gas-to-chemicals, petrochemical hubs, fertilizer production).
- Develop world-class export structure, combining pipelines to nearby markets and large-scale liquefaction capacity.
- Sustain disciplined exploration while calibrating output to support healthy price levels.

Strategies for current exporters, future importers

- Build competitive LNG import capacities and actively diversify supplier base toward better gas security.
- Prioritize domestic production for domestic consumption rather than exports.
- Move from a regulated market (commonly also dominated by state-owned incumbents) toward more market-reflective gas pricing (where not yet the case) to control demand growth of gas.

Strategies for mature economy importers

- Pivot from rigid pipeline dependence toward flexible LNG sourcing to intensify supplier competition.
- Secure long-term offtake agreements for large volumes to ensure long-term security of supply (e.g. Japan exploring investments in Alaska LNG/gas for imports).

Strategies for emerging market importers

- Lock in long-term import contracts, both LNG and pipeline, from established producers (Qatar, Russia, Australia, US); use small-scale LNG for archipelagic or remote markets.
- Reduce gas demand more aggressively, for example accelerated renewables, new nuclear and keeping coal capacities.
- Invest heavily in bioenergy and biomethane, recognizing these will remain supplementary rather than primary solutions. ▶ R

2.2/ Company archetypes and strategies

There are various companies positioned along the natural gas value chain, performing diverse functions in an increasingly interconnected and volatile market. So, to assist our analysis, we also grouped these companies into four distinct archetypes:

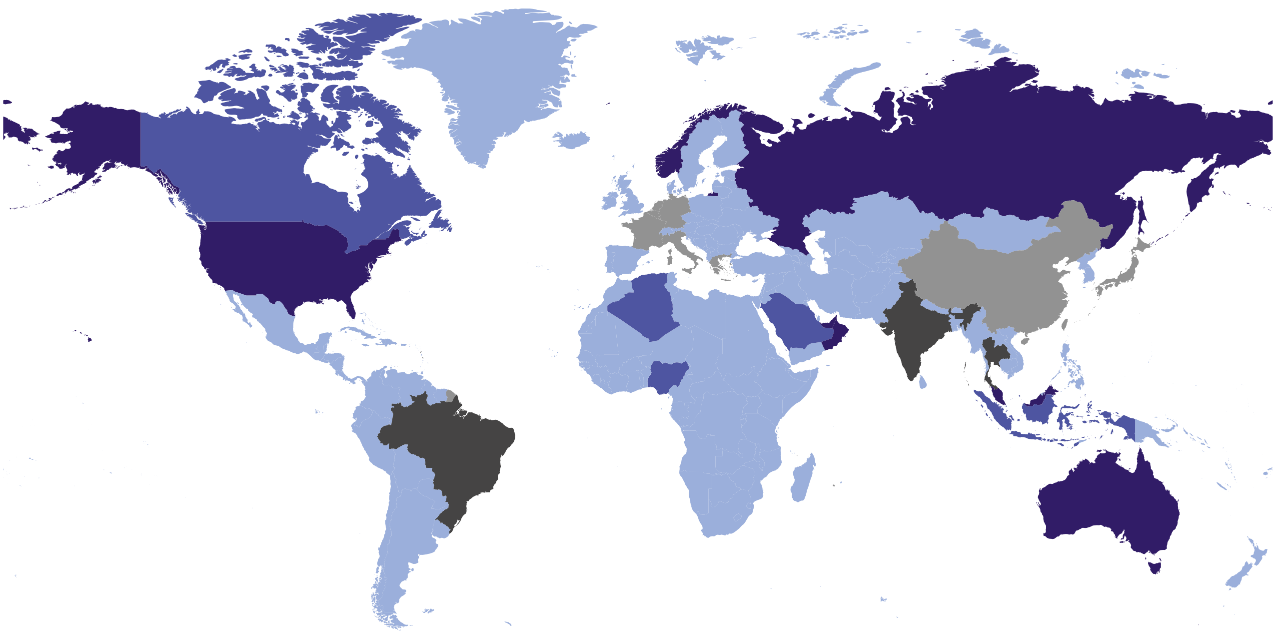
A Upstream natural gas producers with offtake agreements (either via pipeline or LNG)

B LNG traders and integrated portfolio players (with upstream production and trading portfolio)

C Large gas users/utilities

D Gas structure companies (pipelines, regasification, storage capacity, LNG carriers)

R **Overview of key LNG exporters and importers[1]**



1 Utilization can be higher than 100 % of the installed infrastructure in the case of utilization at peak capacity (not baseload)

Key exporter today | Key exporter tomorrow | Key importer today | Key importer tomorrow

Source: Roland Berger

Each archetype leverages its specific assets, contractual positions and market exposure to optimize value, manage risk and capture opportunities. Below we assess each in turn.

Archetype A: Upstream natural gas producers with offtake agreements

Producers looking to enhance competitiveness in a capital-intensive, decarbonizing market tend to take four key approaches:

- Optimize LNG project costs despite rising upstream CAPEX, for example by using modular designs, floating liquefaction and strict design-to-cost principles.
- Maximize netback prices via logistics optimization, destination flexibility and tight control of shipping and regasification costs.
- Expand into gas portfolio trading (similar to Archetype B) by building or acquiring trading capabilities to capture additional value chain margins and increase resilience.
- Invest in carbon capture and storage upstream, for example for high CO_2-content fields, during liquefaction, etc.

Archetype B: LNG traders and integrated portfolio players

Integrated portfolio players are well positioned to extract maximum value from the evolving global gas market by systematically building scale, flexibility and optionality across the entire value chain. Multiple combined approaches are taken:

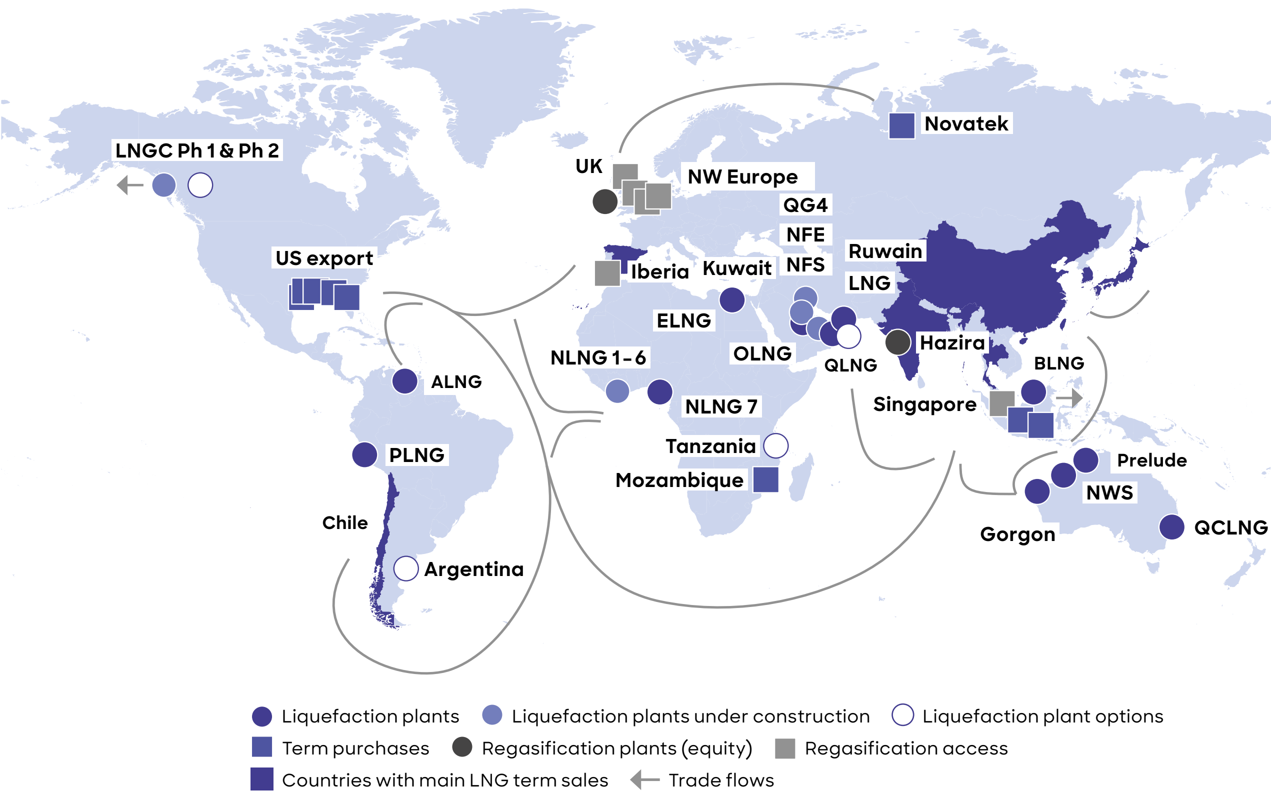
- Leverage scale across the entire gas value chain, prioritizing the overall return rather than the performance of individual contracts or standalone assets while systematically capturing margins through regional and temporal price arbitrage.
- Build optionality and flexibility throughout portfolios by securing destination-flexible contracts that enable redirection of cargos to the highest-value markets and by actively pursuing cargo swaps. Such opportunities are set to multiply as US LNG volumes are increasingly targeted at Asia. Players reinforce this flexibility through direct ownership or guaranteed access to critical infrastructure at strategic supply and demand hubs.
- Expand portfolio optionality and flexibility by acquiring established gas portfolios or forming strategic joint ventures, such as the recent collaboration between JERA and EDF Trading. The sector is expected to become a major hunting ground of joint ventures and M&As in the coming years.
- Extend reach downstream through targeted investments and co-investments in infrastructure. In particular, players focus on gas-to-power projects in high-growth emerging markets where strong demand growth and limited access to capital create attractive opportunities to anchor new volumes and secure long-term offtake.
- Build leading positions in LNG bunkering at key global hubs including Rotterdam, Singapore, Gibraltar, etc. This capitalizes on the rapid expansion of LNG as a marine fuel and the ability to incorporate bio-LNG blends to meet increasingly stringent environmental requirements.
- Integrate clean gases into portfolios by securing biomethane volumes through long-term offtake agreements with producers or by investing directly in biogas upgrading facilities and joint ventures. Simultaneously, players develop "zero-carbon natural gas" by combining conventional molecules with verified negative-emissions credits, delivering net-zero gas at costs that are competitive - potentially lower than the effective end-consumer price once taxes, levies and green certificates are taken into account. ▶ S

Archetype C: Large gas users/utilities

Large gas users typically secure reliable and cost-competitive supply primarily through long-term offtake agreements. Increasingly, they have also taken three key approaches:

- Incorporate spot trading (with controlled degree of exposure) for additional optimization.
- Actively monetize their gas volumes by flexibly adjusting consumption patterns where operationally feasible, utilizing storage capacity and reselling surplus gas during periods of lower demand or higher market prices.

S Example of Archetype B company – Shell's global gas portfolio



Source: Roland Berger, Shell

- For the largest industrial and power-generation players, transitioning toward an integrated trading model (similar to Archetype B) becomes an attractive option to capture additional value and further reduce effective procurement costs.

Archetype D: Gas infrastructure companies (pipelines, regasification, storage capacity, LNG carriers)

Gas infrastructure companies are strengthening their positioning through four major approaches:

- Invest in gas production infrastructure and/or demand markets, and at the same time form alliances with large portfolio players to access infrastructure and storage capacity while also supporting portfolio players to increase optionality. For gas structure players, it helps to de-risk investments while securing long-term mutual interdependence.
- Expand their asset base into decarbonization-enabling infrastructure, such as CO_2 pipelines and liquid CO_2 carriers, and selectively participate in hydrogen-related projects where clear government support and viable economics are in place.
- Harness advanced digital technologies to optimize network operations and improve asset utilization and maintenance programs that reduce costs and increase reliability.

2.4/ Risks and uncertainties

While countless uncertainties exist in the global gas game, two stand out – China's rising influence as the new largest buyer of LNG and the EU's phasing out of Russian gas imports.

China's emergence as a powerful LNG "swing trader"

China is evolving from a conventional LNG importer into a sophisticated global trader, leveraging its vast long-term contract portfolio for arbitrage rather than solely domestic consumption. Led by state-owned giants Sinopec, CNOOC and PetroChina, Chinese firms had secured more than 100 million tons per annum (mtpa) in commitments by 2026 through aggressive signings between 2021 and 2023, making the country the world's largest long-term LNG buyer. Key suppliers include the US (around 20-34 mtpa, mostly flexible FOB terms), Qatar (around 8 mtpa, longer DES contracts) and Australia (legacy fixed deals).

In 2025, weak domestic demand, driven by economic slowdowns, renewables/coal competition, surging Russian pipeline gas (Power of Siberia pipeline system) and US tariffs made many LNG volumes uneconomical. Domestic prices could fall below landed import costs, prompting widespread resale.

As a result, Chinese buyers diverted large cargo volumes, especially US volumes, to Europe and Asia, with up to 40% of term supplies entering spot markets via flexible clauses. This "swing trader" strategy supports European energy security by replacing forgone Russian supplies but increases global volatility. LNG exporters and importers both face increased exposure in the form of heightened price swings from abrupt resales or withdrawals; importers will have increased exposure to supply insecurity via unpredictable diversions and geopolitical vulnerabilities amid trade tensions.

EU phase-out of Russian gas

In 2025, Russian gas still comprised around 13% of EU imports, with limited pipeline flows to landlocked states like Hungary and Slovakia. But in January 2026, the EU adopted a binding regulation to phase out Russian natural gas imports under its REPowerEU framework.
New contracts are prohibited immediately, with existing short-term contracts ending by mid-April 2026 for LNG and mid-June 2026 for pipeline gas. Long-term LNG contracts must terminate by January 2027, while pipeline gas under long-term deals can continue until the end of September 2027 (or November 2027 if storage needs require it). Enforcement includes contract disclosures, prior authorizations, origin proofs and penalties for circumvention, although concerns persist over potential loopholes like indirect third-country imports or emergency clauses.

Meanwhile, the EU is diversifying toward US and Qatari LNG, plus renewables. LNG exporters and importers are again exposed to price volatility from global market shifts. EU importers in particular face the risk of supply disruptions during the transition, potential shortages if alternatives lag and risks of legal challenges (for example, appeals from Hungary/Slovakia), which could delay implementation.

Conclusion

Natural gas will remain a vital, indispensable energy source for decades, but the global gas/LNG market is undergoing profound structural change compared to the past 20 years. Five defining trends will shape the future global gas game:

1. A strong shift toward LNG (over pipeline gas) backed by growing government intervention for security of supply (strategic regasification terminals, mandatory storage, state-supported reserves).
2. Asia, especially South and Southeast Asia, will dominate demand growth.
3. Gas is becoming a truly global, interconnected commodity with shrinking regional price gaps, rising liquidity, real-time cargo redirection and a transition from rigid long-term contracts to flexible, shorter-term and destination-flexible deals.
4. Natural gas is increasingly used as a diplomatic lever, reinforcing diversification and security-of-supply priorities.
5. Interest in zero- and low-carbon gases (such as biomethane) continues to rise, but scaling remains severely constrained.

In addition, there are near-term risks. China's emergence as a large-scale LNG trader creates supply uncertainty for other importers, while the EU's full ban on Russian gas threatens to destabilize the market through oversupply elsewhere.

Key success factors

To counter these risks, players can execute the following no-regrets moves:

- Reduce gas demand where cheaper/cleaner alternatives exist (and monetize the freed-up volumes).
- Build flexible trading capabilities. Even upstream producers and utilities are becoming portfolio optimizers.
- Move to secure strategic infrastructure. Infrastructure is not at risk of stranding; it is the new bottleneck. Regasification terminals, storage and shipping will be strategic assets controlled by those who act first.

In the evolving and increasingly complex global gas game, success will favor those who move fastest to embrace flexibility. This means shifting from rigid, bilateral, volume-focused strategies to dynamic, liquid, arbitrage-driven portfolios that are tuned to geopolitical realities. Players who act quickly on no-regrets moves today will be best positioned to capture value amid volatility and secure resilient gas supplies for the decades ahead.

Contact our experts to ensure your organization is a winner in the global gas game.

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