

Viewpoint

LNG 4.0: When success becomes the barrier to change

The market provides opportunity.
It does not provide assurance.

Author:
Pat Breen





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Foreword: Success is not the same as readiness

The LNG industry has earned its confidence.

Discussion of the observations in this Viewpoint has revealed both the LNG industry's extraordinary strengths and the less visible challenge now facing it.

One industry veteran pointed to LNG's responses to the Fukushima Daiichi disaster, the loss of Russian pipeline supply following the Ukraine crisis and the closure of the Strait of Hormuz as evidence of an industry capable of meeting every major challenge. That confidence is understandable. LNG has repeatedly redirected supply, mobilised infrastructure and adapted commercial arrangements under exceptional pressure.

But successful crisis response does not necessarily demonstrate readiness for the competitive environment ahead. Several executives recognised their own organisations in the description of "if it ain't broke, don't fix it", internal friction and slow execution. One regretted that his senior leaders were not in the room to engage in the discussion. The issue was not a failure to recognise change. It was the difficulty of creating urgency while established structures continued to deliver acceptable results.

A seasoned portfolio manager raised a more structural concern: whether today's fragmented industry will remain sustainable as more participants compete for a shallower value pool. Some players may exit and others consolidate. In that environment, optimising one cargo, contract or asset will not be enough. Advantage will increasingly depend on making supply, infrastructure, contracts, customers and decisions work together.

That is the challenge explored in this Viewpoint. LNG 4.0 does not assume that the current model is broken. It asks whether organisations can adapt before competitive pressure exposes its limitations.

The future will belong to those with the foresight to recognise where value is moving, the confidence to challenge models that still appear successful and the capability to act before change becomes unavoidable. The industry has proved it can respond when events demand it.

The next test is whether it can change before they do.

This Viewpoint provided the foundation for my presentation at the 2026 GIIGNL General Assembly in Milan this month. The talk at GIIGNL was titled: "LNG 4.0: Is the Industry Prepared for a Different Competitive Era?"

With regards

Pat Breen
Chairman & Chief Executive
Gas Strategies

LNG 4.0: When success becomes the barrier to change

The LNG industry has become more flexible, resilient and commercially sophisticated. But the capabilities that delivered yesterday's success may not be sufficient for a larger, more contested and more interconnected market. The challenge is to act before a model that still works becomes a model that no longer wins.

"The market will provide."

It has become one of the LNG industry's most familiar expressions of confidence.

When supply is disrupted or demand rises unexpectedly, higher prices attract cargoes. Portfolio players redirect supply. Sellers maximise production. Buyers adjust their positions and, where necessary, reduce demand.

This is one of the great achievements of the modern LNG industry. It has evolved from a collection of dedicated supply chains into a flexible global market capable of moving substantial volumes between regions.

Europe's response to the sharp reduction in Russian pipeline gas demonstrated that flexibility at scale. LNG moved towards the market prepared to pay for it. Import infrastructure was expanded and used

more intensively. Portfolio players rebalanced their positions and buyers secured alternative supplies.

The market provided.

But not for everyone.

Cargoes redirected to Europe were no longer available elsewhere. Prices moved beyond the reach of some buyers. Demand was curtailed, industrial production reduced and governments forced to intervene.

The experience exposed an important distinction.

The market provides opportunity. It does not provide assurance.

The market may identify an available cargo. It does not assure that a particular buyer can finance it, ship it, receive it and use it within the required timeframe.

That assurance must be designed.

The market provides opportunity. It does not provide assurance.

Flexibility has created interdependence

The original LNG industry was built around dedicated physical and commercial chains.

Gas production, liquefaction, shipping, receiving terminals and downstream markets were developed together. Long-term contracts supported investment. Supply sources and customers were identified in advance. Responsibilities were comparatively clear.

As the industry developed, these chains became more connected. LNG gained access to liquid gas markets. Regional systems became linked. Destination restrictions weakened, third-party infrastructure expanded, flexible US LNG entered the market and portfolio players connected multiple sources with multiple customers.

This evolution created considerable value.

Buyers gained more choice over source, tenure, pricing and

delivery basis. Sellers reached a wider range of customers. Infrastructure served multiple users. Portfolio players could redirect supply as market conditions changed.

Dedicated project chains, regional markets, long-term contracts, shorter-term trading and global portfolios now coexist. Nor is the industry moving neatly from long-term contracting to spot procurement. Buyers increasingly combine different contract durations, delivery bases, pricing structures and infrastructure positions according to their requirements.

The important change is not the disappearance of long-term contracts. It is the larger number of commercial, physical, financial and organisational components that participants must combine into a workable supply model.

Flexibility was achieved partly by separating contracts, assets and responsibilities that had

previously been managed together.

A single LNG position may now depend on several suppliers, shipowners, terminal operators, infrastructure providers, financiers and downstream parties. Each may operate effectively in its own right, while no participant has complete visibility of, or control over, the entire delivery system.

A buyer may have contracts with several suppliers but remain exposed to one production region, shipping corridor or regulatory regime. It may have access to spot cargoes but lack the credit, foreign currency or terminal capacity required to receive them.

A terminal may have spare nameplate capacity but insufficient scheduling flexibility, storage or downstream pipeline capacity to accommodate an additional cargo. A seller may offer diversion rights that are

attractive contractually but cannot be exercised quickly enough to manage a disruption.

Commercial diversification can therefore conceal physical concentration. Contractual flexibility can exist without operational flexibility. Installed infrastructure may be available in

principle but unusable in practice.

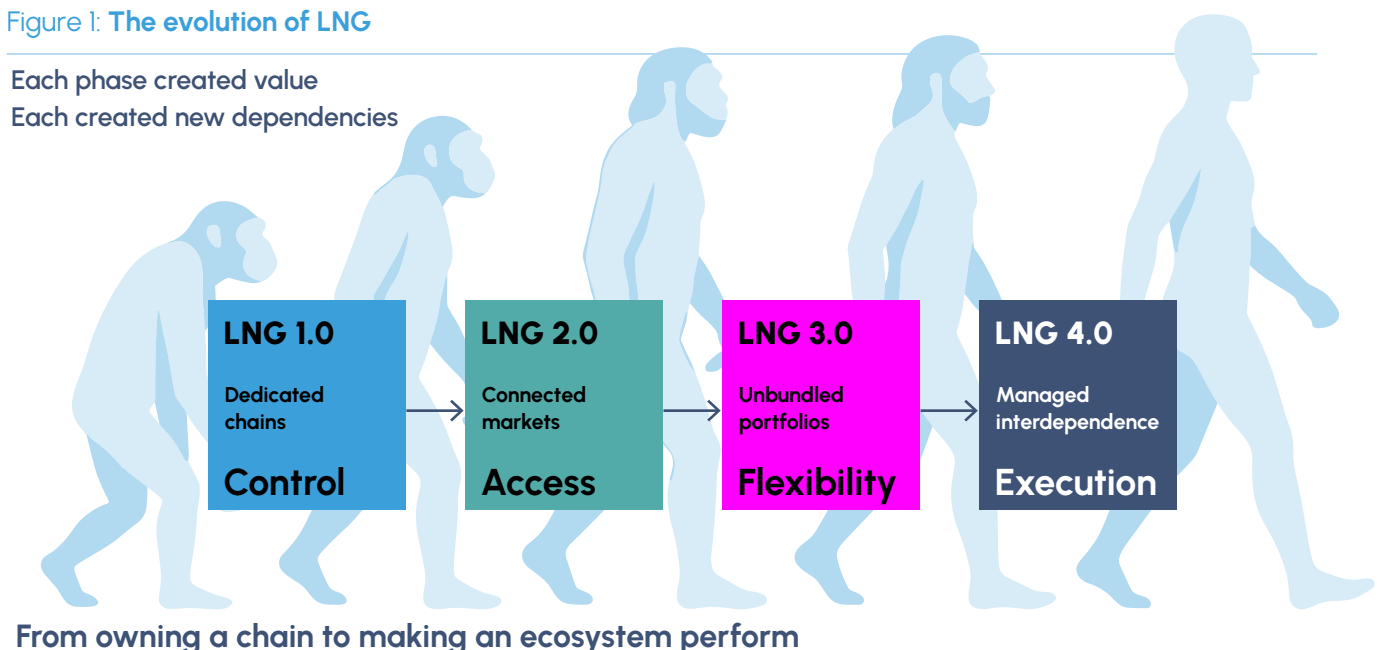
No single organisation necessarily sees, controls or assures the complete system.

LNG 4.0 is not a return to vertically integrated supply chains. Nor does it require every participant to become a global portfolio player.

LNG 3.0 created value through connectivity, unbundling and portfolio optimisation. LNG 4.0 is the discipline of managing the interdependence that success has created, while converting opportunity into dependable delivery and competitive advantage.

Figure 1: The evolution of LNG

Each phase created value
Each created new dependencies



A more contested market

Greater interdependence is not the only reason the industry must adapt.

The next LNG market will not simply be larger. It will be more contested.

A major wave of additional supply is entering a mature market

populated by a wider range of commercially sophisticated participants. Producers, portfolio players, traders, utilities, infrastructure providers and national energy companies increasingly compete across traditional boundaries.

Buyers have changed as well.

Many are more experienced, better informed and more capable of combining long-term supply, shorter contracts, spot purchases, shipping, infrastructure positions and risk-management tools. They are no longer simply choosing between products designed by sellers. They increasingly define the flexibility

Figure 2: **More supply. More players. More capable buyers**

More supply

- Largest new capacity wave to date
- More volume seeking customers
- More pressure to optimise and place supply

More players

- Producers
- Portfolio players
- Traders
- Utilities
- National energy companies
- Infrastructure providers

More capable buyers

- Better informed
- More commercially sophisticated
- Able to design procurement competition
- Expecting a greater share of value

The next LNG market will not simply be larger. **It will be more contested**

they require, shape procurement around their own risks and create competition between alternative solutions.

Traditional roles consequently overlap.

A producer may compete with one of its own customers. A global

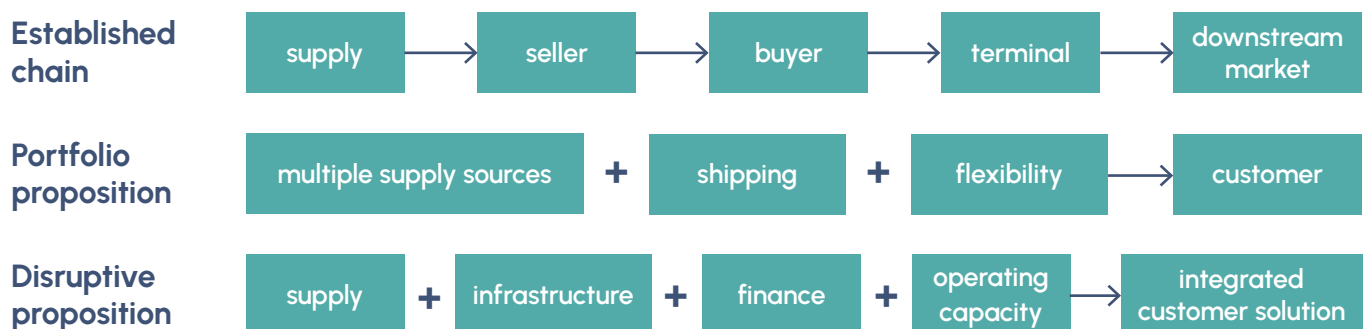
portfolio player may compete with a utility that has developed portfolio capabilities of its own. A traditional buyer may compete for supply with a trader purchasing for resale. A terminal operator may compete not only on tariff and capacity, but on access, responsiveness, connectivity and information.

Participants are no longer competing only from fixed positions within an established value chain. They are increasingly competing through alternative value chains.

Some will combine services that were previously supplied separately. Some will accept risks

Figure 3: **Competition is moving**

From positions within a value chain. **To competition through alternative value chains**



Value will not simply be negotiated. It will be reconfigured

that incumbents will not. Others will aggregate demand, apply their balance sheets differently or create routes around established intermediaries.

Value will not simply be negotiated more aggressively.

It will be reconfigured.

In that environment, speed becomes part of value. A company may identify an attractive cargo, customer requirement or infrastructure opportunity, but lose it while commercial, operational, financial and legal teams establish a common position.

Slow execution is no longer merely an internal inefficiency.

It is a transfer of value to someone else.

But speed without assurance is equally dangerous. An organisation that commits before understanding its physical, financial or operational exposure may capture an opportunity it cannot execute.

Reliability without speed loses opportunity. Speed without reliability destroys value. LNG 4.0 requires both.

Reliability without speed loses opportunity.
Speed without reliability destroys value.
LNG 4.0 requires both.

When success creates inertia

The LNG 4.0 challenge is increasingly recognised across the industry.

In our discussions with buyers, sellers, portfolio players and infrastructure operators, there is broad awareness that the market is becoming more interconnected and more competitive. Organisations understand that buyers are becoming more capable, traditional roles are

overlapping and speed of execution is increasingly important.

The problem is not a failure to see the direction of change.

It is the limited short-term incentive to act.

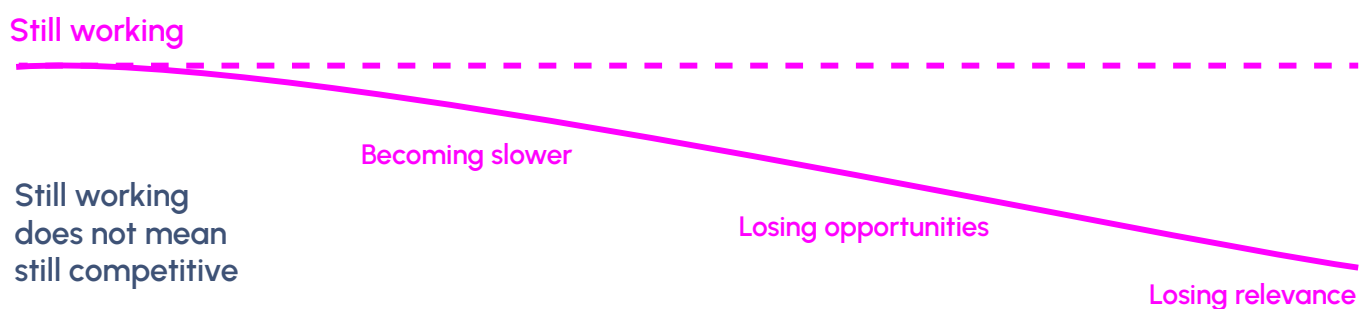
The industry has performed remarkably well. Assets continue to operate. Contracts continue to deliver. Customers continue

"If it ain't broke, don't fix it."

to buy. Organisations that have managed extraordinary disruption can reasonably point to their recent performance as evidence of resilience.

Those achievements deserve recognition. But they can also

Figure 4: **What if it is not broken**



The consequence of inertia may not resemble a crisis.
It may look like a gradual loss of relevance

provide false reassurance.

The immediate response to the case for change is often familiar:

"Our model still works."

"Our assets remain competitive."

"Our contracts protected us."

"We managed the last crisis."

Or, more simply:

"If it ain't broke, don't fix it."

That instinct is understandable. Existing processes reflect accumulated experience. Organisational change creates cost and disruption. It is difficult to make an urgent case for new capabilities when current performance remains satisfactory.

But the relevant test is no longer simply whether the model is broken.

Yesterday's success can become today's inertia. And today's inertia can become tomorrow's competitive disadvantage.

It is whether the model is becoming less competitive.

An organisation can continue to produce acceptable results while responding more slowly than its competitors. Its supply may remain reliable while its customer proposition becomes less relevant. Its assets may continue to operate efficiently while alternative value chains capture opportunities that incumbents are too slow or too internally fragmented to pursue.

The first visible evidence that change is required may therefore not be operational failure.

It may be a customer lost, an opportunity missed, a margin compressed or an established

position in the value chain that another participant has made less valuable.

Yesterday's success can become today's inertia. And today's inertia can become tomorrow's competitive disadvantage.

This is what makes the LNG 4.0 transition difficult. The required capabilities need to be developed not because the current model has stopped working, but because the basis of competition is changing while it still works.

By the time the reason for change becomes immediate, the most attractive value may already have moved elsewhere.

The market will provide, but will it deliver?

Well-functioning markets remain the first line of defence against supply disruption.

When supply tightens, prices create incentives for cargoes to move, production to increase where possible and demand to adjust. Portfolio players and traders can redirect supply more quickly than most administrative mechanisms.

But markets clear principally through price. Energy security asks a different question: can essential energy continue to reach the businesses, communities and systems that depend on it?

A price signal cannot create a cargo that does not exist. Nor can it ensure that an available cargo has a suitable vessel, can use the required shipping route, enter a compatible terminal and reach the downstream customer in time.

Even where these physical elements are available, the buyer may lack sufficient credit, foreign currency or internal authority to act

within the market window.

A cargo moving to the highest bidder may represent an efficient market response. But it may leave another buyer facing fuel switching, demand curtailment or physical shortage.

The critical LNG 4.0 question is therefore not whether the market will respond.

It is whether the organisation seeking security has built the capabilities required to convert that response into delivered energy.

Those capabilities may include:

- diversified long-term and flexible supply;
- shipping access and route contingency;
- usable terminal, storage and downstream infrastructure;
- credit, liquidity and foreign-

currency availability;

- executable contracts and clear decision rights; and
- emergency coordination with counterparties, system operators and government.

The market cannot provide these capabilities automatically. They must be designed, secured and tested by the organisations that depend on them.

The market can reveal an option and establish its price. It cannot assure that the buyer is capable of exercising that option.

The relevant leadership question is not simply:

Will the market provide?

It is:

What must we have in place to convert what the market provides into secure, affordable and usable energy?

Four tests for LNG 4.0

Every LNG position should pass four practical tests.

1. Is the commercial right physically usable?

A contract may provide access to alternative supply, destination flexibility, diversion rights or a replacement cargo. But the right creates value only if it can be exercised.

Is a suitable vessel available? Can the terminal accommodate the vessel and cargo specification? Is there sufficient storage and regasification capacity? Can the downstream gas, industrial or power system receive the gas at the required time?

These questions should be addressed when the commercial arrangement is designed, not left until disruption occurs.

An option that cannot be exercised operationally is not meaningful flexibility. Test the complete system.

2. Is the physical response financially executable?

A cargo can be available and physically deliverable but remain inaccessible because the buyer cannot finance it.

During market stress, prices rise, credit requirements increase, foreign currency may become scarce and normal approval limits can become inadequate.

Credit capacity, payment security, working capital and foreign exchange are parts of the supply system. They are not administrative issues sitting outside it.

A resilient supply strategy must determine in advance how additional or replacement supply would be funded under stressed market conditions.

3. Can the organisations decide and act in time?

A company may have suitable contracts, physical access and financial capacity but still respond too slowly.

Authority may be dispersed across procurement, trading, shipping, operations, finance, legal and senior management. Each function may understand its own responsibilities while no one owns the complete response.

Organisational readiness cannot be improvised after disruption occurs. Information requirements, decision authority and escalation routes need to be established and tested beforehand.

The same applies across organisational boundaries. A response may require a buyer, seller, shipowner, terminal, pipeline operator, lender, regulator and government to act within the same limited decision window.

4. Can the organisation execute faster and more reliably than the alternatives?

An opportunity does not remain available indefinitely.

A cargo may be purchased by another buyer. A customer may select a more responsive supplier. A vessel, terminal position or financing solution may be secured by a competitor while an organisation completes its internal analysis and approvals.

The competitive test is whether the organisation can distinguish quickly between a theoretical and an executable opportunity, integrate the necessary commercial, physical, financial and operational analysis, and commit within the available decision window.

This does not justify haste or weakened governance. The objective is integrated decision-

making, not reckless decision-making.

The successful organisation may not own the most assets or operate the most complex portfolio.

It may be the one with the least avoidable friction between insight, decision and execution.

Figure 5: Test the complete system



Different implications for different participants

LNG 4.0 does not prescribe a single business model. Its implications depend on where an organisation sits in the market.

Buyers

Buyers do not all need to become traders or acquire assets across the LNG chain. They do, however, need to understand the dependencies they have accepted and how those dependencies will be managed.

This becomes particularly important as buyers move from traditional delivered arrangements towards models that give them greater responsibility for shipping, scheduling or supply management.

Buyers should also test whether procurement processes developed for a more stable and less contested market can respond within today's commercial windows. A process can remain procedurally robust while becoming competitively too slow.

Sellers and portfolio players

Sellers need to look beyond the flexibility written into their contracts and consider whether customers can use it.

A more complex product is not necessarily a more valuable one. Flexibility creates value only when aligned with the buyer's infrastructure, financial capacity, internal capabilities and exposure to uncertainty.

Established products may continue to sell, but that is not evidence that they will remain the most relevant propositions. Another participant may understand the customer's complete requirement and assemble a more usable solution first.

Portfolio players face a related challenge. Optimising an individual cargo may maximise immediate value while creating risks elsewhere in the portfolio. Local

optimisation must therefore be reconciled with portfolio-wide resilience and customer delivery.

Infrastructure operators

Infrastructure increasingly connects multiple participants rather than supporting one dedicated chain.

Its contribution cannot be measured only by installed capacity. Scheduling, access rules, storage, interoperability, information flows and downstream connectivity determine whether capacity can be used when conditions change.

Infrastructure operators should test not only whether their assets remain technically competitive, but whether their access arrangements, decision processes and service models are sufficiently responsive to support emerging commercial propositions.

Four choices for managing dependency

Once an organisation has identified a critical dependency, it has four broad choices.

It can **own** the relevant capability or asset where control is strategically important.

It can **contract** for it, with responsibilities, performance standards and remedies clearly defined.

It can **collaborate** where delivery depends on parties sharing information, coordinating decisions or preparing jointly for disruption.

Or it can **build contingency**, accepting that the dependency cannot be controlled economically but preparing alternative responses if it fails.

Most organisations will use a combination of all four.

The essential discipline is to make the choice consciously and assign clear responsibility for making it work.

Dependencies are rarely unmanaged because organisations are completely unaware of them. More often, they sit between established functions, contracts or counterparties, with no one responsible for assuring the complete result.

LNG 4.0 therefore requires leadership teams to identify where existing structures create avoidable delay, duplicated analysis or unclear authority.

The objective is not to remove necessary governance. It is to prevent governance designed for yesterday's operating environment from obstructing timely execution in tomorrow's market.

The LNG 4.0 leadership test

LNG 4.0 is not a future condition that begins when LNG 3.0 stops working.

It is the discipline required while existing models continue to perform, but the basis of competition is changing around them.

"The market will provide" remains an important expression of confidence in LNG.

But it is not a security strategy.

And "if it ain't broke, don't fix it" is not a competitive strategy.

The market provides signals, incentives and opportunities. What it does not provide automatically is assurance that a particular organisation can recognise, finance, assemble and execute the right response before another participant captures the value.

Every leadership team should ask:

1. What supply, service or source of value are we seeking to protect?
2. Where will value be created, contested or disrupted in our part of the market?
3. Which elements of our current success depend on assumptions that may no longer hold?
4. What capabilities will convert market opportunity into secure delivery and competitive advantage?
5. Can we decide and execute at the pace of the opportunity?
6. What are we changing now, before something visibly breaks

"The market will provide" remains an important expression of confidence in LNG. But it is not a security strategy.

LNG 4.0 must turn flexibility into two things: Dependable delivery and competitive advantage.

That assurance must be designed.

The capability must be built.

And the complete system must be tested.

LNG 3.0 created extraordinary value through connectivity, unbundling and portfolio optimisation.

But yesterday's success is not evidence of readiness for tomorrow's market.

LNG 4.0 must turn flexibility into two things:

Dependable delivery and competitive advantage.

The time to build that capability is not when the current model finally breaks.

It is while it still appears to be working.

"if it ain't broke, don't fix it" is not a competitive strategy.



Accelerate your ability to deliver,
with Gas Strategies on your team.

15-17 Furnival Street
London, EC4A 1AB
United Kingdom

marketing@gasstrategies.com
www.gasstrategies.com

