

Viewpoint

Running low on gas?

Your economy doesn't have to stall

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Drive more value from your value chain

Gas Strategies accelerates your ability to build physical and commercial value chains that drive real value, faster.

In a world where speed is a competitive advantage, we accelerate your ability to design, build and finance complex physical and commercial value chains.

We are an energy industry consultancy with an injection of high-end energy experience, and an instinct for action that drives results. Our people have sat in your chair, faced your issues. We translate those years in industry into clear-eyed direction that stops complexity slowing you down and turns process into progress.

From our beginnings in the complex worlds of gas and LNG, we have grown to partner clients across every energy type and drive more value from their value chains.

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

Executive summary

As governments and NOCs look to shore up their economies in the face of declining gas reserves, there's a temptation to see this as simply an energy supply issue. Our experience, shared here, is that the reality is more far reaching. To adapt successfully, you need to change more than your energy mix: you need to change your mindset. Old certainties, assumptions and business models no longer apply. The talent lies in integrating new energy sources into your economy, not simply your energy system.

A decline in natural gas supply destabilises established value chains. Any transition introduces uncertainty into economies and disrupts stakeholder operations and commercial agreements

- **Every option forces choices around short-term supply to end users.** This often leads to political choices between use cases and employment and expensive contract dispute settlements
- **Shaping a new era as an old one ends.** This is a moment to reset for the future, not simply supplement the past, with a new strategy on the role of gas in your energy mix, the prioritisation of end users and the cost and time to implement solutions.
- **There will be profound implications on your wider economy, energy infrastructure and operations.** Supplementary gas or alternatives to existing gas supply introduce new, complex interdependencies and expose you to volatile global markets. The commercial and operational status quo will be transformed, meaning new technology and commercial agreements have to be established.
- **Government support is critical.** Governments can take a holistic view of the energy value chain. They are well placed to drive energy security, manage stakeholders' vested interests and the challenge of declining gas supply in a way that market forces alone may not achieve.
- **The impact is felt across your value chains.** It is essential to integrate alternatives across your value chains during implementation. A combination of measures to address declining supply may be required

Introduction

Declining gas supply challenges the certainties of economies, industries, markets and value chains built on the back of plentiful, low-cost natural gas reserves and/or pipeline imports. But natural gas is a finite resource. That limitation drives many established gas markets to look for alternatives as reserves decline.

The good news is there are multiple options, from new exploration to demand management, gas importation and renewable power. The talent lies in coordinating competing agendas to make a clear-eyed decision on the option (or mix of options) best suited to your economy.

It is a puzzle of many parts, not all of them known or predictable. Uncertainties around supply flexibility, energy pricing, exposure to

international markets and long-term demand have to be balanced against net zero policies and economic growth ambitions.

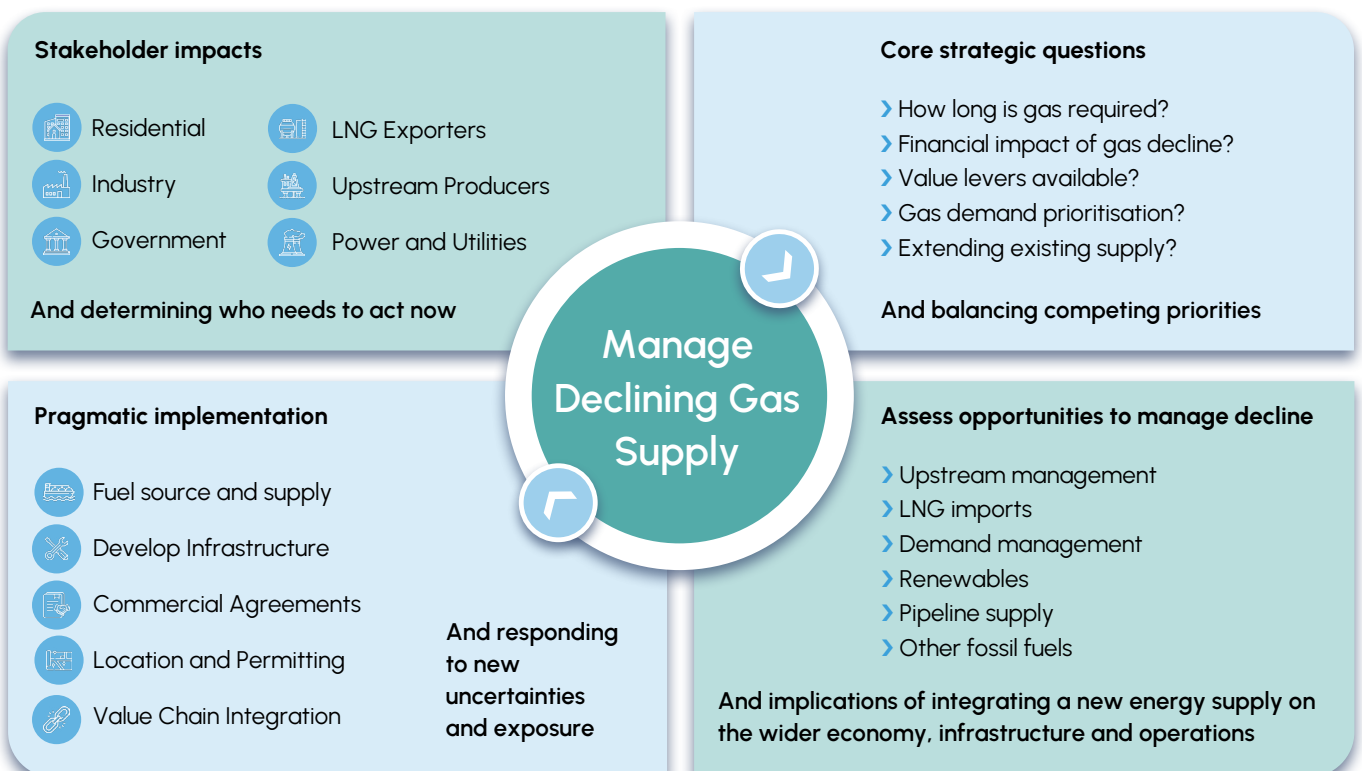
Each option has its own dynamic, from infrastructure costs to the wider societal impact on industry and jobs. The reality is that the costs of inaction – with its risks of power outages and disrupted industries – likely far outweigh the costs of transition, but every option leaves you with a

challenge. Who should bear the short-term cost to secure the long-term benefits of energy security?

Our clients are experts in their own energy systems, but need support when confronting the new and complex decisions that come with reimagining supply chains and exposure to global markets. We are their guide on the journey, helping them assess and access the options best suited to their particular context.

Figure 1: Key components to manage declining gas supply

Source: Gas Strategies



Strategic considerations

You can engineer new infrastructure, but how do you re-engineer and reconfigure economies built on affordable gas to make sure they remain competitive?

There is no “silver bullet”, and there are multiple alternatives, each with its own implications. Certainty may never come, but your window to choose will close

As your existing gas supply declines, the most important challenges are not around technical implementation. They are strategic. What is the long-term role of gas in your energy mix: as baseload power supply or a backup to balance renewables? Which option/s should you pursue? How will you integrate that choice into your energy systems? And when and how should you do so?

In an uncertain world, these decisions have to be based on probabilities rather than certainties. Waiting for market forces to deliver certainty on future international gas prices, the impact of those prices on future demand, or the impact of tariffs on end-user industries is not an option. But the absence of certainty is not the same as an absence of clarity. We partner clients to see the issues and the probabilities clearly, and drive the decisions that cannot wait.

The alternatives for economies with declining gas reserves are well known: supplementing supply through further gas exploration, LNG imports or

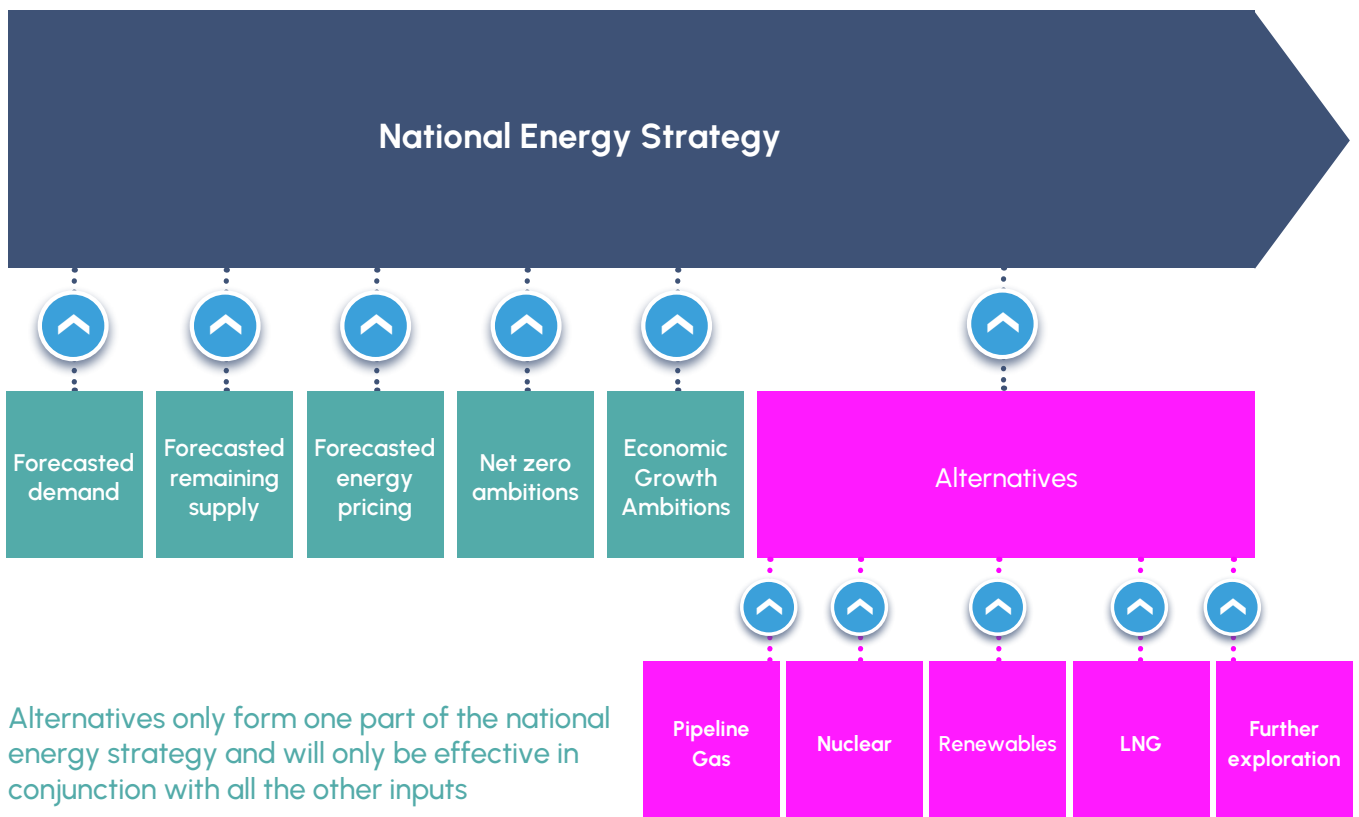
cross-border pipeline supply; reducing demand by substituting gas fired power generation with renewables, nuclear or fuel switching; or a mixture of these.

Each option carries its own distinct lead time, investment requirement and exposure to international markets. For each, there are trade-offs. Commissioning a gas pipeline, for example, comes with a much higher upfront CapEx cost, while importing LNG via FSRUs will cost you in higher on-going OpEx.

The choice is often driven by your country's financial strength, but even the strongest economy is wise to resist overcommitting to a single option too early. Act too fast and evolving supply/demand forecasts may undo your assumptions. Act too slowly and options with longer lead time will no longer be on the table as your cliff edge looms. We help you make the right decisions, at the right time: ones that are right for your economy's finances, your location and your industrial base.

Figure 2: Integrating alternatives into an overall energy strategy

Source: Gas Strategies



Stakeholder implications and management

Declining gas supply is a national challenge: one where government has a key role to play in balancing the economic, political and social interests of the many stakeholders any decision will impact.

Your industries that are key to jobs and economic growth most likely built their business models on low-cost energy and easy access to feedstock. Your population may view cheap electricity as a social right. Gas and gas-related exports have probably delivered a very significant part of your government revenues. These issues run deep and point to a truth about managing your transition to a new energy mix. It is not just a technical or economic issue. It is fundamentally a question of stakeholder alignment.

Aligning the interests of governments, regulators, energy companies, industrial users, investors and citizens in the face of constrained supply is among the most complex challenges our clients face.

Gas distribution firms and gas-fired power generators may lobby for a gas import option to limit the risk of stranded infrastructure. Upstream producers are naturally incentivised to maximise gas production and profits in the near term, and may be

holding out for incentives to support further exploration. Gas exporters may point to commitments they are bound to uphold. Consumers will demand reliability and affordability. Even a technically viable solution can fail without careful alignment of these demands. Misaligned incentives, political fragmentation or timing missteps can derail your progress.

With so many competing interests, the ultimate decision is rarely a purely commercial one. Increasingly, we see governments taking a more active role. They bring a unique and valuable perspective: the ability to take a system-wide view of the whole energy ecosystem. Their leadership

or endorsement is essential, as is their authority to act and align stakeholders.

On projects from the UK to Germany and the Middle East, we have learned how to engage with government agencies and support them in these key roles. But as many governments around the world face increasing fiscal constraints, old assumptions that they will also foot the bill are being challenged. So while their role as leader, convener of stakeholders and reconciler of interest remains key, they are no longer also the default financier. Today, any plan to address declining gas has to answer a key strategic question: who will ultimately pay?

Decline in gas reserves destabilises established value chains as well as challenging the business models of industries built on cheap, plentiful gas and expectations of populations

Continued resource management

Tightening supply and the introduction of alternative energy sources drives a fundamental restructuring of your commercial agreements.

The logical first step for any country facing declining reserves is to maximise the potential of the reserves they do have. Our recent work including Trinidad and Tobago, Angola and Equatorial Guinea focused on extending the lifespan of reserves, managing them more efficiently and improving recovery, while also pulling the levers of stakeholder engagement, policy and financial incentives to reboot exploration and production.

These strategies can buy time, but ultimately decisions need to be made on new energy sources. As those new sources are introduced, there will usually be a transitional phase. Legacy gas systems and newly-introduced alternatives will have to operate in parallel. Like any transition, that can cause tensions. Any remaining upstream producers will be focused on maximising returns and may challenge any constraint new supplies put on this. This parallel period may also see end-users competing for the most cost-effective and reliable energy supply.

Governments can also struggle in the transition phase. Keen to secure investment for their industries or exports, they may have committed to long term gas supply agreements based on overly optimistic views on remaining reserves. That shortfall forces a re-think of what can be long-standing commercial agreements. For example:

- Prioritising allocation of gas or generation capacity for certain end-users based on use cases, employment and the risk of contract disputes.
- Value chain segmentation that requires different commercial models for gas and alternative supply.

Case study

In Trinidad and Tobago, gas shortfalls have been a troubling fact of life since the mid-2010s. Their industry structure saw the National Gas Company (NGC) act as both demand aggregator and single supplier to downstream industry. That left the NGC with multi-million USD exposures for failure to supply. Since 2021, the picture has been further complicated with the NGC and its IOC partners having to address the shutdown of the first liquefaction train of Atlantic LNG and restructure their ALNG commercial model to reflect uncertain future supply.

To successfully manage declining production and relationships with end users, we help our clients navigate these fundamental rethinks. Often long-standing upstream supply contracts have to be renegotiated. The ownership and operating models of infrastructure have to be restructured. And incentives right across the value chain have to be realigned to guarantee supply and remain economically competitive.

Implementation

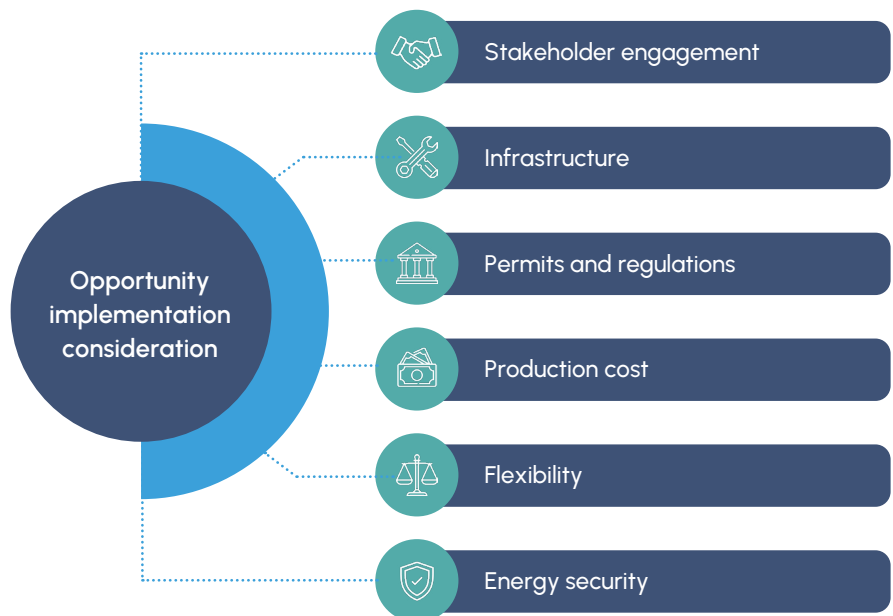
When you are faced with creating new end-to-end value chains, it is essential to look beyond the infrastructure to the commercial, financial, and political decisions that will drive success.

Defining the role of gas in your future energy ecosystem will normally influence your choice of solutions. Countries may choose to go with renewable energy or nuclear power for long-term power supply. In most cases, however, natural gas will continue to have a role on the route to that solution, and as a balancing fuel to manage the intermittency of renewable generation, seasonal variations or periods of peak demand. Other countries may determine that gas is so fundamental to the workings of their economy that they have to find a new baseload supply source.

We advise clients as they wrestle with these implications to define the choice, sizing and timing of alternatives to their declining reserves. Whether they ultimately choose a direct replacement for natural gas or a non-fossil fuel alternative, success demands that you look beyond the infrastructure. Each option has unique lead times, operational considerations, investment requirements, exposure to international markets and implications for energy security. To identify the

Figure 3: Key opportunity implementation considerations

Source: Gas Strategies



best option and avoid costly mistakes or the risk of supply shortages, you need a holistic strategy. We help clients lift their gaze from seeing their transition as purely an infrastructure question to see that bigger picture.

Even when a decision is made to introduce a new source of gas, major issues remain. Simply, 'gas' is not just 'gas'. Different sources have unique characteristics that can affect your energy ecosystem in distinct ways.

Upstream production and pipeline imports may involve technical, commercial, and political challenges but they follow well-established requirements and frameworks. LNG is different. As we have learned on the 35 LNG import projects we have worked on globally, importing LNG is far from a homogenous process. Depending on specific gas supply requirements and your chosen LNG import strategy, there will be a range of infrastructure, operational, and commercial decisions to be made. Each of those decisions will have a profound impact on your existing gas value chains.

- Exposure to global market volatility creates significantly different gas costs and decisions on who in your economy should carry those costs.
- Reduced storage and supply flexibility will need to be managed by gas distributors and LNG procurement teams, and reflected in both end-user and existing natural gas supply contracts.
- Nominations processes will have to be revised, planned around end-user demand, LNG cargo arrival, storage capacity and send-out rates from regasification terminals.

- New gas will have to be integrated into existing gas infrastructure, which may call for upgrades to gas infrastructure, modifications to gas combustion equipment and nitrogen blending to reduce the calorific value of LNG.

Our team has experience overcoming these and other challenges, both as industry practitioners themselves and now as partners to clients in this position. Not just to set the strategy, but to partner you in implementing those decisions. Together, we face the hard truths and complexity that come with declining reserves and work to a pragmatic, value-based solution.

Conclusion

Successfully adapting to declining gas reserves demands bold, coordinated thinking and action. We help you set a clear vision, align stakeholders, manage the trade-offs and build a new market framework. This is not just a technical transition. It is a transformation of your economy and society. With the right strategy and team, you can maintain the energy security growth depends on. You are of course the expert at managing your existing energy ecosystem. Our expertise lies in helping you transition to a new reality as reserves decline: to reconfigure your value chains and respond meaningfully to the new uncertainties and inevitable exposure to global commercial challenges. Simply, we accelerate your route to energy security.



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

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