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The Iran War and Disruption to LNG Supply

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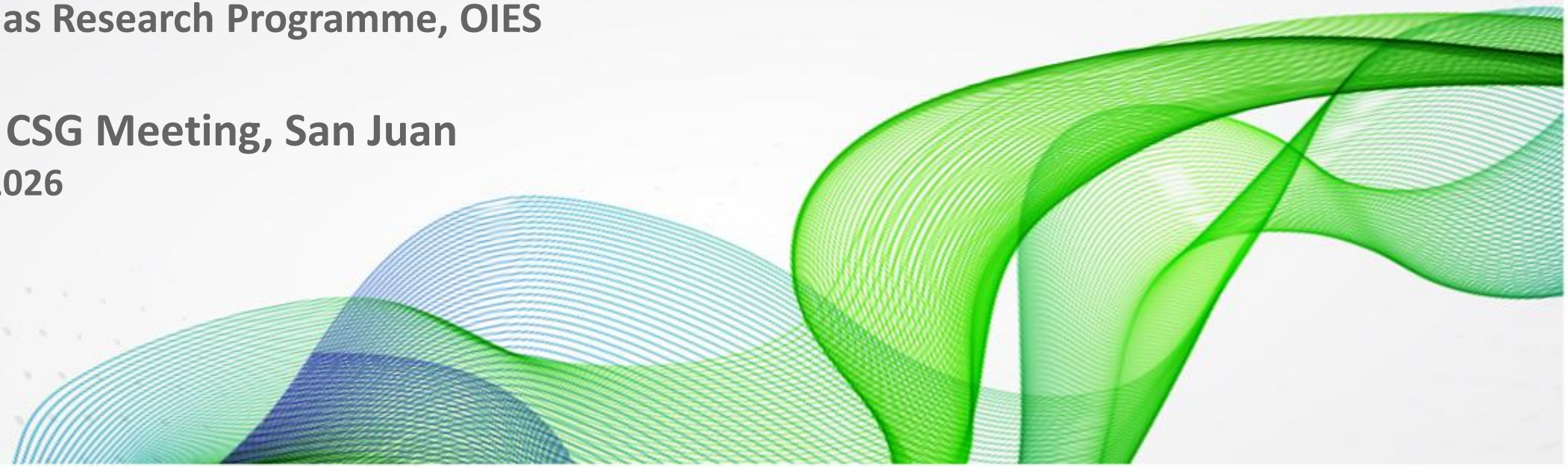
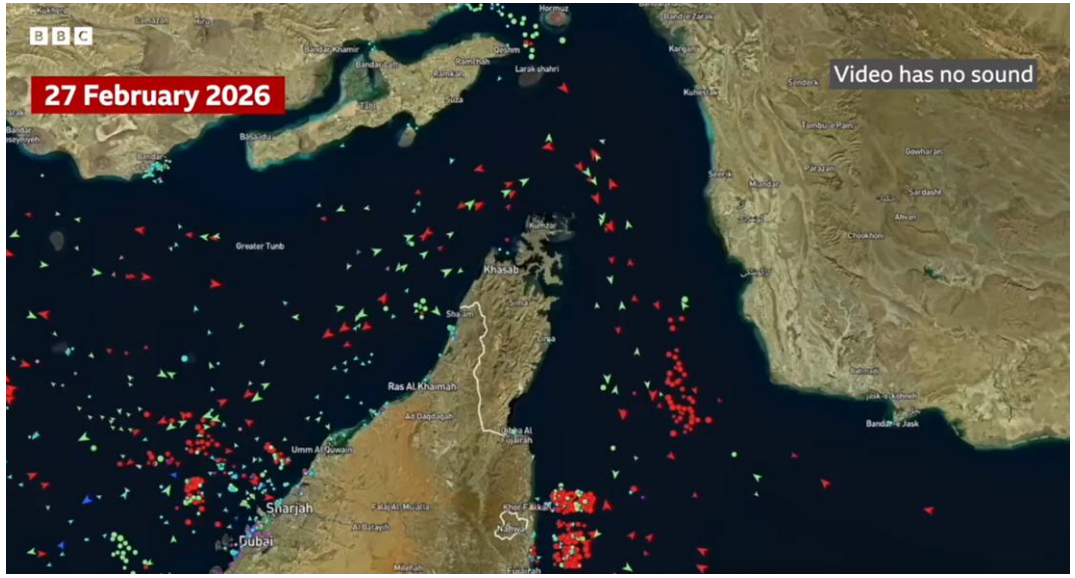


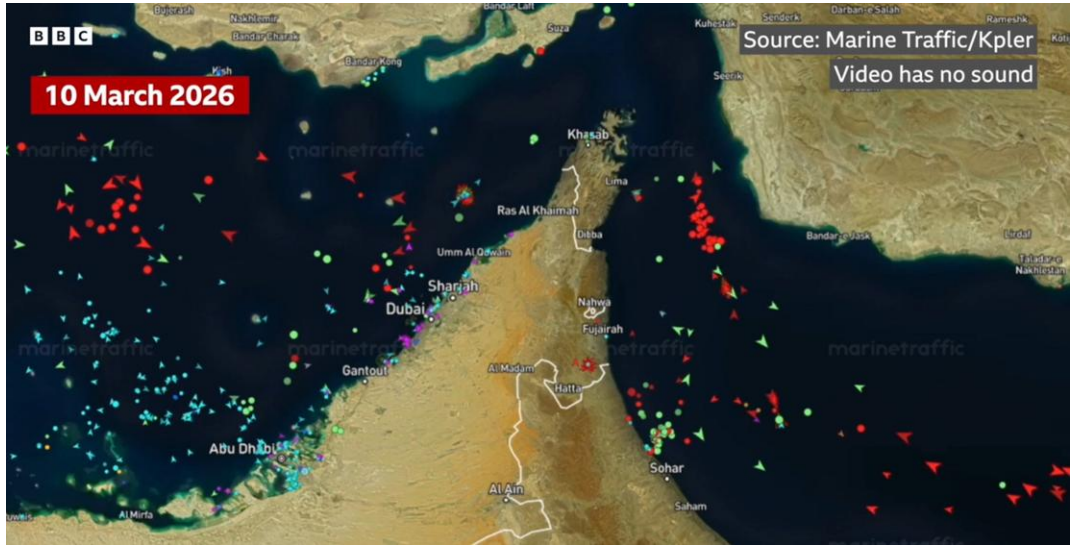
Introduction

- OIES has published multiple analyses of this impact:
  - Closing the Strait of Hormuz: Impact on the Global Gas Market (2 March)
  - Disruption in the Strait of Hormuz: Implications for China's Energy Markets and Policies (9 March)
  - The Iran War and Disruption to LNG Supply from the Persian Gulf (23 March)
  - Assessing India's Energy Vulnerabilities Amid the Gulf Crisis (24 March)
  - Through the Looking Glass: Oil and the Search for Direction (26 March)
  - Modelling the Impact of the Strait of Hormuz Closure on Global Gas Flows and Prices (31 March)
  - Podcasts published on 5th, 11th, 12th, 19th of March and forthcoming (recorded on 1st of April)
  - All available at www.oxfordenergy.org
- Today's focus will be impacts on the natural gas market

Summary

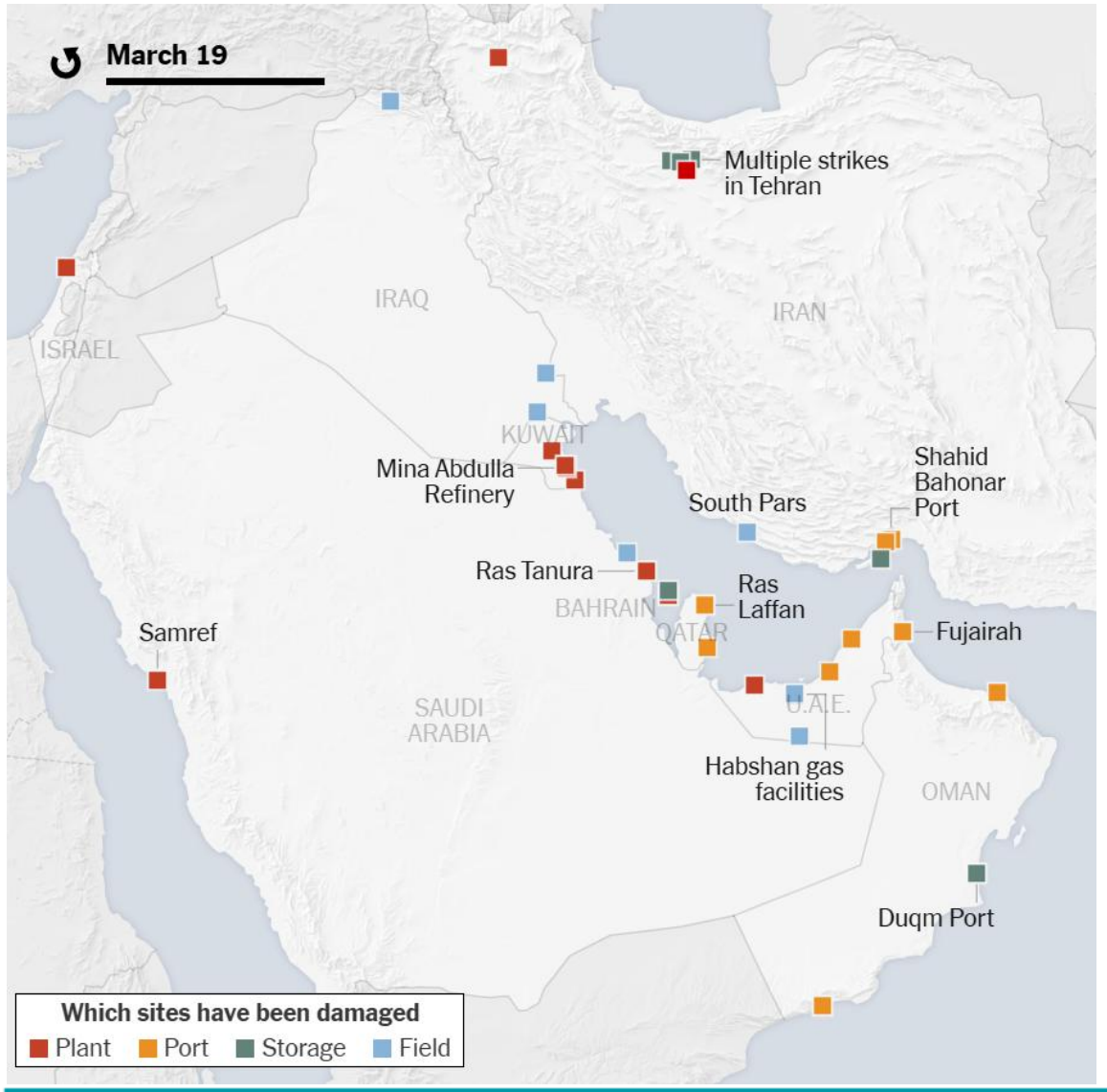
- Strait of Hormuz closure blocks 20% of global LNG supply, or ~9 bcm per month
- Damage to two Ras Laffan trains means long-term disruption and capacity loss
- Doubling of benchmark traded gas prices will rise further as physical supply losses appear from April
- Price shock will spur new consumer demand management in the short-term and gas alternatives in the medium-term





The Iran War: Regional Infrastructure

Left: New York Times, 19 March (https://www.nytimes.com/live/2026/world/us-israel-iran-attack-maps)
Right: Institute for the Study of War – Reuters, 20 March (https://www.reuters.com/graphics/IRAN-CRISIS/MAPS/znpnmelervl/)



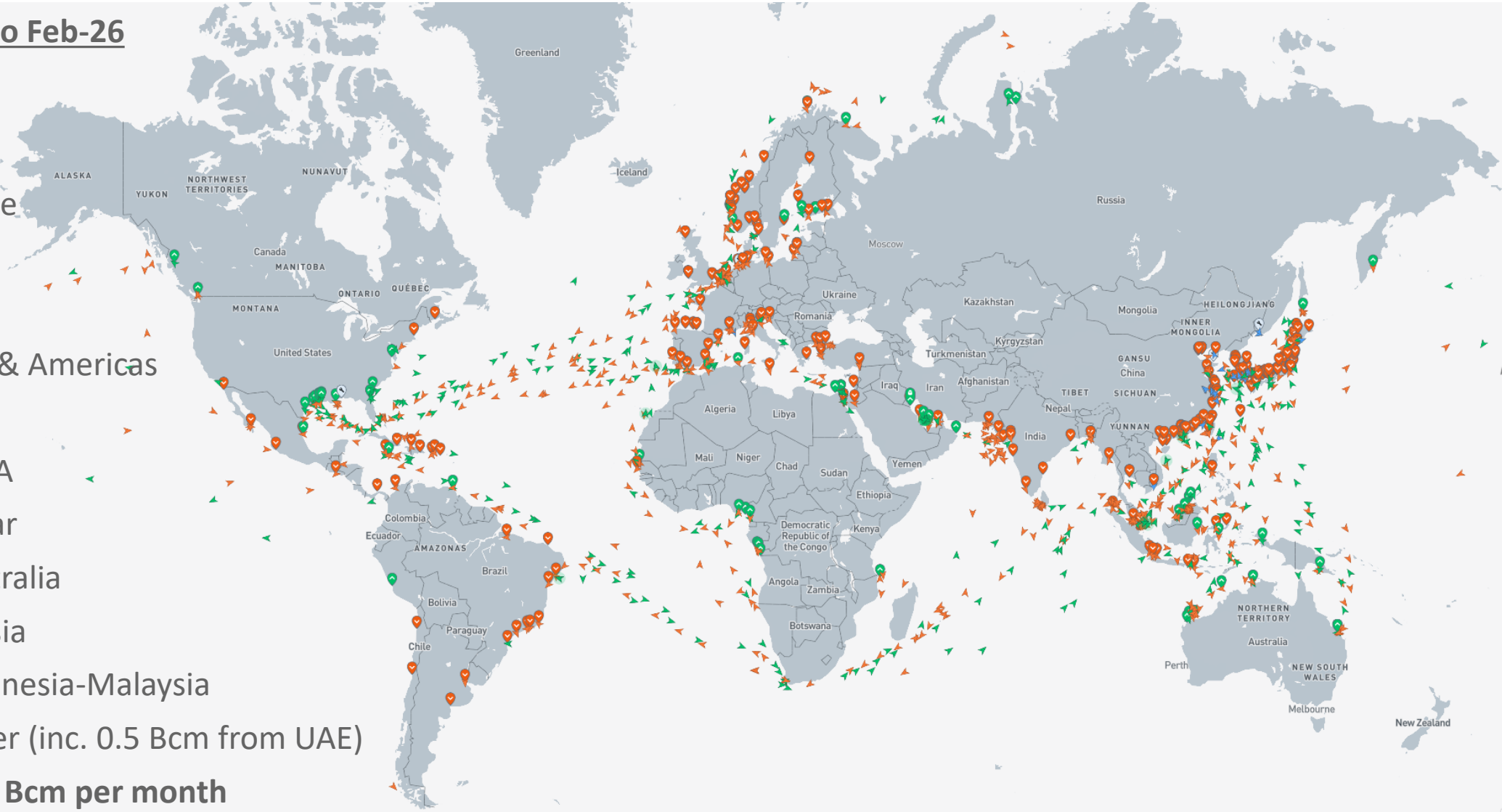
The Global LNG Market

Volumes for exports and import measured at the point of import (unloading)

Map and Data from Kpler LNG Platform [https://terminal.kpler.com/]

Average from Mar-25 to Feb-26 (Bcm per month)

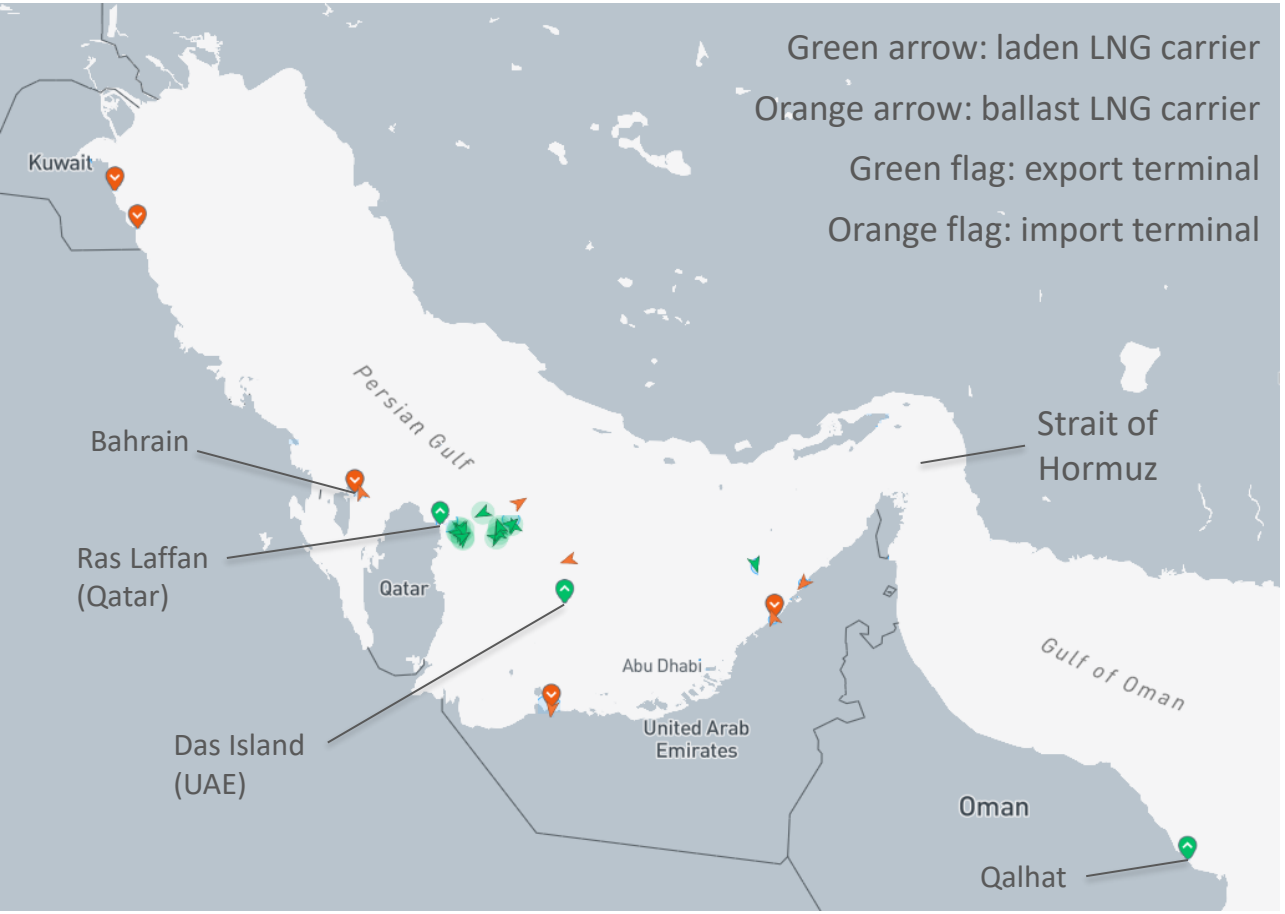
- **Import regions:**
  - 13.2 Bcm to Europe
  - 29.3 Bcm to Asia
  - 1.5 Bcm to Turkey
  - 3.3 Bcm to MENA & Americas
- **Major suppliers:**
  - 12.7 Bcm from USA
  - 8.8 Bcm from Qatar
  - 8.7 Bcm from Australia
  - 3.5 Bcm from Russia
  - 4.0 Bcm from Indonesia-Malaysia
  - 9.7 Bcm from Other (inc. 0.5 Bcm from UAE)
- **Global trade of 47.3 Bcm per month**

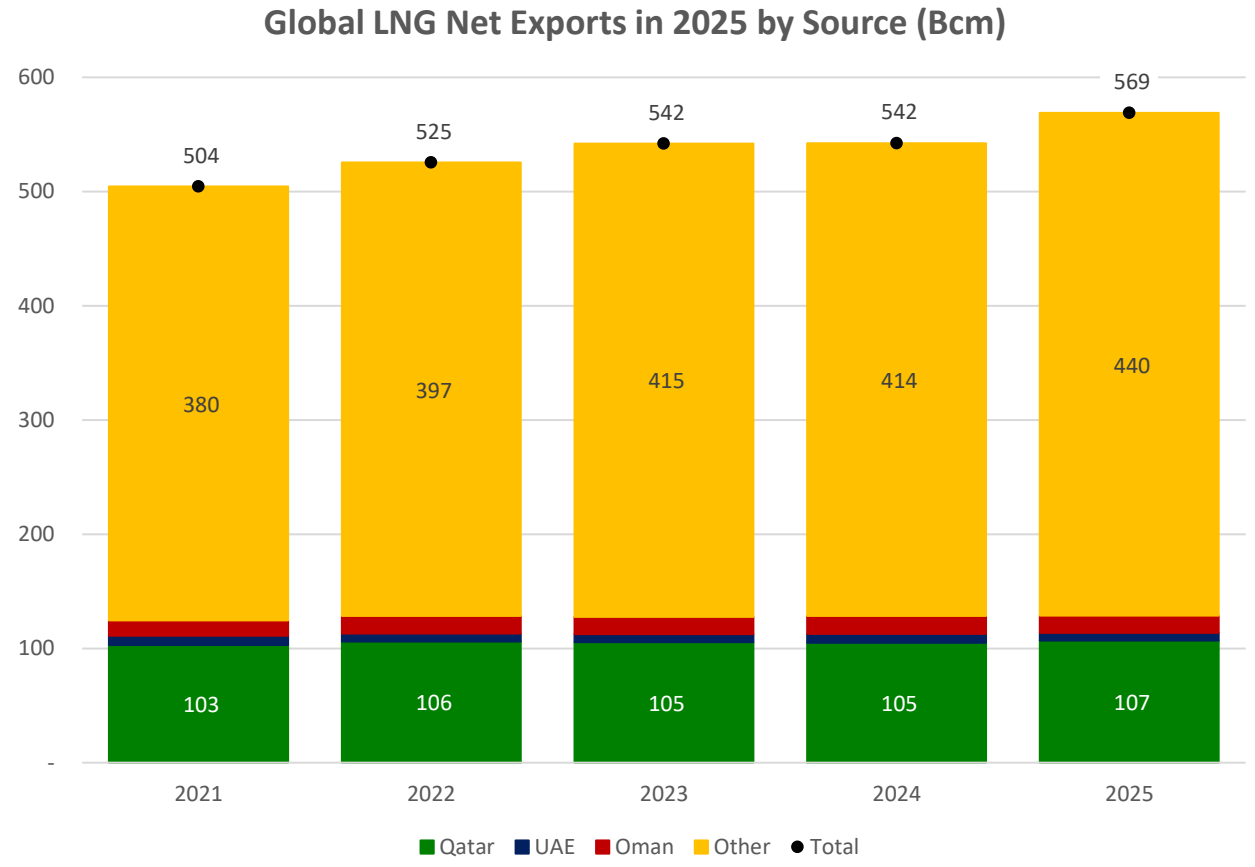


The Persian Gulf in Global LNG Supply

Volumes for net exports measured at the point of export (loading)

Map and Data from Kpler LNG Platform [https://terminal.kpler.com/]





- In 2025, exports from Ras Laffan in Qatar (107.0 Bcm) and Das Island in UAE (6.6 Bcm) accounted for 20% of total global LNG exports (569 Bcm)
- Just outside the Strait of Hormuz, the Qalhat LNG export terminal in Oman exports c.15 Bcm per year
- In 2025, regional importers were Kuwait (9.1 Bcm), Bahrain (0.9 Bcm), and UAE (0.9 Bcm), with imports mostly in summer months
- As of 2 April 2026, 14 laden LNG carriers clustered around Ras Laffan (+1 at UAE) – if Hormuz remains closed, these will likely deliver to Persian Gulf importers

Dependency on Persian Gulf LNG

Volumes for exports measured at the point of export (loading)

Map and Data from Kpler LNG Platform [https://terminal.kpler.com/]

LNG Exports by Destination in 2025 (Bcm)

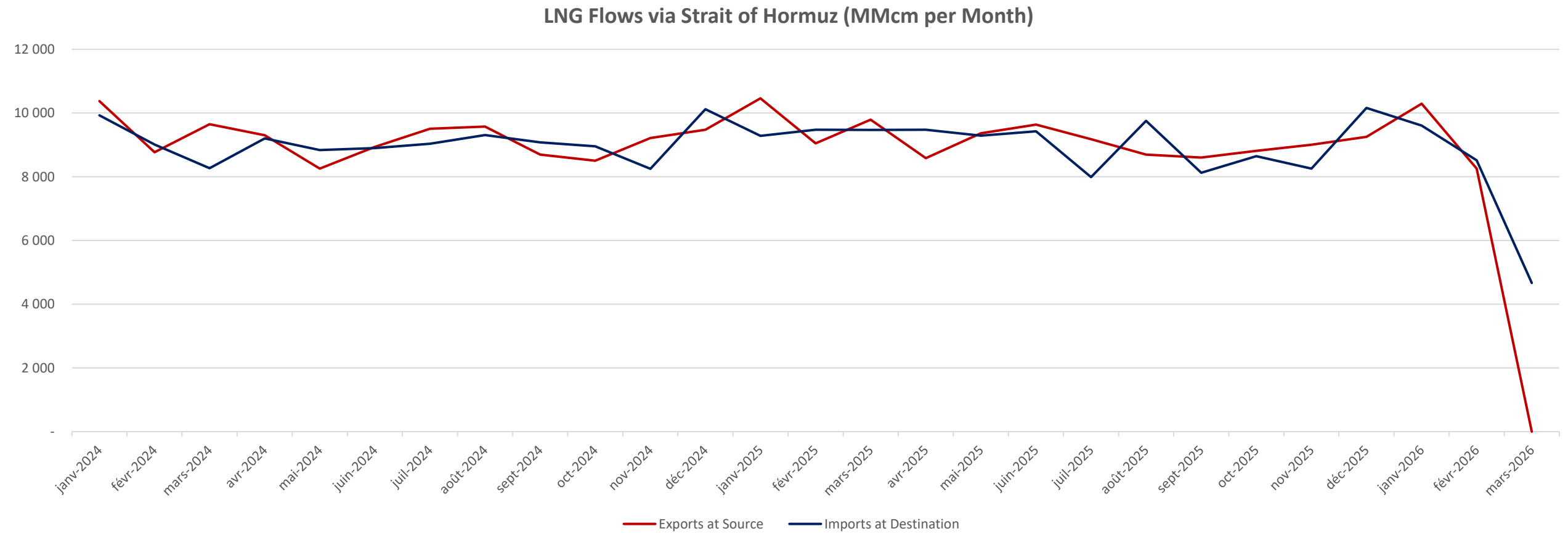
	Qatar	UAE	Oman	Total
China	26.2	0.6	2.3	29.0
Japan	4.7	1.0	4.1	9.8
South Korea	9.2	0.3	2.4	11.9
Taiwan	10.7	0.2	1.3	12.2
Singapore	3.7	-	-	3.7
India	15.4	4.2	2.8	22.4
Pakistan	8.7	-	-	8.7
Bangladesh	5.8	-	-	5.8
Thailand	2.9	-	0.9	3.8
Kuwait	6.3	0.1	1.2	7.6
Italy	6.6	-	-	6.6
Poland	2.1	-	-	2.1
Belgium	2.1	-	-	2.1
Other	2.4	0.2	0.3	2.9
Total	**107.0**	**6.6**	**15.1**	**128.7**

LNG Imports by Source in 2025 (Bcm)

	China	JKTS	IPB	Total
Qatar	26.2	28.0	29.2	83.4
UAE	0.6	1.5	4.1	6.1
Oman	1.8	8.0	2.8	12.6
Other	60.7	154.9	15.1	230.8
Total	**89.3**	**192.4**	**51.3**	**332.9**
Qatar	29%	15%	57%	25%
UAE	1%	1%	8%	2%
Oman	2%	4%	5%	4%
Other	68%	81%	30%	69%
Total	**100%**	**100%**	**100%**	**100%**

- In 2025, the largest importers of LNG from Qatar and UAE were China, South Korea, Taiwan, India, and Pakistan
- Persian Gulf LNG accounted for 30% of China's LNG imports in 2025, compared to 16% for JKTS and 65% for India-Pakistan-Bangladesh
- Within these groupings: Pakistan (99%), India & Bangladesh (58-59%), Singapore (46%), and Taiwan (34%), South Korea (15%), and Japan (6%)
- By contrast, Qatar and UAE accounted for only 8% of LNG imports into Europe (EU-27 plus UK) in 2025 – mostly to Italy, Poland, and Belgium

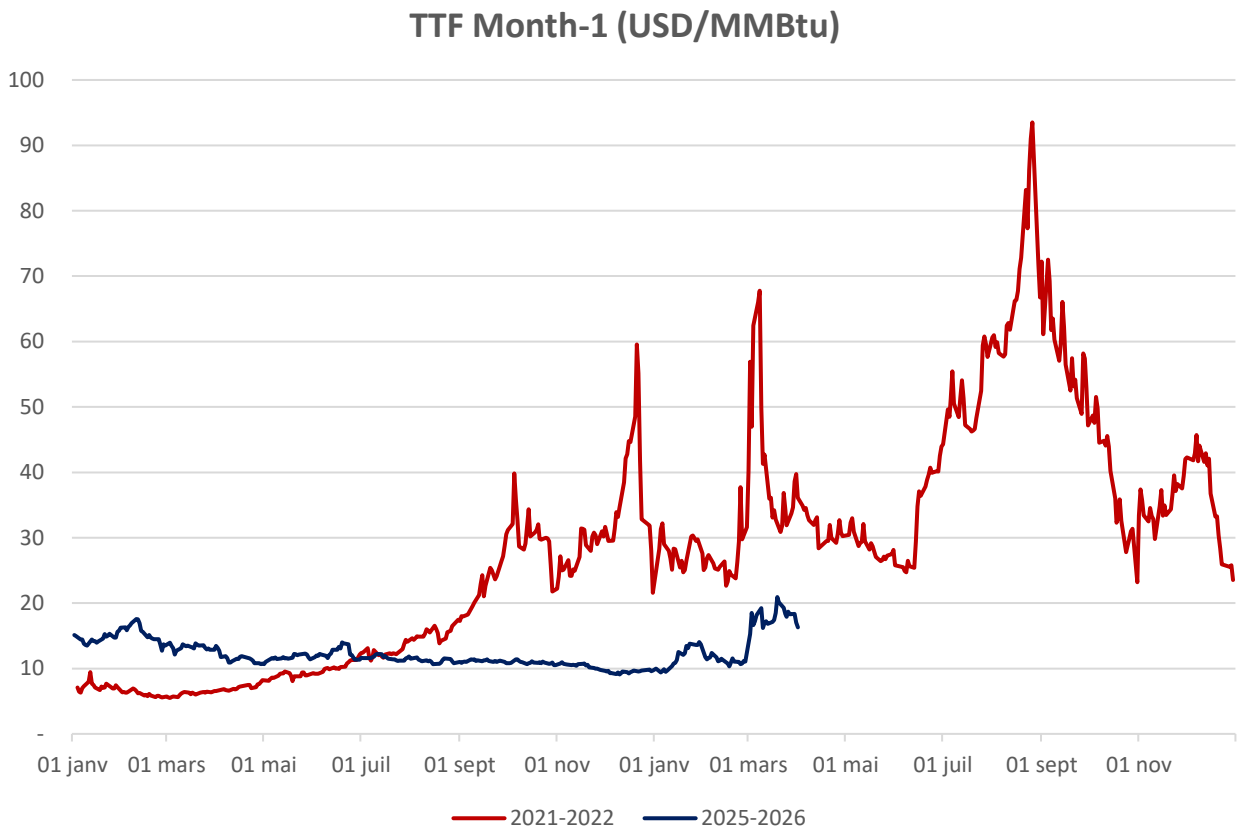
Time-Lag Effect of LNG Exports and Imports



- Measuring LNG exports at the point of export and imports at the point of import assumes a (fluctuating) volume of LNG in transit (‘on the water’)
- Time lag between exports and imports: Three weeks from Qatar to North-East Asia or six weeks to North-West Europe (via Cape of Good Hope)
- In March, half the usual volume of LNG arrived at import destinations, having pass through the Strait of Hormuz - In April, this will fall to zero

Comparing 2022 and 2026

Price data from Argus Direct



Pre-Crisis Context:

- In 2022, the market was already experiencing a bull run of prices from mid-2021 onwards, amid virtually flat growth in global LNG supply
- In 2026, the global market is experiencing LNG supply growth with the promise of more to come in the next several years (esp. in North America). LNG flows via Red Sea already curtailed since January 2024

Timeframes:

- In 2022-24, Russian pipeline gas supply to Europe decline over a period of almost two years as different routes were shut down, but with a sense that it would become permanent (EU ban from 2026-27)
- In 2026, the curtailment of Persian Gulf LNG was almost instantaneous, but the market is hopeful of temporary curtailment

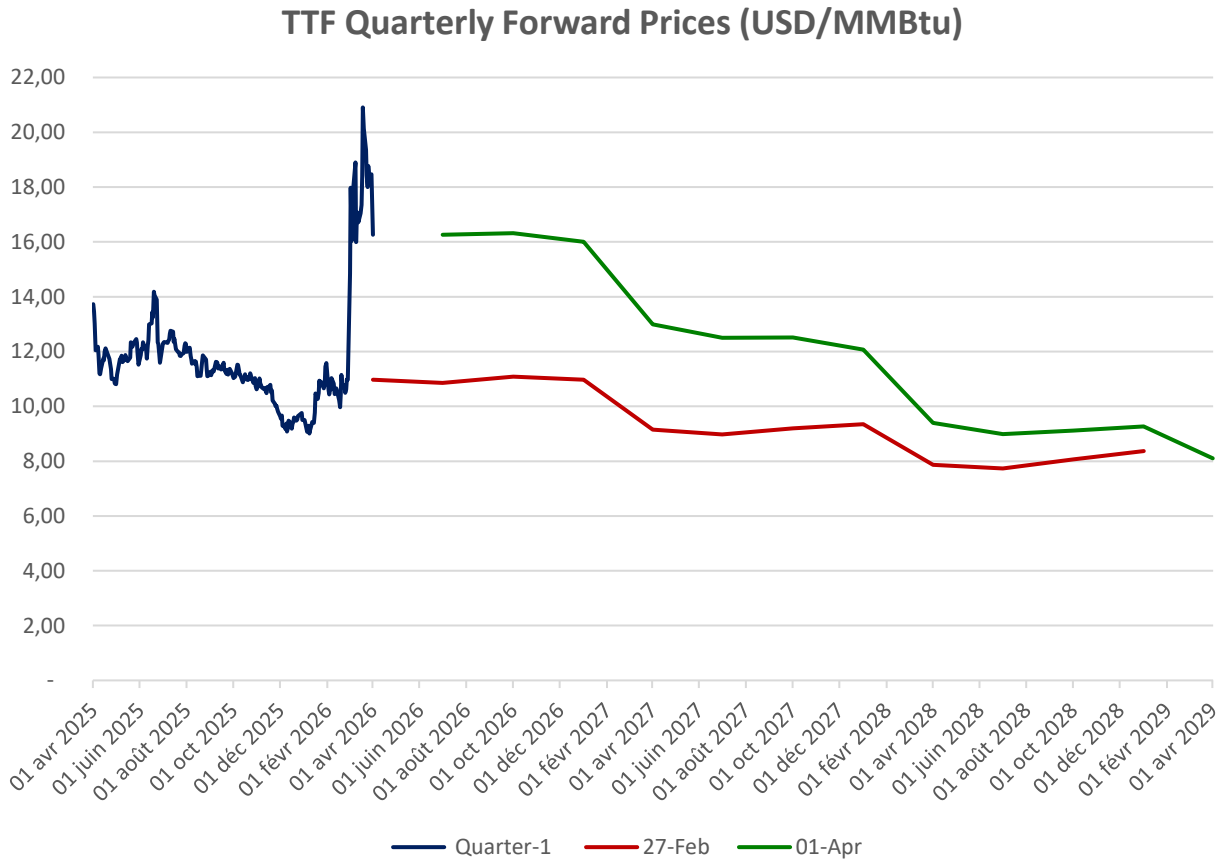
Infrastructure:

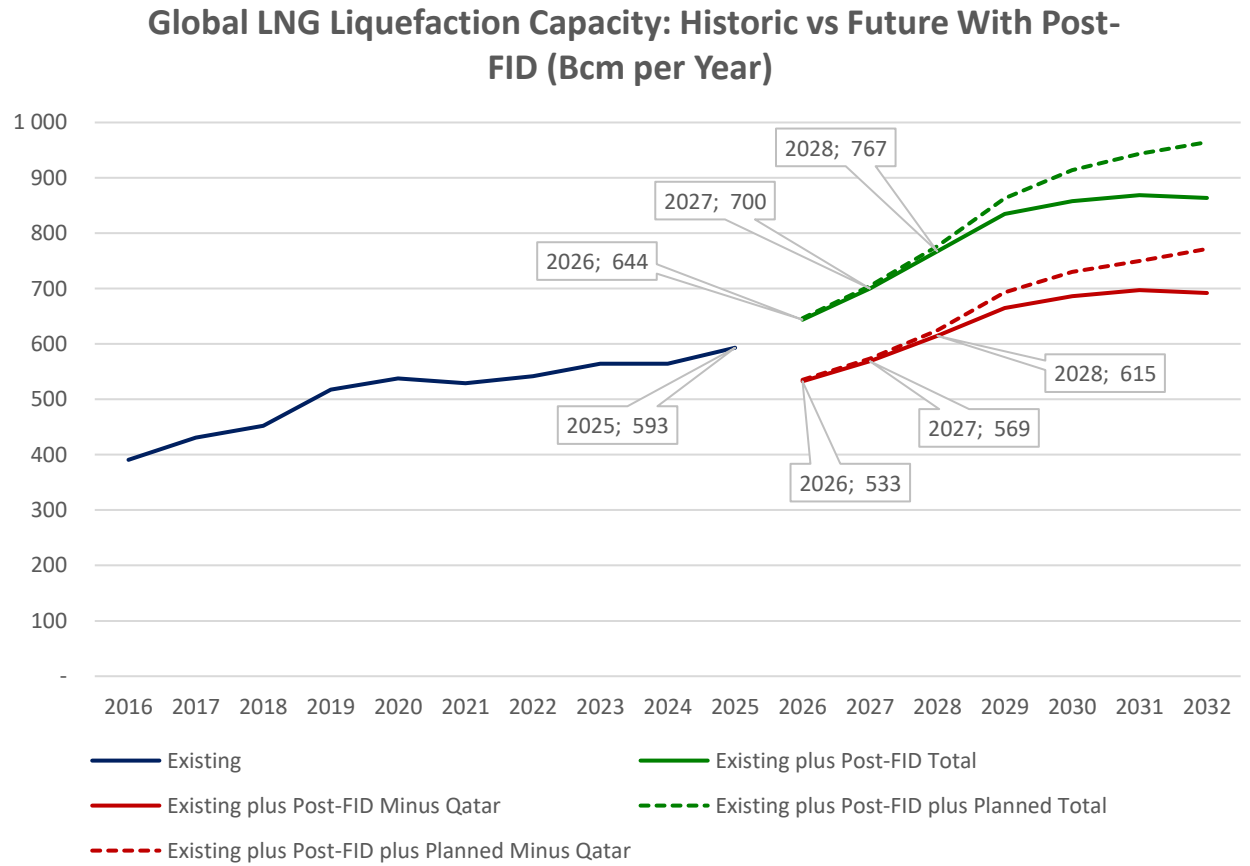
- In 2022, non-Russian import infrastructure in NW Europe was used at max capacity (congestion price at TTF and NBP discount)
- In 2026, LNG import infrastructure remains unchanged. Existing export capacity in Persian Gulf shut & future expansion delayed

- In 2022, Europe high prices curbed demand and pulled in LNG destined for other markets (Asia), where price-sensitive buyers fuel-switched
- In 2026, the volume impact on Asia is direct, and price-sensitive buyers in South Asia will not be able to outbid others as Europe did in 2022
- In both cases, the impact was less gas and more coal in South Asia – Indirectly in 2022 and directly in 2026
- In the wider context, 2026 is a far more serious multi-fuel (including crude and refined products) supply shock than the gas-specific shock of 2022

Looking Ahead

Price data from Argus Direct; LNG liquefaction capacity data from Nexant ECFA World Gas Model

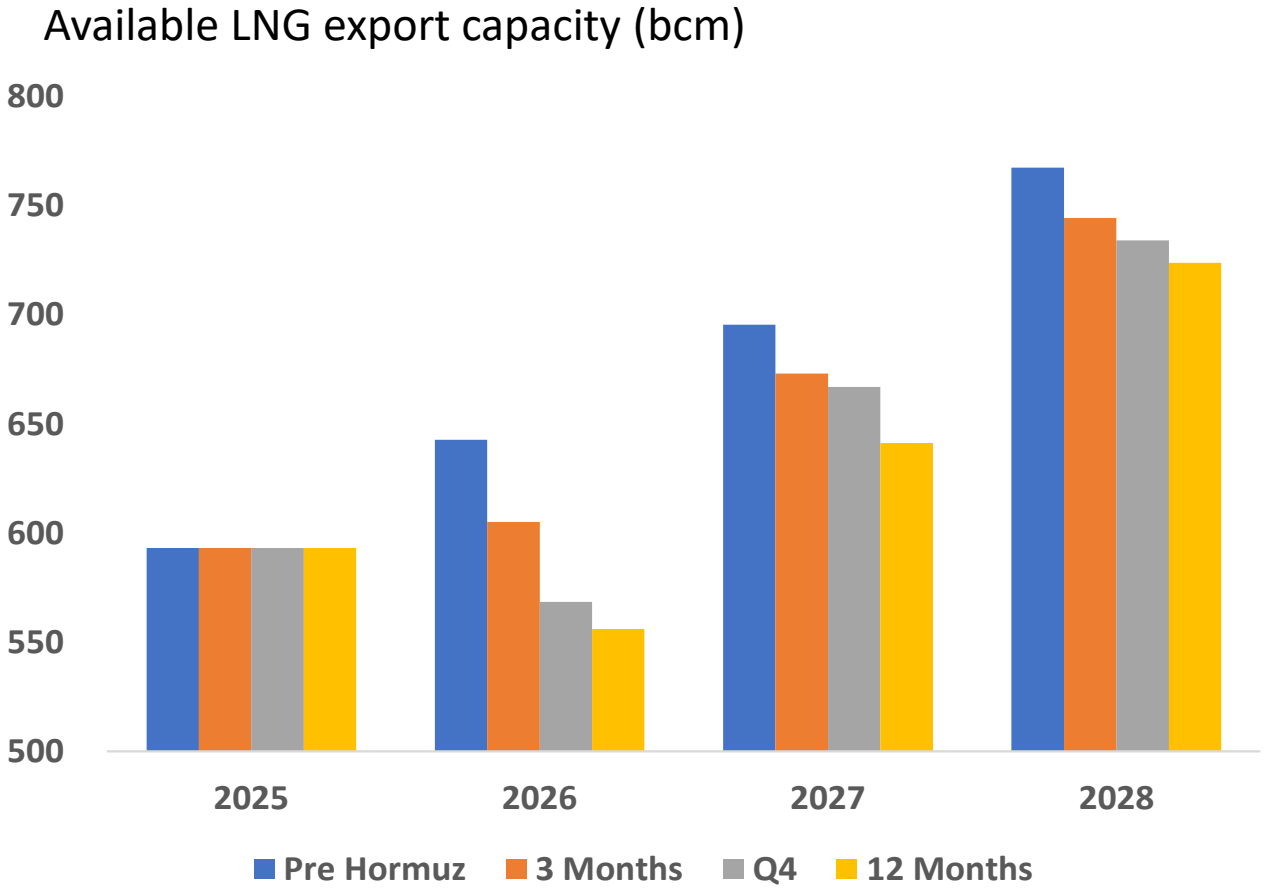




- TTF quarterly forward prices in late February reflected the expectation of continued growth in global LNG liquefaction capacity
- If Qatari supply remains offline, it will take until 2028 for supply growth outside the Persian Gulf to bring global LNG liquefaction capacity back to 2025 levels
- This is reflected in the TTF forward prices for summer 2028 coming back to current levels
- Either restart or damage to infrastructure that suggests Persian Gulf LNG offline for longer will result in price adjustment

Closure scenarios: No good options

- **Very optimistic scenario**: LNG restarts by 1 June after deal by end-April, deliveries by 1 July. Global LNG capacity still expands 12 bcm in 2026. Average 2026 price $13.50 per MMBTU
- **Post-summer restart**: War drags on through summer with Hormuz deal achieved in September and cargoes moving by mid-November. Capacity falls 24 bcm vs 2025. Average 2026 price $21 per MMBTU
- **One year shutdown**: Gulf LNG out until end-Feb 2027. Capacity down 37 bcm in 2026 and average price $34 per MMBTU.



Conclusions: Signposts for the Road Ahead

- When the war ends, LNG restarts will take time:
  - Weeks for the shut-down LNG liquefaction facilities and integrated upstream to restart
  - LNG does not allow for a piecemeal approach as occurring for oil and products – no bilateral deals. Either Qatar LNG restarts or not - All or nothing.
- Timing is key:
  - European seasonal storage refill (influenced by LNG) will impact market sentiment for winter 26/27
  - An extended shutdown starts to contribute to demand destruction, as in Europe in 2022-2023
- Longer term impacts on global LNG market:
  - Import markets will become wary of price volatility and refocus on security of supply. Greater reluctance for infrastructure investments that could curb gas demand growth over the coming 5-10 years.

Thank you!

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The Global Outlook for Gas Demand in a $6 World

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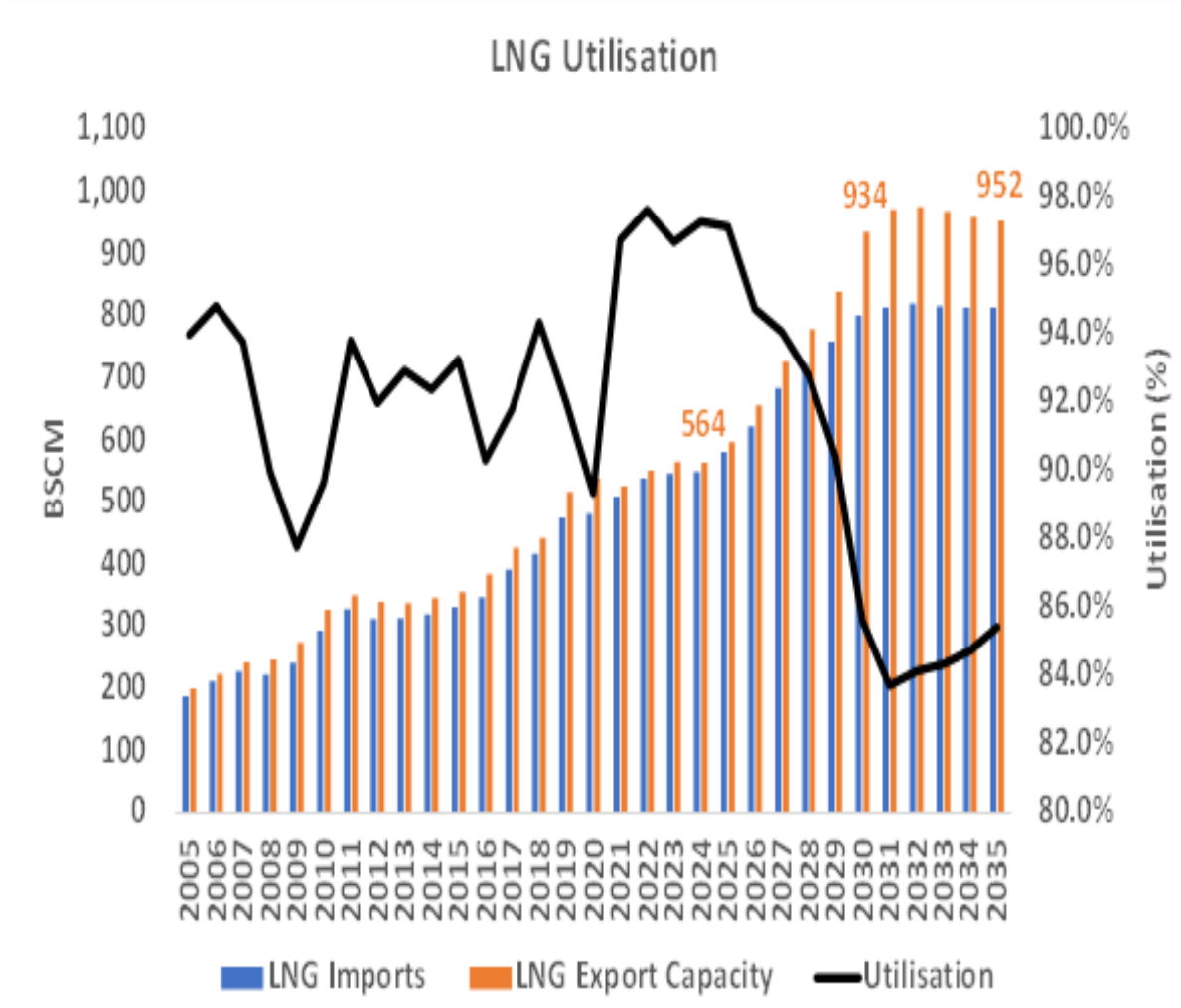
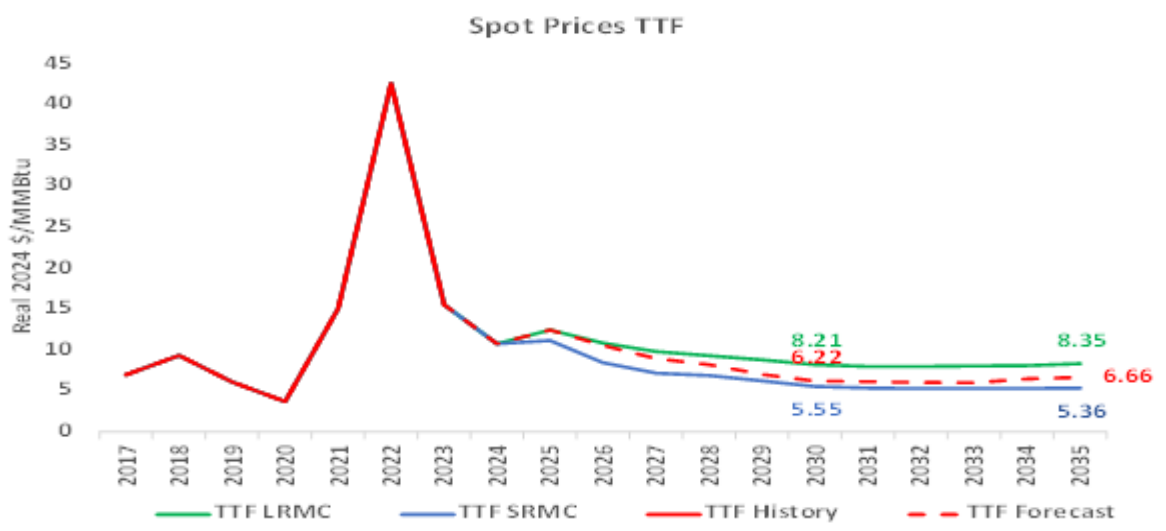
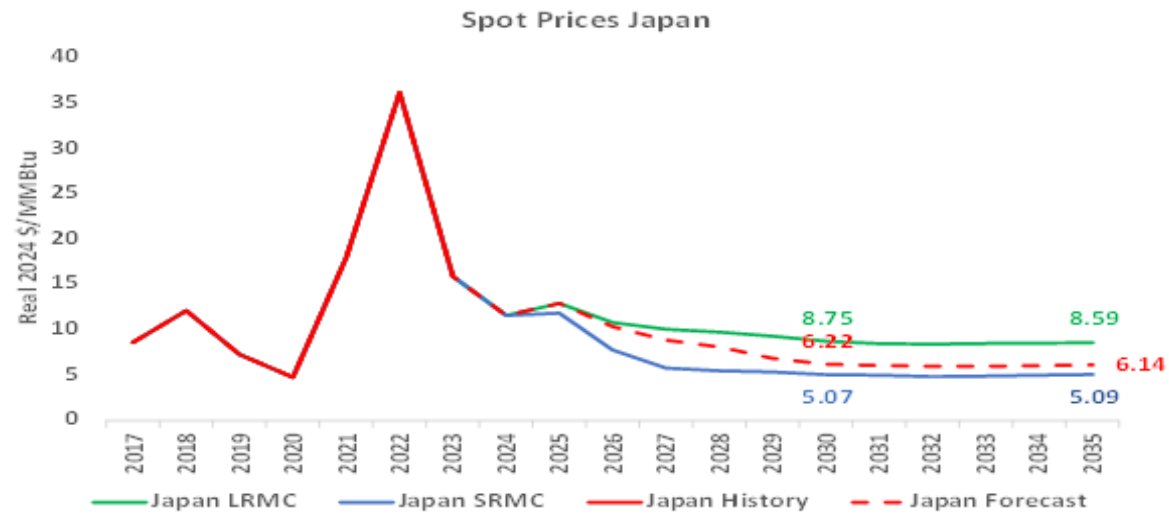
Falling LNG utilisation brings down spot prices







Demand Response

- Number of countries/regions considered – Europe, China, India, JKT, Emerging Asia, Africa, C&S America.
  - North America, Middle East and Former Soviet Union not considered

- Two timeframes considered
  - Short run - impact of lower prices on the switchability of gas from other fuels – principally coal and oil – with existing infrastructure – based on 2030 demand
  - Long run – impact of lower prices on the choice of new infrastructure – gas v renewables and other fuels – based on 2035 demand

- In a $6 gas world in the short run, gas is very competitive with coal, where there is a carbon price, and against oil products with or without a carbon price. Without a carbon price, such as in Asia, gas can be on a par with imported coal in power generation

- In a $6 gas world in the long run, gas can't compete with solar and onshore wind, but is very competitive against offshore wind, with no carbon price (except possibly in China), but also competitive against offshore wind in Europe, where there is a carbon price.

Response by Sector - Midpoint

SHORT RUN RESPONSE					
Country/Region	Power	Industry	Buildings	Transport	Total
Europe	5.00	2.00			7.00
China	3.75	11.00	5.25	1.50	21.50
India	1.00	4.00	2.00	1.00	8.00
Japan, Korea, Taiwan	8.50				8.50
Emerging Asia	11.00				11.00
Africa					-
C&S America	1.50	3.00			4.50
Total	30.75	20.00	7.25	2.50	60.50
%ages	51%	33%	12%	4%	100%

LONG RUN RESPONSE					
Country/Region	Power	Industry	Buildings	Transport	Total
Europe	11.00	2.00			13.00
China	6.25	13.75	7.50	7.50	35.00
India	5.50	5.50	7.50	7.50	26.00
Japan, Korea, Taiwan	17.50				17.50
Emerging Asia	10.00	3.00			13.00
Africa					-
C&S America	9.00	6.50			15.50
Total	59.25	30.75	15.00	15.00	120.00
%ages	49%	26%	13%	13%	100%

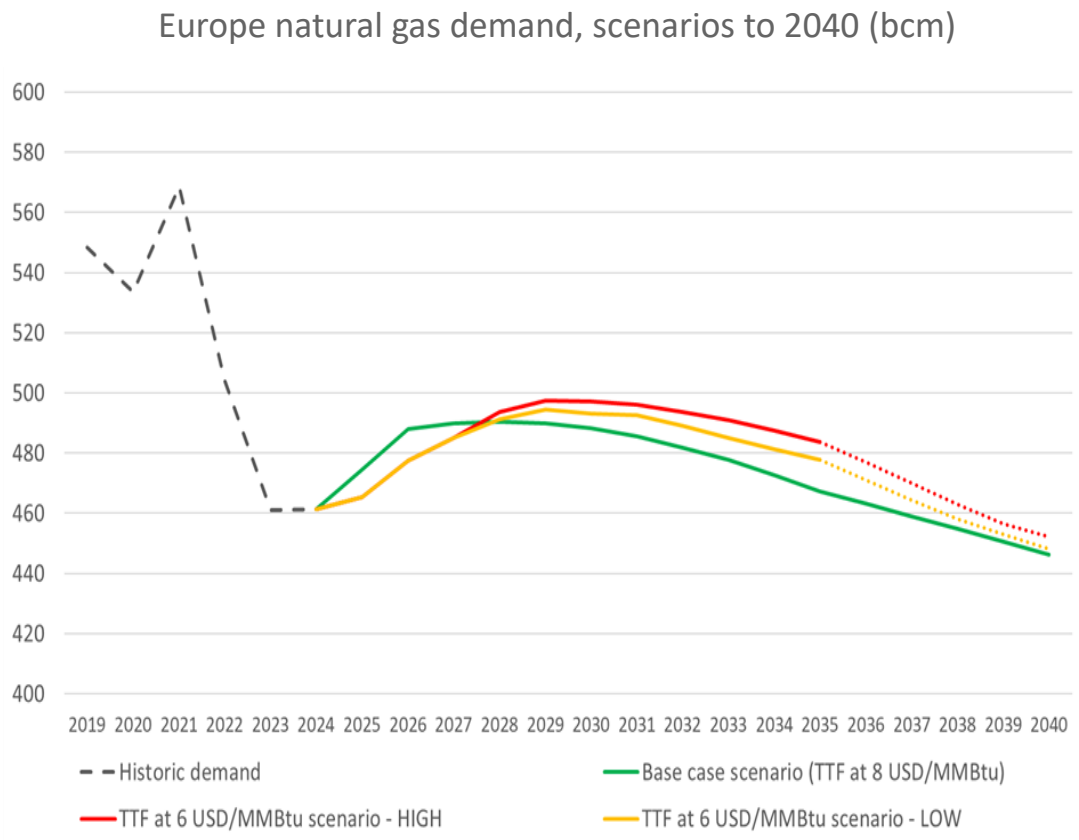
- Based on the midpoint of the response range the table shows the breakdown of the response by sector for each country/region.
- Broadly half the short-run and long-run response is in the power sector, accounted for almost wholly by JKT and Emerging Asia.
- The response in buildings and transport is focused in China and India and increases in the long-run with the opportunity to invest in more gas-fired equipment.
- There is also a significant response in industry in China, India, and C&S America.

Europe Conclusions

- Base Case scenario (i.e. 8$ scenario):
  - 2030: 488 bcm
  - 2035: 467 bcm

- The $6 scenario:
  - 2030: 493-497 bcm (+**5-9 bcm**)
  - 2035: 477-483 bcm (+**10-16 bcm**)

  - Next 2 years: lower than Base Case (due to a 2025 update)
  - From 2028 to 2035: total gas demand surpasses the Base Case
    - Power: switching to gas and higher gas demand over the period
    - Commercial sector: higher gas demand in over the period, +4 bcm in 2030 and +1 bcm in 2035
    - * Industrial sector: lower demand in 2030 and similar demand in 2035, but still higher growth in late 2020s and up to 2030 due to lower starting point in 2025 (update)



Most price-driven changes expected in the **power sector** with additional **coal switching** up to 2035 and potentially major impacts of **delayed renewables** in the early 2030s

China Conclusions

Table 2: Short and long run China price response (bcm)

Sector	Short Run		Long Run	
	Low	High	Low	High
Industry	9.0	35.0	15.0	40.0
Residential	7.0	14.0	10.0	20.0
Power	-	15.0	-	25.0
Transport	-	6.0	-	30.0
Total	16.0	70.0	25.0	115.0
China Demand	538.6	538.6	552.9	552.9
% of Demand	3.0%	13.0%	4.5%	20.8%
LNG Imports Impact	8.0	35.0	12.5	57.5

Source: NexantECA World Gas Model, OIES

- Prices drive responses within the limits of the policy framework.
- If supportive policies exist and prices are competitive vs oil and coal, fuel switching can occur.
- Depends also in the short term on local government policies and willingness to pass through costs to end-users.
- Do sustained long-term prices lead to policy change?
- Electrification, the availability of domestic renewables and coal limit the government's willingness to rely on imported LNG.
- 50 domestic production target means only ~50% of additional demand feeds through to LNG imports.
- Long-term LNG SPAs already signed

India Conclusions

- Short-term assessment:
  - In effect, a short-term $6 per MMBTU spot price should be seen as a **supportive breather** that could lift India's 2030 demand by roughly 5-10 per cent above GtG baseline, but it does not fundamentally change the longer-term trajectory. The **upside remains incremental, not transformational**.
  - The elasticity, depends heavily on cost pass-through after regas, taxes, and levies, alongside last-mile build-out. Any drift back toward $8–9 per MMBTU would erode much of the swing, especially in CGD and industry.

- Long-term assessment:
  - A sustained $6 per MMBTU environment in the 2030s could embed natural gas more deeply in India's energy system bringing it closer to today's most optimistic projections.
  - It could be instrumental in lifting 2040 demand to 211–230 bcm, decisively above GtG and at/near GtB, with the **largest durable gains in CGD (including freight LNG) and measured but real gains in power and industry**.
  - But realizing this upside will hinge on two complementary factors: infrastructure expansion and policy action. If these align, the 'low-price bonus' could surpass baseline demand by 2040, locking in a more permanent higher trajectory for India's gas economy.

JKT Conclusions

- Given the number of oil-fired as well as coal-fired plants in Japan and coal-fired plants in Korea, the potential for coal and oil to gas switching is strong with $6 gas, even without a meaningful carbon price. A short-run response range could be increased LNG demand of 3-14 bcm, with increased long-run demand calculated at 3-32 bcm, all coming from the power sector, with much of the response occurring in Japan.
- Taiwan is closing nuclear and coal so no price response is anticipated

Emerging Asia Conclusions

- Little scope for imported gas – such as LNG priced at $6 or below - to significantly expand its market share in the short term in industry or the feedstock non-energy use sector. The largest scope would appear to be in the power sector in most countries, apart from Singapore where gas already dominates the power sector.
- If coal utilization in power in ASEAN did not increase from 2030 and gas benefitted fully from this then additional gas demand, with low gas prices, could, theoretically, be 10 bcm higher. In addition, against oil, gas could be very competitive and gain share by some 6 bcm. If this total of 16 bcm is seen as the maximum short-term price response then maybe a range from 6 to 16 bcm would be reasonable, equating to some 2.5 per cent to 6 per cent of 2030 Emerging Asia demand.
- In the longer term, if wind power simply grew in line with solar power, which is much more promising in the ASEAN region, then wind capacity would be 25 GW lower by 2035 – this translates into 70 TWh reduced wind power in 2035. If all of this was replaced by natural gas, then this would be around 14 bcm additional gas demand in 2035. This gap could widen to 145 TWh by 2040 – equivalent to an additional 30 bcm of gas demand in power generation.
- On top of this, an additional 6 bcm from industry could also be added to this, giving an additional 20 bcm by 2035. The range in percentage terms would be some 2 - 6.5 per cent of total Emerging Asia gas demand in 2035.

Central & South America Conclusions

Limited price transmission: region lacks liquid gas trading hubs

- High transport, regasification and distribution tariffs add $4-6 to LNG prices at $6
- Even if imported LNG falls to $6/MMBTU, prices for large consumers would likely be >$10/MMBTU, particularly in Brazil, Colombia and Chile

Demand response remains selective

- Short-term gains mainly from fuel oil displacement and higher utilisation of existing assets
- Long-term growth depends on infrastructure investment, not price alone
- Industrial and fertilizer demand is price-sensitive

Power sector: gas role is complementary, not transformational

- Renewables dominate capacity additions
- Gas provides system reliability, seasonal cover and industrial competitiveness

14 BCM additional gas demand (2025) is focused on a few LNG importing countries: Argentina, Brazil, Chile, Colombia and Dominican Republic

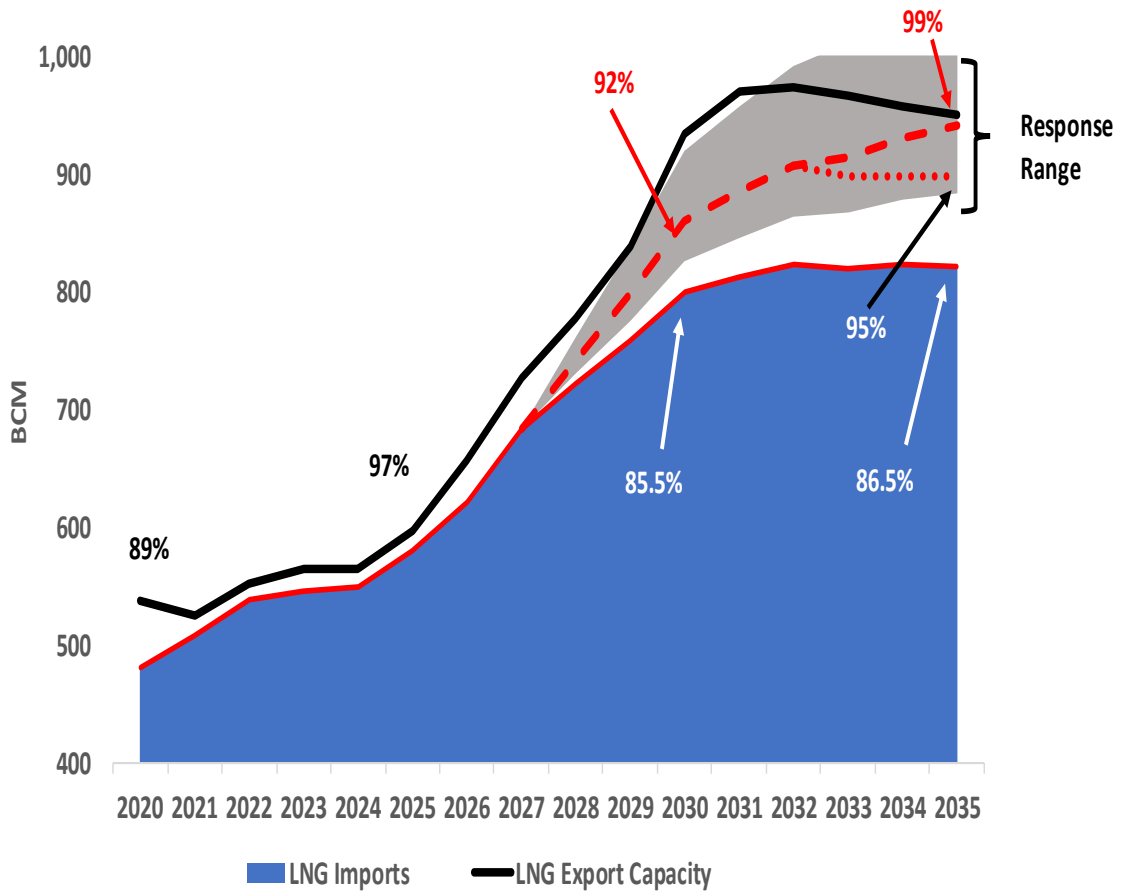
- Demand from other Central America and Caribbean markets, could add + 3 BCM/year, resulting in additional demand of 17 BCM when compared to the Base Case.

Africa Conclusions

- Impact of a drop in international gas hub prices, both in the short term and up to 2035, will be quite different in Africa compared to other regions where gas markets are liberalised (e.g. Europe & USA)
- Very limited volumes of LNG are imported into Africa (mainly Egypt)
- With 40% (~ 600 millions) of its population without access to electricity, a very timid penetration of renewable energy sources (apart from some countries), and the world's fastest population growth, Africa is likely to increase its demand for natural gas (indigenous supplies and imports).
- Much of the growth in gas demand expected to take place in Sub-Saharan Africa.
- Most of Africa's economies, where energy prices are regulated or controlled, do not have the necessary energy market and infrastructure flexibility and capacity to respond to short-term gas price opportunities.
- The switch to gas in Africa will not only depend on natural gas prices, but - more importantly - on how the project risks that investors continue to face to develop commercially viable gas projects in Africa will be managed and mitigated.

LNG Response Range

The LNG Response Range to $6 Gas



- The short-run response is projected to run through to 2030 after which the market will have had time to adjust to potentially lower prices and begin a long-run response.
- Figure illustrates the range of the short-run and long-run response in comparison to the Base Case (shown by a continuous red line) for LNG imports, relative to LNG export capacity.
- The midpoint of the range is the red dashed line which is plotted as the average of the low and high response – short-run up to 2030 and long-run for 2035.
- The 2030 midpoint for additional demand is around 60 bcm and the 2035 midpoint for additional demand is around 120 bcm.
- In the Base Case, the utilization rate is some 85.5 per cent in 2030 and 86.5 per cent in 2035. Not an equilibrium solution, as in an over-supplied market, prices would fall, generating an increase in demand. This rebalancing of the market would result in utilization rates of 92 per cent in 2030 and 99 per cent in 2035.
- A 92 per cent utilization rate might be broadly consistent with $6 gas in 2030, a 99 per cent utilization rate by 2035 is inconsistent with $6 gas. Capping LNG demand at some 900 bcm from 2032 onwards, which results in 95 per cent utilization in 2035, would seem to be more consistent with a $6 price.

Thank you!

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