Institute for Energy Economics and Financial Analysis

Thailand’s gas conundrum

Iran conflict exposes Thailand’s LNG vulnerability for the second time in four years

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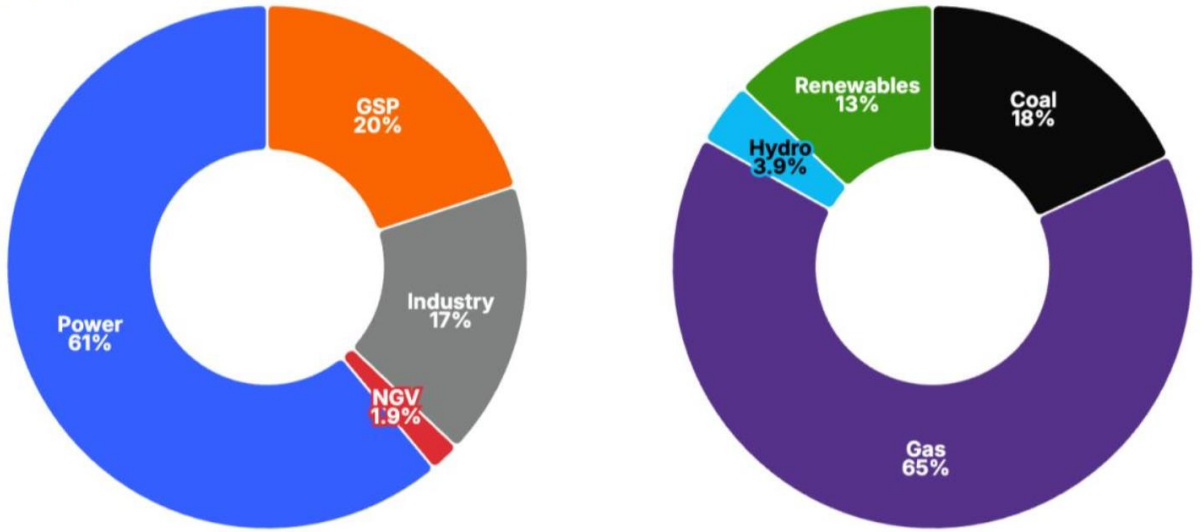
Gas is embedded into Thailand's economy

- Thailand developed a domestic gas industry, partly as a means of reducing dependence on oil imports following the dual oil crises of the 1970s
- Four decades later, gas is a significant source of energy for power, industry and as a feedback for petrochemicals
- Aligning the power sector with NDC3.0 emission targets (47% reduction below 2019 levels by 2035) and achieving net-zero by 2050 will require Thailand to address this gas dependence

Figure 1: Thailand's shares of sectoral gas demand by sector (left) and power generation by fuel (right), 2025

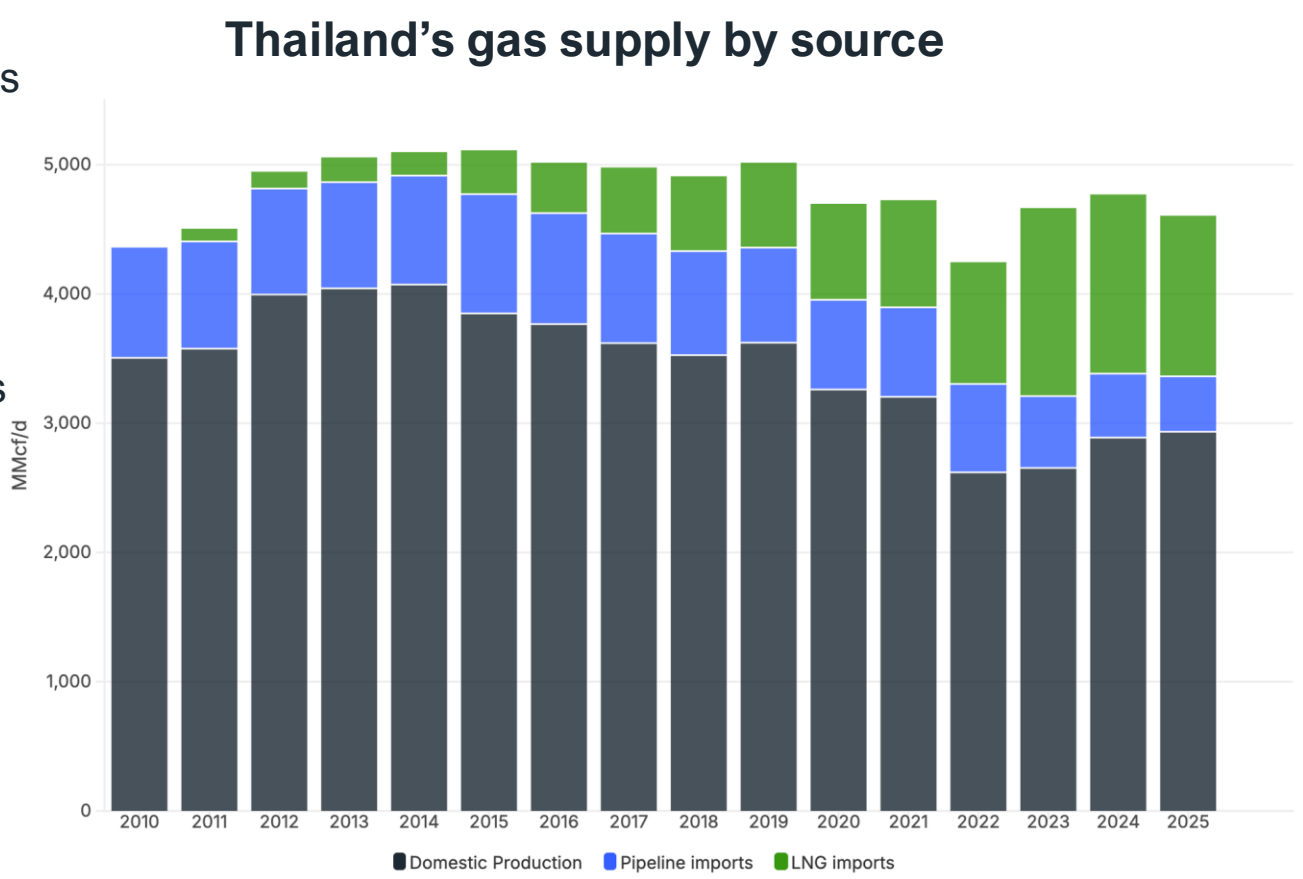


Source: EPPO; Ember; IEEFA calculations.

Note: GSP = Gas separation plant; NGV = natural gas vehicle use in the transport sector.

Declining gas production is increasing LNG reliance

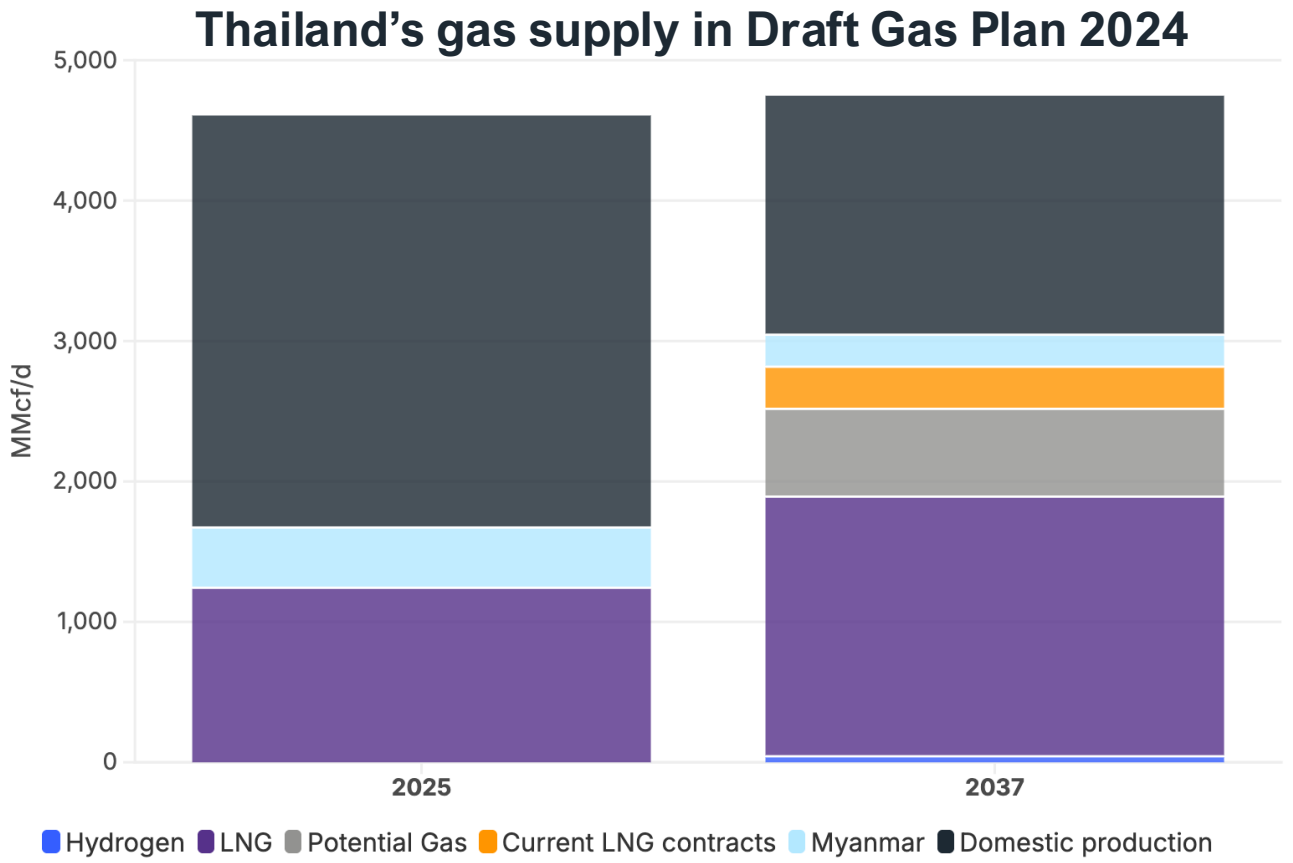
- Declining production has seen LNG's share of gas supply almost double this decade to 27% in 2025
- LNG prices were double those from domestic sources, 29% higher than pipeline imports in 2025
- The government has restructured gas pricing several times since 2022, suggesting that it is difficult to spread of the rising share of high-cost LNG across stakeholders
- Consumers and state-owned utilities or gas suppliers may be unable to shoulder the burden



Source: EPPO

PDPs could significantly increase LNG exposure

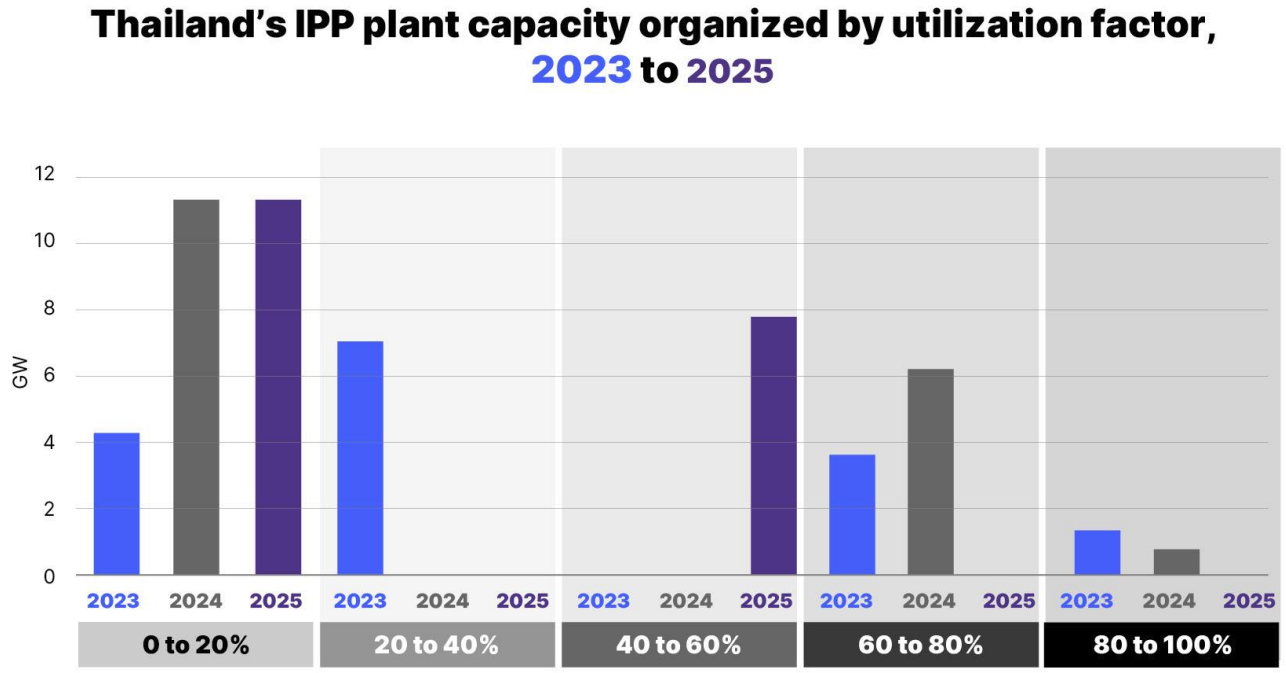
- Despite these affordability struggles, recent PDPs continue to plan for a future with gas embedded in the economy
- Draft PDP2024 includes 6.3GW of new gas-fired capacity
- Realizing this would increase LNG import share to 39 to 46%, up from 27% today
- If Thailand is struggling to spread around the cost of LNG now, how will it manage more of it over the coming years?



Source: EPPO, IEEFA calculations

Yet, many of Thailand's gas assets are underutilized

- October 2025: NEPC suspended the operation of 4GW of gas-fired facilities and delayed the commissioning of 0.6GW Burapa facility to 2029
- Explanation for the pause is an oversupply of electricity capacity
- Why are PDPs calling for gas expansion if existing assets are underutilized?
- This pause presents an opportunity for the next PDP to decouple Thailand from gas going forward



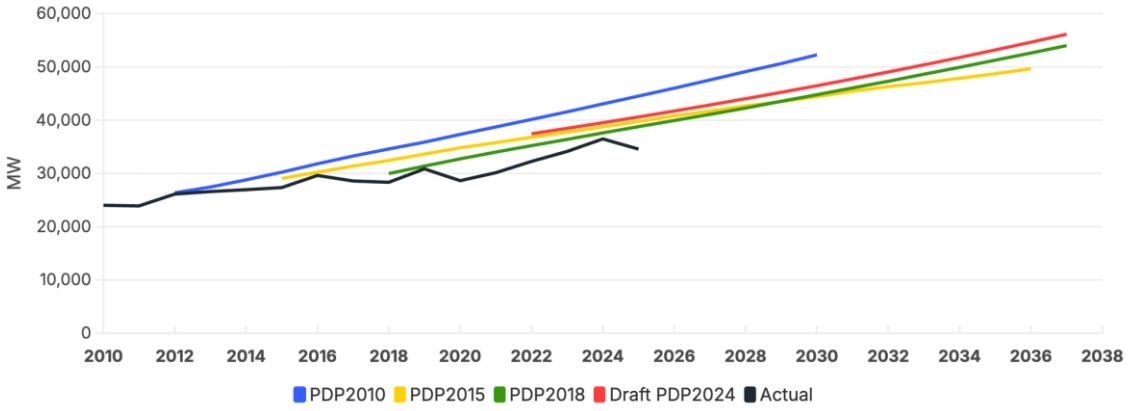
Source: Company financial reports; IEEFA calculations.

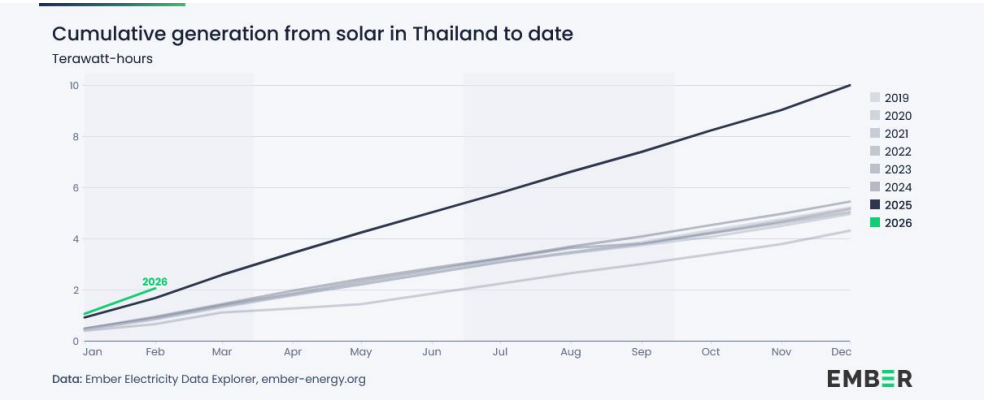
IEEFA

Contributing factors to electricity overcapacity

- **Sluggish pandemic recovery**: capacity built-out based on overly optimist GDP, demand projections in PDPs
- **Reserve margins**: focus on maintaining a 15% margin with a conservative measure of capacity gas pushed margins to 70%
- **Renewables**: Solar capacity doubled to 7.1GW in Dec 2025, output nearly doubled
- **Weather** is a factor, but evidence suggests that this is not a 2025 weather-driven anomaly

Historical and projected peak demand in various PDPs



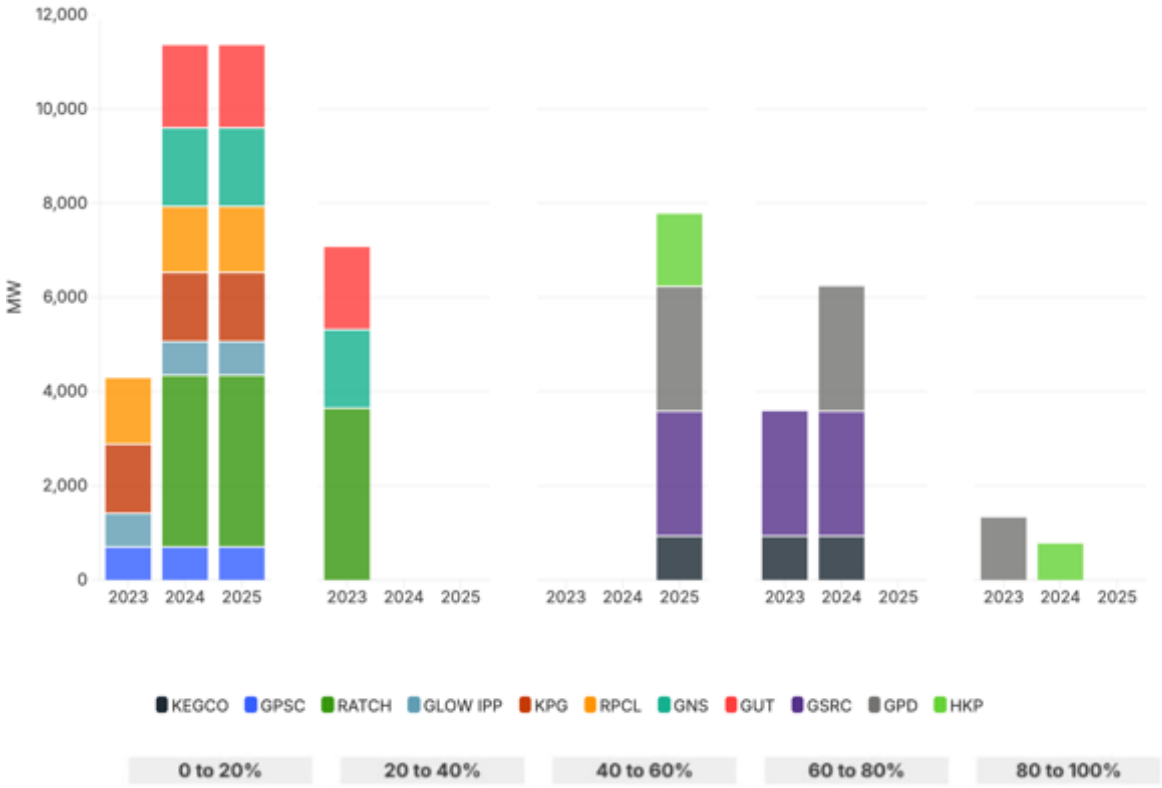


Source: PDPs, IEEFA calculations

Underutilization has been an issue since 2023

- Since 2023, seven gas-fired IPPs totalling 11GW have been used at rates under 30%; in 2025, utilization sank below 10%
- EGAT, under the single buyer model, has paid these facilities THB159 billion since 2023
- Availability payments in non-generating months since 2023 to these assets surpasses THB61 billion
- Utilization rates of several “newer” (five years old or less) plants are also falling over the past three years

IPP plant capacity organized by utilization factor, 2023 to 2025

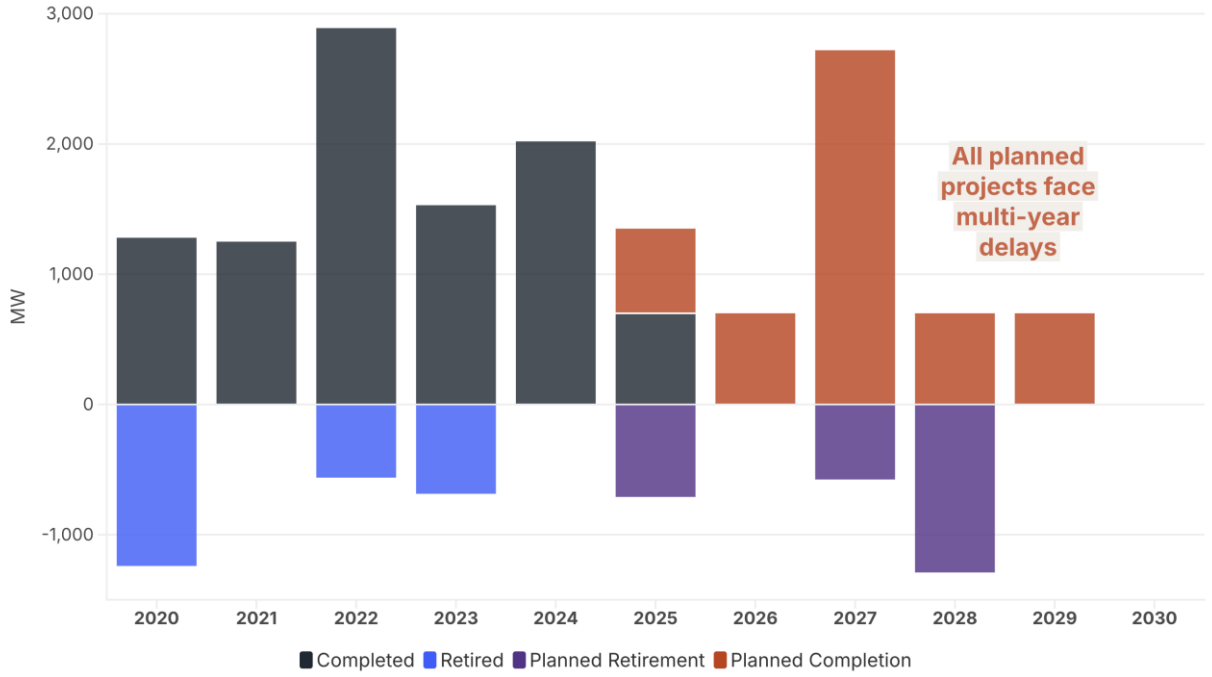


Source: Company financial reports, IEEFA calculations

Many gas projects face delays, cancellations

- EGAT has delayed and canceled tenders for several gas-fired projects (North Bangkok exp., South Bangkok exp., Surat Thani, Nam Phong replacement, Burapa)
- Shortages have tripled the capital cost of gas turbines over the last two years.
- Like LNG, large-scale baseload gas turbines may become a luxury for the highest bidder.
- Future availability payments (AP) will likely need to rise to pay for elevated capital costs
- APs made up 17% of EGAT's first tariff of 2026
- How high will APs need to rise to pay for newbuild gas plants in a market short on gas turbines?

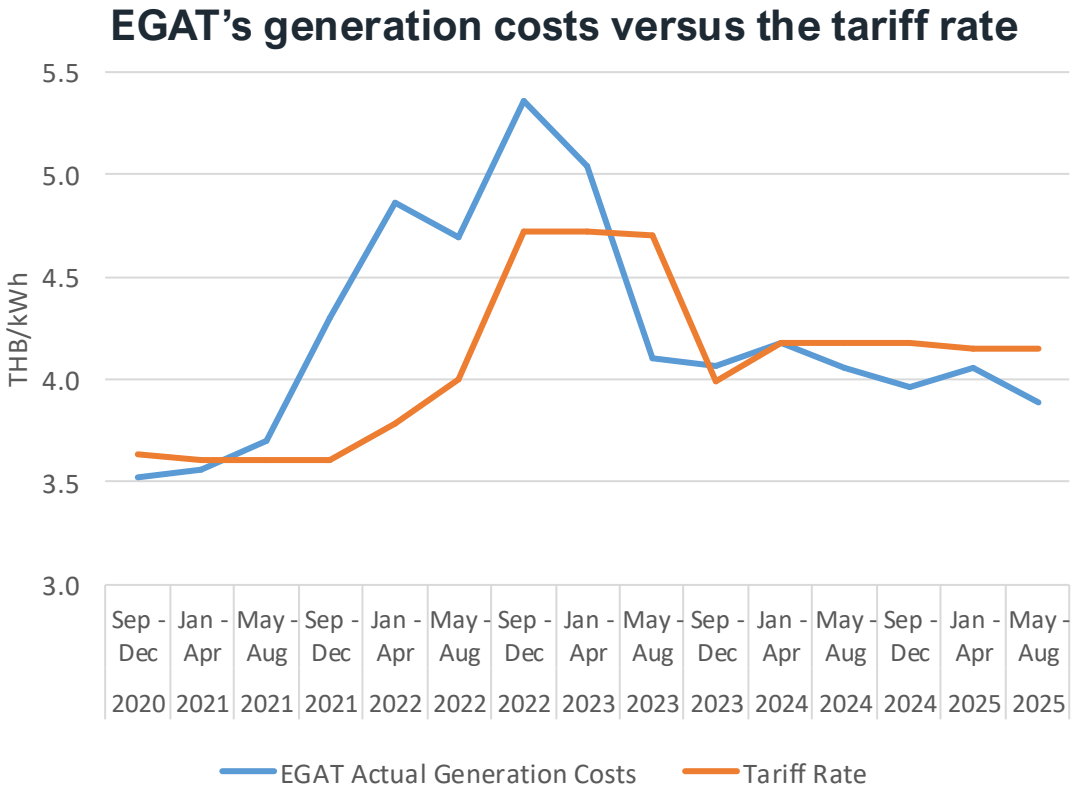
Recent gas capacity additions, proposed projects, and retirements in Thailand (2020–2030)



Source: BNEF; IEEFEA.

EGAT’s lasting debt burden could limit future subsidies

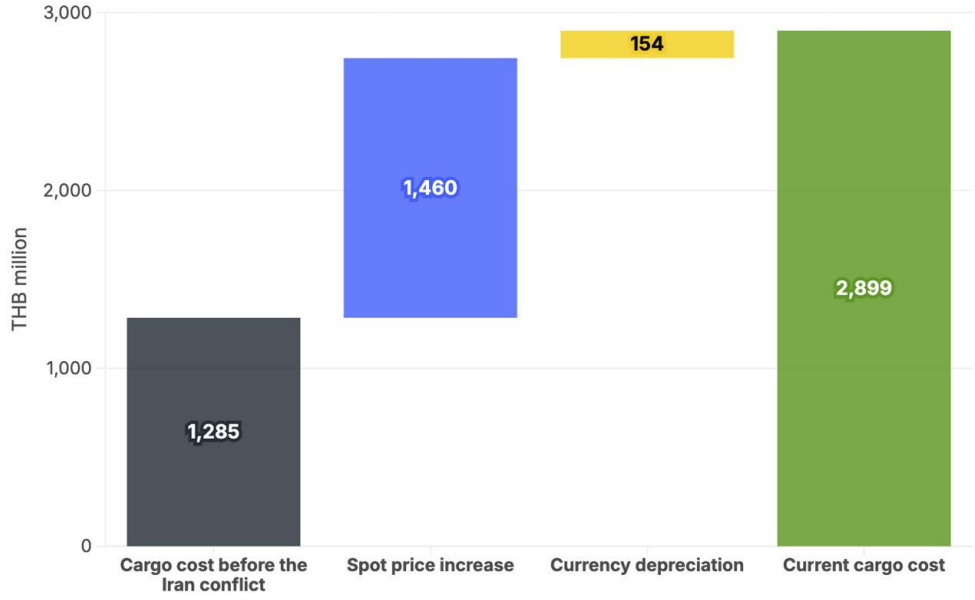
- Subsidy burden from the last energy crisis peaked at THB150 billion in 2022
- Tariff rate reductions have not kept pace with lower fuel costs since 2023, helping pay off the debt
- EGAT cleared more-than-half of the subsidy burden through 2025 by keeping tariffs above the cost of generation
- EGAT was on pace to pay off debt by 2028 prior to Hormuz closure
- Structural weakness in the Thai economy leaves consumers less able to handle tariff increases



Iran conflict is laying bare the unaffordability of LNG

- Uncertainty remains, but the LNG market is likely to be tight for several years
- Replacements for cargoes caught on the West side of the Strait of Hormuz must be found on the spot market
- Thailand procured at least one cargo was procured at USD23.50 per MMBtu, over double the price before the conflict
- Spot prices are now about USD16/MMBtu, over 50% above pre-crisis levels
- Thailand's currency depreciation is also contributing to rising cost of LNG in terms of home currency
- Already struggling to manage costly LNG, the Iran conflict will exacerbate Thailand's gas conundrum with even higher prices

Cost of sourcing a spot LNG cargo in Thailand's currency has more than doubled in March 2026

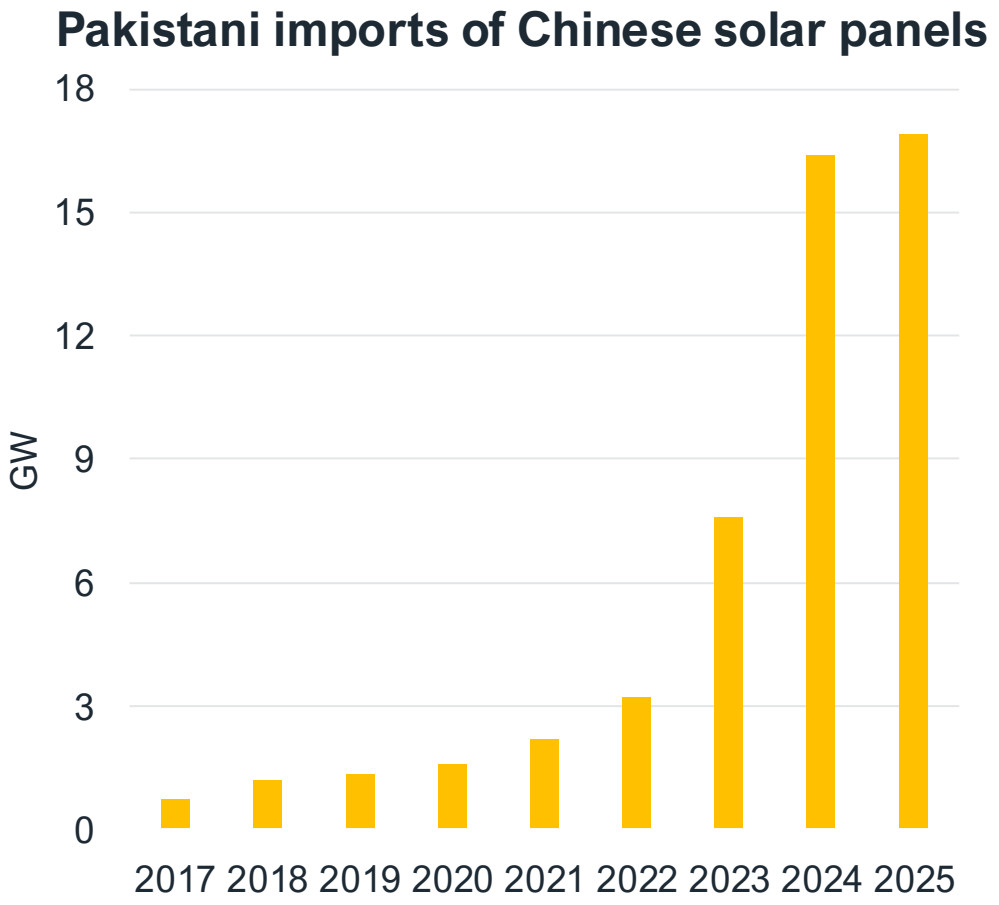


Source: Pacific Exchange Rate Service, Investing.com, media reports, IEEFA calculations.

IEEFA

How quickly can a gas-to-solar transformation happen?

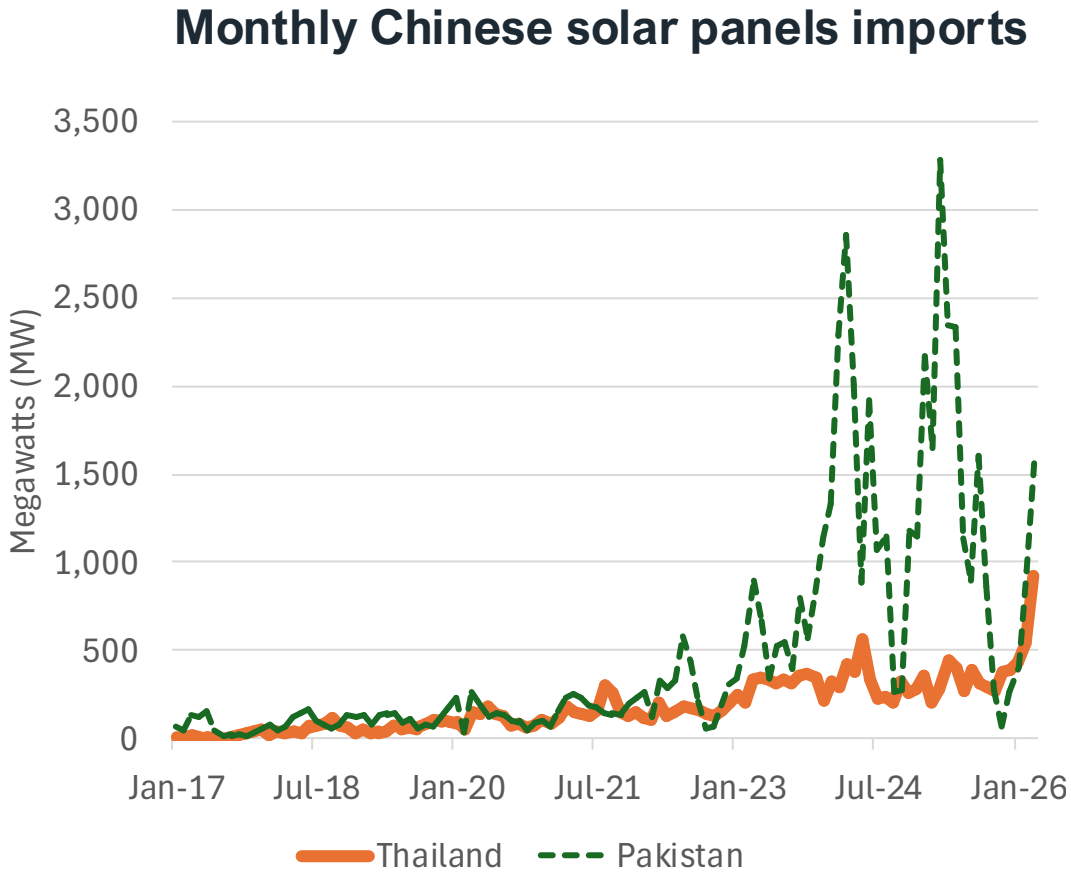
- LNG dependence in Pakistan has resulted in extreme energy insecurity and ballooning power costs.
- Unreliable power supply, unaffordable tariffs, a generous net metering scheme, and low solar panel prices incentivized consumers to import solar panels for energy security.
- Pakistan's solar panels imports have quadrupled since 2022.
- In 2023, the government said it would no longer build LNG-fired power plants.
- In 2016, Pakistan wanted to be the second-largest LNG importer by 2025 but instead became the sixth largest solar panel market.
- Pakistan had a gas surplus before the conflict.
- Solar panels are reducing the severity and duration of load shedding events compared to the last crisis.



Source: Ember Climate.

Can this happen in Thailand?

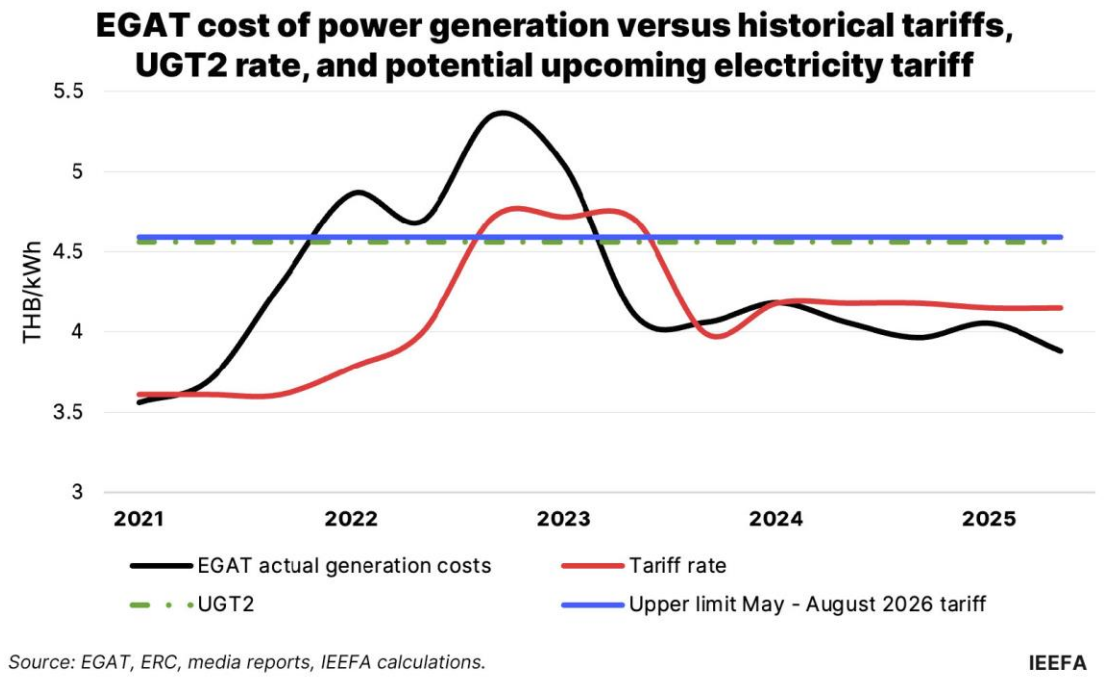
- Pakistan is an extreme example, but Thailand does have the tools to replicate a similar boom from behind-the-meter solar rather than one driven by utility-scale deployment
- Per unit panel costs from China have fallen 66% since 2022, and 50% since 2023
- Policy is eliminating barriers: the removal of factory license requirements (2024); the expansion of the rooftop building modification exemption (2025)
- Incentives are being added: income tax incentives (for residential panels) and corporate tax incentives (for commercial & industrial panels) (2026)
- Crisis impact? Panel imports popped 69% in March to over 0.9GW, by far a new record



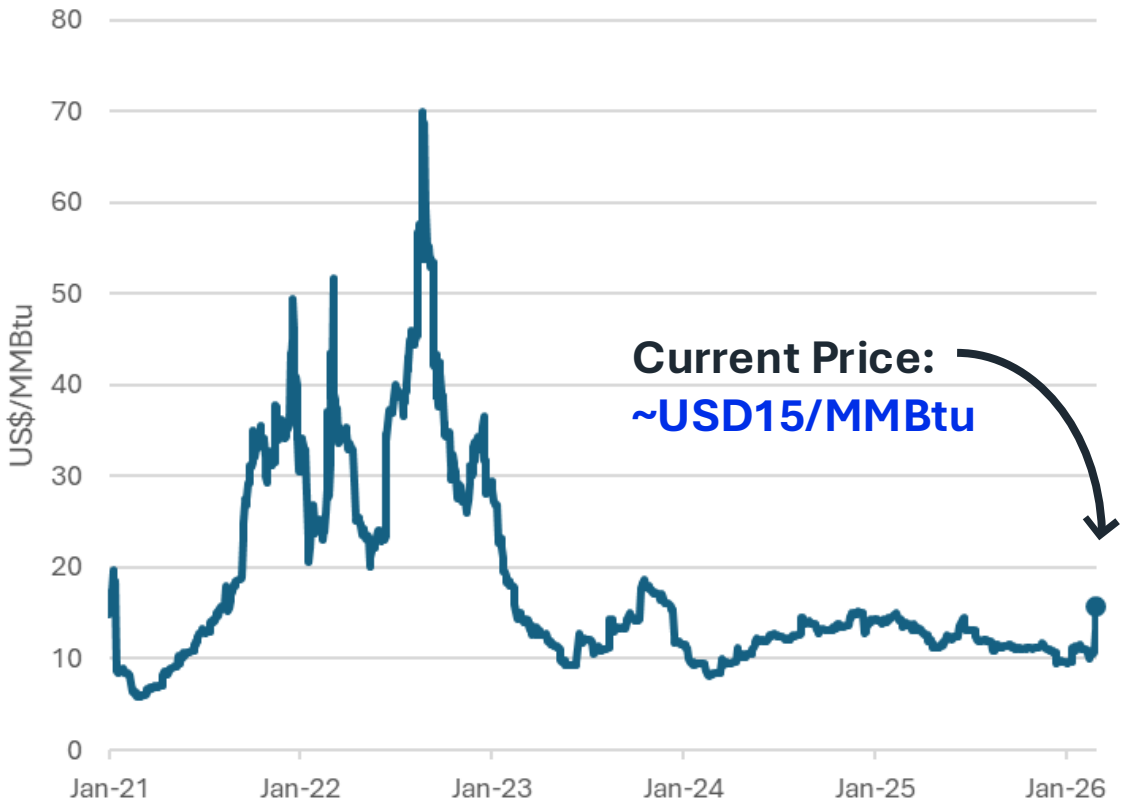
Source: Ember

Consumers may turn to solar to mitigate rising power costs

- EGAT (and PTT) is still paying off outstanding debt from the last crisis, which will limit its ability to shoulder the cost burden of expensive LNG
- UGT2 will provide corporate users access to procuring 2.1GW of renewables directly, with a tariff rate that is high, but in line with the price that EGAT needs eliminate its debt
- DPPA pilot will provide data centers the option of directly procuring 2GW of renewables
- The Iran conflict will amplify the headwinds facing the Thai economy, which may reduce willingness or ability to pay for higher tariffs
- Passing higher LNG costs into tariffs could lead to grid defections, as squeezed consumers look turn to solar panels to improve affordability, energy security



Renewables are a key hedge against volatile prices

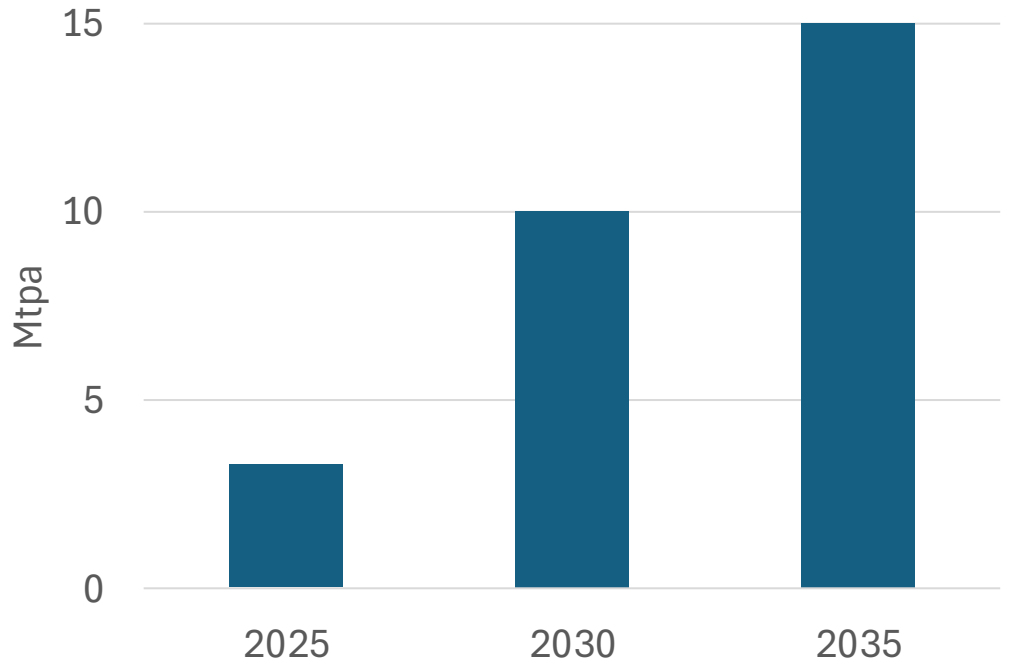


- At USD15/MMBtu, a single cargo costs **USD56 million**.
  - Total annual fuel import bill for one LNG plant: **USD900 million**.
  - Generation cost of **USD130/MWh**.
- Global average costs for onshore wind are **USD40/MWh; USD39/MWh** for solar PV; and **USD60/MWh** for solar PV with BESS
- 7.1GW of solar is enough to offset 1.3 LNG cargoes of imports a month, and USD73 million in fuel requirements
- While LNG has resulted in higher power costs, energy insecurity, and financial stress for emerging markets, solar + BESS are emerging as cheaper, viable options

PTT's dreams of becoming a global LNG trader

- PTT is committing 94% of its 2026-2030 CAPEX plan to gas-related developments (up to THB72 billion), including:
  - Ambitions to increase LNG portfolio to 15Mtpa in 2035
  - LMPT-3 import terminal (8 Mtpa) under construction
- Aiming to replicate the Japan resale model
- Built on the assumption that Asia, particularly Southeast Asia, will be a driving force for global LNG demand growth
- However, this crisis is putting significant downward pressure on the future trajectory of LNG demand

PTT's LNG trading ambitions will increase its LNG exposure



Source: PTT, media reports, IEEFA

Is this crisis planting the seeds of demand destruction?

Notable efforts to reduce LNG exposure in Asia since March 2026			
Vietnam's Vingroup planning to repurpose 4.8GW LNG-to-power project	China's Sinopec cancelled LNG expansion project	Taiwan aiming to restart 3.84GW of nuclear reactors by 2028	Korea restarting 4.75GW of nuclear by May 2026, fast-tracking 7GW of renewables and 1.3GW of storage
5Mtpa	**1Mtpa**	**3Mtpa**	**6Mtpa**
Potential long-term LNG demand impact **15Mtpa**			

Amidst these developments, should PTT commit finite capital, resources to expanding its LNG exposure?

Conclusions

Underutilization of existing assets, rising gas supply costs and surging capital costs are challenging Thailand's gas expansion plans.

The Iran conflict is exacerbating these challenges. Structural weaknesses in the economy will challenge Thailand's ability to afford higher LNG prices.

The current crisis is an opportunity to deliver a PDP and policy that prioritizes renewables and delivers Thailand's power system onto a credible net-zero pathway.

Thank You

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