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Thailand’s gas conundrum: Overbuilt, underutilized, and increasingly expensive

The role of Thailand’s gas plants requires a reassessment in future power development plans

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Contents

Key findings 4
Executive summary 5
Introduction 6
Section 1: Understanding the drivers behind the gas plant suspension 10
Section 2: Many of Thailand's gas plants are currently underutilized 13
Section 3: Many gas plant proposals face delays and even cancellations 16
Section 4: Economic issues with a gas-centric vision for the power sector 19
EGAT's enduring subsidy burden 19
Frequent price reforms highlight challenges of integrating costly gas supply 23
Economic issues in other sectors 24
Thailand works to reduce LNG exposure 26
The way forward for Thailand's Power Development Plans (PDPs) 27
Conclusion 31
Appendix: Details of Thailand's gas-fired IPPs 32
About IEEFA 33
About the authors 33

Figures and Tables

Figure 1: Thailand's power generation by fuel (left) and sectoral gas demand (right), 2025 6
Figure 2: Evolution of Thailand's demand in Draft Gas Plan 2024 by high-level sector.....7
Figure 3: Evolution of Thailand's gas supply in Draft Gas Plan 2024 by source.....8
Figure 4: Thailand's gas supply costs 9
Figure 5: Absolute and adjusted reserve margin of Thailand's power system 11
Figure 6: Historical and projected peak demand in various PDPs..... 12
Figure 7: IPP plant capacity organized by utilization factor, 2023 to 2025..... 15
Figure 8: Recent gas capacity additions, proposed projects, and retirements (2020–2030) 16
Figure 9: EGAT's reported generation costs versus the tariff rate 20
Figure 10: Thailand's gas supply by source 26
Figure 11: EGAT per-unit generation costs of contracted IPPs 28
Figure 12: Thailand's emission trajectory according to NDC3.0..... 30

Table 1: Average GDP growth rate before and after the COVID-19 pandemic, Thailand and select International Monetary Fund (IMF) classifications..... 10
Table 2: EGAT Monthly Planned Gas Plant Utilization (2024 and 2025) 14
Table 3: Annual utilization factors derived from IPP financial statements, 2023 to 2025..... 14
Table 4: Total EGAT payments to seven underutilized IPP plants, 2023 to 2025..... 15
Table 5: EGAT's estimated payments to gas plants for non-generating months..... 21

Key findings

Existing natural gas-fired power plants in Thailand are highly underutilized. In 2025, seven privately owned gas plants operated under a capacity factor of 10%. Most contracted plants have shown declining dispatch rates over the last three years, with several generating almost no electricity.

Thailand’s seven underused gas plants, totaling over 11 gigawatts (GW) of capacity, have cost the Electricity Generating Authority of Thailand (EGAT) and ratepayers THB159 billion (USD5.02 billion) since 2023.

The Government of Thailand still aims to bring 6.3GW of new gas-fired capacity online by 2037. However, nearly all proposed projects face extensive delays, and in 2025, EGAT canceled tenders for three projects. Moreover, global gas turbine shortages are delaying projects around the region and have tripled capital costs in recent years.

The increasing dependence on more expensive liquefied natural gas (LNG) imports, combined with a spike in capital costs for new gas plants, presents challenges that could significantly change the economics of Thailand’s gas expansion plans.

Executive summary

In recent years, Thailand's gas-to-power sector has faced increasing barriers, including underutilization, project delays, and rising gas supply costs. In October 2025, Thailand's National Energy Policy Council (NEPC) suspended the operation of four power plants[1], including three gas-fired facilities totaling 4 gigawatts (GW), and delayed the commissioning of a 0.6GW facility. Citing an oversupply of electricity, the NEPC plans to commission the delayed facility in 2029 and resume operations of the existing facilities after that year.

Shortly after the power pause, Thailand approved its updated nationally determined contribution (NDC) in November 2025.[2] This climate plan envisions reducing the country's net emissions by 47% from 2019 levels by 2035 and achieving net zero emissions by 2050.

The suspension of gas plants, combined with the more ambitious emission-reduction targets set out in Thailand's latest NDC, demands a reassessment of gas expansion plans. The next Power Development Plan (PDP) is expected to be released in 2026.[3] While the Draft Power Development Plan 2024 (Draft PDP2024) was not finalized, an overly ambitious economic growth trajectory called for a 6.3GW expansion of gas-fired capacity between 2028 and 2037.[4]

Under Thailand's Draft Gas Plan 2024, this could require imports of expensive liquefied natural gas (LNG) to nearly double over the next two decades, depending on the success of planned exploration. This would exacerbate the economic burden of LNG that stakeholders are unwilling to shoulder and shift the country off course from achieving its desired climate commitments.

As Thailand seeks to develop energy plans that are aligned with its updated NDC[5], policymakers should move beyond past frameworks that have shaped the country's current approach. The overexpansion of gas-fired power plants, combined with lower production of cheaper, domestic gas, has led to a doubling of LNG's share in the gas supply. Establishing a framework to spread this cost across users without causing hardship to households or strategic sectors is proving difficult.

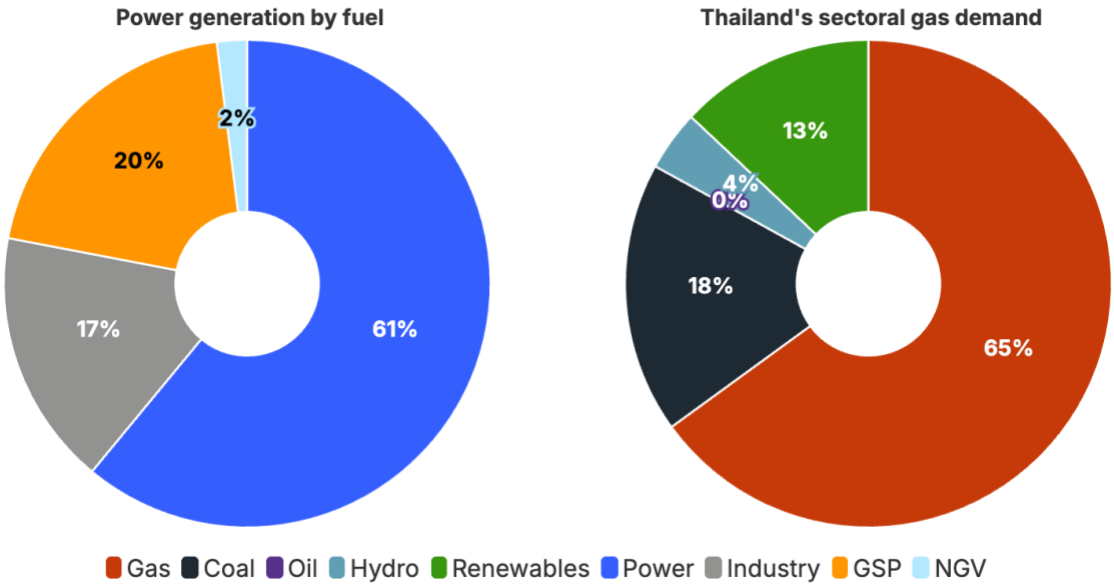
The current gas pause presents an opportunity to recalibrate and deliver Thailand towards a more affordable and sustainable energy future.

[1] Bangkok Post. Weak demand results in suspension of 4 power plants. 29 October 2025.
[2] Argus Media. Thailand advances net zero emissions target to 2050. 04 November 2025.
[3] Bangkok Post. Egat to backstop clean power supply. 09 January 2026.
[4] Energy Policy and Planning Office (EPPO). Draft Power Development Plan 2024. 20 June 2024. Page 45.
[5] The Nation. Energy Minister plans new committee to drive Thailand's Net Zero goals and Power Development Plan. 03 October 2025.

Introduction

Since offshore production began in the Gulf of Thailand in the 1980s, gas has become embedded in Thailand's economy. While use cases for petrochemicals, other industrial processes, and transport grew alongside production over the decades, the power sector has consistently been the largest consumer.

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



Source: EPPO; Ember; IEEFA calculations.

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

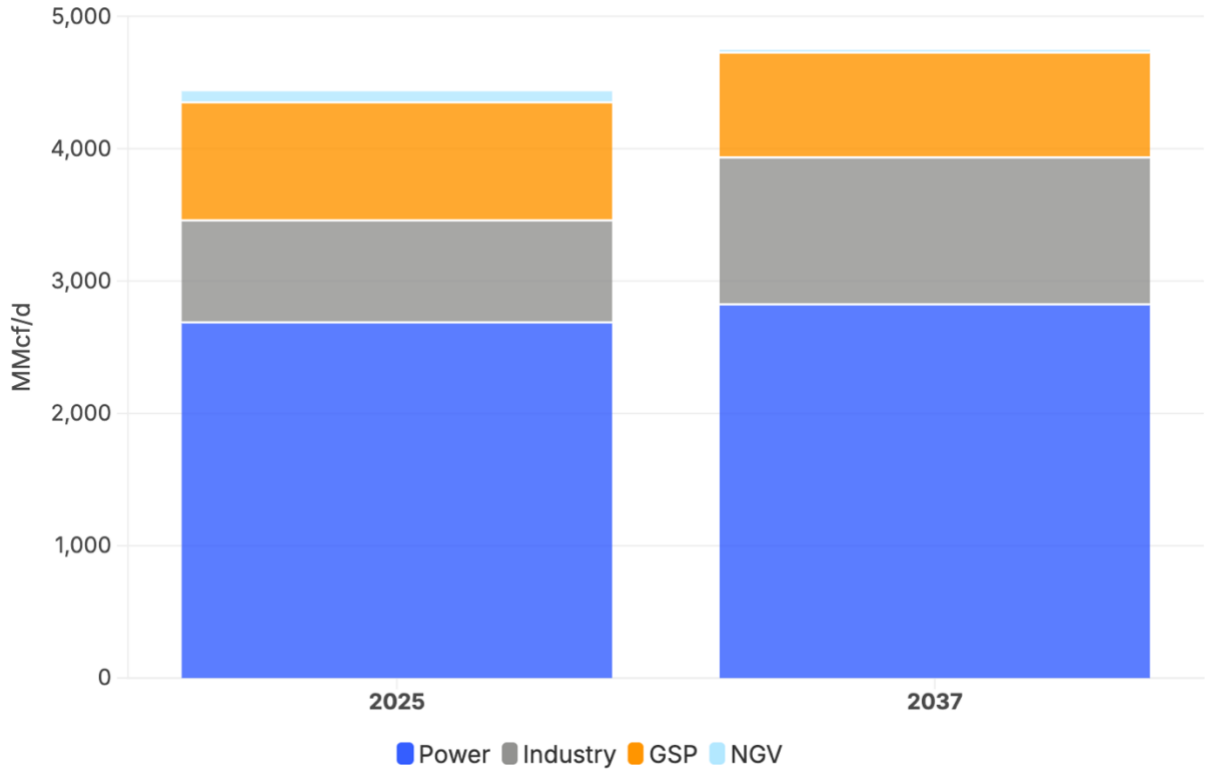
Currently, the power sector accounts for 61% of Thailand's approximately 4,500 million cubic feet per day (MMcf/d) of gas demand, with gas-fired power plants supplying 65% of electricity in 2025. Aligning the Thai economy with a net-zero global emissions trajectory will require policymakers to actively address the gas dependence established over the past 40 years.

Thailand's Draft Power Development Plan 2024 (Draft PDP2024) envisions such a pathway for the country. The document outlines a plan to reach carbon neutrality by 2050 and a net-zero economy by 2065, without forgoing electrical affordability or reliability.

The proposal calls for 43 gigawatts (GW) of capacity additions through 2037 to meet an annual demand of 370 terawatt-hours (TWh), with peaks of 56GW in the same year. It significantly upgrades the role of non-emitting power, aiming to have 51% of demand met by renewables by 2037. Achieving this target requires 24GW of solar expansion, together with 46 gigawatt-hours (GWh) of storage — 26GWh of batteries and 20GWh of pumped hydro — to support the integration.

However, the Draft PDP2024 continues to rely on fossil fuel generation, with gas providing 41% of power in 2037 and coal another 7%. It also calls for further expansion, including the construction of 6.3GW of new gas-fired power plants.

Figure 2: Evolution of Thailand's demand in Draft Gas Plan 2024 by high-level sector

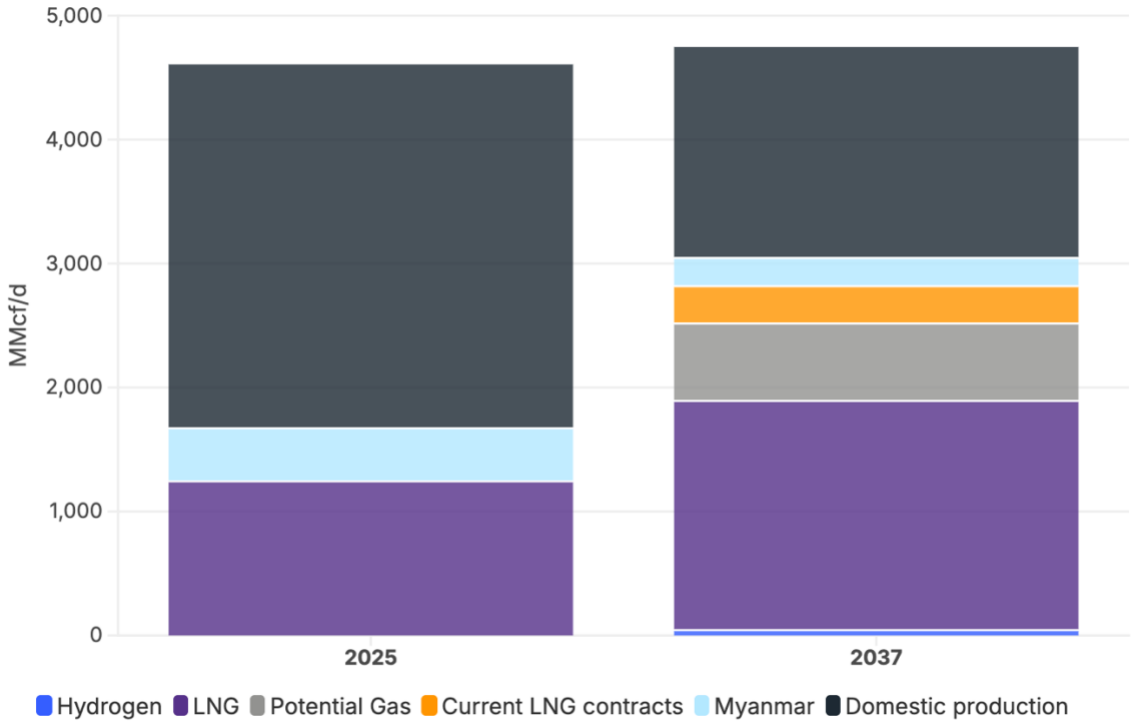


Source: EPPO; Draft Gas Plan 2024.

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

In aggregate, the Draft Gas Plan 2024 sees Thai gas demand hovering around 5 billion cubic feet per day (Bcf/d) until 2030, before declining to 4.7Bcf/d in 2037, or around peak historical levels seen in 2019. Currently, Thailand's gas supply comes from a mix of domestic production (mainly in the Gulf of Thailand or in joint development areas with other countries), pipeline imports from Myanmar, and liquefied natural gas (LNG) imports.

Figure 3: Evolution of Thailand's gas supply in Draft Gas Plan 2024[6] by source



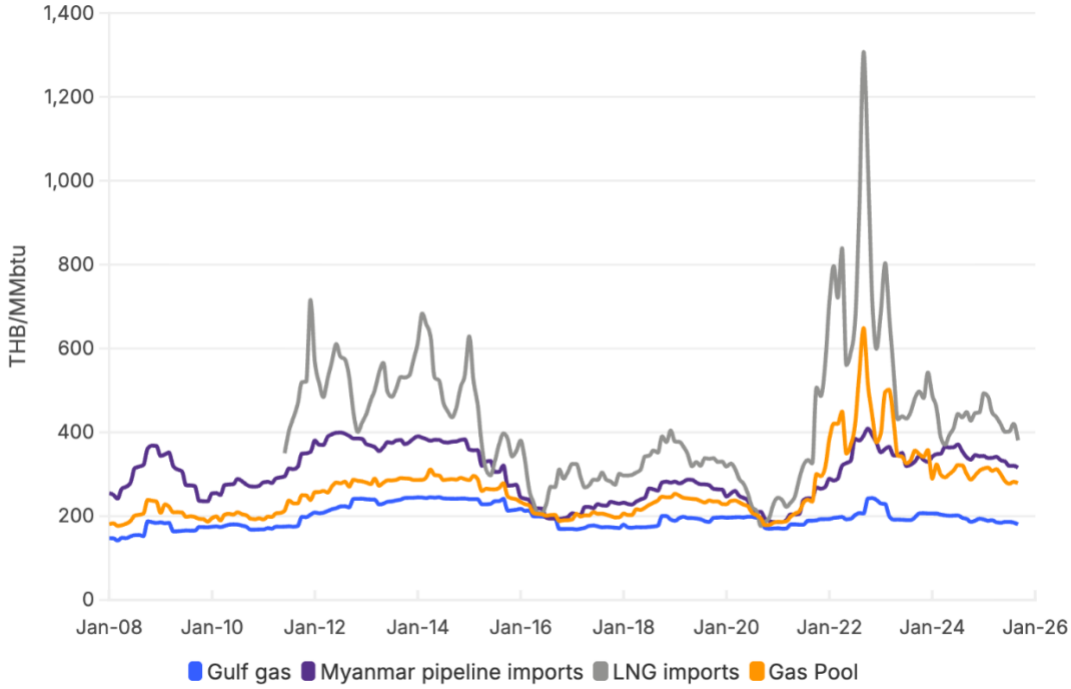
Source: EPPO; Draft Gas Plan 2024.

The Draft Gas Plan 2024 sees LNG imports growing by 73% to supply 43% of gas requirements by 2037, due to declining domestic production and Myanmar imports. However, without successful exploration and production or cost-effective, reliable hydrogen sourcing, Thailand's LNG requirements could grow 2.3 times current import levels to supply 59% of national gas requirements.

The economic implications could be severe for consumers, who are currently struggling to pay for the rising cost of gas supply.[7] LNG prices were more than double those of domestic gas in 2025 and 29% higher than pipeline imports from Myanmar. Global gas prices have also demonstrated significantly more volatility than other sources.

[6] The Draft Gas Plan 2024, released in tandem with the Draft PDP2024, outlines how Thailand's gas supply will evolve to meet the gas requirements of the Draft PDP2024. Besides power, it also includes demand projections for Thailand's other high-level gas consuming sectors.
[7] The Nation. JSCCIB opposes pool gas scheme, citing economic and social risks. 02 May 2025.

Figure 4: Thailand's gas supply costs



Source: EPPO.

Meanwhile, Thailand's supply sources that underpin these pricing frameworks remain in flux. While domestic production is rebounding slightly, LNG now makes up 27% of the supply mix, almost double its share in 2020. Increasing the share of the highest-cost gas source to between 39% and 46% as envisioned in the Draft Gas Plan 2024, presents inflation risks for the Thai economy.

However, planning for higher LNG imports into Thailand may be unnecessary. Underutilized gas power plants, delays in planned gas projects, and the rising share of renewables indicate that the role of gas in Thailand's power sector is already weakening.

Meanwhile, media reports suggest that the government could be planning for significantly higher demand and capacity requirements in the upcoming PDP[8], scheduled for release in 2026. Based on current utilization patterns and historical PDP performance, this could exacerbate gas overexpansion and reduce affordability for electricity consumers.

Leveraging these findings, this report argues for an alternative vision in the next PDP that can deliver Thailand to an energy future aligned with the more ambitious nationally determined contribution (NDC) targets. Such a plan would prevent the country from burdening its economy and ratepayers with expensive LNG exposure for the next decade.

[8] Business Today. Thai Energy Sector Forecast For 20% Growth from New Power Development Plan. 11 January 2026.

Section 1: Understanding the drivers behind the gas plant suspension

The government has attributed electrical overcapacity to weak power demand stemming from a sluggish recovery from the COVID-19 pandemic. While recovery is unstable, rising solar output and chronic overcapacity are also contributing to the oversupply of electricity.

Before the pandemic, Thailand's gross domestic product (GDP) growth mirrored that of the global economy. Since then, the country has fallen behind advanced economies and is recovering more slowly than its Asian peers.

Table 1: Average GDP growth rate before and after the COVID-19 pandemic, Thailand and select International Monetary Fund (IMF) classifications

	2010s	Since 2020	Difference
Thailand	3.6%	2.2%	-1.5%
Association of Southeast Asian Nations (ASEAN)-5	5.2%	4.6%	-0.6%
Advanced Economies	2.1%	3.1%	1.1%
Emerging and Developing Asia	7.0%	6.0%	-1.0%
World	3.7%	4.3%	0.6%

Source: IMF.

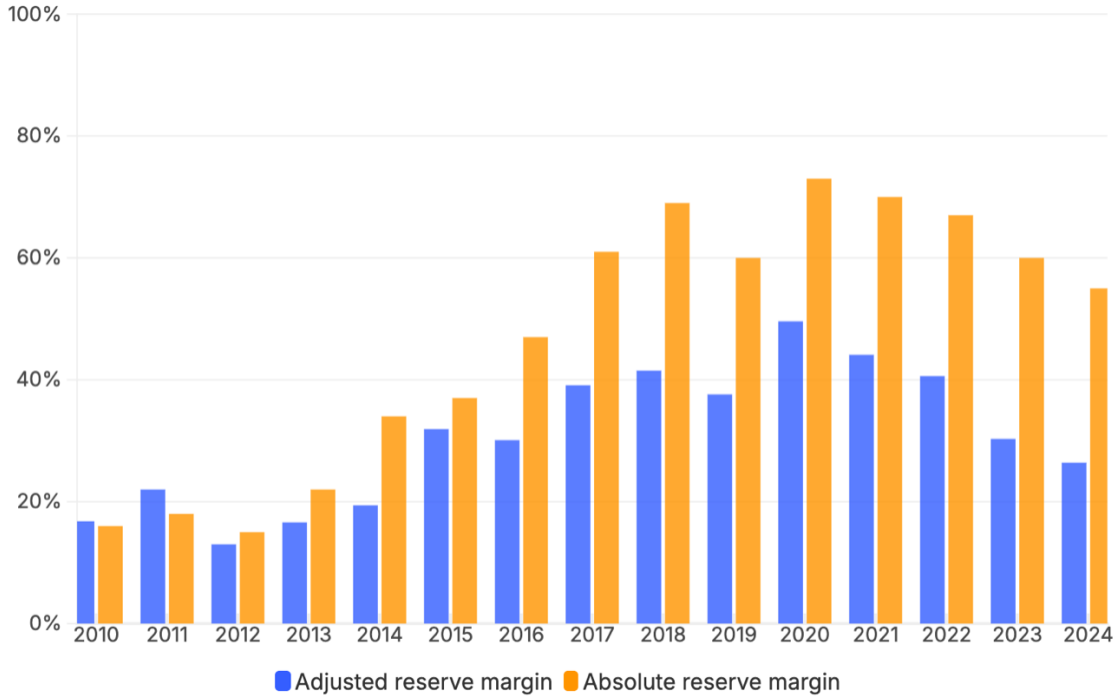
However, in 2025, power demand began decoupling from economic growth. During the first three quarters of the year, electricity demand fell 3.3% compared to the same period in 2024. More importantly, peak power use dropped by over 5% in April and 8% in May, months when electricity use typically soars to provide cooling during the hot season.

While demand stagnates, a surge in renewable output is reducing the need for firm capacity from gas-fired units. According to Ember[9], solar production was up by 63% in the first nine months of 2025. Over the same period, gas-fired generation was down 12%, including a 14% drop by gas units operated by the Electricity Generating Authority of Thailand (EGAT). Overall, gas demand in the country is down by 5%. This decline, combined with a moderate growth in offshore production, is narrowing high-cost LNG import requirements, which were on pace to fall by 12% in 2025, pending final year-end data.

Thailand's ballooning reserve margin over the past decade is exacerbating this mismatch between power demand and generating capacity.

[9] IEEFA calculations based on Ember data. Ember. Electricity Data Explorer. January 2026. Retrieved on 02 February 2026.

Figure 5: Absolute and adjusted reserve margin of Thailand's power system



Source: Ember; Energy Policy and Planning Office (EPPO): EGAT System Contracted Generating Capacity; EGAT annual reports, IEEFA calculations.

Note: Absolute reserve margin reflects the amount of unused available capacity of Thailand's total generating capacity over its peak demand in a calendar year.[10]

Prior to the Draft PDP2024, Thailand's expansion plans were bound by a reliability criteria that requires the reserve margin to not fall below 15%.[11, 12] This is at the higher end of the international standard of between 10–15%.[13] However, Thailand has significantly exceeded the 15% standard for the past decade, peaking at over 70% in 2020, and declining to 55% since.[14]

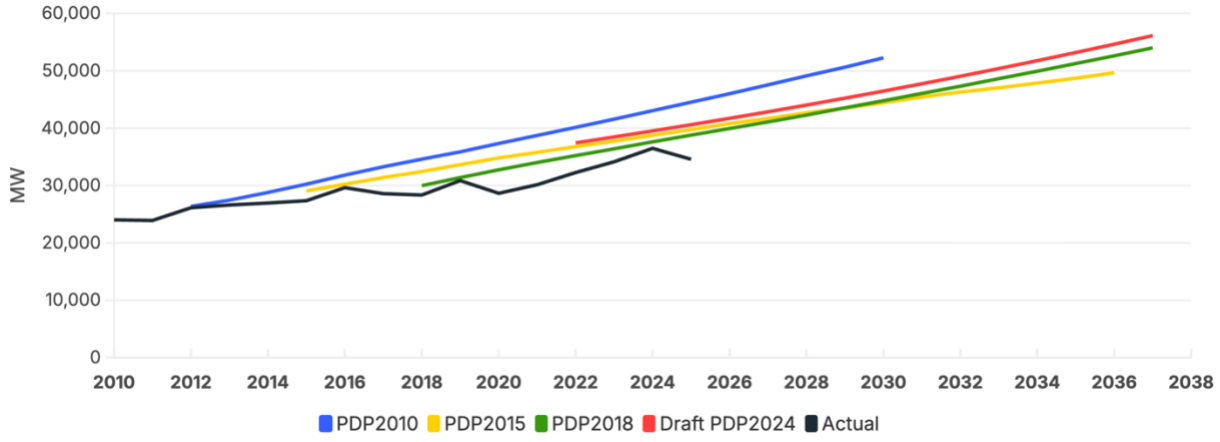
The surge in the reserve margin over the last 10 years suggests that Thailand's overcapacity issues predate the pandemic and are not solely attributable to a weak economic recovery. Moreover, reserve margins have been declining since 2020, indicating that peak demand growth has outpaced capacity growth since the onset of COVID-19.

[10] Adjusted reserve margin estimates the available capacity by derating EGAT's annual contracted capacity by its reported Generating Weighted Equivalent Availability Factor (GWEAF), which accounts outages and other factors that reduce unit availability. This assumes that the GWEAF for non-EGAT capacity is the same as EGAT's. For 2023 and 2024, this estimation yields reserve margins that closely align with those reported by the Ministry of Energy in 2025.
[11] Innovest X. PDP2024: Focus on renewables; but timeline shift. 17 June 2024. Page 1.
[12] Asia Pacific Energy. Summary of Thailand Power Development Plan 2012 – 2030 (PDP2010: Revision 3). June 2012. Page 7.
[13] International Energy Agency (IEA). Thailand Power System Flexibility Study. 31 May 2021. Page 62.
[14] Even when IEEFA adjusts the calculation for the availability of contracted resources, the reserve margin ballooned from 13% in 2012 to 50% in 2020, before falling to 26% in 2024.

Building power capacity to meet ambitious growth targets that were not realized is partly why Thailand is currently suspending gas-fired operations.[15] Projected growth has rarely met or exceeded the expectations of the last four PDPs. Thailand's economic growth has averaged 2.1% since the pandemic[16], far below the 3.8% and 3.2% projections assumed in recent plans (PDP2018[17] and Draft PDP2024[18], respectively). For much of the 2010s, growth lagged significantly behind the 5% target.

The International Monetary Fund (IMF) expects Thailand's growth to average 2.2% for the rest of the decade[19], well below the Draft PDP2024 level of 3.2%.[20] The Bank of Thailand, meanwhile, expects the country's GDP growth in 2026 to slow to 1.6%, down from 2.2% in 2025.[21] Avoiding further overbuild of expensive, gas-fired capacity will require a growth outlook that aligns with the new economic reality in the face of rising global trade tensions.

Figure 6: Historical and projected peak demand in various PDPs



Source: PDP2010; PDP2015; PDP2018; Draft PDP2024; IEEFA calculations.

Note: Draft PDP2024 only provides the peak demand data for 2037. IEEFA estimated a trajectory using a compound annual average growth rate between 2022 and 2037.

[15] PDPs commonly use GDP growth assumptions as inputs to their model of electricity demand and, in turn, to the electricity capacity requirements in long-term energy plans. In Thailand, the NEPC will develop a load forecast based on the economic growth assumptions of the Office of National Economic and Social Development Board (NESDB). Modeling demand typically involves weighing the electric intensity of economic output projections against government efficiency targets to develop a load forecast, including a peak demand forecast. A capacity forecast will be developed to serve this peak load, considering other government initiatives, such as renewable capacity targets, replacements for retirements, and parallel additions for stable, large-scale industrial loads.

[16] International Monetary Fund (IMF). World Economic Outlook (October 2025). October 2025.

[17] Energy Policy and Planning Office (EPPO). Draft Power Development Plan 2024. 20 June 2024. Page 18.

[18] Energy Policy and Planning Office (EPPO). Draft Power Development Plan 2024. 20 June 2024. Page 18.

[19] International Monetary Fund (IMF). World Economic Outlook (October 2025). October 2025.

[20] The economic growth trajectory used in the Draft PDP2024 is based on a National Economic and Social Development Board (NESDB) projection made in March 2022. Energy Policy and Planning Office (EPPO). Draft Power Development Plan 2024. 20 June 2024. Page 18.

[21] Argus Media. Viewpoint: Thailand's LNG demand poised to remain slow. 05 January 2026.

Meanwhile, Thailand's power peaks seldom meet PDP expectations, almost exclusively occurring early — in the first year or two — of the projection period. The most recent Draft PDP2024 is already overshooting peak demand by 15%, just four years into its projection period.

Optimistic economic growth projections may appeal to government departments and business leaders anticipating a favorable future. However, overestimating actual economic potential could lead to overbuilding costly energy infrastructure. In Thailand, end users may be burdened with paying for gas-fired power plants and the associated supply chain infrastructure, including LNG import terminals, even when they are underutilized.

Section 2: Many of Thailand's gas plants are currently underutilized

Some analysts suggest that the conditions driving the 2025 power pause in Thailand are an anomaly caused by mild weather.[22] A reversion to seasonal norms could lift power demand higher. Moreover, they argue that end-use electrification and the commissioning of data centers are causing a structural shift in the economy that will warrant higher power peaks and, in turn, the use of gas by currently idle facilities.

However, this view is at odds with the dispatch trends in recent years of the gas-fired power plants operated by Thailand's Independent Power Producers (IPPs).[23] The following two tables show the utilization rates of gas-fired power projects contracted by EGAT. Table 2 displays EGAT's preliminary estimates for planned monthly procurement, while Table 3 shows annual dispatch figures reported in IPP financial statements.

EGAT estimates may differ from producers' financial reports for various reasons. For example, actual supply-demand fundamentals may vary from EGAT's preliminary assessment. Company financial documents may also show some sales to non-EGAT customers, though EGAT likely purchases a dominant share of plant output as the country's primary wholesaler and sole buyer of bulk electricity.[24]

However, both sources confirm several important conclusions.

First, in 2025, 7 out of 11 contracted gas-fired power plants, representing a combined 11GW of capacity, operated at utilization rates below 10%.

[22] Reuters. Thailand set for record plunge in annual power output, LNG imports. 23 September 2025.
[23] Typically, a plant over 90MW is classified as an Independent Power Producer (IPP), while those between 10MW and 90MW are called Small Power Producers (SPPs). IPPs and SPPs typically sign long-term offtake agreements with EGAT for most of their capacity. Thailand Board of Investment. Electricity. 30 March 2023.
[24] For example, Gulf Energy, the largest IPP in the country, reports that 90 – 95% of its power sales are to EGAT.

Second, underutilization is not limited to 2025. In recent years, most contracted gas plants have shown declining utilization, with several generating near-zero electricity. Since 2023, seven plants comprising over 11GW of capacity have dispatched less than 30% of their maximum output.

Third, declining utilization is not limited to older plants. Several plants less than 15 years old have experienced steep declines in electricity output over the past three years. Many plants built in just the last five years have also seen utilization rates decline.

Table 2: EGAT Monthly Planned Gas Plant Utilization (2024 and 2025)

IPP Name	Start Year	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
KEGCO	2016	42%	45%	75%	58%	72%	37%	68%	36%	36%	36%	36%	35%
GPSC	2006	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RATCH	2002	17%	16%	16%	7%	15%	16%	7%	10%	7%	7%	7%	6%
GLOW IPP	2003	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
KPG	2007	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RPCL	2008	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GNS	2014	0%	2%	29%	19%	6%	71%	29%	0%	0%	0%	0%	0%
GUT	2016	0%	0%	2%	9%	0%	0%	0%	0%	0%	0%	0%	0%
GSRC	2021	76%	80%	92%	87%	85%	72%	70%	86%	89%	57%	59%	39%
GPD	2023	78%	81%	93%	78%	95%	90%	90%	73%	63%	45%	69%	41%
HKP	2024	-	-	89%	88%	89%	89%	89%	110%	105%	113%	112%	88%

IPP Name	Start Year	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
KEGCO	2016	28%	71%	72%	71%	71%	40%	37%	49%	36%	36%	50%	33%
GPSC	2006	0%	12%	26%	16%	0%	2%	26%	12%	0%	0%	0%	0%
RATCH	2002	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GLOW IPP	2003	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
KPG	2007	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RPCL	2008	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GNS	2014	0%	8%	17%	31%	19%	18%	3%	9%	0%	0%	6%	0%
GUT	2016	0%	0%	0%	15%	2%	0%	0%	0%	0%	0%	0%	0%
GSRC	2021	72%	71%	91%	87%	92%	91%	82%	76%	76%	77%	89%	74%
GPD	2023	64%	93%	87%	75%	93%	80%	87%	85%	65%	83%	89%	54%
HKP	2024	79%	89%	89%	89%	89%	89%	85%	68%	90%	90%	90%	90%

Source: IEEFA calculations based on EGAT.

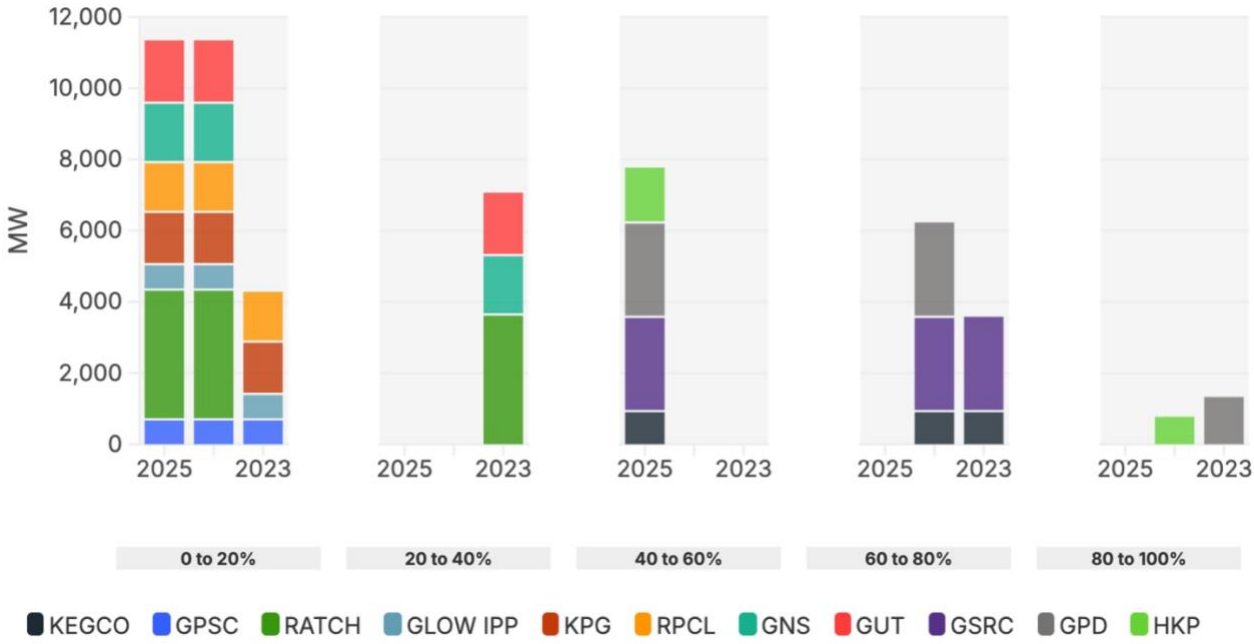
Note: Please consult the Appendix for IPP details.

Table 3: Annual utilization factors derived from IPP financial statements, 2023 to 2025

IPP Name	Start Year	2023	2024	2025
KEGCO	2016	78%	64%	53%
GPSC	2006	8%	8%	8%
RATCH	2002	20%	14%	0%
GLOW IPP	2003	7%	5%	8%
KPG	2007	1%	1%	1%
RPCL	2008	1%	5%	3%
GNS	2014	25%	16%	3%
GUT	2016	25%	16%	3%
GSRC	2021	69%	71%	40%
GPD	2023	80%	65%	41%
HKP	2024	-	95%	59%

Source: Company financial reports; IEEFA calculations.

Figure 7: IPP plant capacity organized by utilization factor, 2023 to 2025



Source: Company financial reports; IEEFA calculations.

The capacity factors observed by IPPs in recent years are indicative of a broader trend of underutilization of gas-fired power-generating assets, and maintaining such a large, contracted base of underutilized facilities has been expensive for EGAT. These costs are ultimately passed on to ratepayers.

The Institute for Energy Economics and Financial Analysis (IEEFA) analyzed EGAT data showing payments to the seven gas-fired power plants with dispatch rates below 30% over the past three years. EGAT has reportedly paid these IPPs over THB159 billion (USD5.02 billion) since 2023.

Table 4: Total EGAT payments to seven underutilized IPP plants, 2023 to 2025

Million THB	2023	2024	2025	Total
GPSC	10,237	2,235	1,976	**14,448**
RATCH	29,765	15,907	8,605	**54,278**
GLOW IPP	6,559	1,714	1,646	**9,919**
KPG	7,691	5,040	4,931	**17,662**
RPCL	3,204	3,357	3,192	**9,753**
GNS	8,635	9,282	7,733	**25,650**
GUT	14,343	6,528	6,438	**27,309**
Total	80,434	44,064	34,521	**159,018**

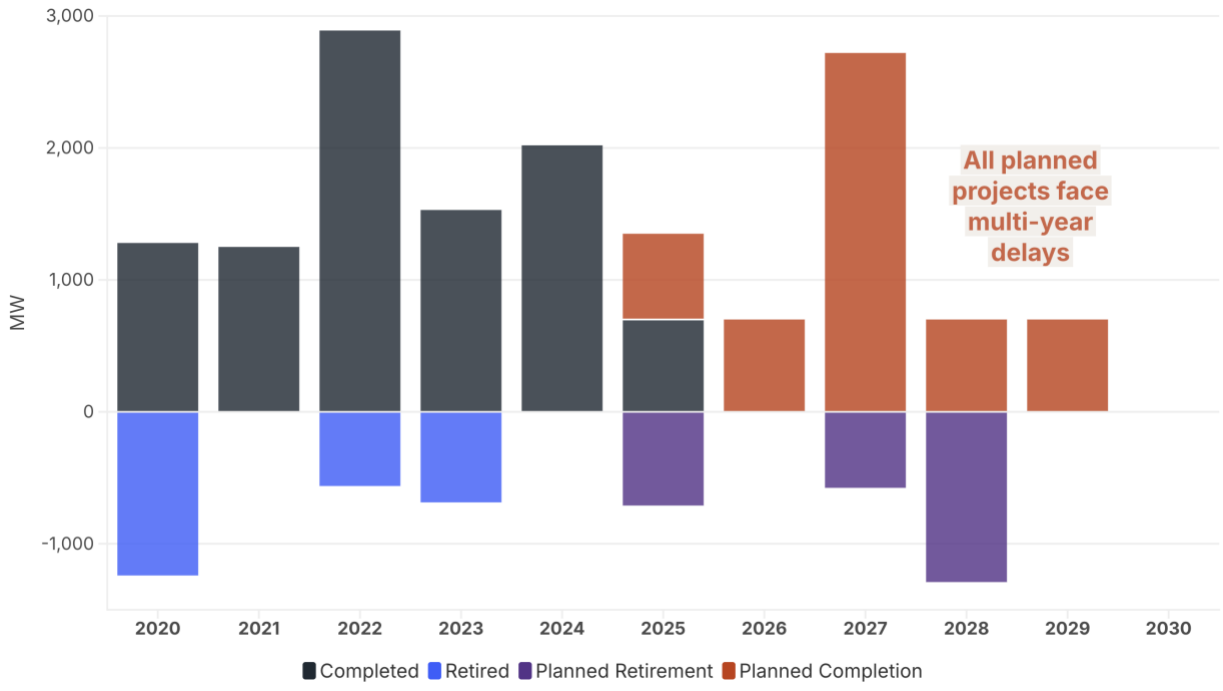
Source: EGAT; IEEFA calculations.

The prospect of stranded gas assets in Thailand's power sector is not a hypothetical outcome of a future energy transition but a characteristic of the current conditions facing gas power plant operators.[25]

Section 3: Many gas plant proposals face delays and even cancellations

While existing gas-fired power capacity has been underutilized recently, Thailand has added significant new capacity over the last five years. Between 2020 and 2025, the country brought nearly 9.7GW of gas plants online, according to Global Energy Monitor data[26], driven largely by projects owned by IPPs. During the same period, 2.7GW of capacity was retired.

Figure 8: Recent gas capacity additions, proposed projects, and retirements (2020–2030)



Source: Global Energy Monitor; IEEFA analysis.

Looking ahead, ongoing projects suggest the rapid buildout of gas plants may continue through 2030. In its 2024 Annual Report, EGAT lists four projects scheduled for completion by 2029.[27] These include the 2,100-megawatt (MW) South Bangkok and the 700MW North Bangkok expansion

[25] Climate Finance Network Thailand (CFNT). Fossil Reckoning: Valuation of Coal and Gas Stranded Assets in Thailand. 21 June 2024.
[26] Global Energy Monitor (GEM). Asia Gas Tracker. Date Accessed: January 2026.
[27] Electricity Generating Authority of Thailand (EGAT). Annual Report 2024. 15 June 2025. Page 153.

projects, as well as the 1,400MW Surat Thani and the 650MW Nam Phong projects, which would replace two existing gas units. In addition, private producers aim to complete the 600MW Burapa power station, led by a consortium of Future Energy Holdings, Gulf Development, and Sinsukjai Co.[28]

Although planned since before 2019, these projects have faced prolonged delays:

North Bangkok expansion: The North Bangkok power station in Nonthaburi consists of two operational combined-cycle gas turbines (CCGTs) that were initially designed to operate on natural gas sourced from Myanmar.[29] The expansion project includes two additional 700MW units to run on imported LNG supplied through EGAT's own floating storage and regasification unit (FSRU).[30] EGAT aims to complete the first unit by 2028 and the second by 2035.[31]

In 2024, EGAT issued a tender to solicit engineering, procurement, and construction (EPC) services for the plant, with terms subsequently revised three times in 2025.[32] In October 2025, bidding for the project was canceled.[33] The reasons for the cancellation are unclear, though EGAT price estimates may provide some insight. Under the terms of the tender, the estimated price listed was THB20.3 billion (USD646.3 million)[34], or USD923 per kilowatt (kW), based on the project's capacity. However, capital costs for gas turbines have nearly tripled over the last two years, from USD700–1,000/kW to over USD2,400/kW. This rapid escalation may have contributed to EGAT's decision to cancel EPC bidding for the project. Given that lead times for new gas turbines are currently in the range of four to five years, the project's turbine shortage suggests it may continue to face extensive delays.

South Bangkok expansion: The South Bangkok power plant consists of two existing CCGT units with 710MW and 1,220MW of capacity, respectively, operating on gas supplied from the Gulf of Thailand and Myanmar.[35] EGAT aims to add three new units, each with 700MW of capacity, running on imported LNG.[36] Construction was expected to take 48 months after signing a letter of intent with equipment suppliers, with completion targeted in 2026 and

[28] Electricity Generating Authority of Thailand (EGAT). Annual Report 2024. 15 June 2025. Page 157.
[29] EGAT. North Bangkok Power Plant. Date Accessed: 04 February 2025.
[30] EGAT. Annual Report 2019. 2020. Page 93.
[31] EGAT. Power Plant Development Projects. January 2022.
[32] EGAT. Announcement for Invitation for Bids No. EGAT 10/2567-NBAP1 (NORTH BANGKOK POWER PLANT (ADDITIONAL) PROJECT PHASE 1). 11 November 2024.
[33] EGAT. Announcement of Cancellation of Invitation for Bids No. EGAT 10/2567-NBAP1 North Bangkok Power Plant (Additional) Project Phase 1. 30 October 2025.
[34] EGAT. Announcement Revision No.3 for Invitation for Bids No. EGAT 10/2567-NBAP1 (NORTH BANGKOK POWER PLANT (ADDITIONAL) PROJECT PHASE 1). 14 July 2025.
[35] EGAT. South Bangkok Power Plant. Date Accessed: 04 February 2025.
[36] EGAT. Annual Report 2019. 2020. Page 93.

2027.[37] However, after opening EPC bidding in October 2021 and revising terms 14 times through 2024[38], bidding was canceled in February 2025.[39]

Surat Thani power project: The Surat Thani power plant is a proposed greenfield project with two 700MW units. The project plans to operate on imported LNG, with diesel oil as a secondary fuel.[40] In January 2022, the National Environment Board approved the project's environmental impact assessment (EIA)[41], with targeted completion of Units 1 and 2 in 2027 and 2029.[42] EGAT opened EPC bidding for the project in May 2021[43], and the bidding terms were revised 15 times between 2021 and 2024.[44] In February 2025, EGAT announced cancellation of bidding for the project.[45]

Nam Phong replacement project: The Nam Phong gas project is an existing facility consisting of two 355MW units. EGAT planned to replace both units with a single 650MW unit and targeted completion in 2025. EGAT opened project bidding in December 2020[46], but officially canceled it in November 2022, after which it has not been reopened.[47]

Burapa power station: The Burapa power project is a 600MW greenfield plant led by a consortium of private partners. The plant signed a 25-year Power Purchase Agreement (PPA) with EGAT in July 2019, followed by a 25-year gas sales agreement a month later.[48] An EIA was prepared in 2019. In October 2025, however, the Burapa project's targeted in-service date was revised from 2027 to 2029.[49] Despite commercial progress on the project, there have been no official announcements regarding EPC contracts or gas turbine supply agreements, though project sponsors have cited Mitsubishi as the intended turbine supplier. Moreover, completion by 2029 would mean that EIA studies were conducted over a decade before project completion.

[37] EGAT. Annual Report 2019. 2020. Page 93.
[38] EGAT. Announcement for Invitation for Bids No. EGAT 2/2564-SBAP (SOUTH BANGKOK POWER PLANT (ADDITIONAL) PROJECT). 02 December 2021.
[39] EGAT. CANCELLATION OF INVITATION FOR BIDS NO. EGAT 2/2564-SBAP (SOUTH BANGKOK POWER PLANT (ADDITIONAL) PROJECT). 06 February 2025.
[40] EGAT. Annual Report 2019. 2020. Page 93.
[41] EGAT. Power Plant Development Projects. January 2022.
[42] EGAT. Annual Report 2019. 2020. Page 93.
[43] EGAT. Announcement for Invitation for Bids No. EGAT 1/2564-SRTP (Surat Thani Power Plant Block 1-2 Project). 21 May 2021.
[44] EGAT. Announcement Revision No.15 for Invitation to Bid No. EGAT 1/2564-SRTP (SURAT THANI POWER PLANT BLOCK 1-2 PROJECT). 21 October 2024.
[45] EGAT. ANNOUNCEMENT OF CANCELLATION OF INVITATION FOR BIDS NO. EGAT 1/2564-SRTP SURAT THANI POWER PLANT BLOCK 1-2 PROJECT. 06 February 2025.
[46] EGAT. Announcement for Invitation for Bids No. EGAT 2/2563-NPORP (Nam Phong Power Plant Replacement Project). 28 December 2020.
[47] EGAT. Final Evaluation Result for Invitation for Bids No. EGAT 2/2563-NPORP (Nam Phong Power Plant Replacement Project). 30 November 2022.
[48] IJ Global. Gulf closes investment in Thai CCGT. 20 January 2020.
[49] Thailand Construction News. Weak demand in Thailand results in suspension of four power plants and delay the opening of a fifth. 31 October 2025.

In most cases, extensive delays contrast with the near-term completion targets for Thailand's planned gas projects. Given that EPC bidding has been canceled for all of EGAT's projects listed in its most recent annual report, it is likely that gas turbines have not been secured.

Simultaneously, major gas turbine suppliers are reporting delivery timelines of roughly five years due to high demand from regions such as North America and the Middle East, as well as materials, components, and labor shortages across the supply chain. As a result, turbine manufacturers are increasingly requiring customers to secure binding slot reservation agreements (SRAs) up to five years ahead of delivery and charging upwards of 20% of the total project cost in some cases.

For Thailand, these factors present a dual challenge to the economics of gas expansion. The country's increasing reliance on expensive LNG is likely to raise marginal generation costs for gas plants. Higher turbine expenses for new plants and costly SRAs would also increase capital expenditures, add multi-year delays, and complicate power sector planning. These structural economic pressures on gas-fired power generation should be addressed in future power development plans.

Section 4: Economic issues with a gas-centric vision for the power sector

EGAT's enduring subsidy burden

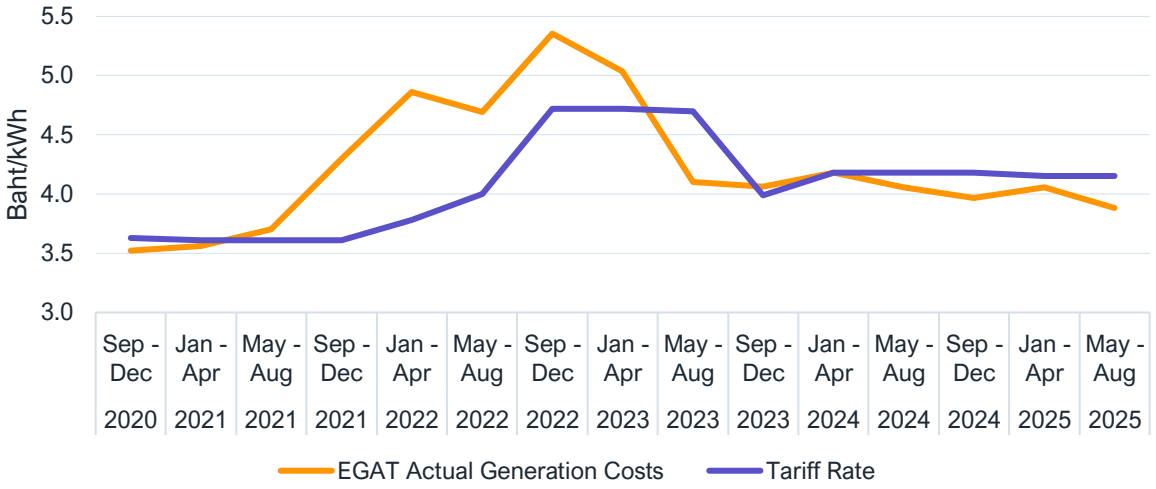
While almost all electricity producers in Thailand are insulated from gas price increases through fuel cost pass-through mechanisms, EGAT continues to pay debt from electricity subsidies provided during the 2021–2023 energy crisis.[50] EGAT's persistent subsidy burden highlights the difficulty in shouldering higher-cost gas supplies among the state-owned utility and power consumers.

Thailand's electricity tariffs consist of a base tariff and an automatic power tariff adjustment, also known as fuel adjustment (Ft). The base tariff aims to cover the long-run marginal cost of operation for state-owned utilities to ensure financial viability and expansion capability in line with future demand.[51, 52]

The Ft generally functions to pass through uncontrollable operating cost fluctuations to end users.[53] These mainly occur due to variations in fuel prices, foreign exchange rates, and inflation, as well as unplanned shifts in government policy.

[50] Thanachart Securities. Utilities Sector News Update. 27 March 2025.
[51] Friedrick-Ebert-Stiftung (FES). Energy transition in Thailand: challenges and opportunities. 2017. Page 16.
[52] Sirasoontorn, Puree. Electricity Tariff Regulation in Thailand: Analyses and Applications of Incentive Regulation. April 2011. Page 5.
[53] Friedrick-Ebert-Stiftung (FES). Energy transition in Thailand: challenges and opportunities. 2017. Page 16.

Figure 9: EGAT's reported generation costs versus the tariff rate



Source: Energy Regulatory Commission of Thailand (ERC).

The growth in EGAT's subsidy burden indicates a government policy to shield consumers from the full impact of the energy crisis. Figure 9 illustrates this by charting EGAT's generation costs versus its tariffs based on submissions to the Energy Regulatory Commission of Thailand (ERC). The sustained reduction in generation costs below the tariff rate since 2024 has enabled EGAT to begin paying off the subsidy. The subsidy burden, peaking at THB150 billion at year-end 2022[54], was on track to fall below THB65 billion by year-end 2025.[55]

Availability payments – the hidden cost of overcapacity

While the National Energy Policy Council's (NEPC) 4GW power pause will reportedly save state-owned utilities THB3.5 billion (USD111 million) in operating expenses[56], idle gas plants continue to incur fixed costs that are passed on to consumers through the base tariffs as availability payments.[57] This is because the PPAs between EGAT and power producers typically specify separate payments to cover availability to operate if dispatched and an energy component based on (actual) electricity sold to EGAT.

According to a leading Thai power company, Global Power Synergy Public Company Limited (GPSC), EGAT pays IPPs the availability payment to cover "the power plant construction cost, as well as the debt burden and the capacity cost" and "fixed costs in machine operation and

[54] EGAT. Annual Report 2024 Financial Statements. June 2025. Page 53.
[55] Fitch Ratings. Fitch Affirms Thailand's EGAT at 'BBB+'; Outlook Negative. 02 December 2025.
[56] Bangkok Post. Weak demand results in suspension of 4 power plants. 29 October 2025.
[57] Availability payments are also known as 'capacity payments'.

maintenance".[58] When devising PPA terms with a different producer, EGAT included that availability payments can also be adjusted for fluctuations in inflation, interest rates, and exchange rates.[59]

While commentary often focuses on the impact of fuel costs or renewable remuneration on electricity tariffs[60], availability payments are a significant, unseen contributor to electricity bills. EGAT's latest estimate for the first tariff cycle of 2026 reports that availability payments are THB0.63 per kilowatt-hour (kWh)[61, 62] — almost 17% of the current base tariff rate of THB3.78/kWh. This far exceeds the current fuel adjustment level of THB0.0972/kWh and the savings the government tried to achieve by reducing renewable funding in 2025 (THB0.17/kWh).[63]

A survey of EGAT's estimated payments to IPPs helps illustrate the actual cost of availability payments (Table 5). Over the past three years, EGAT, as the buyer of last resort, planned to pay over THB61 billion (almost USD2.0 billion) to seven plants for over 11GW of capacity, during months that the facilities generated zero electricity. This represents 38% of the total payments for these plants and 94% of EGAT's subsidy burden accrued during the 2021–2023 energy crisis. Total availability payments are likely larger, as Table 5 only accounts for months when EGAT did not purchase any electricity from the IPP.

Table 5: EGAT's estimated payments to gas plants for non-generating months

Million BHT	2023	2024	2025	Total
GPSC	1,320	2,235	207	**3,762**
RATCH	-	-	8,605	**8,605**
GLOW IPP	1,065	1,714	1,646	**4,425**
KPG	3,541	5,040	4,931	**13,512**
RPCL	3,204	3,357	3,192	**9,753**
GNS	2,555	2,719	1,541	**6,815**
GUT	4,011	5,174	5,019	**14,204**
Total	**15,696**	**20,239**	**25,141**	**61,076**

Source: EGAT.

Availability payments are intended to ensure that power facilities remain fit for deployment during demand surges or unplanned outages. However, the low utilization of several plants should cause stakeholders to question the necessity of these payments.

[58] Global Power Synergy Public Company Limited (GPSC). Annual Report 2024 (56-1 One Report). February 2025. Page 46.
[59] EGAT. Annual Report 2022. June 2023. Page 219.
[60] The Nation. Power tariff cut to 3.88 baht as government eases energy burden. 30 November 2025.
[61] EGAT. Estimated electricity purchase costs for EGAT (Electricity Generating Authority of Thailand) January 2026 - April 2026. 14 November 2025.
[62] This estimate includes the availability payments to small power producers (SPPs), which IEEFA calculates as contributing about 30% of the total availability payments estimated by EGAT. EGAT. Details of the cost of purchasing electricity from SPP-Firm. 14 November 2025.
[63] Solar Quarter. Thailand's ERC Proposes 0.17 Baht/kWh Tariff Cut Amid Renewable Energy Policy Review. 12 March 2025.

Across these seven IPPs, non-generating periods comprise between 16% to 100% of the total estimated payments to EGAT since 2023. EGAT paid GPSC THB9.8 billion to idle the 1,400MW Ratchaburi Power Co. Ltd (RPCL) plant for three consecutive years. With RPCL's PPA with EGAT in effect until 2033[64], ratepayers may pay the facility to remain essentially idle for seven more years if power market conditions do not improve.

What to do about availability payments?

There is limited scope for changing availability payments arising from existing PPAs. Mitigating future exposure will require Thailand to avoid gas expansion plans and allow for legacy PPAs to expire.

Several PPAs between EGAT and gas-fired IPPs are expiring or set to end soon. The agreements governing two gas turbine units at Ratch Group's Ratchaburi power station (RATCHGEN), totaling 1,470MW, expired in 2025, while those covering the remaining 2,175MW of CCGTs terminate in 2027.[65] The PPA for GPSC's 700MW Sriracha Power Plant also concluded in 2025, and its 1,400MW RPCL facility agreement will expire in 2033.

There is a risk that these PPA expirations, together with 4.7GW of planned retirements this decade, could act as an impetus for further expansion. However, availability payments in future PPAs are likely to be much higher, further burdening consumers. This is because availability payments partially exist to remunerate the capital and fixed costs of sourcing and building power plants. Any plans to expand the gas network or replace aging facilities with new builds will inflate the base tariff.

The capital costs of deploying CCGTs have tripled to USD2,400/kW over the past two years. Any project that completes tendering will see these higher costs passed on to consumers through availability payments that are reflected in the base tariff. If gas expansion continues under the support of the current PPA regime, the availability payment burden that EGAT currently estimates costing THB0.63/kWh will certainly be higher in future tariffs.[66]

The government will continue to balance the repayment of EGAT's revenue accrual with an unwillingness to burden electricity ratepayers[67], as both households and businesses struggle to endure Thailand's anemic economic recovery. Credit agencies remain hopeful that lower fuel costs — from LNG oversupply and higher domestic output — will allow EGAT to settle this debt by 2028 while reducing electricity tariffs.[68] However, as a dual-producer and electricity buyer of last resort, EGAT may continue to see its subsidy burden grow due to rising exposure to LNG prices.

[64] GPSC. Annual Report 2024 (56-1 One Report). February 2025. Page 56.
[65] Tris Rating. Ratch Group PLC. 02 August 2024. Page 1.
[66] EGAT. Estimated electricity purchase costs for EGAT (Electricity Generating Authority of Thailand) January 2026 - April 2026. 14 November 2025.
[67] The Nation. Power tariff cut to 3.88 baht as government eases energy burden. 30 November 2025.
[68] S&P Global. EGAT International Co. Ltd. Local Currency Rating Raised To 'A-'; 'BBB+' Foreign Currency Rating Affirmed. 17 November 2025.

Frequent price reforms highlight challenges of integrating costly gas supply

Thailand has seen significant upheaval in its gas pricing frameworks this decade in response to LNG price volatility and its increasing share of the gas supply.

Following Russia's invasion of Ukraine, skyrocketing LNG prices and a precipitous drop in domestic production prompted a state-directed switch away from gas use to reduce LNG imports.[69] For the power sector, this meant leveraging the dual-fuel capability of some of its generating capacity.[70] At the same time, the ERC created an "Energy Pool Price" measure in April 2022 to incorporate the cost of fuel substitutes so that all gas users could avail the benefits of fuel switching.[71]

The ERC ceased the Energy Pool Price measure in February 2024[72], and created a Gas Pool Manager to assess the gas wholesale price that is passed on to regulated consumers. This generally reflects a volume-weighted average of the cost of these supply sources. Unlike prior pricing frameworks, this delivered uniform pricing across Thailand's gas users. However, consumers can bypass this regulated pricing framework by negotiating directly with LNG suppliers, albeit at increased exposure to the highest-cost gas source.

In May 2025, Thailand's NEPC floated a gas pool restructuring that abandons uniform gas pricing to improve the competitiveness of strategic stakeholders at the expense of other users.[73] Gas would be supplied to gas separation plants (GSPs) owned by PTT — an integrated group engaged in various parts of the oil, gas and petrochemical supply chain — at the lower Gulf gas price, benefitting the petrochemical sector. Moreover, a reclassification of GSPs would redistribute their surplus profits to subsidize the gas costs borne by power producers, reducing pressure on EGAT and the inflationary effect on electricity tariffs. Meanwhile, industrial users would be burdened with high LNG import costs. In summary, shielding the petrochemical and power sectors from these expenses would shift financial liability to other key sectors of the economy.

In December 2025, the Bangkok Post reported a new variant to this restructuring.[74] Gas used for other sectors (power, industry, and transport) will be priced at the pool price rate, while GSPs will receive pricing at a rate approximately equivalent to a 10% premium on Gulf gas pricing. The Bangkok Post reports this new restructuring is law as of 1 January 2026.

This pattern of frequent regulatory change suggests that managing Thailand's rising LNG burden is becoming increasingly complex. The viability of gas as a driver of the country's economy requires

[69] Energy Regulators Regional Association (ERRA). Country Highlights: Thailand's Energy Market Outlook. October 2023. Page 8.
[70] Asia Pacific Energy Research Centre (APERC). APEC Oil and Gas Security Exercise in Thailand: 5th APEC Oil and Gas Security Exercise. February 2024. Page 33.
[71] ERC. Annual Report 2022. Page 23.
[72] Tilleke & Gibbins. Thailand's New Pool Gas Scheme. 03 January 2024.
[73] Money & Banking Online. Thai energy group, impact of EGAT's preparation to adjust pool gas cost structure. 14 May 2025.
[74] Bangkok Post. New gas price plan targets green shift. 04 December 2025.

regular collaboration between the government and stakeholders to adjust policies in line with developments in the national gas market.

Economic issues in other sectors

The non-power sectors of Thailand's economy are also key gas users that face issues integrating rising gas costs into their business models. This section details how these high-level sectors use gas and the economic challenges they encounter.

Gas separation plants (GSPs)

Thailand has six existing GSPs, with five located in the industrial area of Rayong near its LNG import terminals, and one in the Southern province of Nakhon Si Thammarat. These GSPs strip natural gas liquids (NGLs) from Thailand's offshore gas stream for use by the petrochemical sector or for third-party resale. PTT's plans to install a seventh GSP in Rayong over the next five years could increase consumption if domestic output is sufficient to feed the facility.

However, Thailand's petrochemical sector faces a negative outlook marred by demand-curbing tariffs, chemical oversupply, and producers with access to lower-cost feedstocks from China, the Middle East, and the United States (US).[75] While Thai producers have repeatedly cited a need to reduce costs[76], the 2024 restructuring led to a direct increase in feedstock costs paid by GSPs.[77] Lobbies to mitigate the impact of rising gas costs on the petrochemical sector — responsible for 7.7% of Thailand's GDP — likely played a significant role in the formation of recent price restructuring proposals.[78]

Industry

Industrial gas use in Thailand comprises several subsectors, including iron and steel, cement, and the manufacturing of various products, including textiles, pulp and paper, food product processing, and machinery. Some users rely on gas to cogenerate both electricity and steam for wet and high-heat industrial processes, which can be produced on site or purchased from neighboring power producers.

According to the Joint Standing Committee on Commerce, Industry and Banking (JSCCIB), paying LNG rates established in the May 2025 restructuring proposal would increase industrial gas costs by 60% over 2025 levels.[79] JSCCIB adds that the proposal would inflate living costs, reduce both industrial output and employment, and potentially slow economic activity as a whole. Thailand's

[75] IRPC Public Company Limited. New World of Petrochemical: The Next Challenge over Future Pathway. 01 August 2025.
[76] PTT Global Chemical. The Atlas of Changes: The Perfect Meltdown Paving the Path to Global Realignment. 01 August 2025.
[77] UOB Kay Hian Private Limited. New Cabinet Reshuffle Positive For PTT. 08 September 2025. Page 2.
[78] IRPC Public Company Limited. New World of Petrochemical: The Next Challenge over Future Pathway. 01 August 2025. Page 39.
[79] The Nation. JSCCIB opposes pool gas scheme, citing economic and social risks. 02 May 2025.

manufacturing sectors reportedly saw 5,000 factory closures between 2021 and May 2025 amid competition with other exporters, mainly China.[80] Higher energy costs — for electricity, gas, and byproduct steam — would exacerbate this issue.

As export-oriented industrial manufacturers cater to an increasingly carbon-conscious global consumer base, Thailand's access to low-carbon electricity may become an existential concern.

The application of the European Union's (EU) Carbon Border Adjustment Mechanism (CBAM) to Thailand's steel and aluminum exports in 2026 could serve as an illustrative example. Kaskikorn Research Center estimates that 3.8% of Thai exports to the EU could be affected by this policy.[81] Facing an emission intensity 17 times that of Europe's, Thai steel producers may see steel costs rise between 1.5% and 1.7% due to EU carbon credit costs.

While access to renewable energy may not help the steel sector immediately, electricity is an input for any CBAM-covered manufacturing imports to the EU. Therefore, providing access to lower-emitting, renewable electricity will not only reduce costs domestically but also increase market competitiveness.

Natural gas vehicles (NGVs)

Gas use in Thailand's transport sector mainly consists of compressed natural gas (CNG) for buses, taxis, trucks, and other vehicles. Transport use has been subsidized — borne as losses through PTT — since around 2009[82], originally to encourage fuel switching away from expensive liquefied petroleum gas (LPG). The subsidies currently function to reduce the burden of higher gas prices on motorists, capping expenses at a loss to PTT. As of mid-2024, subsidization has cost PTT THB150 billion (USD4.8 billion).[83]

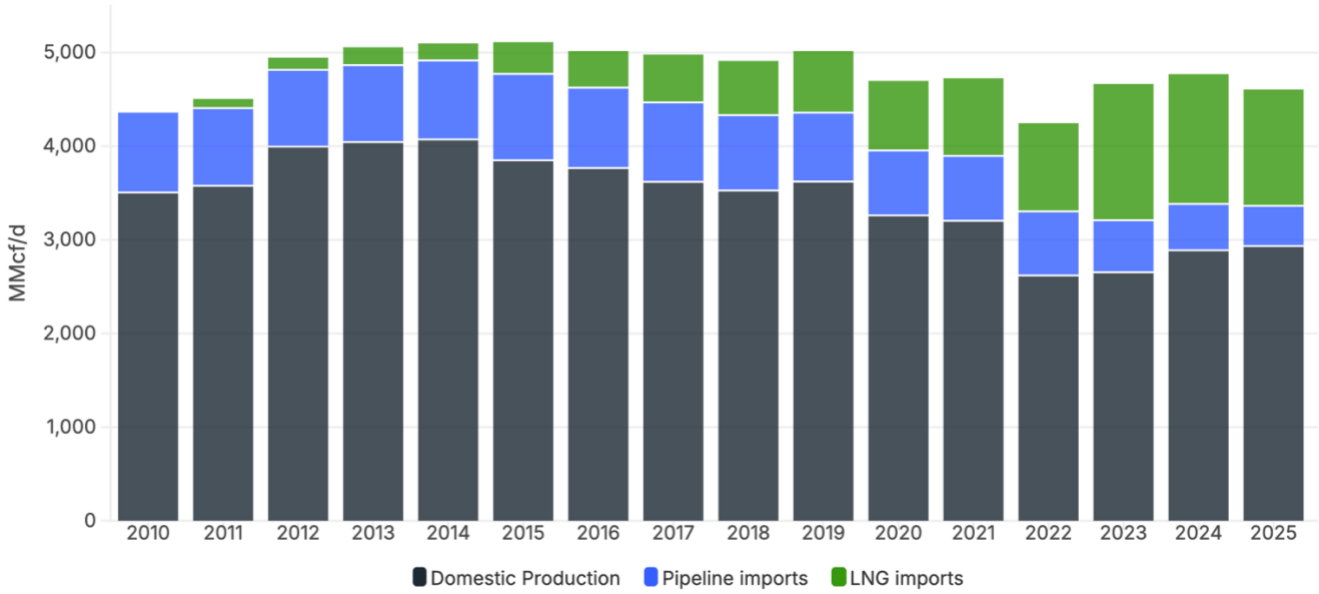
While continued subsidies will support usage in the short term, a structural shift away from gas in transport is underway as motorists turn to alternatives. Transport use of gas has fallen by 69% since its 2014 peak. As of June 2024, almost half of Thailand's NGV stations have ceased providing CNG services or closed.[84] Competition from electric alternatives is likely to continue to reduce NGV use in the future.

[80] Thai Examiner. Industrial policy shift urgently needed. Thailand loses 100 factories a month since 2021 linked to China. 20 May 2025.
[81] The Nation. EU CBAM to shake Thai exports as definitive phase starts on Jan 1. 21 December 2025.
[82] Asian Development Bank (ADB). Fossil Fuel Subsidies in Thailand: Trends, Impacts and Reforms. 2015. Page 25.
[83] The Nation. 217 money-losing NGV stations have closed: PTT source. 16 June 2024.
[84] The Nation. 217 money-losing NGV stations have closed: PTT source. 16 June 2024.

Thailand works to reduce LNG exposure

As the economic impact of costly LNG becomes more evident, the Thai government and its state-owned production companies are taking steps to alleviate the financial burden by unlocking lower-cost gas supplies.

Figure 10: Thailand's gas supply by source



Source: EPPO.

Thailand is experiencing a moderate production rebound, with output nearly 12% above 2022 levels. However, the sharp drop that year was mainly driven by a disrupted handover of the Erawan asset from Chevron to PTT Exploration and Production Public Company Limited (PTTEP), which delayed drilling.[85] Production from the Erawan field remains 6% below 2021 levels, and its increase has mainly resulted in a reversion to the structural decline trend seen since 2014. Without further success in resource development, production will likely continue to decline.

In July 2025, PTTEP acquired a 50% stake in a concession in the Malaysia–Thailand Joint Development Area (MTJDA) from Chevron.[86] PTTEP is also liaising with the Myanmar government to drill wells in existing projects and explore for new resources to increase gas imports from the

[85] Upstream Online. Handover complete: PTTEP takes over at Erawan and Bongkot fields. 24 April 2022.
[86] Reuters. Thailand's PTTEP buys 50% of offshore gas block from Chevron for $450 million. 28 July 2025.

neighboring country.[87] In late 2025, the government began opening licensing rounds in the Andaman Sea to unlock offshore resources within Thailand's current maritime control.[88]

However, bringing any additional supplies into the Thai gas market will take several years. Meanwhile, structural declines are likely to continue, exacerbating debates over which sectors bear the costs of more expensive LNG imports.

The way forward for Thailand's Power Development Plans (PDPs)

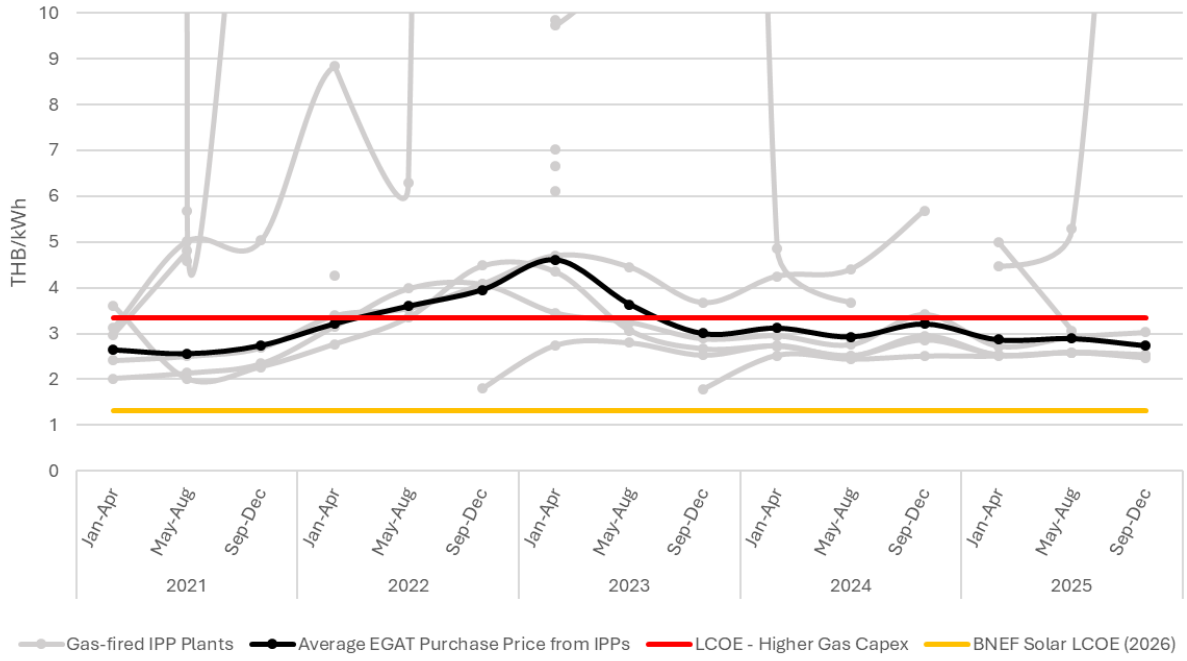
Despite Thailand's more ambitious emission reduction targets in the latest NDC, recent government plans are at odds with power sector trends. Over 11GW of gas units are underutilized, 4GW are idle due to suspension, and at least 4.8GW of projects remain delayed. Regardless, observers expect the status quo from the upcoming PDP[89], with gas expansion justified as necessary to power the rising electrification of end-use sectors and data centers.

Meanwhile, renewable deployment is accelerating. After Thailand's solar capacity reached around 3GW from 2018 to 2024[90], capacity more than doubled in the first 10 months of 2025 to reach 6.8GW.[91] Instead of supporting idling, underperforming, and unaffordable gas units, the government could use cheap, plentiful renewable energy. With over 300GW of potential[92], there is significant headroom for solar generation to increase and meet demand.

Moreover, solar became the cheapest form of electricity in the country in 2022, while gas-fired power plants continue to demonstrate high and volatile per-unit electricity costs.[93] In 2024, Bloomberg New Energy Finance (BNEF) calculated that building new solar projects was cheaper than continuing to operate existing coal and gas facilities, and that pairing solar with four-hour battery storage would become cost-competitive with existing thermal plants in 2025.[94] Volatility in per-unit costs of gas-fired plants is due partly to an increasing reliance on imported LNG and exposure to global gas markets, as well as the declining utilization of plants, which spreads availability payments over a smaller base of electricity output and increases per-unit costs.

[87] The Nation. Thailand, Myanmar plan new wells to boost gas output. 12 October 2025.
[88] The Nation. Thailand signals major energy shift with plan to open Andaman petroleum blocks as Gulf reserves decline. 05 December 2025.
[89] Bangkok Post. New gas price plan targets green shift. 04 December 2025.
[90] Ember. Electricity Data Explorer. January 2026. Retrieved on 02 February 2026.
[91] Department of Alternative Energy Development and Efficiency (DEDE). Performance on Alternative Energy Policy 2025. 23 January 2026.
[92] Clean, Affordable and Secure Energy for Southeast Asia (CASE). Unlocking Rooftop Solar Potential in Thailand: Policies and Pathways to Boost Investments. 27 January 2025.
[93] BNEF. Solar, Wind and Batteries Could Enable Thailand to Reduce Reliance on LNG Imports. 19 May 2025.
[94] BNEF. Solar, Wind and Batteries Could Enable Thailand to Reduce Reliance on LNG Imports. 19 May 2025.

Figure 11: EGAT per-unit generation costs of contracted IPPs



Source: EGAT; Bloomberg New Energy Finance (BNEF); IEEFA calculations.

Note: Grey lines represent EGAT's estimated per-kWh purchase costs from contracted gas-fired power plants. Dots, rather than lines, indicate that EGAT did not purchase any power from the IPPs in adjacent months. LCOE stands for "levelized cost of electricity." The "LCOE – Higher Gas Capex" line is an IEEFA calculation of gas-to-power costs that assumes current global gas plant capex rates of USD2,400/kW — compared to historical rates of USD800-1,000/kW — along with a USD10 per million British thermal units (MMBtu) LNG input price. The chart does not show rates above THB10/kWh. Average EGAT purchase price includes procurement from two coal-fired IPPs.

Figure 11 shows per-unit electricity costs for gas-fired power plants contracted by EGAT, compared with BNEF's 2026 solar levelized cost estimates in Thailand. At the end of 2025, solar costs were less than half of EGAT's average purchase price from gas and coal-fired IPPs.

Meanwhile, due to global gas turbine shortages, higher capital expenditure (capex) assumptions for proposed gas plants operating on imported LNG could elevate generation costs even higher than EGAT's average purchase prices from operating IPPs.

Renewables

The Thai government should draft plans that reflect these ground realities and address the barriers to scaling up low-cost renewable energy.

In a critique of the Draft PDP2024, BNEF highlighted the challenges Thailand would face in mobilizing the investment needed to generate more than half of its electricity from renewables by

2037.[95] The involvement of state-owned EGAT, Metropolitan Electricity Authority (MEA), and Provincial Electricity Authority (PEA) are particularly mentioned, which are lagging on renewables deployment. For example, as of December 2025, EGAT is only operating seven solar plants totaling 78.5MW[96], a mere 0.005% of its contracted capacity and 1.2% of total solar capacity in the country.[97] Moreover, all of the 2.3GW of solar projects under development by EGAT are floating storage systems that can complement its hydro assets, residing on reservoirs.[98] Additionally, the government may restrict the buildout of battery energy storage systems (BESS) to EGAT[99], arguing that the participation of other actors would result in higher electricity bills for consumers.

The NEPC recently approved a pilot program to procure renewable energy through direct power purchase agreements (DPPAs), which should increase solar development.[100] However, excluding the purchaser eligibility to data centers will limit deployment. Expanding the program to other sectors would enable industrial users to access lower-cost renewable energy and help accelerate Thailand's utility-scale solar potential. This could be particularly beneficial given the competitive concerns facing Thailand's export-oriented manufacturing industry.

According to a recent Clean, Affordable and Secure Energy for Southeast Asia (CASE) study[101], Thailand's rooftop solar has a potential of 9GW by 2037. However, earlier studies suggest a possibility of 37GW.[102] The early feed-in tariff (FiT) program and successive modified net billing programs were successful in increasing deployment over 14-fold, from 130MW in 2015 to 1.89GW in 2022. Conversely, capacity limits and the exclusion of commercial and industrial participants in later programs impeded deployment.

Rooftop solar achieved grid parity in Thailand in 2019[103], and some estimates suggest that adopters could recover their investment through electricity savings within four to six years.[104] In the future, the government should open FiT or net metering programs across all sectors.

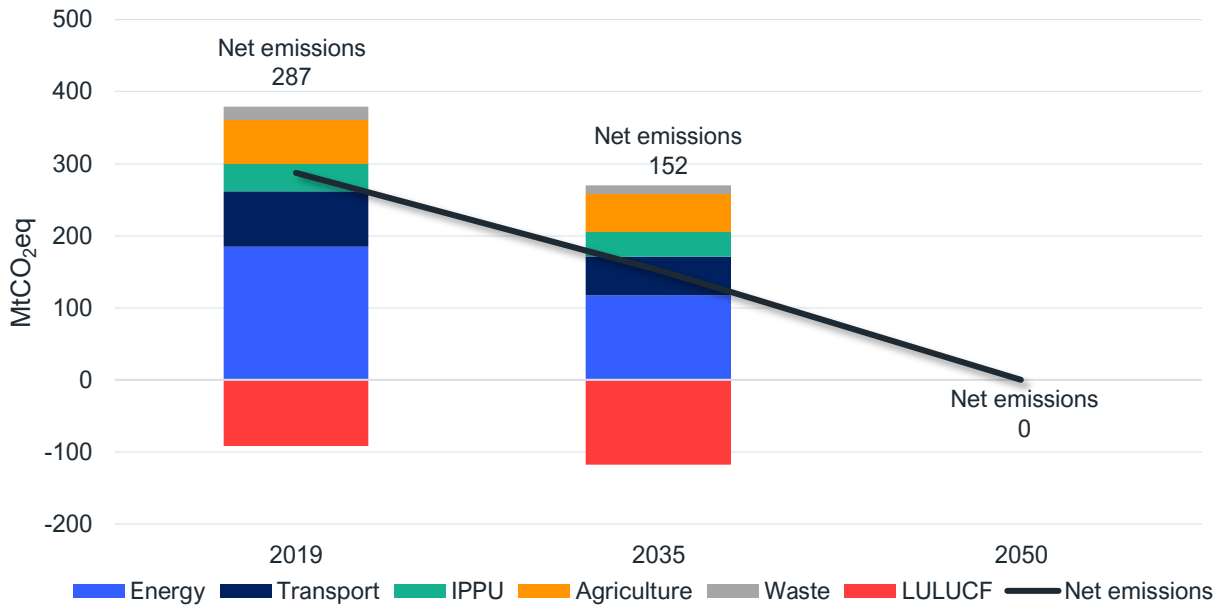
Such barriers are blocking end-users from accessing cheap, reliable renewable energy to mitigate their exposure to rising electricity rates, which are driven by Thailand's increasing reliance on LNG imports. Many industrial users, for example, are in urgent need of affordable energy supplies to compete with an increasingly competitive export market.

[95] BNEF. Thailand: Turning Point for a Net-Zero Power Grid. 19 May 2025.
[96] Based on EGAT's reported Contracted Capacity of 16,235MW for December 2025. EGAT. EGAT's Contracted Generating Capacity. Retrieved on 09 February 2026.
[97] Based on DEDE, which reports that 6,768MW of solar capacity was installed in Thailand as of October 2025. DEDE. Performance on Alternative Energy Policy 2025. 23 January 2026.
[98] EGAT. Power Plant Development Projects. Retrieved on 03 February 2026.
[99] Bangkok Post. Egat to backstop clean power supply. 09 January 2026.
[100] Hunton. Thailand's Draft Regulation on Direct Power Purchase Agreements via Third Party Access for Data Centers. 11 October 2025.
[101] Clean, Affordable and Secure Energy for Southeast Asia (CASE). Unlocking Rooftop Solar Potential in Thailand: Policies and Pathways to Boost Investments. 27 January 2025.
[102] Tongsopit, et al. Prosumer solar power and energy storage forecasting in countries with limited data: The case of Thailand. 30 January 2024.
[103] CASE. Unlocking Rooftop Solar Potential in Thailand: Policies and Pathways to Boost Investments. 27 January 2025. Page 10.
[104] Namsang Chakkol. Solar Panel Prices in 2025: An Updated Installation Cost and Key Price Factors. 2025.

Nationally determined contribution (NDC)

On 4 November 2025, the Department of Climate Change and the Environment submitted Thailand's updated NDC (NDC3.0) to the United Nations Framework Convention on Climate Change (UNFCCC).[105] NDC3.0 sets an emission reduction target of 47% below 2019 levels by 2035, and brings forward its net-zero goal to 2050, aligning the country with a 1.5-degree global warming pathway.

Figure 12: Thailand's emission trajectory according to NDC3.0



Source: UNFCCC.

Note: IPPU = Industrial Processes and Product Use; LULUCF = Land Use, Land-Use Change, and Forestry.

While the increased ambition and earlier net-zero commitment are needed, the submission details raise questions about Thailand's ability to deliver meaningful emission reductions. First, over 99.99% of the mitigation potential identified in these priorities is attributed to reductions in agriculture, including land-use improvements. Second, almost 80% of the prioritized energy sector investments, totaling USD1 billion, are dedicated to unproven technologies, including carbon capture and storage (CCS), small modular reactors (SMRs), and the co-firing of hydrogen and ammonia in power plants. Similarly, 25% of the USD5 billion investment targets for the transport sector rely on hydrogen pathways.

[105] United Nations Framework Convention on Climate Change (UNFCCC). Thailand's Second Nationally Determined Contribution (NDC 3.0). November 2025.

While the targets are ambitious, the priorities required to drive emission reductions lack the rigor needed to deliver meaningful change in the power sector. However, this report demonstrates that a power sector transformation may already be underway in Thailand. The underutilization of existing gas assets, delays in planned gas projects, and the recent increase in solar deployment suggest that the sector is advancing ahead of government planning towards a credible decarbonization pathway.

Conclusion

In the upcoming PDP and future NDCs, Thailand's government can enable a credible transformation rather than continue planning for a gas-centric power system that market participants and decision-makers are increasingly moving away from. Facilitating the acceleration of renewable deployment would also improve affordability for power consumers and non-power gas users. Reducing gas-fired generation would free Thailand's limited, low-cost gas supply for harder-to-substitute sectors, such as the GSPs and export-oriented manufacturing, benefiting the entire economy.

Appendix: Details of Thailand's gas-fired IPPs

IPP Acronym	IPP name	Plant name	In-service Date	Capacity (MW)
KEGCO	Khanom Electricity Generating Company Limited	Khanom Power Station	2016	**930**
GPSC	Sriracha Power Plant	Sriracha Power Plant	2000	**700**
RATCHGEN	Ratchaburi Electricity Generating Company Limited	Ratchaburi Power Plant	2002	**3,645**
Glow IPP	Glow IPP	Glow IPP Power Plant	2003	**714**
KPG	Kaeng Khoi Power Generation Company Limited	Kaeng Khoi 2 Power Project	2007/2008	**1,468**
RPCL	Ratchaburi Power Company Limited	Ratchaburi Power's Power Plant	2008	**1,400**
GNS	Gulf Nong Saeng	Nong Saeng Power Station	2014	**1,668**
GUT	Gulf U-Thai	U-Thai Power Station	2016	**1,752**
GSRC	Gulf Sriracha	Gulf Sriracha Power Plant	2021/2022	**2,650**
GPD	Gulf PD Company Limited	Gulf PD Power Plant	2023/2024	**2,650**
HKP	Hin Kong Power Company Limited	Hin Kong Power Plant	2024/2025	**1,540**

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The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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