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SEPTEMBER
2025

The New US Energy Policy
Energy Dominance or Fallback?

Thibault MICHEL

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ISBN: 979-10-373-1097-2

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How to quote this publication:

Thibault Michel, "The New US Energy Policy: Energy Dominance or Fallback?", *Ifri Studies*, Ifri, September 4, 2025.

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Executive summary

Since taking office, President Trump has defined and started to implement a new energy strategy for the United States (US), aimed at supporting fossil fuels, the nuclear industry, and the critical minerals sector. The implementation of this strategy is conducted through executive orders, including facilitating oil and gas projects (particularly in Alaska), supporting the coal industry, expanding plans for the US nuclear industry, and actions to accelerate the development of critical metals projects. Regarding renewable energy sources, while hydropower and geothermal energy are officially promoted, they have so far received no concrete support. Wind and solar power are under attack, as they are considered unreliable and uncompetitive. Offshore wind has been the subject of specific measures aimed at hindering its development.

The "Drill, Baby, Drill" agenda faces challenges, with limited growth in the oil industry due to low prices, leading to production and exports that are expected to level off and even decline slightly in the coming years. Falling oil prices are also limiting growth in gas production, which is nevertheless supported by increased export capacity and rising consumption in the electricity sector. US gas production and, even more so, exports are expected to grow in the short and medium term. Trade negotiations tied to tariff announcements are being used as a way to promote gas and, more broadly, American energy products exports.

As part of his strategy, President Trump succeeded in passing the One Big Beautiful Bill Act (OBBBA), which ends most of the clean energy tax credits in the 2022 Inflation Reduction Act (IRA).

Donald Trump's energy policy presents several risks, both for the US and the world:

- For the US electricity system: new generation assets will take time to develop, especially for natural gas, nuclear, and hydroelectric power plants, while coal assets are aging and remain largely uncompetitive. This means it will become increasingly challenging to meet the rising demand, which is fueled by the new administration's ambitions to remain a global leader in artificial intelligence (AI) and to develop data center infrastructure and digital industries within the country. President Trump may find himself forced to abandon or at least scale back some of these ambitions due to an inadequate electricity system. While the tech sector may continue to support renewable energy development, this policy could also increase

tensions and vulnerabilities already widespread in the American power grid, especially if opposition to nationwide grid planning persists. Overall, wind and solar energy developments – set to provide most of the capacity added over the next five years – are likely to continue, but at a much slower pace as federal pressure intensifies. Offshore wind is currently the technology most affected by federal actions. Insufficient power generation could also lead to higher electricity prices for US consumers. It remains to be seen whether there will be support for the next generation of technologies not yet mastered by China, such as fusion or solid-state batteries.

- For the US economy: import tariffs and the recently adopted OBBBA threaten the US cleantech industry, which makes up 5% of the country's exports and had been expanding manufacturing capacity under the IRA. Abandoning this industry would have wide-reaching effects: first, even if the Trump administration moves away from the energy transition, the US will still import low-carbon products and run a deficit in this sector; second, a decline in this industry would cause significant job losses, unlikely to be offset by growth in fossil fuel sectors. The gradual removal of IRA subsidies primarily affects electric vehicles, as well as the solar and wind sectors. On the other hand, provisions for carbon capture and storage, where the US still leads, have been preserved.

- For the global decarbonization efforts: the US withdrawal from the Paris Agreement is ongoing. While it remains challenging to predict short- and medium-term developments, forecasts suggest a significant slowdown in the long-term decline of US greenhouse gas emissions, even with a potential increase in emissions for the year 2025.[1] The US withdrawal is also accompanied by a decrease in international funding and sends a misleading signal globally.

1. "Short-Term Energy Outlook, August 2025", US Energy Information Agency (EIA), August 2025, available at: www.eia.gov; "Oil 2025. Analysis and forecast to 2030", EIA, June 2025, p. 69-74, available at: https://iea.blob.core.windows.net.

Résumé

Depuis son entrée en fonction, le président Trump a défini et commencé à mettre en œuvre une nouvelle stratégie énergétique pour les États-Unis, visant à soutenir les énergies fossiles, l'industrie nucléaire et le secteur des minéraux critiques. La mise en œuvre de cette stratégie passe par des décrets présidentiels (*executive orders*), notamment pour faciliter les projets pétroliers et gaziers (en particulier en Alaska), pour soutenir l'industrie du charbon, développer l'industrie nucléaire américaine et accélérer les projets liés aux métaux critiques. En ce qui concerne les sources d'énergie renouvelables, si l'hydroélectricité et la géothermie sont officiellement encouragées, elles n'ont jusqu'à présent bénéficié d'aucun soutien concret. Les énergies éolienne et solaire sont critiquées, car elles sont considérées comme peu fiables et non compétitives. L'éolien en mer a fait l'objet de mesures spécifiques visant à entraver son développement.

Le programme « *Drill, Baby, Drill* » est confronté à des défis, la croissance de l'industrie pétrolière étant limitée en raison des prix bas du pétrole à l'heure actuelle, ce qui devrait entraîner une stabilisation, voire un léger recul, de la production et des exportations dans les années à venir. La chute des prix du pétrole limite également la croissance de la production de gaz, qui est néanmoins soutenue par l'augmentation des capacités d'exportation et la hausse de consommation du secteur électrique. La production de gaz américain et, plus encore, ses exportations devraient toutefois augmenter à court et moyen terme. Les négociations commerciales liées aux annonces de droits de douane sont utilisées comme un moyen de promouvoir le gaz et, plus largement, les exportations de produits énergétiques américains.

Dans le cadre de sa stratégie, le président Trump a réussi à faire adopter le *One Big Beautiful Bill Act* (OBBBA), qui met fin à la plupart des crédits d'impôt pour les énergies propres prévus dans l'*Inflation Reduction Act* de 2022.

La politique énergétique de Donald Trump présente différents risques, que ce soit pour les États-Unis ou le monde :

- Pour le système électrique américain : le développement de nouvelles capacités de production d'électricité nécessitera du temps, en particulier pour les centrales au gaz naturel, nucléaires et hydroélectriques, tandis que les centrales au charbon vieillissent et restent largement non compétitives. Il sera donc de plus en plus difficile de répondre à la demande croissante, alimentée par les ambitions de la nouvelle administration de

rester un leader mondial dans le domaine de l'Intelligence artificielle (IA) et de développer les *datacenters* et les industries numériques au sein du pays. Le président Trump pourrait se voir contraint d'abandonner ou, au moins, de revoir à la baisse certaines de ces ambitions en raison de l'insuffisance du système électrique national. Si le secteur technologique devrait continuer à soutenir le développement des énergies renouvelables, la politique de Donald Trump pourrait accroître les tensions et les vulnérabilités déjà largement répandues dans le réseau électrique américain, en particulier si l'opposition à la planification du réseau à l'échelle nationale persiste. Dans l'ensemble, le développement des énergies éolienne et solaire, qui doit fournir la majeure partie des capacités de production supplémentaires au cours des cinq prochaines années, devrait se poursuivre, mais à un rythme beaucoup plus lent en raison de l'intensification de la pression fédérale. L'éolien en mer est actuellement la technologie la plus touchée par les mesures fédérales. Une production d'électricité insuffisante pourrait également entraîner une hausse des prix de l'électricité pour les consommateurs américains.

- Pour l'économie américaine : les droits de douane à l'importation et l'OBBBA récemment adopté menacent l'industrie américaine des technologies propres, qui représente 5 % des exportations du pays et dont les capacités de production avaient augmenté du fait de l'IRA. Abandonner cette industrie aurait des répercussions considérables : premièrement, même si l'administration Trump s'éloigne de la transition énergétique, les États-Unis continueront d'importer des technologies bas-carbone et d'afficher un déficit dans ce secteur ; deuxièmement, le déclin de cette industrie entraînerait d'importantes pertes d'emplois, qui ne seraient probablement pas compensées par les secteurs des combustibles fossiles. La suppression progressive des subventions de l'IRA touche principalement les véhicules électriques, ainsi que les secteurs des énergies solaire et éolienne. En revanche, les dispositions relatives au captage et au stockage du carbone, domaine dans lequel les États-Unis restent leaders, ont été maintenues.
- Pour les efforts mondiaux de décarbonisation : le retrait des États-Unis de l'Accord de Paris est en cours. S'il reste difficile de prédire les évolutions à court et moyen termes, les prévisions suggèrent un ralentissement significatif de la baisse à long terme des émissions de gaz à effet de serre des États-Unis, avec même une potentielle augmentation des émissions pour l'année 2025.

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Introduction

Six executive orders (EOs) were signed by President Trump on January 20, 2025, the day of his inauguration, in which he accused the previous administration of having made poor choices regarding energy (and in particular of driving up prices) and detailed his plan to reverse the trend. The President has declared an emergency (national energy emergency) to secure greater room for maneuver and to be able to rule rapidly via these EOs and bypass Congress. In his view, America is blessed with an abundance of cheap energy (particularly oil and gas), and these resources must be exploited as much as possible to provide US citizens, but also the world, with reliable, firm and affordable energy. The new approach is thus to put forward a pragmatic posture as opposed to "ideological" choices attributed to the Biden administration, which allegedly aimed to impose solar and wind energy as well as electric vehicles (EVs) without taking into account the opinion of Americans. Donald Trump and his advisors believe that solar and wind power, as intermittent energy sources, are unreliable, and that only firm, baseload energy sources (whose level of production can be modulated) should be supported, which includes the production of electricity from oil, gas, coal, nuclear, but also through specific renewable sources, such as hydroelectricity and geothermal energy –none of these two has benefited from any concrete support so far.

President Trump has surrounded himself with resolutely pro-fossil fuel and climate-skeptic personalities. The leading energy figures in the new administration are his Secretary of Energy, Chris Wright, a former oil company executive, and his Secretary of the Interior, Doug Burgum, until now governor of North Dakota. Burgum acts as the chair and Wright as the co-chair of what Donald Trump has created and named the National Energy Dominance Council (NEDC), a new institution aimed at "producing more energy and making America energy dominant". NEDC gathers 19 members, mainly secretaries, alongside the pro-fossil fuels Director of the Environmental Protection Agency (EPA), Lee Zeldin. However, the exact role of the NEDC and how it works are still unclear.

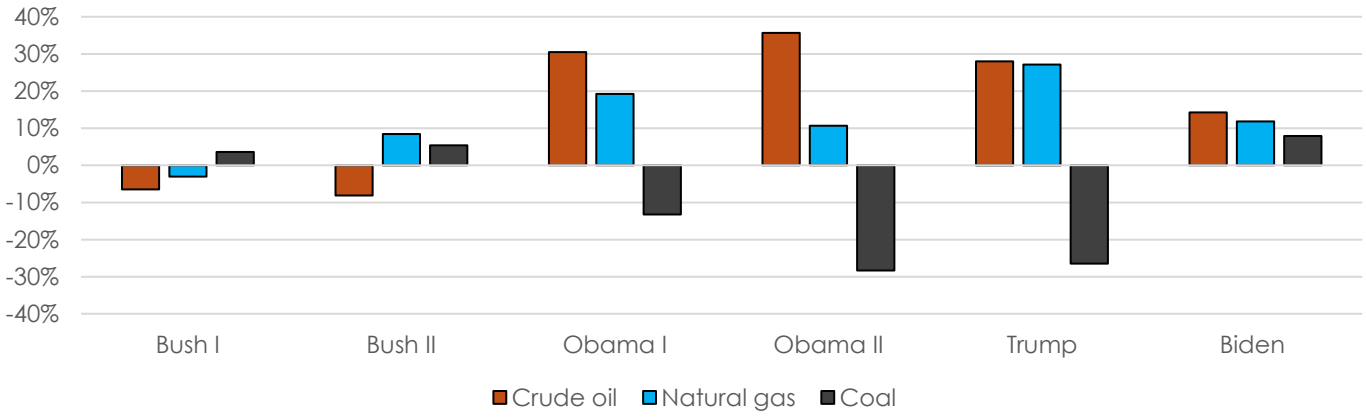
This note assesses the latest energy policy developments in the United States (US). It analyses and questions whether the very high ambitions announced for the digital and artificial intelligence (AI) sectors, which consume large and increasing volumes of electricity, will be supported by a rapid growth in electricity generation, or whether the country could face electricity supply insecurity. It also examines the risks that President Trump's new energy program poses to the US economy, and in particular to its clean technology industry.

The new US energy policy: erasing the Biden legacy

Boosting oil and gas production

President Trump has often accused his predecessor of having established "harmful and inadequate" policies, leading to a decline in oil, gas, and coal production, and as a result to higher energy prices in the US. Yet robust growth figures were achieved under the previous administrations, as highlighted in Figure 1, except for coal, which actually grew again under Joe Biden's presidency.

Figure 1. Trends in US crude oil, natural gas and coal productions, 2000-2024



Source: Ifri, based on data from the US Energy Information Agency (EIA), available at: www.eia.gov.

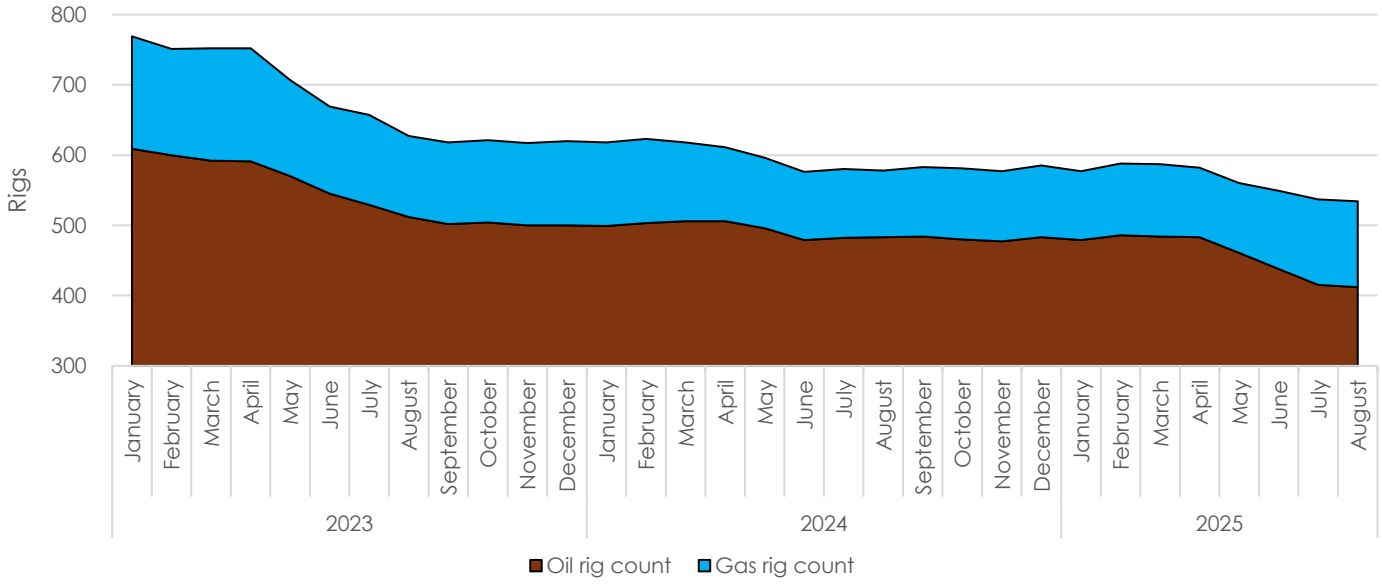
Oil: "Chill, Baby, Chill"

Boosting US oil production further will be challenging. US oil output has already increased significantly over the past few years, exceeding 13 million barrels per day (mb/d) in 2024. US crude oil production hit a new record high in May (13.488 mb/d), but this growth remains limited (+2.2% from May 2024), and the oil rig count is on a downward trend (see Figure 2). Current WTI oil prices (between USD 60 and USD 65 per barrel) do not encourage US companies, whose fracking operations for new wells on average need a barrel price of USD 60 to USD 70 to be profitable,[2] to commit to new drilling and higher production.

2. "Energy slideshow", Federal Reserve Bank of Dallas, July 25, 2025, p. 33, available at: www.dallasfed.org.

In this context, forecasts indicate that US production should peak at around 13.5 mb/d in 2026/2027 before beginning a slight decline.[3] Companies in the sector are concerned about OPEC overproduction, which is causing lower prices, and are reducing their CAPEX budgets.[4] The most at-risk production appears to be in shale areas, due to their high production costs and low level of drilled but uncompleted wells (DUCs), which can be exploited more quickly than new wells. The overall number of DUCs in the US has reached its lowest level in at least ten years, with the decline particularly marked in shale regions such as the Permian, Bakken, and Eagle Ford formations.[5] Shale oil represented 68% of the US total crude oil production in 2024.[6]

Figure 2. Oil and gas rig counts in the US, January 2023 - August 2025



Source: Ifri, based on data from Baker Hughes, available at: www.aogr.com.

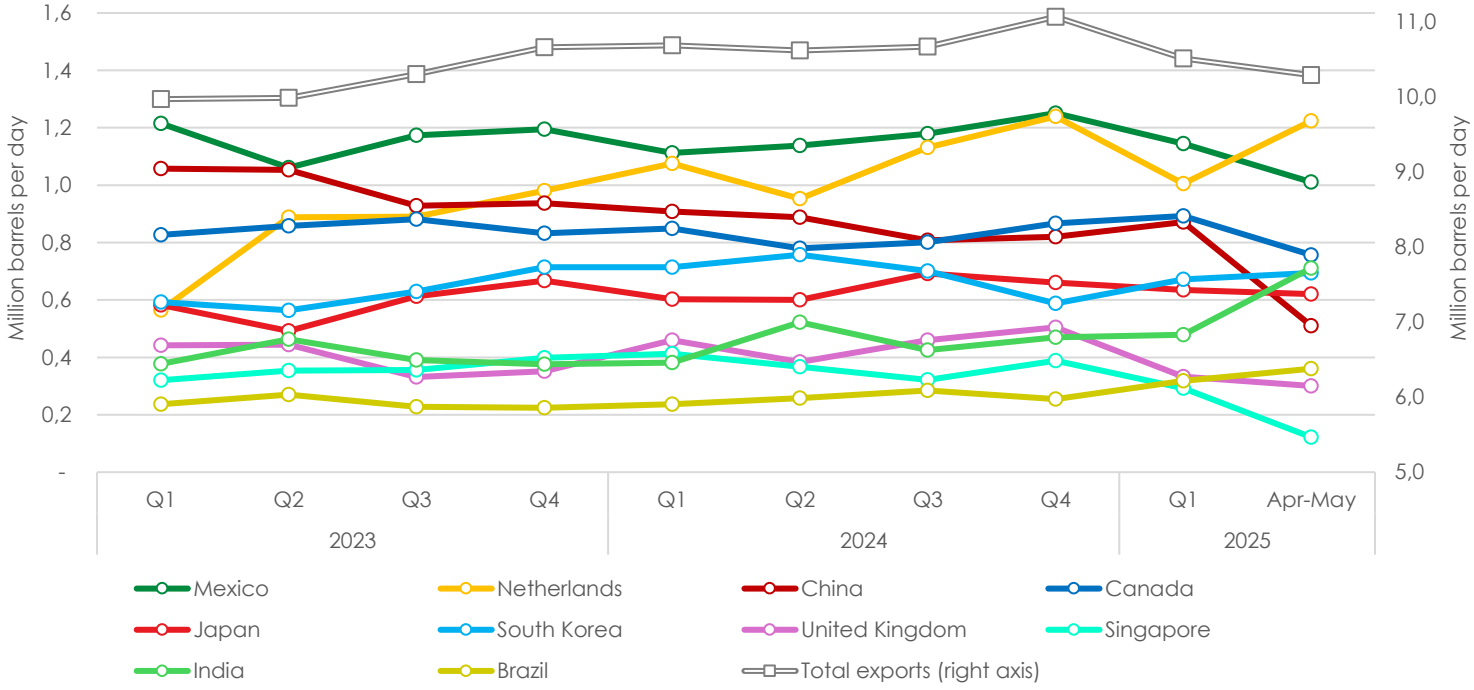
Initiatives announced by Donald Trump, like refueling the Strategic Petroleum Reserve (SPR), are not progressing. The filling speed of the SPR has indeed decreased since the new administration took office (6% between May and December 2024, compared to only 2% between December 2024 and July 2025).[7]

At the same time, according to the International Energy Agency (IEA), global oil demand growth is expected to slow down for the remainder of the year.[8] If they are to increase, US crude oil exports will have to find new

3. "Short-Term Energy Outlook", *op.cit.*
4. J. Smyth and K. Shevory, "US Oil Producers Warn 'Price War' by Opec Members Will Halt Shale Boom", *Financial Times*, August 27, 2025; J. Smyth and K. Shevory, "Opec Oil 'Price War' Will Halt Shale Boom, Say US Producers", *Financial Times*, August 14, 2025.
5. "Oil 2025. Analysis and forecast to 2030", *op.cit.*, p. 71.
6. "Short-Term Energy Outlook", *op.cit.*
7. "Weekly U.S. ending stocks of crude oil in SPR", EIA, consulted on August 19, 2025, available at: www.eia.gov.
8. "Oil Market Report May 2025", EIA, 2025, available at: www.iea.org.

demand centers or intensify supplies to current export markets. Nevertheless, US exports have been stabilizing, with limited growth in recent years and a decline since January 2025 (see Figure 3). Since the start of the year (January to May), they averaged 10.4 million barrels per day, a decrease of 3.14% compared to the 2024 average on the same period. This decrease can be attributed to lower exports to China, Mexico, and Canada amid ongoing trade tensions. Some countries, such as the UK and Singapore, also appear to be reducing their US oil imports. Conversely, supplies to India and, especially, to Europe via the Netherlands have been increasing.

Figure 3. Average US crude oil and petroleum products export by quarter, Jan 2023 - May 2025



Source: Ifri, based on data from the EIA, available www.eia.gov.

Natural gas: the ambition to increase exports faces various challenges

Natural gas production is enjoying stronger momentum than oil. In May 2025, production had increased by 14% compared to May 2024 (+2.7% for oil during the same period), that is 94 billion cubic meters (bcm), while the EIA forecasts growth of up to 16 billion cubic feet per day (bcf/d) in 2026, up from 12 bcf/d in 2024.[9] The gas rig count has been rising since April, reaching its highest level in two years. Despite low oil prices, US production is being driven upward by growing export capacity and demand from the domestic electricity sector.

9. "Short-Term Energy Outlook", *op. cit.*

US liquefaction capacity is expected to double with projects already under construction, whose commissioning dates extend to 2029, reaching 166 million tonnes per annum.[10] It could more than triple if announced projects that have not yet received final investment decisions (FIDs) go ahead. US liquified natural gas (LNG) exports continue to grow rapidly, with record exports in 2024. Meanwhile, the electricity sector is driving domestic consumption upward (+1.5% in 2024 compared to 2023), accounting for 41% of domestic consumption last year (up from 36% in 2019).[11] In 2024, it consumed 382.21 bcm of gas, accounting for 43.3% of the US's electricity generation.

To further increase LNG exports, the new administration has already approved several LNG export projects: Commonwealth, Golden Pass, Delfin, Calcasieu Pass, and Port Arthur's second phase. Donald Trump is also applying his trade negotiation strategies to encourage foreign countries to buy American gas, especially through agreements signed with the EU (USD 750 billion) and South Korea (USD 100 billion) for US energy products. However, the accuracy of these figures is questionable. South Korea already has many long-term LNG supply contracts. While the EU imported only USD 90-100 billion worth of US energy products in 2024,[12] it is expected to increase this amount to USD 250 billion during 2026-2028.

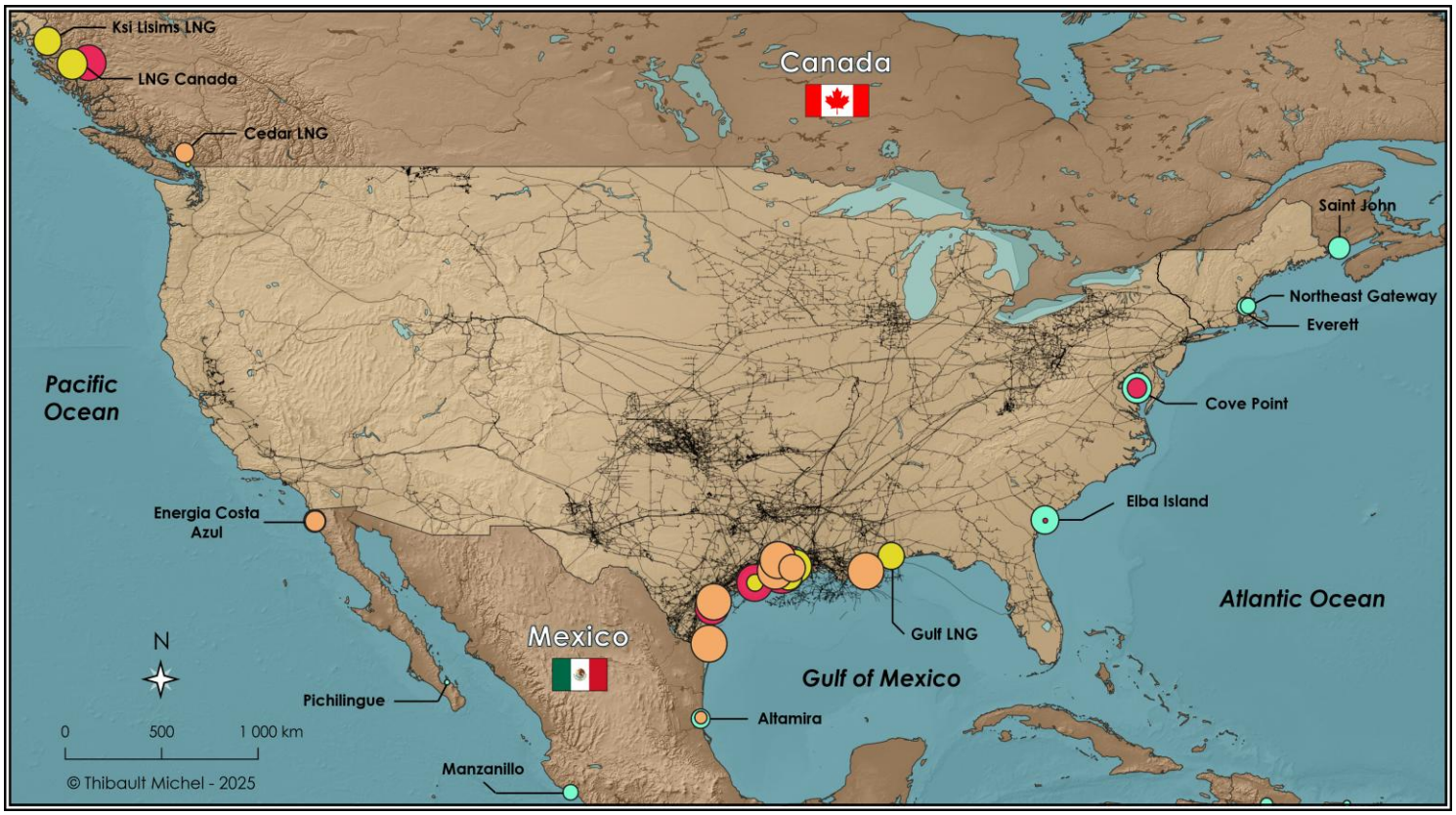
President Trump's natural gas and, especially, LNG export strategy will nonetheless face significant challenges. Europe accounted for 52% of US LNG exports in 2024, but it can hardly be considered a long-term, reliable market for Washington, given its decarbonization agenda. Asia already accounts for 34% of US LNG exports and includes major gas-consuming markets, particularly China, Japan, South Korea, India, and Taiwan. However, according to the EIA, China ceased its purchases of US LNG in January 2025. Southeast Asian countries should also be considered, as their gas reserves are expected to be depleted soon. Around 90% of Singapore's electricity generation comes from gas, and about 60% in the case of Thailand. These countries are therefore seeking new gas supplies and are rapidly building LNG import terminals. For the US, the challenge will be to supply these states with gas at sufficiently competitive prices to compete with supplies from Qatar and Australia, as well as to encourage economies that are heavily dependent on cheap coal to switch to gas.

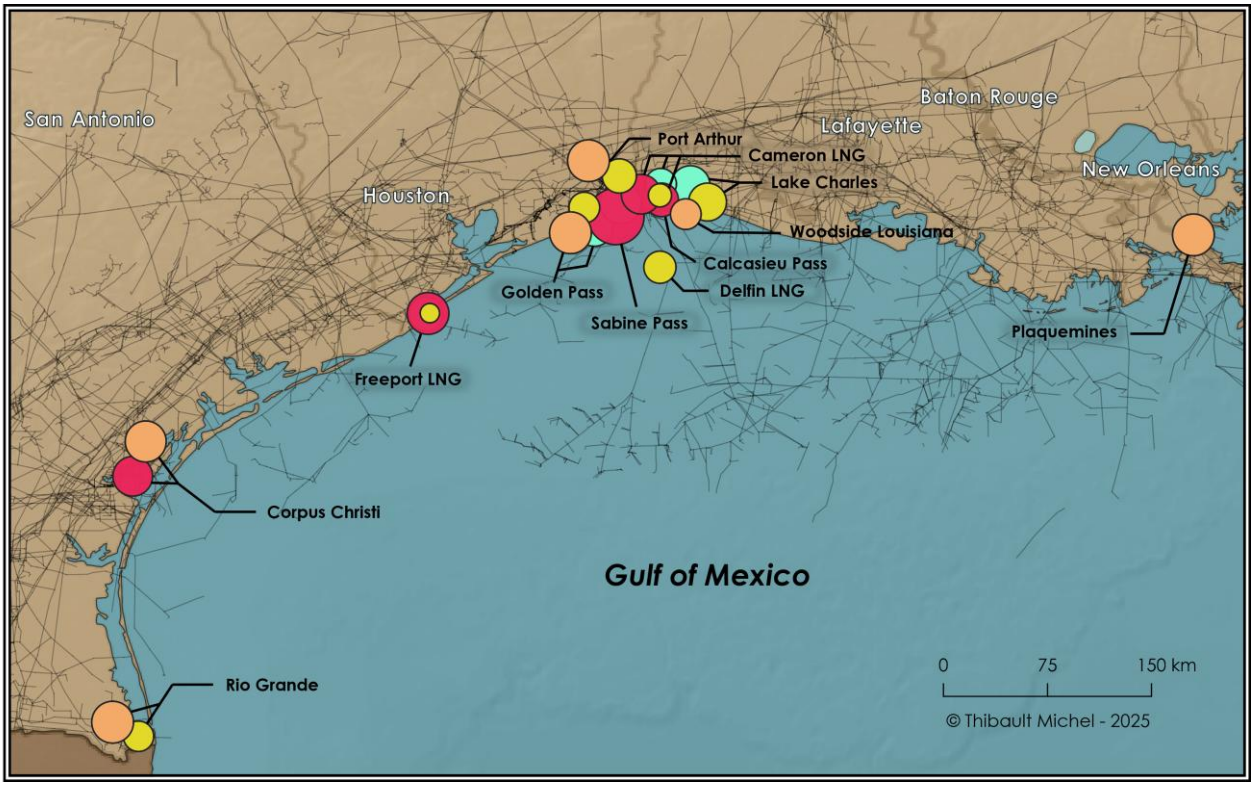
Nevertheless, as represented in Figure 4, all US LNG terminals are located on the Atlantic Coast. To be exported to Asia, their production needs to cross the Panama Canal, whose proper functioning is jeopardized by massive droughts due to climate change, which reduce the water level available in the locks and thus hinder the passage of ships. The canal was

10. "US Liquefaction Capacity", EIA, June 30, 2025, available at: https://view.officeapps.live.com.
11. "Natural Gas Consumption by End Use", EIA, August 29, 2025, available at: www.eia.gov.
12. The European Commission describes those energy products as "US LNG, oil, nuclear fuel and fuel services". "EU-US Trade Deal Explained – Energy Aspects", European Commission, July 30, 2025, available at: https://ec.europa.eu.

affected by a severe drought between October 2023 and July 2024, reducing ship traffic by nearly 50% compared to the previous year at the height of the crisis. Opening and operating LNG terminals on the Pacific coast to avoid this obstacle is thus crucial for Washington and its gas industry. The US gas pipeline network makes it difficult to send large amounts of gas from the West to the East, except maybe alongside the Mexican border, to California. No export terminal project exists on the eastern contiguous shore, and the development of such infrastructure in California, Oregon, or Washington appears rather unlikely, considering the opposition of local communities and political representatives, as well as environmental concerns. It also remains to be seen whether, in the coming years, demand (and in particular the development of import terminals in consumer countries) will be able to keep pace quickly enough to absorb all the new gas volumes made available by the additional capacity developed in the US.

Figure 4. Operational LNG terminals and projects in North America (August 2025)





Source: Ifri, based on data from EIA, IEA, and the Government of Canada.

Note: The maps above do not display the Alaska LNG export terminal announced project, see the following figure.

Alaska: new but costly opportunities

To boost US oil and gas exports, the new administration sees Alaska as playing a key role. In January 2025, Alaska was the focus of a specific EO aimed at harnessing its "extraordinary resource potential". Oil exploration in Alaska had already seen progress under Joe Biden, notably with the approval of the Willow Project, but President Trump's ambitions go much further.

Alaska has significant oil reserves, mainly in the North-Eastern part of the state, especially in the Arctic National Wildlife Refuge (ANWR), a protected area. Donald Trump's EO on Alaska creates new opportunities for oil exploration, such as lifting the temporary ban on activities in the ANWR and easing regulations for oil development. On June 2, 2025, the Department of the Interior (DOI) proposed rolling back the ban on oil and

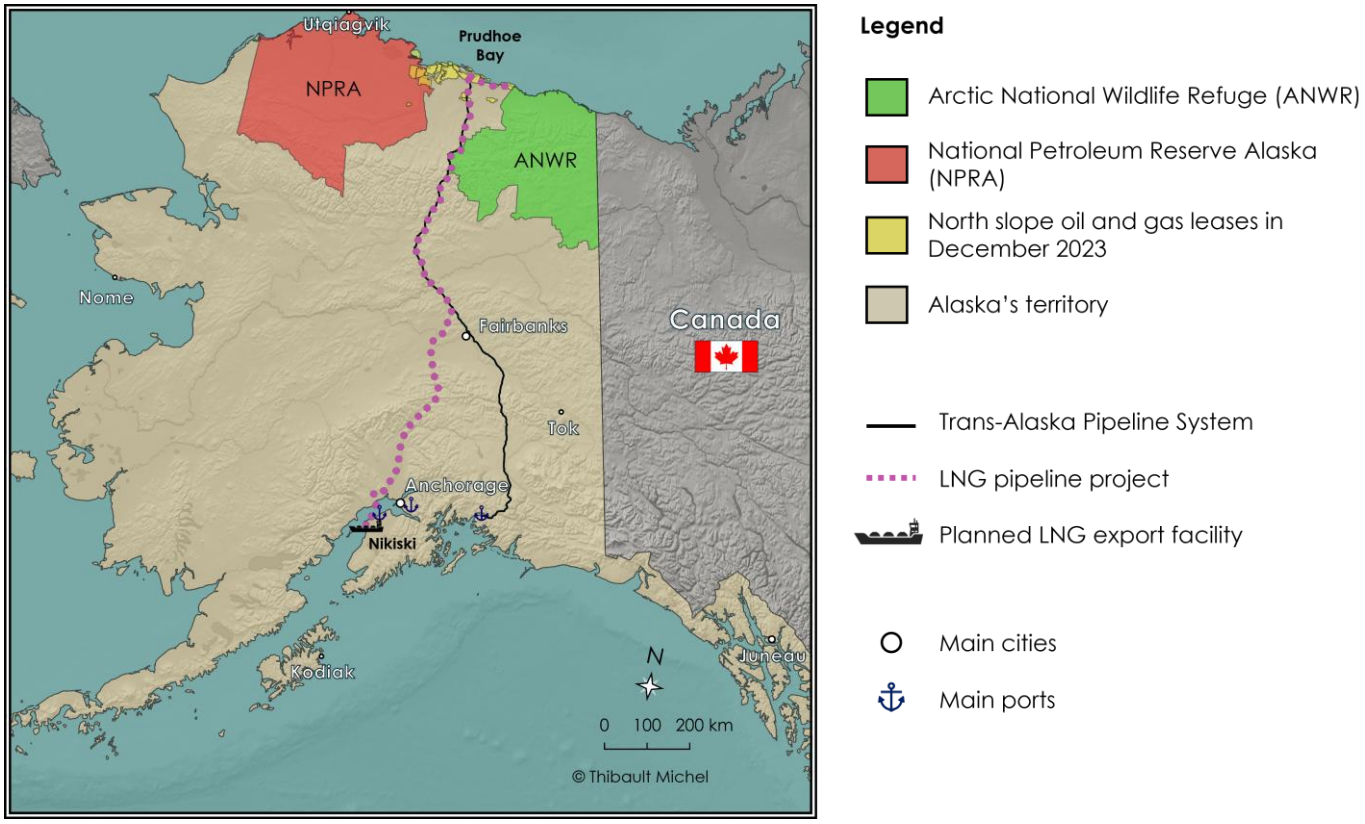
gas leasing in the National Petroleum Reserve-Alaska, a federal land area on the northern coast of Alaska, about 250 km west of the ANWR.[13]

Oil companies remain cautious about Alaska's potential, especially given the legal challenges related to environmental issues and the competitiveness of such projects. Potential production sites are located in very remote areas: more than 1,000 km separate the ANWR from Alaska's ports on the southern coast. Transporting oil across the state is challenging, despite the existence of a pipeline built in 1977 that connects Alaska's south and north shores. This pipeline operates at only a small fraction of its maximum capacity due to a reduction in pump stations and faces maintenance issues, as it crosses mountain ranges up to 3,000 meters high. Nevertheless, Alaska's oil production is expected to increase by 16,000 barrels per day (b/d) in 2026 (+4%, with a current output of 438,000 b/d), after 20 years of decline, mainly due to the development of two new oil fields: Nuna (operational since December 2024) and Pikka (projected to start in 2026).[14]

A gas pipeline project also exists in Alaska, which would partly run parallel to the oil infrastructure. The pipeline would connect the northern coast of the state to the port of Nikiski, where an LNG export terminal is planned to be built. This facility would also provide the US with LNG export infrastructure on the Pacific Coast, which is currently lacking, as explained above, and cut down LNG transport distance to key markets such as Japan. This Alaskan export project, whose development is expected to cost over USD 44 billion and which is envisaged to be operational by 2031, seems even more crucial considering there are no other LNG export projects on the US's Western coast (all projects announced so far on this coast are located in Mexico or Canada).[15] It remains to be seen if promoters manage to sign binding offtake agreements and take a FID.

13. "Interior Moves to Rescind 2024 Rule on Alaska's Petroleum Reserve", US Department of the Interior, June 2, 2025, available at: www.doi.gov.
14. "EIA Forecasts Alaska Crude Oil Production will Grow in 2026 for the First Time since 2017", EIA, March 19, 2025, available at: www.eia.gov.
15. "North America's LNG Export Capacity is on Track to More than Double by 2028", EIA, September 3, 2024, available at: www.eia.gov.

Figure 5. Alaska oil and gas landscape



Source: Ifri, based on data from the Government of Alaska and Alaska LNG.

Critical minerals and nuclear take center stage

The US energy dominance envisioned by Donald Trump also focuses on nuclear power and critical minerals, two areas where the US intends to regain global leadership and that largely gather bipartisan support.

Nuclear: high ambitions announced

As a baseload energy source, nuclear energy plays a crucial role in the energy policy established by the new administration. In 2024, it accounted for 18% of the electricity generated in the US, through 94 reactors, most of which are old; the current strategy is to extend their lifespan to 80 years. The US has the largest nuclear fleet in the world, with 97 gigawatts (GW) of installed capacity. To increase the national nuclear capacity, President Trump signed four EOs on May 23, aiming to multiply this capacity by four, reaching 400 GW. These EOs include accelerating authorization procedures (reducing the approval delay by the Nuclear Regulatory Commission to 18 months) and planning for 10 new reactors to be under construction by 2030. The Nuclear Regulatory Commission (NRC) will also undergo reform, with certain regulatory authorities transferred from the NRC to the Department of Energy

(DOE). Ifri has already extensively covered the challenges involved in achieving such an ambitious goal, whether through large or small reactors.[16]

Critical minerals: a change of approach

Like Joe Biden before him, Donald Trump is making critical metals a priority and aims to make the US the "leading producer and processor of non-fuel minerals".[17] Far from the cooperative approach pursued under the Biden administration, particularly within the framework of the Mineral Security Partnership, President Trump is focusing his efforts solely on the US.

In March 2025, the President issued an EO to accelerate permitting processes and provide financial support to US mining companies through the Defense Production Act –within the regulatory limit of USD 50 million per project for simple notifications to Congress.[18] In this context, NioCorp received USD 10 million in support for its Elk Creek scandium processing project in Nebraska.[19] Through the Department of Defense, the federal government has adopted a significantly different strategy from previous years, becoming a shareholder in MP Materials and supporting its rare earth refining plant project ("10X Facility").[20]

On the international stage, Donald Trump has secured agreements with countries such as Ukraine and the Democratic Republic of the Congo, adopting a transactional strategy: granting easier access to their subsoil in exchange for his support. He has also repeatedly shown interest in Greenland's mineral resources. The US has not entirely abandoned international cooperation on metals, as evidenced by the statements issued after the G7 summit (June)[21] and the Quad summit (July).[22] However, one can question whether these statements are genuinely taken seriously by Washington and whether the goal is truly to achieve a win-win partnership, or simply to obtain concessions and advantages for American mineral companies.

Finally, in April 2025, President Trump signed an EO on seabed mining. The administration could therefore issue contracts for seabed exploration and exploitation, including in international waters as the US has

16. See C. Maisonneuve, "La relance du nucléaire occidental aura-t-elle lieu ? État des lieux des avancées extra-européennes", *Ifri Studies*, Ifri, July 2025, available at: www.ifri.org.
17. Executive order on "Declaring a National Energy Emergency", section 8, January 20, 2025.
18. T. Moerenhout, "Q&A: Trump's Executive Order on US Domestic Mineral Production", Center on Global Energy Policy at Columbia, March 21, 2025, available at: www.energypolicy.columbia.edu.
19. "U.S. Department of Defense Awards up to $10 Million to NioCorp's Subsidiary Elk Creek Resources Corp.", NioCorp, August 5, 2025, available at: www.niocorp.com.
20. "MP Materials Announces Transformational Public-Private Partnership with the Department of Defense to Accelerate U.S. Rare Earth Magnet Independence", MP Materials, July 10, 2025, available at: https://mpmaterials.com.
21. "G7 Critical Minerals Action Plan", G7 2025 Kananaskis, June 17, 2025, available at: https://g7.canada.ca.
22. D. Brunnstrom and K. Singh, "US, Indo-Pacific Partners Announce Minerals Initiative as Rubio Hosts Counterparts", Reuters, July 1st, 2025.

never ratified the United Nations Convention on the Law of the Sea.[23] Ifri will explore the topic of critical metals in the US more extensively in future publications.

More hydro and geothermal, less wind and solar

In 2024, the US had a total installed capacity of 153 GW of wind power and 122 GW of solar power, ranking second in the world for these two energy sources, after China. In the new energy policy, a clear distinction is made between baseload renewable energy sources, notably hydropower and geothermal, which are promoted, and intermittent sources, such as solar and wind, considered unreliable and unaffordable. The administration has taken measures to hinder the deployment of the latter, especially concerning wind. Wind and solar energy are not even included in Donald Trump's definition of energy sources.[24]

Following his assumption of office, President Trump signed an EO to withdraw all areas on the outer continental shelf from offshore wind leasing, thereby implementing a moratorium, for an indefinite period, on the development of new offshore wind projects in the US. The EO also mandates that existing offshore leases be reviewed by the Secretary of the Interior, Doug Burgum, and the Attorney General, Pam Bondi. Projects that have not reached FID are likely to be affected by Donald Trump's EO, and this applies to most offshore wind projects in the US. Some project developers have already faced restrictive measures by the federal government: Equinor's Empire Wind project was subject to a stop order in April—and was ultimately able to resume only as part of a deal between Burgum and New York State Governor Kathy Hochul—while Orsted's nearly completed Revolution Wind project was suspended in August amid the standoff between Denmark and the US over Greenland. Federal measures aimed at undermining the sector are no longer limited to offshore wind, as the 1 GW Lava Ridge onshore wind project in Idaho, which was approved under the Biden administration, was recently canceled by the current administration.

23. E. Hache, E. Normand and C. Roche, "Exploiter les fonds marins : une nouvelle frontière géopolitique ?", in: *RIS. La Revue internationale et stratégique*, No. 136, 2024, pp. 173-183.
24. Executive Order on "Declaring a National Energy Emergency", section 8, January 20, 2025.

Risks for the US electricity system

Donald Trump's agenda poses several risks for the US electricity system, affecting both generation and transmission segments.

Electricity generation: is the administration pushing the right levers?

The US faces growing uncertainty about its ability to meet increasing electricity demand in the coming years. After a decade of stagnation, US electricity demand has been rising again (+2.3% in 2024). This growth is expected to continue in the next few years (around +2.5% in 2025 and 2026 according to EIA's forecasts), driven mainly by the commercial sector–including data centers–(whose demand is expected to grow by +3% in 2025), along with the industrial sector (+2%). This sector is projected to surpass the residential sector for the first time in 2026.[25]

According to a study by the Center for Strategic & International Studies,[26] US data center capacity could reach 84 GW by 2030, compared to 4 GW in 2024. Although estimates of future AI energy consumption vary widely, this figure underscores the need for significant growth in electricity capacity over the coming years to support the digital industry. According to a DOE report, electricity consumption from data centers is projected to rise from 176 terawatt hours (TWh) in 2023 to between 325 and 580 TWh by 2028,[27] representing an increase of 85% to 230%.

The first signs of difficulty balancing generation and demand are already emerging, with the DOE issuing seven emergency orders since the start of the year to mitigate the risk of electricity shortages in certain regions[28]. The relatively low increase in installed capacity (+15% between 2014 and 2024) and the weaknesses of the US electricity grid have only been sustainable in the context of low electricity demand growth (+5% over the same period).[29]

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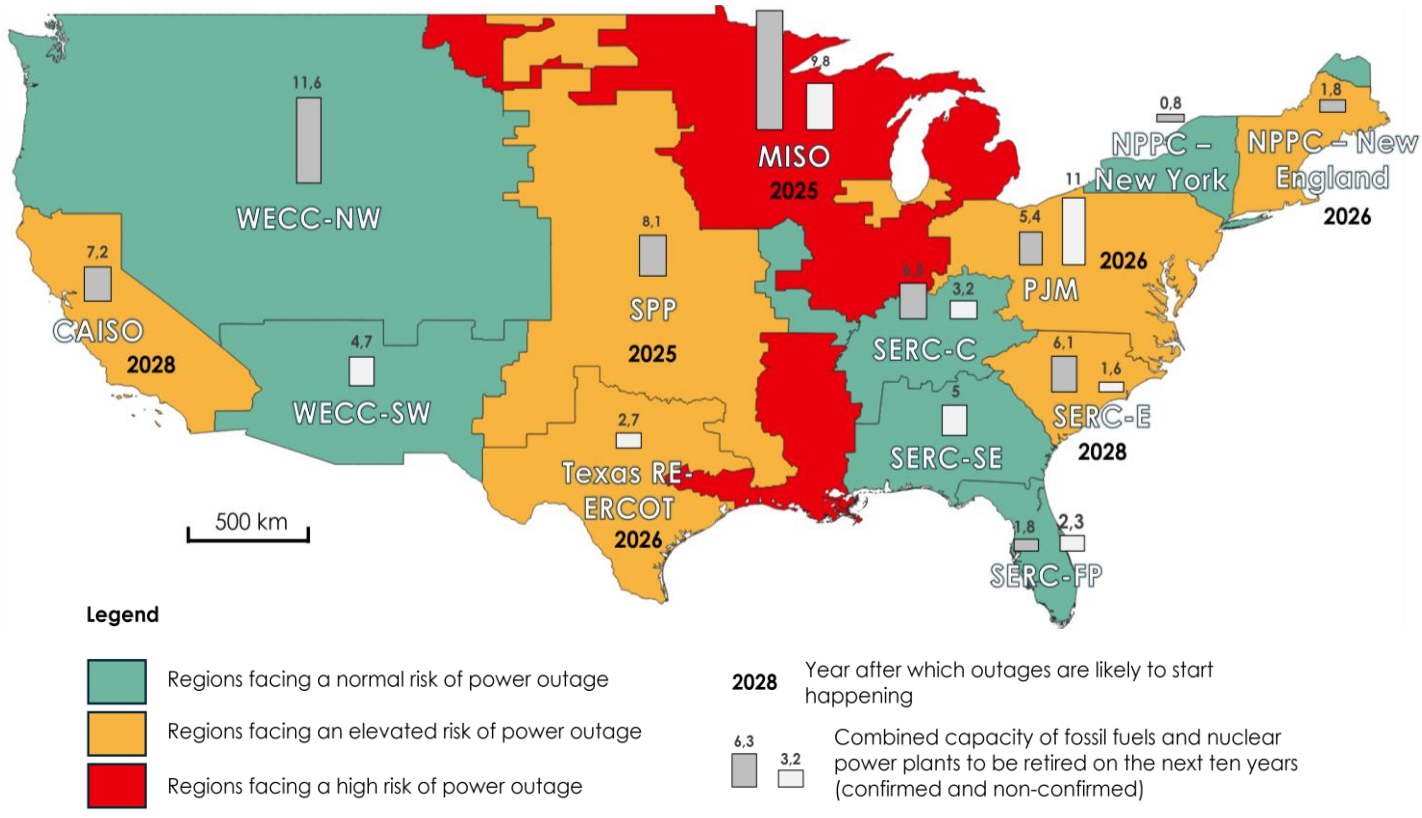
25. "Short-Term Energy Outlook", *op. cit.*
26. C. McGeady, J. Majkut, B. Harithas and K. Smith, "The Electricity Supply Bottleneck on U.S. AI Dominance", Center for Strategic and International Studies (CSIS), March 3, 2025, available at: www.csis.org.
27. "DOE Releases New Report Evaluating Increase in Electricity Demand from Data Centers", US Department of Energy, December 20, 2024, available at: www.energy.gov.
28. "DOE's Use of Federal Power Act Emergency Authority", DOE, consulted in August 2025, available at: www.energy.gov.
29. C. McGeady, J. Majkut, B. Harithas and K. Smith, "The Electricity Supply Bottleneck on U.S. AI Dominance", *op. cit.*

According to the North American Electric Reliability Corporation (NERC), approximately 70 GW of either fossil fuel or nuclear capacity is planned to be retired in the US over the next decade, and this could rise to 115 GW when including the expected but not yet confirmed retirements.[30] This is especially true for regions like the Midcontinent Independent System Operator (MISO) area, which includes cities such as Detroit, Indianapolis, St. Louis, New Orleans, and Minneapolis. This creates a high risk of shortfalls for MISO starting in 2025, while other regions will face less but still significant risks (see Figure 6). According to a report published in February 2024, MISO has been operating near its minimum reserve margin requirements since 2022, and "only averted a capacity shortfall in 2023 because some planned generation retirements were postponed".[31]

Figure 6. Power outage risk and fossil fuel or nuclear capacities to be retired in the next ten years by region, according to the 2024 NERC assessment



Source: Ifri, based on data from the "2024 Long-Term Reliability Assessment", North American Electric Reliability Corporation, consulted in May 2025, available at: https://www.nerc.com.

30. "2024 Long-Term Reliability Assessment", North American Electric Reliability Corporation, December 2024, available at: www.nerc.com.
31. "MISO's Response to the Reliability Imperative", Midcontinent Independent System Operator, February 2024, p. 6, available at: https://cdn.misoenergy.org.

Faced with this situation and the increasing electricity demand, the administration must lay out a framework that develops new generation assets or delays retirements; otherwise, the US risks falling short of its AI dominance goals. In fact, new nuclear, even under an optimistic scenario for small modular reactor, will not be available before the early 2030s.

Coal: is a comeback realistic?

On April 8, Donald Trump signed an EO to "reinvigorate" America's coal industry and explained that the coal industry "will be critical to meeting the rise in electricity demand". This EO aims to remove barriers to coal mining on federal lands, promote the production and export of coal (including by introducing new exemptions to the National Environmental Policy Act), and identify and revise past measures that seek to transition the US away from coal production and electricity generation through coal. Regions with coal-powered infrastructure that are suitable for supplying AI data centers shall also be identified. In May, the DOE added metallurgical coal to its Critical Material List to support the US steel industry.

As of December 2024, the US coal fleet included 174 GW of capacity. Between 70 and 100 GW of this capacity was expected to be retired by 2035 (over 70% of the fleet is at least 40 years old),[32] but these retirements are unlikely to occur at this level under the current administration. However, US power companies are increasingly moving away from coal, primarily for economic reasons (those plants operated at a low capacity factor of 42.6% in 2024, compared to 54% in 2015).[33] They have announced the closure or gas conversion of 9.36 GW of coal-fired power plants for the year 2025.[34]

Gas plants: will new assets be ready on time?

Developing new gas plants will also be a complex process. Around the world, many countries include new gas power plants in their development plans, such as Germany, Japan, Taiwan, or Southeast Asian countries. However, the top three manufacturers (GE Vernova, Siemens Energy, and Mitsubishi Power) account for two-thirds of the plants under construction globally.[35] Due to a surge in orders, these companies now have backlogs for new turbine

32. C. McGeady, J. Majkut, B. Harithas and K. Smith, "The Electricity Supply Bottleneck on U.S. AI Dominance", *op. cit.*

33. "Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels", EIA, available at: www.eia.gov.

34. S. Feaster, "Drumbeat of Coal Plant Closures to Continue in 2025", Institute for Energy Economics and Financial Analysis, April 15, 2025, available at: https://ieefa.org.

35. J. Martos, "Leading Three Manufacturers Providing Two-Thirds of Turbines for Gas-Fired Power Plants under Construction", Global Energy Monitor, August 2024.

deliveries that extend into 2029 or beyond.[36] Additionally, creating new manufacturing facilities takes time, and manufacturers remain cautious about such investments because long-term demand for gas-generated electricity, especially for powering data centers, remains challenging to predict accurately. Many of them are also involved in renewable energy and are thus forced to prioritize investments, choosing between gas and renewable energy manufacturing.

Permitting also presents a significant challenge for all energy sources. This constraint lengthens the time needed to add new power capacity and bring new facilities online, especially to offset retirements of outdated plants. In the case of MISO, as of late 2023, approximately 25 GW of fully approved generation projects in the region's generator queue had missed their in-service deadlines by an average of 650 days.[37] Another 25 GW of projects had not missed deadlines yet, but were at risk of doing so. The primary causes of these delays include regulatory and supply chain issues. As a result, MISO faces risks of shortfalls during non-peak seasons (spring and fall) and existing generators are operated more frequently, reducing opportunities for maintenance and necessary operations, which further exacerbates the problem. The region's reserve margin (17.7% in 2024) could quickly fall to 10% in 2025.[38] A reserve margin below 15% is generally considered inadequate to ensure reliable power system operation.[39]

Solar and wind power overlooked despite strong potential

The new energy policy considers hydroelectricity and geothermal as reliable and affordable energy sources that should be developed. However, the domestic geothermal power capacity remains very limited (only 2.7 GW, less than 0.5% of total capacity) and has stagnated since the early 1990s. Hydropower capacity has also plateaued since this period and currently stands at 80 GW, approximately 6% of the national installed capacity. According to the Federal Energy Regulatory Commission (FERC), there are no hydropower projects currently in development in the US. Increasing hydropower production is challenging because climate change is reducing water availability (US hydropower production declined by 20% from 2017 to

36. J. Anderson, "US Gas-Fired Turbine Wait Times as Much as Seven Years; Costs Up Sharply", S&P Global, May 20, 2025; J. Cohen, T. Fitch and L. Shwisberg, "Gas Turbine Supply Constraints Threaten Grid Reliability; More Affordable Near-Term Solutions Can Help", RMI, June 18, 2025, available at: https://rmi.org.

37. "MISO's Response to the Reliability Imperative", *op. cit.*, p. 10.

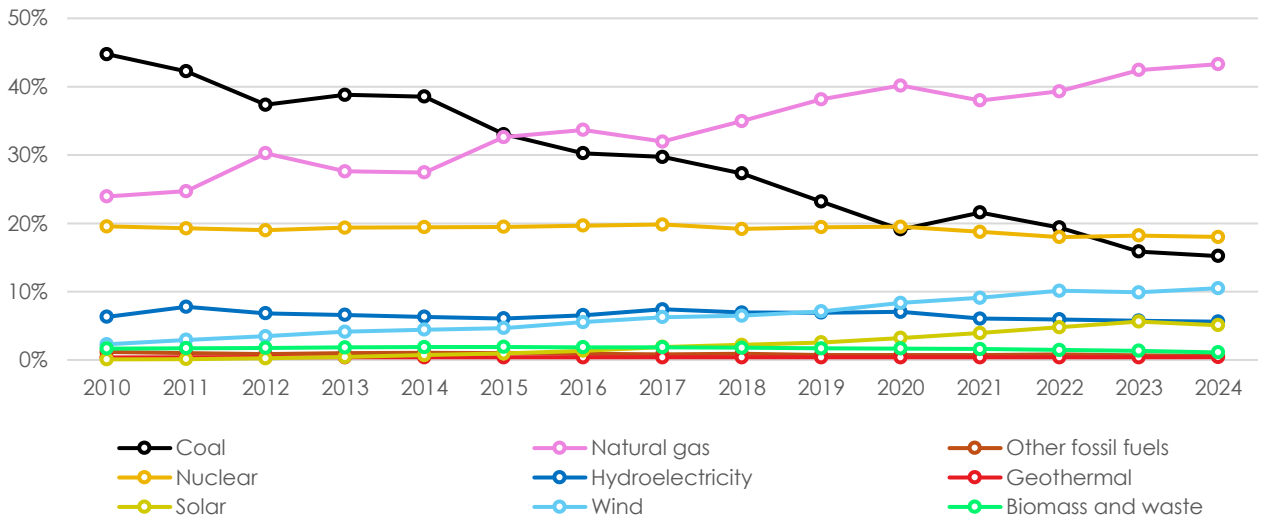
38. "2024 Long-Term Reliability Assessment", *op. cit.*, p. 20 and p. 41.

39. J.P. Pfeifenberger, K. Spees, K. Carden and N. Wintermantel, "Resource Adequacy Requirements: Reliability and Economic Implications", The Battle Group and Astrape Consulting, prepared for the FERC, 2013, p. 5, available at: www.ferc.gov.

2024) and the country lacks a skilled workforce for building new facilities, resulting from a lack of growth over the last 30 years.[40]

Although undermined by the new administration, wind and solar energy still represent a significant share of US electricity generation, with 5% for solar and 10% for wind (see Figure 7). They could therefore be valuable tools for meeting the country's rising electricity demand, accounting for 86% of the high-probability additions over the next three years (March 2025 - March 2028), according to FERC's data.[41]

Figure 7. Share of US electricity generation by source, 2010-2024



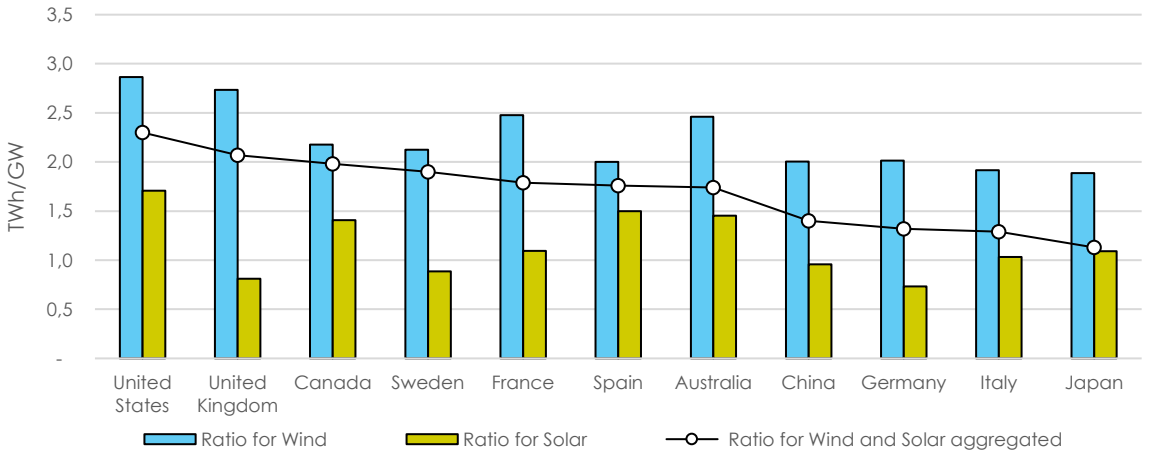
Source: Ifri, based on data from the EIA, available at: https://www.eia.gov.

Furthermore, wind and solar benefit from high production factors in the country. Indeed, as shown in Figure 8, among the ten countries analyzed, the US has the highest ratio of power generation per GW of wind and solar capacity. 1 GW of solar assets produced an average of 1.7 terawatt-hours (TWh) of electricity in 2023, and this ratio increases to 2.9 TWh for wind energy (although with growing curtailments). These ratios even rose in 2024, with 1.78 TWh for solar and 3.0 TWh for wind, whose generation grew by 32 TWh (+8%) despite the lowest capacity additions in a decade.

40. J. Daw, J. Stefek, E. DeGeorge, R. Treisa Philip, A. Cardinal and L. Parkhill, "U.S. Hydropower Workforce: Challenges and Opportunities", National Renewable Energy Laboratory, October 2022, available at: https://docs.nrel.gov.

41. "Energy Infrastructure Update for March 2025", FERC, Office of Energy Projects, May 15, 2025, available at: https://cms.ferc.gov.

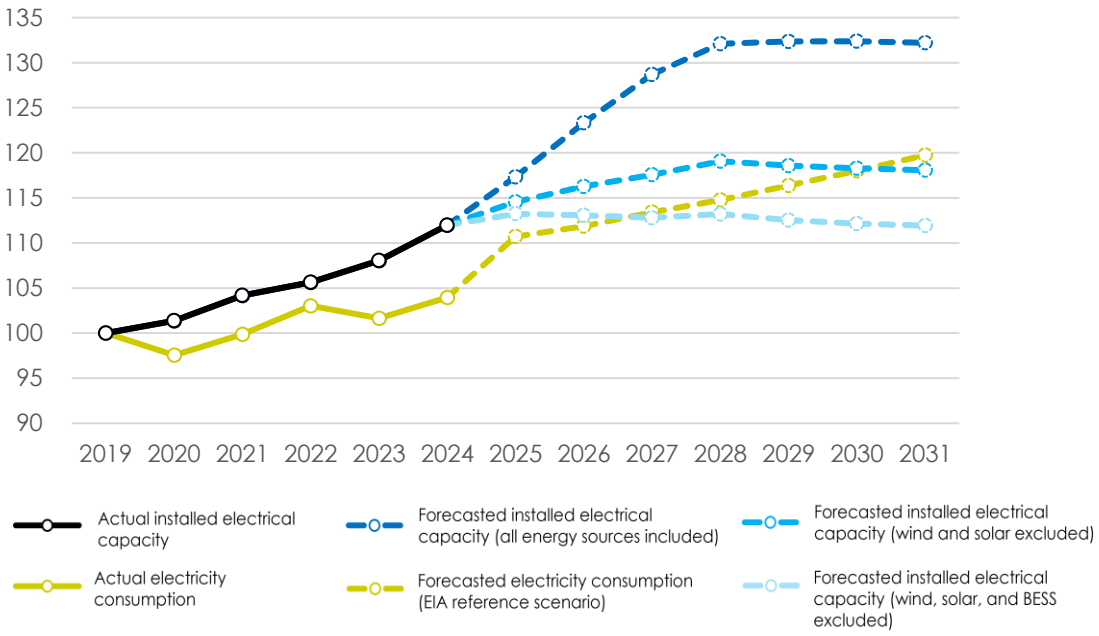
Figure 8. Generation per capacity ratios for wind and solar energy sources in selected countries, 2023



Source: Ifri, based on data from the EIA, available at: https://www.eia.gov.

The key question is whether the Trump administration will be pragmatic enough to recognize the importance and opportunity of deploying renewables to support the US's digital ambitions or whether it will stick to its de facto ideological stance against renewables and climate action. In any case, it seems that it will be difficult, if not impossible, to realize President Trump's lofty ambitions for AI, which will further fuel electricity demand growth, without the support of clean energy technologies. Battery energy storage will have a key role to play.

Figure 9. Comparison between changes in electricity consumption and installed electricity capacity in the US, with 2019 as the base year (100), based on current announcements of capacity additions and retirements, 2019–2031



Source: Ifri, based on data from the EIA, available at: www.eia.gov.

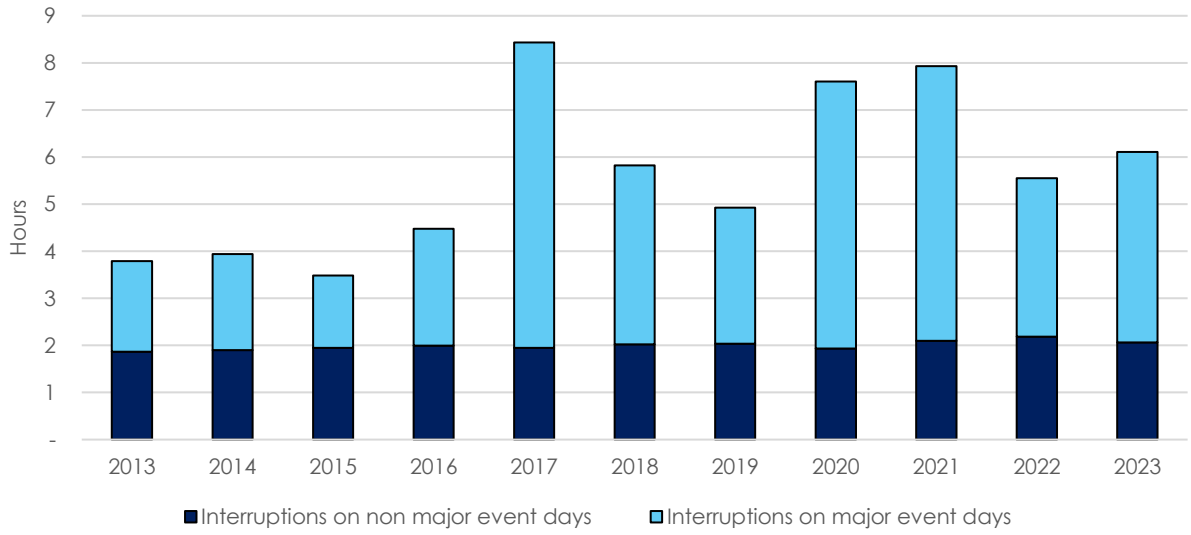
Note: The figure above compares US national electricity consumption with domestic installed capacity evolutions from 2019, with forecasts until 2031. The electricity consumption forecast is based on the EIA's reference scenario in its "Annual Energy Outlook 2025". The installed capacity forecasts are based on planned additions and retirements of power plants as presented in EIA data.

"BESS" refers to battery energy storage systems.

Electricity grid: the Achilles heel of the electricity system

The national power grid also faces significant vulnerabilities, as demonstrated by major power outages in recent years, especially in Texas in 2021, where the death toll from extreme cold weather is estimated between 246 and 702 people. As shown in Figure 10, the average duration of power interruptions per consumer without major events has increased slightly since 2013 (from 1.87 hours to 2.07 hours in 2023), and interruptions caused by major weather events are overall rising, largely due to the effects of climate change. However, electricity grids have received almost no attention in the policies presented by Donald Trump so far.

Figure 10. SAIDI (power supply interruptions per consumer) in the US, 2013-2023



Source: Ifri, based on "Reliability Metrics of U.S. Distribution System", EIA, available at: www.eia.gov.

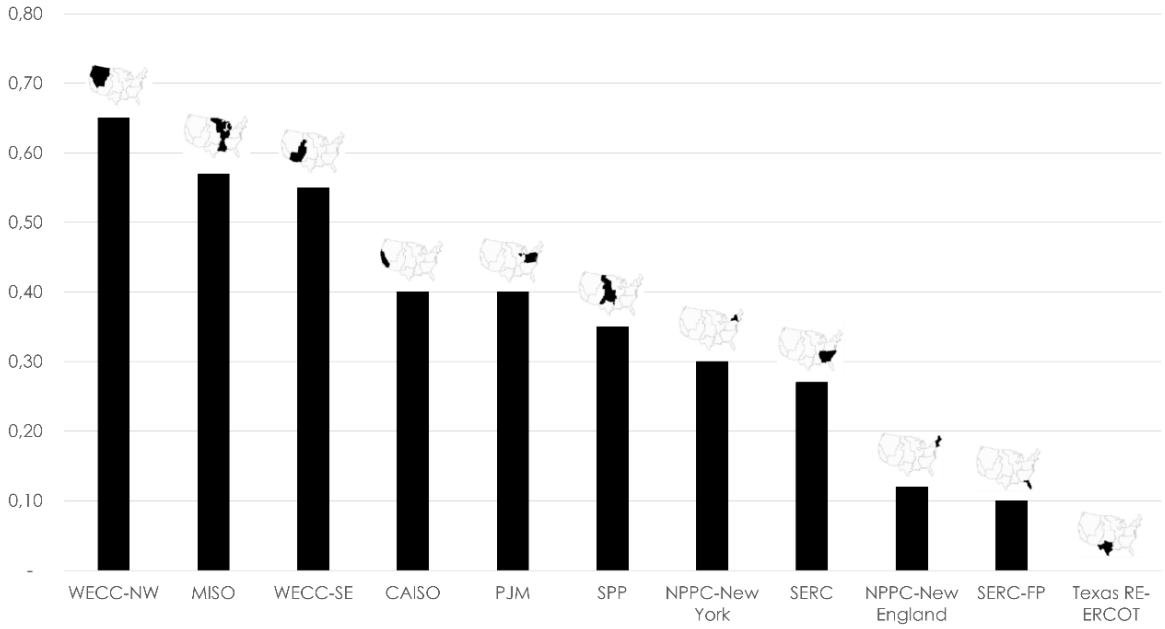
Note: data used refers to the IEEE 1366-2003/IEEE 1366-2012 standards.

A poorly interconnected country

US regions, which operate with low reserve margins, would therefore need additional power supply from other parts of the country. However, the US faces a significant shortage of long-distance power transmission lines and its electricity regions are poorly interconnected. A transfer capability to peak demand ratio is generally considered insufficient below 0.3, adequate

between 0.3 and 0.6, and suitable for security and renewable integration purposes above 0.6.[42] Most US regions have ratios of around 0.5 or below (see Figure 11), with five of the eleven regions having ratios below 0.3. In comparison, in 2023, the average ratio among EU Member states was 0.7, despite differences among countries.[43] This indicates that most US regions cannot receive sufficient support during peak demand periods, as seen during the 2021 winter Texas outage, due to the state's limited interconnections with other states. States and utilities, which are responsible for most grid development, lack incentives to build long-distance, high-voltage transmission lines. Consequently, investments are primarily directed at low-value local transmission projects focused on small-scale reliability and replacing existing infrastructure.[44]

Figure 11. Ratio of interregional transfer capability to peak demand for the US regions, 2023



Source: Ifri, based on The National Transmission Planning Study, US DOE, Grid Deployment Office, 2024, p. 14, available at: www.energy.gov.

The disconnect between investments in transmission and the construction of new high-voltage transmission lines especially highlights this situation. In 2023, utility spending on transmission infrastructure reached

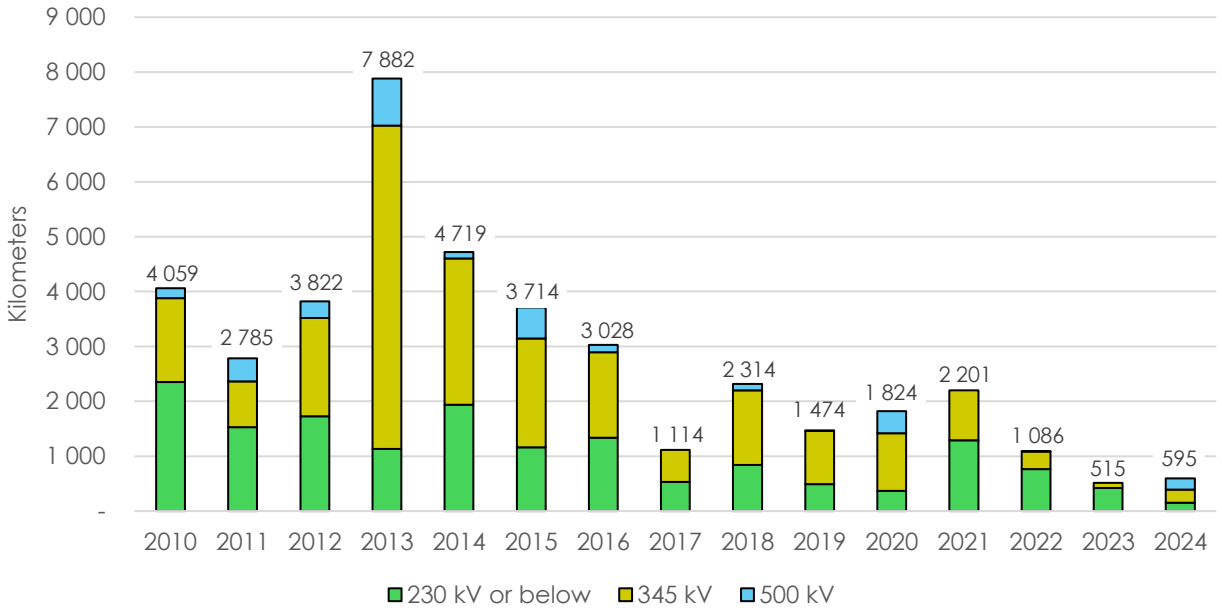
42. This scale is for instance used by the European Commission Expert Group on electricity interconnection targets in the report "Towards a Sustainable and Integrated Europe", European Commission, November 2017, available at: https://energy.ec.europa.eu.

43. Transmission capacities for cross-zonal trade of electricity and congestion management in the EU. "2024 Market Monitoring Report", Agency for the Cooperation of Energy Regulators, July 3, 2024, p. 16, available at: https://acer.europa.eu. When comparing these metrics, it is important to consider that US ratios concern connections between regions part of the same country, while EU ratios concern connections between different countries.

44. C. McGeady, "Strategic Perspectives on U.S. Electric Demand Growth", CSIS, May 20, 2024, available at: www.csis.org.

unprecedented levels in most regions of the US.[45] However, more than 90% of this expenditure was driven by low-voltage investments, and the number of transmission lines exceeding 345 kV has steadily decreased after peaking in 2013[46] (see Figure 12). The primary issue is that regional efforts are uncoordinated and not aimed at national-scale projects. Estimates indicate that the US network will require investments of USD 1.5 to 2 trillion between 2020 and 2030, only to maintain reliability.[47] Some programs have been launched under Joe Biden's directive, particularly through the Grid Deployment Office (GDO, established in 2022), totaling just over USD 15 billion. Still, these amounts are small compared to the tremendous needs.

Figure 12. High and extra-high voltage power transmission line additions in the US, 2010-2024



Source: Ifri, based on "Energy Infrastructure Updates", FERC, Office of Energy Projects, available at: https://cms.ferc.gov.

Two critical pieces of legislation to develop a national-scale grid

Some actions were therefore taken to give federal actors, such as the FERC, more responsibility in designing the US power grid. First, under the Biden administration, Order 1920 was issued and adopted in May 2024. This new rule requires transmission providers to conduct long-term planning and provides guidelines on how to do so (for example, through a transmission

45. Available data shows that combined transmission investments for 8 regions (CAISO, NPCC-New England, MISO, NPCC-New-York, PJM, SPP, Texas RE-ERCOT, SERC) reached 25 billion USD, its highest level. Nathan Shreve, Zachary Zimmerman and Rob Gramlich, "Fewer New Miles. The US Transmission Grid in the 2020s", Grid Strategies, July 2024, available at: https://cleanenergygrid.org.
46. "Energy Infrastructure Updates", FERC, Office of Energy Projects, available at: https://cms.ferc.gov.
47. G. Andersen, M. Cleveland and D. Shea, "Modernizing the Electric Grid: State Role and Policy Options", National Conference of State Legislatures, September 22, 2021, available at: www.ncsl.org.

plan of at least 20 years that must be revised at least every 5 years).[48] Another important piece of legislation developed over the past year is the Manchin-Barrasso permitting bill (MBPB), which includes provisions to streamline permits for oil and gas production, LNG exports, renewable energy projects, and electric transmission lines. As a bipartisan law, it represents a compromise and reflects the shared willingness of both parties to simplify permitting procedures, although not always regarding the same energy infrastructure.

However, the future of these two texts remains uncertain. The FERC adopted Order 1920 with a Democratic majority. The Commission consists of five commissioners, with each party holding up to three seats. A new commissioner is appointed by the US President when one of their terms ends. One of the five commissioners is selected as chair by the President. Order 1920 was strongly opposed by Republican commissioners at the time of its adoption, notably by Mark Christie. He argued that the rule exceeded FERC's authority, encroached on the role of state regulatory agencies, and was a smokescreen hiding its true goal: promoting wind and solar energy and forcing the shutdown of fossil fuel power plants.[49]

As his term expired in June, the US president recently replaced Christie with Laura Swett, an attorney and former adviser to Bernard McNamee, a former FERC commissioner (2018-2020). Swett is primarily known for representing oil and gas pipeline project developers in the past. McNamee, who was appointed to FERC by President Trump during his first term, participated in drafting Project 2025, a manifesto written in 2023 under the guidance of the Heritage Foundation, aiming to provide recommendations for a Trump 2.0 mandate. McNamee authored proposals regarding the DOE, for example calling for the elimination of the GDO, arguing that it focused more on integrating unreliable renewable energy sources with massive subsidies rather than on grid reliability.[50] During his campaign, Donald Trump said he did not support Project 2025, but since taking office, he has implemented numerous recommendations from the project (such as exploiting Alaska's hydrocarbon reserves in the energy sector) and appointed one of its authors, Russell Vought, as director of the Office of Management and Budget. Considering Swett's past association with McNamee and her nomination, the enforcement of Order 1920 could face significant challenges in the future.

Currently, the FERC has three members, two Democrats and one Republican, following the departure of Christie and Willie Philipps, the former Democratic chairman, which took place after pressure from President

48. "FERC Strengthens Order No. 1920 with Expanded State Provisions", FERC, November 21, 2024, available at: www.ferc.gov.
49. "Commissioner Mark Christie's Statement Concerning Order No. 1920 and U.S. Supreme Court's Overruling of Chevron Deference", FERC, June 28, 2024, available at: www.ferc.gov.
50. "Project 2025. Presidential Transition Project", The Heritage Foundation, 2023, p. 368-369, available at: www.mandateforleadership.org.

Trump. Laura Swett, appointed by the president to replace Christie, and David LaCerte (Republican), to replace Philipps, must have their appointments confirmed by the Senate. David Rosner (Democratic) was appointed chairman by Donald Trump in August, but a Republican chairman will likely be named once the party gains a majority on the FERC, i.e., once the Senate has confirmed Swett and LaCerte.

MBPB's future appears less threatened but remains uncertain. Initially, the MBPB was approved by the Senate Energy and Natural Resources Committee in July 2024, but it has not yet been passed in full session by either the Senate or the House. As a bipartisan bill, its eventual passage seems probable, primarily because it would expedite permitting processes in the oil and gas sector, which is likely to appeal to the new administration. However, it may also see its provisions for streamlining permitting for renewable energy and grid development projects removed. The Republicans hold a majority of 2 votes in the House (220R, 212D, and 3 vacant seats) and 3 votes in the Senate (53R, 45D, 2 Independents). The federal government's mistrust of large-scale power line projects is increasing; on July 23, the DOE announced that it was withdrawing its support in the form of a loan guarantee (USD 4.9 billion, or 45% of the total cost) for the "Grain Belt Express" power interconnection project. The project aims to construct a high-voltage direct current line between Kansas, a major producer of wind energy, and Indiana. This project would have enabled a connection between the MISO and SPP regions. The recent "America's AI Action Plan" emphasizes improving and strengthening existing networks, as well as developing new sources of dispatchable power.[51] Developing new lines is not planned; efforts should focus on existing infrastructure.

Even if Order 1920 and MBPB were fully adopted and not questioned under the current administration, their implementation and the tangible effects they could have on the US electricity system would take years to materialize.

51. « Winning the Race. America's AI Action Plan", The White House, July 2025, p. 14-16, available at: www.whitehouse.gov.

The US cleantech industry, from boom to bust?

Donald Trump's new energy plans are also likely to negatively impact the US industry, especially the clean-tech sector.

Tough times for the US cleantech industry

Although they remain lower than hydrocarbon exports, exports of low-carbon technology products made up nearly 5% of the goods exported by the US in 2023. This makes it a non-negligible part, placing the country behind China but ahead of France or the Netherlands on this indicator (see Figure 13). Furthermore, these exports, notably via EVs, biofuels or carbon management technologies, have grown steadily in recent years (see Figure 14). In 2023, the US imported USD 177.4 billion worth of low-carbon technology products, resulting in a trade deficit of USD 77.69 billion for this sector.

Figure 13. Share of low-carbon technology products among total exports, 2023

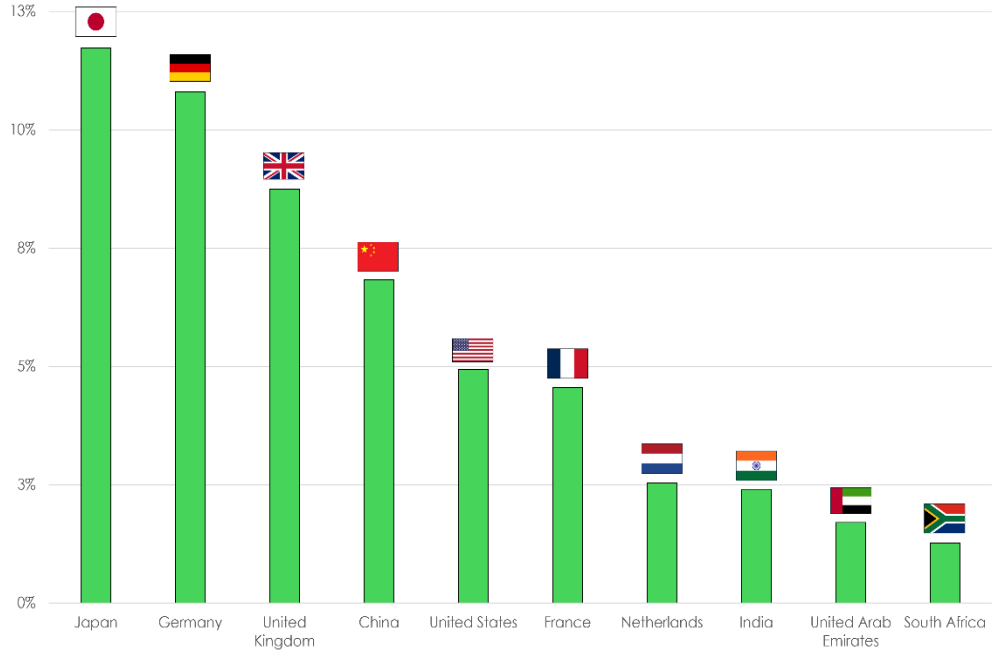
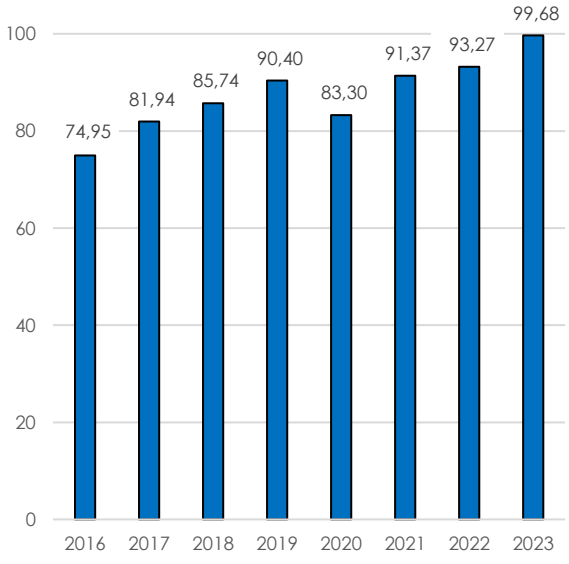


Figure 14. US Exports of low-carbon technology products, USD billion, 2016-2023



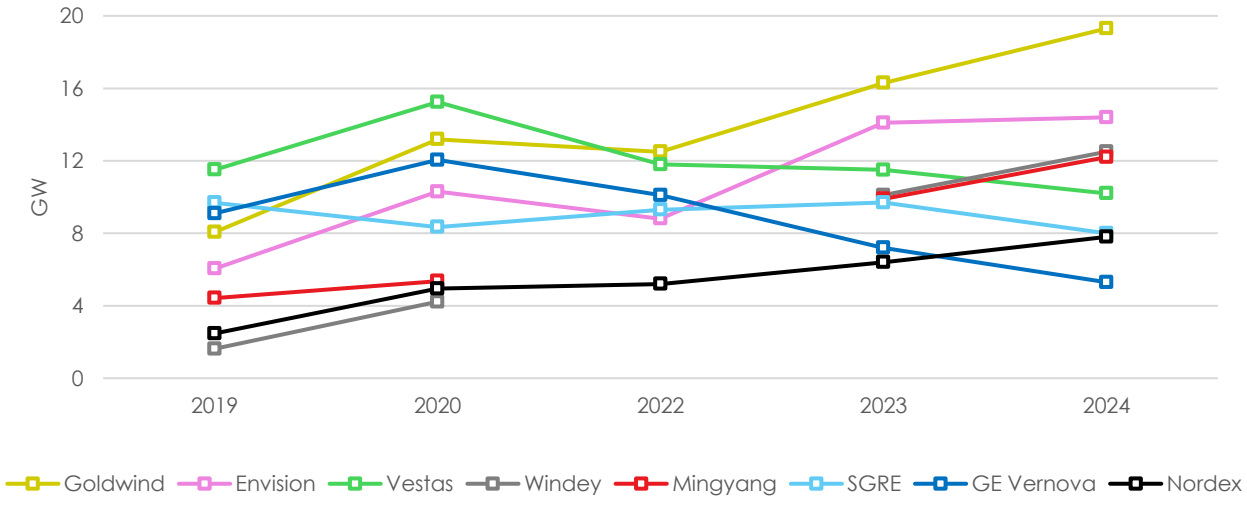
Source: Ifri, based on "Trade in Low Carbon Technology Products", International Monetary Fund (IMF), Climate Change Dashboard, available at: https://climatedata.imf.org.

Note: The IMF data defines low-carbon technology products as products "producing less pollution than their traditional energy counterparts", thereby including "mechanics like wind turbines, solar panels, biomass systems, or carbon capture equipment".

The IRA had triggered a significant clean tech manufacturing boom in the US; yet, even before the current administration took power, the momentum created had already shown its limits, with clean tech investments plateauing –most likely due to permitting issues and uncertainties surrounding the outcome of the 2024 US election. The policy, legal, and trade uncertainties caused by Donald Trump also heavily impacted them. Investments in renewable energy decreased by 36% year over year (y.o.y) in the first semester of 2025 (-USD 20.5 billion).[52] Rising headwinds from tariff escalations, an uncertain federal policy outlook, and broader macroeconomic pressures have led to a significant number of project cancellations in the sector, totaling USD 6.9 billion in Q1-2025.[53]

Some cleantech manufacturing companies are already facing headwinds. While remaining the leader in onshore wind installations in the US market, GE Vernova is encountering increasing competition from Chinese turbine manufacturers and losing ground globally (see Figure 15). In just five years, it has dropped from third to tenth in wind installations (from 12.1 GW to 5.3 GW). To be profitable and recover their industrial research and development costs, Chinese manufacturers benefit from a large domestic market and subsidies –two advantages that GE Vernova will lack in the future, given limited wind deployments in the US and the removal of IRA's tax credits for wind manufacturing. Additionally, on June 4, President Trump increased US tariffs on steel and aluminum to 50%, up from 25%, two materials heavily used in wind turbine manufacturing and for which the US is highly dependent on imports.

Figure 15. Wind installations by primary original equipment manufacturer, 2019-2024



Source: Ifri, based on data from Wood-Mackenzie and BloombergNEF, available at: https://about.bnef.com; https://www.woodmac.com.

52. "Global Renewable Energy Investment Still Reaches New Record as Investors Reassess Risks", BloombergNEF, August 26, 2025, available at: https://about.bnef.com.
53. "The State of US Clean Energy Supply Chains in 2025", Clean Investment Monitor, Rhodium Group and MIT CEEPR, April 24, 2025, available at: www.cleaninvestmentmonitor.org.

The solar industry also faces the problem of rising tariffs. Following an investigation launched under Biden's administration, the administration announced in April tariffs on solar PV manufacturing companies based in four Southeast Asian countries (Cambodia, Malaysia, Thailand, and Vietnam).[54] According to the US International Trade Commission, these four countries accounted for 60% of cells and 82% of panels imported in the US in 2024.[55] The amount of tariff varies depending on the company, especially targeting those accused of circumventing US tariffs on the Chinese solar industry, often by making only minor modifications in these countries.

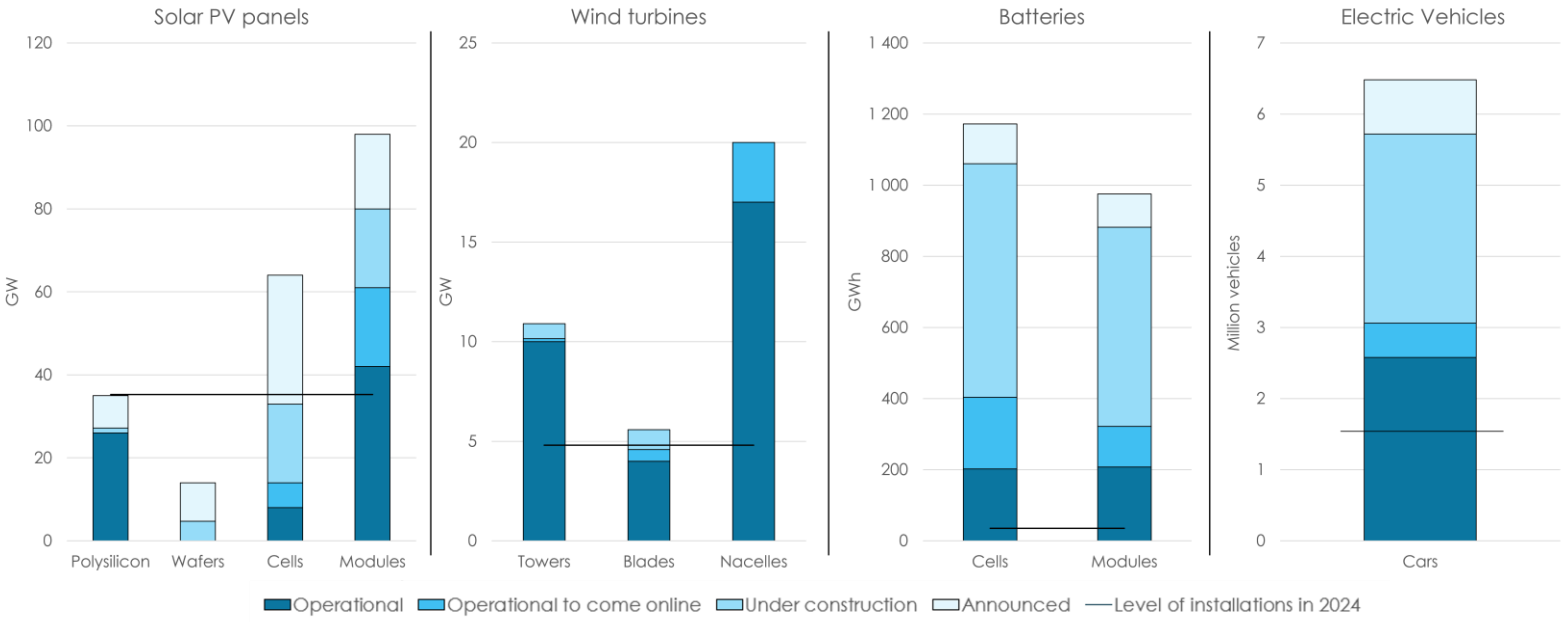
The new tariffs concern cells, whether or not assembled into modules, produced by the targeted companies in Southeast Asia. However, the US solar supply chain currently focuses mainly on producing cells and modules, and to a lesser extent, polysilicon.[56] These tariffs might protect US cell and module producers, but are unlikely to promote the development of a solar wafer industry within the country. If the goal is solely to shield already established US manufacturers, they may be effective. Still, they will likely not accelerate the decoupling from China nor contribute to reducing reliance on foreign supplies by developing an integrated solar PV supply chain in the US. As shown in Figure 16, the US solar domestic supply chain can theoretically meet the 2024 installation targets in terms of modules, but falls short for polysilicon, cells, and wafers. The capacity for polysilicon and cells is expected to increase over the coming years due to ramp-ups from existing plants and new facilities currently under construction, which will roughly enable the 2024 installation goals. Wind, battery, and EV supply chain capacities are sufficient to meet the 2024 installation levels, although last year saw the lowest wind capacity additions in a decade. It is also worth noting that the high current and projected capacity for batteries and EVs, combined with an expected drop in sales –potentially by about half due to Donald Trump's policies– could result in overcapacity in the coming years.

54. "Final Affirmative Determinations in the Antidumping and Countervailing Duty Investigations of Crystalline Photovoltaic Cells Whether or Not Assembled into Modules from Cambodia, Malaysia, Thailand, and the Socialist Republic of Vietnam", US International Trade Administration, April 21, 2025, available at: www.trade.gov.

55. K. Pickerel, "These Are the Countries the US Imported Solar Panels from in 2024", Solar Power World, based on data from the US International Trade Commission, February 11, 2025, available at: www.solarpowerworldonline.com.

56. The supply chain of solar PV starts from polysilicon, which is processed into wafers, which are then assembled into cells, eventually assembled to produce modules.

Figure 16. US solar PV, wind turbines, batteries, and EVs supply chain current (Q1-2025) and expected capacities



Source: Ifri, based on data and analysis from "The State of US Clean Energy Supply Chains in 2025", Clean Investment Monitor, Rhodium Group and MIT CEEPR, April 24, 2025, available at: www.cleaninvestmentmonitor.org.

Note: "batteries" manufacturing capacities and deployment levels include both EVs and battery energy storage systems (BESS). EV sales cover passenger cars, light trucks, buses, and other medium- and heavy-duty vehicles.

In the EV sector, the US leader Tesla is facing challenges. Elon Musk's close ties with President Trump and his role in the Department of Government Efficiency (DOGE) have harmed Tesla's global reputation. The company's sales dropped in Q1-2025 (-13% y.o.y.), along with its revenues (-9% y.o.y.). Although sales and revenues began to recover in Q2 2025, they are still significantly lower than in the same period last year (-13% for sales and -12% for revenues).[57] Tesla also struggles with the failure of its Cybertruck, raising questions about its reliability, while, like other automakers, it faces US tariffs on steel, aluminum, and cars. The US vehicle tariff policy raises questions: while the US general objective is to protect against Chinese competitors, these tariffs increase costs and create uncertainty for all automakers except Chinese companies, which are not present in the US market. In June, Donald Trump signed a measure blocking California's ban on the sale of new gasoline-powered cars, amid rising tensions with the state's governor, Gavin Newsom.[58] For Elon Musk, the benefits of his time in government seem unclear: EVs continue to be heavily criticized by President Trump and his administration, the new budget bill nullifies the impact of the drastic cuts made by DOGE to the US budget, and

57. "Q2 2025 Update", Tesla, July 23, 2025, available at: www.tesla.com.
58. M. Viser, "Trump Targets California with Bill Blocking Ban on Sales of Gas Cars", *The Washington Post*, May 12, 2025.

he ultimately failed to get Jared Isaacman appointed as NASA's new administrator.

Finally, biofuel producers face tariffs on Chinese products, from which they import a large share of their feedstock, such as cooking oil.

The One Big Beautiful Bill Act: a direct hit to the cleantech sector

President Trump introduced the "One Big Beautiful Bill Act" (OBBBA), a reconciliation bill that proposes new expenditures on security and immigration and aims to cut spending on clean energy by repealing most IRA tax credits. The OBBBA was approved by both houses and signed into law by Donald Trump on July 4. This marks a significant victory for the US President, who managed to pass the bill despite strong opposition from lawmakers, including Republicans, due to concerns over increased debt levels, cuts to Medicaid, and the repeal of IRA energy tax credits. Despite this vigorous opposition, the bill was adopted on an accelerated timeline, with most Congress members who initially opposed it ultimately voting for it – often due to compromises, the urgency of the situation (such as raising the national debt ceiling to prevent default), but also to pressure from the White House, with Donald Trump publicly criticizing Republican senators who opposed the bill. The adoption of the OBBBA, despite widespread reservations, could be a turning point: it appears Congress is currently unable to serve effectively as a counterweight.

To reduce federal spending, the OBBBA eliminates or modifies most of the IRA's tax credits, particularly those for electric mobility (30D, 30C, 25E, 45W) and energy efficiency (25C, 25D, 45L) (see Figure 17). Clean electricity generation (45Y, 48E) and subsidies for producing advanced materials (45X) are partially exempt, but their solar and wind energy components are treated unfavorably with a faster phase-out. Removing these subsidies will likely make things worse for cleantech companies like Tesla (the loss of EV credits could significantly reduce domestic demand for years) or GE Vernova (since wind power parts will no longer get the 45X subsidy after 2028).

This does not mean the end of wind and solar energy deployment in the US, but they could quickly lose all forms of federal financial support: while the OBBBA only provides for their removal for projects entering service after July 4, 2026,[59] these conditions depend on current guidelines set by the Internal Revenue Service (IRS). However, an EO signed by President Trump on July 7 aims to "end market distorting subsidies" for wind and solar energy, which are judged "unreliable and foreign controlled". It orders the Secretary of the Treasury to review these guidelines to "enforce the termination" of those credits. The Secretary of the Interior is also instructed to review all

59. See note 1 of Figure 17 for additional details.

elements under its jurisdiction related to wind and solar facilities, to analyze if they have received any "preferential treatment [...] in comparison to dispatchable energy sources". President Trump even declared in August on Truth that the US would no longer approve wind and solar projects and that "days of stupidity were over".

Figure 17. Main OBBBA changes to the IRA energy tax credits

Source: Ifri, based on "The 'One Big Beautiful Bill' Act – Navigating the New Energy Landscape", Sidley Austin, July 15, 2025, available at: www.sidley.com; B. King, H. Kolus, M. Gaffney, N. Pastorek and A. van Brummen, "What Passage of the 'One Big Beautiful Bill' Means for US Energy and the Economy", Rhodium Group, July 11, 2025, available at: https://rhg.com; "One Big Beautiful Bill Act to Scale Back Clean Energy Tax Credits Under Inflation Reduction Act", Holland & Knight, July 7, 2025, available at: www.hklaw.com.

Note: The dates indicate when facilities must begin construction (for 45Y, 48E, 45Q, and 45V), when products need to be manufactured or produced (for 45U, 45X, 45Z), when EVs must be purchased or leased (30D, 25E, 45W), and when items must be installed (30D, 25C, 25D, 45L).
Years indicated refer to January 1st of the specified year (e.g., "2026" refers to January 1, 2026).

1. To qualify for 45Y and 48E tax credits, wind and solar facilities must be placed in service before January 1, 2028, or begin construction before July 4, 2026. Under this second condition, projects starting construction before the end of 2025 must be operational by the end of 2029, and those starting construction between January 1 and July 4, 2026, must be operational before the end of 2030. These conditions are subject to any changes in the IRS's guidance, which are likely to occur after Donald Trump issued an EO on July 7 calling for an end to "market-distorting subsidies" for wind and solar.
2. Metallurgical coal was not included in the 45X tax credit under the IRA scope.
3. For producers of certain critical minerals, the 45X incentive was permanent under the IRA scope.
4. The new 45Z tax credit lowers the maximum amount of tax credit for sustainable aviation fuel (SAF) production from up to USD 1.75 per gallon to USD 1.00. It also restricts eligibility after December 31, 2025: fuels produced after this date must be made from feedstock produced or grown in the US, Canada, or Mexico.

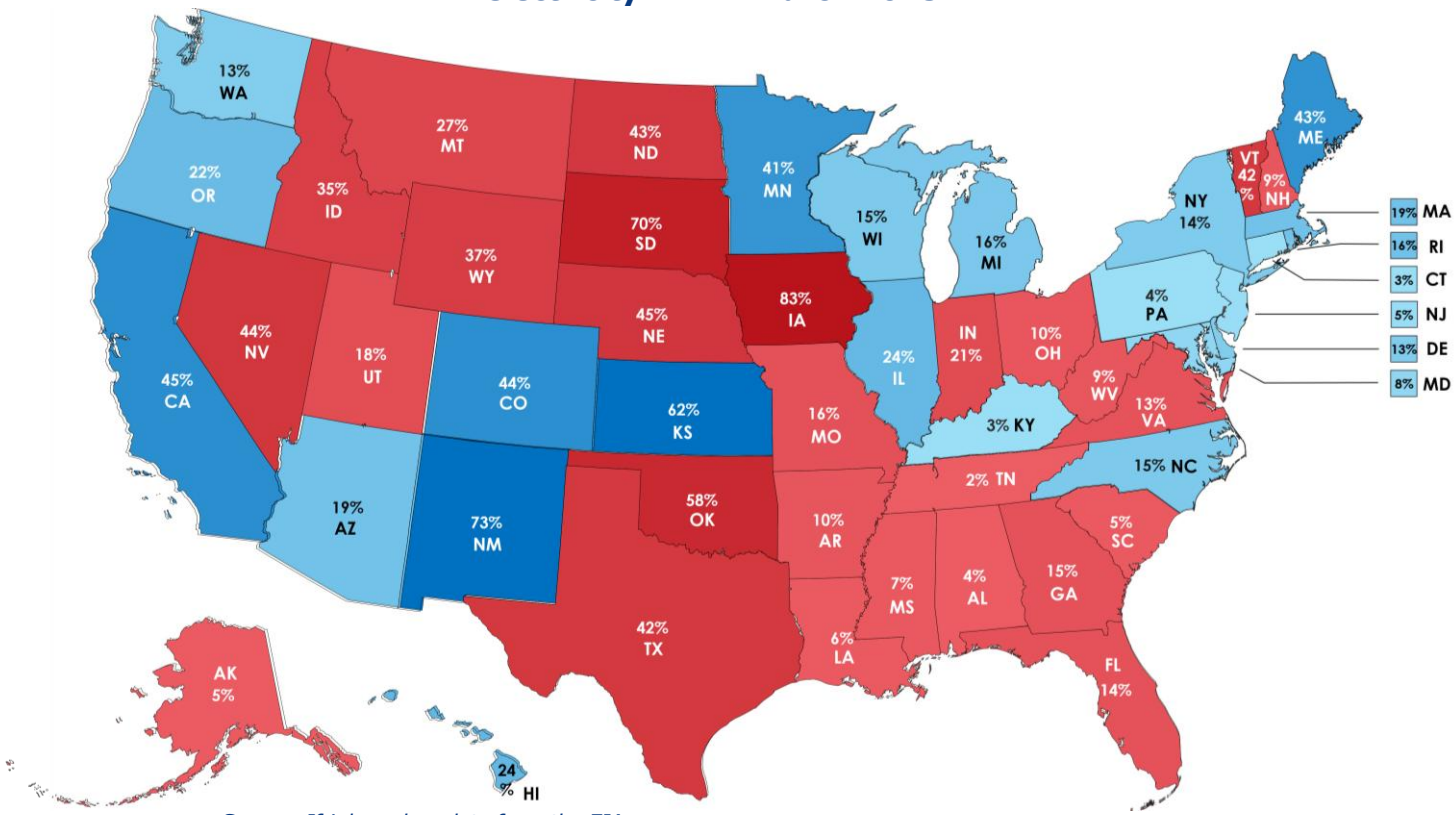
Nevertheless, some momentum has been building in recent years and is likely to continue. Several projects have already been launched, and these technologies remain profitable, with levelized costs of energy generally lower than those of other energy sources. Additionally, certain states continue to promote their development through favorable regulatory frameworks. This is obviously the case in some blue states, but also in various red states, such as Texas, which has attracted the most investment in wind, solar, and BESS in recent years (despite adverse ongoing efforts by some local lawmakers). Its governor, Greg Abbott, for example, has shifted from a relatively hostile stance toward wind and solar power to a more balanced, albeit still uncertain, approach, now recognizing the importance of these energy sources for Texas's economy and energy future. Other Republican states, such as Iowa, South Dakota, and Oklahoma, are also promoting the growth of these energy sources within their borders. As shown in Figure 18, high shares of non-hydroelectric renewable energy sources in states' electricity mixes are a bipartisan trend. Some states are also implementing their own measures to support the cleantech industry, such as tax credits for the purchase of EVs, as in Colorado, for example. The governor of California recently expressed his desire to introduce a similar tax rebate.[60] Major digital companies, like GAFAM, remain interested in improving their public image and operations by powering their data centers with decarbonized electricity (nuclear, wind, solar, hydro, etc.). They will represent a significant source of demand in the future.

However, this momentum depends on federal pressure not becoming too intense. While subsidy cuts and tariffs negatively impact the deployment of solar and wind power, they are not insurmountable obstacles. Conversely, moratoria like the one imposed on offshore wind in January 2025 could have far more damaging effects, especially on solar energy. Most of the US solar potential is concentrated in states west of the North Dakota-Texas line, which are characterized by a high percentage of federal land (48% on average, and

60. T. Briscoe, "How California Plans to Boost EVs with No Federal Help", *Los Angeles Times*, August 19, 2025.

nearly 85% in Nevada, for example). This gives the Washington administration more leverage for action and intervention. The offensive momentum might well be already in place: on July 16, an undisclosed memo from the DOI was leaked, stating that "all decisions, actions, consultations, and other undertakings [...] related to wind and solar facilities" on federal lands would now require Doug Burgum's review.[61] The DOI's definition encompasses all aspects of project development and operation. According to a study by the National Renewable Energy Laboratory, the Bureau of Land Management (a part of the DOI) oversees federal lands containing about 2,819 GW of solar PV and 452 GW of wind potential.[62]

Figure 18. Share of non-hydroelectric renewable energy sources in Democratic (blue) and Republican (red) states' electricity mix in March 2025



Source: Ifri, based on data from the EIA.

Note: since the electricity mix data provided by the EIA on its "Energy State Profiles" is only available for March 2025, this period has been used for this figure. This may slightly underestimate solar electricity generation statistics (compared to what they could be in July or the average for a whole year) and thus reduce the perceived share of non-hydroelectric sources in the electricity mix of some States. However, the purpose of this chart is to show that decarbonized electricity mixes are present in both blue and red states.

The colors of the states are based on the political party of their current governor.

61. J. Siegel and Z. Colman, "Trump Administration Taking New Steps to Block Wind and Solar Projects, Undisclosed Memo Says", Politico, July 16, 2025, available at: www.politico.com.
62. T. Mai, "Renewable Energy Potential on Federal Lands Analysis", National Renewable Energy Laboratory, May 8, 2025, available at: www.nrel.gov.

The OBBBA also emphasizes the conditions related to Foreign Entities of Concern (FEOC), which are companies believed to be overly linked to hostile powers like China, Russia, Iran, or North Korea. For certain technologies, companies applying for IRA subsidies must prove that no FEOC was involved at any point in the supply chain. How these measures will actually be enforced remains uncertain and will depend on future guidance from the IRS, which may take some time, especially given staff reductions at the DOGE in the US administration and the complexity of such a scheme.

A strategy that raises questions

President Trump's strategy, with the OBBBA as a cornerstone, raises questions. While the attacks on solar, wind, and EVs come as no surprise, other choices seem less clear.

Firstly, carbon capture and storage (CCS) continues to benefit from its dedicated tax credit (45Q), which is set to expire in 2033. The US leads this sector, with 22 facilities operational in April 2025, 15 under construction, and 296 planned, accounting for 35% of projects launched worldwide.[63] Possibly driven by lobbying from oil companies that develop CCS systems, this favorable treatment has not been clearly justified, and the rest of the new administration's actions do not put any importance on reducing emissions from industry. Concerning the use of sequestered carbon for producing e-fuels, the provisions of the OBBBA remain unclear, as the 45Z credit supporting the production of clean fuels –including biofuels and e-fuels[64]– is only guaranteed until the end of 2029, while the hydrogen credit (45V) will expire at the end of 2027. There appears to be no actual industrial strategy behind maintaining the carbon capture tax credit.

It also seems that some provisions in the text could harm sectors that President Trump has prioritized. Concerning critical minerals, removing tax credits for EVs –especially the 30D– and the expected decline in demand, since about 50% of EVs sold in the US recently have benefited from these credits,[65] is likely to decrease investment in the US critical minerals sector. In fact, qualifying for these tax credits depended on the origin of the metals used in batteries, which led to a surge in investment in critical metals and batteries after the IRA was introduced (see Figure 19). The 45X credit for producing certain materials will be phased out starting in 2031, while the support for certain minerals was permanent under the IRA. Additionally, because 45X is a production credit, manufacturers must

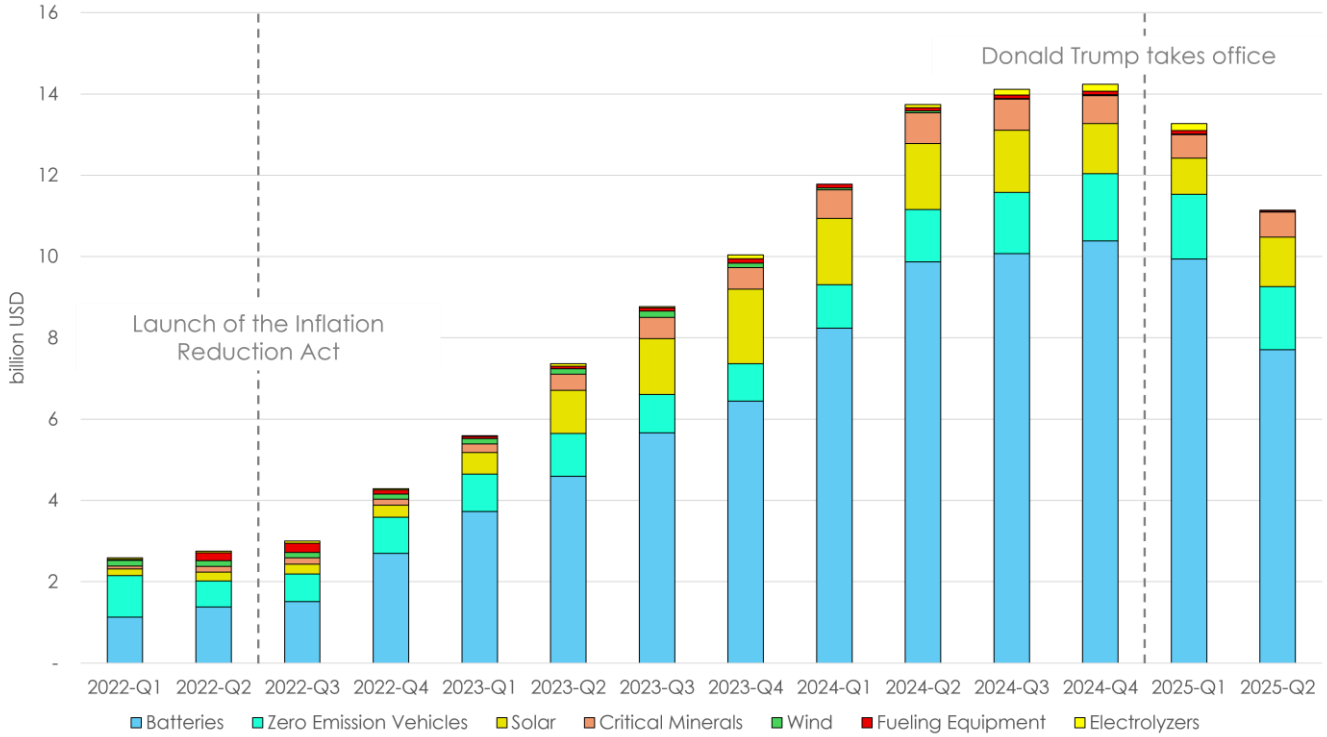
63. "CCUS Projects Database", IEA, April 2025, available at: www.iea.org.

64. E-fuels are produced using captured carbon dioxide, together with hydrogen. Biofuels, on their part, are made from biomass.

65. J. Andreasen Cavanaugh, A.-S. Corbeau, T. Moerenhout, M. Bowen, A. Finan and N. Kaufman, "Assessing the Energy Impacts of the One Big Beautiful Bill Act", Center on Global Energy Policy at Columbia, July 14, 2025, available at: www.energypolicy.columbia.edu.

have begun production to qualify. However, infrastructure for processing and producing metals requires time to develop and scale up, which could lessen the appeal of this credit, especially since the phase-out begins in just five years.

Figure 19. Investments in clean technology manufacturing in the US, 2022-Q1 – 2025-Q2



Source: Ifri, based on data from "Database", Clean Investment Monitor, Rhodium Group and MIT CEEPR, consulted in August 2025, available at: www.cleaninvestmentmonitor.org.

In the nuclear sector, while OBBBA maintains tax credits for clean electricity generation (45Y, 48E, and 45U, which is specific to nuclear-generated electricity), the stricter conditions concerning FEOCs could create challenges for US nuclear companies. For example, starting in 2028, nuclear power plants using fuel from China or Russia will no longer qualify for the 45U credit. Meeting this requirement could be challenging for US companies, given the country's heavy reliance on foreign nations for nuclear fuel and the time required to establish and operate new production facilities. This situation could present opportunities for other nuclear suppliers, such as France, to provide fuel and technology to US nuclear operators.

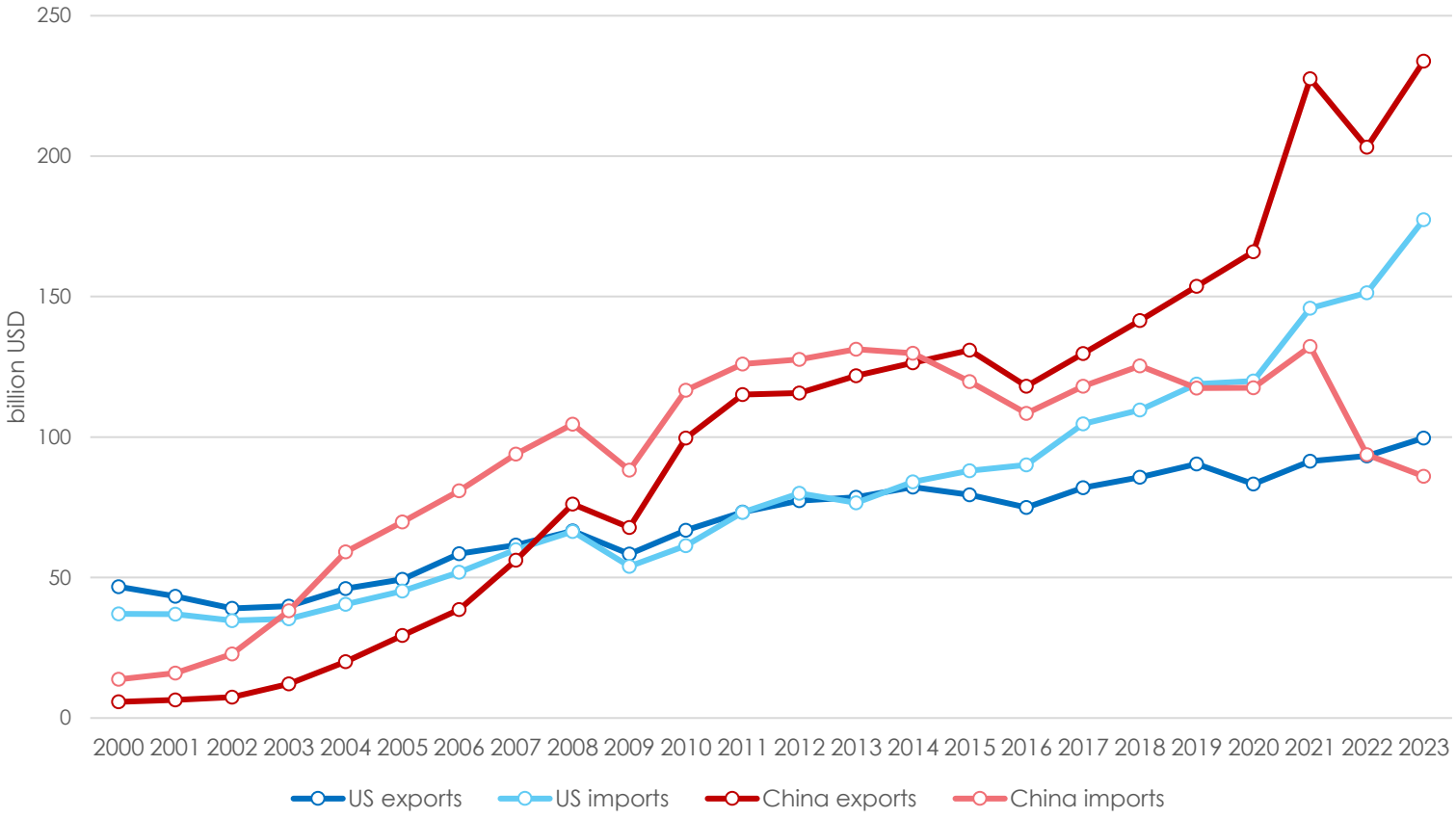
Perspectives: Is the energy dominance agenda empowering China?

The US accounted for 11% of global emissions in 2023, making it the world's second-largest emitter after China and one of the strongest emitters per capita (with 17.61 tonnes of CO2eq. in 2023). If President Trump's agenda is implemented, US greenhouse gas emissions are expected to continue decreasing due to market forces, but at a much slower pace than under the decarbonization efforts initiated under Joe Biden's administration. According to the EIA, these emissions could even slightly increase in 2025.[66]

By withdrawing from the Paris Agreement for the second time, the US is also stepping back from the multilateral framework around the fight against climate change and the related international negotiations, such as the Conferences of the Parties (COPs). This withdrawal weakens the agreement, whose model was made possible and credible mainly through a consensus between China and the US on global emissions reduction. The US is granting more influence to Beijing, which will benefit from greater sway in international climate negotiations and global energy transition markets, at the expense of US cleantech manufacturers. As shown in the previous section and by the US trade deficit regarding low-carbon technology products (see Figure 20), Washington is clearly losing the race for energy transition technologies to China, which has a substantial trade surplus in this area (USD 146 billion in 2023). The new policy under Donald Trump will not improve this situation; in fact, it will likely exacerbate it. With Chinese dominance in cleantech products and their own loss of ground in this sector, the US does not seem to have a "Sputnik stimulus" mindset or awareness. Instead of competing with China, the US appears ready to cede leadership in energy transition technologies (except nuclear) and refocus on its traditional strengths in hydrocarbons. For Europe, this is an opportunity to step up and fill the void left by the US, whether in international negotiations or in energy transition technologies.

66. "Short-Term Energy Outlook", *op. cit.*

Figure 20. US and China exports and imports of low-carbon technology products, 2000-2023



Source: Ifri, based on "Trade in Low Carbon Technology Products", International Monetary Fund (IMF), Climate Change Dashboard, available at: https://climatedata.imf.org.

Note: The IMF data defines low-carbon technology products as products "producing less pollution than their traditional energy counterparts", thereby including "mechanics like wind turbines, solar panels, biomass systems, or carbon capture equipment".

In this chart, "China" includes mainland China and Macao. It does not include Hong Kong.

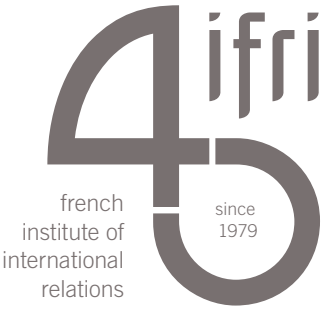
The US withdrawal also harms global efforts to finance climate change mitigation and adaptation. Donald Trump decided to revoke the United States Agency for International Development (USAID), which was running development projects focused on energy transition and security worldwide. The new administration also decided to step out of the Just Energy Transition Partnerships (JETPs) framework, initiatives designed to provide financial aid to developing countries in their energy transition efforts. JETPs have been agreed upon between these countries and a group called the International Partners Group.[67] To date, four partnerships have been finalized: South Africa in 2021 (for USD 8.5 billion), Indonesia in 2022 (for USD 20 billion), Vietnam in 2022 (for USD 15.5 billion), and Senegal in 2023 (for USD 8.5 billion). According to analysis from the Center on Global

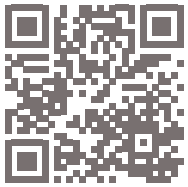
67. This group includes Canada, Denmark, the European Union, France, Germany, Italy, Japan, Norway, and the United Kingdom, after the US withdrawal.

Energy Policy at Columbia, the US contributed USD 4.2 billion to the first three JETPs (for which details are known), representing 8.5% of the total.[68] The US stance, therefore, weakens the concept of climate justice, which remains a point of tension between North and South countries.

Finally, the US reversal sends a notably negative signal worldwide, especially to countries whose economic and energy systems rely on coal. Many nations are questioning the wisdom of shutting down their coal-fired power plants. The fact that the world's leading economic power, a developed country, is preparing to reopen its coal-fired plants and promotes this energy source makes the phase-out less clear and fuels critics' arguments against the energy transition globally. Last but not least, the new US administration has voiced its opposition to policies supporting environmental, social, and governance criteria, challenging efforts by numerous companies both in the US and around the world, as they worry about negative repercussions on their relationship with Washington or even losing access to the US market.

68. G. Jain et G. Bustami, "Realizing the Potential of Just Energy Transition Partnerships in the Current Geopolitical Environment", Center on Global Energy Policy, Columbia University, March 2025, available at: www.energypolicy.columbia.edu.





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