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The Energy Transition under Trump 2.0: USA & International Prospects

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Executive Summary

- The **Biden administration produced a step-change in US action to drive the energy transition at home**, with the Inflation Reduction Act (IRA) the cornerstone of this effort.

- **President Trump has made clear his intention to change strategy** and focus on domestic production and use of fossil fuels as a driver of energy security and economic growth. **However, it's unclear how** statements of intended action by the Trump campaign and transition team in support of **this will translate into practice**.

- **This briefing examines potential short- and medium-term outcomes** for production and demand for clean technologies and fossil fuels, both in the USA and internationally, **under two stylised scenarios**: first where actions are **'constrained'** by legal, procedural, or political factors, and a second **'unconstrained'** scenario where they are not.

- The following page summarises potential outcomes, but **key takeaways for investors are the following**:

- **Power demand growth is likely to drive deployment of grid infrastructure, gas power and renewables**. Gas and renewables - particularly solar and onshore wind - are quick to build and economically attractive even without IRA support.

- **State-level policy may provide a significant backstop** to rollback of federal support for clean technologies, **particularly for renewables and battery storage**, but potentially also for electric vehicles.

- **Further support for oil and gas production is not alone likely to stimulate growing output**. Oil production is likely to be most significantly guided by international price dynamics. **Growing domestic power demand and Liquefied natural gas (LNG) exports are likely to boost US gas production** in the coming years.

- **Changes to US policy are not likely to materially alter the global trajectory** for fossil fuel and clean technology production and demand, which are driven by wider dynamics and priorities.

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United States Outlook

Horizon	Constrained Scenario	Unconstrained Scenario
Short-term (0-2 years)	**Projected growth in EVs, renewables, battery storage and clean technology manufacturing may slow modestly**, while offshore wind development halts. EVs may see an initial boost before slowing once IRA support is removed, with imported EVs most impacted. **Substantial grid build-out may continue, driven by power demand growth**. More supportive policy alone is **not likely to spur oil production growth**, but accelerating power demand and LNG exports **may boost domestic gas production**. Import tariffs on Canada and Mexico may increase ICE vehicle and transport fuel prices.	**Announcements for new clean technology manufacturing capacity may slow significantly,** with some projects announced or under construction cancelled. **Projected growth in renewables and battery storage may also slow relatively significantly,** driven by higher costs of both imports and domestic manufacturing, **but remains supported by state-level policy**. **Projected EV growth may slow further** with threat of permanent removal of state-level regulatory support. **Grid build-out activity continues to grow but at a reduced pace**; particularly cross-jurisdictional interconnection.
Medium-term (2-10 years)	**EV growth may continue but further concentrated in California and other states that follow its vehicle emissions standards** (based on potential waver reinstatement). **Coal power is likely to continue steady decline**, while **renewables** (excl. offshore wind) **and battery storage may continue steady growth** driven by continued federal and state-level policies and underlying economics, although costs may grow due to import tariffs and retaliatory action. **New domestic clean technology manufacturing capacity may slow** as costs increase and market saturation approaches. **Grid build out may continue apace to satisfy power demand growth** and integrate growing renewable capacity. **Growth in domestic gas production may slow** as LNG demand plateaus.	**EV sales may slow significantly across the country** with limited policy support and higher costs. **Clean technology manufacturing capacity and growth may be limited**. **Growth in renewables and battery storage deployment may continue, but focused on states with supportive policy**, and at higher cost. **Gas power expansion may accelerate** to compensate for reduced renewables build-out, **while coal power decline is likely to continue**. **Grid build out activity may remain at a reduced pace**, particularly for cross-jurisdictional interconnection.
	Outcomes across the medium-term will also heavily depend on the actions of President Trump's successor *to be inaugurated in 2029 at the latest,* ***and the shape of wider federal and state elections*** *in the meantime.*	

International Outlook

Horizon	Constrained & Unconstrained Scenario
Short-term (0-2 years)	**Changes to US demand for and production of clean technologies not likely to materially alter non-US production and deployment**, while **stringent US import tariffs may support international deployment of clean technologies** if producers diversify their operations to avoid tariffs, seek new markets, and engage in price competition. Similarly, any growth in US oil and gas production may not impact global demand and total global production materially, if other sources of supply are displaced. **A second US exit from the Paris Agreement is also not likely to materially alter the global energy transition trajectory**, which is increasingly incentivised by energy and economic security and competition, rather than 'burden sharing' of emissions reductions.
Medium-term (2-10 years)	**Short-term dynamics may also apply in the medium-term**, although increased supply of LNG may maintain demand in some regions higher for longer. Withdrawal of US climate finance may 'lock in' some high-carbon infrastructure for some countries that may otherwise be in receipt of these funds. **Overall, the global ex-USA transition trajectory may remain largely unaltered**.

Graphic created by Greenwheel, as at 20th January 2025.

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Preface: The investor's view

Matt Breidert, Ecofin, Portfolio Manager

"**We are likely pivoting** from a period of policy-driven focus on sustainable resources substitution in electricity, **to now an 'urgent need for more power, overall'**.

While **the election of Donald Trump will bring a meaningful pivot in policy support away from renewables** in the US, the reality is that **renewables will remain one of the cheapest forms of additionality to the grid**, even without subsidies.

On top of that, it **should be easier to continue to build renewables more quickly than fossil fuel resources**, while developers are cognisant that election cycles can bring negative surprises later. **We are skeptical there will be a widespread shift in the electricity resource mix over the rest of decade**.

This being said, **the urgent need for *firm, around-the-clock* power** is a very different resource profile than what renewables alone can offer. As such, **we think we will see an 'all of the above' approach widen under this new administration**, save for offshore wind.

We are entering one of the greatest demand-led bull markets in power fundamentals in decades, the result of massive AI investment in hyperscalers, continued datacentre growth and slow but steady penetration of electric vehicles. **This force will overwhelm transient issues for clean-substitution led concerns in our view**."

How important is the USA to the global energy transition and emissions?

The **USA produces a quarter of global economic output, but only around 13% of global energy-related CO_2 emissions**. Its share of global emissions declined from over 20% in the 1990s as emissions grew elsewhere (particularly China and India), and domestic emissions fell. **US emissions are now 20% below its 2007 peak, driven by cleaner power and transport sectors. These sectors still account for 70% of US emissions** (Figure 1). Continued economic growth means that US emissions intensity per unit of GDP produced has more than halved since 1990[i], while per capita emissions have reduced by nearly a third.[ii]

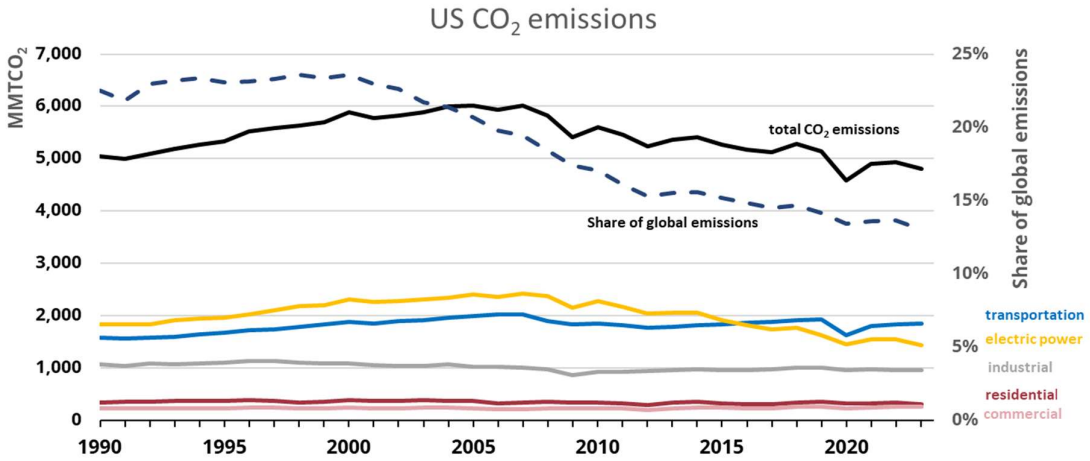


Figure 1 - US energy-related CO_2 emissions. Data Sources: US EIA (2024); Our World in Data (2024). Graphic created by Greenwheel. The information shown above is for illustrative purposes.

Following rapid development of shale resources in the 2010s, **the USA is the largest producer and consumer of both oil and gas the world has ever seen**. It is a smaller, but still **major global demand centre for clean technology**, but broadly **domestic production capacity significantly lags demand** (Figure 2).

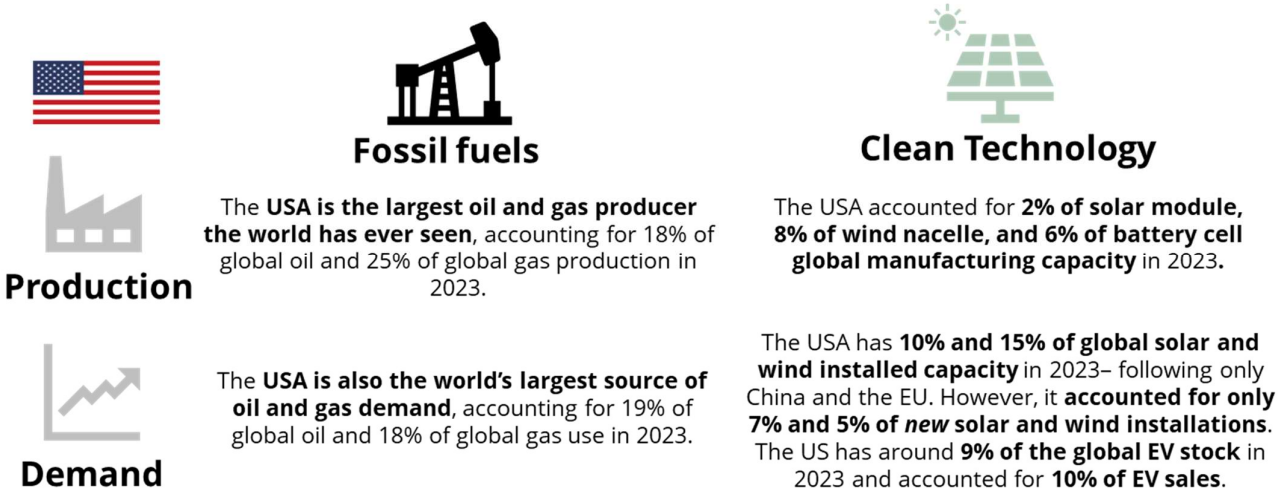


Figure 2 - US production and demand for fossil fuels and clean technology. Data Sources: Energy Institute (2024); US EIA (2024); IEA (2024) .Graphic created by Greenwheel. The information shown above is for illustrative purposes.

This brief explores the range of possible outcomes for key clean technologies and fossil fuel production and use, both in the USA and internationally, under two opposing stylised scenarios - **a 'constrained' scenario**, where action to promote the second Trump administration's energy-related priorities as promised on the campaign trail is limited by legal, procedural, or political factors, and an **'unconstrained' scenario**, where such limiting factors are muted. Broadly, changes are examined relative to the outlook under the Biden administration.

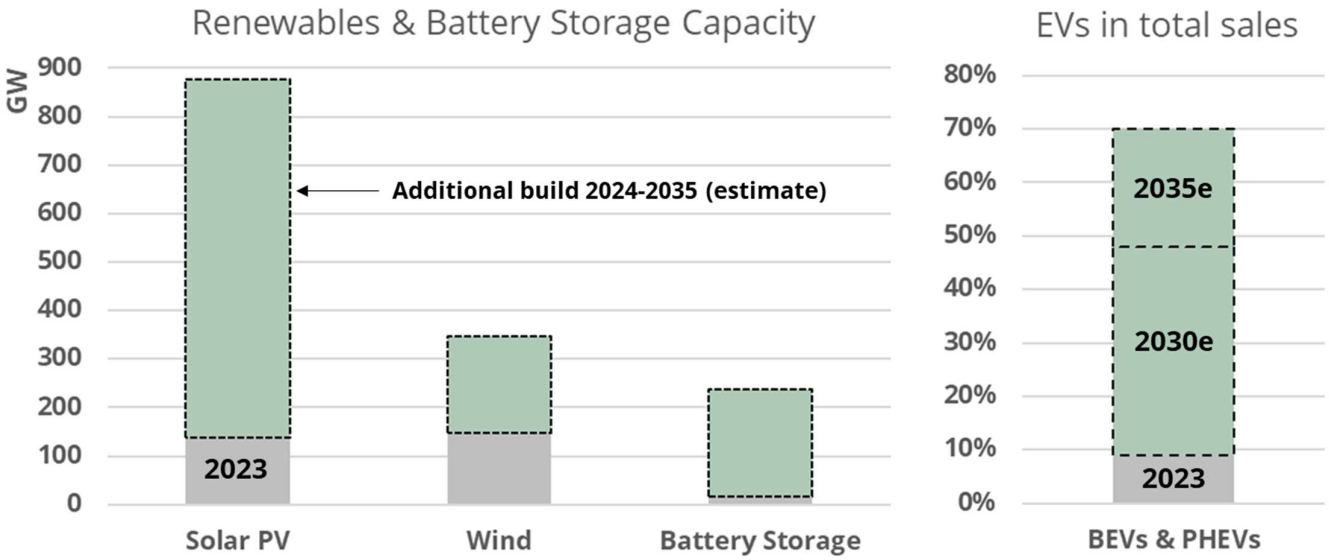
What was the domestic outlook under the Biden administration?

The **Biden administration committed the USA to reducing its emissions by two-thirds by 2035 from 2005 levels, and to achieve net zero by 2050.** The 2035 target as part of the USA's updated Nationally Determined Contribution (NDC) submitted at the end of 2024, building on the existing target of a halving of US emissions by 2030. NDC targets are not legally binding in either domestic or international law.

The cornerstone of US domestic climate and energy policy is the Inflation Reduction Act (IRA). Introduced in 2022, the IRA offers a range of tax credits, loans and grants for the manufacture and deployment of a range of clean technologies and their enablers. The **IRA is supported by the Bipartisan Infrastructure Law (BIL),** which includes grants and loans to boost domestic battery supply chains and grid infrastructure.

The IRA is credited with inducing over $230 billion in domestic clean technology *manufacturing* capacity to date, mostly in batteries and electric vehicles.[iii] It is also credited with significantly boosting the outlook for clean technology deployment in the

US, supported by a wider federal and state-level policy landscape. **Under Biden, installed solar, wind and battery storage capacity was projected to grow nearly 4x by 2035, with electric vehicles growing from 10% to 70% of all car sales by 2035** (Figure 3).



sources: BNEF (2024a); BNEF (2024b). Graphic created by Greenwheel. The information shown above is for illustrative purposes. Forecasts and estimates are based upon subjective assumptions.

Despite this, **the US is not on track to meet its emissions targets** - with Biden-era policies projected to lead to a 30-40% reduction by 2030, and 33-50% by 2035. Before the IRA, the US was on track for a 20% reduction by 2030 (Figure 4).

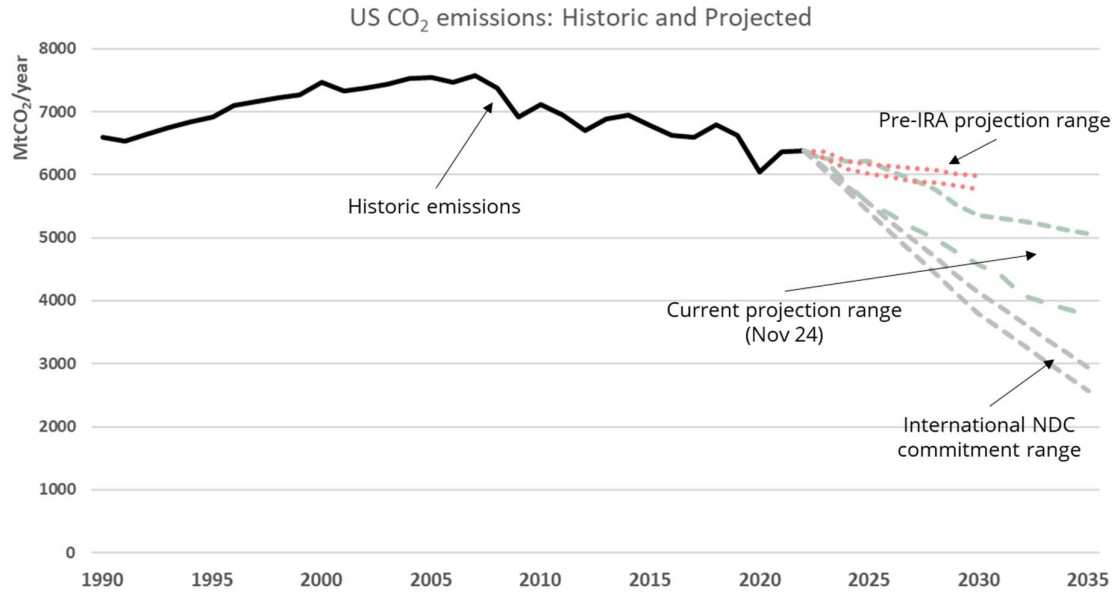


Figure 4 – Historic and projected US CO_2 emissions (Data source: CAT, 2024). Graphic created by Greenwheel. The information shown above is for illustrative purposes. Forecasts and estimates are based upon subjective assumptions.

How might the domestic outlook change under Trump 2.0?

Horizon	Constrained Scenario	Unconstrained Scenario
Short-term (0-2 years)	**Projected growth in EVs, renewables, battery storage and clean technology manufacturing may slow modestly**, while offshore wind development halts. EVs may see an initial boost before slowing once IRA support is removed, with imported EVs most impacted. **Substantial grid build-out may continue, driven by power demand growth**. More supportive policy alone is **not likely to spur oil production growth**, but accelerating power demand and LNG exports **may boost domestic gas production**. Import tariffs on Canada and Mexico may increase ICE vehicle and transport fuel prices.	**Announcements for new clean technology manufacturing capacity may slow significantly,** with some projects announced or under construction cancelled. **Projected growth in renewables and battery storage may also slow relatively significantly,** driven by higher costs of both imports and domestic manufacturing, **but remains supported by state-level policy**. **Projected EV growth may slow further** with threat of permanent removal of state-level regulatory support. **Grid build-out activity continues to grow but at a reduced pace**; particularly cross-jurisdictional interconnection.
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	Outcomes across the medium-term will also heavily depend on the actions of President Trump's successor *to be inaugurated in 2029 at the latest,* ***and the shape of wider federal and state elections*** *in the meantime.*	

Table 1 – Summary of domestic US outlook. Graphic created by Greenwheel.

During the campaign, **President-elect Trump signalled strong opposition to clean technology deployment, and strong support for domestic production and use of oil and gas.** The campaign and transition team made a range of statements about priorities and proposed actions once in office to reflect this position. However, whether they will be able to implement these proposals in full is unclear.

Table 1 describes the key parameters of a **'constrained' scenario**, where actions to promote Trump's priorities are limited by legal, procedural or political factors, and an **'unconstrained' scenario**, where they are not. Descriptions under the 'unconstrained' scenario describe factors that are different from or in addition to the 'constrained' scenario.



Domain	Constrained Scenario	Unconstrained Scenario
Inflation Reduction Act (IRA) & Bipartisan Infrastructure Law (BIL)	**Targeted changes to IRA**, including removal of EV purchase credits and moderate changes to renewable and battery deployment and clean technology manufacturing credits. **Moratorium on new offshore wind**, and administrative barriers to existing projects. **Cancelation of uncommitted grant and loan funds** under IRA and BIL.	**Full repeal of the IRA**, or effective repeal through rewriting access guidance and slow-walking administrative processes.
Grids	FERC Order 1920 on **long-term regional grid planning remains in force**. **No congressional action to reduce planning and permitting barriers** for cross-jurisdictional grid infrastructure. **Unspent grid-related funds under IRA and BIL cancelled**.	FERC Order 1920 on **long-term planning is rescinded**, **congress passes action on planning and permitting for fossil fuel but not grid-related assets**, and attempts are made to **reclaim spent or obligated grid-related funds** under the IRA and BIL.
Emissions regulations	**Federal regulations on GHG emissions from vehicles and power plants are cancelled**. **Recent waivers granted to California** to regulate GHG emissions from vehicles above federal levels beyond 2026, which several other states follow**, are cancelled**.	Action is taken to **remove California's ability to apply for waivers** to regulate GHG emissions from vehicles.
Oil & gas production support	**Methane regulations are cancelled** and other environmental regulations diluted or removed. Greater number of **leases on federal lands offered for sale, with royalties reduced**. **Pause lifted on LNG exports** to non-FTA countries.	
Import tariffs	Existing and scheduled **clean technology and energy-related tariffs remain/enter force**, with **further tariffs targeting key technologies** and countries introduced. Blanket tariffs of **25% on Canada and Mexico and 10% on China** are introduced.	**60% blanket additional tariff applied to China**; **10% additional tariff applied to all other countries** (excl. Canada & Mexico) in addition to targeted clean technology tariffs.

Table 2 – Potential actions under a 'constrained' and 'unconstrained' scenario. Graphic created by Greenwheel.

Inflation Reduction Act (IRA)

In a 'constrained' scenario, consumer subsidies for electric vehicles (EVs) are removed, while **clean technology manufacturing and renewable power tax credits are modified.**

Despite Trump vowing to do so, there is a widely held view that targeted changes to the IRA is more likely than a full repeal. While a simple majority in congress is required, and Republicans hold both the Senate and House, **many Republican lawmakers are opposed to repeal** due to its economic benefits[iv], and its key role in helping to reshore manufacturing capacity and supply chains – a key campaign pledge.

Since the introduction of the IRA **around 80% of investments in clean technology manufacturing have been in Republican districts**.[v] Across 2024, manufacturing investment as a proportion of GDP has also tended to be significantly greater in

Republican states[1] (see Figure 5, left panel), and most announced manufacturing investments are also concentrated in Republican states.[vi]

Around 60% of the $215bn invested in deploying clean technologies in 2024 was in Republican states[vi], supported by the IRA and associated tax credits. This investment was significant as a proportion of GDP in many such states (Figure 5, right panel).

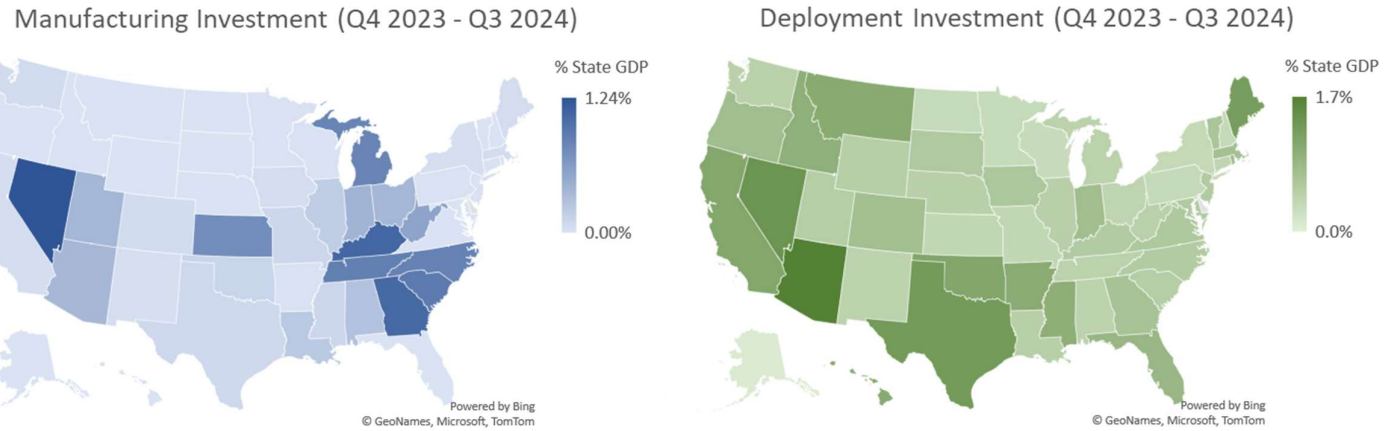

Figure 3 – Investment in clean technology manufacturing and clean technology deployment as a proportion of GDP, Q4 2023 – Q3 2024) Data Source: US DOE (2024). Graphic created by Greenwheel. The information shown above is for illustrative purposes.

However, in the first quarter of 2024 alone tax credits worth $600 million were awarded for EV purchases, which reach $7,500 for vehicles that satisfy domestic manufacturing requirements.[vii] **Eliminating tax credits for EV purchases would likely receive support in Congress**, where a priority may be to find funds to extend wider tax cuts established during the first Trump administration, and which are mostly due to expire in 2025.

This would likely slow EV deployment in the medium-term, but possibly not substantially. In the short-term, deployment of EVs may even increase if consumers seek to take advantage of federal subsidies if they feel they may be removed.[viii]

Some studies suggest that EV purchase subsidises have been a minor driver of growing US EV sales in recent years, with declining production costs – supported by the IRA for domestic battery manufacturing - and regulatory support at state level likely to be the primary drivers of deployment to date. [ix,x]

Imported EVs are limited to a $3,500 rate, although a loophole allows them to qualify for the full credit if they are purchased for lease. This has driven a significant increase in the proportion of imported vehicles leased rather than bought by consumers.[ix] As such, it's likely that **imported vehicles would be most penalised. However, around 70% of EV sales in the US in 2024 were from US-based manufacturers** – principally Tesla.[xi]

[1] Those which voted Republican in the 2024 Presidential election.

However, **wider barriers to EV adoption** such as inadequate charging infrastructure, range anxiety and wider consumer preferences **may remain a drag on growth rates in the medium-term**.[xii]

Under a constrained scenario some modifications to tax credits for renewables and battery storage deployment, and clean technology manufacturing, are likely. For example, the Energy Community Tax Credit adder[2] could be abolished, and credit phase-out dates could be accelerated.[3]

The impact would depend on the specific modifications. However, **even under an 'unconstrained' scenario where the IRA is fully or effectively repealed, deployment of key renewables and battery storage would likely slow rather than stop, due to three key drivers**:

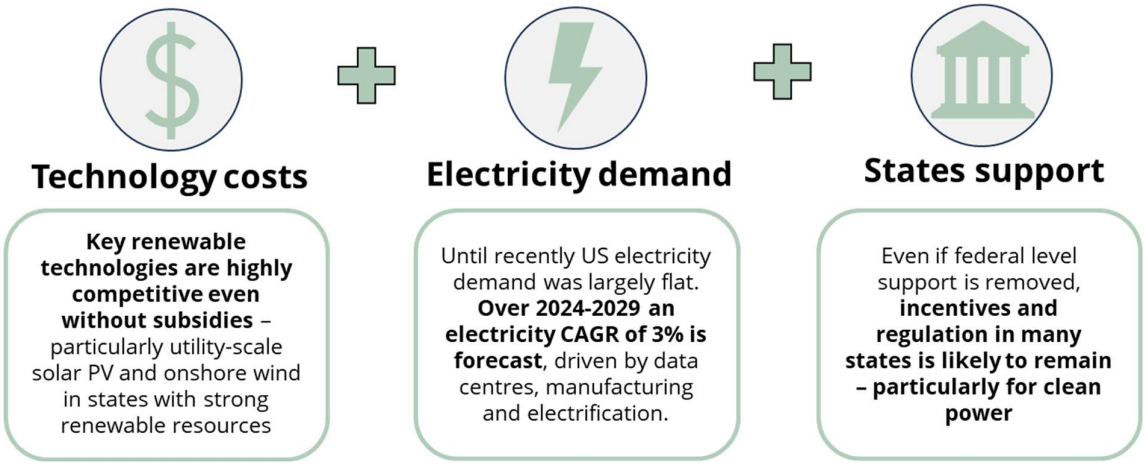

Figure 4 - Three key drivers of renewable and battery storage deployment in the USA. Data source: Wilson et al (2024). Graphic created by Greenwheel. The information shown above is for illustrative purposes.

Even without IRA support, **average costs for new utility-scale solar and offshore wind would remain highly competitive with new fossil fuel capacity** – particularly in states with strong solar and wind resources (Figure 7). However, costs may grow with changes to import tariffs (discussed below), and any reduction in the forecast pace of deployment may lead to otherwise higher electricity prices for end consumers.

Under either scenario, the new administration may seek to curb renewables through other means, such as through a deployment ban on federal lands. Onshore wind and solar are typically built on private or other non-Federal land, limiting the Federal government's role. **Most at risk would be new offshore wind developments**, for which sales of new leases are again likely to cease and existing projects may face regulatory delays.

[2] The Energy Community Tax Credit Bonus applies a bonus of up to 10% (for production tax credits) or 10 percentage points (for investment tax credits) for projects, facilities, and technologies located in energy communities, defined as areas communities with significant fossil-fuel related employment.

[3] Most tax credits are set to phase out in 2032, or when the US power sector CO_2 emissions reach 75% below 2022 levels for clean energy production credits.

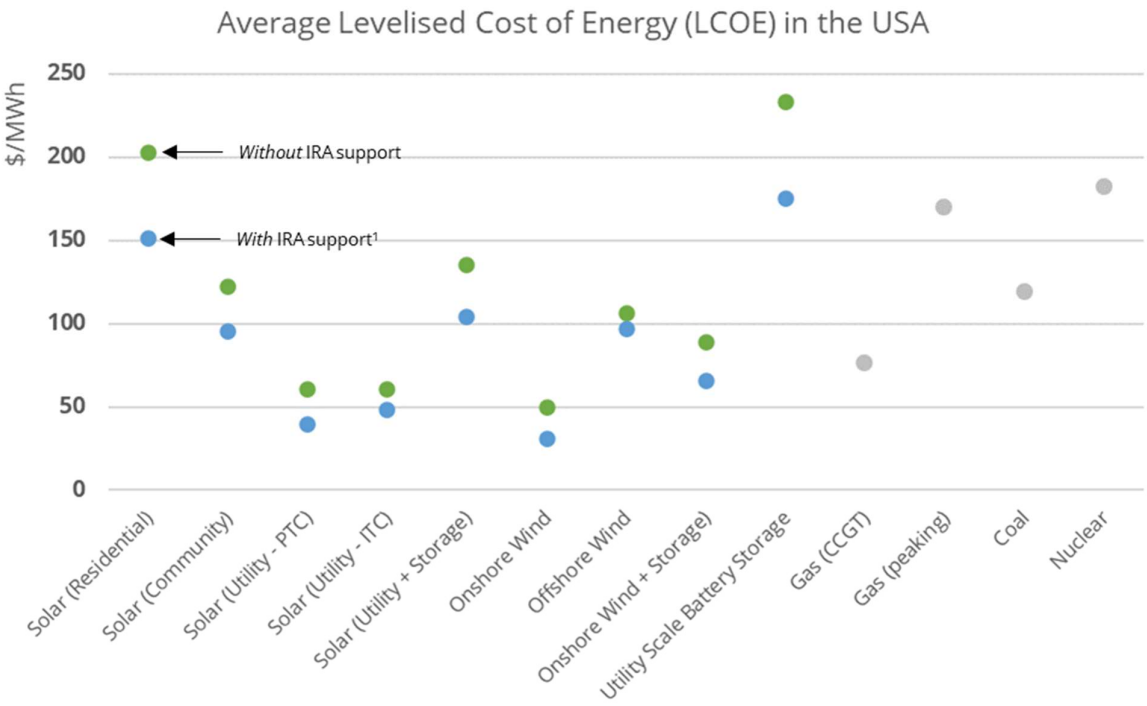

Figure 5 – Levelised cost of energy in the USA. Data source: Lazard (2024). Note: [1]IRA support illustrates maximum reduction using maximum IRA support available. Graphic created by Greenwheel. The information shown above is for illustrative purposes.

However, **existing offshore capacity in the US is negligible, and forecast growth was relatively small**. Around 4GW is under construction, with pre-election projections for total capacity of around 40GW by 2035.[xiii] This is 20% of total projected additional wind capacity build-out by 2035, and even if achieved would be ~3% of projected cumulative wind and solar capacity build-out by that date (see Figure 4).

Forecasts vary, but US power system operators collectively **forecast a 16% electricity peak demand growth by 2029**, **driven primarily by growing data centre demand, but also manufacturing expansion and wider electrification**.[xiv] Data centre demand may grow 2-3x, expanding from around 5% to 7-12% of total US power demand by 2028.[xv] Forecasts for data centre and total demand growth are concentrated in the ERCOT and PJM electricity markets.

Quick-to-build and structurally cheaper renewable and gas power are likely to dominate capacity growth in the short- and medium-term. New nuclear power, supported by both Biden and Trump, may also become material in the longer-term, with potential repowering of some retired nuclear capacity in the medium-term.

Coal power decline is likely to continue. Coal power now accounts for around 15% of US generation, down from over 40% in 2011 – and lower than wind and solar at 17%.[xvi] The US coal fleet is aging, with nearly half its capacity having closed since 2011. Although growing electricity demand has slowed the rate of coal retirements,[xvii] **a third of coal capacity remaining in 2024 is set to close or be converted to gas by 2030**.[xviii] No new

coal power stations have been built since 2013, and there are no reported plans to add capacity.

Under an unconstrained scenario, removing federal support for clean technology manufacturing may significantly reduce its prospects, including for capacity already operating or under construction.

As well as 70% of EVs, two-thirds of the batteries in EVs sold in the US are manufactured domestically.[xix] While most wind nacelles are also produced domestically, battery storage and solar PV installations rely heavily on imports.[xxi]

Announced investments in battery cell manufacturing capacity would be sufficient to comfortably supply all domestic demand for both EV and storage batteries well into the 2030s.[xx] while announced investments in solar modules would also be sufficient to serve domestic demand in 2030. In both cases, at least half this capacity is either already operating or under construction.[xxi,xxii]

With IRA production support, US-made batteries and solar modules may be delivered at internationally competitive prices,[xxi,xxiii] although a significant import dependence for battery anodes and cathodes, and solar cells and wafters, would remain.[xxi] **Removing IRA support would significantly erode this competitiveness and either drive increasing demand for imports or raise prices and supress demand**.

Grids

Power demand growth is likely to be a strong fundamental driver for grid build-out. Actions under a constrained scenario may be largely neutral compared to the Biden policy environment**, but negative in an unconstrained scenario – particularly for regional interconnection.**

In 2022 the Department of Energy's (DOE's) Grid Deployment Office (GDO) was created to administer funds appropriated by the IRA and Bipartisan Infrastructure Law (BIL), totalling $26 billion in grants and loans to support grid expansion and resilience.[xxiv] Most of this funding has been spent or obligated.

In 2024 the **Federal Energy Regulatory Commission (FERC) released Order 1920, which requires each regional transmission authority in the US to construct long-term (>20 year) transmission plans, including interconnections to other regions**. The first plans are due mid-2025, and then every five years.[xxv]

Grid infrastructure that crosses state and other jurisdictional boundaries has long faced planning and permitting challenges. Congress has so far failed to pass legislation to streamline these issues, despite bipartisan bills that have attempted to give power to the federal government to push through new projects deemed nationally important.[xxvi]

In a constrained scenario, Order 1920 remains, congress remains unable to tackle regional planning challenges, and unspent and unobligated GDO and other key transmission-related federal fund are withdrawn. As most appropriated funds have been

spent or obligated this **is not likely to have a significant depressing effect on transmission build-out**, although existing barriers to system interconnections remain.

In **an unconstrained scenario** FERC rescinds Order 1920, Congress passes legislation to accelerate fossil fuel-related infrastructure but limits action on electricity transmission, and efforts are made to reclaim some spent or obligated grid-related federal funds. This **would have a more constraining impact on grid build-out**, particularly if already committed funds are reclaimed, damaging investor confidence. However, **various legal, procedural, and political challenges make pursuing and achieving all three elements together unlikely**.

Electricity and vehicle emissions regulations

Biden introduced robust federal regulations on emissions from existing coal and new gas-fired power stations, and road vehicles.

In 2024 the US Environmental Protection Agency (EPA) announced that all coal plants must either reduce or capture 90% of their CO_2 emissions by 2039, or close. The same rule applies to *new* gas plants that will run at least 40% of the time. Around the same time, the EPA also established CO_2 emissions regulations for light- and medium-duty vehicles sold between 2027-2032, building on those already in place to 2026.

These regulations are vulnerable to legal challenge, and now are likely to be cancelled even under a constrained scenario. Although the likely outcome of any legal challenges is unclear, and are now not likely to be contested, the overturning of the Chevron Doctrine by the Supreme Court in June 2024 (which previously gave authority to federal agencies to interpret vague legal requirements), made successful challenges more likely.[xxvii]

However, state level regulations may provide a strong backstop. California has a statutory waiver to set its own vehicle emission standards above any federal requirements, with 18 other states (plus DC), covering 40% of car and light truck sales opting to follow at least some of these standards too.[xxviii] California currently requires an increasing proportion cars and light trucks sold to be zero-emission, reaching 100% in 2035.

Under a constrained scenario, waivers granted to California by the EPA, and by extension to other States that follow them, are cancelled. This may lead to protracted legal action, and a threat of retroactive enforcement if this ability is reinstated by a future Administration.[xxix]

In December 2024 the Supreme Court declined to hear a case challenging California's legal ability to apply for such waivers, although accepted a case to rule on the granting of specific waivers.[xxx] **However, Trump may yet seek for this statutory ability to be overturned in an unconstrained scenario**. Whether such an effort could succeed is unclear.

If this ability were removed, it may significantly impact the prospects for EVs in the US in the short-to-medium term, although **the extent of the impact would depend significantly on actions of a post-Trump administration** in, for example, reintroducing federal vehicle emissions standards.

State-level policy for decarbonising the power sector is likely to prove robust under either scenario. Twenty-nice states plus DC have mandatory renewable portfolio targets. Sixteen of these have targets reaching >50%, while three have targets escalating to 100% over the period 2023-2045 (Rhode Island, Hawaii, and DC). However, sixteen states have also set 100% clean electricity standards[xxxi], bringing the number of states require their power supplies to decarbonise by 2050 to nineteen.[4] The power of states to set and maintain such rules does not appear to be in question.

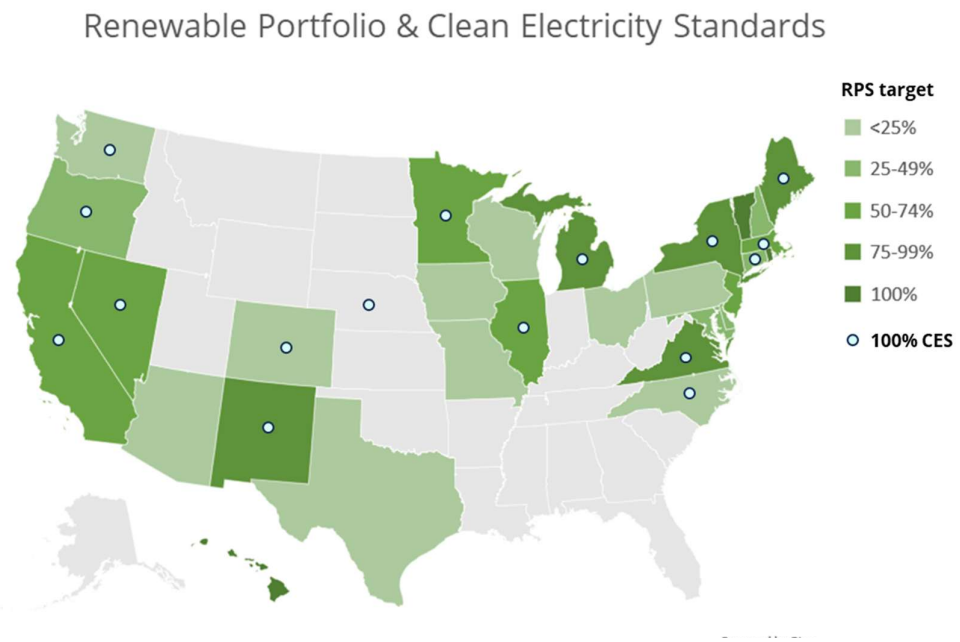

Figure 6 – State-level Renewable Portfolio Standards (RPS) and Clean Electricity Standards (CES). Source: Barbose (2024). Graphic created by Greenwheel. The information shown above is for illustrative purposes.

Oil and gas production support

Both oil and gas production in the US grew by a quarter under the first Trump administration. Under Biden, growth continued to record heights (Figure 9). Since 2009 US oil production nearly trebled, satisfying almost all global demand growth.[xxxii] At the same time, gas production doubled due to fracking techniques opening cheap, untapped resources.

The first Trump administration sought to accelerate oil and gas production. It opened and leased more federal land for production and sought to weaken environmental and permitting regulations – although some actions were successfully

[4] Excluding targets implied from state-wide targets, and those set by executive order only. Individual regulations may be different in their detailed scopes and requirements.

challenged or voluntarily reversed. Long lead times mean these actions likely contributed to continued production growth under Biden.[xxxiii]

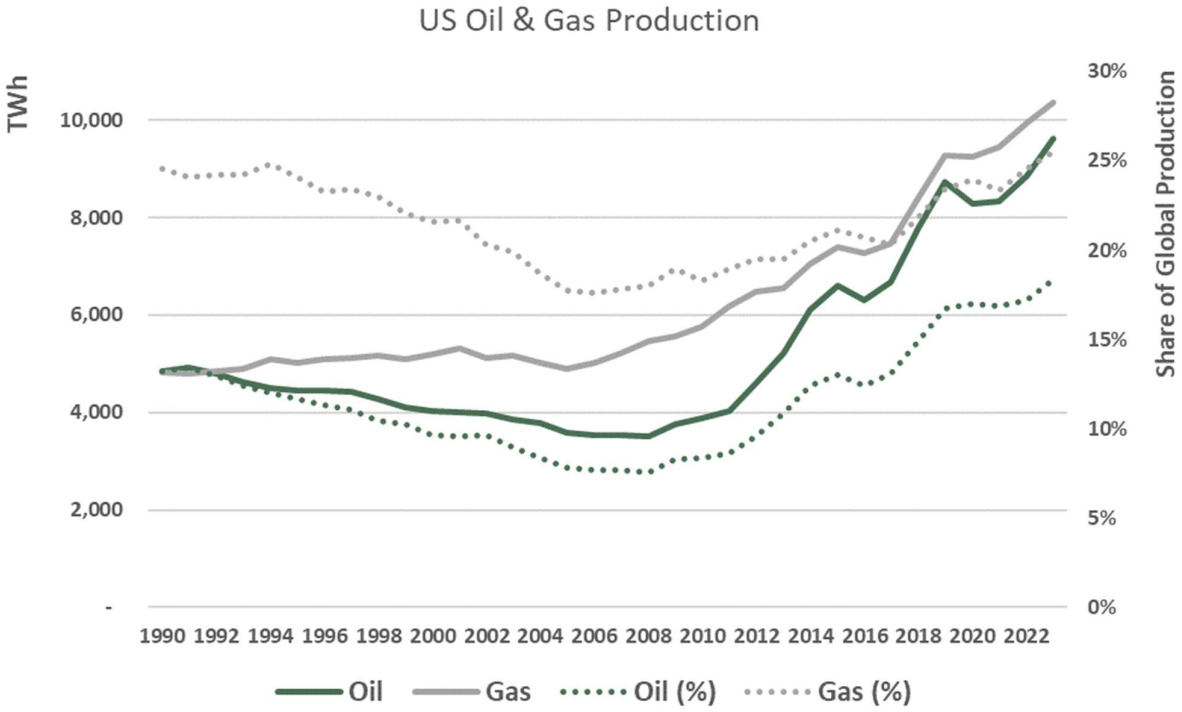

Figure 7 – US oil and gas production. Data Source: Our World in Data (2024). The information shown above is for illustrative purposes.

The Biden Administration introduced environmental regulations targeting oil and gas production operations. Most significant were efforts to tackle methane leakage, through a wide-ranging Methane Emissions Action Plan and a significant 'methane fee' on emissions above a set threshold, to be introduced in 2026.[xxxiv]

Under either scenario the second Trump administration is likely to dilute or remove environmental regulation and expand and expedite leasing and permitting. This includes removing policy tackling methane emissions and encouraging drilling on Federal lands, including through a reduction in royalties.

However, there are relatively few policy-related barriers to increasing production, meaning that under either scenario, **global demand and price dynamics are likely to be the key determinant driving future US oil and gas production**.

The IEA project global oil demand to peak before 2030, driven by structural shifts towards electrified road transport in key global economies. At the same time, global oil production capacity is likely to continue growing, led by the USA. This may produce a **significant global oil oversupply in the short- and medium-term, depressing prices and production**.[xxxv]

Growing US power demand and LNG exports is likely to boost domestic gas production in the coming few years, but a plateau in LNG demand may provide a counterweight in the medium-term.

Global demand for LNG has grown rapidly since the COVID pandemic and onset of the Russia-Ukraine war, as countries (particularly in Europe) scrambled to re-establish secure supplies. The **USA is now the largest LNG exporter with nearly a quarter of the global market**,[xl] using around 15% of its domestic gas production.[xxxvi]

In early 2024 the Biden administration announced a pause on new approvals for LNG exports to countries with which the US does not hold a Free Trade Agreement (FTA), largely on climate grounds.[xxxvii] Even **under a constrained scenario, the ban on new LNG exports is likely to be lifted**. **This may boost domestic gas production for export significantly in the coming few years**.[xxxviii]

However, **key LNG markets are likely to experience peaks in demand in the medium-term, with LNG supply from key competitors ramping up** at the same time**.** The IEA projects global gas demand to peak before 2030, again driven through structural shifts to clean technology[xxxix] - including in Europe, Japan and South Korea, which currently account for half of global LNG demand.

Other LNG growth markets may not emerge due to volatile LNG prices, availability of domestic resources and competing clean technology alternatives.[xxxix,xl] Qatar has the lowest LNG production costs in the world and is significantly boosting its production capacity which may see it gain further market share.[xl]

Import tariffs

China

The US applies import tariffs to a range of clean technologies, particularly from China. Although Trump hiked the rates of largely pre-existing tariffs in his first term, many increased further under Biden. By the end of 2024, tariffs on Chinese imports reached 100% for EVs, 25% for EV batteries and battery components, 7.5% on storage batteries, and 50% for solar cells, wafers and polysilicon. Further tariffs are scheduled, including the rate applied to battery storage imports increasing to 25% from 2026.[xli]

An additional tariff of 10% on China is introduced in the constrained scenario, rising to 60% in an unconstrained scenario, following promises made on the campaign trail. **However**, **imports of solar technologies and EVs directly from China are already negligible** due to the scale of existing tariffs and the supply chain reconfiguration they have already encouraged.[xlii]

Around 20% of EV batteries in cars sold in the US are sourced from China,[xix] and around a quarter of battery storage systems.[xx] The current 25% tariff level for EV batteries was introduced at the end of 2024 and may trigger a decline in the share of Chinese imports as supply chains reconfigure through 2025 and beyond. The same tariff level applied to

battery storage from 2026 is similarly likely to trigger reconfiguration in the short-term, including to US production under a constrained scenario. As such, **tariffs above existing and already-panned rates are unlikely to have significant additional impacts on EV and storage battery imports from China**.

However, **significant new tariffs on Chinese imports higher up the clean technology value chain, particularly on critical materials, may increase costs for US manufacturers, limiting their expansion** and increasing costs for end consumers. This could be further exacerbated should China seek to retaliate with targeted export controls.

Other countries

Due to tariffs introduced in the first Trump administration, most solar deployed in the US since 2018 was manufactured in Vietnam, Thailand, Malaysia, or Cambodia, with Chinese companies playing a significant role. Targeted tariffs have also been applied to these countries due to concerns of unfair subsidies,[xlii] but cost differentials mean these panels have remained economically attractive compared to domestic production.[xliii]

The recent round of tariff hikes on key manufacturers in these countries may change this. However, **solar supply chains are nimble and may quickly relocate, with Chinese firms already rapidly expanding their presence in Indonesia, Laos and the Middle East**.[xlii]

In a constrained scenario where tariffs are targeted on key clean technologies and countries outside China that produce them, a further reconfiguration may be encouraged, including to US production **–** particularly if IRA support remains. However, **in an unconstrained scenario with additional blanket tariffs and where the IRA is repealed, costs for domestic consumers may increase.** Whether this encourages domestic production would depend on tariff levels and evolving costs.

Despite being the world's largest oil producer, for infrastructural reasons **the US imports nearly half the oil it refines for domestic use, alongside pre-refined products**.[xliv] More than half of its domestic production is exported, mainly to Europe and Asia.

Canada and Mexico account for nearly two-thirds of oil and transport fuel imports to the US,[xlv,xlvi] and are part of a highly integrated North American vehicle manufacturing supply chain. **A 25% tariff on all imports from these countries could raise fuel and vehicle prices significantly**, particularly for internal combustion engine (ICE) vehicles. Under either scenario this would improve the economics for EVs, but this is particularly the case in the constrained scenario where EV and battery manufacturing IRA incentives remain largely in place.

How might the international outlook change under Trump 2.0?

Horizon	Constrained & Unconstrained Scenario
Short-term (0-2 years)	**Changes to US demand for and production of clean technologies not likely to materially alter non-US production and deployment**, while **stringent US import tariffs may support international deployment of clean technologies** if producers diversify their operations to avoid tariffs, seek new markets, and engage in price competition. Similarly, any growth in US oil and gas production may not impact global demand and total global production materially, if other sources of supply are displaced. **A second US exit from the Paris Agreement is also not likely to materially alter the global energy transition trajectory**, which is increasingly incentivised by energy and economic security and competition, rather than 'burden sharing' of emissions reductions.
Medium-term (2-10 years)	**Short-term dynamics may also apply in the medium-term**, although increased supply of LNG may maintain demand in some regions higher for longer. Withdrawal of US climate finance may 'lock in' some high-carbon infrastructure for some countries that may otherwise be in receipt of these funds. **Overall, the global ex-USA transition trajectory may remain largely unaltered**.

Table 3 – Summary of changes to the international outlook. Graphic created by Greenwheel.

The second Trump administration may influence the international energy transition through three channels: domestic policy, trade and foreign policy, and international climate collaborations. Scenarios are not considered for action on foreign policy and international climate collaborations due to excessive uncertainty and lack of differentiation, respectively.

Domestic US policy

Under either scenario, potential changes to domestic US climate policy are unlikely to materially alter the global transition or emissions trajectory.

Demand for clean technologies is being increasingly driven by their superior economics and other characteristics. **China dominates both global demand and supply chains for several key clean technologies**, producing them at ever lower costs compared both to their fossil fuel counterparts and most other regions.[xxi]

The **US accounts for a relatively small proportion of global clean technology production and demand**. Although its share of production capacity for some key technologies would grow by 2030 if all announced capacity comes to fruition – particularly for battery cells - China would remain dominant (see Figure 10). Global manufacturing capacity for solar photovoltaic (PV) and key battery components would far exceed what would be required under a Net Zero pathway by 2035.[xxi]

International production and adoption of low-cost, clean technologies is likely to continue growing independently of domestic US policy, displacing fossil fuel demand. Even if production of US oil and gas were to further accelerate and reduce global prices, it is not likely to materially alter global demand projections, and aggregate production may be broadly maintained through supply cuts elsewhere.

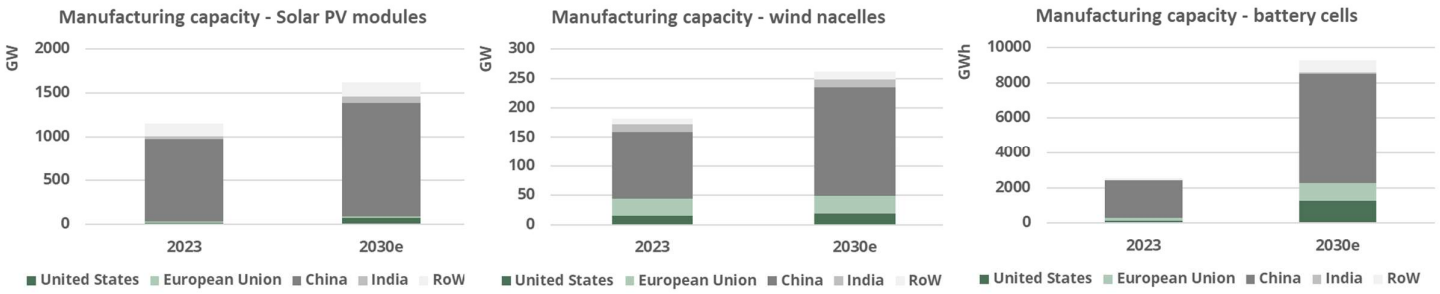

Figure 8 – Manufacturing capacity in 2023 and announcements for 2030 (Data source: IEA, 2024). Graphic created by Greenwheel. Forecasts and estimates are based upon subjective assumptions.

US import tariffs & foreign policy

Although US trade measures may raise clean technology costs for domestic consumers, it may help support the transition elsewhere by either encouraging clean technology producers to diversify their operations to avoid tariffs, drive them to seek new markets, and support price competition. **Over half of Chinese exports of solar and wind power technologies and electric vehicles now go to emerging and developing economies, which have also driven most of the recent growth in export volumes**.[xlvii]

Some of the most pressing global geopolitical issues at the beginning of the second Trump administration have impacts on global fossil fuel markets, such as the conflict in Russia-Ukraine and tensions in the Middle East. It's not clear what the Trump administration's approach to these issues will be in either scenario, however any action that opens or restricts one source of supply is likely to be broadly countered by an increase or reduction in supply from another (including the US) over the medium-term – particularly for oil. In addition, **US trade and foreign policy is not likely to have a directly material effect on total international fossil fuel demand**.

International energy & climate collaborations

A second US exit from the Paris Agreement is not likely to significantly alter the global energy transition or emissions pathway. Although initiated in 2019, the US did not formally leave the Paris Agreement until the day after the November 2020 election of President Biden and re-joined just two months later. There is no clear evidence that this temporary exit had any impact on the US or global energy transition.

Although a second exit from the Paris Agreement would likely be much quicker, as the first time, **a second US withdrawal is not likely to lead many other countries to the exit or induce significant changes to their ambition** – particularly those responsible for significant proportions of global emissions, such as the EU, China and India.

Before its key role in negotiating the Paris Agreement in 2015, the US was not seen as a global leader in climate action. Actions to move away from this position are not likely to be fundamentally destabilising.

With the growing attractiveness of key clean technologies, the global conversation has begun to shift from 'burden sharing' to competition to capture value from the global energy transition. **With its dominant global position in clean technology supply chains and deployment, China has signalled clear willingness to accept the international leadership mantle**.

A US withdrawal may again be temporary. A new administration in 2029 may again seek to rejoin the Agreement, in time for the next round of Nationally Determined Contributions (NDC) submissions that year. This is more difficult if the US also leaves the underpinning UNFCCC, as Trump has signalled, although this might not be easy to do.[xlviii]

The **US is likely to substantially reduce its funding for international climate finance and intergovernmental organisations, which could have more significant long-term impacts**. The US provides around 10% of international climate finance flows from public sources, through bilateral and multilateral channels, such as the World Bank. [xlix] These funds may steeply decline. **This may hamper the energy transition in previously-recipient countries, and lock-in higher carbon infrastructure in rapidly growing economies**, although this may be partially offset be increase investment or finance flows from other countries.

Endnotes

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[i] Our World in Data (2024a)
[ii] Our World in Data (2024b)
[iii] US DOE (2024)
[iv] US Congress (2024)
[v] Bloomberg (2024)
[vi] Clean Investment Monitor (2024)
[vii] US Treasury (2024)
[viii] BNEF (2024c)
[ix] Allcott et al (2024)
[x] Lavasseur (2024)
[xi] US EIA (2024)
[xii] Cantor (2024)
[xiii] NREL (2024)
[xiv] Wilson et al (2024)
[xv] Shehabi et al (2024)
[xvi] Ember (2024)
[xvii] S&P Global (2024a)
[xviii] Wamsted & Feaster (2024)
[xix] S&P Global (2024b)
[xx] ANL (2024)
[xxi] IEA (2024a)
[xxii] The Big Green Machine (2024)
[xxiii] Murray (2023)
[xxiv] US DOE (2023)
[xxv] FERC (2024)
[xxvi] St John (2025)
[xxvii] Elwood et al (2024)
[xxviii] CARB (2024)
[xxix] Gibson Dunn (2024)
[xxx] Clark (2024)
[xxxi] Barbose (2024)
[xxxii] Goldman Sachs (2023)
[xxxiii] Thomas (2024)
[xxxiv] US EPA (2025)
[xxxv] IEA (2024b)
[xxxvi] US EIA (2024a)
[xxxvii] The White House (2024a)
[xxxviii] White et al (2024)
[xxxix] IEA (2024c)
[xl] IEEFA (2024)
[xli] The White House (2024b)
[xlii] Jackson et al (2024)
[xliii] Chu & Sevastopulo (2024)
[xliv] US EIA (2024b)
[xlv] US EIA (2024c)
[xlvi] US DOE (2024)
[xlvii] Myllyvirta & Thieriot (2025)
[xlviii] Lo (2024)
[xlix] Federico (2024)

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