

The Green Bond

Your insight into sustainable finance

27 November 2024

Politics matters, economics
decides



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Politics matters, economics decides

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Time to pass the torch

Dear reader,

It is with mixed emotions that I write this note—my final letter to the reader in The Green Bond. This journey has been deeply rewarding, beginning ahead of the landmark Paris Agreement.

With the growing embrace of Green Finance—the skillful art of leveraging fiduciary expertise to direct capital toward more resource-efficient and less polluting solutions—I am now embarking on a new chapter. I have taken on the challenge of building and leading SEB Water, a dedicated unit designed to drive private capital reallocation toward the water sector. This crucial sector, which faces chronic underinvestment and is often overlooked in strategic private capital discussions, urgently requires attention from all angles.

It has been a privilege to witness how my current and former colleagues—Chris Kaminker, Thomas Thygesen, Elizabeth Mathiesen, Lina Apsheva, and Gregor Vulturius—

have transformed the early ideas behind The Green Bond into the impactful platform it is today. I've also greatly valued the insightful and enriching contributions from our external partners, whose expertise has been instrumental.

Most importantly, none of this would have been possible without you, the readers. Your questions, comments, and feedback have been the lifeblood of The Green Bond. For that, I extend my heartfelt gratitude.

With that – over to my colleagues, who will take this to new heights.

Thank you for everything, and until we meet again,

Christopher Flensburg

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Letter to the reader

Dear reader,

The re-election of Donald Trump has caused widespread concern about the future of the energy transition and international efforts to limit climate change. German climate activities Luisa Neubauer maybe summarized it best: “For a moment it feels like the world is going to end. It’s not. But the heartbreak is real.”. Trump’s promise to repeal support for clean energy will undoubtedly slow the energy transition and put international climate targets in great danger.

However, as Nobel prize winner Daniel Kahneman emphasized in his book *Thinking Fast and Thinking Slow*, in high-stakes or uncertain situations, such as dealing with unfortunate news, it is important not to jump to conclusions. Instead, we are better served to take time to assess the situation calmly before acting heedlessly.

First, it is worth remembering that climate change was not on the ballot in the US election. Inflation and rising inequality have been the key reasons why sitting governments from all political sides in the UK, Japan to the US have lost elections in 2024.

The benefits of renewables – affordability, energy security – undeniably matter to voters. As we argue in our [in-depth analysis](#), the Inflation Reduction Act has also created USD 327bn in investments and 330k jobs in mostly Republican leaning states. For these reasons, we believe that the Trump administration will keep many if not most of clean energy investments incentives of its predecessor.

Second, the energy transition remains undaunted despite rising political uncertainties. In the [Transition update](#) we find that the world will invest twice as much in clean

energy as it does in fossil energy. This is powering a relative decoupling of economic growth and emissions in both industrialized and emerging economies. The unstoppable progress of renewables is also reflected in our [Sustainable finance market update](#). We expect that 2024 will see the highest-ever volume of sustainable debt issued at USD 1.2bn.

Third, clean energy and the fight against climate change is at the heart of geopolitical competition. As discussed in our [debrief on COP29](#), the US can afford to leave global climate leadership to China which has increased its climate finance efforts in recent years.

Fourth, 2024 will be the first year that global temperatures exceed 1.5°C above pre-industrial levels – making it the warmest year on record. As the most ambitious climate targets are getting out of reach, the impacts of extreme events are coming ever more pressing.

In summary, the elections in the US have done nothing to undo the fundamentals of the energy transition or ease the urgency to act on the climate crisis. If anything, they should be a call for even bolder action.

Enjoy your reading,

Gregor Vulturius

Editor in Chief

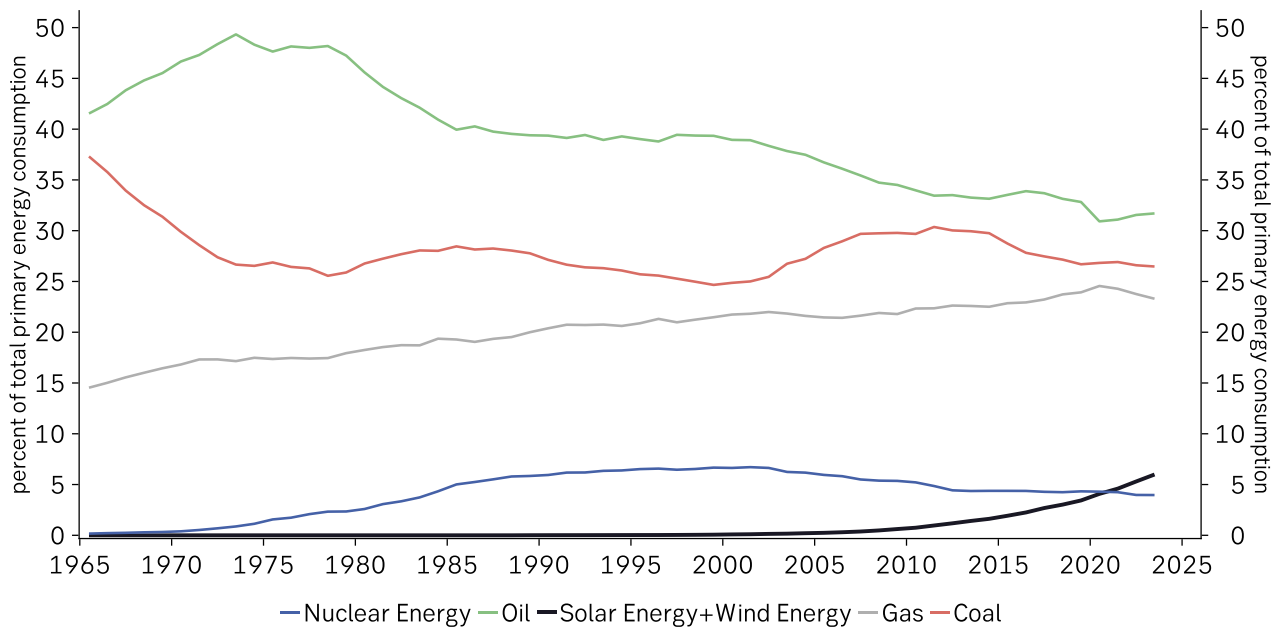
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Transition update

Not the end of the world

The transition to a clean and electrified global energy system will continue even without policy support. However, without such support, it will take too long from a climate perspective. The US election result will slow the US transition but not stop it. China remains the driver of the global transition.

Figure 1 Energy source, share of global primary energy use



Source: BP, SEB Strategy Research

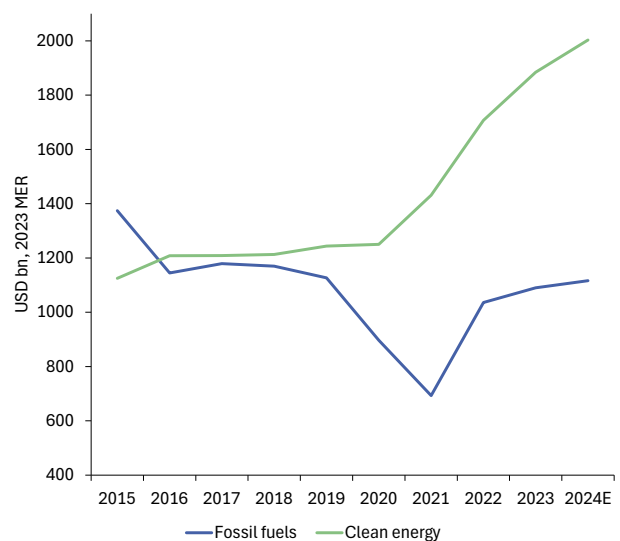
The transition is irreversible

As uncertainty about the political support for climate policies rises, it is important to keep things in perspective. The US election result will not halt the exponential growth in clean energy supply.

Figure 1 shows the main energy sources as a percent of global primary energy consumption. Solar and wind have now surpassed nuclear energy, taking the combined share of these zero-emission technologies to almost 15%. And primary energy does not take the higher efficiency of renewables when converting primary energy to energy output, which means the clean energy share in energy use is even higher.

Global investment trends suggest the renewable share will keep growing (Figure 2). Estimates from the International Energy Agency (IEA) suggest a further increase of 6% in clean energy investments in USD terms in 2024.

Figure 2 Investment in renewable energy and fossil fuels



Source: IEA, SEB Strategy Research

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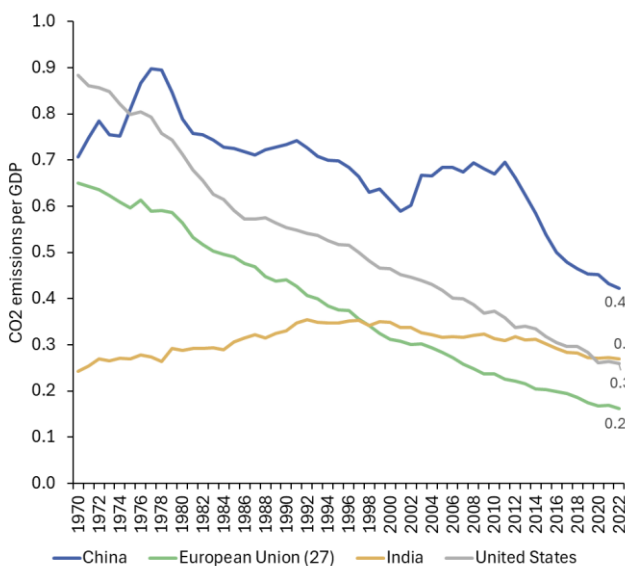
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The growth in clean energy investments stems from renewable energy, more recently joined by energy-efficiency and end use, as well as grids and storage¹. The IEA estimates that the world will invest twice as much in clean energy as it does in fossil energy in 2024.

The main economies of the world have also become less CO₂ intensive, although there are regional differences. As Figure 3 shows, the EU is the least carbon intensive and has been so since the end of the 1990s. The US has exhibited a similar type of decline over the past decades. China's CO₂ emissions per unit GDP have also come down considerably but remains higher than in the other major regions.

The decline in emissions per unit of GDP is both due to the changing energy mix and due to increased efficiency in the use of energy in production processes, transportation and other areas. At the current pace, CO₂ emissions will peak shortly, but without a major decline in GDP or a sudden technology shock, the decline will be gradual.

Figure 3 CO₂ emissions per GDP



Source: BP, SEB Strategy Research

Speed matters – so policy matters too

Significant progress has thus been made in reducing CO₂ emissions, but it is not sufficient to halt the global temperature increase. The IEA have constructed different scenarios for how carbon emissions can potentially develop, depending on the policies and initiatives taken.

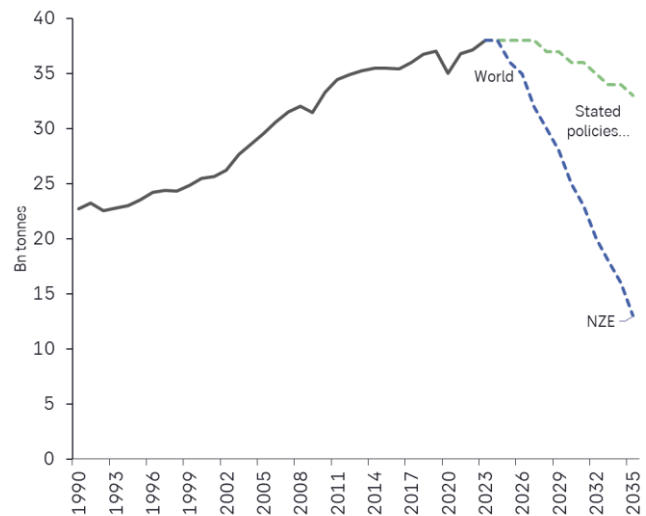
¹ Global investment in clean energy and fossil fuels, 2015-2024 – Charts – Data & Statistics - IEA

² Stated Policies Scenario Definition: A scenario which reflects current policy settings based on a sector-by-sector and country-by-country assessment of the energy-related policies that are in place as of the end of August 2024, as well as those that are under development.

In the 'stated policies scenario'², the IEA expect global CO₂ emissions to decline to 2011-2012 levels by 2035. However, there is a vast gap between the stated policies scenario compared to the 'net zero emissions scenario'³, that sees the current global CO₂ emissions more than halved by 2035.

While the clean energy transition is likely to continue on an exponential trajectory that currently tracks that of earlier technology revolutions even without policy support, that will not be enough to avert a climate disaster. Policy support will be needed, which is why the outcome of the recent US election has led to some concerns.

Figure 4 Global CO₂ emissions and IEA scenario



Source: IEA, SEB Strategy Research

The transition is not at risk, but the climate is

The clean energy transition is progressing at an impressive pace. It is driven by technological progress in the shape of learning curves that drive down the cost as capacity is expanded.

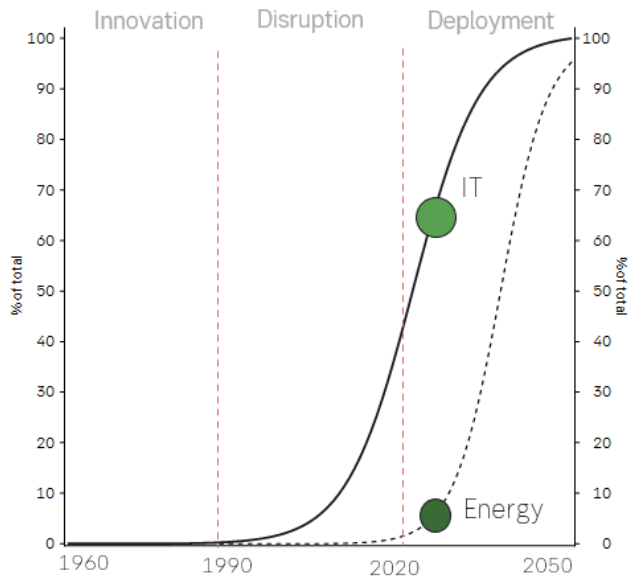
These forces are hard to reverse once they are set in motion. Clean energy is already the cheapest energy source, and the gap is likely to continue widening in their favour for another 10-20 years. We will stop using fossil energy and phase out ICE vehicles regardless of whether policymakers subsidize them or not. The transition will thus not be stopped even if policy support is withdrawn.

The scenario also takes into account currently planned manufacturing capacities for clean energy technologies.

³ Net Zero Emissions by 2050 Scenario Definition: A scenario which sets out a pathway for the global energy sector to achieve net zero CO₂ emissions by 2050. It does not rely on emissions reductions from outside the energy sector to achieve its goals. Universal access to electricity and clean cooking are achieved by 2030. The scenario was updated with the latest available data in 2024.

There is just one problem: if we follow the normal trajectory for technology cycles, it will take at least another 50 years to complete the transition. We refer to this as the 30-30-30 model: it takes around 30 years to make a new technology competitive, 30 years to complete the exponential scaling and establish a new production model and 30 years more to complete the roll-out of this model.

Figure 5 S-curve with normal vs. fast trajectory



Source: SEB Strategy Research

However, to prevent an unsustainable increase in global temperature levels, we must complete the transition in just 25 years.

This will be costly as there are economic reasons for the long transition periods. The replacement cycle in infrastructure is extremely slow. The current infrastructure has been put in place over decades, and once installations are in place, it mostly makes sense to allow them to operate until they are worn out.

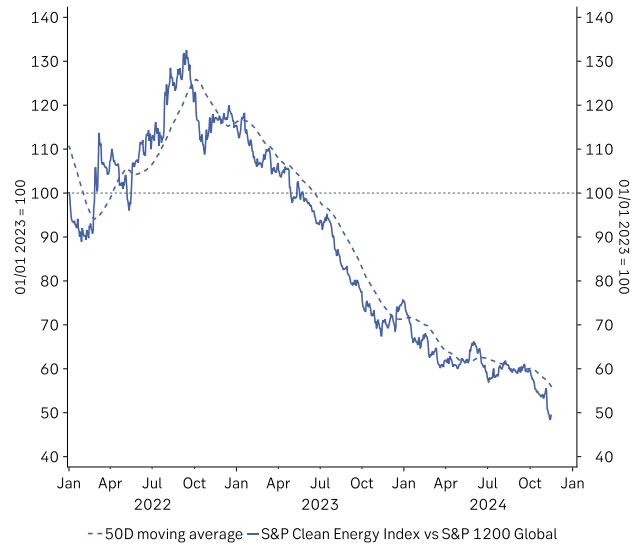
Any acceleration of the replacement cycle must also be coordinated across all parts of the infrastructure. If you increase the supply of electricity, you must expand the grid capacity at the same time. If you add more EVs, you must add chargers at the same pace.

Accelerating the transition will require a comprehensive plan to change the incentives for phasing out existing capacity and increasing investment in new capacity in many parts of the economy at the same time. Right now, China appears to be the only major economy that is willing to execute such a plan, and the US election result suggests the US will take longer than expected to catch up.

Trump 2.0: US climate policy implications

From a climate policy perspective, the battle lines had been clearly drawn ahead of the election day. Vice President Harris wanted to extend President Biden’s pragmatic policy of supporting the transition with subsidies for investment in clean energy, EVs and clean energy supply chains. President elect Donald Trump, on the other hand, famously formulated his energy policy in three words: drill, baby, drill.

Figure 6 S&P Clean Energy Index vs S&P 1200



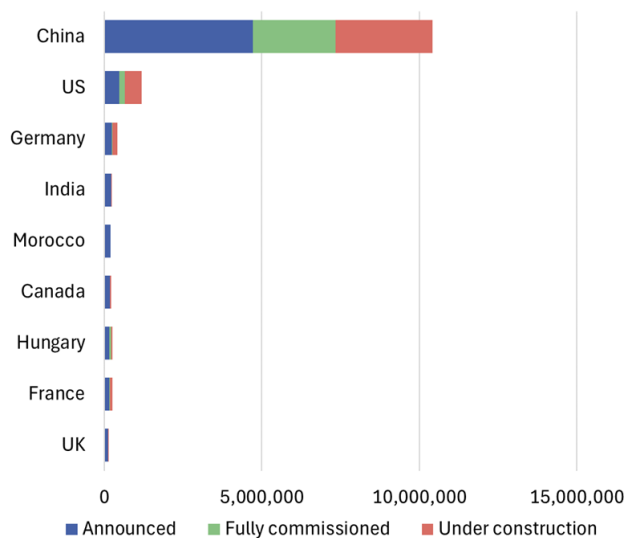
Source: Bloomberg, SEB Strategy Research

It is thus understandable that the clear victory for Trump with the Republicans also getting a majority in both houses of Congress led to some concerns. The stock market perception of Trump’s likely impact on the transition was clear both before and after the election.

The S&P Clean Energy index declined when Trump’s probability of winning improved before the event and tanked when he won, currently down 15% since 5 November (Figure 6). However, it is important to note that this is all based on the general perception of what Trump wants. We do not know what he actually wants and whether it can be realized.

We can get some impression from Trump’s comments on the campaign trail. At the Economic Club of New York in September, Trump said that “to further defeat inflation, my plan will terminate the Green New Deal, which I call the Green New Scam”⁴. He has been particularly scathing of government subsidies for wind power and electric vehicles, but also promised to end the tax credits for renewable energy on his first day as President.

⁴ ABC News: What Trump said he would do on Day 1 if re-elected - News & Media - The Economic Club of New York

Figure 7 Battery cell manufacturing

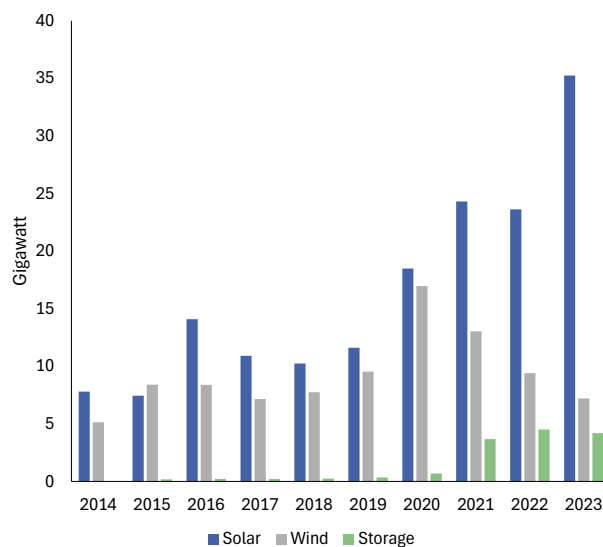
Source: BloombergNEF, SEB Strategy Research

However, the Inflation Reduction Act (IRA) is a huge and complex piece of legislation that also aims to support economic growth and establish US-based supply chains for the key components of the clean energy system that today are controlled by China. It has helped start major investment in batteries, critical minerals and even microchips.

Most of these projects are located in Republican states, and they appear to be very popular in local communities. It is not likely that there will be a majority in Congress for anything like a full repeal. It is also worth noting that the new majority leader in the Senate, John Thune, comes from South Dakota, a state where wind delivers 55% of the energy, and is known to be a strong supporter of wind power⁵ It is not clear yet to which degree President Trump will be able to push Congress into a more radical reversal, but the likely outcome is that the outcome will be less radical than the president had wished.

Many elements of the IRA also align well with Trump's other policy agendas. Ceding control to China of the supply chain for batteries (Figure 7) is not acceptable from a geopolitical perspective and getting jobs and factories back to the US is also a key objective behind Trump's trade policy plans.

The most likely outcome is that President Trump will be able to remove federal subsidies for EVs and wind power, possibly cancelling the remaining auctions of seabed for offshore wind projects.

Figure 8 US investment in solar, storage and wind

Source: BloombergNEF, SEB Strategy Research

However, wind power was already in sharp decline as a share of US renewable energy investment (Figure 8) and states are likely to support the buildout of clean energy capacity, especially if they want to attract AI employers.

This would not lead to a major setback for the clean energy transition, and even in the more radical scenarios like a repeal of all the tax credits, we would not be talking about a reversal but rather about slower, but still impressive growth in US clean energy capacity.

According to estimates from BloombergNEF, such a scenario would remove around 17% from the expected increase in renewable energy capacity over the coming 10 years. This means the US would add 928GW instead of 1119GW of new capacity in the coming 10 years.

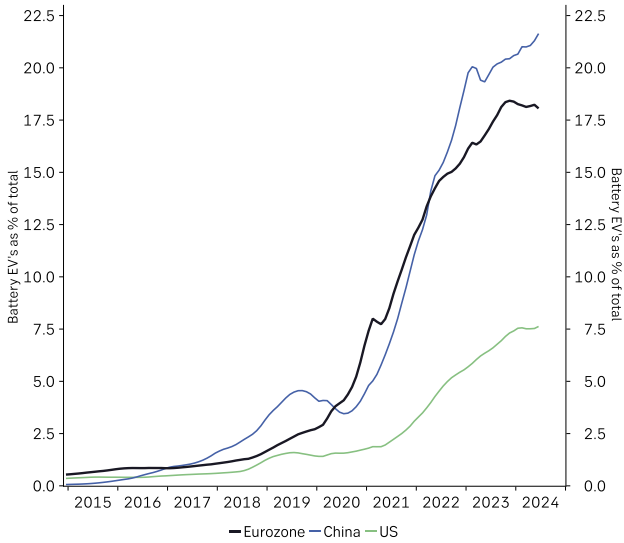
US risks falling behind in electrified transport

When it comes to electrification of energy users, President Trump's reservations about electric vehicles indicate that the US could fall further behind when it comes to electrified transportation. With Elon Musk playing a key role in both Trump's campaign and the new administration, it may be too soon to draw conclusions. In public, Musk has indicated that he wants the EV subsidies to be removed and Chinese EVs to face restrictions, but while that would help Tesla, it would likely delay the overall EV adoption in the US.

Q2 EV sales data from BloombergNEF shows that China continue to be way ahead and accelerating towards 22%, while Europe levels off with a slight downturn just below 20% and the US is far behind, stuck around 7.5%.

⁵ Wind Power Politics: Trump Hates It, But Senator John Thune May Protect It - Bloomberg

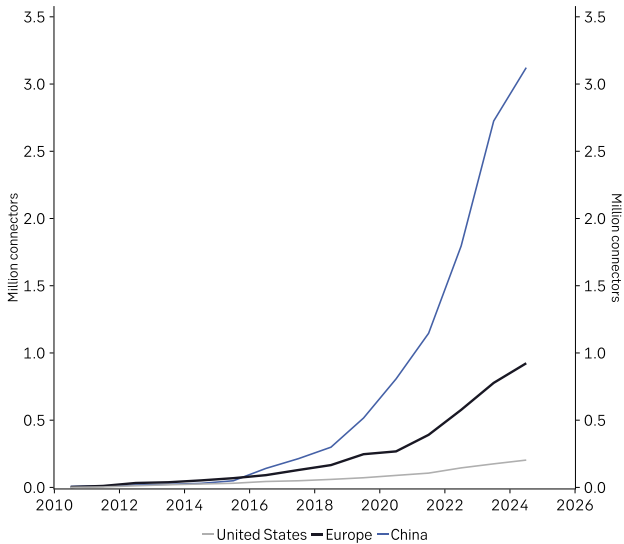
Figure 9 EV sales as fraction of total



Source: BloombergNEF, SEB Strategy Research

Not only are China way ahead of the pack when it comes to EVs, but also in terms of the necessary infrastructure and battery cell manufacturing. China currently has more than 3 million charging stations and the number has tripled in three years. In the US, there are less than 300 thousand, and there is no sign that an exponential scaling curve is about to emerge.

Figure 10 Charging stations



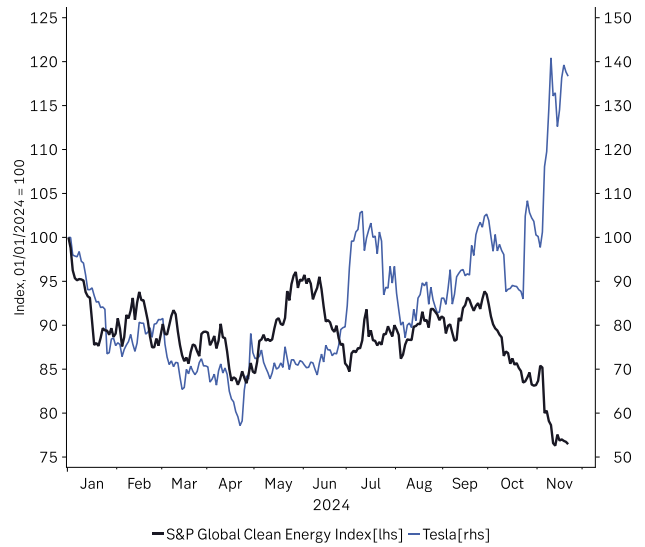
Source: BloombergNEF, SEB Strategy Research

If President Trump proceeds with removing subsidies for EV purchases, it could stall the apparently fragile transition. The US EV penetration is already hampered by longer travel distances and lack of supporting infrastructure and

will be further slowed by the exclusion of the cheapest and most advanced vehicles from China from the US market. If you do not subsidise local producers and you exclude the best competitors from the market, the result is likely to be a significantly slower transition to electrified transportation.

This is also a challenge in Europe, where attempts to protect local producers by taxing or excluding cheaper Chinese alternatives could leave consumers with less attractive options in the EV space. The only way to accelerate the transition if you do not want to take China's offer of supplying very cheap EVs is to facilitate a faster scaling and reduce the cost of locally produced EVs.

Figure 11 S&P Global Clean Energy vs Tesla



Source: Bloomberg, SEB Strategy Research

However, it remains unclear how harshly the new president will treat the EV industry. His close alliance with Tesla founder Elon Musk, one of the world's largest EV producers, must at least leave some possibility open of a softening of the policy stance. Tesla's stock price has soared by 40% since the US election, while clean energy stocks in general have slumped. At the least, that is an indication that markets expect some kind of preferential treatment for Tesla in return for Mr. Musk's services to the administration.

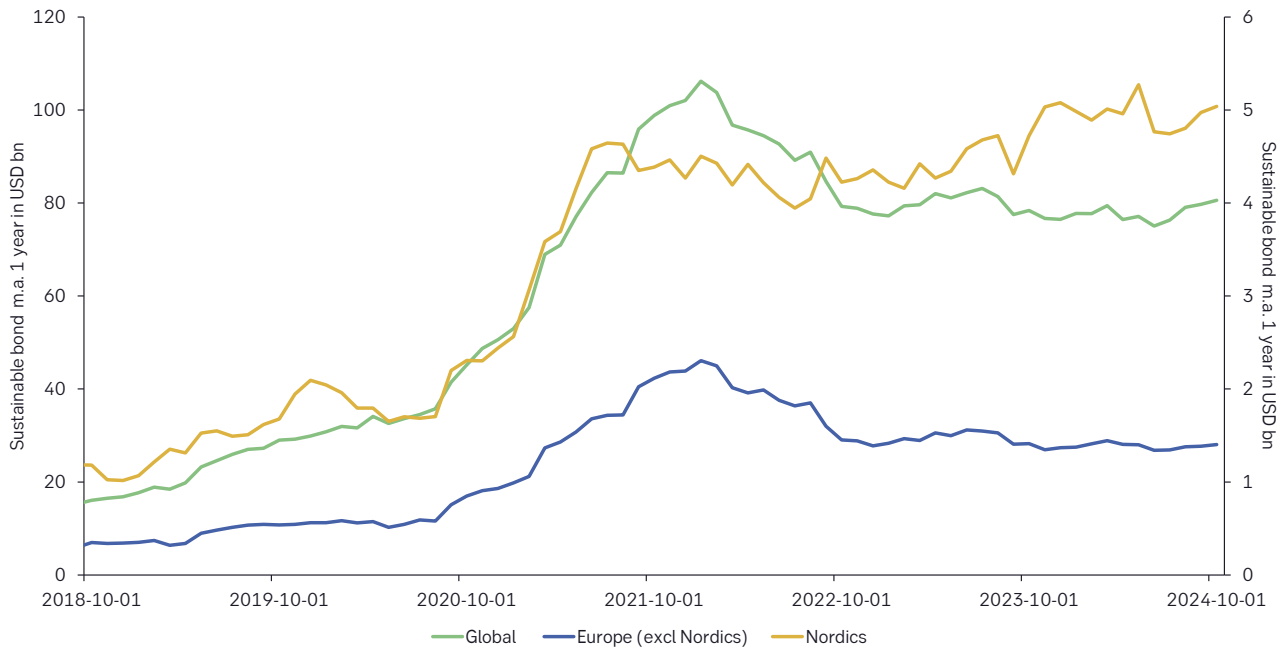
As with all Trump's policies, there are clear ambiguities that we still cannot resolve. This suggests we should be cautious when drawing conclusions.

Sustainable finance market update

Towards a new all-time high in cumulative sustainable bond issuance

The sustainable bond market is returning to growth this. Based on a strong second year, we are forecasting that cumulative sustainable bond volume will exceed USD 1.2tn in 2024. The Nordic market is particularly strong with 45% of corporate issuance being labelled sustainable.

Figure 12 Rolling sustainable bond issuance average



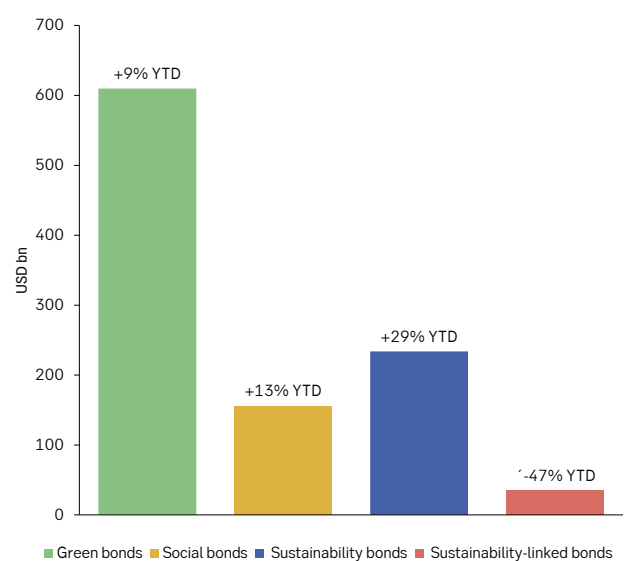
Source: SEB, BloombergNEF 31 October 2024

Sustainable bond market in recovery

A total of USD 1034bn in new sustainable bonds have been issued from January to October of this year. This puts 2024 ahead of last year by more than 12% YTD. Anticipating an end-to-year rush in the final two months, 2024 is well within the reach of the record of 1136bn of sustainable bond issuance set in 2021. We assume that 2024 will see the highest-ever volume of sustainable bonds issued in one year.

Green bonds continue to grow at a steady pace of just under 10% and YTD issuance of USD 610bn. Sustainability bonds have seen the strongest growth of all sustainable bonds this year; 39% Y/Y reaching USD 233bn in new issuance. The decline in new sustainability-linked bond issue remains unabated, with new issuance of performance-linked bond falling by 45% compared to last year. Social bonds also continue to increase at a modest 13% rate, with cumulative YTD issuance just under USD 156bn.

Figure 13 Sustainable bond issuance by product YTD 2024



Source: SEB, Bloomberg 13 November 2024

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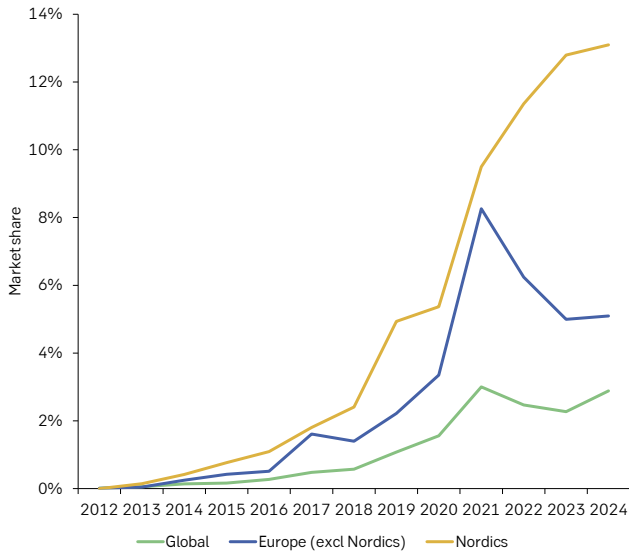
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While the global fixed income market is still down 14% YOY in terms of new bond issuance, sustainable bonds have increased their market share to 2.9%, closing in on the record market share sustainable bonds held in 2021. In Europe, the market share of sustainable bonds has still not return to growth. In the Nordics, the market share of sustainable bonds has returned to growth.

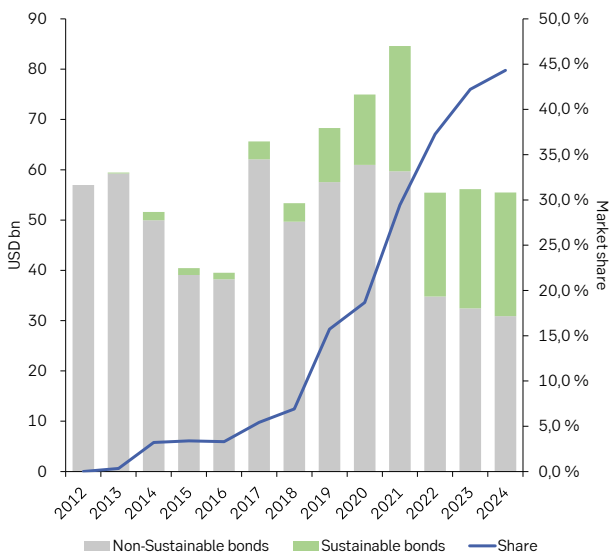
Figure 14 Sustainable bond market share by region



Source: SEB, Bloomberg as of 13 November 2024

Much of the comparatively high market share of sustainable bonds in the Nordics can be attributed to the popularity of green, social, sustainability and sustainability-linked bonds among corporations. Almost 44% of Nordic corporates' new bond issuance in 2024 were sustainable.

Figure 15 Sustainable bond issuance by Nordic corporates incl. real estate

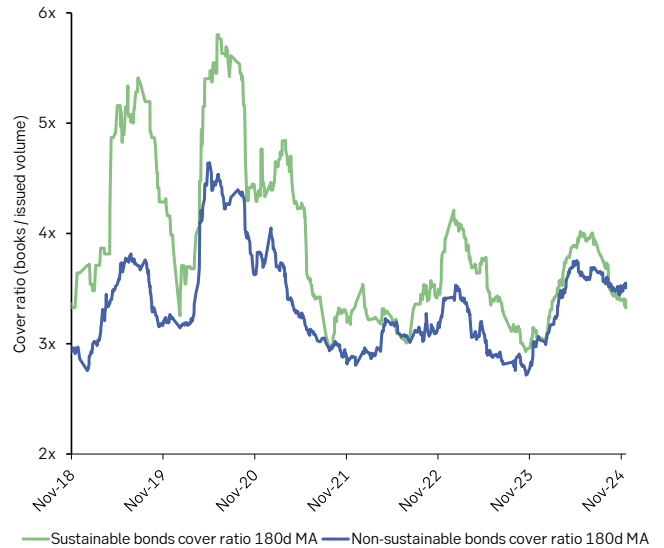


Source: SEB, Bloomberg as of 18 November 2024

As we noted in the last report, the investment grade bond market is characterized by strong investor demand which

has elevated bond cover ratios in the past twelve months. Investor demand for sustainable and non-sustainable bonds is now essentially the same, and in the past weeks one can even see higher demand for EU-denominated investment grade non-sustainable bonds.

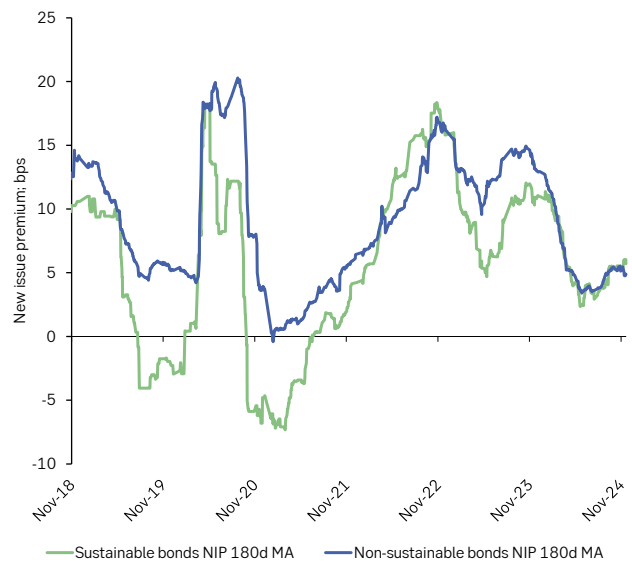
Figure 16 Cover ratio of Sustainable and non-sustainable EUR-denominated IG bonds



Source: SEB, Bloomberg 20 November 2024.

Yet, new issuance premiums for sustainable and non-sustainable bonds have returned to grow suggesting that investor demand maybe weakening. There are also now signs of a "greenium" or investor discount on sustainable bonds. Compared to the last two years, however, issuers still benefit from relatively low new issuance premiums.

Figure 17 NIP of sustainable and non-sustainable EUR-denominated IG bonds



Source: SEB, Bloomberg 20 November 2024

Sustainable finance regulation update

Uncertain future for the Inflation Reduction Act amid political shifts

The Inflation Reduction Act has driven over USD 372bn in clean energy investment and created 330k jobs. However, its future under a Trump administration is uncertain, with potential rollback to EV tax credits and renewable energy. Despite potential delays, the energy transition in the US is expected to continue, though at a slower pace.

The Inflation Reduction Act, enacted two years ago without Republican support, was hailed by Biden as a historic energy investment, but criticized by Trump as a major tax hike. The IRA forms the largest part of new Washington consensus on industrial policy which is why it has been called the end of globalization by the Financial Times.⁶

The legislation allocates USD 500 bn worth in grants, loans and tax incentives designed to promote clean energy, lower healthcare expenses, and enhance tax revenues over 10 years.⁷ It is part of a broader initiative with the Bipartisan Infrastructure Law and the CHIPS & Science Act, contributing to USD 2tn in new spending over ten years and projected to reduce the budget deficit by USD 237 bn according to the Congressional Budget Office.⁸

Table 1 Overview of the IRA-Climate focused

Climate and energy	<ul style="list-style-type: none"> • \$394bn in energy security and climate funding over 10 years: <ul style="list-style-type: none"> • Incentives for clean energy production (solar, wind, nuclear) • Tax credits for electric vehicles and energy efficient home improvements • Support for green technologies and manufacturing • Increased to tax credits for carbon capture and storage
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Source: Congress.gov, McKinsey

The majority of the USD 394bn in energy and climate funding is in the form of tax credits applicable to renewable energy, hydrogen, EVs and energy storage, industrial heat industries and carbon capture, followed by grants, loans, and federal operations.⁹ After it came into power, the IRA – in conjunction with the bipartisan Infrastructure Law – was expected to mobilize up to USD 3.5tn in cumulative capital expenditures in new energy supply infrastructure leading to 37-41% reduction of GHG emissions by 2030 compared to 2005¹⁰.

2 years into the IRA

Since the IRA became law in 2022 and already it has allocated USD 38.75bn as award agreements or allocations to third party recipients, USD 29bn in grant funding tied to open funding opportunities, and USD 12.57bn allocated to internal agency spending.¹¹ This allocation makes up almost half of the USD 105bn reserved for climate related-grant programs by federal agencies.¹² Further, USD 28bn has been awarded through the loan and loan guarantee program.¹³ What's important to note is that a lot of this funding has been awarded, but that does not guarantee that it has been paid out, this would depend on the agreements on the project which can be dependent on project milestones.

In any case this has resulted in companies announcing over 646 new clean energy projects.¹⁴ It is projected that if the projects are completed that over 330k jobs would be created and USD 372bn in investments would be brought in.

Table 2 breaks down the announced project sectors.

⁶ Financial Times

⁷ What's in the Inflation Reduction Act (IRA) of 2022 | McKinsey

⁸ ibid.

⁹ ibid.

¹⁰ REPEAT Climate Progress and the 117th Congress.pdf (repeatproject.org)

¹¹ Implementing the Inflation Reduction Act: Progress to Date and Risks from a Changing Administration

¹² ibid.

¹³ ibid.

¹⁴ Climatepower.us

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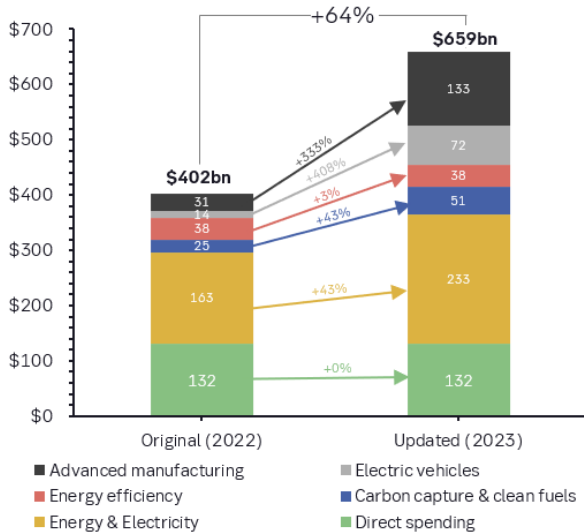
Table 2 Announced project overview by sector

Sector	# of Projects	New Jobs	New Investments
Batteries	183	133k	USD 121bn
Clean Technology	62	46k	USD 150bn
Electric Vehicles	155	51k	USD 30bn
Grid & Transmission	33	15k	USD 12bn
Hydrogen	28	13k	USD 15bn
Solar	135	62k	USD 34bn
Wind	50	13k	USD 11bn

Source: climatepower.us. Some projects categorized under multiple sectors

The IRA has exceeded initial expectations, prompting a reassessment of its original USD 400bn spending estimate for energy and climate initiatives. Due to inflation and increased demand for subsidized activities, the revised estimates project spending to reach USD 660 bn by 2031 and USD 790bn by 2033, as shown in Figure 18.¹⁵

Figure 18 Estimated cost of IRA spending and tax credits (2022-2031)



Source: CRFB

Despite not a single vote from Republicans on the legislation, red states benefit the most from the IRA where over 50% of the projects are within republican districts.

Table 3 Project by state political affiliation

Party	Projects	Est. Investment	Est. Jobs
Republican	354	USD 286bn	191k
Democratic	221	USD 57bn	108k

Source: climatepower.us

One of the most significant changes in the US since the IRA has been law, is the emergence of the Battery Belt, spanning between Michigan to Tennessee to Georgia to western New York, which has shifted the battery value chain. Prior to the IRA, only two battery facilities were operating in the US with 2 under construction, now in 2024, 183 projects have been announced/operating.¹⁶ The Biden administration aims to have electric vehicles as 50% of all vehicles sold in the U.S. by 2030, which has served as a key driver for battery production in the US. A notable insight is that in this battery belt most of the projects as well as largest investments are within red congressional districts.

Despite remarkable success in the number of announced projects and respective volumes of investment, at the end of the day, these are still just announcements, and many projects are facing challenges mainly requiring build process reforms amongst various sectors. Both the building of transmission lines and mines are largely talked about important components to ensure success in projects related to energy and batteries, however they face slowdowns due to permitting. The Biden administration has addressed transmission lines by passing a rule to centralize reviews under the Department of Energy and setting a two-year schedule, rather than the previous 10 years. However, local content requirements for tax credits still present challenges for moving projects from the announcement stage to operation. Additionally, these requirements raise environmental and ethical concerns, such as the delay of lithium mine projects due to slowdowns in environmental permitting for new mines.¹⁷

¹⁵ CRFB

¹⁶ European Parliament

¹⁷ Forbes

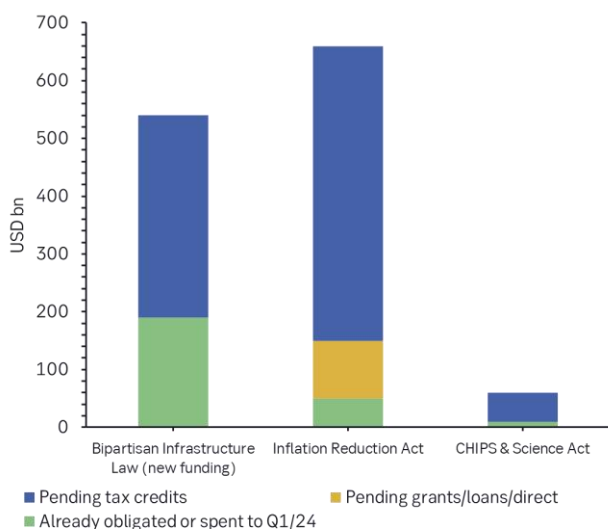
What is still left to finalize of the IRA

There is still outstanding guidance on several sections of the IRA that has yet to be finalized. This includes the Clean Energy Production Credit and Clean Energy Investment Credit, with updates regarding the methods for calculating greenhouse gas emissions from energy facilities.¹⁸

Additionally, there are clarifications needed on definitions related to the Investment Tax Credit for Energy Property, specifying which properties qualify and how the credits should be calculated. Guidance is also pending for the Clean Hydrogen Production Credit, particularly on the standards for determining lifecycle greenhouse gas emissions from hydrogen production facilities. Lastly, the Advanced Manufacturing Production Credit requires further definition to clarify which products are eligible for the credit.

Further, there remains funding for grant programs that has not been available to be spent under the law until 2025 and 2026 which amounts to about USD 14bn. In the long term there is nearly 3 quarters of funds yet to be spent by the time of the US election as illustrated in Figure 19. This can be considered vulnerable capital due to the red sweep.

Figure 19 Biden Legislative Provisions- Energy Transition & Infrastructure (2022-2031)



Source: SEB

Tensions over seas- IRA is causing disagreements with the EU

The European Parliament views the Green Deal Industrial Plan (2023) as Europe's answer to the IRA, aimed at retaining clean energy businesses. While both initiatives offer subsidies for electric vehicles, clean-tech, and

renewable energy, the Green Deal differs by not discriminating against foreign producers. Additionally, the EU relies on designated funds for financing, whereas the IRA uses tax cuts and extends subsidies to households and businesses.¹⁹

The EU's response to the IRA is constrained by its inability to raise taxes to finance spending, limiting the use of tax credits across member states. While the EU has initiatives to retain businesses, many companies are attracted to the IRA's simpler tax credit system, highlighting the complexity of the EU's subsidy structure. Key concerns include the potential relocation of EU industries to the U.S. and the disadvantage faced by EU exporters due to the IRA's local content requirements, which hinder their competitiveness in U.S. markets.²⁰

Two years later, we can see that many European companies did take advantage of the IRA and have announced 50 projects in the US, some of which include Volkswagen, Equinor Wind, and Freyr Battery.²¹

Europe's response to the IRA involves a multifaceted strategy to maintain competitiveness, notably in the semiconductor industry. Germany has committed EUR 4bn to 31 semiconductor projects to attract microchip manufacturers. Additionally, Taiwan Semiconductor Manufacturing Company (TSMC) is investing approximately EUR 10bn in a new plant in Dresden, Germany, with production expected to begin by the end of 2027.²²

While these investments are substantial, they underscore challenges within the EU's industrial policy. The predominance of national-level funding allows countries with greater fiscal resources to attract more investment, potentially creating tensions within the single market by fostering competition among EU member states rather than promoting cooperation.²³

Mario Draghi's report, *The Future of European Competitiveness*, stresses the need for Europe to close the innovation gap with the US and China, warning that fragmented policies and diluted resources weaken its ability to compete, particularly in decarbonization and defense. He calls for coordinated efforts to leverage the single market, boost innovation, and align policies across member states. Ursula von der Leyen plans to introduce a *Clean Industrial Deal* to drive investment in energy-intensive sectors, supporting industrial decarbonization, growth, and competitiveness.

¹⁸ [Implementing the Inflation Reduction Act: Progress to Date and Risks from a Changing Administration](#) | Sabin Center for Climate Change Law

¹⁹ [European Parliament](#)

²⁰ Ibid.

²¹ [Climatepower.us](#)

²² [European Parliament](#)

²³ Ibid.

Critical Minerals Agreement

Tensions between the EU and US were further addressed by the initiation of the Critical Minerals Agreement (CMA) in March 2023, designed to strengthen trans-Atlantic supply chains for critical minerals essential to the green transition. While the CMA aligns with IRA requirements and promotes sustainability, it has faced criticism for its narrow focus on electric vehicle minerals, weak enforcement mechanisms, and risks of fostering new dependencies on the U.S. It also excludes developing nations, which limits its inclusivity, and introduces potential geopolitical risks, particularly with China.²⁴

China's response to the IRA

The EU and U.S. have implemented measures to reduce reliance on China, particularly for manufactured goods and rare earth metals. The U.S., historically dependent on Chinese materials, has shifted its trade strategy with the IRA, disrupting relations and sparking tensions. China, frustrated by reduced exports in green technologies, filed a World Trade Organization complaint in 2024, focusing on U.S. tax credits for electric vehicles and other concerns.²⁵ The IRA's local content requirements also challenge China's "Made in China 2025" ambitions by limiting its green tech exports, escalating trade friction as geopolitical issues influence U.S. elections.²⁶

Inflation Reduction Act faces potential overhaul or repeal

With Trump winning the election, and more specifically all 3 branches of government, the IRA faces new political challenges. During the campaign, Trump had pledged to rescind any "unspent" funds under the IRA²⁷. However, much of the capital allocated under the IRA has already flowed into red congressional districts, generating jobs and economic growth. This makes it unlikely the incoming Trump administration, will easily undo these investments. Even with a Republican-controlled House and Senate, efforts to repeal tax credits supporting sustainable ventures would face strong opposition from those benefiting in red states, as evidenced by the letter from 18 Republican representatives warning against prematurely repealing the energy tax credits in the IRA.²⁸

Nonetheless, a Trump administration could take adversarial actions against the IRA, as altering or repealing a law necessitates approval from both chambers of Congress,

after which the president has significant influence over how the law is executed.²⁹ For instance, the Republican government could attempt to claw back previously awarded funds, though this would be difficult and subject to legal challenges.³⁰ The Office of Management and Budget allows for the termination of award agreements if they no longer align with program goals or agency priorities, meaning a Trump administration could potentially end certain agreements. Additionally, any unspent IRA funds could be reallocated to non-climate programs, but this reallocation is limited to no more than 10% of the funds allocated to any specific IRA program.³¹ If the administration unlawfully reprogrammed or withheld funds, it could face legal challenges under the IRA.

A Trump administration might also stall or cancel unfinalized guidance documents, which would create uncertainty over which projects qualify for tax credits.³² Furthermore, it is expected to be easier for Republican-favored technologies to receive support, at the same time the Trump presidency will make it harder for projects like electric vehicles and renewable energy to receive support. Although rewriting the rules could take up to 18 months, the chilling effect on investment would likely be immediate.³³

More specifically, given the red sweep, it is likely that Trump will repeal the IRA in terms of renaming it to something else, but will keep most tax rebates. However, sectors such as wind, solar, EV's, low-carbon steel and concrete, low emission agriculture, and sustainable finance are quite likely to see the largest changes.³⁴ Already, days after the election, Reuters has reported that Trump's transition team plans to cut the USD 7500 EV consumer tax credit which has further been supported by representatives from Tesla, this would require congressional approval.³⁵

Despite the potential EV tax credit cut, Tesla's company value increased by 40% after the election, showing optimism and expectations of potential favorable policy for Tesla especially now that Elon Musk has been appointed head of the Department of Government Efficiency. Repealing the EV tax credit is further favorable for Tesla since the biggest hit will be taken by its competitors. At the same time, this means that EV's will be more expensive leading to American's not wanting to overpay, thus consequently slowing the transition.

²⁴ [EU-US critical minerals agreement](#)

²⁵ [Reuters](#)

²⁶ [Center for Strategic and International Studies](#)

²⁷ [Trump vows to pull back climate law's unspent dollars - POLITICO](#)

²⁸ [FINAL Credits Letter 2024.08.06.pdf](#)

²⁹ [BNEF's Guide to the US Election Part 6: The Results | BloombergNEF](#)

³⁰ [Implementing the Inflation Reduction Act: Progress to Date and Risks from a Changing Administration | Sabin Center for Climate Change Law](#)

³¹ [Ibid.](#)

³² [Ibid.](#)

³³ [Ibid.](#)

³⁴ For more information contact SEB's Julian Beer

³⁵ [Exclusive: Trump's transition team aims to kill Biden EV tax credit | Reuters](#)

Furthermore, though there is push back on the clean energy production tax credit (PTC) and investment tax credit (ITC) it will likely be difficult to gather a majority in congress to undo the credits due to Republican states that have gained not only jobs, but tax revenue from renewable installations.³⁶ While these are not necessarily likely to be repealed right away, a more likely scenario would be an early phase-out of the credits. Some potential positive news for renewables is that the elected Senate majority leader, John Thune from South Dakota, has endorsed wind energy as it provides 55% of the electricity in his home state, meaning that it is highly likely that Thune will fight against of wind energy repeal, especially onshore wind. Permitting will also be of concern to the Trump administration where we can expect to see Trump reverse Biden's rule that lowers federal land rent for renewables and increases rents for fossil fuels creating the beginning of several difficulties for renewables going forward.

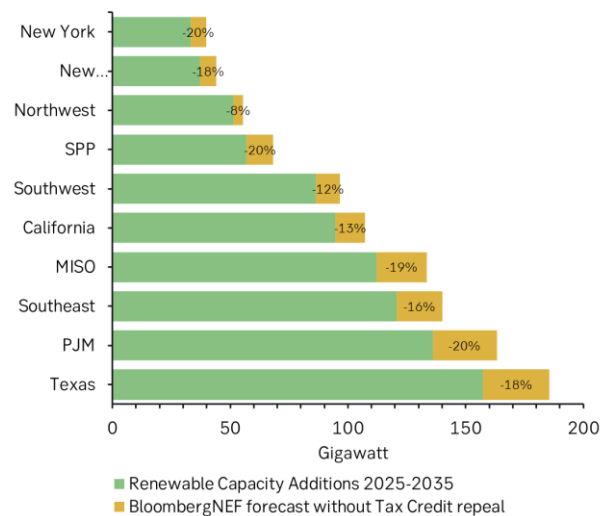
To continue on difficulties faced by renewables considering a Trump administration and given that offshore wind requires federal permits, the offshore wind sector is likely to see a change in leasing by Trump offering the lowest legally required amount of space that can be auctioned through the Bureau of Ocean Energy Management (BOEM).

It is also likely that Biden's 25% tariffs for Chinese permanent magnets, which are essential parts of offshore wind nacelles, could be phased in earlier by Trump instead of waiting for the 2026 start date, which would cause a significant price increase for the offshore wind supply chain. Additionally, the BOEM might decide not to proceed with eight seabed leases scheduled for 2025-2028.³⁷ In this case, Trump can make changes to offshore permitting, tariffs and scheduled leases without congress, as long as the actions he takes fit within the existing legal framework.³⁸ Such congress-absent changes can also apply to onshore wind if the project is located on federal land.

Overall, in a scenario where tax credits are fully repealed, which is unlikely, cumulative additions to wind, solar, and energy capacity are likely to decrease by 17% between 2025 and 2035.³⁹ However, this decrease will not be destructive as it will be a small decrease of a larger projection of increases, as demonstrated in

Figure 20.

Figure 20 Forecast of effective tax credit repeal on new clean energy buildout



Source. BloombergNEF

Among the tax credits expected to stay secure under a Trump administration, the 45X manufacturing tax credit appears especially well-positioned. Its alignment with Trump's focus on bolstering domestic industries, particularly in regions like red districts and swing states, makes it a strong candidate for preservation. Rather than being repealed, this credit could even be expanded to incentivize a fully localized supply chain, further advancing his protectionist economic agenda.⁴⁰

Another key consideration with a red sweep is the potential implementation of Project 2025. This initiative aims to roll back environmental measures addressing the climate crisis and environmental justice, instead prioritizing economic growth driven by fossil fuel development. Project 2025 aims to repeal IRA tax credits, weaken the Environmental Protection Agency's authority, and relax permitting for fossil fuel projects, leading to increased greenhouse gas emissions and reversing climate progress.⁴¹ These actions jeopardize efforts to limit global warming to 1.5°C, exacerbating extreme weather events like heat waves and hurricanes. The resulting disruptions to infrastructure, such as power and water systems, pose significant risks to public health, safety, and the economy.⁴²

The Trump victory may have far-reaching implications beyond the U.S., as the removal of key tax credits and the introduction of tariffs could strain relations with Europe and, especially, China. Trump has pledged to impose 60% tariffs

³⁶ BNEF's Guide to the US Election Part 6: The Results | BloombergNEF

³⁷ What the US Elections Mean for Clean Power | Full Report | BloombergNEF

³⁸ Article II | Browse | Constitution Annotated | Congress.gov | Library of Congress

³⁹ Ibid.

⁴⁰ What the US Elections Mean for Clean Power | Full Report | BloombergNEF

⁴¹ Center for American Progress

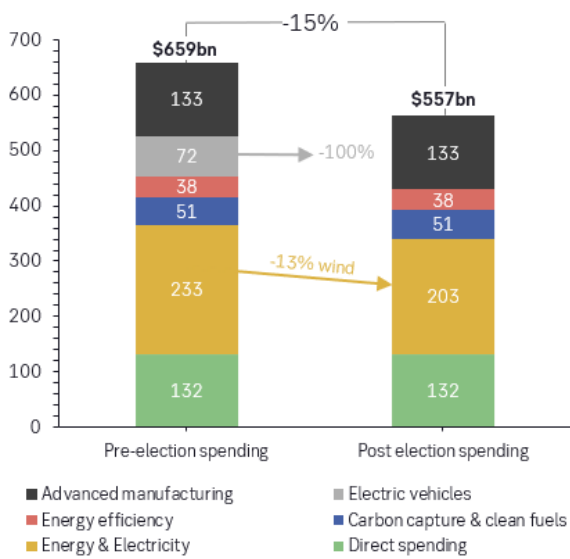
⁴² Ibid.

on Chinese imports and 10-20% on imports from other countries, significantly impacting import-dependent industries such as offshore wind and solar.⁴³ Additionally, he has vowed to withdraw from the Paris Agreement once again and may even exit the United Nations Framework Convention on Climate Change (UNFCCC), leaving Europe and China to take on the mantle of global climate leadership.⁴⁴

Key takeaways

The key takeaway is that the IRA is set to remain, though adjustments may be made to sectors Trump disfavors mainly EV’s and wind energy.

Figure 21 Post-Election: Estimated Cost of IRA Energy Spending and Tax Credits (2022-2031)



Source: CRFB, SEB, Rhodium Group

What we see, as illustrated in Figure 21, is that even with cuts to the wind energy and EV sector, there will still be a significant increase in IRA spending. Therefore, despite potential delays and challenges, including Trump’s likely push for looser fossil fuel regulations, the transition will continue, albeit at a reduced pace.

⁴³ BNEF’s Guide to the US Election Part 6: The Results | BloombergNEF

⁴⁴ Ibid.

Debrief of COP29

Progress on financing and carbon trading

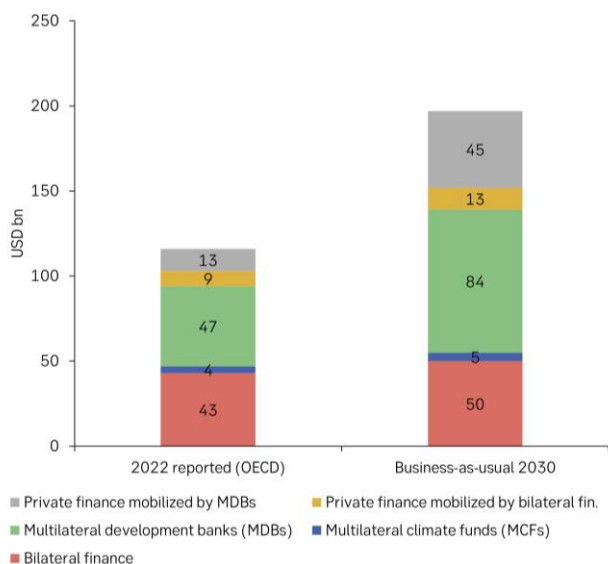
Delegates at COP29 agreed to increase climate finance to developing countries to USD 1.3 trillion by 2035, likely requiring an almost twentyfold increase in private finance. Baku also saw the establishment of an UN-led mechanism for trading carbon credits, including carbon removals.

COP29 reaches contentious agreement on climate finance

After the fourth-longest COP on record, negotiators reached an agreement on a New Collective Quantified Goal on Climate Finance (NCQG). Developed countries – including the US, EU and Japan – agreed in Baku to triple their provisions to developing countries from the previous goal of USD 100bn to USD 300bn annually by 2035. In addition, all countries agreed to scale up climate financing to at least USD 1.3tn per year by 2035 “from all public and private sources”.

The new NCQG raises the ambition of international climate finance. In 2022, developed countries, together with Multilateral Development Banks (MDBs) provided or mobilized close to USD 116bn in climate finance according to the OECD. Prior to COP29, it was estimated that climate finance by developed countries and MDBs would increase to almost USD 200bn by the end of this decade.

Figure 22 Climate finance today and in 2030



Source: NRDC, SEB

China's increasing role in climate finance

The new finance goal also leaves the door open for “voluntary” inputs from developing nations that have not previously provided official climate finance, such as China. COP29 saw China, for the first time, putting a number to its climate finance efforts when China's Vice Premier Ding Xuexiang announced that his country had provided and mobilized RMB 177bn (USD 24.5bn) to support developing countries in addressing climate change since 2016.

Independent assessments have indeed shown that China is already a significant player in global climate finance, contributing USD4.5bn annually from roughly 2013 to 2022, which would account for 6.1% of the total contributions from developed countries during that period⁴⁵. However, China's contributions are primarily non-concessional (compared with OECD countries, which provide approximately 75% of finance from Official Development Assistance budgets)⁴⁶.

Even when counting on additional voluntary contributions from China and other countries, estimated climate finance volume would only reach USD 500bn - still not enough to meet the UN's new climate finance target (see Figure 23)⁴⁷.

Mobilization of private investments key to meet new climate finance target

It is obvious that current trends fall short of the climate finance needs of developing countries that are broadly in the trillions. Given rising populism and tense fiscal conditions in developed countries, meeting the NCQG will rely heavily on private financing.

The agreement at COP29 did not specify how countries would mobilize private investments. However, the Independent High Level Expert Group (IHLEG), launched at COP27, presented a report in Baku how the new climate

⁴⁵ [chinas-international-climate-related-finance-provision.pdf \(wri.org\)](#)

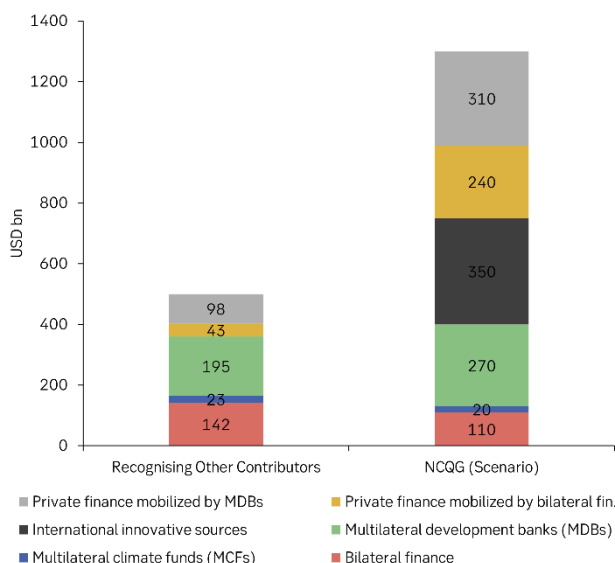
⁴⁶ [China as a Provider of International Climate Finance \(cgdev.org\)](#)

⁴⁷ [Getting from Here to There: Scaling Up Climate Finance for the NCQG \(nrdc.org\)](#)

finance target could be achieved⁴⁸. IHLEG estimated that annual external private finance for climate and nature-related investments in emerging markets and developing countries (EMDC) other than China need to increase by up to 18 times to USD 550bn.

In addition, mobilized private finance through bilateral finance and MDBs, meeting the NCQG may also require new international innovative sources such as levies on fossil fuels and utilizing the IMF's Special Drawing Rights⁴⁹.

Figure 23 Climate finance in 2035



Source: SEB, NRDC, IHLEG

Carbon market rules approved

The newly adopted rules create two different types of markets, where countries will trade emissions reductions and discount them from their Nationally Determined Contributions (NDC) climate plans. The first – known as Article 6.2 – regulates bilateral carbon trading between countries. The second, Article 6.4 creates a UN-hosted carbon-crediting program called the Paris Agreement Crediting Mechanism for countries to sell emissions reductions to inter alia private companies.

Carbon credits issued under Article 6.2 are called Internationally Transferred Mitigation Outcomes (ITMOs) and carbon credits traded under Article 6.4 are called A6.4 Emission Reductions (A6.4REs).

COP29 paves way for methodologies for UN-led public-private carbon trading

At COP29, negotiators reached a deal on general standards for methodologies for Article 6.4. Following the agreement, the Supervisory Body of Article 6.4 (SBM) will now

evaluate various methodologies and begin to approve methodologies that can be used to generate A6.4 compliant credits. So far, the SBM has been following top-down approach to development of methodologies and methodological tools but a bottom-approach where methodologies are proposed to the SBM is also possible.

Going forward, it is expected that the SBM of Article 6.4 will review already existing methodologies that exists in the voluntary carbon market. The Integrity Council for the Voluntary Carbon Market (ICVCM) – an independent governance body – has already signalled that it plans to work together with the UN on aligning methodologies.

Removals now part of Article 6.4

After many years of discussion, carbon dioxide removals, i.e. activities that remove carbon dioxide from the atmosphere, are now being accepted under UN carbon trading mechanism. At COP29, delegates approved a standard on carbon removals which had been put forward by Article 6.4 Supervisory Board⁵⁰.

The new UN standard defines requirements for the monitoring, reporting and accounting of removal activities, and outlines how project developers should address reversal and leakage risks. The standard also requires measures to minimize and where possible avoid negative environmental and social impacts. In addition, a Reversal Risk Buffer Pool Account will be established in the mechanism registry which serves to remediate avoidable and unavoidable reversals.

The Article 6.4 removal standard does not define which activities count as removals. This is left to methodologies that meet standard's requirements and approval by Article 6.4 Supervisory Body. However, the standard states that the amount of carbon credits that need to be transferred to the Risk Buffer Pool depends on the reversal risk assessment of each individual project. This benefits projects with negligible reversal risks like geological storage.

Starting early next year, the SBM of Article 6.4 mechanism will resume its work, in particular to clarify rules around the non-permanence risk of credits. Importantly, the Article 6.4 decision in Baku clarifies that future work must be guided by "best available science", with one possible starting point being a recent Nature Communications study confirming that a CO2 storage period of less than 1,000 years is insufficient for neutralizing emissions⁵¹.

⁴⁸ [Raising ambition and accelerating delivery of climate finance - Grantham Research Institute on climate change and the environment \(lse.ac.uk\)](#)

⁴⁹ [LSE International Development](#)

⁵⁰ [A64-SBM014-AA-A07 \(unfccc.int\)](#)

⁵¹ [Communications Earth & Environment \(nature.com\)](#)

COP29 defines mandatory safeguards for UN carbon trading mechanism

The Article 6.4 carbon crediting system will have a compulsory mechanism that aims to prevent developers of carbon credit projects from breaching human rights or causing environmental damage with their activities – a first for the UN climate process. The Clean Development Mechanism (CDM) – the previous UN carbon market – was dogged by accusations of social and environmental abuses.

Under the new safeguarding mechanism, developers of emissions reduction or removal projects will be required to identify and address potential negative environmental and social impacts as part of a detailed risk assessment. Developers will also be asked to set out how their activities contribute to sustainable development goals like ending poverty or improving health, alongside their primary objective of reducing greenhouse gas emissions.

External auditors will review the risk assessment, check that local communities have been properly consulted and evaluate the appropriateness of the actions proposed by the developers. The rules will apply to both new projects developed under Article 6.4 and to over a thousand more that are seeking to transfer into the new market from the CDM.

The Sustainable Development Toll will work alongside an appeals and grievance procedure agreed on by governmental negotiators earlier this year.

Negotiations struggle to set strong integrity requirements for Article 6.2

Efforts to apply similarly strict safekeeping guidelines to bilateral carbon trading under Article 6.2 have been less successful. At COP29, negotiators agreed to new guidance for Article 6.2. These guidelines outline how bilateral carbon trading should be authorized and reported on.

However, the new rules for Article 6.2 lack the detailed sustainability requirements set for Article 6.4. Instead, sustainability requirements will have to be agreed on a case-by-case basis in bilateral agreements.

Moreover, the final agreement of COP29 does not include a clear definition of inconsistent information on activities generating carbon credits traded under Article 6.2, nor does it set strong penalties for countries providing inconsistent information. Instead of restricting trades, the COP agreement only “requests” countries to refrain from using ITMOs flagged with inconsistencies in their NDCs.

Nevertheless, COP29 saw a host of new bilateral agreements. Zambia announced that it had signed Article 6 deals with Singapore, Sweden, Norway. This follows a deal between Thailand and Switzerland earlier this year.

Impact of US elections on climate negotiations

Donald Trump’s reelection as President cast a shadow on talks in Baku. It was reported that the US delegation acted more subdued than usual. The New York Times⁵² reported that Saudi Arabia, known to push back on new mitigation measures, were particularly emboldened in their stance against including the fossil-fuel transition pledge agreed last year in the COP29 negotiated text.

President Trump will be able to file to quit the Paris Agreement on his first day in office and the US would leave a year later. However, as all countries are supposed to publish an updated Nationally Determined Contribution (NDC) next year – before the US under Trump could officially leave – Washington would still be expected to submit one.

Pulling out of the UNFCCC – the UN Framework Convention on Climate Change – may be more difficult for the incoming administration. The UNFCCC was endorsed by the US Senate almost unanimously in the 1992. The US constitution says the president has the power to make treaties “provided two thirds of the Senators present concur” – but does not mention leaving treaties.

Looking ahead to COP30

Next year’s climate negotiations will take place in Belém in the Brazilian Amazon. With countries due to submit new NDCs by February 2025, COP30 is billed to be a key conference for ramping up ambition to slash emissions globally.

With the US expected to deliver a much weaker NDC, many look to the EU and China to increase their ambitions. The incoming EU Commission is keen to turn its proposed 2040 target into a binding commitment. China may be looking to score geopolitical points against the US by submitting an improved climate plan, too.

Due to its proximity to the Amazon rainforest, it is also being billed as a “nature COP”. In this context, Brazil and Colombia are also working on a proposal for a “new binding global treaty” for tracing critical-mineral supply chains, which they hope to launch at COP30.

⁵² [Saudi Arabia Is Working to Undercut a Pledge to Quit Fossil Fuels - The New York Times \(nytimes.com\)](https://www.nytimes.com)

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