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Thoughts after Cop30

Introduction: COP 30 and global disorder

by Augusto Ninni[1]

The Conferences of the Parties (COPs) have historically been the scenes of clashes between fossil fuelproducing and exporting countries, and those willing to pursue an energy and ecological transition aimed at reducing greenhouse gas (GHG) emissions in order to curb the rise in global temperatures. The spread of electrification and the greater availability of climate finance have increased the willingness of those countries – which represent the majority of the world's population – that have to rely on fossil fuels for economic development to engage in combating climate change. Finally, there are countries (particularly small island states) that are already heavily affected by the consequences of climate change, mainly due to rising sea levels.

However, the COP held in November 2025, or COP30, in Belém (Brazil), took place in a global context that was even more complex and markedly different from previous COPs: a context of global disorder.

It was held without the politically significant participation of the United States (due to the return of Donald Trump to the presidency), against the backdrop of the European Union's (EU) ecological transition policies being watered down (see Mairate's contribution), and amid a more general cooling of interest and willingness to address climate change. There are many examples of this shift, even though climate change remains a priority in various transnational opinion polls: increasing local opposition to the siting of renewable energy facilities, partly for subjective landscape-related reasons; the reduction in both the number and ambition of the Nationally Determined Contributions (NDCs) submitted ahead of COP30; and changes in Bill Gates' thinking.

Based on the results of COP30, three different conclusions can be drawn, depending on the perspective adopted:

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- **From the general perspective of the fight against climate change** – essentially the core raison d'être of the Conferences of the Parties since their inception – COP30 was something of a failure. This is exemplified by the inability to secure a sufficiently large majority to explicitly define a binding roadmap for phasing out fossil fuels (the "Dubai phase-out") in the final resolution. The final text merely reiterates generic 2030 targets, without setting precise deadlines for coal and gas (Musu's contribution focuses on this issue).
- **From the perspective of climate finance**, COP30 committed to a substantial increase in available funding, particularly for adaptation, by 2035 (see the contribution by Lino Sau). However, past experience suggests strong and widespread scepticism about the realism and feasibility of this commitment, i.e. about the actual implementation of the promised spending, especially in light of the reorientation of private finance following Trump's return. It is true, however, that the principle of loss and damage has not been revoked (the relevant fund was established at COP27 in 2023), and now appears to have been operationalised.
- **From the perspective of CO_2 reduction mechanisms**, COP30 achieved significant success only in the area of reforestation, although this mainly benefits some emerging countries in Latin America (particularly Brazil) and Africa. The main innovation is the operational launch of the Tropical Forests Forever Facility (TFFF), with initial capitalisation of $5.5 billion (with the aim of reaching $125 billion), part of which is to be channelled directly to local Indigenous populations.

With regard to global disorder and its impact on the fight against climate change, the most negative development was clearly the election of Trump. In fact, he:

- immediately withdrew the United States from the 2015 Paris Agreement;
- promoted the expansion of fossil fuel production domestically, explicitly intervening against wind energy in particular;
- ended US participation in various international public financing initiatives, seriously undermining the energy transition in poorer countries (thus reducing their capacity for adaptation) and – since climate change is a "common bad" – generating strong negative global repercussions (according to Climate Watch data, the estimated reductions in CO_2 emissions by 2035 from "unconditional" NDCs amount to 4 $GtCO_2e$, while those from "conditional" NDCs – and thus the most affected – amount to 4.6 $GtCO_2e$);
- after COP30, in January 2026, withdrew the United States from 66 international organisations, including the UNFCCC, the IPCC and IRENA;
- signed an agreement with Ursula von der Leyen under which the EU committed to importing $750 billion worth of energy (mainly liquefied natural gas, LNG) from the United States by 2028

– a plan widely regarded as unfeasible in terms of both European demand and US supply, and inherently contrary to the logic of the energy transition.

Finally, immediately after Trump's electoral victory – but before his official inauguration – in December 2024, the most important banks "coincidentally" withdrew from the Net Zero Banking Alliance (NZBA), an alliance aimed at channelling private savings towards renewable energy initiatives in developing countries. This point is also discussed in Lino Sau's contribution.

A second factor that has altered Western countries' approach to the energy transition is China's rapid development in industries related to the energy transition (see the contribution by Ruet and Wang). There are several explanations for this. First, industrial policy considerations: the enormous expansion of production capacity around 2010 was not primarily intended to meet expected domestic demand, but to serve already significant foreign markets, generously supported by incentives. There was also a desire to reduce dependence on fossil fuel imports by expanding domestic renewable production, as well as to combat climate change and reduce pollution, particularly in major urban areas.

Continuous large-scale growth has led China to a position of global dominance (absolute in the case of photovoltaics) across all stages of the value chain: upstream inputs (including most key raw materials), manufacturing across all stages, storage (batteries), and downstream outputs, especially electric vehicles (again, see Ruet and Wang). This has significantly reduced global production costs, making electricity generated from renewable sources markedly cheaper than that produced from fossil fuels, thereby benefiting renewable energy deployment worldwide.

Recently, however, as in other Chinese industries, a phase of structural overcapacity has emerged, sustained by substantial government subsidies and the provision of credit at below-market interest rates through provincial authorities.

The decline in renewable energy costs – especially photovoltaics – nevertheless enabled China and India to reduce coal-fired electricity generation in absolute terms for the first time in history in 2025.

China's dominance in photovoltaics prompted EU countries (through the Net Zero Industry Act, NZIA), following the United States under Biden (through the Inflation Reduction Act, IRA), to adopt protectionist measures in renewable energy manufacturing in order to reduce dependence on imports without formally resorting to tariffs. Under these laws, in certain cases, success in public tenders can depend on whether the winning firm comes from a country holding at least 65% of the relevant import market (NZIA), or whether it uses intermediate inputs not produced in the United States (IRA), in which case the contract may instead be awarded to the runner-up (unless it faces the same constraint).

In other words, geopolitical factors have become a powerful driver of the energy transition, often playing a leading role. The Russia–Ukraine war has contributed significantly to this dynamic, not only by driving up natural gas prices but also by requiring the rapid replacement of Russian gas supplies. Given the speed of this substitution, it led to a greater reliance on LNG, reducing both space and time for the development of renewables.

It is therefore reasonable to argue that global turmoil has split the energy transition into two tracks: on the one hand, Western countries, which have partially slowed the shift to renewables (while giving renewed impetus to nuclear power); on the other, emerging countries that are continuing along the transition path, either by accepting greater dependence on China or by launching national industrial development programmes (as in the case of India and others), often supported by foreign direct investment from Chinese firms (e.g. in Southeast Asia).

Among scholars most sceptical about COP30's results, some have argued that global disorder signals the declining usefulness of organising intergovernmental meetings to achieve the energy transition at the pace and according to the criteria identified by the IPCC. However, as Mairate rightly observes, this view overlooks the fact that climate change is a classic collective action problem, subject to free-riding. It would therefore be unwise to abandon the COP framework as a policy instrument.

It is now worth briefly summarising the individual contributions presented in the newsletter, focusing selectively on a few key issues.

Ignazio Musu's contribution addresses the consequences of COP30 for its central objective: the fight against climate change. He begins by highlighting a distinctive feature of the current energy transition, namely its reliance on government intervention combined with the growing economic competitiveness of new energy sources – a combination that was also central to previous energy transitions.

After briefly reviewing earlier COPs, Musu emphasises that in the case of COP30 "no commitment has been taken to phase out fossil fuels", and that "the focus has shifted from mitigation to adaptation". The fight against climate change, he argues, can only regain momentum if public opinion in the US and the EU changes its current political preferences, while China remains the only major country consistently pursuing a renewable-based energy strategy.

Lino Sau's contribution analyses climate finance (distinguishing it from green finance). He identifies the key actors involved and devotes particular attention to the consequences of Trump's return for the most important private-sector actor, the NZBA. This issue is crucial because many stakeholders stress that the expected contribution of private finance far exceeds that of public finance.

Sau then examines the outcomes of COP30, particularly the identification of a target of $1.3 trillion per year by 2035, the greater emphasis on adaptation over mitigation, and the role assigned to forest financing. Like many others, he expresses doubts about the actual implementation of these commitments in light of the American policy reversal.

Finally, Mairate and Ruet–Wang focus on the roles played by two major actors: the EU and China.

Mairate recalls that EU action in this field is shaped by the positions of individual Member States, rather than by a unified bloc as in trade or competition policy. This has resulted in internal divisions, partly reflecting historical dependence on coal (e.g. Poland), and partly reflecting the political orientation of governing majorities (e.g. Italy). It also raises concerns about the EU's future stance on energy transition policies in the event of political changes in France or Germany.

Ruet and Wang, for their part, analyse China's role as a central protagonist in the ecological transition. They show how China combines energy objectives (including strengthening the decoupling between economic growth and CO_2 and GHG emissions) with economic objectives, viewing renewable energy production both as a driver of growth and as a means of achieving technological leadership. The internationalisation of production through foreign direct investment – reinforced by the trade policies of both Trump administrations – further strengthens this dual ecological and economic strategy in several emerging countries.

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COP 30 and the future of COPs

by Ignazio Musu[2]

Relevant steps forward have been achieved in the recent years in the technological field to allow the energy transition required to reduce the excessive greenhouse gas emissions to face global warming and the related climate change problems without a lower economic growth.

Prices of solar and wind energies have been continually falling and so did the price of batteries to deal with their intermittency problems, relative to fossil fuels' prices; however, being global climate change an environmental externality, technological progress to achieve it, although available, is not introduced automatically, but requires appropriate economic policy tools.

Economists focused on economic instruments of environmental policy acting on relative prices , such as carbon taxes, tradable pollution permits, aimed at introducing a carbon price, and subsidies to GHS emission abatement; but they seems to have ignored that this provides an incentive to adopt environmentally friendly technologies that already exist, whilst the required energy transition to fight climate change requires radical new emission reduction technologies, characterized by new infrastructures and institutions.

The introduction of "radical" innovations and the investments to implement them cannot be based only on price incentives; these can help, but a more direct public intervention is required integrated with those of private companies in research and investments in deployment of the new required carbon-saving technologies.

It must also be taken into account that global warming and the related climate change are negative externalities of a global nature; hence national governments' actions are pushes towards «free-riding» behaviours, waiting to benefit from greenhouse gas emission reductions undertaken by other countries.

To avoid this, the United Nations Framework Convention on Climate Change (UNFCCC) approved in 1992 introduced annual Conferences Of Parties (COPs); but the COP's experience has not been encouraging.

The choice made in the Kyoto's COP of 1997 of a protocol requiring binding «targets» for the reduction of greenhouse gas emissions only for developed countries was a failure.

After years of uncertainties and hesitations in the subsequent COPs, the conviction began to make its way that a new approach was needed, which abandoned the «top-down» approach of the Kyoto Protocol in favour of a «bottom-up» approach to coordinate intervention strategies developed by individual countries, not only the developed ones.

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Hopes came from this «bottom-top» approach adopted by the Paris Agreement from COP 21 held at the end of 2015, approved by almost all countries in the world, to coordinate Intended Nationally Determined Contributions (INDCs) to achieve a global warming of 2°C, and possibly 1.5°C, compared to pre-industrial levels, with net zero GHG emission reached by 2050.

The success of COP 21 was determined by the joint commitment of Barack Obama's United States, of Xi Jinping's China and of the European Union who dragged the other countries.

But things moved towards pessimism after the US President Donald Trump's decision to withdraw from the Paris Agreement and was not cancelled after President Joe Biden's adherence to the Paris Agreement.

New events rose on the geoeconomic scene after the Ukraine's invasion, such as the EU forced to find a fossil fuels alternative to the end of imported Russian gas and EU's clear signs to reduce engagement on green deal to devote economic resources to the improvement of military defence.

More recently, the situation worsened after the decision of Donald Trump, as new president of the United States, not only to withdraw from the Paris agreement again, but to orient US energy policy towards fossil fuels (see the military action against Maduro in Venezuela) and against renewable energy sources.

COPs after 2015 did not contribute to change tendencies towards global warming and climate change as demonstrated by the fact that greenhouse gas emissions, with the exception of the Covid-induced downturn in 2020, have always been growing and continue to grow, with the increase in global temperature broking through the barrier of the increase of 2° C compared to pre-industrial levels.

COPs may be useful for keeping sensitivity alive globally, but it has been proven that they are not enough unless they are led by a set of important countries clearly willing to proceed on the energy transition towards renewable source required to appropriately reduce GHG emissions.

This was also the case for COP 30, where no commitment has been taken to phase out fossil fuels and focus moved from mitigation to adaptation to climate change; some results only emerged on the field of stopping deforestation on the insistence of Brazil as the hosting country; other decisions, such that of mobilize $1.3 trillion annually for climate action were mere announcements.

The lack of leading action from important countries was shown by the United States not even sending an official representation to COP 30, and by the EU representatives clearly shown unable (or unwilling?) to push for more positive outcomes.

At the moment, among big countries, only China seems to play a stimulating role against global warming and climate change although its economy is still based for 86% per cent on the use fossil fuels and since 2019 China's greenhouse emissions overcame those of all the developed countries jointly considered.

At COP 30, China’s representatives declared that China will act within the framework of “Common But Differentiated Responsibilities»(CBDR) and confirmed what President Xi Jinping has since 2020 declared, that China aims to achieve maximum CO2 emissions by 2030, only then starting to reduce them in order to reach net zero emissions not in 2050 but in 2060.

This will be a huge effort, if, according to the new China’s Five Years Plan, by 2060 the contribution to energy of the fossil fuels should be reduced to 25 per cent from the current 80%.

China’s reduction of greenhouse gas emissions will be crucial in the fight against climate change, if its huge required effort in terms of investments will be coordinated with those required by digital technological advancement and artificial intelligence with its big requirements in terms of energy.

China can play a crucial role in the next COPs if it will be able to lead emerging and developing countries, starting with the recently widened BRICS; but pessimism cannot be abandoned unless US and EU join China in the required common effort; the only hope is that public opinions in US and EU will play a role in moving the political leaderships in this direction.

The challenges of green and climate finance: public, private, or both?

by Lino Sau[3]

The recent COP30, held in November 2025 in Belém, in Brazil, brought together nearly 200 countries to negotiate and strengthen global climate action, focusing not only on the implementation of the Paris Agreement, adaptation, and protection of the Amazon, but also pushing for greater climate ambition and emphasizing the fundamental role of *climate* and *green finance*.

As I will try to show, it is therefore important to analyse the role of the financial system in supporting this transition: both public and private financing channels are in fact necessary for the implementation and launch of the green transition.

As a starting point, it is necessary to define *climate* and *green finance* and highlight some of the differences between them, since they are indeed two terms that are often used interchangeably in the context of sustainable finance, but they have different meanings and applications.

Climate Finance is a financing mechanism aimed at supporting the measures needed to mitigate and adapt to climate change. This topic is committed to raising and managing financial resources for environmental projects, with a view to promoting sustainable development and mitigating human impact on the climate. *Climate finance* refers, on one hand and specifically, to financing for projects, strategies, and policies that aim to mitigate the impact of climate change and promote forms of adaptation. This includes projects such as renewable energy, energy efficiency, forest management, and sustainable agriculture. The focus of *climate finance* is primarily on climate issues and the mitigation of greenhouse gas emissions.

Green finance, on the other hand, covers a broader scope and refers to the financing of projects that benefit not only the climate but also the environment in general. This includes projects related to biodiversity conservation, air and water pollution, waste management, and recycling. In other words, while *climate finance* focuses exclusively on climate issues, *green finance* considers a wider range of environmental issues.

Now looking more deeply on the importance of *climate finance* in relation to climate in the current context, one can argue that climate finance is an essential factor in supporting the transition to low-carbon and climate-resilient economies, thus supporting the goal of limiting the global average temperature increase to below 2°C compared to pre-industrial levels. This sector goes beyond simple economic considerations, representing a key tool for stimulating sustainable and environmentally friendly interventions.

Climate finance is also a fundamental pillar of *sustainable development*, addressing global environmental and climate issues and ESG (Environmental, Social and Governance). This topic involves investments and

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financing directed at projects that mitigate or create the conditions for adaptation to climate change, and is a key element in achieving the Sustainable Development Goals (SDGs) set by the United Nations.

Climate finance can help reduce greenhouse gas emissions by promoting the use of renewable energy, improving energy efficiency, and encouraging sustainable agricultural practices. This directly supports the SDGs related to clean and affordable energy, climate action, and life on land. It can also help communities develop their capacity to adapt to climate change by financing projects that improve infrastructure resilience, promote sustainable water use, and protect vulnerable ecosystems. This directly links to the SDGs related to clean water and sanitation, sustainable cities and communities, and life below water.

Climate finance can also stimulate innovation and sustainable economic growth by financing green technologies and sustainable business practices, and plays a crucial role in promoting sustainable development in all its aspects. At the same time, to maximize its impact, it is essential that it be properly integrated into *national* and *international* development *strategies* and accompanied by appropriate policies and regulations.

Climate finance can come from a variety of sources: public (governments) or private (banks and investment funds), domestic or international, bilateral or multilateral. It can take a variety of forms, including grants and donations, green bonds, equity, debt swaps, guarantees, and concessional loans. It can also be used for a variety of activities, including mitigation (finance renewable energy, energy efficiency, sustainable agriculture, and forest management), adaptation (invest in projects that increase the resilience of ecosystems and communities to climate impacts (e.g., droughts, floods)), and resilience building. *Climate Finance* uses indeed a range of specific tools and methodologies to maximize the positive impact of its interventions. In addition, advanced methodologies are used to evaluate projects and measure their impact on the climate.

Governments have a key role to play. Through appropriate policies, they can *indirectly* encourage private investment in green projects (*crowding-in effect*), promote scientific research in the environmental field, and contribute to the process of defining standards for measuring the climate impact of various interventions.

In addition, governments can act directly as financiers of climate-related projects. As the effects of climate change are increasingly felt across all sectors of the economy, public budgets and other financing instruments are beginning to consider climate risk in their investment decisions, further broadening the definition of climate finance. Countries such as the Maldives, for example, consider all financing to be climate finance, as their entire economy and survival are so heavily dependent on climate resilience. As a result, efforts are increasing to redirect traditional development budgets towards financing climate action, particularly with regard to climate change adaptation.

In addition, governments can allocate funds for priority climate actions through their budget processes, such as those defined in their national climate commitments (known as Nationally Determined Contributions under the Paris Agreement), or issue sovereign green bonds to finance such projects.

Sovereign bonds are loans that governments obtain from a group of investors in exchange for regular interest payments over a certain number of years. At the end of this period, when the bond matures, the government returns the initial investment to the investors.

Governments can also mobilize climate finance through emissions trading and carbon taxes. Through carbon trading, greenhouse gas emissions (GHG) are quantified into carbon credits that can be bought and sold. A tradable carbon credit is equivalent to one ton of carbon dioxide, or the equivalent amount of another greenhouse gas (GHG) reduced, sequestered, or avoided. Carbon credits can be purchased by countries or private companies that want to improve their greenhouse gas emission reduction efforts. Carbon taxes are typically applied to discourage the use of products and services with a high carbon footprint. For example, a tax can be applied to gasoline at the pump or to electricity generated from fossil fuels. The proceeds from these taxes can be used to invest in renewable energy, forest conservation, and other forms of climate action.

Banks and other financial institutions play also a crucial role in mobilizing the resources needed for climate finance. These actors can issue green bonds, offer credit on favourable terms for green projects, and invest directly in such projects. In addition, financial institutions can promote the dissemination of financial instruments. At the same time, in order to make these measures truly effective, the banking world needs tools that allow for effective impact measurement. This process makes it possible to assess the effectiveness of various interventions in terms of reducing greenhouse gas emissions and adapting to climate change. For this reason, various tools and methodologies have been developed to measure the climate impact of financed projects.

In this regard, the Net-Zero Banking Alliance (NZBA) is a pivot! This alliance (NZBA) was founded in April 2021 with 43 member banks and has since tripled in size, reaching over 120 members in 40 countries.

Since its inception, members have made a significant contribution to the creation of the internationally recognized “Guidelines for Setting Climate Goals for Banks” to achieve net-zero greenhouse gas emissions in line with the Paris Agreement.

Members also provided innovative guidance and analysis to help banks meet demands for transparency and credibility in climate-related information from regulators, investors, and civil society. By April 2024, over a hundred banks had launched individual, independent, sector-specific climate targets supported by this guidance. Many continue to develop and implement transition plans.

However, since December 2024 (and also while writing!) several banks unfortunately have left the Net Zero Banking Alliance (I shall point out this point later)

As to *Investment funds*, in particular, they play an important role and are key players in the development of climate finance. Through their investment strategies, they can channel substantial resources into green projects, help mobilize the resources needed to tackle climate change, and encourage the creation of new climate-related financial instruments.

The Climate Investment Funds (CIF), for instance, is a leading multilateral climate finance partnership that channels concessional finance through six multilateral development banks (MDBs) for both upstream advisory and downstream investment activities to support climate action.

The World Bank Group, including the International Finance Corporation, the African Development Bank, the Asian Development Bank, the European Development Bank, and the Inter-American Development Bank, are the implementing partners of CIF's investments. CIF comprises two funds: the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF).

In the current complex and rapidly changing landscape, also *international initiatives* such as the United Nations' Financing Climate Action and UNEP's Climate Finance are working to chart a clear course towards increasingly *green finance*.

UNEP (United Nations Environment Programme) Climate Finance refers to all financial flows – public and private – aimed at addressing the causes and consequences of climate change, promoting investment in mitigation (emissions reduction) and adaptation (resilience building) projects, to steer economic decisions towards low-carbon and climate-resilient development, supporting global goals such as those of the Paris Agreement.

In summary, UNEP's Climate Finance is a driver for shifting financial capital towards sustainable solutions, which is crucial for achieving the United Nations Sustainable Development Goals (SDGs) and implementing global climate commitments.

Developed countries often provide financial assistance to developing nations, recognizing differing capacities and historical responsibilities. Some multilateral funds that developing countries can access include the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Adaptation Fund (AF). These funds were established throughout the years as financial instruments of the United Nations Framework Convention on Climate Change (UNFCCC) to provide resources to developing countries.

Developing countries can access part of climate finance in the form of grants from the GEF, GCF, and AF. Governments and the private sector can also access concessional and market-based loans from financial institutions such as the World Bank, African Development Bank, and Inter-American Development Bank, among others. These grants and loans can be used to invest in projects that reduce, absorb, or prevent greenhouse gas (GHG) emissions, such as renewable energy power plants, electric buses, and forest conservation, or in projects that strengthen resilience to climate change, such as the creation of early warning systems, strengthening coastal protection, improving the resilience of agricultural and food systems, and building infrastructure that can withstand storms and floods.

Also, a rapid overview of climate finance and risk management is necessary since they are two closely interrelated concepts. While climate finance refers to the allocation of financial resources to projects or investments that contribute to climate change mitigation, risk management works to identify, assess, and manage risks, including those related to climate.

In the context of climate change, risks can be physical in nature, such as extreme weather events or long-term changes in climatic conditions, or they can be related to the transition to a low-carbon economy, such as regulatory or technological changes. Both types of risks can have a significant impact on the value of investments and financial returns.

Risk management in the context of climate finance involves the use of tools and techniques to assess and manage these risks. For example, it may include scenario analysis to assess the potential impact of various climate change scenarios on an investment, or the use of financial instruments such as insurance to manage physical risks.

Climate risk management is becoming increasingly important for investors, businesses, and regulators. Investors are becoming increasingly aware of climate-related risks and opportunities and are seeking to integrate climate considerations into their investment and risk management processes. Businesses are seeking to manage climate risks to protect their value and ensure their long-term resilience. Regulators are beginning to require greater transparency and disclosure of climate risks.

Last but not least, the relationship between *climate finance and artificial intelligence (AI)* is one of the most promising areas for addressing the global climate crisis. If climate finance also refers to financial flows to projects and initiatives aimed at climate change mitigation and adaptation, artificial intelligence, with its ability to analyse large amounts of data and identify complex patterns, can play a crucial role. First, AI can improve climate risk assessment. By analysing meteorological, geographical, and socio-economic data, AI algorithms can more accurately predict the impacts of climate change on specific regions or economic sectors. This allows investors to make more informed decisions and allocate funds more efficiently. Furthermore, artificial intelligence can optimize the allocation of financial resources. For example, through the use of predictive models, it is possible to identify the most promising renewable energy projects or the most effective mitigation technologies. This not only increases the effectiveness of investments, but also reduces the risk of project failure.

Artificial intelligence can also facilitate transparency and accountability in the climate finance sector by examining sustainability reports. Machine learning algorithms can monitor and verify the implementation of funded projects in real time, ensuring that funds are used appropriately and that climate goals are effectively achieved, for example by reducing the risks of greenwashing or greenhushing.

Finally, AI can help raise awareness and engage the public. Through sentiment and opinion analysis tools, it is possible to better understand the concerns and expectations of local communities and stakeholders, facilitating a more effective and inclusive dialogue on climate issues.

To conclude, despite significant progress, climate finance faces several challenges. These include the need to further increase the resources mobilized, ensure equitable access to finance for all countries, and improve mechanisms for measuring the climate impact of financed projects. Overcoming these challenges will be critical to ensuring a sustainable future for our planet.

Despite the several tools and methodologies available, the *challenges* for climate finance require a shared commitment from governments, banks, and financial institutions, as well as investment funds. The need for accurate measurement of the impact of climate finance is crucial to ensuring the effectiveness of interventions and meeting the needs of developing countries that are heavily dependent on this form of finance.

But the most significant *challenges* are closely linked to *politics* and *politicians*. In the summer 2025 agreement between climate change denier Donald Trump, who has returned to lead the United States of America, and the new von der Leyen administration, which, in order to contain the tariffs imposed by the former, has committed to massively increasing energy imports in an agreement that provides for $250 billion per year in oil, and nuclear fuels from the US over three years may represent a short-sighted approach, which effectively supports Trump's strategy, which has once again taken the United States of America (alone responsible for 24% of cumulative emissions) out of the Paris Agreement.

And just as the Belem summit, COP30, which the US boycotted, was getting underway, the White House announced a new oil development plan, with concessions in the Gulf of Mexico, California, and even Alaska, about twenty of which would cover all offshore areas, including those in the High Arctic, an area more than 200 miles from the coast.

As I mentioned above the exodus from NZBA started on 6 December 2024, with Goldman Sachs becoming the first significant US bank to withdraw. Two weeks later, Wells Fargo followed. Subsequently, Citigroup and Bank of America declared their withdrawal on 31 December. The most recent departure in the US was Morgan Stanley, which happened on January 2. This was followed by the exit from five of the largest Canadian banks, namely TD Bank, Bank of Montreal, National Bank of Canada, Canadian Imperial Bank of Commerce and Scotiabank. Furthermore, five out of six Japanese banks have left the alliance, with Mizuho Financial Group being the most recent to leave along with the exit of Australian infrastructure financier Macquarie. Shortly after Trump's election victory—but before he officially took office—six major U.S. banks (JP Morgan, Citigroup, Bank of America, Morgan Stanley, Wells Fargo, and Goldman Sachs) withdrew from the NZBA.

United States banks left the Alliance under increasing political and legal pressure from the US Republican Party, which portrayed ESG (Environment, Social, Governance) investments as a veiled attempt to boycott the fossil fuel industries. Last year, BlackRock, Vanguard, and State Street were sued by Texas and 10 other Republican-led states, which alleged that large asset managers violated antitrust laws through climate activism that reduced coal production and drove up energy prices. Now that the banking sector has retreated en masse, the credibility of voluntary climate finance initiatives is being called into question. Further, on 27 March 2025, the U.S. Securities and Exchange Commission (SEC) formally withdrew its defence of the Greenhouse Gas Disclosure Rule, which had been a cornerstone of climate-related financial transparency under the Biden administration.

The use of non-binding alliances is becoming increasingly unsustainable, with increasing legal risks and political backlash. For private finance to continue to be a critical component of the global response to climate change, robust and enforceable regulatory frameworks that protect climate action from policy change may be needed. The unravelling of the NZBA may signal that the era of voluntary climate commitments should be replaced by politically resilient, accountable and mandatory mechanisms that can sustain a climate-aligned banking system in volatile environments.

The NZBA continues to include major European and Asian institutions, and some institutions that have left continue to claim that they will independently pursue net-zero emissions strategies.

Now looking more closely at the ieefa.org report (2025) from COP30, we find many key financial expectations that open up many rather optimistic hopes: 1) A credible plan to meet the new $1.3 trillion climate finance goal; 2) A strong, new adaptation finance commitment; 3) Launch of new climate finance vehicles, including forest preservation and Just Transition Reform of multilateral development banks (MDBs) and other international finance architecture; 4) Transparency, accountability and institutional reform for climate finance flows.

Increasing funding to $1.3 trillion a year by 2035 requires far-reaching reforms; for this reason, the report from the circle of finance ministers identifies 5 strategic priorities:

Priority 1: Scaling up concessional finance and optimizing climate funds this is concerned with the creation of a transaction hub for transformative climate finance solutions ('The Hub') and with the acceleration of grid flexibility for high variable renewable energy (VRE) integration in countries that have joined the 'Renewables in Latin America and the Caribbean' (RELAC) initiative (AGF-RELAC).

Priority 2: Reforming MDBs to scale up sustainable finance that is the task Force on Credit Enhancement for Sustainability-linked Financing moves to a full implementation platform.

Priority 3: Strengthening national capacity and investment frameworks for climate finance that is: launch of a 'Global Implementation Accelerator' and the 'Belem Mission to 1.5' to help countries improve the ambition and execution of their NDCs ; boosting the NDC Partnership Work Programme 2026-2030 launched at COP30 (New Five-Year Roadmap for Collective Action for Climate); enhance National Platform Hub to connect Countries with technical assistance, provide Knowledge, and Funding; National Funding Localization Platforms (CPLFs) launched in two African countries; implement coalition for High-Ambition Multilevel Partnerships (CHAMPs) to strengthen collaboration between national and subnational governments; finally build a thriving global ecosystem of Southern Climate Technology Startup.

Priority 4: Development of scalable and innovative financial solutions for private capital mobilization for instance FX Edge will replicate and adapt its proven model to mitigate systemic foreign exchange barriers in new contexts; implement ready and resilient financial instruments (FIRREs) to utilize climate resilience debt clauses, contingent lines of credit, and risk transfer solutions; create promising avenues for streamlining climate finance and support for startups and SMEs in developing countries

Priority 5: Strengthening regulatory approaches for climate finance; implement global super-taxonomy regulatory approaches for climate finance (i.e. a global supertaxonomy to establish a common financial language for what counts as 'sustainable'); creation and adoption of Paris-aligned transition plans; harmonization of carbon markets (GHG Protocol and International Organization for Standardization (ISO)); create a global alignment of carbon accounting; reinforce methodologies for the identification of environmental and climate expenditures in the public budget.

To conclude: it is certain that to prevent the financing of the transition from becoming a race to the bottom, characterized by political pressure, minimal transparency, and vague objectives, both the reforms and the instruments suggested and developed at COP30 in Belem should find urgent implementation.

COP30 and beyond: the role of Europe in climate negotiations

by Andrea Mairate[4]

Macroeconomists generally view climate change as a classical collective action problem where individuals, or groups of countries and other actors must cooperate to effectively address a global issue that affects everyone. The problem arises when individual actors, such as nations or corporations have incentives to act in their own self-interest rather than cooperating for the common good. If countries fail to acknowledge the harsh reality of climate change and its high social, economic and ecological costs, no country or individual would be better off. This is why multilateral cooperation frameworks like the UN Conference of Parties (COP) are needed and are still alive despite the anti-green backlash in Europe, and more strongly in the United States.

A decade after the Paris agreement, COP 30 convened on November 10th 2025 in Belem amid a turbulent geopolitical landscape. The Conference showed how the new multipolar world has changed the framework of climate negotiations through the positions of respective blocs of nations. The main reason was not the absence of the US, depriving the EU of its former ally. During the two weeks of the negotiations, Europe overestimated its own influence as one of the most advanced in climate action and conversely underestimated the power of Brics+ countries. This has made it more difficult to reach a compromise in delivering more ambitious outcomes. Although COP30 was regarded by the organizers as a real-world implementation COP, it lacked ambition in addressing the key challenges posed by the accelerating climate change.

EU's climate diplomacy

Ahead of COP30, all countries were expected to put forward a new or updated climate plan – known as a Nationally Determined Contribution (NDC) – showing how they will help keep global warming limited to well below 2°C, and pursue efforts to keep it to 1.5°C. Just before COP30 began, the EU confirmed its new NDC: a commitment to cut 66.25% to 72.5% of greenhouse gas (GHG) emissions by 2035 (compared to 1990 levels), grounded in its newly adopted 2040 target of 90% net GHG emissions reduction, marking a clear path to climate neutrality by 2050 (European Commission 2025 a, b c).

However, some EU countries were late in handling their climate plans, leaving little time for building up diplomatic leverage. Divisions inside the EU also prevented them from joining initiatives for greater climate ambitions. A clear example is the roadmap for transitioning away from fossil fuels. While many EU countries supported this, Italy and Poland could not agree at the time. Similarly, the EU was not amongst the 29 signatories that sent a letter to the COP30 presidency to complain that the final text draft

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did not contain references to roadmaps and other efforts. Most of the EU countries were supportive, but 10 EU countries including Greece, Hungary, Italy, Poland and Slovakia, did not.

Towards the end, talks nearly collapsed after a clash between the European-led alliance of more than 80 countries against a Saudi led opposition and its allies, including Russia and India. Only after the EU threatened to veto the final text of the deal did it get some concessions. To appease the EU delegation, the Brazilian presidency of COP30 tweaked the text with a reference to a deal on transitioning away from fossil fuels, with discussions about how to achieve this planned for the coming year. The opposition of oil-producing countries achieved a *proviso* that this transition was a voluntary commitment rather than a legally binding decision.

The EU's delegation's efforts to speak with one voice for more ambitious goals were offset by countries or groups of countries with vested interests (e.g. oil producing countries). For instance, the road map on deforestation supported by the EU and climate change activists was excluded from the final deal. So were key provisions on the exploitation of critical minerals, often accompanied with abuses of human rights in some emerging countries, blocked by China and Russia.

China & BRICs+

China also achieved a diplomatic victory for the final text to include a clause saying that *"measures taken to combat climate change, including unilateral measures, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade."*

This aims directly at the EU's Carbon Border Adjustment Mechanism, or CBAM, which is due to come into effect for countries exporting to the EU in January 2026. This mechanism was to promote climate change action by encouraging manufacturers seeking to enter the European market to produce with low carbon footprints to align with EU standards. For China, fossil fuels is a domestic matter. What mattered to Chinese diplomats in Belém was to sell tools for decarbonization, which thanks to their technological dominance benefits Chinese manufacturers. The Europeans hoped that the Chinese would support them for a bolder agreement. But China finds that selling green products from electric vehicles, wind turbines and solar panels is a far more effective way of decarbonization than any UN text, even if the final text was signed by some 200 countries.

COP30 was the first taster of a new world order. Brics+ countries have been more assertive and present at COP30. China turned the conference into a trade negotiation. Oil-rich countries weakened the road map of transitioning out of fossil fuels. The EU delegates complained about the more emboldened Saudi Arabia, which constantly took the floor in meetings to derail the talks. In the end the EU could rely on a handful of countries, but it has lost much influence on the outcomes of the negotiations.

Climate finance

COP 30 concluded with an agreement to triple adaptation finance up to $120 billion per year, as part of the broader package of $300 billion per year in climate finance. While this was considered as notable progress, this target remains far below the actual needs of developing countries, which are bearing the costs of the climate crisis that they have not caused (WEO 2025). The negotiations also faced challenges in defining clear financial mechanisms, in particular inadequate commitments, weak operationalization and reporting systems, leading to a lack of predictable support for climate finance.

Looking ahead

While COP30 may not have made as much progress, and the outcome was far below expectations for many countries (CHLCs 2025)– with no formal agreements on fossil fuels and deforestation, it has shown that multilateral action remains the way forward to deliver progress, even in the absence of the United States (UNFCC 2025a). Ahead of COP30, the latest update to the UNFCCC's 2025 Synthesis Report stated that 113 Parties submitted new or updated NDCs covering nearly 80% of global emissions. Their combined efforts would reduce emissions to about 12% below 2019 levels by 2035. By the end of the Conference, 121 countries had submitted NDCs to the UNFCCC, a significant step towards shaping the global climate framework (UNFCC 2025 b).

As the EU paved the way with long term commitments at home, it is urgent to strengthen climate action on a global scale but also deliver on implementation locally, especially on most vulnerable countries. In this regard, COP30 has been a key milestone. But the next COP, presided jointly by Turkey and Australia will be confronted with the same challenges. From this crisis there lies an opportunity, that of reflecting how the EU envisages to position itself and which alliances it wants to shape global climate action.

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Reinforcing the Green Shift: China at COP30: Aligning Domestic Low-Carbon Strategies with Global Climate Governance in Emerging Clean Energy Markets”

by Joël Ruet and Wang Xieshu[5]

How COP30 reinforced China’s ongoing renewable energy and industrial policy trajectory, serving as a platform to align domestic low-carbon strategies with global climate governance and strengthen its role in emerging clean energy markets.

SUMMARY - COP30 and China’s Renewable Energy Policy: Continuity, Reinforcement, and Emerging Dynamics

While COP30 functioned as a diplomatic reaffirmation and signalling event for China’s energy transition—highlighting renewable energy expansion, green innovation, and industry goals—direct evidence of new industrial policy measures directly caused by the summit remains limited. Instead, COP30 reinforced existing strategic priorities within China’s industrial ecosystem, solidifying renewable capacity targets, promoting green technology cooperation, and aligning industrial narratives with global climate governance, while new implementing policies are still emerging or pending formal articulation.

Held in November 2025 in Belém, Brazil, COP30 reflected a shift in global climate diplomacy toward the implementation of commitments rather than high-level target negotiation, recognizing the need to close the gap between pledges and concrete outcomes to keep warming below 1.5 °C. Although the summit fell short of decisive fossil fuel phase-out commitments, it amplified themes central to China’s evolving energy policy—renewable deployment, industrial decarbonization, and international cooperation on clean technology.

This essay examines how COP30 has shaped, reinforced, or revealed shifts in Chinese industrial policy toward renewables, situating these trends within broader economic planning and China’s role in global clean energy markets. The analysis shows that, while policy innovations directly attributable to COP30 are not yet fully crystallized, the summit served as an important platform for agenda reinforcement, international signalling, and strategic positioning of China’s renewable energy policy.

Overall, COP30 has reinforced rather than redefined China’s approach to renewable energy and industrial policy. By tracing developments before, during, and after the summit, the essay highlights that much of China’s low-carbon trajectory—driven by state-led investment, industrial planning, and emerging clean technologies—was already underway. At the same time, COP30 offered a venue for linking domestic priorities with international climate governance, signalling China’s commitment to green innovation, multilateral cooperation, and strategic industrial positioning. Discussion of post-summit

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trends, including energy storage, hydrogen, and value-chain strategies, underscores the continuity between domestic policy and global engagement, illustrating how China's energy transition is shaped both by long-term structural developments and the opportunities for international collaboration that the summit provides.

Introduction China's Renewable Energy Trajectory Before COP30

Long before China entered COP30 negotiations, its industrial and energy policies had already converged around rapid renewable expansion and large-scale clean energy deployment (Zhou et al., 2025). China has ranked first globally in installed wind power capacity for fifteen consecutive years, while solar, wind, and hydropower now account for a growing share of total energy capacity. By late 2025, total installed renewable power capacity exceeded 3.79 billion kW, with solar and wind expanding at double-digit annual rates, underscoring the scale of China's domestic energy transition6.

This fast expansion and industrial concentration did not emerge organically, but rather reflect a longer-term structural transformation driven by state-led industrial policy. China's renewable energy scale-up is rooted in coordinated five-year plans, strategic public investment, and sustained capacity building across the cleantech manufacturing ecosystem. Within this framework, industrial regulators have explicitly prioritised photovoltaics, wind turbines, batteries, and electric vehicles as core pillars of low-carbon development, while simultaneously promoting the decarbonisation of manufacturing more broadly. As a result, China's renewable transition is best understood not as a market-led adjustment, but as an outcome of deliberate institutional design and policy coordination.

For instance, the development of electric vehicles in China mobilizes regulatory frameworks and state intervention to shape clean technology markets, illustrating that China's renewable and electrification strategies are deeply rooted in institutional conditions that extend beyond simple market forces (Chen, Midler, & Ruet, 2018). In practice, dual markets—one formal and tightly regulated, the other informal and cost-driven—interact under the influence of Chinese policy, making industrial governance and regulation central to the country's broader transition toward renewable and low-carbon industries. This dynamic also well illustrates the structural continuities reinforced around COP30.

Moreover, these efforts extend beyond domestic deployment, including the global expansion of green tech firms and the development of future-oriented energy sectors such as hydrogen and energy storage. In short, China's renewable energy landscape had undergone profound transformation, rooted in a combination of state-led industrial policy, targeted investment, and large-scale deployment. According to the Climate Action Tracker, China achieved the installed wind and solar capacity target originally set for 2030—approximately 1,200 GW—six years ahead of schedule, reaching over 1,400 GW by 2024. By early

[6] https://english.scio.gov.cn/in-depth/2026-01/25/content_118298599.html

2025, renewable capacity growth had continued apace, with solar and wind installations surpassing thermal power capacity, reshaping China's electricity system and marking a milestone in the transition toward cleaner energy sources (Climate Action Tracker, 2025).

This remarkable shift stems from sustained political and economic support, as evidenced by record investments and strategic industrial planning. For example, China invested an estimated USD 625 billion in clean energy in 2024 alone, constituting about 37% of global renewable investment—a powerful indicator of the depth and structural nature of domestic clean energy growth. Solar and wind together accounted for a substantial share of total capacity, pushing renewables to more than half of China's installed power capacity by 2025 (Agora Energiewende, 2025).

China's leadership in renewable technologies extends well beyond domestic generation capacity and reflects a long-term strategy integrating climate objectives with broader economic modernisation. By 2025, Chinese firms controlled a dominant share of global clean energy manufacturing—producing over 90% of solar modules and around 80% of wind turbines, holding roughly 75% of clean energy patents, and shaping global cost structures and supply chains (Asia Times, 2025; Nani, 2025). This industrial strength has translated into rapid overseas expansion, with 114 foreign manufacturing facilities established across solar, wind, and battery sectors, including 35 new sites in 2024 alone, targeting markets in Europe, the Middle East, Asia-Pacific, and increasingly Africa and Southeast Asia (Wood Mackenzie, 2025). Together, these trends underscore how China's domestic industrial build-out has evolved into a globally embedded renewable energy strategy that both prefigured and informs its engagement at COP30.

COP30 as Platform for Reinforcement and Signalling

At COP30, Chinese representatives and associated coalitions emphasized green innovation and cooperative frameworks extending beyond traditional climate diplomacy into broader industrial policy imperatives. In Belém, the Belt and Road Initiative International Green Development Coalition (BRIGC) took part in a high-level side event on green transition and innovation, underscoring China's commitment to integrating renewable energy and clean technologies into international cooperation through knowledge sharing and capacity building. Chinese delegates highlighted progress in building the world's largest clean power system and a national carbon trading market, while reaffirming willingness to deepen cooperation on green innovation and demonstration projects. During the summit, BRIGC and the United Nations Office for Project Services (UNOPS) launched the Global Call for Green Development Best Practices, aimed at promoting replicable low-carbon solutions, particularly in developing countries.

Beyond these specific events, Chinese officials and delegations used COP30 diplomatic platforms to contextualize their long-standing renewable energy efforts within global climate governance frameworks. Although the formal COP30 political declaration did not mandate explicit fossil fuel exit strategies, it emphasized industrial decarbonization and renewable deployment as key elements of climate action—

goals that are fully consistent with China's domestic policy trajectory (Brookings, 2025). By linking domestic policy accomplishments to multilateral agendas, China effectively positioned its industrial and energy transition priorities within the global climate narrative.

The articulation of these positions at COP30 signals a clear intent to leverage international climate venues to advance industrial cooperation agendas. By aligning clean technology expansion with multilateral forums, China projected its industrial leadership and invited partnership, thereby reinforcing domestic priorities while embedding them within broader global transitions. This strategic use of international platforms highlights the dual purpose of China's COP30 engagement: to legitimize its domestic energy policies while simultaneously promoting collaborative opportunities for clean technology deployment abroad.

A key example of this reinforcement dynamic was the prominence of China-led events coordinated by the BRI International Green Development Coalition. These meetings emphasized renewable energy cooperation, carbon markets, and decarbonization pathways, reflecting Beijing's strategy to link industrial strengths with multilateral climate goals. Such engagements indicate that China views its renewable strategy not merely as a domestic industrial priority, but as part of a cooperative global climate architecture—one in which Chinese industrial capabilities and policy frameworks support wider international decarbonization efforts.

Another significant aspect of China's COP30 engagement was the spotlight on updated climate commitments, particularly its revised Nationally Determined Contribution (NDC) for 2035. In late 2025, Chinese leadership unveiled an enhanced climate plan extending absolute emissions targets to all greenhouse gases and expanding renewable deployment goals to achieve roughly 30% of energy consumption from non-fossil sources by 2035 (Hill & Beams, 2025). These updated targets—resulting from a multi-year policy evolution—were strategically showcased at COP30 as evidence of China's commitment to peaking emissions and deepening its energy transition. Nevertheless, analysts noted that these commitments still fall short of the reductions required to align with a strict 1.5 °C pathway, highlighting the continuing gap between ambition and necessary action (Hill & Beams, 2025).

Post-COP30 Industrial Momentum: Energizing Domestic Supply Chains and Capacity Goals

Although COP30 did not result in legally binding new domestic policies for China, the summit's outcomes coincided with continued structural progress in renewable energy deployment and signs of emissions plateauing. Research released around the time of the climate conference indicated that China's carbon dioxide emissions remained flat for over 18 months, largely due to the rapid growth of clean power generation. In the first three quarters of 2025 alone, China added 240 GW of solar and 61 GW of wind capacity—emphasizing the sheer scale of renewable deployment (Financial Times, 2025). These trends suggest that China's renewable transition is already influencing the emissions curve, largely independent of the specific pledges made at COP30.

Nevertheless, the intersection of COP30 outcomes with domestic industrial policy is evident in China's announcements of expanded climate targets and energy infrastructure plans leading into and following the summit. For instance, ahead of COP30, China pledged to submit updated Nationally Determined Contributions (NDCs) covering all greenhouse gas types by 2035. This commitment signalled an integrated approach to emissions, industrial structure, and energy systems, while also providing a framework for the policy discussions and diplomatic positioning at the conference itself.

Following COP30, state regulators further emphasized industrial modernization through green technology deployment. Plans to spur a low-carbon transition across manufacturing sectors—such as photovoltaics, electric vehicles, and lithium battery industries—demonstrate how industrial policy continues to target both domestic decarbonization and international market expansion. By scaling renewable industries and embedding clean technologies in global trade and value chains, these strategies reinforce the continuity between China's pre-COP30 achievements and its post-summit industrial ambitions.

At the same time, post-COP30 developments reveal more nuanced dynamics within China's industrial policy. For example, authorities have moved to scale back certain renewable energy subsidies after rapid growth in installations, transitioning toward more market-based pricing mechanisms. This adjustment reflects a maturing renewable industry capable of competitive deployment without heavy state support, but also raises questions about future investment incentives and the speed of capacity expansion. Such policy refinements highlight that while COP30 reinforced renewable priorities on the international stage, China's domestic strategies remain adaptive, evolving in response to economic, technological, and market conditions.

Emerging Energy Technologies: Green Hydrogen, Storage, and Future-Oriented Sectors

Building on the momentum of COP30 and China's ongoing renewable deployment, attention has increasingly shifted toward emerging energy technologies that extend beyond traditional solar and wind capacities. Green hydrogen, large-scale energy storage, and other future-oriented energy sectors are now central to both China's domestic decarbonization strategy and its international industrial ambitions. These technologies are framed not only as tools for reducing emissions but also as avenues for industrial innovation, economic modernization, and strategic positioning in global energy markets (Yu, 2025; Liu & Zhu, 2024).

China's emphasis on green hydrogen illustrates this dual focus. By leveraging existing industrial capabilities in electrolysis, chemical processing, and renewable power generation, China is investing in hydrogen production, storage, and distribution infrastructure capable of supporting both domestic energy transition and export-oriented industrial collaboration. Policy measures—including subsidies, pilot demonstration projects, and targeted research funding—signal an intention to integrate hydrogen into broader energy and industrial planning, ensuring alignment with long-term climate targets and technological competitiveness (Yu, 2025).

Energy storage technologies are similarly prioritized, reflecting the growing need to balance variable renewable generation with electricity demand. Advanced battery systems, pumped hydro storage, and emerging grid-scale storage solutions are being deployed to enhance grid flexibility, reliability, and efficiency, thereby reinforcing the structural impact of solar and wind expansion on the electricity system. By embedding storage technologies into industrial and urban energy systems, China not only stabilizes its domestic renewable network but also positions itself as a leader in exportable clean energy solutions and global value chains (Liu & Zhu, 2024).

Such industry-level strategies demonstrate that China's clean energy transformation is not only driven by policy incentives but also by corporate strategies that leverage state support and market opportunities to build comprehensive, competitive value chains across emerging clean-tech industries, from EV batteries to hydrogen and storage systems (Wang, Zhao, & Ruet, 2022).

Collectively, these emerging sectors demonstrate a strategic continuation of China's industrial policy approach: leveraging state-led investment, regulatory guidance, and technological innovation to create competitive advantage while advancing decarbonization. The COP30 platform reinforced these trajectories by highlighting China's international collaboration on clean technology demonstration projects and renewable energy cooperation, signalling that future-oriented energy industries are now central to both domestic policy and global engagement. In this way, China's efforts in green hydrogen, energy storage, and other advanced clean technologies illustrate a seamless connection between structural industrial planning, international climate diplomacy, and long-term low-carbon development.

Limitations and Ongoing Challenges

Despite significant renewable growth and enhanced international engagement, China's energy transition continues to face structural challenges. One persistent issue is the ongoing construction of new coal power plants, even as renewable capacity expands. Commentary in the context of COP30 noted that China added substantial new coal capacity in 2024, highlighting the tension between legacy energy infrastructure and the shift to cleaner sources (Council on Foreign Relations, 2025). This duality indicates that China's energy policy remains in transition, with renewables advancing rapidly but not yet fully displacing fossil fuels.

Another limitation is that, while China's renewed 2035 NDC targets signal progress, they still allow emissions to rise or plateau before absolute declines, prompting caution among analysts regarding alignment with stringent climate goals (Hill & Beams, 2025). This underscores that industrial policy must address not only the deployment of clean technologies but also mechanisms to accelerate emissions reductions across sectors beyond the power grid.

Long-term implementation challenges—including grid flexibility, storage deployment, and carbon pricing—remain critical to ensuring renewables can effectively substitute for fossil fuels at scale. Chinese energy reports emphasize that market reforms and systemic innovation are necessary complements to capacity expansion, highlighting that technological and institutional evolution will be essential for sustaining long-term decarbonization (Agora Energiewende, 2025).

Conclusion

In conclusion, COP30 served primarily as a diplomatic reinforcement of China's renewable energy trajectory and industrial policy orientation, rather than as a catalyst for radical policy change. By highlighting renewable deployment, green technology cooperation, and strategic climate commitments, the summit contributed to aligning China's industrial narrative with broader climate governance objectives and underscored the global significance of China's energy transition. Nevertheless, the structural transformations underpinning China's renewable expansion—including state-led investment, industrial scale, and capacity growth—precede COP30 and continue to shape policy outcomes independently of the summit.

Moreover, China's engagement at COP30 reflected a broader narrative of shared global responsibility rather than unilateral leadership. Commentary during the conference emphasized that, as both a major emitter and a developing country, China seeks collaborative frameworks while expecting developed nations to acknowledge and act upon their historical responsibilities in climate action. This framing is consistent with China's diplomatic posture during COP30, wherein it positioned itself as a leading voice for industrializing countries within the climate regime, even as domestic policies continue to balance energy security, economic growth, and emissions reductions.

China's renewable policy environment remains dynamic, characterized by ongoing adjustments to market mechanisms, energy system reforms, and international cooperation frameworks. COP30 functioned to legitimize and amplify these existing domestic strategies while simultaneously highlighting persistent challenges, such as continued coal dependence and the timing of emissions peaks. For scholars and policymakers, the summit's significance lies in how it both reflects and reinforces underlying industrial and energy policy trends, illustrating that China's contribution to the global energy transition is grounded in continuity, structural industrial transformation, and evolving engagement within the international climate governance framework.

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