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China, EU and US cooperation on climate and energy

An ever-changing relationship

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Summary

- In what is a vital year for cooperative climate diplomacy, 2021 could represent a decisive shift in efforts to tackle the climate crisis. Countries are due to submit revised pledges to the UN Framework Convention on Climate Change (UNFCCC) and will negotiate at the 26th session of the Conference of the Parties (COP26), in Glasgow, in an attempt to put global mitigation plans back on track to meet the objectives of the Paris Agreement.
- There is increased optimism that this cooperative process will lead to national targets that match the ambition of the Paris Agreement. China has announced that it intends to bring forward – to before 2030 – the date by which its greenhouse gas (GHG) emissions will peak and to achieve carbon neutrality by 2060. The EU and UK have announced plans to increase the scale of their nationally determined contributions. At the same time, US President Joe Biden has outlined an ambitious climate agenda.
- Biden's election offers a clear opportunity to put the US back at the heart of international climate institutions and processes. It may also lead to the US rebuilding multilateral relations and showing the way for progressive leadership that, while not directly about climate, reinforces international rules-based governance. This contrasts with the every-country-for-itself approach encouraged by the administration of President Donald Trump.
- With the COVID-19 pandemic creating uncertainty in many developed countries and vaccine programmes still in their initial phases, the prioritization of climate change action as well as the level of international climate cooperation and competition will be determined by several factors: the impacts of COVID-19 on energy supply, demand and emissions; the nature and extent of measures in economic recovery packages; and the acceleration or slowing of the energy transition.
- International climate action has shifted towards the introduction of competitive trade mechanisms that protect domestic businesses as they decarbonize and to schemes that incentivize trading partners to align their decarbonization efforts via import tariffs. This has emerged in the context of the increasingly strained relationships between China, the EU and the US, and as the global cooperative approach to tackling climate change has weakened.
- The three economic superpowers are responsible for around 40 per cent of global GHG emissions and consume nearly 50 per cent of the world's energy. Therefore, decisions made in Beijing, Washington and Brussels have significant implications for the world's climate and energy security.

— Policies to reduce GHG emissions tend to be long-term in nature, and they require consistency and stability. The EU has achieved this, showing consistent support for climate initiatives despite changes in leadership. This has resulted in more ambitious mitigation targets and global leadership in the deployment of low-carbon technologies. Likewise, through its five-year planning cycle, China has consistently addressed climate change with ever-greater priority. In the US, climate change remains a partisan issue, with Democratic administrations introducing climate policies, only for these to be slowed down or reversed by Republicans. This stop-start approach to climate mitigation and adaptation reduces the impact of domestic policies and diminishes the effectiveness of the US in the international process.

01 Introduction

Fossil fuel trade has underpinned geopolitics for decades. While international climate agreements have had an impact on the geopolitics and trade of energy, the largest shifts have emerged from greater demand in China and shale oil in the US.

Climate change and environmental protection have moved from the periphery of international relations and geopolitics to centre stage, as they are increasingly recognized as threatening economic stability and societal well-being. There is a broad understanding that this global threat requires global action. However, over the last few years, the international cooperative approach to tackling climate change has become frayed, especially between the three major economic superpowers: China, the EU and the US. Consequently, there has been a shift among government policy towards competitive trade mechanisms that can further climate action in this new context.

This chapter introduces the establishment of cooperative international efforts to combat climate change and the role of the energy trade in shaping geopolitics. Chapter 2 explores the impact of the COVID-19 pandemic on greenhouse gas (GHG) emissions as well as energy supply and demand. Chapter 3 provides an overview of the climate policies of China, the EU and the US. Finally, Chapter 4 describes the shift to a competitive mechanism – taxing imported carbon – to combat climate change.

It is over 25 years since the inception of the United Nations Framework Convention on Climate Change (UNFCCC), which was established as a framework for international cooperation to combat climate change by limiting average global temperature increases. Today, 197 national governments are parties to the convention. There have since been additional international agreements to strengthen global commitment to the work of the UNFCCC, such as the 1997 Kyoto Protocol, the 2009 Copenhagen Accord, and the 2015 Paris Agreement. These and other outcomes from the various Conferences of the Parties (COP) of the UNFCCC have tended to increase the scope of the emissions covered by international agreements – encompassing more sectors and countries. The Kyoto Protocol never covered more than 50 per cent of global emissions (and fell to less than 20 per cent as parties left),

while the Copenhagen Accord covered 80 per cent and the Paris Agreement 96 per cent.[1] The climate mitigation ambition of the agreements has also increased. The Kyoto Protocol set binding emission reduction targets for industrialized countries, with an average of 5 per cent between 2008 and 2012 compared to 1990 levels. The signatories of the Paris Agreement committed to holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursuing efforts to limit the temperature increase to 1.5°C. Under the agreement, a bottom-up approach was adopted with each party encouraged to put forward progressively more ambitious emissions targets through its nationally determined contribution (NDC) every five years. Countries are expected to review and revise their NDCs before the 26th COP (COP26) in Glasgow in November.

Greater global climate ambition is more likely if there are clear and early pledges of increased ambition from influential countries.

Greater global climate ambition is more likely if there are clear and early pledges of increased ambition from influential countries, which can encourage and cajole others. Similar early peer pressure prior to COP21 in 2015 played a key role in the successful conclusion of the Paris Agreement. The previous year, President Barack Obama and President Xi Jinping issued a US–China Joint Presidential Statement on Climate Change. This stated:

> The United States and China hope that by announcing these targets now, they can inject momentum into the global climate negotiations and inspire other countries to join in coming forward with ambitious actions as soon as possible, preferably by the first quarter of 2015.[2]

The EU, largely through France's presidency of COP21, played a vital role in its success, including through extensive preparatory work with different countries.

Despite the UNFCCC and other international agreements, however, global GHG emissions have increased by over 41 per cent between 1990 and 2016. As shown in Figure 1, China is now the largest emitter (25.7 per cent of the total), followed by the US (12.8 per cent) and the EU (7.8 per cent).[3] Therefore, these three actors, as the world's largest emitters as well as being geopolitically critical, have the greatest responsibility to reduce their emissions. Without their willingness to do so, the chance of meeting the Paris Agreement target will evaporate.

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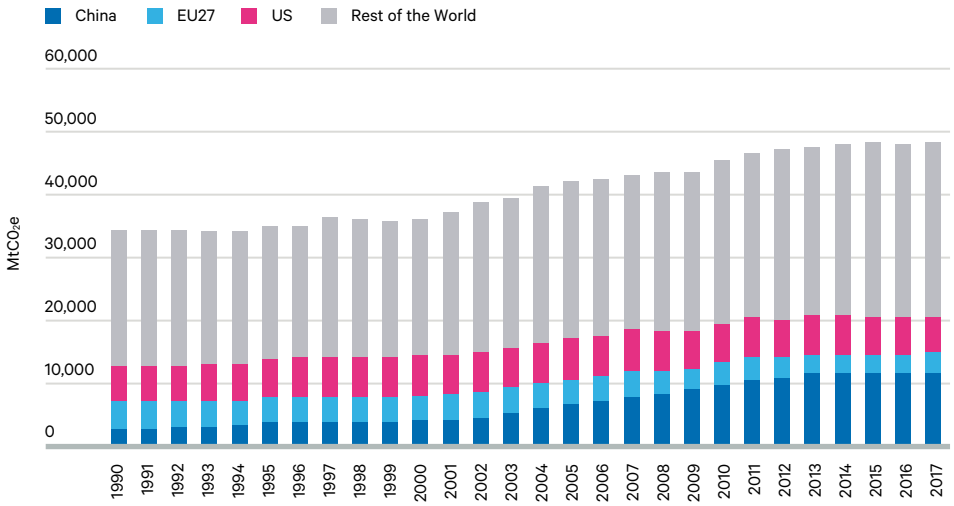
1 Howes, S. (2016), 'From Kyoto to Paris: Which stop mattered?', presentation, Development Policy Centre, http://devpolicy.org/2016-Australasian-aid-conference/Presentations/Day-2/Perspectives-on-Paris_Stephen-Howes.pdf.
2 The White House (2014), 'U.S.-China Joint Announcement on Climate Change', https://obamawhitehouse.archives.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change.
3 World Resources Institute (2020), '4 Charts Explain Greenhouse Gas Emissions by Countries and Sectors', https://www.wri.org/blog/2020/02/greenhouse-gas-emissions-by-country-sector.

Figure 1. Global GHG emissions



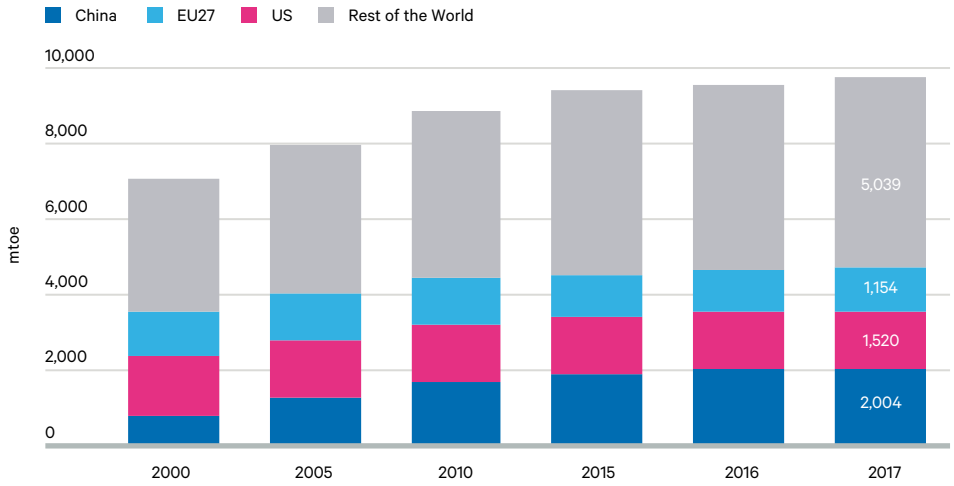
Source: Climate Watch (managed by World Resources Institute) online at: https://www.climatewatchdata.org (accessed 22 Feb. 2021).
Note: The EU27 figures do not include UK emissions to reflect the country's departure from the EU in 2020.

Energy use is essential for almost all human activity and nearly two-thirds of GHG emissions come from the combustion of fossil fuels. Global energy consumption continues to grow, driven particularly by Asia. China's consumption has approximately trebled since 2000, making the country the world's largest energy consumer with 20 per cent of the total.[4] Meanwhile, consumption in the EU and the US has been mostly stable, despite increases in economic output, due to greater energy efficiency and shifting manufacturing patterns.

Recognition of the energy sector as a central cause of climate change has resulted in a move away from coal – a higher-carbon-intensity fuel – to natural gas, and in greater interest in the use of low-carbon technologies such as nuclear power, carbon capture, utilization and storage (CCUS), and renewable energy. However, there is currently little appetite globally, except in China, to increase the use of nuclear power and CCUS, despite considerable high-level political support. Therefore, to date, these technologies have failed to materialize in the power sector on a commercial scale. Conversely, solar and wind power have been deployed at an unprecedented scale and countries are phasing out economic support schemes for these technologies as they become competitive with fossil fuels. Key to the development of solar and wind have been the setting of policies and targets initially in Europe and then in the US, which have then been supported by the manufacturing power of China.

4 Publication office of EU (2020), *EU energy in figures*, https://op.europa.eu/en/publication-detail/-/publication/87b16988-f740-11ea-991b-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=37085&WT.ria_f=3608&WT.ria_ev=search.

Figure 2. Regional energy consumption



Source: Publication office of EU (2020), *EU energy in figures*.

Fossil fuels have been the cornerstone of international trade for decades, which has led producer countries to become significant global economies. The EU's energy import dependency has not changed significantly over the last decade, remaining at around 58 per cent between 2008 and 2018,[5] while China's rose from near zero in 2006 to 45 per cent by 2018.[6] Meanwhile, the US has strengthened its energy independence as a result of the exploitation of shale oil and gas. In 2019, it became a net energy exporter for the first time since 1952.[7]

There continues to be a shift in the global balance of energy consumption and production. Energy demand in OECD countries continues to fall. Coupled with increased production from tight oil in the US, this has led to the centre of gravity of the international oil trade shifting towards Asia. Net-importing countries, including China, still view high dependency on oil from the Gulf states as an energy-security vulnerability.[8]

5 Eurostat (2020), 'Energy production and imports', https://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_production_and_imports#The_EU_and_its_Member_States_are_all_net_importers_of_energy.
6 O'Sullivan, S. (2019), *China: Growing import volumes of LNG highlight China's rising energy import dependency*, Oxford Institute for Energy Studies, https://www.oxfordenergy.org/wpcms/wp-content/uploads/2019/06/China-growing-import-volumes-of-LNG-highlight-China%E2%80%99s-rising-energy-import-dependency.pdf.
7 EIA (2020), '*U.S. energy facts explained – imports and exports*', https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php.
8 Daoliong, Z. and Meidan, M. (2015), *China and the Middle East in a New Energy Landscape*, Research Paper, London: Royal Institute of International Affairs, https://www.chathamhouse.org/sites/default/files/publications/research/20151021ChinaMiddleEastEnergyDaojiongMeidan.pdf.

02
The impacts of COVID-19 on energy and climate

Initial declines in global emissions appear to be reversing. The biggest COVID-19 impact appears to be on accelerated peak oil demand forecasts and the write down of assets, with renewables far less impacted.

The impacts of COVID-19 are far reaching. Healthcare systems the world over have not had to deal with an emergency of this scale since the 1918 Spanish flu. The lives of nearly all 7.8 billion people on earth have dramatically and suddenly altered. Scientists have been warning of the probability of global pandemics increasing as a result of climate change for many years.[9] To date there is no definitive evidence that COVID-19 was caused by climate change and, due to the complexity of attributing such definitive causality, it is unlikely ever to emerge. However, what is clear is that energy supply and demand as well as emissions in China, Europe and the US have been swiftly impacted on a scale unseen in modern history.

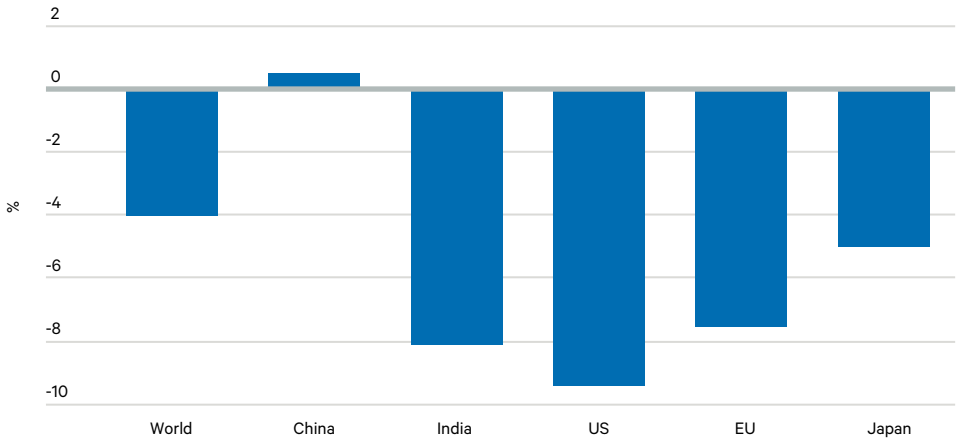
9 Curseu, D., Popa, M., Sirbu, D. and Stoian, I. (2009), 'Potential Impact of Climate Change on Pandemic Influenza Risk' in Dincer, I., Hepbasli, A., Midilli, A. and Karakoc, T. H. (eds) (2009), *Global Warming*, pp. 643–657, doi: 10.1007/978-1-4419-1017-2_45.

Climate: emissions drop, but climate change still dominates

GHG emissions fell by 1.4 per cent during the global financial crisis of 2008–09, only to rise by 5.9 per cent in 2010.[10] It is too soon to say whether the impact on emissions due to the COVID-19 pandemic will be different. However, this time around, the depth of the resulting recession is forecast to be greater.[11] This is likely to lead to a longer-lasting reduction of emissions. Perhaps more importantly, while the world waits for vaccines to be adequately rolled-out, lockdown restrictions could cause long-lasting shifts in demand as mobility patterns, home working and leisure activities evolve.

Daily global CO_2 emissions decreased by 17 per cent in early April 2020 compared with 2019 levels. During the first wave of the pandemic, the maximum daily decrease in emissions in individual countries averaged 26 per cent.[12] However, the September 2020 report by United in Science – which brought together experts from the World Meteorological Organization, the Intergovernmental Panel on Climate Change, the UN Environment Programme and other bodies – showed that the immediate steep declines at the beginning of the pandemic had been reversed. As people returned to work, emissions increased and by June they were just 5 per cent below 2019 levels. The report forecast that CO_2 emissions would likely fall by 4–7 per cent in 2020.[13] Although there is still considerable uncertainty with February 2021 analysis suggesting CO_2 emissions may only have fallen globally by around 4 per cent (Figure 3).

Figure 3. 2020 CO_2 emissions decrease, but China bounces back fastest



Source: Carbon Monitor, https://carbonmonitor.org (accessed 22 Feb. 2021).

10 Mountford, H. (2020), 'Responding to Coronavirus: Low-carbon Investments Can Help Economies Recover', World Resources Institute, 12 March 2020, https://www.wri.org/blog/2020/03/coronavirus-economy-low-carbon-investments.
11 World Bank (2020), 'COVID-19 to Plunge Global Economy into Worst Recession since World War II, World Bank', https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii.
12 Le Quéré, C. et al. (2020), 'Temporary reduction in daily global CO2 emissions during the COVID-19 forced confinement', *Nature Climate Change*, 10(7): pp. 647–653, doi: 10.1038/s41558-020-0797-x.
13 WMO (2020), 'United in Science 2020', https://public.wmo.int/en/resources/united_in_science.

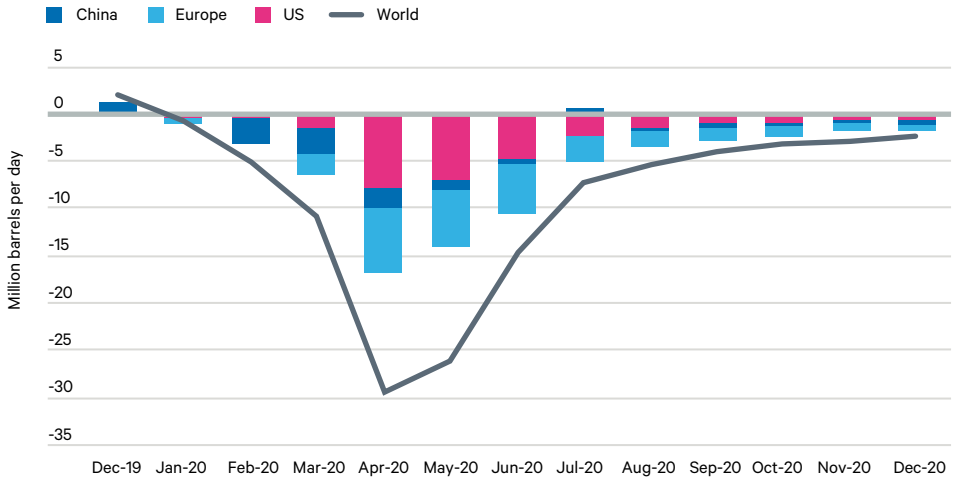
Given that fossil fuels account for over 70 per cent of emissions, at today's level of emissions the energy sector's carbon budget (around 600 gigatonnes of CO_2 until century's end) will likely be exhausted by 2040, 60 years too early. Furthermore, CO_2 remains in the atmosphere for hundreds of years, meaning reductions due to COVID-19 are unlikely to significantly slow climate change.

Energy: demand declines, renewables power on

The COVID-19 pandemic has had considerable short-term impacts on the energy sector. Some will accelerate existing trends, while others could fundamentally reshape the sector and stimulate new climate policies.

Lockdowns around the world brought transport, especially aviation, to a standstill, reducing oil demand by at least one-quarter in Q2 of 2020. Without the filling of strategic reserves and bunkers, which neared their capacity at the height of lockdowns, this decline would have been much steeper (and it still could be). Combined with the price war between Russia and Saudi Arabia, this sent oil prices to their lowest levels in over two decades – having started the year at $65/barrel, they fell below $20/barrel in April 2020. By the end of 2020, annual oil demand had collapsed by 8.8 per cent.[14] These declines greatly surpassed those during the 2008–09 global financial crisis, when oil demand fell by less than 2 per cent.[15] China experienced the earliest but also the shortest COVID-19 lockdown; as a result, its oil demand rebounded relatively quickly and by June it had reached 90 per cent of its pre-pandemic level.[16]

Figure 4. COVID-19 impact on global oil demand growth, by region



Source: IEA (2020), *Oil Market Report – April 2020*, https://www.iea.org/reports/oil-market-report-april-2020.

14 IEA (2021), *Oil Market Report – January 2021*, Flagship Report, https://www.iea.org/reports/oil-market-report-january-2021.
15 EIA (2020), *'U.S. energy facts explained – imports and exports'*, https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php.
16 Xu, M., Kelly, S. and Obayashi, Y. (2020), 'China drives global oil demand recovery out of coronavirus collapse', Reuters, 3 June 2020, https://uk.reuters.com/article/us-global-oil-demand-analysis-idUKKBN23A0XF.

A vital dynamic to consider when forecasting energy prices, which will influence investment decisions in future supply infrastructure, is whether demand destruction or demand deferral is occurring. Has energy demand fundamentally changed or will it bounce back with public transport, air travel and office working returning to pre-pandemic levels? In January 2021, accounting for the most recent resurgence of infections and societal restrictions, the IEA forecast that 2021 will see demand recover by 5.5 million barrels per day (b/d), compared to a decline of 8.8 million b/d in 2020.[17]

Such forecasts implicitly presume demand deferral rather than destruction. However, it is far from clear what the long-term changes will be. Rystad Energy predicted that peak oil demand is likely to be reached three years earlier – 2027/28 – than previously estimated because consumer habits have fundamentally changed as a result of the pandemic.[18] If true, this will lead to less investment in drilling and a price spike in the mid-2020s – just as electric vehicles become cost-competitive. BP and Shell have recently announced write-downs of oil assets worth $15–20 billion because they believe oil prices will remain low for some time. Bernard Looney, BP's chief executive, has said he was 'more convinced than ever' that the company must embrace the energy transition following the collapse of global oil markets.[19] BP targets 50 gigawatts (GW) of net renewable generating capacity by 2030, a 20-fold increase from 2019, and a 40 per cent reduction in oil and gas production.

Renewable-energy optimists contemplate a scenario in which peak demand for fossil fuels is reached earlier than expected, resulting in an accelerated transition.

The impact of low oil and gas prices on the energy transition remains unclear. The renewable-energy optimists contemplate a scenario in which peak demand for fossil fuels is reached earlier than expected, resulting in an accelerated transition as energy companies look to find greater returns by investing in low-carbon technologies.[20] However, others argue that lower prices of fossil fuels reduce the economic competitiveness of renewable energy, particularly solar PV and wind. Significant government stimulus and policy support for the fossil fuel sector in preference to renewables further undermines the decarbonization needed to meet the goal of limiting global temperature increase to 1.5°C.

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17 IEA (2021), *Oil Market Report – January 2021*.
18 Rystad Energy (2020), 'Covid-19 and energy transition will expedite peak oil demand to 2028 and cut level to 102 million bpd', press release, https://www.rystadenergy.com/newsevents/news/press-releases/covid-19-and-energy-transition-will-expedite-peak-oil-demand-to-2028-and-cut-level-to-102-million-bpd.
19 Ambrose, J. (2020), 'BP chief says Covid has deepened commitment to net-zero emissions', *The Guardian*, 17 May 2020, https://www.theguardian.com/business/2020/may/17/bp-chief-says-covid-has-deepened-commitment-to-net-zero-emissions.
20 Sheppard, D. (2020), 'Pandemic crisis offers glimpse into oil industry's future', *Financial Times*, https://www.ft.com/content/99fc40be-83aa-11ea-b872-8db45d5f6714.

According to one estimate, as of January 2021, more than $20 trillion had been allocated for COVID-19 economic stimulus packages,[21] although these estimates are fraught with uncertainty. In June 2020, Bloomberg estimated that only 0.2 per cent of the committed recovery packages of the 50 largest economies were targeted at low-carbon sectors.[22] However, President Biden's push for a climate focused recovery package is likely to significantly improve the global allocation of low-carbon investment. Another assessment states that 12 per cent of stimulus packages would need to be diverted to low-carbon technologies in order to meet the objectives of the Paris Agreement.[23] As COP26 approaches, increased ambition in setting NDCs could be supported and complemented by a green recovery approach, accelerating the energy transition as the market sees a clear signal from governments. The EU has made firm pledges in this area, dedicating at least 30 per cent of its recovery plan and multi-year budget to meeting climate pledges.

Box 1. The indicators of COVID-19 impacts on energy

Bloomberg New Energy Finance (BNEF) predicted that global passenger vehicle sales would fall considerably in 2020 and not recover until 2025, with sales of internal combustion engine vehicles falling by 23 per cent and those of electric vehicles by 18 per cent.[24]

BNEF and the IEA have also predicted global demand for natural gas to fall by 4 per cent in 2020, compared to growth of 2 per cent in 2019.[25] In the US, the price of natural gas fell to a 25-year low in June 2020 to $1.6 per million British thermal units (MMBtu), down from $14/MMBtu in 2005. Lower prices will have a significant impact on investment decisions. Dominion Energy and Duke Energy cancelled their Atlantic Coast Pipeline project in July 2020.[26] In Europe, gas demand fell by 7 per cent in the first five months of 2020, as a result of lockdowns, strong wind generation and mild temperatures.[27] All of this produced something of a perfect storm for gas markets, with various European market prices collapsing to record lows in Q2 of 2020. UK wholesale prices hit their lowest levels for 21 years while the Dutch market fell by around two-thirds, relative to the same time in 2019.[28]

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21 Cornish, L. (2021), 'Interactive: Who's funding the COVID-19 response and what are the priorities?', devex, https://www.devex.com/news/interactive-who-s-funding-the-covid-19-response-and-what-are-the-priorities-96833.
22 Bloomberg (2020), 'Green Stimulus Proposals for a Post-Pandemic, Clean Energy Future', 9 June 2020, https://www.bloomberg.com/features/2020-green-stimulus-clean-energy-future.
23 Hope, G. (2020), 'Building a climate-resilient post-COVID society', *The Forum*, Imperial College London, http://wwwf.imperial.ac.uk/blog/the-forum/2020/11/09/building-a-climate-resilient-post-covid-society.
24 BNEF (2020), *Electric Vehicle Outlook 2020*, https://bnef.turtl.co/story/evo-2020.
25 BNEF (2020), 'Global Gas Industry Set to Resume Growth Post-Pandemic, Adopt Low-Carbon Technologies for Long-Term Growth', 6 August 2020, https://about.bnef.com/blog/global-gas-industry-set-to-resume-growth-post-pandemic-adopt-low-carbon-technologies-for-long-term-growth; IEA (2020), 'Sustainable Recovery', https://webstore.iea.org/download/direct/3008.
26 Penn, I. (2020), 'Atlantic Coast Pipeline Canceled as Delays and Costs Mount', *New York Times*, 5 July 2020, https://www.nytimes.com/2020/07/05/business/atlantic-coast-pipeline-cancel-dominion-energy-berkshire-hathaway.html.
27 IEA (2020), *Gas 2020,* Fuel Report, https://www.iea.org/reports/gas-2020/2020-meltdown.
28 AleaSoft Energy Forecasting (2020), 'Fall in demand and prices of the European electricity markets due to the COVID 19 crisis', 23 March 2020, https://aleasoft.com/fall-demand-prices-european-electricity-markets-due-covid-19-crisis.

The fall in European gas prices in the first half of 2020 accelerated the switch from coal to gas in the power sector.[29] In the US, coal power generation plunged by 30 per cent in that period. In China, coal consumption fell by 8 per cent in Q1 of 2020 compared with 2019 as the economy contracted by 6.8 per cent and coal power generation fell by close to 9 per cent.[30]

Demand in the global power sector fell by 10 per cent and 5 per cent in June and July 2020, respectively.[31] Power demand in Europe also fell by 5–10 per cent during thefirst wave of the pandemic.[32] In the UK, it was down by as much as 20 per cent during the spring lockdown, but slowly returned to near normal levels by mid-summer.[33] Renewables continue to displace fossil fuel generation in Europe. In Q1 of 2020, renewables provided 47 per cent of UK electricity, with wind power accounting for 30 per cent.[34] Renewables delivered a record-level of just under 56 per cent of Germany's electricity in the first half of 2020.[35]

Global investments in low-carbon technologies rose by 9 per cent to $501 billion in 2020, compared to 2019. During this period, investment by China and the US declined by 12 per cent and 11 per cent, respectively. European countries more than countered these declines, increasing their low-carbon investment by 67 per cent. The EU's investment of $166.2 billion now surpasses both China and the US, $134.8 billion and $85.3 billion, respectively.[36]

29 IEA (2020), *Gas 2020*.
30 IEA (2020), *Global Energy Review 2020 – Coal,* https://www.iea.org/reports/global-energy-review-2020/coal.
31 IEA (2020), *Covid-19 impact on electricity, Statistics Report,* https://www.iea.org/reports/covid-19-impact-on-electricity.
32 AleaSoft Energy Forecasting (2020), 'Fall in demand and prices of the European electricity markets due to the COVID 19 crisis', 23 March 2020, https://aleasoft.com/fall-demand-prices-european-electricity-markets-due-covid-19-crisis.
33 National Grid Group (2020), '4 ways lockdown life affected UK electricity use', https://www.nationalgrid.com/uk/stories/grid-at-work-stories/4-ways-lockdown-life-affected-uk-electricity-use.
34 UK Government (2020), 'Energy Trends: June 2020', https://www.gov.uk/government/statistics/energy-trends-june-2020.
35 renews.biz (2020), 'German renewables deliver 'record high' in 1H 2020', https://renews.biz/61419/german-renewables-deliver-record-high-in-1h-2020.
36 BNEF (2021), *Energy Transition Investment Trends, Tracking global investment in the low-carbon energy transition*, https://assets.bbhub.io/professional/sites/24/Energy-Transition-Investment-Trends_Free-Summary_Jan2021.pdf.

03
The energy and climate triumvirate

US climate policy has been unnervingly inconsistent; the Biden administration will need to work hard to build trust. The EU is consistently ambitious, and China has powered the shift to low-cost renewables.

The decisions taken by China, the EU and the US have global impacts across all sectors of the economy and for military and environmental security. While their decisions are usually focused on domestic policies, they have a significant external impact in a globalized and connected world.

In recent years the relationships between the three economic superpowers have deteriorated. This has been particularly acute due to the political posturing around the COVID-19 pandemic. There has been a move towards national responses rather than more coordinated international efforts in dealing with this global crisis. There are many direct and important parallels between this experience and the necessary global response to climate change and energy security.

China

As the world's largest consumer of energy and the largest producer of GHG emissions, China has a direct and significant impact on climate change. Its energy sector is dominated by coal, which accounts for nearly two-thirds of its total energy consumption. Oil is the country's second-largest source of energy (20 per cent) and China is the world's second-largest oil consumer behind the US. The country was a net oil exporter until the early 1990s and became the world's largest net importer of petroleum in 2013.[37] It has a relatively high level of hydropower (accounting for

37 EIA (2020), *China country report*, *US Energy Information Agency,* https://www.eia.gov/international/overview/country/CHN (accessed 12 Oct. 2020).

8 per cent of consumption), followed by a small but growing natural gas supply, a relatively small but rapidly increasing share of solar and wind, and, to a lesser degree, of nuclear power. In the last decade, the production of power in China from solar PV has increased from 0.2 terawatt-hours (TWh) per year to 224 TWh per year and wind power annual generation has grown from 28 TWh to 408 TWh.[38]

China is also a significant force in the low-carbon technology market. Five of the top 10 global wind turbine manufacturers are Chinese (Goldwind, Envision, Ming Yang, Windey and Dongfang), while of the estimated 78 GW of solar PV cells exported around the world, over 80 per cent originated in China.[39] Furthermore, the world's largest manufacturer of LED lighting, Sanan Optoelectronics, is a Chinese company.

China's energy and climate policies are determined primarily by five-year plans and the National Energy Strategy (2016–2030), which are set initially on the national level and then translated into provincial- and city-level targets. The energy and climate goals of the recent five-year plans can be seen in Table 1. A key objective is to reduce the carbon and energy intensity of the economy as well as to diversify energy sources away from fossil fuels, mainly by promoting nuclear power and renewable energy.

Table 1. Chinese climate and energy targets five-year plans

	12th (2011–15)	13th (2016–20)	14th (2021–25)	2030 (NDC submission)
Energy intensity	16 per cent improvement	15 per cent improvement	13.5 per cent Improvement	
Non-fossil fuels	11.4 per cent of energy	15 per cent of energy	20 per cent of energy	20 per cent of energy
Carbon intensity	17 per cent improvement	18 per cent improvement	18 per cent improvement	60–65 per cent below 2005 levels
CO_2 emissions				Peaking of emissions around 2030

Source: Lewis, J. (2011), 'Energy and Climate Goals of China's 12th Five Year Plan', Pew Center on Global Climate Change, https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Energy_climate_goals_china_twelfth_five_year_plan_Pew.pdf; Bloomberg (2021), 'This Is How Top Polluter China Plans to Be Greener by 2025', 5 March 2021, https://www.bloomberg.com/news/articles/2021-03-05/this-is-how-top-polluter-china-plans-to-be-greener-by-2025.

38 BP (2020), *Statistical Review of World Energy*, https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2020-full-report.pdf.
39 Ren21 (2020), *Renewables 2020: Global Status Report*, https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf.

In contradiction to its push towards greater use of renewables, 40.8 GW of new coal plants were in the proposal process in China as of June 2020, the equivalent of the entire coal fleet of South Africa, while 11 GW of new plants were in operation.[40] Despite this, China has continually exceeded its targets for energy intensity and renewable energy. Furthermore, slower growth in power demand combined with the rapid deployment of renewables has led to a reduction in the utilization of its existing coal fleet.[41]

China's NDC submission to the UNFCCC for the first time indicated that it would aim to achieve peak carbon dioxide emissions around 2030 and make best efforts to peak early.[42] China has also said that it aims to increase forest cover by around 4.5 billion cubic metres, relative to 2005 levels. In September 2020, to the surprise of many, President Xi said China would increase its NDC, 'We aim to have CO_2 emissions peak before 2030 and achieve carbon neutrality by 2060. We call on all countries to pursue innovative, coordinated, green and open development for all'.[43] Then, at the UN Climate Ambition Summit in December, it was announced that China would lower its CO_2 emissions per unit of GDP by 65 per cent from 2005 levels and increase the share of non-fossil fuels in primary energy consumption to around 25 per cent by 2030.[44] However, as of early 2021, China has still to submit a revised NDC.

China's NDC submission to the UNFCCC for the first time indicated that it would aim to achieve peak carbon dioxide emissions around 2030 and make best efforts to peak early.

President Xi's announcement gives the impression of support for multilateralism, in contrast to the US approach under President Donald Trump. It was also made at a time when Joe Biden, who is more progressive than Trump on climate ambition, looked to be the favourite to win the US presidential election. One can wonder if President Xi's announcement was timed to ensure that China retains its global status as leading the world in a new phase of more ambitious climate action.

Negotiations are currently underway for China's 14th five-year plan for 2021–25, which will be approved early in 2021. While it is possible that its current intensity targets will remain in place there are calls for energy consumption caps to be replaced with a carbon emissions cap, more in line with the NDC.[45]

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40 Shearer, C. and Myllyvirta, L. (2020), 'A New Coal Boom in China', Global Energy Monitor and Centre for Research on Energy and Clean Air, https://globalenergymonitor.org/wp-content/uploads/2021/01/China-coal-plant-brief-June-2020Eng.pdf.
41 Baxter, T. and Zhe, Y. (2019), 'The 14th Five Year Plan: what ideas are on the table?', *China Dialogue*, 7 August 2019, https://chinadialogue.net/en/climate/11434-the-14th-five-year-plan-what-ideas-are-on-the-table.
42 People's Republic of China (2015), *China's Intended Nationally Determined Contribution*, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/China%20First/China%27s%20First%20NDC%20Submission.pdf.
43 United Nations (2020), '"Enhance solidarity" to fight COVID-19, Chinese President urges, also pledges carbon neutrality by 2060', UN News, https://news.un.org/en/story/2020/09/1073052.
44 Xinhuanet (2020), 'Full Text: Remarks by Chinese President Xi Jinping at Climate Ambition Summit', http://www.xinhuanet.com/english/2020-12/12/c_139584803.htm.
45 Baxter and Zhe (2019), 'The 14th Five Year Plan: what ideas are on the table?'.

The European Union

The EU has developed a framework to combine climate and energy objectives, and it has aligned these with the reporting framework of the UNFCCC. Its first draft climate and energy package was adopted in 2009, with 2020 targets designed to comply with the Copenhagen Accord. In 2014, the 2030 framework was adopted before COP21. The cornerstones of both packages were energy efficiency targets, the use of renewable energy and cuts in GHG emissions (see Table 2).

Table 2. EU climate and energy targets 2020 and 2030

	Actual (2017)	2020 (target)	2030 (target)
Energy efficiency	16.7 per cent	20 per cent[a]	32.5 per cent
Renewable energy (per cent of energy consumption)	17.5 per cent	20 per cent	32 per cent
Emissions reductions (1990 baseline)	21.7 per cent	20 per cent	at least 55 per cent

Source: European Commission (2020), 'Statistics Explained – Energy', https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy.
[a] The envisaged 20 per cent saving amounts to an absolute reduction of 370 million tonnes of oil equivalent (mtoe), resulting in a target primary energy consumption of no more than 1,483 mtoe for 2020. Compared with the actual primary energy consumption in 2005, this is equivalent to a reduction of 13.4 per cent. The EU had already reached its 2020 target for final energy consumption in 2014, but the increased consumption in subsequent years means an additional 3.3 per cent reduction was required between 2017 and 2020. In absolute terms this means that by 2020 EU energy consumption should not exceed 1,483 mtoe of primary energy or 1,086 mtoe of final energy.

The new European Commission, elected in 2019, has put climate change front and centre of its objectives. During her first State of the Union speech, President Ursula von der Leyen proposed to increase the EU climate-mitigation target to reduce emissions by 'at least 55 per cent' compared to 1990 by 2030.

However, given the relatively ambitious nature of the EU's approach, there is no unanimity among member states and the EU institutions as to the importance of climate change, and therefore on the details of the target. In October 2020, the European Parliament voted for stronger action, with a target of 60 per cent by 2030.[46] In the run up to EU Council meetings that month, member states let their position be known. Germany supported a target of at least 55 per cent[47] – which was more ambitious than that proposed by the European Commission with support from the likes of Denmark, Ireland and Spain. Some of the members from Central Europe pushed back. The target was adopted by the European Council in December 2020, but loopholes might well be included, such as carbon offsetting, which continues to be poorly regulated.

46 Climate Home News (2020), 'EU Parliament votes in favour of cutting emissions 60% by 2030', https://www.climatechangenews.com/2020/10/07/eu-parliament-votes-favour-cutting-emissions-60-2030.
47 Appunn, K. and Wettengel, J. (2020), 'Merkel wants to rally EU member states behind 55% climate target', *Clean Energy Wire,* https://www.cleanenergywire.org/news/merkel-wants-rally-eu-member-states-behind-55-climate-target.

In addition to its domestic action and its engagement within the UNFCCC, the EU undertakes bilateral cooperation programmes. These have included the 2005 EU–China Partnership on Climate, in which cooperation goals for 2020 included to 'develop and demonstrate, in China and the EU, advanced "zero emissions" coal technology' and to 'significantly reduce the cost of key energy technologies and promote their deployment and dissemination' (namely energy efficiency, renewable energy, clean coal, methane recovery, carbon capture, hydrogen, and power generation and transmission).[48] However, the development of zero emissions coal technology has not moved forward, either in the EU or China.

Significant cost improvements have been achieved in energy efficiency and renewable energy. How much this is due to EU–Chinese cooperation is impossible to determine. However, it is clear that setting ambitious targets creates market signals and increases the investment certainty for manufacturers, particularly in China.

At the 2018 summit, the EU and China reaffirmed the importance of combatting climate change and their commitment to cooperation on the implementation of the Paris Agreement. In 2020, a postponed autumn summit was expected to prioritize climate change and build momentum towards COP26. A read-out from the 'virtual summit', held instead in September, stated that 'the EU encouraged China to strengthen its climate commitments in terms of peaking carbon dioxide emissions and setting the goal of climate neutrality domestically'.[49]

The partisan nature of the climate change debate in America impacts the EU's ability to cooperate with the US to progress climate ambition. An EU official once said the polarized nature of the climate debate in the US provided European countries with 'cycles of hope and despair'.[50] Relations with the administration of President Obama were more productive from the European perspective. A 2014 White House factsheet stated, 'Recognizing the need for a common approach to these global challenges, the United States and the European Union continue to build our cooperation on issues from energy and climate change'.[51] However, it is clear that, while the US is important regardless of changes in administrations, the EU has continued to invest more in developing climate cooperation and joint programmes with China.

Last July, the European Council agreed the EU's COVID-19 recovery plan and its 2021–27 Multiannual Financial Framework. These promote the mainstreaming of climate action so that 'all EU expenditure should be consistent with Paris Agreement objectives' and that all its programmes should 'comply with the objective of EU climate neutrality by 2050 and contribute to achieving the Union's new 2030 climate targets'. Furthermore, the European Council called for 'at least 30 per cent of the total amount of Union budget and NGEU (a specific recovery

48 European Commission (2005), 'EU and China Partnership on Climate Change', https://ec.europa.eu/clima/sites/clima/files/international/cooperation/china/docs/joint_declaration_ch_eu_en.pdf.
49 European Commission (2020), 'EU-China Leaders' Meeting: Upholding EU values and interests at the highest level', press release, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1648.
50 Najslova, L. (2014), *The EU and the US in the Politics of Global Climate Change Governance: Avoiding the Crucial Questions*, Working Paper, Transworld, http://www.iai.it/sites/default/files/tw_wp_44.pdf.
51 The White House (2014a), 'FACT SHEET: U.S.-EU Cooperation', press release, https://obamawhitehouse.archives.gov/the-press-office/2014/03/26/fact-sheet-us-eu-cooperation.

effort under Next Generation EU) expenditures supporting climate objectives'. In order to enforce this, the European Commission is to report annually on climate expenditure.[52]

Having left the EU, the UK now has an independent climate and energy policy, although these areas are included in the EU–UK Trade and Cooperation Agreement. Importantly, the UK must submit its own NDC to the UNFCCC and has left the EU's Emissions Trading System. In December 2020, the UK government announced its 2030 emissions target of a 68 per cent reduction relative to 1990 levels, which is seen by many as an ambitious target. However, at least in the short term, the UK and EU will likely retain close cooperation on climate issues. For instance, COP26 will be jointly hosted by Italy and the UK, which will also hold the G20 and G7 presidencies, respectively, this year. This should enable increased emphasis and cooperation on key climate-mitigation policies, as well as political coordination in the build-up to COP26.

The United States

By some distance the US has contributed more to historical global GHG emissions than any other country, having emitted 457 billion tonnes of CO_2 or 29 per cent of the global total (followed by the EU at 22 per cent and China at 13 per cent).[53] This is a result of its geographical size and population density (which has caused high passenger-vehicle emissions), wealth and consumer spending, large fossil-fuel resources, as well as the structure of its economy. As mentioned above, the last decade has seen a significant shift in the exploitation of shale oil and gas in the US. The 'shale revolution' has seen annual production of oil increase from 333 mtoe to 747 mtoe between 2010 and 2019, while the production of gas grew from 575 billion cubic metres (bcm) to 920 bcm over the same period. This has had a profound impact not only on declining energy imports, but also on the domestic production and consumption of other energy sources.

Despite pledges of support for the industry from President Trump, the use of coal has continued to decline. In 2014, coal produced 38.6 per cent of the country's electricity, but this had fallen to 23.4 per cent by 2019, and the US Energy Information Agency predicted that the figure would drop to 19 per cent in 2020 and be surpassed by renewable energy.[54] The use of renewable energy (particularly wind) has increased and it is the fastest-growing energy source in the US, doubling between 2000 and 2018.[55] Renewables made up more than 17 per cent of US electricity generation in 2018, with the bulk coming from hydropower (7 per cent) and wind power (6.6 per cent).

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52 European Council (2020), 'Special meeting of the European Council (17, 18, 19, 20 and 21 July 2020)', https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf.
53 Ritchie, H. (2019), 'Who has contributed most to global CO2 emissions?', Our World in Data, https://ourworldindata.org/contributed-most-global-co2.
54 Murray, J. (2020), 'Has Trump lived up to his promise to revive the US coal industry?', NS Energy, 5 October 2020, https://www.nsenergybusiness.com/features/trump-us-coal-industry.
55 Centre for Climate and Energy Solutions (C2es) (2020), 'Renewable Energy', https://www.c2es.org/content/renewable-energy/#:~:text=Renewableper%20cent20energyper%20cent20isper%20cent20theper%20cent20fastest,windper%20cent20powerper%20cent20(6.6per%20cent20percent).

Climate change and environmental protection are more partisan political issues in the US than in the EU. Historically, Republican leaders have been less ambitious than Democratic ones in this regard. During the presidency of Barack Obama, the US took an active and, to some degree leading, role in the Copenhagen and Paris COPs, which helped to raise global ambition. Prior to the Paris COP, the US proposed to reduce its emissions by 26–28 per cent below 2005 levels by 2030.[56] To meet domestic targets, higher federally mandated emission reductions were enacted or proposed. For example, the Clean Power Plan – which was repealed by the Trump administration – could have led to a 32 per cent reduction in power-sector emissions by 2030. The Trump administration also rolled back or weakened legislation relating to emission standards for cars and trucks as well as to energy efficiency standards for light bulbs.[57] However, states and cities in the US have a high degree of autonomy in their energy and climate policies, and the Trump administration's reticence to take ambitious action on environmental issues often resulted in strong action at the subnational level.

The Biden administration can start rebuilding multilateral relations and showing the way for progressive leadership that, while not directly about climate, reinforces international rules-based governance.

The election of President Biden will lead to significant changes in US climate change policy domestically and internationally. His campaign platform included 'setting a net zero 2050 target' and demanding that Congress enacts legislation in his first year in office to establish 'an enforcement mechanism to achieve the 2050 goal, including a target no later than the end of his first term in 2025'.[58]

The Biden administration could offer a clear opportunity for the US to return to the heart of international climate institutions and processes. It can also start rebuilding multilateral relations and showing the way for progressive leadership that, while not directly about climate, reinforces international rules-based governance. As well as agreeing a 2050 net zero target, the US will have to submit an NDC for 2030, as it has now re-joined the Paris Agreement. This is likely to be in the range of a 45–50 per cent reduction in emissions below 2005 levels. For this to be influential in relation to COP26, the US NDC is likely to be published before the summer of 2021. The Democrats having narrowly taken control of the Senate as well as the House in recent elections leaves the administration marginally more able to secure congressional approval for implementing the more ambitious

56 US Government (2015), 'United States's Nationally Determined Contribution', https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/U.S.A.%20First%20NDC%20Submission.pdf.
57 Clevenger, T. and Herbert, M. (2020), '7 Ways the Trump Administration Is Harming the Climate', World Resources Institute, https://www.wri.org/blog/2020/04/7-ways-trump-administration-harming-climate.
58 Biden-Harris (2020), 'Plan for Climate Change and Environmental Justice', Joe Biden for President: Official Campaign Website, https://joebiden.com/climate-plan.

aspects of Biden's campaign pledges. Like Obama and Trump before, Biden could bypass Congress by using executive orders, but the ease with which these can be overturned by his successor means this is not a long-term solution.

The international community takes note of the potentially short-lived nature of US climate policy and therefore the Biden administration will have to go the extra mile to demonstrate that there has been an impactful change in policy. The administration not only has an opportunity to signal that it will re-enter the processes of the UNFCCC, it also has to set a far-reaching domestic carbon-reduction plan – exceeding that of the Obama administration – that further acts as a global catalyst for ambitious pledges by others. However, international climate leaders will be looking for domestic policies and measures that can bridge the political divide in the US and offer long-term stability in the government's position.

04
From cooperation to competition

The US and EU are considering taxing imported carbon – a competitive incentive to increase climate efforts – as the cooperative approach of the Paris Agreement has become frayed.

Like all global policy issues, approaches to climate change are influenced by domestic politics, including its relative prioritization, and the nature of international relationships. While recognizing this, it is clear that environmental protection and climate change remain important global issues for maintaining common interest and addressing shared concerns.

Cooperation between countries, which has built up during the lifetime of the UNFCCC, is at the heart of international climate negotiations and is central to their effectiveness, especially as binding agreements are used less frequently.[59] Almost all countries signed the Paris Agreement, far more than signed the Copenhagen Accord and Kyoto Protocol. The non-binding NDCs are the foundation of the Paris Agreement. They are submitted by governments and the UNFCCC secretariat assesses whether they are collectively ambitious enough to meet agreed global targets.

The cooperation-based foundations of the Paris Agreement have been under stress over the last few years due to the worsening relationships between China, the EU and the US. This, along with President Trump's decision in 2017 to withdraw the US from the Paris Agreement, weakened the international climate action consensus.

59 Hogl, M. (2018), *Enabling Factors for Cooperation in the Climate Negotiations*, German Development Institute, https://www.die-gdi.de/uploads/media/DP_14.2018.pdf.

In November 2017, the Trump administration began the withdrawal process,[60] which came to its conclusion the day after the 2020 presidential election – a decision Biden reversed on his first day in office. In light of the views of the Trump administration, Ursula von der Leyen, while a candidate for European Commission president, stated the EU should 'lead international negotiations to increase the level of ambition of other major emitters by 2021'. For his part, President Emmanuel Macron of France said that 'cooperation between China and the European Union in this respect [the Paris Agreement] is decisive'.[61]

In reaction to Trump declaring, in his first year in office, his intent to withdraw from the Paris Agreement, a Chinese Foreign Ministry spokesperson stated that China would continue to 'step up concrete efforts to deal with climate change, and faithfully implement the Paris Agreement [and] stay committed to upholding and promoting the global governance on climate change and take an active part in the multilateral process on climate change'.[62]

It is clear that China and the EU will continue to engage internationally on climate change issues whatever the political situation in the US.

As mentioned above, the European Parliament raised the EU's NDC ambition in November 2020, increasing the European Commission's proposed 2030 target of 55 per cent emissions reduction to 60 per cent, up from the current 40 per cent target. President Xi's announcement of China's 2060 carbon-neutrality target in September 2020 came one week after the European Commission announced its initial 55 per cent target. This sent a signal that China's climate ambitions are at least as high as the EU's.

A more competitive approach to climate geopolitics is emerging. It is clear that China and the EU will continue to engage internationally on climate change issues whatever the political situation in the US. What is more, to some degree, they see their role as more important when there is less engagement from the US.

However, as the international cooperative approach to climate action under the Paris Agreement has become frayed, the gap between countries' decarbonization efforts has widened, leading some to consider mechanisms to ensure that their trade competitiveness is not undermined. For instance, while the EU has attempted to foster closer climate cooperation with China and to maintain the international climate consensus, it has also begun the process of implementing a more geopolitically competitive climate mitigation mechanism. The EU believes that the introduction of a carbon border adjustment mechanism (CBAM),

60 The White House (2017), *Statement by President Trump on the Paris Climate Accord,* https://trumpwhitehouse.archives.gov/briefings-statements/statement-president-trump-paris-climate-accord.
61 Tamma, P. and Oroschakoff, K. (2019), 'US withdrawal from Paris climate agreement greeted with EU shrug', *POLITICO,* https://www.politico.eu/article/donald-trump-us-withdrawal-from-paris-climate-agreement-greeted-with-eu-shrug.
62 MFAPRC (2017), 'Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference on June 1, 2017', https://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/t1467100.shtml.

in essence a carbon tax on imported goods, will not only protect EU businesses but also trigger decarbonization elsewhere.[63] The carbon import tax applied to a given product can be thought of as reflecting the difference in embodied carbon between goods manufactured domestically to that being imported.

Energy-intensive industries have long argued that regulations and policies that increase the cost of emitting CO_2 put them at a disadvantage relative to their competitors that operate in jurisdictions where there is no equivalent price on carbon emissions. Climate-ambitious governments and campaigners are also concerned that, as decarbonization accelerates and become increasingly heterogeneous, carbon leakage will increase as production shifts to jurisdictions with weaker climate policies.

Taxing the embodied carbon of imported goods at the border is intended to serve multiple, equally important purposes: protecting domestic businesses that pay a greater penalty for their emissions, minimizing carbon leakage and the offshoring of emissions, and encouraging countries with weak climate policies to appropriately penalize emissions.

Taxing carbon at the border is also a significant shift towards a competitive geopolitical mechanism that attempts to stimulate climate action in trading partner countries. Successful implementation of carbon import taxes would result in the need for them waning over time – as decarbonization action equalizes across trading partners, the difference in embodied carbon between domestic and imported goods diminishes.[64]

Taxing carbon at the border is also a significant shift towards a competitive geopolitical mechanism that attempts to stimulate climate action in trading partner countries.

Placing additional tariffs on goods will be politically and technically difficult. Any CBAM will need to comply with World Trade Organization (WTO) rules in order to avoid disputes and trade sanctions, yet also be effective in encouraging trading partners to implement carbon pricing or decarbonization policies. The balancing act regarding WTO rules is to ensure there is no infringement of the non-discrimination obligations of the General Agreement on Tariffs and Trade (GATT), specifically regarding Article III (national treatment) and Article I (most-favoured nation treatment). This means that domestic products are not given unfair preference over imports – for instance, by receiving free carbon allowances under the EU's Emissions Trading System – and that all imports are taxed in a manner that does not give unfair advantage to one trading partner over another.

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63 Zachmann, G. and McWilliams, B. (2020), *A European carbon border tax: much pain, little gain*, Bruegel, https://www.bruegel.org/wp-content/uploads/2020/03/PC-05-2020-050320v2.pdf.
64 Mehling, M. A., van Asselt, H., Das, K., Droege, S. and Verkuikl, C. (2019), 'Designing Border Carbon Adjustments for Enhanced Climate Action', *American Journal of International Law*, 113(3): pp. 433–481, doi: 10.1017/ajil.2019.22.

Aware of this difficult balancing act, the European Commission is proposing to test the CBAM on a sector-by-sector basis.[65] It argues the measure would comply with WTO rules as, although these forbid discrimination between imports and domestic goods, the CBAM rules and associated domestic decarbonization policies can be designed to reduce infringement of GATT Articles I and III. In addition, an environmental-protection exemption argument is possible (but untested) under Article XX.

The difficulty that Article I can create in trade agreements pertaining to environmental protection and the potential for infringement of WTO rules proceedings is demonstrated in the stalled Environmental Goods Agreement negotiations. Forty-six WTO members (including China, the EU and the US) have been conducting negotiations since 2014 to eliminate tariffs on over 300 environmental products. However, the talks have not progressed since 2016, in part due to concerns that this open agreement could create 'free-riding' benefits for non-signatories on a most-favoured nation basis (Article I), something China is particularly concerned about.[66] Indeed, the trade in low-carbon goods has a history of resulting in commercial disputes. Between 2007 and 2018, eight disputes were brought to the WTO regarding the trade in solar PV, of which four were initiated by China.

The potential for trade disputes under WTO rules due to the introduction of carbon border taxes can be seen by rough calculations of the carbon emissions embodied in international trade. A CBAM of €30 per tonne levied on all goods entering the EU would amount to €10 billion on imports from China, €3 billion on imports from the US, and €2 billion on imports from India. For all three countries, this would be equivalent to roughly doubling existing tariffs.[67] This illustrates the stakes that could lead to trade disputes as well as the power of carbon border taxes to incentivize trading partners to decarbonize their exports.

In July 2020, the EU moved to the next stage of the introduction of a CBAM, with the launch of a consultation. This includes a review of the Energy Tax Directive (ETD). The EU's language has changed from a 'tax' to a 'mechanism', which to some implies a more gradual implementation. The ETD review will look at minimum rates for fuels and at re-thinking tax exemptions to reduce the implicit subsidies of fossil fuels and certain economic sectors.

There is opposition to the CBAM inside and outside the EU. Heavy industry sectors, such as steel, are opposed to it as compliance under WTO rules will likely result in the revocation of mechanisms shielding them from the price of carbon (such as carbon credit allowances under the Emissions Trading System). The US has compared the CBAM to the imposition of a digital services tax by some EU countries, which led it to threaten tariffs on EU goods. In 2020, the then US secretary of commerce, Wilbur Ross, said that, 'Depending on what form the

65 Tamma, P. (2019), 'Wanted: Perfect design for Europe's carbon border tax', *POLITICO,* https://www.politico.eu/article/europe-mulls-a-carbon-border-tax.
66 WTO (2016), 'Environmental Goods Agreement news archive', https://www.wto.org/english/news_e/archive_e/ega_arc_e.htm#.
67 *The Economist* (2020), 'The world urgently needs to expand its use of carbon prices', 23 May 2020, https://www.economist.com/briefing/2020/05/23/the-world-urgently-needs-to-expand-its-use-of-carbon-prices.

carbon tax takes, we will react to it – but if it is in its essence protectionist, like the digital taxes, we will react'.[68] However, the position of the US is likely to change with the new administration. The language of President Biden's campaign platform was similar to the EU's in this regard:

> As the US takes steps to make domestic polluters bear the full cost of their carbon pollution, the Biden Administration will impose carbon adjustment fees or quotas on carbon-intensive goods from countries that are failing to meet their climate and environmental obligations. This will ensure that American workers and their employers are not at a competitive disadvantage and simultaneously encourage other nations to raise their climate ambitions.[69]

In late 2019, as it became clear that the European Commission was considering a carbon border tariff, China's Environment Vice Minister Zhao Yingmin said, 'We need to prevent unilateralism and protectionism from hurting global growth expectations and the will of countries to combat climate change together'.[70]

A further deterioration of trust between countries in tackling climate change and a widening gap in decarbonization measures is likely to lead to greater political motivation to implement carbon border taxes, such as the EU's proposed CBAM.

In many regards, a shift in stance towards more competitive climate diplomacy is perhaps a natural consequence of the trust-based NDC mechanism weakening. At the same time, it could be that the geopolitical threat of seriously considering such a competitive approach may swing countries around to re-engaging with the cooperative approach of NDCs. China's 2060 announcement coming immediately on the heels of the EU declaring its increased ambition and CBAM consultation could be construed as such.

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68 Tett, G., Giles, C. and Politi, J. (2020), 'US threatens retaliation against EU over proposed carbon tax', 26 January 2020, https://www.irishtimes.com/business/economy/us-threatens-retaliation-against-eu-over-proposed-carbon-tax-1.4151974.
69 Biden-Harris (2020), 'Plan for Climate Change and Environmental Justice', Joe Biden for President: Official Campaign Website, https://joebiden.com/climate-plan.
70 Cadell, C. (2019), 'China says CO2 border tax would damage global climate change fight', *Financial Review*, https://www.afr.com/world/asia/china-says-co2-border-tax-would-damage-global-climate-change-fight-20191127-p53epp.

05 Conclusion

The year ahead could mark a shift in efforts to tackle the climate crisis. The scale of the challenge requires an unprecedented response. Critically, real-world action needs cooperation, competition and consistency.

The collective outcome of several high-level events in 2021 will be crucial for meeting global climate change objectives, as well as national climate and energy targets. Even under ordinary circumstances this would be an important time, as China sets its next five-year plan, President Biden likely implements progressive campaign pledges – including re-joining the Paris Agreement and setting a 2050 net zero target – and the EU introduces the next structural funds programme.

However, the importance of 2021 is even greater as countries submit their revised five-year pledges to the UNFCCC and negotiate at the COP26 in order to put global mitigation plans back on track to meet the objectives of the Paris Agreement. Two additional factors make the next 12 months particularly important. First, the COVID-19 impacts on energy supply, demand and emissions; the extent of associated recovery packages; and the acceleration or slowing of the energy transition. Second, climate diplomacy between China, the EU and the US is in greater flux than ever before, with an emerging shift towards competitive climate action mechanisms with import taxes on the carbon content of goods.

It is still too early to determine the precise impacts of COVID-19 on the speed of decarbonization and the energy transition. Emissions slowed in 2020, but the initial substantial reduction due to lockdowns shows signs of abating and emissions are returning to near pre-pandemic levels. This only underscores the importance of countries' revised NDC pledges demonstrating significantly increased ambition. This will be aided by the EU's announcement of a 55 per cent emission reduction target by 2030 and President Xi stating that China's goal is to reach carbon neutrality by 2060. Consequently, there is today significantly more optimism over the politics of international climate change than there was just six months ago and the likelihood of an ambitious outcome of COP26 has increased significantly.

The stimulus packages in response to the COVID-19 pandemic are a once-in-a-generation opportunity to accelerate public-sector low-carbon expenditure. China, the EU and the US will need to ensure these have climate action front and centre. The EU has made firm pledges in this regard, dedicating at least 30 per cent of its recovery plan and multi-year budget to meeting climate pledges, and there will be considerable global scrutiny of President Biden on the implementation of his Build Back Better pledges.

China, the EU and the US have been the most important parties to the UNFCCC, not only due to their historical and current emissions, but also to their geopolitical power, which has enabled them to encourage or discourage greater mitigation ambition. Therefore, a united front from these major players and demonstrable examples of cooperation will be fundamental to the success of meeting the objectives of the Paris Agreement. They may prioritize different approaches including using the market, subsidies, green stimulus packages, and legislation or regulation to accelerate the transition to a low-carbon society.

However, even with a new US administration it is likely that a trend towards less international cooperation and more competition will continue. The clearest sign of this shift is the proposed introduction of import taxes on the carbon content of goods entering the EU. This will test the level of political support within the EU and opposition from other countries, as well as the EUs ability to overcome the challenges to the implementation of CBAMs, principally regarding WTO rules. President Biden is considering similar carbon import taxes for the US. New mechanisms that impact global trade are notoriously difficult to introduce and are highly politically sensitive; therefore the chances of their effective implementation are probably low. Nevertheless, just seriously considering carbon import taxes could stimulate trading partners to further their cooperative international pledges and domestic climate action. Thus, a simple dichotomy between cooperation and competition is too reductionist.

The delay in holding COP26, due to COVID-19, gives countries time to take into account the change in administration in the US before submitting their revised NDCs. Moreover, COP26 is being hosted jointly by Italy and the UK, the respective presidents of the G20 and G7 in 2021, which is likely to increase the profile of climate initiatives.

Policies to reduce GHG emissions tend to be long-term, requiring consistency and stability. The EU has achieved this, across successive European Commissions, resulting in more ambitious mitigation targets and global leadership in the deployment of low-carbon technologies. Likewise, China, through its five-year planning cycle has consistently addressed environmental and climate-change issues. But, while this has created policy stability, addressing climate change has often been subordinate to other social and economic priorities of the Chinese government. In the US, climate change remains a partisan issue, with Democratic administrations pushing forward climate policies, only for these to be slowed down or reversed by Republicans. This stop-start approach to climate mitigation and adaption reduces the effectiveness of domestic policies and diminishes the effectiveness of the US in the international process.

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The project aims to explain the differences between the US and Europe's approaches to dealing with the challenges and opportunities posed by China.

https://www.transatlantic-dialogue-on-china.rusi.org

Cover image: A wind turbine in front of the lignite-fired power plant in Jänschwalde, Germany, 2007.
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