



ECO-FUNDAMENTALISM AS GRIST FOR CHINA'S MILL

Jun Arima



Eco-fundamentalism as Grist for China's Mill

Jun Arima

© Copyright 2021, The Global Warming Policy Foundation



Contents

| | |
|---|-----|
| <i>About the author</i> | iii |
| <i>Summary</i> | 1 |
| 1. The Biden climate summit | 3 |
| 2. Inconvenient truths | 4 |
| 3. The fragility of the Paris Agreement | 6 |
| 4. Serving Chinese interests | 8 |
| 5. Conclusion | 15 |
| <i>Notes</i> | 16 |
| <i>Review process</i> | 18 |
| <i>About the Global Warming Policy Foundation</i> | 18 |

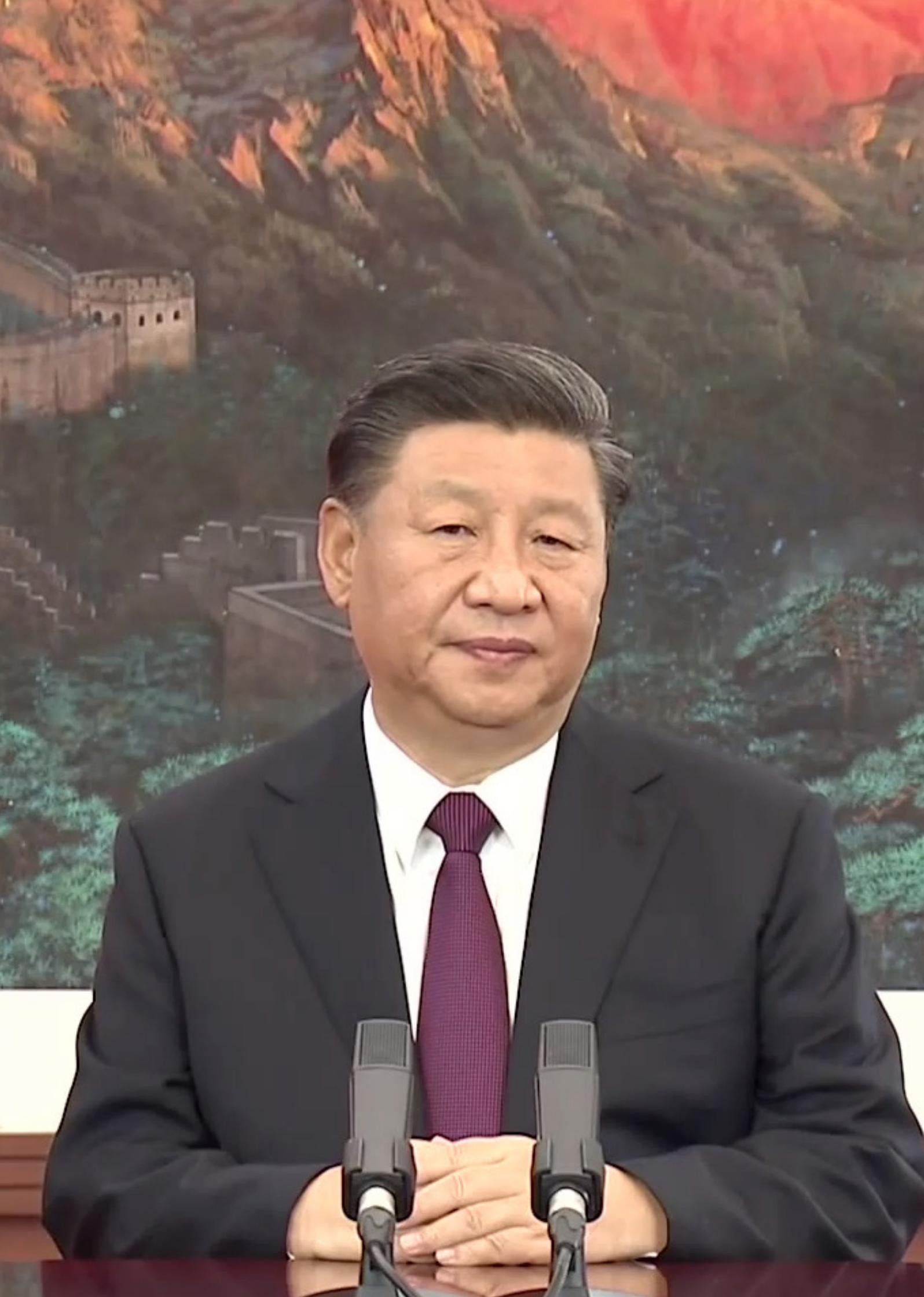
About the author

Jun Arima is an economist and Professor in the Graduate School of Public Policy in the University Tokyo. He began his career in Japan's Ministry of International Trade and Industry, has served as Energy Advisor to the Permanent Delegation of Japan to the OECD, as well as Head of the Country Studies Division of the International Energy Agency. In the Ministry of Economy, Trade and Industry (METI), he has held the posts of Director of the International Affairs Division, Deputy Director General for Global Environmental Affairs, and Director General of the Japan External Trade Organization London.

Throughout his career in METI, he was closely involved in international energy and climate policies, and has served as one of the chief negotiators of the Japanese delegation at the UN climate talks. At COP16, he announced that Japan would never join the second period of the Kyoto Protocol under any condition or circumstances. He has participated in the Conferences of the Parties to the UN Framework Convention on Climate Change fifteen times.

Other than his current academic position, he also serves as Project Leader at the 21st Century Public Policy Institute, is a Consulting Fellow of the Research Institute of Economy, Trade and Industry, a Distinguished Senior Research Fellow, Asia Pacific Institute of Research, a Senior Policy Fellow at the Economic Research Institute of ASEAN and East Asia, and is a Lead Author of the IPCC Sixth Assessment Report.





Summary

- Dramatic emissions reductions pledges in the West are irrelevant without corresponding reductions in the developing world, but neither China, India nor Russia, nearly 40% of world emissions, have made relevant commitments.
- China has declared that its emissions will rise until 2030, with its incremental emissions in the period 2020 to 2025 exceeding the total emissions of Japan. India's emissions will also rise beyond 2030.
- In this context, the 45% reduction in global emissions by 2030 required to limit temperature increases to 1.5°C has a near zero probability of being achieved.
- This failure in climate diplomacy can be attributed to neglect of the energy requirements of developing countries in Asia, which are the epicentre of incremental energy demand and greenhouse gas emissions.
- Polling by the United Nations shows that while citizens in the developed world put a high priority on tackling climate change, those in the developing world place Sustainable Development Goals such as health and wellbeing, decent work and economic growth, and quality education in the top three ranks, with climate occupying much lower places (fifteenth in China, ninth in Indonesia).
- Even in the developed world, willingness to pay is severely limited, and far lower than the expenditures required to deliver the 1.5°C target.
- The pragmatism of the Paris Agreement is threatened by the inflexible fundamentalism of the emerging Net Zero target agenda and puts the developed and developing worlds on a collision course. China is the sole beneficiary of these failing climate policies and the international discord that they create.
- By setting a carbon neutrality target for 2060, ten years later than that of the other developed countries, China has secured room for manoeuvre, and as soon as the failure of the Net Zero policies becomes evident, China will criticise the West and procrastinate over its decarbonisation target.
- Chinese companies are the principal beneficiaries of the green agenda, holding 70% of the global solar market, and representing seven out of the ten largest wind turbine manufacturers.
- The trend towards electric vehicles (EVs) is a particularly advantageous development for China, sweeping away the decades of accumulated technological advantage in internal combustion engines of its major international competitors, and providing a short-cut to automobile power status.
- Dependence on Middle Eastern oil has long been the Achilles' heel of global energy security, but a shift towards renewables, battery storage and EVs could cause a different risk, namely growing dependence on China for fundamental strategic minerals and the high value components manufactured from them.
- Low-carbon policies in the West will reduce the cost of fossil fuels to China, while at the same time increasing energy costs in the West itself, delivering competitive advantage to China. Carbon Border Adjustment Measures will be powerless to prevent this free-riding.
- The West's decision to cease funding modern coal power in the developing world ignores the realities of those countries' requirements and gives China the opportunity to expand its influence by offering the practical assistance that developed countries deny them.
- China's plans for a regional and then a world electrical power grid raises security concerns around cyber-attacks and politically or militarily motivated disconnections.
- The divided and acrimonious world that is being created by Net Zero policies will permit China to further enhance its global economic presence and influence while the developed, democratic world becomes economically, politically, and militarily weaker.



1. The Biden climate summit

On 23 April 2021, the 'Leaders' Summit on Climate' ended with mixed or, rather, a divided outcome.¹ The summit, which was included in President Biden's campaign platform, was intended to demonstrate that after a four-year absence during the Trump administration the US was back as part of the global endeavour to tackle climate change, and moreover that it was in the driving seat, encouraging other countries to raise their levels of ambition, namely the Nationally Determined Contributions (NDCs) for achieving the 1.5°C target and global carbon neutrality in 2050.

The EU had already adopted a new emissions target in December 2020 – a 55% reduction from the 1990 level by 2030, a 15 percentage point increase on their previous target. Just before summit, the US announced its own new 2030 pledge: a 50% reduction below 2005 levels, nearly doubling its previous target.² At the summit itself, Japan and Canada announced similarly ambitious new targets.³

This may sound impressive, but the US, EU, Japan and Canada combined account for less than a quarter of global greenhouse gas (GHG) emissions, so if the global community is really aiming at the 1.5°C target and carbon neutrality by 2050, what matters are the actions of the emerging economies. However, and unsurprisingly, there were no announcements from China, India or Russia, which account for 26%, 7% and 5% of global emissions respectively – nearly 40% of global emissions in total.

China's current NDC aims for emissions to 'peak' by 2030. In other words, it will *increase* GHG emissions in the ten years up to 2030. Indeed, from 2020 to 2025, Chinese incremental emissions will exceed the total emissions of Japan. Meanwhile, India's NDC is a 33–35% reduction by 2030, but projected robust growth implies that its emissions will continue to grow well beyond that date. In this context, the call for a 45% reduction of global GHG emissions by 2030 has a near-zero probability of being achieved.⁴

That is why the US climate envoy John Kerry visited Shanghai a week before the summit: to persuade his counterpart, Special Envoy Xie Zhenhua, to increase China's level of ambition. However, Kerry's visit ended with little to show for it. Instead of unveiling concrete steps towards President Xi's announcement of carbon neutrality goal by 2060, China called on the US to shoulder more responsibility.

That makes sense from Beijing's point of view, since it regards US climate demands as part of its grand strategy to curb China's economic growth. Pang Zhongying, an international affairs specialist at the Ocean University of China, remarks that:

... with both China and the US hardening their stance towards each other, it is getting harder for them to still cooperate on climate in the middle of deepening, across-the-board competition. Kerry's visit may be further proof that the window of opportunity for bilateral cooperation is closing.⁵

Judging from the widening divisions between the OECD states and the key emerging economies, the idealistic climate diplomacy of President Biden and Special Envoy Kerry appears to be futile.

2. Inconvenient truths

Energy realities in Asia

The failure of current climate diplomacy can be attributed to neglect of the realities of energy in developing countries, particularly in Asia, which is the source of most of the increases in global energy demand and GHG emissions.

China is driving its economic recovery from COVID-19 with coal-fired power plants, commissioning some 38 GW of new capacity in the last year, more than offsetting the closures achieved in the rest of the world. China's new coal plants represented 76% of the global total, and there is an ambitious future construction pipeline.⁶

In India, meanwhile, in June 2020, Prime Minister Modi initiated an auction for the rights to mine the country's coal, aiming at energy self-sufficiency and the creation of new jobs.⁷ While actively investing in renewables, India will continue to rely on fossil fuels since they are abundant, accessible, affordable, and dependable.⁸ Professor V Ranganathan, a visiting professor at the University of Pennsylvania, has explained why:

...solar and wind can be no match for good old coal-based electricity because [renewable energy] is intermittent energy, i.e. it provides only energy, while the coal/storage hydro is continuous energy providing both capacity and energy.

In an overview of the situation, the Institute of Energy Economics, Japan predicts that coal consumption will grow continuously in both India and, more broadly, in the member states of the Association of Southeast Asian Nations (ASEAN) from now to 2050, even though coal's share of total primary energy supply and of fuel for power generation will fall.⁹

In short, those alleging the existence of an energy transition in the developed countries, and on that basis calling for a global shift from fossil fuels to renewable energy, are not facing the reality of energy supply in Asia, where fossil fuels will necessarily be dominant for many years.

Ranking the Sustainable Development Goals

More broadly, it should be recognized that countries have different priorities among the seventeen UN Sustainable Development Goals (SDGs), those choices reflecting their own national circumstances. This can be seen clearly in the UN poll, 'My World 2030', which engaged more than 500,000 respondents worldwide. Sustainable Development Goal 13 (Climate Action) was ranked only as the ninth most important, while the top three positions were taken by Good Health and Well-being of People (SDG3), Decent Work and Economic Growth (SDG 8), and Quality Education (SDG 4).¹⁰

Country-specific outcomes in the UN's polling show an even starker contrast. Respondents in Sweden gave climate action the pole position, while those in China placed it fifteenth, and those in Indonesia ninth place. If it is unsurprising that the climate agenda receives high ranking in rich countries such as Sweden, it is also natural that developing countries are more preoccupied with poverty eradication, quality education, health and welfare, and job opportunities. All of these require robust economic growth, which must be underpinned by a secure and affordable energy supply. Climate action has never been and cannot ever be a priority for developing countries, yet it is precisely these countries that will determine whether the world is carbon neutral in 2050.

Willingness to pay matters

One could argue that the Paris Agreement has substantially changed global awareness of climate change, and in fact many people – perhaps even most – would say they are concerned to some degree about climate change. However, the crucial test is how much they are willing to pay to tackle the issue. From the end of 2018 to 2019, France was overwhelmed by the *Gilets Jaunes*, the Yellow Vests.¹¹ While the background of the protest movement is rather complex, its direct trigger was a carbon tax, raising the cost of vehicle fuel.

That a carbon tax increase should be so vigorously rejected in France, the home of the Paris Agreement, was an irony lost on nobody. A survey at the time found that seven out of ten Americans thought climate change is happening, and that some 60% said climate change is mostly or entirely caused by humans.¹² On the other hand, while 57% would support a proposal that would add \$10 to their annual electricity bills to combat climate change, a striking 67% would *oppose* policies that increased their own yearly costs by \$120 or more.

Obviously, there are limits to willingness to pay, and these limits are very much lower than would be required to meet the relevant climate targets. The International Energy Agency's recent report *Net Zero Emissions by 2050* assumes a carbon price of \$75 per tonne of carbon dioxide (\$75/tCO₂) in 2025 and \$130/tCO₂ in 2030.¹³ This implies that citizens of the United States, where per-capita emissions are about 16 tCO₂ per annum, would have to shoulder an additional cost burden of more than \$1000 per year in 2025. Since two thirds are opposed to an additional payment of \$120 a year on their electricity bill, this does not seem likely to be politically viable.

It seems clear, then, that there is a wide gap between the public's expressions of general concern about climate change and their actual willingness to pay. Furthermore, that willingness to pay is far lower than the required level of carbon pricing consistent with meeting the 1.5°C target. This gap will, naturally, be still greater in developing countries.

3. The fragility of the Paris Agreement

As discussed above, ideological climate diplomacy motivated by eco-fundamentalism does not recognize the inconvenient truths about energy requirements in developing countries, or the different ways in which developed and developing countries rank the Sustainable Development Goals. Indeed, there is even a lack of realism about the actual willingness of the rich, developed world to pay to tackle climate change. This has the potential to destabilise the fragile Paris Agreement and to trigger a confrontation between developed and developing countries.

However, having learnt lessons from previous acrimonious negotiations, the framers of the Paris Agreement of 2015 designed it as a hybrid regime. On the one hand, in response to strong demand from small-island states and environmental activists, they set a top-down global goal, limiting temperature increases to well below 2°C, and preferably to 1.5°C, compared to pre-industrial levels. On the other hand, they also established a bottom-up pledge-and-review process, with nations required to set their own targets, reflecting their specific national circumstances. Countries are then required to report periodically on progress in reaching them, submit them to international expert review and, finally, to revise them every five years. While this process is legally-binding, there is no penalty, even if a signatory fails to achieve its targets, a fact which constitutes the major difference between the Kyoto Protocol of 1997 and the Paris Agreement. This bottom-up nature – acknowledging each country's national circumstances and allowing for flexibility – enabled the participation by all parties, including China and the US, in the process. In short, the Paris Agreement is a relatively *pragmatic* hybrid regime of top-down global goals and bottom-up country actions, with a great deal of flexibility built in.

However, subsequent to the Paris Agreement, the 1.5°C target and 2050 carbon neutrality objective have come to be regarded as binding requirements. Those taking this line are urging countries to commit to carbon neutrality by 2050 and to raise their NDCs accordingly. This position not only goes beyond the Paris Agreement, which called only for global carbon neutrality in the latter half of this century, but also substantially changes its bottom-up nature: the Paris Agreement is becoming a top-down regime, in which the 1.5°C goal dictates the actions of all parties, without



regard to their specific circumstances.

Furthermore, the goal of 2050 global carbon neutrality is tantamount to setting a *global* carbon budget by 2050. If developed countries impose this ideology on developing countries, it will trigger a struggle over the remaining carbon budget.

In the post-Kyoto climate negotiation from 2007 to 2011, developed countries advocated a global goal of halving emissions by 2050, but developing countries rejected the argument because they feared the imposition of an emissions cap. Ultimately, while the 2°C goal was included in the Cancun Agreement of 2010, the quantitative global emissions limit was not. The zero-sum game created by the imposition of carbon budgets re-opens this matter and will result in bitter conflicts. If developed countries stick to their desire for global carbon neutrality in 2050, developing countries will demand, in return, that those developed countries achieve carbon neutrality much earlier than 2050, perhaps in 2040, as well as providing a substantial increase in financial assistance. Indeed, it is impossible to envisage a situation in which China or India would announce absolute emissions reduction targets by 2030 for the sake of 2050 global carbon neutrality.

It must also be recognised that developed countries have little if any leverage vis-à-vis developing countries in getting them to raise their NDCs. They have already played their last cards by substantially raising their own level of ambition, and it would be extraordinarily difficult for them to further raise their NDCs or, amid economic difficulties caused by COVID-19, to substantially increase financial assistance. Some might argue that the Carbon Border Adjustment Measures under consideration in the EU could be used as a 'stick' with which to persuade otherwise reluctant developing countries. However, the policy's effectiveness is highly doubtful, for complex geopolitical reasons which are covered in the next section.

In summary, ideological climate diplomacy based on eco-fundamentalism could potentially not only ruin the pragmatic wisdom embedded in the Paris Agreement, but also trigger intense acrimony between developed and developing countries. An even more serious problem is that such a situation would not only be very acceptable for China, but would give it the opportunity for overwhelming global predominance, a topic to which we will now turn.



4. Serving Chinese interests

Growing international concern

In recent years, Beijing's assertive actions have been the cause of great concern. Japan's *Diplomatic Bluebook 2020* notes that China continues to increase its defence budget and has been strengthening and modernizing its military, extensively and rapidly but without any transparency.¹⁴ It is also striving to secure superiority in new domains, such as outer space, cyberspace, and the electromagnetic spectrum.

China continues attempts to change the geopolitical *status quo*, by force or coercion, at sea and in the air, justifying its actions by citing unilateral assertions that are incompatible with the existing order: the law of the sea. In the East China Sea, it has unilaterally developed resources and undertaken surveys without Japan's consent, while in the South China Sea it has constructed large-scale military outposts on the Spratly Islands, ignoring the ruling of Arbitral Tribunal, which awarded them to the Philippines.

China's worrying actions are seen in other areas too. The Hong Kong Security Law it introduced in June 2020 violates its treaty with Britain, and is being used to punish protesters and reduce the city's autonomy.¹⁵ Human rights abuses – detention in camps, forced labour and sexual abuse – against the mostly Muslim Uighur minority group triggered sanctions on Chinese officials in March 2021.¹⁶ China's mishandling of COVID-19 in its early stages,¹⁷ and uncooperative posture to the WHO team that investigated the origins of the pandemic,¹⁸ have triggered strong criticism from the global community. The controversial claim that the virus might have leaked from a Chinese laboratory has been gaining traction steadily. All these matters have dramatically affected public opinion in Western and other countries. According to a Pew Research Center survey on China in October 2020, unfavourable views of China have reached historic highs in many countries, 73% in the US, 73% in Canada, 81% in Australia, 74% in the UK, 71% in Germany, 85% in Sweden and 86% in Japan.¹⁹

How environmentalists see China

In contrast, Western environmental activists and environmental NGOs have a rather different perspective on China. In *The Red and The Green: China's Useful Idiots*,²⁰ Patricia Adams argues:

Rather than becoming cautious about China's role in the world, these groups lavish it with praise for its environmental efforts, using superlatives such as 'herculean' and 'momentous'. Greenpeace announced that 'Prioritizing sustainability will cement China's legacy as it assumes a larger role on the global stage.'

The World Wildlife Fund has even said that 'The new aspiration announced by President Xi reflected China's unswerving support and decisive steps to enhance climate ambition', and the Natural Resources Defense Council's Barbara Finamore even ti-

tled her laudatory book *Will China Save the Planet?*²¹

This vigorous support in some areas is matched by a tactful silence in others. Even though China is the world's largest coal consumer and exporter of coal-fired power plants, green NGOs avoid comment. The international eco-icon Greta Thunberg loudly criticizes Japan's involvement in a high-efficiency and low-emissions coal-fired power plant in Vietnam,²² but says nothing about China, which is building coal-fired power plants in many of the countries participating in the Belt and Road Initiative (BRI). And while the Climate Action Network gave Japan the 'Fossil of the Day Award' twice during COP 25 for its export of high efficiency thermal coal technologies, no attempt was made to shame China with a similar 'award'. A clear double standard prevails.

The reasons are not difficult to understand. Many environmental NGOs operate in China as well as the West, and often participate in joint projects with the government. Securing official consent to operate is crucial, and since they are monitored and supervised by the security apparatus, it is not surprising that they have to adopt a bland or even enthusiastic attitude towards their hosts, and to issue lots of diplomatically positive comments about the country's rapid expansion of renewable power and electric vehicles (EVs). These represent tremendously beneficial propaganda for China, which has severe problems with its image in many other areas.

In July 2021, a coalition of 48 US progressive and environmental groups issued a letter urging President Biden to quit 'demonising China' and to prioritize democracy, so as to tackle 'the climate crisis'.²³ Climate experts criticised the timing of the new defense deal between the US, UK and Australia, since it could have a negative effect on hopes of a deal with China at COP26.²⁴ These actions suggest that the argument in *The Red and The Green* is highly plausible.

China's well calculated emissions target

President Xi's announcement in September 2020 of China's 2060 carbon neutrality goal surprised the international community, but it was a considered step. China is fully aware that developed countries will almost certainly fail to achieve carbon neutrality by 2050. As soon as that outcome becomes evident, China will criticize Western failures and then procrastinate over its own goal. So by setting a carbon-neutrality goal for a date 10 years later than those of developed countries, China has secured room for manoeuvre. And if the developed countries weaken themselves, technologically and militarily, in a futile attempt to achieve their targets, this is a bonus in Beijing's eyes.

It should also borne in mind that developed countries have difficulties in tracking China's mitigation efforts, since its emissions data lack transparency²⁵ and are often falsified, due to corruption at the grass roots.²⁶

Increased demand for Chinese technologies

The rapid introduction of renewable energy in the Western countries has benefited China, and will clearly enrich it still further. Chinese companies already account for 70% of the global solar panel market and are likely to increase their dominance.²⁷ Ironically, it was Germany's Renewable Energy Sources Act,²⁸ introduced in 2000, that led to this dominance.²⁹ The Act's guarantee that renewable electricity would be purchased at a high price for a long period represented a lucrative business opportunity, and with their low labour costs and economies of scale, Chinese manufacturers were able to sweep aside their German competitors. Japan copied Germany's policy, with similar results.³⁰ In short, the biggest beneficiaries of the solar power policies in Germany and Japan have been Chinese manufacturers. Further expansion will simply increase their profits.

China is also becoming dominant in the wind power market. Seven of the world's top ten turbine manufacturers are Chinese.³¹ It also has the third largest offshore wind power generation sector, after the UK and Germany, but Chinese manufacturers are catching up rapidly with the leading European companies, and it is likely that they will come to dominate this sector too. Even in Japan, which not only expects offshore wind power to contribute significantly towards carbon neutrality in 2050 but also possesses a technological advantage, cheaper Chinese-made wind turbines are expected to take a large share of the market. It should be noted, however, that lower capital costs do not necessarily translate into lower long-term ownership costs, and service and repair contracts are expected to be extremely profitable, as they are in Europe.

China is also steadily gaining strength in the manufacture of EVs, a key concern since the automobile industry is a barometer of national capability. The government policy statement *Made in China 2025* makes it clear that it intends to join the ranks of the world's automobile powers in short order.³² However, it is difficult for China to compete with long-established Japanese, American and European manufacturers of internal combustion engines (ICEs). But in the field of EVs, with batteries as their core component, China is on the same starting line, helped by domestic and regional demand; a locally manufactured EV priced at around just £3000 is selling well,³³ and the Japanese logistics giant Sagawa Express recently switched to a Chinese EV for home deliveries.³⁴ Thus the trend towards EVs, motivated by the quest for carbon neutrality, is extremely advantageous for China, regardless of its low-carbon credentials, and sweeps away the decades of technological advantage its international competitors have accumulated.

As the global rush to EVs and solar and wind power accelerates, it is certain that the market share of Chinese companies will increase. However, since about 60% of Chinese electricity is generated from coal, embedded carbon dioxide emissions – per

square meter of Chinese solar panels, for example – are much higher than equivalents manufactured in the US and the EU.³⁵ In addition, it is alleged that half of the polycrystalline silicon used for photovoltaic power generation is produced in the Xinjiang Uyghur Autonomous Region, where human rights abuses and forced labour are thought to be common.³⁶ In June 2021, the US imposed trade bans on five Chinese entities over forced labour allegations in Xinjiang.³⁷ While it remains to be seen if such action will spread to other G7 countries, solar module prices are already rising.³⁸ This will inevitably increase the cost of mitigation strategies for the many countries counting on ‘cheap’ Chinese panels.

The risk of Chinese dominance in strategic minerals

A further shift to renewable energy and EVs risks still higher dependence on China in strategic minerals. More than 60% of the fluorite³⁹ required to manufacture lithium-ion batteries for EVs and more than 60% of rare earths⁴⁰ used in EVs and wind turbine magnets are produced in China. In addition, Chinese investors control about 40% of the cobalt ore required for lithium-ion batteries.⁴¹ This means that even if solar PV, wind turbines and EVs are produced domestically, countries are still vulnerable to Chinese dominance in the strategic minerals required. There is a precedent for this. When a Chinese trawler collided with a Japanese coastguard vessel off the disputed Senkaku Islands in 2010, China imposed restrictions on the export of rare earths to Japan. As US–China tensions have intensified in recent years, China has again referred to possible restrictions on the exports of rare earths, which are indispensable for the US defence industry.⁴²

High dependence on Middle Eastern oil has long been the Achilles’ heel of global energy security, but a shift to renewables and EVs could cause a different and still more concentrated security risk, namely a growing dependence on China for strategic minerals and the components manufactured from them.

Lower procurement cost of fossil fuels

The movement to substantially reduce the use of fossil fuels for the sake of carbon neutrality will also work in favour of China. In keeping with the target for peak emissions in 2030, China will continue to depend on fossil fuels to fuel its economic growth for the next ten years. If developed countries reduce their fossil fuel use during this period, it will lead to a reduction in global demand, which will enable China to procure fossil fuels at lower prices. In effect, emissions reductions in the West mean cheap energy for China. On the other hand, the developed world is facing the high costs of rapid reductions in fossil fuel consumption and the purchase of renewable equipment, solar, wind turbines and electric vehicles from China. This simply helps make Xi Jinping’s ‘Chinese Dream’ – the rejuvenation of the Chinese nation – a reality.

Monopolizing the coal power plant export market

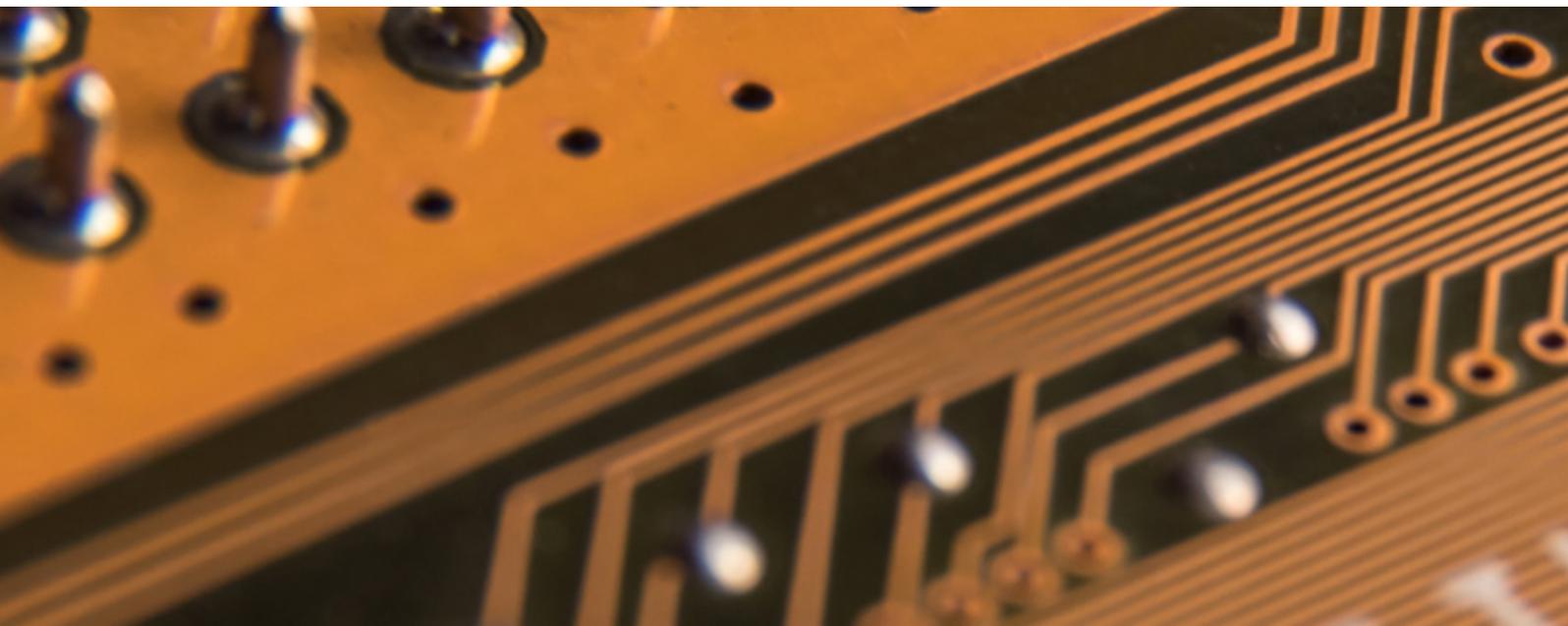
Both the US and the EU are particularly hostile to coal use in developing countries. At the G7 Summit in June 2021, leaders stressed that:

...international investments in unabated coal must stop now and we commit now to an end to new direct government support for unabated international thermal coal power generation by the end of 2021, including through Official Development Assistance, export finance, investment, and financial and trade promotion support.⁴³

Will developing countries stop coal use in response to the call from the G7? Coal is the most abundant and inexpensive energy source in Asia, which will be the source of most new energy demand and carbon dioxide emissions. In response to the Paris Agreement, Asian countries are actively promoting fuel switching from coal to natural gas, as well as the introduction of renewable energy. However, with a view to robust economic growth, they cannot simply dismiss coal-fired power, which can provide a stable supply of inexpensive electricity, essential for delivering the Sustainable Development Goals that those populations regard as most important. In fact, of the 1.2 billion people who received an electricity supply for the first time between 2000 and 2015, 45% did so through coal-fired power.⁴⁴ Even if developed countries and the multilateral financing institutions, such as the World Bank and the Asian Development Bank, suspend finance to coal-fired power plants,⁴⁵ China will fill the vacuum and monopolize the market. This is no mere speculation: China has already spent tens of billions of dollars building coal-fired power plants in 152 countries through the Belt and Road Initiative, and is involved in more than 300 current projects, financing 70% of the coal-fired power plants under construction worldwide.⁴⁶

The implication of the growing presence of Chinese capital and technology in energy infrastructure developments in developing countries represents a serious geopolitical risk. At the 2021 summit in Carbis Bay, Cornwall, in the UK, the G7 leaders agreed to offer developing countries a transparent infrastructure partnership that could rival the BRI.⁴⁷ The effectiveness of this initiative remains to be seen, and there is a real risk that if the G7 push their eco-fundamentalist vision of a green energy transition without due regard to developing countries' national circumstances, China will expand its influence by offering the practical assistance that developing countries actually require.

On 21 September 2021, President Xi announced that China would stop building new coal-fired power stations abroad, while stepping up support for green and low-carbon energy in other developing countries.⁴⁸ While environmental groups welcomed the announcement, it is not yet clear whether Chinese banks and power firms will only pull out of projects that are at the planning stage, or whether it will also axe those under negotiation or at in the early stages of construction. It should also be noted that China will continue to invest in coal at home and that the 'green energy' equipment it exports is based on coal power. China could also benefit from lower coal procure-



ment costs at home, since the announcement could reduce global demand.

President Xi's words should be interpreted as a considered move in the run-up to COP26, an attempt to reduce Western pressure. By playing this card, China is telling Western countries 'the ball is in your court'.⁴⁹

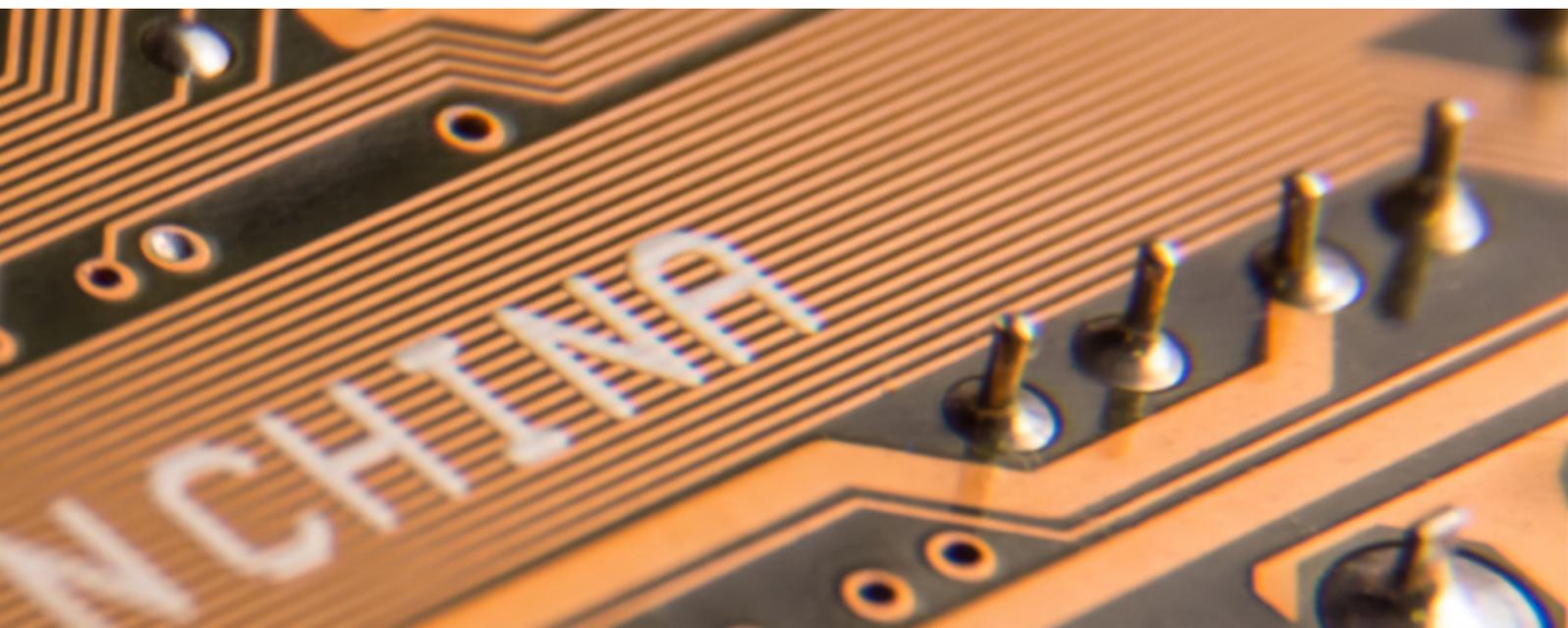
Global energy interconnection

A point little understood in the West is that China is also vigorously promoting the concept of 'global energy interconnection', claiming that this could reduce electricity costs through electricity trading, as well as promoting the spread of renewable energy and supporting decarbonization. With the State Grid Corporation of China at its core, this concept aims at the completion of an international power grid in each continent, including Asia, by 2030, the construction of an inter-continental grid by 2040 and connection of the entire world through a high-voltage power grid by 2050. With rising costs expected for decarbonization, the ability to procure cheap renewable electricity from overseas will obviously be attractive. It is true, of course, that a cross-country network in the European region has enabled wider penetration of intermittent renewable electricity generation, and widespread grid connection and trade could be highly beneficial among countries sharing same the political and economic values. However, an international power grid project led by China raises concerns around cyber-security and the possibility of politically or militarily motivated disconnections in the event of geopolitical tensions.⁵⁰

China as free-rider

Whether the world can succeed in meeting the 1.5°C target or not is critically dependent on Beijing's course of action. As noted above, China now enjoys a very advantageous position as a result of the global trend towards decarbonization. They can increase their emissions up to 2030, and their fossil-fuel procurement costs could decrease. At the same time, they can sell solar panels, wind turbines and EVs to countries rushing for carbon neutrality, while also financing and building coal-fired power plants for developing countries. In short, no matter whether decarbonization accelerates or decelerates, China stands to benefit.

However, some believe that developed countries can prevent Chinese free-riding by taking coordinated actions, such as the Carbon Border Adjustment Measures (CBAMs). In practice this will be very difficult to achieve. Creating an explicit carbon price in the form either of emissions trading permits or a carbon tax will be almost impossible in the US given the current Congressional situation, and China, India and Russia will be united in opposition and will threaten retaliation. Germany, which is extremely dependent on exports to China, is already referring to an idea of 'carbon club', comprising the EU, the US, Japan and China, which would be exempt from the CBAM measures, thus defeating the object of preventing Chinese free-riding. The problem appears to be insoluble.



中国共产党第十八次全国代表大会



国代表

5. Conclusion

Climate change is a global issue, and its solution calls for deep international collaboration. However, when they met in Carbis Bay, the G7 adopted a unified front against threats from China and Russia.⁵¹ In response, China lashed out at the G7, calling it 'small circle' power politics. The geopolitical situation is far from conducive to global co-operation on climate change.⁵²

As Daniel Yergin observes in his recent book, *The New Map: Energy, Climate and The Clash of Nations*:

...there are some disruptions we can anticipate, indeed clearly see...The struggles over climate will be one. But so also, in the era of rising tensions and a fragmenting global order, will be the clash of nations.⁵³

Consequently, the assumption in the International Energy Agency's *Net Zero by 2050* report that the world's countries all move towards carbon neutrality by that date is unrealistic. A more probable scenario is that of a 'divided world', in which developed countries hasten towards deep emissions and extremely high costs, while developing countries make minor revisions to their emissions policies that are inconsistent with the 1.5°C target. The global emissions pathway will be somewhere between the report's Stated Policy Scenario and the Sustainable Development Scenario, and probably closer to the former, which falls far short of a trajectory consistent with the sustainable energy goals and the 1.5°C target.

In such a divided and acrimonious world, China will further enhance its economic presence and influence, while the developed and democratic countries become economically, politically, and militarily weaker. Is this the world we want?

Notes

1. <https://www.state.gov/leaders-summit-on-climate/>.
2. A 26–28% reduction by 2025 from the 2005 level.
3. Japan's was a 46–50% reduction below 2013 levels, an increase of 20 percentage points on its previous target. Canada's was a 40–45% reduction below 2005 levels, well above its previous 36% target.
4. <https://www.ipcc.ch/sr15/chapter/spm/>.
5. <https://www.thegwpf.com/john-kerry-ends-china-trip-with-little-to-show/>.
6. <https://jp.reuters.com/article/uk-column-russell-coal-china-idUKKBN2BU13Q>.
7. <https://www.thehindu.com/news/national/narendra-modi-launches-auction-process-for-41-coal-blocks-for-commercial-mining/article31858048.ece>.
8. <https://www.thegwpf.com/despite-bidens-climate-deal-india-is-set-to-forge-ahead-with-fossil-fuel-acceleration/>.
9. <https://eneken.ieej.or.jp/data/9417.pdf>.
10. <https://datastudio.google.com/u/0/reporting/14nxNJleenggWkXv5PzHOsPNrclibxuHH/page/GHXR>.
11. <https://www.euractiv.com/section/energy/news/french-energy-transition-conferences-reopen-carbon-tax-debate/>.
12. Conducted by the Associated Press-NORC Centre for Public Affairs Research, and the Energy Policy Institute at the University of Chicago. <https://apnorc.org/projects/is-the-public-willing-to-pay-to-help-fix-climate-change/>.
13. <https://www.iea.org/reports/net-zero-by-2050>.
14. <https://www.mofa.go.jp/policy/other/bluebook/2020/html/index.html>.
15. <https://www.bbc.com/news/world-asia-china-52765838>.
16. <https://www.bbc.com/news/world-europe-56487162>.
17. <https://edition.cnn.com/2020/11/30/asia/wuhan-china-covid-intl/index.html>.
18. <https://www.bbc.com/news/world-asia-china-56054468>.
19. <https://www.pewresearch.org/global/2020/10/06/unfavorable-views-of-china-reach-historic-highs-in-many-countries/>.
20. <https://www.thegwpf.org/content/uploads/2020/12/Green-reds.pdf>.
21. <https://www.wiley.com/en-us/Will+China+Save+the+Planet%3F-p-9781509532667>.
22. <https://asia.nikkei.com/Spotlight/Environment/Climate-Change/Greta-Thunberg-joins-Asian-charge-against-Vietnam-coal-plant>
23. <https://www.washingtontimes.com/news/2021/jul/12/climate-groups-blasted-urging-joe-biden-turn-down-/>
24. <https://www.theguardian.com/environment/2021/sep/16/aukus-pact-dash-hopes-china-emissions-deal-cop26-climate>
25. It should also be born in mind that developed countries have difficulties in tracking China's mitigation efforts since China's emissions data lacks transparency and often is fraught with fake data and corruption among the grass roots .
26. <https://www.scmp.com/news/china/politics/article/3010679/chinas-green-efforts-hit-fake-data-and-corruption-among-grass>.
27. <https://www.statista.com/chart/24687/solar-panel-global-market-shares-by-production-steps/>.
28. Erneuerbare-Energien-Gesetz, the EEG.
29. <https://qz.com/41166/how-germanys-energy-transformation-has-turned-into-a-crisis/>.

30. <https://asia.nikkei.com/Business/China-s-solar-panel-makers-turn-up-the-heat-in-Japan>.
31. <https://www.evwind.es/2021/03/13/china-takes-up-7-spots-among-the-worlds-top-10-wind-turbine-manufacturers-for-wind-power/79787>.
32. <https://www.europeanchamber.com.cn/en/china-manufacturing-2025>.
33. <https://www.bbc.com/news/business-56178802>.
34. <https://asia.nikkei.com/Spotlight/Electric-cars-in-China/Japan-s-Sagawa-to-buy-7-200-low-priced-EVs-made-in-China>.
35. <https://www.sciencedirect.com/science/article/pii/S0301421519308158>.
36. <https://www.wsj.com/articles/solar-energy-supply-chain-depends-on-region-where-china-is-accused-of-genocide-11618147228>.
37. <https://www.theguardian.com/world/2021/jun/25/us-bans-target-chinese-solar-panel-industry-over-xinjiang-forced-labor-concerns>.
38. <https://asia.nikkei.com/Business/Energy/Xinjiang-labor-clouds-solar-sector-as-panel-prices-swell>.
39. <http://imformed.com/wp-content/uploads/2019/10/RHODE-Fluorine-Forum-2019-IMFORMED.pdf>.
40. <https://asia.nikkei.com/Business/Markets/Commodities/China-tightens-rare-earth-regulations-policing-entire-supply-chain>.
41. <https://www.politico.com/news/2020/12/02/china-cobalt-mining-441967>.
42. <https://asia.nikkei.com/Business/Markets/Commodities/China-tightens-rare-earth-regulations-policing-entire-supply-chain>.
43. <https://www.consilium.europa.eu/en/press/press-releases/2021/06/13/2021-g7-leaders-communiqué/>.
44. <https://www.iea.org/reports/energy-access-outlook-2017>.
45. <https://www.thegwpc.org/content/uploads/2017/10/Darwall-WB-1.pdf>.
46. <https://theconversation.com/china-finances-most-coal-plants-built-today-its-a-climate-problem-and-why-us-china-talks-are-essential-161332>.
47. <https://www.reuters.com/world/g7-counter-chinas-belt-road-with-infrastructure-project-senior-us-official-2021-06-12/>.
48. <https://www.france24.com/en/live-news/20210921-xi-tells-un-china-will-stop-funding-coal-projects-overseas>.
49. <https://www.thegwpc.com/china-plays-its-green-card-promising-to-sell-the-world-its-wind-and-solar-projects-produced-by-cheap-coal/>.
50. <https://asia.nikkei.com/Spotlight/Asia-Insight/China-s-Belt-and-Road-power-grids-keep-security-critics-awake>.
51. <https://www.nytimes.com/live/2021/06/13/world/g7-summit#a-unified-front-against-threats-by-china-and-russia-becomes-a-priority-of-the-g7-leaders>.
52. <https://www.bbc.com/news/world-asia-china-57458822>.
53. Daniel Yergin, *The New Map*, Penguin 2020, p. 430.

Review process

GWPF publishes papers in a number of different formats, with a different review process pertaining to each.

- Our flagship long-form GWPF Reports, are all reviewed by our Academic Advisory Panel.
- GWPF Briefings and Notes are shorter documents and are reviewed internally and/or externally as required.

Part of the function of the review process is to ensure that any materials published by the GWPF are of a proper academic standard, and will serve the GWPF's educational purpose. As a charity, we recognise that educational material should provide any reader the opportunity to understand, and explore different perspectives on a subject.

This means that, for most publications, we also invite an external review from a party who we would expect to take a different view to the publication's author. We offer to publish any substantive comments alongside the main paper, provided we are satisfied they will enhance the educational experience of the reader. In this way, we hope to encourage open and active debate on the important areas in which we work.

This enhanced review process for GWPF papers is intended to take the content and analysis beyond a typical review for an academic journal:

- More potential reviewers can be involved
- The number of substantive comments will typically exceeds journal peer review, and
- The identity of the author is known to the potential reviewers.

As an organisation whose publications are sometimes the subject of assertive or careless criticism, this review process is intended to enhance the educational experience for all readers, allowing points to be made and considered in context and observing the standards required for an informed and informative debate. We therefore expect all parties involved to treat the reviews with the utmost seriousness.

Final responsibility for publication rests with the Chairman of the Trustees and the GWPF Director. But In every case, the views expressed are those of the author. GWPF has never had any corporate position beyond that dictated by its educational objectives.

About the Global Warming Policy Foundation

The Global Warming Policy Foundation is an all-party and non-party think tank and a registered educational charity which, while openminded on the contested science of global warming, is deeply concerned about the costs and other implications of many of the policies currently being advocated.

Our main focus is to analyse global warming policies and their economic and other implications. Our aim is to provide the most robust and reliable economic analysis and advice. Above all we seek to inform the media, politicians and the public, in a newsworthy way, on the subject in general and on the misinformation to which they are all too frequently being subjected at the present time.

The key to the success of the GWPF is the trust and credibility that we have earned in the eyes of a growing number of policy makers, journalists and the interested public. The GWPF is funded overwhelmingly by voluntary donations from a number of private individuals and charitable trusts. In order to make clear its complete independence, it does not accept gifts from either energy companies or anyone with a significant interest in an energy company.

Views expressed in the publications of the Global Warming Policy Foundation are those of the authors, not those of the GWPF, its trustees, its Academic Advisory Council members or its directors.

THE GLOBAL WARMING POLICY FOUNDATION

Director

Benny Peiser

Honorary President

Lord Lawson

BOARD OF TRUSTEES

Terence Mordaunt (Chairman)

Steve Baker MP

Dr Jerome Booth

Professor Peter Edwards

Chris Gibson-Smith

Kathy Gyngell

Professor Michael Kelly

Lord Moore

Graham Stringer MP

Professor Fritz Vahrenholt

ACADEMIC ADVISORY COUNCIL

Professor Christopher Essex (Chairman)

Professor J. Ray Bates

Sir Ian Byatt

Dr John Constable

Professor Vincent Courtillot

Professor Peter Dobson

Christian Gerondeau

Professor Larry Gould

Professor William Happer

Professor Ole Humlum

Professor Gautam Kalghatgi

Professor Terence Kealey

Bill Kininmonth

Brian Leyland

Professor Richard Lindzen

Professor Ross McKittrick

Professor Robert Mendelsohn

Professor Garth Paltridge

Professor Ian Plimer

Professor Gwythian Prins

Professor Paul Reiter

Professor Peter Ridd

Dr Matt Ridley

Sir Alan Rudge

Professor Nir Shaviv

Professor Henrik Svensmark

Dr David Whitehouse

RECENT GWPF BRIEFINGS

| | | |
|----|---------------------------|--|
| 19 | Indur Goklany | The Papal Academies' Broken Moral Compass |
| 20 | Donoughue and Forster | The Papal Encyclical: a Critical Christian Response |
| 21 | Andrew Montford | Parched Earth Policy: Drought, Heatwave and Conflict |
| 22 | David Campbell | The Paris Agreement and the Fifth Carbon Budget |
| 23 | Various | The Stern Review: Ten Years of Harm |
| 24 | Judith Curry | Climate Models for the Layman |
| 25 | Fritz Vahrenholt | Germany's Energiewende: a Disaster in the Making |
| 26 | Hughes, Aris, Constable | Offshore Wind Strike Prices |
| 27 | Michael Miersch | Truly Green? |
| 28 | Susan Crockford | 20 Good Reasons not to Worry About Polar Bears: Update |
| 29 | Mikko Paunio | Sacrificing the Poor: The Lancet on 'pollution' |
| 30 | Mikko Paunio | Kicking Away the Energy Ladder |
| 31 | Bill Gray | Flaws in Applying Greenhouse Warming to Climate Variability |
| 32 | Mikko Paunio | Save the Oceans: Stop Recycling Plastic |
| 33 | Andy Dawson | Small Modular Nuclear: Crushed at Birth |
| 34 | Andrew Montford | Quakes, Pollution and Flaming Faucets |
| 35 | Paul Homewood | DEFRA vs Met Office: Factchecking the State of the UK Climate |
| 36 | J. Ray Bates | Deficiencies in the IPCC's Special Report on 1.5 Degrees |
| 37 | Paul Homewood | Tropical Hurricanes in the Age of Global Warming |
| 38 | Mikko Paunio | The Health Benefits of Ignoring the IPCC |
| 39 | Jack Ponton | Grid-scale Storage: Can it Solve the Intermittency Problem? |
| 40 | Robert Lyman | Carbon Taxation: The Canadian Experience |
| 41 | Rémy Prud'homme | La Transition Énergétique: Useless, Costly, Unfair |
| 42 | Judith Curry | Recovery, Resilience, Readiness: Contending with Natural Disasters |
| 43 | Paul Homewood | Plus Ça Change: The UK Climate in 2018 |
| 44 | David Whitehouse | Cold Water: The Oceans and Climate Change |
| 45 | Crockford and Laframboise | The Defenestration of Dr Crockford |
| 46 | Paul Homewood | Britain's Weather in 2019: More of the Same, Again |
| 47 | John Constable | The Brink of Darkness: Britain's Fragile Grid |
| 48 | Mike Travers | The Hidden Cost of Net Zero: Rewiring the UK |
| 49 | Martin Livermore | Greenhouse Gas Emissions: The Global Picture |
| 50 | Paul Homewood | The US Climate in 2019 |
| 51 | Patricia Adams | The Red and the Green: China's Useful Idiots |
| 52 | Andrew Montford | Offshore Wind: Cost Predictions and Cost Outcomes |
| 53 | Tim Worstall | A Saviour Spurned: How Fracking Saved us from Global Warming |
| 54 | Jun Arima | Eco-fundamentalism as Grist for China's Mill |

For further information about the Global Warming Policy Foundation, please visit our website at www.thegwpf.org.

The GWPF is a registered charity, number 1131448.

