

Opinion – A Geopolitically Sustainable Green Energy Agenda

Written by Corey Lee Bell and Elena Collinson

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COREY LEE BELL AND ELENA COLLINSON, FEB 7 2024

Nations have increasingly come together to ward-off an existential climate crisis. Yet wars in Europe and the Middle East, rising nationalism and growing superpower tensions are raising questions about whether the climate agenda can remain insulated from rising concerns about energy security. With fading confidence that the modern liberal international order represents a clear disjunction from the realist politicking of the last century, it is necessary to reconsider whether in focusing on the climate change agenda in isolation from geopolitical variables, there has been a neglect of the lessons of the old energy order's political catastrophes. With China accumulating dominance over large spectrums of the green energy value chain, and with Western nations attempting to break the market's hyper-concentration, there is a need for broader multilateral efforts led by third parties that accommodate mature discussions on geopolitical, and in particular energy security, concerns.

2023 was a year in which the climate change agenda brought nations together, but again proved unable to shake off the fetters of their competing economic and political interests. By the year's close global oil and coal consumption were heading to new highs, and COP28 concluded with a successful push by petrostates to replace a commitment to 'phase-out' fossil fuels with a pledge to 'transition away' from them. It is now more likely than not that the Earth's temperature will rise above the 1.5 degree Celsius threshold that most of the world's nations agreed to try to stay below. Indeed, one study shows the threshold has already been exceeded.

There is a growing risk that energy security concerns driven by geopolitical tensions could intensify the impact of national interests on decarbonisation. According to a 2023 report funded by the World Trade Organisation, events such as the Russian invasion of Ukraine have already "made geopolitical concerns rather than economic interests the dominant factor in shaping the policies governing energy trade," potentially leading to energy value chains fragmenting. There are inchoate signs that green energy chains are headed the same way. Democratic nations, for instance, have banded together to create an exclusive Minerals Security Partnership, are studying policies akin to Washington's Inflation Reduction Act (IRA) that place green energy sovereignty above free trade principles, and are threatening trade sanctions and countervailing duties on green tech imports from 'problematic' suppliers, with investigations on green energy technology dumping and cyber 'back doors' in technologies including solar power inverters and electronic vehicles

On the surface the above developments appear to give credence to liberalist concerns that too much 'geopolitics' or realist politicking poses a risk to the climate agenda. But it could equally be argued that there has been too little of the 'right' kind of geopolitics. The Russia and Ukraine war, and the more recent Houthi attacks on shipping in the Red Sea, are perhaps a timely reminder that the weaponisation of energy supply chains and the political disasters of the old oil economy could re-emerge in the new one. The question is, therefore, whether a focus on the climate change agenda in isolation from geopolitical variables can lead to a new energy order that is truly 'sustainable'.

Greater replaceability, and the reduced need for the constant flow of resources, means that green technology is less prone to the more intense security anxieties of the fossil fuel economy. Nonetheless, the warning signs from history are clear. Should the transition continue on its recent trajectory, bereft of a concerted intervention, the world will either see a fractured and compromised green energy trading order, or will instead see a level of concentration in

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energy supply chains, and bottlenecks of a scale of disruptive potential, surpassing anything in modern history. This concentration, moreover, will primarily rest in China, potentially enhancing the hegemonic prospects of what is already a military and economic superpower. More problematic is that China, not unlike Russia, is becoming increasingly autocratic, has made expansive territorial claims and is threatening a neighbouring territory with war, and it has, in recent history, weaponised its critical mineral supplies.

The green energy reset gifted China with a unique opportunity to overcome one of the most significant constraints to its national power – its heavy reliance on foreign nations to meet its rapidly expanding energy needs. It also benefited from a shift from fossil-fuel technologies for which the West (and nations such as Japan) had head-starts over China spanning decades, to technologies in which lead times were less than a decade, and which were more compatible with China's domestic industrial and R&D strengths, such as its burgeoning electronic goods sector. A mixture of innovation, market scale and effective long-term planning, and no short measure of subsidies, facilitative regulation, foreign acquisitions, tech transfer and debatable market practices, propelled this agenda into an enormously successful green energy sector expansion. This has seen China transform in the space of several years from a nation that saw energy security as a primary vulnerability, to controlling vast spectrums of the global value chain of the new energy technologies set to dominate the post-fossil fuel economy.

What makes this particularly problematic is the staggering scale of this dominance. China controls over 80% of the critical components of solar panels (including a 97% share of silicon ingots and wafers), in 2022 supplied nearly 60% of the world's wind turbines, now accounts for over a third of the world's electrolysers – used to produce low-emission hydrogen for fuel cells – and is a major supplier of heat pumps. Further upstream, China leads the supply of 21 of the European Commission's list of 34 critical minerals, accounts for 85% of rare earth processing and around 70% of their mining production, as well as around 70% of the refinery capacity of cobalt and lithium, critical minerals used in lithium EV batteries, which Tesla Motors CEO Elon Musk has described as "the new oil." Six of the top 10 global lithium battery manufacturers are Chinese, and one estimate puts China's battery manufacturing capacity at 77% of the global share.

These figures dwarf the oil market global export shares of the largest exporter Saudi Arabia (almost 15% as of 2021), and in some categories match the oil market share of OPEC nations in their entirety. Yet the unwillingness of many nations to face the scale of the problem when it was in its formative stage is now leaving many – in particular democratic states wary of China's rise – with few good choices. As a recent Japanese study argues, the three agendas of derisking from China, decarbonising, and retaining economic stability, are now heading towards a zero sum game. Simply put, states could find being presented with a lose-lose choice between enhancing the risk of either geopolitical/geoeconomic or environmental crises, with either in turn potentially precipitating its alternative.

All nations face security risks from energy supply overconcentration, as well as the threat that energy dependency erodes their agency. Growing subsidies from industrialised nations in the green tech sector is also damaging the competitive prospects and industrial sovereignty of poorer, developing nations. But, similar to the oil era, most directly affected by this situation are likely to be the resource (critical mineral) rich nations. With extraction forecast to fail to meet demand in the near future, these nations, many of whom already have fragile government institutions and preexisting social tensions, could find such challenges accentuated by competing pressures from rivalling blocks scrambling to secure supplies. There are already nascent signs that this could soon occur. The largely impoverished and historically unstable Democratic Republic of Congo (DRC), responsible for about 70% of the world's supply of cobalt, a key component in EV batteries, is already receiving increasing attention from both the United States and China.

Chinese investors, who have long been accused of exploiting the nation, are upscaling their heavy presence. The US, which has signed an MOU to codevelop an EV supply chain with the DRC, could soon see bills introduced into Congress "about securing access to DRC's cobalt for U.S. security interests". If intensifying competition translates into great power political pressure, it could pose risks to a fragile nation in which battles for control of these very resources has previously been a feature of militia-fed chaos, civil war, and regional tensions. This could also be the case in other African nations that have been a magnet for foreign investment such as Zimbabwe.

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On the other side of the world, the recent election of Javier Milei as president of Argentina – the world's fourth largest supplier of lithium and one of the three nations that make up South America's 'lithium triangle' – is also bringing attention to the growing intersection between domestic politics and the geopolitics of new energy in that region. These issues pose the question as to what can now be done. Barry Lynn, a former senior fellow at the New America Foundation, and the head of the Open Markets Institute, proposed a "rule of four," or the notion that no country or company should hold more than a 25% market share in any crucial commodity such as critical minerals. But with trust between the major players deteriorating, the potential for a new energy order emerging from compromise or positive competition between them is shrinking, raising the spectre of fragmented and inefficient supply chains, or hyper-centralisation prompting widespread withdrawals from decarbonisation commitments.

Ultimately the broader community of nations, leveraging their status as supply chain partners and target markets for green technologies, could play a key role in averting the new energy order's overconcentration or fragmentation. To do so, however, would require the formation of a multilateral forum that practices a new form of liberal pragmatism: one that accommodates, as opposed to castigates, mature discussions on geopolitical and, in particular, realist energy security concerns.

About the author:

Dr Corey Lee Bell is a researcher at the Australia-China Relations Institute, University of Technology Sydney.

Elena Collinson is Head of Analysis at the Australia-China Relations Institute, University of Technology Sydney.