

# The Strategic Implications of Renewable Energy

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For the EU, the incentive to transition to clean energy is not just ecological but also geopolitical. Daniel Scholten analyses the twists and turns that may lie ahead in Europe's path to realise its goal of becoming a world leader in renewables. While EU Commission President Ursula von der Leyen's Green Deal may be a move in the right direction, a coherent blueprint with political backing will be essential if the EU is to forge a sustainable and coordinated energy security policy.

The European Union recognises and is actively seeking the geopolitical benefits of renewable energy. Renewable energy is not just a policy priority for the European Commission in light of climate change and pollution, but a path to energy security, industrial strength, and global stability.

But renewable energy presents strategic challenges of its own. Internally, it introduces a new energy politics with the potential to cause trouble among its members. What should Europe's future integrated energy system look like and how should the costs and benefits be shared? While the EU sets ambitious renewable targets, it has no blueprint for how a future European energy system should function or for managing a multi-speed transition. Externally, new supply chains, linking materials, sources, generation technologies, and distribution corridors, will mean new uncertainties, energy borders, and dependencies. On the economic front, the jobs and prosperity that renewables promise depend on the EU coming out on top in the competition over clean tech.

## The geopolitics of renewable energy

The geopolitical implications of renewable energy have received increased attention over the last few years and scholars discern both benefits and drawbacks of the transition.

On the one hand, the abundant and widespread nature of renewable energy enables more domestic production, lowering import dependence and improving trade balances of current fossil fuel importers. Countries essentially become prosumers that face a make-or-buy decision between cheap imports and secure domestic supply. This frees them up to select reliable trade partners now that more countries are producers. Electricity is the energy carrier of most renewables. As electricity suffers from long-distance losses, energy trade is likely to become more regional. There would likely be fewer entanglements in the Middle East and concerns about transport bottlenecks such as the Suez Canal, Malacca Straights or pipelines in unreliable transit countries. Instead of global supply chains, grid communities (where countries jointly manage an energy system with their neighbours) become an option. A new industry emerges in clean generation technologies, support systems, and storage, providing jobs and revenues. Finally, renewables contribute to local and global stability. Locally, decentralised generation facilitates economic development and political empowerment. Globally, renewables reduce pollution and emissions and thus decrease the likelihood of conflict and migration.

On the other hand, renewable energy could increase industrial rivalry between the United States, the European Union, China, and other clean tech players. They will vie for global market shares, access to critical materials, and

technical know-how. The transition also raises concerns among current fossil fuel exporters about stranded oil and gas assets and political instability. Another factor is the intermittency of solar and wind energy. Not all countries have cheap storage means such as Alpine lakes and so ensuring that cheap electricity is available at the right time troubles policy-makers. Grid politics will replace pipelines politics as the ownership of interconnectors gains increasing strategic relevance to the control of flows and for the protection of domestic markets. Even if the final result of the energy transition promises benefits, the process harbours plenty of uncertainties as countries adjust their infrastructures and shift trade partners.

## **EU energy policy and the benefits of renewable energy**

The EU wants to be a global leader in renewable energy. Its targets state that, by 2030, 32 per cent of the EU's energy mix should come from renewable sources. It has also promoted the renewable energy industry as part of its energy and climate policy framework, with its A Clean Planet For All strategy aiming for a climate-neutral EU by 2050.

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Such measures are not ends in and of themselves; they are intricately interwoven with the EU's strategic goals. In its 2014 Energy Security Strategy and 2015 Energy Union package, the European Commission calls for secure, competitive, and sustainable energy in the European Union. The Energy Union covers five main areas. The first pertains to security, solidarity and trust. It calls for the diversification of origin, sources, and routes plus the strengthening of emergency and solidarity mechanisms and critical infrastructures (storage capacity, contingency plans, and the ability to redirect energy flows), as well as cooperation for a common external voice. The second aims for a fully integrated internal market that guarantees the free flow of energy through adequate infrastructure without technical and regulatory barriers. The third is energy efficiency, including both moderation of demand and less wasteful production and distribution. Doing more with less implies fewer imports and better trade balances. The fourth is climate action and the decarbonisation of the economy and is strongly linked to the Paris Agreement and the EU's ambition for climate leadership. Finally, the Energy Union calls for research, innovation, and competitiveness to support new technologies and create jobs and revenues.

Renewable energy represents the EU's chosen path to diversify away from oil and natural gas, improve energy security, and break free from old ties to engage in new trade relations from a position of industrial leadership. In terms of soft power, its deployment is expected to support claims of political leadership in climate affairs and create leverage in other areas. But the benefits of renewable energy will not materialise by themselves. The EU still has a series of obstacles to overcome, both at home and abroad.

## **Domestic challenges for the EU**

The integration of renewable energy systems resembles a strategy without an objective. Introducing renewable sources into existing energy systems requires a massive effort and coordination among member states if blackouts are to be avoided and the most is to be made of the natural advantages different countries enjoy. However, as it stands, the EU is unclear about what the European energy system should look like after the transition. Crucial questions remain unanswered. What (renewable) energy sources should be used for electricity, heat, and mobility, and where will they be generated? What would be the ideal mix between electricity and gases (such as natural gas or hydrogen) for a robust energy system? How much demand will be met through decentralised generation and

microgrids and how much high-voltage interconnector capacity do we need? How and where will energy be stored? Who should operate what parts of the system? While the EU decides on renewable energy targets such as 32 per cent by 2030, the execution is left to the member states. As each country has its own policy priorities and energy preferences, from a European perspective, it is essentially pursuing a process into the unknown.

This lack of a clear destination has three damaging consequences. First, there is a risk of unnecessary spending on redundant capacity. Why built excess storage or standing reserves if interconnection could be just as effective? Second, EU energy security benefits from coordination between renewable energy efforts. For example, while it may be good for the climate if all countries move to renewables as fast as possible, for grid stability it may be safer if some countries retain substantial fossil capacity for the time being to handle intermittency elsewhere. Intermittency effects have already spilt across borders, leading to disputes and countries installing phase-shifters to prevent unwanted fluctuations. Third, without a blueprint, a view on how supply chains will change over the energy transition is missing.

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It is unlikely that the benefits of renewable energy will be distributed equally among EU member states. Merely aiming for a regulated internal market may be insufficient to overcome the political challenges to that same market's proper functioning. In this light, the different speeds with which the energy transition is proceeding among EU member states is affecting European energy security. In short, renewable energy is perceived as win-win in the West and win-lose in the East. Whereas renewable energy represents political independence and industrial opportunities for Western European countries, Eastern European countries realise its security of supply potential but worry about their workforce in the fossil fuel industry and electricity prices. These differences reflect divergent national energy security interests and lead to different policy strategies. This development could undermine energy relations among EU countries, European energy security, and the Energy Union. Countries will control cross-border energy flows to service their national interests rather than a European one, for example, by blocking flows to protect domestic markets from cheap renewable electricity. These differences will hinder a common external voice in energy matters and leave the EU open to divide and conquer tactics by Russia, China, and the US. As long as the benefits of renewable energy are not more evenly distributed over EU members, this Achilles heel will remain exposed.

The centrality of Germany in EU energy flows and markets is another political issue. Situated at the heart of Europe, most north-south and east-west energy flows cross its borders. Considering German economic and political dominance, the question arises whether this is desirable for the EU as a whole. Wouldn't a European energy system be more resilient if new interconnection capacity were to target routes from west to east both through Scandinavia and below the Alps, and from north to south via France and the Low Countries and through the Visegrád group?

## **External strategic considerations**

Looking outwards, the EU needs to reevaluate its energy borders. Current energy trade is with Russia, Norway, the Middle East, and Africa, with important transit corridors in Ukraine and Turkey. The EU neighbourhood policy is hence well placed to handle energy. With the transition to renewable energy, more domestic (and local) generation, the electric nature of transportation, and critical material needs for clean tech will change the EU's relations with these countries. More fundamentally, the question is what new energy relations will replace old ones? Which countries will be instrumental to Europe's future energy needs? As the EU has no systemic plan or views on future

supply chains, even if some countries have critical materials strategies, it is difficult to anticipate Europe's new energy borders and partners. Moreover, it is not only a matter of Europe's needs. How other countries perceive the energy transition is also an open question. Will countries such as China and the US manage to gain a bigger foothold with Europe's potential future trade partners? Understanding future needs and the trajectories of other countries, first and foremost those of Russia and Middle Eastern exporters, will help manage anxieties and expectations and develop alternative projects with partners such as Ukraine, Turkey, the Eastern Mediterranean, and North Africa.

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In this light, even without a blueprint of future supply chains, we can anticipate four strategies open to categories of countries to address the differentiated impacts of the energy transition. First, a limited number of current fossil fuel net-importers could become potential leaders in clean tech. These are essentially the EU and its industrial competitors like China and the United States. Supportive industrial policy will be required from the EU if it is to compete with other great powers, as will be investment in relationships with both material suppliers and lucrative export markets. Second, most countries that are current fossil fuel net-importers will not become leaders in renewable energy. These countries will instead become interesting export markets for the EU over which industrial rivalry will ensue. The aim should be to convince such countries to adopt EU technologies and infrastructure standards to secure long-term relationships. Third, certain current fossil fuel exporters will manage to diversify their economy, possibly through renewable energy. Saudi Arabia is one possible example. For the EU, these countries represent ongoing but changed relationships. The aim here is to maintain good relationships by tackling this transition together, in a coordinated way. This approach would also help to keep industrial competitors at bay. Last, some current fossil fuel exporters will become renewable energy (technology) importers. These countries are likely to face civil unrest if their main source of income disappears. They are also likely to opt for the cheapest clean tech imports. For the EU, such countries will lose importance but may need attention if they are located at Europe's borders and instability occurs. In essence, the EU would need to gracefully downgrade current relationships, perhaps by shifting cooperation to other areas.

The expected economic benefits of renewable energy depend on the EU emerging strongest in the competition over clean tech. The EU covets global industrial leadership and promotes renewable energy industries, yet it follows a very economic route in a world that is increasingly multipolar and fragmented, i.e. political. Competitive industry and a focus on intellectual property may be insufficient to ensure access to foreign markets and critical inputs. A multi-speed Europe and Chinese initiatives such as the 16+1 initiative to promote cooperation with Eastern European countries mean that the EU is challenged in its home market, reducing the potential for economies of scale, industrial growth, and global competitiveness. The EU would do well to develop a strategy for Eastern Europe and its near-abroad early on. Incorporating them into an energy infrastructure dominated by EU technologies and standards would make it more difficult for rivals to sell their technologies there in the future. In many ways, the EU should approach this not as selling generation technologies or buying African solar electricity, but as a package: cooperation on energy sources, critical materials, generation technologies, distribution means, and storage assets delivered as part of a relationship combining energy, infrastructure, and industrial policy. This approach would be like China directly linking the Belt and Road Initiative to their all-electric society efforts centred around battery technology chains, and would mean rethinking Europe's new energy borders to support industrial strategy where possible.

## How to get there

The famed Prussian military theorist Carl von Clausewitz drew an important distinction between objectives, strategies, and tactics: “Tactics are the use of armed forces in a particular battle, while strategy is the doctrine of the use of individual battles for the purposes of war.” As paraphrased by Willie Pietersen, strategy is about picking the right battles. Tactics are about successfully executing those battles. The objective, finally, would be winning the war, often defined in a specific manner such as unconditional surrender or withdrawal of foreign troops. It seems that the EU approach to the energy transition resembles one of strategy (and tactics) without an objective. The EU is fighting on all fronts but lacks a coherent strategy or a clear objective for what its future energy system should look like. For a coordinated energy security policy that can support Europe’s industrial ambitions, having a blueprint with political support behind it is essential.

The development of such a strategy seems utopian, given the EU’s mandate and member states’ authority over their energy policy. Muddling through along current lines is a far more realistic expectation. Still, the European Green Deal under development by Commission President Ursula von der Leyen seems to push things in the right direction. It proposes more ambitious 2030 emissions targets, new carbon and emission taxes, and a sustainable investment plan to support green innovation. Importantly, it also recognises the need for a Just Transition Fund to help countries move away from coal and retrain workers. Let us hope this fund can overcome the inherent differences between member states’ energy security priorities and pave the way towards real cooperation on renewable energy.

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