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Two Pillars for the Green Transition: European Energy Security in the Era of Decarbonisation

by Tommaso Luisari

Slowly but steadily, Europe is emerging from an energy crisis that threatened to stymie the post-pandemic recovery and plunge its economy into recession once more. After Russia's weaponisation of energy supplies left European governments scrambling to secure alternative fossil fuels for the better part of 2022, the energy outlook today has defied the most pessimistic expectations: supplies are ensured, storages are adequately filled,[1] and energy prices are returning to pre-crisis levels. Consequently, the focus in Brussels has shifted from navigating the crisis to ensuring that the transition to renewables, as enshrined in the European Green Deal, does not jeopardise European energy security once more.

Yet the roadmap for doing so is complex. Drawing on the lessons learnt during the crisis, European energy security arguably rests on two pillars: secure supply chains and efficient energy use. Only the combination of the two can successfully emancipate Europe from energy dependency, and bolster the often-touted resilience of the European economy.

Pillar one: Securing autonomous supplies

The International Energy Agency defines energy security as "the uninterrupted availability of energy sources at an affordable price".[2] It follows that the first milestone on the road to European energy security is the availability of an uninterrupted supply of energy. This requires both an independent generation capability and to satisfy the remaining demand

[1] European Commission DG Energy, *EU Reaches 90% Gas Storage Target Ahead of Winter*, 18 August 2023, https://energy.ec.europa.eu/node/5508_en.

[2] International Energy Agency (IEA) website: *Emergency Response and Energy Security*, last updated 3 August 2023, https://www.iea.org/about/emergency-response-and-energy-security.

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through imports while remaining committed to a political vision that seeks, in the long run, to phase out the latter in favour of the former.

In May 2022, in response to Russia's invasion of Ukraine, the European Commission presented REPowerEU, its plan to wean the Union off its dependence on Russian fossil fuels by frontloading the roll-out of renewable power generation capacity. The plan targets a 42,5 per cent renewable energy share by 2030; the measures proposed to this end include investment worth 300 billion euro and proposals for fast-tracking the permitting processes for renewables.[3] Despite reservations on the EU's capacity to meet the 2030 target,[4] REPowerEU is undeniably a step in the right direction as regards energy security, since it will enable the Union to source a sizeable part of its energy requirements in house by the end of the decade.

Yet in its execution the Union must avoid re-creating conditions analogous to those that allowed Russia to engineer last year's energy crisis.[5] The roll-out and sustainment of green energy generation capacity requires access to a host of minerals and rare earth elements (REEs). Today, European REE demand relies on third-country imports, and, given Europe's absence from the upstream part of most REE value chains,[6] this will remain the case for the foreseeable future. Moreover, China has positioned itself as "the kingpin of clean energy supply chains" thanks to a provident industrial policy of targeted, state-backed investment and, since 2010, increasing export restrictions.[7] Given the centrality that REE imports will have in the green transition, the risk of replacing one strategic dependency (Russian fossil fuels) with another (Chinese REEs) is therefore a real one.

Against this backdrop, it is imperative for the Union to develop a strategy to initially navigate, but ultimately mitigate these dependencies. The Critical Raw Materials Act is a welcome start, in that it sets a maximum import quota of 65 per cent from a single third country for the Union's annual consumption of any strategic raw material. However, the 65 per cent

[3] See the 2023 Flagship Technical Support Project "Accelerating Permitting for Renewable Energy" in the European Commission DG Reform website: https://reform-support.ec.europa.eu/node/437_en.

[4] IEA, "Is the European Union on Track to Meet Its REPowerEU Goals?", in *Renewables 2022. Analysis and Forecasts to 2027*, Paris, IEA, 2022 (revised version January 2023), p. 117-128, https://www.iea.org/reports/is-the-european-union-on-track-to-meet-its-repowereu-goals. The IEA concludes that "in none of [our forecasts] are [the increase] levels consistent with the [targets in the] REPowerEU plan".

[5] Jillian Ambrose, "Russia Is Orchestrating Europe's Gas Crisis, Says Energy Agency Boss", in *The Guardian*, 12 January 2022, https://www.theguardian.com/p/kadjk. For more details on how Russia engineered Europe's gas crisis, see Dmitri Alperovitch with Sergey Vakulenko, "How Russia Engineered the Perfect Gas Crisis" (podcast), in *Geopolitics Decanted*, episode 17 (29 July 2022), https://podcast.silverado.org/episodes/analysis-of-the-war-in-ukraine-july-28-2022-IzPM5ON9.

[6] Jane Nakano, "The Geopolitics of Critical Minerals Supply Chains", in *CSIS Reports*, March 2021, p. 15, https://www.csis.org/node/60182.

[7] IEA, *The Role of Critical Minerals in Clean Energy Transitions*, Paris, IEA, May 2021 (revised version March 2022), p. 162, https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions; Ibid., p. 4-6.

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ceiling should not be considered as an end goal; on the contrary, it should be continuously revised downward, leveraging the firepower of the Global Gateway to challenge China's quasi-monopolistic position in the REE value chains. Doing so requires protracted efforts to diversify the European supply chain, and ultimately engagement with China and the United States to create the conditions for open global supply chains. This outcome ought to be a target of the Union's international development policy in the years to come, as it will ensure a viable transition to autonomous energy generation and allow for its sustainment over time.

With this target in sight, policymakers must nonetheless take into account that, in a context where all 27 member states are net importers of energy,[8] the transition to pan-European self-sufficiency in energy generation will be no rapid feat. Consequently, member states will have to backfill through imports of oil and gas, which, along with nuclear generation capacity, are likely to account for a substantial part of European energy consumption for the foreseeable future. If energy security is to be sustained throughout the transition, it is then crucial for member states to maintain the hard-earned diversification in the sourcing of fossil fuel imports. EU-wide coordination on this aspect can lead to many low-hanging fruits – for example, consistently pursuing the joint purchasing of gas via the recently established EU energy platform[9] would allow the Union to leverage its market weight as a major consumer to drive down gas prices. Ultimately, however, real energy security can only be achieved by reducing the EU's energy dependency rate to a level that would allow for the rapid substitution of imports with domestic energy production, should any economic or geopolitical contingencies arise. This "de-risking" approach should underpin the political vision that guides all EU energy policy choices in the upcoming years.

Pillar two: Reducing demand by ensuring energy efficiency

If energy security is to be achieved without jeopardising the 2050 climate targets, all these measures to ensure supply should be complemented by policies aiming to reduce demand for energy and raw materials by ensuring their efficient use. Doing so requires a multi-faceted effort across several policy areas, which builds on the lessons learnt in 2022. Fixes to the electricity market to reduce consumption at the margin,[10] by, for example, better linking wholesale and retail prices, should be the tip of the iceberg; in the long run, the Union requires a comprehensive industrial plan[11] that treats energy

[8] Eurostat, "Energy Imports and Dependency", in *Shedding Light on Energy in the EU – 2023 Interactive Edition*, March 2023, https://ec.europa.eu/eurostat/web/interactive-publications/energy-2023#energy-imports-dependency.

[9] See the EU Energy Platform webpage for more details: https://energy.ec.europa.eu/node/5060_en.

[10] Michael Pollitt et al., *Recommendations for a Future-Proof Electricity Market Design*, Brussels, Centre on Regulation in Europe, December 2022, https://cerre.eu/?p=10904.

[11] Pier Paolo Raimondi, "Walking out of the Woods: EU Industrial Policy between the Energy Crisis and Decarbonisation", in *IAI Commentaries*, No. 22|64 (December 2022),

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efficiency as a tenet of sustainable development. Recycling goals for raw materials should be constantly but realistically revised upwards, and investment both within and outside the EU in transition-enabling sectors, such as those identified in the Strategic Technologies for Europe Platform (STEP), should be geared to defined energy efficiency goals. Finally, the Union can do more to address the skill shortage that besets green industries today, by, for instance, better aligning its environmental policies with skill development strategies at the sectoral level. The American Inflation Reduction Act – which compels firms that wish to benefit from tax credits to allocate at least 15 per cent of the new labour hours required for the projects to newly-hired apprentices – offers interesting lessons in this respect.

Strategies to foster energy efficiency at the industrial level should not spare ambition: the crisis has shown industry to be more prone to substitution of energy sources than it would admit itself.[12] Financing these efforts while maintaining a level playing field will prove difficult, as the sustainable finance strategy and the European Investment Bank can only go that far before distortive state aid will need to kick it. Yet if the Union wants to attain energy security and meet the Paris climate commitments enshrined in its own legislation, it will need to double down on demand reduction first of all.

An ambitious but realistic approach

Achieving European energy security in the era of decarbonisation will revolve around two pillars: pursuing an autonomous energy generation capacity, backstopped by imports, and fostering the efficient use of resources. To reach these targets, an ambitious but realistic approach to policymaking is required. Ambitious, in that member states should not hesitate to make use of the economic firepower and R&D capacity at their disposal to steer private industry towards well-defined but demanding sustainability targets. Realistic, in that it will have to take into account that the pool of resources that enable the transition is finite, and thus that both China and the United States will have agency in shaping Europe's ability to access the critical raw materials and related processing capacities that underpin the transition. A targeted, priority-based approach to investment should therefore be pursued; particular emphasis must be put on contingency planning, both at the European and member state level. Ultimately, pursuing ambitious energy generation and efficiency goals with a realistic approach is the shortest path to attain European energy security today, and thereby ensure that Europe doesn't repeat tomorrow the mistakes of yesterday.

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https://www.iai.it/en/node/16355.

[12] Benjamin Moll, Moritz Schularick and Georg Zachmann, "Not Even a Recession: The Great German Gas Debate in Retrospect", in *ECONtribute Policy Briefs*, No. 48 (May 2023), http://hdl.handle.net/10419/273549.

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