

Strengthening European Energy Security

Reducing impacts of geopolitical instability
by investing in the energy transition

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Introduction

The energy crisis that followed the invasion of Ukraine, as well as the recent blackouts in Spain and Portugal, have underscored the growing energy security risks confronting Europe. The EASAC report on “Security of Sustainable Energy Supplies” examines how Europe’s shift to low-carbon energy, coupled with investments in energy infrastructure, offers opportunities to strengthen resilience while also reducing emerging vulnerabilities. The report’s definitions of “energy security” includes not only the uninterrupted supply of energy in adequate quantities, but also the availability of energy at affordable prices.

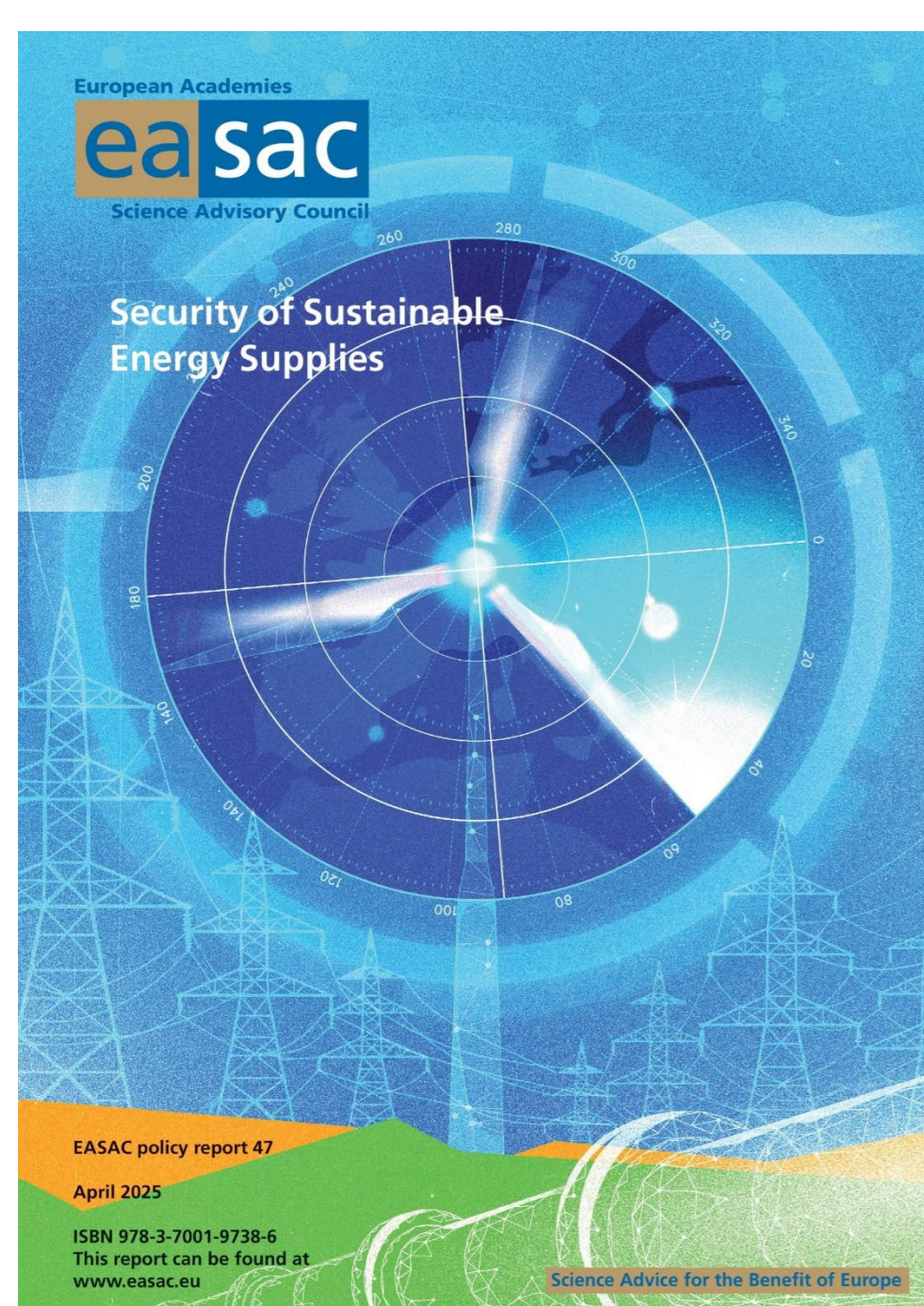
Multilateral partners

The EASAC working group behind this report brought together experts from a wide range of social and technical scientific disciplines. It was co-chaired by Prof. Claire Dupont (University of Ghent) and Prof. Paula Kivimaa (Finnish Environment Institute), and comprised 26 experts representing 21 European countries. The project was coordinated by William Gillett, Director of the EASAC Energy Programme, with support from Yorick W. Enters, EASAC Energy Policy Adviser.

At the project’s kick-off workshop, valuable input was provided by 15 experts from the European Commission, the Joint Research Centre, EU DSO, WindEurope, SolarPower Europe, EASE, and EuroHeat & Power. In addition, an energy modelling workshop organised by EASAC gathered contributions from 12 modelling teams across 11 European countries, offering further key insights.

Selected main messages

- **Transitioning from fossil fuels to low-carbon energy sources strengthens energy security.** The decentralised nature of renewable energy, combined with reduced reliance on fossil fuel imports, lowers vulnerability to supply disruptions. In addition, increasing the share of renewables is widely expected to drive down energy prices over time.
- **A secure energy transition will require integrated, forward-looking policies and a more connected energy system.** As large-scale electrification and renewable deployment expand, greater flexibility will be essential. This will depend on enhanced storage capacity, demand-side response, voltage and frequency stabilisation, back-up generation, and stronger interconnections across the grid.
- **Citizen engagement is key to a secure, timely, and fair energy transition.** While many technological aspects of the energy transition are reasonably well understood, social factors - such as public opinions on new energy infrastructure projects - can have a massive impact on the transition rollout. Public opposition can drastically slow down the transition and prolong the dependence on volatile fossil fuel markets.



Policy Recommendations

- Accelerate the energy transition to improve energy security.
- Finance the strengthening of energy infrastructure, including protection against cyberattacks.
- Further integrate energy markets to improve security, sustainability, and affordability.
- Engage with citizens to reduce societal tensions and promote the energy transition.
- Improve the efficiency and circularity of the energy system to reduce the demands for energy and critical raw materials.

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