

## PRESS RELEASE

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### Europe's energy system in 2050 requires a flexible backup to wind, sun and batteries for longer supply gaps

A fully decarbonised energy system in 2050 will regularly face longer periods of not enough energy from the wind and sun, says the new study "[The need for clean flexibility in Europe's electricity system](#)", which was presented today at an event of EUTurbines and EUGINE.

The authors of the study, renown economic consultancy Frontier Economics, conclude that even with a perfect European grid ("copper plate approach") as well as large amounts of battery storage and demand-side management these will not be sufficient to cover regularly occurring "dunkelflaute"- events.

Based on historical weather data and generation and storage capacities predicted by the transmission system operators, the modelling of Frontier Economics shows that weather conditions from January 2010, would lead to a maximum residual load of 366 GW in 2050 to be covered by flexible back-up generation, ensuring that electricity supply meets demand during three cold January weeks. This amounts to almost 40% of the [total installed capacity](#) for the EU in 2020.

To illustrate the magnitude of the challenge at hand, Frontier Economics calculates that covering the longer-lasting, extreme supply gaps would require 1,4 billion electric vehicles. As a back-up solution for such longer supply gaps, high-density energy storage options with green molecules in combination with power plants running on climate-neutral gases would be a better solution, the study finds. Those plants would then run a limited number of hours a year.

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The study was presented during the event “Empowering the Energy System through Flexibility”, which was opened by Catharina Sikow-Magny, Director at the European Commission’s DG Energy, who commented on the efforts of the European Commission on supporting flexibility via a revision of the European electricity market design. The study also includes recommendations on how to better support the necessary investments in the required flexible generation capacities.

“The study highlights the importance of not only looking at the short-term flexibility options like batteries and demand-side management. Our flexible power plants can be decarbonised with the use of renewable and climate-neutral gases and operate just when nobody else can ensure a reliable electricity supply” says EUTurbines President, Sven-Hendrik Wiers.

*Note for the Editor:*

**EUGINE** is the voice of Europe’s engine power plant industry. Our members are the leading European manufacturers of engine power plants and their key components. Engine power plants are a flexible, efficient, reliable, and sustainable technology, helping to ensure security of electricity supply and providing (renewable) electricity and heat.

For more information, please see [www.eugine.eu](http://www.eugine.eu)

**EUTurbines** represents the leading European gas and steam turbine manufacturers.

EUTurbines advocates an economic and legislative environment for European turbine manufacturers to develop and grow R&I and manufacturing in Europe and promotes the role of turbine-based power generation in a sustainable, decarbonised European and global energy mix.

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