



## **New Scenario tool analyses the benefits and cost of green transition**

**The Danish Energy Agency launches the Balmorel Lite tool for assessment of the value of renewable energy in different electricity systems. Based on existing power plants, various scenarios can be simulated to represent potential system effects of various investments in renewable energy sources like wind and solar. It is a simple tool that can analyse the transformation of the power systems and provide a better understanding on how renewable energy affects the power markets.**

Long term energy planning has always been a key element of the Danish energy and climate model. Since the first oil crisis in 1973, Denmark has established a focused long-term energy policy, leading to the transition of the Danish energy system towards reduced energy consumption, increased decentralized energy production and increased utilization of renewable energy resources. The Danish Energy Agency is now presenting a model to introduce users in the analysis of current and future electricity systems. The model can perform various scenarios analyses with potential investments in renewable energy.

Denmark has for many years been in the lead with transition to renewable energy generation. Renewable energy's share of the final energy consumption has been steadily increasing since 1980. Nowadays, renewable energy accounts for more than 50% of domestic electricity generation, which is mainly due to electricity production from wind energy. Renewable energy is becoming increasingly competitive with conventional energy sources due to the declining renewable energy costs and the increasing prices of fossil fuels.

### **Shows the challenges and opportunities of integrating renewable energy**

The Danish Energy Agency presents this simplified web based tool to analyse effects, such as curtailment of renewable energy and changes in electricity prices due to an increasing share of renewable energy in existing power systems. The objective of the tool is to provide a broader picture of the possibilities and challenges for deploying more renewable energy, integrating it into a flexible electricity system and to perform initial localized calculation of system costs, i.e. current vs. future energy mix. The results from the model are deployable in relation to [the LCoE Calculator](#), by providing authorities with full economically feasible and sustainable alternatives for their future energy systems including system costs and changes in the electricity price by increasing the share of renewable energy in existing power systems.

The model can be accessed and used without a charge through the webpage [www.balmorellite.dk](http://www.balmorellite.dk).

### **About Balmorel Lite:**

- Balmorel Lite is a simplified version of the energy model Balmorel, which is used for scenario analysis in many countries. However, only the electricity sector can be represented with Balmorel Lite.
- Balmorel Lite simulates the hourly load distribution on power plants based on their short run marginal costs within a year.
- During the simulation, Balmorel Lite takes into account the start-stop costs and the technical minimum load on thermal power plants. As a result, the need for flexibility in the thermal power plants is illustrated in order to achieve optimal integration of renewable energy.
- Balmorel Lite is part of the Danish cooperation and activities with the purpose of supporting an environmentally sustainable development in the world's developing economies using Danish experiences with low carbon technologies and systems.

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