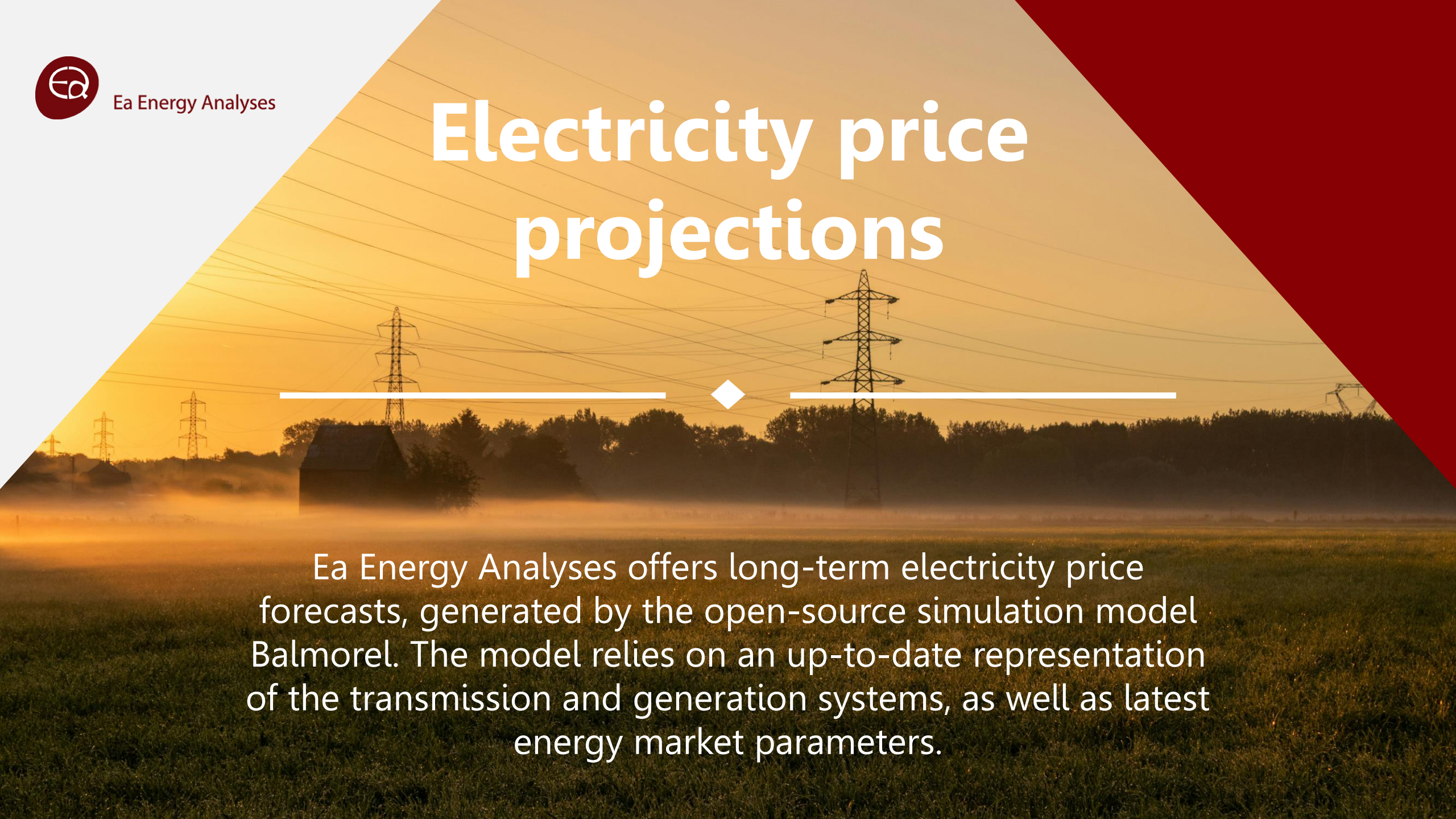
Ea Energy Analyses

Electricity price projections



Ea Energy Analyses offers long-term electricity price forecasts, generated by the open-source simulation model Balmorel. The model relies on an up-to-date representation of the transmission and generation systems, as well as latest energy market parameters.

Annual, hourly and technology specific prices

In addition to annual averages of electricity and heat prices, prices on an hourly time scale for all relevant years and areas can be delivered (e.g. DK1 and DK2).

Specific electricity prices, weighted for different fuels, technologies or individual generators can be provided as well. These are particularly relevant for investors in power production facilities (e.g. wind farm developers) to assist in the evaluation of prospective investments.

Example

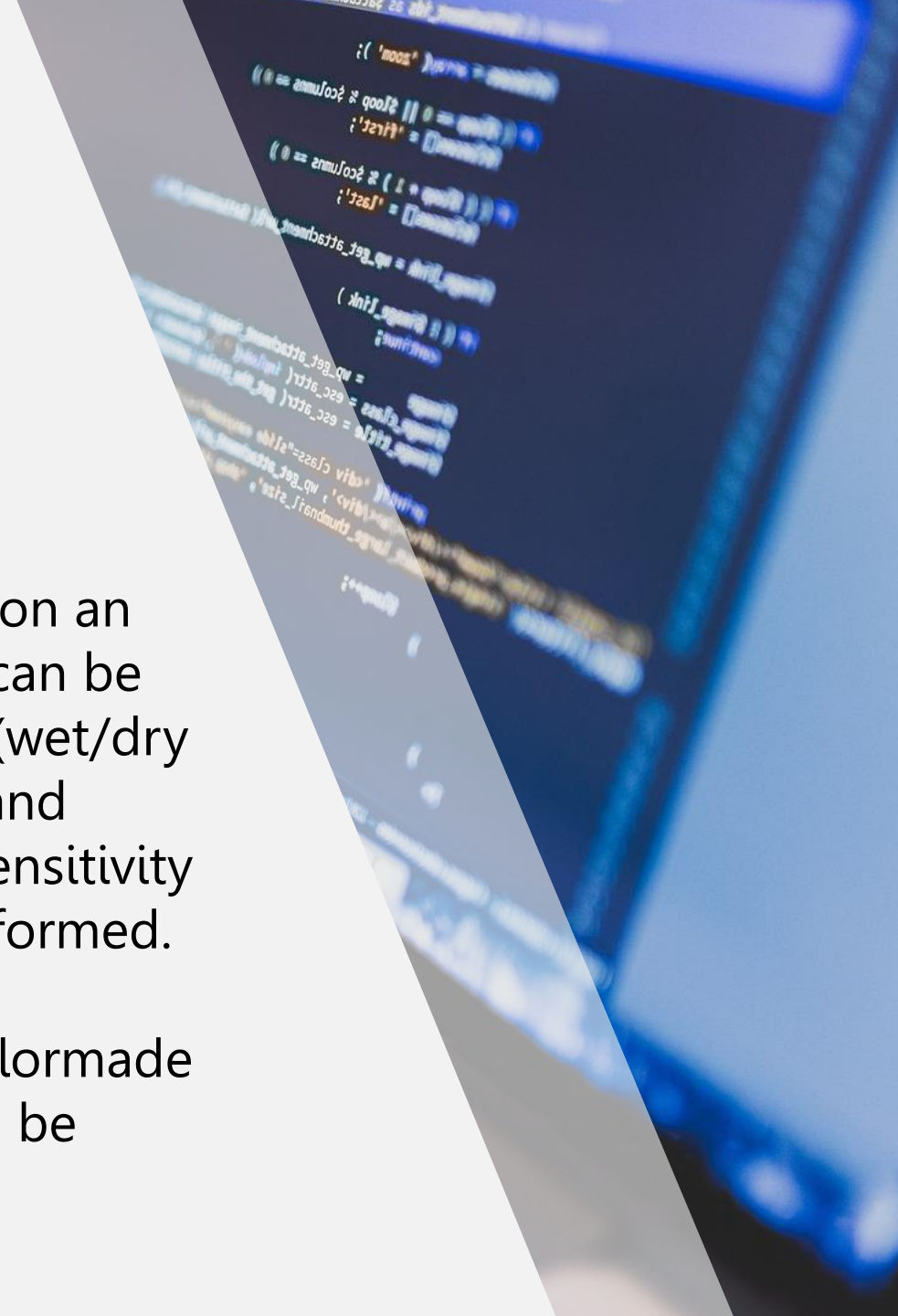

Hourly projections for selected price zones in 2035 (one week)
EUR/MWh
60
50
40
30
20
10
0
-10
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
DK1
Germany
NO2
SE4
Finland

Scenarios & sensitivity analyses

The energy price can be provided for a set of different scenarios.

Apart from Ea's best estimate scenario, which is based on an extensive updated database, a number of alternatives can be investigated based on e.g. differences in precipitation (wet/dry years), fuel and CO_2 prices, subsidy levels, generation and transmission build-out, renewable energy goals, etc. Sensitivity analyses on these or other parameters can also be performed.

Furthermore, forecasts for power and heat prices of tailormade scenarios including customer-specific assumptions can be provided.



Simulation model

The simulation of the power systems are undertaken with the open-source model Balmorel.

Balmorel is an optimisation model that can be used for:

- Detailed short-term hourly operation and dispatch analysis
- Long-term development investigations, including optimised investments in generation transmission capacities
- Price formation simulations, allowing for market and stakeholder analysis

Features

The model has hourly time resolution and a detailed description of generation facilities. For Nordic and Baltic countries, the model uses pricing zones as used in the Nord Pool market.

Germany is modelled with four zones to reflect transmission constraints. Other countries are modelled as one price zone.

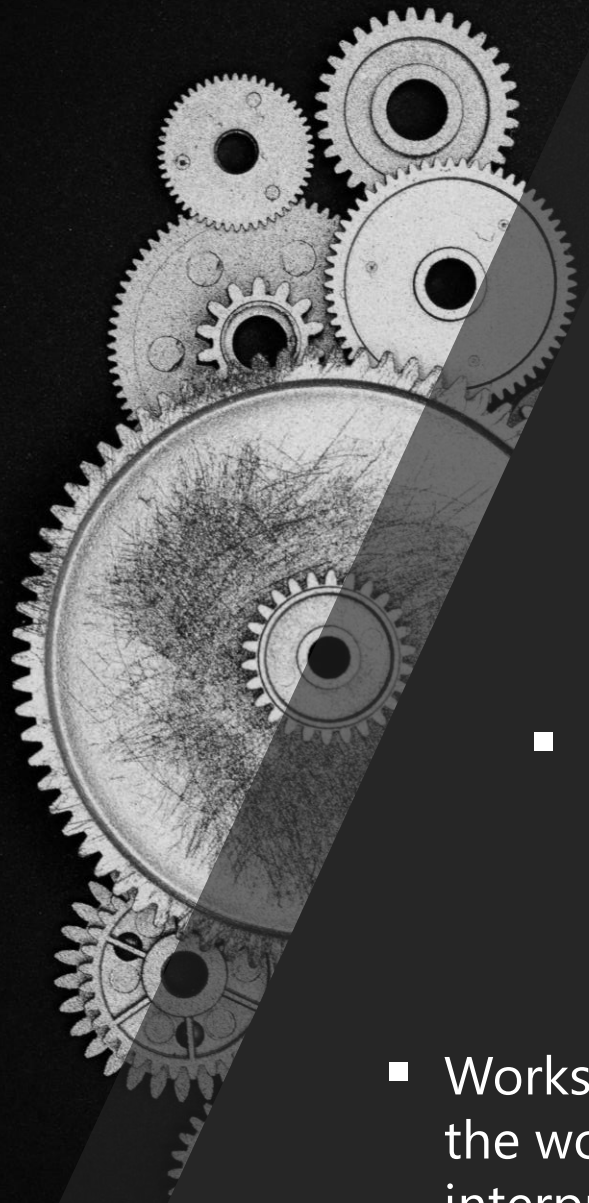
Prices are generated from marginal system costs, emulating optimal competitive bidding and clearing of the market.

Database

The generation and transmission capacities are based on reliable sources and updated regularly for all countries in the simulation.

An up-to-date database of the power system for Europe, which includes capacity and grid expansions is the foundation for the price projections.

Recent official forecasts for parameters such as fuel and CO_2 prices are used as input data for the electricity price projections.



Deliverables

- A report: A detailed report describing price projections and corresponding analysis of the power and district heating market, as well as an account of the methodology and input data used in the simulations.
- A user-friendly excel data file: Output data is delivered as an excel workbook containing a number of easy-to-use pivot tables with relevant information on the energy system and prices.
- Workshops: Additional workshops can be provided on the workings of the Balmorel model and further interpretation of output data.

About Ea Energy Analyses

Ea Energy Analyses is a Danish consulting company providing consulting services and performing research in the field of energy and climate change. Ea Energy Analyses operates in Denmark, the Nordic region and abroad with project activities in Europe, North America, Asia and Africa.

Ea's scope of work comprises analyses of energy systems from a technical, economic and environmental approach, as well as analyses of energy and climate policy measures. Our analyses focus on new production technologies as well as savings and adaption of energy consumption to a more intelligent energy system. We use complex mathematical models for simulation of electricity and heat systems in a liberalised market, and we utilise scenario techniques to estimate long-term possibilities for developing sustainable energy systems

Ea Energy Analyses

Ea Energy Analyses

Gammeltorv 8, 6th floor
1457 Copenhagen K
info@eaea.dk
www.eaea.dk