

Documentation

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Welcome to the short-term-forecasting wiki! Documentation coming soon!

Short-term forecasting of electricity generation, demand and prices using machine learning.

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Regions

Bidding zones

Definition

- The largest geographical area within which market participants are able to exchange energy without capacity allocation.
- The majority of bidding zones in Europe are defined by national borders (e.g., France or the Netherlands).
- Some are larger than national borders (e.g., Austria, Germany and Luxembourg or the Single Electricity Market for the island of Ireland)
- Some are smaller zones within individual countries (e.g., Italy, Norway or Sweden).

Source: Ofgem.

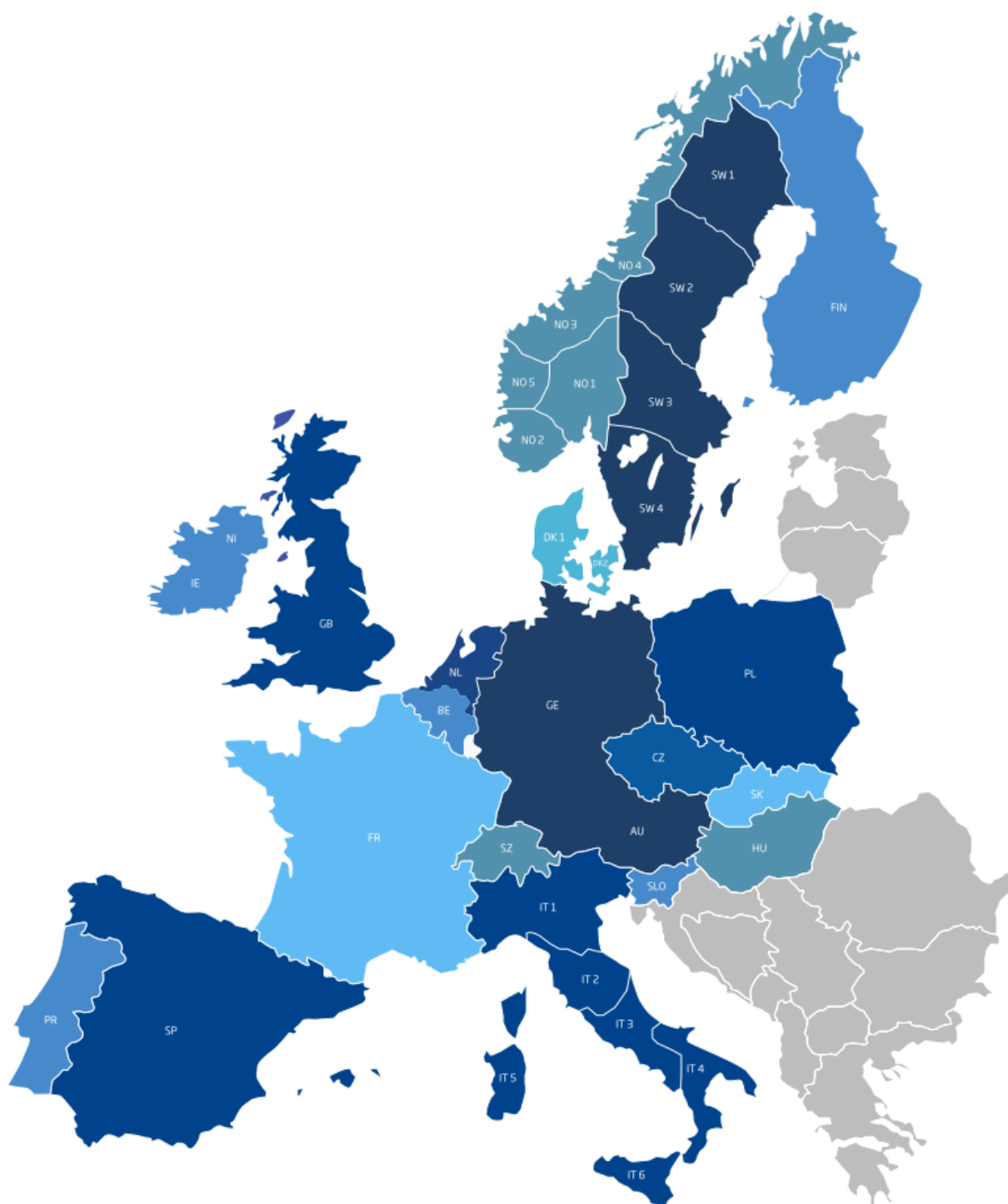


Figure 1: Bidding zones in the European electricity market. Source: Polskie Sieci Elektroenergetyczne.

Bidding zones in the North Sea region

Figure: Bidding zones in the European electricity market. Source: Polskie Sieci Elektroenergetyczne.

Table 1: Bidding zones in the North Sea region.

Country	Market(s)	Zone(s)
Belgium (BE)	EPEX SPOT	BE
Germany (DE / GE)	EPEX SPOT	DE-AT-LU**
Denmark (DK)	Nord Pool	DK1, DK2
France (FR)	EPEX SPOT	FR
Netherlands (NL)	EPEX SPOT	NL
Norway (NO)	Nord Pool	NO1, NO2, NO3, NO4, NO5
Sweden (SE / SW)	Nord Pool	SE1, SE2, SE3, SE4
United Kingdom (UK)	EPEX SPOT, Nord Pool	GB, I-SEM**

** Austria (AT / AU); Luxembourg (LU); Great Britain (GB); Irish single electricity market (I-SEM), which includes Republic of Ireland (IE) and UK's Northern Ireland (NI)

North Sea countries

NUTS (Nomenclature of territorial units for statistics)

See the Jupyter notebook.

Data

Data folder navigation

- ENTSO-E
 - generation and load data for each bidding zone in the North Sea region, grouped by country
- Meteo - meteorological data, grouped by country
- Market - market data for the North Sea region
- NUTS - territorial units

Met data

Deutscher Wetterdienst

- CDC (Climate Data Center) portal
- CDC OpenData
- Terms of use for data on the CDC ftp server
- Data set descriptions
 - Hourly station observations of air temperature at 2 m above ground in °C for Germany
 - Hourly station observations of relative humidity in % for Germany
 - Hourly station observations of precipitation amount in mm for Germany
 - Hourly station observations of form of precipitation (WR code) for Germany
 - Hourly station observations of index whether precipitation has fallen for Germany
 - Hourly mean of station observations of wind speed ca. 10 m above ground in m/s for Germany
 - Hourly mean of station observations of wind direction at ca. 10 m above ground in degree for Germany
 - Hourly station observations of air pressure at station level in hpa for Germany
 - Hourly station observations of air pressure at mean sea level in hpa for Germany
 - Hourly station observations of cloud coverage in eighths for Germany
- Hourly wind data

Royal Netherlands Meteorological Institute

Met Office

Norwegian Meteorological Institute

Swedish Meteorological and Hydrological Institute

Danish Meteorological Institute

Météo-France

The Royal Meteorological Institute of Belgium

Generation and demand data

ENTSO-E Transparency Platform

- GENERAL TERMS AND CONDITIONS FOR THE USE OF THE ENTSO-E TRANSPARENCY PLATFORM
- LIST OF DATA AVAILABLE FOR FREE RE-USE
- Downloaded data:
 - Actual Generation per Production Type
 - Total Load - Day Ahead / Actual

Market data

Nord Pool

- Membership list - Nord Pool
- Terms and conditions for use

EPEX Spot

- EPEX SPOT Exchange Members

Other data

NUTS (Nomenclature of territorial units for statistics)

Methodology

Modelling framework

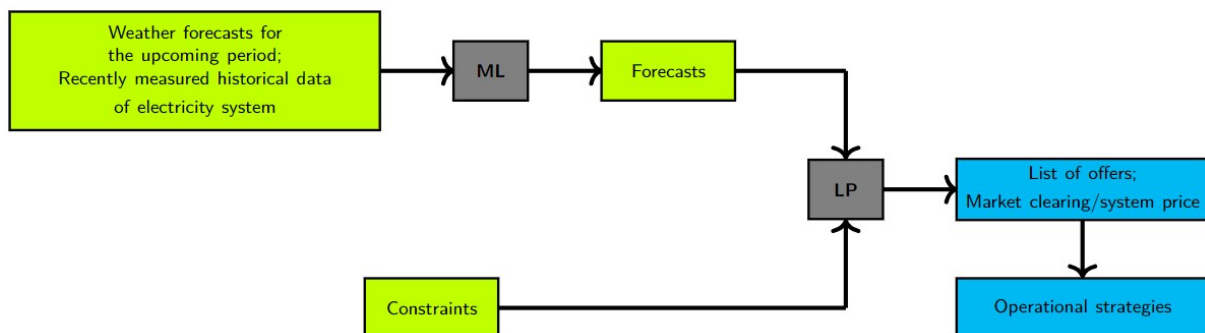


Figure 2: Modelling framework.

Figure: Modelling framework.

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