

Network modelling Breakout Group

Participants

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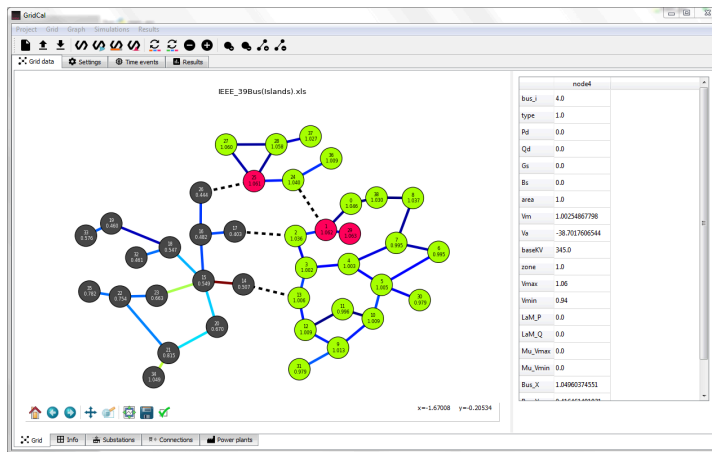
Modelling Methodologies

- Basic transport model - nodes, two way direction, where flow is a variable
- Load flow model, coupled to market model, takes into account reactive power, and actual Kirchhoff laws.
- Basic transport model is popularly used for electricity market analysis, and sufficient as well, since it is similar to the linear flow-based market coupling used in Central Western Europe.
- [Granger causality](#) is a statistical hypothesis test for determining whether one time series is useful in forecasting another, first proposed in 1969.

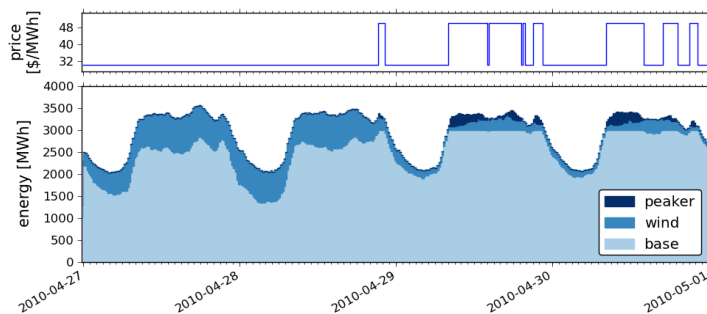
Tools

- [PYPOWER](#): Static power flows; python p
- ort of [MATPOWER](#) (which is compatible to [Octave](#))
- [PyPSA](#): General tool kit for both load flow calculations, short term market optimization, and long term investment. Can model it more dynamically (?). Developed at Frankfurt
- [Mosaik](#) (co-simulation framework)

- [GridCal](#), based on PyPower, is an attractive load flow method with better timeseries data handling



- [Minpower](#) (unit commitment, storage)



- See Wiki article [Free software for power system analysis](#) for further links
- DIW GAMS code for `elmod`

TODO

Improve the wiki!

- Basic summary of grid modelling (power flow and optimal power flow) approaches to wiki (transport, linear, full non-linear)
- Quick summary of existing software advantages/disadvantages
- Summarise approaches to transmission expansion planning