



General overview of the Wilmar project

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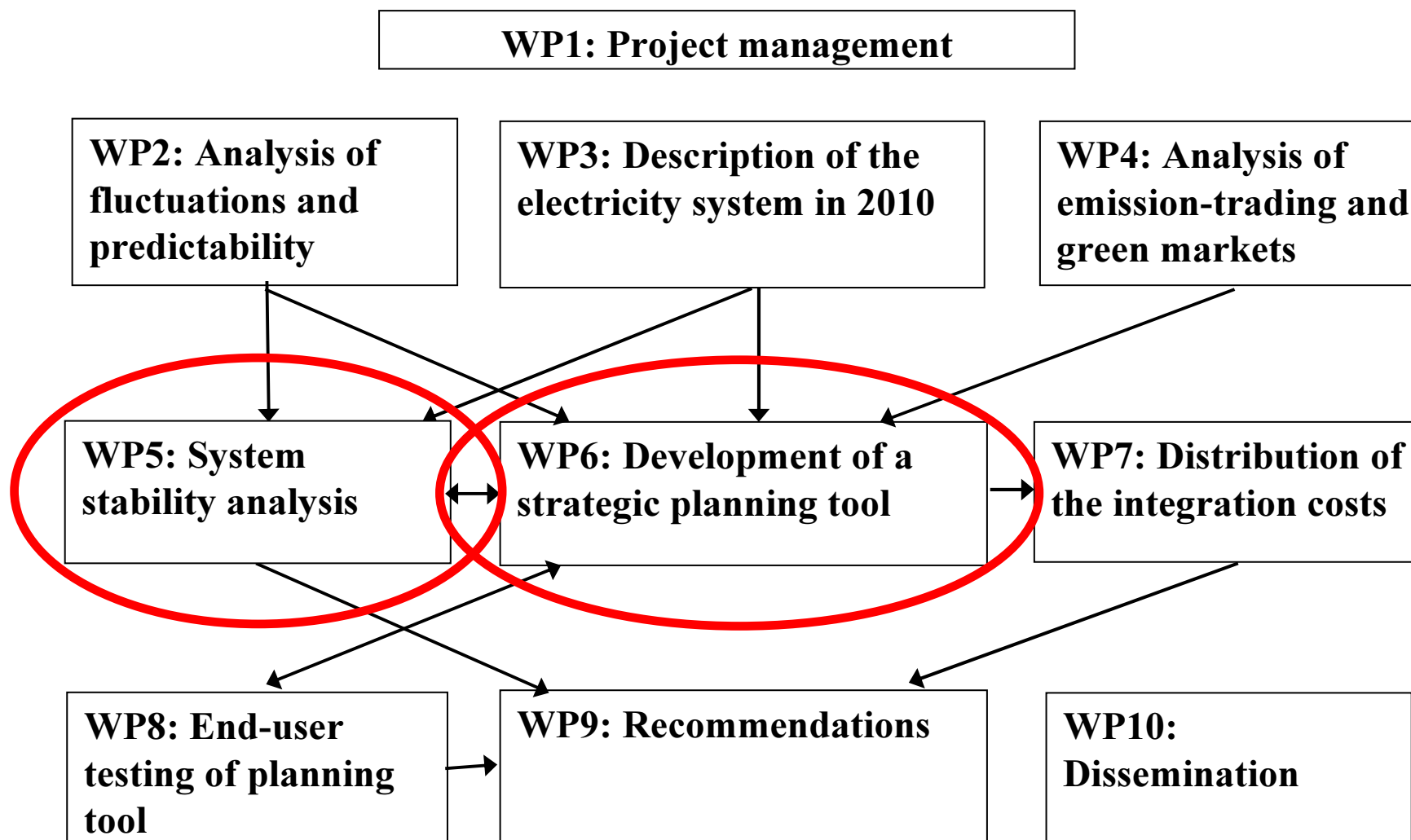
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Risø's mission is to promote environmentally responsible technological development that creates value in the areas of energy, industrial technology and bioproduction through research, innovation and consultancy.

www.risoe.dk

- 9 partners:
 - Research institutions: DTU (DK), IER (D) , KTH (S), Risø (DK), SINTEF (N), VTT(F),
 - TSO: Elkraft (DK)
 - Power producer: Elsam (DK)
 - Power pool: Nord Pool Consulting (N),
- Resources: approximately 20 man years
- Funding: Partly funded through EUs fifth framework programme, 1.4 MEuro from EU
- Duration 3 years, finalised this month

WP structure



- Model development
 - Wilmar Planning tool
 - Analysis of wind power integration with hourly time resolution
 - Consisting of several sub models
 - Stepwise power flow model
 - Analysis of wind power integration with resolution of minutes
 - Development of interaction between Planning tool and stepwise power flow model

Results

- Model development
 - Extension of 23 generator model in DigSilent/PSSE
 - Analysis of system stability issues with time resolution of milliseconds

- Data collection:
 - Development of databases
 - Collection of data for production, transmission and storage units
 - Collection of time series for electricity demand, heat demand, exchange third countries, hydro inflow ...
 - Collection of wind speed and wind power production data

- Results generation concerning:
 - Technical impacts of wind power
 - Price impacts of wind power
 - Avoided costs of wind power
 - Performance of integration measures
(transmission extension, electricity storage,
heat pumps)

Dissemination activities

- Public website: www.wilmar.risoe.dk
 - Planning tool available on website
- Half-yearly newsletter
- Conference presentations:
 - EWEC 2004, IAEE 2004 & 2005, ...
- Articles
- Recommendations

The future

- More testing and calibration of models
- Analysis of the integration costs of wind power and the performance of integration measures
- Documentation and dissemination
- Public models put on the Wilmar homepage:
www.wilmar.risoe.dk
- New EU project: SUPWIND