IEA Wind Task 36: Wind Energy Forecasting

Session 4: Forecasting Benchmarking, Trials and Evaluations
Atlanta, GA, June 21, 2017
Dr. Corinna Möhrlen, WEPROG
Task Objective is to encourage improvements in:
1) weather prediction
2) power conversion
3) use of forecasts

Task Organisation is to encourage international collaboration between:
- Research organisations and projects
- Forecast providers
- Policy Makers
- End-users and stakeholders

Task Work is divided into 3 work packages:
WP1: Weather Prediction Improvements inclusive data assimilation
WP2: Development of a benchmarking platform & best practice guidelines
WP3: Communication of best practice in the use of wind power forecasts

Follow us on our webpage: www.ieawindforecasting.dk
WP1: Weather Prediction Improvements inclusive data assimilation

1. **Compilation of list of available data sets, especially from tall towers**
   List on Homepage → Topics → Task 1.1 Available Data Sets
   [http://www.ieawindforecasting.dk/topics/work-package-1/task-1-1](http://www.ieawindforecasting.dk/topics/work-package-1/task-1-1)

2. **Announcement of field measurement programs and availability of data for research**

3. **List of recent and current meteorological experiments**
   [http://www.ieawindforecasting.dk/topics/work-package-1/task-1-2](http://www.ieawindforecasting.dk/topics/work-package-1/task-1-2)

3. **Verification and Validation of improvements through a common data set to test model results**
WP2: Benchmarking, Predictability and Model Uncertainty

1. Design and Evaluation of benchmark exercises:
   → Best practice guideline for the Design of Benchmarks and trials
   → Best practice guideline for forecast evaluation, benchmarks and trials

   Started – first public draft version ready in autumn 2017

2. Evaluation protocols for deterministic + probabilistic forecasts:
   → review of existing protocols
   → best practice
   → critical assessment of new proposals

   To be started in summer 2017

3. Uncovering uncertainty origins through the whole modelling chain.

   Just started...

4. Set-up and dissemination of benchmark test cases and data sets

   To be started in summer 2017
WP3: Closing the gaps of Forecast usage and Forecast Uncertainties in the Power Sector

Investigation about forecasts uncertainties in the business practices of actors in the power systems sector

- State of the art review
- Value from the use of probabilistic forecasts:
  - Review of existing approaches and applications
  - Evaluation and quantification
- best practices guideline

Use of forecasts in decision making

- State of the art review
- Knowledge sharing from demonstration/pilot projects

Role of short-term forecasting in decision making

- Assessment related to long term (multi annual) processes

Communication of wind and wind power forecasts to end-users.

- Review
- Recommendations
- Best practice guidelines
- Do we need a Standardisation of wind power forecasting products?
Questionnaire: Forecasts uncertainties in the business practices of actors in the power systems sector

How to participate:

1. Go to our Webpage (www.ieawindforecasting.dk → news) or to our dropbox to collect a questionnaire

2. Fill it out and send it to <ieawind36.wp3@gmail.com> or upload it anonymously at our dropbox!

3. Talk to me! Tell me about your “head aches”, I’ll bring them forward to include the topic in our guideline!
Follow us or join us...

Project webpage

http://www.ieawindforecasting.dk/

Workpackage-pages: www.ieawindforecasting → Topics

WP1: Weather prediction improvements
http://www.ieawindforecasting.dk/topics/work-package-1

WP2: Benchmarks and Evaluation
Task 2.1 Best Practice .... coming soon ...
Task 2.4 Test Cases
http://www.ieawindforecasting.dk/topics/workpackage-2/task-2-4

WP3: End Use and Communication
http://www.ieawindforecasting.dk/topics/workpackage-3/task-3-1
http://www.ieawindforecasting.dk/topics/workpackage-3/task-3-5

Contacts of Workpackage and Task Leaders at the WP-pages
PUBLICATIONS: ALL OUR WOK IS MADE PUBLICLY AVAILABLE
http://www.ieawindforecasting.dk/publications

5 interesting information lists:
http://www.ieawindforecasting.dk/news → 5 Lists in Wind Forecasting
Meteorology masts with online data over 100m height, useful for verification of wind speed predictions

Publicly available wind power forecasting benchmarks, to test your model against

Current or finished research projects in the field of wind power forecasting

Meteorological experiments going on currently or recently

Future research issues