HydroBalance User Meeting 2015

Trondheim, 15-16 September 2015
Julie Charmasson, SINTEF Energy Research
## Agenda 15th Sept.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>12.30 - 13.00</td>
<td>Welcome, introduction and project status</td>
<td>Michael Belsnes, Julie Charmasson, SINTEF Energy Research</td>
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<td>13.00 - 17.00</td>
<td>Presentations followed by discussions.</td>
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<td>13.00</td>
<td>WP2 results: Wind variability driven pumping strategy</td>
<td>Magnus Korpås, NTNU</td>
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<td>13.50</td>
<td>WP4 results: Present and future environmental impacts of hydropower on Norwegian lakes</td>
<td>Ingeborg Helland, NINA</td>
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<td>14.40 - 15.00</td>
<td>Break</td>
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| 15.00 | **WP5 results**: Results from study of non-technical barriers and societal acceptance on local and national levels.  
*Marte Qvenild, SINTEF Energy Research* |
| 15.50 | **Fully charged or out of power?** Experiences and outlooks from the hydropower region of Lister.  
*Liv Birkeland, Lister Nyskaping/Listerrådet* |
| 16.20 | **Energy storage**  
*Atle Harby, SINTEF Energy Research* |
| 17.00 | **End of day 1** |
| 19.00 | **Dinner in Trondheim Centre, Ai Suma Restaurant** |
Dinner tonight at 19.00

AiSuma Restaurant
Kjøpmannsgata 57, 7011 Trondheim
Status: Dissemination

Since October 2013

- Scientific papers: 4
- Presentations at seminars: 7
- Conference abstracts: 13
- Conference posters: 3
- Workshops organized: 7
- Deliverables: 4
- Media items: 18
- Brief: 1
- Master Thesis: 1

- PostDoc started 1 March 2014
- PhD started 1 Sep 2014
Status work packages

- **WP1:**
  - Scenarios developed; Policy brief published

- **WP2:**
  - Review about Variability Characteristics of wind and solar power resources
  - Cost study: Norwegian pumped hydro for providing peaking power in a low-carbon European power market – Cost comparison against OCGT and CCGT
  - Review about simulations studies of Balancing of variable wind and solar production in Continental Europe with Nordic hydropower
  - Cost study (Master thesis): Cost of flexibility in the future European power system

- **WP3:**
  - Price study from IAEW (Value of large-scale balancing and storing from Norwegian hydropower for the German power system and generation portfolios)
  - Methodology and study for operation of hydropower in future and payback for investors in pumped storage

- **WP4:**
  - Field work carried out: all data collected
  - Analyse of fish communities along environmental gradients
  - Comparative study of a lake and a reservoir

- **WP5:**
  - Field work in Tyin (Interviews)
  - Study about non-technical barriers and societal acceptance on local and national levels.
Status economy

Budget in 1000 NOK

- Original budget
- Revised by Jan 2015

!!! Reporting of in-kind is important
08.30 - 10.00 Results from WP3

08.30  Presentation of WP3

08.35  *IAEW study: 2050-electricity prices in Europe,* detailed study for reserve products in Germany, and portfolio analysis calculating value of Norwegian hydropower for German stakeholder.
*Andreas Maaz, IAEW*

09.05  *Determining future electricity prices for Hydro Balancing project.*
*Marit Van Hout, ECN*

09.25  *WP3 results:* Profitability for pumped storage in Otra river system in Hydrobalance scenario
*Ove Wolfgang, Arild Lote Henden, SINTEF Energy Research*
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<tr>
<td>10.10 - 10.30</td>
<td>Break</td>
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<tr>
<td>10.30 - 12.15</td>
<td>Concept for the roadmap for large-scale balancing from Norwegian hydropower</td>
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<tr>
<td>10.30</td>
<td>Presentation of a proposed concept followed by discussions in groups</td>
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<td><em>Julie Charmasson, SINTEF Energy Research</em></td>
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<tr>
<td>10.40</td>
<td>Discussions in groups</td>
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<td>11.30</td>
<td>Summaries from break-out groups and discussion in plenary</td>
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<td>12.00 - 13.00</td>
<td>Lunch at NINA</td>
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<td>13.00</td>
<td>End of the meeting</td>
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