

## WREN Meeting Minutes June 14 – 15, 2017

### Overview

The WREN (IEA Wind Task 34) meeting was held July 14 – 15, 2017, in Gotland, Sweden. The purpose of this meeting was to discuss the status of key WREN activities, determine the next steps for in-progress projects, and identify the focus of new efforts. This in-person meeting included representatives from eight of the ten WREN member countries. France and Spain were not able to send representatives to this meeting. A participant list can be found in Table 1. The meeting agenda is found in **Attachment 1**.

Table 1. Meeting attendees

<b>Country</b>	<b>Representative(s)</b>	<b>Affiliation</b>
<b>Ireland</b>	Oonagh Duggan	BirdWatch Ireland
<b>Netherlands</b>	Marijke Warnas	Rijkswaterstaat – Branch Water, Traffic and Environment (WVL), Department of Water Quality and Nature Management (VWKN)
<b>Norway</b>	Roel May	Norwegian Institute for Nature Research
<b>Portugal</b>	Miguel Repas Goncalves Miguel Mascarenhas	STRIX Bioinsight
<b>Sweden</b>	Annika Nilsson Åsa Elmqvist	Swedish Energy Agency Vindval
<b>Switzerland</b>	Muriel Perron	nateco AG
<b>United Kingdom</b>	Finlay Bennet	Marine Scotland Science
<b>United States</b>	Karin Sinclair Andrea Copping	National Renewable Energy Laboratory Pacific Northwest National Laboratory

### Expected outcome of meeting:

1. **Review of progress of various products**
2. **Determine next steps for Cumulative Effects Assessment white paper**
3. **Determine next steps for Green versus Green white paper**
4. **Determine next steps for environmental risk based management white paper**
5. **Identify specific SSS topics**
6. **Schedule for completing WIRE article**
7. **Planning for CWW, workshop, and next in-person meeting**

### Summary of Action Items

**ACTION 1:** Karin will provide Oonagh name of IEA Wind EC representative. UPDATE: done

**ACTION 2:** NREL will develop a registration form and provide to the CWW organizing committee for posting on the CWW website. UPDATE: prepared; Miguel R. to follow up

**ACTION3:** Karin will update sections 5 & 6 of the WREN work plan based on the decisions made in this meeting. UPDATE: done

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**ACTION4** – Andrea will put WREN deliverables schedule on Google docs or WREN Hub members' site

**ACTION5**: Marijke to follow up with Spain as Manuela had previously expressed interest in this topic

**ACTION6**: Google docs – add disclaimer that changes should generate a new version to make version control easier

**ACTION7**: Portugal, Netherlands, Scotland, Norway will coordinate and develop another outline/scope by July 15<sup>th</sup> 2017

**ACTION8**: Marijke will conduct analysis of survey responses already received

**ACTION9**: Marijke, with support from Portugal, Scotland, and Norway, will develop 2 separate surveys, to be available by August 15<sup>th</sup> 2017

**ACTION10**: Portugal to provide survey response. UPDATE: done

**ACTION11**: Åsa to follow up with Spain; Manuela expressed interest in this topic

**ACTION12**: Andrea will send Post Normal Science to group

**ACTION13**: All members should read the RMB outline and provide feedback to Andrea

**ACTION14a**: Bat researchers (Miguel Repas, Jens, Cris) to hold conference call to discuss potential SSS

**ACTION14b**: next SSS topics: grouse (Muriel); upland birds (Roel)

**ACTION14c**: Outreach materials should be developed/brought to CWW. Karin will develop a 2-page summary on WREN. Andrea should bring WREN Hub bookmarks, copies of AM 2-pager and SSS on harbor porpoises

**ACTION15**: Karin to add US names as potential webinar speakers. UPDATE: done

**ACTION16**: A Tethys story can be developed after the CWW conference; volunteer needed

**ACTION17**: Sweden will develop Tethys story on the Gotland Story specific to new research program on environmental effects from wind power; timeline will be decided later this year.

**ACTION18**: Portugal will develop Tethys story on floating platforms

**ACTION19**: Switzerland will send Tethys story ideas by July 15

**ACTION20**: revisit ambassador activities during September WREN meeting.

**ACTION21**: Karin will send around slides of CWW WREN-related presenters as known with links to the guidelines. UPDATE: Distributed with draft meeting minutes.

**ACTION22**: Andrea will put high resolution version of WREN logo on Google drive. UPDATE: Done

**ACTION23**: Everyone tell Karin if you know of other WREN-related talks and posters at CWW.

**ACTION24**: Andrea, Åsa and Marijke will meet to determine process and content of workshop. UPDATE: Done – plans were reported to members on 2<sup>nd</sup> day of meeting.

**ACTION25**: Andrea and the workshop team will distribute the workshop agenda by August 25<sup>th</sup>.

**ACTION26**: Miguel G. will check if workshop registration will be added to CWW site. Invitation to CWW registrants will be sent as soon as possible.

**ACTION27**: Karin is checking if this has been done or if NREL should do this. UPDATE: done



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**ACTION28:** Background for the workshop will be sent out at least a week ahead of time by the organizing team (Andrea, Åsa and Marijke)

**ACTION29:** Andrea will develop Tethys blast on CWW WREN workshop and send out on August 4<sup>th</sup> and August 18<sup>th</sup>. UPDATE: done

**ACTION30:** Karin will ensure NWCC also distributes information on CWW WREN workshop. UPDATE: done.

**ACTION31:** Andrea to provide Miguel R. with WREN Hub login

**ACTION32:** Andrea to provide country contacts on WREN Hub

**ACTION33:** WREN members should respond to WREN Hub/Tethys peer review surveys

**ACTION34:** Andrea to provide WREN Hub updates at all meetings

**ACTION35:** WREN members to send documents to Andrea for inclusion in WREN Hub.

Oonagh has some to send. Include English abstract for those documents that are not in English.

**ACTION36:** Andrea will send URL for 2 pager of WREN Hub/Tethys.

**ACTION37:** Andrea to provide country usage data at next update; Oonagh is interested in this.

Below is a summary of the topics discussed and details on action items.

## Introductions

Welcome from **Olle Jansson**, Advisor to the Vice-Chancellor, Uppsala University Gotland

**Liselotte Aldén**, Programme Director at Campus Gotland

- Liselotte provided an overview of wind energy work at Uppsala University Gotland; Gotland campus works with main Uppsala campus as well.
- Campus provides Masters program in wind power project management. Will add bachelors in wind energy sustainability.
- Lots of distance learning classes as well, about 90 full time students
- Outreach – work with many other stakeholders – education and competency – also research communications, from tech to PhD level
- Local collaboration
- Arrange seminars, industry, permitting officers, focused on research findings
- Research focused on wind resources and wakes (tied with Åsa's work) – large scale turbulence and mixing, within large wind farms, farm to farm interactions, resource mapping, at scales mm's to 10's km, experimental and modeling, also looking at cold climate wind energy development
- Stand up for Wind, center of research at Uppsala with other universities, about 40 million crowns, 50 people
- Node within European Academy for Wind Energy; run conference every 2 years on wakes.

## Introductions and status of WREN membership



Welcome to Portugal (Miguel and Miguel). Canada is close to joining (Ryan joined call in March). Canada will likely join by September meeting in Portugal. Germany likely to rejoin WREN; Johann is very interested but needs support. Mexico interested in joining as well, though resources are also a possible constraint. France and Spain are members of WREN but have not been able to send members to any meetings thus far. All WREN members, except France, have expressed commitment to participate at September meeting in Portugal.

#### Update on IEA Wind ExCo meeting

- Karin attended ExCo79 in Espoo, Finland. 20 countries plus other organizations were in attendance.
- VTT (Finnish research agency) asked WREN (Karin) to provide a presentation on the Environmental Challenges of Wind Energy during a by-invitation-only seminar held the day before the ExCo meeting. Attendees included representations from a wide range of sectors including researchers, media, OESs, NGOs, utilities, and others. Media links (in Finnish) are below.
- VTT's Press Release: [www.tekniikkatalous.fi/kaikki\\_uutiset/suomi-etunenassa-140-160-metria-korkeiden-tuulivoimaloiden-rakentamisessa-pelottomampi-asenne-olemme-teknologiakansaa-6653560](http://www.tekniikkatalous.fi/kaikki_uutiset/suomi-etunenassa-140-160-metria-korkeiden-tuulivoimaloiden-rakentamisessa-pelottomampi-asenne-olemme-teknologiakansaa-6653560)
- Article: *In the role of international wind power research: Due to technological advances, wind power is well suited to Northern Finland's conditions.* 24.5.2017: [www.energiatalous.fi/?p=1781](http://www.energiatalous.fi/?p=1781)
- Radio interview with Ville Lehtomaki of VTT (minutes 41-46): <http://areena.yle.fi/1-4121481>
- Karin was on a panel with social acceptance and the cost of energy to report on the status of WREN to the ExCo. This was a well-received panel – many countries were fully engaged in the topics discussed. The ExCo Chair praised the work conducted in WREN. He also expressed complements for the efforts WREN has put in to meeting IEA Wind administrative requirements.
- Oonagh asked who EC ExCo member is. **ACTION 1:** Karin will provide Oonagh name of IEA Wind EC representative. UPDATE: done

Review of minutes from March call to see where we have met schedule and where we need to work towards completing the activities discussed:

- CWW workshop – arrangements are on track. Need to schedule a call to coordinate workshop. UPDATE: workshop structure was discussed in Gotland and a plan was developed.
- SSS – Harbor porpoise topic completed. New topics have been identified: grouse (Muriel); upland birds (Roel)
- Webinars are scheduled
- I-P manuscript – no update
- WIRE article – some items still needed but article has been submitted to editor
- New members of WREN
- Possibilities for other focus areas for WIRE



### Overview of proposed CWW WREN workshop structure

- Andrea presented a proposed structure. After much discussion, the leads for each white paper decided to meet offline, develop an approach, and present it to the group on Day 2.
- Workshop organizers are responsible for registration of the workshop. **ACTION 2**: NREL will develop a registration form and provide to the CWW organizing committee for posting on the CWW website. UPDATE: form sent to Miguel for posting on CWW website.

### IEA Wind Status report

- Karin provided a brief overview of work plan, specifically focused on Sections 5 (work plan schedule and Section 6 (deliverables schedule). **ACTION3**: Karin will update sections 5 & 6 of the WREN work plan based on the decisions made in this meeting.
- **ACTION4** – Andrea will put WREN deliverables schedule on Google docs or WREN Hub members' site

### **White Papers (WP1)**

Members discussed the white papers, with each lead providing an overview of progress made to date; plans for next steps; and, schedule for completion and publication. Ultimately much of the discussion was focused on the upcoming WREN workshop to be held in conjunction with the CWW in September.

### **Cumulative Effects Assessment (Marijke)**

- Survey has gone out; few responses have been received
- The request is for respondents to answer what they know, not do a lot of extra work
- Surveys must be anonymous
- Oonagh sent out survey to 150 but only received 2 responses, despite reminders. Further responses may be forthcoming
- Annika explained that the reaction from several people in Sweden to whom the survey was distributed perceived the questions as a request to make a statement over the legal situation within the country, and they felt it was beyond their expertise. This is not the same thing as answering a question on what you believe.
- The group discussed the usefulness of the surveys and how best to get the information
- The question of whether cumulative impacts assessment is mandatory in EU was discussed. Some believe it is necessary for scoping but may not be followed through (UK); others think it is mandatory.
- It is hard to get people to respond, especially governmental organizations, as they would be putting their names on it, and cannot really commit unless they receive clearance from within the agency/government.
- Responses will likely be different from different stakeholders
- It is very difficult to get a complete picture of the information
- The goal should not be perfect information – we will not be able to get all or even adequate information.

- **Writing team:** Roel, Liz Masden and potentially Portugal will contribute to the paper.  
**ACTION5:** Marijke to follow up with Spain as Manuela had previously expressed interest in this topic
- **ACTION6:** Google docs – add disclaimer that changes should generate a new version to make version control easier
- Annika – Sweden conducts CE analysis on sound of wind, but for other biological effects clear cut ways to measure or analyze are not known
- European court of justice holds countries accountable for upholding the law
- Unlike sound or water quality, ways to measure biological effects are not available
- Muriel – should be possible to find an example in each country of how CEA has been done
- **ACTION7:** Portugal, Netherlands, Scotland, Norway will coordinate and develop another outline/scope by July 15<sup>th</sup> 2017
- **ACTION8:** Marijke will conduct analysis of survey responses already received
- **ACTION9:** Marijke, with support from Portugal, Scotland, and Norway, will develop 2 separate surveys, to be available by August 15<sup>th</sup> 2017
  - WREN members to get basic survey: What is your country doing for CEA?
  - Stakeholders will be asked for examples and papers etc.
- No need to cancel the request for responses to the current survey. Portugal plans to provide response. Several organizations in Ireland are in the process of completing the survey. Include any additional information received to what Marijke has thus far. No need to send out further requests for responses. **ACTION10:** Portugal to provide survey response. UPDATE: done

### **Green versus Green paper (Åsa)**

- Upcoming report on decision-making models delivered – lots that is relevant to G v G
- Decisions not well informed as decision-makers do not know how to weight decisions, trade offs
- Links to CEA – what is measurable? Have to deal with multiple criteria. Tools to help decision-makers need to be developed.
- Some tools exist but they have built in fallacies, so you need to know your problems to apply tools to wind energy
- Report is not to be published now as it is too complex for stakeholders
- Title (green v green) – title should be revisited to include issues of how to work with tradeoffs and work with weighted assessments
- Can provide tools and mechanisms, ways to structure problems
- Åsa can coordinate the work but cannot do the writing due to conflicts of interest (with environmental agency). She can work on the workshop and write it up
- Need to frame the problem for the workshop, then use the workshop to gather information
- Paper will be introduction and background on why we need to work on G v G, then will include examples of how to deal with G v G.

- Need to describe what G v G is, rather than leap into the tools, including the spatial and temporal aspects of G v G.
- Will paper address ethical and long term issues? Miguel – decision-makers aren't in position to make the ethical decisions.
- Political decisions should be made with multiple inputs, of which one of them can be ethical.
- **Writing team:** Sweden (a different researcher), UK (someone maybe), Norway (Roel). Switzerland can contribute as reviewer. **ACTION11:** Åsa will follow up with Spain as Manuela had previously expressed interest in the G v G topic
- WREN workshop will be used to gather information on this topic; survey probably not needed
- Information inputs wanted, including good examples
- Brainstorming for revising title of G v G; keywords:
  - Ethics of using science to evaluate political decisions
  - How to make tradeoffs and perform weighted assessments
  - Valuing trade offs
  - Systems thinking
  - Process of making weighted assessment on green versus green
  - Decision making processes that balance experts and stakeholders
  - Tradeoffs in decision making: Tools for balancing science and stakeholders
  - Ethics
  - Tools
  - Summary of decision-making tools
  - Fallacies and key issues
- **ACTION12:** Andrea will send Post Normal Science to group
- Schedule for draft document is December 2017; completion date for paper will be pushed out (we can discuss this further at the next meeting in Portugal)

### **Individual Effects to Population-Level Impacts (Roel)**

- Manuscript submitted in January; no progress on review thus far
- Roel is working on 2 pager; need to wait for comments from reviewers
- Goal is to have 2 pager ready for posting when journal article is published
- Finlay will deliver talk on I-P at CWW

### **Environmental Risk Based Management (RBM) paper (Andrea)**

- Andrea provided an outline of the paper for discussion
- Paper may have similarities to adaptive management paper
- Risk needs to be defined in paper
- Paper expected to raise some very important questions. One example: how does RBM affect financing a project?

- Paper should point out in order for regulators to be open and transparent they need to take risks. Need to be clear that if regulators are going to be honest they have to communicate that they are willing to take risks
- There is a strong link to project financing and biodiversity components of a project
- **ACTION13**: All members should read the RMB outline and provide feedback to Andrea
- **ACTION13a**: Andrea will work with the two other white paper leads (Åsa and Marijke) on a joint survey with social scientist to be used to gather information.
- Writing team to include **Andrea, Elise, Miguel R., Finlay, and Manuela**. Elise's summer intern is assisting with some initial research.
- Miguel R. suggested the use of Survey Monkey for a survey, which could be sent out to registrants ahead of September WREN workshop
- These surveys could be complemented with oral interviews if needed

### Short Science Summaries (WP3)

- The first SSS on harbor porpoises has been published
- The process from start to finish takes approximately 3 months
- Once comments are received by Andrea, they will be sent back to the authors
- Several topics were identified but need more investigation to move forward. The topics include:
  - Functional differences between bats and different mitigation strategies (Jens Rydell). **ACTION14a**: Bat researchers (Miguel Repas, Jens, Cris) to hold conference call to discuss potential SSS
  - Fish and wind turbines – Finlay
  - Golden eagles and white tailed eagles – Roel
  - Terrestrial mammals: wolves in Portugal; deer in Switzerland – Miguel G.
  - Kestrels?
  - Migratory soaring birds – Miguel R.
  - Seabirds (collisions, displacement, colony birds) – Roel/Marijke
  - **ACTION14b**: next SSS topics: grouse (Muriel); upland birds (Roel)
- References for any SSS topics need to be sent to Andrea so they can be added to Tethys

### Outreach and Engagement (WP4)

- We discussed the need to disseminate information on WREN at the CWW
- A booth at CWW would cost 600 EUR and therefore will not be pursued
- We can **use the WREN poster location as a good meeting place**
- **ACTION14c**: Outreach materials should be developed/brought to CWW. Karin will develop a 2-page summary on WREN. Andrea should bring WREN Hub bookmarks, copies of AM 2-pager and SSS on harbor porpoises

### **WIRE article**

- The article has been submitted by Karin. In the submittal process, the names of 2 peer reviewers are requested. Karin suggested Oonagh and Johann Koeppel. UPDATE: Oonagh has completed review.
- WREN members are also invited to submit articles on related topics. Members indicated other journals may do a better job of reaching our target audiences; no topics were suggested.

### **Webinar Series**

Additional webinar topics to consider include:

- Restoration that can be done in combination with decommissioning or repowering of wind projects. Can be for land-based and offshore, with land-based more likely; also good opportunity to manage the associated infrastructure.
- Sweden has done this – one project has been decommissioned.
- Sweden – guidelines for repowering have been written (Liselotte)
- UK has an elaborate report on decommissioning
- Associated infrastructure (roads/tracks) and the environmental impacts of power lines, etc should also be considered. Impacts of roads/tracks = Scottish Natural Heritage has guidelines
- Increase in power with repowering, is this an opportunity to look at cumulative impacts.
- Environmental practice **ACTION15**: Karin to add US names as potential webinar speakers. UPDATE: Mike Azeka (EDF Renewable Energy) and Jerry Roppe or Laura Nagy (Avangrid Renewables)
- Compensation: offsite like for like
- Developing countries approach to environmental management of wind energy

### **2-page summaries**

- These summaries should focus on the white papers or any topic that does not fall into the SSS category.
- Roel is working on draft for I-P manuscript.

### **Tethys stories**

- Should be 200 – 500 words
- **ACTION16**: one can be developed after the CWW conference; volunteer needed
- **ACTION17**: Sweden will develop one on the Gotland Story
- **ACTION18**: Portugal will develop one on floating platforms
- **ACTION19**: Switzerland will send ideas by July 15
- All ideas and timing for Tethys Stories should be sent to Andrea.

### **Expert Forums**

- These focus on a technical problem that more than one country is working on.
- A researcher or other expert is needed to lead the discussion and also to act as a facilitator is needed, with a few slides to get the conversation started. Thereafter, a facilitated discussion will take place.
- Group should be limited to 20 to allow all to participate.
- Forum can be recorded and posted on WREN Hub if all agree.
- Would be good to hold one forum before the end of September. Refer to December 2016 notes for list of topics.
- Could be concentrated on a technical issue identified during CWW WREN workshop.

### **Ambassador Activities**

- Need new ambassador activities. **ACTION20**: revisit ambassador activities during September WREN meeting.
- Oonagh has set up list that includes 152 including contacts

### **Conference on Wind and Wildlife Impacts**

CWW organizers are working to bring wind energy companies as well as financing companies to the conference.

### **CWW Events:**

- WREN member meeting on Monday September 4<sup>th</sup> (all day)
- WREN member dinner (to be planned?)
- WREN member lunch September 5<sup>th</sup> (noon – 1pm)
- WREN Workshop Tuesday afternoon September 5<sup>th</sup> (1:30pm – 6:30pm)
- CWW Wednesday, Thursday, and Friday September 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> (until noon)

### **Workshops and Tour**

- Tuesday 9am – 6pm: Wildlife fatality estimator – Manuela Huso/USGS
- Friday 4pm – 8pm: Mitigation and Compensation Strategies. A tool for adaptive management. Bioinsight
- Saturday – tour of wind facility in southwest Portugal. Bird watching also available. Project has implemented shutdown using radar system

### **Other CWW topics**

- We discussed the usefulness of each workshop and expected outcomes. Several WREN members had been invited to participate in the AWWI workshop originally scheduled for Wednesday 6pm – 10pm. Few WREN members expressed interest in attending however this workshop has now been cancelled. A dinner may instead be planned by AWWI.



- CWW has guidelines for papers and posters; all are due September 1<sup>st</sup>. **ACTION21**: Karin will send around slides of CWW WREN-related presenters as known with links to the guidelines. UPDATE: Distributed with draft meeting minutes.
- **ACTION22**: Andrea will put high resolution version of WREN logo on Google drive.
- **ACTION23**: Everyone tell Karin if you know of other WREN-related talks and posters at CWW.
- Excursions are on the CWW website. One to a wind farm in SW Portugal is in the planning stages.
- **ACTION24**: Andrea, Åsa and Marijke will meet to determine process and content of workshop. UPDATE: Done – plans were reported to members on 2<sup>nd</sup> day of meeting.
- Five (5) hours needed for workshop. White papers will be reviewed sequentially. Draft agenda was developed and will include an introduction, a panel, 3 rotations to cover the three topics, and a final session to cover interactions between the topics and key messages. No surveys will be circulated ahead of this workshop; one will be developed to distribute after the workshop. Apps may be useful during the workshop (CWW will have one) thus a survey could be added. **ACTION25**: Andrea and the workshop team will distribute the workshop agenda by August 25th.
- **ACTION26**: Miguel R. will check if workshop registration will be added to CWW site.
- Invitation to CWW registrants will be sent as soon as possible. **ACTION27**: Karin is checking if this has been done or if NREL should do this. UPDATE: Miguel R. said he would do it
- **ACTION28**: Background material for the workshop will be sent out at least a week ahead of time by the organizing team (Andrea, Åsa and Marijke)
- **ACTION29**: Andrea will develop Tethys blast on CWW WREN workshop. Update: Done. Sent out August 4<sup>th</sup> and will be repeated August 18<sup>th</sup>
- **ACTION30**: Karin will ensure NWCC also distributes information on CWW WREN workshop. UPDATE: done.

## WREN Hub

- **ACTION31**: Andrea to provide Miguel R. with WREN Hub login
- **ACTION32**: Andrea to provide country contacts on WREN Hub
- **ACTION33**: WREN members should respond to WREN Hub/Tethys peer review surveys
- **ACTION34**: Andrea to provide WREN Hub updates at all meetings
- **ACTION35**: WREN members to send documents to Andrea for inclusion in WREN Hub. Oonagh has some to send. Include English abstract for those documents that are not in English.
- **ACTION36**: Andrea will send URL for 2 pager of WREN Hub/Tethys.
- Google Analytics is used to report on use of WREN Hub/Tethys to DOE.

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- **ACTION37**: Andrea to provide country usage data at next update; Oonagh is interested in this.

**2017/2018 WREN meetings**

Host countries and appropriate dates for future meetings include:

- September 4, 2017: Estoril, Portugal Miguel
- May or June 2018: Netherlands Marijke
- Fall 2018: United Kingdom/Aberdeen Finlay

**Attachment 1  
WREN Meeting  
June 14 – 15, 2017  
Uppsala University Campus Gotland  
Visby, Gotland, Sweden  
Agenda – FINAL**

**Expected outcome of meeting:**

- 1. Review of progress of various products**
- 2. Determine next steps for Cumulative Effects Assessment white paper**
- 3. Determine next steps for Green versus Green white paper**
- 4. Determine next steps for environmental risk based management white paper**
- 5. Identify specific SSS topics**
- 6. Schedule for completing WIRE article**
- 7. Planning for CWW, workshop, and next in-person meeting**

Day 1

9:00 Welcome

Lead/Facilitator

**Olle Jansson**, Advisor to the  
Vice-Chancellor;  
**Liselotte Aldén**, Programme  
Director at Campus Gotland

Introductions

**All**

Review meeting agenda

**Karin**

Debrief of IEA Wind ExCo79 meeting

**Karin**

9:45 Review of progress of various products and activities

**Karin**

Overview of proposed CWW workshop structure

**Andrea**

Evaluate timeline of deliverables (Work plan Sections 5/6)

**Karin**

Identify modifications, as needed

**All**

10:30 Cumulative Effects Assessment paper (WP1)

**Marijke**

Overview of progress made to date

Plans for next steps

Schedule for completion and publication

11:15 Break

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- 11:30 Green versus Green paper (WP1) **Annika and Åsa**  
Overview of progress made to date  
Plans for next steps  
Schedule for completion and publication
- 12:15 Lunch (provided by Swedish Energy Agency)
- 1:00 Individual Effects to Population-Level Impacts (WP1) **Roel**  
Status on journal submittal  
Schedule for development of 2-pager
- 1:15 Outreach and Engagement **Karin/Andrea, All**  
Short Science Summaries (WP3)  
WIRE article  
Webinar Series (WP4)
- 2:00 Environmental Risk Based Management paper (WP1) **Andrea/Elise**  
Overview of progress made to date  
Plans for next steps  
Schedule for completion and publication
- 2:45 Break
- 3:00 Conference on Wind Energy and Wildlife Impacts (WP4) **Karin, All**  
Oral presentations and posters  
Organization and structure of workshop
- 5:30 Adjourn



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Day 2

- |       |   |  |
|-------|---|--|
| 8:00  | Review Day 1  | <b>Karin</b>                                     |
| 8:30  | Outreach and Engagement (continued)<br>2-pagers (WP4)<br><i>Tethys</i> Stories (WP4)<br>Ambassador activities (WP4)<br>Expert Forums (WP4)  | <b>Andrea</b>                                    |
| 9:30  | Overview of progress on WREN Hub (WP2)<br>Outcome of <i>Tethys</i> peer review<br>New features added since November meeting in Broomfield<br>Statistics on use patterns, other information on Hub<br>Discuss/determine next steps | <b>Andrea</b>                                    |
| 10:15 | Break   |  |
| 10:30 | Future WREN meetings<br>September 2017: Estoril, Portugal<br>May or June 2018: Netherlands<br>Fall 2018: United Kingdom   | <b>Miguel</b><br><b>Marijke</b><br><b>Finlay</b> |
| 11:30 | Review of deliverable schedule  | <b>Karin</b>                                     |
| 12:00 | Adjourn   |  |