IEA Wind TEM# *113* on *NET ZERO ELECTRICITY SYSTEM STUDIES*

8-9th April 2024, Dublin, Ireland

Final Agenda

Day 1: Monday, 8th April, 2024

Time	Topic	Presenter
9:00 AM	Check-in and Badging	
9:30 AM	Welcome and meeting overview	John Mc Cann, *SEAI*
9:45 AM	**Public Session – Net Zero Power System Studies**	
9:45 AM	IEA Wind TCP and Tasks 11, 25 & 53	Ignacio Marti, *IEA Wind* Hannele Holttinen, *IEA Wind* Philipp Beiter, *IEA Wind*
10:00 AM	**Presentation 1:** *A Review of Global Net Zero Electricity and Energy System Studies*	Abbas Rabbie, *Laval University, Canada*
10:15 AM	**Presentation 2:** *IEA Global Net Zero Assessments*	Craig Hart, *IEA Paris*
10:30 AM	**Presentation 3:** *Net Zero Planning in Denmark / ENTSO-E*	Antje Orths, *Energinet, Denmark*
10:45 AM	**Presentation 4:** *UCC Net Zero Energy System Modelling for Ireland*	Andrew Smith, *UCC, Ireland*
11:00 AM	**Q&A**	
11:15 AM	Break	
11:30 AM	**Presentation 5:** *Net-Zero 2050: U.S. Economy-Wide Deep Decarbonization Scenario Analysis*	Eamonn Lannoye, *EPRI, USA*
11:45 AM	**Presentation 6**: *Lessons from Ireland for Net Zero Energy System*	Jonathan O'Sullivan, *ESB, Ireland*
12:00 PM	**Presentation 7:** *Impact of Sector Coupling on the Cost Efficiency of Net Zero Carbon Energy Systems*	Juha Kiviluoma, *VTT, Finland*
12:15 PM	**Presentation 8:** *Studying large shares of wind and solar in the energy system - IEA Wind Task 25 Recommended Practices*	Hannele Holttinen*, IEA Wind*
12:30 PM	**Presentation 9:** *Co-Production of Long-Term Decarbonisation Plans*	Fabian Neumann*, TU Berlin, Germany*
12:45 PM	**Q&A**	
1.00 PM	Lunch break	
2:00 PM	**TEM 113 Closed Session**	
2:00 PM	Participant Introductions	All

2:15 PM	**Presentation 10:** *Spine H2 IRL - A case study in developing and applying state of the art open-source tools to model the transition to net-zero*	Jody Dillon, *Energy Reform, Ireland*
2:30 PM	**Presentation 11:** *Bulk Power System Planning Studies, Including Highly Renewable Futures*	Bethany Frew, *NREL, USA*
2:45 PM	**Presentation 12:** *Operational and stability impacts of high shares of variable renewables in power systems*	Damian Flynn, *UCD, Ireland*
3:00 PM	**Presentation 13:** *Independent & Resilient Energy System with Green Hydrogen: System Requirements for Net-zero Ireland*	Gianni Goretti, *ESB, Ireland*
3:15 PM	**Presentation 14:** *Optimal mix and dispatch of resources in low-carbon energy systems - results energy system modelling studies*	Magnus Korpas, *NTNU, Norway*
3:30 PM	Short break	
3:45 PM	**Presentation 15:** *Interprovincial transmission in Canada*	Madeleine McPherson, *University of Victoria, Canada*
3:55 PM	**Presentation 16:** *Wind and solar system integration*	Matti Koivisto, *DTU Wind, Denmark*
4:05 PM	**Presentation 17:** *Methodologies for optimal hybridization and complementary aggregation of vRES.*	Ana Estanqueiro, *LNEG, Portugal*
4:15 PM	**Presentation 18:** *Firm Power Generation - overview and outlook*	Jan Remund, *Meteotest, Switzerland*
4:25 PM	**Presentation 19:** *Low-dimensional scenario generation method of solar and wind availability for representative days in energy modeling*	Martin Densing, *Paul Scherrer Institute, ETH Zurich, Switzerland*
4:35 PM	**Presentation 20:** *Expanded modelling scenarios to understand the role of offshore wind in decarbonizing the United States*	Philipp Beiter, *NREL, USA*
4:50 PM	Summary presentation & discussion	Ignacio Marti, All
5:00 PM	Day close	

Day 2: Tuesday, 9th April, 2024

Time	Topic	Presenter
9:00 AM	**TEM 113 Breakout Sessions**	
9:00 AM	Introduction to objectives of session	All
9:10 AM	Short break and division in breakout sessions	
9:15 AM	**Breakout Session 1: *State of the art*** *Discussion of state of the current art in small groups. Groups divided by sub-topic and will elaborate on or challenge the state of the art findings from the questionnaire, initial talks.* *Potential Sub-Groups:* • *Wind Energy's role in the net zero electricity system* • *Identification of modelling assumptions, generation portfolio and scenarios studied* • *Future resource adequacy vs. electricity customer expectations* • *Net zero electricity system vs. net zero energy system studies* • *Network Expansion / Infrastructure / Operational Planning Studies* • *Communicating net zero study outcomes to diverse audiences* • *Economic factors in net zero systems / Costs to ratepayers / taxpayers, market evolution*	Small groups
10:30 AM	Results presentation & discussion	All
11:00 AM	Break	
11:15 AM	**Breakout session 2: *Knowledge gaps and disagreement*** *Building on the questionnaire and breakout session 1, and using the same groups, discussion focuses on where is there knowledge gaps, disagreement, unknowns or need for more data?* *Potential Sub-Groups:* • *Wind Energy's role in the net zero electricity system (*Deliberate repeat of Q1 in Session1)* • *Is net zero enough, do we need net negative?* • *Computational methods* *Model limitations: time resolution, power system stability, network resolution* • *Technology specific considerations* *Demand profiles for new electric loads (temperature dependency)* • *System Expansion Planning vs. Operational Planning*	Small groups

	• *Collaborative open source tools / What do we need?* *Gap between current practice & state of the art in studies* • *IEA Wind RP16 – Is it adequate for net zero studies? Why don't all modellers use it? Could it be an online guide / toolkit?* • *Improving resilience for future higher societal reliance on electricity* • *Data for infrastructure: network data for studies (transmission, distribution, gas and other networks). Interactions with neighbouring systems, e.g. export induced emissions, wheeling congestion (studied system boundaries)* • *Consistent meteorological input data for all resources - Future impact of climate change*	
12:30 PM	Results presentation & discussion	All
1:00 PM	Lunch break	
2:00 PM	**Breakout Session #3: *Research needs identification*** *Where do we need research? How should we prioritise research?* ***Topics and priorities to be developed from break out discussion***	Small groups
2:45 PM	Results presentation & discussion	All
3:00 PM	**Full group open discussion: *Research needs identification*** *Where do we need research? How should we prioritise research?* ***Topics and priorities to be developed from break out discussion***	All
4:00 PM	Break	
4:15 PM	Interactive poll or Additional Discussion	
4:30 PM	**Collect main points & identify follow-up responsibilities**	All
4:45 PM	Wrap up	
5:00 PM	Event close	