

IEA Wind Task 11 Topical Expert Meeting #105 21st – 22nd September 2023

Harmonised LCA for Wind Energy

Environmental profiles of wind energy: current state and recommendations for harmonised life cycle assessment

Location: **Switzerland, Wädenswil**

The environmental profile of renewable energies is gaining more and more attention from decision makers and the public. Up-to-date and robust life cycle assessments (LCA) are an essential basis for the scientific and comprehensive comparison of the environmental impacts of different electricity generation technologies. Comparative LCA studies have shown that wind energy is among the power generation technologies with the lowest environmental impacts per kWh of produced electricity. However, there is a great variation of results depending on considered technology and location, modelling choices, and databases used. Yet, consistent, reliable, and transparent LCAs gain importance as a basis for decision-making for different stakeholders.

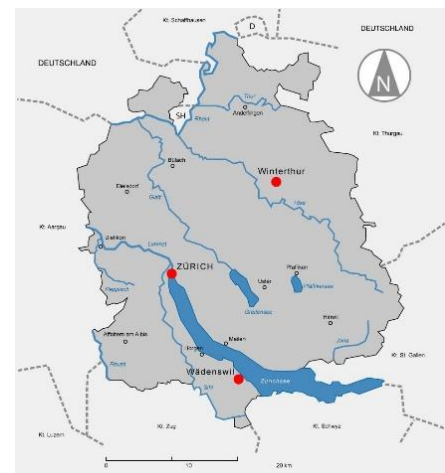
The IEA Wind TCP does not yet have a research task that focuses on the quantification of the environmental impacts of wind energy using the LCA methodology. Consistent, reliable and transparent LCA data are important for market growth and the further optimization of wind energy's sustainability performance. The used technology and the size of wind turbines are evolving rapidly, and LCA results for wind energy are often based on outdated life cycle inventory data. A new briefing on sustainability would be complementary to the current tasks of the "Social, Environmental and Economic Impacts" research priority area.

This topical expert meeting will bring together international experts on the environmental profile of wind energy to initiate a discussion on the key considerations for a guiding framework on life cycle assessment of wind energy.

We look forward to welcoming you in Wädenswil.

Matthias Stucki, Alena Frehner

Zürich University of Applied Sciences (ZHAW)



Programme Day 1:

Time	Working Title	Speaker [Chair, tbc]
DAY 1, Thursday, September 21st		
08:00	Arrival	
08:30	Welcome and Introduction	[Matthias Stucki]
08:30	Welcome address, programme overview	Matthias Stucki
08:50	Introduction of experts	all
09:50	Introduction to the topic	Matthias Stucki
10:15	Coffee Break & Network	
10:45	Motivation for harmonized LCA	[Matthias Stucki]
10:45	The value of LCAs in the wind industry	Alexander Vandenberghe, WindEurope
11:05	Motivation of electricity supplier	Jean-Luc Zanasco, SIG Pascal Müller, EWZ
11:25	Motivation of administration	Lionel Perret, IEA (Switzerland)
11:45	Harmonisation in other sectors: lessons learned	TBD, TNO
12:05	Lunch break & Network	
13:20	Presentation Session I: Offshore case studies	[René Itten]
13:20	A framework for carbon footprint assessment of offshore wind energy for the Norwegian government	Aje Rihel, Esgian
13:40	Experiences in carbon footprinting of individual offshore wind parks and identified challenges: the relevance of integrating specific vessel emission data	Oliver Stephenson, Esgian
14:00	Eco-conscious design of offshore wind farms	Samuel Kainz, TUM
14:20	Strategic usage of LCA and offshore windfarm case study	Rosa Garcia Sanchez, Ørsted
14:40	Discussion	all
14:50	Coffee Break & Network	
15:05	Presentation session II: Onshore case studies	[Alena Frehner]
15:05	Integrating LCA into the design of wind turbines and wind farms	Carlo Bottasso, TUM
15:25	Eco-conscious design of onshore wind turbines	Adrien Guilloré, TUM
15:45		TBC
16:05	Discussion	all
16:15	Coffee Break & Network	
16:30	Workshop I: Goals and needs for harmonization	[Alena Frehner]
16:30	Introduction to workshop	Alena Frehner
16:40	Speed dating / Brainstorm and discussion in small groups	all
17:00	Synthesis in plenary	all
17:20	End of Day 1	
17:30	Social Apéro	
19:00	Joint Dinner	

Programme Day 2:

DAY 2, Friday, September 22 nd		
08:20	Welcome to day 2	Matthias Stucki
08:30	Presentation Session III: Special cases / methodological approaches / future technologies / communication	[René Itten]
08:30	Parameterised LCA model of offshore wind projects : new functionalities to help harmonising LCA ?	Joanna Schlesinger, MINES ParisTech
08:50	Past and current LCA studies & LCA harmonisation in the Airborne Wind Energy community	Karin Treyer, PSI (CH)
09:10	Application of prospective LCA for wind power	TBD, TNO
09:30		TBC
09:50	Discussion	all
10:00	Coffee Break & Network	
10:20	Workshop II: Harmonization of modelling and communication - Factsheet development	[Matthias Stucki]
10:20	Introduction to challenges	Alena Frehner
10:30	Discussion in small groups on inventory modelling, impact assessment, communication, interpretation and reporting.	all
11:20	Synthesis and joint recommendations in plenary	all
11:50	Discussion: Outlook & next Steps	[Matthias Stucki]
11:50	Need for a permanent task on LCA and sustainability?	all
12:20	Outlook and next steps	
12:50	Synthesis, Announcements and Farewell	
13:00	End of Day 2	

Practical information

Lunch

Vouchers for lunch at the ZHAW restaurant in the building GD will be provided to all participants for Day 1 (Thursday). A vegetarian meal option is always on offer.

Location

The meeting will take place at the Campus Grüental, Zürich University of Applied Sciences (ZHAW), 8820 Wädenswil, Switzerland.

How to get there

Arrival and departure airport is Zurich Airport (ZHR).

There are direct connections from Zurich Airport to Wädenswil with the regional train, leaving every 30 minutes (travel time approx. 20 minutes). From the train station in Wädenswil there is a bus bringing you directly to the Forschungsanstalt (leaving every 15 minutes). Please find your most convenient connection here: <https://www.sbb.ch/en/>

The bus stop is called “Wädenswil, Forschungsanstalt”. We recommend travelling by public transport. From the bus stop, it is a 3-minute walk to the building GS, as indicated on the map below, where we will meet in room GS c2. Signage will be in place.

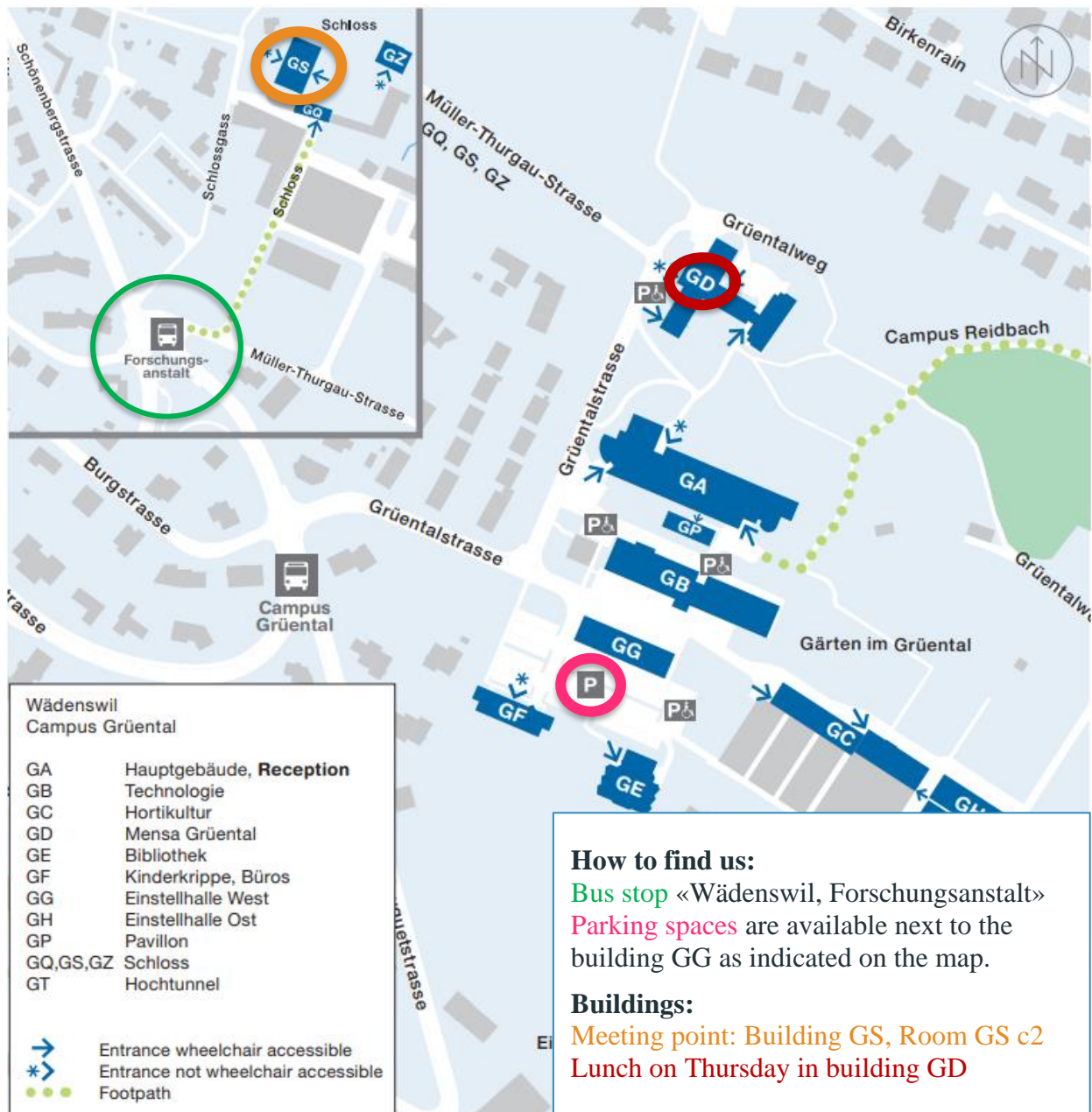
If you plan to travel by car, please contact us so that we can organise parking options: alena.frehner@zhaw.ch

Accommodation

We recommend the following hotels, not far from the meeting location and right at the lake of Zurich:

- Hotel Engel: at the lake, 100 m from the train station, 10 rooms available
<https://engel-waedenswil.ch/en/>
- Becozy du Lac: at the lake, 100 m from the train station
<https://www.becozydulac.ch/en>
- Landgasthof Au: at the lake, 3.5 km from the train station (5min drive), 16 rooms available
<http://halbinselau.com/en/home/>

Due to limitation of the available hotel rooms in Wädenswil, the reservations should be done promptly. Alternatively, you may choose to stay in Zurich and commute 30min e.g. with public transport to the meeting in Wädenswil.



For further information, please contact Alena Frehner: alena.frehner@zhaw.ch

Dining options and things to do

Lokma offers a range of many authentic dishes from the Turkish cuisine based on century-old recipes as well as creative new discoveries. In addition to meat dishes, there is also a range of traditionally prepared vegetarian starters, snacks and salads.

Restaurant Engel provide a menu of the highest quality in a stylish atmosphere and with a view of Lake Zurich. The cuisine focuses on fresh, seasonal and regional food.



The ambience in the [Pizzeria Romantica](#) will make you feel like you are in Italy. Watch the pizza chef at work as your pizza is made or enjoy a good pasta and other Italian specialties.

The [Momo House](#) is a small Tibetan family business and aims to serve all Momo lovers the most delicious and authentic Momos, Sha-Paley and other delicious Asian dishes. Whether meat lover, vegetarian or vegan – there is something for everyone here.

And many more...

In case you have some additional time to kill, you can make use of some of Wädenswil's leisure activities such as the indoor swimming pool with sauna, the Finnish track, the mini-golf course, an indoor riding arena and the Vita-Parcours, or the tennis courts as well as the golf course: <https://www.waedenswil.ch/angebote>