

4. Distributed wind stakeholders' workshop 3

The overall target of this workshop 3 was to further discuss how research can support and strengthen the Danish industry to deploy more wind power and renewable energy at distribution grid to meet the Danish vision of green transition. The workshop provided space for sharing experience on the challenges, the Danish players & stakeholders are facing in various relevant distributed wind (DW) topics, such as: DW standards, DW integration and network support, human dimensions of Distributed Wind. Beside this, in the workshop, we also target to initiate the discussion for a new EUDP IEA Task 41 project proposal. The workshop supported the work in the IEA Wind TPC Task 41 and provided results anchored in Denmark, thus creating added value for Danish players.

The main take-away messages from the workshop discussions are:

- There are several opportunities in distribution networks with large share of RES, as e.g.
 - Available large amount of data related to weather forecasts, load profiles, generation from WPPs and PVs can be collected for optimal operation.
 - Wind power plants are more controllable through power electronics -> these capabilities can be utilized for optimal operation in the network along with already available network assets. This would reduce the need for network reinforcements to some extent.
 - Distribution networks can potentially provide flexibility in terms of active and reactive power exchange or as reserve capacity for the transmission network. The interactions between TSO/DSO can prove further beneficial to incorporate RES in the Distribution network.
- Distribution network no longer have a passive role because the network has controllable active and reactive power capabilities which can prove beneficial economically.
- Possibility to have joint ownership of small wind turbines, as otherwise there are few and expensive to fit on the market.
- There is a need for Danish manufactures onboard in working with standards.
- There are still persistent obstacles for Danish small wind, such as prohibitive rules for installations of wind turbines smaller than 500kW, expensive testing requirements, not well-tested power curves.
- The benefits of distributed wind cannot be taken for granted but are produced through social and material practices.
- There is a crucial need for identifying and reviewing of distributional justice of distributed wind.

- Social acceptance does not only refer to local acceptance or community acceptance, but also includes the role of political institutions, policymakers, legislations, planning authorities that co-determine (enable or hamper) the uptake of distributed wind

In the following, the presentations of workshop 3 are included.