



Nordic Folkecenter
for Renewable Energy

THE DANISH ENERGY TRANSITION

What happened to the pivotal role of rural communities and small decentralised wind?

All technologies are needed for 100% RE

Clear example:

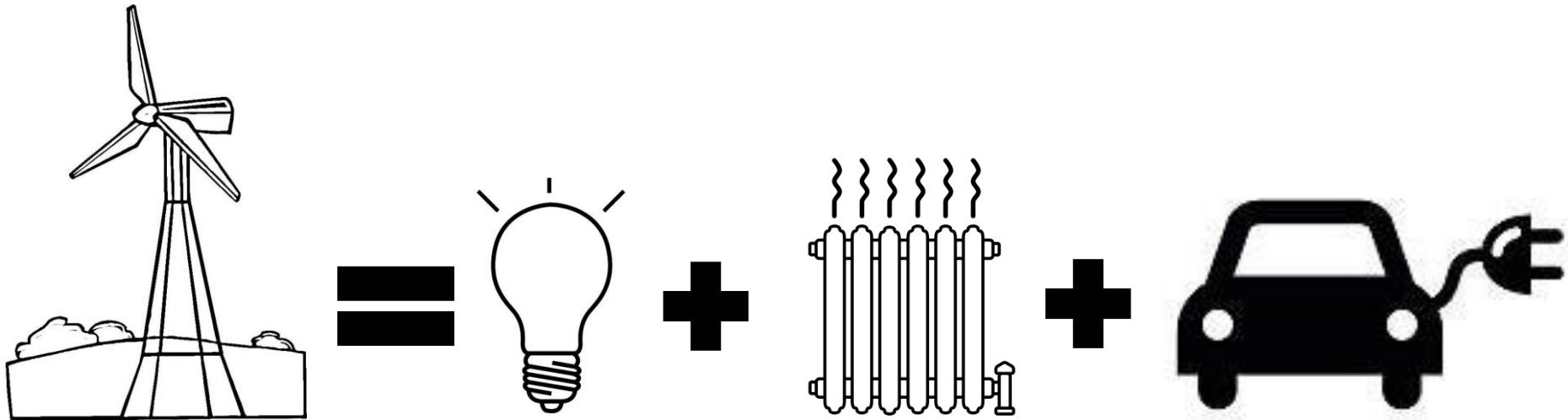
Approx. 64% of the households in Denmark are connected to a district heating system.

In the future, this could be 70%?

What about the remaining 30% of households?



Households and SME in Rural Denmark



Note

- Small wind turbines are not new, they existed before large wind turbines!
- However, they present different technical, economic and social challenges.
- Research and development is needed to mature the technology, **TESTING IS NEEDED!**

Support to a local wind turbine project.
The wind turbine, 100 kW, the biggest of
the new generation at that time.



Folkecenter's Test Centre for Small Wind – Since 1984

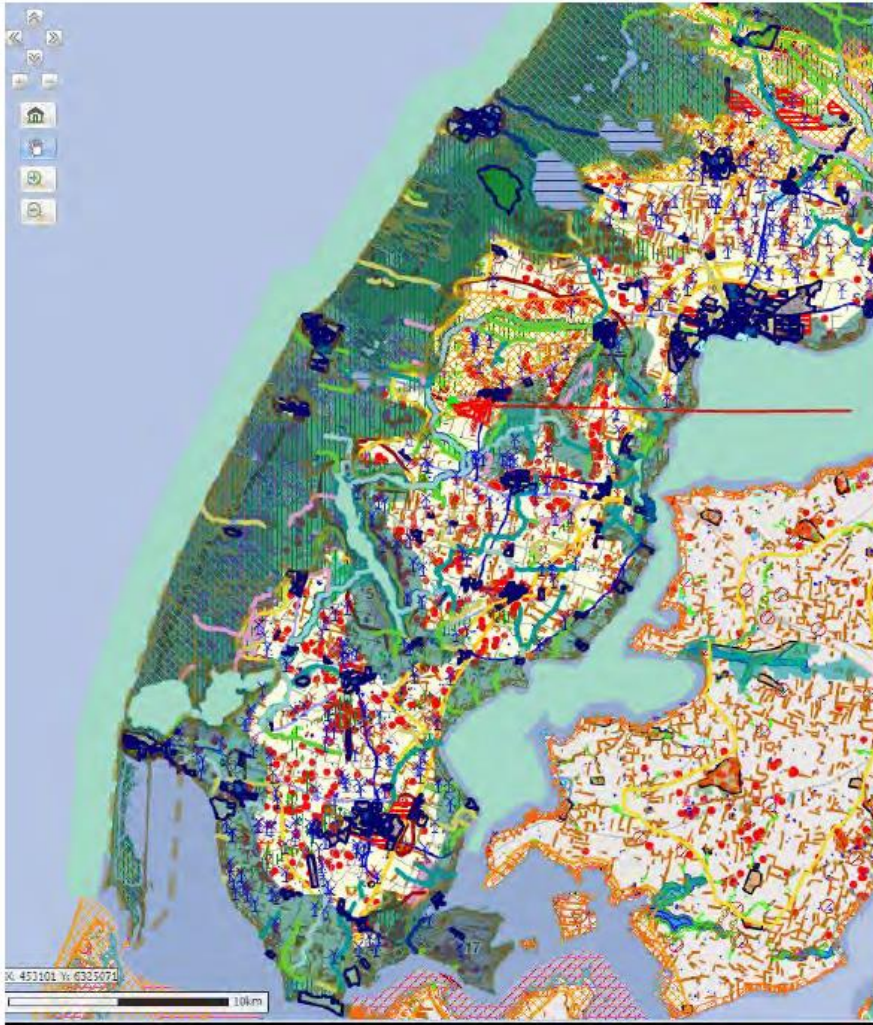




Testing in process at the Folkecenter



New HVr Testcentre



Beskrivelse af projektet

Ansøgningen omfatter anlæg af i alt 3 testpladser til afprøvning af husstands vindmøller. Det vil således være forskellige typer af møller, der opstilles på pladserne. Vindmøllerne kan få en højde op til 25 meter og skal overholde de gældende støj- og skyggekrav til nabobeboelse uanset, at der er tale om testmøller.

Planprocessen og screeninger

Debatfasen løber over 4 uger og giver borgere, interesseorganisationer, foreninger, myndigheder og interesserede mulighed for at fremsætte forslag og ideer til den forestående planlægning.

Området er ikke udlagt til teknisk anlæg i kommuneplanen, og med dette debatoplæg foretages kommende arealreservation i kommuneplanen til formålet.

På baggrund af debatfasen vil der blive taget stilling til udarbejdelse for forslag til kommuniplantillæg m.v.



The need for an international test centre for small wind turbines

- **In contrast to the large-sized wind turbine industry, small wind turbines are still plagued by high costs and poor reliability.**
- The reasons are many. Most significantly, small wind turbines are designed and manufactured by **small companies** with **limited funds** for product testing and improvement. As a result, nearly all small wind turbines have been introduced to the market with **limited field testing**.
- Small wind turbine manufacturers have essentially used their **customers to test their products**. This system is extremely unsatisfactory and leads to dissatisfied customers. It also retards the refinement of small wind turbine designs by **limiting the feedback** that manufacturers receive about how their products perform in the field.
- A professionally administered international test center that could provide testing for free or only a nominal fee would offer small wind turbine manufacturers an opportunity to test their products and to gain useful feedback about performance and reliability, enabling them to improve their products.

Capacity building of SMEs is crucial

Why?

- New RE technologies + integrated systems
- New energy efficiency tech
- Approx. 95% of all Danish companies have 9 or fewer employees
- Innovation capacity
- SMEs were at the core of the RE movement

CEVELA

Center for Vedvarende Energi i Landdistrikter
Fokus på små og mellemstore virksomheder



Note

- **Supportive energy policies and regulations are essential.**
- This is clearly NOT the case currently.
- Not only for small wind, but also for decentral CHP...

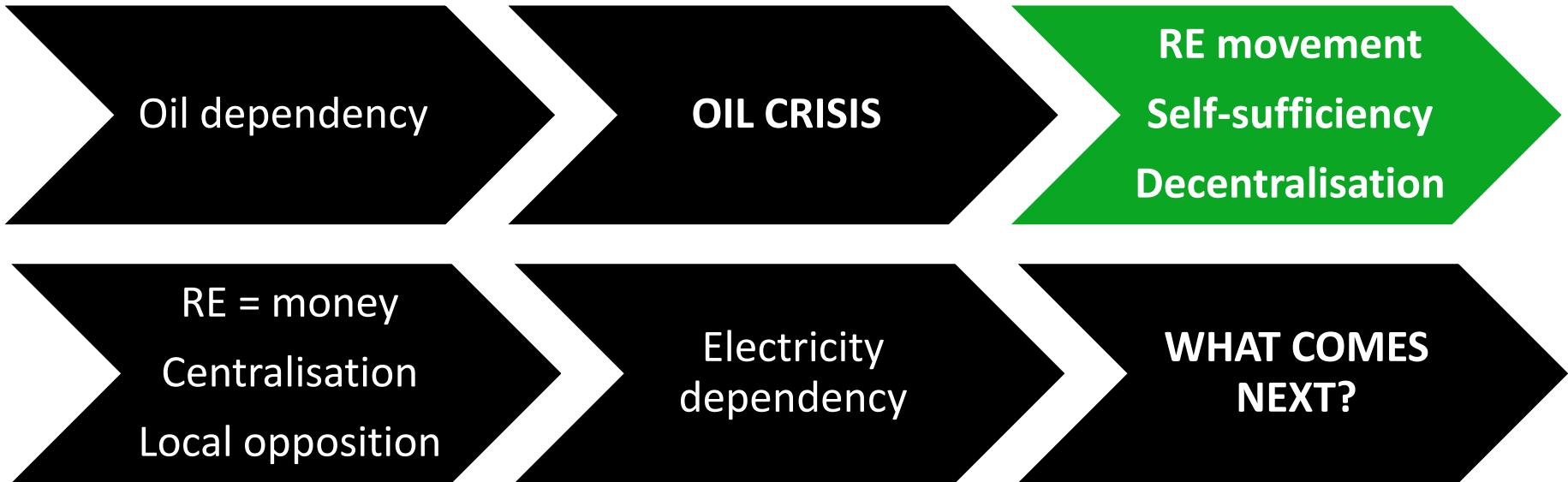
Energy consumers' democracy



Energy producers' democracy



FROM OIL-DEPENDENCY TO ELECTRICITY-DEPENDENCY



What are the interests of those pushing this recession?

Do we need a second REvolution?



Nordic Folkecenter for Renewable Energy

www.folkecenter.net

www.folkecenterevents.net



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