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Introducing Community Power

by Henning Bo Madsen; August 22, 2017
SustainableEnergy



See the Program and the Proceedings at: http://www.inforse.org/europe/seminar_17_DK.htm

Alliancen for Community Power in Denmark

www.communitypower.eu



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- Work on energy / energy policy since 1979 as a grassroot and in various projects in Municipalities and organisations.
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Community Power – why ?

A growing number of environmental and other NGOs believe that

- ✿ the future energy supply must be both environmentally and socially sustainable
- ✿ the future energy supply, which is based 100% on renewable energy sources, should be owned and controlled by consumers or municipalities.
- ✿ Local ownership and benefits from using renewable energy sources.
- ✿ Better conditions for all citizens to get the energy they need from plants using renewable energy sources





Benefits of Community Power

- ✦ Citizens and communities are involved and make decisions about their energy future. More democracy. People take the POWER.
- ✦ Stronger, healthier communities are created. Working together in a community and achieving a goal provides a sense of purpose, pride and achievement.
- ✦ By mobilizing people community energy provides a valuable new source for the much-needed investment in renewables, storage and energy savings.
- ✦ It raises awareness of locally generated and locally consumed renewable energy as well as promotes efficient use of energy.
- ✦ This can ensure public support for renewable energy across Europe.



Community Power – what ?

Some of the features of Community Energy

- Local citizens are involved in the operation of the facility
- **There is a democratic structure**
- The project contributes to the replacement of energy production from fossil fuels and other unsustainable fuels
- People who live or work close to the project have benefits
- Any surplus goes back to consumers or the community or reinvested in other local community energy projects



Danish experiences with community ownership

Once upon a time

- ✿ all electricity utilities were consumer-owned cooperatives or municipal - both production and supply.
- ✿ All district heating companies were consumer-owned cooperatives or municipal - both production and supply. This still applies to supply and very much to production companies.
- ✿ Virtually all wind turbines were owned by locally based wind turbine cooperatives



New ownership 2004-2005

- changed with the implementation of the EU internal energy market Energy Agreement in 2004 (all parties except the EL).
- 2005 DONG acquired almost all the Danish power plants, Vattenfall and E.ON a small handful



Today

- Guild owned windmills number unknown - estimates about 250
- Consumer-owned district heating plants about 300
- 2 solar guilds + 2 small hydropower
- But over 90,000 PV systems among consumers - prosumer
- Municipal heating utilities buy power plants back (københavns belysningsvæsen, VEKS, Odense, Aalborg)



Ownership Models RE



Solar energy: common solar - consumer-owned cooperatives

Biomass collectively: consumer-owned cooperatives or municipal corporations own heating / CHP production + DONG and E-on

Offshore wind farms, DONG, Vattenfall (Pension funds partial ownership)



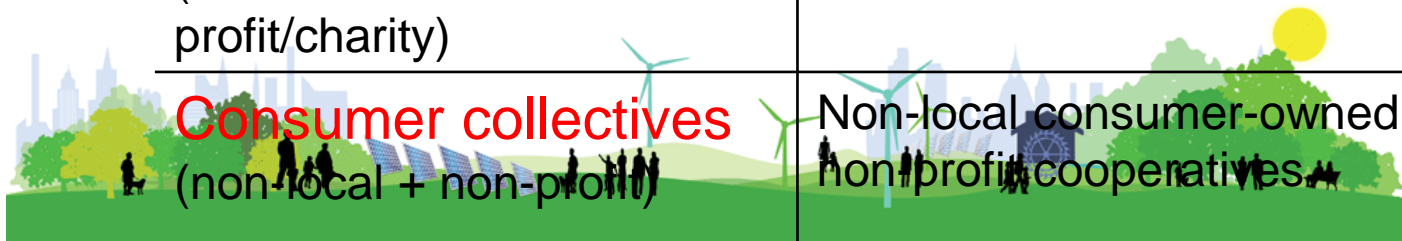
- ✿ Land based windmills
- ✿ - Private investors
- ✿ - Windmill guild (I / S)
- ✿ Some municipal, fund owned, utility owned







<p>Community Power (local + common good)</p>	<p>Local foundations Non-profit consumer-owned local cooperatives Municipal companies Local trust funds</p>
<p>Local Energy Communities (local + for-profit)</p>	<p>For-profit cooperatives and other forms of business partnership</p>
<p>Citizen Energy (non-local + for-profit)</p>	<p>Non-local cooperatives and other forms of business partnership where citizens participate as individuals</p>
<p>Social Energy (non-local + non-profit/charity)</p>	<p>Non-local foundations, non-local trust funds, others?</p>
<p>Consumer collectives (non-local + non-profit)</p>	<p>Non-local consumer-owned non-profit cooperatives</p>



EU Commission definitions

- ✦ As part of the EU Commissions proposal for the
- ✦ Clean Energy Package
- ✦ Proposal for new RE Directive recognize community energy





RES Directive (Article 22)

Renewable energy communities

“[...] **an SME or a not-for-profit organisation**, the shareholders or members of which cooperate in the generation, distribution, storage or supply of energy from renewable sources, fulfilling at least **four out of the following criteria**:

(a) shareholders or members are **natural persons, local authorities**, including municipalities, **or SMEs** operating in the fields or renewable energy;

(b) at least **51%** of the **shareholders** or members with **voting rights** of the entity are **natural persons**;





RES Directive (Article 22)

Renewable energy communities

- (c) at least **51%** of the **shares or participation rights** of the entity are owned by **local members**, i.e. representatives of local public and local private socio-economic interests or citizen having a direct interest in the community activity and its impacts;
- (d) at least **51%** of the seats in the **board of directors or managing bodies** of the entity are reserved to **local members**, i.e. representatives of local public and local private socio-economic interests or citizens having a direct interest in the community activity and its impacts;
- (e) the community has **not** installed **more than 18 MW** of renewable capacity for electricity, heating and cooling and transport as a yearly average **in the previous 5 year**.



Article 22

Renewable energy communities

1. Member States shall ensure that renewable energy communities are entitled to generate, consume, store and sell renewable energy, including through power purchase agreements, **without being subject to disproportionate procedures and charges that are not cost-reflective.**
2. **Without prejudice to State aid rules**, when designing support schemes, Member States shall take into account the specificities of renewable energy communities.



Danish examples



Danish examples

Hvide Sande

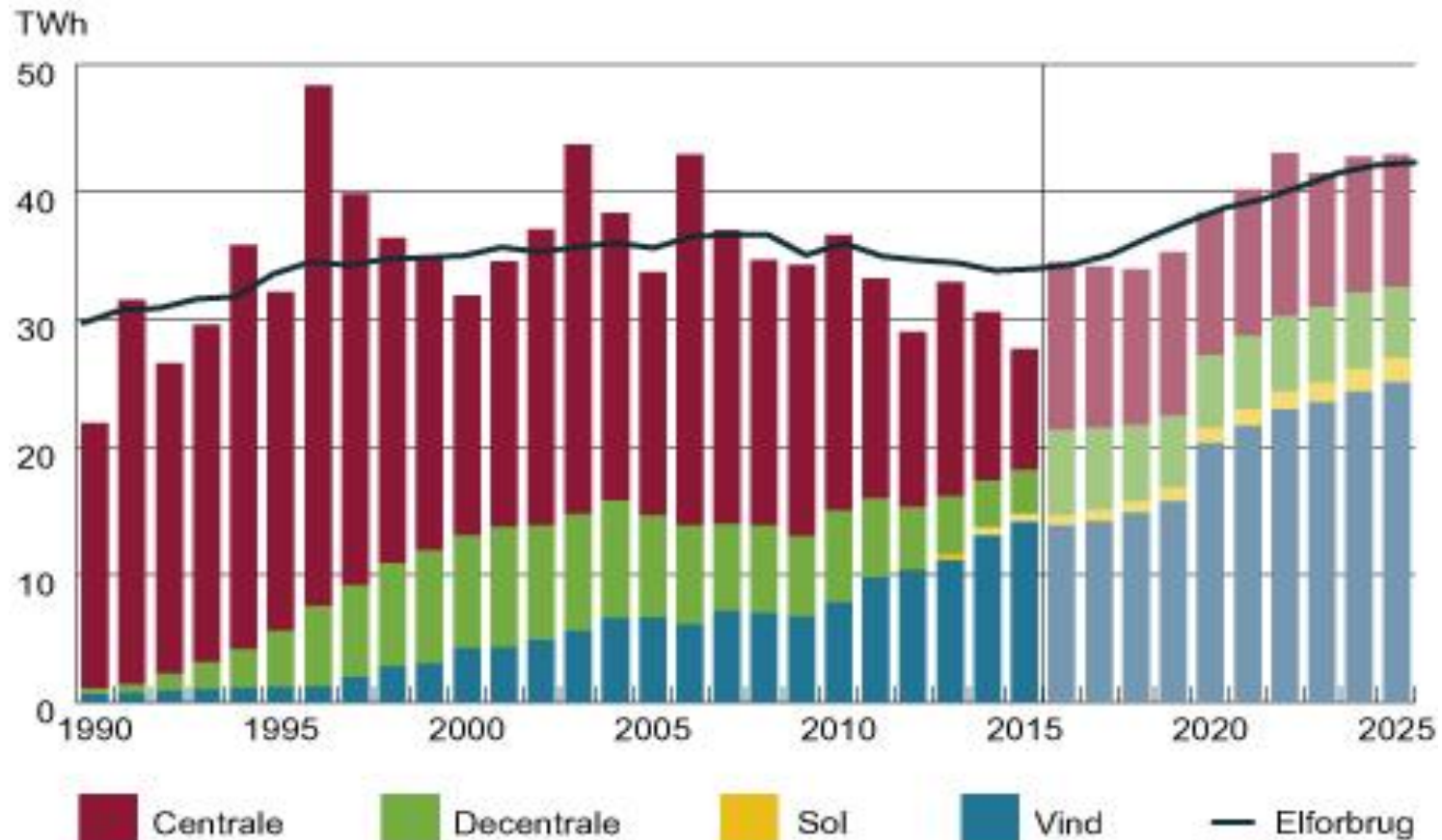
- ✦ The three wind turbines at Hvide Sande Nordhavn were established by the “Foundation Hvide Sande Business Development”, founded by the Holmsland Klit Tourist Association. The turbines’ owners pay high land rent to Hvide Sande Harbour and this rental income is used to co-finance new port facilities. The power produced by the wind turbines is approximately 45,000 MWh per year. The turbines contribute to reaching Ringkoebing-Skjern municipality’s goal of becoming selfsufficient in renewable energy by 2020.
- ✦ Hvide Sande has, since 2012, fought resolutely against foreign investors and major projects which would not involve the local community. Several local actors established a nonprofit fund which helped tackle the issue of the community’s energy independence. The obligation to make non-profit use of surpluses was the key in persuading the population to agree to this scheme. The three wind turbines demanded an investment of €12.2m, 20 % of which was paid by 400 co-operative local stakeholders.



Solar District Heating (approx. 110 plants in Denmark)



Status RE in Electricity in Denmark



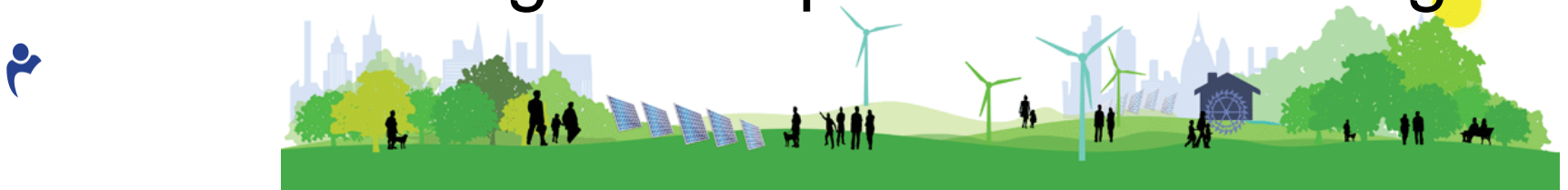
El-production in 2014-2015

Development in el- production in Denmark (GWh)	2014	2015
Nettoelproduktion	30.615	27.704
Nettoimport	2.855	5.912
El consumption (incl. Grid loss)	33.471	33.616
El from central plants	13.281	9.493
El from decentral plants	3.643	3.454
El from land based windmills	7.913	9.300
El from off-shore windmills	5.165	4.833
El from solar cells	597	605
El from hydro power	16	19



Status of RE transition

- ✦ Expansion with wind on land are slowed down
- ✦ Photovoltaics has slowed sharply down
- ✦ Solar heat: large expansion in smaller consumer-owned district heating companies
- ✦ Biofuel: individual furnaces, heating plants, power plants "running fast" Biogas: farmers and gas companies are building



Central questions

- ✦ Economic gain – Who and how big ?
- ✦ Democratic control – direct or indirect / hierarchical ?
- ✦ Centralised or decentral production ?





Alliance for Community Power



ENERGI
AKADEMIET



Vestjyllands Energi-og Miljøforening

Ærø Energi-og Miljøkontor

Høje Taastrup Miljø-og Energicenter

Himmerlands Energi-og Miljøforening

Vendssyssel Energi- og Miljøforening





Internationalt

- ✦ Community Energy – locally owned cooperatives in European countries

Tyskland, Belgien www.ecopower.be , Skotland, UK
(www.communitypower.eu + www.rescoop.eu)

- ✦ Friends of the Earth
(www.foeeurope.org)

Reclaim Power movement (www.reclaimpower.net)



RE in Ringkøbing-Skjern Municipality

- ✦ Has a vision / strategy for covering 100 pct. of energy consumption in 2020 with local RE production
- ✦ In 2015 reached 56 pct.
- ✦ In 2016 addition of the PV plant in Hjortmose, biogas plant near Spjald, at least 5 new 3 MW wind mills at Vognkær



SOLAR CELLS PV at Hjortmose

- ✦ 31 km cables and 16,000 poles
- ✦ 10 Investors each hold between 3 and 16 per cent.
- ✦ 69,000 panels spread over 38 transformers
- ✦ Investment 125 million. kr
- ✦ Estimated production: ca. 17 million. kWh / year
- ✦ 2.7 per cent. of the municipality's electricity consumption





COMMUNITY





