EU Trends in Energy Efficiency and Danish Experiences

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International Network for Sustainable Energy

Network of 150 NGOs worldwide, 80 in Europe

An international voice to NGOs promoting renewable & energy efficiency

-> Active on EU & Climate policies
-> Sustainable energy visions
-> Sustainable Energy News
-> Strengthening NGOs in promotion of energy for local development and protection

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The climate challenge

We now live in “antropocene”, the geological period, where humans governs the earth & the climate by our actions

The countries of the world have committed to limit human climate change to 3.5’C, equal widespread catastrophes

We must limit global warming to 1.5 – 2’C: reduce all greenhouse gases to net zero also until 2050, go to 100% renewable energy until 2050
EU has set target of 40% greenhouse gas reduction 1990-2030, 27% renewable energy in 2030, 27% increase in energy efficiency 2005-2030

Denmark has target of 100% renewable energy economy-wide in 2050 and we expect that in 2020 more than 50% of Danish power will be windpower (it is 40% today)

SustainableEnergy and Friends of the Earth Denmark promotes 100% renewable energy economy-wide by 2030 – 16 years from now
EU’s Plan for 40% Reduction

Updated renewable energy directive: effective support
Updated Energy efficiency directive: energy companies must save at users, planning for district heating and others
Ecodesign Directive requiring energy efficient equipment
Energy labelling Directive
Updated Energy Performance of Buildings Directive
Reduced emission-allowances under the EU Emission Trading Scheme (2.2% reduction per year, not 1.7%, 12% Banking per year)
Energy Transition until 2030 is realistic for Denmark & the economy can benefit

- Analysis of energy system – hour by hour with the EnergyPLAN programme shows that an electricity system with 84% windpower and 7% solar can supply in all hours of the year.
- Compared with continued use of fossil fuels, renewable energy supply can be cheaper in 2030, if we also save energy and make a transport transition.
Danish Primary Energy Supply, 2030
Danish Energy System Costs 2030, with Energy Efficiency Invest.
Low-energy Renovation in DK 2016

Apartment block after renovation

Cross-section of building after insulation (insulation is yellow). Former balconies are to the right. Observe also roof and floor insulation.
Thank you
Expand renewable energy

11000 MW windpower in 2030, half on land (today 4855 MW)
4000 MW solar PV in 2030 (today 530 MW)
1800 MW heat pumps in district heating (today ca. 5 MW)
850 MW bio-CHP and 3000 MW biogas peak power
20 PJ solar heat (11 mill. m² = 1100 ha), 19 PJ geotermi
Sustainable biomass – 150 PJ in Danmark
Large variations in power flows can be managed

RES12: Windpower
RES34: Solar PV
Flex: Flexible power demand
HP: Heat pumps
Wasteheat/Geo: geotherm. Heat
CHP: Combined heat & power