
Danish Industry Agreement for Sustainable Woody Biomass

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EU4Energy Vienna Policy Forum: Bioenergy for Heat

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The Energy Infrastructure in Denmark today



Large penetration of district heating – 64 % of all households



Wind power generates around 50 % of electricity



All large power plants are combined heat and power

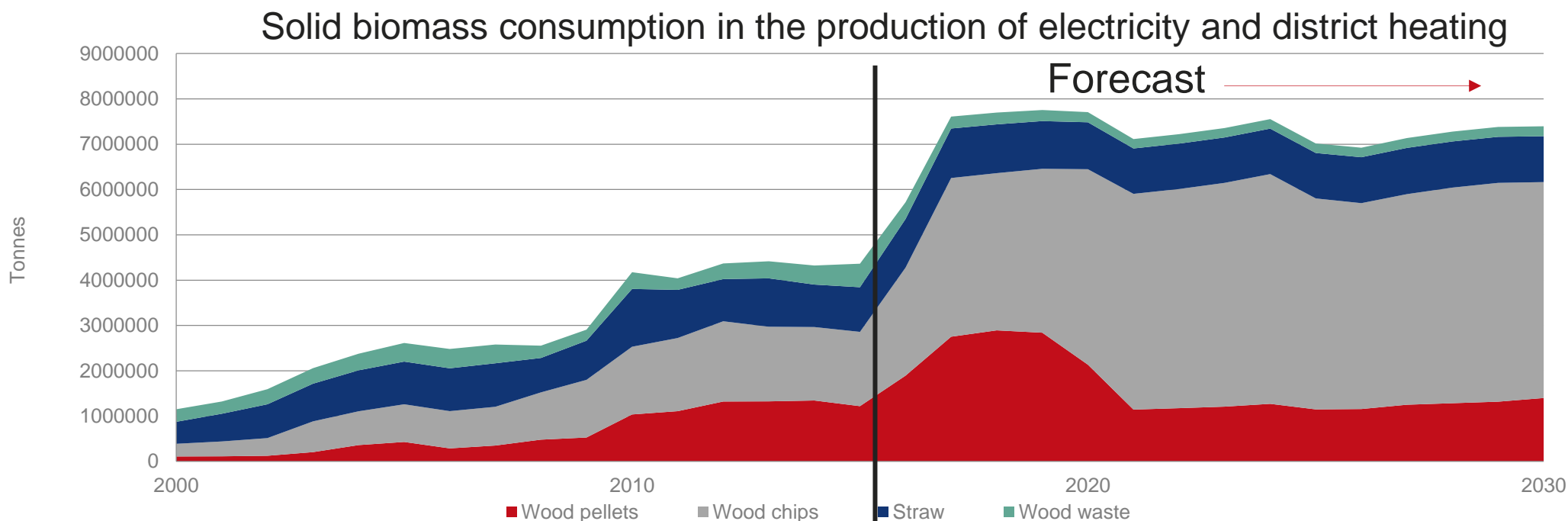


High share of renewable energy – 2/3 is biomass



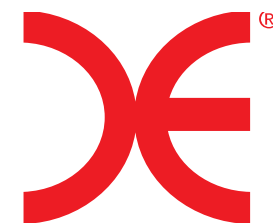
Energy infrastructure and companies are publicly owned

Energy Sector Biomass Consumption



Source: Danish Energy Agency, Energy Statistics forecast

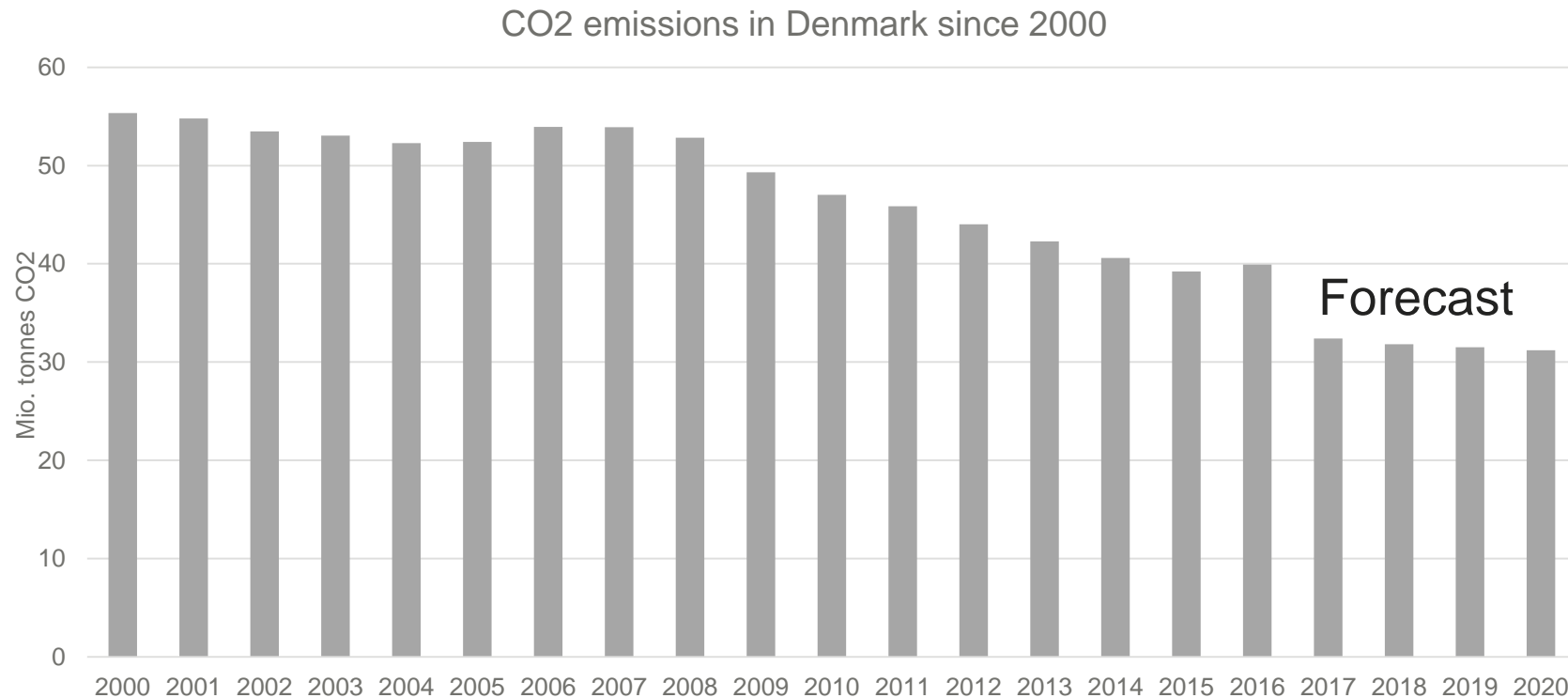
Industry Agreement



**DANSK
ENERGI**

CO2-emissions have declined since 2006

A large part of the decline is due to biomass



Danish CO2-emissions have declined since 2007 and will continue to decline until at least 2020. A high share of this decline is due to increased use of biomass in the CHP-sector.

Source: Danish Energy Agency, Energy Statistics forecast

A voluntary sustainability agreement?

Increased focus on sustainability of solid biomass

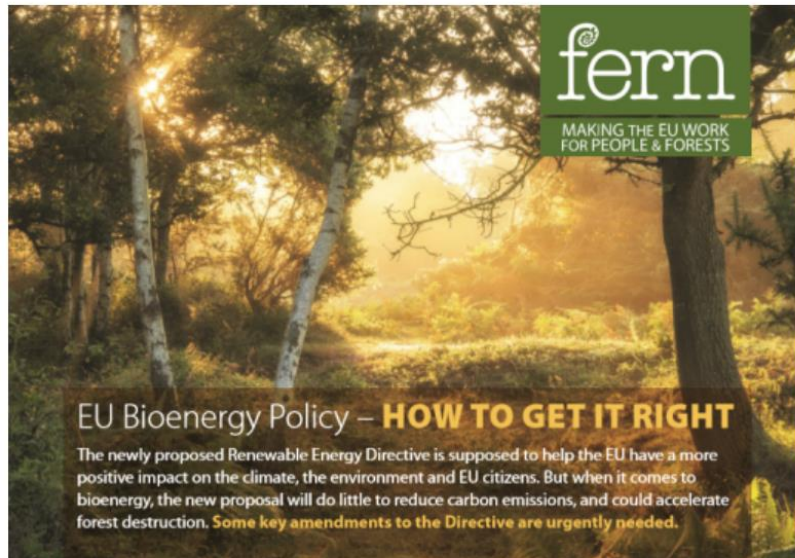
Wood Is Not a Carbon-Neutral Energy Source

01 March 2017



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EU Bioenergy Policy: how to get it right



Open Access

Invited Editorial

Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral

Ernst-Detlef Schulze, Christian Körner, Beverly E. Law, Helmut Haberl, Sebastiaan Luyssaert



Dogwood Alliance @DogwoodAlliance · Jan 15

.@carolinapunset @pavelpoc @mortenhelveg Carbon Loophole: Why is wood burning counted as green energy? It's a loophole that's hurting Southeastern forests. ow.ly/XB1a30hm2Mq via @yale360 #biomass



Carbon Loophole: Why Is Wood Burning Counted as Green Energy?

A loophole in carbon-accounting rules is spurring a boom in burning wood pellets in European power plants. The result has been a surge in logging, p...
e360.yale.edu

Recent years have seen an increase in questions being asked regarding wood use in the European energy sector. NGOs, news agencies and some researchers have raised concerns regarding forest management, bioenergy, EU and antional policies and related subjects



How we work with sustainability

- From about 2012 there has been focus on sustainability of bioenergy in Denmark – earlier than in many other countries
- The Danish government decided not to introduce sustainability requirements for solid biomass
- Danish regulation is often built on trust and cooperation between authorities and actors
- This led to the Industry agreement



CEO Danish District Heating Association
CEO Danish Energy
Minister of Energy and Climate

Industry Agreement - Contents

1. LEGALITY	• Legality of forest management and utilisation is safeguarded	
2. ECOSYSTEMS	• Protection of forest ecosystems	
3. CARBON CYCLE	• Forest productivity and ability to contribute to the global carbon cycle must be maintained	
4. CONDITION OF FOREST	• Forests must be healthy and well-functioning	
5. BIODIVERSITY	• Protection of biodiversity, sensitive areas and areas worthy of preservation	
6. RIGHTS	• Social and work-related rights must be respected	
7. CO2 LIMITS	• CO2 emissions from the biomass value chain	
8. CARBON CYCLE	• Forest carbon stock, iluc, iwuc	<u>Not implemented yet – too little knowledge</u>

The Danish Industry agreement was made in 2014 with participation from energy organisations, utility companies and authorities

Documented through certification: FSC, PEFC, SBP and "Alternative documentation" – Audited by 3rd party auditor

CO2 EMISSION LIMITS FROM BIOMASS VALUE CHAINS

Value chain for biomass



Operation: planting, maintenance, and logging



Production of wood pellets and -chips



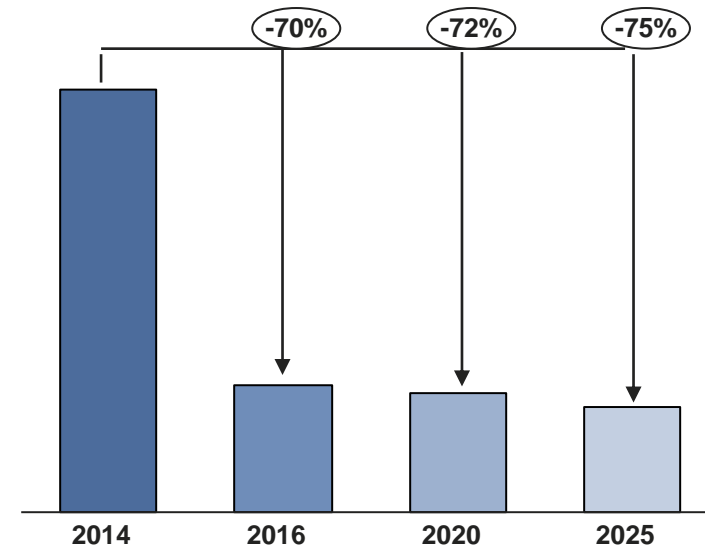
Transportation



Utilisation rate of power station

CO2 reduction requirements

Shown in relation to the continued use of fossil fuels



*EU-kommissionen, den 28. juli 2014: State of play on the sustainability of solid and gaseous biomass used for electricity, heating and cooling in the EU samt den engelske lovgivning for biomasse bæredygtighed – Timber Standard for Heat & Electricity: Woodfuel used under the Renewable Heat Incentive and Renewable Obligation.

Who, Timeframe and Costs

Who

- All heat and power producing plants
- Plants above 20 MW have to document sustainability through yearly, 3rd party audited reports that are made public.

Timeframe

- Agreement started 2016 and covered 40 % of solid biomass
- In 2017: 60 %, 2018: 75 %, 2019: 90 %
- 2020 onwards: EU regulation through REDII.

Costs

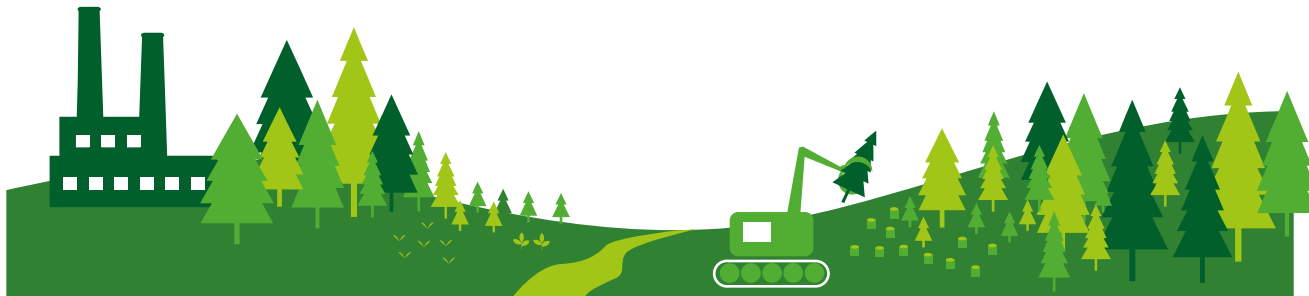
- Small companies: 1-2 man-months of extra work first year
- Large companies: More resources used, but sustainability is a core activity of those companies, e.g. Ørsted
- Documentation systems already in place – small adjustments needed for sustainability documentation
- 3rd party auditing and reporting: € 2000 pr. year
- Certified biomass a few percent more expensive than non-certified

Results from 2016

Biomass delivered aug-dec 2016	ton	%
Total Biomass	979,415	100%
Wood Pellets	721,762	74%
Wood Chips	257,653	26%
Certified Biomass	497,069	51%
Alternative Documentation	67,457	7%
Total Documented Biomass	566,764	58%
Non-Forest Biomass	10667	1%

**A high fraction of
certified sustainable
biomass**

Requirement was 40 %



Benefits of our work with sustainability



Cooperation between forest owners, industry, biomass suppliers, energy industry, authorities and the research community



Easy to adapt to proposed EU REDII regulation: Systems and processes are in place already



We can show our energy consumers that we take sustainability seriously

EU Renewable Energy Directive II

Introduced by the Commission in the Winter Package in November 2016

- Introduces sustainability criteria for solid biomass from 2020
- Lots of debate: e.g. regarding risk-based approach vs. resource based approach
- Ongoing trialogue between comission, council and parliament

From 2020 we will most likely have EU criteria for solid biomass – similar to what we have in Denmark

Summary

- Energy infrastructure with district heating making use of biomass is a wise solution for Denmark
- Large increase in use of wood pellets and wood chips
- This development has resulted in an increased share of renewables and low GHG-emissions from electricity and heat production
- Sustainability requirements for solid biomass are in place
- The Danish energy industry is well prepared for coming EU regulation

Is the Danish voluntary approach possible in your home countries?