



Mål og virkemidler i de nordiske landenes handlingsplaner for Fornybar Energi

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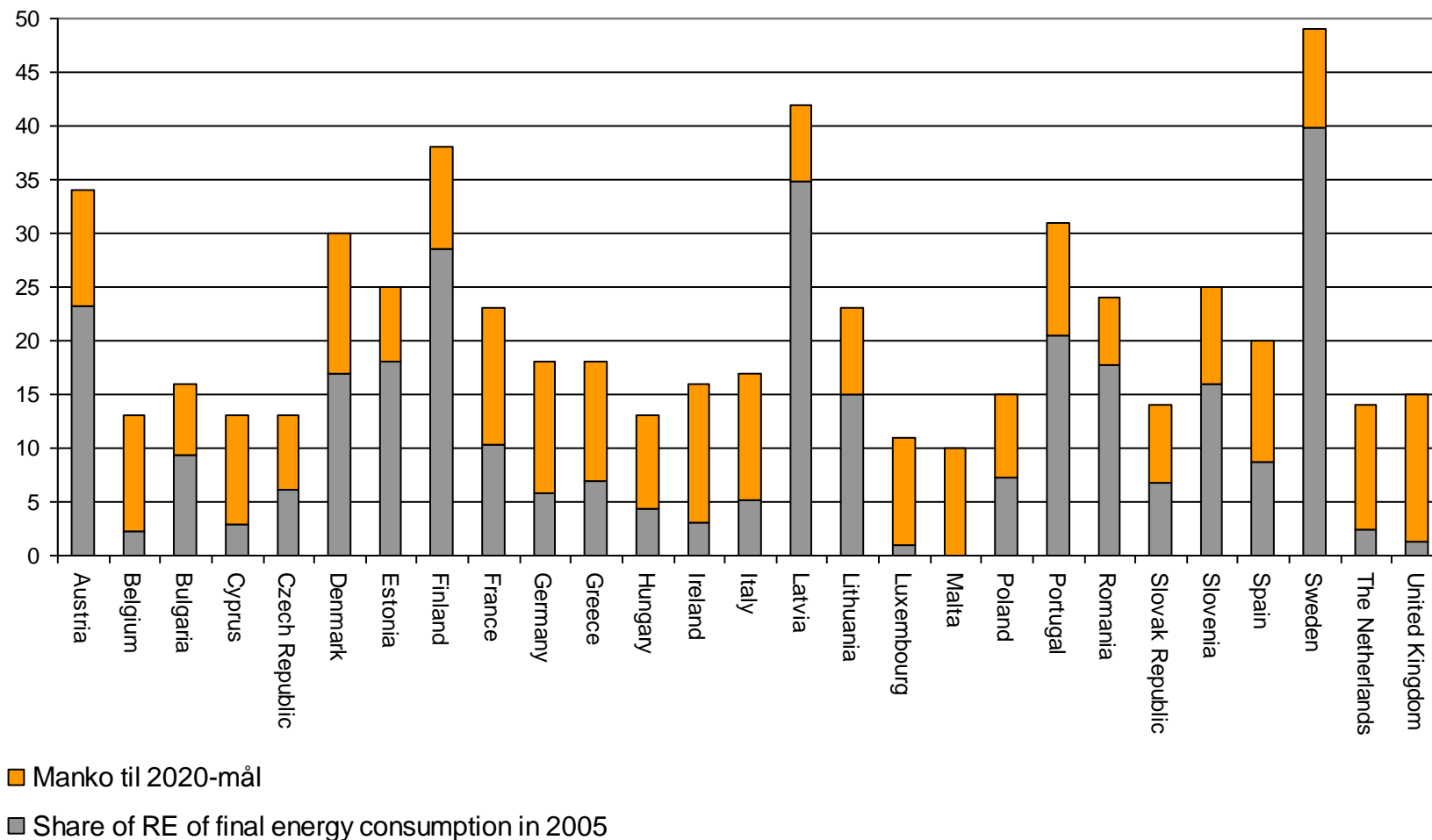
Content

- Targets and measures in RES-Directive
- Targets and projections in Nordic countries
- RES-measures in Nordic countries
 - National measures
 - Current positions regarding use of coop-mex

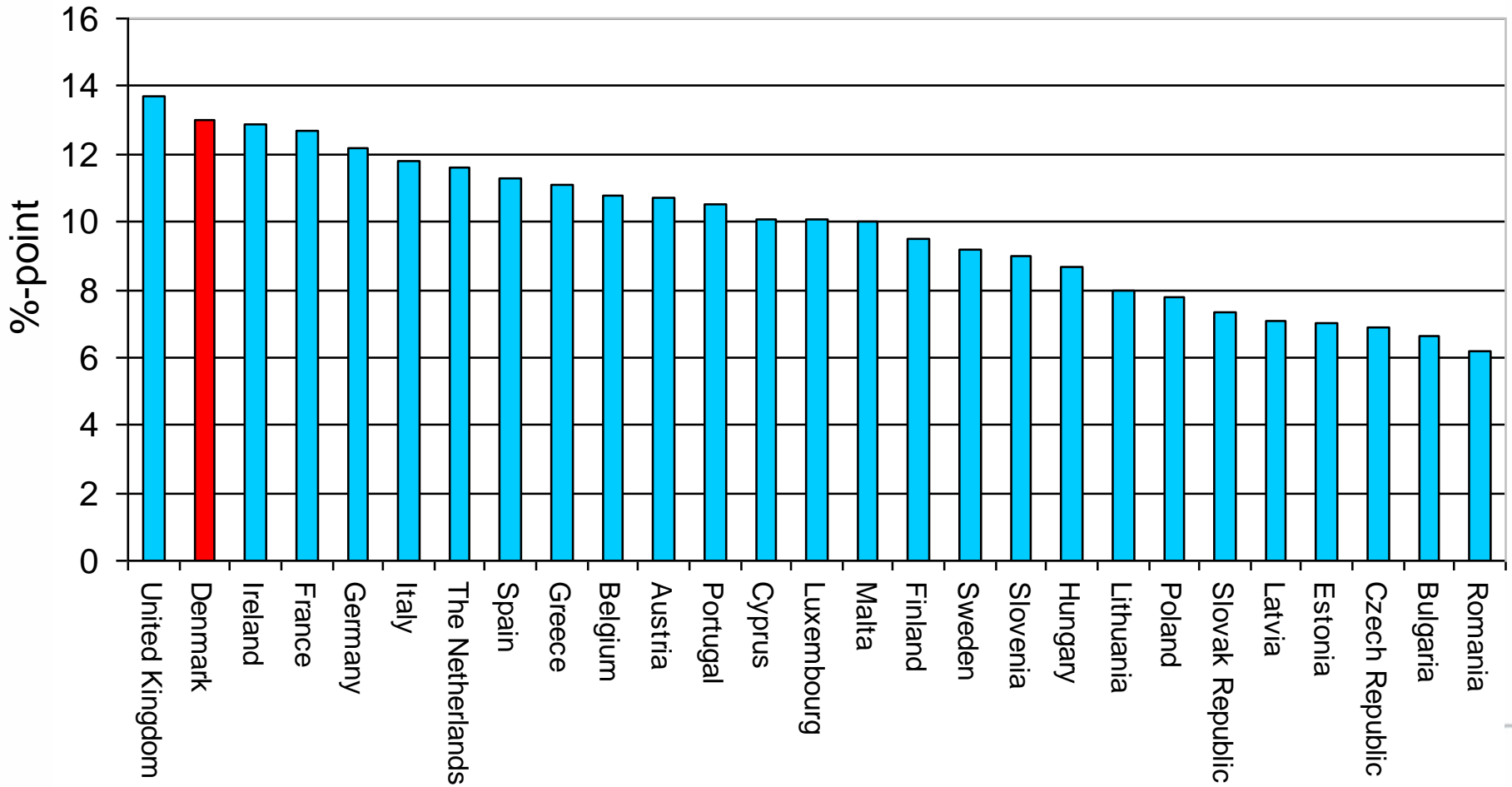
The RES directive: Targets for EU-countries

- 20 % share of RES in EU's gross (enlarged) final energy consumption
 - Individual legal binding national targets
 - Indicative trajectory
- 10 % share of RE in the transport sector
 - Legal binding target
 - Special rules for electric vehicles (x 2,5) and 2nd-generation biofuels (x 2)

National targets for RE-share



RE-increase in the RES Directive



The RES-Directive: Overall measures for target compliance

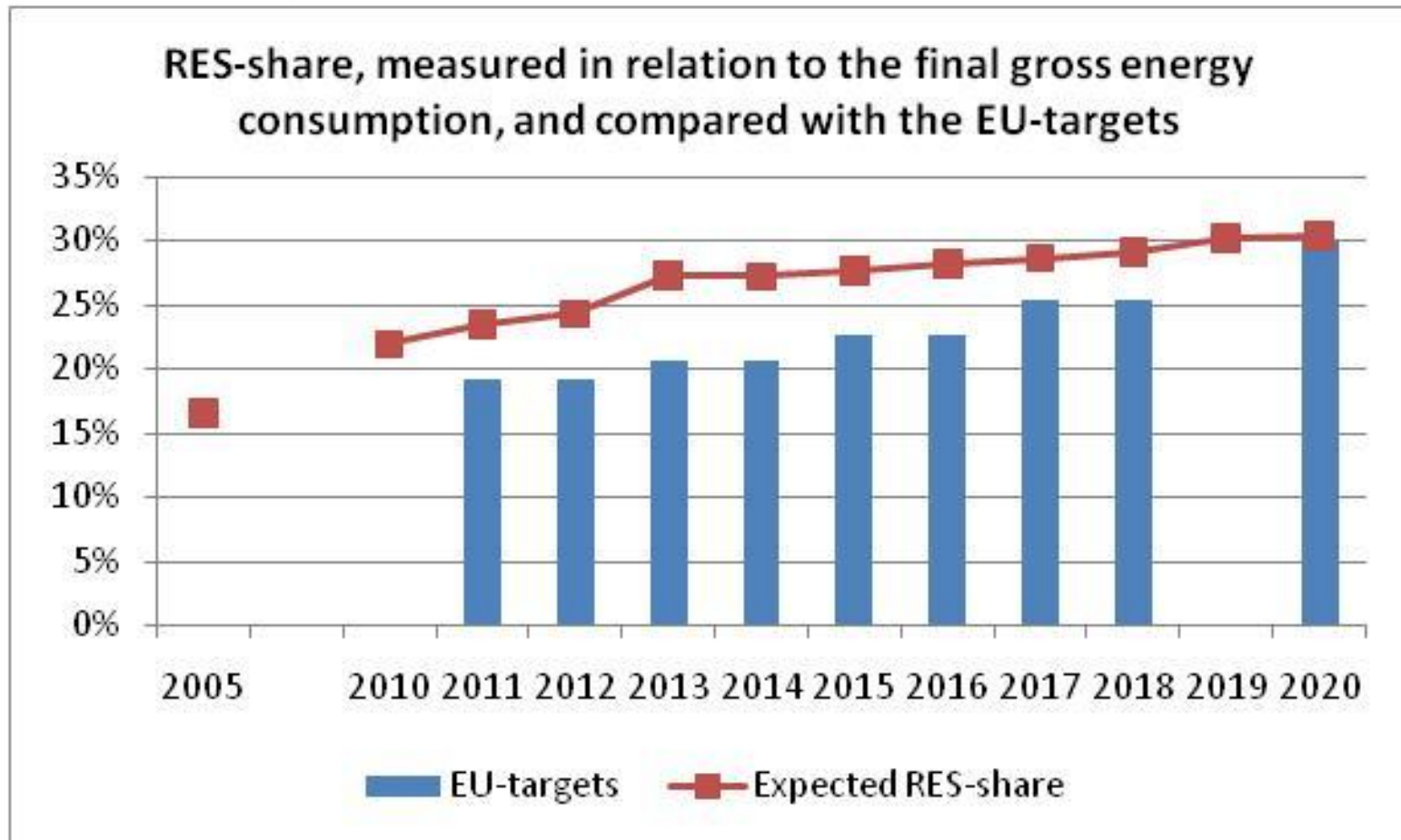


- NREAP's and follow up
 - First NREAP already submitted
 - Biannual progress reports
 - Revised NREAP needed if below "trajectory"
- National support schemes the "back bone"
- Cooperation mechanisms
 - Statistical transfers between Member States
 - Joint Projects
 - Joint support schemes

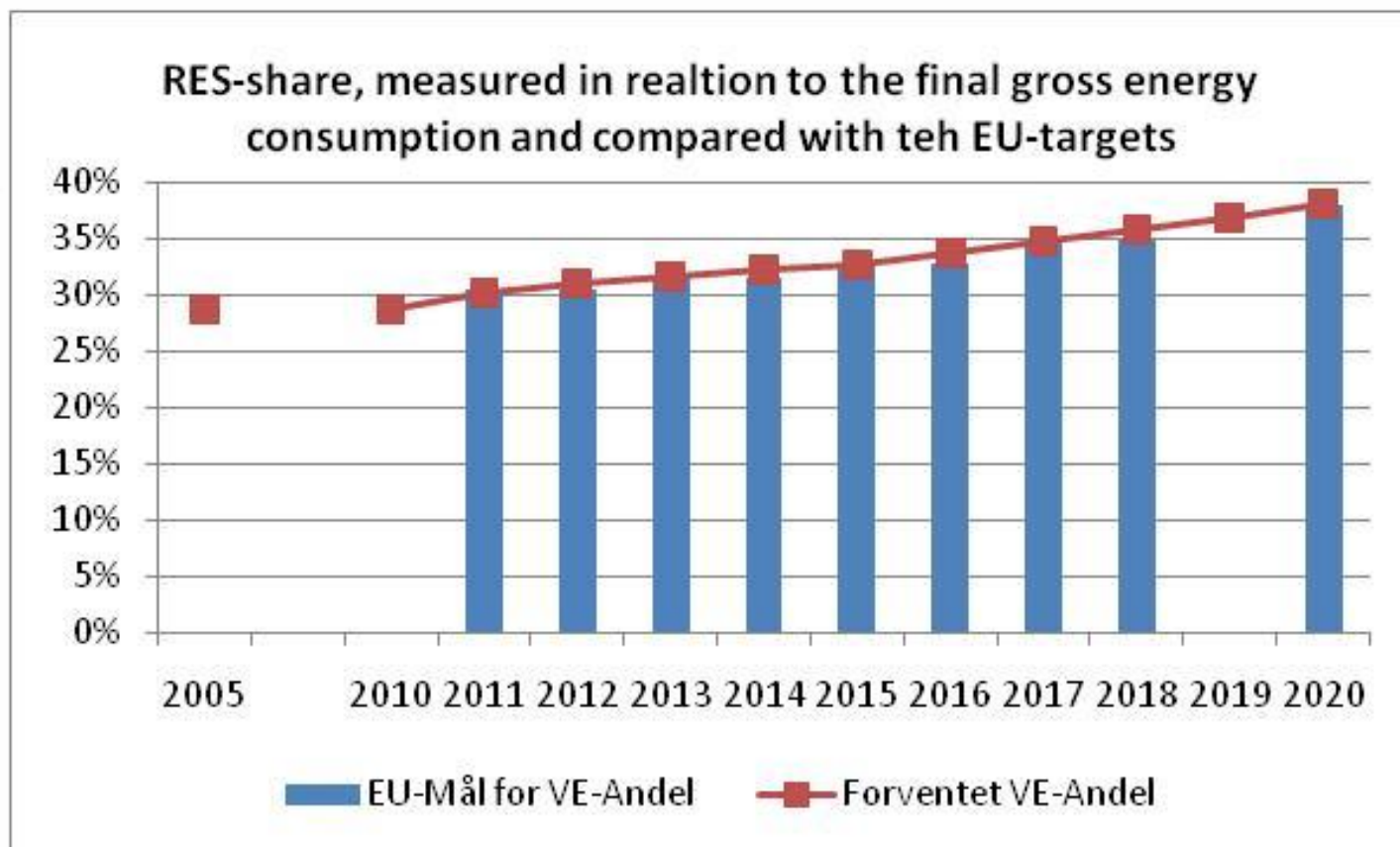
RES-targets in 2020 in Nordic countries

% RES	Denmark	Finland	Iceland	Norway	Sweden
Level in 2005	17.0%	28.5%	55.8%	58.2%	39.8%
Target for 2020	30.0%	38.0%	To be finally decided	To be finally decided	50.2% (49%)
Increase	13.0%	9.5%	To be finally decided	To be finally decided	10.4% (9.2%)

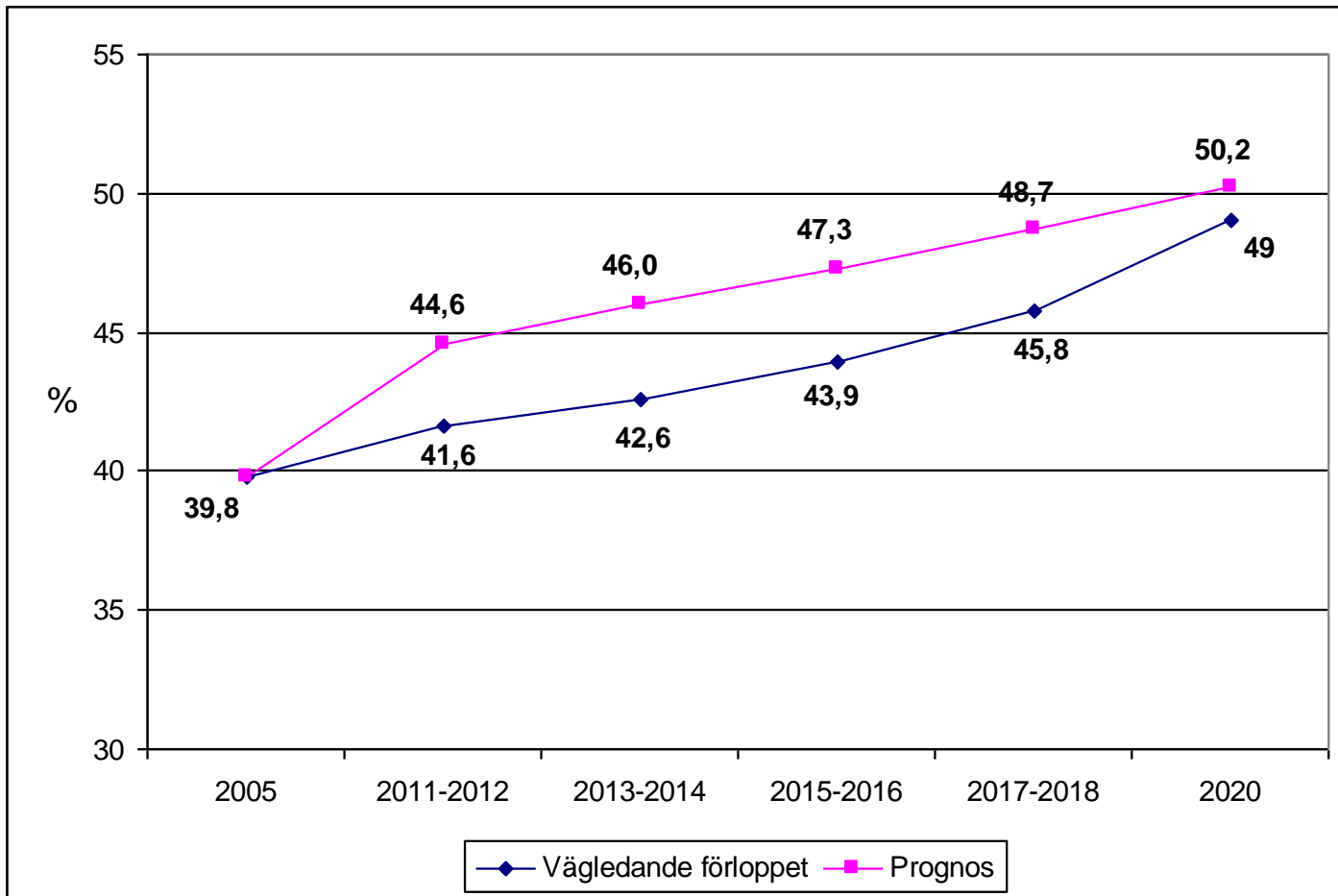
Compliance with overall target - Denmark



Compliance with overall target – Finland



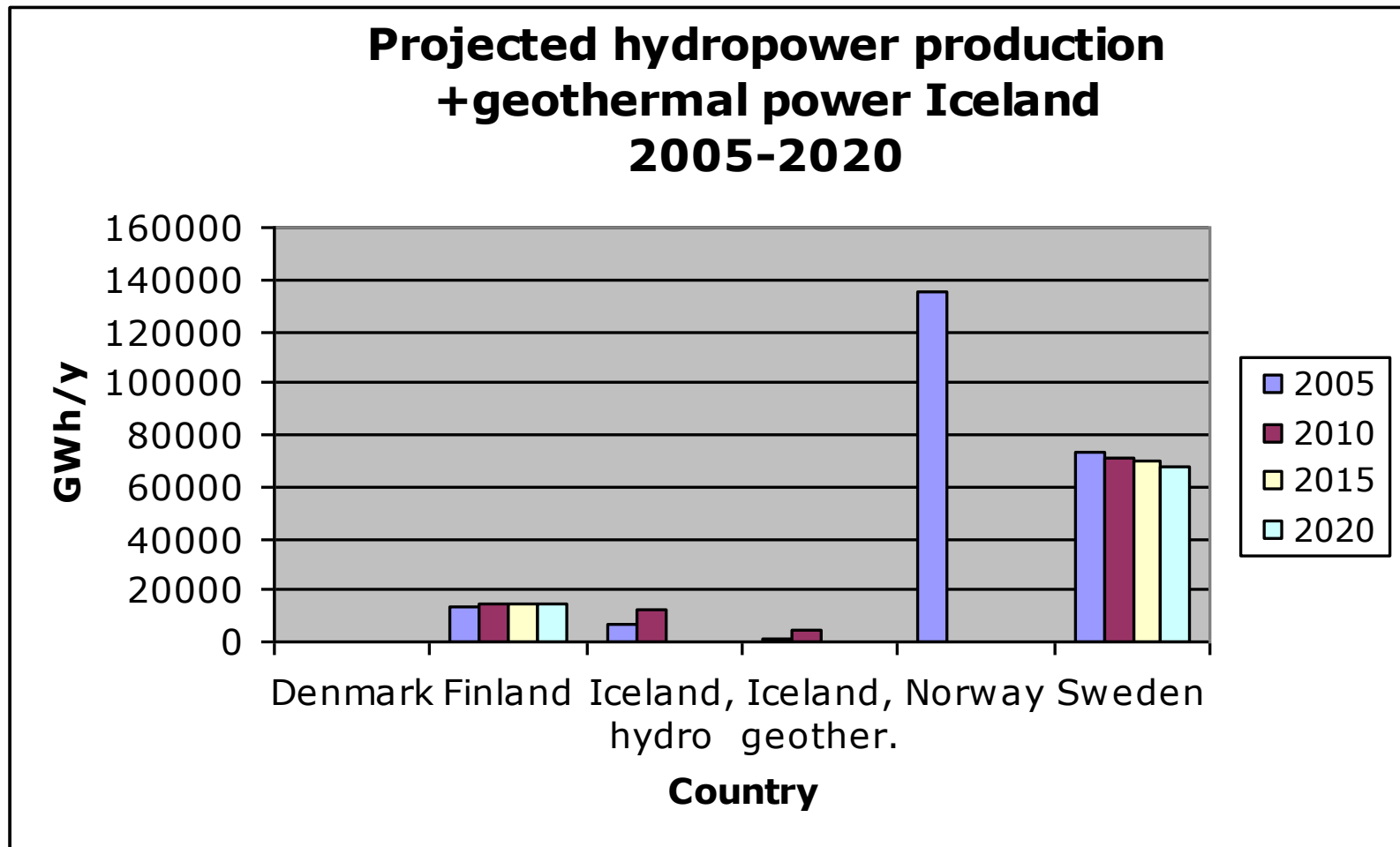
Compliance with overall target – Sweden



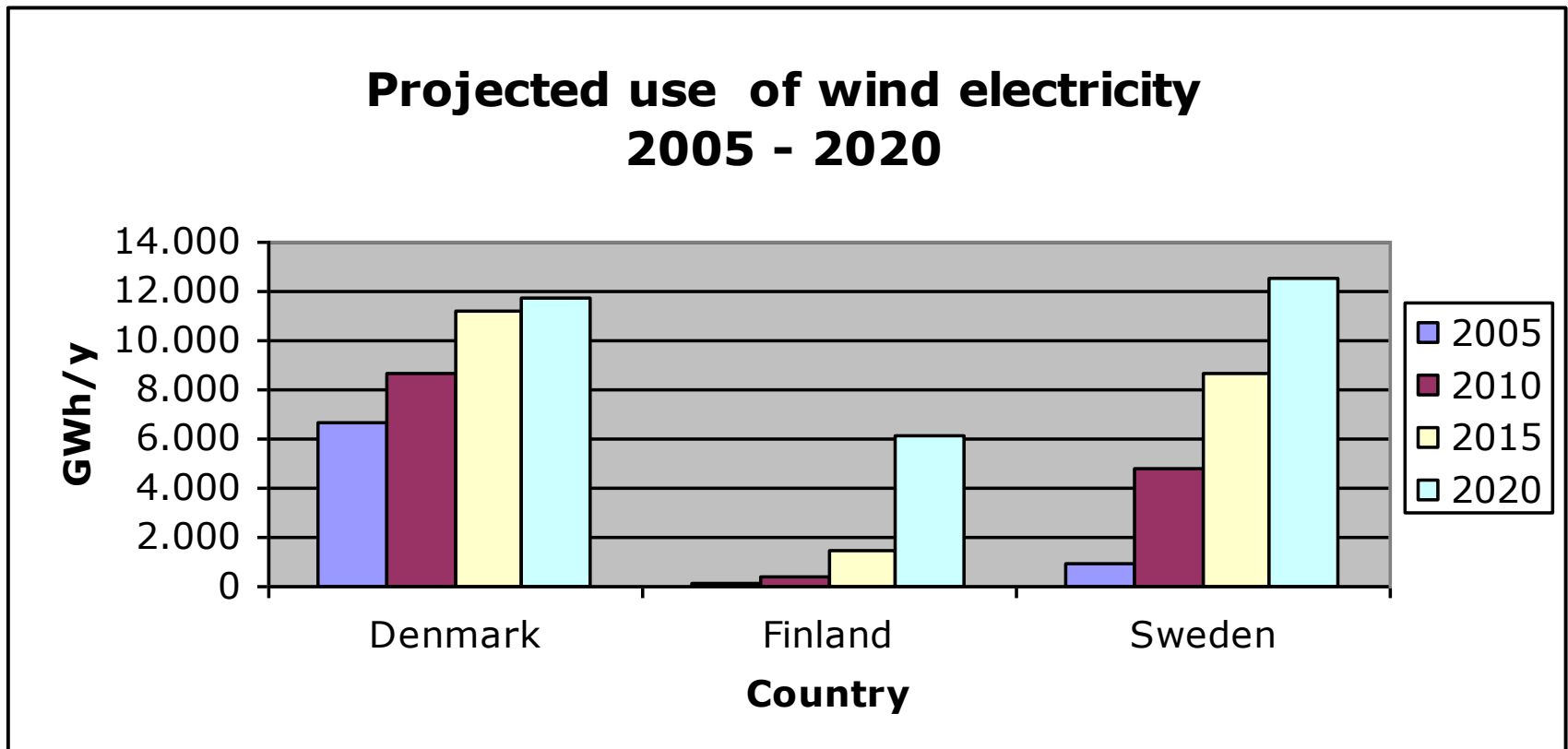
Nordic current positions regarding target compliance in 2020

	Seller country	"Meeting target" country	Buyer country	Not clarified yet
Denmark		X		
Finland		X		
Iceland				X
Norway				X
Sweden	X			

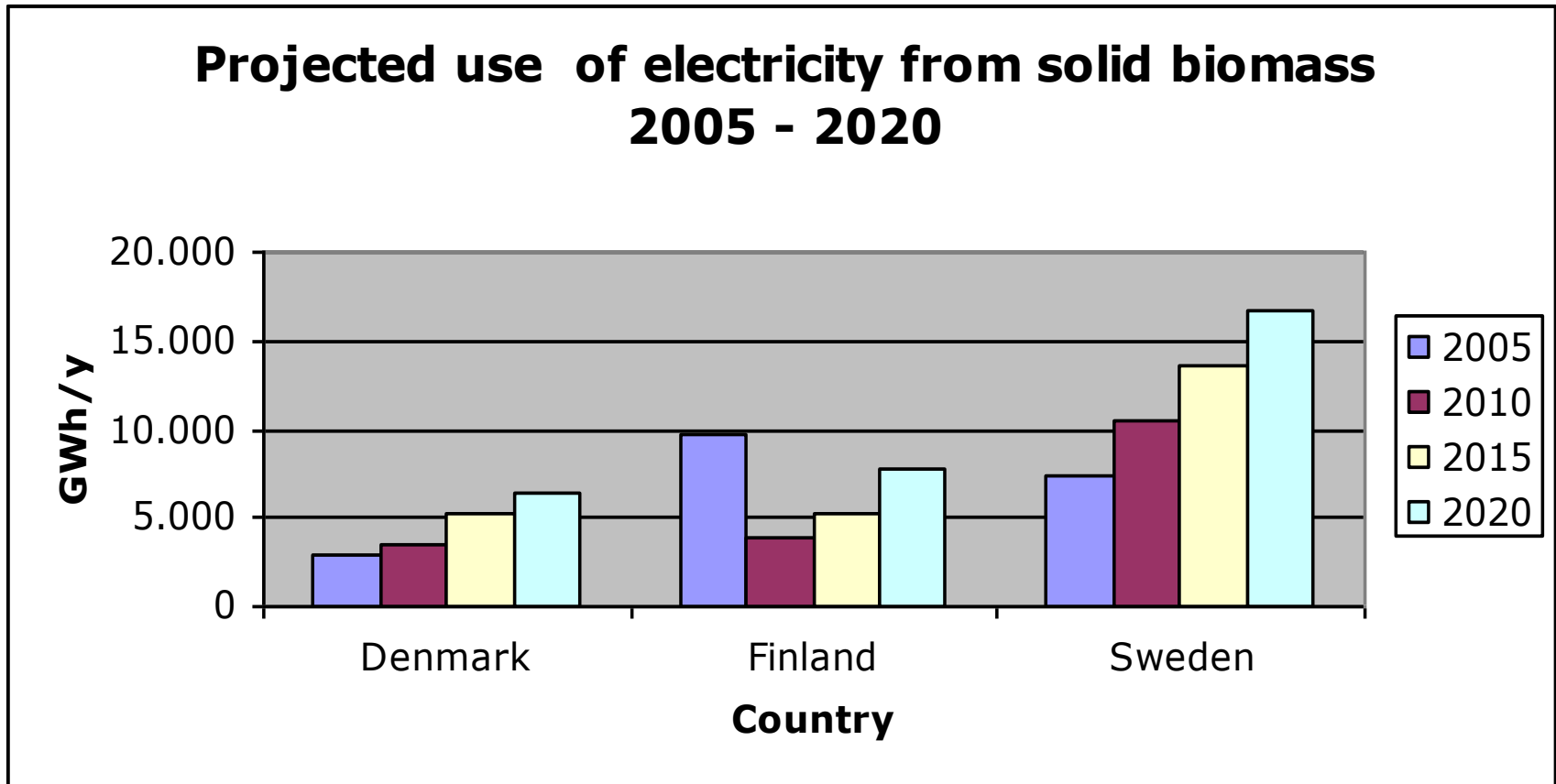
Electricity - hydro power



Electricity - wind power

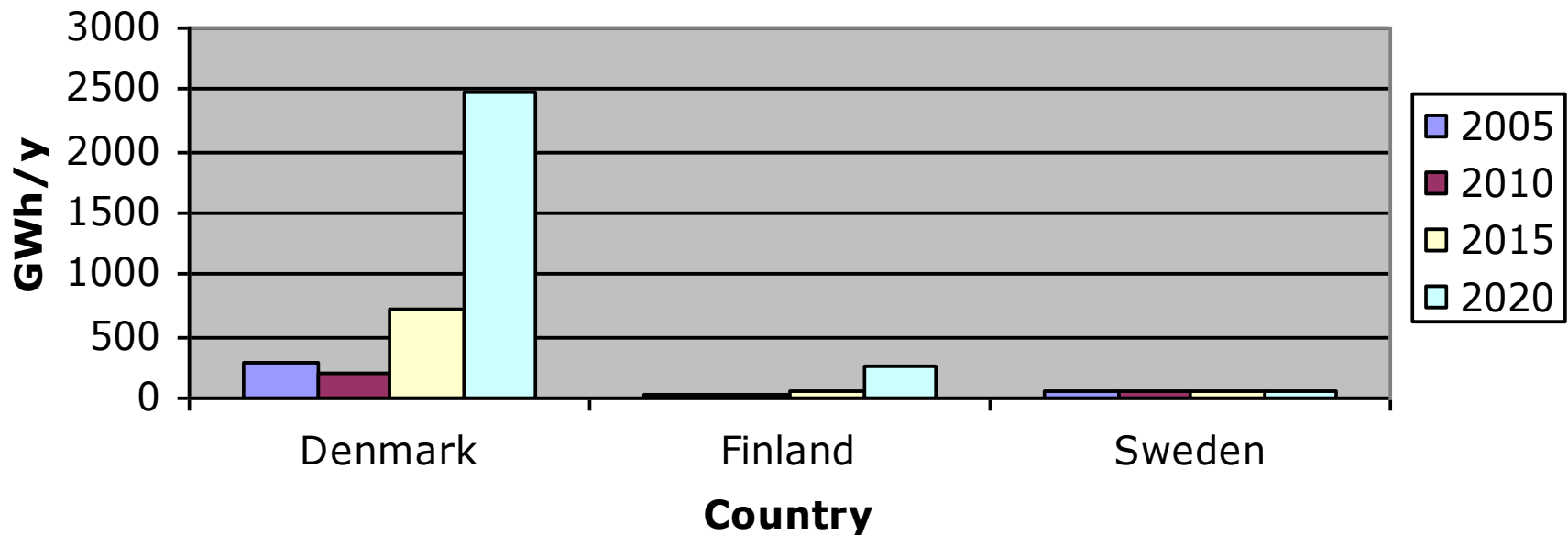


Electricity - solid biomass

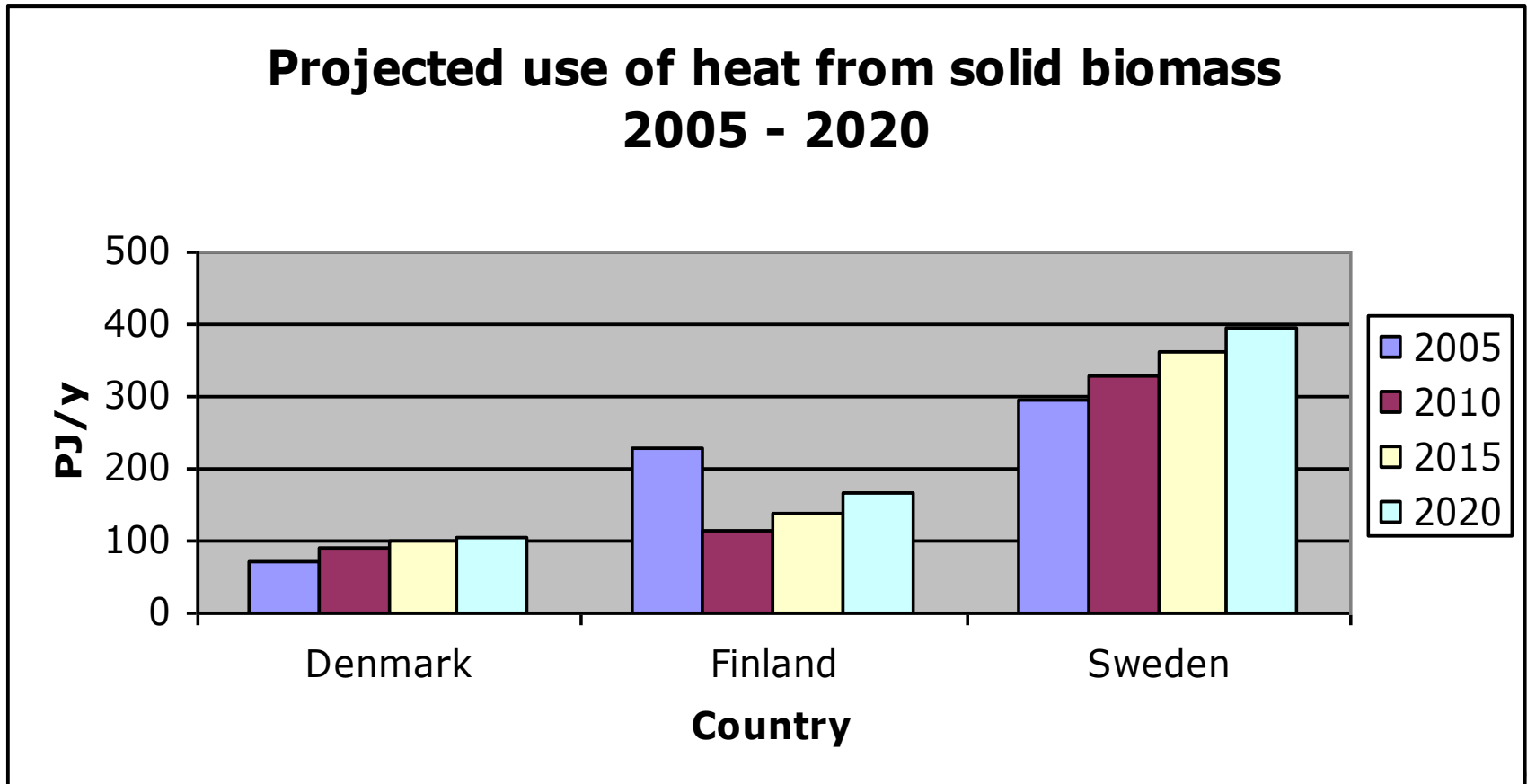


Electricity - biogas

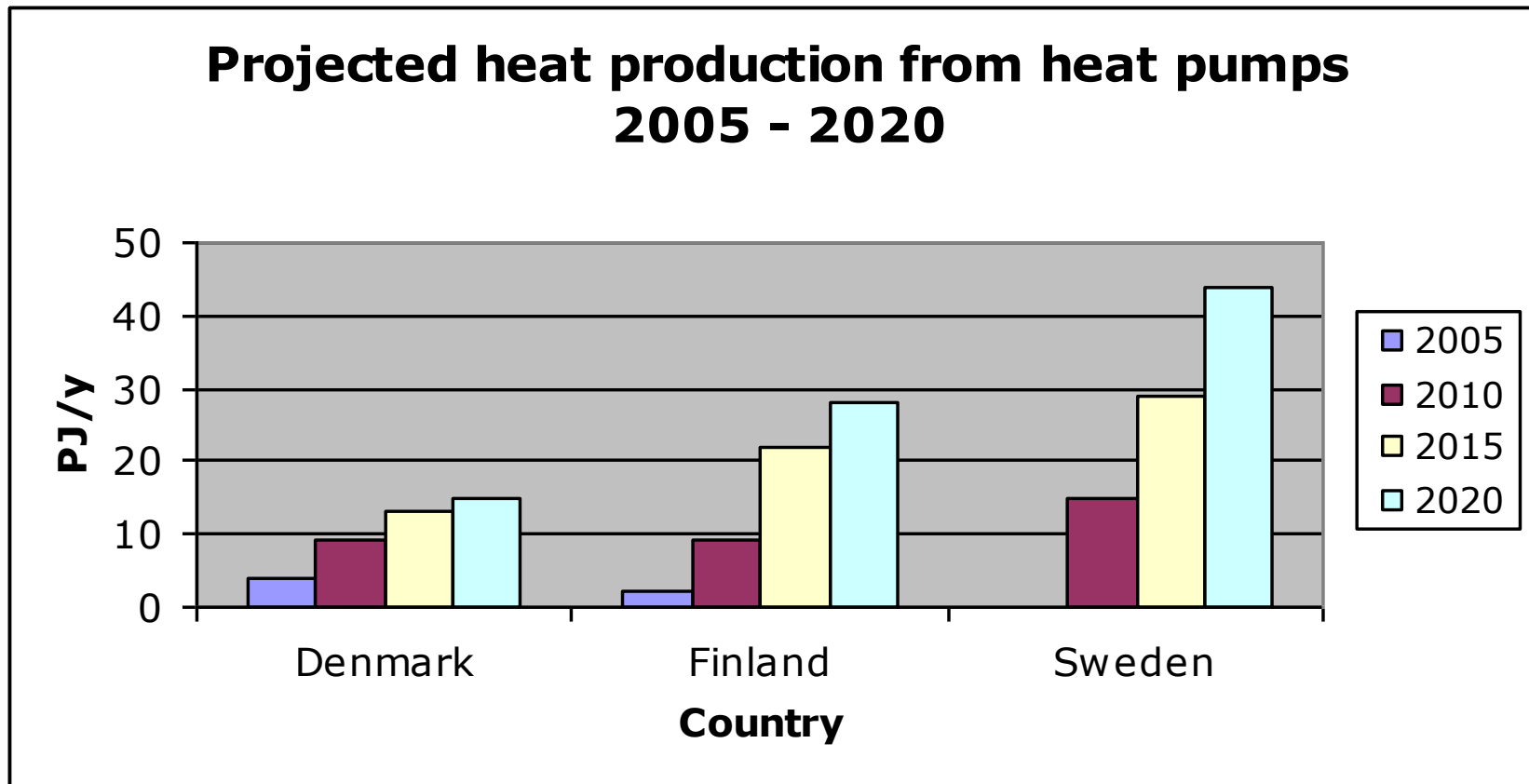
Projected use of electricity from biogas 2005 - 2020



Heat - solid biomass

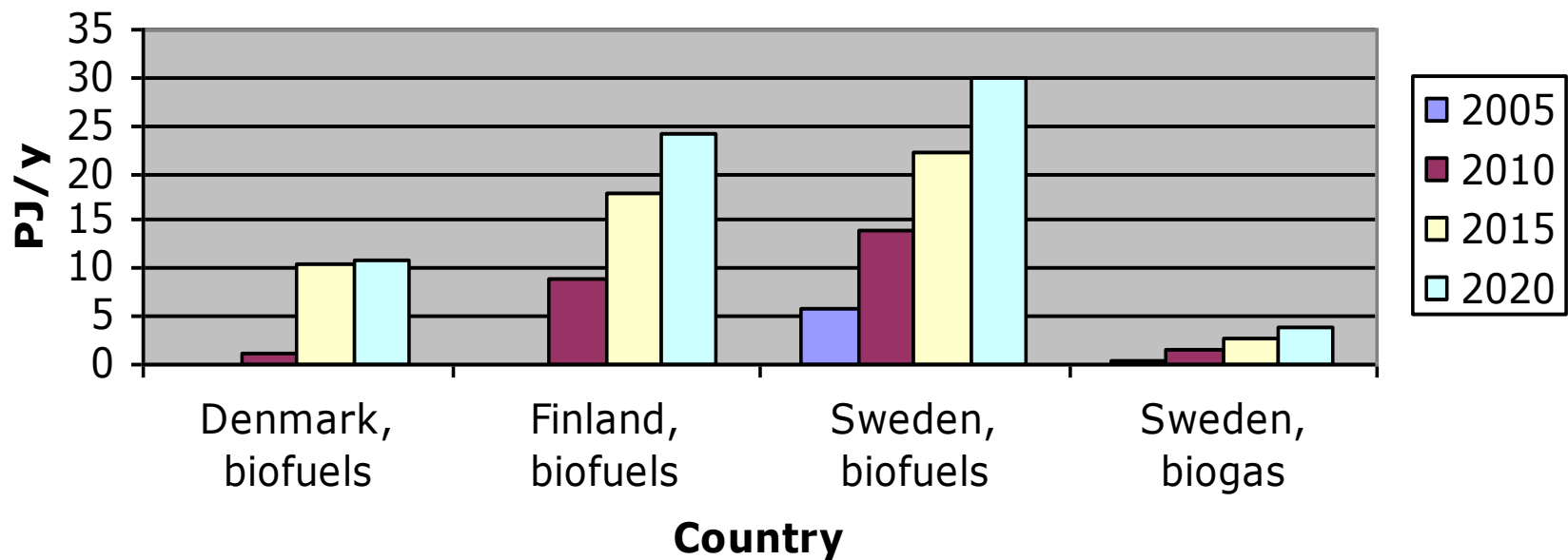


Heat - heat pumps

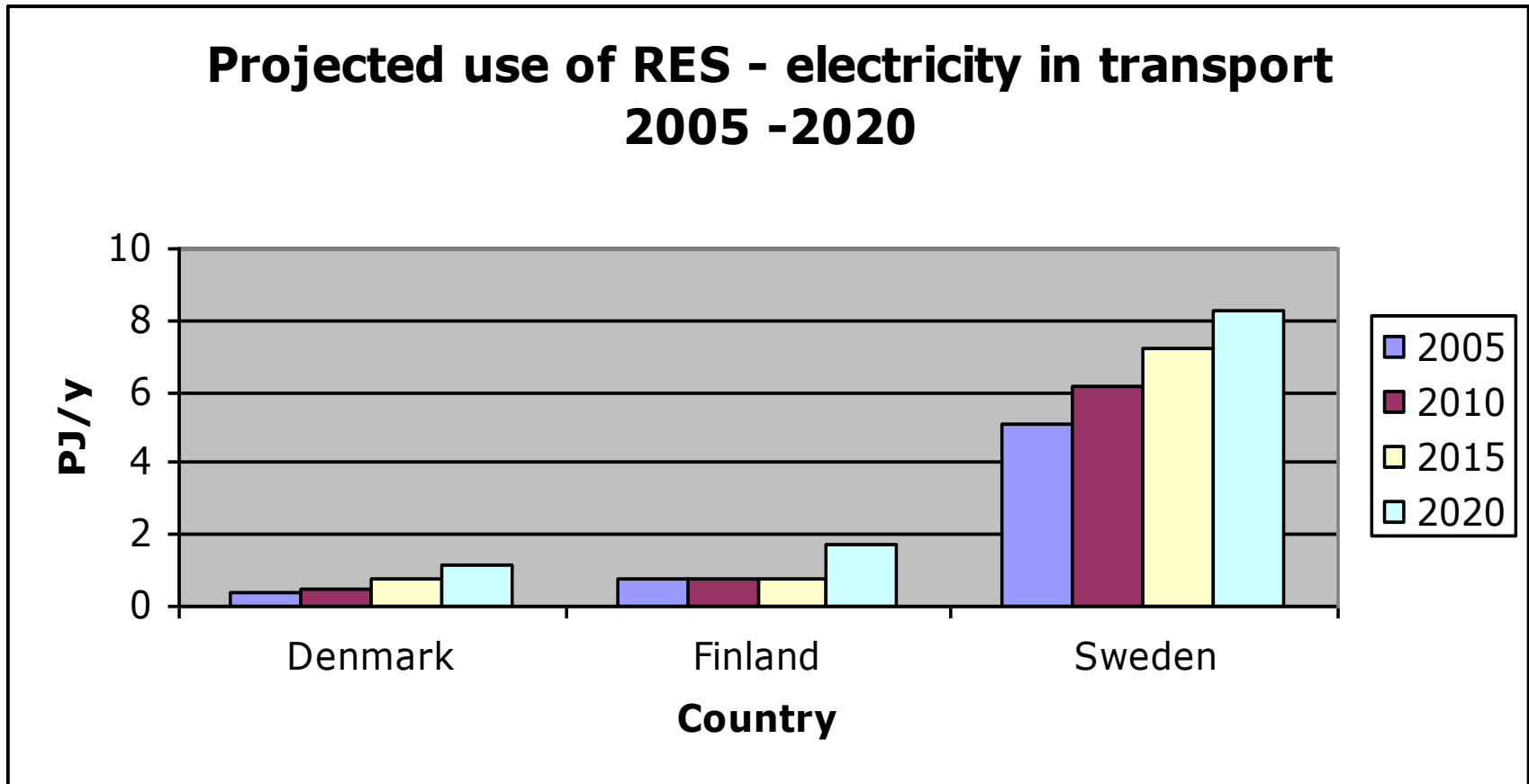


Transport - biofuels and biogas

Projected use of biofuels and biogas in transport 2005 - 2020



Transport – RES-electricity



General measures

<u>Country:</u>	DK	I	N	F	S
Energy tax on fossil fuels	X	X	X	X	X
CO2 tax on fossil fuels	X		X	X	X
EU - Emission Trading Sch.	X		X	X	X
Harv. support - biomass	X			X	

Measures – electricity sector

<u>Country:</u>	DK	I	N	F	S
Feed in tariffs/premiums	X			X	
Green certificates			(X)		X
Invitation to tender	X				
Investment support			X	X	X
Planning support	X				X
Electricity tax reimburs.			X		
Compulsory biomass cap.	X				
No specific support		X			

Measures – heating sector

<u>Country:</u>	DK	I	N	F	S
Investment support	X		X	X	X
Energy and CO2 tax release	X			X	X
RES through building codes	X		X	X	X
No specific support		X			

Measures – transport sector

<u>Country:</u>	DK	I	N	F	S
Tax reduct. on green cars	X	X	X		
Promotion electrical vehicles	X	X	X		
Tax release for biofuels			X	X	
Comp. blending of biofuels	X		X	X	X

Danish main RES-measures (1)

General measures

- Energy taxation on fossil fuels

Measures for RES in the electricity sector

- Invitation to tender (off shore wind)
- Fixed feed in tariffs (biogas)
- Market prices + feed in premium (land wind, biomass and waste in CHP-plants)
- Net metering principle (solar PV, small RES)
- Compulsory installed capacity for use of biomass in power sector (biomass in large CHP-plants)

Danish main RES-measures (2)

Measures for RES in the heating sector

- Energy tax release on RES, used in the heating sector (biomass)
- Investment subsidies (biogas, solar heating, indiv. heat pumps, connection to district heating)

Measures for RES in the transport sector

- Tax release (purchase of electric vehicles)
- Compulsory blending of biofuels in petrol and diesel (bio-ethanol, bio-diesel)

Finnish main RES-measures (1)

General measures

- Energy and CO₂-taxation on fossil fuels
- EU ETS

Measures for RES in the electricity sector

- Feed-in tariffs for wind power, power from biogas, power from forest chips and small CHP plants using wood fuel
- Investment support for other renewables (total fund 150 million € in 2011 including all sectors)
- Fixed support system small and existing plants

Finnish main RES-measures (2)

Measures for RES in the heating sector

- Tax on fossil fuels and electricity
- Investment subsidies for switching from oil or electrical heating to ground heat pumps or pellets
- Investment support for renewables (total fund 150 million € in 2011 including all sectors)

Finnish main RES-measures (3)

Measures for RES in the transport sector

- Compulsory blending of biofuels in petrol and diesel (20 % in 2020)
- Tax release for bio fuels (CO2 component)
- Investment subsidy for biorefineries (50 M€ in 2011)

Iceland main RES - measures (1)

General measures

- Energy taxation on fossil fuels
- A bill on amendments on laws on excise tax on motor vehicles and fuel.
- According to the bill, the taxation shall be measured after the vehicles registered amount of CO2 Emission (gramme/km).

Measures for RES in the electricity sector

- There are no incentives for electricity generation in Iceland – 100% renewable!

Iceland main RES - measures (2)

Measures in transport sector

- Renewables in the transport sector is less than 1% of the total energy use in the sector.
- Ongoing work to implement electricity, bio, hydrogen ect.
- Tax-exemptions on “green-cars”

Norwegian main RES-measures (1)

General measures

➤ Energy taxation on fossil fuels and electricity

Measures for RES in the electricity sector

- Enova SF
 - investment support scheme for wind on land
 - program targeting all forms of renewable marine power production
- Common green certificate market with Sweden from 2012 onwards
- Reimbursement of the electricity tax for bio power

Norwegian main RES-measures (2)

Measures for RES in the heating sector

- Tax on fossil fuels and electricity
- Enova
 - Investment support for district heating infrastructure, district heating production and small scale renewable heating systems
- Building codes
 - At least 40 % of heating in new buildings < 500 m² (60 % in new buildings > 500 m²) must come from other energy sources than fossil fuels and electricity.

Norwegian RES-measures (3)

Measures for RES in the transport sector

- Tax release (purchase of electric vehicles)
- Favourable arrangements for electric vehicles (free parking, use of lane dedicated to public transport, free ferry, general tax release, etc.)
- Tax release for bio fuel
- Compulsory blending of biofuels in petrol and diesel

Swedish main RES-measures (1)

General measures

- Energy and CO2-taxation on fossil fuels
- EU ETS

Measures for RES in the electricity sector

- Green certificate trading system
- Planning support for wind power
- Investment support for market introduction of wind power (350 MSEK 2008-2012)
- Investment support for Photovoltaics (60 MSEK 2011-2012)