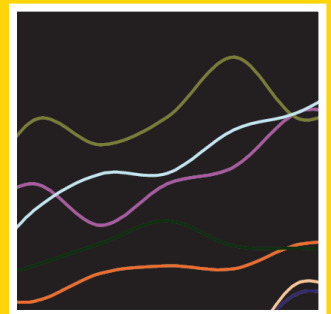
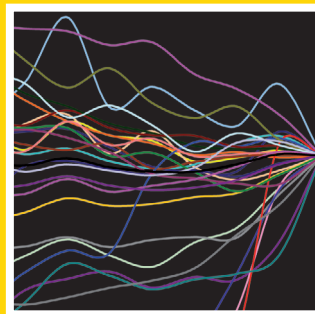


Trends and projections in Denmark 2016

Tracking progress towards EU Member States' climate and energy targets



Cover design: EEA

Layout: EEA

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Introduction

This country profile contains key data on greenhouse gas (GHG) emissions, renewable energy and energy efficiency for each EU Member State (MS). This profile is part of a package of country profiles that support and complement the EEA publication *Trends and projections in Europe 2016* – an assessment of progress towards climate and energy targets in Europe (EEA, 2016g). In the EU, each MS is committed to meet targets concerning GHG emissions, renewable energy and energy efficiency:

- Under the Effort Sharing Decision (ESD), Member States must achieve 2020 targets on GHG emissions from the sectors that are not covered by the European Union (EU) Emissions Trading System (ETS). These targets range from a 20 % reduction to a 20 % allowed increase compared with 2005 base-year levels. To ensure progress towards 2020 targets, the ESD also sets binding targets for each Member State and for each year of the 2013–2020 period. These annual targets are expressed in terms of emission budgets, as quantities of Annual Emission Allocations (AEAs).
- Under the Renewable Energy Directive (RED), Member States must achieve 2020 targets on the proportion of renewable energy sources (RESs) in their gross final energy consumption. These targets range from 10 % to 49 %. To ensure progress towards 2020 targets, the RED also sets indicative trajectories for the period from 2011 to 2020. Member States have also set their own estimated trajectories in their national renewable energy action plans (NREAPs) reported in 2010.
- Under the Energy Efficiency Directive (EED), Member States have to set indicative, non-binding targets on primary or final energy consumption for 2020. For primary energy consumption, Member States have set targets ranging from a 24 % reduction to a 22 % increase compared with 2005 levels. For final energy consumption, these targets range from a 22 % reduction to a 43 % increase compared with 2005 levels. No indicative trajectory has been formally set to monitor progress towards these targets. This analysis uses a simple approach for monitoring progress, which considers an indicative linear trajectory between 2005 energy consumption levels and 2020 targets.

This country profile includes:

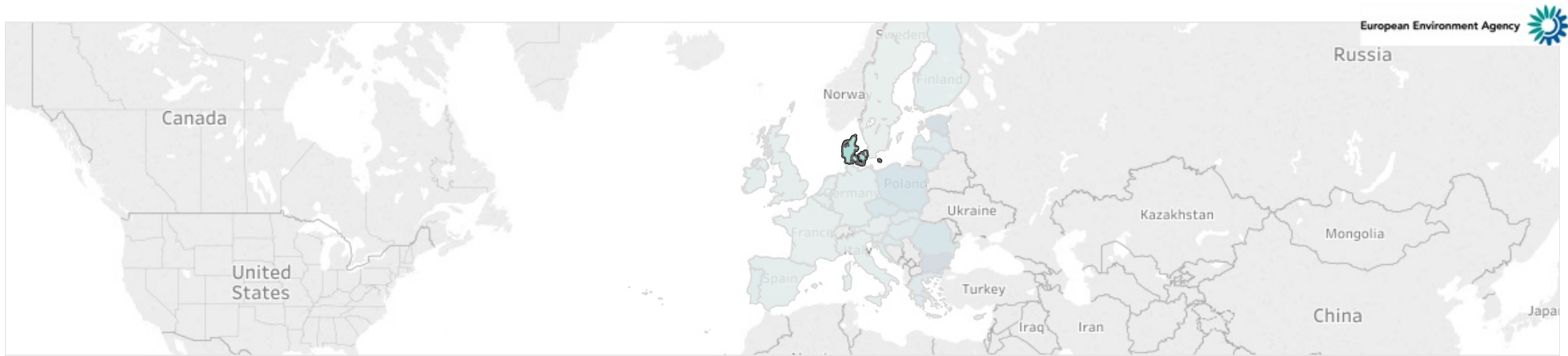
- A brief assessment of progress towards national targets concerning GHG emissions in the sectors covered by the ESD, renewable energy and energy efficiency
- Key data and figures on national trends in GHG emissions.

The information presented in the country profiles originates mainly from the information submitted through:

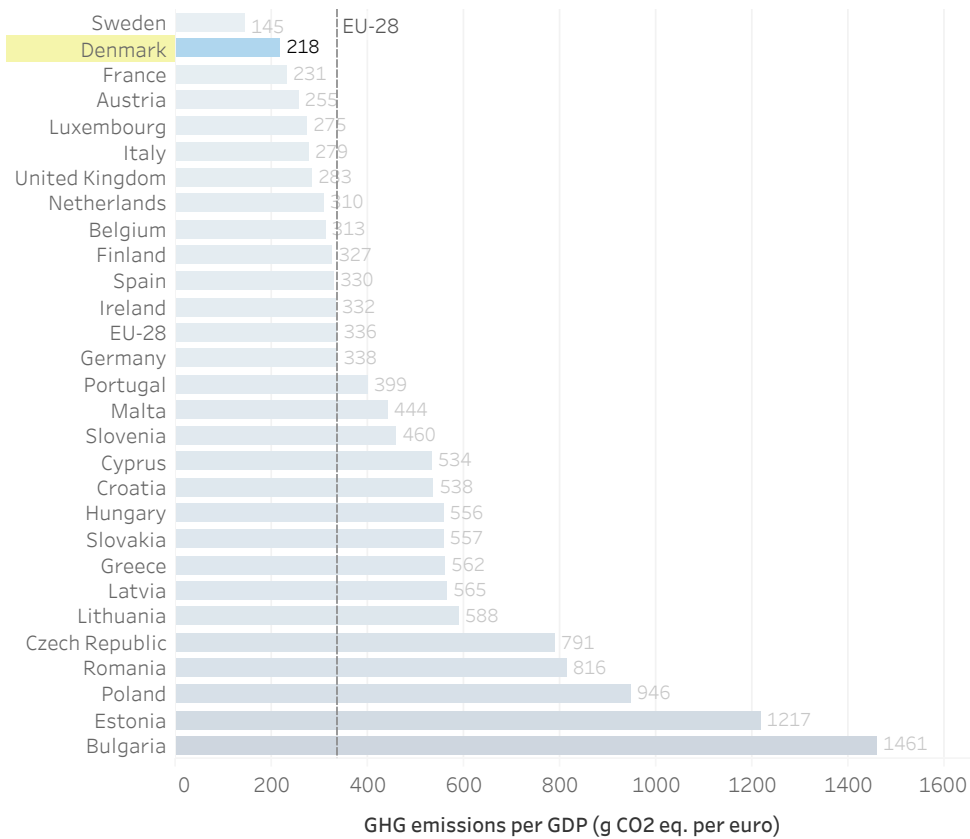
- EU Monitoring Mechanism
- UNFCCC
- Renewable Energy Directive (RED)
- Energy Efficiency Directive (EED)
- Eurostat
- National action plans and progress reports on renewable energy and on energy efficiency.

Data sources

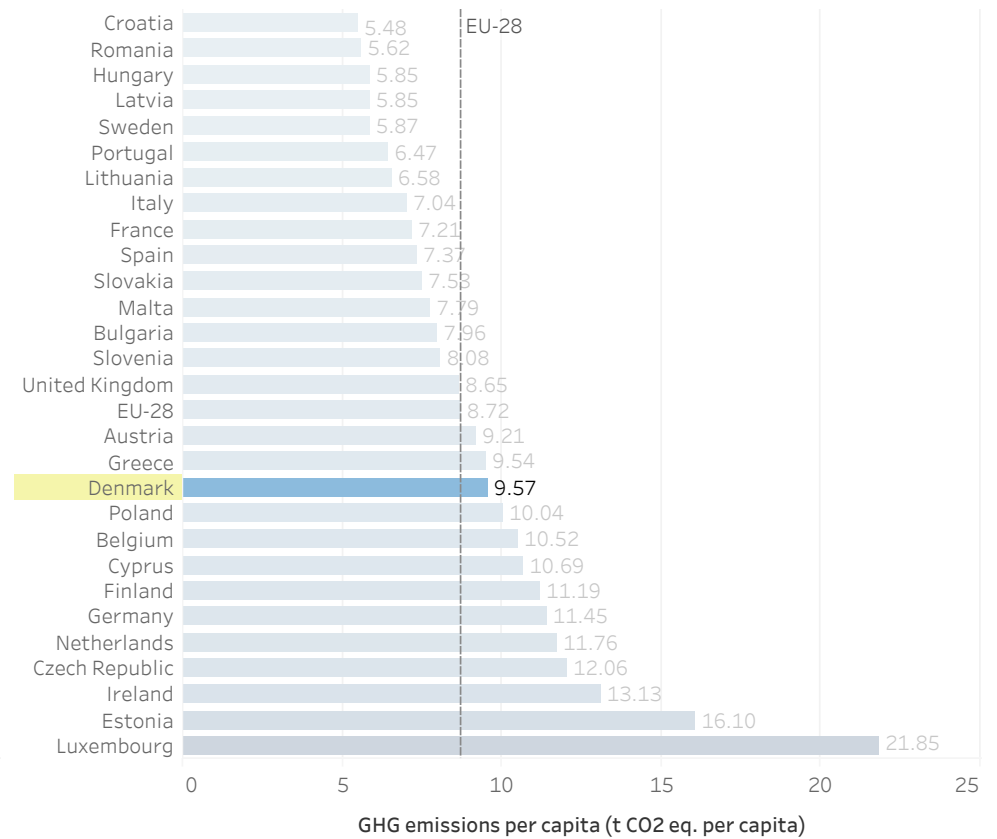
A detailed overview of the data sources underpinning this country profile is provided in Annex 1 of the EEA publication *Trends and projections in Europe 2016* (EEA, 2016g).



Greenhouse gas emission intensity of the economy



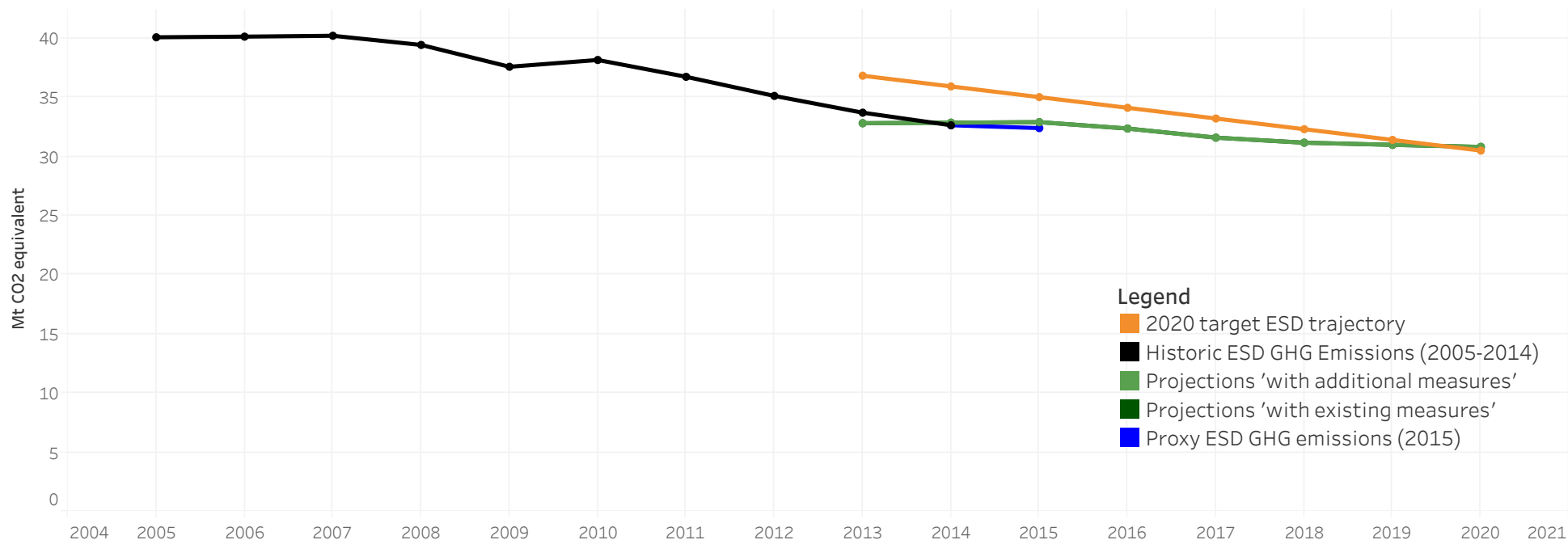
Greenhouse gas emissions per capita



Progress towards EU Member States' greenhouse gas emission targets

Each Member States shall meet its legally binding targets concerning greenhouse gas emissions covered under the Effort Sharing Decision (ESD) for each year of the period from 2013 to 2020. The ESD covers emissions from sectors such as transport, buildings, agriculture and waste that are not covered by the EU Emission Trading Scheme (ETS).

Figures 1: GHG emission, trends, projections, targets in Denmark



Sources: EEA, 2016a, b, c, d, e, f, g, j and k; EC, 2013a and b

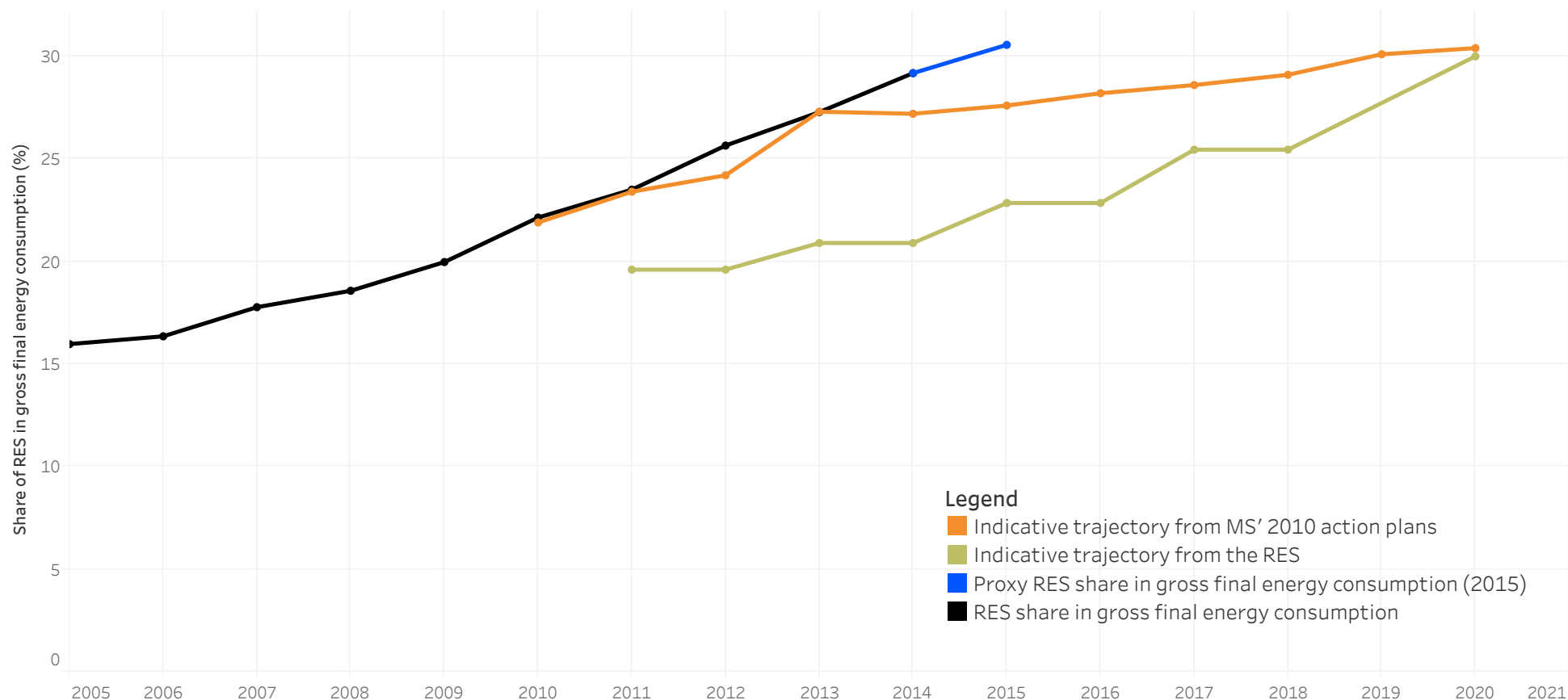
Note: The GHG emission trends represent emissions covered under the Effort Sharing Decision (ESD). The values for 2013 and 2014 ESD emissions are based on the final review report of the comprehensive review of GHG inventories, which took place under the ESD in 2016. For projected emissions, the 'with existing measures' (WEM) scenario reflects existing policies and measures, while the 'with additional measures' (WAM) takes into account the additional effects of planned measures reported by Member States. For the most part, these projections were reported in 2015 and therefore do not reflect the expected effects of recent policy proposals for the period after 2020. A significant gap between historic and projected emissions in the reference year shows that Member States did not use the latest available historic ESD emissions as reference point for their ETS and ESD projections.

MtCO2 eg.	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2020 target ESD trajectory									36.8	35.9	35.0	34.1	33.2	32.3	31.4	30.5
Historic ESD GHG Emissions (2005-2014)	40.1	40.1	40.2	39.4	37.6	38.2	36.7	35.1	33.7	32.6						
Projections 'with additional measures'									32.8	32.9	32.9	32.4	31.6	31.2	31.0	30.8
Projections 'with existing measures'									32.8	32.9	32.9	32.4	31.6	31.2	31.0	30.8
Proxy ESD GHG emissions (2015)											32.4					

Progress towards EU Member States' renewable energy efficiency targets

Each Member States shall meet its legally binding targets concerning the 2020 share of renewable energy sources (RES) in gross final energy consumption.

Figure 2: Progress towards targets regarding renewable energy sources (RES) consumption as a proportion of Denmark's energy consumption, All



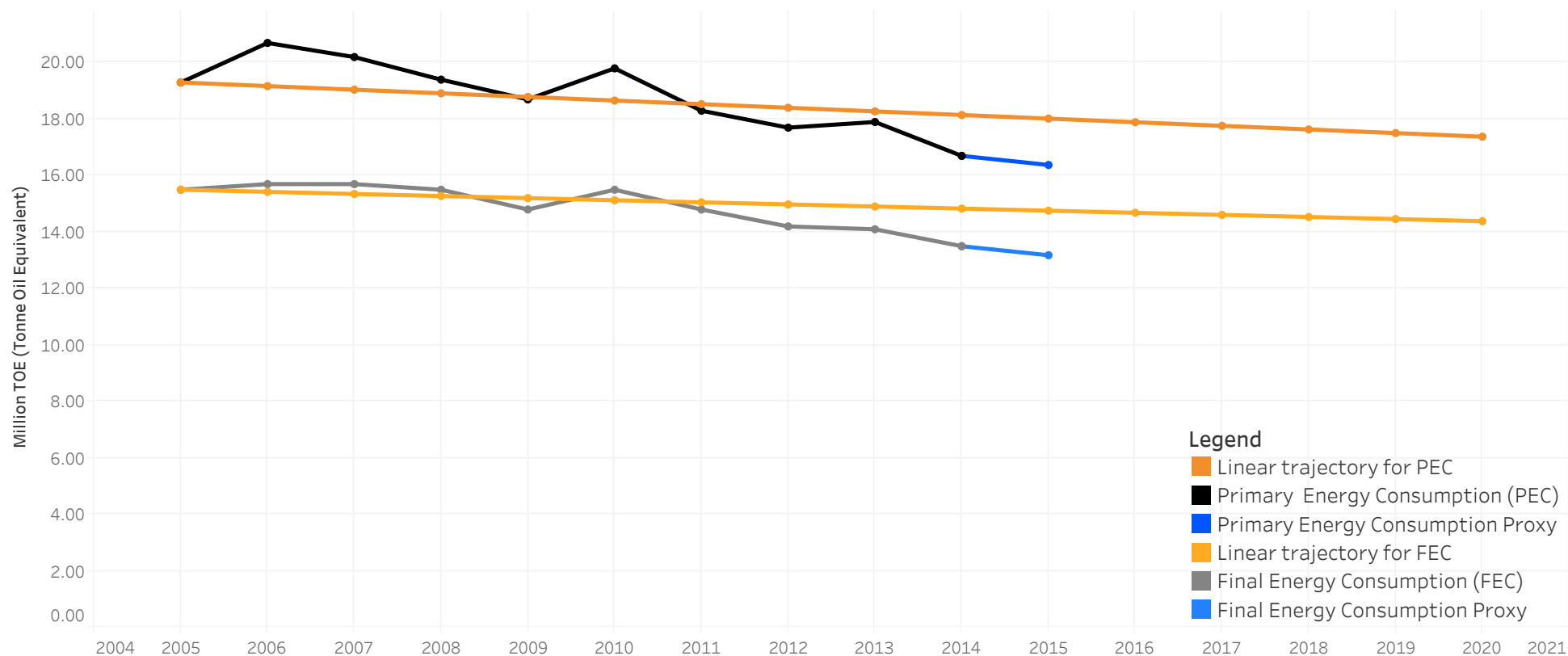
Sources: EC, 2011, 2013c and d; EU, 2009a; Eurostat, 2016c and d; EEA 2011; EEA (forthcoming)

%	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES share in gross final energy consumption	14.86	15.97	16.35	17.77	18.57	19.97	22.14	23.5	25.65	27.28	29.18						
Indicative trajectory from MS' 2010 action plans							21.9	23.4	24.2	27.3	27.2	27.6	28.2	28.6	29.1	30.1	30.4
Indicative trajectory from the RES								19.6	19.6	20.9	20.9	22.85	22.85	25.45	25.45		30
Proxy RES share in gross final energy consumption (2015)												30.56					

Progress towards EU Member States' energy efficiency targets

Each Member States shall meet its non-binding targets for energy consumption for 2020.

Figure 3: Progress towards Denmark's primary and final energy consumption targets



Sources: EC, 2008; European Council, 2014; EEA, 2016h and i; Eurostat, 2016a and b

Million TOE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Final Energy Consumption (FEC)	15.5	15.7	15.7	15.5	14.8	15.5	14.8	14.2	14.1	13.5						
Final Energy Consumption Proxy											13.2					
Linear trajectory for FEC	15.5	15.4	15.4	15.3	15.2	15.1	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.5	14.4
Linear trajectory for PEC	19.3	19.2	19.0	18.9	18.8	18.7	18.5	18.4	18.3	18.1	18.0	17.9	17.8	17.6	17.5	17.4
Primary Energy Consumption (PEC)	19.3	20.7	20.2	19.4	18.7	19.8	18.3	17.7	17.9	16.7						
Primary Energy Consumption Proxy											16.4					

References

- EC, 2008, *European energy and transport: Trends to 2030 — update 2007*, European Commission (https://ec.europa.eu/energy/sites/ener/files/documents/trends_to_2030_update_2007.pdf) accessed 17 September 2015.
- EC, 2011, Impact assessment accompanying the document ‘Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions “Energy roadmap 2050’, Commission Staff Working Paper SEC (2011) 1565/2 Part 1/2 (https://ec.europa.eu/energy/sites/ener/files/documents/sec_2011_1565_part1.pdf) accessed 30 July 2015.
- EC, 2013a, Commission Decision of 26 March 2013 on determining Member States’ annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council (notified under document C (2013) 1708) (OJ L 90, 26.03.2013, p. 106) (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D0162>) accessed 30 September 2015.
- EC, 2013b, Commission Implementing Decision of 31 October 2013 on the adjustments to Member States’ annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council (2013/634/EU) (OJ L 292, 31.10.2013, p. 19) (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D0634>) accessed 15 August 2014.
- EC, 2013c, *EU energy, transport and GHG emissions: Trends to 2050*, European Commission (<http://ec.europa.eu/transport/media/publications/doc/trends-to-2050-update-2013.pdf>) accessed 27 May 2015.
- EC, 2013d, ‘National Action Plans’, European Commission (http://ec.europa.eu/energy/renewables/action_plan_en.htm) accessed 14 October 2016.
- EEA, 2011, ‘National renewable energy action plan (NREAP) data from Member States’, European Environment Agency (<http://www.eea.europa.eu/data-and-maps/figures/national-renewable-energy-action-plan>) accessed 17 September 2015.
- EEA, 2016a, *Annual European Union greenhouse gas inventory 1990–2014 and inventory report 2016*, EEA report No 15/2016, European Environment Agency (<http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2016>) accessed 14 October 2016.
- EEA, 2016b, *Approximated EU GHG inventory: proxy GHG emission estimates for 2015*, EEA Report No 15/2016, European Environment Agency (<http://www.eea.europa.eu/publications/approximated-eu-ghg-inventory-2015>) accessed 4 November 2016.
- EEA, 2016c, ‘EEA greenhouse gas — data viewer’, European Environment Agency (<http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer>) accessed 18 October 2016.
- EEA, 2016d, ‘Eionet: Reporting obligations database (ROD) — Deliveries for projections’, European Environment Agency (<http://rod.eionet.europa.eu/obligations/697/deliveries>) accessed 14 October 2016.
- EEA, 2016e, ‘EU Emissions Trading System (ETS) data viewer’ (<http://www.eea.europa.eu/data-and-maps/data/data-viewers/emissions-trading-viewer>) accessed 18 October 2016.
- EEA, 2016f, *Trends and projections in the EU ETS in 2016 — The EU Emissions Trading System in numbers*, EEA Report No 24/2016 (<http://www.eea.europa.eu/publications/trends-and-projections-EU-ETS-2016/>) accessed 18 October 2016.

EEA, 2016g, *Trends and projections in Europe 2016 — Tracking progress towards Europe's climate and energy targets*, EEA Report No 29/2016 (<http://www.eea.europa.eu/themes/climate/trends-and-projections-in-europe>) accessed 24 November 2016.

EEA, 2016h, 'Final energy consumption by sector and fuel (CSI 027/ENER 016)', European Environment Agency (<http://www.eea.europa.eu/data-and-maps/indicators/final-energy-consumption-by-sector-9/assessment>).

EEA, 2016i, 'Primary energy consumption by fuel (CSI 029/ENER 026)', European Environment Agency (<http://www.eea.europa.eu/data-and-maps/indicators/primary-energy-consumption-by-fuel-6/assessment>).

EEA, 2016j, ESD GHG emissions dataset, European Environment Agency (forthcoming)

EEA, 2016k, GHG projections dataset - data viewer, European Environment Agency (forthcoming)

EEA, forthcoming, *Renewable energy in Europe 2017 — Recent growth and knock-on effects*, European Environment Agency.

EU, 2009a, Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16) (<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=EN>) accessed 15 August 2014.

EU, 2009b, Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 (OJ L 140, 05.06.2009, p. 136) (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0136:0148:EN:PDF>) accessed 5 August 2014.

EU, 2012, Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1) (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32012L0027:EN:NOT>) accessed 25 June 2014.

European Council, 2014, *Conclusions on 2030 Climate and Energy Policy Framework*, EUCO 169/14, European Council (http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf) accessed 9 September 2015.

Eurostat, 2016a, 'Final energy consumption', Eurostat (<http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdcc320&plugin=1>) accessed 25 November 2016.

Eurostat, 2016b, 'Final non-energy consumption', Eurostat (<http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdcc320&plugin=1>).

Eurostat, 2016c, 'Gross inland energy consumption by fuel type', Eurostat (<http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tsdcc320&plugin=1>) accessed 25 November 2016.

Eurostat, 2016d, 'SHARES 2016 results', Eurostat (<http://ec.europa.eu/eurostat/web/energy/data/shares>) accessed 25 November 2016.



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