



Assessment of climate change policies as part of the European Semester

Country Report Denmark

16 January 2015

A report submitted by [ICF Consulting Services](#)
in association with

[Ecologic Institute, Berlin](#) and [eclareon GmbH](#)

to [DG Climate Action](#)

[ICF Consulting Services Limited](#)
Watling House
33 Cannon Street
London
EC4M 5SB
T +44 (0)20 3096 4800
F +44 (0)20 3368 6960
www.icfi.com

Document Control

| | |
|-------------------------------|---|
| Document Title | Assessment of climate change policies as part of the European Semester: Country Report Germany |
| Job No. | 30300170 |
| Prepared by | Anna Pobłocka-Dirakis, eclareon GmbH (Lead author) |
| Checked by | Checked by Tim Scarbrough, ICF International |
| Date | 28 November 2014 |
| First point of contact | Lena Ruthner, ICF International Watling House 33 Cannon Street London EC4M 5SB Lena.Ruthner@icfi.com |

This final draft report (the “Report”) has been prepared by ICF Consulting Ltd (“ICF”) and its subcontractors for DG Climate Action (the “Client”) and does not necessarily represent the Commission’s view. The Report is based on the data which was publicly available at the time of its delivery by ICF and ICF shall not be held liable for any change, update or any other alterations of this data after delivery.

The report is building on the country reports and other documents prepared by Ecologic Institute and eclareon for the Directorate General for Climate Action (DG CLIMA) under Service Contract: 071201/2012/635684/SER/CLIMA.A.3.

This report is the copyright of the Client. The contents of this Report may not be reproduced in whole or in part, nor passed to any other organisation or person without the specific prior written permission of the Client.

ICF and its subcontractors have used reasonable skill and care in checking the accuracy and completeness of information supplied by the Client or third parties in the course of this project under which the Report was produced. ICF is however unable to warrant either the accuracy or completeness of such information supplied by the Client or third parties, nor that it is fit for any purpose. ICF does not accept responsibility for any legal, commercial or other consequences that may arise directly or indirectly as a result of the use by ICF of inaccurate or incomplete information supplied by the Client or third parties in the course of this project or its inclusion in this report.

Contents

- Document Control ii**
- 1 Short Summary..... 2**
- 2 Climate and energy policy priorities 2**
- 3 GHG trends and projections 3**
- 4 Policy development 4**
- 4.1 Key policies as outlined by the National Reform Programme 4**
- 4.2 National policy priorities 5**
 - 4.2.1 Energy Efficiency 5
 - 4.2.2 Renewable Energy 5
 - 4.2.3 Transport 6
 - 4.2.4 Agriculture 6
- 5 Policy progress against Country Specific Recommendations (CSRs) issued 2013 6**
- References 7**

1 Short Summary

Climate change plays an important role in Danish policy. In general there are two most important policies concerning climate and energy policies in Denmark. One is the “Government’s Climate Plan. Towards a society without greenhouse gases” from August 2013, aiming at reducing greenhouse gas emissions by 40% in 2020 compared to 1990 (ENS 2013). The other one is the Energy Agreement 2012–2020 from March 2012, setting policies and goals intended to reach Denmark’s long-term domestic target of 100% renewable energy in both the energy and transport sectors by 2050 (ENS 2012).

By 2020, Denmark needs to reduce its emissions not covered by the EU ETS by 20% compared to 2005, according to the Effort Sharing Decision (ESD). The latest data for 2013 show that Denmark not only met but significantly exceeded its annual allocation interim target for the year 2013 by 11.6 percentage points. National projections indicate that even with existing measures (WEM) the country will exceed its 2020 target with 1.6 percentage points of reductions beyond the target.

The key policy developments in the last year (Jan. 2014 – Jan. 2015) include the “Strategy for Energy Renovation of Buildings” as a part of the Energy Agreement of 2012. The Strategy covers 21 initiatives aiming at reducing energy consumption for heating in existing buildings by 35% by 2050 (see Chapter 4.2.2). Apart from that, in June 2014 the Danish Parliament passed the Climate Change Act. The Act introduced an independent Climate Council, an annual Climate Policy Report and an obligation for the Minister for Climate, Energy and Building to set targets for national greenhouse gas reduction with a ten-year perspective, at least once every 5 years (see Chapter 2).

2 Climate and energy policy priorities

Climate change plays an important role in Danish policy. In August 2013, the Danish government presented the “Government’s Climate Plan. Towards a society without greenhouse gases”, which aims at reducing greenhouse gas emissions by 40% in 2020 compared to 1990. Apart from the Plan, an inter-ministerial working group developed an instrument catalogue containing 78 measures which address emissions from transport, agriculture, buildings and waste. The catalogue includes, for example, measures such as the reduction of speed limits on highways from 130 to 110 km/h, reduced nitrogen standards in agriculture or a tax on nitrous oxide from waste water (ENS, 2013).

In June 2014, the Danish Parliament passed the Climate Change Act. The Act will form an agenda for Denmark’s climate policy with a goal to become a low-emission society by 2050. The low-emission society should be resource-efficient, with energy supply from renewable energy and considerably lower greenhouse gas emissions. The Act and related notes introduce an independent Climate Council, which will prepare recommendations on how to achieve the goal of low-emission society by 2050 and evaluate the status of the targets fulfilment. Each year a Climate Policy Report including an overview of introduced measures together with the Climate Council’s recommendations should be presented to the Danish Parliament. Apart from that, the Act obliges the Minister for Climate, Energy and Building to set targets for national greenhouse gas reduction with a ten-year perspective, at least once every 5 years (KEBMIN, 2014a). Apart from that in February 2014, the Danish government (Social Democrats and Social Liberals), the Socialist People’s Party, Alliance and the Conservative Party came to a political agreement on the national climate targets by 2020. The parties agreed to reduce Denmark’s greenhouse gases emissions by 40% by 2020 compared to 1990 levels (KEBMIN, 2014f).

In 2012, the Danish parliament passed a broad climate and energy strategy in the form of an Energy Agreement 2012–2020 (ENS, 2012). The agreement sets policies and goals intended to reach Denmark’s long-term domestic target of 100% renewable energy in both the energy and transport sectors by 2050, and several other benchmarks by 2020. The latter includes obtaining 35% of final energy consumption from renewables, 50% wind power in electricity consumption, and a 7.6% reduction in gross energy consumption compared to 2010. The measures in the agreement are expected to reduce GHG emissions by 34% by 2020 compared to 1990. In June 2014, the Climate,

Energy and Building Minister presented a projection of the cost of the Energy Agreement. According to this projection the overall costs of the Energy Agreement will be higher than previously expected (4.9 billion DKK (660 million EUR) instead of 3.4 billion DKK (460 million EUR) by 2020), but that the electricity prices for both households and enterprises will be lower in 2020 than was predicted when the Energy Agreement was concluded (KEBMIN, 2014b).

Moreover, in October 2013, the Danish Government announced the Growth Plan for Energy and Climate, which will help create growth, jobs, and better export opportunities for Danish companies in the energy technology and solutions industries. The Growth Plan for Energy and Climate focuses on how the government's goal of transforming the Danish energy system and energy consumption can contribute to continued economic growth and increased employment in Denmark (KEBMIN, 2013).

“Green growth” is a priority in Denmark and one of the Energy Agreement’s main objectives. In 2009 the government published a strategy paper on Green Growth and a government analysis of “green” products and services in the economy, concluding that in 2010, “green production” (ranging from photovoltaic installations to wastewater management to environmental consulting services) accounted for more than 250 billion DKK (33.5 billion EUR) in revenue, equivalent to 9.2% of the total turnover in Danish companies. So-called “green exports,” such as wind turbine technologies, amounted to 80 billion DKK (10.7 billion EUR), equivalent to 10.4% of total Danish exports. The Danish government expects that the investment foreseen in the Energy Agreement 2012–2020 (90–150 billion DKK until 2020) will create 4,000 additional jobs in 2013 and 2014, and 6,000 to 8,000 jobs between 2015 and 2018 (Danish Ministry of Environment, 2012).

In November 2014 the Danish government agreed on the national budget for 2015, which foresees numerous funding measures for environmental and climate protection actions. Among others, approximately 300 million DKK (40 million EUR) will be dedicated to actions aiming at reaching the 40% target for lower greenhouse gas emissions by 2020 compared to 1990. Among others the following actions will receive support: dissemination of large heat pumps transforming electricity from wind power plants into heat, which can be used in district heating systems, lowering risks of geothermal energy investments and advice and information campaigns on energy conservation and transformation of the energy system (KEBMIN, 2014c).

3 GHG trends and projections

Denmark reduced its total GHG emissions by 17% between 2005 and 2013; however, between 2012 and 2013 emissions increased again. The share of GHG emissions not covered by the European Emission Trading Scheme (EU ETS) is around 59% in Denmark, which is slightly above the EU28 average (see Table 1).¹

Table 1 Key data on GHG emissions

| | | National data | | | | EU28 |
|----------------------------|--------------------------|---------------|------|------|------|-------|
| | | 2005 | 2011 | 2012 | 2013 | 2013 |
| Total GHG emissions | Mt CO ₂ eq | 64.1 | 56.5 | 51.6 | 53.2 | 4 539 |
| Non-ETS emissions | Share in total emissions | 59% | 62% | 65% | 59% | 58% |

Source: EEA 2014a; EEA 2014c

By 2020, Denmark needs to reduce its emissions not covered by the EU ETS by 20% compared to 2005, according to the Effort Sharing Decision (ESD). The latest data for 2013 show that Denmark not

¹ The European Environment Agency has developed a complex methodology to measure progress on the Non-ETS/ESD targets of all EU Member States. This report uses the figures derived on this basis. A detailed explanation and the underlying absolute amounts are contained in Annexes 1-3 of the EEA report No 6/2014 “Trends and projections in Europe 2014. Tracking progress towards Europe's climate and energy targets for 2020” available at <http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2014/>

only met but significantly exceeded its annual allocation interim target for the year 2013 by 11.6 percentage points (see figures in Table 2). National projections indicate that even with existing measures (WEM) the country will exceed its 2020 target with 1.6 percentage points of reductions beyond the target.

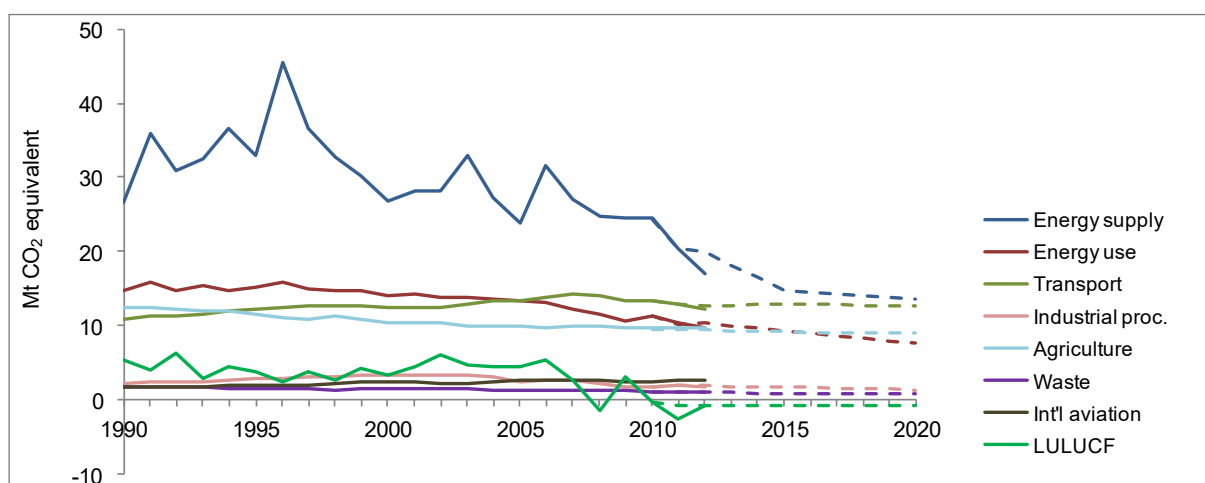
Table 2 Non-ETS emission targets, trend and projections

| | | Compared to base year |
|------|---------------------|-----------------------|
| 2013 | ESD interim target | - 3.4% |
| | ESD emissions | - 15.0% |
| 2020 | ESD target | - 20.0% |
| | ESD projections WEM | - 21.6% |
| | ESD projections WAM | n.a. |

Source: EEA 2014a. Green indicates target met or exceeded.

GHG emissions are mainly created by the energy industry followed by the transport sector and direct fuel consumption (e.g. households for heat generation) (see figure below for historic and estimated emissions by sector). Projections indicate that by 2020 emissions from the energy industry and from direct fuel consumption will be reduced. This trend becomes already apparent when looking at emissions reductions in the energy industry over the last two to three years. Transport emissions have been relatively stable since 2008.

Figure 1 GHG trends and projections by sector



Source: EEA 2014a. Actual data until 2012 and projections from 2010 onwards.

4 Policy development

This section covers significant developments made in key policy areas between January and December 2014. It does so through two different perspectives: 1) progress on the policies communicated under the National Reform Programme and 2) developments in the identified national priority sectors and policy areas.

4.1 Key policies as outlined by the National Reform Programme

Member States prepare National Reform Programmes (NRPs) each April outlining the country's progress and the key policies and measures to achieve targets under the EU 2020 Strategy. These key policies and measures are summarised in the following table and their current status is provided.

Table 3 Key policies and measures as outlined by the NRP 2014

| Energy Agreement 2012-2020 | |
|-----------------------------------|--|
| Status in the NRP | Implemented |
| Status as per Dec 2014 | Partly implemented |
| Description of policy | The Agreement was made in March 2012 and sets policies and goals intended to reach Denmark's long-term domestic target of 100% renewable energy in both the energy and transport sectors by 2050. Some of the measures envisaged in the Energy Agreement have already been implemented (e.g. the "Strategy for Energy Renovation of Buildings" from May 2014) others are still to be implemented (Energy Agreement, 2012). |

| The Climate Act | |
|-------------------------------|---|
| Status in the NRP | Implemented |
| Status as per Dec 2014 | Implemented. The Danish Parliament passed the Climate Change Act in June 2014. |
| Description of policy | The Act introduces an independent Climate Council, an annual Climate Policy Report and an obligation for the Minister for Climate, Energy and Building to set targets for national greenhouse gas reduction with a ten-year perspective, at least once every 5 years (see Chapter 2) (KEBMIN, 2014a). |

4.2 National policy priorities

The below sub-sections provide updates on key existing and new policies in priority sectors and policy areas of relevance to the energy and climate targets under the Europe 2020 strategy². Each sector or policy area contains information on the most important policy instruments in operation or development.

4.2.1 Energy Efficiency

Within the EU28, Denmark has the second least energy-intensive economy. Energy intensity declined by 8% from 2005 to 2012 (Eurostat, tsdec360), while the final energy consumption dropped by 9% from 2005 to 2012, with the reductions coming mainly from the industrial and transport sectors (Eurostat, tsdpc320). Denmark is currently on track towards its indicative EU energy efficiency target (EEA, 2014a).

In May 2014 Climate, Energy and Building Minister presented the "Strategy for Energy Renovation of Buildings" as a part of the Energy Agreement of 2012. The Strategy covers 21 initiatives aiming at reducing energy consumption for heating in existing buildings by 35% by 2050 (there is no specific target for 2020), including among others requirements for windows and other building materials, better advice to homeowners, improved energy labelling scheme (KEBMIN, 2014d).

4.2.2 Renewable Energy

The share of renewables in gross final energy consumption was 26.0% in 2012 which is above the indicative 2012 target of 19.6% set out by the Renewable Energy Directive (RED). The average annual growth rate was 6.6% between 2005 and 2012. Thus, an annual growth rate of only 2.9% is needed between 2013 and 2020 to reach the 2020 target of 30% (EEA, 2014a). The share of renewable electricity generation in final electricity consumption increased by more than half from

² The Consortium jointly with DG Clima identified these based on identified challenges in Country Profiles (EEA, 2014), share of sectors in total GHG emissions, and Country Specific Recommendations (2014). DG Clima has identified additional relevant issues to be reviewed for some or all Member States, including country specific energy challenges.

24.7% to 38.7% between 2005 and 2012 while the share of renewable heating increased similarly from 22.1% to 33.3% (Eurostat, SHARES, 2014).

In May 2014, the Danish Energy Agency (DEA) published an energy scenario report ("Energy Scenarios for 2020, 2035 and 2050") analysing the future energy system by 2050 concerning phasing out of fossil fuels and replacing them with renewable energy. Scenarios include the entire energy system, also the transport sector. The report states that it is technically possible to construct an energy system independent of fossil fuels (coal, oil and natural gas). According to the DEA's report the additional costs of this energy transition are between 6 and 29 billion DKK (approx. 0.8 – 3.89 billion EUR) until 2050 depending on energy sources (KEBMIN, 2014e).

4.2.3 Transport

Emissions from transport have increased between 1990 and 2012 but have decreased by 8% between 2005 and 2012. Moreover, their proportion in Denmark's total emissions has increased to 23%. Similarly, energy consumption from transport increased between 1990 and 2012 but was reduced by 14% between 2005 and 2012 (Eurostat, tsdcc210 and tsdpc320). Average emissions for newly registered cars are very low in Denmark with a level of 112.7 g CO₂/km. This value is the fourth lowest in the EU and has decreased at a higher rate than the EU average between 2005 and 2013 (Eurostat tsdtr450). Denmark's fuel taxation rates are above the EU average. The road fuel excise duties on diesel are the eighth highest among EU MS and the excise duties on petrol are the tenth highest (EEA, 2014b).

Denmark has a registration tax which is based on value, fuel consumption and safety equipment. Also, an annual circulation tax exists that is based on fuel consumption (ACEA 2014). However, only HVGs are committed to pay a tax for road use according to their number of axles (CE Delft, 2012).

In July 2014, the Transport Minister presented a new national cycling strategy. The goal of the strategy is to get more Danes to cycle. The Bicycle Strategy targets three issues for encouraging citizens across the country to cycle both short and long distances: more cycling in everyday life (using bicycles on the road to work and school), active vacation and leisure (using bicycles for recreation) and safe cycling (more safe roads and bike paths) (TRM, 2014).

4.2.4 Agriculture

Denmark has adopted a number of measures aiming at reducing the impact of agriculture on the environment for many years. The first Action Plan for the Aquatic Environment (APAE) was adopted in 1987. Nearly 10 years later, in 1998 the second Action Plan for the Aquatic Environment (APAE) II was accepted. The following APAE III was submitted and was supposed to run from 2004 until 2015. In 2009 the Danish government launched the Green Growth Agreement on development of agriculture with better conditions for the nature and environment. The Green Growth Agreement replaced the APAE III (Miljøministeriet, 2014). The Green Growth Agreement foresees investment of 13.5 million DKK in green growth until 2015. The main relevant agriculture initiatives include: reducing the harmful effects of pesticides on humans, animals and nature; reduced ammonia load; reduction of agricultural emissions of greenhouse gases by an anticipated 700,000 tonnes of CO₂ per year (2009-2020) (FVM, 2009).

5 Policy progress against Country Specific Recommendations (CSRs) issued 2013

The EU Commission provides Country Specific Recommendations (CSRs) for each MS for consideration and endorsement by the European Council. The recommendations are designed to address the major challenges in relation to the targets of the EU 2020 Strategy.

No CSRs related to climate change and energy were issued for Denmark in 2014.

References

- ACEA (European Automobile Manufacturer's Association), 2014. Taxation Guide. Available at: <http://www.acea.be/uploads/publications/CO_2_Tax_overview_2014.pdf> [Accessed 9 January 2015].
- Bicycle Strategy, 2014. Cykelstrategi
- CE Delft, 2012. An inventory of measures for internalizing external costs in transport. Final Report. November 2012. Available at: <www.cedelft.eu/publicatie/an_inventory_of_measures_for_internalising_external_costs_in_transport/1334> [Accessed 9 January 2015].
- Climate Change Act, 2014. [Klimaloven](http://www.klimaloven.dk).
- Danish Ministry of Environment, 2012. Analysis produced by the Climate, Energy and Building Ministry of Commerce and Growth Ministry and Environment Ministry. Available at: <http://www.mim.dk/Nyheder/2012/20121128_gronstatistik.htm> [Accessed 18 November 2014].
- EEA, 2014a. Climate and energy profiles 2014. Available at: <http://www.eea.europa.eu/themes/climate/ghg-country-profiles> [Accessed 9 January 2015].
- EEA, 2014b. Road fuel excise duties. Available at: <http://www.eea.europa.eu/data-and-maps/daviz/road-fuel-excise-duties#tab-chart_1> [Accessed 9 January 2015].
- EEA, 2014c. Approximated EU GHG inventory: Proxy GHG emission estimates for 2013. EEA Technical report No 16/2014. 30 September 2014
- Energy Agreement, 2012. Accelerating Green Energy Towards 2020. Available at: <http://www.ens.dk/sites/ens.dk/files/dokumenter/publikationer/downloads/accelerating_green_energy_towards_2020.pdf> [Accessed 15 January 2015].
- Energy Scenarios for 2020, 2035 and 2050, 2014. Energiscenarier from mod 2020, 2035 og 2050
- ENS, 2012. Accelerating Green Energy Towards 2020. Available at: <http://www.ens.dk/sites/ens.dk/files/dokumenter/publikationer/downloads/accelerating_green_energy_towards_2020.pdf> [Accessed 9 January 2015].
- ENS, 2013. Regeringens klimaplan. Available at: <<http://www.ens.dk/klima-co2/regeringens-klimaplan>> [Accessed 9 January 2015].
- Eurostat, SHARES 2014. Short Assessment of Renewable Energy Sources.
- Eurostat, ten00065. Total environmental tax revenues as a share of GDP.
- Eurostat, tsdcc210. Greenhouse gas emissions by sector.
- Eurostat, tsdcc360. Implicit tax rate on energy.
- Eurostat, tsdec360. Energy intensity of the economy.
- Eurostat, tsdpc320. Final energy consumption by sector.
- Eurostat, tsdtr450. Average carbon dioxide emissions per km from new passenger cars.
- FVM, 2009. Grøn Vækst. Available at: <http://fvm.dk/fileadmin/user_upload/FVM.dk/Dokumenter/ServiceMenu/Publikationer/Groen_vaekst.pdf> [Accessed 15 January 2015].
- Government's Climate Plan. Towards a society without greenhouse gases, 2013. Regeringens klimaplan. På vej mod et samfund uden drivhusgasser.
- Green Growth Agreement, 2009. Grøn Vækst
- Growth Plan for Energy and Climate, 2013. Vækstplanen for energi og klima

- KEBMIN, 2013. Lancering af vækstplan for energi og klima. Available at:
<<http://www.kebmin.dk/nyheder/lancering-vaekstplan-energi-klima>> [Accessed 9 January 2015].
- KEBMIN, 2014a. Questions and answers about the Climate Change Act and Climate Council - for journalists. Available at: <http://www.kebmin.dk/sites/kebmin.dk/files/climate-energy-and-building-policy/denmark/Climate-Change-Act/qa_climate_change_act.pdf> [Accessed 9 January 2015].
- KEBMIN, 2014b. Regeringen skaber klarhed om PSO-gebyret. Available at:
<<http://www.kebmin.dk/nyheder/regeringen-skaber-klarhed-pso-gebyret>> [Accessed 9 January 2015].
- KEBMIN, 2014c. Finanslov sætter skub i den grønne omstilling. Available at:
<<http://www.kebmin.dk/nyheder/finanslov-saetter-skub-groenne-omstilling>> [Accessed 9 January 2015].
- KEBMIN, 2014d. Vi skal nedbringe energiforbruget i vores bygninger. Available at:
<<http://www.kebmin.dk/nyheder/nedbringe-energiforbruget-vores-bygninger>> [Accessed 9 January 2015].
- KEBMIN, 2014e. Helveg: Energiforliget viser vejen. Available at:
<<http://www.kebmin.dk/nyheder/helveg-energiforliget-viser-vejen>> [Accessed 9 January 2015].
- KEBMIN, 2014f. Spørgsmål/svar til journalister om Klimaloven og Klimarådet. Available at: <http://www.kebmin.dk/sites/kebmin.dk/files/klima-energi-bygningspolitik/dansk-klima-energi-bygningspolitik/klimalov/qa_klimalov_og_klimaraad.pdf> [Accessed 15 January 2015].
- Miljøministeriet, 2014. Vandmiljøplanerne - et historisk overblik. Available at:
<<http://mst.dk/borger/landbruget-miljoeet/baeredygtighed-i-landbruget/vandmiljoeplanerne-et-historisk-overblik/>> [Accessed 9 January 2015].
- Strategy for Energy Renovation of Buildings, 2014. Strategi for energirenovering af bygninger
- TRM, 2014. Ny cykelstrategi skal få endnu flere danskere til at cycle. Available at:
<<http://www.trm.dk/da/nyheder/2014/ny+cykelstrategi+skal+faa+endnu+flere+danskere+til+at+cykle/>> [Accessed 9 January 2015].