Environmental Performance Reviews

Denmark

HIGHLIGHTS

2019

OECD

BETTER POLICIES FOR BETTER LIVES

OECD Environmental Performance Reviews

THE OECD

The Organisation for Economic Co-operation and Development (OECD) provides its 36 member countries with a forum to work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to help governments respond to new developments and concerns. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

WHAT ARE EPRs?

OECD Environmental Performance Reviews (EPRs) provide evidence-based analysis and assessment of countries' progress towards their environmental policy objectives. They promote peer learning, enhance government accountability and provide targeted recommendations to help countries improve their environmental performance. They are supported by a broad range of economic and environmental data. The OECD has been conducting EPRs of its member and partner countries for more than 25 years. All reports, and more information, are available on the EPR website: http://oe.cd/epr.

THE EPR OF DENMARK

Denmark is one of the founding members of the OECD, in 1960. The previous Environmental Performance Reviews of Denmark were published in 1999 and 2007. The report reviews the country's environmental performance since 2005. The process involved a constructive and mutually beneficial policy dialogue between Denmark and the countries participating in the OECD Working Party on Environmental Performance (WPEP). The OECD is grateful to the two examining countries: Australia and the Netherlands. The report provides 44 recommendations, approved by the Working Party on 25 April 2019. They aim to help Denmark green its economy and improve its environmental governance and management. Particular emphasis is placed on waste, materials management and circular economy, and chemicals management.

http://oe.cd/epr

"Denmark is a long-standing green growth leader. By using the next ten years to continue greening the energy mix, reducing emissions from transport and agriculture, reducing waste and improving resource productivity, it can lead the way towards a carbon neutral and circular economy."

Rodolfo Lacy
OECD Environment Director

Denmark

Overview

Denmark is a world leader in green growth and environmental policy. Since the 1990s, it has decoupled energy use, greenhouse gas (GHG) emissions and air pollution from economic activity. It has increased its focus on exporting renewable technologies and expertise to developed countries and emerging markets, contributing to sustainable development globally. Still, challenges remain. Biodiversity is under pressure, with natural habitats in a poor state of conservation. The quality of coastal waters and air in the largest cities has improved, but is still inadequate. Waste generation is rising and the waste management market is fragmented. Accelerating the transition towards a carbon neutral and circular economy will require phasing out fossil-fuelled vehicles, further promoting sustainable and renewable energy sources, supporting mechanisms to convert more agricultural land to natural areas, and scaling up opportunities for recycling and reuse of materials.

OPPORTUNITIES

- **A governance system to engage all political parties in environmental agreements.**
- **Goals of 70% GHG emission reduction by 2030 (compared to 1990) and carbon neutrality by 2050.**
- **Goal of 100% renewables-based electricity by 2030, which will support the decarbonisation of transport and heating.**
- **Cost-effective targeted regulation of agriculture to improve the state of the aquatic environment.**
- **New land-use planning policy to help municipalities protect areas of interest for nature conservation.**
- **Transition to a circular economy supported by key stakeholders.**
- **Key player in chemicals risk assessment and management at the international level.**

CHALLENGES

- **Biodiversity is under pressure and habitats are poorly preserved.**
- **Low quality of coastal waters and legacy pesticides in groundwater.**
- **Farming of environmentally valuable land, such as peatland.**
- **Air pollution above international standards in the largest cities.**
- **A fragmented market for waste management.**
- **Serious human health impacts linked to exposure to chemicals.**

DENMARK 2018

Population
6 million

GDP/capita
(current purchasing power parity)
USD 57 000
(OECD average is 46 000)

Total area
43 000 km^2

Population density
134 inhabitants/km^2
(OECD average is 36)

Currency
USD 1 = DKK 6.315
EUR 1 = DKK 7.453

Key environmental trends and developments

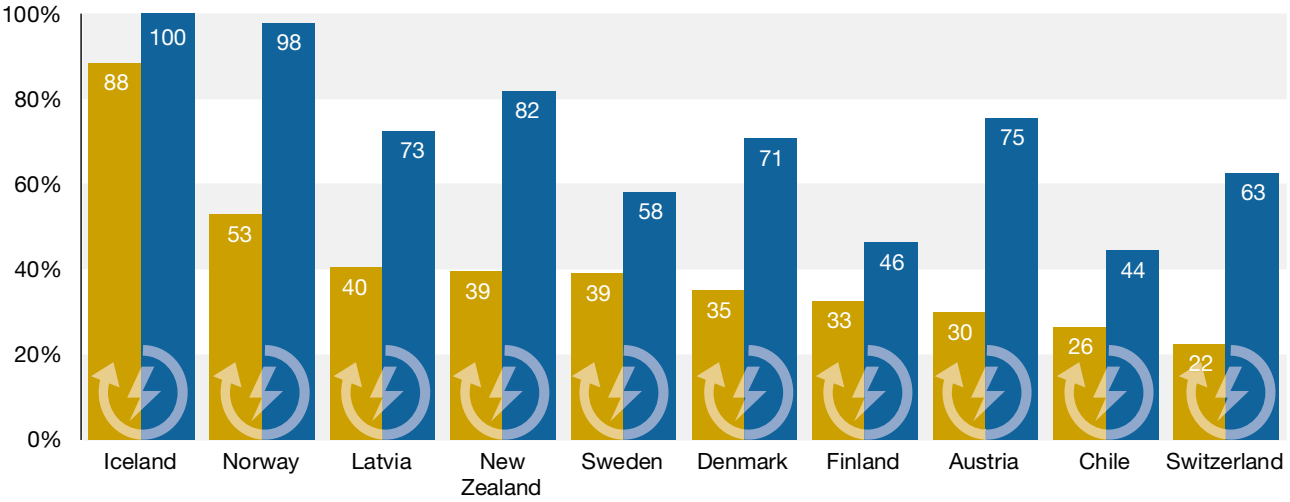
Denmark has made good progress in decoupling environmental pressures from economic growth. In particular, the country is transforming its energy sector through investment in wind and bioenergy. The transition is set to continue thanks to ambitious medium- and long-term targets for renewables and GHG emission reduction. A proposal has emerged on the need to accelerate the transition to non-fossil-fuelled cars in order to move towards carbon neutrality while improving air quality. Land use is dominated by agriculture, making it a key sector in environmental protection. Biodiversity is under pressure and most coastal waters have not yet achieved good ecological status.

ENERGY AND CLIMATE CHANGE

- Denmark has one of the highest shares of renewables in the energy mix in the OECD even though its hydropower potential is not comparable to other countries (Figure 1). Renewables have largely replaced coal in power generation, with bioenergy and wind being the most important renewable energy source. Denmark has decoupled energy use from economic growth and its energy intensity is among the lowest in the OECD.
- The 2018 Energy Agreement sets targets for renewables to account for 55% of primary energy supply and fully cover Denmark's electricity consumption by 2030. Given the important role of bioenergy, the environmental sustainability of biomass supply must be addressed.
- Between 2005 and 2017, Denmark reduced its direct and indirect GHG emissions by 27.7%. Its headline climate goals are 70% reduction of GHG emissions by 2030 compared to 1990 (cross-party political understanding of 25 June 2019) and carbon neutrality by 2050 (Energy Agreement). Under EU law, by 2030 Denmark must reduce emissions from agriculture, transport, buildings and waste (which are not covered the EU Emissions Trading System) by 39% from the 2005 level, one of the most ambitious targets among EU countries.
- To prepare for carbon neutrality, in 2018 the government proposed halting sales of new petrol and diesel cars by 2030, and supporting research and development (R&D) of low-GHG farming and carbon capture and storage on farmland and in forests.

Denmark wants to reduce GHG emissions by **70%** in 2030 from the 1990 level

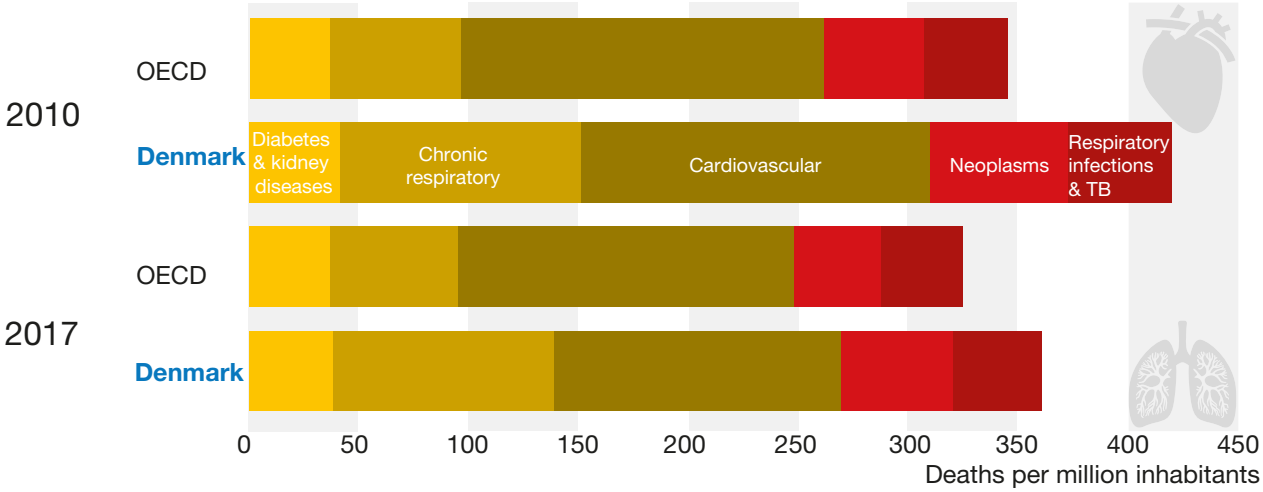
Figure 1. **Denmark is a leader in the use of renewable energy sources,**
Share of renewables in total primary energy supply and power generation, top ten OECD countries, 2017



Source: IEA (2018), IEA World Energy Statistics and Balances (database).

Amager Bakke in Copenhagen, Denmark

Figure 2. **Air quality remains a challenge,** number of premature deaths caused by ambient particulate matter pollution per million inhabitants, Denmark and the OECD



Source: OECD (2018), "Exposure to air pollution", OECD Environment Statistics (database).

AIR QUALITY

- Denmark is on track to meet its 2020 targets under the EU National Emission Ceilings Directive for nitrogen oxides, non-methane volatile organic compounds and sulphur oxides. It will be more difficult to meet the targets for 2020 and 2030 on fine particles ($PM_{2.5}$) and ammonia.
- Steps to improve urban air quality include low-emission zones in major cities, a registration tax exemption for electric cars, particle filters for new fossil fuelled vehicles and enhanced emission limit values for residential wood stoves. Measures have also been taken to reduce ammonia emissions, such as banning manure application by splash plate and requiring slurry tanks to be roofed.
- The number of premature deaths caused by ambient air pollution continues to be above the OECD average (Figure 2). The welfare cost of $PM_{2.5}$ exposure is estimated at 3% of GDP. According to Danish estimates, 3 200 premature deaths a year are attributable to air pollution, including from abroad.

Next steps | energy, climate change and air quality

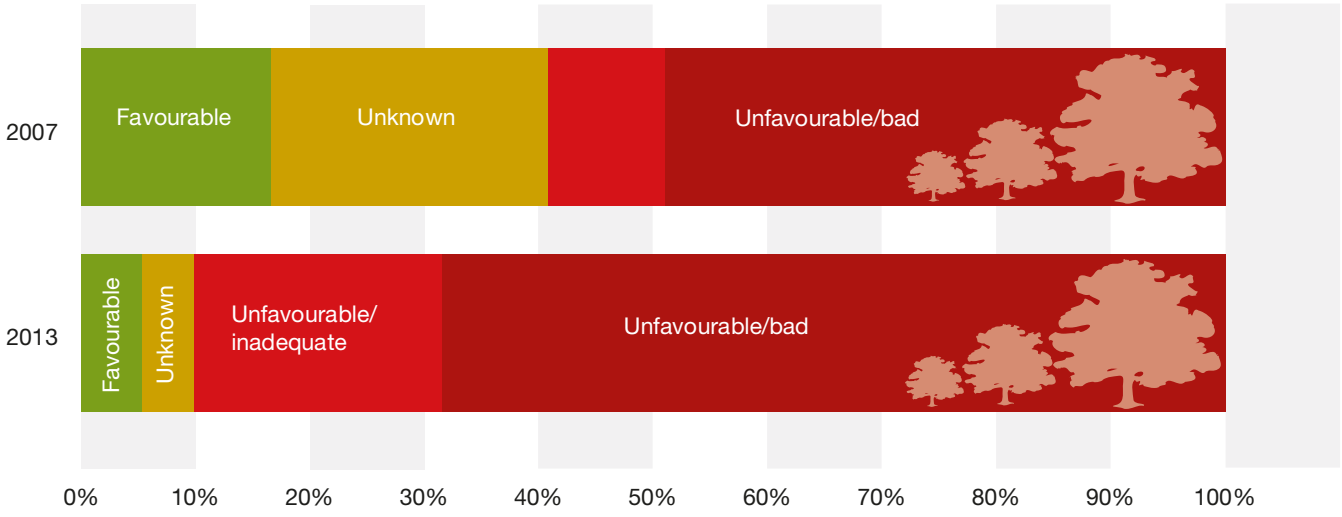
- Make every effort to achieve the goal of further reducing GHG emissions by 2030.
- Develop a strategy to achieve carbon neutrality by 2050.
- Continue efforts to address urban $PM_{2.5}$ pollution.

Key environmental trends and developments *cont'd*

BIODIVERSITY AND WATER

- Five national parks have been created since 2008. The area of "biodiversity forests" is being increased; these forests have a more stringent biodiversity protection objective than other forests and have less intensive management or no management at all. A new Green Map of Denmark will help municipalities take existing and potential areas of interest for special nature protection into account in spatial planning.
- The 2014 Biodiversity Strategy does not set targets for protected areas. Natura 2000 sites cover some 8% of the land area and 18% at sea. However, 68% of the total area of habitats and 27% of species covered by the EU Habitats Directive are in unfavourable or bad conservation status (Figure 3), and 27% of assessed plant and animal species are red-listed.
- Despite progress, most coastal waters have not yet achieved good ecological status as required by the EU Water Framework Directive. The same is true for many rivers and lakes. Nitrogen discharges into coastal waters, which constitute the main pressure, were reduced by around 10% between 2005-07 and 2013-15. The presence of legacy pesticides in groundwater is a concern.
- A targeted regulation of nitrogen, based on water pollution risk, was updated in 2015. This is a step in the right direction, as it improves cost-effectiveness by focusing efforts on vulnerable areas.

Figure 3. **The state of natural habitats remains poor,** overall assessment of conservation status of habitats



Source: Source: EC (2014), National Summary for Article 17 of the Habitats Directive, Report 2007-12

Next steps | biodiversity and water

- Update the 2014 Biodiversity Strategy and set intermediate targets for protected areas and connectivity.
- Provide sufficient public financial support to achieve the goal for "biodiversity forests" on both state-owned and private land.
- Continue to implement targeted nitrogen regulation and estimate its side effects on GHG emissions to foster synergies.

Environmental **governance** and management

Denmark has a decentralised environmental governance system in which municipalities have been responsible for most management tasks since 2007. This creates unevenness in how environmental rules are applied across the country. Governance benefits from a culture of co-operation between political parties and government and between business and civil society. Expertise in socio-economic impact assessment (SEIA) is strong, but not always used systematically.

INSTITUTIONS AND REGULATION

- Task forces were set up to help build municipal capacity following a 2007 governance reform. Municipalities share expertise and best practices through the organisation Local Government Denmark.
- To enhance policy continuity, governments form political agreements with other parties. This governance system has brought positive long-term change, such as stable investment in renewables.
- In 2017, the government revised the SEIA guidelines, which cover environmental protection. However, SEIA is not yet mandatory for government decisions or for regulatory impact assessment of draft laws.

LAND-USE PLANNING

- Municipalities do spatial planning in the form of municipal and local land-use plans based on national guidelines.
- Farmland occupies more than 60% of the surface area and puts pressure on certain land of high environmental value, such as peatlands. In 2018, a Multifunctional Land Redistribution Fund (MLRF) was established with a budget of EUR 33 million to buy land where farming has a significant environmental impact and convert it to natural areas.
- Environmental and farming organisations have recommended raising the budget for land redistribution. However, scaling up public funding requires cost-effectiveness analysis and could be supplemented by the mobilisation of private funds.

COMPLIANCE

- A risk-based inspection system applies even to small and medium-sized enterprises, which is good practice. The system is effective in finding violations, including by the most potentially harmful companies.
- Municipalities tend to favour different measures to promote compliance promotion and enforcement, creating an uneven playing field for companies. A new enforcement strategy includes scaling up guidance and ensuring transparent and uniform treatment of companies.
- In 2017, a panel of legal experts recommended simplifying environmental legislation while keeping the current level of protection.

ENVIRONMENTAL DEMOCRACY

- Public participation in environmental policy is high. The Environmental Information Act, implementing the UN Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, has a broad scope of application.
- From 2011 to 2015, the average processing time for complaints against government decisions on the environment was reduced from 369 to 182 days, facilitating access to justice.

Next steps | governance

- Expand the use of task forces to build capacity in the areas where municipalities face challenges
- Evaluate the cost-effectiveness of scaling up land acquisition and redistribution of environmentally valuable agricultural land
- Consider making SEIA mandatory for government decisions with a significant environmental impact
- Level the playing field for firms by ensuring that municipalities apply compliance promotion and enforcement measures based on similar, well-established criteria

Case studies

WIND ENERGY

Increased electricity generation costs, due to the oil crises of the 1970s, led to serious consideration of wind energy as an alternative to fossil fuels. Denmark's wind energy sector started to develop in the late 1970s and 80s thanks to public engagement and support policies. The country became a major international player in the 1990s.Today, onshore wind has become more competitive with coal and natural gas for power generation. Bid prices for offshore wind projects have meanwhile decreased, from EUR 141/MWh (DKK 1 048/MWh) at the Anholt tender in 2010 to EUR 50/MWh (DKK 372/MWh) at the Kriegers Flak tender in 2016. Onshore and offshore wind turbines met around 40% of Denmark's electricity consumption needs in 2016.

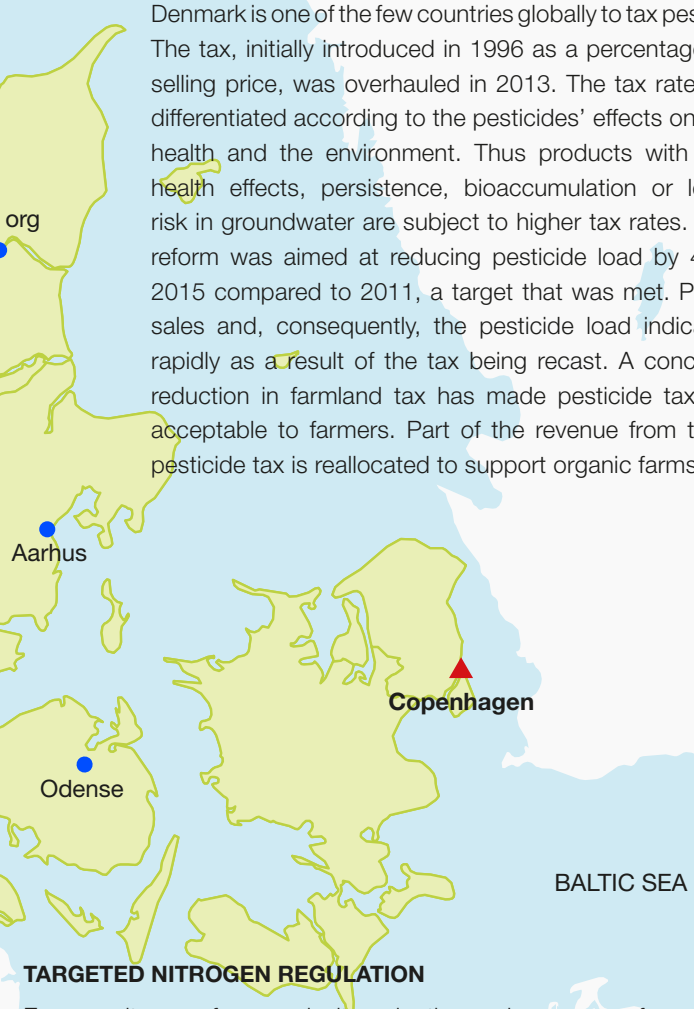
FORLIG: CROSS-PARTY POLITICAL AGREEMENTS

Agreements between political parties ("forlig" in Danish) are a particular feature of Denmark. They provide long-term continuity in policy implementation, which is essential for creating a climate of trust for investors, including in renewables. Parties concluding a political agreement undertake to support the legislation necessary for its implementation. It is a way for a minority government to ensure that a parliamentary majority will support its legislative proposals before it presents them. For example, a government proposal of April 2018, Energy for a Green Denmark, was followed by negotiations that led to an agreement by all parties in the Parliament in June 2018, the Energy Agreement.

Note: Greenland and the Faroe Islands not pictured

PESTICIDE TAX

Denmark is one of the few countries globally to tax pesticides. The tax, initially introduced in 1996 as a percentage of the selling price, was overhauled in 2013. The tax rate is now differentiated according to the pesticides' effects on human health and the environment. Thus products with greater health effects, persistence, bioaccumulation or leaching risk in groundwater are subject to higher tax rates. The tax reform was aimed at reducing pesticide load by 40% by 2015 compared to 2011, a target that was met. Pesticide sales and, consequently, the pesticide load indicator fell rapidly as a result of the tax being recast. A concomitant reduction in farmland tax has made pesticide tax reform acceptable to farmers. Part of the revenue from the new pesticide tax is reallocated to support organic farms.



TARGETED NITROGEN REGULATION

Excess nitrogen from agriculture is the main source of pressure on water quality in Denmark's coastal waters and fjords. The country has been a pioneer in assigning farmers nitrogen quotas and requiring them to keep a nitrogen balance at farm level. In 2013, a commission on nature and agriculture proposed to introduce targeted nitrogen regulation, a differentiated policy based on the risk of water pollution (how much each coastal water needs protection), thus improving cost-effectiveness by focusing nitrogen policy on vulnerable areas. Targeted regulation was introduced in 2015 and is still being implemented

GREEN MAP OF DENMARK

Following amendments to the Planning Act in 2015 and 2017, municipalities have started to designate areas of special interest for nature protection when revising their land-use plans. The complete designation will make up the Green Map of Denmark. The Danish EPA has developed a tool to help municipalities identify these areas in their territory. Preparation of the Green Map is a key element of Danish nature conservation policy. Once completed, the map will provide a clearer picture of the location and extent of protected areas, where to improve them and where to create new areas and connecting corridors.

INDUSTRY PARTICIPATION IN THE PROMOTION OF CIRCULAR ECONOMY

Denmark has new ambitions in espousing the concept of circular economy. The 2013 national circular economy strategy, "Denmark without Waste – Recycle More, Incinerate Less", and the complementary strategy of 2015, "Denmark without Waste II – Strategy for Waste Prevention", marked the beginning of a circular approach to waste management. To further promote circular economy, a circular economy advisory board of 12 Danish entrepreneurs from companies of all sizes and sectors was formed in 2016. In 2017, it recommended increasing resource productivity by 40%, recycling 80% of total waste and reducing waste generation by 15%, all by 2030. The recommendations were supported by the Confederation of Danish Industry, the Danish Chamber of Commerce, the Danish Construction Association and the Danish Agriculture and Food Council. In 2018, a political agreement on circular economy was published on the basis of the recommendations

Towards green growth

Green growth ranks high on Denmark's political agenda. The country has a small, open economy in which resolving environmental challenges by promoting clean technologies and their exports contributes to economic growth. The country has succeeded in decoupling growth from air pollution and GHG emissions while making some progress in resource productivity. It is a leader in the use of environmental policy instruments in areas such as taxation, investment, and research and innovation, although the taxation of households at higher rates than companies is not justified from an environmental standpoint. Denmark was among the first countries to conduct a voluntary national review on progress towards implementation of the United Nations Sustainable Development Goals. Its official development assistance (ODA), including for the environment and climate, focuses on private sector engagement and finance.

GREENING PRICE SIGNALS

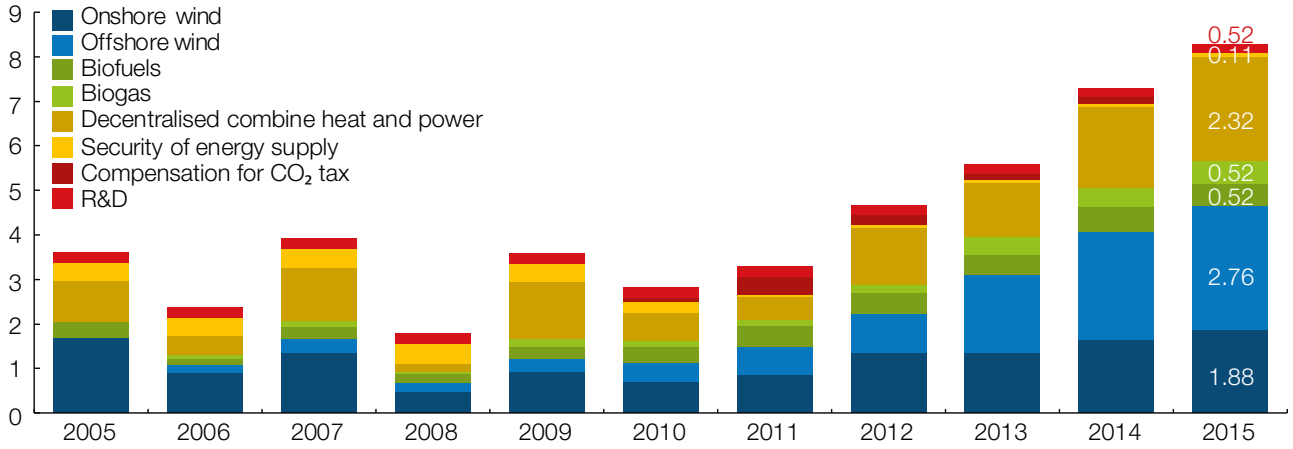
- Denmark is a pioneer in carbon pricing, with nearly all energy-related CO_2 emissions subject to a price signal. However, as industry and agriculture face a considerably lower tax burden due to tax reductions and exemptions, incentives for energy savings and CO_2 emission reductions are unequal. Woody biomass for heating is not taxed, as it is considered carbon neutral. Energy utilities have put in place a voluntary programme to ensure that the biomass used comes from sustainably managed forests.
- Environmentally related tax revenue fell to 3.7% of GDP in 2017, though it remained the highest in the OECD at twice the OECD average. The fall was mainly due to reductions in motor vehicle registration tax for fuel-efficient cars.
- Vehicle ownership is heavily taxed, mainly through a registration tax differentiated by vehicle fuel consumption. This has led to a relatively low vehicle ownership rate, but has also discouraged renewal of the car fleet. Petrol fuel is taxed more than diesel, which is not justifiable from an environmental perspective. Shifting vehicle taxation from ownership to use would enhance environmental effectiveness. The taxation of heavy vehicles fails to internalise the external environmental costs they cause. A commission has been asked to develop a strategy on how to achieve the goal of selling only low- or zero-emission cars from 2030 onwards.

GREEN INVESTMENT

- Denmark was one of the first countries to implement a green energy strategy based on a broad political agreement, creating a climate of trust for investors and supporting a boom in renewables over the last decade. Support for renewables has risen sharply since 2012 (Figure 4), most of it financed by a public service obligation (PSO) levied on all electricity consumed in Denmark. The 2018 Energy Agreement aims to develop renewables at conditions closer to the market, including phasing out the PSO levy by 2021.
- Public investment in rail infrastructure increased by more than 50% in real terms between 2005 and 2016, while remaining lower than public spending on roads. However, the Train Fund, intended to finance investment, was later limited in scope.
- Most expenditure on waste and wastewater services is recovered from households through user fees; hence household spending as a share of total final consumption expenditure, 1.6% as of 2016, is the highest in the EU. High user fees may reflect high quality of service and full cost recovery, but also service provision inefficiency.

Green taxes made up **3.7%** **of GDP** in 2017, the highest share in the OECD

Figure 4. **Financial support for renewables has risen sharply since 2012,** support for renewables, 2005-15, DKK billion



Note: 2005: detailed breakdown not available.
Source: IEA (2007), Energy Policies of IEA Countries: Denmark – 2017 Review.

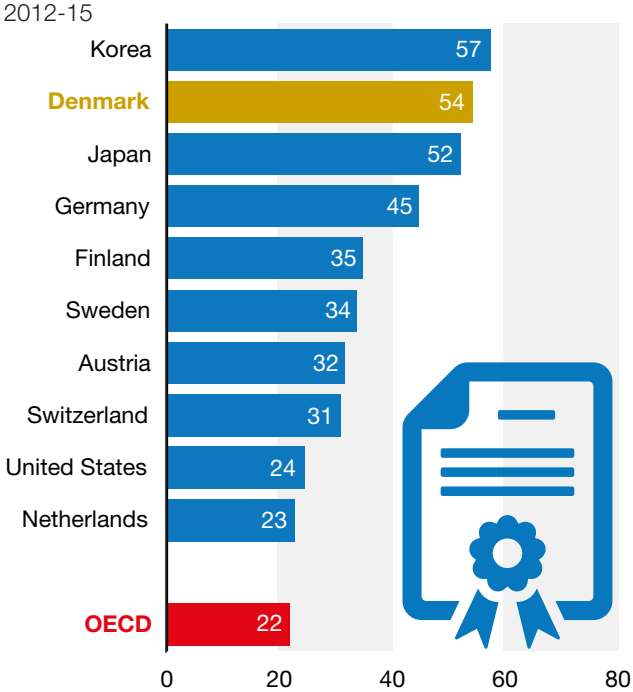
ECO-INNOVATION

- Denmark is at the forefront of innovation in Europe, and its patents have the highest level of specialisation in environmental technology among OECD countries. Measured per capita, Denmark ranks second for environment related inventions, after Korea (Figure 5). The Danish wind power industry is recognised as a world leader.
- Public funds allocated to R&D in the energy sector were cut in half between 2013 and 2016. However, the 2018 Energy Agreement plans to return to the 2013 level of DKK 1 billion (EUR 134 million) by 2024. Business R&D spending is highly concentrated in a few large companies. Incentives for R&D should be made available to start-ups, which are often more innovative than their larger counterparts.
- Reducing GHG emissions by 70% in 2030 and achieving carbon neutrality by 2050 will require developing low-carbon technology in sectors other than energy, including agriculture and carbon sequestration.

TRADE AND DEVELOPMENT

- The transition to a low-carbon, circular economy is seen as an economic opportunity to boost exports of environmental technology and services. Clean tech has been the fastest-growing export sector, supported by Denmark's international reputation as a front runner in green solutions, its strong export promotion framework and its support for internationalisation of innovation and commercial activities.
- Denmark is one of the few countries to have achieved the UN target of allocating at least 0.7% of gross national income to ODA. The ODA budget was, however, reduced in 2015, which affected environment and climate related development finance. At the same time, the focus has been on enhancing private sector engagement and mobilising private investment

Figure 5. **Denmark is a leader in green innovation,** green patents per capita, top ten OECD best performers, average 2012-15



Note: Data refer to patent applications filed in the inventor's country of residence according to the priority date and apply solely to inventions of high potential commercial value for which protection has been sought in at least two jurisdictions. *Source:* OECD (2018), "Patents", OECD Environmental Statistics (database).

Next steps | green growth

- Reduce the energy taxation gap between households and businesses to equalise incentives for energy savings and CO_2 reduction.
- Improve alignment of transport taxes with transport-generated externalities.
- Continue to gradually phase out subsidies to renewables technology as it becomes economically competitive, and ensure that remaining support is technology neutral.
- Ensure continuity of R&D in energy and other environmentally relevant areas, including climate mitigation options in agriculture and land use.

Waste, materials management and the **circular economy**

Although levels of domestic material consumption and waste generation are high compared to other OECD countries, landfilling has been almost eradicated and most waste streams have recorded impressive rates of recycling and recovery. The next step for Denmark is to accelerate the transition towards a truly circular economy in which more waste is recycled or reused, fewer resources are used and less waste is generated. A fragmented waste market and excess capacity in incineration are key challenges on this path.

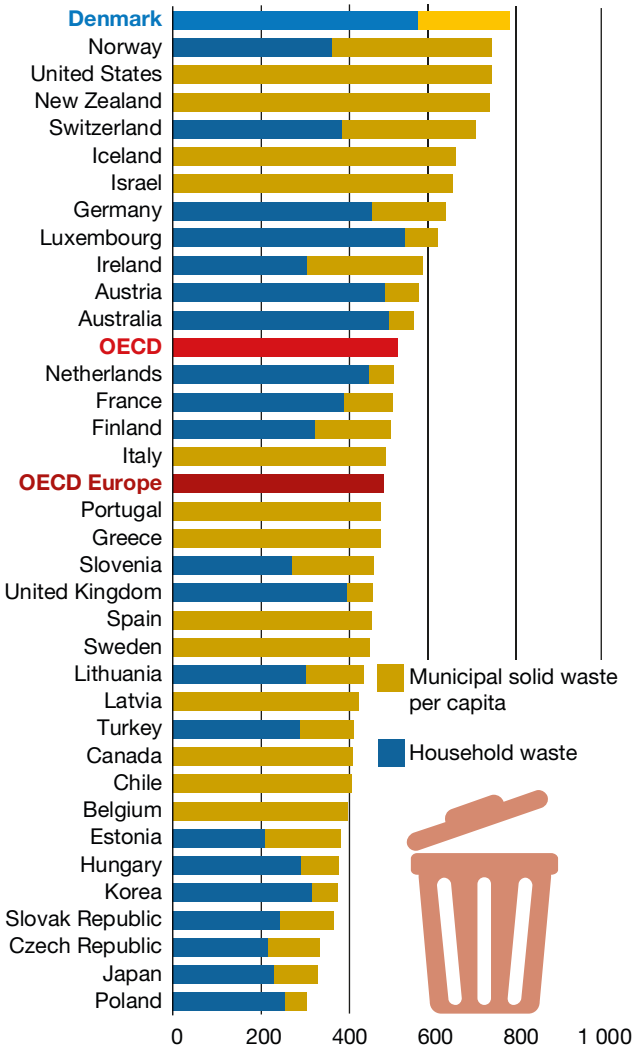
CIRCULAR ECONOMY

- Denmark has long paved the way for circular economy approaches by promoting eco-design, clean production, eco-innovation and sustainable consumption.
- The national strategy for a circular economy of 2018, developed in co-ordination with the private sector, places a strong emphasis on how business drive transition and how government can help.
- Denmark has managed to nearly eliminate landfilling. It has also achieved impressive results in recycling and recovery of most waste streams.

RESOURCE USE AND WASTE

- Despite the progress made since 2005, the Danish economy has low resource productivity. In 2016, domestic material consumption per unit of GDP was USD 1.95 per kg, which is well below the OECD average (USD 2.42). This was mainly driven by the construction sector in particular large-scale infrastructure projects.
- Total waste generation rose by 30% between 2010 and 2016, mainly due to increased generation of construction and demolition waste.
- Denmark had the highest level of municipal waste per capita in the OECD in 2017 (Figure 6). Municipal waste generation has grown faster than private final consumption, but has been stable since 2010. More incentives to prevent waste are needed for waste generation to decrease.

Figure 6. **Municipal waste generation per capita is the highest in the OECD,** municipal waste generation in kilogrammes per capita, 2017



Notes: Denmark includes garden waste in municipal waste reporting. Excluding garden waste, Denmark would rank among the six OECD countries generating the highest levels of municipal waste per capita as of 2017. OECD aggregates show municipal solid waste per capita.
Source: OECD (2019), "Municipal waste", OECD Environmental Statistics (database).


"Garbage" fish - Helsingor (Elsinore), Denmark

INSTITUTIONAL FRAMEWORK

- The cost of waste management services is among the highest in OECD Europe.
- Municipalities have considerable autonomy in waste management planning, including deciding on the treatment of most waste. Heavy investment by municipalities in incineration plants has created excess capacity.
- A lack of harmonised rules on waste sorting countrywide limits incentives for investment in large-scale recycling facilities. Around half of municipal waste is still being incinerated, although composting is on the rise (Figure 7).

Only **1%** of **municipal waste** is landfilled

Figure 7. **Half of municipal waste is disposed of in incinerators with energy recovery,** municipal waste treatment 2011-17

Notes: recycling rates may be underestimated due to lack of reporting.*Source:* OECD (2019), "Municipal waste", OECD Environmental Statistics (database).
Source: OECD (2019), "Municipal waste generation and treatment", OECD Environment Statistics (database).

Next steps | waste, materials management and the circular economy

- Expand pricing of waste management services by volume or weight to encourage prevention of household waste.
- Develop policies to minimise output of single-use products, such as plastics.
- Better manage excess incineration capacity by reforming municipal waste management.
- Harmonise criteria for sorting and collecting municipal waste fractions to create economies of scale and encourage investment in innovation and large-scale recycling facilities.

Chemicals management

Denmark is a standard setter in many areas of chemicals management and at the forefront of discussions at the international level. Yet chemicals continue to pose health and environmental risks. A high prevalence of male reproductive disorders has been linked to exposure to certain chemicals, such as endocrine disrupters, and groundwater contamination by pesticides remains a problem. Denmark must balance monitoring of chemicals released in the environment with the need to continue predictive risk assessment and management. Given the small size of the country and its chemical industry, ensuring compliance of high-risk chemicals in imported products is key.

INSTITUTIONS AND REGULATION

- Denmark has strong regulatory, institutional and monitoring frameworks to manage the health and environmental risks associated with the use of chemicals and chemicals in consumer products.
- Co-operation between public authorities, industry and NGOs through platforms such as the Danish Chemicals Forum is exemplary and should be continued.
- Multi-year cross-party political agreements on Chemical Initiatives set Denmark's national strategies, priorities and objectives and guarantee a broad commitment and resources for their implementation.

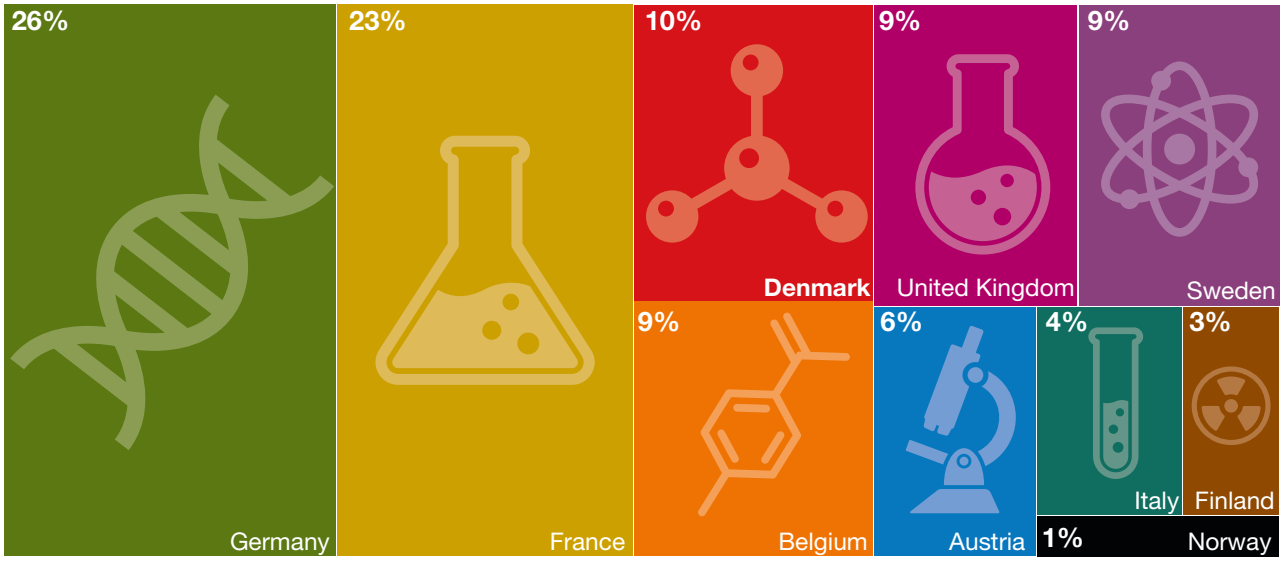
RISK ASSESSMENT AND MANAGEMENT

- Danish chemical policy focuses on ensuring that imported chemicals and consumer products are safe for the environment and health. To this end, Denmark has developed a high level of expertise in chemical risk assessment, becoming an international leader.
- Denmark's active role at EU level is evidenced by the high number of chemicals assessed and the country's contribution to regulation and restriction of chemicals (Figure 8).
- A 2013 revamp of the pesticide tax to base it on the health and environmental effects of individual products could inspire other OECD countries. The differentiated tax has reduced the pesticide load by 40% from the 2011 level in terms of sales (Figure 9). To make it more acceptable to farmers, revenue is returned through a reduction in land value tax.

MONITORING

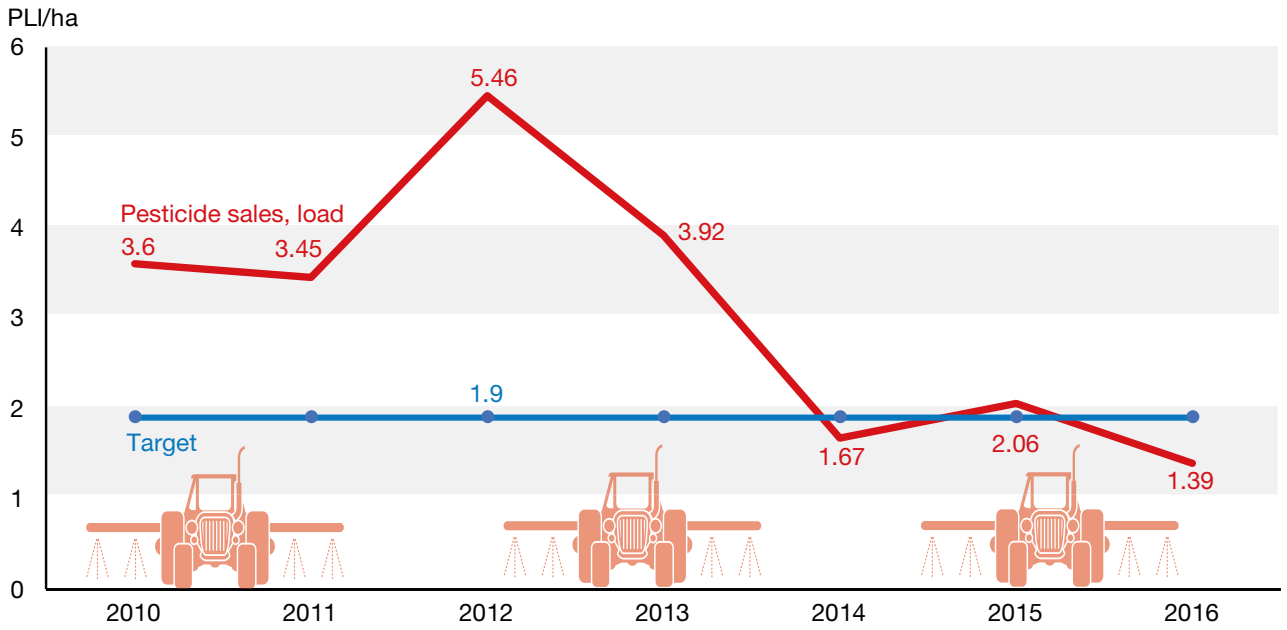
- Denmark's comprehensive chemical monitoring system includes the National Monitoring and Assessment Programme for the Aquatic and Terrestrial Environment (NOVANA) and its dedicated programmes, for example on groundwater.
- Danish research centres working on endocrine disruptor risk monitoring and prevention have developed biomonitoring surveys tracing the presence of chemicals in humans.
- Further increasing monitoring of chemicals in the environment and in consumer products would help reduce the health and environmental risk they pose. However, this should not come at the expense of predictive risk assessment and management. Denmark must share budgetary resources efficiently between the two.

Figure 8. **Denmark is an EU leader in the evaluation of endocrine disruptors,** endocrine disruptor assessment under the REACH or Biocidal Products Regulations, 2013-19.



Source: ECHA, Information on chemicals (website), March 2019.

Figure 9. **Differentiated pesticide taxation reduces environmental and health risks,** pesticide sales and consumption based on pesticide load indicator (PLI), 2010-16



Note: For evaluation of the tax, data were recalculated for all years with an updated database (e.g. new classifications under the CLP Regulation) and updated data collection filters, especially spray journal reports for the first years.
Source: Holze et al. (2018), Evaluering af den differentierede pesticidafgift (Evaluation of the differentiated pesticide tax).

Next steps | chemicals

- Further expand risk-based monitoring of chemicals, including legacy pesticides in groundwater.
- Strengthen biomonitoring to provide better evidence of exposure to endocrine-disrupting chemicals and possible effects on human health while addressing trade-offs between monitoring and proactive identification of chemicals requiring regulatory action.
- Continue performing an active role at the EU level in identifying chemicals of concern and in risk assessment and management of chemicals.
- Strengthen efforts at the national and international levels on compliance assurance for high-risk chemicals in products, including imports and e-commerce.

OECD Environmental Performance Reviews
Denmark 2019

MORE INFORMATION

OECD Environmental Performance Reviews: Denmark 2019
The report and all data are available on
http://oe.cd/epr-denmark

Environmental Performance Review programme
http://oe.cd/epr

CONTACTS

Head of Division
Nathalie Girouard
Nathalie.Girouard@oecd.org

Review Co-ordinator
Gérard Bonnis
Gerard.Bonnis@oecd.org

Communications
Natasha Cline-Thomas
Natasha.Cline-Thomas@oecd.org

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BETTER POLICIES FOR BETTER LIVES