

Country profile – the Netherlands

The section 'Key climate- and energy-related data' was prepared by the EEA. It includes the latest data available as of 31 July 2014

The section 'Climate and energy policy framework' was prepared by eclareon and Ecologic Institute, Germany. It includes the latest information on national policies and measures available as of 31 May 2014.

For methodological details and other country profiles, see www.eea.europa.eu/themes/climate/country-profiles.

Key climate- and energy-related data — the Netherlands

Key data on GHG emissions	2005	2011	2012	2013	EU 2012
Total GHG emissions (UNFCCC, Kyoto Protocol) (Mt CO ₂ -eq.)	209.4	195.1	191.7	191.9	4 544.2
GHG per capita (t CO ₂ -eq./cap.)	12.8	11.7	11.5	11.4	9.0
GHG per GDP (g CO ₂ -eq./PPS in EUR)	437	360	352	352	350
Share of GHG emissions in total EU-28 emissions (%)	4.0 %	4.2 %	4.2 %	4.3 %	100.0 %
EU ETS verified emissions (Mt CO ₂ -eq.)	80.4	80.0	76.4	86.8	1 848.6
Share of EU ETS emissions in total emissions (%)	38.4 %	41.0 %	39.9 %	45.2 %	40.7 %
ETS emissions vs allowances (free, auctioned, sold) (%)	- 7.1 %	- 13.9 %	- 16.0 %	+ 3.5 %	- 14.1 %
Share of CERs & ERUs in surrendered allowances (%)	0.0 %	4.4 %	26.6 %	n.a.	26.4 %
Non-ETS (ESD) emissions, adjusted to 2013–2020 scope (Mt CO ₂ -eq.)	123.0	113.2	113.3	105.1	2 566.6
Key data on renewable energy	2005	2010	2011	2012	EU 2012
Share of renewable energy in gross FEC (%)			4.3 %	4.5 %	14.1 %
() = including all biofuels consumed in transport	(2.3 %)	(3.7 %)			
Share of renewable energy for electricity (%)	6.3 %	9.7 %	9.8 %	10.5 %	23.5 %
Share of renewable energy for heating and cooling (%)	2.0 %	2.7 %	3.3 %	3.4 %	15.6 %
Share of renewable energy for transport (%)			4.6 %	5.0 %	5.1 %
() = including all biofuels consumed (%)	(0.2 %)	(3.1 %)			
Key data on energy consumption	2005	2010	2011	2012	EU 2012
Primary energy consumption (Mtoe)	68.5	71.1	66.3	67.1	1 584.8
Primary energy consumption per capita (Mtoe/cap.)	4.2	4.3	4.0	4.0	3.1
Final energy consumption (Mtoe)	51.7	53.9	50.7	51.1	1 104.5
Final energy consumption per capita (Mtoe/cap.)	3.2	3.3	3.0	3.1	2.2
Efficiency of conventional thermal electricity and heat production (%)	60.2 %	58.7 %	60.2 %	58.5 %	50.0 %
Energy consumption per dwelling by end use	2005	2009	2010	2011	EU 2011
Total energy consumption per dwelling (toe/dwelling)	1.58	1.48	1.50	1.45	1.42
Space heating and cooling (toe/dwelling)	1.06	1.00	1.01	0.98	0.96
Water heating (toe/dwelling)	0.23	0.21	0.21	0.21	0.18
Cooking (toe/dwelling)	0.04	0.04	0.04	0.04	0.08
Electricity (lighting, appliances) (toe/dwelling)	0.25	0.24	0.24	0.23	0.20

Progress towards GHG targets (under the Effort Sharing Decision, i.e. non-ETS emissions)

2013 ESD target (% vs base year)	- 3.5 %	2020 ESD target (% vs base year)	- 16.0 %
2013 ESD emissions (% vs base year)	- 15.3 %	2020 ESD projections WEM (% vs base year)	- 15.2 %
		2020 ESD projections WAM (% vs base year)	- 18.8 %

Based on approximated emission estimates for 2013, emissions covered by the Effort Sharing Decision (ESD) (i.e. in the sectors which are not covered by the EU ETS) are expected to be below the annual ESD target in 2013. Projections indicate that 2020 ESD emissions are expected to be below the 2020 ESD target, only if measures planned until 2013 are fully implemented.

Progress towards renewable energy targets

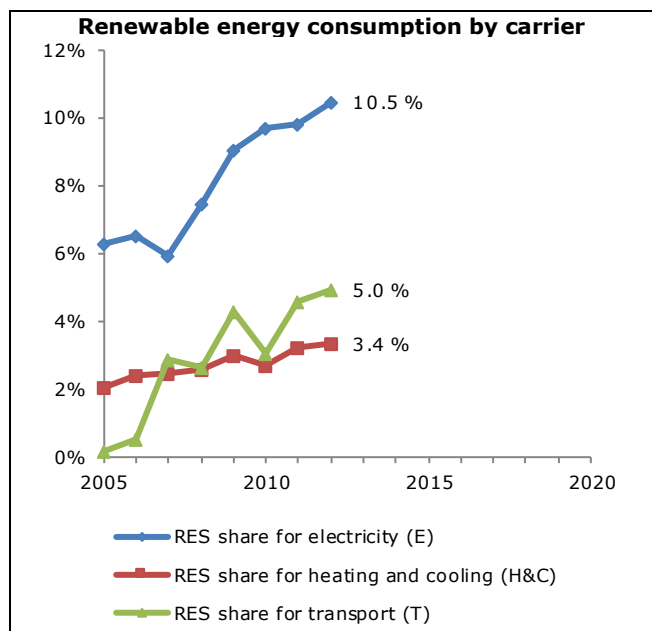
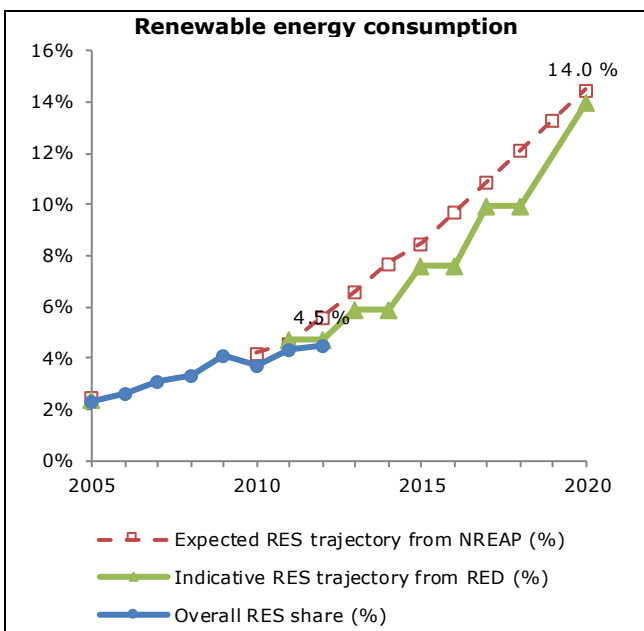
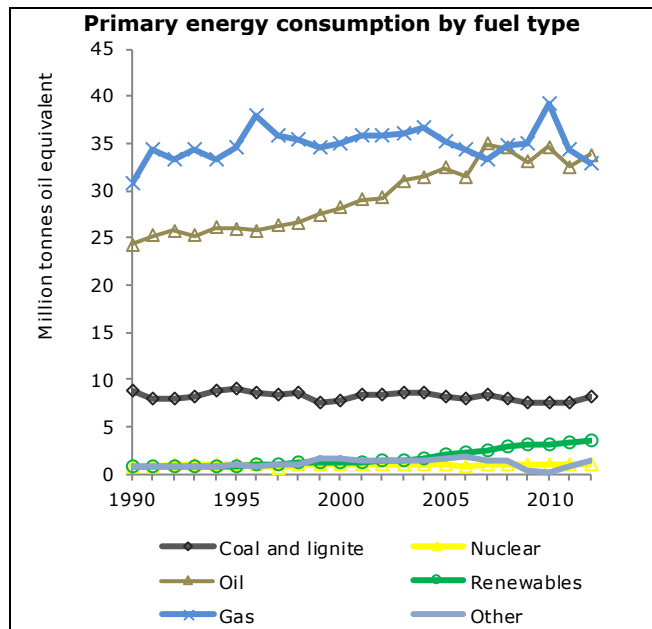
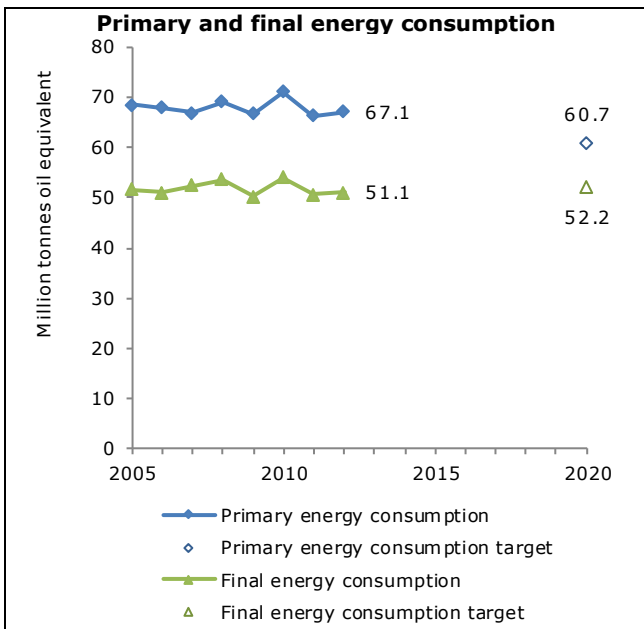
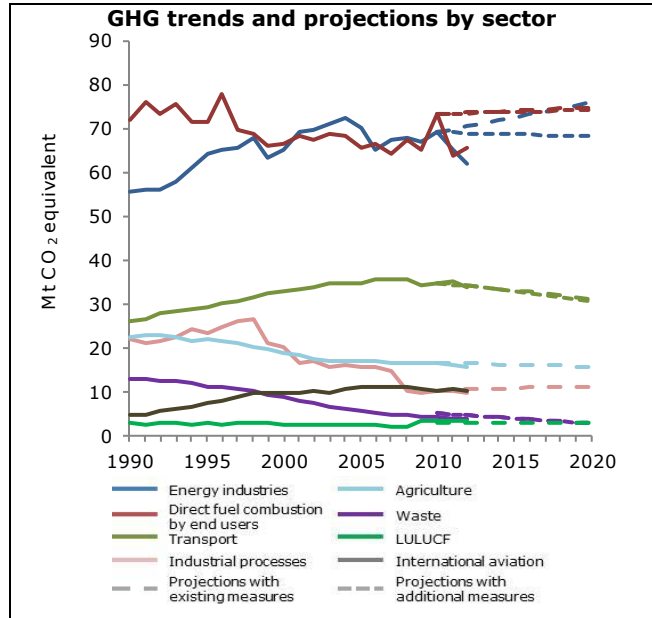
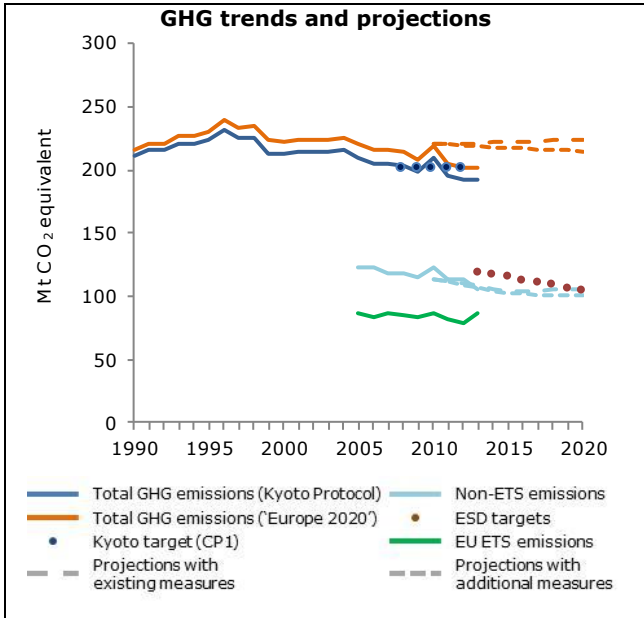
2012 RES share in gross final energy consumption (%)	4.5 %	2011–2012 indicative share from RES Directive (%)	4.7 %
2020 RES target	14.0 %	2012 expected share from NREAP (%)	5.6 %

The average share of renewable sources in gross final energy consumption for 2011–2012 was 4.4% (2.3 Mtoe), which is lower than the indicative RED target for 2011–2012 (4.7%). At the same time, the share of renewables in 2012 (4.5 %) is lower than the expected 2012 NREAP target (5.6 %). Over the period 2005–2012 the observed average annual growth rate in renewable energy consumption amounted to 11.5%. In order to reach its 2020 NREAP target, Netherlands needs an average annual growth rate of 15.4% in the run-up to 2020. In absolute terms, this is equivalent to 4.0 times its cumulative effort so far.

Progress towards energy efficiency targets

Primary energy consumption:		Final energy consumption:	
2005–2012 average annual change	- 0.3 %	2005–2012 average annual change	- 0.1 %
2012–2020 average annual change to target	- 1.2 %	2012–2020 average annual change to target	+ 0.3 %

Between 2005 and 2012, final energy consumption decreased while the 2020 target is actually positive compared to 2005. However, primary energy consumption did not decrease at a sufficient pace to put the Netherlands on track to meet its 2020 reduction target for primary energy consumption. Further improvements in conversion efficiency in the energy sector, where the consumption has been increasing since 2008, could contribute to reducing further primary energy consumption. Concerning final energy consumption, the Netherlands can focus on stabilizing energy consumption in end-use sectors, in particular in the industry and the residential sectors.



Climate and energy policy framework

Challenges and opportunities

The Netherlands has been actively developing mitigation and adaptation policies. However, progress on two of the main pillars for greenhouse gas (GHG) emission reductions, renewable energies and energy efficiency, is currently not sufficient. There is a significant gap between the current renewable energy share in total energy consumption and the 2020 target, and also estimations of final energy savings based on current measures show that the 2020 energy-savings target laid out in the Energy Agreement for Sustainable Growth could be missed by more than 40 % (PBL, 2013).

For renewables, the main support scheme SDE+ has been criticised for not having enough budget to trigger a sufficient level of investment for the Netherlands to comply with its 2020 goal (SER, 2013). Furthermore, the policy architecture of the SDE+ was assessed as favouring large investors and technologies with already low electricity production costs, and thus not supporting further innovation (Tonneyck, 2013). Simplified access for small investors to the promotion scheme could help spur the necessary investments. Moreover, the dedicated promotion of currently higher cost technologies could help trigger innovation and Dutch industry could profit from gaining know-how and market share in prospectively successful sustainable energy technologies. Regarding energy efficiency, a long-term strategy and further investments could improve the Netherlands' performance towards its 2020 energy-savings target and create further employment and turnover in green industries. A study by Energie-Nederland, and Netbeheer Nederland, released in October 2013, estimated that the energy transition and related innovation could trigger 20 000 new jobs by 2017 (ECN, 2013).

Climate and energy strategies

The Sustainability Agenda was published in 2011 aiming at the transformation towards a green economy and advocates green growth through international agreements, smart and efficient regulations, and improved financial incentives. The Sustainability Agenda builds on the international Climate Agenda, the National Roadmap Climate 2050 and the Local Climate Agenda 2011. It defines the priority areas, such as: resources and product chains, sustainable water and land use, food, climate and energy, and mobility. With the implementation of this Agenda, the Cabinet of Ministers hopes to increase the competitiveness of the Dutch economy by reducing its dependence on fossil energy sources and environmental harm.

For the energy sector, the centrepiece is the Energy Agreement for Sustainable Growth that has been published in September 2013. It includes: an annual savings target of 1.5 % in final energy consumption, totalling 100 PJ of energy savings by 2020; a targeted share of renewable energy of 14 % in 2020 and 16 % in 2023; and the creation of at least 15 000 jobs. Already in 2012, employment in the sustainable sector reached 10 000 jobs with revenue of EUR 3.3 billion per year (Dutch Government, 2013).

Renewable energy

The self-defined target to increase the share of renewable energies in final energy consumption to 16 % (+ 2 % from the EU target) has been revised in the summer of 2013 and pushed back to 2023 due to insufficient progress. The main support scheme for renewable electricity and heat, especially in large-scale applications, is a premium tariff with a quasi-tendering process, called SDE+. Under the SDE+ energy producers compete against each other for funding in six steps on a 'first come, first serve' basis. The budget for the support of renewable energy in electricity and heat production in SDE+ will amount to EUR 3.5 billion in 2014, an amount that is still criticised of being too low to reach the 2020 goal (SER, 2013). Furthermore, it has been criticised that the current scheme favours technologies that already produce at a low price. Accordingly, new technologies, being relatively expensive, lack sufficient support and thus the chance for further cost reductions (Tonneyck, 2013).

Next to the SDE+, photovoltaic installations can qualify for subsidies under the Spring Agreement, with a maximum investment subsidy of EUR 650. Moreover, for enterprises investing in renewable electricity and heat, the Energy Investment Allowance (EIA) offers a tax deduction of up to 41.5 % of the investment costs for renewable energy and energy savings, which has been estimated to lead to a reduction of investment costs by 10 %. This instrument can also be used by energy cooperatives as an investment support.

Furthermore, renewables in heating and cooling can qualify for subsidised loans providing an interest rate reduction of 1 %.

Energy efficiency

There is no specific long-term energy efficiency strategy, but the Energy Agreement for Sustainable Growth includes an annual savings target of 1.5 % in final energy consumption, totalling 100 PJ of energy savings by 2020.

Energy **taxation** is rather high with the level of excise duties being above the EU average. There are exemptions for energy-intensive businesses if the consumer has agreed to obligations for improving energy efficiency, as well as for electricity used for chemical reduction and in electrolytic and metallurgical processes. The Netherlands has no carbon dioxide (CO₂) tax in place.

Cogeneration of electricity and heat is fostered by lowering investment costs. The government's Long-Term Agreements, voluntary agreements with non-Emissions Trading System (ETS) large and medium-sized companies and institutions in industry, agriculture and the service sector, covering the period from 2001 to 2020, aim at improving energy efficiency by 30 % between 2005 and 2020. In return for the introduction of energy-saving plans (energy management and saving projects), the government agrees not to impose additional specific national measures aimed at energy conservation or CO₂ emission reductions on the involved companies. In addition, industrial companies acting under these covenants are largely exempt from energy and carbon taxes and the energy efficiency component of the EIA supports industrial process improvements as well as building renovation for enterprises through tax deductions. In the **building** sector, minimum energy performance standards and performance certificates have been introduced. Energy efficiency measures in buildings, such as floor, roof and wall cavity insulation, as well as double glazing are eligible for a reduced value-added tax rate of 6 %. Since January 2014, a fund of EUR 300 million is directed towards landlords, owners and tenants to finance energy-saving technology and measures with the help of low-interest loans with a 12-year payback period (Dutch Government, 2014). The fund is co-financed by private parties: EUR 225 million was contributed by Rabobank and ASN Bank, and EUR 75 million was added from the state. Furthermore, under the

support programme More with Less, the government signed voluntary agreements with key players within housing, energy and construction to reduce energy consumption in existing buildings. The programme is planned to reduce barriers for owners to stimulate investment in savings measures, for example through customised advice on subsidies, costs and savings.

Transport

Vehicle **taxes** in the Netherlands are partly based on CO₂ emissions: the registration tax that is levied on passenger cars and motorcycles is based on the price of the vehicle, its CO₂ emissions, and a lump sum differentiating between diesel and petrol cars. An ownership tax for passenger cars is based on deadweight and fuel, but varies between the provinces. For buses, coaches and commercial vehicles, the tax is based on weight only. The Netherlands levies a time-based road toll for commercial vehicles with a weight of over 12 t. Diesel and petrol are taxed above EU average. Fuel suppliers are obliged to blend transport fuels with a share of sustainable **biofuels**, from 4.25 % in 2011 to 5.5 % in 2014. Contributions made by biofuels produced from wastes, residues, non-food cellulosic material and lignocellulosic material are counted twice, which results in a relatively large share of biodiesel from used cooking oil, for example. Tax deductions similar to the EIA scheme exist for investments in biofuel and hydrogen production facilities. The Action Plan Electric Mobility supports the purchase of electric vehicles if CO₂ emissions are lower than 50 grams per kilometre. The overall policy aim is to achieve 15 000 to 20 000 electric cars in 2015 and 1 million by 2025.

No measures promoting **modal shift** are reported, but in general, transport networks for bicycles as well as the public transport system are considered to be well developed.

Fluorinated gases (F-gases)

The Netherlands aims to reduce nitrous oxide gas emissions through the EU ETS. The government realised an opt-in for nitrous dioxide from industrial processes into the ETS. Furthermore, hydrofluorocarbons shall further be reduced by promoting afterburner systems.

Agriculture

The Covenant Clean and Efficient Agrosectors contains concrete actions to reduce CO₂ emissions by 3.5 to 4.5 Mt per year until 2020 for the sectors of agriculture, horticultural field crops and livestock. Facilitated by research and innovation programmes, as well as by the financial support, companies in the field of greenhouse horticulture are stimulated to exchange best practices and expertise and innovation in the field of innovative energy systems, energy efficiency and the use of renewable energies. Here, the Market Introduction of Energy Innovation (MEI) programme offers a 40 % subsidy for investments in innovative energy systems contributing to a reduction of CO₂ emissions and energy consumption. The Investment Subsidy in Energy Savings (IRE) programme offers an investment subsidy of up to 25 % of eligible investment costs. For 2013, the budget for MEI is EUR 9 million and for IRE it is EUR 2.225 million.

Waste

The Netherlands' policy on waste management focuses firstly on prevention, secondly on reuse and thirdly on incineration with energy recovery. As a result, the amount of landfilled waste has been reduced substantially. Between 1990 and 2012 the rate of waste reuse (including recycling and the use of waste for energy production) increased from an already high level of 60 % to almost 88 % of the total amount. The majority of the residual comes from residential waste, followed by office waste. Most industrial waste, almost all demolition waste, almost all agricultural waste and almost all waste from coal-fired power plants are being fully recycled (I&M, 2013). Additionally, on 22 November 2013 the national Chain Agreement for Recycled Plastic was signed. The main aim of the Agreement is to close the plastic recycling loop and get rid of visible waste in waters within the upcoming 2 years.

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