

Progress report

Energy from renewable sources in the Netherlands 2011-2012

Directive 2009/28/EC

Under Article 22 of Directive 2009/28/EC¹ (hereinafter: Renewable Energy Directive), the Minister of Economic Affairs must submit a report every two years on progress in the promotion and use of energy from renewable sources. The first progress report was sent to the Commission at the end of 2011. This second progress report must be submitted to the Commission by no later than 31 December 2013.

This report corresponds with the template laid down by the European Commission on 30 June 2009. Reference is made to the template² for any explanation of tables and figures.

Explanation concerning this report

The following principles have been employed for this report to describe the policy and data used:

1. Description of existing or new policy

This report reflects the progress made in 2011 and 2012 and the results are the effect of the policy and measures in force at that time. These are listed in the response to question 2 in this report. An outline of the Second Rutte Cabinet's new energy policy is provided in section 2 and in response to questions 2 and 3.

2. Graphs and tables

The figures used for 2011 and 2012 in this report have been supplied by Statistics Netherlands (CBS) and the Dutch Emissions Authority (NEa). The figures for the renewable energy support schemes under question 3 come from the Ministry of Economic Affairs and NL Agency. Where other sources have been used, reference is made to this in the text or by means of a footnote.

¹ 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.

² http://ec.europa.eu/energy/renewables/reports/2011_en.htm.

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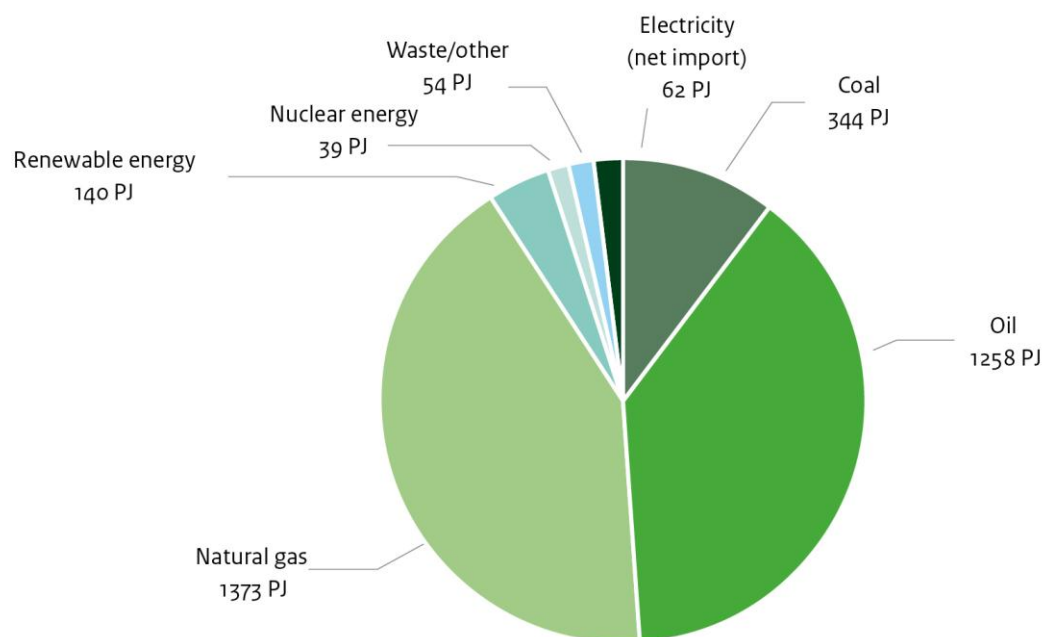
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Section 1 Energy from renewable sources: status 2012

For the Netherlands, the target for the share of energy from renewable sources in the gross final consumption of energy in 2020 is 14 %.

The energy situation in the Netherlands in 2012 was characterised by primary energy consumption of 3 269 petajoules. Major sources of energy were natural gas (1 373 petajoules), oil (1 258 petajoules) and coal (344 petajoules). In 2012 renewable energy sources contributed 140 petajoules. Figure 1 shows how the primary energy consumption was distributed across the various sources.

Figure 1: Primary energy consumption in the Netherlands in 2012: total 3 269 PJ³



In accordance with the Renewable Energy Directive, the share of renewable energy has been based on the final energetic consumption. In 2012 this was 2 185 petajoules. The final consumption of renewable energy was 98 petajoules, slightly higher than in 2011 (93 petajoules). It also rose in comparison with 2010 (86 petajoules).

The production of renewable electricity rose by 5 % in 2012 compared with 2011, while the production of renewable heat increased by 7 %. Total energy consumption was up 1.5 % due to 2012 being a colder year than 2011. This resulted in a 0.2 percentage point increase in the share of renewable energy from 4.3 % in 2011 to 4.5 % in 2012. In 2010 this share stood at 3.7 %.

The indicative target for the Netherlands for the 2011-2012 period was 4.7 %. The actual figure has not met the indicative trajectory by a limited margin.

³ Source: CBS Statline.

Section 2 Outline of the Second Rutte Cabinet's new energy policy

On 5 November 2012 the Second Rutte Cabinet took up office. In the coalition agreement⁴ presented on 29 October 2012, the Cabinet set out an ambitious and stable sustainable energy policy. To achieve these ambitions, efforts need to be stepped up significantly. The Cabinet has made sufficient financial resources available to achieve a 14 % share for renewable energy in 2020 and a 16 % share in 2023. Priority is being given to the use of a smart and efficient mix of policy instruments to ensure that the target can be realised with the lowest possible costs.

To create a stable investment climate in the short and long term, in September 2013 the Cabinet concluded an Energy Agreement⁵ with more than 40 parties, including employers, employees, environmental organisations, energy companies, local and regional authorities and interest groups. Through this Energy Agreement, the parties concerned are taking joint responsibility for making major investments that will result in a 14 % share for renewable energy in 2020 and a 16 % share in 2023.

The Energy Agreement includes agreements on lowering costs through innovation, gradually rolling out onshore and offshore wind, restricting the co-firing of biomass and promoting the local generation of sustainable energy. Over the coming years, tenders will be invited for 3 450 megawatts of offshore wind power. With regard to onshore wind, agreements have been made with the provinces concerning the realisation of 6 000 megawatts of operational wind capacity in 2020. The promotion of the co-firing of biomass is being restricted to 25 petajoules of biomass and strict sustainability criteria will be linked to co-firing. Local generation of sustainable energy is being promoted by means of an energy tax credit of 7.5 cents/kWh. An implementation plan containing actions has been drawn up to put the Energy Agreement into practice. To guarantee progress in implementing these actions, a governance structure has been agreed, in which all signatories of the agreement are actively participating. A detailed description of the (new) measures agreed in the Energy Agreement has been included in Annex 1.

The SDE+ scheme [Promotion of Sustainable Energy Production Scheme Plus] is and remains the most important instrument for increasing the share of renewable energy in a cost-effective way. Expenditure for rolling out renewable energy stands at € 0.9 billion per year in 2014, rising to € 2.8 billion per year in 2020 and € 3.2 billion in 2023. The total resources available come partly from general funds and partly from a surcharge on energy bills introduced in 2013.

The Energy Top Sector continues to promote innovation through financial resources in order to boost the energy sector and reduce the cost of sustainable energy technologies. The Green Deal approach is also being continued. This instrument is geared towards removing bottlenecks (in legislation and regulations for example), making good and objective information available and establishing effective partnerships. In this way promising projects are still being set up.

Finally, in its letter to Parliament on the opening of the SDE+ scheme in 2014 the Cabinet announced that the system of cooperation mechanisms from the Renewable Energy Directive will be developed into legislation and regulations (the SDE+ Decree) to allow these measures to be used⁶. By making use of such cooperation mechanisms, the Netherlands is aiming to achieve its target at a lower cost.

⁴ Coalition Agreement, 29-10-2012, 'Building Bridges', (<http://www.rijksoverheid.nl/regering/regeerakkoord>)

⁵ Energy Agreement, 06-09-2013, 'Energy Agreement for Sustainable Growth', (<http://www.energieakkoordser.nl>).

⁶ Parliamentary paper 31 239, No 171.

Section 3 Response to questions in template report

Question 1. Sectoral and overall shares and actual consumption of energy from renewable sources in 2011 and 2012.

Sectoral and overall shares and actual consumption of energy from renewable sources in 2011 and 2012.

At 4.5 %, the share of energy from renewable sources in 2012 showed a slight increase of 0.2 percentage points compared with 2011. This share is slightly lower than the indicative target from the National Renewable Energy Action Plan, in which an indicative trajectory with an average of 4.7 % was assumed for the period from 2011 to 2012⁷.

Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources in the gross final consumption of energy⁸

	2011	2012
RES-H&C (%)	3.3	3.4
RES-E (%)	9.8	10.5
RES-T (%)	4.6	5.0
Overall RES share (%)	4.3	4.5
Of which from cooperation mechanism (%)	0	0
Surplus for cooperation mechanism (%)	0	0

The share of renewable energy increased by a limited amount over the 2011-2012 period. A number of reasons can be given for this. There has been an increase in the production of renewable energy. The normalised production of wind energy rose by 5 % in 2012, for example. In addition, there was relatively strong growth in solar PV on private roofs. The use of renewable heat also rose, as did the production of electricity and heat by waste incineration plants. While renewable energy production increased, however, so too did final consumption between 2011 and 2012 due to the cold winter. On balance, the share of renewable energy in percentage terms only increased to a limited extent as a result.

⁷ Indicative target calculated in accordance with Annex 1(B) of the Renewable Energy Directive.

⁸ Facilitates comparison with Table 3 and Table 4a of the NREAPs.

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (PJ and ktoe)⁹

	2011 PJ	2012 PJ	2011 ktoe ¹⁰	2012 ktoe
(A) Gross final consumption of RES for heating and cooling	37	39	875	939
(B) Gross final consumption of electricity from RES (excluding electricity for transport)	42	44	1 003	1 047
(C) Gross final consumption of energy from RES in transport (without double counting, including electricity for transport)	15	15	349	349
(D) Gross total RES consumption (without double counting) ¹¹	93	98	2 228	2 336
(E) Transfer of RES to other Member States	0	0	0	0
(F) Transfer of RES from other Member States and 3rd countries	0	0	0	0
(G) RES consumption adjusted for target (D)-(E)+(F)	93	98	2 228	2 336

⁹ Facilitates comparison with Table 4a of the NREAPs.

¹⁰ 1 PJ = 23.8845897 ktoe; 1 ktoe = 0.041868 PJ.

¹¹ According to Article 5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

Table 1b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in the Netherlands to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity¹²

	2011 MW	2011 GWh	2012 MW	2012 GWh
Hydro¹³:	37	100	37	100
- of which non pumped				
- of which <1 MW ¹⁴	0	0	0	0
- of which 1 MW–10 MW ¹³	2	5	2	5
- of which >10 MW ¹³	35	95	35	95
- of which pumped ¹³	0	0	0	0
- of which mixed ¹⁵	0	0	0	0
Geothermal	0	0	0	0
Solar¹⁶:	145	100	365	254
- of which photovoltaic	145	100	365	254
- of which concentrated solar power	0	0	0	0
Tide, wave, ocean	0	0	0	0
Total wind¹⁷:	2 316	4 725	2 433	4 939
- of which onshore	2 088	3 982	2 205	4 156
- of which offshore	228	743	228	782
Total biomass:	1 297	7 071	1 243	7 239
- of which solid biomass ¹⁸	1 063	6 011	1 007	6 195
- of which biogas ¹⁹	217	1 060	219	1 043
- of which bioliquids ²⁰	17	0	17	0
TOTAL	3 795	11 996	4 078	12 532
of which in CHP	807	4 439	846	4 752

¹² Facilitates comparison with Table 10a of the NREAPs.

¹³ Normalised in accordance with Directive 2009/28/EC.

¹⁴ Statistics Netherlands only provides totals. Due to data confidentiality, Statistics Netherlands cannot provide a breakdown and is bound by legal obligations in this regard. The breakdown is based on data from the NREAP.

¹⁵ In accordance with new Eurostat methodology.

¹⁶ Electricity from solar energy is entirely photovoltaic.

¹⁷ In accordance with the procedure under Directive 2009/28/EC total wind energy has been normalised. The breakdown into onshore and offshore wind has been based on (non-normalised) electricity production from onshore and offshore wind.

¹⁸ Including renewable fraction of domestic waste.

¹⁹ Including electricity production from green gas.

²⁰ Since 2011 only bioliquids that demonstrably meet the sustainability criteria from the Renewable Energy Directive have counted.

Table 1c: Total actual contribution (final energy consumption) from each renewable energy technology in the Netherlands to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (TJ and ktoe)²¹

	2011 TJ	2012 TJ	2011 ktoe	2012 ktoe
Geothermal (excluding low temperature geothermal heat in heat pump applications)	316	495	8	12
Solar	1 041	1 069	25	26
Biomass:	30 463	32 261	728	771
- of which solid biomass ²²	25 626	26 842	612	641
- of which biogas ²³	4 837	5 419	116	129
Renewable energy from heat pumps:	4 828	5 505	115	131
- of which aerothermal	2 312	2 654	55	63
- of which geothermal ²⁴	2 516	2 851	60	68
TOTAL	36 648	39 330	875	939
Of which DH²⁵	8 768	9 632	209	230
Of which biomass in households	12 503	12 663	299	302

²¹ Facilitates comparison with Table 11 of the NREAPs.

²² Including renewable fraction of domestic waste.

²³ Including final consumption for heat from green gas.

²⁴ Including a small portion of hydrothermal (heat from surface water).

²⁵ Defined as sold heat, therefore including steam sold to industry.

Table 1d: Total actual contribution from each renewable energy technology in the Netherlands to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (TJ and ktoe)^{26,27}

	2011 TJ	2012 TJ	2011 ktoe	2012 ktoe
Biogasoline	6 231	5 211	149	124
- of which biofuels, Article 21(2) ²⁸	confidential	509	confidential	12
- of which imported ²⁹	not known	not known	not known	not known
Biodiesel	7 207	8 142	172	194
- of which biofuels, Article 21(2) ³⁰	confidential	7 634	confidential	182
- of which imported ³¹	not known	not known	not known	not known
Total for biogasoline and biodiesel	13 438	13 353	321	319
- of which counting double	6 958	8 143	166	194
Hydrogen from renewables	0	0	0	0
Renewable electricity	1 174	1 259	28	30
- of which road transport	9	14	0	0
- of which non-road transport	1 165	1 245	28	30
Others (as biogas, vegetable oils, etc.)	-	-	-	-
- please specify				
- of which biofuels, Article 21(2) ³²	-	-	-	-
TOTAL	21 584	22 776	516	544

²⁶ For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

²⁷ Facilitates comparison with Table 12 of the NREAPs.

²⁸ Biofuels that are included in Article 21(2) of Directive 2009/28/EC, (double-counting biofuels).

²⁹ From the whole amount of bioethanol/bio-ETBE.

³⁰ Biofuels that are included in Article 21(2) of Directive 2009/28/EC, (double-counting biofuels).

³¹ From the whole amount of biodiesel.

³² Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

Question 2. Measures taken in 2011 and 2012 and/or planned at national level to promote the growth of energy from renewable sources

Measures taken in 2011 and 2012 and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in the National Renewable Energy Action Plan.

In 2011 and at the end of 2012 a number of policy adjustments were made by the First and Second Rutte Cabinets to achieve the European target. Table 2 provides an overview of the measures in progress in 2011 and 2012, together with new measures from 2011 and 2012.

Table 2a: Overview of policy and measures 2011 and 2012

Name of measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
SDE+ [Promotion of Sustainable Energy Production Scheme Plus]	Financial	Energy generated	Energy producers	Existing	2011-
SDE [Promotion of Sustainable Energy Production Scheme]	Financial	Energy generated	Energy producers (incl. consumers)	Existing	2008-2010 (payment for max. 15 years)
MEP [Environmental Quality of Electricity Production]	Financial	Energy generated	Energy producers	Existing	2003-2006 (payment for max. 10 years)
OVMEP [Transitional Environmental Quality of Electricity Production Scheme]	Financial	Energy generated	Energy producers	Existing	2006-2007 (payment for 10 years)
EIA [Energy Investment Allowance]	Financial (fiscal)	Installed capacity	Energy producers	Existing	2001-
MIA/VAMIL [Environmental Investment Allowance/Random Depreciation of Environmental Investments]	Financial (fiscal)	Installed capacity	Energy producers	Existing	MIA: 2000 VAMIL: 1991-
Garantieregeling geothermie [Geothermal guarantee scheme]	Financial	Installed capacity	Energy producers	Existing	2009-
Groen beleggen [Green investment]	Financial (generic, financing)	Installed capacity	Energy producers and investors	Existing	1995-
Innovatiekrediet [Innovation loan]	Financial (generic, financing)	Energy innovation	Energy producers	Existing	2008-
Garantie Ondernemersfinanciering [Entrepreneurial financing guarantee]	Financial (generic, financing)	Installed capacity	Energy producers	Existing	2008-
Borgstelling MKB kredieten [SME loan guarantee]	Financial (generic, financing)	Installed capacity	Energy producers	Existing	2008-
Subsidierегeling hernieuwbare warmte [Renewable Heat Subsidy Scheme]	Financial	Installed capacity	End users (individuals)	Existing	2009-2011
Subsidierегeling zonnepanelen Lenteakkoord [Spring Agreement Solar Panel Subsidy Scheme]	Financial	Installed capacity	End users (individuals)	Existing	2012-2013
Innovatieagenda energie [Energy Innovation Agenda]	Financial	Installed capacity, energy generated, energy innovation	Energy producers	Existing	2008-2012
Energy Top Sector	Financial	Installed capacity, energy generated, energy innovation	Industry and research institutes, government	Existing	2011-

Table 2a: Overview of policy and measures 2011 and 2012 (continued)

Name of measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
Subsidieprogramma proeftuinen intelligente netten [Smart grid test bed subsidy programme]	Financial	Energy innovation	Energy transporters	Existing	2011-2015
Subsidieprogramma proeftuinen duurzame mobiliteit: rijden op biogas en hogere blends biobrandstoffen [Sustainable mobility test bed subsidy programme: biogas and higher biofuel blends]	Financial	Energy innovation	End users	Existing	2011-2013
Subsidieprogramma proeftuinen duurzame mobiliteit: hybride en elektrisch rijden [Sustainable mobility test bed subsidy programme: hybrid and electric transport]	Financial	Energy innovation	End users	Existing	2009-2014
Subsidieregeling demonstratieprojecten schoon en zuinig [Clean and efficient demonstration projects subsidy scheme]	Financial	Energy innovation	End users (agriculture)	Existing	2011-2012
Subsidieregeling marktintroductie energie innovaties [Energy innovations market launch subsidy scheme]	Financial	Energy innovation	End users (glasshouse horticulture)	Existing	2009-2012
Energy tax on electricity and gas (offsetting of electricity, renewable heat)	Financial	Energy generated	End users	Existing	1996-
Differentiated private motor vehicle and motorcycle purchase tax/motor vehicle ownership tax	Financial	Installed capacity	End users (cars)	Existing	2011-
Biofuel obligation	Regulatory	Energy generated	Transport fuel traders	Existing	2007-
Structuurvisie Infrastructuur en Ruimte [Structural Vision for Infrastructure and Space]	Regulatory	Installed capacity	Various	Ready	2012-
Structuurvisie wind op land [Structural Vision for Onshore Wind]	Regulatory	Installed capacity	Various	Planned ³³	2014-
Structuurvisie wind op zee [Structural Vision for Offshore Wind]	Regulatory	Installed capacity	Various	Planned	2014
Rijkscoördinatierегeling [National coordination scheme]	Regulatory	Installed capacity	(Central) government, energy producers	Existing	2008-
Crisis-en herstelwet (provinciale coördinatierегeling) [Crisis and Recovery Act (provincial coordination scheme)]	Regulatory	Installed capacity	(Provincial) authorities, energy producers	Existing	2010-
Gemeentelijke coördinatierегeling [Municipal coordination scheme]	Regulatory	Installed capacity	(Municipal) authorities, energy producers	Existing	2008-
Wabo [Environmental Law (General Provisions) Act]	Regulatory	Installed capacity	Government	Existing	2010-

³³ Draft Structural Vision for Onshore Wind is ready and was made available for inspection on 28 March 2013 (http://www.centrumpp.nl/projecten/alle_procedures/ontwerp_structuurvisie_windenergie_op_land_en_milieueffectrapport__2013.aspx).

Table 2a: Overview of policy and measures 2011 and 2012 (continued)

Name of measure	Type of measure	Expected result	Targeted group and/or activity	Existing or planned	Start and end dates of the measure
(Tightening up of) Energy Performance Coefficient (EPC)	Regulatory	Installed capacity	Government, planners, architects	Existing	1995- (tightened up in 2011)
Voorrang voor Duurzaam opgewekte energie [Priority for Sustainably Generated Energy]	Regulatory	Energy generated	Energy producers	Existing	2010-
Gas Act and Electricity Act	Regulatory	Energy generated	Energy producers and transporters	Existing	Gas: 2000- Electricity: 1998-
Energy Report 2011	Soft	Behavioural change, installed capacity and energy generated	Various	Existing	2011-
National Expertise Centre for Heat	Soft	Behavioural change, installed capacity	Various	Existing	2009-
Nationaal plan bijna energie-neutrale gebouwen [National plan for nearly zero-energy buildings] (BENG)	Soft	Behavioural change, regulatory	Governments, building managers, homeowners	Existing	2012-
Certificeringsregeling en opleidingsstructuur duurzame energie voor installateurs [Sustainable energy certification scheme and training structure for installers]	Soft	Behavioural change, regulatory	Sustainable energy installers	Existing	2012-
Plan van Aanpak Elektrisch Rijden [Electric mobility action plan]	Soft and financial	Behavioural change	Investors, end users, government	Existing	2009-

Since the beginning of 2011, the governing body and platforms for developing the EnergyTransition have no longer been active. The themes of the EnergyTransition are still current, however, and are being followed up both through government policy and private initiatives. Examples include the Green Deal, Energy Top Sector and market initiatives such as ‘Stichting Groen Gas Nederland’ (Netherlands Green Gas Foundation).

The Netherlands makes use of agreements to generate support and commitment amongst organisations for its (renewable) energy policy. Agreements contribute to the implementation of the proposed policy instruments and the achievement of (renewable) energy policy targets. The table below provides an overview of the agreements in force in 2011 and 2012.

Table 2b: Overview of agreements

Agreement	Date	Signatories	Aims
Green Deal	2011-	Citizens, businesses, other authorities, social organisations and central government	To realise sustainable local projects in fields including energy saving, sustainable energy, sustainable mobility and the sustainable use of raw materials and water
Long-term agreements on energy efficiency (MJAs)	Various years	MJA-e+ (2007-2011): Bulbs, bulb cultivation and mushroom cultivation MEE: ETS businesses MJA3 (2001-2020): municipalities and non-ETS businesses	To improve energy efficiency in businesses and institutions; in-house and in the chain
Climate agreement between municipalities and central government	2007-2011	Association of Netherlands Municipalities (VNG) and central government	To realise 'Clean and Efficient' objectives
Climate and Energy Agreement between provinces and central government	2009-2011	Association of Provincial Authorities (IPO) and central government	To contribute to the realisation of 'Clean and Efficient' objectives
Meer met Minder [More with Less]	2008-2011	Bouwend Nederland, UNETO-VNI, Energie Nederland and central government	To realise additional energy savings of 100 petajoules in existing buildings in 2020
Reassessment of More with Less: Agreement on energy saving in existing buildings and homes	2012-	Bouwend Nederland, UNETO-VNI, Energie Nederland and central government	To improve the energy performance of at least 300 000 existing homes and other buildings by at least two levels on the energy label each year
Spring Agreement Energy saving in new buildings	2008-2011	Bouwend Nederland, Neprom, NVB and central government	Compared with the building-related energy consumption in accordance with the 2007 EPC requirement: 25 % lower standardised energy consumption in 2011 50 % lower standardised energy consumption in 2015
Agreement reassessing Spring Agreement	2012-	Bouwend Nederland, Aedes, Neprom, NVB and central government	Compared with the building-related energy consumption in accordance with the 2007 EPC requirement: 50 % lower standardised energy consumption in 2015
Agreement on energy saving in the housing association sector	2008-2011	Aedes, Woonbond and central government	In accordance with More with Less and Spring Agreement. Additional energy-saving measures; 24 petajoule saving in 2020
Reassessment of Agreement on energy saving in the housing association sector: Rental sector agreement	2012-	Aedes, Nederlandse Woonbond, Vastgoed Belang	To ensure all rental housing stock of housing associations has an average Energy Index of at least 1.25 (average energy label B) in 2020 and to ensure 80% of the housing stock of Vastgoed Belang has a C label or better.
'Clean and Efficient Agricultural Sectors' Agreement	2010-	Central government and agricultural sectors	To achieve 30% of greenhouse gas emissions in 2020 compared with 1990.

Question 2a. Progress made in evaluating and improving administrative procedures

Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy.

The administrative procedure for renewable energy projects has been structured more efficiently in recent years with the introduction of the State Coordination Program for (Energy) Infrastructure of National Interest, the Crisis and Recovery Act (provincial and municipal coordination program) and the Environmental Law (General Provisions) Act (Wabo). Administrative procedures have also been simplified by means of digital one-stop shops (such as the Omgevingsloket Online [Online Environment Office]), where it is possible to apply for environmental permits, and the E-loket [E-office], where support applications can be made).

Through the national coordination procedure, the siting of major renewable energy projects of national importance is dealt with under the guidance of the Ministry of Economic Affairs and the Ministry of Infrastructure and the Environment and the granting of permits is coordinated. This shortens the time it takes to deal with siting and the granting of permits.

Coordination schemes were also introduced for provinces and municipalities when the Crisis and Recovery Act entered into force. In addition, this Act streamlined administrative procedures. Shorter time limits have been imposed on the courts, for example, and local and regional authorities can no longer appeal against decisions made by central government.

The Environmental Law (General Provisions) Act (Wabo) simplifies and speeds up the granting of permits and also ensures that a better service is provided by the government in the areas of construction, space and the environment. Renewable energy projects are also covered by this Act. There is a single decision-making period and a single appeal procedure.

2012 saw the publication of the Planning Vision for Infrastructure and Landscape, which presents spatial plans in these two areas. The plans for renewable energy generation are being developed in specific structural visions. For example, the definitive Planning Vision for Onshore Wind Power will be published at the beginning of 2014 and structural visions are also being developed for offshore wind and underground infrastructures. A structural vision for pipelines was completed in 2013.

The Ministry of Infrastructure and the Environment in particular has been working on resolving bottlenecks relating specifically to onshore wind, in the areas of noise, location-specific risks, pipeline safety, road and waterway safety, water defence safety, military radar disruption and nature conservation, to ensure that market parties have greater scope to realise wind energy projects.

This has resulted in the following measures:

- Noise: with effect from 1 January 2011 a new standard for exposure to noise from wind turbines has been introduced for homes in the Activities Decree. This new standard has speeded up the procedure and made noise data clearer, while offering the same protection for residents.
- Location-specific risks: with effect from 1 January 2011 a standard distinction has been introduced in the Activities Decree between the permitted location-specific risk of a vulnerable property and a property with limited vulnerability. This amendment has speeded up the procedure and improved the assessment of risks.

- Pipeline safety: with effect from 1 January 2011 the Public Safety (Pipelines) Decree³⁴ entered into force. This decree specifies a calculation method for assessing wind turbines close to pipelines, for example.
- Military radar disruption: with effect from 1 October 2012, Article 2.6.9 of the General Rules for Spatial Planning Decree entered into force. The assessment model employed to forecast any disruption caused by wind turbines to radar images used for military and civil aviation has been adjusted. This makes it possible to erect more wind turbines.
- Nature conservation: the Nature Conservation Act and the Flora and Fauna Act have been evaluated and were sent to the Lower House in 2012. Following the evaluation, the Cabinet submitted a legislative proposal to curtail 'gold-plating' of legislation and regulations over and above the obligations arising directly from European Directives. This will result in shorter procedures when the proposal enters into force.

³⁴ http://wetten.overheid.nl/BWBR0028265/geldigheidsdatum_05-12-2013.

Question 2b. Measures taken to ensure the transmission and distribution of electricity produced from renewable energy sources and to improve the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements

Please describe the measures taken to ensure the transmission and distribution of electricity produced from renewable energy sources and to improve the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements.

On the basis of the Dutch Electricity Act 1998 (Article 23), grid operators are obliged to connect installations to the grid without discrimination. The connection must be made within a reasonable period following installation. This period is limited to 18 weeks for (a) a connection up to 10 MVA or (b) a connection for a production installation that generates sustainable electricity or is used for high-efficiency cogeneration (CHP). The waiting lists for connection that used to exist have been remedied by making a distinction between access to the grid and transmission on the grid. Grid access is therefore guaranteed for all production installations.

Grid operators are also obliged to transport the electricity produced, unless the grid capacity is insufficient (Electricity Act 1998, Article 24). If there appears to be inadequate transport capacity, congestion management is employed. Congestion is relatively uncommon in the Netherlands and is limited to specific regions and specific times. Consequently, the net costs estimated for the congestion management system are much lower than those associated with connection waiting lists. The costs of congestion management are socialised via the transport tariffs.

The Congestion Management Decree, which regulates the priority status of energy generated from renewable sources within the congestion management system, was published in the Bulletin of Acts and Decrees on 24 October 2012. Grid operators are currently working on amending the grid codes so that the principle of priority for renewable energy can be applied. The transmission and distribution of electricity from renewable energy sources is in fact already guaranteed. In practice, if a congestion area is identified, grid operator Tennet keeps sustainable energy production out of this area; if production needs to be down-regulated within a congestion area, renewable energy generation is not affected.

Structural congestion is being remedied by making investments in extra grid capacity. Grid operators in the Netherlands are obliged by law to make the necessary capacity available (Electricity Act, Article 16). Attention is, however, paid to making these investments in the most economically efficient way. Consideration also has to be given to 'measures in the area of sustainable electricity, energy saving and demand management or decentralised electricity production which may overcome the need to replace or increase production capacity' (Electricity Act, Article 16(1)(c)).

In the third structural vision for the electricity supply (SEV III) space has been reserved for the large-scale production and transportation of electricity in the Netherlands. SEV III will run until 2020. It was evaluated in 2012. The evaluation revealed that these reservations are sufficient to absorb onshore and offshore wind energy on the high-voltage grid until 2020.

Question 3. Support schemes and other renewable energy measures

Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan.

The following schemes for promoting the use of renewable electricity are described in this section.

1. SDE+
2. SDE
3. MEP
4. EIA
5. Green Projects Scheme
6. Solar Panels Subsidy Scheme
7. Energy Top Sector
8. Green Deals

1. Promotion of Sustainable Energy Production Scheme Plus, SDE+

The Promotion of Sustainable Energy Production Scheme Plus (SDE+) was opened for the first time on 1 July 2011. SDE+ is a technology-neutral scheme. It aims to promote the generation of as much renewable energy as possible per euro by promoting the cheapest technologies and by allocating the available budget on the basis of competition between renewable electricity, renewable heat and green gas projects. The less subsidy one needs, the more likely it is that there might still be budget available. Initiators are given the opportunity to make their submission in the 'free category' at a lower amount than that advised by the Energy Research Centre of the Netherlands (ECN) for the technology concerned. Through its design, the SDE+ scheme adheres to the best practice principles for feed-in premium schemes recently published by the Commission³⁵.

By covering the unprofitable gap of projects, SDE+ offers long-term financial security (up to 15 years). The scheme is financed by a surcharge on energy bills. It is a feed-in premium scheme: a payment is made for the difference between the cost price of energy from fossil fuels and that of sustainable energy for a period of up to 15 years (guaranteed price – corrective amount = subsidy). The guaranteed price is the average cost price of the renewable energy technology, or the sum of investment and operating costs, plus a reasonable profit margin, divided by the amount of renewable energy expected to be produced. The corrective amount is derived from the energy prices expected and achieved (the price that the producer can obtain for the energy on the market). An expected energy price is determined ex ante for the advance payment of projects (provisional corrective amount). The energy price is then determined at the end of each calendar year for the past year (definitive corrective amount). As the corrective amount may differ each year, the producer receives a different subsidy amount per unit of energy produced in each calendar year. However, the producer does have an almost constant yield from the produced energy and the SDE+ subsidy in euros per kilowatt hour.

There is an upper limit for the subsidy. The maximum subsidy per unit of energy produced may not exceed the difference between the guaranteed price and the basic energy price (2/3 of the average energy price expected over the long term).

³⁵ European Commission Guidance for the Design of Renewables Support Schemes, November 2013, SWD(2013) 439 final.

The guaranteed price and the corrective amounts are based on independent advice from the Energy Research Centre of the Netherlands (ECN) and DNV KEMA. Each year the guaranteed prices are reviewed and adjusted in line with the developments on the market. The advisory process involves a consultation with market parties. Stakeholders are given the opportunity to contribute to this consultation in writing and/or verbally. To check the advisory work of ECN and DNV KEMA, an annual review is conducted. In 2011 and 2012 this review was performed by Fraunhofer ISI in collaboration with the Technical University of Vienna.

SDE+ 2011 was opened on 1 July 2011 and the obligations for renewable energy projects were published in December 2011. In 2012 the SDE+ scheme was opened on 13 March. Following approval by the Commission within the framework of state aid, it was possible to enter into obligations at the end of 2012. Since the start of SDE+, obligations amounting to more than € 6 billion have been committed. Most renewable energy projects require virtually the full implementation period of four years. The projects that have been awarded an SDE+ subsidy will result in an increasing share of renewable energy from 2013 onwards.

Table 3: results of SDE+ in 2011 and 2012

	SDE+ 2011	SDE+ 2012
Available budget	€ 1.5 billion	€ 1.7 billion
Number of projects committed to	740	244
Guaranteed price awarded to projects	9 €/ct/kWh	7 €/ct/kWh
SDE+ contribution to the renewable energy target	0.4 % points	0.7 % points

2. Promotion of Sustainable Energy Production Scheme, SDE (2008-2010)

The predecessor of SDE+ was the Promotion of Sustainable Energy Production Scheme (SDE). Just like SDE+, SDE was a feed-in premium scheme that was opened annually. Unlike SDE+, in the SDE scheme a budget ceiling was published for each technology and a guaranteed price was determined. SDE started in 2008 with the opening of various subsidy categories for renewable electricity and green gas and was opened for the last time in 2010. Cash payments arising from obligations entered into by the end of 2010 on the basis of SDE are expected to be covered from general funds up until the end of 2030.

A number of projects, mainly large ones, that were awarded an SDE subsidy are yet to be completed. The Noordoostpolder wind farm (429 MW) and offshore wind farms Q10, Buitengaats and Zee-energie (total of 719 MW) require a lot of time for completion, but are making good headway.

3. Environmental Quality of Electricity Production, MEP (2003-2006)

Under the Environmental Quality of Electricity Production (MEP) scheme, subsidies were awarded between 2003 and 2006 in the form of a fixed feed-in premium for renewable electricity projects. MEP was an open-ended scheme. The last commitments for the MEP scheme were entered into in 2006. The MEP subsidy was a fixed subsidy tariff for each kilowatt hour produced and applied for a period of 10 years. A year-long transitional scheme was put in place for biomass digestion projects. The cash payments for the MEP scheme will decrease sharply up to the end of 2020 and will be covered from general funds until this time.

Table 3a: Cash payments for MEP, SDE and SDE+ for renewable energy.

MEP, SDE and SDE+ support schemes 2012	Support per unit³⁶	Total (x € 1 million)
MEP Onshore wind	0.077 €/kWh	226.9
MEP Offshore wind	0.097 €/kWh	78.5
MEP Biomass (incl. waste and landfill gas; incl. transitional MEP)	0.069 €/kWh	306.5
MEP Solar	0.097 €/kWh	0.5
MEP Hydropower	0.097 €/kWh	7.2
Estimated total of annual support from MEP³⁷		619.6
SDE Onshore wind	0.051 €/kWh	18.1
SDE Offshore wind ³⁸		0
SDE Biomass renewable electricity (incl. sustainable energy from waste and landfill gas)	0.042 €/kWh	36.3
SDE Biomass renewable gas	0.334 €/Nm ³	5.7
SDE Solar	0.334 €/kWh	11.5
SDE Hydropower	-	0.0
Estimated total of annual support from SDE		71.5
SDE+ Onshore wind	0.047 €/kWh	0.2
SDE+ Offshore wind***		0
SDE+ Biomass renewable electricity (incl. sustainable energy from waste and landfill gas)	0.029 €/kWh	0.5
SDE+ Biomass renewable heat and CHP	8.2 €/GJ	1.1
SDE+ Biomass renewable gas	0.366 €/Nm ³	0.8
SDE+ Solar	0.041 €/kWh	0.1
SDE+ Hydropower		0
SDE+ Geothermal	5.3 €/GJ	0.1
Estimated total of annual support from SDE+		2.8

4. Energy Investment Allowance (EIA)

The Energy Investment Allowance is intended for entrepreneurs who want to invest in energy-saving technologies and the use of renewable energy within their business. Entrepreneurs can deduct 41.5 % of the investment costs from their taxable profit, in addition to the usual depreciation. The EIA is a generic scheme. The business assets or parts thereof that are eligible are stated on the EIA Energy List. This list is updated annually and aligned with the best available alternatives on the market.

³⁶ The amount of energy supported by means of the support per unit provides an indication of how effective the support is for each type of technology. Average basic and corrective amounts have been taken as a basis in this table for SDE and SDE+. In the case of wind energy a correction has been made for the wind factor and in the case of waste for the percentage of biogenic waste. For biomass to which a graduated payment applies based on heat usefully employed, the average graduated payment for heat and a cost-effectiveness per kWh for electricity and heat together have been taken as a basis. An average of the guaranteed prices for 2008-2010 has been taken as a starting point for SDE, minus the corrective amount for 2012. In the case of SDE+ an estimate of the average guaranteed price for the (free) category in which the application was made has been taken as a basis for the guaranteed price.

³⁷ In the case of MEP (excl. biomass) the fixed subsidy contribution per unit is indicated.

³⁸ In the case of SDE offshore wind 2009, subsidies worth 5 billion euros were awarded. These wind farms are now being realised, but were not yet in production in 2012.

This fiscal scheme of the Ministry of Finance and the Ministry of Economic Affairs is implemented by NL Agency and the Dutch Tax and Customs Administration. NL Agency assesses a notification on the basis of the technical and administrative requirements of the EIA and issues a declaration if the requirements are met. The Dutch Tax and Customs Administration determines whether or not an entrepreneur will receive an EIA. For both 2011 and 2012 the EIA budget amounted to € 151 million and it was not utilised fully in either year due to the economic crisis (€ 109 million in 2011 and € 94 million in 2012). In 2011, 44 % of the investment amount notified concerned investments in renewable energy. The corresponding figure in 2012 was 21 %.

5. Green Projects Scheme

Consumers can purchase green securities (green saving) or shares in a green investment fund (green investment). Anyone participating in green saving or green investment invests in green products that have been approved by the Dutch Government and benefits from tax advantages.

Banks then lend the funds contributed, at a lower interest rate, to projects whose performance in the area of nature and the environment is clearly better than the usual standard and considerably better than the statutory minimum requirements. There is a list of eligible project categories. Performance in the area of nature and the environment has been laid down in the form of requirements, which are verified by the agencies NL Agency and Dienst Regelingen [Subsidy Schemes Service].

According to the 2013 and 2014 budget memoranda, the fiscal expenditure connected with the scheme amounted to € 133 million in 2011 and € 95 million in 2012.³⁹

6. Solar Panels Subsidy

Following the Budget Agreement, a temporary subsidy scheme for solar panels was launched for private individuals with effect from 2 July 2012. The subsidy amounted to 15 % of the purchase price of a solar PV installation. A maximum of 3.5 kilowatt peaks was subsidised for each installation, which corresponded to an amount not exceeding € 650. The available budget for 2012 and 2013 was almost € 51 million and the budget was exhausted on 8 August 2013.

7. Energy Top Sector

To promote innovation, the Cabinet has designated nine top sectors. These are sectors in which the Netherlands is a major global player. The starting point for this approach is that the government is no longer the sole party that determines the direction taken through its regulations and subsidies, but that Dutch companies take control to a greater extent and are given the freedom to be entrepreneurial, to invest, to innovate and to export. The top sector policy is based on a sectoral and integrated approach, as opportunities and bottlenecks are often sector specific and relate to a wide range of factors linked to the climate for establishing a business. This is the case, for example, for bottlenecks in the area of knowledge and innovation, (sector-specific) regulations, taxation, the financing of new products, the alignment of education with the labour market and the accessing of foreign markets. The precise nature and extent of these bottlenecks differ significantly from one sector to another. Content-related and financial agreements have been laid down in so-called innovation contracts. These consist of a mix of measures in the areas of fundamental research, applied research and valorisation. A top team has been appointed for each top sector area, including representatives from SMEs, the scientific community, the government and a figurehead from the sector, which is responsible for implementing the innovation contracts.

³⁹ Notional yield exemption + tax credit for green investment in budget memoranda:
for 2011: http://www.rijksbegroting.nl/2013/voorbereiding/miljoenennota,kst173802_14.html
for 2012: http://www.rijksbegroting.nl/2014/voorbereiding/miljoenennota,kst186728_14.html

One of the nine top sectors is the energy sector. The Energy Top Sector is made up of seven top consortia (the top consortia for knowledge and innovation (TKIs) for offshore wind, solar energy, bioenergy, smart grids, energy saving in the built environment, energy saving in industry and gas). Almost 400 public and private organisations are participating financially in the Energy Top Sector, with close to half of these being SMEs. Total energy innovation resources of € 120 million were available for the TKI participants in 2012. In addition, the government made a total of € 23.2 million available via the Energy Research Centre of the Netherlands (ECN) and the Netherlands Organisation for Applied Scientific Research (TNO). The proportion of the programmes financed by companies is approximately 43 %.

8. Green Deals

On 3 October 2011 the Green Deal approach was presented. This is a low-threshold approach that the Cabinet is using to encourage green growth. The Cabinet is facilitating initiatives of companies, social organisations, local and regional authorities and citizens by removing bottlenecks (relating, for example, to existing legislation and regulations or access to financing). Bottom-up initiatives from society form the basis of the Green Deal approach. The themes covered are energy, raw materials, mobility, biodiversity and water.

The Green Deal approach forms an important part of the Cabinet's wider sustainability policy. Since its launch in 2011, 153 Green Deals have been concluded, of which 100 relate to energy. A total of 679 parties are involved (including companies, sector organisations, local and regional authorities and knowledge institutions). According to the parties, 68 % of the initiatives were realised more quickly thanks to the Green Deal approach.

An important side effect of the Green Deal approach is that it has resulted in a new and different way of working within central government. This is characterised by a focus on removing barriers (policy assistants have the task of resolving bottlenecks on behalf of central government), 'opening windows and doors' (policy assistants are encouraged to seek contact with parties in the field to identify bottlenecks), a focus on collaboration (a Green Deal always comprises contributions from central government and parties in the field), a bottom-up approach (parties in the field are invited to come forward with initiatives) and a project-based method of working (policy assistants support one or more Green Deals).

Question 3.1 How supported electricity is allocated to final customers.

Please provide the information on how supported electricity is allocated to final customers.

On 1 January 2005 the electricity labelling scheme came into force. This scheme makes it compulsory for energy suppliers to inform final customers of how the electricity they supply has been generated. No later than four months after the end of a calendar year final customers are informed of the composition of the electricity supplied over the past calendar year. Energy suppliers use guarantees of origin and guarantees of origin from EU countries to validate the share of their supply obtained from renewable sources. The remaining electricity supply comprises trade balances of the energy suppliers.

By means of the electricity label, energy suppliers also inform customers of the amount of radioactive waste per kWh that resulted from the generation of the nuclear energy supplied and of the amount of CO₂ released from the supplied energy generated from fossil sources.

Question 4. Support schemes that take into account RES applications that give additional benefits

Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits in relation to other, comparable applications, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material.

The MEP and SDE schemes both included a category for renewable electricity generation from waste incineration. In the SDE, renewable heat from waste incineration was also eligible in addition to renewable electricity. The possibilities for this additional utilisation of heat have been expanded further in the current SDE+ scheme. Not all the sustainable energy produced is eligible for support, but only the energy that a plant produces over and above that of a theoretical reference plant, or the additional heat that is used beneficially. Since 2012 no further subsidies have been granted for new waste incineration plants, as there is currently no need for new waste incineration capacity in the Netherlands.

In addition to the category for sustainable energy from waste incineration, the MEP, SDE and SDE+ schemes also include scope for renewable energy from anaerobic digestion. This mainly relates to the anaerobic digestion of waste streams, such as manure and vegetable, fruit and garden waste. The benefit of these routes is that the waste in question is used beneficially, instead of being directly removed for processing.

The Energy Investment Allowance promotes investment by entrepreneurs in energy-saving technologies and the use of renewable energy within their business. It applies to the energy investments included on the Energy List. The business assets described meet a particular saving or efficiency requirement, which means that the best available alternatives are encouraged. One example within the category of renewable energy is the biofuel production plant intended for the production of solid, liquid or gaseous fuels from ligneous or cellulosic compounds. The Energy List is updated annually.

In 2009 the Ministerial Regulation on the Double Counting of Better Biofuels entered into force. This was changed with effect from 1 January 2013 to the Renewable Energy for Transport Regulation. Under certain conditions, biofuels produced from waste, residues, non-food cellulosic material and ligno-cellulosic material may be counted double for the purposes of complying with the annual obligation. A table of raw materials that are eligible and ineligible for double counting is appended to the regulation with the aim of providing greater clarity.

In May 2011 the Dutch legislation implementing the Renewable Energy Directive and Fuel Quality Directive⁴⁰ was published. This legislation entered into force with retroactive effect from 1 January 2011. The double counting of biofuels is described in Article 16 of the Renewable Energy for Transport Regulation. There are no additional support measures for biofuels other than this double counting.

⁴⁰ Directive 2009/30/EC.

Question 5. System of guarantees of origin

Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system.

In the Netherlands guarantees of origin must have been issued for electricity to be considered renewable. Guarantees of origin for electricity are issued here by CertiQ, a wholly owned subsidiary of TSO TenneT. Some of the tasks performed by CertiQ are TenneT's statutory tasks, as laid down in the Electricity Act. CertiQ reports directly to TenneT and its public shareholders. To this end CertiQ draws up an annual plan and annual report and periodically presents its results to the ACM (Authority for Consumers and Markets) and the Ministry of Economic Affairs.

For renewable gas a statutory certification system is being introduced from 2014. The green gas certificates will be issued by Vertogas.

There will also be a statutory certification system for renewable heat from 2014. A voluntary system for heat certificates has been in operation since 2012. These certificates are issued by CertiQ.

Question 6. Developments in the availability and use of biomass resources for energy purposes

Please describe the developments in 2011 and 2012 in the availability and use of biomass resources for energy purposes.

Most of the biomass used for electricity generation and heating originates from foreign waste and residue streams. It is primarily the biogenic fraction of the waste that is burned in waste incineration plants. A considerable amount of waste wood is also made available for energy purposes, both for applications in the Netherlands and other EU countries. In terms of kilograms, a large proportion of biomass originates from the agricultural industry. This mainly concerns wet waste streams (e.g. manure), which are anaerobically digested. Another important stream is the import of wood pellets for the co-firing of biomass in power stations. These have a primary energy content of approximately 20 PJ and largely originate from North America.

For 2011 and 2012 no data are available on the origin and type of raw materials used to produce biofuels for transport. There are data, however, on the origin and type of raw materials contained in the biofuels consumed in the Netherlands for transport. These data are set out in the Dutch Emissions Authority's (NEa) annual report.⁴¹ In line with the European Renewable Energy Directive, the administrative system relating to the blending obligation focuses on identifying biofuels that are brought onto the Dutch market. For these biofuel streams information is collected on the sustainability, origin and type of the raw materials, CO₂ performance, etc. Dutch factories that produce biofuels for transport do so not only for the Dutch market, but also to a large extent for foreign markets. At present the government does not collect any information on the type and origin of the raw materials for exported biofuels. Collecting such data would create an additional administrative burden. It is also doubtful that this information could be published, due to the possibility of tracing it back to individual companies.

⁴¹ NEa (2013) and (2014), 'Naleving jaarverplichting 2011 resp. 2012 hernieuwbare energie vervoer en verplichting brandstoffen luchtverontreiniging' ['Compliance with annual obligation for 2011/2012 relating to renewable energy for transport and obligation relating to fuels and air pollution'].

Table 4: Biomass supply for energy use^{42,43,44}

Domestic raw material							
	Physical units			PJ ⁴⁵		ktoe	
	2011	2012	unit	2011	2012	2011	2012
Biomass supply for heating and electricity							
Direct supply of wood (forests, gardens, parks)	1 285 333	1 301 761	m ³	10	11	249	252
Indirect supply of wood (waste wood, residues from wood processing) ⁴⁶	1 553 010	1 877 693	tonne	20	24	486	574
Energy crops	175 561	172 964	tonne	1	1	25	25
Agricultural residues and by-products	3 956 676	3 680 058	tonne	16	13	377	322
Biomass from waste	7 055 222	7 566 518	tonne	52	54	1 230	1 289
Others			tonne				

Table 4a: Current domestic agricultural land use for production of crops dedicated to energy production (hectares)

Domestic agricultural land use for crops dedicated to energy production	2011	2012
Energy maize	4 000	4 000
Rapeseed	< 2 000	< 2 100
Short rotation trees	13	6
Miscanthus	91	124

For rapeseed this is the total area.⁴⁷ It is not known what portion was used for energy crops. In 2012 hardly any domestically grown rapeseed or maize was used in the Netherlands for the production of biofuels for transport for the domestic market (NEa 2013). Rapeseed is used for 1.5 % of the biofuels brought onto the market in the Netherlands (FAME) and maize for 23.9 % (ETOH). The main supplier of rapeseed in 2012 was Germany (72 %), followed by France (27 %). With regard to maize, the main supplier in 2012 was the United States (63 %), followed by Hungary (12 %)⁴⁸. The area of forage maize cultivated for energy has been calculated by Statistics Netherlands using information from surveys of anaerobic digestion plant operators conducted in 2011. See also question 7 below.

Domestic agricultural land use for the cultivation of crops dedicated to energy production is minimal compared with the total area used for arable crops of 520 000 hectares and the total area used for green fodder (including forage maize) of 240 000 hectares in 2012.

⁴² Data originate from a combination of data from official energy statistics, work by the University of Utrecht for IEA Bioenergy task 40, the Green Deal report on the sustainability of solid biomass, Statistics Netherlands manure statistics and expert estimates.

⁴³ The amount of raw materials imported for the production of biomass for electricity and heat is small and has not been recorded separately.

⁴⁴ Imported wood pellets and wood chips that are used directly for the production of heat or electricity in the Netherlands are not raw materials and have therefore not been included in the table.

⁴⁵ The energy values of the raw materials have been determined on the basis of the tonnages/m³ and the calorific values of the incoming biomass streams. For biogas production this is based on the highest calorific value and for the use of solid biomass and bioliquids on the lowest calorific value.

⁴⁶ A substantial portion of the waste wood (approximately 7 PJ) is made suitable for consumption in the form of an energy carrier in the Netherlands through collection and sorting and is subsequently exported.

⁴⁷ CBS Statline, [http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=710000gs&D1=1-3&D2=15&D3=0&D4=0,6,\(I-2\)-I&VW=T](http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=710000gs&D1=1-3&D2=15&D3=0&D4=0,6,(I-2)-I&VW=T)

⁴⁸ NEa (2013), 'Naleving jaarverplichting 2012 hernieuwbare energie vervoer en verplichting brandstoffen luchtverontreiniging' ['Compliance with annual obligation for 2012 relating to renewable energy for transport and obligation relating to fuels and air pollution'].

Question 7. Changes in commodity prices and land use

Please provide information on any changes in commodity prices and land use in 2011 and 2012 associated with increased use of biomass and other forms of energy from renewable sources. Please provide where available references to relevant documentation on these impacts in your country.

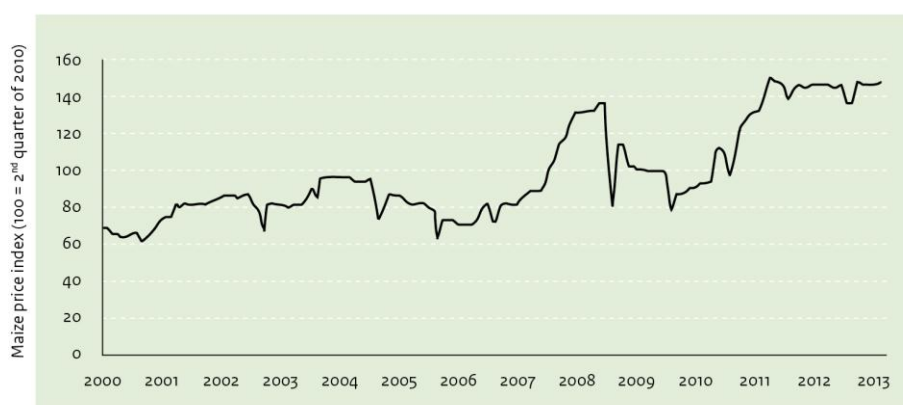
Changes in commodity prices

For wood pellets, wood chips and energy wood there is no indication that demand from energy applications in the Netherlands has led to changes in commodity prices in the preceding two years.

In 2011 and 2012 the Netherlands imported the vast majority of the wood pellets consumed. The prices for wood pellets fluctuated between 120 and 140 euros/tonne over 2011 and 2012. The average price of pellets on the ICE Index rose slightly in 2011 and remained fairly stable in 2012. It is an international market and the Netherlands produces only a fraction of its own use. The main factors that determine prices are dry bulk shipping rates, demand in other countries and supply.

A commonly used crop for energy generation in the Netherlands is energy maize (forage maize). The forage maize produced in the Netherlands (230 000 hectares) is largely used in the animal roughage industry, with only a few per cent being used for energy generation via (co-)digestion. Surveys of operators of anaerobic digestion plants⁴⁹ have revealed that the price of energy maize increased further by approximately 25 % in 2011 and 2012. The use of energy maize and industrial waste in anaerobic digestion plants decreased sharply in 2011 and 2012. Large plants that make use of maize as a (co-)substrate work with long-term contracts and notice little of the volatility on the daily market. The daily price of energy maize is influenced mainly by anticipated harvests and demand. It also emerges from the above-mentioned evaluation that the price of the co-substrates used for anaerobic digestion (besides maize these are mainly residue streams) is increasing due to rising domestic demand and demand from neighbouring countries, where the subsidy climate is more favourable. This increase has continued in recent years. Substrate costs account for approximately a third of operating costs.

Figure 2: Indexed maize prices for 2000-2013 based on prices of the LEI (Agricultural Economics Research Institute)^{50,51}



⁴⁹ Evaluation of anaerobic digestion plants in the Netherlands, phase 2 OWS, October 2013, (<http://www.agentschapnl.nl/actueel/nieuws/rapportage-procesmonitoring-verbeterpunten-voor-vergisting>).

⁵⁰ ECN and DNV KEMA, October 2013, 'basisbedragen in SDE+ 2014 eindadvies' ['guaranteed prices in SDE+ 2014 final recommendation'].

⁵¹ Index = 100 for the second quarter of 2010.

For energy wood, data concerning price development are available from individual suppliers. In most cases these data must be handled confidentially. In its annual report for 2012 Staatsbosbeheer⁵² [the organisation responsible for managing Dutch nature reserves] reported that the selling price for energy wood rose by around 30 % compared with 2011 and by around 20 % compared with 2010, with a volume of approximately 20 300 tonnes (2011: 36 000 tonnes; 2010: 53 000 tonnes). In 2011 Staatsbosbeheer's selling prices per tonne of energy wood were approximately 8 % lower than in 2010.

Changes in land use

In the Netherlands there were no significant changes in land use associated with increased use of biomass and other forms of energy from renewable sources.

From the above-mentioned survey of anaerobic digestion plant operators, Statistics Netherlands has calculated that the amount of forage maize used in 2011 corresponds to an area of roughly 4 000 hectares. Statistics Netherlands' agricultural census reveals that the total area of forage maize in 2011 was 230 000 hectares. Energy maize accounts for such a small proportion of the total area of maize that any changes to its area have a negligible impact on the total maize area.

In 2012 rapeseed was used for a limited portion of the biodiesel brought onto the market in the Netherlands (see also text under Table 4a)⁵³. Virtually all this rapeseed is imported. In 2011 and 2012 rapeseed covered an area of approximately 2 000 hectares⁵⁴. It is not known what portion of the harvest from this limited area is used for energy purposes.

⁵² <http://www.staatsbosbeheer.nl/> or

<http://www.staatsbosbeheer.nl/over%20staatsbosbeheer/jaarverslag%202012.aspx>.

⁵³ NEa (2013), 'Naleving jaarverplichting 2012 hernieuwbare energie vervoer en verplichting brandstoffen luchtverontreiniging' ['Compliance with annual obligation for 2012 relating to renewable energy for transport and obligation relating to fuels and air pollution'].

⁵⁴ Statistics Netherlands, agricultural census.

Question 8. Share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material

Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material.

Table 5: Production and consumption of Art. 21(2) biofuels (TJ and ktoe)

Art. 21(2) biofuels ⁵⁵				
	TJ		ktoe ⁵⁶	
	2011	2012	2011	2012
Production of all biofuels (Art. 21(2) and non-Art. 21(2)):				
Biodiesel	18 167	43 549	434	1 040
Biogasoline	confidential	confidential	confidential	confidential
Consumption of all biofuels (Art. 21(2) and non-Art. 21(2)):				
Biodiesel	7 207	8 142	172	194
Biogasoline	6 231	5 211	149	124
Total production Art. 21(2) biofuels	not known	not known	not known	not known
Total consumption Art. 21(2) biofuels	6 958	8 143	166	194
Share of Art. 21(2) biofuels in final consumption of renewable energy for transport (%)	64	72	64	72

Since 2009 regulations have been in force in the Netherlands concerning the double counting of biofuels made from wastes, residues, non-food cellulosic material and ligno-cellulosic material. The Netherlands was the first country in the EU to introduce such regulations. In 2011 and 2012 such biofuels accounted for a share of approximately 64 % and 72 % respectively on an energy basis. In practice this mainly concerns biodiesel made from used frying fat and animal fats from abattoirs.

There are three major biodiesel manufacturers in the Netherlands that produce this type of biodiesel. The raw materials for the biofuels that can be double counted come from right across the European Union.

⁵⁵ Biofuels made from wastes, residues, non-food cellulosic material and ligno-cellulosic material.

⁵⁶ 1 PJ = 23.8845897 ktoe, 1 ktoe = 0.041868 PJ.

Question 9. Impact of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality

Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality in 2011 and 2012. Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country.

Hardly any raw materials for biofuels are cultivated in the Netherlands. The NUTS-2 study on emissions from the cultivation of raw materials for biofuels conducted by LEI Wageningen⁵⁷ reveals that, out of the four potential biofuel crops for the Netherlands that were studied, rapeseed is the only crop used for the production of biofuels (biodiesel). In 2011 and 2012 rapeseed was cultivated on a relatively small area of less than 2 100 hectares with an average yield of 3 800 kg per hectare⁵⁸. The other three crops studied (wheat, maize and sugar beet) have to date been cultivated almost entirely for food and/or feed and not for biofuel production. A small proportion of the area of forage maize is used for energy crop cultivation, as a raw material for the production of biogas from anaerobic digestion.

As hardly any raw materials for biofuels are cultivated in the Netherlands (in addition, hardly any new agricultural land is being brought into use), there are no impacts on biodiversity, water quality or soil quality as a result of the cultivation of biofuel crops in the Netherlands.

⁵⁷ Dutch energy crops, LEI Wageningen UR, 2010.

⁵⁸ Statistics Netherlands, 2008.

Question 10. Estimate of greenhouse gas emission savings due to renewable energy

Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources.

Since 2010 greenhouse gas emission savings due to the use of renewable electricity, heating and cooling, and transport have risen.

Table 6: Estimated GHG emission savings from the use of renewable energy (ktonnes of CO₂ equivalents)

Environmental aspects	2011	2012
Total estimated net GHG emission saving from using renewable energy ⁵⁹	9 278	10 108
- Estimated net GHG saving from the use of renewable electricity	6 957	7 648
- Estimated net GHG saving from the use of renewable energy in heating and cooling	1 536	1 621
- Estimated net GHG saving from the use of renewable energy in transport	786	839

The greenhouse gas emission savings from the use of renewable electricity and heat have been calculated on the basis of a substitution method in accordance with the Renewable Energy Monitoring Protocol⁶⁰. The reference technology for electricity is a national mix of gas-fired, coal-fired and nuclear power stations with emissions of 0.59 kg CO₂ per kWh in 2012. For heat the main reference technology is a gas-fired boiler with efficiency of 90 %, resulting in emissions of 63 kg CO₂ per GJ of useful heat.

The greenhouse gas emissions prevented by the consumption of biogasoline and biodiesel for transport in 2012 have been calculated from a combination of data taken from Statistics Netherlands energy statistics and data of the Dutch Emissions Authority (NEa) on the greenhouse gas performance of the biogasoline and biodiesel brought onto the market. The NEa received these data from companies that supply biogasoline and biodiesel under the Renewable Energy for Transport legislation and regulations and the Fuels and Air Pollution legislation and regulations.

For 2011 the emissions prevented have been calculated from the average reduction per unit of energy for biogasoline and biodiesel in 2010 and 2012 multiplied by the amount of biogasoline and biodiesel brought onto the market in 2011 from the energy statistics.

For 2010 use has been made of a combination of data taken from Statistics Netherlands energy statistics, data of the NEa on the type and origin of biogasoline and biodiesel brought onto the market and standard figures for greenhouse gas emissions savings from the Renewable Energy Directive. The NEa received data on 2010 through voluntary reporting by the sector associations.

⁵⁹ The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

⁶⁰ NL Agency, 2010.

Question 11. Excess/deficit production of energy from renewable sources up to 2020

Please report on (for 2011 and 2012) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020.

On the basis of current legislation and regulations it is not yet possible to apply statistical transfers, joint projects and joint rules for decisions on support schemes. A legislative proposal is currently being prepared with a view to changing the legislation and regulations on this point. Should this take place, attention will be paid to this policy option in future progress reports.

Table 7: Excess/deficit production

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production	0	0	0	0	0	0	0	0	0	0

Question 12. Estimate of the share of biodegradable waste in waste used for producing energy

Please provide information on how the share of biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates.

The way in which the share of biodegradable waste in waste used for producing energy is estimated was described in Annex 3 of the Renewable Energy Monitoring Protocol (2010).

The share of biodegradable waste is estimated annually by an independent organisation, Rijkswaterstaat Environment, using the annual reporting of the waste registration working group. This estimate is based on seven steps. Data from the study on the composition of waste in the Netherlands, which has been conducted over many years, provides the foundation. With the help of the data taken from this study, the energy and carbon content and associated biomass share is determined for the waste streams burned at waste incineration plants (WIPs). A flat-rate renewable energy percentage is then calculated for all WIPs in the Netherlands together from the biomass share in the energy.

This model has been revised following a study by Rijkswaterstaat. The change relates to how the composition of foreign waste processed at Dutch WIPs is determined. Initially, this was equated with the composition of Dutch domestic waste. Now the composition is determined on the basis of a weighted average of the composition of the shipped waste streams. The composition of these waste streams is known based on information from the decisions issued under the Waste Shipments Regulation⁶¹. This change took effect from monitoring year 2012 and will be described in the forthcoming amendment of the Renewable Energy Monitoring Protocol.

⁶¹ Regulation (EC) 1013/2006.

Annex 1 Energy Agreement for Sustainable Growth

In the *Energy Agreement for Sustainable Growth* the parties create the basis for a broadly supported, robust and future-proof energy and climate policy. The agreement offers a long-term perspective, while incorporating agreements for the short and medium term, creates confidence and thereby reduces uncertainty amongst citizens and companies with regard to investment. It will help the stuttering economy to regain momentum quickly by providing a significant stimulus for investment and employment. In addition, it limits the burden on citizens and companies as far as possible.

Within this context the parties will endeavour to realise the following targets:

- Savings in final energy consumption of 1.5 % per year on average.
- Savings in the Netherlands' final energy consumption of 100 PJ by 2020.
- An increase in the share of renewable energy generation (currently 4 %) to 14 % in 2020.
- A further increase in this share to 16 % in 2023.
- At least 15 000 full-time jobs, largely to be created over the next few years.

The agreement is geared towards strengthening the structure of the economy and will release investments running into billions of euros in all sectors of our society over the coming years.

It comprises ten pillars.

1 Energy saving

Energy saving is a key point and the *first pillar* for achieving a sustainable energy supply. The target is to achieve savings in final energy consumption of 1.5 % per year on average. The parties have agreed on a package of measures that are expected to make it possible to realise savings of around 100 PJ by 2020. The agreements on energy saving focus on the built environment and on increasing energy efficiency in industry, the agricultural sector and the rest of the business community. A revolving fund of approximately € 600 million will be set up for energy saving in the built environment.

This national energy saving fund will be launched in 2013. All homeowners, landlords and tenants who have not yet been given an energy label will receive an indicative energy label for their home in 2014 and 2015 based on a uniform national method. The parties to the Rental Sector Energy-Saving Agreement are committing to achieving the agreed targets of an average label of B (corporations) and 80 % of homes with at least a C label (private landlords) in 2020. Possibilities for a regional heat infrastructure are being investigated for a number of areas of the Netherlands, which draw on and are comparable with the proposals already made by the Rotterdam region. Finally, there is broad support for an ambitious energy-saving programme in the glasshouse horticulture sector.

2 Scaling-up of renewable energy generation

The scaling-up of renewable energy generation forms a *second pillar* of the programme. The parties want to achieve a 14 % share for renewable energy in 2020 and a 16 % share in 2023. This will require an intensive focus on various sources of renewable generation, such as onshore wind, offshore wind, various forms of local generation, such as solar energy, and the use of biomass. A number of key points are presented below:

- Scaling-up of offshore wind to 4 450 MW of operational capacity in 2023. Existing wind farms and those in the pipeline account for in the region of 1 000 MW. In addition there are the tendering procedures for a total of 3 450 MW, for which a phased tendering schedule will be employed from 2015 with incremental increases.

- For onshore wind investments are being made within the frameworks agreed with the provinces to achieve 6 000 MW in 2020.
- To achieve legislation that will create robust opportunities in the future to allow sustainable generation to play a substantial role, and that takes into account the consequences of intermittent generation for the electricity grid, the parties are working together on the STROOM legislative agenda, which has been initiated with this in mind.

3 Decentralised generation

An important *third pillar* of the Energy Agreement is the decentralised generation of renewable energy by individuals themselves and in the form of cooperative initiatives. Citizens are being given more opportunities to generate renewable energy themselves and local and regional initiatives are being supported where necessary and possible by municipalities, provinces and central government. From 1 January 2014 a tax credit of 7.5 cents/kWh is being introduced for renewable energy that is generated as part of a cooperative or by an owners' association (VvE) and used by small-scale consumers. The members of the cooperatives/VvEs and the installation(s) must be situated within a 'postcode rose' (five-digit postcode plus adjacent postcodes). The tax credit is being covered by an increase in energy tax.

4 Energy transport network

The energy transition will have far-reaching consequences for the networks responsible for matching supply and demand. The *fourth pillar* ensures that the energy transport network is ready for a sustainable future. The parties have agreed to prepare thoroughly for this new future so that changes can be introduced quickly when they are necessary and desirable. There is also an explicit focus on European collaboration.

5 European emissions trading system (ETS)

An effective European emissions trading system (ETS), as the *fifth pillar* of the agreement, is a crucial factor in the long-term development towards a sustainable energy supply.

6 Fossil-fuel power generation and coal-fired power stations

Over the period up to 2050 fossil fuels will continue to account for an important share in energy consumption, even though the agreement focuses on achieving an 80-95 % reduction in CO₂ in 2050 and a 16 % share for renewable generation in 2023. The use of gas-fired power stations remains important on the North-Western European electricity market. The parties have agreed that the capacity of the 1980s coal-fired power stations will be scaled back as part of the transition towards a sustainable energy supply. In concrete terms this *sixth pillar* means that three coal-fired power stations will close on 1 January 2016, with the two remaining power stations closing on 1 July 2017.

7 Mobility and transport

The *seventh pillar* of the Energy Agreement comprises steps in the area of mobility and transport to move towards more efficient transport and more sustainable mobility. The parties have agreed on ambitious targets, namely a 60 % reduction in CO₂ emissions by 2050 compared with the 1990 level and, as an interim step, a reduction to 25 Mtonnes (-17 %) in 2030. Within the context of the envisaged savings in (final) energy consumption of at least 100 PJ for the economy as a whole, the parties have agreed that the transport and mobility sector will make an expected contribution of 15-20 PJ in 2020.

8 Employment opportunities

The Energy Agreement will result in significant employment opportunities in the installation and construction sectors and, over time, in the sustainable energy sector – this is the *eighth pillar* of the

agreement. The ambition is to capitalise on these opportunities and create at least 15 000 additional full-time jobs over the 2014-2020 period.

9 Energy innovation and export

The *ninth pillar* focuses on energy innovation and export. As far as possible, efforts will be made to tie in with the approach of the Energy Top Sector and collaborate with other top sectors. The approach taken to realise the ambitions comprises six elements, namely financing, national market development, international market development, the structure of legislation and regulations, SME involvement and human capital. SDE+ resources will be used in a targeted way for demonstration projects that help to reduce the costs of renewable energy and thereby allow the 16 % renewable energy target to be achieved in a more cost-effective way.

10 Financing programme

The *tenth pillar* comprises an extensive financing programme focused on releasing the huge investments required for the transition envisaged in the Energy Agreement. Agreement has been reached with financial parties and various umbrella organisations (Dutch Banking Association (NVB), Dutch Association of Insurers and the Federation of the Dutch Pension Funds) on an approach that makes investments in energy saving and renewable energy attractive. This involves structuring a financing programme that will improve the financeability of large renewable energy projects. The programme also focuses on smaller, often decentralised, projects that struggle to achieve a good financing structure. Primary responsibility for large-scale investment projects will remain with banks, which will finance the project phase of these major projects.

Mutual collaboration

There is a strong connection between the ten pillars of the Energy Agreement and they reinforce each other's effectiveness. For example, financing can only work if there is a consistent policy with regard to the scaling-up of renewable energy. Employment programmes are essential to build up capacity so that there are people to work on major installation and insulation activities. Over this term of office the government is setting aside approximately € 70 million to finance various supporting measures, such as the agreement assisting municipalities with local and regional energy saving and generation, the issuing of the indicative energy label, the expertise centre for energy saving, better enforcement of the Environmental Management Act, the Energy Performance Testing (EPK) pilot, the launch of the financing programme and the activities to promote energy innovation and export.

Embedding

An important factor that will affect the success of the transition over the coming years is consistency in the policy pursued by government and other parties. The agreement must therefore ensure that this is appropriately embedded over the next few years. Central government is responsible for developing, implementing and evaluating the policy measures referred to in the agreement and will be accountable to Parliament in respect of these.

A key factor for a successful energy transition over the coming years will be consistency in policy, implementation and adjustment. This was agreed by the representatives of central government, employers' organisations, employees' organisations, environmental organisations and other social parties and financial institutions when they signed the Energy Agreement. The starting points here are that:

1. The parties are responsible for implementing the elements assigned to them; no additional supervision or monitoring is desired.

2. The parties want to be jointly responsible for the successful implementation and development of the agreement, including social involvement. For that reason the parties are keen to continue their collaboration.