Government of the Netherlands

Progress report: energy from renewable sources in the Netherlands 2009-2010

EC Renewable Energy Directive (2009/28/EC)

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Introduction

In accordance with Article 22 of Directive 2009/28/EC[1] (hereinafter referred to also as the Renewable Energy Directive), each Member State shall submit a report to the Commission on progress in the promotion and use of energy from renewable sources. The progress report must be submitted to the Commission by 31 December 2011, and every two years thereafter.
The present report conforms to the model proposed by the European Commission for progress reporting and thus meets all the requirements laid down in Article 22 of the Directive. For an explanation of tables and figures, please see the model.

Responsibility for this report

In this report, the following assumptions have been made for the description of policy and the data used:

1. Description of existing or new policy

This report describes the progress made on the basis of the Directive on energy from renewable sources for the years 2009 and 2010. These results arise from policy and measures in effect at that time. They have been included in the answer to Question 2 in this report. The impact of the new policy pursued by the Rutte 1 Government (which took office in autumn 2010) helps determine the indicative trajectory until 2020. A broad outline of the new energy policy is given in Chapter 2 and under Questions 2 and 3. The impact of the new policy on the target for 2020, as calculated by the Netherlands Environmental Assessment Agency (PBL) and ECN, is described in the section entitled Target for 2020, *Effects of new policy*.

2. Graphs and tables

The figures for 2009 and 2010 adopted in this report have been supplied by Statistics Netherlands (CBS), the LEI and the Dutch Emissions Authority (NEa). The figures for the support schemes for renewable energy under Question 3 come from the Ministry of Economic Affairs, Agriculture and Innovation and the NL Agency. Where other sources have been used, this is stated in the text or via a reference.

[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.

1 *Energy from renewable sources*

Situation in 2010

For the Netherlands, the binding national general target for the share of gross final energy consumption to come from renewable energy sources in 2020 has been set at 14%.

The energy situation in the Netherlands in 2010 is characterised by primary energy consumption of 3.5 EJ. Major sources of energy are natural gas (1.5 EJ), oil (1.3 EJ) and coal (0.3 EJ). As of 2010, renewable energy sources contribute 0.1 EJ (127 PJ) (avoided primarily).

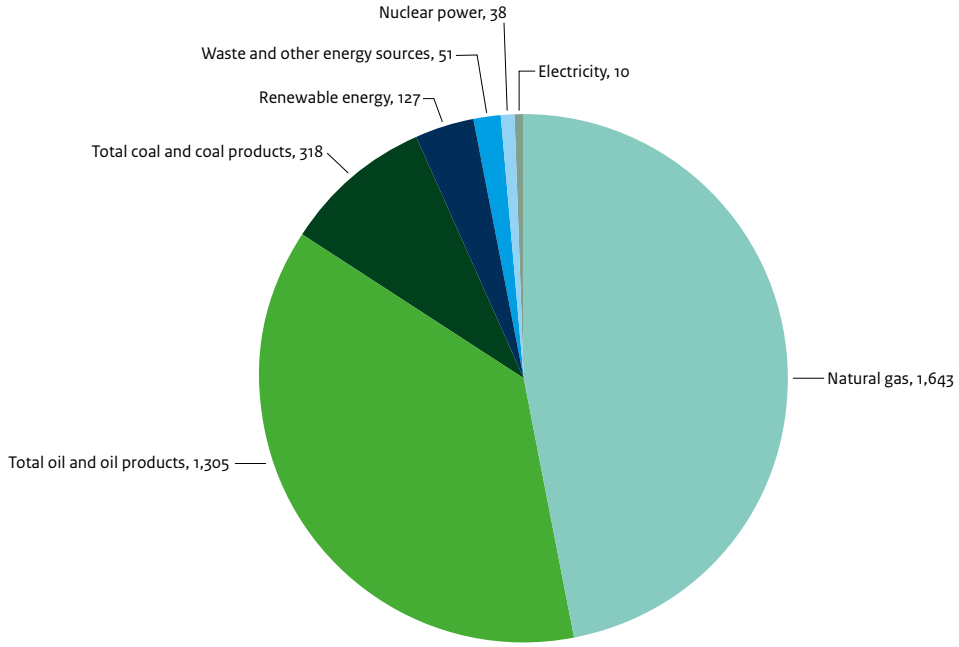

Figure 1 Energy consumption in the Netherlands in 2010 in PJ (Source Statistics Netherlands Statline)

According to the Renewable Energy Directive, the share of renewable energy is based on final energy consumption; in 2010, this was 2,245 PJ. Final consumption of renewable energy was 86 PJ and thus slightly lower than in 2009 (88 PJ). This slight fall arose from lower biofuel consumption by transport, which was in part offset by an increase in coincineration of biomass in power stations.
In percentage terms, the share of renewable energy fell from 4.1% to 3.7% over the period 2009-2010. Higher consumption accounts for 0.3% of the 0.4 percentage point fall. This is because total final energy consumption rose 7% owing to the cold winter in 2010 and the economic recovery. The rest of the fall is attributable to the fall in final consumption of renewable energy of 2 PJ.

Consumption of biofuels for road transport fell in 2010 compared with the previous year, despite a slight tightening-up of the obligation for suppliers of motor fuels to add biofuels. This seems contradictory, but can be explained by the fact that the Biofuels (Road Transport) Decree gives suppliers the option of doing more than required in one year, and less in others. Suppliers have made use of this flexibility by adding less than required in 2010, capitalising on extra efforts in 2009 and earlier. The fall can thus be regarded as incidental.

Production of renewable electricity accounted for 9.1% of electricity consumption in 2009, and for 9.7% in 2010. This means that the target in the European Directive on Renewable Electricity from 2001 has been achieved.

2 The Rutte government's new energy policy

2011 Energy Report

The 2011 energy report sets out the vision, strategy and measures for reducing the Netherlands' dependence on fossil fuels and gradually switching to renewable energy. Energy management must become more sustainable and less dependent on dwindling fossil fuels, with greater benefits being gained from the robust Dutch energy sector. Energy is essential for the economy to function. Customers must be able to count on reliable energy at competitive prices. The full range of safe and reliable energy options, both grey and green, are sorely needed to ensure this. In the longer term, a realistic transition to sustainable energy management is needed, given climate-related demands and the dwindling availability of fossil fuels. This calls for an international economic approach in order to avoid saddling businesses and citizens with unnecessarily high costs.
A new feature of the energy policy is that the government wants to make use of the strength of the Dutch energy sector. This would provide growth, jobs and revenue. In summary, the core of the energy policy is designed to ensure reliable energy provision and the transition to cleaner energy provision and to safeguard the economic prospects of the energy sector.

The increase in the share of energy from renewable sources must be accompanied by the exploitation of economic opportunities, green energy and growth. Investing in sustainable energy management is worthwhile because the ultimate social benefits outweigh the social costs. This nevertheless means that the sustainability of energy management must be boosted in an economically sensible manner by promoting the use of technologies that are nearly profitable and encouraging innovation policy on other technologies.
To achieve the targets for 2020, namely 14% of energy consumption to come from renewable sources, the Sustainable Energy Incentive Scheme Plus (SDE+) has been launched to foster the most cost-effective technologies. This scheme was launched in 2011, as a follow-up to the Sustainable Energy Incentive Scheme (SDE). The longer-term approach entails bolstering the energy sector by, among other things, promoting innovation. In this way, renewable energy can compete with grey energy in the long run. This is fleshed out within the Energy Top Sector policy, which forms part of the new business policy further explained below.

The Energy Report further emphasises that investment in the energy market and infrastructure is needed. The infrastructure must be modernised owing to the internationalisation of the energy market, the transition to more renewable energy and the fact that energy is increasingly generated locally.
A new energy policy instrument is the Green Deal, an arrangement between central government and society. Where favourable projects that could contribute to a sustainable society do not get off the ground, the government tackles any problems in the short term. Savings achieved and the local generation of sustainable energy are important elements in this. The key features of the new energy policy are further elucidated below.

Promotion of Sustainable Energy production (SDE+)

The Sustainable Energy Incentive Scheme Plus (SDE+) was launched on 1 July 2011. SDE+ replaces the incentive scheme for sustainable energy production (SDE). SDE had been launched in 2008 and was discontinued on 31 December 2010.
SDE+ is being phased in during the launch period. In the first phase, applicants will receive a lower payment. In 2011, this amount will be a maximum of 15 cents per kWh electricity, and 132 cents per Nm^3 gas in the last phase. Subsidisation under the SDE+ scheme thus depends on the kilowatt hours of energy or cubic metres of gas produced. In addition, SDE+ also has a free category. The free category provides scope for technologies that are still currently on average more expensive than 15 cents per kWh, such as tidal power and large solar installations. This subsidisation likewise depends on the kilowatt hours of energy or cubic metres of gas produced.
The phased approach fits in with SDE+'s aim of promoting the least expensive forms of sustainable energy. Anyone applying for subsidy in the first phase (and thus receiving less payment) has more of a chance of sufficient budget being available. As with the old SDE, the principle of 'first come, first served' applies.
In 2011, 1.5 billion euros was committed to new projects. This amount will be paid out over about 15 years. As a result of annual new commitments being entered into, cash expenditure on sustainable energy will be 1.4 billion euros/year. As from 2013, SDE+ will be funded by a surcharge on the energy bills of citizens and businesses.

Green Deal

The Green Deal was presented on 3 October 2011. It constitutes an arrangement between the Dutch Government and society, namely citizens, enterprises, authorities and other organisations, and is designed to help them implement their plans for achieving sustainability.
The Green Deal aims to eliminate obstacles, for example statutory and regulatory problems, ensure effective and objective information provision and bring about effective cooperation. In practice, simple solutions such as better cooperation between government and local enterprises often turn out to promote the implementation of new sustainable projects. The Green Deal covers specific projects in such areas as energy saving, sustainable energy, sustainable mobility and sustainable use of raw materials and water.
The Dutch Government is set to conclude further Green Deals with society in the coming years. Citizens, enterprises, organisations and other authorities are asked to come up with new proposals by February 2012, with the themes covered being energy, raw materials, mobility and water.

Energy Top Sector

In February of this year the Rutte Government launched a new business policy. This policy is based on government no longer exerting control purely through rules and subsidies, but on Dutch enterprises being more in control and being given scope for taking action, investing, innovating and exporting.
The new policy means (I) fewer subsidies in exchange for lower taxation, (II) fewer and simpler rules, (III) greater access to business funding, (IV) better use of know-how by the business community, and (V) better understanding of the business community's needs on the part of the tax authorities, education and the diplomatic service. A sectoral and integrated approach has been chosen for this because opportunities and challenges are usually sector-specific in nature and encompass a wide range of factors affecting the climate for business start-ups. These are sectors in which the Netherlands is a strong player globally, and include the energy sector.
Via the Energy Top Sector policy, the Dutch Government promotes and supports cooperation between energy(-related) enterprises in the Netherlands, knowledge centres and authorities on the development of energy technologies, products and services in which the Netherlands can excel internationally. Energy innovation policy is also good for making sustainable energy options cost-effective.
Within 'top teams', operators, scientists and the government have jointly devised recommendations for measures enabling the sector to carry on competing on the global market. At the time of the drafting of this report, innovation contracts are being drawn up, including for the Energy Top Sector. Under the innovation contract, enterprises, knowledge centres and the government agree which activities relating to energy research and innovation they are willing to undertake and what contribution each makes in this process.

3 2020 *targets*
Effects of new policy

Following the National Action Plan for Energy from Renewable Sources, the European Commission has asked the Netherlands to confirm that the measures are adequate for achieving the general targets. The Netherlands has previously indicated that computation of its energy policy cannot take place before the second half of 2011, after the launch of SDE+. This section sets out how the (new) policy will affect achievement of the targets.

In its memorandum on the Impact of Government Policy on the Environment and Climate issued on 19 September 2011, the Netherlands Environmental Assessment Agency (PBL) envisages growth in the share of renewable energy from 4% in 2009 to around 7-8% in 2015/2016 and 12% in 2020. This is based on this Government's renewable energy policy for the period 2011/2015, which has already been launched. Until the planned end of the life of the current Government, the Netherlands is thus on course to meet its target. This is consistent with the indicative target of 7.6% set out in Directive 2009/28/EC for 2015-2016.

An unexpectedly lower percentage arises from the absence of projects, obstacles to spatial integration or lengthy authorisation procedures. In that event, the budget available will not fully deployable. Any unspent part of the budget could then be used collaboratively to increase the share of energy from renewable sources.
PBL also states that the new design of SDE+, which is aimed at promoting competition between options, is bearing fruit. The new SDE+ is responsible for adding two percentage points to renewable energy, within the planned share of 12%. PBL has also given its first impression of the impact of the Green Deals recently concluded with groupings within Dutch society. This analysis shows that the Green Deals mainly serve to eliminate the obstacles mentioned, thereby bringing the 12% target closer.
In accordance with the coalition agreement, the costs and benefits of the policy will be evaluated in 2014, partly in the context of European policy and the European objective.
The evaluation may show that further action may be needed after this cabinet period to achieve the European objective fully. Various options are available for this: further tightening-up of the SDE+ system, a supplier commitment, or the use of collaborative mechanisms. For 2012, proposals have already been developed for tightening up the SDE+ system.

These chiefly concern the inclusion of sustainable heat in SDE+, besides renewable electricity and green gas. The proposals have been submitted to the European Commission in connection with mandatory notification of State aid. The Netherlands is awaiting the judgment of the European Commission. Pending this, there is a high level of potential sustainable heat available in the Netherlands. Swift consent is therefore important with a view to achieving the 14% target in 2020.

The current Cabinet is now reconfiguring the target with renewable options. The Action Plan from June 2010 focused as far as possible on wind options. To promote cost effectiveness, the focus is now more on sustainable heat and green gas. Given the existing potential of these options, the Netherlands assumes that the European target can be achieved at lower cost than estimated previously.

4 Answers to template report questions

1. Sectoral and overall shares and actual consumption of energy from renewable sources in 2010 and 2009

The share of energy from renewable sources in 2010 dipped by 3.8% compared with 2009 and therefore lags behind the projected trajectory set out in the National Action Plan for Renewable Energy, which had assumed a figure of 4.2%. Of the 0.4 percentage point fall, 0.3% is attributable to higher total consumption. This is because total final energy consumption rose by 7% owing to the cold winter in 2010 and the economic recovery. In addition, a fall in consumption of biofuels by road transport contributed to the decline.

Table 1 The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources

	2009	2010	NREAP expectation 2010
RES – Heating & Cooling (%)	3.0	2.7	3.7
RES - Electricity (%)	9.1	9.7	8.6
RES - Transport (%)	4.2	3.0	4.1
Overall RES share (%)	4.1	3.7	4.2
Of which from cooperation mechanisms (%)	0	0	0
Surplus for cooperation mechanism (%)	0	0	0

Consumption of biofuels for road transport fell compared with the previous year, despite a slight tightening-up of the obligation for suppliers of motor fuels to add biofuels. This seems contradictory, but can be explained by the fact that the Biofuels (Road Transport) Decree gives suppliers the option of doing more than required in one year, and less in others. Suppliers have made use of this flexibility by adding less than required in 2010, capitalising on extra efforts in 2009 and earlier.

Production of renewable electricity in 2010 equated to 9.7% of electricity consumption. This means that the target in the European Directive on Renewable Electricity from 2001 has been achieved.

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

	2009	2010	2009	2010	NREAP expectation 2010
	PJ	PJ	ktoe	ktoe	ktoe
(A) Gross final consumption of RES for heating and cooling	34	35	806	827	906
(B) Gross final consumption of electricity from RES	39	42	925	1008	915
(C) Gross final consumption of energy from RES in transport	20	14	472	339	319
(D) Gross total RES consumption [2]	88	86	2,103	2,063	2,128
(E) Transfer of RES to other Member States	0	0	0	0	0
(F) Transfer of RES from other Member States and 3rd countries	0	0	0	0	0
G) RES consumption adjusted for target (D)-(E)+(F)	88	86	2,103	2,063	2,128

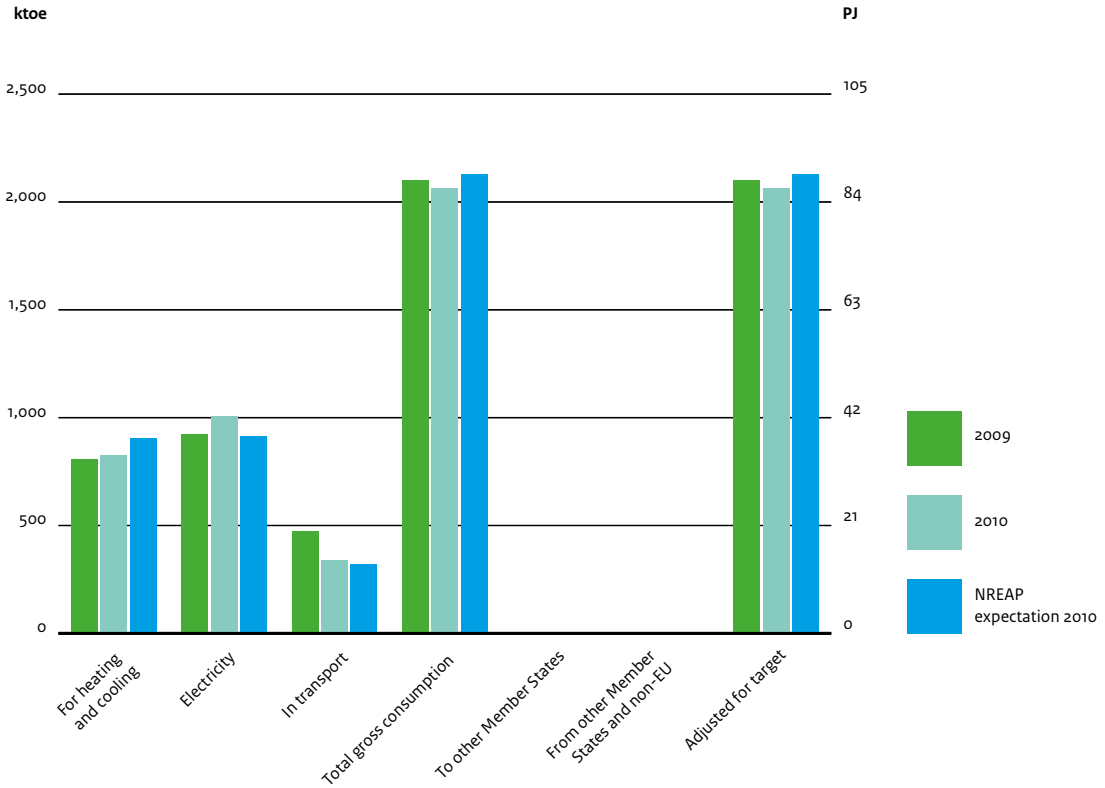

Figure 2 Gross final energy consumption per sector in ktoe and PJ as per table 1a

2 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 electricity

	2009		2010		NREAP expectation 2010	
	MW	GWh	MW	GWh	MW	GWh
Hydropower [3]	37	100	37	101	47	127
non-pumped						
<1MW*	0	0	0	0		
1MW–10 MW*	2	5	2	5	2	5
>10MW*	35	95	35	96	45	122
pumped	0	0	0	0		
mixed [4]						
Geothermal	0	0	0	0	0	0
Solar**						
photovoltaic	68	46	88	60	92	73
concentrated solar power	-	-	-	-	-	-
tidal, wave and ocean power	0	0	0	0	0	0
Wind [5]	2,222	4,481	2,237	4,503	2,221	4,470
onshore	1,994	3,762	2,009	3,737	1,993	3,667
offshore	228	719	228	765	228	803
Biomass	1,028	6,129	1,205	7,059	1,430	5,975
solid biomass	825	5,122	992	5,961	1,214	5,103
biogas	186	934	196	1,044	216	872
bioliquids	17	74	17	54	0	0
Totaal	3,355	10,756	3,567	11,722	3,790	10,636
waarvan in warmtekrachtkoppeling	667	3,742	743	4,075		2,897

** Statistics Netherlands provides only totals. Owing to data confidentiality, Statistics Netherlands cannot provide a breakdown. Statistics Netherlands is obliged not to provide such breakdowns by virtue of the Statistics Netherlands Act. The breakdown provided here is based on data from NREAP*

*** Electricity from solar energy is fully photovoltaic*

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

4 In accordance with the new Eurostat methodology.

5 In line with the procedure in accordance with Directive 2009/28/EC, wind energy in total has been normalised. Onshore wind production and offshore wind has been calculated by multiplying total normalised electricity production of wind energy by the share of offshore of onshore wind in actual electricity production from wind energy.

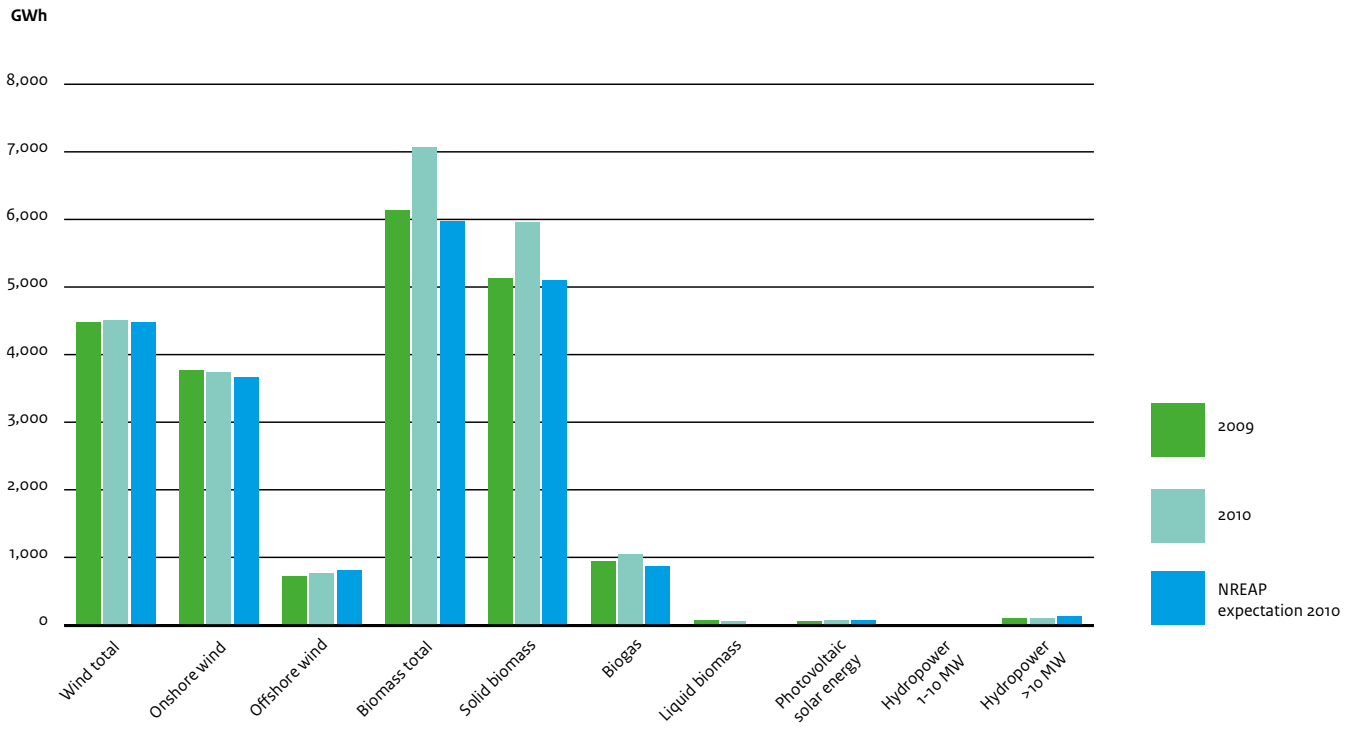

Figure 3 *Contribution per technology as per table 1b*

Table 1c Total actual contribution (final energy consumption) from each renewable energy technology in the Netherlands [Member State] 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)

	2009	2010	2009	2010	NREAP expectation 2010
	TJ	TJ	ktoe	ktoe	ktoe
Geothermal (excluding low-temperature geothermal heat in heat pump applications)	142	318	3	8	39
Solar	932	1,001	22	24	20
Biomass	29,275	29,242	699	698	684
solid biomass	23,658	23,815	565	569	573
biogas [6]	4,311	4,836	103	116	111
bioliquids	1,306	590	31	14	-
Renewable energy from heat pumps	3,390	4,045	81	97	132
of which aerothermal	1,586	1,921	38	46	35
of which geothermal [7]	1,804	2,124	43	51	90
of which hydrothermal					0
Total	33,738	34,606	806	827	906
of which DH	6,712	7,098	160	170	490
of which biomass in households	12,232	12,347	292	295	159

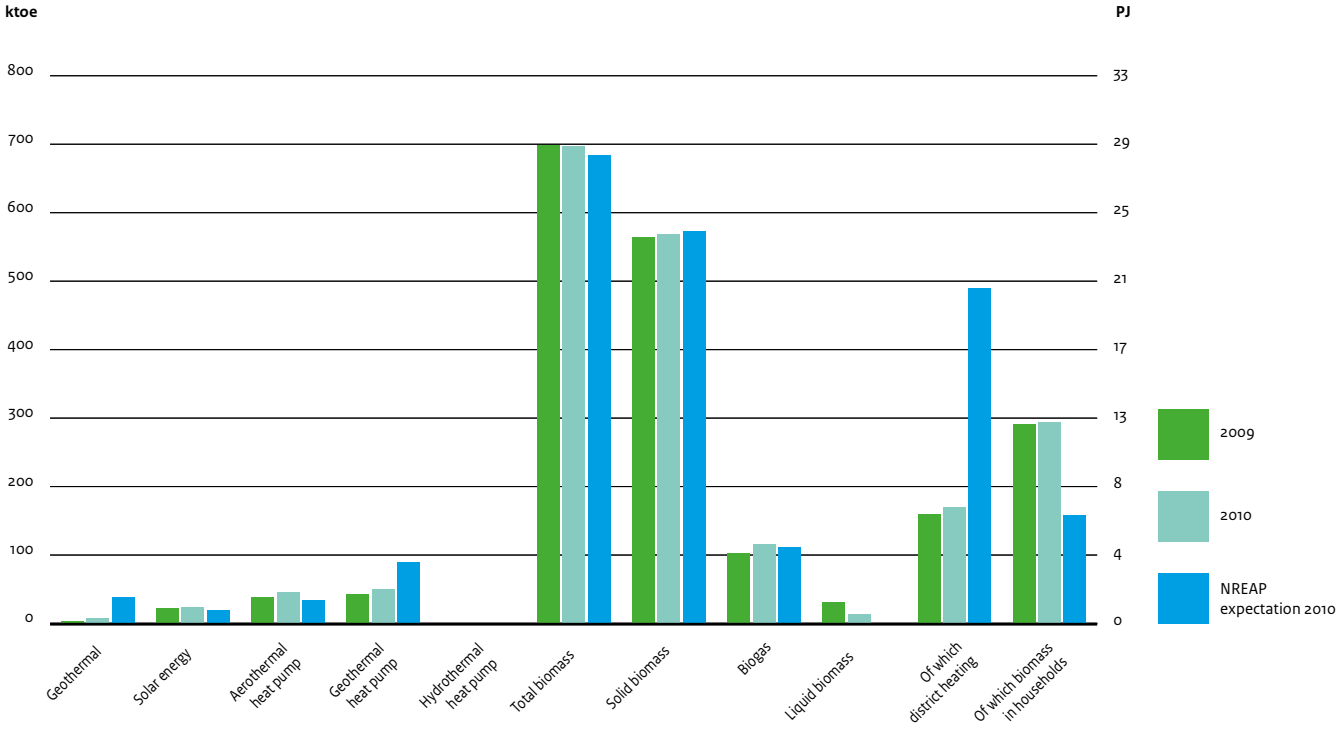

Figure 4 Contribution per technology in GWh as per table 1c

6 Including final consumption of heat from green gas

7 Including a small share of hydrothermal (heat from surface water)

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) [8,9]

	2009	2010	2009	2010	NREAP expectation 2010
	TJ	TJ	ktoe	ktoe	ktoe
Bio ethanol/bio-ETBE	5,771	5,614	138	134	168
of which biofuels [10] article 21.2	-	162	-	4	17
of which imported [11]	no data	no data	no data	no data	152
Biodiesel	9,835	3,963	235	95	139
of which biofuels [12] article 21.2	3,216	3,412	77	82	139
of which imported [13]	no data	no data	no data	no data	69
Hydrogen from renewables	-	-	-	-	-
Renewable electricity	946	1,033	23	25	12
of which road transport	3	3	0	0	0
of which non-road transport	943	1,029	23	25	12
Others (biogas, vegetable oils, etc.) – please specify	-	-	-	-	no data
of which biofuels [14] article 21.2	-	-	-	-	no data
Totaal	19,773	14,189	472	339	430

8 Only taking into account biomass meeting the sustainability criteria, see Article 5, paragraph 1, final clause.

9 Facilitates comparison with Table 12 of the National Action Plan for energy from renewable sources.

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

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

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

13 From the whole amount of bioethanol.

14 Biofuels that are included in Article 21, paragraph 2 of Directive 2009/28/EC.

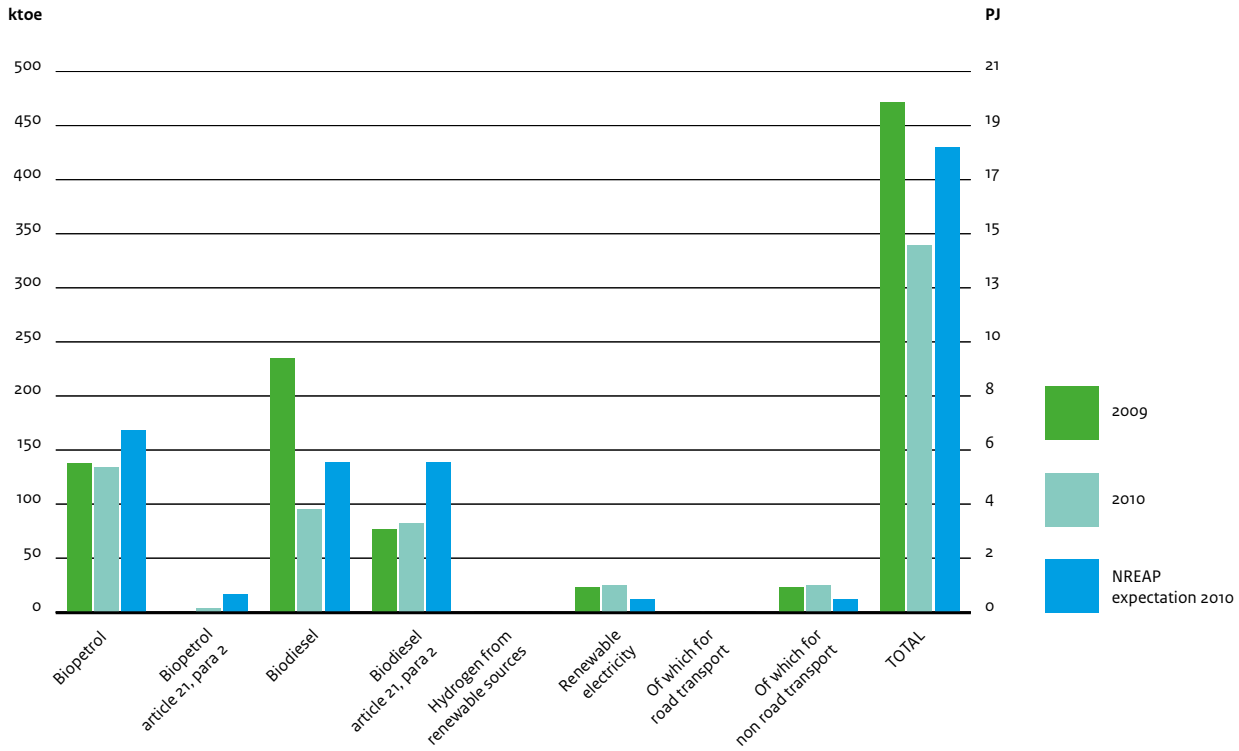

Figure 5 Contribution by technology for heating and transport as per table 1d

2. Measures taken in 2010 and 2009 and/or planned at national level to promote the growth of energy from renewable sources

In 2010, no new measures came into effect; Table 5 from the National Renewable Energy Action Plan applies in full to that year. In 2011, the new Rutte Government 1 made a number of policy adjustments to achieve the European target. Table 2 below provides an overview of the measures in effect in 2009 and 2010 together with new policy from 2011, the energy report for 2011, SDE+, the Energy Top Sector and the Green Deal.
SDE+, which is described below under Question 3, replaces SDE. An important change is that SDE+ is phased in. Applicants receive a lower payment in the first phase than in the following phases. The phased launch is consistent with the aim of the SDE+ scheme to promote the least expensive forms of sustainable energy. Energy research, including funding, becomes part of the Energy Top Sector.

Table 2a Overview of all measures and policies

Name and reference of the measure	Type of measure	Expected result	Target group and/ or activity	Existing or planned	Start and end dates of the measure
1. 2011 Energy Report	Soft	Behavioural change, installed capacity and generated energy	Various	Existing	2011 -
2. Top Sector Energy	Soft and financial	Installed capacity, generated energy, energy innovation	Industry and research institutions, government	Planned	2011 -
3. Structural vision onshore wind (Designation of preferred areas for large-scale wind farms)	Regulatory	Installed capacity	Various	Planned	2012 -
4. Renewable energy in transport regulation	Regulatory	Generated energy	Traders in biofuels for transport	Existing	2011 -
5. 'Clean and Efficient' (Schoon en Zuinig) policy programme, NREAP	Soft	Behavioural change, installed capacity and generated energy	Government	Existing	2007 - 2011
6. National coordination scheme (spatial planning act, section 3.6.3.), NREAP 4.2.1	Regulatory	Installed capacity	Government	Existing	2008 - continuous
7. Environmental Licensing Bill (Wabo), NREAP 4.2.1	Regulatory	Installed capacity	Government	Existing	2010 - continuous
8. Energy Performance Coefficient, NREAP 4.2.3	Regulatory	Installed capacity	Government, planners, architects	Existing	1995 - continuous
9. Municipalities and state climate agreement, NREAP 4.2.2	Soft	Installed capacity	Government	Existing	2007 - 2011
10. Climate agreement and energy agreement between state and provinces, NREAP 4.2.3	Soft	Installed capacity	Government	Existing	2008 - 2011
11. National Action Plan for wind energy	Soft	Behavioural change, installed capacity and generated energy	Various	Existing	2009 - 2011
12. Priority for Sustainability, NREAP 4.2.6	Regulatory	Generated energy	Energy producers	Existing	2010 -

Name and reference of the measure	Type of measure	Expected result	Target group and/ or activity	Existing or planned	Start and end dates of the measure
13. Gas and electricity acts, NREAP 4.2.7	Regulatory	Generated energy	Energy producers and transporters	Existing	Gas act 2000 - Electricity act 1998 -
14. SDE+: Sustainable Energy Incentive Scheme Plus	Financial	Generated energy	Energy producers (incl. consumers)	Existing	2011 -
15. SDE: Sustainable Energy Incentive Scheme, NREAP 4.3	Financial	Generated energy	Energy producers (incl. consumers)	Existing	2008 - 2010 (opening regulation)
16. Environmental quality of electricity production (MEP), NREAP 4.3	Financial	Generated energy	Energy producers	Existing	2003 - 2006 (opening regulation)
17. Transitional MEP regulation (OVMEP), NREAP 4.3	Financial	Generated energy	Energy producers	Existing	2006 - 2007 (opening regulation)
18. EIA: Energy Investment Allowance, NREAP 4.3	Financial	Installed capacity	Energy producers	Existing	2001 -
19. Energy Investment Allowance / Random depreciation of environmental investments (MIA/ VAMIL), NREAP 4.3	Financial	Installed capacity	Energy producers	Existing	MIA: 2000 - Vamil: 1991 -
20. Green investments, NREAP 4.3	Financial	Installed capacity	Energy producers and investors	Existing	1995 - 2014
21. Energy innovation agenda, NREAP 4.3	Financial	Installed capacity, generated energy, energy innovation	Energy producers	Existing	2008 - 2012
22. Subsidy regulation for renewable heat, NREAP 4.4	Financial	Installed capacity	Consumers	Existing	2009 -
23. Risk cover for geothermal heat, NREAP 4.4.	Financial	Installed capacity	Energy producers	Existing	2009 - 2010
24. Biofuels obligations, NREAP 4.5	Regulatory	Generated energy	Traders in biofuels for transport	Existing	2007 - 2010
25. TAB: Fuelling Stations for Alternative Fuels, NREAP 4.5	Financial	Installed capacity	Sales organisations biofuels for transport	Existing	2008 -
26. IBB: Innovative Biofuels, NREAP 4.5	Financial	Installed capacity	Producers of biofuels for transport	Existing	2006 -
27. Action Plan for Electric Vehicles, NREAP 4.5	Soft and financial	Behavioural change	Investors, consumers, government	Existing	2009 -

Public administration and the market working together

In relation to cooperation between the market and public administration, the Green Deal was launched in 2011. The Green Deal is an arrangement between the public administration and society, enterprises, citizens, social organisations and decentralised authorities to get specific projects from society off the ground relating to such matters as energy saving, sustainable energy, sustainable mobility, and sustainable use of raw materials and water. The Green Deal is aimed at eliminating problems, for example in terms of laws and regulations, the provision of sound, objective information and creating effective cooperation.
The table below provides an overview of the agreements in effect in 2009 and 2010 supplemented by the Green Deal.

Table 2b Overview of covenants + Green Deal

Covenant	Date	Signatories	Aims
Green Deal	September 2011-	Citizens, businesses, other regional authorities and social organizations, and State government	Sustainable economy: realizing sustainable local projects in the field of, among others, energy saving, renewable energy, sustainable mobility and the sustainable use of raw materials and water
Long-term agreements for energy efficiency (MJAs)	Various years	'MJA-e+' (2007-2011): LTA for flower bulbs and bulb cultivation, and mushroom cultivation. 'MEE: ETS-ondernemingen': Energy efficiency LTA for ETS companies. 'MJA3' (2001-2020): LTA for municipalities and non-ETS-companies	Achieving energy efficiency improvements in businesses and institutions; in-house and on the production line.
Climate Accord between municipalities and the State	November 2007-2011	VNG (Association of Dutch Municipalities) and the State government	Contributing to achieving the objectives of the 'Clean and Efficient' (Schoon en Zuinig) programme • Stimulating and facilitating renewable energy in homes, municipal buildings, and energy and waste companies. • Designating zones for renewable energy generation.
'More with Less' (Meer Met Minder)	January 2008	Dutch Construction and Infrastructure Federation (Bouwend Nederland), UNETO-VNI, EnergieNed, Dutch Association for Energy Markets (VME) and the State government.	Achieving additional energy savings in existing buildings of 100 PJ in 2020.
Spring Accord – Energy Savings in New Buildings	April 2008	Bouwend Nederland, Neprom, Dutch Banking Association (NVB) and the State government	Compared to 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
Innovation and action programme 'clean and efficient agricultural sectors' (from the Covenant 'Schone en Zuinige Agrosectoren')	June 2008	LTO Nederland, KAvB, LTO Glaskracht, Productschap Tuinbouw, Productschap Akkerbouw, Platform Hout in Nederland, BVOR, Bosschap, Nevedi, FNLI, Platform Agrologistiek, NZO and State government	CO_2 reduction: 3.5-4.5 Mton in 2020 w.r.t. 1990 Reducing other greenhouse gases: 4-6 Mton (CO_2 equivalents) in 2020. Renewable energy: • 200 PJ in 2020 from domestic biomass • 12 PJ in 2020 from wind energy 2% energy efficiency improvement per year.
'Energy saving in the corporate sector'	October 2008	Aedes, Woonbond and State government.	As per More with Less and Spring Accord. Extra energy-saving measures; 24 PJ saving in 2020.

Convenant	Date	Signatories	Aims
Sector accord Energy 2008-2020	October 2008	EnergieNed, Dutch Association for Energy Markets (VME), Netbeheer Nederland and State government	Contributing to achieving climate and energy targets; Agreements on efforts for realising goals in the field of offshore wind, onshore wind, biomass, solar PV, CCS, heat, and infrastructure.
Sector accord: 'Sustainability in motion'	December 2008	ANWB, RAI, BOVAG, VNA, KNV, TLN, EVO, CBRB, NS passengers, Rotterdam Port Authority, Schiphol Group, KLM, PDM and State government.	Sustainable mobility: reducing CO_2 emissions and energy consumption
Climate Energy Accord Provinces and State	January 2009	IPO and State government	Contributing to realising 'Clean and Efficient' targets Speaking with market parties and helping them to share in delivering renewable energy. Developing and embedding sustainable energy mix policy.

Since the beginning of 2011, the Energy Transition has ceased being active in the form of the Controlling Authority and platforms. This does not alter the fact that the themes of Energy Transition are still relevant and are copied both in government policy and in private initiatives. Examples are the Green Deal, the Energy Top Sector and market initiatives such as Stichting Groen Gas Nederland and Energiesprong sev. An overview of the seven themes at which the Energy Transition is aimed is provided below.

Table 2c Energy Transition (until 2011)

Theme	Explanation
Sustainable Mobility	The Sustainable Mobility Platform is working on cleaner and more climate-neutral fuels, clean and efficient vehicles, and more efficient use of vehicles.
Green Raw Materials	The Green Raw Materials is working towards the goal of replacing 30% of fossil fuels in the Netherlands with renewable resources by 2030. This will result in lower CO_2 emissions and less dependence on oil, coal and natural gas.
Chain Efficiency	The ambition of the Chain Efficiency Platform is to achieve an annual saving of 150 to 180 PJ in product and production chains by 2030, and 240 to 300 PJ by 2050.
New Gas	The New Gas Platform is taking the lead in realising sustainable gas management. In the Netherlands today natural gas accounts for around 50% if primary energy consumption.
Sustainable Electricity	The Sustainable Electricity Platform concludes that it is possible to meet the demand for electricity in the Netherlands with virtually no CO_2 emissions. The Platform considers a 40% share of renewable electricity realistic in 2020.
Built Environment	The Energy Transition in the Built Environment Platform (PeGO) wants an energy reduction of 50% in the built environment within 20 years (by 2030). The Platform aims to achieve this by applying energy conservation measures on a large scale and using renewable energy.
Greenhouses as a Source of Energy	The Greenhouses as a Source of Energy Platform has the following ambitions for the horticultural sector for 2020: climate neutral (new) greenhouses, 48% fewer CO_2 emissions, to become a supplier of renewable heat and energy, and to greatly reduce the use of fossil energy.

2a Progress 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. (Article 22(1) e) of Directive 2009/28/EC).

The General Provisions of Act Environmental Licensing Bill (Wabo) came into force on 1 October 2010. Wabo seeks to simplify and speed up the granting of authorisation and improve service provision by the public administration in relation to building, spatial planning and the environment. Wabo introduces environmental authorisation for this, which replaces a total of 25 different authorisations and consents. In addition, applications for environmental authorisation can be arranged by submitting a single digital application form to the Online Environmental Office (OLO). Lastly, there is a single decision deadline and a single appeals procedure. Wabo also covers sustainable energy projects.

The administrative procedure for large-scale wind and biomass projects – the national coordination scheme – does not need further improvement. This procedure deals with the spatial integration of projects of this kind under the direction of the Ministry of Economic Affairs, Agriculture and Innovation and coordinates the granting of authorisation. This cuts the time needed for spatial integration and granting of authorisation from often 10 years or more to between around 18 months and 2 years. The 'Green Deal' has been struck with most provinces and many municipalities and enterprises, an arrangement incorporating specific agreements for the implementation of generally sustainable energy projects. Central to this is implementation of the projects with a minimum of administration.
SDE+, and also tax benefits for sustainable energy (EIA), can be applied for digitally.
Specifically for onshore wind, the review model that forecasts disruption of radar images by windmills for military and civil aviation has been adapted. This makes it possible to erect more windmills at many locations in the Netherlands.

2b Ensuring the transmission and distribution of electricity from renewable energy sources and rules for sharing costs related to grid connection and grid reinforcements

Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements. (Article 22(1) f) of Directive 2009/28/EC).

Under Article 23 of the Dutch Electricity Act (1998), transmission system operators are required to connect installations to the grid without discrimination. The connection must be made within a reasonable timeframe after installation. This period is limited to 18 weeks for (a) a connection up to 10 MVA, or (b) a connection for a production installation for generating sustainable electricity or a high-performance combined heat and power (CHP) system.
The distinction between access to the grid and transmission on the grid has rectified previous waiting lists for connection. This ensures access to the grid for all production installations, for both renewable and non-renewable energy.
Transmission system operators are also required to transport the electricity produced unless grid capacity is insufficient (Article 24). If transport capacity seems insufficient, congestion management is adopted. Congestion is relatively rare in the Netherlands and is confined to specific regions and specific time periods. As a result, the net costs of the congestion management system are estimated to be much lower than the costs associated with waiting lists for connection. Congestion management costs are currently socialised. It is still being investigated whether (some of) the costs can be attributed to 'grey' producers in a congestion area. New congestion management regulations laying down specific priority in distribution for sustainably produced electricity in a congestion area are expected to come into force at the beginning of 2012.
Structural congestion is being rectified by investments in extra grid capacity. Transmission system operators in the Netherlands are required by law to offer the necessary capacity (Article 16). Nevertheless, checks are performed to make these investments as economically efficient as possible. Consideration should also be given to "measures relating to sustainable electricity, energy saving and demand management or decentralised electricity production that may overcome the need to replace or boost production capacity" (Article 16(1)c)).

3. Support mechanisms schemes and other measures for renewable energy

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. (Article 22(1) b) of Directive 2009/28/EC).

The following schemes to promote the use of renewable electricity are described in this section:

1. SDE+
2. SDE
3. MEP
4. EIA
5. MIA/Vamil
6. Green Projects Scheme
7. Energy innovation agenda and Technology Development
8. National Coordination Scheme

Sustainable Energy Incentive Scheme Plus (SDE+)

In 2011, the Sustainable Energy Incentive Scheme (SDE) became the Sustainable Energy Incentive Scheme Plus (SDE+). The aim of this scheme is to generate as much sustainable energy as possible per euro, by subsidising the least expensive forms, i.e. affordable, reliable and clean energy. SDE+ provides long-term financial certainty by covering the unprofitable peak of projects. For details of the system for calculating subsidy amounts, see the description of SDE below.

SDE+, as applies in 2011, is based on four pillars:
- A single complete budget ceiling;
- A maximum basic amount of 15 cents/kWh for renewable electricity or 104 cents/Nm³ for renewable gas;
- Phasing-in;
- Introduction of a "free category".

SDE+ compensates for the difference between the cost price of grey energy and that of sustainable energy over a period of 12 or 15 years (basic amount - correction amount = SDE contribution). This is the basic principle of the scheme.

A single complete budget ceiling

A single subsidy ceiling is laid down for all categories instead of different subsidy ceilings per technology, as had hitherto been customary in SDE. All technologies therefore compete with one another for the same budget. In 2011, the budget is still equally split between electricity and gas. If one option is more heavily subscribed than another, the remaining budget is redistributed between electricity and green gas, via the publication of an amending regulation. In this way, the system functions as if there is one ceiling. In the meantime, the SDE Decree is being adapted so that a single ceiling is launched for all options as from 2012.

A maximum basic amount of 15 cents/kWh and 104 cents/Nm³

A maximum basic amount of 15 cents/kWh (and 104 cents/Nm³ for green gas options) applies. In principle, all technologies that can produce sustainable energy for this amount or less qualify for subsidy.

Phasing-in

Four phases are launched during the tender period. In the first phase, projects with a basic amount not exceeding 9 cents/kWh can apply for subsidy. In each subsequent phase, this upper limit goes up – where the remaining budget is adequate – one step, up to the maximum basic amount of 15 cents/kWh and 104 cents/Nm³ in the fourth phase. For each technology, there is still a dedicated basic amount above which subsidy will not be paid. Within the phases, the principle of 'first come, first served' applies.

Introduction of a "free category"

Each phase comprises a free category. In this way, innovative operators who can produce less expensively than the calculated basic amount for the technology in question can gain access to SDE+. For projects in the free category, a basic amount applies that is equal to the upper limit of the phase in question in which subsidy has been sought. This is conditional on this amount being lower than the basic amount of the technology in question. The free category therefore offers scope for a number of technologies whose costs are on average higher than 15 cents/kWh, such as electricity from thermal conversion of biomass < 10 MW, solar photovoltaic panels ≥ 15 kWp, free flow energy, osmosis, electricity from geothermal energy, wind at sea, offshore wind and electrical codigestion.
The maximum basic amount per phase up to 15 cents/kWh and 104 cents/Nm³ in phase 4 nevertheless continues to apply. On top of this this, a bonus can, however, be given for heat recovery.

Technologies for the production of renewable electricity are:
- waste incineration
- landfill gas or biogas from waste water treatment plants/sewage treatment plants
- biomass (various types of production plants)
- wind energy
- hydropower (including free flow energy)
- solar power (solar photovoltaic panels)
- geothermal energy
- osmosis
- sustainable heat (as from 2012)

Technologies for the production of renewable gas are:
- landfill gas or biogas from waste water treatment plants/sewage treatment plants (including as part of a green gas hub)
- biomass (various types of digesters, including as part of a green gas hub)

In 2011, the first allocations were made under SDE+ (feed-in premium). The available budget was EUR 1.5 billion. Cash payments from SDE+ are expected to be made as from 2013.

Both production costs and correction amounts are based on independent opinions of the Energy Research Centre of the Netherlands (ECN) and Kema. The advisory process provides for consultation with market players. During the consultation process, Stakeholders are given an opportunity to make a substantive contribution in writing and/or verbally. To monitor ECN's and Kema's advisory work, Fraunhofer ISI conducts a review each year in collaboration with the Vienna University of Technology. Each year, the Minister for Economic Affairs, Agriculture and Innovation lays down the production costs for new decisions. The same applies to correction, based on market prices for energy, with which the effective amount of support for all producing installations is determined.

Sustainable Energy Incentive Scheme (SDE)(closed as from 1-1-2011)

The Sustainable Energy Incentive Scheme (SDE) is an operating subsidy for the production of renewable electricity and renewable gas and a precursor of the SDE+ scheme mentioned above. SDE started in 2008 with the launch of various subsidy categories and closed on 1 January 2011.

Basic amount

SDE ensures many years of financial certainty by covering the unprofitable peak of projects. To determine the unprofitable peak, a basic amount is included in the decision to grant subsidy. This is the average cost price of the renewable energy option, i.e. the sum of investment and operating costs, plus a reasonable profit margin, divided by the expected quantity of sustainable energy produced.

Subsidy

The subsidy is the difference between the basic amount and the energy price. The energy price is, after the end of each calendar year, laid down for the previous year. The energy price may differ per category. Besides the energy price, other factors may be taken into account. The energy price including other factors is called the correction amount. Because the correction amount can differ each year, the producer receives a different subsidy amount per energy unit produced per calendar year.

Basic energy price

Besides the basic amount, a basic energy price also applies. In the case of electricity, the basic electricity price amounts to two thirds of the expected multiyear average electricity price. This maximises the subsidy; the maximum subsidy per energy unit produced cannot exceed the difference between the basic amount and the basic energy price. Under the SDE scheme, subsidies in the form of a feed-in premium were granted between 2008 and 2010. Besides electricity, this also concerns projects for green gas.

Cash payments from SDE are expected to increase steadily in the coming years and to carry on until 2030.

Environmental Quality of Electricity Production (MEP)

Under the Environmental Quality of Electricity Production (MEP) scheme, subsidies in the form of a feed-in tariff were awarded between 2003 and 2006. The scheme was discontinued in 2006. The MEP subsidy is a fixed subsidy tariff per kWh produced and applies for a period of 10 years. CHP plants form an exception to this rule, and were covered by an annual subsidy scheme. In the case of biomass projects, a transitional scheme was introduced for one year. Cash payments for the MEP scheme steadily shrink until 2020.

Table 3 Cash payments from MEP and SDE for renewable energy

MEP and SDE support schemes 2011		Per unit support*	Total (in million euro)**
MEP Onshore wind		0.077 €/kWh	246
MEP Offshore wind		0.097 €/kWh	73
MEP Biomass (inc. waste and landfill gas; inc. transitional MEP)		0.072 €/kWh	363
MEP Solar		0.097 €/kWh	1
MEP Hydropower		0.097 €/kWh	6
Environmental Quality of Electricity Production (MEP)	Production incentives • Feed-in tariff • Feed-in premium • Contracts	0.077 €/kWh	688
Total annual estimated support in the electricity sector		0.077 €/kWh	688
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector			
SDE Onshore wind		0.066 €/kWh	9
SDE Offshore wind		0 €/kWh	0
SDE Biomass renewable electricity (inc. renewable energy from waste and landfill gas)		0.061 €/kWh	47
SDE Biomass renewable gas		0.395 €/Nm³	
SDE Solar		0.316 €/kWh	6
SDE Hydropower		0.081 €/kWh	0
Sustainable Energy Incentive Scheme (SDE)	Production incentives • Feed-in tariff • Feed-in premium *** • Contracts	0.086 €/kWh	62
Total annual estimated support in the electricity sector ***		0.086 €/kWh	62
Total annual estimated support in the heating sector			
Total annual estimated support in the transport sector			
Sustainable Energy Incentive Scheme Plus (SDE+)	Production incentives • Feed-in tariff • Feed-in premium *** • Contracts	0 €/kWh	0
Estimated total annual support in the electricity sector ***		0 €/kWh	0
Estimated total annual support in the heating sector			
Estimated total annual support in the transport sector			

** The amount of energy supported by the support per unit gives indication of the effectiveness of the support for each type of technology.*

*** The cash outflows for the MEP and SDE are based on the state of affairs on 1 September 2011. Cash expenditure in the months of September to December 2011 inclusive are included in the form of an estimate.*

**** Calculation exclusive of renewable gas.*

Energy Investment Allowance (EIA)

The Energy Investment Allowance is intended for operators wanting to invest in energy saving technologies and the use of renewable energy in their businesses. Besides the usual depreciation with the Energy Investment Allowance, operators can deduct a certain percentage of the investment costs of energy-saving assets from assessable profit; in 2011, this was 41.5%. The EIA is generic in design, which means that the assets described in the EIA brochure meet a specific saving or return requirement. A number of assets that do not conform to the standard laid down, but which represent the best available alternative on the market, are an exception to this. Assets or parts of assets that qualify are set out on the EIA Energy List, which is updated each year.

This fiscal scheme from the Ministry of Finance and the Ministry of Economic Affairs, Agriculture and Innovation is implemented by the NL Agency and the Tax Office. The NL Agency checks that a notification satisfies the technical and administrative requirements of the EIA and issues a declaration if it does.

The Tax Office establishes whether or not an operator receives EIA. The budget for 2011 is €151 million. Based on the situation as at 3 October 2011, the percentage of renewable energy in the EIA this year is put at 10%, equivalent to €15 million. For the sake of completeness, it should be pointed out that no tax revenues are provided with an EIA declaration. This only happens if the investor includes the EIA allowance in his tax filing.

Environmental Investment Allowance (MIA)scheme and Random of Depreciation of Environmental Investments (Vamil) scheme

The aim of the MIA scheme and the Vamil scheme is to encourage operators to invest in specific environmentally friendly sustainable assets on the Environmental List. The schemes make environmentally friendly assets much better known and demonstrably speed up their market launch. The MIA and Vamil schemes are two different schemes but are used in combination because both use a common list, the 'Environmental List'. This Environmental List is revised each year. A budget of €101 million is available for the MIA scheme in 2011. Vamil offers scope for depreciating an investment at an arbitrary juncture, thus providing interest and liquidity benefits. It is possible to depreciate the entire investment fully in the year of purchase. Faster depreciation reduces the assessable profit. For Vamil, a budget of €24 million is available in 2011.

MIA and Vamil are schemes run by the Ministry of Finance and the Ministry of Infrastructure and the Environment. The NL Agency and the Tax Office implement the MIA and Vamil schemes. The NL Agency helps compile the Environmental List and performs technical checks on applications. The Tax Office checks the tax filing and then determines whether MIA/Vamil may be applied.

It is not possible to provide an estimate of the proportion of renewable energy in MIA/Vamil; these schemes do not contain separate sections for renewable energy. Examples of sustainable energy technologies supported include the following: investments in electric or hybrid transport, very economical passenger cars, gasification systems, biomass processing equipment, pyrolyser for waste recycling, groundwater management system with sustainable energy provision, sustainable energy generation and drive system for a river-going vessel, production system for microalgae, fermenter with algae reactor, etc.

Green Projects Scheme

Consumers can purchase green securities (green saving) or shares in a green investment fund (green investing). Anyone undertaking green saving or investing invests in green projects approved by the Dutch authorities. Tax advantages apply to this. Banks then lend, at a lower interest rate, the money thus brought in to projects that perform markedly better than usual in the sphere of nature and the environment, and much better than the statutory minimum requirements. There is a list of project categories that are eligible. Performance in the sphere of nature and the environment has been laid down in requirements monitored by the NL Agency and the Regulation Service.
The budget for 2011 is € 134 million. Based on historical data, the proportion of renewable energy is around 30%, and the estimate of the proportion in this year is thus € 43 million.

Energy innovation agenda and technology development (ended in 2011)

2011 is a transitional year in which the financial support schemes for energy research and development are moved to the Energy Top Sector. Until 2011, projects have been promoted under the social innovation agenda formulated by Energy Transition. This contained a large number of support measures aimed at the acceleration phase of the energy innovation process. Renewable energy forms a large part of this package. With the discontinuation of the Fund for Economic Structural Reinforcement (FES), the innovation agenda with associated subsidies has stopped, and projects supported are continuing to run until 2013/2014.
The national Energy Research Subsidy (EOS) programme also ended in 2011. The programme aims to extend technical knowledge of energy efficiency and sustainable energy by supporting research by Dutch knowledge centres and enterprises. EOS covers the entire process from idea to market launch. Projects supported are continuing to run until 2013/2014.
Increasingly, Dutch research is coordinated internationally.
An example of this is the ERA-NET projects. Within these projects, national ministries and agencies cooperate and undertake joint activities. There are 68 ERA-NET projects in total. Some projects publish calls for the submission of research projects in the participating countries. Researchers in those countries can then receive contributions based on regulations in the relevant country. ERA-NET can play a role in short- and medium-term programmes at the interface between community (European) programming and national programming.
The European Commission issued the European Strategic Energy Technology Plan (SET plan) in November 2007. This plan aims to make Europe a world leader in energy technologies. The SET plan proposes seven priority areas for establishing European Industrial Initiatives (EIIs). These are initiatives aimed at bolstering industrial energy research and innovation by ensuring that activities and participants attain critical mass. A roadmap and an implementation plan have been developed for each theme. The Netherlands participates in these EIIs.
Support (cash payments) for renewable energy given to projects under the energy innovation agenda and technology programmes is put at €37 million for 2011. The 2011 cash estimates of the NL Agency and the "Monitor for publicly funded energy research, 2010", which shows that 40% of publicly funded energy research is on renewable energy sources, have been used for calculation purposes.

National Coordination Scheme

The National Coordination Scheme (RCR) makes it possible to coordinate authorisations for major energy infrastructure-related and renewable energy projects. This is intended to speed up the granting of authorisation.

Application

Large-scale energy projects are covered by the National Coordination Scheme (RCR). The RCR aims to shorten and streamline procedures for establishing such projects. The National Coordination Scheme is included in Articles 3.35 and 3.36 of the Spatial Planning Act. In the case of renewable energy projects, the RCR applies in the following situations:

- For a production plant for generating renewable electricity with the aid of wind energy with a capacity of at least 100 MW, including connecting this plant to the grid.
- For a production plant for generating renewable electricity other than with the aid of wind energy with a capacity of at least 50 MW, including connecting this plant to the grid.

Modules

The RCR consists of two modules: the project module and the implementation module.

- The project module covers the special decision on the project. Where the project is not envisaged in the development plan, a national integration plan is drawn up which forms part of the development plan. This national integration plan is drawn up by central government (the Ministry of Economic Affairs, Agriculture and Innovation (EL&I) and the Ministry of Infrastructure and the Environment (I&M)).
- The implementation module provides for the coordination of all other decisions required for the project by the Minister for Economic Affairs, Agriculture and Innovation. The administrative bodies concerned remain authorised to take decisions and determine the substance of those decisions. However, the

Minister for Economic Affairs, Agriculture and Innovation determines the timeframe within which the decisions must be taken and ensures that all decisions and the logistics of deposition for inspection are coordinated properly. Participation in the required (draft) decisions and appeals to the Council of State are also included. Direct appeals to the Council of State usually apply under this procedure. If an administrative body does not take the desired decision, or does not take it in good time, the Government (the Minister for Economic Affairs, Agriculture and Innovation and the Minister for Infrastructure and the Environment) is authorised to take a decision to replace the decision by the administrative body concerned.

3.1 The way the electricity for which support is provided is allocated to final customers

Please provide information on how supported electricity is allocated to final customers for the purpose of Article 3 (6) of Directive 2003/54/EC. (Article 22(1) b) of Directive 2009/28/EC).

The power labelling scheme came into effect on 1 January 2005. This scheme requires energy suppliers to inform final customers about how the electricity supplied has been generated. Energy suppliers inform customers of the composition of the supplied electricity by 1 April of each calendar year. Energy suppliers use European Guarantees of Origin and Guarantees of Origin from EEC countries to validate the sustainable element of their provision. The remaining electricity provision consists of trade balances from the energy suppliers.
In addition, energy suppliers inform customers, via the power labelling, about the quantity of radioactive waste per kWh produced by generating the nuclear energy supplied and the quantity of CO_2 released from the energy supplied that has been generated from fossil sources.

4. Support schemes taking into account renewable energy applications that deliver 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, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material. (Article 22 (1) c) of Directive 2009/28/EC).

The MEP and SDE schemes both comprise a category for sustainable energy from waste incineration. In the SDE scheme, not only renewable electricity but also sustainable heat from waste incineration was eligible. Scope for this has been further extended in the current SDE+. Under that scheme, not all sustainable energy production is eligible for support, but only energy that a plant produces over and above that produced by a theoretical reference plant. Besides the category for sustainable energy from waste incineration, the MEP, SDE and SDE+ schemes also provide scope for renewable energy from digestion. This concerns the digestion of principally waste streams, such as manure and vegetable, fruit and garden waste. The advantage of these routes is that the waste in question is recovered instead of being directly removed for processing.

The MIA and Vamil schemes encourage operators to invest in specific environmentally friendly sustainable assets on the Environmental List. These assets exhibit better environmental performance than the usual alternatives. In the case of renewable energy, a number of technologies have been included on this list, such as: fermenter with algae reactor, pyrolyser, small-scale pure manure digestion at farm level, various applications of renewable energy technologies in products or processes, etc. The Environmental List is updated each year.

The Energy Investment Allowance encourages operators to invest in energy-saving technologies and the use of renewable energy in their undertakings. The EIA applies to energy investments on the Energy List. The assets described meet a specific saving or return requirement, thus promoting the best available alternatives. An example within the renewable energy category is the biofuel production plant intended for the production of solid, liquid or gaseous fuels from woody or cellulosic compounds. The Energy List is updated each year.

Biofuels

The Ministerial Regulation on double-counting of better biofuels came into effect in 2009. Biofuels produced from waste, residues, non-food cellulosic material and lignocellulosic material may, under certain conditions, be double-counted when complying with the annual obligation.
Dutch legislation implementing the EU Renewable Energy Directive (RED, 2009/28/EC) and the Fuel Quality Directive (FQD, 2009/30/EC) was published in May 2011. This legislation comes into force retroactively as of 1 January 2011. The double counting of biofuels is described in section 6 of the Renewable Energy Transport Regulation. The Ministerial Regulation on double-counting of better biofuels dating from 2009 has accordingly lapsed.

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. (Article 22(1) d) of Directive 2009/28/EC).

In the Netherlands, guarantees of origin must be issued for renewable electricity. Guarantees of origin for electricity are, in the Netherlands, issued by CertiQ, a full subsidiary of TenneT TSO. Some of the tasks that CertiQ discharges are statutory tasks of TenneT, as laid down in the Electricity Act. CertiQ reports directly to TenneT and its public shareholders. Each year CertiQ draws up an annual plan and annual report for this and periodically submits its results to the Netherlands Competition Authority (NMa) and the Ministry of Economic Affairs, Agriculture and Innovation. See Annex 1 for a detailed description of power certification in the Netherlands.
In the case of renewable gas, there is not yet a statutory certification system. The producer must pass on the production himself, although requirements have been laid down for metering and supervision. A voluntary system for Guarantees of Origin for green gas has been operational since July 2009. These green gas certificates are supplied by Vertogas. There is also a statutory framework for the certification of energy from CHP plants but because CHP certificate cannot yet be traded there is for the time being no interest from the sector in using this.

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

Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes. (Article 22(1) g) of Directive 2009/28/EC).

Most biomass for electricity generation and heating comes from waste from the Dutch domestic market. This chiefly comprises the biogenic fraction of waste incinerated in waste incinerators. In addition, a great deal of waste wood is made available for energy purposes, for use both in the Netherlands and in other EU States. In terms of weight, a lot of biomass comes from agriculture and the agro-industry. This mainly concerns wet waste streams, such as manure, which are digested. Another important stream is the importation of wood pellets for co-incineration of biomass in power stations, amounting to around 20 PJ. A large proportion of these come from North America (see Table 4, under Imports of processed biomass).

For 2009 and 2010, no data are available on the origin and nature of raw materials for the production of biofuels for transport. In line with the EU Renewable Energy Directive, the administrative system for blending requirements is aimed at mapping biofuels placed on the Dutch market. For these biofuel streams, information is collected on sustainability, the origin and nature of the raw materials, CO_2 performance, etc. Dutch factories for biofuels for transport produce not only for the Dutch market but also to a large extent for markets in other countries. In relation to exported biofuels, the central government does not currently collect information on the nature and origin of the raw materials. Collecting this information would impose additional administrative burdens. It is also doubtful whether this information could be published, given its traceability to individual enterprises.

Table 4 Energy provision from biomass [15]

Raw materials from domestic sources							
	Physical amount			Primary energy production PJ		Primary energy production ktoe	
	2009	2010	unit	2009	2010	2009	2010
Biomass supply for heating and electricity production							
Direct supply of wood (forests, gardens, parks)	1,257,476	1,319,597	m^3	10	11	243	256
Indirect supply of wood (waste wood, scrap wood) [16]	1,895,160	1,786,519	ton	25	23	585	552
Energy crops	261,669	364,532	ton	2	2	37	54
Waste and by-products from agriculture and the agro-industry	2,136,684	3,768,566	ton	8	15	192	358
Biomass from waste	6,433,803	6,686,881	ton	48	49	1,157	1,168
Other			ton				

Raw materials from the EU							
	Physical amount			Primary energy production PJ		Primary energy production ktoe	
	2009	2010	unit	2009	2010	2009	2010
Biomass supply for heating and electricity production							
Direct supply of wood (forests, gardens, parks)			m^3				
Indirect supply of wood (waste wood, scrap wood)	0	59,259	ton	0	1	0	19
Energy crops			ton				
Waste and by-products from agriculture and the agro-industry	65,000	0	ton	1	0	16	0
Biomass from waste			ton				
Other			ton				

Imported processed biomass from EU countries							
	Physical amount			Primary energy production PJ		Primary energy production ktoe	
	2009	2010	unit	2009	2010	2009	2010
Biomass supply for heating and electricity production							
Direct supply of wood (forests, gardens, parks)							
Indirect supply of wood (waste wood, scrap wood)	155,250	229,921	ton	3	4	65	96
Energy crops							

Waste and by-products from agriculture and the agro-industry							
Biomass from waste							
Other							

Raw materials from outside the EU

	Physical amount			Primary energy production PJ		Primary energy production ktoe	
	2009	2010	unit	2009	2010	2009	2010
Biomass supply for heating and electricity production							
Direct supply of wood (forests, gardens, parks)			m3				
Indirect supply of wood (waste wood, scrap wood)			ton				
Energy crops			ton				
Waste and by-products from agriculture and the agro-industry			ton				
Biomass from waste			ton				
Other			ton				

Imported processed biomass from countries outside the EU

	Physical amount			Primary energy production PJ		Primary energy production ktoe	
	2009	2010	unit	2009	2010	2009	2010
Biomass supply for heating and electricity production							
Direct supply of wood (forests, gardens, parks)							
Indirect supply of wood (waste wood, scrap wood)	953,679	1,047,417	ton	17	18	399	438
Energy crops							
Waste and by-products from agriculture and the agro-industry							
Biomass from waste							
Other							

15 Data come from a combination of official energy statistics, work by Utrecht University for IEA bioenergy task 40, the report Evaluation of digesters in the Netherlands, OWS 2011, and export assessments

16 A substantial portion of the waste wood is exported (around 7 PJ)

Table 4a Current domestic use agricultural land for the production of energy crops (ha)

Domestic use of agricultural land for energy crops (ha)		
	2009	2010
Energy maize	5,500	8,000
Rapeseed	2,635	2,632
Short rotation trees	12	8
Miscanthus	58	83

Agricultural land used for energy crops

For rapeseed this is the total area [17]. It is unknown what proportion has been used for crops dedicated to energy production. In the Netherlands, virtually no rape from own land was used in 2010 for the production of biofuels for the domestic market. Rape is used for 6% of biofuel production placed on the market in the Netherlands. The main rape supplier is Belgium (76%), followed by the United Kingdom (21%) [18]. Statistics Netherlands has calculated the area of forage maize used for energy crop production from information gleaned from surveys of fermenter operators conducted in 2009 and 2010. See also Question 7 below. Domestic agricultural land use for growing energy crops is minimal compared with the total area of arable land in the Netherlands (542,070 hectares) and the total area given over to green fodder (including forage maize) in the Netherlands (237,530 hectares).

17 Statistics Netherlands Statline, http://statline.cbs.nl/StatWeb/publication/?DM=SLNL&PA=71000ogs&D1=1-3&D2=15&D3=0&D4=0,6,(l-2)-l&VW=T

18 NEA, report on the sustainability of biofuels in 2010, dated March 2011

7. Changes in commodity prices and land use

Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with the 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. (Article 22(1) h) of Directive 2009/28/EC).

Changes in commodity prices

In the case of wood pellets, wood chips, energy wood and the usual food crops and fodder crops, there is no indication that demand from energy applications in the preceding two years has led to changes in commodity prices.
In 2009 and 2010, the Netherlands imported more than 90% of wood pellets consumed. Between 2009 and 2011, prices fluctuated in the range €115-145/tonne, but that was certainly not the result of Dutch market developments. It is an international market, and the Netherlands produces only a fraction of its own consumption.
The main factors that determine price are the dry bulk shipping rates, demand in other countries (e.g. Belgium and the UK) and the release of large stocks of wood pellets from the southeast USA in 2010/11 [19].

A commonly used crop for generating energy in the Netherlands is energy maize (forage maize). Forage maize produced in the Netherlands (230,700 hectares) is for the most part used in the raw feed industry, with only a few per cent being used for generating energy via (co) fermenting. Surveys of fermenter operators conducted as part of the "Evaluation of fermenters in the Netherlands" [20] project have shown that the price of energy maize has risen about 25% over the last 6 years. Large maize digesters work with long-term contracts and see little of the volatile day market. The daily price of energy maize is influenced mainly by harvest expectations. The above-mentioned evaluation also reveals that the price of the cosubstrates used for digestion (besides maize, this means chiefly residual streams) rises owing to increasing demand from the domestic Dutch market and neighbouring countries, which have a more favourable subsidy climate. Substrate costs account for more than 30% of operating costs. In the case of energy wood, data on price changes are available from individual suppliers; these data must be handled confidentially in most cases. In its annual report for 2010, Staatsbosbeheer [21] reports an increase in the sale price of energy wood of around 15% compared with 2009, on a volume of around 53,000 tonnes (2009: 58,000 tonnes).

Changes in land use

The Netherlands has not experienced significant changes in land use as a result of increased use of biomass and other forms of energy from renewable sources. Based on the above-mentioned survey of fermenter operators, Statistics Netherlands has calculated that the quantity of forage maize used in 2010 equates to an area of around 8,000 hectares. The corresponding figure in 2009 was around 5,000 hectares. The agriculture and horticulture figures from LEI/Statistics Netherlands show that the total area of forage maize in 2010 is 230,700 hectares, a fall of just over 11,000 hectares compared with 2009 [22]. The increase in the use of maize for fermenting has not led to an increase in the area of maize or a change in land use. In the Netherlands, rape was used for a limited proportion of biodiesel placed on the market in the Netherlands in 2010, namely 6% of biodiesel [23]. Rape is mainly imported, with the main supplier being Belgium (76%), followed by the United Kingdom (21%). Around 4% of rape used has been grown in the Netherlands. The area of land in the Netherlands used to grow rape was 2,635 hectares in 2009 and 2,632 hectares [24] in 2010, and has thus remained virtually unchanged.

19 Dutch contribution to wood pellet study 2011 (to be published), Copernicus Institute Utrecht University

20 Evaluation of fermenters in the Netherlands, OWS, November 2011, on behalf of the NL Agency.

21 http://www.jaarverslagstaatsbosbeheer.nl/downloads/Jaarstukken_2010.pdf

22 LEI and Statistics Netherlands, agriculture and horticulture figures http://www3.lei.wur.nl/ltc/Classificatie.aspx

23 NEa, report on the sustainability of biofuels in 2010

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

8. Share of biofuels 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 lingo cellulosic material. (Article 22(1) i) of Directive 2009/28/EC).

Table 5 Production and consumption of biofuels as referred to in Article 21(2) (TJ and ktoe)

Biofuels as referred to in Article 21(2) [25]				
	TJ		ktoe	
	2009	2010	2009	2010
Production				
Biodiesel	10,138	14,134	242	338
Biopetrol	confidential	confidential	confidential	confidential
Consumption				
Biodiesel	9,835	3,963	235	95
Biopetrol	5,771	5,614	138	134
Total production Art. 21(2) biofuels	unknown	unknown	unknown	unknown
Total consumption Art. 21(2) biofuels	3,216	3,574	77	85
Share of Article 21(2) fuels in total RES in transport (%)	33	50	33	50

Since 2009, the Netherlands has had regulations governing the double-counting of biofuels from waste, residues, non-food cellulosic material and lignocellulose. The Netherlands was the first country in the EU to have such regulations. In 2009 and 2010, such biofuels accounted for a share of approx. 33% and 50% respectively on an energy basis. In practice, this mainly concerns biodiesel made from spent deep-frying oil and animal fats from slaughterhouses.

There are three major biodiesel manufacturers in the Netherlands that produce this kind of biodiesel. The material comes from throughout the EU.

25 Biofuels from wastes, residues, non-food cellulosic and lignocellulosic materials.

9. Impact of the production of biofuels and bioliquids on biodiversity, water resources, water 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 within your country in the preceding 2 years. Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country. (Article 22(1) j) of Directive 2009/28/EC).

In the Netherlands, hardly any raw materials for biofuels are grown. The NUTS 2 study of emissions from the cultivation of biofuel raw materials conducted by LEI Wageningen [26] shows that rape is the only one of the four potential biofuel crops studied for the Netherlands that is used for biofuel production (biodiesel). In 2009 and 2010, rape was grown on a relatively small area of around 2,630 hectares, with an average yield of 3,800 kg per hectare (Statistics Netherlands, 2008). The other three crops studied (wheat, maize and sugar beet) are to date virtually exclusively grown for food and/or cattle feed and not for biofuel production. A small proportion (3.5%) of the area of forage maize is used for energy crops as raw material for biogas production from digestion. In 2009 and 2010, most production sites used residual streams for biofuel production, such as: deep-frying oils, animal fats and glycerine.
However, an ethanol plant started production in the Netherlands at the end of 2010. This plant largely uses grain, which is thought to be bought in internationally. Because virtually no raw materials for biofuels are grown in the Netherlands (virtually no new agricultural land is used either), the cultivation of biofuel crops does not affect biodiversity, water quality or soil quality in the Netherlands.

26 Dutch energy crops, LEI Wageningen UR, 2010

10. Estimated greenhouse gas emission reductions from renewable energy

Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (Article 22 (1) k) of Directive 2009/28/EC).

Compared with the preceding year, greenhouse gas emission savings due to the use of renewable electricity and heating and cooling rose in 2010. In the case of biofuels, renewable energy for transport, a fall in greenhouse gas emission savings is evident. This arises from the above-mentioned fall in the physical consumption of biofuels. To achieve the mandatory biofuel share of 4% in 2010, many suppliers used extra supplies from previous years. As a result, physical supplies in 2010 proved to be lower. Greenhouse gas emission savings also work out lower.

Table 6 Estimated greenhouse gas reductions (ton CO_2-eq)

Environmental aspect	2009	2010
Total estimated GHG saving from the use of renewable energy [27]	8,547	8,912
Estimated net GHG saving from the use of renewable electricity	6,359	6,883
Estimated net GHG saving from the use of renewable energy in heating and cooling	1,458	1,511
Estimated net GHG saving from the use of renewable energy in transport [28]	730	518

27 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.

28 Greenhouse gas emission savings have been calculated with the aid of the Report on the sustainability of biofuels in 2010 (NEa, March 2011). Market players reported voluntarily, covering about two thirds of biofuels brought onto the market in the Netherlands under the requirements in 2010. The raw material breakdown from 2010 has also been used for 2009.

11. Surplus/shortfall of energy production from renewable sources until 2020

Please report on (for the preceding 2 years) 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. (Article 22 (1) l, m) of Directive 2009/28/EC).

Table 7 Actual and estimated excess and/or deficit in production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in the Netherlands (ktoe)

	Jaar n-2 (2009)	Jaar n-1 (2010)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated excess or deficit production (please distinguish per type of renewable energy and per origin/destination of import/ export)	0	0	0	0	0	0	0	0	0	0	0	0

11.1 Details of statistical transfers, joint projects and joint support scheme decision rules

There are not yet any statistical transfers, joint projects or joint support scheme decision rules. The use of collaborative mechanisms may be considered during the evaluation of policy in 2014. In that event, future monitoring reporting will examine this policy option.

12. Estimated share of biodegradable waste in waste used for energy production

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. (Article 22 (1) n) of Directive 2009/28/EC).

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

The method was updated in 2010. This update concerns the net calorific value per waste stream and the biogenic shares of the fractions of household residual waste. The values of the six fractions accounting for the largest shares in household residual waste have been determined again on the basis of analyses. In relation to the other fractions, the values have been updated on the basis of a search of the literature. This is described in Biomass in household residual waste fractions, SenterNovem 2008.

The share of biodegradable waste is estimated each year by an independent agency, the NL Agency for Waste Management Implementation, using the annual report of the waste registration work group. The estimate is based on seven steps, with underlying data taken from years of research on the composition of waste in the Netherlands. With the aid of data collected from this research, energy, the carbon content and the associated biomass fraction are determined for waste streams incinerated in waste incinerators.
A 'fixed renewable energy percentage' is then calculated for all waste incinerators in the Netherlands from the proportion of biomass in energy.
The current method of estimation is "best practice", and there is no reason to take steps to improve and verify it.

5 Additional information regarding Article 22 (3 a-c)

Additional information with regard to Article 22, paragraph 3: a) plans for an administrative body responsible for processing applications for licenses and providing assistance, paragraph 3: b) automatic approval for planning and permit applications for renewable energy installations automatically approve in the event the set time limit expires, and paragraph 3: c) the indication of geographical locations suitable for the exploitation of energy from renewable sources within the context of land-use planning and for the setting up of plants for district heating and cooling.

The General Provisions of Environmental Licensing Bill (Wabo), which came into force on 1 October 2010, and the National Coordination Scheme for administrative procedures on large-scale wind and biomass projects cover all these aspects. These provide for simpler and swifter granting of authorisation and better service provision by the public administration in relation to building, spatial planning and the environment. This is described in more detail in section 2a.

6 Appendix 1
Electricity certification process

The processes surrounding Guarantees of Origin (GO) for renewable electricity in the Netherlands comprise the following steps:

1. **Registration of production facilities;**
2. **Processing of measurement values;**
3. **Issue of guarantees of origin;**
4. **Monitoring of guarantees of origin issued;**
5. **(Inter)national trade;**
6. **Cancellation of guarantees of origin.**

1. Registration of production installations

Before guarantees of origin can be issued for electricity generated in a production installation, the production installation in question must be included in the register held by CertiQ, the Dutch guarantee management authority. Every production installation applying to CertiQ undergoes an administrative check conducted by the regional network manager in whose network area the installation is sited. The regional network manager establishes whether the installation is suitable to generate sustainable electricity and whether the meters present are suitable for measuring production and the return of such electricity. The production installation is not included in CertiQ's register until the regional network manager has completed its checks, and the outcome of these is positive.

2. Processing of measurement values

It is the task of the regional network manager (which is independent) to collect production figures and pass them on to CertiQ for all production installations on the register. Communication between the regional network manager and CertiQ is fully automated. For installations that can convert various energy sources into electricity (i.e. incinerators that process, among other things, biomass), the producers concerned inform CertiQ of the sources from which the electricity produced has been generated, and in what proportions.

3. Issue of guarantees of origin

Based on these data, CertiQ issues guarantees of origin. The issue of guarantees of origin also takes place completely electrically, i.e. without human intervention. When issued, these guarantees of origin are transferred to the account of a dealer who has nominated the producer for this purpose.

4. Monitoring of guarantees of origin issued

Producers who maintain a biomass installation are required each year to supply CertiQ with an assurance report from an independent auditor. The auditor audits a producer's statement in terms of the proportion of fuels used (see section 2. Processing of measurement values). He reports on this in the assurance report. Based on this report, CertiQ can establish whether the producer's statement has been accurate. If the assurance report shows that insufficient guarantees of origin have been issued, these are still issued by CertiQ. If too many guarantees of origin have been issued, on the other hand, these are deducted from the relevant dealer's account.

5. (Inter)national trade

Guarantees of origin can be traded within the Netherlands, but also sold to other EU Member States, and to Norway and Switzerland. Every dealer has internet access to his electronic account, from where he can instruct the transfer of certificates to another (Dutch or non-Dutch) dealer's account. These instructions are processed completely electronically. International instructions are processed by a central electronic hub managed by the Association of Issuing Bodies (AIB). The AIB is an association of guarantee issuing bodies who have jointly developed a standard for the issue of and trading in guarantees of origin. This joint approach means that arrangements for guarantees of origin in Europe are highly standardised and that the quality and reliability of the system is safeguarded.

6. Cancellation of guarantees of origin

All suppliers in the Netherlands are obliged to demonstrate to their customers the origin of sustainable electricity they have supplied. Suppliers must ensure that they have sufficient guarantees of origin in their account each month to be able to discharge their obligation. Within one month after the end of the period in which the sustainable electricity was supplied, they must then cancel a corresponding quantity of guarantees of origin from their account. CertiQ supplies data periodically to the Dutch Office of Energy Regulation (the supervisor) concerning numbers of certificates cancelled. Based on these data, the Dutch Office of Energy Regulation checks whether suppliers have discharged their obligations.