

Template for Member State progress reports under Directive 2009/28/EC.

Article 22 of Directive 2009/28/EC requires Member States to submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every two years thereafter. The sixth report, to be submitted by 31 December 2021, shall be the last report required.

Member State reports will be important for monitoring overall renewable energy policy developments and Member State compliance with the measures set out in the Directive 2009/28/EC and the National Renewable Energy Action Plans of each Member State. The data included in these reports will also serve to measure the impacts referred to in Article 23 of Directive 2009/28/EC. Consistency in Member State data and reporting would be useful.

The purpose of the template is to help ensure that Member State reports are complete, cover all the requirements laid down in the Article 22 of Directive and are comparable with each other, over time and with National Renewable Energy Action Plans submitted by Member States in 2010. Much of the template draws on the template for the National Renewable Energy Action Plans¹.

When filling in the template, Member States should comply with the definitions, calculation rules and terminology laid down in Directive 2009/28/EC and those of Regulation (EC) No. 1099/2008 of the European Parliament and the Council².

Additional information can be provided either in the prescribed structure of the report or by including annexes.

Passages in italics aim to guide Member States in the preparation of their reports. Member States may delete these passages in the version of the report which they submit to the Commission.

¹ C(2009)5174.

² OJ L 304, 14.11.2008, p. 1.

1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (2014; 2013 e.g. 2010 and 2009) (Article 22(1)(a) of Directive 2009/28/EC).

Please fill in the actual shares and actual consumption of renewable energy for the preceding 2 years in the suggested tables.

Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources³

	2013	2014
RES-H&C ⁴ (%)	33.4	32.5
RES-E ⁵ (%)	106.9	109.6
RES-T ⁶ (%)	1.6	4.8
Overall RES share ⁷ (%)	66.5	69.2
<i>Of which from cooperation mechanism⁸ (%)</i>	0.5	1.1
<i>Surplus for cooperation mechanism⁹ (%)</i>	0	0

The renewables share has increased in Norway over the past two years, among other things owing to new hydropower production capacity. This is in line with the National Action Plan under the Renewables Directive (NREAP).

However, the increase was considerably higher than that forecast in the baseline set out in the Action Plan, mainly as a result of lower energy consumption due to the warmer weather. Energy consumption in Norway varies with outdoor temperatures, and in 2014 the temperature was 1.7 °C above the average temperature recorded between 1980 and 2010. Total national energy consumption was lower than forecast in both 2013 and 2014, which resulted in a lower denominator and thus a higher renewables share.

The renewables share also increased as a result of increased hydropower generation. Due to the weather conditions hydropower generation levels were high in 2014, and considerable new production capacity was also added. The method used in this report to calculate hydropower generation resulted in particularly high normalised electricity generation from hydropower in 2014, resulting in a higher numerator in the renewables calculation.

Given the particularities of the Norwegian energy system, such year-on-year variations are to be expected. Renewable power generation in Norway relies mainly on hydropower and production levels therefore vary with the hydrological conditions. Similarly, energy consumption in Norway is to a large extent correlated with outdoor temperatures and thus varies from year to year. This is described in points 3.1. and 3.2 of the Action Plan.

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

⁴ Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)b) and 5(4) of Directive 2009/28/EC divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

⁵ Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)a) and 5(3) of Directive 2009/28/EC divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

⁶ Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf. Article 5(1)c) and 5(5) of Directive 2009/28/EC divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.

⁷ Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

⁸ In percentage point of overall RES share.

⁹ In percentage point of overall RES share.

The reduced heating and cooling renewables share (RES-H&C) is due, among other factors, to lower heating requirements due to the mild weather and thus lower biofuels consumption. Furthermore, the consumption of biomass as a share of overall energy use has decreased as a result of the decline in the pulp and paper industry. These relative changes had a greater impact on the numerator than on the denominator since the consumption of other energy sources decreased less than was the case for biofuels.

As regards the renewables share in transport there is an apparent major increase from 2013 to 2014, mainly due to biofuels not having been included in the 2013 figures. As from 2014, however, biofuel use can be reported as renewable energy consumption in transport based on documentation that it is certified as sustainable.

Energy consumption and generation in Norway varies from year to year, and it is expected that for the next reporting period the renewables share will be closer to the baseline drawn up in the national action plan.

Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)¹⁰

	2013	2014
(A) Gross final consumption of RES for heating and cooling	1 566.3	1 393.7
(B) Gross final consumption of electricity from RES	11 741.1	11 811.2
(C) Gross final consumption of energy from RES in transport	62.8	194.6
(D) Gross total RES consumption ¹¹	13 370.1	13 399.5
(E) Transfer of RES to other Contracting Parties or Member States	0.0	0.0
(F) Transfer of RES from other Contracting Parties and 3rd countries	95.2	221.7
(G) RES consumption adjusted for target (D)-(E)+(F)	13 465.3	13 621.2

* Transfer from Sweden to Norway under the electricity certificate scheme (joint support scheme). See points 3 and 11.1.

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

	2013		2014	
	MW	GWh	MW	GWh
Hydro¹³:				
non pumped	31 033.0	135 071.3	31 153.0	135 810.5
<1MW	29 682.0	135 101.7	29 802.0	135 826.4
1MW–10 MW	61.0	276.6	61.0	268.3
>10MW	1 606.0	7 004.9	1 606.0	6 991.7
pumped	28 015.0	127 820.2	28 135.0	128 566.4
mixed ¹⁴	0.0		0.0	
	1 351.0	0.0	1 351.0	0.0

¹⁰ Facilitates comparison with Table 4a of the NREAPs.

¹¹ According to Art.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.

¹² Facilitates comparison with Table 10a of the NREAPs.

¹³ Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

¹⁴ In accordance with new Eurostat methodology.

<i>Geothermal</i>	0.0	0.0	0.0	0.0
<i>Solar:</i>	0.0	0.0	0.0	0.0
<i>photovoltaic</i>	0.0	0.0	0.0	0.0
<i>concentrated solar power</i>	0.0	0.0	0.0	0.0
<i>Tide, wave, ocean</i>	0.0	0.0	0.0	0.0
Wind:	818.0	1 872.2	863.0	2 114.7
<i>onshore</i>	815.7	1867.8	860.7	2106.9
<i>offshore</i>	2.3	4.4	2.3	7.8
Biomass¹⁵:	96.0	183.0	96.0	25.0
<i>solid biomass</i>	79.0	170.0	79.0	12.0
<i>biogas</i>	17.0	13.0	17.0	13.0
<i>bioliquids</i>	0.0	0.0	0.0	0.0
TOTAL	31 947.0	137126.5	32 112.0	137 950.2
<i>of which in CHP</i>		2.0		2.0

Table 1c: Total actual contribution (final energy consumption¹⁶) from each renewable energy technology in Norway to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)¹⁷

	2013	2012
<i>Geothermal (excluding low temperature geothermal heat in heat pump applications)</i>	0.0	0.0
<i>Solar</i>	0.0	0.0
Biomass¹⁸:	989.9	807.9
<i>solid biomass</i>	977.3	796.1
<i>biogas</i>	12.6	11.8
<i>bioliquids</i>	0.0	0.0
<i>Renewable energy from heat pumps:</i>	405.9	422.4
- <i>of which aerothermal</i>		
- <i>of which geothermal</i>		
- <i>of which hydrothermal</i>		
TOTAL	247.0	255.4
<i>of which DH¹⁹</i>	158.9	167.0
<i>of which biomass in households²⁰</i>	0.0	0.0

Table 1d: Total actual contribution from each renewable energy technology in Norway to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)^{21, 22}

	2013	2012
Bioethanol/ bio-ETBE	0	9.6
<i>of which Biofuels²³ Article 21.2</i>	0	0.3

¹⁵ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) of Directive 2009/28/EC last subparagraph.

¹⁶ Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.

¹⁷ Facilitates comparison with Table 11 of the NREAPs.

¹⁸ Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

¹⁹ District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

²⁰ From the total renewable heating and cooling consumption.

²¹ For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

²² Facilitates comparison with Table 12 of the NREAPs.

<i>of which imported</i> ²⁴	0	8.9
Biodiesel	0 (118) ²⁵	119.5
<i>of which Biofuels</i> ²⁶ Article 21.2	0 (3)	-
<i>of which imported</i> ²⁷	0(118)	118.4
Hydrogen from renewables	0	0
Renewable electricity	62.77	65.5
<i>of which road transport</i>	2.15	5.6
<i>of which non-road transport</i>	60.62	59.9
Others (as biogas, vegetable oils, etc.) – please specify	0	0
<i>of which Biofuels</i> ²⁸ Article 21.2	0	0
TOTAL	62.77	194.6

2. Measures taken in the preceding 2 years 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 your National Renewable Energy Action Plan. (Article 22(1)(a) of Directive 2009/28/EC)

Table 2: Overview of all policies and measures

<i>Name and reference of the measure</i>	<i>Type of measure*</i>	<i>Expected result**</i>	<i>Targeted group and or activity***</i>	<i>Existing or planned****</i>
<i>Enova support scheme for the transport sector</i>	Financial	Higher investments in biofuel production and energy-saving and emissions-reducing measures in the transport sector	Transport sector	In 2015 Enova launched new schemes aimed at reducing climate gas emissions in the transport sector, which replaced the Transnova aid scheme for alternative fuel pilot, demonstration and infrastructure projects
<i>Enova grant</i>	Financial	Higher investments in sustainable heating systems that contribute to the phasing out of fossil fuels and energy savings. Increased investments in the energy upgrade of homes.	Households	Existing. Amends Enova's aid schemes for private homes.
Planning and Building Act and Construction Technology Regulation (TEK). Requirements regarding energy needs and energy supply in new and renovated buildings.	Regulatory	More energy-effective buildings where renewable energy accounts for a larger share of the energy consumption	Construction industry	Existing and planned TEK revised in 2007 and amended in 2010, but contained energy-related requirements previously. The Government plans to introduce new passive house energy requirements from 1 January 2016

²³ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²⁴ From the whole amount of bioethanol / bio-ETBE.

²⁵ The figures in brackets are recorded values, but as the sustainability criteria had not yet come into force the official reported figure is 0.

²⁶ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

²⁷ From the whole amount of biodiesel.

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

Ban on oil-fired heating as from 2020.	Regulatory	Reduced oil combustion for heating, increased use of renewable heat.	Construction industry	Planned A ban is under consideration.
Competence-building programmes in the construction industry, such as Buildings of the Future, Low Energy Programme, Build up skills, Future Built, Bygg21.	Information	Building up competence on energy solutions in the construction industry	Construction industry and municipalities	Existing
Binding biofuels sales target in road transport.	Regulatory	Increased use of biofuels	Transport sector (road transport)	Existing From 1 April 2010 at least 3.5 % by volume of all fuel supplied to the road transport sector must be biofuels, increased to 5.5 % from 1 October 2015. Planned: 7 % from 1 January 2017, followed by further increases and conversion to more advanced biofuels (to be extended to non-road machinery)
Sustainability criteria introduced for biofuels and bioliquids covered by the binding sales target or by aid schemes	Regulatory	Increased sustainability of biofuels or bioliquids sold	Transport sector (road transport) and construction industry	Existing From 1 January 2014 (Planned: sustainability criteria for all biofuels sold)
Double counting introduced for the binding sales target for biofuels produced from waste, residue, ligno-cellulosic material and cellulosic material other than food	Regulatory	Possible conversion to more advanced biofuels with higher sustainability	Transport sector (road transport)	Existing From 1 January 2014
Increased deduction from one-off levy on cars with CO ₂ emissions of less than 105 g/km	Financial		Road transport	From 1 January 2015
Deduction from one-off levy increased from 15 to 26 % for rechargeable hybrid cars	Financial		Road transport	From 1 January 2015
VAT exemption measures implemented for electric car batteries and the leasing of electric cars	Financial		Road transport	From 1 July 2015
Electricity tax increased by NOK 0.01/kWh	Financial		Households and service industries	From 1 January 2015
Electricity tax increased by NOK 0.05/kWh	Financial		Households and service industries	From 1 July 2015
CO ₂ levy increased by NOK 0.48/l for domestic aviation covered by allowances and NOK 0.19/l for	Financial		Domestic aviation	From 1 January 2015

other domestic aviation				
HFC and PFC levy increased by 5 %	Financial		Cross-sectoral	From 1 January 2015
Levy on NO _x emissions increased by 5 % NOK 1.50/kg	Financial		Cross-sectoral	From 1 January 2015
The scope of the road use charge on fuel has been restricted to cover only petrol, mineral diesel, and biofuels taken into account towards meeting the binding sales target under the product regulation. Biofuel sold over and above the target is no longer subject to road use charges.	Financial		Road traffic	From 1 October 2015

* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

** Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?

*** Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc.? or what is the targeted activity / sector: biofuel production, energetic use of animal manure, etc.)?

**** Does this measure replace or complement measures contained in Table 5 of the NREAP?

2.a 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).

No new measures; see Action Plan

2.b 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).

2. No new measures; see Action Plan

3. 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 Commission reminds Member States that all national support schemes must respect the state aid rules as foreseen in Articles 107 and 108 of the Treaty on the Functioning of the EU. The notification of the report in accordance with Article 22 of Directive 2009/28/EC does not replace a state aid notification in accordance with Articles 107 and 108 of the Treaty on the Functioning of the EU.

*It is suggested that **table 3** is used to provide more detailed information on the support schemes in place and the support levels applied to various renewable energy technologies. Member States are encouraged to provide information on the methodology used to determine the level and design of support schemes for renewable energy.*

Table 3: Support schemes for renewable energy

RES support schemes year n (e.g. 2011)		Per unit support	Total (MNOK)	Total (M€)*
<i>Renewable electricity</i>				
Electricity certificate scheme** 2014	Obligation/quota (%) Electricity certificate quota 6.9 %	0.021/kWh (NOK)		
	Penalty/Buy out option/ Buy out price (€/unit)	NOK 257/electricity certificate The levy varies with the price of electricity certificates ***	0	0
	Average certificate price	NOK 194/MWh Average price, weighted by volume, of electricity certificates in Norway and Sweden in 2014. Exchange rate: SEK 100 = NOK 98.86 and EUR 1 = NOK 9.223)	NOK 1 billion	EUR 111 million
	Tax exemption/refund	N/A	N/A	N/A
	Investment subsidies (capital grants or loans) (€/unit)	N/A	N/A	N/A
	Production incentives	N/A	N/A	N/A
	Feed-in tariff	N/A	N/A	N/A
	Feed-in premiums			
Tendering				
Total annual estimated support in the electricity sector				
Total annual estimated support in the heating sector				
Total annual estimated support in the transport sector				

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

** Source of figures: Annual report on electricity certificates, http://webby.nve.no/publikasjoner/rapport/2013/rapport2013_59.pdf.

*** Failure to revoke electricity certificates is subject to a fee of 150 % of the average price, weighted by volume, of electricity certificates registered in Norway and Sweden in the period from 1 April of the previous calendar year to 31 March of the current calendar year.

Electricity certificate scheme: Launched on 1 January 2012, this scheme promotes new power generation from renewable energy sources in Norway.

Additional information on the electricity certificate scheme can be found on the website of the Norwegian Water Resources and Energy Directorate (*Norges vassdrags- og energidirektorat*, NVE): <http://www.nve.no/no/Kraftmarked/Elsertifikater/>.

Enova SF

The objective of Enova and the Energy Fund (*Energifondet*) is to promote environment-friendly changes in energy use and power generation and the development of advanced energy and climate technologies. Enova also aims to strengthen security of supply and help reduce climate gas emissions. On 1 January 2015 it took over the tasks previously performed by Transnova. A State enterprise located in Trondheim, Enova manages the resources of the Energy Fund, whereas the Ministry of Oil and Energy provides overall guidance on the use of the Fund. Its tasks are set out in an agreement with

the Ministry on the Fund's management, and the current agreement applies from 2012 to the end of 2016. In an appendix to the agreement of 2015, Enova was given new guidelines on the promotion of environment-friendly transport and a rights-based scheme for energy-efficiency measures in households.

Enova's new focus on the transport sector is anchored in the agreement, which among other things sets a new key target ensuring support from the Energy Fund to measures aimed at reducing climate gas emissions from transport. In January 2015 Enova launched the Enova grant, a rights-based aid scheme for energy-saving measures in households. The scheme is designed to reach a support level of NOK 250 million annually.

The agreement sets out the objectives of Enova and the Energy Fund as seven main targets defining Enova's areas of activity. Enova is to promote:

- new energy and climate technologies being developed and brought to market;
- more effective and flexible energy use;
- increased use of energy carriers other than electricity, natural gas and oil for heating;
- increased use of new energy resources, including energy recovery and bioenergy;
- better-functioning markets for effective and more environment and climate-friendly energy solutions;
- better public awareness of available environment and climate-friendly energy-saving solutions;
- reduced climate gas emissions in the transport sector.

Enova has set itself a quantitative energy and climate-related target of at least 7 TWh to be achieved during the period covered by the agreement. The agreement focuses on specific areas, including energy and climate technology and environment-friendly transport.

Transport

In addition to Enova's transport aid schemes, a number of tax exemptions are designed to promote the use of renewable energy in the transport sector in Norway (see table 2).

In 2013 and 2014 a binding national sales target applied in Norway requiring the total annual sales of biofuels to account for at least 3.5 % of overall fuel sales for road traffic purposes. The target was increased to 5.5 % from 1 October 2015 and will be further increased to 7.0 % with effect from 1 January 2017.

The sustainability criteria for biofuels and bioliquids (Articles 17-21 of the Sustainability Directive) are enacted in a national regulation which entered into force on 1 January 2014. Biofuels and bioliquids taken into account for measuring compliance with the renewables target or the binding sales target must satisfy the sustainability criteria.

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

Power generation covered by electricity certificates is not automatically allocated to final consumers as provided for by Article 3(6) of Directive 2003/54/EC.

Norwegian power producers may be issued with guarantees of origin. Such guarantees are provided under a voluntary scheme designed to allow documentation of the sources from which a given amount of power was generated.

Power producers must inform customers of the origin of their power supplies during the previous year in promotional material and invoices (product declaration). This requirement is laid down in a new NVE metering and accounting regulation.

Power suppliers that do not make use of guarantees of origin must refer to the product declaration as calculated by the NVE or, as a minimum, refer to the NVE's website. End users requiring documented proof that they are buying power generated from renewable energy sources must buy guarantees of origin.

4. 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).

In Norway there are no such support schemes.

5. 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).

The guarantees of origin scheme is governed by the Guarantees of Origin Regulation (FOR-2007-12-14-1652). Norway participated in the Concerted Action on the Renewables Directive and contributed to drawing up a common template for a form presenting such schemes in detail. The enclosed form describes the introduction of the guarantees of origin scheme in Norway. The form has been submitted to CA-RES and will be made available on the NVE website (*link to be provided*). We would therefore refer you to the information given in the form (enclosed).

6. 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).

Currently, biomass used for energy purposes in Norway is mainly made up of firewood used for heating by private households and for industrial purposes by the forest industry. A smaller share is district heating from wood and organic household waste combusted in incineration plants (waste-to-energy-plants).

The supply of biofuels, mainly from the forests, largely depends on logging activities, which in turn depend on prices and demand in international markets. 2014 saw an increase in logging, and thus in the supply of biomass for energy purposes, compared to 2013. Yet direct use of biofuels decreased from 2013 to 2014 due to a mild winter and increased use of energy-efficient heating ovens. Indirect use also declined following closures in the pulp and paper industry.

The former woodchips energy scheme, a support scheme for woodchips and energy production from forest fuels, led to an increase in fuel chips production, reaching 917 000 m³ lv (loose volume) of woodchips in 2013. Some 60-70 % went to domestic bioenergy generation while the remaining amount was exported. The scheme was abolished in 2014, with the result that the felling of timber for woodchips production shrank to virtually nil.

Production of energy crops (grasses, etc.) and short rotation trees is negligible to non-existent in Norway.

Table 4: Biomass supply for energy use

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU(*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Biomass supply for heating and electricity:												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings, etc.)**	3.32 million m ³	2.89 million m ³	570	497								
Indirect supply of wood biomass (residues and co-products from wood industry etc.)**	0.81 million m ³	0.55 million m ³	130	89								
Energy crops (grasses, etc.) and short rotation trees (please specify)	0	0										
Agricultural by-products / processed residues and fishery by-products**	Na	Na										
Biomass from waste (municipal, industrial etc.)**	0.91 million tonnes	1.02 million tonnes	249	280								
Others (please specify)												
Biomass supply for transport:												
Common arable crops for biofuels (please specify main types)												
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)												
Others (please specify)	1106 tonnes	1027 tonnes	0.70	0.65								

* Amount of raw material if possible in m³ for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste

** The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

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

There is virtually no production of crops dedicated to energy production in Norway.

Land use	Surface (ha)	
	2014	2013
1. Land used for common arable crops (wheat, sugar beet etc.) and oil seeds (rapeseed, sunflower etc.) (Please specify main types)	0	0
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	0	0
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	0	0

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

When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.

The price of bioenergy largely reflects the use and cost of heat pumps and electricity prices, which in recent years have remained relatively stable at low levels. The generation and use of bioenergy has not had any impact on land value and use in Norway.

Official price statistics for various types of biofuels are currently not available.

8. 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).

Article 21(2) biofuels ²⁹	2013	2014
Production – Fuel type bioethanol (ktoe)	2.66	3.36
Consumption – Fuel type bioethanol (ktoe)	- (0.2)	0.3
Consumption – Fuel type biodiesel (ktoe)	- (2.9)	-
Total production Art.21.2.biofuels	2.66	3.36
Total consumption Art.21.2. biofuels	- (3.1)	0.3
% share of 21.2. fuels from total RES-T	- (0.3 %)	0.2 %

9. 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 Norway timber is harvested mainly to supply the mechanical wood and pulp and paper industries with raw materials, rather than for energy purposes. In practice, fuelwood is supplied as residual raw material from other forestry activities. There have been no substantial changes in this area over the past two years. Logging affects the forest ecosystem, cultural heritage sites and outdoor life in various ways and a number of factors are at play in determining the exact impact. All production and harvesting of biomass from the forests must be carried out in a sustainable manner as required by the relevant legislation and comply with the Norwegian PEFC forest management standard. Research is being carried out to establish the impact of increased biomass production in Norway.

²⁹ Biofuels made from wastes, residues, non-food cellulosic material, and lignocellulosic material.

Norwegian authorities have adopted the EU's sustainability criteria for biofuels and bioliquids as from 1 January 2014, while at the same time maintaining the binding biofuels sales target of 3.5 % by volume (increased to 5.5 % as from 1 October 2015). Biofuels consumption in Norway is practically entirely covered by imports (see table 1d).

10. 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).

For the calculation of net greenhouse gas emission savings from the use of renewable energy, the following methodology is suggested:

- *For biofuels: In accordance with Article 22(2) of Directive 2009/28/EC.*
- *For electricity and heat it is suggested to use the EU wide fossil fuel comparators for electricity and heat as set out in the report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling³⁰, if no later estimates are available.*

If a Member State chooses not to use the suggested methodology for estimating the net greenhouse gas emission savings, please describe what other methodology has been used to estimate these savings.

Table 6: Estimated GHG emission savings from the use of renewable energy (t CO₂eq)

Environmental aspects	2013	2014
Total estimated net GHG emission saving from using renewable energy³¹		
- Estimated net GHG saving from the use of renewable electricity		
- Estimated net GHG saving from the use of renewable energy in heating and cooling		
- Estimated net GHG saving from the use of renewable energy in transport		

Hydropower accounts for a large part of Norway's stationary energy consumption, and its climate gas emissions from domestic energy consumption are therefore relatively low in comparison to other countries. Increased use of renewable energy, particularly in the form of electrical power, will have only a limited direct effect on emissions in Norway.

Increased exports from Norway could help expand the use of renewables in other countries. Norwegian hydropower is a flexible energy resource which, to a large extent, can be tapped in response to demand. In the context of increased phasing-in of wind power and other variable renewable energy sources in Europe, the flexibility of the Norwegian hydropower system could help balance energy inputs in countries to which we are connected via a transmission grid.

Emissions from energy generation are subject to the European allowance trading scheme. Under the allowance scheme, total emissions were initially set for the commitment period ending in 2020. If increased generation of renewable power leads to reduced fossil power generation, the price of the allowances may fall as a result. This would lessen the incentives to implement emission-reducing measures in other sectors. On the other hand, lower allowance prices could have an impact politically in terms of decisions on future allowance limits.

Total energy consumption in the transport sector fell by nearly 2 % from 2013 to 2014. Fuel consumption in road transport accounts for 75 % of the total domestic consumption for transport

³⁰ Report available on: http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/com_2010_0011_3_report.pdf .

³¹ 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.

purposes, of which diesel consumption for road haulage and private cars accounts for some 70 %. The consumption of petrol has dropped substantially over the past decade, whereas the consumption of diesel has risen. In 2014 petrol consumption fell by around 5 % on a year-on-year basis whereas diesel consumption increased by 0.4 %, i.e. not sufficiently to counterbalance the decrease in petrol. Thus total energy consumption for road transport fell by just under 1 % from 2013. With regard to maritime transport energy consumption fell by 8 % on the previous year. Power consumption by electric cars is increasing steadily and is estimated at 65 GWh in 2014, which is some 0.15 % of the total energy consumption for road transport.

Climate gas emissions from the transport sector have hardly changed. Renewable energy sources in transport are mainly renewable electricity, biofuels, certain biogases and hydrogen. Electric power is used in transport mainly by trains, trams, the underground and electric cars. These means of transport still account for a limited share of energy consumption in the transport sector, which is dominated by road, air and maritime transport.

Promoting the use of biofuels is a measure designed to increase the renewables share in transport. Biofuels consumption remained stable in 2013 and 2014, but an increase is expected as a result of the higher binding biofuels sales target and the exemption from road use charges.

11. 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) and (m) of Directive 2009/28/EC).

Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Contracting Parties, Member States and/or third countries in Norway (ktoe)^{32 33},

	Year 2013 (2013)	Year 2014 (2014)	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)										

Norway's renewables share in 2013 and 2014 was above the baseline estimated in the Action Plan (see Question 1). This is mainly due to yearly variations, and it is expected that for the next reporting period the renewables share will be closer to the estimated baseline. There are no plans to transfer excess production in 2013 and 2014 to other countries.

11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.

³² Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Contracting Party may correct the data of the previous reports.

³³ When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).

As the first countries in Europe, Norway and Sweden have implemented a *joint support scheme* as a cooperation mechanism under Article 11 of the Renewables Directive and established a common electricity certificate market to promote the expansion of power generation from renewable energy sources.

The two countries have established a distribution rule pursuant to Article 11(1)(b) of the Directive to determine how the generation of renewable power in the electricity certificate market is to be distributed between them. In a letter dated 25 March 2013 the Ministry of Petroleum and Energy informed the EFTA Surveillance Authority on the distribution rule for the Norwegian-Swedish electricity certificate scheme.

Normalised production in Norway from utilities put on stream after 2012 and covered by the scheme amounted to 712 GWh in 2014, whereas the corresponding normalised production in Sweden reached 5 868 GWh. For 2014, 2 578 GWh will be transferred from Sweden to Norway to be reported under the Renewables Directive.

12. Please provide information on how the share for 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).

Please note that in the first progress report (2011 report) Member States are invited to outline their intentions with regard to the questions addressed in Article 22(3 a-c). In addition, Member States are also welcome to provide any other information considered relevant to the specific situation of developing renewable energy of each Member State.

A calculation has been made of the renewables share of waste delivered to Norwegian incineration plants in 2009. The project is an update of a project carried out in 2006. The calculation methods used are the same as those used in 2006 with some changes, such as a more detailed analysis of the renewable, fossil and inert content of each fraction of waste.

In this project the renewables share was calculated in both weight and energy terms. The calculations were made on the basis of available waste statistics, sample analysis of household and industrial waste and data from relevant publications. The project involved new sample analyses of various types of industrial waste delivered to Norwegian incineration plants. The calculation of the renewables share in energy terms was based on a model developed by PROFU, which has also helped ensure the quality of the calculations. The renewables share was calculated at:

- 60 % in weight terms
- 52 % in energy terms

According to the calculations made the renewables share of the waste, based on actual net calorific value, was 52 %. There was no significant change compared to the results obtained in 2006, when the renewables share was calculated at 50 %.

Heat value (entire volume of waste): 11.5 MJ/kg (SSB: 10.5 MJ/kg)
Fossil energy share: 48 %. Renewable energy share: 52 %.

The total energy content of waste delivered to Norwegian incineration plants has been calculated at some 3.5 TWh/year.