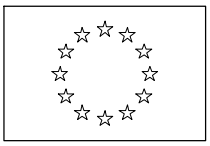

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 30.6.2009
C(2009) 5174-1

COMMISSION DECISION

of 30.6.2009

establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

(Text with EEA relevance)

Draft

COMMISSION DECISION

of 30.06.2009

establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to 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 amending and repealing Directives 2001/77/EC and 2003/30/EC[1], and in particular Article 4(1) second subparagraph thereof,

Whereas:

(1) Directive 2009/28/ EC requires each Member State to adopt a national renewable energy action plan. These plans are to set out Member States' national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020, taking into account the effects of other policy measures relating to energy efficiency on final consumption of energy, and adequate measures to be taken to achieve those national overall targets, including cooperation between local, regional and national authorities, planned statistical transfers or joint projects, national policies to develop existing biomass resources and mobilise new biomass resources for different uses, and the measures to be taken to fulfil the requirements of Articles 13 to 19 of Directive 2009/28/EC.

(2) In accordance with Directive 2009/28/EC, the Commission should adopt by 30 June 2009 a template for the national renewable energy action plans comprising the minimum requirements set out in Annex VI of that Directive.

HAS ADOPTED THIS DECISION:

Article 1

The template for the national renewable energy action plans required by Article 4(1) of Directive 2009/28/ EC as set out in the Annex to this Decision is adopted.

Article 2

This Decision is addressed to the Member States.

[1] OJ L140, 5.6.2009, p.16

Done at Brussels, […]

For the Commission
[…]
Member of the Commission

ANNEX

TABLE OF CONTENTS

Template For National Renewable Energy Action Plans (NREAPs)

Directive 2009/28/EC of the European Parliament and of the Council of … on the promotion of the use of energy from renewable sources requires Member States to submit a National Renewable Energy Action Plan (NREAP) to the European Commission by 30 June 2010. This is the template for these Action Plans. In accordance with Article 4 of Directive 2009/28/EC, the use of this template is obligatory.

The purpose of the template is to ensure that NREAPs are complete, cover all the requirements laid down in the Directive and are comparable with each other and with future Member State biannual reports on the implementation of the Directive.

When filling in the template, Member States are required to comply with the definitions, calculation rules and terminology laid down in Directive 2009/28/EC. Member States are furthermore encouraged to use the definitions, calculation rules and terminology in Regulation (EC) No. 1099/2008 of the European Parliament and the Council[2]*.*

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

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

The Commission reminds Member States that all national support schemes must respect the state aid rules as foreseen in Articles 87 and 88 of the EC- Treaty. The notification of the NREAPs does not replace a state aid notification in accordance with Article 88(3) of the EC-Treaty.

1. SUMMARY OF NATIONAL RENEWABLE ENERGY POLICY

Please give a short overview of the national renewable energy policy describing the objectives of the policy (such as security of supply, environmental, economic and social benefits) and the main strategic lines of action.

2. EXPECTED FINAL ENERGY CONSUMPTION 2010-2020

In this section, Member States are required to set out their estimates of gross final energy consumption of all types of energy (from both renewable and conventional sources), overall and for each sector, in the period up to 2020.

These estimates have to also take into account the expected effects of energy efficiency and saving measures to be introduced during the period. Under the heading "reference scenario" a scenario has to be presented taking into account only the energy efficiency and savings measures adopted before 2009. Under the heading "additional energy efficiency scenario" a scenario has to be presented taking into account all measures to be adopted from 2009. The elaboration of the other parts of the NREAP is based on this additional energy efficiency scenario.

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[2] OJ L 304, 14.11.2008, p. 1.

The term 'consumption for heating and cooling' has to be understood as the derived heat produced (heat sold), plus the final consumption of all other energy commodities except electricity in end-use sectors such as industry, households, services, agriculture, forestry and fisheries. The notion of heating and cooling covers therefore also final energy consumption for processing. Electricity may also be used for heating and cooling in final consumption, but this electricity is covered in the electricity target, which is why it is excluded here.

According to Article 5(6) of Directive 2009/28/EC, for the purpose of measuring compliance with the 2020 target and the interim trajectory, the amount of energy consumed in aviation is to be considered to be no more than 6,18% of the Member State´s gross final energy consumption (4,12% for Cyprus and Malta). The appropriate adjustments (if any) could be made in the table. The box shows how to calculate this

BOX – how to Calculate the 'aviation capping mechanism' in the Renewable Energy Directive

Assume Country A has a share of aviation energy consumption (AEC) of its total gross final energy consumption (GFEC) of X:

$X = AEC/GFEC$

Assume $X>6,18\%$

In this case the cap implies that for the purpose of assessing compliance,

$GFEC_{adjusted} = GFEC – AEC + AEC_{adjusted}$

where $AEC_{adjusted} = 0,0618 * GFEC$

In other terms

$GFEC_{adjusted} = GFEC – AEC + 0,0618 * GFEC=$

$= GFEC – X*GFEC + 0,0618 * GFEC=$

$= GFEC * (1,0618 – X)$

The "adjustment" as a % of the real GFEC and as a function of X is therefore

$Adjustment =(GFEC - GFEC_{adjusted})/GFEC=$

$= X-0,0618$

In the case of Cyprus and Malta, the figures of 4,12% and 0,0412 should replace the figures of 6,18% and 0,0618 respectively.

Table 1: Expected gross final energy consumption of [Member State] in heating and cooling, electricity and transport up to 2020 taking into account the effects of energy efficiency and energy saving measures[3] 2010-2020 (ktoe)

	2005	2010		2011		2012		2013		2014	
	base year	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
(1) heating and cooling[4]											
(2) electricity[5]											
(3) transport as in Art. 3(4)a[6]											
(4) Gross final energy consumption[7]											
The following calculation is needed only if final energy consumption for aviation is expected to be higher than 6,18% (4,12% for Malta and Cyprus):											
Final consumption in aviation											
Reduction for aviation limit[8] Art. 5(6)											

[3] These estimates on energy efficiency and energy savings shall be consistent with other such estimates that Member States notify to the Commission, notably in Action Plans under the Energy Services Directive and the Energy Performance of Buildings Directive. If different units are used in those Action Plans the conversion factors applied should be indicated.

[4] It is the final energy consumption of all energy commodities except electricity for purposes other than transport, plus the consumption of heat for own use at electricity and heat plants and heat losses in networks (items '2. Own use by plant' and '11. Transmission and distribution losses in page 23 and 24 of the energy Statistics Regulation, OJ L304 of 14.11.2008) .

[5] The gross electricity consumption is national gross electricity production, including autoproduction, plus imports, minus exports.

[6] Transport consumption as defined in Art. 3(4)a) of Directive 2009/28/EC. Renewable electricity in road transport for this figure should be multiplied by a factor of 2,5, as indicated by Article 3(4)c) of Directive 2009/28/EC.

[7] As defined in Article (2)f) of Directive 2009/28/EC. This comprises final energy consumption plus network losses and own use of heat and electricity at electricity and heating plants (NB: this does not include consumption of electricity for pumped hydro storage or for transformation in electrical boilers or heat pumps at district heating plants).

[8] According to Article 5(6) consumption for aviation has to be considered only up to 6,18% (Community average), for Cyprus and Malta up to 4,12% of gross final energy consumption.

TOTAL consumption after reduction for aviation limit											

	2015		2016		2017		2018		2019		2020	
	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
(1)heating -cooling[9]												
(2) electricity[10]												
(3) transport as in Art. 3(4)a[11]												
(4) Gross final energy consumption[12]												
The following calculation is needed only if final energy consumption for aviation is expected to be higher than 6,18% (4,12% for Malta and Cyprus):												
Final consumption in aviation												
Reduction for aviation limit[13] Art. 5(6)												
TOTAL consumption after reduction for aviation limit												

9 See footnote 4.

10 See footnote 5.

11 See footnote 6.

12 See footnote 7.

13 See footnote 8.

3. RENEWABLE ENERGY TARGETS AND TRAJECTORIES

3.1. National overall target

Table 2: National overall target for the share of energy from renewable sources in gross final consumption of energy in 2005 and 2020 (figures to be transcribed from Annex I, part A of Directive 2009/28/EC):

(A) Share of energy from renewable sources in gross final consumption of energy in 2005 (S_{2005}) (%)	
B) Target of energy from renewable sources in gross final consumption of energy in 2020 (S_{2020}) (%)	
(C) Expected total adjusted energy consumption in 2020 (from Table 1, last cell) (ktoe)	
(D) Expected amount of energy from renewable sources corresponding to the 2020 target (calculated as B x C) (ktoe)	

Member States may choose to look to the flexibility measures in Articles 6, 7, 8 and 11 of Directive 2009/28/EC with a view to making some of their own renewable energy consumption available to count towards the targets of other Member State(s) – or with a view to counting energy from renewable sources consumed in other Member State(s) towards their own targets. In addition they may use physical imports from third countries of electricity from renewable energy sources in accordance with the provisions of Articles 9 and 10 of Directive 2009/28/EC.

Any assessments of the renewable energy potential of your country can be attached in annex.

Any renewable energy targets at regional level or in major cities or in major energy consuming industries supporting the national renewable energy target fulfilment can also be attached in annex.

3.2. Sectoral targets and trajectories

According to Article 4(1) of Directive 2009/28/EC, Member States are required to set their targets for the share of energy from renewable sources in 2020 in the following sectors:

- *heating and cooling;*
- *electricity;*
- *transport.*

The total of the three sectoral targets, translated into expected volumes (ktoe) including the planned use of flexibility measures, has to be at least as high as the expected amount of energy from renewable sources that corresponds to the Member State's 2020 target (as reported in the last cell of Table 2).

The transport target, in addition, has to be compatible with the requirements of Article 3(4) of Directive 2009/28/EC for a 10% share of renewable energy in transport. It should, however, be noted that the calculation of compliance with the

target in Article 3(4) differs from the calculation of transport's contribution to the Member State's overall national target for renewable energy.

For the transport target, and not for the overall target:

- *Among petroleum products, only petrol and diesel count towards the **denominator**. This means that the kerosene/jet fuel used in aviation and the fuel oil used in shipping do not count (though the diesel used by some trains and some inland waterway vessels does);*

- *Biofuels from wastes, residues, non-food cellulosic material and ligno-cellulosic material count double towards the **numerator**;*

- *Electricity from renewable sources used in road vehicles counts 2.5 times towards the **numerator and the denominator**.*

According to Article 3(4)(c) of Directive 2009/28/EC to calculate the contribution of electricity produced from renewable sources and consumed in electric vehicles, Member States may choose to use either the average share of electricity from renewable energy sources in the Community, or the share of electricity from renewable energy sources in their own country, as measured two years before the year in question. For the estimation of the average share of electricity from renewable energy sources in the Community, Member States may use the future scenarios prepared by/ for the European Commission[14].

As well as setting sectoral targets for 2020, Member States must also describe the trajectory that they expect the growth of renewable energy use in each sector to follow between 2010 and 2020. The sectoral renewable targets in electricity and heating and cooling and the sectoral trajectories are estimations.

Table 3 requires Member States to furnish the information referred to above.

When filling in the table, Member States will wish to draw on the more detailed breakdown of expected renewable energy use required by Table 9. Calculation Tables 4a and 4b provide guidance in preparing Table 3.

The Directive requires Member States to publish and notify to the Commission their forecast for the use of the flexibility measures by 31 December 2009. Member States will wish to draw on this forecast in filling in the relevant parts of Table 4a. Member States are not, however, required to use the same figures in their Action Plans as they gave in their forecast documents. In particular, they may wish to adjust the figures in the light of the information contained in other Member States' forecast documents.

[14] For example the scenario documented in Appendix 4, p.287, in "*Appendixes to Model-based Analysis of the 2008 EU Policy Package on Climate Change and Renewables*": http://ec.europa.eu/environment/climat/pdf/climat_action/analysis_appendix.pdf. In this scenario the EU27 average share of gross electricity production from renewable energy forms is 19,4%, 24,6% and 32,4% for the years 2010, 2015 and 2020, respectively.

Table 3: National 2020 target and estimated trajectory of energy from renewable sources in heating and cooling, electricity and transport (*Calculation tables 4a and 4b are expected to guide the preparation of table 3.***)**

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES-H&C[15] (%)												
RES-E[16] (%)												
RES-T[17] (%)												
Overall RES share[18] (%)												
Of which from cooperation mechanism[19] (%)												
Surplus for cooperation mechanism[20] (%)												

[15] 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. Line (A) from table 4a divided by line (1) of table 1.

[16] 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/ECdivided by total gross final consumption of electricity. Row (B) from Table 4a divided by row (2) of Table 1.

[17] 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). Line (J) from Table 4b divided by row (3) of Table 1.

[18] Share of renewable energy in gross final energy consumption. Row (G) from Table 4a divided by row (4) of Table 1.

[19] In percentage point of overall RES share.

[20] In percentage point of overall RES share.

As part B of Annex I of the Directive			2011-2012	2013-2014	2015-2016	2017-2018		2020
			S_{2005}**+20%** (S_{2020}-S_{2005})	S2005 **+30%** (S_{2020}-S_{2005})	S2005 **+ 45%** (S_{2020}-S_{2005})	S2005 **+65%** (S_{2020}-S_{2005})		S_{2020}
RES minimum trajectory[21] (%)								
RES minimum trajectory (ktoe)								

[21] As defined in Annex I.B of the Directive 2009/28/EC.

Table 4a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(A) Expected gross final consumption of RES for heating and cooling												
(B) Expected gross final consumption of electricity from RES												
(C) Expected final consumption of energy from RES in transport												
(D) Expected total RES consumption[22]												
(E) Expected transfer of RES to other Member States												
(F) Expected transfer of RES from other Member States and 3rd countries												
(G) Expected RES consumption adjusted for target (D)-(E)+(F)												

[22] 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.

Table 4b: Calculation table for the renewable energy in transport share (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C) Expected RES consumption in transport [23]												
(H) Expected RES electricity in road transport [24]												
(I) Expected consumption of biofuels from wastes, residues, non- food cellulosic and lingo-cellulosic material in transport[25]												
(J) Expected RES contribution to transport for the RES-T target : (C)+(2,5-1)x(H)+(2-1)x(I)												

[23] Containing all RES used in transport including electricity, hydrogen and gas from renewable energy sources, and excluding biofuels that do no comply with the sustainability criteria (cf. Article 5(1) last subparagraph). Specify here actual values without using the multiplication factors.

[24] Specify here actual values without using the multiplication factors.

[25] Specify here actual values without using the multiplication factors.

4. MEASURES FOR ACHIEVING THE TARGETS

4.1. Overview of all policies and measures to promote the use of energy from renewable resources

Table 5: Overview of all policies and measures

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and or activity***	Existing or planned	Start and end dates of the measure
1.					
2.					
3.					
…					

* 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)?

4.2. Specific measures to fulfil the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

4.2.1. Administrative procedures and spatial planning (Article 13(1) of Directive 2009/28/EC)

When answering the following questions, Member States are requested to explain the current national, regional and local rules concerning the authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products. Where further steps are needed to ensure that procedures are proportionate and necessary, Member States are requested also to describe planned revisions, expected results and the authority responsible to carry out such revisions. When information is technology specific, please indicate it. When regional / local authorities have a substantial role, please also explain it.

(a) List of existing national and, if applicable, regional legislation concerning authorisation, certification, licensing procedures and spatial planning applied to plants and associated transmission and distribution network infrastructure:

(b) Responsible Ministry(/ies) / authority(/ies) and their competences in the field:

(c) Revision foreseen with the view to take appropriate steps as described by Article 13(1) of Directive 2009/28/EC by: [date]

(d) Summary of the existing and planned measures at regional / local levels (where relevant):

(e) Are there unnecessary obstacles or non-proportionate requirements detected related to authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products? If so, what are they?

(f) What level of administration (local, regional and national) is responsible for authorising, certifying and licensing renewable energy installations and for spatial planning? (*If it depends on the type of installation, please specify.*) If more than one level is involved, how is coordination between the different levels managed? How will coordination between different responsible authorities be improved in the future?

(g) How is it ensured that comprehensive information on the processing of authorisation, certification and licensing applications and on assistance to applicants made available? What information and assistance is available to potential applicants for new renewable energy installations on their applications?

(h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedual steps are needed to receive the final authorisation/ licence/permit? Is there a one-stop shop for coordinating all steps? Are timetables for processing applications communicated in advance? What is the average time for obtaining a decision for the application?

(i) Do authorisation procedures take into account the specificities of the different renewable energy technologies? If so, please describe how. If they do not, do you envisage taking them into account in the future?

(j) Are there specific procedures, for example simple notification, for small-scale, decentralised installations (such as solar panels on buildings or biomass boilers in buildings)? If so, what are the procedual steps? Are the rules publicly available to citizens? Where are they published? Is the introduction of simplified notification procedures planned in the future? If so, for which types of installation / system? (Is net metering possible?)

(k) Where are the fees associated with applications for authorisation/ licences/ permits for new installations published? Are they related to the administrative costs of granting such permits? Is there any plan to revise these fees?

(l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipments and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling? If such official guidance is not available or insufficient, how and when will this need be addressed?

(m) Are there specific trainings for case handlers of authorisation, certification and licensing procedures of renewable energy installations?

4.2.2. Technical specifications (Article 13(2) of Directive 2009/28/EC)

(a) To benefit from support schemes do renewable energy technologies need to meet certain quality standards? If so, which installations and what quality standards? Are there national, regional standards that go beyond European standards?

4.2.3. Buildings (Article 13(3) of Directive 2009/28/EC)

Please note that when referring to increasing the use of renewable energy sources in buildings, the supply of renewable electricity from the national grid should not be considered. The focus here is on increasing local supply of heat and/ or electricity to individual buildings. The direct supply of heat or cooling through district heating and cooling in buildings could also be taken into account.

(a) Reference to existing national and regional legislation (if any) and summary of local legislation concerning the increase of the share of energy from renewable sources in the building sector:

(b) Responsible Ministry(/ies) / authority(/ies):

(c) Revision of rules, if any, planned by: [date]

(d) Summary of the existing and planned measures at regional / local levels:

(e) Are there minimum levels for the use of renewable energy in building regulations and codes? In which geographical areas and what are these requirements? (Please summarise.) In particular, what measures have been built into these codes to ensure the share of renewable energy used in the building sector will increase? What are the future plans related to these requirements / measures?

(f) What is the projected increase of renewable energy use in buildings until 2020? (If possible differentiating between residential –"single-unit" and "multiple unit", commercial, public and industrial.) (To answer this question you may use a table as Table 6 below. Data could be given yearly, or for selected years. Both heating and cooling and electricity consumption from renewable energy sources should be included.)

Table 6 Estimated share of renewable energy in the building sector (%)

	2005	2010	2015	2020
Residential				
Commercial				
Public				
Industrial				
TOTAL				

(g) Have obligations for minimum levels of renewable energy in new and newly refurbished buildings been considered in national policy? If so, what are these levels? If not, how will the appropriateness of this policy option be explored by 2015?

(h) Please describe plans for ensuring the exemplary role of public buildings at national, regional and local level by using renewable energy installations or becoming zero energy buildings from 2012 onwards? (Please take into account the requirements under the EPBD).

(i) How are energy efficient renewable energy technologies in buildings promoted? *(Such measures may concern biomass boilers, heat pumps and solar thermal equipment fulfilling eco-label requirements or other standards developed at national or Community level [cf. text of Article 13(6)]).*

4.2.4. Information provisions (Articles 14(1), 14(2) and 14(4) of Directive 2009/28/EC)

Current and future information and awareness raising campaigns and programmes, as well as planned revisions, and expected results have to be described. Member States should also indicate which responsible authority will monitor and review the effects of the programmes. When regional / local authorities have a substantial role, please also indicate and summarise it.

(a) Reference to existing national and or regional legislation (if any) concerning information requirements according to Article 14 of Directive 2009/28/EC:

(b) Responsible body/(ies) for dissemination of information at national / regional / local levels:

(c) Summary of the existing and planned measures at regional / local levels (where relevant):

(d) Please indicate how information is made available on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport to all relevant actors (consumers, builders, installers, architects, suppliers of relevant equipment and vehicles). Who is responsible for the adequacy and the publishing of this information? Are there specific information resources for the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources, public administration? Are there information campaigns or permanent information centres in the present, or planned in the future?

(e) Who is responsible for publishing information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources for heating, cooling and electricity? (*Supplier of the equipment or system, public body or someone else?*)

(f) How is guidance for planners and architects provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating industrial or residential areas? Who is responsible for that?

(g) Please describe the existing and planned information, awareness raising and training programmes for citizens on the benefits and practicalities of developing and using energy from renewable sources. What is the role of regional and local actors in the designing and managing these programmes?

4.2.5. Certification of installers (Article 14(3) of Directive 2009/28/EC)

(a) Reference to existing national and/or regional legislation (if any) concerning certification or equivalent qualification schemes for installers according to Article 14(3) of the Directive 2009/28/EC:

(b) Responsible body/(ies) for setting up and authorising certification / qualification schemes by 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps:

(c) Are such certification schemes / qualifications already in place? If so, please, describe.

(d) Is information on these schemes publicly available? Are lists of certified or qualified installers published? If so, where? Are other schemes accepted as equivalent to the national/ regional scheme?

(e) Summary of existing and planned measures at regional / local levels (where relevant).

4.2.6. Electricity infrastructure development (Article 16(1) and Article 16(3) to (6) of Directive 2009/28/EC)

Besides the current situation and already existing legislation future actions, planned revisions, responsible bodies for it and expected results have to be described.

(a) Reference to existing national legislation concerning requirements related to the energy grids (Article 16):

(b) How is it ensured that transmission and distribution grids will be developed with a view to integrating the targeted amount of renewable electricity while maintaining the secure operation of the electricity system? How is this requirement included in the transmission and distribution operators' periodical network planning?

(c) What will be the role of intelligent networks, information technology tools and storage facilities? How will their development be ensured?

(d) Is the reinforcement of the interconnection capacity with neighbouring countries planned? If so, which interconnectors, for which capacity and by when?

(e) How is the acceleration of grid infrastructure authorisation procedures addressed? What is the current state and average time for getting approval? How will it be improved? (*Please refer to current status and legislation, bottlenecks detected and plans to streamline procedure with timeframe of implementation and expected results.*)

(f) How is coordination between grid infrastructure approval and other administrative planning procedures ensured?

(g) Are priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources?

(h) Are any renewable installations ready to come online but not connected due to capacity limitations of the grid? If so, what steps are taken to resolve this and by when is it expected to be solved?

(i) Are the rules on cost sharing and bearing of network technical adaptations set up and published by transmission and distribution system operators? If so, where? How is it ensured that these rules are based on objective, transparent and non-discriminatory criteria? Are there special rules for producers located in peripheral regions and regions with low population density? (*Cost bearing rules define which part of the costs is covered by the generator wishing to be connected and which part by the transmission or distribution system operator. Cost sharing rules define how the necessary cost should be distributed between subsequently connected producers that all benefit from the same reinforcements or new lines.*)

(j) Please describe how the costs of connection and technical adaptation are attributed to producers and/or transmission and/or distribution system operators? How are transmission and distribution system operators able to recover these investment costs? Is any modification of these cost bearing rules planned in the future? What changes do you envisage and what results are expected? (*There are several options for distributing grid connection costs. Member States are likely to choose one or a combination of these. According to the "deep" connection cost charging the developer of the installation generating electricity from renewable energy sources bears several grid infrastructure related costs (grid connection, grid reinforcement, and extension). Another approach is the "shallow" connection cost charging, meaning that the developer bears only the grid connection cost, but not the costs of reinforcement and extension (this is built into the grid tariffs and paid by the customers). A further variant is when all connection costs are socialised and covered by the grid tariffs.*)

(k) Are there rules for sharing the costs between initially and subsequently connected producers? If not, how are the benefits for subsequently connected producers taken into account?

(l) How will it be ensured that transmission and distribution system operators provide new producers wishing to be connected with the necessary information on costs, a precise timetable for processing their requests and an indicative timetable for their grid connection?

4.2.7. Electricity network operation (Article 16(2) and Article 16(7) and (8) of Directive 2009/28/EC)

(a) How is the transmission and distribution of electricity from renewable energy sources guaranteed by transmission and distribution system operators? Is priority or guaranteed access ensured?

(b) How is it ensured that transmission system operators, when dispatching electricity generating installations give priority to those using renewable energy sources?

(c) How are grid- and market- related operational measures taken in order to minimise the curtailment of electricity from renewable energy sources? What kinds of measures are planned and when is implementation expected? *(Market and grid design that enable the integration of variable resources could cover measures such as trading closer to real time (changing from day-ahead to intra-day forecasting and rescheduling of generators), aggregation of market*

areas, ensuring sufficient cross border interconnection capacity and trade, improved cooperation of adjacent system operators, the use of improved communication and control tools, demand-side management and active demand-side participation in markets (through two-way communication systems - smart metering), increased distributed production and domestic storage (e.g. electric cars) with active management of distribution networks (smart grids).)

(d) Is the energy regulatory authority informed about these measures? Does it have the competence to monitor and enforce implementation of these measures?

(e) Are plants generating electricity from renewable energy sources integrated in the electricity market? Could you please describe how? What are their obligations regarding participation in the electricity market?

(f) What are the rules for charging transmission and distribution tariffs to generators of electricity from renewable energy sources?

4.2.8. Biogas integration into the natural gas network (Article 16(7) and Article 16(9) and (10) of Directive 2009/28/EC)

(a) How is it ensured that the charging of transmission and distribution tariffs does not discriminate against gas from renewable energy sources?

(b) Has any assessment been carried out on the need to extend the gas network infrastructure to facilitate the integration of gas from renewable sources? What is the result? If not, will there be such an assessment?

(c) Are technical rules on network connection and connection tariffs for biogas published? Where are these rules published?

4.2.9. District heating and cooling infrastructure development (Article 16(11) of Directive 2009/28/EC)

(a) Please provide an assessment of the need for new district heating and cooling infrastructure using renewable energy sources and contributing to the 2020 target. Based on this assessment, are there plans to promote such infrastructures in the future? What are the expected contributions of large biomass, solar and geothermal facilities in the district heating and cooling systems?

4.2.10. Biofuels and other bioliquids – sustainability criteria and verification of compliance (Articles 17 to 21 of Directive 2009/28/EC)

The following part of the national action plan should explain Member States' future strategy regarding fulfilment of the sustainability criteria for biofuels and bioliquids and verification of compliance with the scheme.

(a) How will the sustainability criteria for biofuels and bioliquids be implemented at national level? (*Is there legislation planned for implementation? What will be the institutional setup?)*

(b) How will it be ensured that biofuels and bioliquids that are counted towards the national renewable target, towards national renewable energy obligations and/or are eligible for financial support comply with the sustainability criteria set down in Article 17(2) to (5) of Directive 2009/28/EC? (*Will there be a*

national institution / body responsible for monitoring / verifying compliance with the criteria?)

(c) If a national authority / body will monitor the fulfilment of the criteria, does such a national authority / body already exist? If so, please specify. If not, when is it envisaged to be established?

(d) Please provide information on the existence of national law on land zoning and national land register for verifying compliance with Article 17(3) to (5) of Directive 2009/28/EC. How economic operators can access to this information? (*Please provide information on the existence of rules and distinction between different land statuses, like biodiversity area, protected area etc; and on the competent national authority who will monitor this land register and changes in land status.*)

(e) As far as protected areas are concerned, please provide information under which national, European or international protection regime they are classified.

(f) What is the procedure for changing the status of land? Who monitors and reports at national level on land status changes? How often are the land zoning register updated (monthly, annually, bi-annually, etc.)?

(g) How is compliance with good agro-environmental practices and other cross-compliance requirements (required by Article 17(6) of Directive 2009/28/EC) ensured and verified at national level?

(h) Do you intend to help develop voluntary "certification" scheme(s) for biofuel and bioliquid sustainability as described in the second subparagraph of Article 18(4) of Directive 2009/28/EC? If so, how?

4.3. Support schemes to promote the use of energy from renewable resources in electricity applied by the Member State or a group of Member States

Support schemes can be regulatory, providing for targets and/ or obligations. They may provide financial support either for investment or during the operation of a plant. There are also soft measures like information, education, or awareness-raising campaigns. As soft measures are described above, this assessment should focus on regulatory and financial measures.

Please describe existing schemes with legal reference, details of the scheme, duration (indicating start and end dates), past impact and explain whether any reform or future schemes are planned and by when. What are the expected results?

Regulation

Regulation can set target(s) and obligations. In case there is such an obligation please detail it:

(a) What is the legal basis for this obligation/target?

(b) Are there any technology-specific targets?

(c) What are the concrete obligations/targets per year (per technology)?

(d) Who has to fulfil the obligation?

(e) What is the consequence of non-fulfilment?

(f) Is there any mechanism to supervise fulfilment?

(g) Is there any mechanism to modify obligations / targets?

Financial support

Financial support can be classified in various ways. Examples are:

financial support for investment, capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, renewable energy obligations with or without green certificates (tradable green certificates), feed-in tariffs, feed-in premiums, voluntary schemes

For any scheme you use, please give a detailed description answering the following questions?

(a) What is the name and a short description of the scheme?

(b) Is it a voluntary or obligatory scheme?

(c) Who manages the scheme? (*Implementing body, monitoring authority*)

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

(e) How is long-term security and reliability addressed by the scheme?

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

(g) Does support differ according to technology?

(h) What are the expected impacts in terms of energy production?

(i) Is support conditional on meeting energy efficiency criteria?

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

(k) Is this a planned scheme? When would it be operational?

(l) What start and end dates (duration) are set for the whole scheme?

(m) Are there maximum or minimum sizes of system which are eligible?

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

(o) Are there regional / local schemes? If so, please detail using the same criteria.

Specific questions for financial support for investment:

(a) What is granted by the scheme? (subsidies, capital grants, low interest loans, tax exemption or reduction, tax refunds)

(b) Who can benefit from this scheme? Is it specified for certain technology(/ies)?

(c) Are applications continuously received and granted or are there periodical calls? If periodical, could you please describe the frequency and conditions?

Specific questions for tradable certificates:

(a) Is there an obliged share of electricity produced from renewable sources in the total supply?

(b) Who has the obligation?

(c) Are there technology-specific bands?

(d) Which technologies are covered by the scheme?

(e) Is international trade in certificates allowed? What are the conditions?

(f) Is there a floor bottom price?

(g) Is there a penalty for non-fulfilment?

(h) What is the average price for certificates? Is it made public? Where?

(i) What is the trading scheme for certificates?

(j) How long can a plant participate in the scheme?

Specific questions for feed-in fixed tariffs:

(a) What are the conditions to get the fixed tariff?

(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the tariff?

(c) Is it a technology specific scheme? What are the tariff levels for each?

(d) Are there other criteria differentiating tariffs?

(e) For how long is the fixed tariff guaranteed?

(f) Is there any tariff adjustment foreseen in the scheme?

Specific questions for feed-in premiums:

(a) What are the conditions to get the premium?

(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the premium?

(c) Is it an alternative to fixed tariff?

(d) Is it a technology-specific scheme? What are the premium levels for each?

(e) Is there a floor and/or a cap for the premium? Please specify.

(f) For how long is the premium price guaranteed?

(g) Is any tariff adjustment foreseen in the scheme?

Specific questions for tendering:

(a) What is the frequency and size of the tenders?

(b) Which technologies are specified?

(c) Is it integrated with grid development?

4.4. Support schemes to promote the use of energy from renewable resources in heating and cooling applied by the Member State or a group of Member States

Please follow the structure of point 4.3 and apply the questions to the support measures provided for renewable energy use in the heating and cooling sector. Please address the following additional points:

(a) How are the support schemes for electricity from renewable energy sources adapted to encourage the use of CHP from renewable energy sources?

(b) What support schemes are in place to encourage the use of district heating and cooling using renewable energy sources?

(c) What support schemes are in place to encourage the use of small-scale heating and cooling from renewable energy sources?

(d) What support schemes are in place to encourage the use of heating and cooling from renewable energy sources in industrial applications?

4.5. Support schemes to promote the use of energy from renewable resources in transport applied by the Member State or a group of Member States

Please follow the structure of point 4.3 and apply the questions the support measures provided for renewable energy use in the transport sector. Please make distinctions according to transport modes (such as road transport, non-road land transport). Please address the following additional points:

(a) What are the concrete obligations / targets per year (per fuel or technology)?

(b) Is there differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?

4.6. Specific measures for the promotion of the use of energy from biomass

Biomass has an important role as primary energy in all the three sectors: heating and cooling, electricity and transport. National biomass strategy is crucial to plan the role and the interaction of uses between the energy end uses and interaction with other non-energy sectors. Therefore Member States are required to assess their domestic potential and increased mobilisation of domestic and imported biomass resources. The impact on and the interaction with other non-energy sectors (as the food and feed industry, pulp and paper industry, construction industry, furniture industry etc.) should be analysed.

4.6.1. Biomass supply: both domestic and trade

Under this point Member States should assess the supply of domestically available biomass and the need for imports.

There should be a distinction between biomass (A) from forestry – (1) direct and (2) indirect supply; (B) from agriculture and fisheries– (1)directly provided and (2)by-products / processed crops; and (C) from waste – (1)biodegradable fraction of municipal solid waste, (2) biodegradable fraction of industrial solid waste and (3) sewage sludge. Data is required for the above-mentioned first subcategories, while more detailed information is optional. However the aggregated figures shall reflect the following categorisation and give information in the units of Table 7. The role of

imports (EU and non-EU) and exports (if possible, EU and non-EU) must be reflected.

Please note that wood chips, briquettes and pellets can be either from direct supply or from indirect supply from forestry. If information on pellets is included in the table, it should specify whether the raw material comes from direct or indirect supply.

In the case of biogas and biofuels the amount of raw feedstock should be detailed in Table 7, not the amount of processed feedstock. It is understood that for imports and exports the amount of biomass feedstocks for biofuels is more difficult to ascertain, and estimations may be necessary. Alternatively, if the information on imports is given on the basis of biofuel imports, it must be specified in the table.

Table 7: Biomass supply in 2006

Sector of origin		**Amount of domestic resource**[26]	**Imported**		**Exported**	**Net amount**	**Primary energy production (ktoe)**
			EU	**Non-EU**	**EU/non-EU**		
A) Biomass from forestry[27]**:**	*Of which:*						
	1. direct supply of wood biomass from forests and other wooded land for energy generation						
	Optional - if information is available you can further detail the amount of feedstock belonging to this category:: a) fellings b) residues from fellings (tops, branches, bark, stumps) c) landscape management residues (woody biomass from parks, gardens, tree rows, bushes) d) other (please define)						
	2. indirect supply of wood biomass for energy generation						
	Optional - if information is available you can further detail: a) residues from sawmilling, woodworking, furniture industry (bark, sawdust) b) by products of the pulp and paper industry (black liquor, tall oil) c) processed wood-fuel d) post consumer recycled wood (recycled wood for energy						

- [26] Amount of the resource in m^3 (if possible, otherwise in appropriate alternative units) for category A and its subcategories and in tonnes for categories B and C and their subcategories.
- [27] Biomass from forestry should also include biomass from forest-based industries. Under the category of biomass from forestry processed solid fuels, such as chips, pellets and briquettes should be included in the corresponding subcategories of origin.

	generation, household waste wood) e) other (please define)						
B) Biomass from agriculture and fisheries:	*Of which:*						
	1. agricultural crops and fishery products directly provided for energy generation						
	Optional - if information is available you can further detail: a) arable crops (cereals, oilseeds, sugar beet, silage maize) b) plantations c) short rotation trees c) other energy crops (grasses) d) algae e) other (please define)						
	2. Agricultural by-products / processed residues and fishery by-products for energy generation						
	Optional - if information is available you can further detail: a) straw b) manure c) animal fat d) meat and bone meal e) cake by–products (incl. oil seed and olive oil cake for energy) f) fruit biomass (including shell, kernel) g) fishery by product g) clippings form vines, olives, fruit trees h) other (please define)						
C) Biomass from waste:	*Of which:*						
	1. Biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) **and landfill gas**						
	2. Biodegradable fraction of industrial waste (including paper, cardboard, pallets)						
	3. Sewage sludge						

Please explain the conversion factor/calculation methodology used above for the conversion of the amount of available resources to primary energy.

Please specify on what basis the biodegradable fraction of municipal solid waste and of industrial waste was calculated.

Please use Table 7a to give an estimated contribution of biomass energy use in 2015 and 2020. (Following the categorisation used in Table 7.)

Table 7a: Estimated biomass domestic supply in 2015 and 2020

Sector of origin		2015		2020	
		Expected amount of domestic resource	**Primary energy production (ktoe)**	**Expected amount of domestic resource**	**Primary energy production (ktoe)**
A) Biomass from forestry:	**1. direct supply of wood biomass from forests and other wooded land for energy generation**				
	2. indirect supply of wood biomass for energy generation				
B) Biomass from agriculture and fisheries:	**1. agricultural crops and fishery products directly provided for energy generation**				
	2. Agricultural by-products / processed residues and fishery by-products for energy generation				
C) Biomass from waste:	**1. Biodegradable fraction of municipal solid waste including biowaste** (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) **and landfill gas**				
	2. Biodegradable fraction of industrial waste (including paper, cardboard, pallets)				
	3. Sewage sludge				

What is the estimated role of imported biomass up to 2020? Please specify the quantities expected (ktoe) and indicate possible import countries.

In addition to the information provided above, could you please describe the current situation of agricultural land used for dedicated energy production as follows:

Table 8: Current agricultural land use for production of crops dedicated to energy in 2006

Agricultural land use for production of dedicated energy crops	Surface (ha)
1) Land used for short rotation trees (willows, poplars)	
2) Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum	

4.6.2. Measures to increase biomass availability, taking into account other biomass users (agriculture and forest-based sectors)

– **Mobilisation of new biomass sources**:

(a) Please specify how much land is degraded.

(b) Please specify how much unused arable land there is.

(c) Are any measures planned to encourage unused arable land, degraded land, etc. to be used for energy purposes?

(d) Is energy use of certain already available primary material (such as animal manure) planned?

(e) Is there any specific policy promoting the production and use of biogas? What type of uses are promoted (*local, district heating, biogas grid, natural gas grid integration*)?

(f) What measures are planned to improve forest management techniques in order to maximise the extraction of biomass from the forest in a sustainable way?[28]: How will forest management be improved in order to increase future growth? What measures are planned to maximise the extraction of existing biomass that can already be put into practice?

– **Impact on other sectors:**

(a) How will the impact of energy use of biomass on other sectors based on agriculture and forestry be monitored? What are these impacts? (If possible, please provide information also on quantitative effects.) Is the monitoring of these impacts planned in the future?

(b) What kind of development is expected in other sectors based on agriculture and forest that could have an impact on the energy use? (E.g. could improved efficiency/ productivity increase or decrease the amount of by-products available for energy use?)

4.7. Planned use of statistical transfers between Member States and planned participation in joint projects with other Member States and third countries

– *Under this subchapter the expected use of cooperation mechanisms between Member States and Member States and third countries has to be described. This information should draw on that provided in the forecast document referred to in Article 4.3 of the Directive 2009/28/EC .*

4.7.1. Procedural aspects

(a) Describe the national procedures (step by step) established or to be established, for arranging a statistical transfer or joint project (including responsible bodies and contact points).

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[28] Recommendations can be found in the report issued by the Standing Forestry Committee ad hoc Working Group II in July 2008 on Mobilisation and efficient use of wood and wood residues for energy generation. The report can be downloaded at: http://ec.europa.eu/agriculture/fore/publi/sfc_wgii_final_report_072008_en.pdf

(b) Describe the means by which private entities can propose and take part in joint projects either with Member States or third countries.

(c) Give the criteria for determining when statistical transfers or joint projects shall be used.

(d) What is going to be the mechanism to involve other interested Member States in a joint project?

(e) Are you willing to participate in joint projects in other Member States? How much installed capacity / electricity or heat produced per year are you planning to support? How do you plan to provide support schemes for such projects?

4.7.2. Estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States

– *Please use Table 9 filling in the required information.*

4.7.3. Estimated potential for joint projects

(a) In which sectors can you offer renewable energy use development in your territory for the purpose of joint projects?

(b) Has the technology to be developed been specified? How much installed capacity / electricity or heat produced per year?

(c) How will sites for joint projects be identified? (For example, can local and regional authorities or promoters recommend sites? Or can any project participate regardless its location?)

(d) Are you aware of the potential for joint projects in other Member States or in third countries? (In which sector? How much capacity? What is the planned support? For which technologies?)

(e) Do you have any preference to support certain technologies? If so, which?

4.7.4. Estimated demand for renewable energy to be satisfied by means other than domestic production

Please use Table 9 filling in the required information.

Table 9: Estimated excess and/or deficit production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States in [Member State] (ktoe)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estimated excess in forecast document											
Estimated excess in NREAP											
Estimated deficit in forecast document											
Estimated deficit in NREAP											

5. Assessments

5.1. Total contribution expected of each renewable energy technology to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport

The contribution of each renewable energy technology to the trajectory and 2020 targets in the electricity, heating and cooling and transport sectors should be estimated giving a possible future scenario without necessarily establishing any technology target or obligation.

For the electricity sector, both the expected (accumulated) installed capacity (in MW) and yearly production (GWh) should be indicated by technology. For hydro, a distinction should be made between plants of less than 1 MW, between 1 and 10 MW, and over 10 MW installed capacity. For solar power, details should be given separately for contributions from photovoltaic solar and concentrated solar power. Wind energy data should be indicated for onshore and offshore separately. For biomass, a distinction should be made between solid, gaseous and liquid biomass for electricity.

When assessing the heating and cooling sector, estimates of both installed capacity and production should be given for geothermal, solar, heat pumps and biomass technologies, with a breakdown for the latter category for solid, gaseous and liquid biomass. The contribution from district heating plants using renewable energy sources should be estimated.

The contribution from different technologies to the renewable energy target in the transport sector should be indicated for ordinary biofuels (both bioethanol and biodiesel), biofuels from wastes and residues, biofuels from non-food cellulosic material or from ligno-cellulosic material, biogas, electricity from renewable energy sources and hydrogen from renewable energy origin.

In case you have estimations on developing the use of certain technologies by regions, could you please indicate that after the table?

Table 10.a: Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources <u>in electricity</u> 2010-2014

	2005		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:												
<1MW												
1MW–10 MW												
>10MW												
Of which pumping												
Geothermal												
Solar:												
photovoltaic												
concentrated solar power												
Tide, wave, ocean												
Wind:												
onshore												
offshore												
Biomass:												
solid												
biogas												

bioliquids[29]												
TOTAL												
of which in CHP												

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

Table 10.b: Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources <u>in electricity</u> 2015-2020

	2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:												
<1MW												
1MW-10 MW												
>10MW												
Of which pumping												
Geothermal												
Solar:												
Photovoltaic												
Concentrated solar power												
Tide, wave, ocean												
Wind:												
Onshore												
Offshore												
Biomass												
solid												

biogas												
bioliquids[30]												
TOTAL												
of which in CHP												

[30] See footnote 24.

Table 11: Estimation of total contribution (final energy consumption[31]) expected from each renewable energy technology in [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 2010-2020 (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal (excluding low temperature geothermal heat in heat pump applications)												
Solar												
Biomass:												
solid												
biogas												
bioliquids[32]												
Renewable energy from heat pumps: - of which aerothermal - of which geothermal - of which hydrothermal												
TOTAL												
Of which DH[33]												
Of which biomass in households[34]												

- [31] Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.
- [32] Take into account only those complying with the sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.
- [33] District heating and / or cooling from total renewable heating and cooling consumption. (RES- DH)
- [34] From the total renewable heating and cooling consumption.

Table 12: Estimation of total contribution expected from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources <u>in the transport sector</u> 2010-2020 (ktoe)[35]

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/ bio-ETBE												
Of which Biofuels Article 21.2[36]												
Of which imported[37]												
Biodiesel												
Of which Biofuels Article 21.2[38]												
Of which imported[39]												
Hydrogen from renewables												
Renewable electricity												
Of which road transport												
Of which non-road transport												
Others (as biogas, vegetable oils, etc.) – please specify												
Of which Biofuels Article 21.2[40]												
TOTAL												

- [35] For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.
- [36] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.
- [37] From the whole amount of bioethanol / bio-ETBE
- [38] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.
- [39] From the whole amount of biodiesel
- [40] Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

5.2. Total contribution expected from energy efficiency and energy saving measures to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport.

The answer to this requirement should be included in table 1 under chapter1.

5.3. Assessment of the impacts (Optional)

Table 13: Estimated costs and benefits of the renewable energy policy support measures:

Measure	Expected renewable energy use (ktoe)	Expected cost (in EUR) – indicate time frame	Expected GHG reduction by gas (t/ year)	Expected job creation

5.4. Preparation of the National Renewable Energy Action Plan and the follow-up of its implementation

(a) How were regional and/or local authorities and/or cities involved in the preparation of this Action Plan? Were other stakeholders involved?

(b) Are there plans to develop regional/local renewable energy strategies? If so, could you please explain? In case relevant competences are delegated to regional/local levels, what mechanism will ensure national target compliance?

(c) Please explain the public consultation carried out for the preparation of this Action Plan.

(d) Please indicate your national contact point / the national authority or body responsible for the follow-up of the Renewable Energy Action Plan?

(e) Do you have a monitoring system, including indicators for individual measures and instruments, to follow-up the implementation of the Renewable Energy Action Plan? If so, could you please give more details on it?