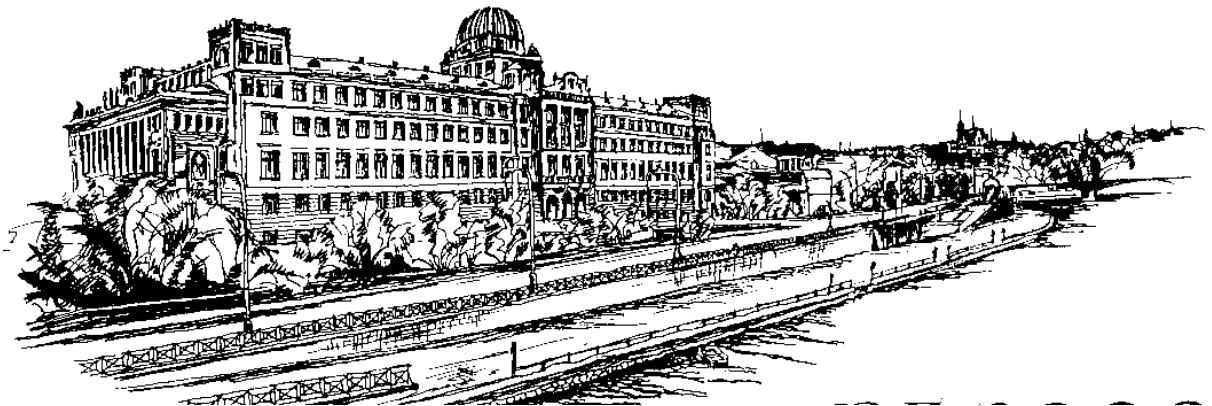


National Renewable Energy Action Plan of the Czech Republic



Ministry of Industry and Trade

July 2010

Preamble

The form and structure of the National Renewable Energy Action Plan of the CR being presented is given by Commission Decision 2009/548/EC of 30 June 2009 establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC of the European Parliament and of the Council. In order to ensure that the national action plans of individual Member States and proposed targets are comparable with each other, the template for the given document is binding.

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 lays down a 20% target for the overall share of energy from renewable sources and a 10% target for energy from renewable sources in transport for the European Union as a whole. Pursuant to this Directive, only the overall 2020 targets are mandatory for the Czech Republic, i.e. a mandatory target of a 13% share of energy from renewable sources in gross final energy consumption by the Czech Republic by 2020 which includes a mandatory target of a 10% share of energy from renewable sources in all kinds of transport in gross final energy consumption by the Czech Republic by 2020. Interim targets for individual years and individual types of renewable sources of energy contained in the National Renewable Energy Action Plan for the Czech Republic are only indicative.

The National Renewable Energy Action Plan for the Czech Republic (hereinafter the National Action Plan) being presented suggests a target of a 13.5% share of energy from renewable sources in gross final energy consumption and the fulfilment of a target of a 10.8% share of energy from renewable sources in transport in gross final energy consumption.

The National Action Plan being presented has been drawn up to meet the set targets in the area of the use of energy from renewable sources on the grounds of current and planned realistic projects and the expected realistic prediction of future development based on the statistical monitoring of trends and also taking into account the subsidy policy where relevant. As far as photovoltaic systems and wind power plants are concerned, the projects under development are confronted with a requirement to maintain the safety and reliability of the energy system. The National Action Plan has thus not been based on the possible or theoretical potential of individual types of renewable sources.

The Ministry of Industry and Trade shall assess the National Action Plan and its fulfilment at least once in two years and the outcomes of the assessment shall be communicated to the government. The Ministry shall also present proposals for updating the National Action Plan. Such interim assessment and updating will also permit, where applicable, the modification of the target of a 13.5% share of energy from renewable sources in gross final energy consumption, with the minimal target remaining 13%.

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1 SUMMARY OF NATIONAL RENEWABLE ENERGY POLICY

The main objective of the energy sector is to satisfy the energy needs of the Czech Republic for the long-term horizon. The current National Energy Conception, whose key priorities are safety, independence and sustainable development, envisages that safe supply of energy for reasonable prices shall be guaranteed primarily by the use of all available domestic energy sources as well as the best available global technologies in the most environmentally friendly manner. Renewable sources represent an important part of these domestic sources and are likely to gradually develop while fully respecting the size, climatic conditions and parameters of energy grids in the Czech Republic.

1) Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources and amending certain acts, as amended

2) Implementing regulations to Act No. 180/2005 Coll.:

- Regulation No. 140/2009 Coll., on the regulation of prices in energy sectors and on price regulation procedures
- Regulation No. 343/2008 Coll., on the specimen application for the issue of a guarantee for the origin of electricity from renewable sources and specimen warranty on the origin of electricity from renewable sources
- Regulation No. 502/2005 Coll., on the determination of methods for the computation of the amount of energy produced during the co-combustion of biomass and a non-renewable source
- Regulation No. 482/2005 Coll., on the determination of biomass types, methods of its use and parameters to support the production of energy from biomass, as amended
- Regulation No. 475/2005 Coll., implementing certain provisions of the Act on the Promotion of Use of Renewable Energy Sources, as amended

3) Act No. 406/2000 Coll., on energy management, as amended

4) Implementing regulations to Act No. 406/2000 Coll. in relation to renewable sources:

- Regulation No. 195/2007 Coll., laying down the range of opinions on spatial development policy and spatial planning documentation, binding opinions on the protection of interests protected by Act No. 406/2000 Coll., on energy management, as amended, and conditions for the determination of energy installations
- Regulation No. 148/2007 Coll., on energy performance of buildings

- Government Decree 195/2001 Coll., laying down details of the content of local energy concept

5) Act No. 458/2000 Coll., on business conditions and public administration in energy sectors and on the amendment of certain acts, as amended (Energy Act)

6) Implementing regulations to Act No. 458/2000 Coll. in relation to renewable sources:

- Regulation No. 140/2009 Coll., on the regulation of prices in energy sectors and on price regulation procedures
- Regulation No. 541/2005 Coll., on electricity market rules, the principles for setting prices for activities of the electricity market operator and the implementation of some other provisions of the Energy Act, as amended
- Regulation No. 426/2005 Coll., on details of granting licences for business activities in energy sectors, as amended

2 EXPECTED FINAL ENERGY CONSUMPTION 2010–2020

Table 1
Expected gross final energy consumption of the Czech Republic in heating and cooling, electricity and transport up to 2020 taking into account the effects of energy efficiency and energy saving measures⁽²⁾ 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 ⁽¹⁾	17 644	18 326	17 805	18 417	17 837	18 419	17 765	18 514	17 778	18 645	17 821
2. Electricity ⁽²⁾	6 014	6 151	6 036	6 338	6 210	6 480	6 329	6 621	6 449	6 761	6 568
3. Transport as in Article 3(4)(a) ⁽³⁾	6 007	6 146	6 128	6 169	6 139	6 294	6 255	6 389	6 342	6 464	6 407
4. Gross final energy consumption ⁽⁴⁾	29 665	30 623	29 969	30 924	30 186	31 193	30 350	31 523	30 568	31 870	30 796
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 ⁽⁵⁾ Article 5(6)											
Total consumption after reduction for aviation limit											

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	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 and cooling ⁽¹⁾	18 856	17 963	19 008	18 083	19 170	18 205	19 554	18 560	19 783	18 742	19 992	18 680
2. Electricity ⁽²⁾	6 903	6 697	7 039	6 807	7 189	6 927	7 309	7 022	7 427	7 118	7 563	7 232
3. Transport as in Article 3(4)(a) ⁽³⁾	6 506	6 429	6 542	6 443	6 577	6 456	6 723	6 436	6 584	6 416	6 573	6 618
4. Gross final energy consumption ⁽⁴⁾	32 265	31 089	32 589	31 333	32 937	31 587	33 585	32 018	33 794	32 275	34 128	32 531
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 ⁽⁵⁾ Article 5(6)												
Total consumption after reduction for aviation limit												

(1) This 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" of Regulation (EC) No. 1099/2008, (p. 23 –24).

(2) The gross electricity consumption is national gross electricity production, including autoproduction, plus imports, minus exports.

(3) Transport consumption as defined in Article 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.

(4) 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).

(5) According to Article 5(6) consumption for aviation has to be considered only up to 6.18% (for Cyprus and Malta up to 4.12%) of gross final energy consumption.

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 to Directive 2009/28/EC):

A. Share of energy from renewable sources in gross final consumption of energy in 2005 (S 2005) (%)	6.1
B. Target of energy from renewable sources in gross final consumption of energy in 2020 (S 2020) (%)	13.5
C. Expected total adjusted energy consumption in 2020 (from Table 1, last cell) (ktoe)	32,531
D. Expected amount of energy from renewable sources corresponding to the 2020 target (calculated as B × C) (ktoe)	4,382

3.2 Sectoral Targets and Trajectories

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 (1)	8.4	10.2	10.9	11.6	12.3	12.7	13.1	13.4	13.8	13.8	14.0	14.1
RES-E (2)	4.5	7.4	9.8	10.9	11.8	12.5	12.9	13.2	13.5	13.8	14.1	14.3
RES-T (3)	0.1	4.1	4.6	5.2	5.9	6.5	7.1	7.7	8.3	9.6	10.2	10.8
Overall RES share (4)	6.1	8.3	9.4	10.1	10.8	11.3	11.8	12.1	12.5	12.9	13.2	13.5
Of which from co-operation mechanism (5)	0	0	0	0	0	0	0	0	0	0	0	0
Surplus for co-operation mechanism (5)	0	0	0	0	0	0	0	0	0	0	0	0
<p>(1) 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.</p> <p>(2) 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 gross final consumption of electricity. Line (B) from Table 4a divided by line (2) of Table 1.</p> <p>(3) Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf Articles 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 line 3 of Table 1). Line (J) from Table 4b divided by line (3) in Table 1.</p> <p>(4) Share of renewable energy in gross final energy consumption. Line (G) in Table 4a divided by line (4) of Table 1.</p> <p>(5) In percentage points of overall RES share.</p>												
Directive requirements				2011-2012	2013-2014	2015-2016	2017-2018					2020
				$S_{2005} + 20\%$ ($S_{2020} - S_{2005}$)	$S_{2005} + 30\%$ ($S_{2020} - S_{2005}$)	$S_{2005} + 45\%$ ($S_{2020} - S_{2005}$)	$S_{2005} + 65\%$ ($S_{2020} - S_{2005}$)					S_{2020}
RES minimum trajectory (1)				7.5	8.2	9.2	10.6					13.0

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RES minimum trajectory (ktoe)			2245	2484	2746	3272		4215
(1) As defined in Annex I.B to 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	1 482.0	1 810.9	1 945.2	2 069.5	2 183.5	2 268.0	2 359.0	2 428.8	2 507.8	2 562.0	2 616.8	2 672.2
(B) Expected gross final consumption of electricity from RES	269.4	445.3	607.1	690.3	761.8	817.9	863.8	898.8	934.7	972.4	1 006.4	1 037.8
(C) Expected final consumption of energy from RES in transport	8.9	250.2	284.6	327.3	371.3	414.3	454.5	494.2	533.7	617.8	654.0	690.9
(D) Expected total RES consumption ⁽¹⁾	1 760.2	2 506.4	2 836.9	3 087.1	3 316.6	3 500.2	3 677.3	3 821.8	3 976.1	4 152.2	4 277.3	4382.9
(E) Expected transfer of RES to other Member States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(F) Expected transfer of RES from other Member States and 3rd countries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(G) Expected RES consumption adjusted for target (D) - (E) + (F)	1 760.2	2 506.4	2 836.9	3 087.1	3 316.6	3 500.2	3 677.3	3 821.8	3 976.1	4 152.2	4 277.3	4 382.9

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

Table 4b
Calculation table for the renewable energy in transport share

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C) Expected final RES consumption in transport ⁽¹⁾	8.9	250.2	284.6	327.3	371.3	414.3	454.5	486.9	521.5	593.5	593.8	594.6
(H) Expected RES electricity in road transport ⁽²⁾	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3
(I) Expected consumption of biofuels from wastes, residues, non-food cellulosic and lingo-cellulosic material in transport ⁽²⁾	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	6.0	11.9	29.9	47.8
(J) Expected RES contribution to transport for the RES-T target: $(C) + (2.5 - 1) \times (H) + (2 - 1) \times (I)$	8.9	250.2	284.6	327.3	371.3	414.3	454.5	494.2	533.7	617.8	654.0	690.9
<p>(1) Containing all RES used in transport including electricity, hydrogen and gas from renewable energy sources, and excluding biofuels that do not comply with the sustainability criteria (cf. Article 5(1) last subparagraph). Specify here actual values without using the multiplication factors.</p> <p>(2) Specify here actual values without using the multiplication factors.</p>												

4 MEASURES FOR ACHIEVING THE TARGETS

4.1 Overview of All Policies and Measures to Promote the Use of Energy from Renewable Sources

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. Act No. 180/2005 Coll. and new act on supported energy sources	Regulatory, financial	Installed capacity, energy generated	Investors	Existing/ planned	
2. Act No. 406/2000 Coll.	Regulatory	Consumption reduction	Public administration, installers,...	Existing / planned	
3. Act No. 458/2000 Coll.	Regulatory	Installed capacity	Public administration, investors, planners	Existing / planned	
4. Act No. 183/2006 Coll.	Regulatory	Installed capacity, energy generated	Public administration, investors, planners	Existing / planned	
5. Act No. 184/2006 Coll.	Regulatory	Installed capacity	Public administration, investors, planners	Existing	
6. 4.2.1 c) Analysis of the existing legislation and determination of critical points protracting authorisation processes within the frame of planning permission and building permit procedures	Regulatory	Installed capacity	Public administration, investors, planners	Planned	
7. 4.2.1 c) Implementation of measures to simplify authorisation processes into the existing legislation	Regulatory	Installed capacity	Public administration, investors, planners	Planned	
8. 4.2.1 g) Methodological guidelines of the Ministry for Regional	Soft	Installed capacity, energy generated	Public administration, investors, planners	Existing	

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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
Development					
9. 4.2.1 g) Ministry of Industry and Trade – National plan	Soft, financial	Installed capacity, energy generated, consumption reduction	Public administration, investors, planners	Existing	
10. 4.2.1 m) Ministry of the Environment – Methodological guideline	Soft	Installed capacity	Public administration	Existing	
11. 4.2.1 m) Ministry of Industry and Trade – Special building office	Regulatory	Installed capacity, energy generated	Public administration	Planned	
12. 4.2.3 i) and 4.3 and 4.4 EU Structural Funds	Financial	Installed capacity, energy generated, consumption reduction	Investors	Existing / planned	
13. 4.2.4. i) Drafting of a study on the introduction of intelligent measuring systems	Regulatory, soft	Consumption reduction	Public administration	Planned	
14. 4.3 and 4.4 Price decisions of the Energy Regulatory Office	Regulatory, financial	Installed capacity	Public administration, investors	Existing, planned	
15. 4.4 c) Green Savings Programme	Financial	Consumption reduction	Investors	Existing	
16. 4.5 a) Act on fuels and an implementing legal regulation	Regulatory	Biofuels	Public administration, investors	Existing, planned	
17. 4.6.2 c) Support of short rotation woods plantations			Public administration, investors	Existing	
1. New act on air protection and an implementing legal regulation	Regulatory	Use of biofuels in transport Certification of biofuels in terms of the sustainability criteria	Public administration Producers, biofuel importers and sellers, suppliers of fuels (Fs)	Existing, planned	

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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
<p>(*) (Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).</p> <p>(**) Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?</p> <p>(***) 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.)?</p>					

Individual measures to support individual types of renewable sources are provided in Annex No. 2 hereto.

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)

- 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:

Act No. 183/2006 Coll., on spatial planning and building regulations, as amended (Building Act)

- Regulation No. 268/2009 Coll., on technical requirements for structures
- Regulation No. 499/2006 Coll., on structure documentation
- Regulation No. 501/2006 Coll., on general territorial management requirements, as amended
- Regulation No. 526/2006 Coll., implementing certain provisions of the Building Act in building regulation related matters
- Regulation No. 500/2006 Coll., on planning analytical materials, planning documentation and methods of recording spatial planning activities.
- Regulation No. 503/2006 Coll., on more detailed rules of planning permit procedure, public law contract and spatial planning measures.

Act No. 184/2006 Coll., on the withdrawal or restriction of ownership title to land or structure (Expropriation Act)

Act No. 406/2000 Coll., on energy management, as amended

- Regulation No. 195/2007 Coll., laying down the range of opinions on spatial development policy and spatial planning documentation, binding opinions on the protection of interests protected by Act No. 406/2000 Coll., on energy management, as amended, and conditions for the determination of energy installations
- Regulation No. 148/2007 Coll., on energy performance of buildings

Act No. 458/2000 Coll., on business conditions and public administration in energy sectors and on the amendment of certain acts, as amended (Energy Act)

- Regulation No. 426/2005 Coll., on details of granting licences for business activities in energy sectors, as amended
- Regulation No. 245/2001 Coll., on details of granting national authorisation for the construction of selected gas facilities, its modification, renewal or withdrawal, as amended

Act No. 100/2001 Coll., on environmental impact assessment and amending some related acts, as amended (Act on Environmental Impact Assessment)

- It evaluates the impact on public health and environmental impacts, including the impact on fauna and flora, ecosystems, soil, rock environment, water, air, climate and landscape, natural resources, tangible property and cultural heritage, as defined by special legal regulations, and their mutual relationships and links.

Other related legislation, such as:

- Act No. 114/1992 Coll., on the protection of nature and landscape, as amended,
- Act No. 289/1995 Coll., on forests and on the modification and amendment to certain acts, as amended (Forestry Act),
- Act No. 334/1992 Coll., on the protection of the agricultural land fund, as amended,
- Act No. 254/2001 Coll., on water and amendments to some acts, as amended (Water Act),
- Act No. 20/1987 Coll., on national heritage protection, as amended, etc.
- Regulations and conceptual development documents of local and regional self-governments, in particular:
 - principals of regional spatial development,
 - regional territorial energy conceptions,

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

Act No. 183/2006 Coll., on spatial planning and building regulations, as amended (Building Act)

- Ministry for Regional Development – methodological guidance and a 2nd instance body of appeal
- Regional building offices – conduct the procedure and are 1st instance bodies of appeal
- Regional authorities – drafting and publication of principles of regional spatial development
- Municipal building offices – conduct the procedure

The above mentioned public administration authorities exercise the competences as stipulated in this Act.

Act No. 184/2006 Coll., on the withdrawal or restriction of ownership title to land or structure (Expropriation Act)

- Ministry for Regional Development
- Expropriation proceedings are conducted by expropriation offices which are as follows:
 - a) municipal authorities with extended powers (Act No. 314/2002 Coll., on the establishment of municipalities with authorized municipal authority and establishing of municipalities with extended powers, as amended)
 - b) Prague City Hall
 - c) metropolitan authorities of territorially subdivided cities and towns.
- Prague City Council and metropolitan councils of territorially subdivided chartered cities and towns are not entitled to transfer the competences of the expropriation office by charter to metropolitan districts or boroughs.
- The powers exercised by expropriation offices are delegated powers.

Act No. 406/2000 Coll., on energy management, as amended

- Ministry of Industry and Trade – methodological guidance
- State Energy Inspection – issuing of opinions that are background documents for building offices for permit granting
- Regional authorities – drafting and issuing of principles of regional spatial planning

Act No. 458/2000 Coll., on business conditions and public administration in energy sectors and on the amendment of certain acts, as amended (Energy Act)

- Energy Regulatory Office – issuing of licences for energy production and distribution
- Ministry of Industry and Trade – issuing of authorizations for the construction of energy production installations

Act No. 100/2001 Coll., on environmental impact assessment and amending some related acts, as amended (Act on Environmental Impact Assessment)

- Regional authorities – issue statements
- Ministry of the Environment – if a project covers more regions, the Ministry shall decide which regional authority is to issue the statement; then the authority exercises its powers as stipulated in the Act.

Note on the powers of the Ministry of the Environment: the Ministry issues statements in a number of other cases, e.g. according to Annex No. I, column A of Act No. 100/2001 Coll., on environmental impact assessment and amending some related acts, as amended (Act on Environmental Impact Assessment), in cases of international environmental impact assessment, etc.

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

The wording of the above-mentioned acts currently in force contradicts the principles laid down in Article 13(1) of Directive 2009/28/EC.

The following steps will lead to the simplification of authorization processes:

- Analysis of the current legislation and the identification of critical points prolonging authorisation processes that are part of planning permission and building permit procedures
- Proposal of legislative measures to simplify authorization processes that are part of the spatial planning, planning permission and building permit procedures. The deadline for the proposal will depend on the governmental legislative process.

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

For existing measures see the answer in point a).

In certain cases the current legislation provides for banning or postponing (at a regional/local level) the construction of any RES facility or line installation necessary for a RES to be connected

For planned measures see the answer in point c).

- 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?

The following obstacles related to the authorisation procedures in the area of planning permission and building permit proceedings have been detected and the issue handling processes are as follows:

- Complex legislation (one of the most complex in the EU)
- Chaining of procedures (the specific order of administrative proceedings has to be followed – before progressing to the following step, the necessary opinion that is decisive for issuing permission (planning permission or a building permit) has to become effective) and possible reconsiderations of the issue are possible within the authorisation process.

Section 78(1) of the Building Act also specifies the possibility of joining the planning permission procedure with the building permit procedure, thus enabling one to obtain the planning permission and the building permit at the same time, which, in time terms, leads to deadline shortening. Despite the fact that the current legislation permits joint planning permission and building permit procedure, this cannot be applied to line installations yet.

- Complicated co-ordination of targets of individual public administration bodies involved in the process of considering, authorising and updating conceptual spatial development documents – the Spatial Development Policy of the CR or the Principles of the Regional Spatial Development - that subsequently serve as legally binding background documents for the location of line installations.
- The process of considering spatial plans for line installations can take up to 120 months; only then can the preparatory stage of the relevant structure be initiated.
- The two-tier procedure in the preparatory stage (planning permission procedure and building permit procedure) usually takes up to 52 months for line installations, in relation to sources it depends primarily on the EIA procedure that lacks clear rules or deadlines.
- At present, the entire preparation and implementation phase for line installations takes between 122 and 196 months (at present operators are issuing decisions on connection that is to take place in 2022 and in certain

areas the issuing of decisions for renewable sources of energy has been suspended.

- 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?
- Environmental impact assessment of the project – powers are set forth in the Act on Environmental Impact Assessment.
 - Building permit and planning permission – powers are set forth in the Building Act.

The level of involvement of administrative bodies and deadlines for issue handling are given in the Code of Administrative Procedure. In some cases these deadlines are not met and the enforcement of law is complicated (time-consuming enforcement of law in court). Other deadlines are laid down in other legal regulations, for example, in Act No. 100/2001 Coll., on environmental impact assessment and amending some related acts, as amended (Act on Environmental Impact Assessment).

Co-ordination is quite poor and improvements are expected, see the answer in point c).

A high number of building offices together with the requirements for employee qualifications and their remuneration represent a major problem.

Licensing powers are determined in the Energy Act.

- 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?

Only information on planning permission processes, EIA, IPPC and authorisations (selected gas installations) is available.

As far as information on planning permission and building permit procedures (i.e. granting of occupancy permits) is concerned, the information is not publicly available in one spot (like, for example, EIA database). However, publication and public hearing requirements, as laid down for these procedures in the Building Act, are met. The Act specifies, among others, the conditions for public hearing and involvement of the public – e.g. obligatory public hearings within the frame of planning permission procedures; the requirement set for entities applying for planning permission decision to publish information on their projects and on submitting their applications for planning permission in an appropriate publicly accessible place; placing a public notice on the initiation of the planning permission procedure on an official panel, etc.

The right to information is also supported by Act No. 106/1999 Coll., on free access to information, as amended.

To facilitate the process of applying for building permits and planning permissions, the **Ministry for Regional Development** provides applicants with detailed methodological guidelines published on its website.

Since 2008 the **Ministry of Industry and Trade** has operated, as part of the National Programme for the Promotion of Energy-Saving Measures and the Use of Renewable Energy Sources, a special free website: www.mpo-efekt.cz, containing all information regarding the possibilities of obtaining subsidies for renewable energy installations. Furthermore, it provides information on energy audits aimed at optimal selection and the evaluation of suitability of the relevant renewable source. To simplify the inquirer's search, it also contains a list of contacts for energy auditors categorised by region. The website also runs a free energy advisory centre to which applicants may forward their questions regarding the use and installation of a renewable source and advisors (most of them energy auditors) provide competent professional advice. Within the frame of this National Programme, approximately 50 energy advisory and consultancy centres (EKIS) are operated in the territory of the CR (several within each region) which can be contacted and visited by applicants who can arrange a meeting with energy consultants (auditors). These centres are accessible on workdays during their opening hours.

Detailed information on application processing is provided in the Code of Administrative Procedure. After submitting a request for information, the administrative body being addressed has to inform the applicant on the progress of processing his/her application within the set time limit (usually 30 days).

- h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedural 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?
- Horizontal coordination is not implemented institutionally
 - The need for coordination of special structures is dealt with on an ad hoc/individual basis by appointing a governmental assignee for the selected structure
 - A maximum statutory time limit for application processing is 60 days plus a period that needs to be added if the procedure is suspended due to the request for supplying additional background documents or further clarification.
 - Procedural steps of permit issuing (planning permission and building permit procedure):
 - Presentation of an application for a permit including all related enclosures
 - Issuing of the permit by a building office

- There is a risk of administrative proceedings chaining
- Overall time limit for the preparatory phase is:
 - § For line installations conditioned by RES connection – up to 52 months (including the whole preparatory phase of the investor)
 - § For RES installations up to 72 months (including the whole preparatory phase of the investor)
 - § Note: The above-mentioned time limits do not include the time necessary for:
 - decision-making pursuant to the Act on Public Procurement
 - decision-making by courts
 - investor's internal decision-making.
- The time limit for the processing of applications submitted within building permit proceedings alone is stipulated in the Code of Administrative Procedure.

The timetables for application processing are governed by the Building Act (Act No. 183/2006 Coll.) and the Code of Administrative Procedure (Act No. 500/2004 Coll.).

- Procedural steps to issue the final licence:
 - Presentation of an application for a licence including all related enclosures
 - Issuance of a permit by the Energy Regulatory Office

The timetables for application processing are governed by the Code of Administrative Procedure (Act No. 500/2004 Coll.).

The level of involvement of administrative bodies and the time limits for application processing are governed by the Code of Administrative Procedure. Some bodies do not issue decisions pursuant to the Code of Administrative Procedure (e.g. EIA statements are issued/are not issued by the environmental body regardless of the Code of Administrative Procedure).

There is no one-stop shop to co-ordinate all steps. The co-ordination is therefore rather poor, but some improvement is expected, see the answer in point c).

As part of the steps mentioned in point c), centralisation on a national level for important structures is likely to be considered (similar to proposals made by ENTSO to the European Commission for line installations).

- 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?

In terms of procedures, the current legislation does not take into account the specificities of different renewable energy technologies. See also the answer to the question in point j).

- 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 procedural 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?)

Yes, the regulations are publicly available at the web sites of offices and individual ministries and also municipalities have an obligation to keep the collection of acts and enable the public to consult it.

Yes, there are simplified authorisation procedures (Section 4 of the Building Act directly imposes the use of simplified procedures where possible), but applicable solely in “flawless” cases. In the course of proceedings, the relevant public administration bodies involved may apply the statutory requirement for further procedures, for example, the EIA fact-finding procedure according to Act No. 100/2001 Coll., on environmental impact assessment and amending some related acts, as amended (Act on Environmental Impact Assessment)

The description of individual simplified authorisation procedures:

1) For planning permission procedure and building permit procedure:

- According to implementing Regulation No. 195/2007 Coll., laying down the range of opinions on spatial development policy and spatial planning documentation, binding opinions on the protection of interests protected by Act No. 406/2000 Coll., on energy management, as amended, and conditions for the determination of energy installations.
- There are no simplified procedures for line installations conditioned by renewable energy source connection.
- Approximately 30 public administration bodies (not just the State Energy Inspection) are to provide their statements within the planning permission and building permit procedures. Even in simplified procedures (e.g. for biogas stations) their opinions may be, in the event of appeal by one of the participants, reviewed by superior bodies. If this is so, the time limits stipulated by the Code of Administrative Procedure are suspended. For planning permission/building permit procedure the time limits, including the time necessary for possible reviews, are approximately 225 days (for each of the procedure).

2) Energy generation and distribution licences:

- According to Energy Act No. 458/2000 Coll. licences are not required for the generation of heat energy supplied to end consumers through one supply heat installation from a heat energy source located in the same building or elsewhere provided it is used for the same purpose.
- According to Act No. 458/2000 Coll. currently in force the qualification requirements do not apply to applicants for licences for renewable energy production with capacity up to 20 kW. Furthermore, the financial requirements do not apply to licensed activities of production installations with a capacity lower than 200 kW. For production installations with a capacity up to 1 MW only a “declaration” on funds availability is required. Applicants for a licence for renewable energy production installations whose installed capacity does not exceed 200 kW are only required to provide simplified notification.
- For licences to generate energy, the amendment to Energy Act No. 458/2000 Coll. envisages only tax record keeping for low capacity sources (up to 5kW). This is a step towards simplification compared to the current practice, as at present all licensed energy sources are required to keep accounting books.

3) Environmental impact assessment:

The assessment is only carried out for installations classified as category I. and II.:

- In the course of the fact-finding procedure an environmental body may decide that the assessment has to be carried out even for smaller installations (with capacities lower than those set for categories I and II.).
- Category I: fuel-burning installations with a heat capacity over 200 MW.
- Category II: fuel burning installations with a heat capacity from 50 to 200 MW, wind power plants with the overall capacity over 500 kWe or a tower height over 35 meters, water power plants with the overall installed capacity over 10 MWe.

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?

The fees associated with applications for authorisation/licences/permits are clearly specified in Act No. 634/2004 Coll., on administrative fees, as amended.

- Building permit and planning permission procedure – see Annex No. I point 17.
- Certificates – see Annex No. I point 22
- Licences – see Annex No. I point 23

Yes, the fees are related to permit granting administrative costs. The above-mentioned Act is amended regularly. In 2009 there were a total of ten amendments made. In 2010 (June) it has been amended four times. The Act falls within the responsibility of the Ministry of the Interior.

- l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipment 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?

Administrative guidance for the installation of equipment and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling, is provided through a variety of training sessions and courses backed, for example, by the Ministry of Industry and Trade. The support of such courses is also ensured in the provision of Section 5 of Act No. 406/2000 Coll., on energy management, as part of the National Programme for the Promotion of Energy-Saving Measures and the Use of Renewable Energy Sources. This Programme also supports the so-called Energy Information and Consultancy Centres (there are several in each region) where people interested in the installation of such equipment will obtain free expert advice.

Within the scope of the implementation of Directive No. 2009/28/EC, it will be incorporated in the amendment of Act No. 406/2000 Coll., on energy management.

- m) Is there specific training for case handlers of authorisation, certification and licensing procedures of renewable energy installations?

Granting of permits within the scope of planning permission and building permit procedure – training is organised and arranged by the Ministry for Regional Development for employees of local and regional building offices and by the State Energy Inspection for employees of Regional Inspectorates.

Granting of permits/licences – introductory training for its employees is organised directly by the Energy Regulatory Office.

Issuing of the environmental impact assessment statements - introductory training for its employees is organised directly by regional authorities or the Ministry of the Environment.

The Ministry of the Environment has drafted a methodological guideline for the preventive assessment of the territory in terms of location of certain renewable energy sources (wind power plants and photovoltaic power plants). This methodological guideline is designed for regions and smaller self-governmental units. The Ministry of the Environment also launches information campaigns for public administration employees who issue decisions on renewable energy installations, including the publication of suitable publications and organisation of seminars at the regional level

and training sessions at the municipal level. It also issues a white paper for its employees.

The problem is that in particular in case of line installations some trained employees encounter this kind of project only once in 30 or 40 years. Therefore the proposed changes in the legislation foresee centralisation (special building office with specifically trained employees. Moreover, co-ordination of these procedures within the EU is also necessary – e.g. for cross-border line installations and their co-ordination).

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?

Yes, there are certain rules that renewable energy technologies need to meet to benefit from support schemes.

Act No. 180/2005 Coll. currently in force stipulates that the support of renewable energy production differs according to the type of renewable source and the installed capacity of the production plant and in the case of electricity generated from biomass also according to the biomass parameters laid down in the implementing regulation. The implementing regulation is Regulation No. 482/2005 Coll., on the determination of biomass types, methods of its use and parameters to promote the production of energy from biomass, as amended. The Regulation specifies all types of biomass, its parameters and methods of use that are entitled to receive support.

Other quality requirements are laid down in the Price Decision of the Energy Regulatory Office.

Other technical specifications are determined for the support of heating and cooling from renewable energy sources. Technologies for biomass heating installations, heat pumps and solar collectors as required by Article 13(2) and (6) of the above-mentioned Directive shall be incorporated in the new act on supported energy sources.

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

- 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:
- Act No. 406/2000 Coll., on energy management, as amended
 - Regulation No. 148/2007 Coll., on energy performance of buildings (implementing regulation to Act No. 406/2000 Coll.).

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

- Ministry of Industry and Trade
- State Energy Inspection
- Regional and local building offices

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

- Amendment to Act No. 406/2000 Coll. – to take place during 2010
- Amendment to Regulation No. 148/2007 Coll. – to take place during 2010

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

- Promotion of energy savings, in particular in the area of building heating and cooling
- Promotion of the use of renewable energy sources in buildings, in particular in the area of building heating and cooling

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?

Act No. 406/2000 Coll., on energy management and Regulation No. 148/2007 Coll., on energy performance of buildings stipulate that each new building and any building over 1,000 m² undergoing a major refurbishment has to undergo a renewable energy use assessment.

In the amendments of the above-mentioned Act and Regulation this requirement is extended to cover all buildings undergoing a major refurbishment.

The amendment of Act No. 406/2000 Coll. envisages that if renewable energy sources are technically, economically and environmentally feasible, they will have to be incorporated in all new or refurbished buildings - starting from 2012 this will apply to all public buildings and starting from 2015 to all other buildings.

- 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	3.0	3.8	4.3	4.7

- 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?

The current situation and future plans (including the year 2015) regarding the obligatory increase of share of renewable energy in new and newly refurbished buildings are specified in the answer to the question in point e).

- 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).

See the answer to the question in point e). This obligation set for public buildings will, according to the amendment to Act No. 406/2000 Coll., be met also by the construction of zero energy buildings or refurbishing of the existing buildings to zero energy buildings. According to Act No. 406/2000 Coll. currently in force public buildings that are required to have an energy performance certificate have to display it in a publicly accessible place.

- 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)).

Energy efficient renewable energy technologies are supported by the National Programme and programmes funded from the EU Structural Funds. The new act on supported energy sources will deal with this area. Support is also provided within the Green Savings Programme (administered by the Ministry of the Environment).

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

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

These requirements will be dealt with in the amendment to Act No. 406/2000 Coll., on energy management, which is being drafted. The amendment to the above-mentioned act will, in the section on the sphere of activities of the Ministry of Industry and Trade, state the following:

- It will publish and update information on individual forms of support for energy savings and renewable energy installations and installations using energy from secondary sources.
- It will be in charge of activities associated with consulting, education and promotion of the efficient use of energy from renewable and secondary sources.
- It will publish and update information on individual forms of support for energy savings and renewable energy installations.

The section on the National Programme for the Promotion of Energy-Saving Measures and the Use of Renewable and Secondary Energy Sources will state:

- To implement the Programme, subsidies from the national budget may be provided for awareness raising campaigns, education, training and consulting in the area of energy management as well as renewable and secondary energy sources use and benefits.

The section on the execution of state administration by the Ministry of Industry and Trade in the new act on supported energy sources that will replace Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources and amending certain acts, as amended (Act on the Promotion of Renewable Energy Sources) will also:

- publish information on individual forms of support for renewable energy installations.

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

Ministry of Industry and Trade.

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

Existing measures:

Since 2008 the Ministry of Industry and Trade has operated, as part of the National Programme for the Promotion of Energy-Saving Measures and the Use of Renewable Energy Sources, a special free website: www.mpo-efekt.cz, containing all information regarding the possibilities of obtaining subsidies for renewable energy installations. Furthermore, it provides information on energy audits aimed at optimal selection and the evaluation of suitability of the relevant renewable source. To simplify the inquirer's search, it also contains a list of contacts for energy auditors categorised by region. The website also runs a free energy advisory centre to which applicants may forward their questions regarding the use and installation of a renewable source and advisors (most of them energy auditors) provide competent professional advice. Within the frame of this National Programme, approximately 50 energy advisory and consultancy centres (EKIS) are operated in the territory of the CR (several within each region) which can be contacted and visited by applicants who can arrange a meeting with energy consultants (auditors). These centres are accessible on workdays during their opening hours.

The Ministry of the Environment has launched an awareness raising campaign aimed at state employees that takes place in all municipalities with extended powers. The campaign focuses on RES technologies as well as the authorisation process and examples of good practice.

Planned measures:

See the answer to the question in point a), chapter 4.2.4.

- 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?

See the answer to the question in point c), chapter 4.2.4. Moreover, support is provided to information campaigns organised by other sectors.

- 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?*)

The amendment to Act No. 406/2000 Coll., on energy management, as amended, envisages the introduction of a relevant provision to satisfy the requirements set in the Directive.

- 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?

See the answer to the question in point c), chapter 4.2.4.

- 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?

See the answer to the questions in points a, c) and e), chapter 4.2.4.

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:

Qualification and professional competence requirements for installers are generally laid down in Act No. 455/1991 Coll., on Trades, as amended (Trade Licensing Act). According to Annex No. 1 of the above-mentioned act, installation is a so-called craft trade. The professional competence requirements for craft trades are laid down in Sections 21 and 22 of the given Act.

- 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:

Ministry of Industry and Trade

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

Such certification schemes/qualifications are already implemented in Act No. 406/2000 Coll., on energy management, as amended, and they regard inspections of efficiency of boilers and air conditioning systems, drafting energy audits and elaboration of energy performance certificates.

Act No. 406/2000 Coll., on energy management, as amended, currently in force:

- An inspection of boilers and internal heat lines under subsections 2 and 3, and an inspection of boilers used for heating, with an output in excess of 200 kW, located in the heated building, may only be carried out by persons specified in Section 10, or persons authorised under a special legal regulation, tested by the Ministry. The scope of those tests shall be set in an implementing regulation.
 - An inspection of air conditioning systems may only be carried out by persons specified in Section 10 or persons authorised under a special legal regulation 4d), and tested by the Ministry in the field of energy efficiency and proposed measures. The scope of those tests shall be set in an implementing regulation.
 - The certificate may only be elaborated by a person authorised under Section 10 or a person authorised under a special legal regulation 5b), tested by the Ministry in line with an implementing regulation with respect to the details of its elaboration.
 - An energy audit may be carried out by a person settled in another European Union Member State if that person engages in the work of an energy auditor in the Czech Republic temporarily or occasionally, provided that the person is:
 - a) a national of a European Union Member State,
 - b) authorised to work as an energy auditor under the laws of another European Union Member State.
- 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?

Certification and qualification systems for inspections of efficiency of boilers and air conditioning systems, elaboration of energy audits and energy performance certificates are publicly available as part of the “testing code” placed on the website of the Ministry of Industry and Trade. This website also comprises a list of persons authorised to carry out these activities and may be searched by name, region or specialisation.

See the answer to a). Also the amendment to Act No. 406/2000 Coll., on energy management, as amended, foresees the introduction of provisions fully meeting the requirement of the Directive.

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

See the answer to the previous question in point d), chapter 4.2.5.

4.2.6 Electricity Infrastructure Development (Article 16(1) and Article 16(3) to (6) Directive 2009/28/EC)

- a) Reference to existing national legislation concerning requirements related to the energy grids (Article 16):
- Act No. 458/2000 Coll., as amended,
 - Regulation No. 51/2006 Coll., on conditions for connection to the distribution or transmission grid, as amended.

- 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?

The operator of the transmission grid processes and annually updates the Study on Transmission Grid Development which takes into account all inputs from the production, consumption and foreign co-operation. The output of the Study is a ten-year investment plan of • EPS, a.s. (transmission grid operator) that is further projected into specific timetables of individual events. Co-operation with transmission grid operators is an inseparable part of this activity which is stipulated in the Rules of Transmission Grid Operation approved by the Energy Regulatory Office.

Similarly, distribution grid operators develop multi-annual plans of development of their grids in which the requirements for the connection of new energy generation and consumption installations are taken into account.

The amendment to the Energy Act envisages that the Ministry of Industry and Trade will have to consider the 10-year investment plans of operators of transmission and distribution grids; the approval of the Ministry of Industry and Trade shall be an essential prerequisite for the approval of these plans by the Energy Regulatory Office.

However, it is necessary to mention the problem of long time limits for the preparation and implementation of line installations:

- Approvals that are being issued by • EPS, a.s. today are for connection that is to take place, for example, in 2022
- Short regulatory period – currently a 5-year regulatory period applies to 10-year plans. Under these conditions it is impossible to ensure financing from external sources (besides that, according to the currently valid legislation, financial costs are not included in the regulation).

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

The role of SMART grids will lie primarily in the possibility of managing renewable sources of energy and generating up-to-date (on-line) data for their management aimed at ensuring their maximum use, in particular in connection to the operation of other sources of the production portfolio. This will be based both on existing technologies (e.g. multiple remote control) as well as neuron networks. It is also crucial for us to focus on possibilities of efficient storage of electricity generated from renewable energy sources (research and foreign experience).

The first step for the determination of the role of intelligent networks is elaboration of a study pursuant to Directive 2009/72/EC and this will be followed by a decision on the possible introduction of intelligent metering systems.

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

At present there is a study in progress which is being carried out in co-operation with the 50 Hz Transmission company. Its aim is to assess the efficiency of the new interstate connection between • EPS, a. s. and 50 Hz Transmission (Vítkov – Meclenreuth). The outcomes of the study will be available by October 2010. A joint study of • EPS, a. s. and SEPS, a. s. (Slovak transmission grid operator) is to be launched next year. It will evaluate the impacts of changes in the portfolio of sources of the Czech and Slovak Republics on the efficiency of the Otrokovice – Bošáca interstate connection.

- 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.*)

In order to accelerate the statutory procedures preceding the authorisation of the project, a major amendment to the Act on Environmental Impact Assessment and to the Building Act will be proposed, in particular in connection with the findings of the Inter-Sectoral Committee, established on the basis of Governmental Resolution No. 419 of 31 May 2010 and focusing on the issues discussed in the following document: "Proposal of Measures to Improve Competitiveness and the Development of Business Activities in the CR and the Elimination of Redundant Requirements of Environmental Legislation", and the Tripartite Working Group for EIA issues established by the Ministry of the Environment in relation to the conclusions of the meeting of the Council of Economic and Social Agreement held on 22 April 2010. Unless major changes are introduced in authorisation procedures, the preparation and construction of a new line installation can take from 10 to 16 years. In certain cases these time limits will hinder further connection of renewable sources of energy. This is a European-wide problem – see the ENTSO initiative. Possible solutions may include, for example, the act on the construction of 24 TSO lines (Germany), Planning Act 2008 (Great Britain), etc.

Also the answer to the question in point c), chapter 4.2.1.

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

There is no coordination in place. At present, municipalities have powers that permit them not to respect the required construction of infrastructure that is necessary for the development of the production base, including renewable sources of energy.

See also the answer to the questions in points f) and h), chapter 4.2.1.

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

Yes, provided there is free capacity in the given place and it is not a threat to safe and reliable operation of the grid. Otherwise the operator of the transmission grid as well as distribution grid operators take steps to increase it – see b), however, these steps are inadequately lengthy due to the legislation currently in force in the Czech Republic.

- 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?

See b) and g).

- 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.*)

All these issues are governed by Regulation No. 51/2006 Coll., on conditions for connection to the distribution or transmission grid, as amended.

- 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.)

All that is based on the current regulatory frame. The proposals for the following regulatory period permitting the implementation of the • EPS, a.s. investment programme are the subject of intense talks between • EPS, a.s. and the Energy Regulatory Office. As regards distribution system operators, no modifications of the rules are planned for the following regulatory period (2015-2019).

- 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?

All producers have to follow Regulation No. 51/2006 Coll., on conditions for connection to the distribution or transmission grid, as amended, defining unambiguously and in a non-discriminatory manner the share of connection costs depending on the type of connection and connection capacity.

- 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?

These issues are clearly specified in Regulation No. 51/2006 Coll., on conditions for connection to the distribution or transmission grid, as amended.

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?

Under standard operation conditions, transmission system operators do not control the launching of sources; when providing transmission services, they treat all sources equally. Source operation control is carried out by transmission system operators only to the extent of the ensured auxiliary services or together with distribution system operators in order to prevent emergency situations or in emergency situations. To connect a renewable energy installation, the transmission system operator as well as

distribution system operators have to proceed according to law and if the location has free capacity, they ensure priority connection to the system. If no free capacity is available, the transmission system operator and distribution system operators take steps to increase the capacity – see 4.2.7 b). However, this additional capacity will only be available after 2020. It generally applies that the limitation of access to the system is possible only if there is a security threat or the operation's reliability is endangered.

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

The transmission system operator in the Czech Republic is not generally entitled to decide on the dispatch of individual electricity generating installations, however, there are several exceptions. This regards in particular situations defined in Section 24(3)(d) of the Energy Act: malfunction in the transmission system or planned works in the transmission system. The procedure followed in these cases is specified in the above Act and relevant implementing regulations.

- 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).*)

The transmission system operator in the Czech Republic as well as distribution system operators in the Czech Republic actively support the development of a market environment promoting the integration of various types of electricity generating installations. In compliance with law, they ensure the development of the transmission system as well as distribution systems, including, in the case of the transmission system, the increase of the overall commercially available cross border transmission capacity.

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

The transmission system operator as well as distribution system operators provide information on extraordinary measures taken in compliance with the Energy Act (Act No. 458/2000 Coll.).

- 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?

The integration of renewable energy sources in the electricity market takes place in particular according to the relevant provisions of Act No. 180/2005 Coll., 458/2000 Coll. and Regulation No. 541/2005 Coll., on the electricity market rules, principles of setting prices for the activities of the electricity market operator and the implementation of some other provisions of the Energy Act, as amended. If the producer is interested, the transmission system operator as well as distribution system operators are obliged to purchase the renewable energy electricity generated and use it preferentially to cover the losses in the transmission system. The transmission system operator may offer surplus electricity, if any, on the electricity market. As regards distribution system operators, any electricity generated which exceeds the losses in the distribution system becomes a deviation when the costs to settle its price are reimbursed to distribution system operators at a regulated price for the use of the network.

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

There are no fees for the transmission or distribution of the electricity generated (i.e. the supply to networks). Fees are only charged for the purchase of electricity from the network in compliance with Regulation No. 541/2005 Coll., on the electricity market rules, principles of setting prices for the activities of the electricity market operator and the implementation of some other provisions of the Energy Act, as amended, and the relevant Price Decisions of the Energy Regulatory Office.

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?

Response to Article 16(7) of the Directive: Act No. 458/2000 Coll. currently in force (Section 19a(1)) lays down the method of price regulation for gas transmission and distribution. The rules on price regulation are published in the official journal of the Energy Regulatory Office. The current legislation is sufficient. In practice, transmission and distribution prices are set on a non-discriminatory basis for all types of gas that meet technical (qualitative) requirements for connection into the gas network. Thus gas transmission and distribution tariffs are identical, regardless of the type of gas transmitted.

- 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?

Response to Article 16(9) of the Directive: These are directory provisions (they will not be implemented). The existing natural gas network (high pressure) has sufficient capacity for potential connection of biogas sources. Network capacity is always determined in relation to the relevant connection point (of any gas generator) and the existing distribution network. In general, it can be said that the high-pressure network capacity is sufficient for gas injecting. This is not relevant for middle-pressure and low-pressure connections due to minimal purchases from this part of the network in summer months.

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

Response to Article 16(10) of the Directive: Technical rules concerning gas quality are set forth in TPG 902 02 of 2008 (Quality and Testing of Gas Fuels with High Methane Content). At present TDG 983 01 is being prepared (Injection of Biogas into Natural Gas Networks. Quality and Measuring Requirements) regarding requirements for biogas stations, quality measurement, rules for odourisation and pressure. A regulation on connection is being drafted by the Energy Regulatory Office which is to deal also with the method of calculation of connection tariffs.

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?

With respect to the fact that almost all major cities in the Czech Republic already have some heating infrastructure and that the share of heat supply from heating systems in the overall heat consumption by the Czech Republic exceeds 50%, in principle the existing heating infrastructure can be, in terms of meeting the renewable energy 2020 target, considered sufficient. As for the existing systems, it will be primarily necessary to focus on their refurbishing and increasing their efficiency (decrease of heat losses during distribution). New heating systems may be developed primarily in smaller settlements where a suitable renewable energy source is available (in particular biomass or biogas) in sufficient quantities. Central plans for the future promotion of heating infrastructure development in the Czech Republic have not been drafted. Issues regarding heat supply are usually dealt with in Territorial Energy Conceptions processed at the regional level, at the level of chartered towns and the Capital of Prague or municipalities based on delegated powers as laid down in Act No. 406/2000 Coll., as amended. Financial support for the development of heating systems can be obtained from the European Union Structural Funds.

In the Czech Republic, the share of large heating installations using solar and geothermal energy is likely to be marginal. The Czech Republic does not have significant easily accessible sources of geothermal energy and solar energy, on the other hand, is available primarily in periods when the supply of heat is not required and therefore there is little possibility of using it on a larger scale.

4.2.10 Biofuels and Other Bioliquids – Sustainability Criteria and Verification of Compliance (Articles 17 to 21 of Directive 2009/28/EC)

- 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?*)

The implementation of the sustainable criteria for biofuels and bioliquids will be part of the relevant legal regulations.

- 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?*)

See the answer to the previous question in point a), chapter 4.2.10.

- 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?

The introduction of the certification system is envisaged for 2011.

A certified person possessing an authorisation issued by the Ministry (certified by the Ministry) or a person authorised to carry out such activities by a EU Member State will review the meeting of the sustainability criteria for biofuels and bioliquids by the producer (or the importer).

The possession of a certificate for the production of transport biofuels that meet the sustainability criteria will be checked by the Czech Environmental Inspection.

The State Energy Inspection will check whether producers of renewable energy and heat from bioliquids possess a certificate ensuring compliance with the sustainability criteria for bioliquids used for energy production.

- 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 can economic operators access 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.)*

1) Spatial planning

Legislation regarding spatial planning:

- Act No. 183/2006 Coll., on spatial planning and building regulations, as amended (Building Act)
- Regulation No. 501/2006 Coll., on general territorial management requirements, as amended
- Regulation No. 500/2006 Coll., on planning analytical materials, planning documentation and methods of spatial planning activity recording
- Regulation No. 195/2007 Coll., laying down the range of opinions on spatial development policy and spatial planning documentation, binding opinions on the protection of interests protected by Act No. 406/2000 Coll., on energy management, as amended, and conditions for the determination of energy installations

Related legislation:

- Regulation No. 503/2006 Coll., on a more detailed rules of planning permission procedure, public law contract and spatial planning measures.

2) Land Register

National Land Register legislation:

- Act No. 344/1992 Coll., on the Land Register of the Czech Republic, as amended (Land Register Act)
- Regulation No. 26/2007 Coll., implementing Act No. 265/1992 Coll., on the entry of ownership and other titles to real estate, as amended, and Act No. 344/1992 Coll., on the Land Register of the Czech Republic, as amended (Land Register Act), (Land Register Regulation),
- Act No. 359/1992 Coll., on surveying, mapping and cadastral bodies, as amended.

In the Czech Republic, the Land Register is public and everyone has the right to consult it, obtain copies of the entries, extracts or drawings and to use the data provided therein. On the other hand, the collection of instruments and documents of title are not freely accessible. Documents of title are provided solely to a person who proves his/her identity and specifies why s/he requests such information. Copies of instruments from the collection of instruments can be obtained provided the applicant proves his/her identity and specifies why s/he requests such information. The public access to the Land Register can only be limited for reasons specified by law (laid down in the Land Register Act).

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

- Act No. 114/1992 Coll., on the protection of nature and landscape, as amended
- Act No. 289/1995 Coll., on forests and on the modification and amendment to certain acts, as amended (Forestry Act),
- Act No. 334/1992 Coll., on the protection of the agricultural land fund, as amended,
- Act No. 164/2001 Coll., on natural healing springs, sources of natural mineral water, natural spas and spa sites and on the amendment to some related acts, as amended (the Spa Act).
- Act No. 254/2001 Coll., on water and amendments to some acts, as amended (Water Act).

The Land Register serves, among others, to protect the environment, the agricultural land fund and land areas used for forest purposes. It also specifies the status of land (arable soil, hop fields, vineyards, gardens, orchards, permanent grass cover,

woodland, water areas, built-in areas and yards and other areas) and selected data on methods of its protection. This includes the protection of nature and landscape (national parks, national park protection zones, national nature preserves and natural monuments, protection zones of special protection areas or protected trees, sites of Community importance, important bird areas), the protection of natural spas, natural healing sources, sources of natural mineral waters, water-work protection and water source protection (stipulated in the Land Register Regulation).

- 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.)?

The change of data on the type and method of real estate protection registered in the Land Register is carried out based on graphic and written background documentation:

- on the protection of natural healing spas, natural healing source and natural mineral water source and their protection zones and pursuant to the notice by the Ministry of Health – Czech Inspectorate of Spas and Springs (Spa Act No. 164/2001 Coll.),
- on the protection of part of nature and landscape and their protection zone and a notice of the relevant nature and landscape protection body or a specialised nature and landscape protection organization that maintains a central register of environmental protection (Act No. 114/1992 Coll., on the protection of nature and landscape),
- on the water-work protection zone and based on a decision by the water office (Water Act No. 254/2001 Coll.).

Modification of data in the Land Register regarding the type and method of protection of agricultural land and woodland and non-agricultural land that are part of the agricultural land fund are carried out based on the decision or consent of the agricultural land fund protection body, the bodies of the State Forest Administration (land area used for forest purposes), or a decision on land adjustment proposal authorisation (Act No. 139/2002 Coll., on land adjustments), provided these instruments expressly state information on protection, and on the basis of a notice by the owner of the land.

The Land Register is updated on a continuous basis according to the instruments presented for entry in the Land Register.

The Land Register is administered by land registries (Act No. 359/1992 Coll.)

- 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?

See the answer to the previous question in point a), chapter 4.2.10.

- 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?

At present we do not expect the Czech Republic to engage in voluntary 'certification' scheme(s) for biofuel and bioliquid sustainability by signing bilateral and multilateral agreements with third countries that would contain provisions on the sustainability criteria as laid down in the Directive.

4.3 Support Schemes to Promote the Use of Energy from Renewable Sources in Electricity Applied by the Member State or a Group of Member States

Regulation

Regulation can set target(s) and obligations. In case there are such obligations, please detail them:

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

Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources and amending certain acts, as amended (Act on the Promotion of Renewable Energy Sources). The Act sets an 8% share target for energy from renewable sources in gross energy consumption in 2010.

- b) Are there any technology-specific targets?

No, there are not, there is only a general target set in Act No. 180/2005 Coll., i.e. an 8% share target for energy from renewable sources in gross energy consumption in 2010.

The National Action Plan will set targets for individual technologies.

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

No concrete targets or obligations are set for individual renewable energy technologies.

The National Action Plan will set targets for individual technologies.

- d) Who has to fulfil the obligations?

They are not set, see point c).

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

They are not set, see point c).

- f) Is there any mechanism to supervise fulfilment?

There are no specific targets for individual renewable energy technologies, see point c). Generally it can be said that compliance with Act No. 180/2005 Coll. is monitored by the State Energy Inspection.

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

The 8% target for 2010 is determined by the Directive and law. After the approval of Directive 2009/28/EC a new target for 2020 will be defined.

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) Give the name and a short description of the scheme.

At present the Czech Republic offers the following types of financial support:

A) Investment support from subsidy schemes for the promotion of renewable energy and heat production:

- National Programme for the Promotion of Energy-Saving Measures and the Use of Renewable Energy Sources
- Operational Programmes in Business and Innovation (Ministry of Industry and Trade) and the Environment (Ministry of the Environment)
- Green Savings Programme (Ministry of the Environment)
- Rural Development Plan of the CR (Ministry of Agriculture)

B) Feed-in tariffs and green bonuses for the promotion of renewable energy production (the so-called operational form of support – see below). The problem is that VAT is imposed on this subsidy (at present it accounts for 20% in the Czech Republic).

C) Tax exemptions or reductions and tax refunds:

- Income tax exemptions. In compliance with the provision of Act No. 586/1992 Coll., on income tax, as amended (hereinafter the "Income Tax Act"), the income from the green installations listed therein is exempt from taxes:
 - Small water power plants up to the capacity of 1 MW,
 - Wind power plants,
 - Heat pumps,
 - Solar installations,
 - Installations generating and using biogas and woodgas,
 - Biomass energy or heat generating installations,
 - Installations generating biologically degradable substances as specified in a special legal regulation.

This relates to the income from the operation of the below-mentioned installations in the calendar year in which they were put into operation and for the immediately following five years.

- Tax deductions (pursuant to the Income Tax Act).
- Tax exemptions pursuant to Act No. 261/2007 Coll., on public funds stabilization, as amended
- Exemption from property tax (pursuant to the Property Tax Act):
 - Renewable energy projects provided the land and the installations designed solely for the purpose of improvement of the environment in the Czech Republic form one functional unit.

Existing operational support (feed-in prices and green bonuses):

Renewable energy production is promoted based on Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources and amending certain acts, as amended (Act on the Promotion of Renewable Energy Sources). The Act, created based on the implementation of Directive of the European Parliament and of the Council 2001/77/EC, was adopted in 2005. The Act sets forth two schemes of operational support of renewable energy production: feed-in prices and green bonuses. These schemes cannot be combined, producers have to choose one that they wish to apply. A change is possible as of 1 January of the following year. The support within both schemes is funded by the transmission network operator or the regional distribution network operator depending on the network connection of the producer in question.

Feed-in prices have been calculated with respect to the wording of Section 6 of Act No. 180/2005 Coll. and are set in a way to guarantee producers, during the lifecycle

of individual types of electricity generating installations, a 15-year return on investment. During the source lifecycle, the feed-in prices are increased by 2 to 4% taking into account the industrial producer price index.

The Energy Regulatory Office determines the amount of green bonuses based on the market price of electricity generated from individual types of renewable energy sources. Under this scheme, producers may sell the generated electricity to any customer or electricity trader for the market price and gain a green bonus. The bonus scheme also permits them to consume the electricity generated and to apply for a green bonus for this consumption. Compared to feed-in prices, these are more favourable as they take into account the risk associated with the marketability of such electricity.

Basic technical and economical parameters of individual types of renewable energy sources that influence the calculation of support are stated in Annex No. 3 of Regulation of the Energy Regulatory Office No. 475/2005 Coll., implementing certain provisions of the Act on the Promotion of Use of Renewable Energy Sources, as amended. The basic parameters for each type of renewable energy sources are investment costs in relation to the installed capacity unit and expected energy use per hour.

b) Is it a voluntary or obligatory scheme?

From the point of view of investors or producers, it is a voluntary scheme. However, energy system operators are obliged to pay producers the feed-in price for renewable energy they have generated and want to sell. As regards the green bonus scheme, they are required to pay producers the bonuses for electricity generated. In both cases producers have to sign a contract on support payment (supply contract) with the distributor or transmission system operator. The support is then paid based on a monthly renewable energy production report.

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

Act No. 180/2005 Coll. has been drafted by the Ministry of Industry and Trade. According to the Act the feed-in prices and green bonuses are set by the Energy Regulatory Office.

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

As regards the support of feed-in prices and green bonuses it was not necessary to take any special measures. All end consumers fund the scheme by electricity prices paid to regional distribution companies or the transmission system operator. Obligatory purchase of renewable energy by system operators increases their costs as they are required to pay a higher feed-in price. These additional costs are recognised in electricity distribution prices for end consumers in the form of a

nationwide uniform fee included in the electricity distribution price. The costs are thus covered by all electricity consumers rather than the state budget.

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

The existing scheme does not deal with this aspect.

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

Yes, it is revised annually and for new sources the support is determined according to the current technical and economic parameters. In the feed-in price scheme, regressive modifications for existing sources are limited; the permitted increase is from 2 to 4%. In the green bonus scheme, annual reviews of current market prices of individual types of renewable energy are carried out and green bonuses are modified according to these prices.

To calculate feed-in prices, the technical and economic parameters specified in Regulation 475/2005 Coll., implementing certain provisions of the Act on the Promotion of Use of Renewable Energy Sources, as amended, are taken into account.

- g) Does support differ according to technology?

Yes, the amount of support differs for each renewable energy technology.

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

As a result of increase in renewable energy production, electricity prices are expected to be increased by raising the regulated contribution to cover the additional costs associated with the promotion of renewable energy sources. The contribution paid by all electricity consumers is used to finance feed-in prices and green bonuses.

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

No, it is not.

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

Yes, it is. In the future applying for support for certain types of renewable energy source is likely to be conditioned by meeting the minimal efficiency values (e.g. biomass).

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

It is planned for 2011 or 2012.

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

There is no end date set for operational support. The year 2005, i.e. the year of adoption of Act No. 180/2005 Coll., can be considered the start day of the scheme. Support for individual types of renewable energy sources will be paid for the period of their expected life, which in case of renewable energy sources means 20 years; for small water power plants the lifecycle is 30 years.

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

In the category of small water power plants support is provided to sources with an installed capacity up to 10 MW.

In the category of wind power plants, support can be provided solely to wind power plants covering an area of 1 km² and with the overall installed capacity over 20 MWe.

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

Yes, it is possible; a project can receive investment support in the form of a subsidy from the Structural Funds. Furthermore, all renewable energy sources, excluding small water plants, over 1 MW are income tax exempted for a period of 5 years plus the year of its putting into operation.

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

There are no such schemes.

Note: The above-mentioned refers to current support schemes. The planned operational support will be specified in the new act on supported energy sources which is being prepared in connection with the transposition of Directive 2009/28/EC.

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)

As part of the financial support of investments, the Czech Republic grants the following:

- Subsidies, low interest loans (Investment support from subsidy programmes promoting renewable energy and heat production)
- Tax exemption
 - Income tax (pursuant to the Income Tax Act)
 - Property tax (Property Tax Act)
- Tax deductions (pursuant to the Income Tax Act).

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

The following entities can benefit from the scheme: entities specified in the support programmes and entities listed in the Income Tax Act, Property Tax Act and Regulation No. 12/1993 Coll., implementing certain provisions of Act of the Czech National Council No. 338/1992 Coll., on Property Tax.

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

As far as the subsidy programme support is concerned, support is provided based on periodical calls and calls to submit applications for subsidy programmes. The eligibility for such support is checked by the programme administrator as well as by local financial offices.

- National programmes (backed by the state budget) are one-year programmes. The selection of projects to be supported is carried out by an evaluation committee composed of independent specialists. Applications have to be submitted with complete documentation. Projects are selected by an evaluation committee consisting of independent specialists.
- Structural programmes using financial funds from the EU are generally multi-year plans. First, so-called registration applications are submitted (presentation of basic background documentation and the opinion of the tender holder on the submitted project. After the preliminary approval of the registration application, so-called complete applications with the entire documentation have to be presented. The selection of projects for support is carried out by an evaluation committee composed of independent specialists.

As regards tax exemption (income tax, land tax, property tax), the entity (tax payer) can be exempt from tax payment without applying for such exemption by asserting its right in their tax return. In compliance with the provision of Section 19(2) of the Income Tax Act, a taxpayer may waive the exemption by notice to the tax administrator no later than before the expiry of the period for filing the tax return for the given tax period in which the sources and installations in question were put into operation. The eligibility for such support is checked by financial offices. Applications are submitted with complete documentation.

Specific questions for tradable certificates:

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

There is no obliged share of electricity produced from renewable sources in the total supply in the Czech Republic.

Act No. 406/2000 Coll., on energy management, as amended, and Regulation No. 148/2007 Coll., on energy performance of buildings stipulate that for each new building and any building covering more than 1,000 m² and undergoing a major refurbishment a renewable energy use assessment must be provided.

In the amendments to the above-mentioned Act and Regulation which are being drafted this requirement shall be extended to cover all buildings undergoing a major refurbishment.

The amendment to Act No. 406/2000 Coll. envisages that if renewable energy sources are technically, economically and environmentally feasible, they will have to be incorporated in all new or refurbished buildings. Starting from 2012 this will apply to all public buildings and starting from 2015 to all other buildings.

- b) Who has the obligation?

The obligations stated in the answer to the question in point a) apply to building constructors, building owners or associations of owners of the building.

- c) Are there technology-specific bands?

Within the scope of obligations stated in the answer to the question in point a) there are no technology-specific bands.

- d) Which technologies are covered by the scheme?

The obligations stated in the answer to the question in point a) are not technology-restricted.

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

In the Czech Republic no trade in certificates has been introduced.

- f) Is there a floor bottom price?

See the answer to the question in point e).

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

Sanctions and penalties may be imposed for the non-fulfilment of the obligations stated in the answer to the question in point a).

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

See the answer to the question in point e).

- i) What is the trading scheme for certificates?

See the answer to the question in point e).

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

See the answer to the question in point e).

Specific questions for feed-in fixed tariffs:

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

Producers have to have a valid licence for energy production issued by the Energy Regulatory Office, be connected to the system and have a commercial meter installed. Based on meter reading, producers send monthly reports on renewable energy production to the distribution (transmission) network operator and the operator pays them the relevant amount.

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

There are no such caps.

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

There are different levels of support for each type of technology. The currently applicable levels are published in price decisions of the Energy Regulatory Office no. 4/2009 and 5/2009, accessible at the Office's site: www.ero.cz. Below is an overview for new sources put into operation after 1 January 2010 (exchange rate used 1 € = 25.5 CZK).

Type of RES	Feed-in prices (€/MWh)
Photovoltaic installations up to 30 kW	480
Photovoltaic installations over 30 kW	476
Wind power plants	89
Small water power plants	118
Geothermal energy	177
Biogas stations*	162
Pure biomass burning*	180

*) As regards biogas and biomass, the level of support differs according to the type of fuel

- d) Are there other criteria differentiating tariffs?

The basic criterion is the date of putting of the installation into operation, which means that the technical and economic conditions in the period of production installation launch are respected. Other criteria include the age of individual technological components (for wind and small water power plants), type of fuel in case of biogas, method of burning and type of fuel in case of biomass and categorisation according to the installed capacity in case of photovoltaic power plants.

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

Tariffs are guaranteed according to the following table:

Type of RES	Feed-in price guarantee [in years]
Small water power plant	30
Biomass	20
Biogas	20
Landfill, fermentation and mine gas	15
Wind power plant	20
Geothermal power plant	20
Photovoltaic power plant	20

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

Feed-in prices for new production installations are calculated on an annual basis, taking into account current investment costs. For existing sources, i.e. production installations already in operation, the prices are increased by 2 to 4 percent according to the development of the industrial producer price index.

Specific questions for feed-in premiums:

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

Producers have to have a valid licence for energy production that is issued by the Energy Regulatory Office and a commercial meter installed. Based on meter readings, producers send monthly reports on renewable energy production to the distribution (transmission) network operator and the operator pays them the relevant amount.

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

There are no such caps.

- c) Is it an alternative to fixed tariff?

It is a market support scheme. In the green bonus scheme, producers have to find their customers and sell their electricity for market prices. In addition, they are paid a fixed green bonus by the distribution (transmission) network operator. The level of the

green bonus is, in principle, defined as a difference between the feed-in price and the market price of the given type of renewable energy source for the category. However, compared to feed-in prices, bonuses are more favourable as they make account of the risks associated with the marketability of the generated electricity.

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

There are different levels of support for individual types of technology. The currently applicable levels are published in price decisions of the Energy Regulatory Office no. 4/2009 and 5/2009, accessible at the Office's site: www.ero.cz. Below is an overview of new sources put into operation after 1 January 2010 (exchange rate used 1 € = 25.5 CZK).

Type of RES	Green bonuses (€/MWh)
Photovoltaic installations up to 30 kW	451
Photovoltaic installations over 30 kW	438
Wind power plants	72
Small water power plants	80
Geothermal energy	138
Biogas stations*	124
Pure biomass burning*	142

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

No, there are not.

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

Green bonuses are guaranteed for one year. The following year an analysis of the electricity market prices for individual types of renewable energy sources takes place and green bonuses are reviewed with respect to market development.

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

Tariff adjustments are only carried out based on market price updates of individual types of renewable energy sources.

Specific questions for tendering:

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

Tenders for the construction of technologies for the production of renewable energy are held according to the needs of existing and future operators of such technologies. These operators announce tenders and set tender criteria.

- b) Which technologies are specified?

In this answer it is impossible to clearly list individual technologies specified in tenders.

- c) Is it integrated with grid development?

As part of the permit for the construction of a renewable energy production technology, the operator (or future operator) has to obtain, prior to the initiation of the construction, a consent or a preliminary consent of the electricity grid operator concerning connection to electricity grid. Based on the application for connection to the electricity grid, the transmission or distribution system operator will analyse the requirements for future development of the system and draft its investment plan for the development and enhancement of the system.

As far as the production of heat is concerned, the future renewable heat production technology operator has to ensure sufficient purchase of heat produced by it, a connection to the distribution system of another heat distribution operator or the modernisation of such heat distribution system (and possibly co-finance it) or its construction.

4.4 Support Schemes to Promote the Use of Energy from Renewable Sources 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?

In addition to the obligatory feed-in prices or green bonuses, if applicable, a special surcharge applies to CHP production. At present, however, it is not sufficiently high to encourage investors to produce CHP from renewable energy sources, in particular from biomass.

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

The use of renewable energy sources for heating systems is currently supported by the following support schemes:

- Investment support from the European Union Structural Funds (Operational Programmes in Environment, Business and Innovation and the 2007–2013 Rural Development Plan)
- Exemption of income from the operation of heat pumps, solar installations, installations for the production and use of biogas and woodgas energy, biomass heat production and the use of geothermal energy from income tax pursuant to Act No. 586/1992 Coll., as amended, in the year when they are put into operation and in the five-year period immediately following; the exemption applies both to natural and legal persons
- Exemption from property tax (pursuant to Regulation No. 12/1993 Coll.):
 - Sources of geothermal energy including heat pumps
 - Solar collectors and biomass energy sources
- Indirect support by means of a bonus for CHP production from renewable energy sources

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

Small-scale heating and cooling from renewable energy sources is supported primarily by the Green Savings programme which administers a significant volume of

funds generated by the sale of unused greenhouse gas emission credits assigned to the Czech Republic within the frame of flexible mechanisms of the Kyoto Protocol to the United Nations Framework Treaty on Climate Change, and also within the scope of the support scheme of the National Environmental Fund.

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

Support schemes to encourage the use of heating and cooling from renewable energy sources in industrial applications are similar to those mentioned in point b). Private companies, however, are not entitled to apply for an investment subsidy for the use of renewable energy sources from the Operational Programme in the Environment.

4.5 Support Schemes to Promote the Use of Energy from Renewable Sources in Transport Applied by the Member State or a Group of Member States

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

At present, bioethanol is consumed to produce motor fuels and it is either used as a low-percentage additive to motor petrol in compliance with the legislation in force or in the form of high-percentage bioethanol fuel blends (E 85 – for ignition engines, E 95 – for diesel engines).

For ignition engines conventional mixture of petrol and bioethanol (or ETBE) is used and its composition is such as commonly available in the network of petrol stations in the territory of the CR. In compliance with the legislation in force (Regulation of the Ministry of Industry and Trade No. 133/2010 Coll./implementing regulation to Act No. 311/2006 Coll., on fuels) and the latest amendment to the Act on Air Protection, the additive of bioethanol (or an equivalent) to motor fuels since 1 June 2010 amounts on average to 4.1%, however, the technical standard (• SN EN 228) sets a maximum limit of 5.0%. In order to permit higher concentrations of biofuels (bioethanol) in motor fuels, special engines designed for these new fuels have to be developed to replace the existing ones.

FAME, i.e. ROME (rapeseed-oil methyl ester) is currently consumed to produce motor fuels either as a low-percentage additive to diesel oil in compliance with the current legislation (Regulation of the Ministry of Industry and Trade No. 133/2010 Coll. and • SN EN 590) or in the form of diesel blends (SMN 30 containing a minimum of 30% of FAME/ROME) or pure FAME/ROME used in Diesel engines.

To propel diesel engines, conventional diesel oil with added FAME/ROME is used in quality commonly distributed at petrol stations in the territory of the CR in compliance with the valid legal regulations. In compliance with the legislation in force (the latest amendment to the Act on Air Protection), starting from 1 June 2010 the 6.0% fossil share in diesel fuel should be replaced by a bio-component; diesel fuels will thus comprise an average of 6.0% of bio-content. According to the technical standard (• SN EN 590), however, it shall not exceed 7.0%. In order to permit higher concentrations of these substances, special engines designed for these new motor fuels have to be developed to replace the existing diesel ones.

The amendment to the Act on Fuels is likely to lay down the obligation to market petrol fuels with a maximal content of bioethanol up to 5% (E5) until the end of 2018 at a minimum of 50% of petrol stations operated in the territory, which means that a major percentage of petrol stations will sell (until the set deadline) in particular petrol fuels of this type. Simultaneously, it is expected that there will be pressure to increase the overall bio-content in transport fuels, therefore it will soon exceed the five-percent limit and it will be necessary to introduce petrol fuels with bio-content up to 10% (E10), which is a limit laid down by Directive 2009/30/EC as well as by the proposed EN 228, or the E 85 fuel. In total, the Czech Republic sells twice as much diesel fuels than petrol fuels and the maximum diesel fuel bio-content limit is 7.0% (B7), as set forth in the • SN EN 590 technical standard in force.

Therefore the planned increase in bio-components in motor fuels aimed at replacing fossil petrol and diesel oil will have to be satisfied by combining “ordinary” fuels (pursuant to EN 590 and EN 228) with high-concentration biofuels (E85, SMN 30, B100). See also Table 12 below.

Directive 2009/30/EC amending Directive 98/70/EC as regards the specification of petrol and diesel launches on the EU market the E10 fuel containing up to 10% of ethanol (preserving the obligation to continue to market the E5 petrol and the B7 diesel containing up to 7% of FAME). Regulation (EC) No. 692/2008 implementing and amending Regulation (EC) No. 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information imposes an obligation to check vehicles for polluting emissions from exhaust fumes by means of the E5 and B5 reference fuels, i.e. fuels with a lower bio-component share than those that will be available on the market after the putting of the vehicle into operation.

In particular for diesel fuels, the bio-content for the reference fuel has not been determined as specified in Directives 97/68/EC and 2004/26/EC as amended by Directive 2010/26/EC on emission from engines to be installed in non-road mobile machinery (locomotives, motor vehicles, river vessels) and in Directive 2000/25/EC as amended by Directives 2005/25/EC and 2010/26/EC on measures against the emission of gaseous and particulate pollutants from engines to be installed in agricultural and forestry tractors (tractors). Furthermore, Directives 97/68/EC and 2005/25/EC ban the use of other fuels than diesel oil for engines installed in new rail vehicles, vessels and agricultural tractors that are to be put into operation. They do not permit the use of biofuels or alternative fuels, such as ethanol.

- 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?

No, there is no specific support provided to biofuels which meet the criteria of Article 21(2) of the Directive. Second generation biofuels may be supported by mineral oil excise duty reduction or exemption, as specified in the Multiannual Programme for the Support of Further Use of Biofuels in Transport.

As far as the high-percentage blends E85, E95, SMN 30 and B100 (i.e. 100% FAME), pure natural oils and biogas are concerned, excise tax reduction applies to the bio-content. On the contrary, motor fuels and diesel oil with low bio-content (E5, E10 and B7) are not tax-advantaged.

4.6 Specific Measures for the Promotion of the Use of Energy from Biomass

4.6.1 Biomass Supply: Both Domestic and Trade

Table 7
Biomass Supply in 2006 (in thous. tons)

Sector of origin		Amount of domestic resource ⁽¹⁾	Imported		Exported	Net amount	Primary production (ktoe)
			EU	Non-EU	EU/non-EU		
A) Biomass from forestry ⁽²⁾	Of which						
	1) direct supply of wood biomass from forests and other wooded land for energy generation	3268	12	0	139	3142	975
	<i>Optional — if information is available you can further detail the amount of feedstock belonging to this category:</i>						
	(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	2599	43	0	378	2264	561
	<i>Optional — if information is available you can further detail:</i>						
	(a) residues from sawmilling, wood working, 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 generation, household waste wood)						
	(e) other (please define):						
B) Biomass	Of which:						

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Sector of origin		Amount of domestic resource (¹)	Imported		Exported	Net amount	Primary production (ktoe)
			EU	Non-EU	EU/non-EU		
from agriculture and fisheries	1) agricultural crops and fishery products directly provided for energy generation						
	<i>Optional — if information is available you can further detail:</i>						
	(a) arable crops (cereals, oilseeds, sugar beet, silage maize)						
	(b) plantations						
	(c) short rotation trees						
	(d) other energy crops (grasses)						
	(e) algae						
	(f) other (please define)						
	2) Agricultural by-products/processed residues and fishery by-products for energy generation	88	0	0	0	88	32
	<i>Optional — if information is available you can further detail:</i>						
(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							
(h) clippings from vines, olives, fruit trees							
(i) other (please define)							
C) Biomass	Of which						

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Sector of origin		Amount of domestic resource ⁽¹⁾	Imported		Exported	Net amount	Primary production (ktoe)
			EU	Non-EU	EU/non-EU		
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	235	0	0	0	235	54
	2) Biodegradable fraction of industrial waste (including paper, cardboard, pallets)						22
	3) Sewage sludge						
<p>⁽¹⁾ Amount of the resource in m³ (if possible, otherwise in appropriate alternative units) for category A and its subcategories and in tonnes for categories B and C and their subcategories.</p> <p>⁽²⁾ 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.</p>							

Note: Excluding biogas charge

Biogas 2006

	mil. m3	ktoe
Municipal wastewater treatment plants	55	30
Industrial wastewater treatment plants	3	2
Biogas stations	15	8
Landfill gas	51	25
Total	123	63

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

- Conversion factor: fuel quantity x efficiency

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

- 60% of the total renewable energy fraction – the biodegradable fraction of municipal solid waste is determined based on the consultations and information from IEA, Eurostat, other EU states and information from national incinerator operators.

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	3 868	1 223	4 412	1 405
	2) indirect supply of wood biomass for energy generation	5 389	1 306	5 489	1 311
B) Biomass from agriculture and fisheries	1) agricultural crops and fishery products directly provided for energy generation	400	143	500	179
	2) agricultural by-products/processed residues and fishery by-products for energy generation	400	143	500	179

Sector of origin		2015		2020	
		Expected amount of domestic resource	Primary energy production (ktoe)	Expected amount of domestic resource	Primary energy production (ktoe)
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	382	96	663	166
	2) biodegradable fraction of industrial waste (including paper, cardboard, pallets)	–	17	–	17
	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.

At present it is impossible to estimate the quantity of imported biomass, however, it is presumed that it only amounts to single percentage points and the import is realised primarily from neighbouring 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 (ha)

Agricultural land use for production of dedicated energy crops	Surface
1. Land used for short rotation trees (willows, poplars)	970,000 ha*
2. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum	

Total area of available (unused) agricultural land that may be used for production of dedicated energy trees and crops consumed in energy sources by direct burning, to produce biogas and liquid fuels for the generation of electricity and heat and to grow biofuels used in transport (while maintaining food security, i.e. 2,070,000 ha of arable land): 977,000 ha

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.

The current state of land degradation has not been mapped in the CR as a whole, there is only partial information available on potential degradation.

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

In the Czech Republic there are approximately 977,000 ha of unused arable land - a common potential for the production of agricultural biomass as a source for direct burning and biogas and liquid fuel production while maintaining food security of the Czech Republic.

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

The Ministry of Agriculture supported and plans (starting from 2011) to support the use of unused arable land for energy purposes, for example, by financial backing of and subsidies for establishing plantations of short rotation trees. Also, centres and consultation offices are operated to launch growing of short rotation trees on unused land, for example Silva Taroucy Research Institute for Landscape and Horticulture.

Support will be provided within the frame of the Rural Development Programme (EAFRD) – Axis I focusing on modernisation of agricultural businesses. Applicants are primarily entrepreneurs in the agricultural sector.

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

In the Czech Republic, primary material, such as animal manure, are already used and supported within the scope of energy (and also heat) production from biogas stations, as stipulated in Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources.

- 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*)?

In the Czech Republic, biogas is financially supported within the scope of energy production from biogas stations, as stipulated in Act No. 180/2005 Coll., on the promotion of electricity production from renewable energy sources, and within the scope of subsidy programmes.

- 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? ⁽⁴⁾: 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?

Measures:

- Improved use of forest biomass
- Development of more efficient technologies for biomass extraction and transport
- Awareness campaigns for forest owners and
- Defining of operational support of renewable heat production in the legislation.

In 2009 an analysis and final quantification of usable forest biomass were carried out with emphasis on extraction residues for energy purposes while taking into account the risks arising from the impact on soil, nutrient circulation and biodiversity.

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?

As part of the development of the renewable energy action plan, individual values relating to the production of biomass energy from individual types of biomass will be statistically monitored, including the division into agricultural, forest and residual biomass. Shares of individual types of biomass in other non-energy sectors, e.g. wood processing (furniture-making) and paper-making industries, will be monitored too.

- 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?)

See the answer to the question in point a) above. Yes, as part of the annual statistical data collection, the potential growth in energy biomass production will be monitored in connection with figures on production and demand in other agriculture- and forestry-based sectors. This refers primarily to production in the wood processing (furniture-making) and paper-making industries, its year-to-year change and impacts on product

prices resulting from the potential shortage of biomass raw materials in the Czech Republic.

4.7 Planned Use of Statistical Transfers between Member States and Planned Participation in Joint Projects with Other Member States and Third Countries

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).

The Act on supported sources of energy (to replace existing Act No. 180/2005 Coll.) is expected to contain the following provision on the powers of the Ministry of Industry and Trade:

- It will be in charge of negotiating bilateral and multilateral international treaties with another state or other states on the development of a joint project focusing on the use of energy from renewable and secondary energy sources in order to decrease costs associated with achieving the national goals and on statistical transfers associated with these projects; it will provide information and notices and present them to the Commission and the co-operating states and consider these projects and statistical transfers in connection with b).
- It will publish rules, terms and conditions and instructions regarding joint international projects and statistical transfers. (*Rules and instructions are expected to be published on the website of the Ministry of Industry and Trade*)

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

See the answer to the question in point a) above, chapter 4.7.1.

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

See the answer to the question in point a), chapter 4.7.1.

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

See the answer to the question in point a), chapter 4.7.1.

- 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?

At present, the Czech Republic does not plan to develop any joint international project. As regards potential future involvement of the Czech Republic in international projects on the use of renewable energy, support schemes and their forms will be specified in rules, conditions and instructions for the development of joint international projects and statistical transfers to be developed and published by the Ministry of Industry and Trade on its website as part of the new act on supported sources of energy.

4.7.2 Estimated Excess Production of Renewable Energy Compared to the Indicative Trajectory which Could be Transferred to Other Member States

See Table 9

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?

At present, the Czech Republic does not plan to develop any joint international project. The Czech Republic can offer experience and knowledge in the energy and engineering sectors suitable, for example, for manufacturing turbines for water and wind power plants and other engineering components arising from the long Czech tradition of high-quality education and orientation.

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

At present, the Czech Republic does not plan to develop any joint international project.

- 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 of its location?)

At present, the Czech Republic does not plan to develop any joint international project.

- 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?)

As a result of rather low awareness in particular in neighbouring states, it is not expected that the Czech Republic would develop a joint international project. For the publication of national action plans of all countries and establishing of an information platform which is likely to include information on demand and supply of joint projects.

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

With respect to the fact that the Czech Republic currently does not plan to develop any joint international project, the answer to the question regarding preference to support certain technologies is not relevant.

4.7.4 Estimated Demand for Renewable Energy to Be Satisfied by Means Other than Domestic Production

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 the Czech Republic (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 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 Sources in Electricity, Heating and Cooling and Transport

Table 10a
Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in the Czech Republic to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity 2010-2014

	2005		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	1 020	2 380	1 047	2 109	1 056	2 129	1 072	2 154	1 086	2 185	1 094	2 207
< 1MW	123	343	162	575	166	579	178	604	187	635	191	657
1MW – 10MW	154	728	142	474	147	490	147	490	147	490	147	490
> 10MW	743	1 309	743	1 060	743	1 060	743	1 060	743	1 060	743	1 060
<i>Of which pumping</i>	-	-	-	-	-	-	-	-	-	-	-	-
Geothermal:	0	0	0	0	0	0	0	0	4.4	9.0	4.4	18.4
Solar:	1	0	1 650	578	1 660	1 685	1 665	1 693	1 670	1 698	1 675	1 703
<i>Photovoltaic</i>	1	0	1 650	578	1 660	1 685	1 665	1 693	1 670	1 698	1 675	1 703
<i>Concentrated solar power</i>	-	-	-	-	-	-	-	-	-	-	-	-
Tide, wave, ocean	-	-	-	-	-	-	-	-	-	-	-	-
Wind:	22	21	243	454	293	558	343	663	393	767	443	871
<i>Onshore</i>	-	-	-	-	-	-	-	-	-	-	-	-
<i>Offshore</i>	-	-	-	-	-	-	-	-	-	-	-	-

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	2005		2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Biomass:		721		1 930		2 566		3 346		3 976		4 437
<i>Solid</i>	–	560	–	1 306	–	1 718	–	2 261	–	2 668	–	2 905
<i>Biogas</i>	36	161	113	624	147	848	177	1 084	207	1 308	237	1 531
<i>Bioliquids</i> ⁽¹⁾		0		0		0		0		0		0
Total		3 122		5 072		6 939		7 855		8 635		9 236
<i>of which in CHP</i>		475		1 930		2 566		3 346		3 976		4 437
(1) Take into account only those complying with the sustainability criteria (cf. Article 5(1) of Directive 2009/28/EC last subparagraph).												

Table 10b
Estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable energy technology in the Czech Republic to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity 2015-2020

	2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:	1 099	2 220	1 107	2 233	1 110	2 244	1 115	2 253	1 121	2 264	1 125	2 274
< 1MW	191	670	194	683	193	694	193	703	195	714	194	724
1MW – 10MW	147	490	147	490	147	490	147	490	147	490	147	490
> 10MW	743	1 060	743	1 060	743	1 060	743	1 060	743	1 060	743	1 060
<i>Of which pumping</i>	-	-	-	-	-	-	-	-	-	-	-	-
Geothermal:	4.4	18.4	4.4	18.4	4.4	18.4	4.4	18.4	4.4	18.4	4.4	18.4
Solar:	1 680	1 708	1 685	1 713	1 690	1 718	1 690	1 721	1 695	1 724	1 695	1 726
<i>Photovoltaic</i>	1 680	1 708	1 685	1 713	1 690	1 718	1 690	1 721	1 695	1 724	1 695	1 726
<i>Concentrated solar power</i>	-	-	-	-	-	-	-	-	-	-	-	-
Tide, wave, ocean	-	-	-	-	-	-	-	-	-	-	-	-
Wind:	493	975	543	1 079	593	1 183	643	1 288	693	1 392	743	1 496
<i>Onshore</i>	-	-	-	-	-	-	-	-	-	-	-	-
<i>Offshore</i>	-	-	-	-	-	-	-	-	-	-	-	-

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	2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Biomass:		4 819		5 086		5 401		5 656		5 911		6 165
<i>Solid</i>	–	3 065	–	3 108	–	3 200	–	3 231	–	3 262	–	3 294
<i>Biogas</i>	267	1 754	297	1 978	327	2 201	357	2 425	387	2 648	417	2 871
<i>Bioliquids</i> ⁽¹⁾		0		0		0		0		0		0
Total		9 741		10 130		10 565		10 936		11 308		11 679
<i>of which in CHP</i>		4 819		5 086		5 401		5 656		5 911		6 165

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

Table 11
Estimation of total contribution (final energy consumption ⁽⁵⁾) expected from each renewable energy technology in the Czech Republic 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)	0	0	0	0	9	15	15	15	15	15	15	15
Solar	2	7	8	9	11	13	15	16	18	19	21	22
Biomass:	1 374	1 759	1 885	2 000	2 097	2 166	2 248	2 308	2 379	2 424	2 470	2 517
Solid	1 351	1 706	1 821	1 924	2 009	2 067	2 137	2 187	2 246	2 280	2 314	2 350
Biogas	23	53	64	76	88	99	110	122	133	144	156	167
Bioliquids ⁽¹⁾	0	0	0	0	0	0	0	0	0	0	0	0
Renewable energy from heat pumps:												
— of which aérothermal												
— of which geothermal												
— of which hydrothermal	29	45	52	60	67	74	82	89	96	104	111	118
Total	1 405	1 811	1 945	2 070	2 175	2 253	2 344	2 414	2 493	2 547	2 602	2 657
Of which DH ⁽²⁾	55	132	174	236	275	299	303	320	347	348	350	352
Of which biomass in households ⁽³⁾	886	1 097	1 124	1 152	1 179	1 208	1 237	1 263	1 290	1 318	1 346	1 375

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

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

(3) From the total renewable heating and cooling consumption.

Table 12
Estimation of total contribution expected from each renewable energy technology in the Czech Republic to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector 2010-2020 ⁽⁶⁾ (ktoe)

	2005	2010	2011	2012	2013	2014 ⁽⁴⁾	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE	0	50	54	65	74	82	91	99	107	114	122	128
Of which Biofuels ⁽¹⁾ Article 21(2)	0	0	0	0	0	0	0	2	7	17	29	29
Of which imported ⁽²⁾	0	17	17	19	21	23	24	25	26	27	28	29
Biodiesel (FAME/ROME)	3	193	221	251	283	317	347	378	409	437	465	495
Of which Biofuels ⁽¹⁾ Article 21(2)	0	0	0	0	0	0	0	14	24	60	131	215
Of which imported ⁽³⁾	6	64	71	75	85	95	104	113	123	131	135	143
Hydrogen from renewables	0	0	0	0	0	0	0	0	0	0	0	0
Renewable electricity	6	7	10	11	14	15	16	17	18	18	19	19
Of which road transport	0	0	0	0	0	0	0	0	0	0	0	1
Of which non-road transport	6	7	10	11	14	15	16	17	17	18	18	18
Others (as biogas, vegetable oils, etc.) — please specify	0	0	0	0	0	0	0	0	0	48	49	49
Of which Biofuels ⁽¹⁾ Article 21(2)	0	0	0	0	0	0	0	0	0	48	48	48
Total	9	250	285	327	371	414	455	494	534	618	654	691

⁽⁶⁾ For biofuels take into account only those compliant with the sustainability criteria (cf. Article 5(1) last subparagraph).

⁽¹⁾ Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

⁽²⁾ From the whole amount of bioethanol/bio-ETBE.

⁽³⁾ From the whole amount of biodiesel.

⁽⁴⁾ Broader use of high-percentage biofuel blends (E85, E95, SME30) and pure biofuels (FAME/ROME)

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 Sources in Electricity, Heating and Cooling and Transport

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?

Apart from the Ministry of Industry and Trade, which is the author of the Plan and the entity responsible for the implementation of Directive No. 2009/28/EC, the following parties were involved in the production of the Renewable Energy Action Plan: Energy Regulatory Office, Association for District Heating, Czech Association of Regulated Energy Companies, representatives of energy, heating and gas companies, transmission system operator, and others. Materials and background documents of the Ministry of Agriculture and the Ministry of the Environment, among others, were incorporated.

- 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?

There are plans to develop regional/local renewable energy strategies as they are, pursuant to Act No. 406/2000 Coll., on energy management, as amended, a mandatory part of planning energy conceptions. These conceptions also contain an assessment of the use of renewable and secondary energy sources. Territorial energy conceptions are elaborated for each region by regional authorities, the Prague City Hall and chartered town authorities. Planning conceptions are part of the spatial planning documentation.

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

See the answer to the question in point a) above, chapter 5.4. Consultations were carried out in approx. two-week intervals usually in the form of personal meetings, sometimes by electronic mail.

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

Ministry of Industry and Trade

- 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?

The Ministry of Industry and Trade in co-operation with the Czech Statistical Office keep detailed statistical energy records that serve to monitor the development of a variety of energy indicators, including the development of the renewable energy share in gross final energy consumption in the Czech Republic including transport and other related and follow-up indicators.

Annex No. 1 – Table Section

A) RES energy - total

Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Biomass (households)	TJ	37 079	40 138	46 606	44 700	44 831	45 941	47 074	48 214	48 300	50 568	51 780	52 887	54 017	55 171	56 348	57 550
Biomass (non-households)	TJ	22 129	22 552	24 126	24 113	24 175	27 783	32 774	37 905	41 767	43 841	46 155	46 543	46 931	47 319	47 707	48 095
Water power plants - calculation	TJ	8 568	9 183	7 523	7 288	8 747	7 594	7 666	7 757	7 867	7 947	7 995	8 041	8 081	8 113	8 153	8 187
Water power plants - normalization	TJ		7 035	7 180	7 417	7 556	7 609	7 612	7 761	7 979	8 128	8 213	8 257	8 162	8 369	8 423	8 364
Biodegradable fraction of municipal solid waste	TJ	1 899	1 927	1 931	1 890	1 733	1 742	1 873	1 873	1 873	1 873	1 873	2 607	3 883	3 883	3 883	3 883
Biogas	TJ	1 937	1 797	2 177	2 585	3 271	4 467	5 746	7 098	8 376	9 655	10 933	12 211	13 489	14 767	16 045	17 323
Biodegradable fraction of PRO and ATP	TJ	990	400	517	591	620	679	694	709	709	709	709	709	709	709	709	709
Heat pumps	TJ	545	676	926	1 267	1 575	1 883	2 191	2 498	2 806	3 114	3 422	3 730	4 038	4 345	4 653	4 961
Geothermal energy	TJ	0	0	0	0	0	0	0	0	390	696	696	696	696	696	696	696
Energy and heat production bioliquids	TJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transport biofuels	TJ	117	883	1 360	4 654	8792	10 172	11 512	13 226	14 966	16 709	18 344	19 961	21 590	25 084	26 570	28 081
Solar thermal collectors	TJ	103	128	152	202	222	273	330	393	462	537	612	681	744	804	864	924
Wind power plants - calculation	TJ	76	180	450	882	1 037	1 636	2 010	2 385	2 760	3 135	3 510	3 885	4 260	4 635	5 010	5 385
Wind power plants - normalization	TJ	0	0	0	0	1 508	2 005	2 499	3 000	3 488	4 014	4 453	4 896	5 340	5 785	6 231	6 678

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Photovoltaic systems	TJ	1	2	8	47	320	2 080	6 067	6 095	6 113	6 131	6 150	6 168	6 186	6 196	6 205	6 214
Total - calculation	TJ	73 443	77 867	85 776	88 218	95 323	104 251	117 936	128 155	137 469	144 916	152 180	158 120	164 624	171 723	176 844	182 009
Total - normalization	TJ	73 443	77 866	85 776	88 218	94 603	104 635	118 371	128 774	138 308	145 975	153 975	159 347	165 784	173 129	178 335	183 478

A.1) RES heat energy

Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Biomass (households)	TJ	37 079	40 138	46 606	44 700	44 831	45 940	47 073	48 214	49 379	50 568	51 780	52 887	54 017	55 171	56 348	57 550
Biomass consumption	tons	2 852 206	3 087 549	3 585 103	3 400 000	3 408 156	3 489 200	3 571 561	3 654 412	3 738 583	3 824 074	3 910 885	3 989 016	4 068 467	4 149 238	4 231 329	4 314 740
Biomass (non-households)	TJ	20 112	19 920	20 641	19 899	19 900	23 225	26 968	30 143	32 540	33 760	35 501	35 777	36 053	36 328	36 604	36 880
Biomass consumption	tons	1 966 928	1 839 578	1 916 200	1 884 799	1 877 358	2 245 213	2 693 494	3 018 232	3 245 040	3 377 403	3 545 395	3 572 235	3 599 075	3 625 915	3 652 755	3 679 595
Biodegradable fraction of municipal solid waste	TJ	1 860	1 886	1 887	1 848	1 692	1 599	1 494	1 494	1 494	1 494	1 494	2 185	3 241	3 241	3 241	3 241
Biological waste component	tons	224 893	227 533	226 681	218 292	191 837	184 423	169 356	169 356	169 356	169 356	169 356	261 516	388 016	388 016	388 016	388 016
Biogas	TJ	1 357	1 163	1 405	1 624	1 752	2 219	2 693	3 195	3 669	4 143	4 617	5 091	5 564	6 038	6 512	6 986
Installed capacity	MW	169	171	173	177	183	202	237	269	300	332	364	395	426	458	489	521
Biodegradable fraction of PRO and ATP	TJ	990	400	517	591	620	679	694	709	709	709	709	709	709	709	709	709
Heat pumps	TJ	545	676	926	1 267	1 575	1 883	2 191	2 498	2 806	3 114	3 422	3 730	4 038	4 345	4 653	4 961
Installed capacity	MW	110	150	199	254	309	364	419	474	529	584	639	694	749	804	859	914
Geothermal energy	TJ	0	0	0	0	0	0	0	0	360	630	630	630	630	630	630	630

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Installed capacity	MW	0	0	0	0	0	0	0	0	50	50	50	50	50	50	50	50
Heat generation bioliquids	TJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar thermal collectors	TJ	103	128	152	202	222	273	330	393	462	537	612	681	744	804	864	924
Crop area	th.m2	84	105	130	165	205	250	300	355	415	480	540	595	645	695	745	795
Installed capacity	MW	59	74	91	115	143	175	210	248	290	336	378	416	451	486	521	556
Total	TJ	62 047	64 312	72 135	70 131	70 592	75 818	81 442	86 646	91 419	94 955	98 765	101 689	104 996	107 276	109 562	111 880

A.2) RES energy

Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Biomass (non-households)	TJ	2 017	2 632	3 485	4 214	4 275	4 557	5 807	7 762	9 227	10 080	10 654	10 766	10 879	10 991	11 103	11 216
Biomass consumption	tons	389 239	512 435	665 377	865 116	873 767	984 154	1 321 912	1 915 629	2 303 440	2 506 258	2 643 446	2 676 606	2 709 766	2 742 926	2 776 086	2 809 246
Water power plants - calculation	TJ	8 568	9 183	7 523	7 288	8 747	7 594	7 666	7 757	7 867	7 947	7 995	8 041	8 081	8 113	8 153	8 187
Water power plants - normalization	TJ		7 035	7 180	7 417	7 556	7 609	7 612	7 761	7 979	8 128	8 213	8 257	8 162	8 369	8 423	8 364
Installed capacity	MW	1 020	1 028	1 029	1 045	1 036	1 047	1 056	1 072	1 086	1 094	1 099	1 107	1 110	1 115	1 121	1 125
Biodegradable fraction of municipal solid waste	TJ	38	40	43	42	41	143	379	379	379	379	379	422	641	641	641	641
Installed capacity	MW	2,9	2,9	2,9	2,9	2,9	2,9	42,8	42,8	42,8	42,8	42,8	57,8	81,3	81,3	81,3	81,3
Biological waste component	tons	5 523	5 174	5 225	4 944	6 763	48 977	203 844	203 844	203 844	203 844	203 844	226 884	280 384	280 384	280 384	280 384
Biogas	TJ	579	633	771	960	1 518	2 247	3 052	3 903	4 707	5 511	6 315	7 120	7 924	8 728	9 532	10 336
Installed capacity	MW	36	43	50	71	94	113	147	177	207	237	267	297	327	357	387	417

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Geothermal energy	TJ	0	0	0	0	0	0	0	0	0	30	66,2	66,2	66,2	66,2	66,2	66,2
Installed capacity	MW	0	0	0	0	0	0	0	0	0	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Energy generating bioliquids	TJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wind power plants - calculation	TJ	76	180	450	882	1 037	1 636	2 010	2 385	2 760	3 135	3 510	3 885	4 260	4 635	5 010	5 385
Wind power plants - normalization	TJ	0	0	0	0	1 508	2 005	2 499	3 000	3 488	4 014	4 453	4 896	5 340	5 785	6 231	6 678
Installed capacity	MW	29	44	114	150	193	243	293	343	393	443	493	543	593	643	693	743
Photovoltaic systems	TJ	1	2	8	47	320	2 080	6 067	6 095	6 113	6 131	6 150	6 168	6 186	6 196	6 205	6 214
Installed capacity	MW	1	1	3	54	460	1 650	1 660	1 665	1 670	1 675	1 680	1 685	1 690	1 690	1 695	1 695
Total - calculation	TJ	11 278	12 670	12 280	13 432	15 938	18 259	24 981	28 281	31 054	33 185	35 004	36 402	37 972	39 305	40 645	41 980
Total - normalization	TJ	11 278	12 670	12 280	13 432	15 219	18 643	25 416	28 900	31 893	34 245	36 165	37 630	39 132	40 711	42 136	43 449

A.3) RES energy in transport

1) Total consumption in transport (real situation)

	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total energy consumption in transport	PJ	254.8	261.1	274.3	269.5	273.0	261.0	261.8	267.2	271.1	274.2	275.4	276.5	277.6	277.6	277.2	277.1
Individual types of energy in transport																	
Total fuel consumption	PJ	245.9	251.9	264.6	259.7	263.3	250.7	251.1	255.9	259.5	262.1	263.0	263.5	263.9	263.0	262.0	260.4
Gaseous fuels	PJ	3.27	3.46	3.65	3.70	3.96	4.37	4.81	5.33	5.56	5.94	6.20	6.74	7.28	8.12	8.65	9.94
LPG	PJ	3.27	3.46	3.55	3.60	3.69	3.78	3.87	3.96	4.06	4.15	4.24	4.33	4.43	4.52	4.61	4.70
CNG	PJ	0.00	0.00	0.10	0.10	0.28	0.59	0.94	1.37	1.50	1.79	1.96	2.41	2.86	3.60	4.04	5.24
Biogas (biomethan)	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04
Hydrogen	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	PJ	5.64	5.78	5.99	6.04	5.80	5.85	5.91	5.97	6.04	6.10	6.18	6.29	6.38	6.47	6.58	6.73
Total	PJ	254.8	261.1	274.3	269.5	273.0	261.0	261.8	267.2	271.1	274.2	275.4	276.5	277.6	277.6	277.2	277.1
RES in transport – total																	
Bio-components in fuels	PJ	0.12	0.88	1.36	4.65	8.79	10.17	11.51	13.23	14.97	16.71	18.34	19.96	21.59	23.08	24.57	26.08

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	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Of which high-percentage biofuel blends or pure biofuels	PJ							0.08	1.62	3.19	4.75	4.98	5.29	5.83	5.82	7.39	9.64
RES energy	PJ	0.25	0.26	0.27	0.30	0.27	0.30	0.40	0.48	0.58	0.64	0.69	0.72	0.74	0.76	0.78	0.80
Biogas (biomethan)	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04
RES oils including vegetal oils	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00
RES in transport - total	PJ	0.37	1.14	1.63	4.95	9.06	10.48	11.91	13.70	15.55	17.35	19.03	20.69	22.34	25.86	27.38	28.92
Share of transport RES in final consumption																	
RES share in transport**	%	0.15	0.44	0.59	1.84	3.32	4.01	4.55	5.13	5.73	6.33	6.91	7.48	8.05	9.32	9.88	10.44

2) Total consumption in transport (without LPG and CNG - Directive)

	year	2005sk	2006sk	2007sk	2008sk	2009sk	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total energy consumption in transport	PJ	251.5	257.6	270.6	265.8	269.0	256.6	257.0	261.9	265.5	268.2	269.2	269.8	270.3	269.5	268.6	267.2
Individual types of energy in transport																	
Total fuel consumption	PJ	245.9	251.9	264.6	259.7	263.3	250.7	251.1	255.9	259.5	262.1	263.0	263.5	263.9	263.0	262.0	260.4
Gaseous fuels	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04
Biogas (biomethan)	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04
Hydrogen	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	PJ	5.64	5.78	5.99	6.04	5.80	5.85	5.91	5.97	6.04	6.10	6.18	6.29	6.38	6.47	6.58	6.73
Total	PJ	251.5	257.6	270.6	265.8	269.0	256.6	257.0	261.9	265.5	268.2	269.2	269.8	270.3	269.5	268.6	267.2
RES in transport - total																	
Bio-components in fuels	PJ	0.12	0.88	1.36	4.65	8.79	10.17	11.51	13.23	14.97	16.71	18.34	19.96	21.59	23.08	24.57	26.08
of which high-percentage fuel blends or pure biofuels	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.08	1.62	3.19	4.75	4.98	5.29	5.83	5.82	7.39	9.64
Electricity from RES	PJ	0.25	0.26	0.27	0.30	0.27	0.30	0.40	0.48	0.58	0.64	0.69	0.72	0.74	0.76	0.78	0.80
Biogas (biomethan)	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04
Oils from RES, including vegetal	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00

RES in transport in total	PJ	0.37	1.14	1.63	4.95	9.06	10.48	11.91	13.70	15.55	17.35	19.03	20.69	22.34	25.86	27.38	28.92
Transport RES share in final consumption**																	
RES share in transport**	%	0.15	0.44	0.60	1.86	3.37	4.08	4.64	5.23	5.85	6.47	7.07	7.67	8.27	9.60	10.19	10.83

3) Total consumption in transport (real situation) – details

Bio-components in transport - total	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE***	PJ	0.00	0.05	0.01	1.39	1.94	2.10	2.27	2.70	3.10	3.45	3.80	4.13	4.46	4.78	5.09	5.37
of which second generation biofuels	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.30	0.70	1.20	1.20
of which imported	PJ	0.00	0.00	0.00	0.58	0.68	0.69	0.72	0.81	0.90	0.97	1.02	1.03	1.07	1.15	1.17	1.23
Biodiesel	PJ	0.12	0.84	1.35	3.26	6.86	8.07	9.25	10.52	11.87	13.26	14.55	15.83	17.13	18.31	19.48	20.72
of which second generation biofuels	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	1.00	2.50	5.50	9.00
of which imported	PJ	0.29	0.83	0.31	1.62	2.40	2.66	2.96	3.16	3.56	3.98	4.36	4.75	5.14	5.49	5.65	6.01
RES electricity	PJ	0.25	0.26	0.27	0.30	0.27	0.30	0.40	0.48	0.58	0.64	0.69	0.72	0.74	0.76	0.78	0.80
of which in road transport	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.03
of which in non-road transport	PJ	0.25	0.26	0.27	0.30	0.27	0.30	0.40	0.48	0.58	0.64	0.68	0.71	0.73	0.74	0.76	0.77

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Other (biogas, oil)	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	2.02	2.03	2.04
RES oils, including vegetal	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00
Biogas	PJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.04

Consumption of diesel and petrol and their bio-components	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE	th tons	0.0	1.8	0.3	51.6	71.7	77.7	83.9	100.1	114.7	127.8	140.6	153.0	165.2	177.0	188.5	198.7
Petrol – consumption in total	th tons	2 029.0	2 012.0	2 098.0	2 019.0	2 040.0	1 923.0	1 923.0	1 960.0	1 960.0	1 937.0	1 915.0	1 893.0	1 870.0	1 848.0	1 825.5	1 788.0
Bio-content share substituting petrol	%	0.0	0.1	0.0	2.4	3.3	3.8	4.1	4.8	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.4
Biodiesel	th tons	3.2	22.6	36.6	88.1	185.3	218.2	249.9	284.4	320.8	358.3	393.2	427.8	463.0	494.8	526.5	559.9
Diesel - consumption in total	th tons	3 703.0	3 860.0	4 072.0	4 037.0	4 098.0	3 923.0	3 932.0	4 007.0	4 090.0	4 175.0	4 217.0	4 250.0	4 284.0	4 284.0	4 284.0	4 284.0
Bio-content share substituting diesel	%	0.1	0.6	0.8	2.1	4.3	5.3	6.0	6.7	7.4	8.1	8.8	9.5	10.2	10.9	11.6	12.3
Biodiesel and bioethanol	th tons	3.2	24.4	36.9	139.8	257.0	295.9	333.8	384.5	435.5	486.1	533.8	580.9	628.2	671.7	715.0	758.6
Diesel and petrol - consumption in total	th tons	5 732.0	5 872.0	6 170.0	6 056.0	6 138.0	5 846.0	5 855.0	5 967.0	6 050.0	6 112.0	6 132.0	6 143.0	6 154.0	6 132.0	6 109.5	6 072.0
Bio-content share substituting diesel and petrol	%	0.0	0.4	0.5	2.2	3.9	4.7	5.3	6.0	6.7	7.4	8.2	8.9	9.6	10.3	11.0	11.7

Diesel and petrol bio-content consumption	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	th tons	3.2	24.4	36.9	139.8	257.0	295.9	333.8	384.5	435.5	486.1	533.8	580.9	628.2	671.7	715.0	758.6
Bioethanol/bio-ETBE as petrol substitution	th tons	0.0	1.8	0.3	51.6	71.7	77.7	83.9	100.1	114.7	127.8	140.6	153.0	165.2	177.0	188.5	198.7
Import	th tons	0.0	0.0	0.0	21.3	25.1	25.6	26.8	30.0	33.3	35.8	38.0	38.3	39.6	42.5	43.4	45.7
Bio-component substituting diesel	th tons	3.2	22.6	36.6	88.1	185.3	218.2	249.9	284.4	320.8	358.3	393.2	427.8	463.0	494.8	526.5	559.9
Import	th tons	7.8	22.5	8.3	43.7	64.9	72.0	80.0	85.3	96.2	107.5	118.0	128.3	138.9	148.4	152.7	162.4

B) Final energy consumption and RES share

Final energy consumption																	
Year		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total including savings and economic crisis impacts	(PJ)	1242.0	1262.9	1241.0	1261.0	1203.7	1254.7	1263.8	1270.7	1279.8	1289.4	1301.6	1311.9	1322.5	1340.6	1351.3	1362.0
RES share in final energy consumption - Directive requirements																	
RES share - real situation, Directive requirements	(PJ)	76.2	78.0	86.4	88.1	89.0	93.0	94.0	97.0	104.0	107.0	115.0	126.0	137.0	146.0	165.0	176.5
RES share - real situation, Directive requirements	(%)	6.1	6.2	7.0	7.0	7.4	7.4	7.4	7.6	8.1	8.3	8.8	9.6	10.4	10.9	12.2	13.0
Directive 2009/28/EC - targets (obligatory, indicative)	(%)	6.1						7.5		8.2		9.2		10.6			13.0
		Initial						Indicative		Indicative		Indicative		Indicative			Target in total
RES share in final energy consumption - proposed scenario																	
RES share - real situation, expectations	(PJ)	76.2	78.0	86.4	88.1	94.6	104.6	118.4	128.8	138.3	146.0	153.3	159.3	165.8	173.1	178.3	183.5
RES share - real situation, expectations	(%)	6.1	6.2	7.0	7.0	7.4	8.3	9.4	10.1	10.8	11.3	11.8	12.1	12.5	12.9	13.2	13.5

Annex No. 2 - Measures for Achieving the Targets

1. Heating and Cooling

1.1. Geothermal

Measures to meet the 2020 target:

Investment support of research and development in the area of use of geothermal energy. Investment support within the frame of national support programmes and the European Union Structural Funds.

1.2. Solar

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

1. 3. Biomass

1.3.1. Solid - Households

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds.

1.3.2. Solid – Non-households

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

1.3.3. Solid - Biodegradable Fraction of Municipal Solid Waste

Measures to meet the 2020 target:

- 1. The integration of installations using MSW among renewable energy producers and the provision of adequate support (as set forth in Directive 2009/28/EC). Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.*
- 2. Changes in the Waste Management Policy within the meaning of Directive 2008/98/EC, clear preference of use of MSW for energy purposes rather than its landfilling.*
- 3. Supporting the use of waste for energy purposes in order to satisfy the requirements laid down in Directive of the Council 1999/31/EC on the landfill of waste which imposes an obligation on the CR to reduce, by 2020, the weight of landfilled biodegradable municipal waste generated in 1995 by 75%. Biodegradable municipal waste represents an important part (around 50%) of mixed municipal waste that is, apart from its current use for energy purposes, taken to landfills.*
- 4. Gradual raising of fees for MSW landfilling with the intention to reduce it to 5% by 2020.*
- 5. Extension of subsidised projects and areas to facilitate drawing of subsidies for the use of waste for energy purposes.*
- 6. Simplification of the authorisation procedure for the construction of installations satisfying the requirements of Directive 2000/76/EC on the incineration of waste.*

7. Raising public awareness, public awareness campaigns

1.3.4. Solid – Biodegradable Fraction of PRO and ATP

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

1.3.5. Biogas

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

1.3.6. Bioliquids

Measures to meet the 2020 target:

No substantial development of this type of renewable energy source is expected by 2020 and therefore no special support measures have been proposed.

1.4. Heat Pump Renewable Energy

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

2. Electricity Production

2.1. Water

2.1.1. Up to 1 MW

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

2.1.2. 1 – 10 MW

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.

2.1.3. Over 10 MW

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds.

2.2. Geothermal

Measures to meet the 2020 target:

Investment support of research and development in the area of use of geothermal energy. Investment support within the frame of national support programmes and the European Union Structural Funds. Operational support of electricity production stipulated in the new act on supported energy sources which is being drafted.

2.3. Solar

2.3.1. Photovoltaic

Measures to meet the 2020 target:

Suitable and adequate operational support of electricity production compared to other renewable sources of energy arising from the act on supported energy sources which is being drafted.

2.3.2. Concentrated Solar Energy

Measures to meet the 2020 target:

Suitable and adequate support within the frame of international joint projects with countries that have access to this renewable source of energy. If a decision is made on future implementation of these projects, it will be necessary to reach an agreement on statistical transfers of certain volumes of electricity generated within these projects that could be included in the national target of the CR.

2.4. Tide, Wave, Ocean

Measures to meet the 2020 target:

Suitable and adequate support within the frame of international joint projects with countries that have access to this renewable source of energy. If a decision is made on future implementation of these projects, it will be necessary to reach an agreement on statistical transfers of certain volumes of electricity generated within these projects that could be included in the national target of the CR.

2.5. Wind

Measures to meet the 2020 target:

Suitable and adequate operational support of electricity production compared to other renewable sources of energy arising from the act on supported energy sources which is being drafted.

2.6. Biomass

2.6.1. Solid – Non-households

Measures to meet the 2020 target:

Suitable and adequate operational support of electricity production compared to other renewable sources of energy arising from the act on supported energy sources which is being drafted.

2.6.2. Solid – Biodegradable Fraction of Municipal Solid Waste

Measures to meet the 2020 target:

1. *The integration of installations using MSW among renewable energy producers and the provision of adequate support (as set forth in Directive 2009/28/EC). Investment support within the frame of national support programmes and the European Union Structural Funds. The investment support has to satisfy the requirements laid down in the new act on supported energy sources which is being drafted.*
2. *Changes in the Waste Management Policy within the meaning of Directive 2008/98/EC, clear preference of use of MSW for energy purposes rather than its landfilling.*
3. *Supporting the use of waste for energy purposes in order to satisfy the requirements laid down in Council Directive 1999/31/EC on the landfill of waste, which imposes an obligation on the CR to reduce, by 2020, the weight of landfilled biodegradable municipal waste generated in 1995 by 75%. Biodegradable municipal waste represents an important part (around 50%) of mixed municipal waste that is, apart from its current use for energy purposes, taken to landfills.*
4. *Gradual raising of fees for MSW landfilling with the intention to reduce it to 5% by 2020.*
5. *Extension of subsidised projects and areas to facilitate drawing of subsidies for the use of waste for energy purposes.*
6. *Simplification of the authorisation procedure for installations satisfying the requirements of Directive 2000/76/EC on the incineration of waste.*
7. *Raising public awareness, public awareness campaigns.*
8. *Operational support of electricity generated as laid down in the act on supported energy sources which is being drafted.*

2.6.3. Biogas

Measures to meet the 2020 target:

Investment support within the frame of national support programmes and the European Union Structural Funds and suitable and adequate operational support of electricity production arising from the act on supported energy sources which is being drafted. Injecting purified biogas into the NG system will not be supported by the above-mentioned regulation.

2.6.4. Bioliquids

Measures to meet the 2020 target:

As this renewable source of energy is not expected to develop significantly by 2020, no special support measures have been proposed.

3. Transport

Prior to the presentation of the list of measures for this area, it is necessary to state that the term “transport” in terms of replacing fossil petrol and diesel is quite broad – it includes not only road transport by passenger cars and trucks, but also railway motor car transport (using diesel of the quality required by Czech technical standard • SN EN 590), propulsion of transportation equipment and machinery in the agricultural, construction, mining and other industries where motor diesel oil is usually used and, last but not least, the use of electric cars in the transport sector.

Pursuant to the European legislation in force, air and river transport are not counted into the share of alternative fuels from renewable sources of energy in transport, therefore these types of transport are excluded from the above-mentioned list. Furthermore, it is possible to introduce measures to promote transport of trucks by railway. The use of renewable sources of energy in electric traction (e.g. railways, trams, etc.) is considered pursuant to Article 3(4) of Directive of the European Parliament and of the Council No. 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

Within the scope of continuous promotion of transport biofuels as alternative fuels from renewable energy sources, it is necessary to take into account the fact that the 10% share target for 2020 cannot be achieved by adding low percentages of biofuels into petrol and diesel

oil (Directive 2009/30/EC and European standards for petrol and diesel quality - EN 228 and EN 590), therefore, in the near future, it is appropriate to carry out the following:

a) within the scope of the new act on air protection that is being drafted

- *adapt the existing conditions for entities statutorily obliged to use biofuels instead of fossil petrol and diesel in transport in the CR to enable these business entities to remain competitive with respect to entities from other Member States that operate in the Central European region,*
- *gradually implement biofuels as alternative motor fuels in the CR; introduce a realistic conception of using alternative renewable fuels in transport by 2020 while respecting the legislation in force (both European and national), conditions in the CR, expert estimates of petrol and diesel consumption development in transport, development and modernisation of the existing domestic vehicle fleet, broader use of high-percentage biofuel blends and pure biofuels; take into account the future use of second and third generation biofuels and the use of biomass as a raw material in the process of refining oil into fuels (approx. after 2015).*

b) in the conditions existing in the CR, review the existing and new possibilities of use of biofuels as propellants, in particular the promotion of pure biofuels as well as high-percentage biofuel blends – in particular in the agricultural sector (this is where biofuels are produced and in other Member States also used /e.g. Germany, France, Austria, Sweden, etc./), in the building and mining industries or by local public transport companies; in connection with the above-said ensure the following:

- *termination of the emulsion diesel pilot project - based on this project, emulsion diesel is used as a “green fuel” by transport companies of the city of Prague and Ostrava, and replacement of this fuel by either pure biofuels (FAME/ROME) or the E 95 fuel,*
- *permit the use of pure biofuels (FAME/ROME) or high-percentage biofuel blends (SMN 30) in motor cars operated by • eské dráhy (pursuant to the Czech Statistical Office it means approx. 120 th tons of diesel per year) and also in the building and mining sectors (pursuant to the Czech Statistical Office it means approx. 230 th tons of diesel per year),*
- *within the scope of modernisation of the fleet operated by the public administration establish conditions to allow for the introduction of E85 passenger cars in their fleet.*

c) in close co-operation with the government, relevant sectors (in particular the Ministry of Agriculture, Ministry of the Environment, Ministry of Industry and Trade), BIOPALIVA group and the Czech Technological Biofuel Platform (CTBP), the government has to create conditions for the research, development and production of second and third generation biofuels) simultaneously utilising the experience and practical knowledge of other Member States (in particular Austria and Germany). The transition to second and third generation biofuels means better biofuel sustainability criteria (in particular for the production of bioethanol), however, it does not deal with their application. At present, BTL-type technologies are rather expensive and without a massive support they do not have any significant economic potential – combining these technologies with refining processes seems to be a suitable alternative. Refining of vegetal and animal oils or fats (including deep-frying ones) could be a viable solution as these products, unlike FAME, are an excellent

fuel component without side-effects as regards stability, resin formation, etc. It is necessary to support research of and investments into the implementation of these processes that are likely to be far lower than in case of new BTL technologies implementation or the production of bioethanol from lignocellulose. It is necessary to review the existing alcohol production capacities to determine whether the CR could produce more bioalcohol, though on the basis of second generation biofuels, and to adopt the necessary legislative measures to permit, in the future, the implementation of feasible solutions,

- d) the government has to create conditions for a more rapid modernization of current car fleet in the CR, in particular by supporting the production and import of new vehicles propelled by biomass fuels and by supporting their operation (e.g. improve customer awareness of positive aspects of such vehicles, the possibility of free urban parking, lower motor third party liability insurance premiums, etc. – see, for example, Sweden), by stimulating the modernisation of vehicle fleet (some form of scrapping bonus designed for biofuel-propelled cars) and higher taxes on older cars not meeting emission limits – charges should be progressive enough to stimulate citizens to purchase a new car. This should apply to passenger cars as well as lorries, buses, etc.*
- e) the government has to create conditions comparable to the conditions for compressed natural gas (CNG) used in transport to permit the use of alternative motor fuels from renewable sources of energy in transport in the CR,*
- f) support the implementation of the above-mentioned measures by appropriate legislative changes, i.e. modifications in the national legislation or drafting of new national regulations that are necessary.*

In conclusion, the above-mentioned measures aimed at achieving the 2020 target, i.e. to replace 10% of all fossil petrol and diesel fuels in transport by alternative renewable fuels (biofuels), may be summarized into the following specific tasks:

- a) based on proactive co-operation of the sectors involved (Ministry of Transport, Ministry of Finance, Ministry of Industry and Trade, Ministry of Agriculture, Ministry of the Environment and Government of the Czech Republic), develop a realistic conception of use of RES alternative fuels (biofuels) for the period from 2011 to 2020 which is based on current conditions in the country, European legislation and equal opportunities for all engaged business entities operating on the fuel market and to incorporate this conception into the draft of the new act on air protection that has to lay down obligations for all entities in the entire biomass chain, i.e. from oil processing to the use of fuels as motor propellants*
- b)) the government has to create conditions for broader use of pure biofuels and high-percentage biofuel blends – in particular in the agricultural, railway, municipal public transport, building and mining sectors*
- c) provide governmental support to the research, development and possible production of second and third generation biofuels, including biomass refining*

d) the government has to create conditions comparable to the conditions for compressed natural gas (CNG) used for transport purposes to promote the use of alternative motor fuels from renewable sources (biofuels)

e) the government has to support faster modernisation of vehicle fleet with the aim to maximise the use of, in particular, hybrid vehicles also in public administration

f) draft the necessary legislation to back the implementation of the measures proposed – new act on air protection, amendment to the act on excise taxes, legal regulations to promote future production and use of second and third generation biofuels.

4. Other Measures

For further development of renewable energy production, it is necessary to ensure that the authorisation procedure for the construction of energy system installations is simplified and shortened. Without this measure the targets and interim targets laid down in this renewable energy production plan are unlikely to be fulfilled.