

REPUBLIC OF SRPSKA
MINISTRY OF INDUSTRY,
ENERGY AND MINING

DECREE
ON GENERATION AND CONSUMPTION OF ENERGY FROM RENEWABLE ENERGY
SOURCES AND CO-GENERATION

Banja Luka, February 2011

Pursuant to Article 27 paragraph 3 of the Energy Law (Official Gazette of Republic of Srpska, number 49/09) and Article 43 paragraph 2 of the Law on Government of Republic of Srpska (Official Gazette of Republic of Srpska, number 118/08), the Government of Republic of Srpska in its 6th session held on 9 March 2011 makes

DECREE

ON GENERATION AND CONSUMPTION OF ENERGY FROM RENEWABLE ENERGY SOURCES

I BASIC PROVISIONS

Article 1

This Decree determines the goals and measures for supporting electricity generation from renewable energy sources and co-generation facilities, method of providing and using means for supporting the energy generation from renewable energy sources and co-generation facilities, indicative and framework goals of the energy shares from renewable sources in gross final consumption of energy in Republic of Srpska as well as sorting of energy undertakings for generation of electricity from renewable sources and co-generation facilities.

Article 2

The aim of the Decree is to, for purposes of safety of supply, preservation of the environment and prevention of the climate changes, promote utilization of the renewable energy sources and efficient co-generation, ensure constant and reasonable increase of the energy shares from renewable energy sources in total consumption of energy in Republic of Srpska, enable cost-effective utilization of natural resources and sustainable development and contribute to sustainable development of local communities and social cohesion (employment, reduction of migration and similar).

Article 3

- (1) Terms used in this Decree shall have the following meaning:
- a) "generation" shall mean generation of electricity in the hydro power plants, thermal power plants and other facilities which are connected to transmission or distribution network, as well as generation for their own needs,
 - b) "energy from renewable sources" shall mean the energy from renewable non-fossil sources such as the energy of wind, sun, air-thermal energy, geo-thermal energy, hydro-thermal energy, hydro energy, biomass, waste gas, gas from the facility for waste water treatment and other (agricultural) biogas,
 - c) "biomass" shall mean bio-degradable parts of products, waste and remains of the biological origin from agriculture (including vegetal and animal matters), forestry and related industries which include fishing trade and fish-farming as well as bio-degradable parts of industrial and municipal waste,

- d) "bio liquid" shall mean liquid fuel for energy needs other than for transport, including electricity for heating and cooling generated from biomass,
- e) "biofuel" shall mean liquid or gaseous fuel for transport, generated from biomass,
- f) "biogas" shall mean the gas caused by anaerobic degradation or fermentation of the organic matters,
- g) "waste gas" shall mean all gases which occur by biodegradation from the waste,
- h) "Agricultural biogas" is the gas occurred as a result of the natural biodegrading of the organic matters free of oxygen (farm waste, remains from agricultural generation of e.g. sugar-beet, remains from the pasture ground, especially separated biodegradable municipal waste, specific energy crops and other);
- i) "geo-thermal energy" shall mean the energy obtained from natural underground warm sources,
- j) "non-accumulated solar (sun) energy" shall mean the energy obtained through direct solar (sun) radiation,
- k) "photovoltaic cells" shall mean semi-conducting elements which directly transfer non-accumulated solar energy in electricity,
- l) "wind farm" shall mean the undertaking which transfer the energy of wind into electricity, including all individual undertaking connected to generation of electricity from energy of wind, like one or more wind turbines with accompanying transformer stations or electrical lines, and managerial and other structures which are used for the purposes of the wind plant,
- m) "fossil fuel" shall mean non-renewable energy sources caused in a natural way below the ground level in a long period from flora and fauna remains, such as coal, oil and natural gas,
- n) "co-generation" shall mean the concurrent generation of heat and electricity and/or mechanical energy in one process,
- o) "co-generation facility" shall mean the facility that may operate in co-generation,
- p) "co-generating production" shall mean the sum of electrical and mechanical energy and useful heat from co-generation,
- q) "co-generation of high efficiency (efficient co-generation)" shall mean co-generation which meets the requirements of the energy savings,
- r) "gross final energy consumption" shall mean the energy delivered for the energy purposes for industry, transport, household, for services including public service, for agriculture, forestry and fishing, and it includes its own consumption in generation electric power and heat facilities as well as the losses of electric and heat energy in transmission and distribution,
- s) "electric energy generated from renewable energy sources" shall mean electric energy generated in the plant using only renewable energy sources, and a part of electricity generated from renewable sources in the plants which also use non-renewable energy sources including electricity generated from renewable sources used for energy accumulating, but excluding electricity generated as a result of such energy accumulating (RNE),
- t) "gross final consumption of electricity" shall mean gross generation of electricity in Republic of Srpska, including also generation for its own needs, increased for the import but reduced for export of electricity,
- u) "gross final consumption of energy in the transport sector" shall mean total amount of petrol, diesel, bio-fuel and electricity consumed in car and railway traffic,
- v) "indicative goals" shall mean the amounts expressed in percentages which represent a share of energy from renewable energy sources in gross final consumption of energy and a share of electricity from efficient co-generation in gross final consumption of electricity in Republic of Srpska and they serve as indicators of

- efficiency of the applied incentive measures and needs for their possible correction and everything for the purposes of realization of goals till 2020,
- w) "framework goals" shall mean the installed capacities and expected generation of electricity defined as "framework" for some technologies and/or type of sources and fuels but their sum realization is needed for realization of the defined indicative goals,
- (2) Terms which are not stated in the paragraph 1 of this Article shall have the meaning as defined by the Law on Energy and Law on Electricity.

II SORTING OF ENERGY FACILITIES, INDICATIVE AND FRAMEWORK GOALS

1 Sorting of energy facilities

Article 4

Provisions of this Decree are related to the facilities for generation of electricity which use the following renewable energy sources:

- a) energy potential of the water courses,
- b) energy of wind,
- c) energy obtained from the biomass,
- d) energy obtained from bio-gas (waste gas, the gas from the facility for the waste water treatment as well as agricultural biogas),
- e) geo-thermal energy,
- f) the energy of sun,

Article 5

The facilities which use renewable energy sources for generation of electricity, pursuant to the installed capacity, are divided as follows:

- a) the facilities connected to the distribution network which use renewable energy sources for generation of electricity of the installed capacity of up to 1 MW inclusive,
- b) the facilities connected to transmission or distribution network which use renewable energy sources for generation of electricity of the installed capacity of more than 1 MW to 5 MW inclusive,
- c) the facilities connected to the transmission or distribution network which use renewable energy sources for generation of electricity of the installed capacity of more than 5 MW to 10 MW inclusive,
- d) the facilities connected to the transmission or distribution network which use renewable energy sources for generation of electricity of the installed capacity of more than 10 MW,
- e) the facilities which use renewable energy sources for generation of electricity and which are not connected to the transmission or distribution network.

Article 6

Provisions of this Decree are related to the co-generation facility which used one of the following technologies:

- a) gas turbine of the combined cycle with heat re-cuperation;
- b) anti-pressure steam turbine,
- c) condensation steam turbine with the steam deduction,
- d) gas turbine with the heat re-cuperation,
- e) generator with internal burning,
- f) micro-turbine,
- g) Stirling generator,
- h) fuel cells,
- i) steam machine,
- j) organic Rankin processes,
- k) other types of technology which represent the concurrent generation of heat and electricity in one process;

Article 7

Co-generation facilities, as regards the installed electric capacity, are divided into the following:

- a) co-generation facilities of the installed electric capacity, up to 1 MW inclusive, connected to the distribution network,
- b) co-generation facilities of the installed electric capacity of 1 MW to 30 MW inclusive, connected to the transmission or distribution network,
- c) co-generation facility of the installed electric capacity of more than 30 MW.

2 Indicative and framework goals

Article 8

(1) This Decree defines the planned indicators of generation and consumption of energy from renewable energy sources and co-generation facilities in Republic of Srpska till 2020, expressed through the following indicative goals:

- a) sum goal on the share of the energy consumption from renewable sources in gross final consumption of energy in Republic of Srpska,
- b) sector goals on:
 - 1) a share of the electricity consumption generated from renewable sources in gross final consumption of electricity in Republic of Srpska,
 - 2) a share of consumption of heat energy from renewable sources in gross final consumption of heat energy in Republic of Srpska,
 - 3) a share of consumption of energy from renewable sources in total consumption of energy in transport in Republic of Srpska
- c) a share of consumption of electricity generated from efficient co-generation facility in the gross final consumption of electricity in Republic of Srpska.

- (2) Ministry in charge for energy in cooperation with Regulatory Commission for Energy of Republic of Srpska analyzes the realization of generation and consumption of energy from renewable energy sources and co-generation facilities, in relation to the indicative goals as referred in paragraph 1 of this Article, for the purposes of estimate and possible corrections of the applied measures for stimulating generation and consumption of energy from renewable sources and co-generation facilities.

Article 9

- (1) Sum indicative goal, which represents the electricity share, energy for transport and energy for heating and cooling, generated from renewable energy sources in gross final consumption of energy in Republic of Srpska in 2020, is determined on the basis of the expected gross final consumption of energy in 2020 and expected final consumption of energy from renewable sources in 2020 and is presented in Appendix number 1 - Table A which is an integral part of this Decree.
- (2) The timetable of realization of the indicative goal as referred in paragraph 1 of this Article is presented in the Appendix number 1 - Table B, which is an integral part of this Decree.

Article 10

Sector indicative goals on share of energy from renewable sources in gross final consumption of energy till 2020 in sectors of electricity, transport and heating and cooling are presented in the Appendix number 2 which is an integral part of this Decree.

Article 11

Indicative goals of share of electricity from efficient co-generation facilities in gross final consumption of electricity in Republic of Srpska are presented in the Appendix number 3 which is an integral part of this Decree.

Article 12

1. Framework goals as regards installed capacities and expected generation of electricity from renewable energy sources depending on the type of renewable energy sources, namely applied technologies till 2020 are presented in the Appendix number 4 which is an integral part of this Decree.
2. Framework goals as regards installed capacities and expected generation of electricity from efficient co-generation facilities depending on the type of fuel till 2020 are presented in the Appendix number 5, which are integral part of this Decree.

Article 13

Framework goals as regards expected gross final consumption of heat energy from renewable energy sources depending on the type of renewable energy source, namely

applied technology till 2020, are presented in Appendix number 6, which are integral part of this Decree.

Article 14

- (1) Framework goals as regards expected consumption of energy from renewable energy sources depending on the type of fuel in transport till 2020 are presented in the Appendix number 7 - Table A, which is an integral part of this Decree.
- (2) The energy from renewable energy sources in the sector of transport is meant by all types of energy from renewable sources spent in all types of transport.

III INCENTIVE MEASURES, METHOD OF PROVIDING MEANS FOR SUPPORTING AND INSTITUTIONAL STRUCTURE OF THE INCENTIVE SYSTEM

1 Incentive measures

Article 15

Generators of electricity in the facilities which use renewable energy sources and in the efficient co-generation facilities may achieve the following incentives:

- a) advantages while connecting to the transmission or distribution network, in a sense of obligation of the system operator to, at the request of generator pursuant to regulations, provide conditions for connection of those generation facilities which realize the right for incentives on the power network,
- b) advantages in the access to the network (dispatching), complying with technical limitations of the electric power system, totally or partly,
- c) the right to the obligatory redemption of electricity and
- d) guaranteed feed in tariff or premium;

Article 16

(1) The right to the incentive referred to in Article 15 of this Decree may be realized by the generator of electricity provided that:

- a) it generates electricity using renewable energy sources at the cost-effectively appropriate way and protecting environment in the generation facility:
 - 1) hydro power plant of the capacity of 10 MW inclusive,
 - 2) the plant using solid biomass the capacity of 10 MW inclusive,
 - 3) the plant using agricultural bio-gas of the capacity of 1 MW inclusive,
 - 4) wind plant and
 - 5) solar plant with photo voltaic cells,
- b) it generates electricity in efficient co-generation facility of the capacity of 30 MW inclusive,
- c) the amounts of electricity, namely installed capacities of generation facilities using renewable energy sources do not exceed the amounts defined in Appendix number 8, which makes the integral part of this Decree,

- d) the amounts of electricity, namely installed capacities of the efficient co-generation facilities do not exceed the amount defined in the Appendix number 9, which makes an integral part of this Decree;
- (2) Conditions and proceedings of the incentives realization, period of granting rights to incentive and the amount of the feed in tariff or premium referred to in paragraph 1 of this Article, pursuant to the Law on Energy and provisions of this Decree shall be prescribed by Regulatory Commission for energy of Republic of Srpska by the Rule on incentives for generation of energy using renewable energy sources or co-generation, with the consent of the Republic of Srpska Government.

2 Method of providing means for incentives

Article 17

- (1) The means for incentives for generation of electricity from renewable energy source and co-generation facilities are provided from the bonus on tariffs for electricity which is delivered to end users in Republic of Srpska.
- (2) The amount of bonus to the tariff for electricity referred to in paragraph 1 of this Article is determined by the Rule referred to in Article 16 paragraph 2 of this Decree.
- (3) The amount of the bonus to the tariff for electricity referred to in paragraph 1 of this Article is expressed as a separate item in the electricity bill while calculation and collection is done by the supplier of end users.

Article 18

From the means for incentives for generation of electricity from renewable sources and co-generation facilities, referred to in Article 17 of this Decree, the following shall be provided:

- a) total amount of the calculated premium for electricity generated in generation facilities which realized the right to incentives,
- b) coverage of the balancing costs of the electric power system caused due to differences between the planned and generated electricity from the plants which realize the right to incentives (costs of the balancing responsibility),
- c) fee for doing administrative-financial and other operational tasks of the system of incentives;

3 Institutional structure for operational realization of the system of incentives

Article 19

- (1) Administrative-financial and other operational task of the system for incentives for generation of energy from renewable sources and co-generation facilities shall be

done by the independent body that carries out the functions of the system operator for incentives (hereinafter the system operator for incentives) established by the Republic of Srpska Government.

- (2) The method of work and financing of work of the system operator for incentives referred to in paragraph 1 of this Article, is prescribed by the Rule referred to in Article 16 paragraph 2 of this Decree.

Article 20

- (1) System operator for incentives is in charge of the following activities:

- a) it keeps records on the planned annual amounts of electricity and installed capacities of the facilities that generate electricity which the right to incentive is realized for;
 - b) it collects and processes the data on electricity generated in the facilities which realize the right to incentives pursuant to Articles 15 and 16 and which are submitted by generators and operators of transmission and distribution system,
 - c) it analyzes realization of the planned generation of electricity which the right for incentive is realized for,
 - d) it informs the ministry in charge of energy and Regulatory Commission on the planned and realized generation of electricity which the right to incentive is realized for, on a monthly basis,
 - e) it concludes the contract on the obligatory redemption at the feed in tariffs and it makes the obligatory redemption of electricity from generators of electricity from renewable sources and/or efficient co-generation,
 - f) it concludes the contract and makes calculation and payment of the premium to generators of electricity that realize the right to premium,
 - g) it concludes the contract with suppliers of end users in order to regulate obligations on the bases of the procurement-sale of electricity in the system of the obligatory redemption,
 - h) it invoices the suppliers and charges them for the electricity sold from the obligatory redemption,
 - i) it invoices the suppliers and charges them for the renewable sources fee,
 - j) it takes the balancing responsibility for generation of electricity which the right for incentives is realized for,
 - k) it carries out other duties as well which are necessary for the consistent functioning of the system of incentives for generation of electricity from renewable sources and in efficient co-generation pursuant to the Rule referred to in Article 16 paragraph 2 of this Decree;
- (2) System operator for incentives keeps separate accounting records and bill for special purposes for procurement-sale of electricity generated from renewable sources and in efficient co-generation which the right to the guaranteed feed in tariff is realized for and for using means for incentives pursuant to Article 17 of this Decree.
- (3) System operator of incentives is obliged to make rules for implementation of the incentive system within the period prescribed by this Rule referred to in Article 16 paragraph 2 of this Decree.
- (4) The consent to the rule referred to in paragraph 3 of this Article is given by the Regulatory Commission for energy of Republic of Srpska.

- (5) The fee for doing activities referred to in paragraph 1 of this Article is approved by the Regulatory Commission for energy at the request of the system operator for incentives.

IV AMOUNTS OF THE STIMULATED ELECTRICITY AND OBLIGED SHARE OF CONSUMPTION OF BIO-FUEL IN TRANSPORT

1 Amounts of the electricity stimulated

Article 21

- (1) In order to achieve the framework goals referred to in Article 12 paragraph 1 of this Decree, it is determined the amount of electricity, namely the installed capacities of the generation facilities which use renewable energy sources in Republic of Srpska which generation is stimulated pursuant to Articles 15 and 16 of this Decree.
- (2) The amount of electricity, namely installed capacities of generation facilities which use renewable energy sources in Republic of Srpska which generation is stimulated for each particular year till 2020 and for each particular technology, cannot exceed the amounts and capacities presented in the Appendix number 8, which make the integral part of this Decree.

Article 22

- (1) For the purposes of realization of the framework goals referred to in Article 12 paragraph 2 of this Decree, the amount of electricity is determined, namely the installed capacities in co-generation facilities in Republic of Srpska which generation is stimulated pursuant to Articles 15 and 16 of this Decree.
- (2) The amount of electricity, namely the installed capacities of co-generation facilities in Republic of Srpska which generation is stimulated for each particular year till 2020 cannot be more than the amount and capacities presented in the Appendix number 9 which makes the integral part of this Decree.

2 Obligatory share of consumption of bio-fuel in transport

Article 23

For the purposes of realization of the framework goal referred to in Article 14 of this Decree, each distributor (supplier) of fuel in Republic of Srpska has to ensure that the annual average amount of bio-fuel in all fuel transactions are carried out at the market of Republic of Srpska in specific calendar year equivalently amounts to, at least, the percentage amount for that calendar year as presented in Appendix number 7 - Table B, which makes an integral part of this Decree.

Article 24

Method of monitoring and control of application of the Article 23 of this Decree, energy and chemical characteristics of the bio-fuel as well as other form of incentives for generation and consumption of fuel are determined by specific regulations.

V TRANSITIONAL AND FINAL PROVISIONS

Article 25

Till establishment of the system operator for incentives referred to in Article 19 paragraph 1 of this Decree, The Republic of Srpska Government shall commission the Mixed Holding "Elektroprivreda Republike Srpske" - Parent company, a.d. Trebinje to do administrative-financial and other operational duties of the system for incentives for generation of energy from renewable sources and co-generation facilities.

Article 26

This Decree becomes effective on the eighth day from its publication in the Official Gazette of Republic of Srpska and shall be applicable till making specific law which shall arrange this field.

Number: 04/1-012-2-438/11

Date: 9 March 2011

PRESIDENT OF THE GOVERNMENT
Aleksandar Dzombic

Appendix number 1 - Indicative sum goal and time table for realization of goals

Table A - Indicative sum goal on the share of consumption of energy from renewable sources in the gross final consumption of energy in Republic of Srpska

A. Share of energy from renewable energy sources in gross final consumption in 2005 (S ₂₀₀₅) (%)	29,18
B. Goal for the share of energy from renewable energy sources in gross final consumption in 2020 (S₂₀₂₀) (%)	35,98
C. Expected gross final consumption in 2020 (ktoe)	1616,70
C2.Expected gross final consumption in 2020 (PJ)	67,69
D. Expected amount of energy from renewable sources pursuant to the goal in 2020 (it is calculated as B x C) (ktoe)	581,66
D2 Expected amount of energy from renewable sources pursuant to the goal in 2020 (PJ)	24,35

Table B - Time table of the goals realization

Realization plan	2011-2012	2013-2014	2015-2016	2017-2018	2018-2019	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 path (%)	30.54%	31.22%	32.24%	33.60%		35.98%
RES minimum path (ktoe)	340.85	370.95	416.10	476.30		581.66

Appendix number 2 - Sectoral indicative goals

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RES electricity	69.32 %	69.32 %	69.70 %	70.84 %	71.22 %	71.60 %	71.98 %	72.73 %	73.49 %	74.25 %	75.76 %	76.90 %
RES heating and cooling	19.04 %	19.04 %	20.71 %	25.73 %	27.40 %	29.08 %	30.75 %	34.09 %	37.44 %	40.79 %	47.48 %	52.50 %
RES - transport	0%	0%	0.50%	2.00%	2.50%	3.00%	3.50%	4.50%	5.50%	6.50%	8.50%	10%
Total share RES	29.18 %	29.18 %	29.52 %	30.54 %	30.88 %	31.22 %	31.56 %	32.24 %	32.92 %	33.60 %	34.96 %	35.98 %

Appendix number 3 - Indicative goals of share of electricity from efficient co-generation facilities

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
electricity from efficient co-generation facility	-	-	-	4.28%	5.06%	8.43%	10.12%	13.49%	16.87%	21.93%	26.99%	33.73%

Appendix number 4 - Framework goals for electricity from renewable sources

	2005.		2010.		2011.		2012.		2013.		2014.		2015.		2016.		2017.		2018.		2019.		2020.	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
hydro	727.18	2394.76	727.18	2394.76	742.01	2448.18	786.48	2608.42	801.31	2661.84	816.13	2715.25	830.96	2768.67	860.61	2875.50	890.26	2982.33	919.91	3089.16	979.21	3302.82	1023.68	3463.06
• <1MW	0.86	4.08	0.86	4.08	1.31	6.10	2.66	12.18	3.11	14.20	3.56	16.23	4.01	18.25	4.91	22.30	5.81	26.35	6.71	30.40	8.51	38.50	9.86	44.58
• 1MW-5MW	6.32	29.98	6.32	29.98	10.32	47.98	22.32	101.98	26.32	119.98	30.32	137.98	34.32	155.98	42.32	191.98	50.32	227.98	58.32	263.98	74.32	335.98	86.32	389.98
• 5MW-10MW	8.00	37.94	8.00	37.94	9.00	42.44	12.00	55.94	13.00	60.44	14.00	64.94	15.00	69.44	17.00	78.44	19.00	87.44	21.00	96.44	25.00	114.44	28.00	127.94
• >10MW	712.00	2322.76	712.00	2322.76	721.38	2351.65	749.50	2438.32	758.88	2467.21	768.25	2496.10	777.63	2524.99	796.38	2582.77	815.13	2640.55	833.88	2698.33	871.38	2813.89	899.50	2900.56
• pump	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
geo-thermal	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar	0.00	0.00	0.00	0.00	0.21	0.25	0.84	1.00	1.05	1.25	1.26	1.50	1.47	1.75	1.89	2.25	2.31	2.75	2.73	3.25	3.57	4.25	4.20	5.00
• photovoltaic	0.00	0.00	0.00	0.00	0.21	0.25	0.84	1.00	1.05	1.25	1.26	1.50	1.47	1.75	1.89	2.25	2.31	2.75	2.73	3.25	3.57	4.25	4.20	5.00
• concentrated solar	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
wind	0.00	0.00	0.00	0.00	5.00	10.00	20.00	40.00	25.00	50.00	30.00	60.00	35.00	70.00	45.00	90.00	55.00	110.00	65.00	130.00	85.00	170.00	100.00	200.00
biomass	0.00	0.00	0.00	0.00	1.28	2.82	5.10	11.28	6.38	14.10	7.65	16.91	8.93	19.73	11.48	25.37	14.03	31.01	16.58	36.65	21.68	47.92	25.50	56.38
• solid	0.00	0.00	0.00	0.00	0.50	1.48	2.00	5.91	2.50	7.39	3.00	8.87	3.50	10.35	4.50	13.30	5.50	16.26	6.50	19.22	8.50	25.13	10.00	29.56
• bio gas	0.00	0.00	0.00	0.00	0.78	1.34	3.10	5.36	3.88	6.71	4.65	8.05	5.43	9.39	6.98	12.07	8.53	14.75	10.08	17.43	13.18	22.80	15.50	26.82
bioliquid ¹	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
total	727.18	2394.76	727.18	2394.76	748.49	2461.24	812.42	2660.70	833.73	2727.18	855.04	2793.66	876.35	2860.15	918.97	2993.12	961.59	3126.08	1004.21	3259.05	1089.45	3524.99	1153.38	3724.44

¹ only those that meet the criterion of sustainability

Appendix number 5 - Framework goals for electricity from co-generation facilities

	2005		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Fossil fuel	145.50	0.00	145.50	0.00	0.00	0.00	30.10	158.86	60.20	317.71	90.30	476.57	105.35	556.00	135.45	714.86	165.55	873.71	195.65	1,032.57	255.85	1,350.29	301.00	1500.00
- solid	75.50	0	75.50	0	0.00	0.00	0.32	1.79	0.64	3.58	0.96	5.37	1.12	6.27	1.44	8.06	1.76	9.85	2.08	11.64	2.72	15.22	3.20	17.00
- liquid	57.50	0	57.50	0	0.00	0.00	5.75	27.38	11.50	54.75	17.25	82.13	20.13	95.82	25.88	123.19	31.63	150.57	37.38	177.95	48.88	232.70	57.50	270.00
- gaseous	12.50	0	12.50	0	0.00	0.00	24.03	129.69	48.06	259.38	72.09	389.07	84.11	453.91	108.14	583.60	132.17	713.29	156.20	842.98	204.26	1,102.36	240.30	1200.00
biomass	0.00	0.00	0.00	0.00	0.00	0.00	2.35	4.53	4.70	9.06	7.05	13.58	8.23	15.85	10.58	20.38	12.93	24.90	15.28	29.43	19.98	38.49	23.50	45.00
biogas	0.00	0.00	0.00	0.00	0.00	0.00	0.65	1.50	1.30	3.00	1.95	4.50	2.28	5.25	2.93	6.75	3.58	8.25	4.23	9.75	5.53	12.75	6.50	15.00
solid biomass	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.85	1.60	3.69	2.40	5.54	2.80	6.46	3.60	8.31	4.40	10.15	5.20	12.00	6.80	15.69	8.00	18.00
waste gas	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.18	1.80	2.36	2.70	3.55	3.15	4.14	4.05	5.32	4.95	6.50	5.85	7.68	7.65	10.05	9.00	11.00
mixed	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
total	145.50	0.00	145.50	0.00	0.00	0.00	32.45	163.39	64.90	326.77	97.35	490.16	113.58	571.85	146.03	735.23	178.48	898.62	210.93	1062.00	275.83	1388.78	324.50	1600.00

Appendix number 6 - Framework goals for the heat energy from renewable energy sources
Table A(κtoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal	0.00	0.00	0.05	0.21	0.26	0.32	0.37	0.47	0.58	0.68	0.89	1.05
Solar:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biomass	78.03	78.03	85.00	105.90	112.87	119.84	126.81	140.74	154.68	168.62	196.49	217.39
· solid	78.03	78.03	84.98	105.81	112.76	119.70	126.65	140.54	154.43	168.32	196.10	216.94
· biogas	0.00	0.00	0.02	0.09	0.11	0.14	0.16	0.20	0.25	0.29	0.39	0.45
· bio liquid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RES from the heat pump	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
· airthermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
· geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
· hydrothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	78.03	78.03	85.05	106.11	113.14	120.16	127.18	141.22	155.26	169.30	197.38	218.44
Remote heating	3.30	3.30	3.38	3.63	3.71	3.79	3.87	4.04	4.20	4.37	4.70	4.94
Biomass in household	74.74	74.74	81.67	102.49	109.43	116.37	123.30	137.18	151.06	164.93	192.69	213.50

Table B**(PJ)**

total	3.27	3.27	3.56	4.44	4.74	5.03	5.32	5.91	6.50	7.09	8.26	9.15
Total	3.27	3.27	3.56	4.44	4.74	5.03	5.32	5.91	6.50	7.09	8.26	9.15
Remote heating	0.14	0.14	0.14	0.15	0.16	0.16	0.16	0.17	0.18	0.18	0.20	0.21
Biomass in households	3.13	3.13	3.42	4.29	4.58	4.87	5.16	5.74	6.32	6.91	8.07	8.94

Appendix number 7 - Framework goals for energy from renewable energy sources in transport (κτοε)

Table A

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<u>Bio-ethanol bio - ETBE</u>	0,00	0,00	1,24	4,97	6,22	7,46	8,70	11,19	13,68	16,16	21,14	24,87
<u>Out of which obligatorily</u>	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Bio diesel	0,00	0,00	0,00	3,63	4,54	5,44	6,35	8,17	9,98	11,80	15,42	18,15
<u>Out of that obligatorily</u>	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Hydrogen from RES	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 from RES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total	0	0,00	2,15	8,60	10,75	12,90	15,05	19,36	23,66	27,96	36,56	43,01

Table B

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
%	0,00	0,00	0,50	2,00	2,50	3,00	3,50	4,50	5,50	6,50	8,50	10,00

Appendix number 8 - Amount of the stimulated electricity from renewable sources

	2005.		2010.		2011.		2012.		2013.		2014.		2015.		2016.		2017.		2018.		2019.		2020.	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
hydro	1.10	4.50	1.10	4.50	6.55	29.03	22.90	102.60	28.35	127.13	33.80	151.65	39.25	176.18	50.15	225.23	61.05	274.28	71.95	323.33	93.75	421.43	110.10	495.00
<1MW	0.00	0.00	0.00	0.00	0.45	2.03	1.80	8.10	2.25	10.13	2.70	12.15	3.15	14.18	4.05	18.23	4.95	22.28	5.85	26.33	7.65	34.43	9.00	40.50
1MW-5MW	1.10	4.50	1.10	4.50	5.10	22.50	17.10	76.50	21.10	94.50	25.10	112.50	29.10	130.50	37.10	166.50	45.10	202.50	53.10	238.50	69.10	310.50	81.10	364.50
5MW-10MW	0.00	0.00	0.00	0.00	1.00	4.50	4.00	18.00	5.00	22.50	6.00	27.00	7.00	31.50	9.00	40.50	11.00	49.50	13.00	58.50	17.00	76.50	20.00	90.00
geothermal	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
solar	0.00	0.00	0.00	0.00	0.21	0.25	0.84	1.00	1.05	1.25	1.26	1.50	1.47	1.75	1.89	2.25	2.31	2.75	2.73	3.25	3.57	4.25	4.20	5.00
• photovoltaic	0.00	0.00	0.00	0.00	0.21	0.25	0.84	1.00	1.05	1.25	1.26	1.50	1.47	1.75	1.89	2.25	2.31	2.75	2.73	3.25	3.57	4.25	4.20	5.00
• concentrated solar	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
wind	0.00	0.00	0.00	0.00	5.00	10.00	20.00	40.00	25.00	50.00	30.00	60.00	35.00	70.00	45.00	90.00	55.00	110.00	65.00	130.00	85.00	170.00	100.00	200.00
biomass	0.00	0.00	0.00	0.00	0.83	2.23	3.30	8.91	4.13	11.14	4.95	13.37	5.78	15.60	7.43	20.05	9.08	24.51	10.73	28.97	14.03	37.88	16.50	44.56
• solid	0.00	0.00	0.00	0.00	0.00	0.00	2.00	5.91	2.50	7.39	3.00	8.87	3.50	10.35	4.50	13.30	5.50	16.26	6.50	19.22	8.50	25.13	10.00	29.56
• biogas	0.00	0.00	0.00	0.00	0.00	0.00	1.30	3.00	1.63	3.75	1.95	4.50	2.28	5.25	2.93	6.75	3.58	8.25	4.23	9.75	5.53	12.75	6.50	15.00
• bio-liquid	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
total	1.10	4.50	1.10	4.50	12.59	41.50	47.04	152.51	58.53	189.52	70.01	226.52	81.50	263.52	104.47	337.53	127.44	411.53	150.41	485.54	196.35	633.55	230.80	744.56

Appendix number 9 - Amounts of the stimulated electricity in co-generation facilities

	2005.		2010.		2011.		2012.		2013.		2014.		2015.		2016.		2017.		2018.		2019.		2020.	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Fossil fuel	0	0	0.00	0.00	0.00	0.00	9.10	41.32	18.20	82.64	27.30	123.96	31.85	144.62	40.95	185.94	50.05	227.26	59.15	268.58	77.35	351.22	91.00	413.20
- solid	0	0	0.00	0	0.00	0.00	0.32	1.79	0.64	3.58	0.96	5.37	1.12	6.27	1.44	8.06	1.76	9.85	2.08	11.64	2.72	15.22	3.20	17.91
- liquid	0	0	0.00	0	0.00	0.00	5.75	27.38	11.50	54.75	17.25	82.13	20.13	95.82	25.88	123.19	31.63	150.57	37.38	177.95	48.88	232.70	57.50	273.77
- gaseous	0	0	0.00	0	0.00	0.00	3.03	12.15	6.06	24.31	9.09	36.46	10.61	42.53	13.64	54.69	16.67	66.84	19.70	78.99	25.76	103.30	30.3	121.5266
waste gas	0	0	0.00	0.00	0.00	0.00	0.90	1.18	1.80	2.36	2.70	3.55	3.15	4.14	4.05	5.32	4.95	6.50	5.85	7.68	7.65	10.05	9	11.82
total	0	0	0.00	0.00	0.00	0.00	10.00	42.50	20.00	85.00	30.00	127.51	35.00	148.76	45.00	191.26	55.00	233.76	65.00	276.26	85.00	361.27	100.00	425.02

