Answers to the additional questions on NREAP

Table 3:

- Table 3 has not been filled in correctly, therefore it is not clear neither from Table 3, nor from Part 3 what are the expected sectoral targets and their trajectories. Table 3 needs to be corrected using the NREAP methodology and sectoral targets for renewable energy use in electricity, heating and cooling and transport need to be clearly stated.

Updated Table 3 with corrected figures can be found in Annex 1 to this document.

Table 4b:

- Table 4b only presents one overall consumption trajectory, but does not give data on expected RES electricity use, nor Art. 21.2. fuels. These estimations should be given and they should be consistent with the estimations provided in Table 12.

Updated Table 4b with additional data can be found in Annex 2 to this document.

Table 5 and overview of measures to promote the use of energy renewable sources:

- Table 5 and description of support measures refers to the ERDF financial support for broader use of renewable energy sources for power production. It should be clarified whether ERDF support for renewable energy use under the priority axis "Development of energy sector" of the Operational Programme for the Development of the Living Environment from 2007 to 2013 is still available or not, given the fact that Estonian authorities have notified to the EC in 2010 that financial support allocated to renewable energy under this operational programme will be transferred to other priorities. References to financial support from the ERDF in this part should be brought in line with the changes in the Operation Programme for the Development of the Living Environment.

The Modification of the Operational Programme for the Development of the Living Environment was approved by the European Commission in June 2011. At the same time, since September 2011, support for extensive use of renewable energy sources has been provided by the Environmental Investment Centre based on Regulation of the Minister of the Environmental no. 42 dated August 30, 2010 "Establishment of the conditions and procedure for providing support for extending the use of renewable energy sources for energy production and upgrading of distance heating networks" (*„Taastuvenergiaallikate laialdasemaks kasutamiseks energia tootmiseks ning kaugküttevõrkude parendamiseks toetuse andmise tingimuste ja korra kehtestamine*";

https://www.riigiteataja.ee/akt/13355369). Consequently, the support for investments is currently available but another source of financing is used instead (it is no more the European Regional Development Fund (ERDF) but other state budget revenues).

Buildings (Q4.2.3):

- Table 6 on the estimated share of renewable energy in the building sector should be filled in (at least with estimations for the years to come, if the data for 2005 are not available).

The estimated share of renewable energy in the building sector is illustrated in a table below:

	2005	2010	2015	2020
TOTAL	15%	22%	25%	29%

Grid development (Q4.2.6):

- All questions of the NREAP template should be answered providing detailed information on the planned actions to develop the electricity infrastructure in view of integration of energy from renewable sources. Questions should be answered with references to concrete planned regulatory revisions and other actions and should contain clear timetable for each of these actions.

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

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

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

Information provided in the initial action plan should be sufficient. All concerning requirements related to the energy grids exist in the Electricity Market Act (EMA). The requirements related to the connection to power networks have been described in the grid code.

(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?

Today the transmission and distribution grids are sufficiently developed to guarantee domestic supply from RES at all time. In the future, assuming an increase in electricity consumption new lines and substations are established together with reinforcing old ones by strategic and investments plan of Transmission System Operator. There is no separate

strategy for only maintaining the secure operation of electricity system due to integration of renewable electricity. To ensure secure operation of the electricity system, the regularly updated development plan of the electricity system takes into account all the aspects of system development, including integration of different production units.
As described in the initial action plan, the main problem related to maintaining of the secure operation of the electricity system while integrating the targeted amount of renewable electricity is mainly related to wind power and its properties.
Adopted NREAP stated, that the condition of power networks in Estonia does not allow the connection of a sufficient number of connected parties related to wind power, has meanwhile been reassessed by the Transmission System Operator. They have conducted an analysis of the possibilities and limitations for wind power capacity in Estonia within the next 10 years. The analyses in the study show that it is technical possible to further develop wind power in Estonia in the coming years without severe balancing costs. The alternative is developing interconnections, which is a solution to overcome the grid limitations and guarantee secure operation of the electricity system. The analyses show that wind power development in Estonia is highly depended on an efficient and market based use of the interconnector between Finland and Estonia. The analysis is one of the base documents for grid development planning, allowing 900 MW of wind capacity into the grid if Estlink 2 (650 MW) and all together 1000MW of connection is created with Finland (wind capacity today app. 150 MW).

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

Estonian Transmission System Operator's concept on moving towards intelligent networks anticipates normal development of existing electrical network, where power faultless power system operation and supply quality is incentivised. Both developed information technology and data communication tools are utilised to achieve this. TSO continues the development of intelligent transmission system according to its strategy and investments plan. Even today a lot of intelligent network functions have been integrated and developed during the process:

1) Fault identification and localization
2) Automated controlling of substations;
3) Smart meters – possibility to apply different tariffs and manage demand-side;
4) SCADA/EMS management system – possibility to manage information between control and various powerplants, distribution networks, neighbouring controls;
5) Voltage control by reactive power control;
6) Wide Area Monitoring System (WAMS);
7) Connecting of FACTS (Flexible Alternating Current Transmission Systems) etc.

In the future:

8) Demand side management.

Driving force today for developing intelligent networks with information technology tools is the full opening of electricity market in 2013 and its continuous development after, which acquires uninterruptable and smooth information flows with minimal costs between demand and supply.

Intelligent networks is also a priority developed field under National Energy Technology Program, which development is ensured by research action in Tallinn University of Technology and Estonian TSO (see 4.1. chapter 8).

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

Planned reinforcements of the interconnection capacities with neighbouring countries:

- Estlink 1 – 350 MW interconnection between Estonia and Finland full acquisition (buy out) in 2013, operational from 2007;
- Estlink 2 – 650 MW interconnection between Estonia and Finland construction 2014;
- 3rd Estonian and Latvian interconnection in 2017-2020 (additional 500 MW).

(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*.)

If a producer is interested in to connect to the grid infrastructure, he applies for the conditions for the connection from the network operator. The network operator is obliged to issue conditions for the grid access within 30 (distribution grid) or 90 (main grid) days. If documentation is not sufficient for issuing the conditions for the connection the network operator may request additional information. The time needed for the issue of technical conditions varies and depends, how quickly technical issues related to potential network connection can be solved.

The legal basis for the connection is:

- Electricity Market Act[1];
- Grid Code[2];
- standard conditions for the network connections issued by network operators.

Although recent information shows, that time for getting the access to the grid is reasonable, the Ministry of Economic Affairs and Communications has been closely monitoring some problematic cases. Long-lasting processes are caused by contrary views to technical solutions to fulfil technical criteria. Changes in legislation are not needed: the procedures and technical conditions are described well enough, but good practices should be promoted. However, the technical research should be done before simplification or revision of the existing legislation. The projects on integration of small-scale RES are in progress and will be finalised in 2014.

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

[1] In Estonian "Elektrituruseadus", published in the webpage of State Gazette www.riigiteataja.ee
[2] In Estonian „Võrgueeskiri", published in the webpage of State Gazette www.riigiteataja.ee

Before the conditions for the grid connection can be applied, approval for detailed planning or conditions for the building design should be received.

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

There are no priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources. All the electricity producers are subject to equal treatment. Electricity production from renewable energy sources is supported through investments support or renewable energies favourable tariffs.

(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?

With a view of achieving the targeted amount of renewable energy in the grid, there no capacity limitations of the grid.

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?

Sufficient information is given in the initial action plan.

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.)

There are no special rules for producers located in peripheral regions and regions with low population density.

(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.)

Estonia practices the "shallow" approach of connection cost sharing, meaning that the developer bears only the grid connection cost, but not the cost of reinforcement and

extension of the grid at the location. This is built into the grid tariffs and paid by the customers. Such approach gives a stronger inventive for developing of production and especially renewable energies production units, as their investments supports also cover connection costs construction. No severe modifications are foreseen in these costs.

(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?

No, once the producer has agreed the conditions for the connection, these cannot be changed. Producers will have tariffs for network services approved by Estonian Competition Authority and designed to respect the principle of equal treatment.

(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?

Sufficient information is given in the initial action plan.

Grid operation (Q4.2.7):

- All questions of the NREAP template should be answered providing detailed information on the planned actions to improve the operation of the electricity networks. Questions should be answered with references to concrete planned regulatory revisions and other actions and should contain clear timetable for each of these actions.

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?

The transmission and distribution of electricity from renewable energy sources is guaranteed on the basis of guaranteed access.

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

The priority is given through support mechanisms, either supporting infrastructure investments or incentivising generation through premium tariffs. Thereby electricity generation from non-renewable energy sources is less competitive and this leaves enough market space for electricity producers using RES.

(c) How are grid- and market-related operational measures taken in order to minimize 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 priority measure by TSO to minimize the curtailment of electricity from renewable energy sources is ensured through sufficient cross border interconnection capacity and trade (e.g. analysis of the possibilities and limitations for wind power capacity in Estonia within the next 10 years), which is by TSO, a basis for improved cooperation of adjacent system operators and a possibility for aggregated markets. In Estonian scenario it means connecting its electricity network and market with North–European Nord Pool market via Estlink projects (see 4.2.6.). As the electricity market will not be opened until 2013 there are yet no market-based measures to improve the usage of renewable resourced. Estonia has also introduced initial levels of smart metering system for demand side management purposes for some years now. Also a large—scale national electric cars project (www.elmo.ee) has been launched. Nevertheless sophisticated intelligent electricity networks in order to minimize the curtailment of renewable energy is largely at concept phase and under investigation at R&D, there are no specific timetable to provide when to expect certain measures.

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

(d) Kas energiasektorit reguleerivat asutust on kõnealustest meetmetest teavitatud? Kas ta on pädev kõnealuseid meetmeid jälgima ja nende rakendamist jõustama?

(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 information given in the initial action plan should be sufficient.

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

The information given in the initial action plan should be sufficient.

District heating and cooling infrastructure development (Q4.2.9):

- On the basis of information provided in the plan, it is not clear whether Estonian authorities expect further extension of the existing district heating networks and what

contribution is expected from large renewable energy production facilities in the district heating systems. Answers to these questions should be provided.

Estonia supports the development of efficient energy systems. In intensely populated areas district heating is the most efficient system. Measures supported by the Environmental Investment Centre will continue in the coming years. Transition from the use of gas and oil shale to the use of biomass in district heating will ensure a better price for consumers. At the same time it also contributes to the improvement of air quality and security of supply.

Biofuels and other bioliquids – sustainability criteria (Q4.2.10):

- More information should be provided on how the sustainability criteria for biofuels will be implemented at national level, how it will be ensured that biofuels comply with the sustainability criteria and when is it envisaged that a national authority/body for monitoring the fulfilment of the criteria, will be established.

Estonia has adopted sustainability criteria for the biofuels in a regulation on requirements to liquid fuels (regulation of the minister or environment "Environmental requirements to liquid fuels and sustainability criteria to biofuels and procedure for their verification", in Estonian "Vedelkütustele esitatavad keskkonnanõuded ning biokütuste säästlikkuse kriteeriumid ja nende tõendamise kord", https://www.riigiteataja.ee/akt/129122010153). According to the regulation, the compatibility with sustainability criteria is verified by an independent expertise or analysis. A change in the mechanism for promotion of biofuels in Estonia will be done and instead of fuel excise exemption for biofuels put to the market a biofuel quota requirement for fuel suppliers will be applied. Instead of Tax and Customs Authority, national Environmental Board will be responsible for checking the documents submitted by fuel suppliers. Environmental Board is an existing authority.

Electricity support scheme (Q4.3):

- Further clarifications should be provided on the eligibility for support (references to articles in the Electricity Market Act do not provide enough information) and the role of carbon price in determining the support level.

Electricity Market Act – requested clarifications can be found in:

Section 59. Support (1) 1) 2) 3) 4) 5) and (2) 1) 2):
(1) A producer has the right to receive support from the distribution network operator:
1) for the electricity, if it is generated from a renewable energy source. Beginning with 1 July 2010, if it is generated from renewable energy source, except biomass;
2) for the electricity, if it is generated from biomass in a cogeneration process, beginning with 1 July 2010, except when electricity is generated in a condensation mode. Detailed instructions for cogeneration are established by regulation of the Government of the Republic via the proposal of the Minister of Economic Affairs and Communications. The base of the proposal for detailed instructions for cogeneration presented to the Government by the Ministry of Economic Affairs and Communications is the proposal from the Competition Authority;

3) for the electricity, if it is generated in an efficient cogeneration process if waste within the meaning of the Waste Act, peat or oil-shale processing retort gas is used as a source of energy;
4) for the electricity in an efficient cogeneration process which has the electric capacity not exceeding 10 MW;
5) for the availability of installed net capacity of oil-shale based generation unit, if the generation unit has started generation process between 1 January 2013 to 1 January 2016.

(2) The transmission network operator shall pay support to the producer on the basis of the application of the latter as follows:
1) 0.0537 euros per one kilowatt-hour of electricity if it is generated in accordance with points 1 or 2 of subsection 1 of this section;
(22.04.2010 entered into force 01.01.2011 - RT I 2010, 22, 108)
2) 0.032 eurot per one kilowatt-hour of electricity if it is generated in accordance with points 3 or 4 of subsection 1 of this section;
(22.04.2010 entered into force 01.01.2011 - RT I 2010, 22, 108)

Section 108. Eligibility Period of Support (11):
(11) If the amount of support specified in subsection 6 of section 591 of this Act is not used up by 1 January 2016 and if a generating installation which has a gross capacity of at least 300 MW has started operation pursuant to section 59 (1) 5), the unused amount of support may also be used to pay for the availability of the installed net capacity of an oil shale-based generating installation if the generating installation started operation in the period from 1 January 2013 to 1 January 2018.
(28.01.2010 entered into force 27.02.2010 - RT I 2010, 8, 40)

NB! There is no role of carbon price on the determination of support level.

- References to the investment aid conditions should also be clarified, indicating whether output indicators of 100 MW and 500 MW refer to the individual project size or total installed capacity the investment aid applies to.

The output indicators of 100 MW and 500 MW refer to the individual project size of installed capacity of which the investment aid applies to.

- More details should also be provided on the technology specific tariffs or aid**.**

Estonia applies technology-neutral support levels to renewable energy sources or technologies in its support schemes available in the electricity market. However, in some cases investment grants through targeted support schemes have been provided to installations using renewable energy sources, eg for wind energy farms, small-scale biomass and biogas CHPs etc. It is planned to continue with targeted support schemes providing investment grants when necessary.

Heating support schemes (Q4.4):

- More concrete information should be provided on the support for renewable energy use in heating and cooling. Current references only provide information on support available for farmers.

There are no measures for cooling as due to our climate conditions there is no need for it. Instead there are measures for heating. Estonia has adopted District Heating Act, the Act includes several measures to ensure continuous operation and maintenance of district heating systems through tariff regulation in the systems, The Act also includes special promotion mechanisms for renewable energy supply. Measures targeted to reconstruction of boilerhouses, combined heat and power plants and heating pipelines are also supported from national programmes providing investment grants.

Biofuels support schemes (Q4.5):

- Various planned measures are listed, but target dates for their implementation and the exact nature of measures (regulatory, information etc.) are not always clear. Additional information should be provided on the planned support measures and clear targets per fuel/per year to ensure the projected growth in renewable energy use in transport in accordance with projections made in Table 12.

Promotion of the biofuels in transport fuels market is a new issue for Estonia and measures are designed bearing in mind greater need for flexibility for authorities implementing the NREAP in order to increase share of renewable energy sources in transport sector. To achieve biofuels targets, Estonia intends to have a contribution from electrical vehicles, other vehicles on alternative renewable fuels (especially subsidised public transport) and fuel efficiency measures. However, given the relatively unclear potential of these new measures – Estonia does not have experience with similar measures – definitive sub-targets are not adopted for these measures. Only an indicative assumption of the potential contribution of alternative measures to the biofuel quota requirement for fuel suppliers can be given. This number is expressed in Table 12 of the NREAP.

- The plan refers to the support for 2nd generation biofuels (in the framework of National Energy Technology Platform) but tables 4b and 12 do not project any art.21.2 biofuel use. This should be clarified.

Table 4b was updated and it is enclosed as Annex 2 to this document.

Biomass supply (Q4.6.1):

- Table 7:
  - The column "primary energy production" should be filled in. When doing so, the conversion factors / calculation methodology should be explained.

Table 7 was updated and it is enclosed as Annex 3 to this document.

- Table 7a:

- The columns "primary energy production" in 2015 and 2020 should be filled in for all biomass sources (including wood resource). When doing so, the conversion factors / calculation methodology should be explained.
- The columns "amount of domestic resource" in 2015 and 2020 should be filled in for all biomass sources (including sewage sludge).
- It should be explained why indirect supply of wood biomass is not projected in 2015 and 2020 whereas it amounted to 2 500 000 m3 in 2006.
- There is no projection of biomass domestic supply from the agricultural and fishery sector which is not consistent neither with the explanation given in the plan nor with the objectives of the DPB (Development Plan for Enhancing the Use of Biomass and Bioenergy for the period 2007-2013). The relation between table 7a projections and the effects of the measures described should be further clarified.
- No domestic supply of waste for energy generation is projected in table 7a which is not consistent with the plan indicating that energy from waste in 2013 would amount to 3.65 PJ (p. 46).

Table 7a was updated and it is enclosed as Annex 3 to this document. Efforts to promote the use biomass supply from the agricultural and fishery sector have direct links with measure 4.4.2 (promotion of biogas production and use, page 38). The number 3.65 PJ on page 46 illustrates a potential, not the actual use for energy generation.

- The following questions should be answered:

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

Several analyses have been done in Estonia, this figures in NREAP are taken from these analyses.

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

We are not able to say if there will be any biomass imports. There can be indirect imports from Eastern Europe (timber for sawmills).

Measures to increase biomass availability (Q4.6.2):

- Question a): it should be clarified what is meant by "*taking into account the size of the area of unused arable land, the use of degraded land for mobilisation of new biomass sources has not been discussed*" (p.50).

There already exists a vast amount of unused land area usable for biomass mobilisation as half of the conditionally unused arable land is totally unused (123'000 ha). The area of degraded land is marginal compared to that of unused land. For these reasons, the use of degraded land for mobilisation of new biomass has not been a matter of discussion.

- Questions d) and e) have not been addressed. These should be answered.

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

There are four biogas plants in construction stage, which among other products will also use animal manure and slime for producing energy. Some more plants are planned to be built but more information is not available at the moment.

(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)?

There is no specific policy for promoting the production and use of biogas, Estonia applies technology-neutral approach. However, for the biogas the position may change after completion of the measure 4.4.2 (promotion of biogas production and use, page 38).

- Question f): the plan refers to results from surveys referring to possibilities to increase biomass mobilisation from forests (p. 44-45). It should be clarified whether the Development Plan for Enhancing the Use of Biomass and Bioenergy for the period 2007-2013 contains measures dedicated to such mobilisation.

No, it doesn't contain such measures, the biomass availability from forestry is addressed in recently reviewed "Forestry strategy of Estonia" (approved in Parliament in February 2011).

- Impacts on other sectors:
    - (a): The plan refers to impacts of intensified use of forestry on prices (increase). It should be indicated whether these impacts will be monitored in the future.

The increasing demands for timber residues impact energy production costs and therefore the end-user prices of electricity and heat. For this reason all other industries that are more or less energy price sensitive have to adjust to this boost. The increase of demand is caused by the energy policy related to the usage of renewable energy sources culminating in subsidies permitted by law.

    - Question (b) has not been addressed. This should be answered.

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?)

We do not expect any remarkable change in productivity – agriculture and forestry sectors have already adopted modern technologies and potential in productivity increase that would cause changes in bioenergy supply, is limited. Residues from forestry will be used in energy sector, at the moment there are no plans to develop other industries, that would use forestry residues.

Table 11:

- The share of renewable energy use in heating in 2020 is estimated to decrease compared to 2010. Table 11 only indicates biomass use; figures for biogas are not provided. However, in section 4.4 of the Estonian NREAP measures are planned for biogas support. Please clarify whether biogas is expected to contribute to the target of renewable energy use in the heating and cooling sector.

First biogas production facilities will become operational in 2013 and they will have a small contribution to share of RES. However, biogas promotion is costly and a decision on next steps will be done after first installations have proved expected benefits.

Contribution of energy efficiency measures (link to Table 1):

- Additional information should be provided on the current and/or planned policy measures to achieve the energy savings indicated in the energy efficiency scenario in Table 1.

All energy efficiency measures in Estonia to achieve energy efficiency targets are described in National Energy Efficiency Action Plan (NEEAP) submitted to the Commission in September 2011. The NEEAP is accessible in webpage of the Commission http://ec.europa.eu/energy/efficiency/end-use_en.htm

Annexes

1. Updated Table 3 of the NREAP
2. Updated Table 4b
3. Updated Table 7 and Table 7a

ANNEX 1

Updated Table 3 of the NREAP

Tabel 3. Riiklik 2020. aasta eesmärk ning taastuvatest energiaallikatest toodetud energia hinnanguline kujunemiskõver kütte- ja jahutus- ning elektri- ja transpordisektoris

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Taastuvatest energiaallikatest toodetud küte ja jahutus[1] (%)	31,3%	38,9%	39,5%	39,8%	39,7%	39,7%	39,7%	39,5%	39,2%	39,0%	38,7%	38,4%
Taastuvatest energiaallikatest toodetud elekter[2] (%)	1,2%	6,4%	7,0%	8,1%	11,3%	12,0%	13,2%	13,2%	15,2%	16,1%	15,7%	17,6%
Taastuvate energiaallikate osakaal transpordisektoris[3] (%)	0,0%	0,1%	0,1%	2,4%	4,8%	4,8%	4,8%	5,9%	6,8%	7,8%	8,8%	10%
Taastuvate energiaallikate üldine osakaal[4] (%)	16,6%	20,9%	21,2%	22,0%	23,3%	23,4%	23,6%	23,7%	24,2%	24,5%	24,5%	25%
Sellest (%) on pärit koostöömehhanismidest[5]	-	-	-	-	-	-	-	-	-	-	-	-
Ülejääk	-	-	1,8%	2,6%	3,2%	3,3%	2,4%	2,5%	1,7%	2,0%	0,7%	0,0%

[1] Taastuvenergia osakaal kütte- ja jahutussektoris: taastuvatest energiaallikatest toodetud soojus- ja jahutusenergia summaarne lõpptarbimine (määratletud direktiivi 2009/28/EÜ artikli 5 lõike 1 punktis b ja lõikes 4), mis on jagatud soojus- ja jahutusenergia summaarse lõpptarbimisega. Tabeli 4a A rida jagatud tabeli 1 reaga 1.

[2] Taastuvenergia osakaal elektrisektoris: taastuvatest energiaallikatest toodetud elektri summaarne lõpptarbimine (määratletud direktiivi 2009/28/EÜ artikli 5 lõike 1 punktis a ja lõikes 3), mis on jagatud elektri summaarse lõpptarbimisega. Tabeli 4a B rida jagatud tabeli 1 reaga 2.

[3] Taastuvenergia osakaal transpordisektoris: taastuvatest energiaallikatest toodetud energia lõpptarbimine transpordisektoris (vt direktiivi 2009/28/EÜ artikli 5 lõike 1 punkt c ja lõige 5), mis on jagatud 1) bensiini, 2) diislikütuse, 3) maantee- ja raudteetranspordis tarbitud biokütuse ning 4) maismaatranspordis tarbitud elektri tarbimisega transpordis (nagu on esitatud tabeli 1 real 3). Tabeli 4b J rida jagatud tabeli 1 reaga 3.

[4] Taastuvenergia osakaal energia summaarses lõpptarbimises. Tabeli 4a G rida jagatud tabeli 1 reaga 4.

[5] Protsentuaalne osa taastuvate energiaallikate üldisest osakaalust.

koostöömehhanismide puhul[6] *(%)*												
Nagu on sätestatud direktiivi I lisa B osas			2011–2012		2013–2014		2015–2016		2017–2018			2020
			S_{2005} **+20%** (S_{2020}–S_{2005})		S2005 **+30%** (S_{2020}–S_{2005})		S2005 **+ 45%** (S_{2020}–S_{2005})		S2005 **+65%** (S_{2020}–S_{2005})			S_{2020}
Taastuvate energiaallikate kasutuse väikseim kujunemiskõver[7] (%)			19,40		20,10		21,15		22,55			25
Taastuvate energiaallikate kasutuse väikseim kujunemiskõver (ktoe)			630		658		706		759			863

[6] Protsentuaalne osa taastuvate energiaallikate üldisest osakaalust.

[7] Määratletud direktiivi 2009/28/EÜ I lisa B osas.

ANNEX 2

Updated Table 4b of the NREAP

Tabel 4b. Arvutustabel: taastuvenergia osakaal transpordisektoris (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
C) Taastuvate energiaallikate eeldatav kasutus transpordisektoris[1]	0	1	1	20	40	41	42	52	61	71	81	92
H) Taastuvatest energiaallikatest toodetud elektri eeldatav tarbimine maanteetranspordis*[2]	0	0,1	0,1	0,1	0,2	0,2	0,3	0,4	0,5	0,6	0,6	0,6
I) Jäätmetest, jääkidest, toiduks mittekasutatavatest tselluloosmaterjalidest ja lignotselluloosist toodetud biokütuste eeldatav tarbimine transpordisektoris[3]	0	0	0	0,1	0,1	0,1	0,2	0,2	0,2	0,3	0,3	0,3
J) Taastuvate energiaallikate eeldatav osakaal transpordisektoris (panus taastuvenergiaalase eesmärgi saavutamisse transpordisektoris):(C)+(2,5–1)x(H)+(2–1)x(I)	0	1,2	1,2	20,3	40,4	41,4	42,7	52,8	62,0	72,2	82,2	93,2

1 Kõik transpordisektoris kasutatud taastuvenergialiigid, sealhulgas taastuvatest energiaallikatest toodetud elekter, vesinik ja gaas, välja arvatud biokütused, mis ei vasta säästlikkuse kriteeriumidele (vt artikli 5 lõike 1 viimane lõik). Täpsustage tegelikud väärtused ilma korrutustegureid kasutamata.

2 Täpsustage tegelikud väärtused ilma korrutustegureid kasutamata.

3 Täpsustage tegelikud väärtused ilma korrutustegureid kasutamata.

ANNEX 3

Updated Table 7 and Table 7a of the NREAP

Tabel 7. Biomassi varud 2006. aastal

Päritolusektor		Riigisiseste varude kogus[1]	Imporditud		Eksporditud	Netosumma	Primaarenergia toodang (ktoe)
			Liikmesriikidest	Mitteliikmesriikidest	Liikmesriikidesse/mitteliikmesriikidesse		
A) Metsanduse st pärinev biomass[2]	*Sellest:*						
	1. Metsadest ja muult metsamaalt otse energiatootmiseks saadud puidupõhine biomass (m^3)						287
	2. Kaudselt energiatootmiseks saadud puidupõhine biomass (m^3)						344
B) Põllumajandusest ja kalandusest pärinev biomass	*Sellest:*						
	1. Otse energiatootmiseks saadud põllumajanduskultuurid ja kalandustooted						0
	2. Põllumajanduse kõrvalsaadused või töödeldud jäägid ja kalanduse kõrvalsaadused, mida kasutatakse energiatootmiseks					Põhk 600 000 t	Põhk 0
C) Jäätmetest pärinev biomass	*Sellest:*						
	1. Tahkete olmejäätmete bioloogiliselt lagunev fraktsioon, sh biojäätmed (prügilagaas, biolagunevad haljastus- ja aiajäätmed, kodumajapidamistest, restoranidest, toitlustus- ja jaemüügiettevõtetest pärinevad toidu- ja köögijäätmed ning samalaadsed toiduainetetööstuse jäätmed) **ja prügilagaas**					Tahked olmejäätmed 200 000 t	Tahked olmejäätmed 0 Prügilagaas 2,3
	2. Tööstusjäätmete bioloogiliselt lagunev fraktsioon, sh paber, papp, kaubaalused	90 000 t				90 000 t	0
	3. Reoveesetted		-	-	-	-	1,5

Tabel 7a. Biomassi hinnangulised riigisisesed varud 2015. ja 2020. aastal

Päritolusektor		2015		2020	
		Riigisiseste varude hinnanguline kogus	Primaarenergia toodang (ktoe)	Riigisiseste varude hinnanguline kogus	Primaarenergia toodang (ktoe)
A) Metsanduse st pärinev biomass	**1. Metsadest ja muult metsamaalt otse energiatootmiseks saadud puidupõhine biomass (m3)**	3 600 000 – 6 000 000	300-500	3 600 000 – 6 000 000	300-500
	2. Kaudselt energiatootmiseks saadud		200		200

[1] Ressursside kogus kuupmeetrites (võimaluse korral; alternatiivina muudes asjakohastes ühikutes) kategooria A ja selle alamkategooriate puhul ning tonnides kategooriate B ja C ning nende alamkategooriate puhul.

[2] Metsandusest pärit biomassi puhul tuleks arvesse võtta ka metsandusel põhinevast tööstusest saadud biomassi. Metsandusest pärit biomassi puhul tuleks töödeldud tahked kütused (laastud, briketid ja puidugraanulid) lisada vastavatesse päritolukategooriatesse.

	puidupõhine biomass				
B) Põllumajandusest ja kalandusest pärinev biomass	**1. Otse energiatootmiseks saadud põllumajanduskultuurid ja kalandustooted**	0	0	0	0
	2. Põllumajanduse kõrvalsaadused või töödeldud jäägid ja kalanduse kõrvalsaadused, mida kasutatakse energiatootmiseks		Põhk 1 Biogaas 10		Põhk 1 Biogaas 18
C) Jäätmetest pärinev biomass	**1. Tahkete olmejäätmete bioloogiliselt lagunev fraktsioon, sh biojäätmed** (prügilagaas, biolagunevad haljastus- ja aiajäätmed, kodumajapidamistest, restoranidest, toitlustus- ja jaemüügiettevõtetest pärinevad toidu- ja köögijäätmed ning samalaadsed toiduainetetööstuse jäätmed) **ja prügilagaas**		Tahked olmejäätmed 0 Prügilagaas 2,3		Tahked olmejäätmed 0 Prügilagaas 2,3
	2. Tööstusjäätmete bioloogiliselt lagunev fraktsioon, sh paber, papp, kaubaalused		0		0
	3. Reoveesetted		1,5		2,0