

# Non-cost barriers to renewables – *AEON* study

Estonia

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- Confidential -

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# 1 Introduction

Administrative barriers still exist and they need an in-depth and specific analysis to find a unique solution to solve them. It is essential to raise the administrative capacity of the municipalities. In some cases the laws and regulations of the Environmental Impact Assessment temporize the procedures too long. A long-time stable national policy is required to create stable RES-related business environment and to open the energy market totally. A better integration between different strategic plans is necessary.

There is a competing public interest to the implementation of RES technologies – environmental issues and issues about the value of one's property.

Most of the stakeholders presume technical specifications clearly defined, but they think that the Estonian Grid Code is much more strict than European standards and it might be a barrier. In general, there are no barriers that impede the operation of the internal market.

According to Estonian electricity industry, development plan priority in power engineering is expanding cogeneration of renewable energy, heat and electricity. The exemplary role of public buildings is weak or even deficient, but there are signs of improvement. As there is an attitude “Not In My Back Yard”, there must be done a thematic plan for RES development in Estonia, where is defined the State Interest and determined the areas where investors can develop the technology.

The European energy efficiency labels, certificates and standards are in place for RES technologies. There is no historical reason for using technologies that do not fulfil the requirements in Estonia.

The information related to awareness raising support measures is clear and accessible. However, there is lack of funding and support for awareness raising campaigns. The stakeholders organize the campaigns on their own. In public conscious economical considerations dominate, so there is no demand for greener energy. Because of lack of information, people and investors are sceptical about biofuels.

The Ministry of Economic Affairs and Communications is responsible for certification of RES technologies. The training on RES technologies is provided during the technical studies in universities and in institutions of professional higher education.



The infrastructural standards pose a limit to development of the electrical grid infrastructure. There are issues, which need additional explanation and improvement of the legislation. TSOs and DSOs develop the transmission systems the way it is best for their own interest.

The Estonian Competition Authority is controlling the access to grid, reasons for access denial, rules for cost bearing and sharing of grid connection. Procedures for the grid connection are regulated by Electricity Market Act, Grid Code and approved transmission operator's standard terms.

TSOs and DSOs oppose biogas connection to the network because the biogas quality and pressure differ from the gas in the network.

There is lack of accurate rules for encouraging a share increase of RES technologies in district heating and lack of experience in cogeneration technologies. The share of RES technologies in district heating is not transparent to customers.

## 1.1 Sources

The list of questions was sent to 16 stakeholders, who represented policy makers, energy agencies-regulators, associations, investors on and producers of technologies, transmission system operators and NGOs. Five of the stakeholders sent the answers by e-mail and four gave the answers through telephone. The Ministry of Economic Affairs and Communications denied to answer the questions because there has been done one similar research about the topic before. The Ministry sent the report (Support-Ers. WP 3. Assessment of Administrative Structures and Procedures. Sept 2009) and the report was used in this study. All together answers were gathered from ten to fifteen stakeholders.



## 2 Issue 1 Administrative Procedures

### 2.1 Introduction

In summary, administrative barriers still exist and they an in-depth and specific analysis and finally find a unique solution to solve them.

The clarity of the information depends on the administrative capacity of a municipality. It is essential to raise the administrative capacity of the municipalities. In case of lack of technological knowledge the expert opinion is used.

It is not clear, what are the criteria for preferring one wind park to another in case of situation when there are more applicants than the grid volume can accept.

In some cases laws and regulations of Environmental Impact Assessment temporize the procedures too long.

There are only few permits, but the developers have to conciliate the permits with several different authorities.

There is a competing public interest to the implementation of RES technologies – environmental issues and issues about the value of one's property.

A long-time stable national policy to create stable RES-related business environment and to open the energy market totally.

There must be done a better integration between different strategic plans.

### 2.2 Description of barriers & solutions

#### 2.2.1 Detailed description of the Barriers and solutions

##### *Barrier 1.1 – Inefficient general administrative procedures*

In Estonia it takes 6-36 months to receive an installation permit. For receiving a building permit, you have to compile a plan, project and go through an Environmental Impact Assessment (EIA). Receiving time of a permit depends mostly on duration of EIA. On some opinions laws and regulations of Environmental Impact Assessment temporize the procedures too long.

The estimated costs involved in the administrative process is 20 000-60 000 Euros. All the stakeholders have an opinion that the requested requirements are appropriate and it is clear who is the ultimate responsible person/body. For most of the stakeholders the provided information about the administrative process (rules, procedures, requirements) is clear, accessible, accurate and sufficient. Although it is marked out, that it is not clear, what are the criteria for preferring one wind park to another in case of situation when there are more applicants than the grid volume can accept. The clarity of information also depends on the municipality. In some municipalities the administrative capacity is better, in some worse. The information in the internet is insufficient on one opinion.

There are involved mostly 2-6 actors in the administrative process – usually 2 bodies with 2 persons. However when the municipality council is involved, the number of involved people could reach up to 50. Half of the stakeholders believe that the involved actors have sufficient knowledge about the technology. However, there is lack of technological knowledge in several municipalities. If there is lack of knowledge the expert opinion is used.

It is required to apply for 1-2 permits (building permit, installation permit and/or production permit). There is need for more than 2 permits in case of wind parks on-shore when the municipality insists building permit for every wind generator not for the whole park.

There are only few permits, but the developers have to conciliate the permits with 9-10 different authorities (Environmental, building, connection of electrical installations to the electrical network; the permits require also conciliation of permits with authorities responsible for aviation, defence, roads, protection of national heritage, technical surveillance, rescue and also owners of other communications). At local level the municipalities should have unified rules and transparency in process of permit issuance. There is no coordination between the authorities, the conciliation of permits with different authorities is left entirely to the developers. It was also noted that the responsibilities for implementing of RES are not clearly divided between the Ministries.

#### *Barrier 1.2 – Competing public interests*

All the stakeholders have an opinion that there is a competing public interest to the implementation of RES technologies.

General opinion on wind power is positive, but local people (inhabiting the neighbouring sites of wind generators) consider wind generators as waste to the landscape. Also the low frequency sound is annoying. Placing wind generation to off-shore could reduce the barrier.

General opinion on biogas is positive, but local people (inhabiting the neighbouring sites of biogas plants) consider these as source of smell and it might drop the value of their property.

#### *Barrier 1.3 – Inexistent or insufficient spatial planning*

The state's economic policy and economic development plans in Energy sector is controlled by the Ministry of Economic Affairs and Communications. For the “Biomass

and bio-energy development plan for the years 2007-2013” an implementing agency is the Rural Development Foundation.

There are some contradictions between different strategic plans in some areas. This may lead to conflicts between different stakeholders. There must be done a better integration between the plans.

For example there is a contradiction between the RES goals and “Oil shale development plan”. The amounts of mined oil shale do not count with the energy from RES technologies.

#### *Barrier 1.4 – Other Barriers*

Stakeholders considered also as administrative risks as follows:

- Unstable politics – regulations are often changed;
- Lack of responsibility by authorities, which leads to low productivity;
- Government’s scepticism toward bio energy, so the sector is overridden.

The interviewed persons recommended keeping a long-time stable national policy to create stable RES-related business environment and to open the energy market totally.

According to the unstable politics, it is not sure if support is available in future or if regulations change. There is lack of regulating legislation and standardization. Availability of less expensive alternatives as raw material for bio energy is currently costly.

The sellers of fossil fuel have done an effective lobby campaign, which has lead to the fact that there is a bureaucratic wall against the bio fuel producers and sellers in Estonia. The producers export 100% of the production. The solution would be if for example the capital city of Estonia would change the fossil fuels to bio diesel in public transport. It would be good for the environment and also raise the knowledge of consumers.

### 2.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
1.1		Is one stop-shopping possible?	No
1.2		Amount of money to be invested in the administrative process (including cost of work and costs like fees) (in €)	20 000-60 000
1.3		Time to be spent for the administrative process (duration to get all the main permits) (in months)	6-36
1.4		Estimated number of permits required (#)	1-2
1.4.1		TSOs	1
1.4.2		Wind parks	1-2

## 2.3 Literature

**Ernst&Young**, 2008, Legal and Tax regulations of bioenergy sector, Tallinn.

**Dobrin, M., Mitroi, L.**, 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.

National development plan for use of oil shale 2008-2015.

## 3 Issue 2 Technical Specifications

### 3.1 Introduction

Most of the stakeholders presume technical specifications clearly defined, but they think that the Estonian Grid Code is much more strict than European standards and it might be a barrier. The lack of standards (in bio fuel fields) and also stricter standards may lead to a situation, where it is too difficult to produce energy from renewable sources and therefore there is no motivation to develop this sector. In general there are no barriers that impede the operation of the internal market.

### 3.2 Description of barriers & solutions

#### 3.2.1 Detailed description of the Barriers and solutions

##### *Barrier 2.1 – Weak definitions*

Most of the stakeholders presume technical specifications required to benefit from a support scheme clearly defined. Only one stakeholder stated that the technical specifications are divided into different documents and the description is diffuse.

##### *Barrier 2.2 – no EU standards applied*

The technical specifications are expressed in terms of European standards. However, the stakeholders think that the Estonian Grid Code is much more strict than European standards. On some stakeholders opinion the stricter Grid Code is a barrier. There is also a lack of standards in the field of bio fuels. The lack of standards and also stricter standards may lead to a situation, where it is too difficult to produce energy from renewable sources and therefore there is no motivation to develop this sector. To support the production of energy from renewable sources, the legislation must wholly be consistent with European Acts.

##### *Barrier 2.3 – Specified locations*

There are some technical specifications that state or implicitly state where equipments and systems are to be certified. The Ministry of Economic Affairs and Communications is responsible for standardization, certification, accreditation, licensing, registers, competition surveillance and consumer protection.

The Electricity Market Act and the Grid Code determine in what terms the wind generators are accepted into the grid.

#### *Barrier 2.4 – Barrier to trade*

In general there are no barriers that impede the operation of the internal market. But one stakeholder mentioned that the technical specifications for wind generators are one of the most difficult ones in Europe, so it is a kind of trade barrier in EU level. For example the Estonian Grid Code requires testing the power plant before connecting to the network.

#### 3.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
2.1		Are specifications expressed in terms of European standards (including eco-labels, energy labels and other technical reference systems), though such European references exist?	Yes

### 3.3 Literature

**Ernst&Young**, 2008, Legal and Tax regulations of bioenergy sector, Tallinn.

**Dobrin, M., Mitroi, L.**, 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.

Development plan for using the biomass and bio energy 2007-2013, **enacted by the parliament of Estonia 21.10.2008**,  
<http://www.envir.ee/orb.aw/class=file/action=preview/id=306730/P%D5KKi+kinnitamine.pdf>.



## 4 Issue 3 Building integrated technologies

### 4.1 Introduction

According to Estonian electricity industry, development plan priority in power engineering is expanding cogeneration of renewable energy, heat and electricity.

The administrative procedure is time consuming, although only a few permits are required. Half of the stakeholders believe that the rules for the implementation of this technology are clear, easily accessible, transparent and non-discriminatory and that legal obligations of a given share of renewables in building integrated technologies are strong enough, respected and non-discriminatory.

There is a competing public interest in the field of environmental issues and issues about the value of one's property. The exemplary role of public buildings is weak or even deficient, but there are signs of improvement.

As there is an attitude "Not In My Back Yard", there must be done a thematic plan for RES development in Estonia, where is defined the State Interest and determined the areas where investors can develop the technology.

### 4.2 Description of barriers & solutions

#### 4.2.1 Detailed description of the Barriers and solutions

##### *Barrier 3.1 – Inefficient general administrative procedures*

The installation of RES technologies is not exempted from authorization procedures. There are only few permits, but the developers have to conciliate the permits with several different authorities. Therefore, the process is quite time consuming.

##### *Barrier 3.2 – No/insufficient specific rules for building integrated/small scale RES installations*

The rules for the implementation of this technology as a Building Integrated RES technology are clear, easily accessible, transparent and non-discriminatory for half of the stakeholders. It is mentioned that there is no homogeneous viewpoint of the environmental impact of RES technologies. There must be clear definition what are the preferred technologies and where are the preferred sites for those technologies in the energy sector.

### *Barrier 3.3 – Competing public interests*

There is a competing public interest for building integrated RES technologies. The main contradictive interested party is the local people who live next to the areas where RES technologies are planned. The raised arguments are environmental issues and issues about the value of one's property. The solution could be the wider involvement of interested parties and raise of knowledge.

### *Barrier 3.4 – Renewables obligations insufficient*

Half of the stakeholders believe that legal obligations of a given share of renewables in building integrated technologies are strong enough, respected and non-discriminatory towards this technology. However, there is potential for improving the legislation. Although have not noticed discriminative elements.

### *Barrier 3.5 – Exemplary role of public buildings neglected*

At the moment the exemplary role of public buildings is deficient, but there are signs of improvement. Namely as it is very expensive to maintain the KUMU (National Art Museum – a new building), the discussion about zero-energy public buildings have raised. At the moment there is discussion about the new city government hall of Tallinn and ERM (Estonian National Museum), which are possibly going to be zero-energy buildings. The knowledge of zero-energy buildings has raised.

The use of biofuels is planned to reach 6% from fuels used in transportation by 2013, whereas local administrations and governmental institutions should be the leading consumers of bio fuels. In addition, one stakeholder mentioned the exemplary role of public sector in using biofuels in public transport.

### *Barrier 3.6 – RES deployment hindered by spatial planning matters*

There is no thematic plan for RES in Estonia. Therefore, counties are preparing plans, where there is very little space for renewable energy plants. In many municipalities there is an attitude “Not In My Back Yard” (NIMBY).

A thematic plan for RES development in Estonia is welcomed, where is defined the State Interest and determined the areas where investors can develop the technology.

### *Barrier 3.7 – Tenancy law and ownership law impedes development of Building Integrated RES technologies*

Tenancy law and ownership law are not barriers for RES technologies in Estonia.

## 4.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
3.1		Is this installation type in normal cases exempted from an authorization procedure (building permit)?	No
3.2		Are legal-administrative requirements adequate for this installation type?	Yes
3.3		Number of administrations that must be contacted (#)	2-6

## 4.3 Literature

**Ernst&Young**, 2008, Legal and Tax regulations of bioenergy sector, Tallinn.

**Dobrin, M., Mitroi, L.**, 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.



## 5 Issue 4 – Promotion of energy efficient renewable energy equipment

### 5.1 Introduction

The European energy efficiency labels, certificates and standards are in place for RES technologies. There is no historical reason for using technologies that do not fulfil the requirements in Estonia. So there was no barrier detected in this topic.

### 5.2 Description of barriers & solutions

#### 5.2.1 Detailed description of the Barriers and solutions

##### *Barrier 4.1 – Non-compliant promotion schemes*

No need to detect this barrier. The Minister of Environment regulation no 14 24.03.2009 says that support is available only for efficient cogeneration of electricity and heat that bases on RES technologies.

##### *Barrier 4.2 – Lack of substitution of existing inefficient systems*

No need to detect this barrier. All the installed renewable technologies are quite new in Estonia, so there is no historical reason for using technologies that do not fulfil the requirements.

##### *Barrier 4.3 – Use of national procedures*

There are European energy efficiency labels, certificates and/or standards in place for RES technology and the standard efficiency requirements are used. Although the efficiency label “Green Energy” is implemented long ago, no improvements have done.

##### *Barrier 4.4 – Insufficient information*

No barrier detected.

#### 5.2.2 Best Practice Elements and Indicators

No.	Benchmark	Result
4.1	Are the requirements of Art 13 (6) of the Directive concerning the promotion of efficient bioheat and heat pumps fulfilled? (yes/no)	Yes

### 5.3 Literature

**Electricity Market Act**, (RT I 2003, 25, 153), enacted by the parliament of Estonia 11.02.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13279771>.

**District Heating Act**, (RT I 2003, 25, 154), enacted by the parliament of Estonia 11.02.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13203018>.

**Liquid Fuel Act**, (RT I 2003, 21, 127), enacted by the parliament of Estonia 29.01.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13251292>.

**Building Act**, (RT I 2002, 47, 297), enacted by the parliament of Estonia 15.05.2002, <https://www.riigiteataja.ee/ert/act.jsp?id=13277804>.

**Regulation of Minimum Requirements for Energy Efficiency**, (RT I 2007, 72, 445), enacted by the Government of Estonia 20.12.2007, <https://www.riigiteataja.ee/ert/act.jsp?id=13217396>.

**Terms of measure “Wider use of renewable energy sources in energy production”**, (RTL 2009, 31, 400), Regulation of Minister of Environment nr 14 24.03.2009, <https://www.riigiteataja.ee/ert/act.jsp?id=13218417>.

## 6 Issue 5 Information/awareness raising

### 6.1 Introduction

The information related to awareness raising support measures is clear and accessible. But there is lack of funding and support for awareness raising campaigns. The stakeholders organize the campaigns on their own.

In public conscious economical considerations dominate, so there is no demand for greener energy. Because of lack of information, people and investors are sceptical about bio fuels.

### 6.2 Description of barriers & solutions

#### 6.2.1 Detailed description of the Barriers and solutions

##### *Barrier 5.1 – Insufficient availability of information on support measures*

The information related to existing support measures for RES is clear, easily accessible, accurate and sufficient. Although, could be better concerning to small wind generators.

##### *Barrier 5.2 – Insufficient funding for campaigns/programs*

Stakeholders' opinion is that there is not enough funding for information and awareness raising campaigns and half of the stakeholders believe that the authorities do not use the money effectively.

##### *Barrier 5.3 – Insufficient campaign-/program-design*

The stakeholders have an opinion, that the information and awareness raising campaigns for RES technologies are not accurately planned, nor effective. Concerning to wind power, the stakeholders have dealt with the campaigns for their-self and have not met any state support. Because of missing awareness raising campaigns the public knowledge about RES technologies and the benefits of the technologies is low. There must be implemented a state support scheme for awareness raising.

##### *Barrier 5.4 – Other Barriers*

There is no demand for green energy (economical considerations dominate). The main public opinion expects from RES lower energy prices, less environmental impact and location “Not In My Back Yard”.

At moment neither the inhabitants nor the municipalities gain from green energy projects. Public awareness of local people could be influenced by involvement of municipalities and landowners economically (make them shareholders).

Bio fuels are new for Estonia, there is lack of information and therefore people and investors are sceptical about it. Vehicle manufacturers are cautious about bio fuels. Fuel sellers are sceptical about using bio fuels. Because of lack of solid understanding about bio fuels and use of them, there is need for more standards.

### 6.2.2 Best Practice Elements and Indicators

No.	Benchmark	Result
5.1	Is sufficient information on support measures available?	Yes

## 6.3 Literature

**Ernst&Young**, 2008, Legal and Tax regulations of bioenergy sector, Tallinn.

**Dobrin, M., Mitroi, L.**, 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.



## 7 Issue 6 Certification

### 7.1 Introduction

The Ministry of Economic Affairs and Communications is responsible for certification of RES technologies. The guidelines are made available for the stakeholders. The training on RES technologies is provided during the technical studies in universities and in institutions of professional higher education.

### 7.2 Description of barriers & solutions

#### 7.2.1 Detailed description of the Barriers and solutions

##### *Barrier 6.1 - Lack of a Certification body*

The Ministry of Economic Affairs and Communications is responsible for certification of RES technologies. There is no national certification body for RES technologies but recently established Energy Agency could play the role. There is no certification scheme.

##### *Barrier 6.2 - Lack of guidelines*

The guidelines are made available for planners, architects and others who are responsible for planning and design. No barrier detected.

##### *Barrier 6.3 - Lack of training*

There is no support for certification courses for planners, architects and other responsible parties. The training on RES technologies is provided during the technical studies in universities and in institutions of professional higher education.

#### 7.2.2 Best Practice Elements and Indicators

No.	Benchmark	Result
6.1	Are certification schemes or equivalent qualification schemes available for installers?	No
6.2	Is sufficient training on RES provided during the standard education curriculum of installers?	Yes

### 7.3 Literature

**Dobrin, M., Mitroi, L.,** 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.

## 8 Issue 7 Infrastructure Development

### 8.1 Introduction

The infrastructural standards pose a limit to development of the electrical grid infrastructure. The rules are clear, easily accessible, transparent and non-discriminatory, but there are issues, which need additional explanation and improvement of the legislation. The rules are respected, but the limited grid capacity might cause discrimination. TSOs and DSOs develop the transmission systems the way it is best for their own interest.

### 8.2 Description of barriers & solutions

#### 8.2.1 Detailed description of the Barriers and solutions

##### *Barrier 7.1 - Problems concerning connection to existing electricity networks*

All the stakeholders are on an opinion, that the infrastructural standards pose a limit to development of the electrical grid infrastructure. The limits are written in to the Grid Code. Only a transmission system operator believed, that no limits are posed by the standards.

The rules for electrical grid development are clear, easily accessible, transparent and non-discriminatory towards RES technologies for all the stakeholders, except one related to wind power. The transmission system operator had an opinion, that there are issues, which need additional explanation and improvement of the legislation.

The rules are respected, but the limited grid capacity might cause discrimination. For example, there are no compensating power plants for wind generators. As the power from wind is very unstable, the capacity for wind generators is quite limited at the moment. To use the whole potential of the wind, compensatory plants must be installed.

The coordination between the different subjects involved in the process of development of grid infrastructure is poor. There is potential for improvement.

The development of transmission systems is the obligation of TSOs and DSOs. Although, it is mentioned, that the decisions are rather made lead by their own interest.

*Barrier 7.2 - Problems concerning development of electricity network infrastructures according to a long-term strategy*

National Strategy “Sustainable Estonia 21” supports the increase of RES technologies in energy sector. The goal of “Biomass and bio-energy development plan for the years 2007-2013” is to create good environment for producing biomass and bio energy, to decrease the need for fossil fuels and to protect the natural environment against the negative effects.

The terms of new connections are approved by the transmission network operator and State institutions. The transmission network operators are not allowed to discriminate the market stakeholders. The rates of transmission enable to invest in network development. (Estonian electricity management development plan up to 2018).

No barriers detected.

*Barrier 7.3 - Problems concerning development of a Trans-European Electricity Network*

In the “Estonian electricity management development plan up to 2018” there are defined Estonian electrical network’s strengths:

- Good connection with Latvia, Russia and Finland;
- Good and well developing network;
- Good co-operation with Baltic States and Finland.

In case of accidental turn off of a power plant or transmission device Estonia has a contract with other States to increase their electricity production within 15 minutes (Estonian electricity management development plan up to 2018).

No barriers detected.

## 8.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
7.1		Presence of an efficient (in terms of capability of achieving its stated objectives) plan for the reinforcement of the interconnection capacity with neighbouring countries.	Yes
7.2		Presence of an efficient plan for the reinforcement of the connection capacity within the country.	There is a plan, but the efficiency is questionable according to the answers of the stakeholders.

### 8.3 Literature

**Ministry of Economic Affairs and Communications**, 2008, Estonian electricity management development plan up to 2018, Tallinn.

**Electricity Market Act**, (RT I 2003, 25, 153), enacted by the parliament of Estonia 11.02.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13279771>.

**National Strategy “Sustainable Estonia 21”**, (RT I 27.09.2005, 50, 396), enacted by the parliament of Estonia 14.09.2005, <https://www.riigiteataja.ee/ert/act.jsp?id=940717>.

**Biomass and bio-energy development plan for the years 2007-2013**, (RTL, 30.01.2007, 10, 164), enacted by the Government of Estonia 25.01.2007.



## 9 Issue 8 Power Grid Issues

### 9.1 Introduction

After receiving the installation permit the grid contract is signed, after what the electricity can be connected to the grid. Estonian Competition Authority is controlling the access to grid, reasons for access denial, rules for cost bearing and sharing of grid connection. Procedures for grid connection are regulated by Electricity Market Act, Grid Code and approved transmission operator's standard terms.

### 9.2 Description of barriers & solutions

#### 9.2.1 Detailed description of the Barriers and solutions

##### *Barrier 8.1 - Problems concerning grid connection*

After receiving the installation permit from the public authority the grid contract is signed. Electricity can be connected to the grid after signing the grid contract. Connection duration to the grid is not limited by the legislation. The duration depends on the grid contract and the installation permit.

For wider use of renewable energy sources in electric power production, the Estonian law on electricity market imposes the network operator to buy electricity, which is connected to the mains of particular operator and is produced from renewable energy source or instead the operator can choose to pay fixed premium to the producer for sold electricity.

No barrier detected.

##### *Barrier 8.2 - Problems concerning grid access*

Access and reasons for access denial are controlled by Estonian Competition Authority (recognized, independent authority). Although some of the stakeholders are not aware of it. There are accurate, transparent and non-discriminatory laws defining procedures for grid connection: Electricity Market Act, Grid Code and approved transmission operator's standard terms. The Estonian Competition Authority has approved the accurate, transparent and non-discriminatory rules for cost bearing and sharing of grid connection. The rules are respected. In case of violation the rules, a special procedure follows.

Electricity Market Act points out that the Grid Code envisages simplified connection procedure for energy producers who use renewable energy sources and whose capacity is under 15 kW.

No barrier detected.

#### *Barrier 8.3 (former barrier 9) - Problems concerning TSOs and DSOs*

There are no bigger problems concerning to TSOs and DSOs. It is mentioned that they develop the power grid rather according to their own interest.

#### *Barrier 8.4 – Other Barriers*

National Grid Code requires compensating capacities that result in increase of investment cost (wind generators). The connection conditions for the new CHP plants include compulsory investments to the additional equipment that are needed only in the case of system failure. The TSO has no obligation to compensate these investments to the investor. The investment will increase the cost of the energy from the particular CHP plant and by that decrease it's feasibility.

### 9.2.2 Best Practice Elements and Indicators

No.	Technology	Benchmark	Result
8.1		Are the rules on cost sharing and bearing of grid connection objective, transparent and non-discriminatory ?	Yes
8.2		Is the denial of grid connection by TSOs and DSOs a common problem, constituting an important barrier for RES development?	No
8.3		Number of months for getting grid connection (considering also approval of grid connection)	1-3
8.4		Estimated connection costs in Euros (in case producer pays)	10% of project costs

## 9.3 Literature

**Dobrin, M., Mitroi, L.**, 2009, Support\_ERS, WG3: Assessment of Administrative Structures and Procedures.

Electricity Market Act.

**Ministry of Economic Affairs and Communications**, 2008, Estonian electricity management development plan up to 2018, Tallinn.

**Electricity Market Act**, (RT I 2003, 25, 153), enacted by the parliament of Estonia 11.02.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13279771>.

**National Strategy “Sustainable Estonia 21”**, (RT I 27.09.2005, 50, 396), enacted by the parliament of Estonia 14.09.2005, <https://www.riigiteataja.ee/ert/act.jsp?id=940717>.

**Biomass and bio-energy development plan for the years 2007-2013**, (RTL, 30.01.2007, 10, 164), enacted by the Government of Estonia 25.01.2007.



## 10 Issue 9 Gas Network Issues

### 10.1 Introduction

There is lack of rules and legislation. TSOs and DSOs oppose biogas connection to the network because the biogas quality and pressure differ from the gas in the network. The rules for cost bearing and sharing of network connection for biogas are approved by the Estonian Competition Authority.

### 10.2 Description of barriers & solutions

#### 10.2.1 Detailed description of the Barriers and solutions

##### *Barrier 9.1 – No encouragement for upgrading*

Biogas can be directed into the gas network, when the gas meets the technical requirements of the network and the gas-operated appliance. At the same time the sold gas needs to meet the standard quality requirements for example standardized ingredients, pressure and caloric energy.

It is economically more efficient to produce electricity and heat from biogas. It is preferred to use the gas in local level. For example, when a company produces biogas as a by-product (from waste water sediments, landfill gas etc), the gas is rather used in the company's own energy and heat system.

##### *Barrier 9.2 – Lack of information*

There is lack of rules and legislation. The transmission operator has started to prepare the quality specification of the gas that is injected into the network.

##### *Barrier 9.3 – Authorisation procedures*

There are accurate, transparent and non-discriminatory rules for cost bearing and sharing of network connection for biogas. The rules are approved by the Estonian Competition Authority.

##### *Barrier 9.4 – Lack of incentives for infrastructure owners to open to biogas*

The market actors (TSOs and DSOs) oppose biogas connection to the network because the biogas quality and pressure differ from the gas in the network.

### 10.2.2 Best Practice Elements and Indicators

No.	Benchmark	Result
9.1	If green certificates and/or subsidies for biogas are in place, do they de facto make unattractive to feed green gas into the grid due to the high level of subsidy for biogas used for electricity generation?	No
9.2	Are the costs of grid connection for producers of gas from renewable energy sources objective, transparent and non-discriminatory?	Yes
9.3	Do transmission and distribution tariffs discriminate against gas from renewable energy sources?	No
9.4	Average time needed for grid connection approval (from application for grid connection to formal approval) in months (#).	3-4

# 11 Issue 10 District Heating

## 11.1 Introduction

There is lack of accurate rules for encouraging a share increase of RES technologies in district heating and lack of experience in cogeneration technologies.

## 11.2 Description of barriers & solutions

### 11.2.1 Detailed description of the Barriers and solutions

*Barrier 10.1 – Lack of positive conditions for the increase of the share of renewables in existing DHC systems*

There is lack of accurate rules for encouraging a share increase of RES technologies in district heating. The rules are rather generally written into the Energy Development Plan. Comparing to bio electricity, bio heat is less regulated and supported. There is lack of information and lack of experience in cogeneration technologies.

*Barrier 10.2 – Lack of positive conditions for the initiation and expansion of DH systems largely based on renewables*

The regulations and other steering activities (e.g. city planning) are sufficient to effectively encourage the initiation and expansion of district heating systems based on RES technologies. There are historical reasons for wide spread of RES technologies in DH systems. As after the collapse of Soviet Union, the prices of heavy fuel oil went up and it was too expensive to produce heat. So a lot of boiler plants in Estonia renovated in the way that they started to use peat, sawdust, chopped timber and other renewables.

*Barrier 10.3 – Other Barriers*

The share of RES technologies is not transparent to customers.

### 11.2.2 Best Practice Elements and Indicators

No.	Benchmark	Result
10.1	Are there policies to promote the increase of the RES share in existing DH networks? (yes/no)	No
10.2	Are there policies to promote the initiation / expansion of DH networks? (yes/no)	Yes
10.3	Percentage present renewable share (see ECOHEATTOOL) (2005 data)	24,4
10.4	Percentage CHP share (idem) (2005 data)	10

### 11.3 Literature and Sources

**Ernst&Young**, 2008, Legal and Tax regulations of bioenergy sector, Tallinn.

**District Heating Act**, (RT I 2003, 25, 154), enacted by the parliament of Estonia  
11.02.2003, <https://www.riigiteataja.ee/ert/act.jsp?id=13203018>