Cooperation under the RES Directive

Case study: Statistical Transfer between Estonia and Luxembourg

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Task 4 report

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Executive Summary

This case study analyses the possible cooperation between Estonia as host country and Luxembourg as off-taking country in the framework of the RES Cooperation Mechanisms laid down in Directive 2009/28/EC. Both countries expressed their interest to cooperate through Statistical Transfer.

Estonia is expected to have a surplus of renewable energy up to 2020 as the share of RES reached 25.9% in 2011 (above the EU-target of 25% in 2020). Estonia would like to sell the expected excess RES amount to cover cost of the related RES production and to reduce the burden on electricity consumers in Estonia.

Currently, Estonia has made a draft legislation that sketches the concept for Statistical Transfers. The main motivation is to have the legal basis in place today, in order to enable actual negotiations with other Member States.

For **Luxembourg** it will be difficult to meet its national RES target (11% in 2020) using domestic resources only. A balanced approach between domestic deployment and exploitation of lower-cost options in other countries might lead to meeting 2 to 3 %-points of the target (about 19% of the total RES target amount in 2020) through Cooperation Mechanisms (estimate from NREAP).

Both Luxembourg and Estonia have a slight preference for Statistical Transfers over other Cooperation Mechanisms. Statistical Transfer has some perceived advantages over other schemes:

(1) Statistical Transfer is in principle technology neutral,

(2) The implementation is seen as easiest and administrative costs are lowest

(3) Statistical Transfer is easiest from the perspective of state aid regulations (as basically no changes occur in the existing support schemes for RES in both countries).

(4) Statistical Transfer is useful in the short-term up to 2020. Due to lack of 2030 targets, Luxembourg has focused on Statistical Transfer.

Luxembourg prefers a multiannual contract to meet interim targets until 2020 and the binding 2020 target.

Both Member States (MS) have a clear preference for a **bilateral contract with binding sales** (and ex-ante fixed minimum volumes) as this is suitable in case of predictable surplus and ensures a predictable revenue stream for the selling Member State. For the buying Member state it gives a higher planning certainty. In addition, both MS favour a flexible call option for additional volumes. These volumes would only be transferred if suitable for both MS.

Of the costs and benefits identified, the following ones have been selected as the most important ones when setting a price for transfer:

(1) Support costs for RES in Estonia vs. support costs for RES in Luxembourg

(2) Increased grid-related costs in Estonia vs. decreased support costs for RES in Luxembourg

Ad 1: With certainty, support costs for RES in Estonia are lower than in Luxembourg (as this was the main motive for Luxembourg to consider Statistical Transfer).

Ad 2: The grid-related costs are not known, but since they already occurred without the Statistical Transfer, one could justify to neglect them. At this moment it is difficult to say whether the increase in RES capacity in Estonia has led to additional grid-related costs and how to take these costs into account when calculating a transfer price.

Price corridor

The price corridor for the Statistical Transfer is determined by both countries:

- The **floor of the price corridor** is determined by Estonia as the selling party. There are two perspectives on the potential floor price: On the one hand, one can look at the support level in Estonia. Estonia has a uniform 5.37 €ct/kWh premium for new RES electricity installations. This means that the preferred selling price for Estonia will most likely not be below this price, at least not for the transfer of new RES generation. On the other hand, Estonia already achieved a RES surplus with its current support scheme. As the support costs for this surplus have already been paid (independently of any Statistical Transfer), Estonia might be willing to accept a lower price than the original support cost, thus recovering at least part of that cost. For existing RES capacity, there would therefore be no fixed floor price. The minimum price would rather depend on the lowest price Estonia is willing to accept.
- The **cap of the price corridor** is determined by Luxembourg as the buying party. Most likely, the price cap will be defined by the alternative cost of domestic RES deployment (opportunity cost). Then, Statistical Transfer is a complementary alternative to own domestic RES deployment. In reality also the price for Statistical Transfers offered by other MS will play a role (i.e. is the Statistical Transfer market a sellers' or a buyers' market), but this aspect is neglected for the case study.

An alternative price corridor could be based on the RES heat price and Estonia claims to have installed a large number of district heating systems based on biomass. Especially heat-only systems provide cheaper RES energy. The so-called levelised cost of biomass heat supply is between 1 to 2 €ct/kWh. So in case the heat production by biomass would be taken as benchmark for statistical transfers, the floor of the price corridor could be around 1 to 2 €ct/kWh.

Potential obstacles

One important obstacle could be the **public acceptance** of the Statistical Transfer (in general and/or in comparison to other Cooperation Mechanisms), both in Luxembourg and in Estonia. Therefore the benefits of cooperation need to be clearly communicated. Part of the barrier in Estonia is that RES stakeholders see no advantage of Statistical Transfers for the RES sector unless it would lead to lifting the present cap on RES support.

Estonia mentioned the lacking progress in implementing domestic legislation allowing for the government to participate in Cooperation Mechanisms as a **legal barrier.**

Another barrier is the **first mover risk** – i.e. engaging in Cooperation Mechanisms without building on the experience and best practices of other countries that have done so previously (e.g. without first projects that could be used as price setting). An additional problem relates to the very wide price range of Statistical Transfers, which makes the final price very uncertain. In Joint Projects there are more technology and project specific data that narrow down the price corridor.

Practical arrangements

Luxembourg pays a certain amount of money to Estonia in return for the renewable energy credits. No country information is provided in respect to the question whether any country intends to open seems to intend opening up its national support scheme. Therefore, for the time being no changes to the national renewable energy legislation seem required.

In Estonia, the costs for financing renewable energy support (feed-in premiums) are passed on to consumers. The government could pay the yearly income from the Statistical Transfer to the transmission system operator, which is in charge of administering the surcharge and paying out the support –and thus would pass on a lesser surcharge to the consumer. Since the Estonian support scheme is notified as state aid, this would cause no state aid problem.

Luxembourg would have to adapt its legislation to generate the necessary financing for Statistical Transfer (i.e. it would include an extra charge on energy consumers in the renewable energy law to generate funds for statistical imports).

If successful, Statistical Transfer could incentivise additional RES deployment in Estonia. If Estonia's government can show that it can successfully recover the costs of RES support through Statistical Transfer, it might have an argument to deploy additional RES.

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1 Introduction

The European Directive 2009/28/EC establishes national renewable energy targets for the European Member States. Moreover, it introduces the possibility for Member States to cooperate in order to jointly achieve their national renewable targets. The types of cooperation available to the Member States include Statistical Transfer (Art. 6), Joint Projects (Art. 7), and Joint Support Schemes (Art. 11); they imply that two or more Member States combine (part of) their renewable target to achieve this target more efficiently.

Statistical Transfer implies the transfer of a specified amount of energy from renewable sources from one Member State to another Member State. The transferred quantity shall be deducted from the amount of energy from RES that is taken into account in measuring compliance by the Member State making the transfer and added to the amount of energy from RES that is taken into account in measuring compliance by the Member State accepting the transfer.

This case study report analyses the possible cooperation between Estonia as host country and Luxembourg as off-taking country in the framework of the RES Cooperation Mechanisms. Both countries expressed their interest to cooperate through Statistical Transfer. This report might serve as a good practise example for countries that are considering Statistical Transfer, but have not yet defined how to proceed. It report describes a number of issues, such as the possible design characteristics that are included in section 1.2 followed by the costs and benefits of cooperation, included in chapter 2. Then the potential barriers to cooperation and the ways to solve them are described in chapter 3. The report also addresses administrative and contractual arrangements of cooperation, covered in chapter 4.

Within this case study, only bilateral cooperation between two countries is considered, i.e. a bilateral contract between two countries (Luxembourg as off-taking country and Estonia as host country).

1.1 Description of the case

Estonia is expected to have a surplus of renewable energy up to 2020. In 2011, the share of RES in final energy consumption reached 25.9%, which is already above the EU-target of 25% in 2020. Both the electricity and the heating and cooling sector contributed to this target significantly. The share of RES in transport was relatively small. In 2011, 12.3% of the electricity was produced from RES. The RES electricity share is expected to increase to 17.6% in 2020. The RES heating and cooling sector already reached its 2020 target in 2011. In 2009, RES H&C reached 41.8% (2020 target was set at 38.3%). The significant growth in this sector is explained by the combination of low fuel prices and targeted support measures (Tammist, 2013).

There is still a large renewable energy potential in Estonia that is currently untapped (e.g. onshore wind). Estonia already expressed interest in exporting its surplus of renewable energy via the

mechanism of Statistical Transfers. It sees Statistical Transfers as a useful option to promote renewable energy investments in the country, specifically in the electricity market (CA RES, 2013). Estonia would like to sell the excess RES amount to recover (part of) the cost of the developed excess RES production that electricity consumers in Estonia have to pay. This would be both for the trajectory up to 2020 and for the year 2020 itself.

The Ministry of Economics has initiated the process to put in place the legal basis for Statistical Transfers with other Member States. Currently, Estonia has made a draft legislation that sketches the concept for Statistical Transfers. The motivation of this approach, which emerged from talks with other MS on potential Statistical Transfer, is to have the legal basis in place at the moment that actual negotiations with other Member States are started. At the core of the legal debate has been the question whether statistical transfers are an asset of the state or an asset of the people, that is, where the income should be distributed to. The draft indicates that Statistical Transfers will benefit the consumers, that is to say, the income shall be transferred back into the support scheme (and decrease the payment obligations for electricity customers).

The main points of interest for Estonia are seemingly the questions of the adequate allocation mechanism for fair distribution of cost and benefits and, related to this, a concrete pricing mechanism. The country is currently actively seeking cooperation with other MS through Statistical Transfer. Luxembourg is one of these countries. Estonia sees clear economic benefits from cooperation as selling surplus brings an additional revenue stream that could be used to decrease the levy charged to consumers to cover the costs of RES support.

For **Luxembourg** it will be difficult to meet its national RES target (11% in 2020) using domestic resources only. Luxembourg has expressed interest in participating in a case study on Statistical Transfer, also with Estonia. Its main interest in participating in one of the Cooperation Mechanisms is its target achievement. For Luxembourg, domestic target achievement is important, but also cost-effectiveness is relevant. Given its limited RES resources, it aims for a reasonable mix between domestic and foreign deployment.

A balanced approach between domestic deployment and exploitation of lower cost options in other countries might lead to meeting at least 2%-points of the target through Cooperation Mechanisms (estimate from the NREAP). The amount of credits and/or volume to be transferred is not known yet. This is due to the uncertainties related to the RES-projections. Moreover, as both countries might potentially have actual negotiations on this cooperation, electricity volumes are part of the negotiation process.

1.2 Design characteristics

Both Luxembourg and Estonia have a slight preference for Statistical Transfer over other mechanisms such as joint support schemes or joint projects. Statistical Transfer has some advantages over other schemes:

1) It is technology neutral (in principle),
2) It is assumed that the implementation is easiest and administrative costs are lowest and
3) It is the easiest from the perspective of state aid regulations (as basically no changes occur in the existing support schemes for RES in both countries).

Other design characteristics of this cooperation case study are related to the number of contracting parties, a multiannual contract versus an annual contract and the volume to trade.

Both countries have expresses their interest in a bilateral contract. As there is no experience with Statistical Transfer yet, the set-up of a bilateral contract is much easier than with a multilateral contract. Moreover, Luxembourg prefers a multiannual contract to meet interim targets and the 2020 target. Estonia has expressed its agreement with this. The reason for having a multiannual contract is that Luxembourg is not only interested in meeting the 2020 target (and thus simply avoiding potential costs for non-fulfilment), but that it has a clear preference for also meeting its interim targets. A multi-annual contract also provides more certainty for both parties. For the host country there will be a stable revenue stream and for the off-taking country a stable contribution to target achievement.

At the same time, there is a clear preference of Estonia for trading a minimum fixed volume, combined with the option to increase this amount later on ("call option"). Estonia proposes to trade a certain minimum amount as prove of actual political will. In addition it suggests a potential review of the volume in the future, giving the possibility to increase the volume to be traded, if feasible.

Luxembourg agrees with this approach, as it has a clear preference for a minimum fixed amount too. However, it also seeks to provide a quantifiable cost level. Such a transaction, in which the maximum cost levels are defined, would be easier to pass through the legal procedure..

Both Member States still have to define and negotiate all preferences with regards to the design options. However, several general preferences seem to exist.

1.2.1 Scope of the cooperation

Contractual arrangement

In the field of Statistical Transfer, there are a number of contractual arrangements possible. These are framework contracts versus ad-hoc contracts or multilateral versus bilateral contracts. In this case, there is a clear preference for a bilateral, binding sales contract (and a minimum trade volume). This binding sales contract may include a later review of the volumes that would enable an

increase of the traded amount (but not a decrease). Details of the Statistical Transfer will be included in the bilateral agreement of both countries.

A bilateral contract has a number of advantages, which might be important at this early implementation stage (when there is no or little experience). First, there are lower transaction costs involved in the set-up of the cooperation compared to cases with multilateral contracts. In multilateral contracts, there are more countries involved as contractual parties, which requires more efforts for negotiation. In addition, it requires more efforts in streamlining the Statistical Transfer of energy between the contractual parties. Second, less prior experience is necessary with bilateral contracts, as no other countries have started with Statistical Transfer from which countries may learn. And third, the political feasibility to establish cooperation is potentially better. A bilateral contract with one selling and one buying party is easier to explain as the benefits for cooperation are clear from the beginning. One country sells the agreed amount of energy to the other country and there is no need to split the sale between two or more off-taking or host countries.

Volumes

The total traded volume involved in the project will still have to be decided. However, Estonia has assessed the quantities that would be available for selling through Statistical Transfers. Luxembourg estimates that 2 to 3%-points of the RES target of 11% needs to be bought from other countries.

Regarding the amounts to be traded, there is a slight preference for fixed minimum volumes defined ex-ante, combined with the option to increase this amount later on. A minimum volume is suitable in case of predictable surplus, it ensures a revenue stream for the selling Member State and gives higher planning certainty for the buying Member State.

Fixed volumes present, however, two important risks. First, the selling Member State assumes a risk of target under-fulfilment and, second, the buying Member State assumes risk of target over-fulfilment (thus of additional costs).

However, Estonia is very certain of having a RES surplus and Luxembourg is very certain of not fulfilling its target with national RES capacity only. Both mentioned risks are therefore relatively minor. Moreover, Luxembourg has expressed a preference for a fixed minimum volume, as it gives a certain security to reach the target and makes the target achievement costs more predictable.

Technology specification

In general, a Statistical Transfer is technology neutral. However, under certain circumstances, relating the Statistical Transfer to a specific technology might be useful with regards to political acceptance of the cooperation. This might be the case, for instance, if the price of the transfer is perceived to be high from the buyer's perspective (in this case Luxembourg).

In general, linking Statistical Transfer to a technology might be useful, especially for countries negotiating a Joint Project in parallel. If such a joint project does not work out, it is always possible to

fall back on Statistical Transfer as a back-up option. This Statistical Transfer could then be linked to a certain technology.

It is important to bear in mind that the Statistical Transfer does not have to be limited to RES electricity: part of the additional RES capacity to fulfil the target in Estonia was realised through (district) heating plants.

Timeframe

Given the early stage of negotiations, the only thing that can be said with some certainty is that both countries expressed a clear preference for a multi-annual contract. The main reason is that such a contract would enable the off-taking country Luxembourg to meet its interim targets as well. A multi-annual framework also reduces uncertainty for both parties (agreed/stable revenue stream and agreed/stable contribution to target achievement).

This cooperation is seen by both MS as the basis for bilateral cooperation beyond renewable energy issues, an issue that was highlighted by Luxembourg.

Price determination

At this early stage of negotiation, there is not much information available from the countries on the price determination. From the information available we can conclude, however, that both countries have shown a preference for fixed prices, as this approach reduces the complexity of the scheme. Moreover, it provides certainty on revenues and costs.

Rules against non-compliance

The issue of rules against non-compliance was not yet mentioned. But seemingly, Estonia is certain to fulfil its target and therefore to be able to offer RES energy already in this early stage. Stating a fixed minimum volume in the bilateral contract and combining it with a flexible call option will limit the risk of non-compliance with the bilateral contract to a minimum.

2 Costs and benefits

2.1 Identifying the different cost and benefit elements

Within the project (Task 1 report), a number of possible costs and benefits of Cooperation Mechanisms have been discussed. This chapter analyses the relevance of different cost elements for the Statistical Transfer between Estonia and Luxembourg.

2.1.1 Direct costs/benefits

Direct effects (costs) of Cooperation Mechanisms mainly comprise RES support costs and transaction costs.

RES support costs

RES support costs relate to the increase or decrease of support costs in the host country and/or off-taking country. The host country supports more RES than is strictly necessary for meeting its target, so initially it spends more. The off-taking country would normally spend a relatively high amount to meet its target and is looking for ways to reduce the costs. Within the Cooperation Mechanism, the host country tries to sell part of its RES production statistically to cover the costs it has made nationally and the off-taking country will see its costs reduced for meeting its target.

In general, the level of support cost applicable for the statistical transfer will depend on the approach underlying the transfer agreement, including if average or marginal costs shall be applied (see the discussion in the Task 1 report of this project), if the reference technologies are based on electricity or heat production, if existing RES production can be used (at current support levels) or additional RES capacity needs to be installed (which might require higher incentives). In the following, we assume a marginal pricing approach based on electricity technologies for existing RES production (as suggested in the Task 1 report). As an alternative, we also show estimations for RES heat.

Transaction costs

These costs are related to concluding the contractual arrangements and any other costs related to the cooperation later on (e.g. such as monitoring). These costs may be relatively minor, but are present in all contractual arrangements.

2.1.2 Indirect effects

Apart from these direct costs (effects), there are a number of indirect side effects of Cooperation Mechanisms.

System integration costs

The system integration costs for RES occur in the host country and are divided into three categories:

- Grid related costs – related to connection of additional RES capacity
- Ancillary services costs – related to balancing of the network as result of additional RES capacity.
- Infrastructure and production costs of the conventional capacity (e.g. back-up capacity for additional RES capacity and possible extension of the electricity network).

Since this is a purely Statistical Transfer, no system integration costs occur in the off-taking country for the off-taken volumes. Hence, the total costs of system integration in the off-taking country will be lower than they would be in the case that all RES for meeting the target would be installed nationally.
In the host country, system integration costs are higher than the reference case, in which the RES target would be precisely met without a surplus. However, since Estonia already has reached a surplus production of RES in relation to the target, the system integration costs of 'existing RES production' are sunk and thus less relevant for the price setting of Statistical Transfers in this case study.

Reduction of local air pollution

There will be a reduction of local air pollution in the host country (reduction of fossil fuel based electricity and heat production as a result of increased RES capacity).

Greenhouse gas emission savings

There will be additional GHG savings through the increased RES production in the host country (by exceeding the national RES target), which might be counterbalanced by increased carbon-intensity of other production though, and less GHG savings in the off-taking country (due to lower RES capacity installed nationally).

Security of supply increase

The security of supply might increase for the host country as a result of increased RES capacity as in comparison to a situation in which the national RES targets are exactly met.

In general, Estonia's dependency on energy imports is rather low (<20% of all energy consumed in the country is imported). Nonetheless, security of supply will increase especially with an increased share of RES in heating, through a reduction in the dependence on imports of natural gas, which is in particular used in the heating sector. *Impact on biodiversity and landscape*

There might be an impact on biodiversity and landscape in the host country, which could be seen as a cost for the host country as a result of increased capacity installed, e.g. when a large PV park is constructed on arable land that would have revenues for crop production, or a potential decrease in tourism in some locations due to the construction of wind power plants. Again, these effects are hardly relevant for the case study, as the surplus RES capacity has already been installed.

Employment effects

This usually means an increase of employment in the host country and less employment in the off-taking country than would have been the case when the off-taking country would have installed all RES capacity domestically.

Costs for consumers

This means lower RES charges for consumers in the off-taking country compared to the situation that all RES capacity would have been installed domestically, as the RES generation costs in the off-taking country are higher than in the host country. Therefore the Cooperation Mechanisms potentially decrease the costs for consumers.

In the host country, the burden on consumers to finance RES support will be lowered. We assume that the Statistical Transfers will cover existing (or anyway developed) RES production in Estonia. Without the Statistical Transfer, the PSO[1] fee for consumers would have increased. The income from the Statistical Transfers will be used to decrease the PSO level and thus help to reduce the burden on consumers from RES development. Additionally, the consumers in Estonia will potentially benefit from (slightly) lower wholesale prices, which are often experienced in markets with high shares of RES because of the so-called merit order effect.

Innovation effects

Innovation effects are mainly expected in the host country, benefitting from new technology to be installed.

Increased RES deployment as a result of Statistical Transfer

Estonia has currently a cap on RES support payable to electricity generated from wind to limit the costs which consumers have to pay through a levy. If Estonia can successfully recover the costs for RES support through Statistical Transfer, the government may have an argument to deploy additional RES (recovering additional future costs through further Cooperation Mechanisms).

[1] Public Service Obligation, an add-on to consumer bills from which the support payments to RES are financed.

2.1.3 Costs of non-compliance

A separate category of costs are the costs of non-compliance. These costs refer to, first, costs for non-compliance with the RES target (through related sanctions). Especially for the off-taking country it would be important to know what the potential costs of non-compliance are in comparison with the cost of buying RES energy abroad. Second, costs of non-compliance refers to costs (sanctions) for non-compliance with the cooperation agreement.

The direct and indirect costs and benefits focused on the Statistical Transfer between Estonia and Luxembourg are shown in table 1 below.

Table 1 – Costs and benefits of Statistical Transfer for Luxembourg and Estonia

	Off-taking Country Luxembourg	Host Country Estonia
Direct costs - Support costs - Transaction costs	Additional support costs for RES in Estonia Transaction costs for closing bilateral agreement	Increased grid related costs* (and costs for ancillary services and grid infrastructure) Transaction costs for closing bilateral agreement
Indirect costs	Less additional employment in RES sector than in case of meeting RES targets nationally	Impact on biodiversity and landscape due to more RES installed (e.g. more wind turbines)*
Direct benefits	Avoided costs of non-compliance with the binding national RES targets Reduced support costs for deploying new RES nationally Reduced grid related costs for connecting new RES nationally (and costs for ancillary services and grid infrastructure)	Costs for RES capacity are partly covered by Luxembourg This means reduced levy for domestic consumers, meaning reduced energy costs for consumers
Indirect benefits	Less RES capacity nationally means less impact on the landscape	Reduced air pollution due to switch to biomass Additional GHG savings Additional reduction of import dependency

	Off-taking Country Luxembourg	Host Country Estonia
		Employment effects in sector of biomass energy (probably also wind power sector) Additional resources may become available for additional RES installations
NET BENEFITS	Cheaper achievement of the national target → support costs in Estonia lower than what they would have been in Luxembourg when achieving the same amount of RES capacity	Surplus in RES sold to Luxembourg. This reduces the costs for consumers in Estonia for support of RES

Comments:

- * More RES electricity implies increase of grid related costs in the host country. But in the case of Estonia it cannot be said that the country invested more in RES electricity due to the existence of Cooperation Mechanisms, as the RES surplus has already been achieved beforehand.
- A similar remark can be made regarding the additional RES costs for Estonia. As Estonia will have a RES capacity larger than the national target, strictly speaking, they could have decided to stop supporting RES when the national target was reached. The additional costs of the surplus are not a result of the cooperation between Estonia and Luxembourg

To summarise, the RES support costs and grid related costs in Estonia did not directly occur because of the planned Statistical Transfer, but can be reduced because of Statistical Transfer taking place.

In order to reduce the issue of costs and benefits to a feasible level of complexity we suggest to leave out most of the possible cost and benefit elements because they are probably insignificant (transaction costs) or are very difficult to quantify (employment effects, air pollution, landscape/biodiversity costs).

Of the abovementioned costs and benefits, the following ones should be taken into account when setting a price for transfer:

1) Support costs for RES in Estonia vs. support costs for RES in Luxembourg
2) Possibly increased grid related costs in Estonia vs. decreased support costs for RES in Luxembourg

Under 1, it is certain that support costs for RES in Estonia are lower than support costs for RES in Luxembourg as this was the main motive for Luxembourg to consider Statistical Transfer.

Under 2, the grid related costs are uncertain yet. At this moment it is difficult to say whether the increase in RES capacity in Estonia have led to additional grid related costs and whether these costs are higher than would have been in Luxembourg. But as this cost item was not mentioned by Estonia and these costs are not a direct result of the cooperation with Luxembourg, they can be neglected.

The price range of the transfer will depend on several factors. These are discussed in some detail below. Concretely, the Statistical Transfer will consist of a volume and a price, which are interdependent. We start by discussing the volume, and then move on to a potential price corridor.

It is crucial to mention that the following sections neither reflect the position of Estonia nor of Luxembourg. The following analysis serves as a hypothetical approach to setting a price for Statistical Transfer.

2.2 Prices and volumes in the Statistical Transfer

We derive the likely volume of the Statistical Transfer from the national binding targets and their interpretation as in the national renewable action plans (NREAPs).

In Estonia, the national target for RES is 25% in 2020 (share of energy from renewable sources in gross final consumption of energy), an increase from 18% in 2005. In the NREAP, the expected total adjusted energy consumption in 2020 amounts to 3,451 ktoe. This translates into a RES target of 863 ktoe. In the NREAP, Estonia (2011) already declared that it could meet its target and sell some surplus amount abroad. According to the NREAP, this can be up to 100 ktoe annually. E.g. for the years 2013 and 2014 this amount was estimated at 105 ktoe and 109 ktoe respectively. However, for the following years, this amount decreased to become zero in 2020. This seems to be related to the relative uncertainty about target achievement in the future. For this case study, we assume that a surplus of ca. 100 ktoe RES in Estonia in 2020 is realistic.

In Luxembourg, the national target for RES is 11% in 2020 (share of energy from renewable sources in gross final consumption of energy), an increase from 0.9% in 2005. In the NREAP (2011), the expected total adjusted energy consumption in 2020 amounts to 4,396 ktoe. This translates into a RES target of 483.5 ktoe. Luxembourg announced in its NREAP that it will need to purchase up to 93 ktoe (to meet the 2020 target).

When comparing the requirements from Luxembourg to the surplus of Estonia (around 100 ktoe), we conclude that Estonia could theoretically cover the demand of Luxembourg. This would, however, mean that Estonia must sell its entire surplus to Luxembourg.

In the following, we hypothetically assume that the Statistical Transfer agreement will be based on a fixed amount of max. 100 ktoe RES for transfer in 2020. We are assuming for simplicity in this situation that Luxembourg will cover their entire need with one trading partner (in this case Estonia).

Luxembourg will on the one hand fix a maximum payment to be made (for legislative reasons) – however, it does not seem realistic that they will cover their entire need with one trading partner. Nonetheless, we can assume this hypothetically for now.

The price level can theoretically be based on several different approaches, as discussed in Task 1 of this project. We will here discuss a possible price corridor, which could serve as basis or starting point of negotiation. The price corridor can be based on 1) the price of RES electricity or 2) the price of RES heat.

2.2.1 Price in the Statistical Transfer: Costs of supporting electricity

It has to be noted that the majority of RES production in Estonia is to be delivered not by electricity production, but by the heating sector. Here, the support schemes in place are very specific and mostly based on investment grants. This makes an objective price determination very difficult. We expect, though, that all measures in the heat sector are less expensive than in the electricity sector. The electricity sector will thus present the marginal technologies that are relevant for the Statistical Transfer. This is, because Estonia will always use the least expensive options first to fulfil their own target. Surplus is for a starting point always to be valued from the marginal (i.e. the most expensive) technologies required.

We thus begin defining the price corridor with a short investigation of the support cost for a unit of RES electricity in the two countries: In Estonia, RES-E receives a feed-in premium. The bonus currently amounts to 5.37 €ct per kilowatt hour and does not differ for the individual technologies. We assume (for simplicity reasons) that this level will not change until 2020. In Luxembourg, RES-E benefits from a feed-in tariff, which is technology-specific.

- Wind energy - €ct 8.27 per kWh
- Hydro-power – From €ct 8.5 to 10.5 per kWh (based on installed capacity)
- Biomass – From €ct 11 to 14.5 per kWh (based on installed capacity
- Biogas plants – From €ct 12 to 15 per kWh (based on installed capacity)
- Solar energy (PV) - €ct 26.40 per kWh for PV installations ≤ 30 kW

In order to make the feed-in tariffs comparable to the feed-in premiums, we have to calculate an expected equivalent support level. When assuming that the electricity generated under the feed-in tariff in Luxembourg will be sold into the market by an eligible entity at market prices and that the revenues from these sales are completely used to offset the cost of the support scheme, than the equivalent support level can be calculated as the difference between the guaranteed price under the feed-in tariff and the market price. When assuming that the wholesale price lies at approx. 4 €ct per kilowatt hour in 2020, we arrive at equivalent support levels of 4.3 €ct/kWh (wind) to 22.4 €ct/kWh (solar PV).

For solar PV, a 9% price decrease was announced for 2014, so that the tariff would reduce from 26.4 €ct per kWh to only 24 €ct per kWh (this support level is still quite high in international comparison). When deducting the wholesale price, the equivalent support level amounts to approx. 20 €ct/kWh,

which could be taken as basis for the year 2020. However, PV support levels are currently highly dynamic and levels could be further reduced significantly until 2020 given technology cost developments. Therefore, using the current support levels for biomass as starting point for a price corridor in 2020 seems more realistic.

2.2.2 Price corridor

For the price corridor, we derive a cap and a floor, based on the information from above.

The floor of the price corridor is determined by Estonia as the selling party. There are three perspectives on the potential floor price:

(1) On the one hand, one can look at the support level in Estonia. Estonia has a uniform 5.37 €ct/kWh premium for new RES electricity installations. This means that the preferred selling price for Estonia will most likely not be below this price, at least not for the transfer of new RES generation, and therefore the floor price can be set at 5.37 €ct/kWh.
(2) On the other hand, Estonia already achieved a RES surplus with its current support scheme. As the support costs for this surplus have already been paid (independently of any Statistical Transfer), Estonia might be willing to accept a lower price than the original support cost, thus recovering at least part of that cost. For existing RES capacity, there would therefore be no fixed floor price. The minimum price would rather depend on the lowest price Estonia is willing to accept.
(3) An alternative floor price could be based on the RES heat price in Estonia. Estonia claims to have installed a large number of district heating systems based on biomass. Especially heat-only systems provide cheap RES energy. The so-called levelised cost of biomass heat supply is between 1 to 2 €ct/kWh. So in case the heat production by biomass would be taken as benchmark for Statistical Transfer, the floor of the price corridor could be around 1 to 2 €ct/kWh. This will be explained below.

Costs of supporting RES heat

In the previous example we assumed that the marginal costs for meeting the RES target was based on RES electricity, meaning that the price corridor would probably be based on the differences in the feed-in premium of both countries. A large part of the RES target in Estonia is however based on RES heat, which has a far lower production costs than electricity per kWh. Estonia also mentions in its NREAP that they expect to cover up to 70% of the target with RES heat.

Part of this heat will be produced in CHP plants with high-efficiency cogeneration. Here the feed-in premium is applied if electricity and heat is produced in an efficient cogeneration regime.

When looking at the generation costs for electricity from biomass CHP based on LCOE (Levelised costs of electricity), international research shows that these costs do not differ that much from electricity only systems. Averages for LCOE for electricity are around 10 – 15 €ct/kWh[2] which is comparable to the biomass feed-in price already paid in Luxembourg.

When talking about heat only boilers, then there is a different story. Here the levelised costs for heat supply (LCOH) expressed in €ct/kWh are significantly lower, averaging to around 1 – 2 €ct/kWh[3].

So, in the hypothetical case that the marginal RES costs would be based on RES heat, the price floor of the transfer could be as low as 1 – 2 €ct/kWh.

The cap of the price corridor is determined by Luxembourg as the buying party. Two options are thinkable:

(1) Luxembourg's price cap is defined by potential payments for domestic RES-E deployment, it sees the Statistical Transfer as complementary to domestic RES deployment, e.g. if not enough projects are available domestically;
(2) Luxembourg defines the price cap by referring to potential penalties from infringement payments, if the target is not fully met domestically.

[2] LCOE and LCOH data have been derived from the following sources: Bruckner, T., H. Chum, A. Jäger-Waldau, Å. Killingtveit, L. Gutiérrez-Negrín, J. Nyboer, W. Musial, A. Verbruggen, R. Wiser, 2011: Annex III: Cost Table. In *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation* [O. Edenhofer, R. Pichs-Madruga, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, P. Eickemeier, G. Hansen, S. Schlömer, C. von Stechow (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. International Renewable Energy Agency (2012), RENEWABLE ENERGY TECHNOLOGIES: COST ANALYSIS SERIES – Volume I – Power Sector – Issue 1/5 – Biomass for Power Generation - http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-BIOMASS.pdf

In the first option, we assume that Luxembourg tries to develop as much RES domestically as possible and reverts to Statistical Transfer as sort of last resort. In this (extreme) case, when all domestic options are exploited, the absolute maximum that Luxembourg would accept to pay would be the support cost that they would have for solar PV, i.e. approx. 20 €ct/kWh. Given the expected decreases in PV support until 2020, we estimate that a maximum of the price corridor corresponding to the current support levels for biomass of 7- 11 €ct/kWh is more realistic.

Also the expected penalties from an infringement process could in theory set a price cap. Assuming maximum payments in the first option, then the whole Statistical Transfer could potential arrive a maximum volume of approximately 200 m EUR (20 €ct/kWh x 100 ktoe / 11.6 kWh/ktoe x 10^-6). If Luxembourg expects that penalty payments are lower than that, the second option potentially could also set the price cap. However, from a preliminary legal analysis, we do not expect that the penalty payments will be that straightforward in the sense of either meeting the target or paying a penalty. When not meeting the target, Member States might just as well be obliged to pay a daily penalty *until* the target accomplishment is achieved (e.g. through ex-post Statistical Transfers). We therefore continue to only operate with the first option.

The theoretical price corridor is therefore: 5.37 €ct/kWh - 11 €ct/kWh, in case the basis is agreed on for RES electricity, and 1 €ct/kWh - 11 €ct/kWh , in case the basis is agreed on for RES heat.

The following factors justify the narrowing of the price corridor:

- Determination of the marginal costs of the RES technology that will cover the target. E.g. this may not be wind energy or hydro-power (having the lowest FIT) but e.g. biomass. It is not likely that the marginal costs will be based on the most expensive option (as declared by the Luxembourg representative),
- More clarity about the price of the penalty in case of non-compliance with the 2020 target. But as said before, a straightforward comparison of RES price per kWh and penalty per kWh will probably not be possible.

Figure 1 – Price corridor for transfer price between Estonia and Luxembourg based on RES-E production

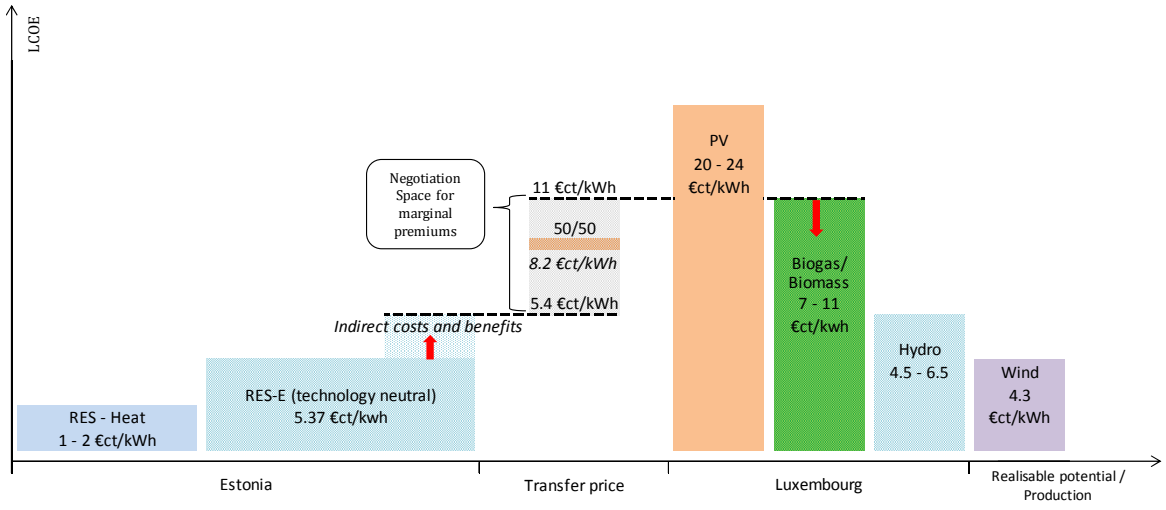
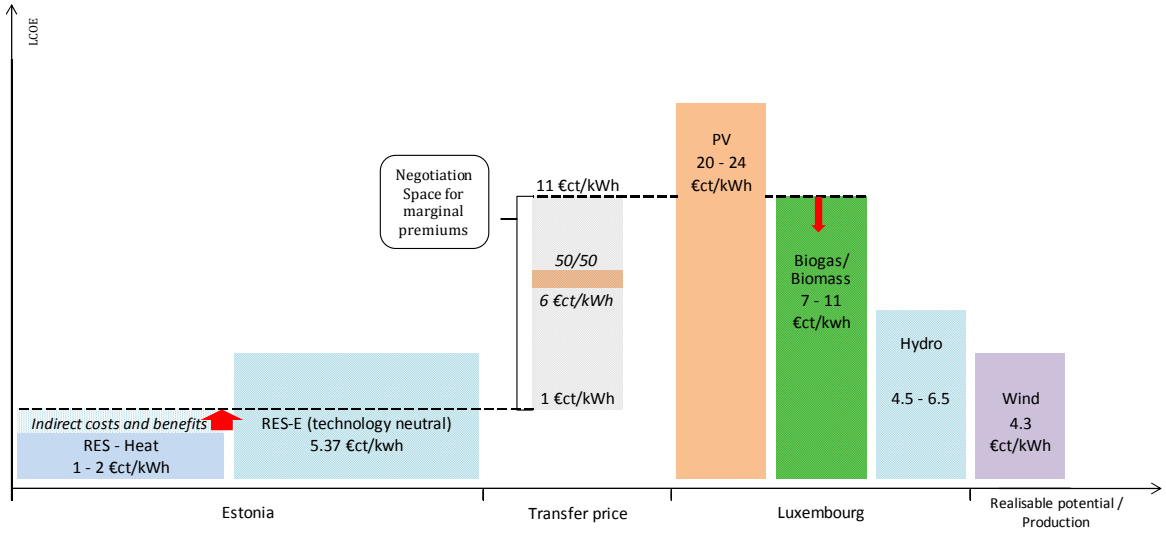


Figure 2 – Price corridor for transfer price between Estonia and Luxembourg , with a floor price based on low-cost RES-H



Obviously, these price corridors can only serve as an 'objective' starting point of the negotiation between host and off-taking country. The actually agreed transfer prices are subject to free agreement between the two actors and can just as well lie below the here mentioned 'floors'.

2.3 Transfers and compensation: creating a win-win situation

Little details could be provided on transfers and monetary compensations as the cooperation between Luxembourg and Estonia is in an early stage of development.

The basis for price determination has been provided in the above section. The price to be determined should present clear benefits for both countries. On the one hand, Estonia should gain enough revenues for a significant decrease of the consumer levy for its energy consumers. Luxembourg on the other hand hopes to gain significant cost savings in meeting the target through Statistical Transfer.

3 Potential obstacles and how to overcome them

The following obstacles have been identified:

- Public acceptance of the Statistical Transfer (in general and/or in comparison to other Cooperation Mechanisms) – benefits of cooperation need to be clearly communicated. Related to this is the political acceptance:
    - Difficult to communicate the role of the buying country that is sponsoring RES deployment abroad (Luxembourg)
    - Statistical transfer does not imply physical transfer, more difficult to explain.
    - Estonia mentioned the lacking progress on implementing domestic legislation allowing for the government to participate in Cooperation Mechanisms as a legal barrier.
- First mover risk – i.e. engaging in Cooperation Mechanisms without building on the experience and best practices of other countries that have done so previously, as a barrier (e.g. without first projects that could be used as price setting). Estonia and Luxembourg are hesitant to name any numbers.
- Sanctions for non-compliance, especially the uncertainty of the level

3.1 Public acceptance

Problems may occur with the public acceptance of Statistical Transfer. First of all in general, the question may arise why the off-taking country is sponsoring RES capacity abroad? This means that there is a challenge to communicate the role of the buying country that is sponsoring RES deployment abroad (in this case Luxembourg). Second, in comparison to other Cooperation Mechanisms, Statistical Transfer means (at least in the public's eye) the financing of other countries' RES capacity without seeing any new capacity installed.

Also from the point of the host country, the questions may arise why they are investing in new RES to cover the targets of another country. This is less relevant in Estonia as the RES capacity is already installed and not a result of the Statistical Transfer.

As Statistical Transfer does not imply physical transfer it is therefore more difficult to explain to the general public. This is especially the case in Estonia where there is some experience with CO2 credits trade, but this was a different concept. CO2 credit trade was mainly project related (in the framework of Joint Implementation), so some tangible result could be seen in the form of new RES projects.

The system of Statistical Transfer is to some extent comparable to emission trading in the framework of the Kyoto Protocol (trade of so-called Assigned Amount Units). Here trading took also place between countries, trading a certain amount of GHG emission reductions against a certain price. Often the selling countries used the revenues for investing in additional GHG emission reduction programmes.

This mechanism of reinvesting credits from emission trading to sustainable energy investments is not considered in the case of Statistical Transfer. This makes Statistical Transfer less popular among the RES stakeholders in Estonia, who do not see a direct benefit of Statistical Transfer for the RES sector in Estonia. Therefore, these stakeholders were demanding to include the possibility of Joint Projects and Joint Support Schemes into the legislation on Cooperation Mechanisms as well.

3.2 First mover risk

Engaging in Cooperation Mechanisms without building on the experience and best practices of other countries that have done so previously, is viewed as a barrier (e.g. without first projects that could be used as a price setting example). This is probably one of the reasons, why information on price setting is difficult to gain. Neither Luxembourg nor Estonia has experience in this field and does not want to disclose (too much) information on price negotiation.

Going for the option among Cooperation Mechanisms that generally is perceived to be administratively least complex, i.e. Statistical Transfers, Estonia and Luxembourg can limit the first mover risk to a certain extent. When both countries enter into a rather limited bilateral contract (which is limited in time and volume), the risk of having agreed on a disadvantageous price is much less than e.g. in a longer term joint project or a full joint support scheme.

However, choosing Statistical Transfers over other Cooperation Mechanisms and making a bilateral contract does not eliminate the first mover risk completely, but going for a more straightforward option limits possible unforeseen issues like the need of splitting the transfer among more countries (in case of multilateral contracts) or by the need to monitor the continuation of a RES project in construction and later its production (in case of joint projects).

There may be also certain advantages of being a first mover. For the off-taking country, being the first mover may bring a certain price advantage as the demand for RES kWh is not that high yet. Stepping in later may lead to higher prices. This will be under the condition that a market will slowly

develop. For the host country, waiting may be advantageous, but then there is no certainty yet that a market will develop that will lead to higher prices. To ensure a stable income, stepping in right now may have its advantages.

Although Statistical Transfer is often perceived as being less risky than Joint Support Schemes or Joint Projects, the main risk for the "first mover" may be the price range that remains very wide, due to the lack of earlier examples and no existing market place. In case of Joint Projects there are more project specific data available that narrow down the price corridor. In Statistical Transfer, we do not yet know what technology will determine the marginal costs (and the transfer price) and this may also differ case by case. The transfer price therefore remains one of the largest uncertainties.

3.3 Sanctions for non-compliance

There are two different forms of sanctions:

Sanctions for non-compliance with the RES target

It is not yet possible to quantify the costs for non-compliance with the 2020 target. Therefore, it's not possible to take these costs into account and compare them to the costs of purchasing RES energy through Statistical Transfer and make a thorough cost-benefit analysis.

Related to this is the uncertainty on meeting domestic RES targets for the host country when considering Statistical Transfer. This is a barrier for many countries, as discussed during the interviews. Representatives of countries like Poland and Slovakia mentioned that they have a small surplus, but there is still uncertainty that when acting as host country, they may become non-compliant. This is probably less the case in Estonia, where they already exceeded the target.

Therefore, the host country needs to have some RES in reserve in case the RES increase up to 2020 will be lower than expected.

Sanctions for non-compliance with the cooperation agreement

In case of a risk of non-compliance with the RES target, the host country may be tempted not to comply with its contract and transfer the required RES amount. Therefore it's important to cover this risk in the bilateral contract. As both countries have expressed their interest in trading a fixed (or minimum) amount, this risk could be minimalized. Developing a contract with a straightforward target (and clear sanction clauses) reduces the risk of different understanding of the meaning of a contract.

3.4 State aid issues

There might be State aid concerns related to the Statistical Transfer agreement.

Estonia is already in the process of having its reformed national renewable energy support scheme authorized. As of 1 July 2014 the new Guidelines for Environmental and Energy Aid 2014-2020 are the applicable framework for assessing the compatibility of the Estonian scheme with EU competition law. The income from Statistical Transfers are expected to be used to reduce the PSO fees. Provided that the payment by the government into the scheme would not increase the support to renewable energy producers and that the change in the financing of the support does not confer any selective advantages, no additional issues related to State aid are expected to occur.

As regards to Luxembourg, there should be no concerns either, it seems. Luxembourg would make payments only to the Estonian government but would not itself grant State aid to any industry or undertaking.

3.5 Other barriers and opportunities

Pending changes to the Estonian support scheme are currently dependent on the pending decision on the State Aid notification. At the same time, the legislative process to implement Statistical Transfer has been delayed because Estonian stakeholders wish to see legislation developed for joint projects and joint support schemes as well.

Information about additional legal barriers is currently limited. This will require further investigation, also in line with the concretization of the bilateral contract.

A contract for a Statistical Transfer – which would already apply for the time before 2020 and foresee regular transfers of renewable energy credits – may increase the engagement of the Estonian government as regards to implementation. While their renewable energy target under the Directive 2009/28/EC is already reached so that there is little risk of (financial) sanctions which may constitute a driver, such a contract could provide a financial incentive to further develop renewables beyond the achievement of the own target and thus implement the respective legislative framework. This is even more so, if the respective clauses in the contract foresee penalties for Estonia in case the renewable energy credits to be transferred under the agreement are not developed, i.e. not transferred.

Thus, the Statistical Transfer could be a way to bring new momentum into the Estonian renewable energy policy thereby "naturally" overcoming the existing barrier of delayed implementation.

4 Practical arrangements

Both Estonia and Luxembourg seem to be in favour of bilateral contract. In this case, no significant amendments to national renewable energy laws are required.

As the Case Study merely foresees a Statistical Transfer and no country seems to intend opening up the national support scheme, for the time being no changes to the national renewable energy legislation seem required.

Rather, it seems to be foreseen that Luxembourg pays a certain amount of money to Estonia in return for the renewable energy credits. Estonia wants to use that money for financing the support to renewable energy, it seems, but no details on how this should be done are currently known.

Further, the Estonian renewable energy legislation is under reform. So far, there is no "final" text, so that it is difficult to make concrete suggestions. Estonia has a feed-in system, under which the costs for financing renewable energy support are generally passed on to consumers. Thus, it seems easiest to include a paragraph into the provision dealing with the funding of the support (currently Art. 59 of the Electricity Market Act 2003), stating that the government shall pay a certain contribution per year to the transmission network operator which is in charge of administering the surcharge and paying out the support. The provision could ensure that the transmission network operator uses the government contribution to fund the financing of the support and thus passes on a lesser surcharge to the consumer.

As regards the legislation in Luxembourg, it might be that Luxembourg would need to develop legislation to generate the necessary financing for the Statistical Transfer: such could be done by including an extra charge on energy consumers to generate funds in the renewable energy law or it could be done by any other legislation. Luxembourg currently also maintains a feed-in system, and there is no information available whether it is intended to generally open up this system to renewable energy production in other Member States. Considering this and trying to find an easy solution, one could turn to the fund from which the renewable energy support in Luxembourg is financed anyways, and use money from there to finance the Statistical Transfer. In principle, it remains at the discretion of Luxembourg, from which budget resources, or otherwise, it would pay for a certain value of Statistical Transfer.

5 Conclusions

Estonia and Luxembourg have expressed their preliminary interest to cooperate through Statistical Transfer. Estonia will be the host country, with a RES surplus compared to its 2020 target, selling a certain amount of RES kWh to Luxembourg as off-taking country. Luxembourg may have problems meeting its RES target through domestic measures only and is therefore looking for possibilities to cover part of its target through Statistical Transfer.

Overall expected effects of the cooperation between Estonia and Luxembourg seem to be positive for both countries. The primary benefits for Luxembourg will be certainty that the country will meet its national target and this against lower costs than with domestic support for RES only.

The primary benefit for Estonia is that it will receive additional funding for its RES capacity, enabling the government to lower the levy that Estonian consumers are paying for RES support. This means that costs already made for RES heat and power production above the national target could, at least partly, be recovered through Statistical Transfers.

Both countries are at this moment expecting that the economic and non-economic benefits of cooperation are larger than the associated legal, financial and political costs and risks. Of key importance for the final sum of costs and benefits will be the following:

- Transaction costs: As we are talking about Statistical Transfer and not Joint Projects or Joint Support Schemes, the associated transaction costs are relatively low.
- What could negatively influence these costs is that there is little experience from other countries in setting up Statistical Transfer, which could make these upfront costs (e.g. for design) slightly higher than would be in the case of previous experience from other countries.
- Related to this is the uncertainty of the suitable price due to lacking experience with ST. This uncertainty may be even bigger with Statistical Transfer compared to the other Cooperation Mechanisms Joint Projects and Joint Support Schemes that are usually technology specific and thereby have a narrower price corridor.
- One additional argument of starting with cooperation is that the countries mentioned that they are interested to extend the cooperation beyond RES issues (although those have not been further specified).

Regarding the price corridor, the project team has developed a price corridor based on feed-in tariffs/premiums of different RES electricity technologies that could possibly form the basis for negotiation:

- When based on RES electricity production, the possible corridor could be between 5.37 €ct/kWh - 11 €ct/kWh. Here 5.37 is the feed-in premium in Estonia and 11 the premium for biogas in Luxembourg, which will probably be the highest possible marginal cost to reach the RES target in Luxembourg.

- When based on heat production, the price floor of the transfer could be as low as 1 – 2 €ct/kWh (estimated costs for RES heat production based on biomass).
- An important question is whether both countries only negotiate about Estonia's existing RES surplus or also about producing additional RES. In the former case, the price floor might be rather at the lower end, in the latter case, the higher floor price would apply.

STEP-WISE GUIDE TO IMPLEMENT A COOPERATION FOR STATISTICAL TRANSFER BETWEEN [MS1] AND [MS2]	
Steps	*Our suggestion*
Determine cooperation specifications Participating Member States [project parameters] Amount of RES credits to be transferred	Participating Member States – Estonia and Luxembourg Estimate of amount of RES credits to be transferred not known yet. NREAP of Estonia states that around 100 ktoe of RES would be available for transfer.
Conduct Cost-Benefit analysis	**Estonia** • Costs for RES capacity are partly covered by Luxembourg, leads to • reduced levy for domestic consumers, meaning reduced energy costs for consumers **Luxembourg** • Reduced support costs for new RES nationally • Avoided costs of non-compliance • Reduced grid related costs and costs for ancillary services
Address contractual arrangements Cost sharing Risk sharing Draft model contract	In this early stage of Cooperation Mechanism development there has been a focus on direct cost only In this stage, it is assumed that indirect costs and benefits are netting each other out Draft model contract included in Annex
Identify necessity for new legislation/changes to existing legislation Adopt new legislation/changes to existing legislation	Both countries will go their own way: **Estonia**: Draft legislation enabling Statistical Transfer is prepared **Luxembourg**: Legislation only to be prepared after agreement with host country is prepared
Make required institutional arrangements Establish operating mandate Establish procedures for the transfers and notification	*Not relevant in this stage*

Notify the Commission	
Make joint communication strategy	*Not relevant in this stage*
Operate the cooperation Continuous monitoring & potentially improving	*Not relevant in this stage*

6 Annex: Proposed Draft Agreement for a Statistical Transfer between Estonia and Luxembourg

Draft Agreement between

Estonia, in the following referred to as "the selling Member State"

and

Luxembourg, in the following referred to as "the buying Member State"

on

THE ESTABLISHMENT OF A FRAMEWORK FOR

THE STATISTICAL TRANSFER OF ENERGY FROM RENEWABLE SOURCES

FOR TARGET COMPLIANCE PURPOSES UNDER DIRECTIVE 2009/28/EC

Preamble

[…]

Part 1 OBJECTIVE AND DEFINITIONS

Article 1 Objective

(1) The objective of this Agreement is to provide a legal framework for the implementation of Statistical Transfers under Articles 6 of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (hereafter: Directive 2009/28/EC).

(2) The Parties enter into this Agreement with the purpose of

a) contributing to the cost-efficient achievement of the EU target to increase the share of energy from renewable sources to 20 percent by 2020;

b) optimise the balance of benefits from Statistical Transfers of renewable energy target amounts for both the buying and the selling Member State;

c) create broad public acceptance with regard to Statistical Transfers

d) [… additional points]

Article 2 Definitions

Pursuant to the Agreement the following terms are defined as

a) Selling Member State: a Member State of the European Union which, as a party to this Agreement, intends to transfer the renewable energy target amounts to the buying Member State according to this agreement;

b) Buying Member State: a Member State of the European Union which, as a party to this Agreement, intends to receive the renewable energy amounts for target compliance purposes under Directive 2009/28/EC from the selling Member State;

c) Directive 2009/28/EC: Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC;

d) Renewable energy target amount: the statistical value of energy from renewable sources as reported for the purpose of compliance with the mandatory national targets for the share of energy from renewable sources in final energy consumption as set out in the third column in part A of Annex I to the Directive 2009/28/EC;

Part 2 KEY OBLIGATIONS

Article 3 Cooperation

(1) The Parties shall at all times co-operate in order to establish and maintain the necessary and favourable conditions for the implementation of the Statistical Transfer.

(2) National contact points are established to facilitate the implementation of this Agreement and deal with any matters arising in the course of the implementation. The contact point of the selling Member States will be [xx]. The contact point of the buying Member State will be [yy].

Article 4 Obligations of the Parties

(1) The buying Member State guarantees the selling Member to buy the renewable energy target amount corresponding to the production of overall xx ktoe of energy from renewable energy for the price and under the conditions set out in Art. 5 and Art. 7 of this Agreement.

(2) The selling Member State undertakes to notify the Statistical Transfer of the respective renewable energy target amount to the European Commission within the deadline set out in Art. 6 paragraph 2 of Directive 2009/28/EC and in accordance with Art. 6 of this Agreement.

Part 3 SPECIFICATIONS AND NOTIFICATION OF STATISTICAL TRANSFERS

Article 5 Specifications of Statistical Transfers

(1) This Agreement covers the Statistical Transfer of the renewable energy target amount of overall xx ktoe from renewable energy. Such may include energy other than electricity, provided that it was produced from renewable energy sources as in accordance with the definition under Directive 2009/28/EC.

(2) The overall renewable energy target amount of xx ktoe shall be split into annual transfers of xx ktoe each.

Article 6 Notification to the European Commission

(1) Statistical Transfers as agreed between the Parties, shall be notified by the selling Member State to the European Commission according to Art. 6 paragraph 2 of the Directive 2009/28/EC, specifying the exact amount of energy from renewable sources to be statistically transferred from the selling Member State to the buying Member State for each relevant calendar year measured in ktoe, as well as the corresponding price paid by the buying Member State.

(2) A copy of this notification shall be sent to the buying Member State's contact point at least a month in advance of the deadline provided for in Article 6 paragraph 2 of Directive 2009/28/EC. The buying Member State shall notify the Commission of its agreement with the Statistical Transfer within the deadline of Article 6 paragraph 2 of Directive 2009/28/EC.6

(3) To facilitate the European Commission's task of monitoring the overall progress of implementation of and compliance with Directive 2009/28/EC the Parties will also notify the Commission of the overall content of the agreement in particular including the amounts to be transferred during the entire time period of the Agreement, possible options for additional transfers and price adaptation arrangements within a month after the coming into force of this agreement.

Part 4 PAYMENTS AND OTHER RESPONSIBILITIES

Article 7 Payments

(1) The price per renewable target amount transferred shall be xx Euro per ktoe.

(2) The buying Member State shall disburse the due amount for the first transfer of renewable energy target amount onto [the account xx] at the latest by 30 April of the year following the year for which a notification according to Art. 6(1) of this Agreement has been made by the selling Member State. From then on, payments shall be made annually. I

(3) The price may be adjusted according the development of the average costs for supporting the generation of energy from renewable energy in the selling country according to the following formula: [definition of adjustment formula]

Article 8 Responsibilities in case of non-compliance

(1) The Member States as project parties assume the responsibility for any failure or refusal to perform their obligations under this Agreement other than for reasons of force majeure according to Art. 9 of this Agreement.

(2) In case of non-compliance with any obligation under this Agreement a party is obliged to compensate the injured party fully for any damages incurred due to the non-compliance.

(3) The payment of such damages shall not limit the right to seek further compensation under the Agreement or otherwise.

Part 5 GENERAL PROVISIONS

Article 8 Relationship between this Agreement and other International Obligations

Nothing in this Agreement shall derogate from the rights or obligations of any State under any relevant international treaty or rule of international law.

Article 9 Force Majeure

(1) Responsibility for non-performance or delay in performance on the part of any Party to this Agreement with respect to any obligations or any part thereof under this Agreement, other than an obligation to contribute financially, shall be suspended to the extent that such non-performance or delay in performance is caused or occasioned by Force Majeure, as defined in this Agreement.

(2) Force Majeure shall be limited to:

a) Natural disasters (earthquakes, landslides, cyclones, floods, fires, lightning, tidal waves, volcanic eruptions and other similar natural events or occurrences);

b) War between sovereign States where the relevant State has not initiated the war under the principles of international law, acts of terrorism, sabotage, rebellion or insurrection;

c) International embargoes against States other than the relevant State, provided, in every case, that the specified event or cause of the above mentioned types and any resulting effects preventing the performance by the relevant State of its obligations, or any part thereof, are beyond the relevant State's control.

(3) If a Party to this Agreement is prevented from carrying out its obligations or any part thereof under this Agreement (other than an obligation to pay money) as a result of Force Majeure, it shall notify in writing the other affected Parties to which performance is owed. The notice must:

a) Specify the obligations or part thereof that cannot be performed;

b) Fully describe the event of Force Majeure;

c) Estimate the time during which the Force Majeure will continue; and

d) Specify the measures proposed to be adopted to remedy or abate the Force Majeure.

Following this notice, and for so long as the Force Majeure continues, any obligations or parts thereof which cannot be performed because of the Force Majeure, other than the obligation to pay money, shall be suspended.

Article 10 Dispute Settlement

(1) Any dispute, controversy or claim arising out of or relating exclusively to this Agreement, or the breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules.

(2) The following conditions will apply:

a) The appointing authority shall be … [name of institution or person];

b) The number of arbitrators shall be ... [one or three];

c) The place of arbitration shall be ... [town and country];

d) The language to be used in the arbitral proceedings shall be [...].

Article 11 Confidentiality

(1) The Parties to this Agreement are committed to confidentiality against third parties for all information and objects that are not to be notified to the European Commission according to Art. 6 of the Agreement or have not been otherwise published and are conveyed in confidence by any other

Party. The receiving Party shall not use any such information or objects for any purpose other than in accordance with the terms of this Agreement. The disclosure of confidential information or objects requires the express written consent by the conveying Party.

(2) The confidentiality clause excludes objects or types of information that

a) have been developed or are being developed by the receiving Party independently of the information;

b) are part of the generally accessible state of technology or that reach this status without the fault of the receiving Party or

c) were already in the possession of the receiving Party at the time of the announcement.

Article 12 Written Form

All additions and modifications to this Agreement, which will be numbered consecutively, shall be duly signed by both parties prior to affecting any of the changes therein contained. No addition or modification of this Agreement shall be effective or binding on either of the parties hereto unless agreed in writing and duly signed by the parties.

Article 13 Severability Clause

If any part of this Agreement shall be or become invalid, then it shall be replaced by that valid regulation which comes closest to its meaning and intention. All other parts of this disclaimer shall remain valid in that case.

Article 14 Entry into Force

This Agreement shall enter into force on […date…].

Article 15 Termination/Modification/Review

(1) The agreement will terminate on […date…].

(2) By way of exception, this Agreement can be terminated […]

(3) The agreement can be amended at any time by mutual consent of the parties documented in writing. Any such amendment shall be deposited according to Art. 16 of this Agreement and enter into force one month after the date of the deposit. The parties will review this agreement at least once every three years to determine whether it should be revised, renewed [or canceled].

Article 16 Depositary

(1) [Member State X] shall act as the Depositary of the Agreement.

(2) The original of the Agreement, in the […] languages, each version being equally authentic, shall be deposited with the Depositary. The Depositary shall transmit certified copies of each of these versions to the Parties which have signed the Agreement.

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