

E-TRACK project

Minutes from the second Consultation Workshop for the Nordic countries

Stockholm, 15 May 2006, 10:00 – 16:00

Participants

Claes Hedenstrom	Vattenfall	SE
Jenny Fridström	Svenska Kraftnät	SE
Mari Hegg Gunderson	Water Resources and Energy Directorate (NVE)	NO
Ole Haugen	Norwegian Electricity Industry Association (EBL)	NO
Johan Kling	The Swedish Society for Nature Conservation	SE
Olav Kolbeinstveit	Water Resources and Energy Directorate (NVE)	NO
Henrik Lawaetz	Energistyrelsen	DK
Ulf Møller	Statnett SF	NO
Steen Mücke	ENERGI E2	DK
Christian Friberg Bruun Nielsen	Energinet.dk	DK
Rickard Nilsson	Nordpool	SE
John Ravlo	Enviro Energi ASA	NO
Caroline Wall	Swedish Energy Agency	SE
Christof Timpe	Öko-Institut	DE
Aaron Best	Öko-Institut	DE

Please see also the presentations in the annex of these minutes

1 Welcome, Introduction

Claes and Christof welcome the group and the participants introduce themselves. It is noted that unfortunately there is no participant from Finland.

Claes briefly presents the key characteristics of the Nordic electricity market (see file "[01-Disclosure in the Nordic countries.pdf](#)"). The joint Nordic market has a total production of 350-400 TWh, with 30-40 TWh of RES-E. Sixty percent of power in the region is physically traded. Wet and dry years lead to considerable changes in generation and load flows from year to year. There are different support schemes for RES-E in each of the countries: Denmark has a feed-in system; Sweden uses green certificates; Finland offers tax exemptions; and Norway uses investment support.

The agenda is agreed as proposed.

10.00	Welcome and introduction of new participants Confirmation of the agenda	Claes Hedenstrom, Vattenfall
10.15	Background, objectives and status of the project Summary of findings from the first work packages:	Christof Timpe Öko-Institut

	<ul style="list-style-type: none"> • WP1: „Existing Tracking Schemes“ • WP2: „Framework conditions for tracking“ 	
11.00	<p>What's new?</p> <p>Reports from participants on new developments in the context of electricity disclosure and tracking issues in the Nordic area</p>	All
12.00	<p>Evaluation criteria for tracking options</p> <p>Comments and Discussion</p>	Christof Timpe
12.30	Business Lunch	
13.15	<p>Options for tracking electricity</p> <p>Comments and Discussion</p>	Christof Timpe All
14.45	Coffee	
15.15	Cost drivers of tracking systems	Christof Timpe
15.45	Outlook on the upcoming work in the project	Christof Timpe
16.00	Close of the Workshop	

2 Project Overview and Presentation of Results of Work Packages 1 and 2

Christof presents the status of work in the project and condensed results from WP1 (Existing Tracking Schemes) and WP2 (Framework Conditions for tracking), see presentation "[02-project status.pdf](#)".

Rickard remarks on slide 6 that we must face the fact that there is trading between parties and that an explicit link does not exist between production and consumption).

Sweden: Commenting on slide 12, Claes states that the ability in Sweden to convert Elcerts into RECS certificates is legislated to disappear as of January 2007. This will help prevent double counting. It is not possible to redeem paper GOs and thereby remove them from circulation.

Norway: Commenting on slide 13, Mari states that the new support scheme for renewable electricity is still not published (it was due Easter 2006). It will not be a support scheme in common with Sweden. It could be a feed-in system or an investment support. A national certificate scheme is unlikely. Other participants state that it will most likely be a feed-in system. The Renewables Directive is implemented in Norway, but is expected to come into force not earlier than 2 August 2006 because EEA member Iceland is late. The Electricity Market Directive will be put into national legislation by the Norwegian parliament by June 2006, which is the deadline for implementation of the Electricity Market Directive in EEA countries. Regulations (a combination of certificates and tracking agreements) are coming out in January 2007. A large number of RECS certificates are being exported and then used for disclosure. But there are no regulations regarding what the mix should then be in Norway.

It is noted that the Norwegian off-shore electricity production is non-renewable (it comes mostly from oil and gas, which is burned on oil and gas platforms, and one coal-powered plant). Mari adds that offshore energy is not included in the renewables information reported to the Commission.

Johan states that the green power quality labels operating in Norway and Denmark have the same name as Sweden: "Bra Miljöval".

Rickard asks whether banking of attributes should be allowed. If there are extra certificates left over in a year, would the producers be allowed to "bank" the certificates, and then sell them in a dry year? Banking could affect the credibility of the system to consumers and other stakeholders. It is still an open question whether and under which conditions banking should be possible. John states that some countries follow the calendar year while others follow the business year, so there are already some implicit forms of banking (inter-year transfer).

Scope of the project: Christof explains that the leading use for tracking is disclosure, but the project also intends to cover support schemes, GOs, etc. where possible. GOs demonstrate the origin of electricity, and could therefore be used disclosure. Actually, one of the first findings from E-TRACK is that GO should be used for disclosure. However, there is no explicit link between GOs and disclosure in European legislation. Responsibility for GO is on renewable energy side of DG TREN, while responsibility for disclosure is on the electricity market side of DG TREN. This does not make it easier to combine the issues.

Commission involvement: The E-TRACK project is sponsored by the Intelligent Energy Europe Programme of the Commission. The Commission is not obliged to take up the recommendations of the E-TRACK team. This project was proposed from the consultants' side. It is not a service contract that is strongly related to the current activities of Commission. The Commission is following the project, but not too closely so far.

3 What's new?

Workshop participants present the latest developments in their countries and sectors.

Denmark

Christian presents the electricity disclosure system in Denmark (see presentation "[03-The Danish tracking system 2006.pdf](#)", which covers both the tracking system and label design). Suppliers can either rely on a general residual mix provided by the TSO (actually there are two residual mixes for the eastern and western part of Denmark), or they prove to the TSO via "declarations", supported by certificates or GO, that they have a different attribute mix. The supplier mix will then be declared in labels from 1 May onwards for the preceding year. The declarations are not in place yet, so for 2005 all suppliers (even including green ones) will have to disclose the residual mix, i.e. the regional average. Green suppliers must use declarations to prove their sales.

The requirements for the accepted documentation for supplier declarations are still being decided and will need to be approved by Danish energy agency. The agency currently considers issues such as treatment of import and export, and how to determine CO₂ emissions from CHP plants with heat production.

Rickard reports that in NORDEL, 98% of production information regarding various sources is available in January for the previous year. NORDEL produces monthly values as well, though they do not collect environmental attributes.

There is no mandatory design for disclosure labels, but Energinet.dk provides a template. Suppliers make their own calculations on their mix, which are then verified by Energinet.dk. There is a clear

objective to keep the disclosure labels comparable for consumers. There is no link between the disclosure system and the product design and verification of "Bra Miljöval".

Mari remarks that verifying the declarations is an considerable task for the TSO. She suggests that Nordic countries should better coordinate their efforts with regards to tracking of electricity and disclosure. Norway would like to benefit from experience in Denmark and Sweden.

Christof remarks that the Danish approach is very interesting and seems to lead to an impressive accuracy. He sees the need to thoroughly define the requirements for the declarations for individual attribute mixes in order to secure this high accuracy. However, a potential shortfall of the Danish system could result if the optional use of declarations isn't used much by suppliers. In this case, all customers would receive more or less the same disclosure information, which would not enable choice. Christof wonders what could be done to create incentives for suppliers to use labels. Henrik states that in Denmark declarations must at least be used to sell renewables-based products.

There is redemption for GOs in Denmark.

Norway

Ole presents the position of the Norwegian electricity industry association on "Electricity disclosure in Norway" (see file "[04-Electricity disclosure in Norway.pdf](#)").

While production statistics report nearly 100% renewable generation in Norway, there is only minimal domestic demand for renewable electricity. However, green sales are slowly rising. A key issue to solve is the current implicit double-counting, which occurs because renewable electricity exports from Norway are not accounted for when information about origin of electricity is given to consumers. As significant volumes of RES-E certificates are exported, it is unclear which attributes should be disclosed to domestic consumers.

Credibility and consumer trust are fundamental prerequisites for a successful disclosure system and therefore double counting is a key problem. Given the issue's complexity and importance, Norway must focus on solving this. A solution for the double counting problem requires a coordinated approach at least within the Nordic region.

There have recently been a few Norwegian suppliers marketing 100% renewable electricity, but the consumer authority has intervened and stopped the marketing. The electricity branch has started a Task Force on disclosure, and the consumer authority is participating in it. Norway is hoping to present a draft regulation for disclosure in October 2006. Other than in many European countries, in Norway the same people are working on both the renewable and disclosure directives.

Rickard re-iterates that it is important to recognize that the Nordic Market is one single market and that the region will be faced with the problem that no one will know the export/import attributes unless the various countries track attributes in a common way.

Claes points out the role of market regulation and consumer protection policy for the development of sound regulations for disclosure, e.g. avoiding double counting. John reports that marketing messages such as "environmentally friendly" have been challenged by consumer authorities in Norway. Therefore, suppliers have recently changed their wording to "hydropower and windpower". John also states that it is not only consumer demand which can drive demand for RES-E. The financial value of an electricity company as well as its ability to attract new employees is affected by whether it exercises social responsibility, which includes production and/or supply of green energy.

Sweden

Caroline presents recent developments in Sweden. The Electricity Act regulations (implementing the Electricity Directive) have been in place since July 2005. The authorization for the Energy Agency to issue secondary legislation on disclosure (under the electricity ordinance) was received in April, 2006. A disclosure proposal based on a physical approach (e.g. like contract-based tracking) was sent to stakeholders in January 2006, but it did not receive a favourable response and has been withdrawn. The proposal was rejected mainly because of the impact it would have on the electricity market and on the liquidity of Nordpool as well as double-counting issues. The Energy Agency is now getting started on a new proposal regarding electricity disclosure, and looking at other countries to see what they have done. There are still some questions regarding whether the Energy Agency has the authority to make such regulations.

Claes supplements the information given by Caroline with a presentation on the position of the Sweden branch organisation on disclosure (see "[05-Swedenergy - Disclosure.pdf](#)"). A draft set of interim guidelines (for use until the official regulations are in place) will shortly be published. The approach distinguishes between "known origin" and "unknown origin." Known origin electricity comprises GO. Bra Miljöval certified electricity and (for an interim period) also bilateral electricity contracts with attributes. Known origin electricity can be used both for specified products (via an ex ante agreement with customers that they are receiving a certain product, which must be verified ex post) as well as disclosure of non specified supply (which is an ex post process). Regarding electricity from unknown origin, Swedish companies are looking at the entire Nordic region, rather than just Sweden. To calculate the residual mix for Sweden, the following procedure is proposed:

Production mix in the Nordic region

- + physical imports into the region
(using exporting countries production mix minus domestic green consumption)
 - + imports of Guarantees of origin into the region
 - exports of Guarantees of Origin from the region
 - reliable information of green consumption in the Nordic area (Bra Miljöval & Norppa labelled electricity, redeemed Guarantees of Origin, support systems which allocate generation)
-
- = Residual mix for use in Sweden

Sweden benefits from a Nordic approach because there is so much renewable energy flowing in from Norway. The proposed disclosure label looks similar to one recommendation from Germany, with both a supplier and product mix, accompanied by additional environmental information. Christof comments that the complexity for the proposed residual mix calculation shows the importance of having a single tracking mechanism.

Finland

As a short report on Finland, it is noted that the NORDEL production mix is used as a default value for disclosure. However, the environmental indicators are determined based on national average emissions.

International Residual Mix Project of the AIB

Christof, switching temporarily to a role of a member of the Association of Issuing Bodies (AIB), presents the International Residual Mix Project (see file: "[06-AIB_IRM.pdf](#)").

General discussion items

Rickard asks whether there are general targets regarding the degree of accuracy of the statistical data. Christof replies that there is no regulation on the actual figure. E-TRACK is promoting a pragmatic approach, which takes into account tradeoffs between accuracy and other criteria.

Christof remarks that a residual mix not only consists of a percentage mix of fuel sources used for power generation and the related environmental information, but also represents an absolute volume of electricity for which the residual can be used.

4 Evaluation criteria for tracking options

Christof presents the proposed evaluation criteria — informational value, accuracy, robustness, feasibility and flexibility (see file: "[07-Evaluation Criteria.pdf](#)").

There are no participant comments or questions.

5 Options for tracking electricity

Christof presents the three generic tracking options and the proposed recommendation (see file: "[08-Tracking Options.pdf](#)")

Discussion on Option A “Ex post contract tracking”

Christof clarifies that although this option features part of the tracking recommendation from the German branch organisation VDEW, other elements of Option A are different and therefore the overall evaluation of this option should not be related to the German approach.

The accuracy of the reiteration procedure is discussed. Participants wonder whether all participants would end up with the same electricity mix if the process was reiterated enough times. There is also the question why it is not possible to solve the mathematical problem directly, not using an iteration. Christof responds that the iteration procedure is still under discussion in Germany and that E-TRACK will look into it in more depth. However, the key aspect of Option A is not the iterative mechanism. It is that the net trading balance is used as the basis for allocating the attributes.

The differences between Option A and certificate-based tracking is discussed. Clearly, certificates could be allocated independent from the underlying power sales, whereas Option A creates a link between attributes and power trading. However, in Option A attributes are only accounted for ex post, i.e. traders do not know during the transactions which attributes will result from their activity. Claes states that the advantage of certificates is that you protect the integrity of attribute information, whereas a contract-based system mixes attributes and power markets and therefore requires complex procedures.

If Option A was applied to the Nordic countries, the high percentage (60%) of electricity traded through the Nordpool exchange would result in a large share of default data. As this is pure production statistics, a significant degree of double counting would result. This could be solved by using a residual mix,

but then still a large part of the market would not be differentiated in terms of disclosure information. Caroline remarks that this is the reason why Sweden might have problems with Option A. Option A is similar to the approach which was proposed by the Swedish Energy Agency and was not well received by stakeholders and finally withdrawn.

It is not clear whether Option A would really result in low cost. Christof reports that German traders say that their trading software can tally the net trading balances automatically. The manual part is getting the data into a shared database and accounting for the attributes.

Rickard and Claes state that the technical cost is one thing, but the effect on markets could be significantly more if it forces some actors out of the market because they can't compete. Market consequences of the different options should be evaluated in sufficient detail. Christof explains that a negative impact on market results in a lower feasibility ranking.

He also reports that the project team may add a sixth criteria called "cost". Separating this from the more comprehensive criterion "feasibility" would increase transparency.

Discussion on Option B "Voluntary certificate system plus residual mix"

Some participants state that customer demand for attributes is for renewables, and that the system should focus on finding out the renewable portion, and not spend resources determining the level of non-renewable production. Others believe that there are consumers willing to pay for nuclear power.

Christof states that the introduction of certificates does not necessarily mean that they are traded on a market. Firstly, it means standardised pieces of information in a database that accounts for generation attributes. How the certificates are used is up to the regulations in each country (or tracking option).

Johan states that as a temporary solution, Option B would be acceptable. However, the problem is that there is a high level of accuracy on the renewable part, but lower reliability on the non-renewable part. Christof replies that it is possible to have 100% accuracy with the residual mix. However, the residual does not support differentiation of suppliers and products, and therefore reduces the informational value.

In any system with optional use of explicit tracking, producers of "dirty" electricity have an incentive not to use explicit tracking, but to let their generation be accounted for in the residual. An integrated company could even sell its own "dirty" generation to an exchange and buy it back with the attributes of the residual.

Claes states that suppliers should create products with certain claims with regards to attributes only if they use explicit tracking. Christof agrees that if suppliers rely on the residual, then this should be sold as a "default product" with no ex ante claims about its attributes.

Some participants reiterate that a comprehensive certificate system for all types of generation would be the best solution. Christof agrees in principle. However, if certificates are only voluntary (e.g. for non green production, as in Option B), then there should still be the option that certificates are created for any power type and that the barriers to doing that should be as low as possible.

Discussion on Option C "Ambitious certificate system"

This system requires issuing and use of certificates for all kinds of power generation. Participants discuss whether there is a risk that generators might sit on certificates and by doing this, force prices to

rise. Given the current imperfect status of electricity markets, this would be a possibility. There is agreement that it is possible to mandate issuing of certificates (on the production side), but requiring their use on the consumption side is not practical due to the market manipulation risks (i.e. the distributors' dependencies on generators to sell them the certificates). Therefore there should always be the option to use a residual mix.

In option C, the value of a certificate for "dirty" power could be negative. Therefore if a residual is available, generators of "dirty" power would prefer to use the residual mix instead of selling certificates at negative prices.

Johan finds that an approach between options B and C would be more feasible. The tracking system should promote differentiation of products beyond the green market, but without forcing suppliers to do so. Christof states that Option C could easily move up in feasibility if the requirement for suppliers to use certificates was removed and a residual mix introduced. This would not reduce accuracy. However, the impact on informational value then depends on the share of the residual in the total market.

Discussion on the draft recommendation

There is an intensive discussion about the proposed European-wide residual mix. Participants state that there is no real European-wide electricity market, which would give justification for a uniform European residual. Whereas some participants expect that in case of regional residuals (e.g. one for the Nordic countries), the differences will be levelled out by significant flows of green attributes from Nordic to continental Europe (for example, 20% of Norwegian power generation is in green contracts already). Others see this effect only to be marginal.

Claes states that the geographical scope of the residual mix should be linked to the real development of regional or European electricity markets. He prefers a regional system for the Nordic market.

Christof explains that the main argument for a European residual mix is to significantly reduce the problem of regional balancing of volumes of physical power and attributes. For example, in the case of a Nordic country exporting hydro certificates to Germany, what does it get back? If Nordic generators export significant volumes of green energy or certificates, then there must be a clear regulation which attributes are disclosed to Nordic consumers. A strong regulator would be required to force power companies to tell their customers that their power is no longer mostly renewable.

Henrik clarifies that Denmark is starting out with a national residual mix. They may expand it later, but it is difficult to explain to the average person that they are receiving coal or gas, when the country is pursuing national goals regarding renewable energy and CO2 emissions.

Rickard suggests that the scope of the residual could reflect the limits of the grid system. For example, the Nordic countries can physically export a theoretical maximum of 25 Terawatt hours p.a. to continental Europe. This could be an incentive for more grid investment.

A proposal is discussed to allow for banking of certificates from wet years for use in dry years. Banking could also reduce the requirements to send back attributes to the Nordic market in return for exports of hydro attributes. Christof remarks that the directive requires using attributes from the previous year, and therefore he thinks that banking is not possible.

There is broad agreement that a balance between volumes of attributes and physical power must be kept. Exported certificates must therefore be replaced by other attributes. **Action item:** The E-TRACK project team will make proposals for how this problem could be solved.

However, Caroline reminds the participants to focus on what the regulation is actually for: helping customer choose a supplier. Tracking regulations should not negatively influence the functioning of the market. While striving for accuracy, we should not forget the criteria of feasibility.

Christof asks what the geographical system borders of a certificate system should be. For example, should it be possible to import attributes of electricity produced in Iceland? He remarks that an advantage of Option A is that the results make sense to participants and stakeholders because it reflects activity on the electricity market. Certificate imports from Iceland could have the opposite effect, and confuse stakeholders. A potential solution could be to restrict imports to those geographical regions which are physically connected to the European Transmission system. (It must be noted that certificates from off-grid generation within Europe can pose similar problems.)

6 Cost drivers

Due to time constraints this agenda item is skipped.

7 Overview of future project work

Due to time constraints this agenda item is skipped.

8 Closing

Participants suggest that more NGOs should be included in future workshops because if NGOs are not happy then customers will not accept the tracking results. **Action item:** the project team will arrange for bilateral meetings with Greenpeace, WWF, and consumer organisations.

Christof invites further comments in writing to the consultation document. **Action item:** In order to be discussed in the next project meeting, participants should send any additional comments to Oeko by 9 June 2006.

Action item: Claes will collect and distribute electronic copies of the presentations to all participants by 17 May 2006.

Claes states that there was much interest expressed today in exchanging ideas and increasing coordination among Nordic countries, and asks for suggestions regarding how to keep the Nordic discussion going. Participants express general interest in working together and having another workshop but is not sure who should take the responsibility. **Action item:** Claes will send out emails to gauge interest.

Claes thanks the participants and members of the project team.

The workshop ends at 16:00.