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SETREC Policy Makers Workshop, The Hague October 10th, 2004
Workshop Minutes

The SETREC Renewable Energy Policy Makers Workshop was held at the end of Phase 3 of the SETREC Project. 37 delegates attended with 8 speakers on Effects of TRECS and International Renewable Energy Trade. The findings of the project were presented and feed-back was sought.

The objectives of the workshop were to present and get feedback on intermediate project results and as much as possible incite discussion on major findings, particularly those that seem mutually conflicting. Promotion of the project final seminar, which will be held on 20 and 21 January in Brussels (maybe Luxembourg). And to provide policy makers with an informal platform to discuss TREC, RE support scheme, and international trade issues together. Feedback has told us that the latter was very successful and important.

Michel Verhagen (Dutch Ministry of Economic Affairs, Department of Energy Production, member of the Dutch Presidency team)

Michel Verhagen explains that the Dutch government is dealing with a number of energy related themes during the current Dutch Presidency of the European Union. One of these themes is "wind offshore". A European workshop on this issue was organised in The Hague just one week earlier, which led to the signing of a ten-page declaration on the future of wind offshore. Topics covered are the grid connection and environmental aspects. Another theme is the elaboration of the European Communication on Renewable Energy, which includes the levelling out of barriers (as through the GO), a biomass action plan (mainly focussed on information exchange) and the role of third countries.

Mr.Verhagen is positive about SETREC as a process to create understanding on the TREC-issue. However, he also sees a lot of difficulties/barriers for international trade on the short term; at least up to 2010. He sees TRECs as an important issue for the longer term. The SETREC recommendations, which will be drawn up on the basis of this workshop and other events and actions, will matter greatly to the policy determination of the Commission, early next year.

Willem van de Heul (Dutch Ministry of Economic Affairs (EZ) Department of Energy Production. Renewable energy expert and member of the Dutch Presidency team)

Willem van de Heul starts with some major renewable energy successes in the Netherlands, which include high wind turbine density, particularly in northern areas of the country and the fact that 2,5 million households have voluntarily chosen green electricity, which will contribute to their general environmental consciousness. He goes into some recent history and major lessons learned in The Netherlands. The early liberalisation of the energy market for green electricity was a major trigger in the market, which also lead to substantial import of renewable energy from other countries (which is OK) and from existing installations (which is not OK). A lot of Dutch stimulation funds leaked away and as a consequence the tax system has been adjusted. The current MEP-system can be considered to be a Feed-in-tariff system.

The current expectation of the Dutch government is that Member States (MS) will fill in their 2010 targets with renewable energy installations in their own country. Most MS are in favour of that and without real harmonisation of the support schemes international trade will be very difficult. He expects that the Dutch target for 2010 will be fulfilled with Dutch capacity through the MEP.

From the discussion after the presentation, the Dutch government expects that a substantial number (over half, down to about 1 million) of the current green electricity customers will switch to grey electricity as a consequence of the change in the support scheme and the related price increases. A representative of the electricity sector (Laetitia Ouillet, NUON) makes clear that the effect possibly will be less because energy companies will probably choose to keep the price artificially low (equal to grey electricity) in order to keep their customers, at least for a year or so.

On a question whether the Dutch government seeks bilateral trade cont(r)acts with other countries Mr. Van de Heul makes clear that this is not yet the case, but that the Dutch government is open to this type of contact. He also sees that the general opinion within the government became gloomier during the last couple of months. **Mario Ragwitz** asked why EZ didn't include 'only new installations'. Mr. van der Heul explained that the tax scheme was very generic in design and it was not possible to discriminate; tax regulations from the EC are very strict, you may not discriminate. Within the MEP system specifying such criteria is possible.

SETREC Effects of TRECS

Verity Ducos, the Co-Ordinator of the European Commission Altener SETREC|GO project, briefly describes the project objectives and the approach. She elaborates on the results from the 3 track approach in order to give stakeholders a sort of panoramic view on Effects of TRECs: **Track 1. Actual Fact Finding** within existing or historic TREC systems within Europe; **Track 2. Model based scenario analysis**, where the El Green Model is adapted to see effects from 3 different TREC system scenarios: Free International Trade, unlinked from physical flow of energy; No international Trade, unlinked; and Free International Trade with technology specific quotas set. **Track 3. Perception based research**, where 3 expert groups are polled and interviewed on their perceptions of effects of TREC systems on certain RE Policy driving factors. The three target groups are RE Policy Makers; Industry players including banks and 'TREC' experts.
Verity explains that as well as presenting fact finding from actual situations, data is compared against the SETREC list of RE Policy priorities in order to show the effects TRECS have on them:
Achieving RE Targets: - Undoubtedly but depends on obligation level and penalty. Costs of reaching the target level are influenced by the design eg. free market forces, no international trade
Achieving CO2 Targets: - Yes but at a relatively higher cost than other mechanisms. Main issue is actually ownership of carbon credits related to RE production eg where is greenness accounted for eg UK
Reduction of other air emissions: - Yes as above.
Stimulation of (regional) economic development: - Yes, but when tendency is to protect local interests instead of a European approach costs increase
Create basis for long term sustainable energy supply: - seen by a few a as a relevant effect of TREC systems - too early to tell
The results of the Track 3. poll show the perceptions of the effects of TRECs from Policy makers, Industry and Academics show remarkable findings such as:
"social acceptance" for the "Free market- unlinked" is scored slightly less positively than that for "No International trade"
- "economic development / job creation" for "Free market unlinked" is hardly more positive than for the other scenarios.

Quantitative analysis of TREC schemes based on the model ElGreen

Mario Ragwitz from ISI-Fraunhofer, Germany presents the scenario analysis results of the SETREC project starting with the model-based findings where three different TREC systems are analysed with respect to cost efficiency and technology development. He explained the parameters of the model (based on El Green) as a static techno-economic model considering detailed cost-resource curves of all RES-E in the EU-15 / dynamic effects like experience curves are neglected, country specific TREC prices are meant for illustration of potential cross-country differences not as detailed numeric results. Simulations are performed for the year 2020 / hypothetical country specific and EU wide "targets" are derived from the policy scenarios of the projects MITRE and FORRES 2020 (target for RES-E share in EU-15 equals 32% in 2020). The method of approach for calculating the additional costs to consumers is derived from the difference between the producer surplus plus the green certificate price minus the conventional electricity price related to the set quota. (a quota is set and a price is determined). Using this method, findings show the effects of using different technologies, cheaper eg biomass and more expensive eg PV. If the two technologies are grouped (within one country with one quota) you can divide or add curves giving a very clear view of the effects on additional costs to the consumer. In the situation where some countries can not meet their targets with cheap technologies alone the remainder must be filled with more expensive technologies, in theory raising the overall price of the certificates and costs to society. Mr. Ragwitz showed the technology split for the three TREC scenarios tested, the free trade and no trade scenario use the cheapest technologies. The tech-split scenario uses more wave, solar and biogas for the same amount of electricity generated. He shows the average generation costs versus profit for the three.
In summary the findings show: The "Free Trade scenario" leads to significantly lower expenditures than the "No Trade scenario". The economic efficiency of the "Technology scenario" compared to a "Free trade scenario" depends highly on the renewable targets and on the technology mix chosen. In case of low-average targets the scheme "Free Trade" is the one associated with the lowest expenditures. In cases of very ambitious targets the technology scenario leads in many cases to lower total expenditures (higher expenditures for electricity generation are compensated by lower company profits). This effect is increased in case of a dynamic consideration involving technology learning.

Questions were sought on poll vs model results

Petteri Kuuva questions whether, with such ambitious quotas, marginal running units will result in high costs and therefore high prices to end-users.

Mr.Papastamatiou questions that in the 'no trade' model prices depend on the quota but should they also depend on the penalty (which is always higher than the marginal costs).

Mr. Ragwitz responds by saying that the pre-calculation of the costs is set into the model to calculate the final price.

Mr.Papastamatiou's remarks on the relation between the price **risks** for the buyer of physical energy and for buying certificates. Mr. Ragwitz made clear that the model does not deal with the risk for the physical part, but also that the risk is rather small because of the stable market for physical energy, where the market for certificates has to deal with much larger uncertainties. The minimum tariff is very effective in the quota system. Risks perceived by investors has been included in the Green X model through the rate of return by investors but in this SETREC / EL Green model that is not the case. This could be input into SETREC later.

Christiaan Vrolijk states that in terms of investment, banks don't relate to the certificate price but they do relate to the power price related to long term contracts. With the minimum price set you have a clearer view to investments.

Phil Moody states that the political question should be **defining the risk of demand for RE**: The main source of risk is that we don't know future targets so you don't know if you are under or over the target. At the moment you meet the target the price is 0. **Olivier Squilbin from CWAPE** emphasises that is why short term contracts are problematic and that you need a minimum tariff to reduce risk.

In a lead discussion about overestimating free trade it is remarked that there is a myriad of issues to be solved before international trading is viable. It is possible and is only a matter of time to solve it but national policy is very important too.

Martin Finucane states that MS policy is designed to meet their own indigenous production. That after that has been achieved TRECS will become more interesting; that TRECs are more medium to long term issues than short term issues.

Hakon Opsund from Norway explains that banks are used to the long-term contract situation. The problem with an international market is that it is somewhat too complex for agreements to be made: financing into different support schemes; complexities in each system, eg UK; definitions incorporated into systems eg Peat etc. Agreements can be made more easily between 2-3 countries than MS25.

When questioned about the possibility of international trade, **Phil Moody** adds that in his opinion the UK market is too small right now but if and when it reaches a reasonable and viable size the UK may be interested in international trade.

Petteri Kuuva remarks that we have Kyoto (protocol) targets set, so where it is cheaper to realise RE in heat than in electricity, heat should be the most cost efficient solution which is a reason why we should be hesitant to set any mandatory goals at EU level. **Christiaan Vrolijk** responds that there will be RE targets set at EU level and the post 2010 targets need to be set fast or RE investments in RE will stop. In addition the ambition level must be high enough to keep momentum going to reach the 2010 targets – otherwise there will be a time-lag if not a stop to meeting those, little own for incentives for the 2020 targets. **Mario Ragwitz** agrees but highlights that that is only true for the case of certificates systems. **Olivier Squilbin** adds that there are not only environmental targets to consider in this equation but also economic development – regional development issues.

The Share of Renewable Energy in the EU:

Karina Veum from European Commission, DG Energy and Transport, presents the overview from the RES Communication showing successes and problems across EU including wind as a success story (600% growth) and biomass growth now lagging (2/3 of RE mix prediction). She explains that the European Council meeting set for November in the Netherlands will provide conclusions on the communication. She presents the overview of progress per country. Policies currently implemented in EU15 will probably result in a share of 18 – 19 % in 2010 instead of 22 %. Future steps are explained in the following context: The Commission acknowledges the importance of providing a longer-term perspective. Before setting new targets, the Commission considers it necessary to more thoroughly assess the impacts of RES targets (eg on balancing, the positive and negative effects for electricity production). The Commission will carry out regular reviews of progress in the development of renewable energy sources. Review will be carried out not later than the end of October 2005. In 2007 the setting of targets for the period after 2010 will commence.

Renewables in the greenhouse: TRECs, GOs, and the EU ETS:

Christiaan Vrolijk from IT Power, UK explains he is the co-ordinator of the RE-GO part of SETREC|GO project studying and making recommendations on Guarantees of Origin. He presents the case for Multiple counting – as opposed to double counting, there is the possibility and a real evidence of multiple counting of the greenness of a MWh. Multiple Counting problems arise through the different definitions of support schemes: definitions of a TREC and the definition of a GO. Problems also arise in systems that include multiple targets: GHG, RES-E and the system for disclosure =GO. Where the systems overlap are where the multiple counting problems may arise. Within his presentation focussing on the EU ETS Mr.Vrolijk reasons that RES-E does not contain any GHG benefits. That if a RES-E producer could claim reductions, it would constitute double counting as it would have to have been sold by a coal fired power station, for example, who would also have claimed the ghg reduction. He states that the EU ETS will add to the price of electricity and therefore the RES-E operator by default will receive a higher price, extra income, for his electricity even without the EUA benefit; and with it certainly constitutes multiple counting. The impact of this depends on the structure of the support scheme. Mr.Vrolijk presents an interesting price comparison (see presentation). He concludes this section explaining that RES-E may receive emissions windfall profits as a result. The following section explains the relationship between TRECS and GO's, that GO's are a harmonised disclosure system and TRECs are a support scheme, they can be seen as the 'support' part of the GO. Mr.Vrolijk throws forward the statement that a TREC must not include green tariffs, disclosure or MS targets. That on issuance of a TREC a GO must be earmarked for the support it represents and that if this definition is not enforced there will be double counting. He discusses the option of a TREC being part of a GO or a GO acting as a TREC in which case the risk of double counting is minimised. The GO would then need defined redemption attribute.
(N.B. NL is essentially setting their voluntary TREC system up next year as GO)
Mr.Vrolijk finishes with the recommendations from the RE-Go project:
1. Definition: GO is the exclusive proof of RES-E for three uses: support, report, target
No other proof exists. GO is thus used for tracking the RES-E attributes
2. GO do not contain GHG reductions
3. Need to introduce earmarks and redemption

Questions:
Martin Finucane reinforces the fact that definition of RE must be set for harmonisation to be successful.
Katrien Verwimp from VREG, Flanders, asks if GOs and TREC (functions) are traded separately is there a problem with export subsidy? Mr.Vrolijk responds that in the UK for example, the ROC is a 'national' support system and is only valid in the UK. You can attach it to the GO but when is redeemed it would have to be re-seperated.
Phil Moody says that this is something that should be looked at since UK GOs are able to be exported. He adds that TRECS and GOs can indeed function bundled together or separately. As a temporary solution they should be kept together and later could be separated. **Katrien Verwimp** questions that if they are together it would be difficult for traders, for transparency etc.

The experiences in Sweden after the first evaluations
Thomas Sundqvist from STEM, Sweden opens his presentation of the Swedish TREC system by outlining its basic design and parameters:
- Will be + 10 TWh RE-E in 2010; is likely that there is nearly 10TWhrs in the RE-E system currently. (He qualifies that the accuracy of the estimation of how much RES-E was in the system at the start of TREC trading affects the evaluation now)
- RE-E sources: wind, solar, wave, biofuels, and some hydro (+ peat)
- Mandatory quota obligation on end-users (electricity suppliers) with penalties
- Quota set at : 7.4% (2003) - 16.9% (2010)
-value is 1 certificate = 1 MWh RE-E produced
- price level is currently around 53Eur/MWh representing the total price fro RE. The certificate price is 25EUR/certificate.
- Unlimited banking, limited borrowing

The first quota period, 2003, was 8 months and the result was that 61.1TWH were consumed, 4.5 million certificates were issued and 3.5 million redeemed. Redemption occurs at the beginning of March each year. Around 20 million Euros were collected in penalties (8.8 million certificates). The quota fulfilment was 77%.

STEMS evaluation process occurs in two phases, the first which is complete, addressed firstly the inclusion of Peat: results in a system with dual purposes (potential credibility problem). There are other support options available.
Secondly the Quota obligation fee where the penalty cap determined price during 2003, STEM sees that the penalties may drain the system. Also incentives to fulfil the quota obligation are important; STEM recommended

a variable fee coupled to and higher than the certificate price. If "feed-back" needed/wanted they should extend borrowing.
And thirdly the exclusion of Electricity intense industry where the current classification is problematic; an alternative classification can be based on the Energy Efficiency Directive.
The second stage of the evaluation, currently in process, is addressing the level of ambition of the system, effects on costs to the consumer and to wind development in particular. A general overview will also be delivered and statistics reported. This is due November 2004. Further studies on the efficiency of the system from the consumer perspective is also due in the second phase evaluation; study on transaction costs is on-going. (ref: SETREC Swedish Country Report 2 for more information www.setrec.info).
Mr.Sundqvist explains the current discussions to set up a Norwegian TREC-system with a common market with Sweden.
Norwegian Water Resources and Energy Directorate (NVE) report on TRECS, now public, talks of mimicking the Swedish system.
Norway's plans include setting up the following bodies with responsibilities:
- NVE: supervise, approve production facilities, redemption body
- Stattnet (TSO): issuing body, handle the TREC-register
During the Autumn of 2004 STEM will investigate the consequences of an expanded TREC-market (with NVE) Government bills will be passed during 2005. The plan is for a common TREC-market to be set up as of January 2006.

Questions:
Mr. Papastamatiou poses the question whether GO should be issued to off-grid producers, where a TREC (as an autonomous system) is issued. Mr.Sundqvist replies that Sweden do not take this into account. It is stated that some off grid biomass was sold into the Netherlands. According to the Directive any RE should be counted towards targets. They should be issued by GOs, there is a need to be very careful of double counting in this case.
Peterri Kuuva asks what the reason is for the high certificate price.
Mr.Sundqvist expands that end use prices are higher than expected because the price of certificates is higher than expected; A price cap on the penalty fee exists for the first 2 years and the market drove prices to that cap price during 2003. Since then they seem to have evened out. There is no cap for next year, so we are watching to see what happens.

Ingunn Ettestol , ENOVA, Norway states that district heating is 50TWh in Sweden, she asks whether switching has been seen in the bio market? What is the link between the energy markets? Thomas confirms that there was a tax exemption problem as you do not have to pay CO2 tax on CHP power production. From 2004 there is also a part exemption on combined heat production. One side effect of the TREC system is that it gives market players incentives to use fossil fuels for heat production.

The overall message from Sweden is that they are positive w.r.t. international trade in certificates; when they open up their system for Norway the system is open for everyone (given the other country follows the basic design of the Swedish system).

Effects of TRECS from an operational viewpoint – Italian TREC System
Stefano Alaimo from GME, the Italian power exchange in Italy presents an operational viewpoint on TRECS systems. For an efficient TREC market he stresses the importance of translucency, the ability to see how many transactions have occurred, minimum prices, maximum prices and total volumes = price disclosure. Project financing activity needs "risk control" and price knowledge helps in this. Bilateral contracts ARE NOT TRANSPARENT. They usually do not allow operators to know market prices. Security is critical, operators must trust the market and trade certificates without any limitation due to "credit risks". An organized marketplace usually has rules to guarantee buyers and sellers. The Buyers' risk is that the seller doesn't own certificates and the sellers' risk is that the buyer doesn't pay. Bilateral contracts are not safe from those kind of risks.
"Counterparty risk" is not negligible. Banks refrain on their lending activities to finance RES power plants because of concern about those risks. GME gives security to the marketplace buyers making a "guarantee deposit", into a GME account, one day before the market session. For each GC they want to buy, a minimum price is requested. After the market session, if the amount deposited covers the entire debt of the buyer, GME will pay the seller. If not, the buyer is requested to make an additional payment to the seller. If the additional payment fails, a penalty is applicable. Sellers are allowed to sell only GCs deposited in the Registry owned by Issuing Body (GRTN – Italian TSO).
Mr.Alaimo explains that the more a market environment is **transparent and secure, the more liquidity will be attracted to it. Liquidity means efficient prices:** From the supply side viewpoint, that should give the operator the "right return" from their investments in RES power plants and an incentive to new investments.

From the demand side viewpoint, efficient prices mean that market forces can bring incentive costs at the "right" level.
Mr.Alaimo talks about technology deployment possibilities through TRECS systems. He says that **the length of certification period should depend on the technology**. Usually RES power plants have the right to get green certification for a fixed period of time. More expensive technologies could possibly not be properly supported. New investment will then concentrate on the cheapest technologies, with a non-optimal development of new technologies thus the diffusion of RES can be dampened. One way to get expensive technologies economically convenient is to eliminate the certification period. In Italy there is a hypothesis of 12 years certification for biomass and waste (instead of 8 years) under discussion currently and new rules for solar are due to be issued shortly. Mr.Alaimo explains the concept and value of **forward contracts** on TRECS. TRECS are currently only issued for RES production of the year before, the current year and, sometimes, for the year after (on expected production). Forward contracts issued on future RES production of 1,2,….x years forward should make project financing easier. The Italian experience shows many OTC agreements. Stefano sees that a definition of a Master Agreement for Forward Contracts on TRECS could be an important step forward. TSOs could provide an authorisation of Forward transactions or a verification service on historical behaviour of operators involved in the contract, in order to minimise "counterparty risk". He also notes that an organised market should not be excluded if the volumes are high.
Mr.Alaimo then talks about **minimum design criteria** to be considered from an operational view point for **harmonisation** to occur. Conditions need to be set up for **mutuality**, TRECS issued in one country need to be valid to comply with the obligation in another country. There needs to be a **link among registries** and the **size/denomination of the TREC** has to be the same eg: 1MWh/certificate. In Italy the unit is 50MWh/certificate.

The Policy Maker Panel is assembled including: Martin Finucane, Ministerial Department of Communications, Marine and Natural Resources, Ireland; Petteri Kuuva, Ministry of Trade and Industry, Department Energy, Finland; Hakon Opsund, Ministry of Petroleum and Energy, Norway; Gerard Lipinski, Ministry of Economy and Labour - Energy Security Department, Poland. The members are asked firstly to give an account of the systems operating within their countries related to effects and secondly to explain what their view is on harmonisation for international trade in RE.

Martin Finucane explains that **Ireland** has a 'stop-start' tendering system, which has the advantages of a market-based system where the costs from the competitive system ensure renewables are going into the system. There are trading advantages for bigger players. Small-medium developers see financial risks, the system for them is not as 'bankable' as eg Feed-In tariff system would be. There is uncertainty over price as the issuing is considered over 5-10 year time frame. The system and price therefore, depends on the pace and development of the market (or the quota to fulfil).
He sees that TRECS have advantages while the RE market is growing – for 5-10 years, but questions whether we are always going to be pushing the RE portfolio, at some point we will be looking at the fuel mix for security of supply. Demand will decrease as supply increases. Ireland is seen as a monopolistic system with a small domestic market with no liquidity. In terms of International trade – exporting Ireland are adopting the 'wait and see' approach. Martin states that they are aware of the potential but unlocking it is dependent on other scenarios. The cost of RE will vary markedly, MS will all be different to a certain extent. He sees that international trade will develop but 'HOW' is critical, definition is critical.

Petteri Kuuva explains that **Finland** developed a voluntary TREC system when the RECS system started. GO started this year and they are sold together. As the subsidy scheme in the NL will stop in Jan 2005, so the voluntary market will stop too. Finland does not operate a subsidy system for RE. Investment subsidies for producers are able to get a tax rebate, but in the case where electricity is exported they cant get that rebate but the power does contain investment subsidies and tax rebates. Finland is looking at a quota based TREC system, Petteri explains that they are still hesitant but eagerly waiting. He stresses that different production types need different amounts of support. In Finland biomass is very competitive and wind development therefore raises a political question about costs to the consumer. On the question of windfalls he sees it safer to provide subsidies to investors so you can calculate whether it is sufficient, but not too big (is adjustable). These are the questions and barriers related to the specifics of the Finnish situation.

Hakon Opsund from the Ministry of Petroleum and Energy in Norway confirms that there is to be a TREC system established with Sweden. That ENOVA also operates a scheme for investment subsidies for wind power. The National Assembly in Norway was advised against a national TREC market but was advised to follow an international TREC system. The issues that are being discussed presently relate to definitions, whether you have the same RES as each other. For example Hydro is cheap in Norway and not supported, but in Sweden it is supported and is more expensive. Norwegian consumers will not pay for more expensive hydro

power from Sweden. The technical issues being discussed are that there should be one register - linked registries, the certificate denomination should be equal and should hold exactly the same attributes. There should be banking and borrowing ability. The length of the market is also under discussion. The longer international market might see unequal values. He states that quotas don't need to be the same. You need a certain ambition level to go into it to stimulate new production, which will be different depending on the state and the chronological developments of new RE in national markets. In Norway 99% of electricity is renewable production and 93% renewable consumption. Mr.Opsund's view on international trade at this time is that it is much easier to come to agreements with one country than with 25.

Mark Draeck from the Ministry of the Flemish Community, Natural Resources and Energy Department, Flanders, Belgium, explains that the philosophy behind the Flemish TREC system that began operations in 2002, was to provide a dynamic in green electricity of 6% by 2010. Developing intermediate targets and calculating each year whether energy suppliers could redeem the certificates corresponds to the RE production calculation. Therefore the most profitable RE projects would be realised first. At this stage in 2004 the conclusions are that the dynamic has been created, the system works and green electricity production has increased but, not as much as was wanted. Observations have been that the most profitable projects were not actually realised first (eg Wind off-shore) but biomass projects were realised. There were federal administration bottlenecks retarding the development of wind off-shore. On a national level the green certificate system doesn't see a fixed price but the price is defined by the market which is a problem for investors and bankers, so a minimum price has been set to boost investors. You could see it as a sort of feed-in tariff on a certificate system with a minimum and maximum price. When Flanders looked at extending distribution costs of RE to other regions the EC ruled as unacceptable and stated that if you open it for one you have to open it for all. So Flanders decided to abolish it, the main focus is on their own production and consumption of RE. With this in mind, Mr.Draeck, sees that international trade won't play a major role up to 2010. He sees that targets need to be for the post 2010 period. The calculations have started but he perceives the EC don't know what to do yet and that one could not expect a rapid decision on the framework. He notes that feed-in tariff systems are growing together in a way towards bilateral agreements.

Gerard Lipinski from Ministry of Economy and Labour, Department of Energy Security in **Poland**, explains a presentation on the situation in Poland. The main assumptions of the Polish RES-E support mechanism are:
- Quota support system
- Separated market system only for RES-E
- Internal competition between varied RES types
- Price of every sold kWh includes costs of RES-E (all electricity consumers are charged with the costs)
- President of Energy Regulation Authority supervised realisation of obligatory purchase.

The situation since EU accession in May 2004: an amendment of Energy Law is in force, which reached two goals:
Main – full implementation of the EU directive for renewable electricity (2001/77/EC),
Additionally - partly corrected distribution system operators obligations according 2003/54/EC directive.

He explains the main changes so far in Poland in the RES-E field:
- Guarantee of Origin system establishment
- Purchase obligation for every supplier: turnover companies (like earlier) and producers (included TPA)
- Transmission priority
- Periodic reports required by the Directive introduction
- Introduction of a minimal level of penalties in case of lack of fulfilment of the obligation. Penalties proportional to the quantity of not purchased energy and an average annual price
- The National Fund of Environmental Protection and Water Management has allocated funds from the fines for RES investments supporting.

Mr.Lipinski illustrated the process flows of the system. (ref: presentation attached).
He explained that from Poland's position targets after 2010 should be for heat and electricity. They are cautious that very ambitious targets for 'new electricity only' can stop RE development of RES heat production. He sees that after 2010 International trade will be very difficult. A solution could be to unify targets across Europe for NEW production only and for TRECS to be accepted in all countries, for the definition to be the same as in the 77 Directive. He is not sure that introducing an unlinked TREC SYSTEM (independent of the physical flow) is a good idea at this time. The Polish RE market is not well developed yet, it is very early days.

Main conclusions

Hans Schneider, as the moderator, draws the main conclusions from the day.

In general it is obvious that European wide, international trade is not on the agenda and is not expected to happen in the short term. It is seen more possible to establish regional TREC systems eg Scandinavia, where there are complications only between 2-3 countries and not 25. Up until 2010 MS are concentrating on national RES development, production and consumption.
It is clearly important that future targets be set quickly to maintain momentum up to the 2010 targets and then beyond. We heard that the EC are cautious in setting these targets and want to constantly review affects.
It is also clear from the SETREC presentations that perceptions of TREC effects are not always in line with the facts, but that these ,perceptions of experts are what policy decisions are also influenced by and are merited when taken into account alongside the facts and quantitative model analysis for 2020. From the model results the 'Free TREC Trade' scenario is the most cost effective, the 'NO International TREC Trade' scenario gets very expensive with ambitious targets and the Technology specific TREC system is the most cost effective under very ambitious targets.

The important minimum design criteria for harmonisation for international TREC trade highlighted from this group are:

- clear RES definition for all
- linked registries
- transparency
- same denomination
- same attributes
- banking and borrowing ability

Other issues raised for further study are the **length of the market** (will be longer in international market), ability for **forward contracts**, how to **not marginalise RES-Heat development through ambitious RES-E targets** especially relevant for countries like Poland with a large heat industry and developing RES-Heat industry.

The workshop provided a good look at the errors, their effects and consequent adaptations made or being looked at.
We have seen the specifics and theoretical differences between TRECs and GOs and the EU ETS systems and where the potentials for multiple counting exist.

Hans Schneider thanked everyone for participating and closed the meeting. Coffee and further informal discussions took place between the participants.