Criteria for quality certification of Tradable Renewable Electricity Certificate (TREC) products

Release 1

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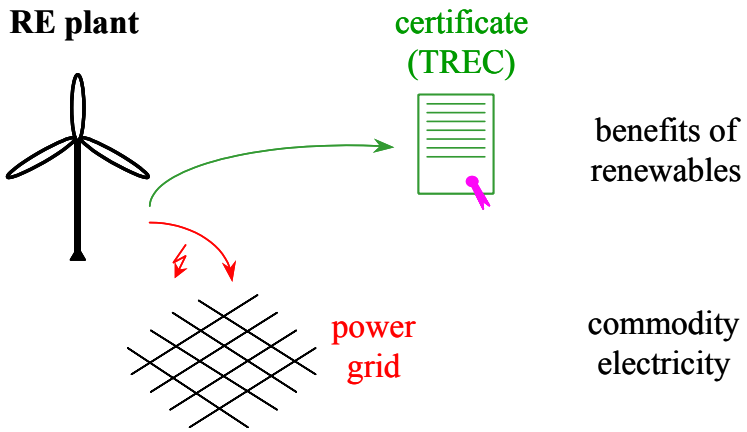
TRECs certification website: http://www.oeko.de/service/greencert

1. Background

The instrument of Tradable Renewable Electricity Certificates (TRECs) provides an option to transfer the benefits of electricity from renewable energy sources (RES-E) without the necessity to transfer the corresponding physical electricity. TRECs can be a powerful tool for the market-based promotion of RES-E.

Each TREC certificate represents the benefits of renewable power over conventional or nuclear electricity generation. This benefit is separated from the commodity electricity at the point of power generation ("issuing of TRECs"). Thus the generator sells two separate products: electricity and TRECs. The certificates can be transferred to any other party without the limits and constraints of the electricity system. Transfers of TRECs can even take place between different continents, e.g. North America and Europe.



TRECs usually exist as electronic records in a database. This is similar to the way banks are keeping accounts for the money of their customers. The value of a certificate is "cashed in" if it is consumed. This means that it is removed from the market forever, e.g. by deleting the record in the database or moving it to a redemption account. Until a TREC is consumed, it can easily be traded between parties just like any other good. Any body who has bought and consumed TRECs can claim that he has promoted the corresponding volume of electricity from renewable energy sources through the instrument of TRECs.

Although TRECs are neither a physical nor a visible good or commodity, it is possible to create products for final consumers (industrial, commercial or households) on their basis. In principle, there are three options for these products:

- combination of consumed TRECs with electricity from the system (this is an option to create a Green Power Product, using TRECs instead of a tracking system for RES-E)
- combination of consumed TRECs with any electricity (or energy) consuming device or service (with the intention of greening the energy consumption of this device or service, e.g. a washing machine or an electric vehicle)
- products consisting of consumed TRECs alone (the redemption of TRECs on behalf of a customer and the transfer of the environmental benefit contained in them to the customer is actually a service rather than a product).

The first option can be treated under rules of any green power labeling scheme, provided that this scheme accepts TRECs as an equivalent to tracking of RES-E. This paper addresses criteria for a quality standard for the two latter options. In this regard, "quality standard" is not limited to an objective assessment of TRECs systems and product credibility, but also includes minimum requirements for the ecological benefits of TRECs products which define an ecological standard. This standard can be defined only on the basis of subjective judgment.

2. Purpose of this paper

As stated above, this paper deals with criteria for a quality standard for either "pure" TRECs products or combinations of energy consuming devices or services with TRECs. The criteria set out here are derived from the preliminary results of the European Green Electricity Network (EUGENE) for principles and criteria for a European Green Electricity label. This is supplemented by additional requirements which apply specifically for TRECs systems and products.

This paper will serve as the basis for a pilot phase of certifying TRECs products, i.e. it is work in progress and any comments are welcome. The pilot phase itself is open to any supplier of TRECs products willing to subscribe to the requirements of these certification criteria.

The criteria set out in this paper represent the views of Öko-Institut regarding minimum standards to be met to ensure that TRECs products are ecologically sound and credible. We invite other labeling organizations, as well as environmental and consumer NGOs to join us in this test phase.

3. Quality criteria for TRECs products

3.1 Eligibility of Certificates

To be eligible for certified products, TRECs have to meet the following requirements:

1. They must be created in a credible TRECs system which guarantees that the certificate actually represents the benefits of RES-E over electricity from other sources, and that the information incorporated in the certificate or available from other reliable sources is sufficient to apply the criteria set out in this paper.

   This includes the following requirements:

   - The TRECs system must represent the total benefits of RES-E, i.e. it must prevent "double-selling", e.g. by ensuring that electricity from which certificates have been generated is not sold as green or renewable nor that parts of the environmental benefit - like CO_2 reduction - are claimed by anybody else than the title holder of the certificate.[1]

   - The TRECs system must be able to prevent unacceptable degrees of fraud by exercising an appropriate degree of verification and control over information and data provided on RES-E power plants.

   - The TRECs system must provide sufficient and easily available information regarding the source of renewable energy, the technology used, the country where the plant is located, the date of its first operation, and the use of any public support. In the case of hydropower and biomass, additional information with regard to environmentally eligibility of these sources must be available (see below for details), which might require exact identification of the plant.

   - The system must allow for the redemption of certificates for the purpose of TRECs products (in contrast to obligations etc.). If this feature is not available, the certificates may also be transferred to a trusted organization (e.g. a foundation created by NGOs) which guarantees that these certificates will never go back into the market.

   Individual TRECs systems can be accredited to this certification scheme by checking these requirements. A list of accredited TRECs systems will be available from the website http://www.oeko.de/service/greencert.

[1] The latter will have to be reviewed in detail for TRECs systems in countries with a CO_2 emissions "cap and trade" regime. In that case a possible requirement for the TRECs seller would be to also acquire and transfer/retire a certain amount of CO_2 permits per kWh. The emission factor applied for this would have to be determined rather high (e.g. at 1 kg/kWh) to be sure that enough CO_2 permits are purchased to cover the TRECs sale in terms of kWh.

2. The TRECs must represent environmentally sound generation of electricity.

   This includes the following requirements:

   - For TRECs from solar energy, wind, biogas, sewage gas, geothermal power, wave and tidal energy no specific requirements are imposed.[2]

   - Landfill gas is not accepted as a source of TRECs, as environmentally sound solid waste disposal technology will not generate landfill gas in the future. Electricity from the incineration of wastes is excluded also.

   - Currently there is no overall agreement on ecological criteria for **hydropower**. The EUGENE network is striving to agree on appropriate criteria for Europe, which might be used in the future for this TRECs certification scheme as well.
     For the time being, TRECs from hydropower can only be accepted into certified products if the plants which have generated the corresponding RES-E fulfill either the Swiss standard "naturemade star" for hydropower or the requirements set out by the Low Impact Hydro Institute. Note that these standards do not prejudge any hydropower criteria which might be applied in the future.

   - For **biomass**, there is also no overall agreement on ecological criteria yet. With regard to the specific complexity of the environmental evaluation of biomass, TRECs from biomass will be excluded from certified products until appropriate criteria from the EUGENE network or any other source have been developed and accepted into these criteria.

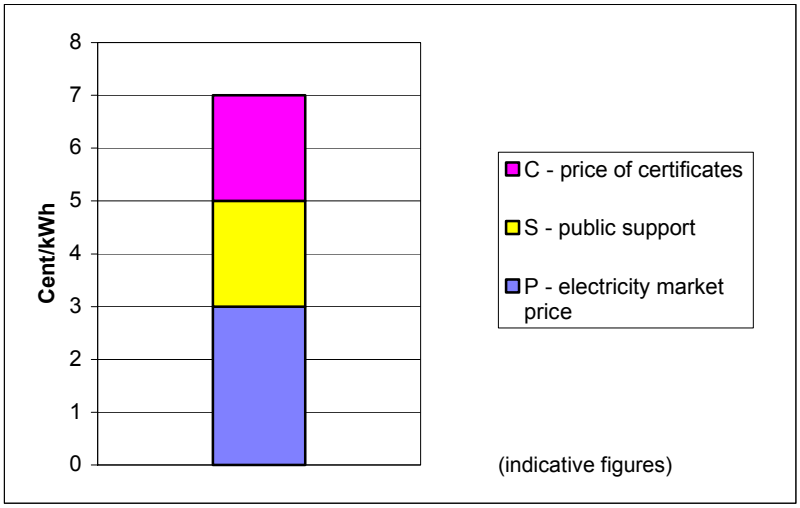
3.2 Additionality requirements

A certain potential of RES-E (mainly old hydropower plants) is already viable in the electricity market without the support from dedicated consumers who either buy green power or TRECs products. In addition, most countries have implemented public support schemes to expand RES-E generation. Any environmental benefit claimed by suppliers or consumers of green electricity, as well as TRECs products, should be **over and above the baseline** which is defined by the existing RES-E power plants and the effects of public support. In other words, environmental additionality is created by RES-E generation which fulfills both following criteria:

- Plants are regarded as **new** if they came into commercial operation after a certain date which should usually be the year of liberalization of the wholesale electricity market in each individual country or state. In the absence of liberalized markets, eligible plants should not be older than three years before the respective certification contract period. Besides construction of new plants, significant re-investments in existing plants can also create new generation capacity, if the re-investment is equivalent to 50 % or more of the cost of a comparable new plant.

[2] Of course the existing legal requirements for licensing and operation in the respective country have to be met.

- If new plants received a significant investment support or if their ongoing production is supported from any public scheme, only a part of their generation is regarded as additional. This part can be determined from the following figure.



The degree of additionality (A) contained in certificates from these plants is calculated as

$$A = \frac{C}{C+S}$$

Note that any significant investment support will be converted into production support by an equal distribution of the investments support on the expected generation within the fiscal lifetime of the plant, which applies for depreciation of the investment.

The certification criteria require that certified TRECs products contain a **minimum of 33 % of environmental additionality**. This means that all certificates included in certified products have to be evaluated with regard to whether they have been produced in a new plant and to the degree of additionality they contain. If the average additionality of a TRECs product portfolio is less than the minimum stated above, then additional certificates have to be consumed by the TRECs product supplier without selling more of his product, until the minimum requirement is met.

Explanation:

If a certain type of certificates contains less than the required additionality level (A_{req}), then for each unit of a certified TRECs product sold to a consumer a number of X units of certificates have to be consumed, with

$$X = \frac{A_{req}}{\left[\frac{C}{C+S}\right]} \qquad \text{and} \qquad X \geq 1$$

3.3 Balancing and accounting requirements

The TRECs product supplier shall properly record his sales and all relevant data on the certificates he has purchased and consumed. All transactions shall either be checked by a public accountant or other competent auditors.

On an annual basis, the total of TRECs products sold (measured in MWh) and the total of consumed certificates should be matched.[3] The supplier has to prove that he has at least consumed the appropriate number of certificates which correspond to his TRECs product sales (no underrun or borrowing allowed). To allow flexible market operation, a volume of consumed certificates, which have not been used for TRECs product sales in one year, can be carried on to the following year (banking). This volume is restricted to a maximum of 20 % of the TRECs products sales in the past year.

The additionality requirements are verified on an annual basis as well. No underrun in additionality is allowed, nor can any additionality above the minimum requirements be carried forward to following periods.

3.4 Consumer protection

TRECs are an abstract subject which is not easy to understand by consumers which usually are not experts. Therefore TRECs product suppliers are obliged to clearly communicate to their customers what their product is about and what the benefit is. Besides general information, which is easy to understand, background information for interested customers should be made available (qualified links on a supplier's website are sufficient for this).

4. Procedures for the TRECs certification

If a TRECs product supplier is interested in this quality certification, he should get in touch with Öko-Institut and provide information on his product and the certificate systems he wants to use. Öko-Institut will discuss the applicability of the certification criteria to the individual product with the supplier and will submit a contract which includes a reasonable fee for certification.

With the signature of the contract, the supplier subscribes to the quality criteria for a contract period of 12 months. He may refer to certification by Öko-Institut immediately after the confirmation of the contract by Öko-Institut, but not before the point in time stated in the contract.

Not later than six weeks after the first half year of the contract period, the supplier provides an interim report to Öko-Institut stating the volume of his TRECs products sold, detailed information on the certificates consumed and the level of additionality achieved within the first six months. The information provided by the supplier should allow Öko-Institut to check, whether the requirements of the certifica-

[3] Long-term contracts between TRECs product suppliers and consumers, e.g. to cover the consumer's electricity demand with certificates, will be treated as a delivery of certificates on a monthly basis.

tion criteria are met. The interim report shall also state the projections for product sales and certificate redemption for the second half of the year.

Not later than eight weeks after the end of the contract period, the supplier provides a final report to Öko-Institut stating the volume of his TRECs products sold, detailed information on the certificates consumed and the level of additionality achieved within the contract period. The report shall be supplemented by all relevant documents prepared by the public accountant or auditor. The information provided by the supplier should allow Öko-Institut to check, whether the requirements of the certification criteria are met. If the supplier wants to continue certification, then the report shall also state the projections for product sales and certificate redemption for the following year.

Öko-Institut has the right to verify the information provided by the supplier. This includes on-site inspections at the premises of the supplier. The supplier agrees to provide all relevant documentation to Öko-Institut as requested.

If a certified TRECs product fails to fulfill the certification criteria, Öko-Institut has the right to withdraw the certification and to publish this fact. Before doing so, Öko-Institut will try to agree with the supplier on measures to compensate for the shortfalls of the TRECs product. Details are laid down in the certification contract.

As this is a pilot phase for certification, Öko-Institut is free to further develop the criteria set out in this paper and to co-operate with other parties for continuation of the certification scheme. Nevertheless, for each certification contract the criteria apply which are valid at the time of signature of the contract.

5. More information

For more information on the quality certification of TREC products please visit our website or contact us via email, mail, telephone or fax:

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