Position Paper

on the Commission Non-Paper

"Modalities for co-financing of CCS and innovative renewable energy projects"

Brussels, 19th June 2009 – The revised ETS provides for up to 300 million allowances to be set aside from the New Entrants Reserve (NER300) to help finance inter alia innovative renewable energy demonstration projects.
EREC welcomes the discussion document sent on 4th June to the members of the Climate Change Committee but wants to draw attention to serious shortcomings in the text.

I. Balance of funding

The Commission appears unwilling to indicate the level of support it will offer for NER300 projects. Instead it will call on project promoters to "stipulate in cash the required contribution" (page 2, Non-Paper) in their proposals.
Assuming that NER300 covers 50% of the cost of project types as listed in Annex I A and assumed that one renewable energy project per category is financed (page 2, Non-Paper) this would suggest that about 8 bn EUR will go towards 8 CCS projects (less 1 bn EUR to account for funding already provided by the EEPR). After making various assumptions about the funding requirements of the renewable energy projects, EREC estimates that in total about 1.5 bn EUR has been set aside for them.
The criteria applied, the very strict types of projects and the complete absence of information as to how the selection will be made between renewable energy and CCS projects, restrict considerably the possibility for our industry to put forward projects and the chance of seeing them selected. Neither a formal split between CCS and renewable energy projects, nor the criteria for a split are set anywhere in the Non-Paper. EREC considers an upfront split of the allowances as the best way to ensure that the NER300 provides for an adequate and fair promotion of zero-carbon and low carbon technologies for the citizen's benefit. In this regard, EREC believes that at least 50% of the NER300 should go to renewable energy.

II. Insufficient Project Categories

EREC is concerned about the fact the project areas identified in Annex I A II are far too restrictive and do not reflect already identified areas of innovation in need of demonstration, some important areas of innovation are even totally neglected. EREC strongly believes that Annex I A II has to be revised. For a more detailed elaboration concerning the different renewable energy sectors please consult point VI. of this paper.

III. Setting up a supportive framework for financing under the NER

Upfront financing rather than per kWh payments

As the installation of Renewable Energy technologies is capital intensive, and the access to funding in the early stages is vital for a project going ahead, EREC prefers upfront payments of non-repayable grants that cover a project's investment phase rather than its operation phase. This would help both to offset a share of the investment costs and to bring on board private investors who would not have wanted to take on the liability of the full cost of the project, a need that is even more pressing in the current economic climate, where lending institutions are particularly risk-averse.

No need for a "claw-back clause" in case of project failure to deliver CO2 reductions.

In the Framework Programme for research, technological development and demonstration, grants for up to 50% of eligible costs can be obtained for demonstration work, which, for installations, would be work conducted during the project's investment phase. The grants are made available as the investments are made. They cannot be reclaimed if, ultimately, the project proves unsuccessful. This should also be the case for NER-funding. A project developer will not consider applying for NER funds if there is a risk that they have to be paid back. This would not only jeopardise the project, but also the financial stability of the company.

Financing innovation presents risks. If the Commission considers an innovation to be worth financing, then it should share the risk of project failure with the investor. The selection process as part of the calls for tender is there to ensure that extremely risky projects are discarded from the beginning. Compliance with the text of Article 10a (8) of Directive 2009/29/EC on CO2 avoidance can be achieved in a different way, i.e. with milestones (see below).

By using milestones in the way described below, one also ensures that the disbursed funds truly correspond to money effectively spent for the "relevant incremental part of the project" paid for by the developer and that the money is not given without verified action.

Using milestones for early financing and compliance with CO2 avoidance under Article 10a (8)

EREC welcomes the approach of setting milestones for funding and disbursement of revenues. However, for renewable energies, these milestones should not be set for the first ten years of operation, as proposed by the Commission, but rather distributed over the project's construction phase, with a final milestone shortly after start of operation. This will both help with needed upfront investment and securing additional sources of finance.

In renewable energy projects, milestones would enable the progress towards completion and operation of a project to be monitored. The final milestone shortly after start of operation validates the fact that the project is running, hence that CO2 is avoided. This touches on a crucial difference between CCS-projects and RE-projects:

- Coal plants with CCS ***can store*** emissions during operation (it is EREC's understanding that CCS plants can be run as normal coal plants without the capture and storage part of the process) so that there might be a need to ensure that CO2 is still captured 10 years down the line. The revenue generated by the plant is linked to electricity generation but not necessarily to CO2-avoidance. The operator can generate revenue without avoiding CO2-emissions. For that reason, NER300 has to incentivise leaving the CCS equipment switched on, making a payment per tone CO2 sequestered appropriate.
- Renewable energy projects, on the contrary, ***always avoid*** CO2 during operation. The revenue generated by the plant is linked to electricity generation ***and*** to CO2-avoidance. Once the investments have been made, the operators will always have an incentive to keep the plant running. Hence the need for a single milestone shortly after project start to ensure compliance with Art 10a (8)'s requirement for CO2-avoidance.

As such, EREC considers that milestones set during construction phase both avoid the need for a "claw-back clause" and ensure compliance with Article 10a (8) of Directive 2009/29/EC.

IV. Pro rata cuts to all projects to fit available budget is inadvisable

Section 5, "Selection procedure", bullet 7 of the Non-paper says,

> Adjustments will be made where total request for funds from the NER is higher / lower than the available funds [...]. If it is higher, the aim will be to reduce costs of both the CCS and renewables parts of the demonstration programme in the same proportion

This policy would encourage all project sponsors to inflate their budgets. It seems unwise to assume that an N% reduction in each project's budget will have a comparable effect on each project's chance of success.

V. Knowledge-sharing

The requirements set out in Annex III are welcome. However, knowledge-sharing requirements constitute an important part of the text and therefore should as such be spelt out in the comitology text, and not be adapted in the call for proposal (as proposed in point 2 of the Non-Paper).

An addition should be made to point D of Annex III to require that data on the residual CO2 emissions of NER300 project should be made public. Currently, point D requires only that data on the reduction in CO2 emissions is knowledge that must be shared.

VI. Eligibility criteria and projects identified

Project types in Annex I A II should include upstream innovation

Upstream innovation (manufacturing, installation, grid systems) is completely absent from Annex I A II, despite the fact that it is often where the bottlenecks are. Renewable energies have greatly evolved and now require different, innovative, upstream capacity to enable rolling out of the latest technologies. Obviously, production or installation of more, innovative, RE-units will result in more CO2 savings. As such, EREC considers that interpretation of Article 10a (8) of Directive 2009/29/EC regarding "funding will be made available upon verified avoidance of CO2" – is not a valid reason to restrict financing of these project types and asks the Committee to consider them.

Minimum scale of projects

For all renewable energies, a minimum scale has been required for project eligibility. Recital 20 of Directive 200/29/EC mentions a sufficient scale for projects as an indication. We therefore call on CCC members to ensure these thresholds are indicative and non binding especially if bigger project are submitted. Operators will use a demonstration project to get the technology as close as possible to a market price. This will entail sizes of projects that are difficult to foresee without considering individual projects.

Shortcomings of Project Categories identified

While the project areas identified in Annex I A II are far too restrictive and do not reflect already identified areas of innovation in need of demonstration some important areas of innovation are even totally neglected. For the respective sectors:

Bioenergy

The scope of bioenergy demonstration project categories should be broadened to include other innovative bioenergy technologies. The Annex excludes many innovative project areas that are crucial for bioenergy development from an energy efficiency and CO2 savings point of view, namely:

- Biorefineries - integrated innovative processes for production of bio-fuels (solid, liquid and gaseous[1]) heat, electricity, chemicals and industrial products (e.g. pulp, wood products, fiber, pellets) and agricultural products (e.g animal feed) valorising biomass potential and simultaneously producing a range of products[2]
- Combined biomass production and supply chain
- Agripellets production and use

[1] Could include innovative gaseous fuels such as BioH2 and innovative liquids such as bioemethanol,

[2] The basis for such refineries or combined bioenergy plants can be either a pulp and paper factory, a combined heat and power plant, pellets plants or any other biomass based installation. The raw materials can vary. It can be waste products or residues or biomass from foresty or agriculture. The total efficiency is maximized by making use of excess energy and by-products from the different processes. It is important to demonstrate such "integration" of various processes in full scale, but also to develop further different in-going processes.

- Torrified pellets production and use
- Improved co-firing technology (CHP) to allow higher share of biomass co-firing
- Co-firing with liquid biomass in steam and gas power plants
- Co-firing with agropellets
- Gasification technology
- Biogas plants using agricultural and food industry waste or non-food energy crops
- High efficiency CHP using bio-based waste (vegetable as well as animal waste oil) and other by-products and residues
- Improved biogas technology such as two steps biogas process (hydrolysis and methanogenesis separated) to shorter the digestion time and decrease the digester's volume.
- Production of up-graded biogas to be fed into the national gas grid

In addition, the quantitative limits of the indicated bioenergy projects are too high. The project categories that fall under the heading 'RES demonstration projects with size threshold' for bioenergy are in real terms projects of a commercial size. For example, the lignocellulose plants 200 kt/y is the size of a commercial plant not a demonstration plant. Therefore, we would suggest lowering a threshold to 50 kt/y or at very maximum 100 kt/y. Also, 30 MW plant is too large – 10 MW is large enough for a demonstration project. The building of so called 'demonstration projects' of over 50kt/y would also be faced with availability of biomass resources problems and also logistic problems. These challenges would be overcome if in real terms they were 'demonstration projects' at a lower size threshold, as they would concentrate the demonstration of the technology not on avoiding collateral problems to be a commercial technology and the flow of raw material in that instance would not be a concern. In addition, with very high size thresholds the project realization of such plants would be too costly before we actually know that the technology can work in practice.

Concentrated Solar Power

In the area of concentrated solar power there are areas of innovation that the eligibility criteria ignore, too.

The "free-standing demonstration plant" has to be seen as "hybrid solar- biomass free-standing demonstration plant" with a capacity of 50MW rather than 30MW. In addition, "new storage concepts: 4-7 hours" as well as "Stirling Parabolic Dish with storage or hybridization: 1-5 MW" are areas that are missing. Moreover, a project using a 'dry cooling' concept should be eligible as well as a project using a high-capacity, high-temperature heat store. These innovations could be implemented and the project could still meet the fundamental requirement to deliver verified avoidance of CO2.

Photovoltaics

The three categories proposed in the Non-Paper are welcome, however it is believed that they are too restrictive and should be complemented with additional categories, allowing projects to be funded as well under the 2nd call for proposals. Additionally the following areas should be included:

- Large scale crystalline silicon demonstration power plants based on new cell architecture (e.g. back contact cells and/or hetero-junction cells): 40 MW
- Large scale crystalline silicon demonstration power plants based on ultra thin wafer <70μm): 20 MW
- PV power generation pant based on distributed PV systems within a region/city (Threshold: to cover >20% of the electricity demand of such region/city in order to simulate a large deployment of PV in the future)

Geothermal

Enhanced geothermal systems need to be tested in two different kinds of extensional stress field (Graben systems and basins) and in crystalline shields. Geothermal systems also need to be demonstrated that use thermodynamic cycles suitable for low temperatures (Kalina Cycle and Organic Rankine Cycle) offering big possibilities in particular for Eastern European countries.

Wind

As stated in the EWEA position on the non-paper, submitted earlier on to the Commission and sent for information to CCC members, there are several issues with regards to the list of Wind project types in Annex IAII :

- It is too restrictive and doesn't comprise some already identified innovations in need of demonstration: more project types have been identified in the European Wind Initiative and by the Wind Technology Platform as being innovative and ready for demonstration (i.e. offshore substructures, specific offshore turbines…).
- It includes hypothetical innovations: projects for 10MW and 20MW turbines will be ready for demonstration in the timeframe of the calls.
- Upstream innovation is completely absent from the project types, despite the fact that it is there, that the bottlenecks are. Specific project types have been identified as being innovative (robotized manufacturing, offshore installation vessels, harbour at sea concepts…) and are in great need of funding. Their impact on rolling out Wind Energy would be considerable. We believe these project types should be included as well and ask members of the committee to consider them.

As such the following amendment to the list of projects in Annex I A II of the non-paper is proposed, based on the innovation strategy identified in the European Wind Initiative, a strategy designed in collaboration with the EU Commission and the Wind Technology Platform, gathering the most innovative industry players. For more information on each specific area, please consult aforementioned document: **NER Funding - Breakthrough Wind Technology.doc**

Generation Capacity

Off-shore wind systems of greater capacity (turbines **≥ 6 ~~8~~** MW): 40 MW
Off-shore wind systems (10 MW turbines): 40 MW
Off-shore wind systems (**up to** 20 MW turbines): 40 MW
Floating Off-shore wind systems: 40 MW

Offshore wind systems with non-monopile substructures:

Gravity-based structures: 25 MW

For deep waters, (20-50 m depth): jacket, tripods: 40MW

Offshore specific turbines (e.g. direct drive, two-bladers) 40MW

On-shore wind turbines **for complex terrain, (e.g. forested terrains, mountainous areas, desert)**: 25 MW

~~**On-shore**~~ wind turbines for cold climates: 25 MW

Upstream/Downstream innovations

Robotised manufacturing yards for turbines, components and structures

Installation and operation: high capacity "jackup"-barges and vessels

Offshore maintenance facilities and Harbour at sea concepts

Offshore wind farms flexibly connected to 2 or more countries (component of a pan-European grid)

System operation and virtual power plants

HVDC multi-Terminal offshore solutions

Ocean

As in the other project areas, the Ocean Energy project types listed in Annex I A II are far too restrictive. The Non-Paper only points out oscillating water column (OWC) technology leaving behind many other categories of technologies that have been identified as being highly innovative and ready for demonstration such as, for example, point absorbers and Pelamis-type devices.

Small Hydropower

The Hydropower sector has been completely ignored in the Non-Paper despite the fact that new innovative demonstrations on more environmentally friendly hydro are in development and in a real need for support in order to become commercially viable.

Hydropower faces urgent development needs in particular, in areas where untapped potential still exists in Europe such as low-head and very low head installations, efficiency improvement of hydro units in refurbishment, multipurpose plants, fish-friendly turbines, and other measures that improve environmental integration.

The following areas show particular need for funding:

- New very/low-head small hydropower schemes (for example VLH-concept)
- Multipurpose plants – innovative ways of combining electricity production with existing infrastructure for irrigation, waste-water treatment, cooling and process water cycles and others
- Development of storage / pumped-storage facilities for small hydropower serving and revalue other RES like wind and solar
- Innovative methods of taking advantage of using energy from existing sites, for example using reserved flow for electricity production
- Fish-friendly turbines

- Innovative and environmentally friendly ways of refurbishing and upgrading of existing sites
- SHP models in flood prevention and control which will become increasingly important with the effects of the Climate Change

Virtual Power Plants

The Commission should find a way to make renewable energy virtual power plants (VPPs) eligible. Innovation in renewable energy technology can derive from the combination and integration of technologies. This project category would gather any interested renewable energy sector such as wind, biomass or hydro. VPPs can also satisfy the fundamental requirement that the project as a whole deliver verified CO2 avoidance linked to a defined capacity.