

Press Release

Renewable Energies: Fixed remunerations will have to stay beyond 2050

New study by the arrhenius Institute proposes long-term necessity of public support schemes for electricity production from renewable energy sources

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On January 23, the EU Commission published its Energy and Climate Package. It contains targets for extending the use of renewable energy sources towards a share of 20% in 2020. Thereby, electricity production plays a key role together with the transport sector and heat production. The lead study "Extension Strategy for Renewable Energies" of the German Ministry of the Environment published in February 2007 eyes a share of renewable energy in electricity production of nearly 80% in 2050.

To support this path and to accelerate cost reductions owed to learning by doing, electricity production from these sources in Germany is currently supported by fixed feed-in tariffs according to the Renewable Energy Act (Erneuerbare-Energien-Gesetz EEG). This instrument partly faces heavy critique and it is suggested, that it should be replaced by a system of direct sales of electricity on the power market and of green certificates on a separate market. In addition, a number of players claim that support for renewable energy is only necessary during a transition phase. Once their total average cost of production fall below the cost of production from conventional sources, they should become competitive in the liberalized markets on their own. Public support mechanisms would then be dispensable from 2020 onwards.

According to recent findings by the arrhenius Institute this is not the case. The new study "Incentives to Invest in Electricity Production from Renewable Energy under Different Support Schemes" analyses the conditions under which the abovementioned objectives for market penetration of renewable energies might be met.

"During the investment analysis one has to distinguish between the average annual electricity price and the price at the moment of electricity production", says Sven Bode, author of the study. Several investigations during the last 18 months revealed that the electricity price at the power exchange heavily depends on the (fluctuating) electricity production from Wind energy and photovoltaics. Whenever wind farms produce a lot of electricity, the spot price and thus the revenues from direct sales will decrease. The effect will be the stronger the larger the share of renewable energies in electricity production becomes. "This systematic problem with revenues will decrease the incentive to invest in new, additional installations without public support massively", summarizes Bode his findings. He adds: "Public support schemes will still be necessary in 2050 if the share of renewable energies is to be increased further."

Furthermore, the study shows that a supplementary green certificates system would not solve the problem. "Assuming the competition model of the EU, a perfect markets, one can show that decreasing revenues from the electricity market will not be compensated by additional revenues from the sale of certificates" explains Helmuth Groscurth, co-author of the study. Operators of renewable energy installations will receive certificates

at no costs ("on top") if and only if the corresponding electricity has been delivered to the grid. The marginal cost of producing certificates is therefore equal to zero for all producers. Consequently, in a "perfect" market the price at the exchange will be randomly anywhere between zero and a possible penalty for not meeting one's quotas. "Under such conditions, risk premiums will increase capital costs for new installations substantially" says Groscurth and adds: "The incentive to invest is likely to be very low under such a regime. We do not expect this to lead to significant market penetration."

Both authors are convinced that fixed feed-in tariffs or similar instruments such as tenders with guaranteed revenues for both electricity production and the environmental benefits will remain necessary even in the distant future. Purely market driven solutions are not sufficient to boost the electricity production from renewable source. Both authors are convinced that "the findings will add a new angle to the current debate on the EU energy policy".

The study may be downloaded under www.arrhenius.de

About arrhenius

Svante Arrhenius, Swedish scientist and Nobel laureate, predicted the anthropogenic greenhouse effect as early as 1896. The Institute named after him is an independent think tank that advises decisions makers in politics and businesses on energy and climate policy.

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