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Excerpt: Feed-in tariffs for renewable energies: an effective program to boost the economy without incurring additional public debt (Hans-Josef Fell, MP)

Everyone agrees that we have to overcome the current economic crisis. But how can we do this? In many countries, tax money is used to finance economic stimulation packages. This mainly boosts government debt, which must be repaid by future generations. Economic stimulus programs which do without government funding present a much better option. Governments and parliaments have to provide incentives for private investment through targeted regulation – this enables the creation of economic stimulus packages which revive the economy without amassing additional debts. This kind of option should simultaneously help to solve other serious problems, such as climate change and secure energy supplies. The Renewable Energies Act (EEG), which was introduced in Germany in 2000, is just this kind of stimulation package. The German renewable energies sector is growing, virtually without the aid of public funding, creating jobs and contributing to climate protection. The Act centers on the obligation to purchase electricity generated from renewable energies and to pay a fixed tariff for it. The principle behind the EEG is to ensure that investments in renewable energies, for the right installations in the right locations, pay off.

The EEG regulates the business relationship between producers of electricity from renewable energies, grid operators and customers. The EEG allows producers of green electricity to sell their product. In most countries, the electricity market is dominated by just a small number of utilities who very frequently block access to the grid and do not invest in renewables. If they did, their electricity production from conventional power plants would soon cease to be viable. Moreover, if they supported the expansion of decentralized electricity generation from renewable sources, they would destroy their traditional monopoly. The German example confirms this: Conventional utilities hardly invest at all in renewable energies even though they, too, would benefit from feed-in tariffs.

Following the introduction of the EEG, Germany experienced a boom in innovations in the most diverse renewable energy sectors. The number of jobs in the industry has risen from just 30,000 in 1998 to 280,000 today. In 2008, 15% of electricity was generated from renewable energies. This represents a steep growth curve compared with 2000, when only 6% of electricity came from renewable sources. At the time, hardly anyone would have expected such rapid growth. The reduction in usage of fossil and nuclear fuels saved 7.8 billion euros, and if you add external costs, savings even amounted to 9.2 billion euros. The additional costs incurred owing to the EEG only account for 3.2 million euros. This shows that our economy already benefits from the use of renewable energies. Renewable energies have started to reduce our dependency on expensive fuel imports and to promote domestic energy supply. In addition, they make a decisive contribution to protecting the climate and the environment.

So, what are the preconditions for making the Renewable Energies Act a success?

First of all, it takes a cost-covering feed-in tariff, i.e. an orientation toward the financial requirements for investments in renewable energies. The tariff should cover costs and allow for an acceptable return on investment of ca. 7%. Otherwise investments would not be made to the desired extent.

Tariffs are determined using economic calculation models which take into account investment costs, operating costs, capital costs, tax write-offs, etc. Returns must be generated in addition to the costs for installations, operation and loan interest.

Tariffs must be adapted to the type of renewable electricity generation, i.e. the size of the installation and meteorological conditions. The happy medium lies between a return on investment which is so low it becomes unattractive to investors, and a tariff which is so high that the resulting costs may lead to the failure of the law.

In order to be able to make dependable plans, investors not only need a guaranteed tariff but also a guaranteed duration during which this tariff will be paid. In Germany, the law provides for a duration of 20 years. It is important to note, however, that it guarantees the tariff which was applicable in the year the installation was built. The law provides for a degression right from the start. This makes sense for the following reasons: The quicker the market grows, the more the tariff for new installations can be reduced, because accelerated market growth leads to a quicker drop in production costs. It is also important to note that the degression rate is based on actual cost reductions. The overall degression is comprised of inflation and the nominal degression as laid down in the law. Both tariff and degression rates should be checked against the actual development of costs every few years.

Another important precondition for the success of renewable sources is access to the grid. Producers will only receive the tariff if they can actually feed their electricity into the grid. Grid operators must not have the power to prevent new renewable energy installations from being built. The German EEG provides the following: Grid operators are obliged to accept green electricity into their grid. Electricity produced under the EEG has priority (!) over electricity from conventional sources. Conventional power plants will consequently be the first to be taken off the grid.

In this respect, it is important for the law to be consistent, because consistent legislation offers investors a reliable framework. It is therefore important to articulate political statements, i.e. declarations of intention and election statements, in favor of a feed-in law.

The market volume must not be limited. This would slow down expansion because fewer or no new factories would be built, market growth would stagnate and investment levels would decrease. A cap may also have the effect of distorting the market because many investors will try to "bag" feed-in tariffs just before the cap threshold is reached.

One of the EEG's great advantages is that it does not rely on subsidies. Innovations are not financed by tax money. The feed-in tariff for electricity producers is financed by all customers, who pay a small additional fee for the electricity they use.

The fact that the tariff does not rely on tight public budgets, the risk of having to reduce it is low, even during economically difficult times. This system also makes the tariff independent from annual budgetary decisions, so that the producing industry has a reliable basis for their calculations without having to worry about the finance ministry cutting their yields.

In 2001, the European Court decided that the feed-in tariff does "not constitute State aid within the meaning of European rules on State aid". On a European level, subsidies from tax money are referred to as State aid, which means that the feed-in tariff is not a subsidy.

Critics of the EEG often claim that guaranteed feed-in tariffs are not consistent with a competitive market.

Renewable energies account for much lower external costs than fossil or nuclear energies. The fewer the costs that are externalized, the more meaningful prices will be. Today, external cost savings thanks to the EEG are already higher than the additional electricity costs.

Some adversaries of feed-in models prefer a quota model over feed-in tariffs.

Under a tender model, the provider with the lowest costs will be awarded the job. Under a quota model, the tariff is based on the price of electricity and the price of certificates.

However, these two models create great economic insecurities for electricity producers as they automatically set an upper limit to the expansion of renewable energies. The United Kingdom is a good example of this. Under the quota model, a kilowatt hour of wind-generated electricity costs 0.6 euro cents more, which is almost twice as much as in Germany. At the same time, the number of wind turbines installed in the UK is only one tenth of those installed in Germany, despite the favorable weather conditions there. This shows that feed-in tariffs are more successful, cost efficient and lead to more market activity, and consequently to more competition.

Another disadvantage of the quota and tender models is the administrative aspect. The EEG minimizes the need for the State to manage the model by transferring the action to companies and private persons. It is up to them whether or not they wish to sign a feed-in contract.

Operators make an effort to maintain their installations, because the feed-in tariff, and thus the return on investment, depends on the amount of electricity fed into the grid. If the installation is subsidized via tax money, the State has to ensure that the installations produce a maximum output, which in turn requires substantial administrative work. This shows once again, that only a statutory guaranteed feed-in tariff can ensure that the installation will remain in operation in the long term. It is important to note that a guaranteed feed-in tariff is not the same as guaranteed returns: the entrepreneur must make an effort to buy the right installation and to maintain it in order to generate a yield and to manage his entrepreneurial risk.

Using public tenders to promote renewable energies will also slow their expansion. Of course, tenders are also published under the feed-in tariff model; however these are not published by the state, but by private investors. This improves competition, for example between project developers and producers of installations, who – motivated by their entrepreneurial responsibility - will consider in detail who to choose for their tender. Of course, competition amongst providers to offer the best technology is a crucial factor for innovation.

The feed-in tariff and the subsequent high number of tenders in a competitive market forms the basis of the EEG's success and strong innovative power. The German example shows that the EEG has led to a significant number of companies being founded. What is interesting here is that most innovations did not arise from the established energy companies, but from newly-founded, privately owned companies. This is not the case under the British quota model.

In Germany, the feed-in law lies within the responsibility of the legislator. Parliament sets great store by fixing tariffs itself instead of leaving the task up to government or agencies. The legislative body considers a range of objectives which were laid down in the Act's preamble, such as securing energy supply, climate protection and technological development.

In addition, good framework conditions for approvals are needed. The bureaucratic effort should be kept as low as possible.

The law stipulates that there is no need to approve each individual feed-in contract. A grid connection does not require official authorization either, since the EEG expressly states the permission to connect renewable energies to the grid. Germany has a clearing house which can be addressed in cases of conflict.

The construction of certain installations, such as wind turbines or hydropower installations, is, of course, subject to building regulations, which means that a building permit can only be granted by the authorities. In order to obtain a building permit, various regulations must be adhered to depending on the technology to be installed, e.g. laws on emissions, noise protection, or nature conservation. Planning law must also be observed, i.e. a wind turbine cannot be built in the middle of a residential area. These spatial planning regulations and building permits are important to prevent uncontrolled developments. However, they must not be misused to protect the privileges of conventional energies.

It is evident that the EEG is an efficient economic stimulus package which does not place an additional burden on state coffers, creates new jobs, enables innovation and helps secure energy supply. And all this in addition to the necessary and important contribution to climate protection, which would in itself constitute reason enough for introducing this law on a global level.