

## EEG 2.0 – Disadvantages eliminated?

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## 1 EEG 2.0 – Disadvantages eliminated?

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In January 2014, the German Minister for Economic Affairs, Sigmar Gabriel, presented the key points of the reform of the German law on Renewable Energy Sources (Erneuerbaren-Energien-Gesetzes : EEG). After a record-breaking short time, the new EEG went through the legislative process and entered into force on 1 August 2014.

Since then, the federal government claims that the new EEG “deleted” the energy revolution’s disadvantages. The EEG reform is supposed to make the energy revolution “predictable, affordable and efficient”.

No sooner had the new EEG been adopted than Federal Minister Gabriel did not hesitate to already attribute the small reduction in the EEG levy, determined by other factors (see figure 1), to his policy.

It is shown below that the **revised EEG** ultimately aims to **slow down the energy revolution**, so as to protect the traditional energy sector and its owners against economic losses.

The bitter situation described here is accompanied by recommendations which are likely to lead the energy revolution to success.

## 2. How can the new law be assessed?

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If the development of renewable energies is, admittedly, not stopped with the new EEG, it is at least greatly slowed down. Development corridors have been established for individual technologies, above which the degression of the feed-in tariff increases and thus the investments in wind and solar become increasingly uneconomical:

- For onshore wind energy and for photovoltaic development, corridors of 2.4 to 2.6 GW per year have been specified. However, the data refers to the net additional capacity for wind (i.e. total installed capacity less disposal of old plants), but for solar energy it refers to the gross added capacity.<sup>1</sup>
- For the expansion of biomass utilization, a corridor of 0.1 GW per year has been specified.

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<sup>1</sup> This means that the capacity of the total installed solar systems will initially rise, but with the decommissioning of the old plants from the boom years 2010 to 2012, the installed capacity will eventually decline.

- The bonus for the repowering of existing wind turbines has been canceled.
- The targets for the development of offshore wind farms have been reduced.

In addition, as of August 1<sup>st</sup> 2014 new photovoltaic plants with a capacity of more than 10 kW have to pay a surcharge for a personal consumption of the produced electricity, which initially amounts to 30 percent of the EEG levy, and increases to 35 percent from 01/01/2016 and to 40 percent from 01/01/2017.

Furthermore, all systems with an output of 500 kW and more are obliged to market the generated electricity directly on the stock exchange. This is usually done by a service company, the direct marketer. Thus, the feeder no longer receives a feed-in remuneration from the transmission system operator, but the revenues from the electricity market and, additionally, the so-called market premium that compensates the difference to the EEG subsidization rates. From 1 January 2016, all installations from 100 kW will fall under this regulation.

As of 2017, all new installations should only be eligible to the EEG support through invitations to tender. Already in 2015, the new instrument will be tested with the first invitations to tender. With the transfer to the tendering procedure, the EEG in its current form is quasi abolished.

Parallel to the change of the EEG, the **Investment Code** (KAGB)<sup>2</sup> was also amended and became effective in July 2014. Numerous changes have been incorporated - with the declared aim of protecting investors. In fact, the small investors are hardly protected. Rather, the implementation and funding of projects is made more difficult for energy cooperatives and small corporations, through additional requirements and administrative burden.

### 3. What were the reasons for the amendment of the EEG?

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The **old EEG practically “foundered” on its success**. The rapid expansion of renewables significantly reduced the power generation from hard coal, brown coal and natural gas. In the first half of 2014, the renewable energy sources already produced more than 28 percent of all German power. This has a dual effect on conventional energy suppliers:

<sup>2</sup> The first version of the KAGB (Kapitalanlagegesetzbuch) already entered into force in July 2013 and replaced the previously valid Investment Act. The German federal legislator has integrated its rules in the KAGB and expanded it with numerous new product rules and regulations.

## EEG 2.0 - Disadvantages eliminated?

- The prices on the electricity market only know one direction: down! Since 2011, the stock prices have fallen by almost 50 percent to currently 3 to 4 cents / kWh.
- The conventional energy suppliers sell a smaller amount to lower prices and thus have to bear losses compared to their previous transactions with industrial customers, utilities and electricity traders.

This is reflected in the stock market value of the largest electric providers. The market prices of E.on and RWE shares have halved in the last four years. The EnBW share has crashed by more than 30 percent in the last three years.

Many cities that took a financial interest in the energy suppliers suffer with the companies and complain about million-dollar losses. Electricity suppliers threaten with further job cuts and divestment and warn against blackouts.

At the same time, the press reported that foreign companies get paid to take the excess electricity from solar or wind power plants in Germany. But they fail to mention that this only happens during a few quarters of an hour in the year and only because the prognosis of supply and demand on the electricity market was not covered with the actual development. Since the conventional power plants are not scaled back because they have no relevant financial incentive or are not technically capable of it, the excess electricity is exported.

Populist propaganda against the EEG was spread by the big German power companies: the "Handelsblatt" reported on 17.01.2012 that Jürgen Großmann (at that time still CEO of RWE) thought of the promotion of solar energy in Germany as a "massive waste of money". According to him, this form of energy in Germany makes as much sense "as growing pineapples in Alaska"<sup>3</sup>.

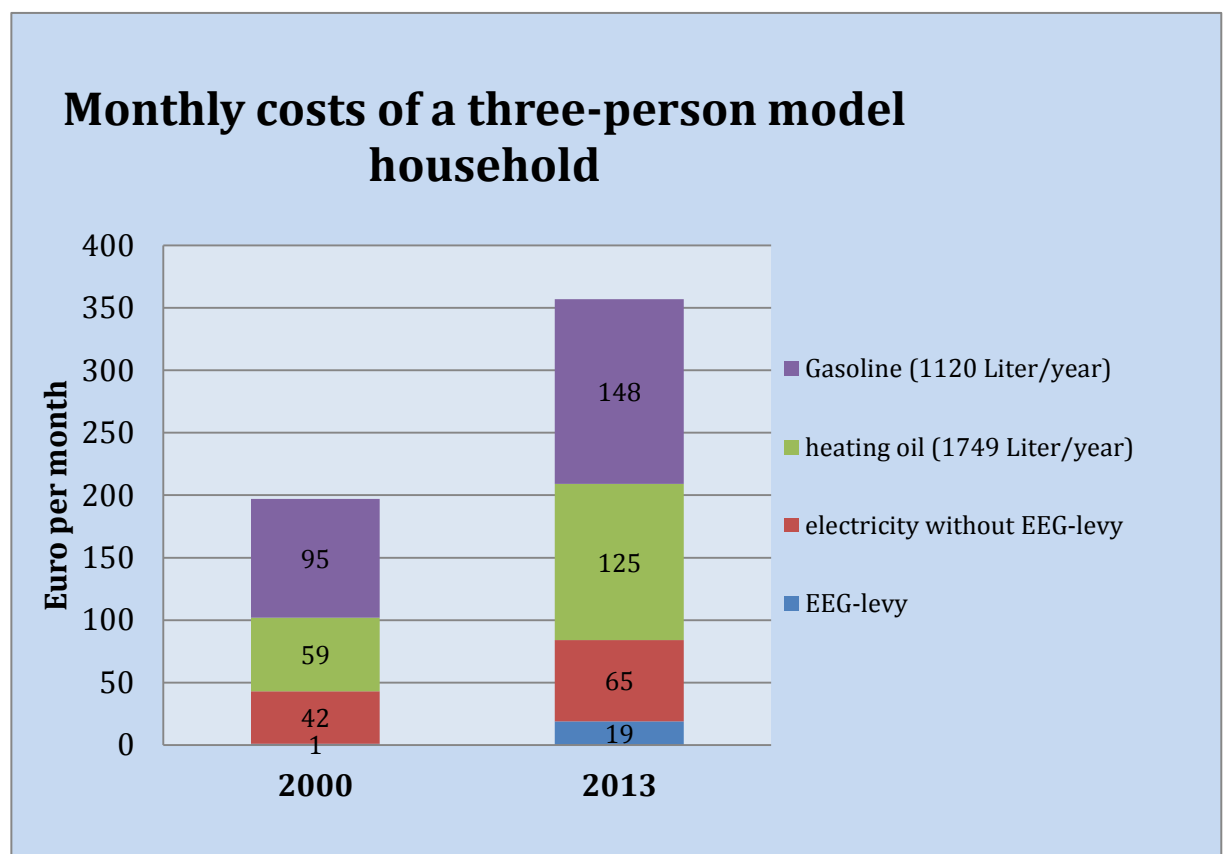
The employer-friendly initiative "Neue Soziale Marktwirtschaft" (New Social Market Economy), whose current chairman Wolfgang Clement also is on the Supervisory Board of RWE's subsidiary RWE Power AG since February 2006, also participated to the media campaign against the EEG.

Critics also came from the consumer protection of households and from the tradesmen associations: the EEG levy had increased to 6.24 cents per kWh in 2014. For an average household with a power consumption of 3500 kWh per year, this resulted in a

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<sup>3</sup> <http://www.handelsblatt.com/unternehmen/industrie/handelsblatt-energietagung-grossmann-mahnt-europaeische-energiepolitik-an/6076310.html>

financial burden of about 19 euros per month. The ruling parties in Berlin have souped up the rising cost of electricity into a major problem in the last two years. However, considering the actual development of the costs of all energy sources, the total monthly energy costs of the average household (including gasoline) have nearly doubled in the last thirteen years. Out of the cost increase of a household's total energy consumption seen between 2000 and 2013, only 19 euros, or about 11 percent of this increase can be proved to have been caused by the renewable energies (see figure 1). The proportion of the costs actually attributable to renewable energy sources<sup>4</sup> in 2013 actually is less than 6 percent of the total monthly costs. If the cost of the renewables was distributed equally between all customers, the burden on domestic and small commercial customers would be much lower.



*Fig. 1: Monthly energy costs of an average household in Germany (Source: Renewable Energy Agency 2013, own illustration)*

The reason the EEG levy has risen so sharply since 2010 is because the large electricity consumers have been partially or almost completely exempted from it. The big consumers thereby benefited in two ways: first, through the exemptions from the EEG

<sup>4</sup> Including sales tax component and current discounts for big companies

levy (privilege), and secondly by the decreasing market prices for electricity. Furthermore, the EEG surcharge increased because of compensation payments for the previous year and an excessively high liquidity reserve. While the payments to the plant operators have increased very little from 2011, the EEG levy has risen sharply (see figure 2).

The German Federal Office of Economics and Export Control has made a press statement on 10.02.2014 according to which the number of **beneficiary companies** (which are exempt of the biggest part of the EEG levy) for 2014 has **increased** by 378 companies, to reach 2,098 companies. The height of the privileged electricity quantity for 2014 now stands at 107,101 GWh and has increased by 11,544 GWh over the previous year. As a result, an additional burden on the remaining electricity consumers with an amount of 5.1 billion euros arises (compared to 4.0 billion in 2013). These additional exemptions from the EEG levy have a much stronger effect on the EEG levy as the additional development of all renewable energy sources this year.

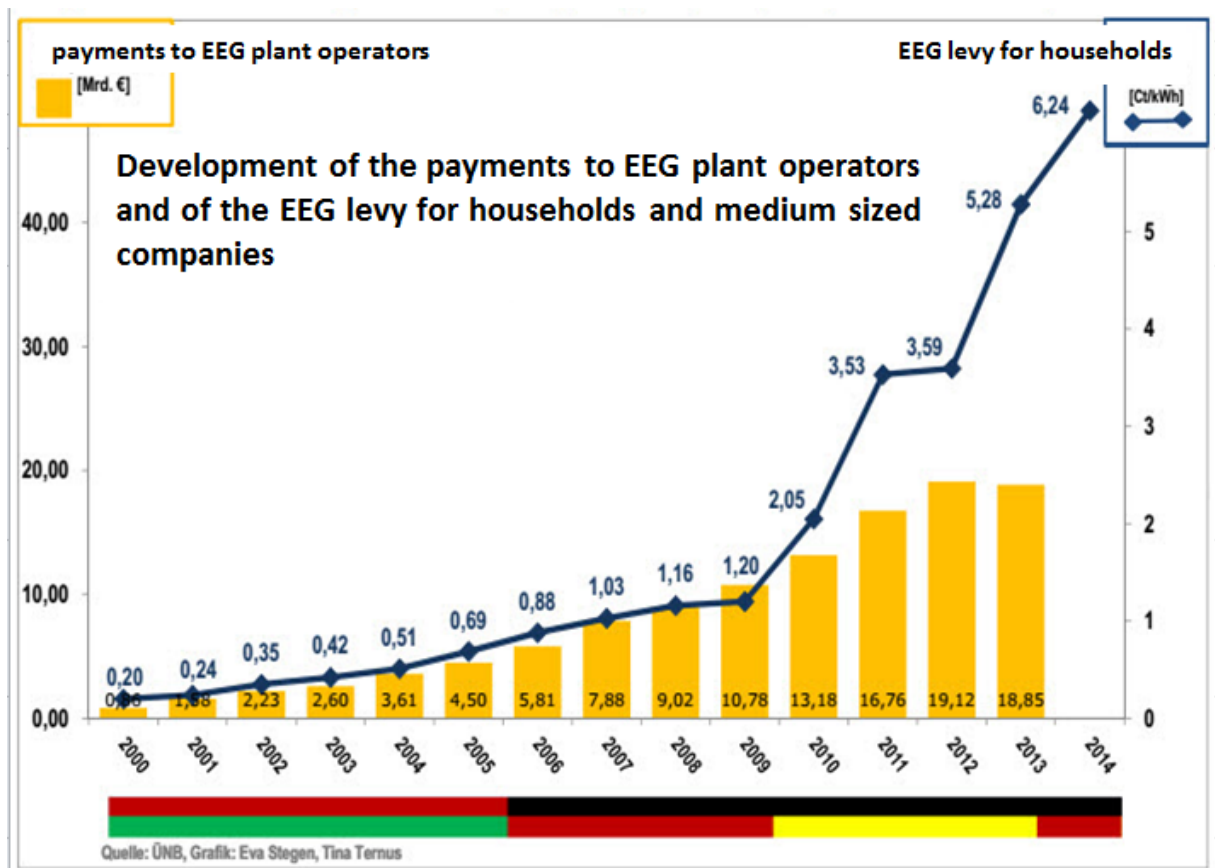


Fig.2: EEG levy and payments for the energy fed into the grid by EEG plant operators drift apart. (Source: EWS) In 2012: Extension of the industry privileges

## 4 Preparations for the U-turn

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The major energy suppliers and the industry succeeded, through targeted campaigns in cooperation with the government, to call the EEG into question and to influence public perception and reporting. As early as the spring of 2013, the then Environment Minister Peter Altmaier spread the unsubstantiated horror scenario according to which the EEG would lead to additional costs of energy supply in the amount of one billion euros. A short time later, he predicted an 8 cents increase<sup>5</sup> of the EEG surcharge in 2014 and thus prepared the political basis for the so-called “electricity price brake”. It is on this ground that his successor, Economy Minister Sigmar Gabriel, could enforce the EEG 2.0.

## 5 What needs to be done to promote the energy transition?

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The current **privilege of major electricity consumers** leads to a high energy cost burden on households, businesses and small industrial customers. Small and medium-sized enterprises, with an annual electricity consumption of less than a million kilowatt hours, are greatly disadvantaged. At the same time the privileged industry benefits from the sharp drop in electricity prices. While the electricity prices for large consumers are lower today than 10 years ago, the prices for small businesses have about doubled. It is urgent to stop this undesirable development by completely eliminating the subsidies for businesses that are not exposed to international competition. The remaining companies need to be more involved in the financing of the additional costs of renewable energy sources.

The current EEG levy finances the difference between the feed-in tariff and the market price. Since the spot market electricity prices have fallen sharply in recent years and are expected to fall even further, this contributes to increasing the EEG levy. This could be avoided if the additional costs for the EEG levy were determined compared to the average electricity generating costs (and not to the spot market prices) and were passed on to all electricity customers.

A functioning carbon emission trading system with a tight cap could also significantly reduce the problem: electricity generated from fossil fuels and in particular from coal would become more expensive on the stock market and hence the amount to be

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<sup>5</sup> In reality, the EEG levy in 2014 was 6.24 cents / kWh and could be reduced for 2015 to the current level of 6.17 cents / kWh.



passed on to customers for the promotion of renewable energies would be lower. In addition, coal would be substituted by gas. Due to the insufficient conception of the European emission trading system, a steering effect could hardly be recorded since its introduction. This would require permits prices of 40 euros/ton and more. Since the design of the operating conditions for the trading of emissions permits would require an agreement on the European level - which is not to be expected because of the divergent interests of the EU members - the government should resort to other instruments, such as a **CO<sub>2</sub> tax** or stricter emission directives for power plants.

Moreover, there is currently too much fossil power generation capacity in operation. DIW has shown in a study in November 2014 that coal-fired power plants with a total capacity of around 10 GW could be shut down in Germany, with the consequence that the electricity market price would rise slightly and the EEG levy would decrease accordingly. This means that the existing excess capacity in the yet predominantly fossil and thus CO<sub>2</sub> emitting power plant park is a major obstacle to the implementation of the turnaround in energy policy and to achieve climate protection goals.

To continue the restructuring of the energy supply, to which the citizens contribute substantially through investments in renewable and energy efficiency, reliable regulations for feed-in tariffs for renewable energy sources are essential. The priority access to the grid for green electricity must be maintained. However, recent statements of the former Energy Commissioner Günter Öttinger in front of the Economic Council of the CDU show that this development is not desired at all in industry circles: Germany is supposed to be "*infiltrated*" by homeowners with solar systems, farmers with bioenergy power plants and citizens who contribute financially to wind turbines (SZ 4 July 2014).

With an increasing renewable power generation, the economic situation of the conventional electricity producers changed. In the future, their plants will only be needed when sun, wind, water and biomass cannot generate enough power. This also requires another remuneration of the (necessary) fossil power plants. The current system of price formation on the electricity market, which focuses on the "merit order"<sup>6</sup>, will work always worse in the future. The higher the share of renewable energy sources in the electricity network, the less will the market price in an "energy-only market" reach a level that leads to a full cost recovery for the electricity generation.

In the future, this requires a system that **remunerates** not only the supply of electricity, but also **the provision of necessary power plant capacity**. This remuneration could be based on invitations to tender for defined generation capacities (on long, medium and

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<sup>6</sup> The "merit order" rule states that the power plants are used in accordance with their variable costs. First, a producer will use the power plants that have the lowest variable cost. With increasing demand the power plants with the next lower variable costs are used. Electricity prices on the stock market are based on the marginal costs of the last power plant used.

short term) and, taking into account the location (the impact on the network load), an appropriate order could be made in connection with the power plant deployment planning of transmission system operators. In return, the power plant operators would only receive, in addition to their capacity premium for providing capacity, the actually incurred variable operating costs for each kilowatt hour produced (mainly fuel costs). There are different views and concepts about this point in the energy industry discussions that should be analyzed in depth over the next year.

Another weak point must be addressed independently of all other solutions: the neglected issue of energy policy, **energy efficiency** must be systematically developed. At present this is where the largest deficits in energy policy are. By tapping into the savings potential, energy expenses for consumers could be substantially reduced: it is absolutely more cost effective to save kilowatt hours than to produce them over a long period of time. However, the companies that have direct access to customers, the energy suppliers, have no interest in savings, as these reduce both their sales and their profits. Here, the **framework** must be designed so that companies gain an economic advantage from the implementation of efficiency measures - either by obtaining additional customers or by a commitment within the framework of the EU Energy Efficiency Directive.

The central point for the success of the energy transition is an honest and transparent **information policy** that exposes to all parties the advantages and disadvantages as well as the cost of switching to renewable energy sources and energy efficiency. This includes the systematic study of the external costs that our current energy system entails. With such a systematic approach that also takes the further economic benefits into account, the "extra cost" would be eclipsed by the benefits. This is where the current and the previous governments have failed: instead of positioning themselves with clear climate protection objectives and the necessary tools, climate protection goals are questioned and the necessary measures are not addressed.

An additional aspect has to be noted. The current **tariff situation** is very confusing for electricity customers and, in addition, counterproductive in terms of climate protection: the largest consumers get the best rates. Today there is simply **no reason why** a higher power consumption and **increased air pollution should be rewarded with discounts**. Even in a liberalized energy market, models could be realized that allow a competition of providers without favoring high power consumption.

Households and businesses can also make their contribution to the energy revolution by **purchasing electricity and gas from the energy suppliers who promote the energy revolution**. With these companies, the kilowatt-hour could be slightly more expensive, but they usually offer services that help save energy and increase the share of renewable energy sources. The outcome is that the electricity bill - despite higher prices or not granted bonuses - can be lower due to a lower consumption. To facilitate the

choice of an appropriate company, Büro Ö-quadrat, in cooperation with the Ruhr West University, has developed assessment criteria for a “**provider test**”. The method and criteria are currently being tested for a selection of companies.

## 6. Conclusion

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As can be seen from the foregoing, a sustainable energy policy has to take various factors into consideration. The handbrake applied by the federal government on renewable energy is the wrong way and is counterproductive in the sense of a sustainable development.

The **old EEG** was an instrument that has contributed significantly to the global development of renewable energies and their **immense cost reduction**. In this respect, it was a **success story** that could not be better written.

Against this background, it is particularly galling that in the new version of the law, only the preamble shows the right way. The development corridors set out in the **new EEG** are too low **to achieve climate change targets in the electricity sector**.

The experience in recent years illustrates two things:

1. If the energy revolution fails, it is not because of technical issues. Rather, it will fail because of the inertia of the energy industry, which succeeds to enforce its interests through political influence.
2. The energy revolution does not come from above. It must **be enforced by committed citizens and organizations from below**. This can be done through a variety of activities: through the organization in energy cooperatives, through investments in their own renewable systems, through efficiency measures in their own homes, by choosing an energy supplier that supports the energy transition, and through political influence at the local level, at the state level as well as at the federal level.

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