

THE EEG SURCHARGE FOR 2014

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1. Facts versus feelings

On 15 October 2013, the four responsible transmission system operators (TSOs) announced the level of the EEG surcharge for 2014.

In this document, the German Renewable Energy Federation (BEE) seeks to explain and quantify the component parts of the EEG surcharge for 2014. The aim of this paper is to put the discussion on the EEG surcharge for 2014 and the further expansion of renewable energy on an objective footing, as well as to shed light on the causes of potential electricity price increases. The hope is it will highlight the need to eradicate any irrelevant and consumer-hostile components from the EEG surcharge.

2. Overview of the 2014 EEG surcharge and its components

According to calculations by the TSOs, the EEG surcharge for 2014 will increase from its current level of 5.277 cents/kilowatt-hour to 6.420 cents/kilowatt-hour (kWh). From 1 January 2014, all non-exempt consumers will pay this amount for each kilowatt-hour they use. The figure set by the TSOs differs only slightly from the calculations of the German Renewable Energy Federation (BEE), which estimated the surcharge at 6.26 cents/kWh (*Calculation of the EEG surcharge – see Annex*).

The real costs of supporting renewable energy have only increased from 2.39 to 2.54 cents/kWh, i.e. by just 6.3%.

Apart from the modest increase in the pure costs of RES support, the following factors are primarily responsible for the sharp rise in the EEG surcharge in the coming year. These factors are – if at all – only indirectly connected with the expansion in renewable energy. They include:

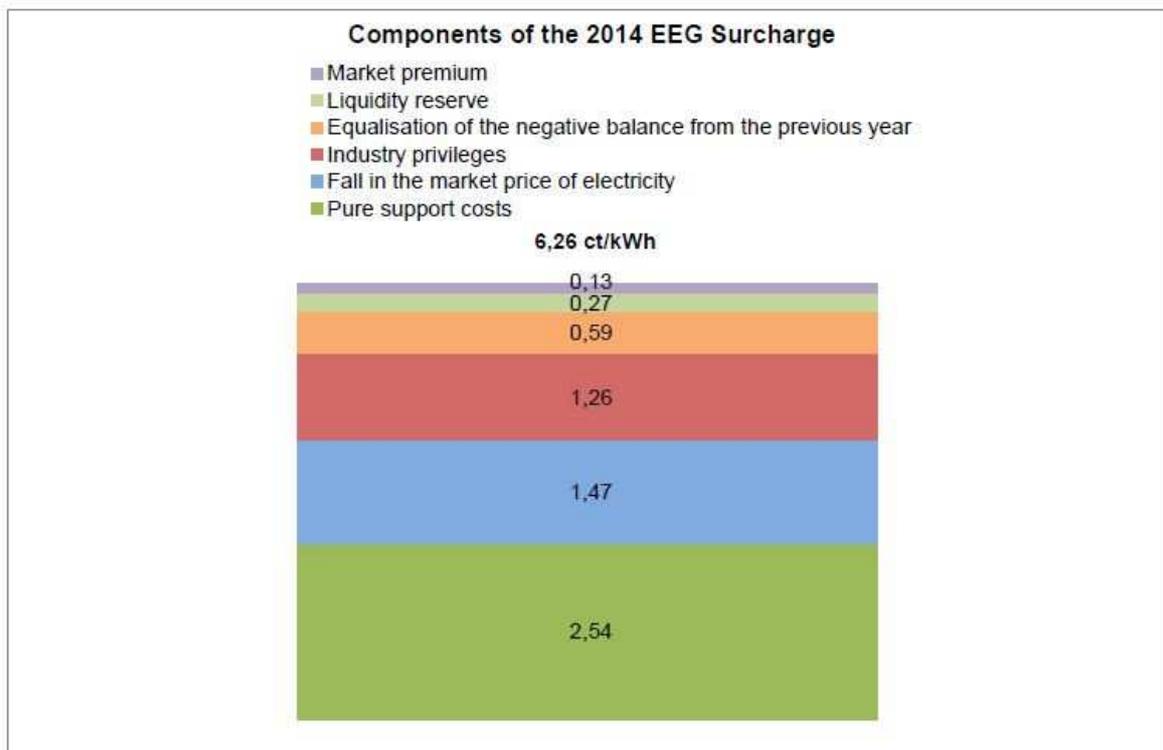
- the significant reduction in the market price of electricity,
- the expansion of energy privileges, especially for the energy-intensive manufacturing industry,
- the market premium,
- equalisation of the negative balance resulting from forecasting errors when calculating the EEG surcharge for 2013 (i.e. making up the deficit).

This shows that:

The EEG surcharge is no longer the price we pay for the expansion of renewable energy. It is also not an indicator of the cost of the energy revolution

in Germany (Energiewende).

Instead, the EEG surcharge offers a distorted image of the energy revolution. The Renewable Energy Sources Act (EEG) is now burdened with the politically flawed decision to sell renewable energy on the electricity market and privileges outside the system for intensive energy users in the industrial sector. These factors, which are indirectly connected to the expansion in renewable energy, represent more than half of the surcharge and are a disproportionate burden for the average consumer.

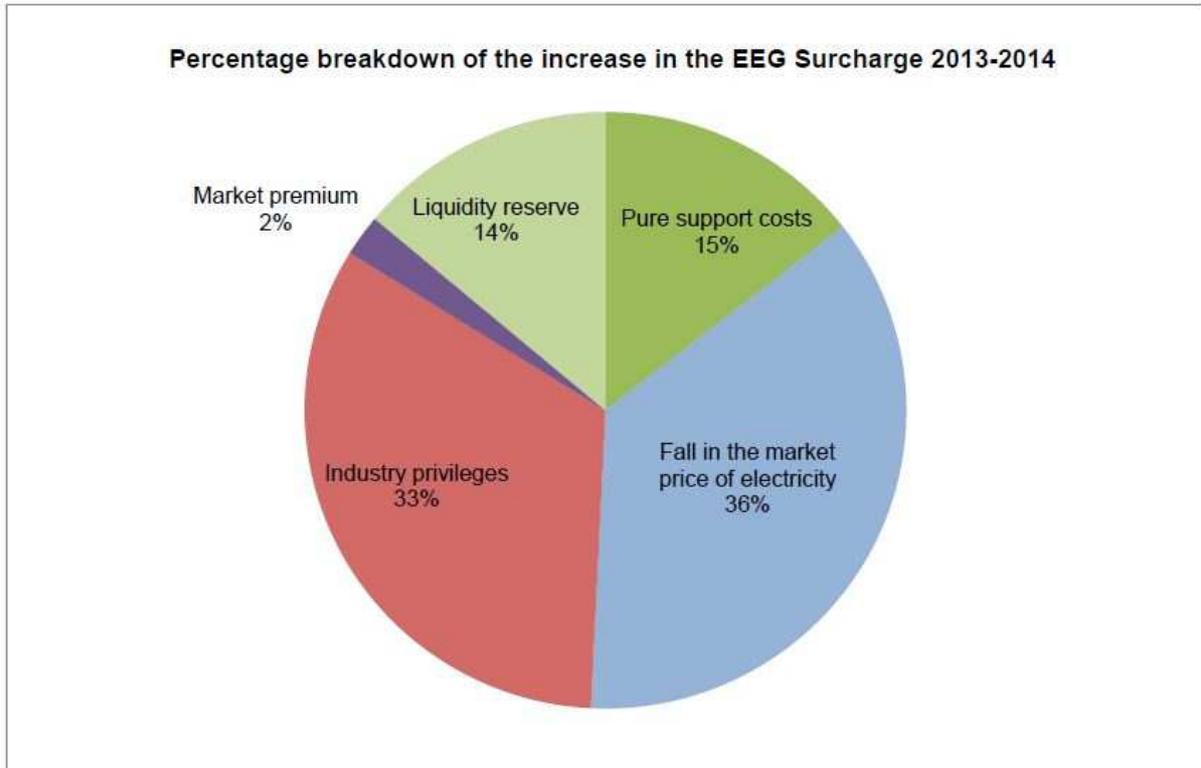


3. Factors contributing to the increase in the EEG surcharge for 2014

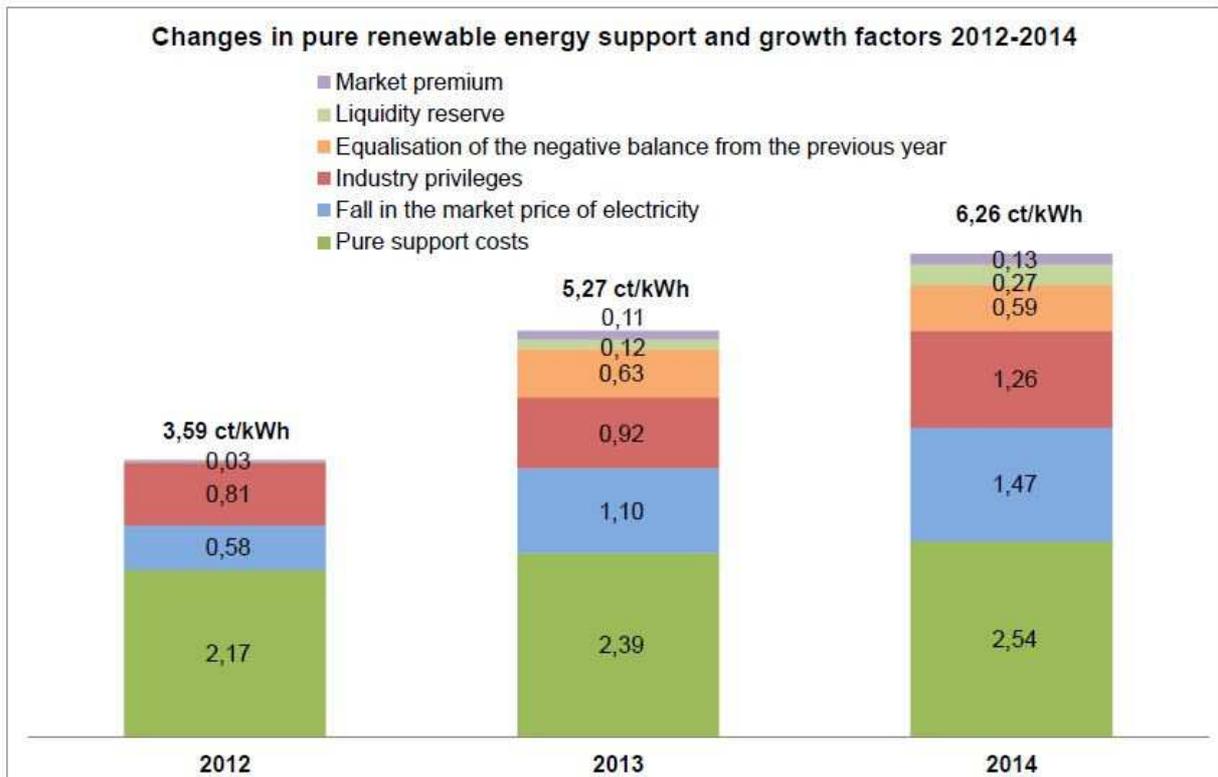
As compared to 2013, the EEG surcharge will increase by almost 1 cent/kWh in 2014. The additional expansion in renewable energy represents only 0.15 cent/kWh of this rise.

The following account for the lion's share of the increase:

- the fall in the market price of electricity (36%),
- the expansion of industry privileges (33%).

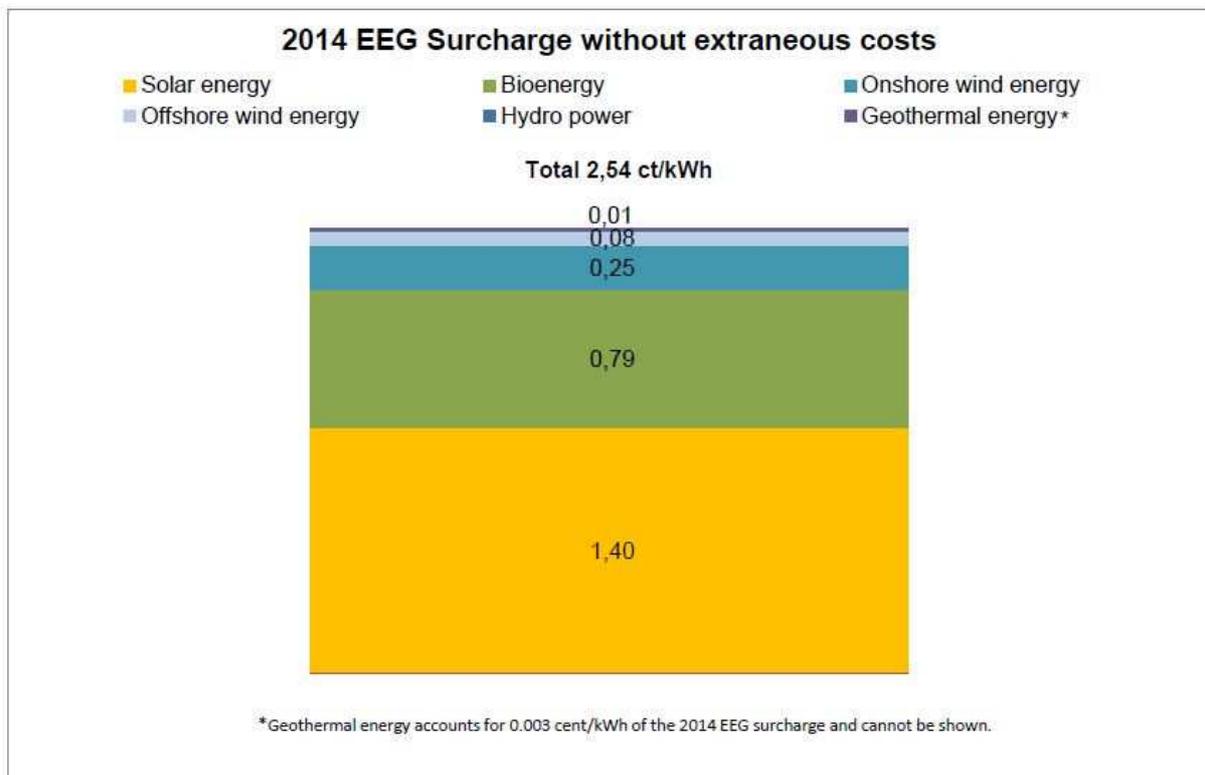


While pure support costs for the development of renewable energy are set to increase by just 6% in 2014, the remaining factors, added together, will increase by 29%.



3.1. The real costs of financing renewable energy – accounting for 2.54 cents/kWh of the EEG surcharge for 2014

Pure support costs lie at the heart of the EEG surcharge. They cover the difference between expenditure on compensation payments and revenue from marketing renewable energy on the energy market. This sum allows the construction of new renewable power plants to be financed via the electricity price. The different technologies incur different costs (so-called differential costs) according to their maturity level and their specific site and operating conditions.



The pure costs of financing renewable energy account for 2.54 cents/kWh of the EEG surcharge for 2014. In comparison with 2013, this component has thus increased by just 0.15 cent/kWh. In other words, the construction of new renewable energy power plants is certainly not the main culprit behind the significant increase in the EEG surcharge. On the contrary, RES development represents only 15% of the overall increase compared with 2013.

3.2. The fall in the market price of electricity – accounting for 1.47 cents/kWh of the EEG surcharge for 2014

Market prices (spot and futures market) have been on a downwards trend for years. While in the second quarter of 2008 electricity spot market prices amounted to around 7 cents/kWh, they had dropped to 4.3 cents/kWh by 2012. The spot price even fell as low as an average of 3.7 cents/kWh in 2013.

The excessively low prices for CO₂ credits play a key role in this falling trend. The European Emissions Trading System has been sluggish for years. Operators of coal-fired power plants stock up on cheap credits and are thus able to sell their electricity for low prices on the spot market. The spot market price for electricity falls as a result.

The following figures point to the huge gap between the current price of a tonne of CO₂ and the costs of the environmental impact of carbon emissions:

- In the second quarter of 2013, CO₂ certificates were available for around €4-5/tonne.
- The real CO₂ costs, as estimated by the German Federal Ministry for the Environment (BMU) and the Federal Environment Agency (UBA), are closer to €80/tonne. A price of at least €30/tonne would be required to encourage investment in energy-efficient climate protection technologies and to stabilise the market electricity price.

Another significant factor contributing to the decline of market prices is the growing amount of electricity generated from renewable energy, squeezing expensive fossil fuel power plants out of the market and lowering the current market price of electricity (*Merit order effect* – see Annex).

In contrast to widespread opinion, many companies benefit from these low market prices when buying electricity, because the price decrease translates into lower costs when they are procuring power. The significant economic benefits of RES expansion bear fruit for the companies who are able to take advantage.

However, the reduction in the spot market price poses a problem for the EEG surcharge because of the calculation method defined by law: when renewable energy lowers the market price, the difference between the feed-in tariff paid for electricity generated from renewable energy, and the revenue from the sale of this electricity on the market becomes larger. This automatically increases the surcharge, which is intended to close the gap between expenditure on the feed-in tariff paid and revenue from the sale of the electricity generated from renewable energy.

This leads to the following paradox: the lower the market price due to the supply of renewable power, the higher the EEG surcharge. This effect is enhanced by significantly reduced prices for CO₂ certificates and the fall in electricity demand, as this also contributes to the reduction in market prices.

This means that renewable energy lowers market prices and simultaneously becomes a victim of its own success due to the flawed calculation method.

The EEG surcharge for consumers will rise by 0.37 cent/kWh next year purely due to the decline in spot market prices. This factor thus accounts for 1.47 cents/kWh of the EEG surcharge, representing an annual total volume of €5.5 billion.

3.3. Industry privileges – accounting for 1.26 cent/kWh of the EEG surcharge for 2014

The special equalisation scheme under the Renewable Energy Sources Act (Section 40 et seq.) ensures that energy-intensive companies are given a helping hand with their energy costs. The scheme was originally introduced to allow power-intensive companies to continue to compete at international level. The privileged businesses pay a lower surcharge depending on their electricity consumption and intensity. They are even entirely exempt from paying the surcharge if they can satisfy their electricity requirements with own power plants (Section 37(3) EEG 2012). The relief for companies is at the expense of private consumers and trade and commercial businesses (*Special equalisation scheme and industrial power consumption* – see Annex).

The amendment to the EEG on 1 January 2012 allowed the Federal Government to expand the special equalization scheme to a significant extent. The number of privileged companies rose from 603 in 2011 to 1,691 in 2013. The number of companies exempt from paying the EEG surcharge will continue to rise sharply next year as well, increasing to 2,300 companies. As a consequence, the number of people investing in the transformation of our energy supply system is set to fall yet again. The EEG surcharge for 2014 will thus rise by another 0.34 cent/kWh compared to 2013.

Industry privileges as a whole (special equalisation scheme and own consumption) thus account for 1.26 cents/kWh of the EEG surcharge for 2014. The cost of these industry privileges is 37% higher than the previous year. Companies are predicted to save €5.8 billion next year just by being partially or completely exempt from paying the EEG surcharge.

3.4. Equalisation of the negative balance for 2013 – accounting for 0.86 cent/kWh of the EEG surcharge for 2014

In 2013, the EEG account (*Calculation of the EEG surcharge* – see Annex (4.1)) moved into negative territory. This was because spot market prices fell more sharply than forecast and led to even lower revenue for the renewable electricity sold on the market than predicted. An additional sum will have to be collected in 2014 to balance the EEG account. Making up the deficit caused by higher expenditure in 2013 accounts for 0.59 cent/kWh of the EEG surcharge for 2014.

3.5. Market premium – accounting for 0.13 cent/kWh of the EEG surcharge for 2014

By introducing the so-called market premium on 1 January 2012, the legislative bodies sought to facilitate market integration of renewable energy in the electricity sector. Plant operators changing from the existing EEG remuneration system to marketing their electricity directly on the spot market are paid a premium (*Market premium* – see Annex).

According to data provided by the transmission system operators, approx. 90% of the installed wind capacity, 40% of the installed bioenergy capacity and 10% of the installed photovoltaic energy capacity is covered by the newly introduced marketing model. Expenditure on the market premium amounts to 0.13 cent/kWh of the EEG surcharge for 2014.

4. Annex

4.1. Calculation of the EEG surcharge

Since the year 2000, the development of renewable energy has been supported by the Renewable Energy Sources Act (EEG). This guarantees the purchase of electricity from renewable power plants and fixed remuneration for each kilowatt-hour of electricity generated over a period of 20 years. The resulting costs of financing renewable energy are passed on to customers via the so-called EEG surcharge.

Through the EEG surcharge, electricity consumers thus finance the development of renewable energy in the power sector. This means that the surcharge closes the gap between expenditure on feed-in tariff payments for electricity generated by renewable power plants and revenue from the sale of this renewable electricity on the spot market (so-called differential costs).

The surcharge is fixed annually – on 15 October of any one year for the following year. It is based on a forecast estimating various developments for the coming year as precisely as possible. In addition to data for existing renewable power plants, the relevant transmission system operators (TSOs) have to submit a forecast for new EEG plants to be constructed. They also have to calculate the average feed-in tariff these new plants will receive and estimate their probable generating hours. These are the three major factors to be considered when calculating the anticipated expenditure.

This expenditure is set against revenue from the sale of the generated electricity on the electricity spot market, which also has to be calculated by the TSOs.

Revenue and expenditure are set off in a combined account, the so-called EEG account. The gap between expenditure on feed-in tariff on the one hand, and the revenue obtained from selling renewable power on the market on the other hand, constitutes the cost of developing renewable energy (also called differential costs). These costs have to be covered by the EEG surcharge.

To this end, the differential costs are divided by the kilowatt-hours of electricity which are predicted to be consumed and which are not exempt from paying the surcharge on account of special provisions (see below). The resulting figure per kilowatt-hour of electricity is the so-called EEG surcharge. It serves to balance the EEG account, covering all revenue and expenditure.

The calculation method shows that any number of major factors can merely be estimated in this process:

- construction of new plants,
- the degree of capacity utilization,
- revenue earned on the electricity market, closely related to changes in market prices,
- electricity consumption.

In other words, the calculation of the EEG surcharge is a forecast which can be adversely affected by a number of uncertainties. Any subsequent real-time variation from the assumptions made – such as falling or rising market prices, the construction of more or fewer plants, more or fewer hours of wind or sunshine, higher or lower electricity consumption – are taken into account when calculating the surcharge for the following year and hence corrected (or made up) retrospectively.

4.2. Renewable energy lowers market prices – the merit order effect

The merit order is a way of ranking power plants in the electricity market. Plants with the lowest marginal costs are the first to be brought online to meet demand, followed by plants with higher marginal costs in ascending order until all demand is met. On the market, the last accepted bid determines the electricity price. Hence, the electricity price is determined by the most expensive power plant needed to meet the respective demand in a specific quarter of an hour.

Power plants with marginal costs below the set electricity price are allowed to sell their electricity. More expensive power plants cannot act in the respective trading session.

However, the marginal costs of wind and solar power plants are close to zero, as they do not have to buy fuel or emission allowances. Therefore, in a liberalised energy market, these plants always come online and thus oust more expensive fuel-dependent plants. The so-called merit order effect lowers the market price of electricity.

Wholesale market prices are reduced not only as a result of renewable energy generation, but also thanks to the extremely under-priced CO₂ certificates. The fact that the European Parliament voted to temporarily remove 900 million CO₂ certificates from the market on 3 July 2013 (backloading) will unfortunately do nothing to counteract this market distortion.

The reference point for calculating the decline in spot market prices caused by the use of renewable energy is the third quarter of 2008, when the average spot market price was 7.3 cents/kWh. At that time, fossil fuel prices were at a similar level. The prices for

CO₂ certificates were also around €24/tonne, a value well within the range sought by the European Commission. By way of comparison, in the last three months, the price of certificates was around €4/tonne.

4.3. Special equalisation scheme and private consumption by industry

The EEG special equalization scheme (Section 40 et seq.) ensures that energy-intensive companies are given a helping hand with their energy costs. The scheme was originally introduced to allow power-intensive companies to continue to compete at international level. The privileged businesses pay a lower surcharge depending on their electricity consumption and intensity. The legislative bodies decided that the additional costs would be shouldered by private consumers and trade and commercial businesses, i.e. by Germany's small- and medium-sized enterprises.

While in 2006 some 282 companies (with a power consumption of 70 TWh) saved the sum of about €410 million because of these privileges, this figure had increased to 734 by 2012, with savings of €2.36 billion. The extra costs for non-privileged electricity consumers rose accordingly. The electricity bill of an average household rose by around €18 a year in 2012 alone because of this industry privilege scheme.

The Federal Government significantly increased the number of potential beneficiaries of this privilege scheme again by the 2012 amendment of the Renewable Energy Sources Act (EEG). With effect from 2013, businesses with an electricity consumption of 1 GWh per year and with electricity costs accounting for 14% of the company's gross value can also benefit from this favourable provision. According to current data from the Federal Office of Economics and Export Control (BAFA), 1,691 companies were (partially) exempt in 2013. The number of exempt companies could rise to over 2,300 in 2014.

It should be added that electricity generated by industrial companies in their own power plants is not subject to the EEG surcharge (Section 37(3)). About half of the power consumed by German industry is thus fully exempt or has to pay only a very small EEG surcharge. Industrial power consumption in Germany amounts to approx. 240 TWh a year. Private households use around 140 TWh a year. The same amount is required by the trade and services sector.

4.4. Market premium

By introducing the so-called market premium on 1 January 2013, the legislative bodies sought to facilitate market integration of renewable energy in the electricity sector. Plant operators changing from the existing EEG remuneration system to marketing their electricity directly on the spot market are paid a premium.

In the electricity market, in addition to the regular market price, plant operators receive the difference compared to the current EEG feed-in tariff. The calculation is based on the average electricity price for the respective trading month. The so-called market premium is added to this average price, compensating for the exact difference between the original EEG tariff and the average market price. If plant operators manage to sell their electricity above the average price, they earn more as the market premium is not reduced accordingly. Therefore, electricity producers using the market premium model can earn an amount significantly higher than the current EEG tariff.

Furthermore, operators receive a so-called management premium which compensates them for any extra expenditure (administrative expenses, preparation of feed-in forecasts, etc.), and for the higher risks incurred by marketing their electricity directly. Operators of biogas plants receive an additional so-called flexibility premium as well as the management premium to encourage them to adapt their electricity generation to demand.

4.5. Liquidity reserve

The so-called liquidity reserve was introduced for the first time in 2012. This income, generated in connection with the EEG surcharge, is intended to create a buffer for the EEG account (see above). It helps reduce or prevent a temporary negative balance and avoids interest charges. The liquidity reserve must not exceed 10% of the difference between revenue and expenditure in the EEG account. In 2012, the liquidity reserve accounted for 3%, but in 2013 it was fully utilized at a figure of 10% for the first time.