

« [Energiewende: a lesson in numbers \(Part 1\)](#)

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## Energiewende: a lesson in numbers (Part2)



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(picture link:<http://www.nature.com/nature/journal/v445/n7125/full/445254a.html>)

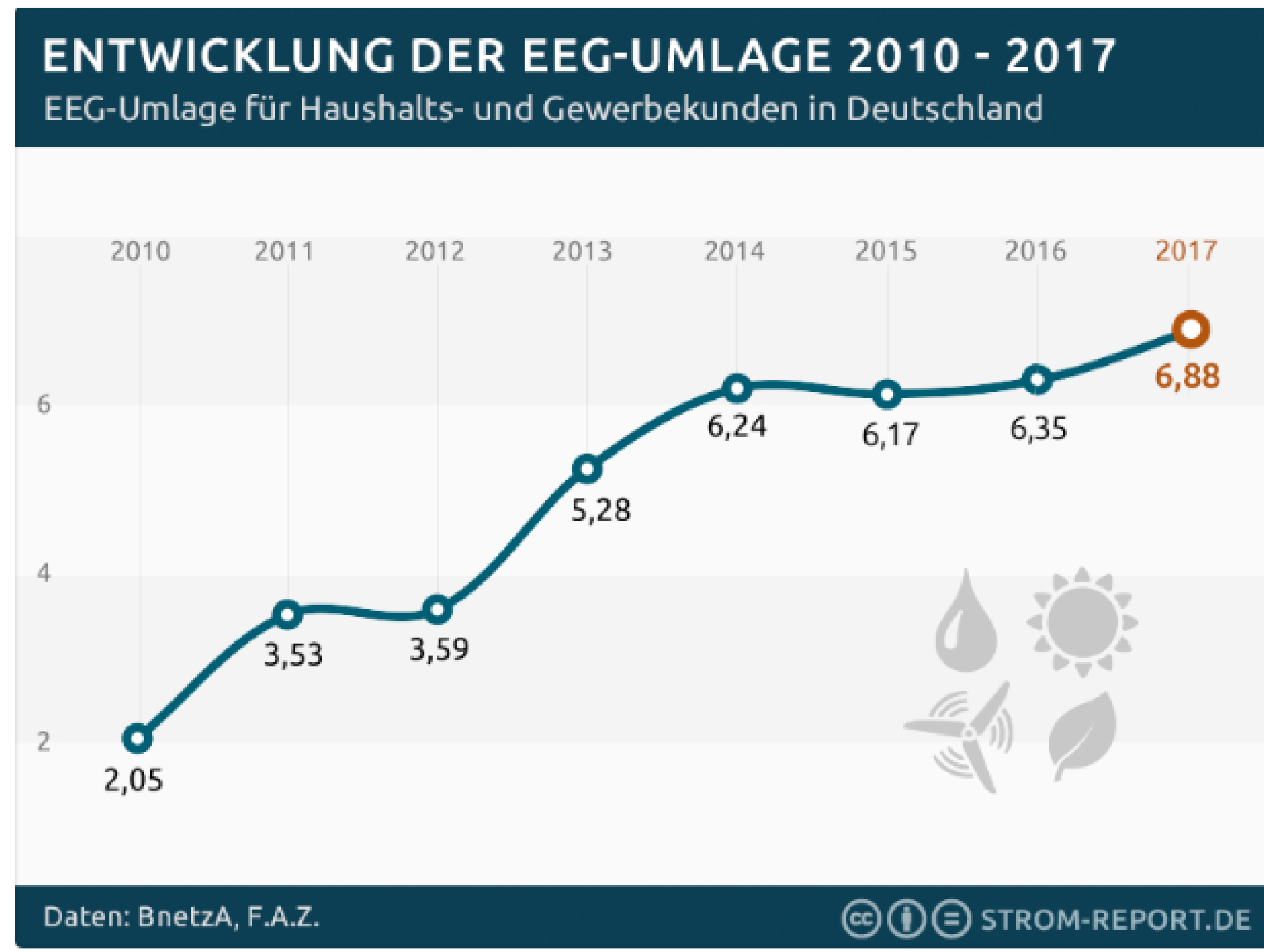
In the first part of this comment on the Energiewende I showed that its primary goal to restrict the CO2 emissions has not been attained.

In this second and last part I will concentrate on the costs of the Energiewende.

### 2. The costs of the Energiewende

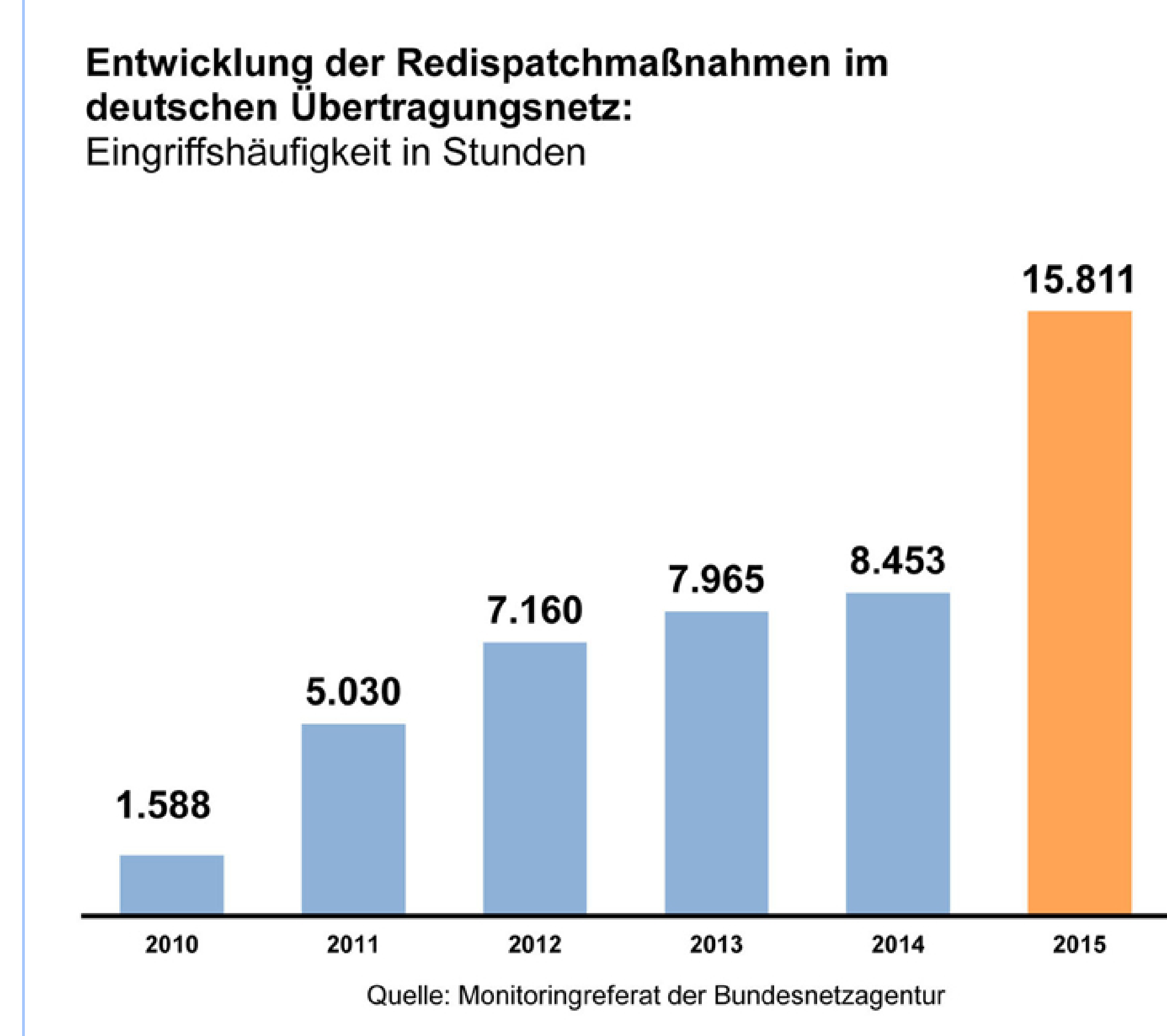
Let us remember that the financial aspect of Energiewende is a system of subsidies going into many directions: those who install solar PV or wind-turbines (for instance) receive a subsidy for the installation costs; they are granted priority in feeding electricity into the grid, and they are paid for this feed-in a tariff largely in excess of the market price. The McKinsey report writes: "Die aktuell vorliegenden Zahlen belegen, dass die bisherigen Erfolge der Energiewende überwiegend durch teure Subventionen erkauft worden sind".

The costs for the individual household rises continuously, as shown by the next graph:



The increase with respect to the 2010 situation is a mind-blowing 3.35 factor; as the kWh price will probably reach or exceed 0.30 Euro in 2017, most experts agree that the yearly supplementary cost per 4 person household will be higher than 1400 Euro (which has to be compared to the 1 € price of one ice cone per month/person that minister Jürgen Trittin announced in 2004!).

The subsidization has transformed a free market into a planned economy, with many unintended nefarious consequences: At certain times the combined solar+wind production is excessive, and leads to negative prices (the big electricity companies must pay their (foreign) clients to accept the surplus electricity):



The "redispatch" interventions to stabilize the grid and avoid its collapse rise by a factor of 10 from 2010 to 2015 (link); the costs rise practically more than the doubling given by "Moore's law" during 2013-2015 (link):



Actually, if one includes not only the costs of not-needed electricity, but also those of the redispatch (changing the provenience of the electrical energy) and the mandatory reserve capacity, we are close to a doubling in the years 2011-2013-2014-2015, as shown by the "Insgesamt" total in million Euro (link) :

So viele Millionen Euro mussten Stromverbraucher dafür zahlen, dass die Netze infolge des Umbaus der Stromversorgung immer häufiger stabilisiert werden müssen

	2011	2012	2013	2014	2015
Kosten für die Abregelung nicht verwendbaren Stroms aus erneuerbaren Energien (Einspeisemanagement)	33,5	33,1	43,8	183,0	478,0
Kosten für die regionale Verlagerung von Kraftwerkeinsätzen (Redispatch)	41,6	164,8	113,3	185,4	402,5
Netzreserve für den Fall, dass in Deutschlands Süden zu wenig fossile Kraftwerke am Netz sind	16,8	25,7	56,3	66,8	168,0
<b>Insgesamt</b>	<b>91,8</b>	<b>223,6</b>	<b>213,3</b>	<b>435,2</b>	<b>1.048,5</b>

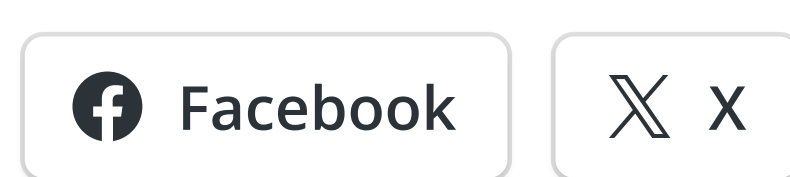
The McKinsey report sees grid management costs quadruple during the coming years and rise to over 4 billion Euros (4\*10^9) per year. A recent article in The Economist titled "Wind and solar power are disrupting electricity systems". Here three main problems are cited: the subsidies, the intermittency of wind and solar and finally their very low production costs which make traditional power stations (urgently needed for base-load, backup and grid stabilization) non-economic: without state subsidies nobody will built these power stations, so that the circle of state planning (as we know it from soviet times) is closed.

### 3. The job problem

Renewables have always been hyped for their job potential, but the reality in Germany is quite different: 2016 was the fourth year with falling job numbers in the renewable industry, and when this trend continues the aim of 322000 "green" jobs will not be attainable in 2020. Equally disquieting is that 2016 is the first year showing a decline in the jobs in the electricity-hungry industry. An older (2011) AEI report concludes that green jobs only displace traditional ones, and that in Spain each green megawatt installed destroyed 5.28 jobs. It seems that the whole Energiewende depends on its foundation of big subsidies (either direct or indirect) and state planning and steering. In a free market, the rise of "renewable" electricity would not be nil, but be much slower. The subsidies have spoiled huge parts of the industry, and they see these subsidies paid by all the citizens as their due.

Fritz Vahrenholdt has published a paper at the GWPF titled "Germany's Energiewende: a disaster in the making". He could well be right.

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