Why Renewable Energy Sources Are Ruining Us

by Heinrich Duepmann

Heinrich Duepmann is the chairman of Germany's National Movement Against the Renewable Energies Law (NAEB). He addressed the Industrial Policy Conference of the Civil Rights Solidarity Movement (BüSo) in Bad Salzuflen on March 10, 2010. A report on the conference appeared in EIR*, March 26, and the keynote speech by party chairwoman Helga Zepp-LaRouche was in* EIR*, April 2. Mr. Duepmann's speech has been abridged and translated from German.*

First of all, what is the National Movement Against the Renewable Energies Law?

I want to emphasize that I am neither personally nor financially involved nor otherwise active in this business. But my training makes me somewhat competent to speak on the subject, and as far as energy data in Germany is concerned, I certainly have the facts.

I was initially intensively engaged in the citizens' initiatives against wind power, but these initiatives will not, as I see it, bring about a real improvement, because in the final analysis, they speak only for a very small portion of the population, and have other drawbacks.

As for the so-called "climate skeptics": Although the theme of "the human impact of global warming" is being hyped worldwide, it must be said that but the issue of wind and solar energy, if we put aside California, is a German one. This foolishness really does come from Germany, in contrast to the ususal climate hype, which comes from elsewhere.

Wind power in California was virtually dead. You probably remember all the pictures of the broken-down wind power sites from the 1980s. It was dead, but it is coming to life again in Germany, and after the first initiatives of GROWIAN (GReat-WIndpower-Complex). At the time, I was myself a believer in this technology, which became the big boom at the beginning of the new century in Germany, because of the Renewable Energy Law [Erneuerbare Energien Gesetz, EEG, effective January 2009].

What we are saying is: The EEG affects everyone, we are all paying for it, so that this small clique of people can get a golden nose job! We try to operate on the federal level, presenting the special situation of wind and solar power. We try to operate by gaining members and persuading politicians, to make the craziness clear to the voters at large.

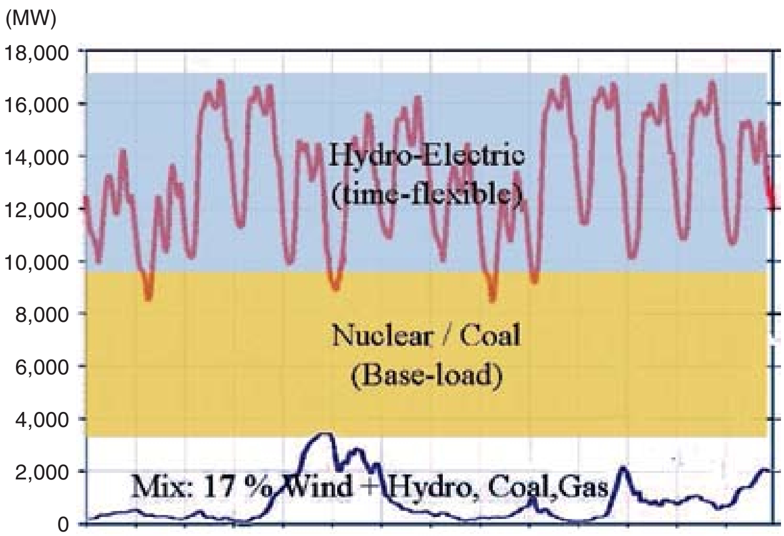
'Three Stars' for Providing Electricity

The most important requirements for providing electricity—I call them the "three stars"—are that the grid must always have a voltage of 220 V (or 231 V, technically); it must constantly generate 50 Hertz with the generator, which is rotated by something, be it a wind power plant or a conventional steam engine; and all power stations producing electricity in the network must have the same sine-curve zero point, at the same point in time. That must match exactly, at plus or minus .05.

That is really the great challenge, to keep production and consumption in balance, in each millisecond. Without that, you have a blackout.

Now, let's look at the fluctuations in consumption in the power grid (**Figure 1**). You see here a two-week time frame, with two peaks each day—one in the morning between 9:00 and 10:00, and the other between 1:00

FIGURE 1
Fluctuations in Power Consumption (Upper Curve) and Power Production From 'Renewable' Sources



Source: Transpower-Nord.

and 2:00 or 3:00 in the afternoon. The consumption shown here is relatively symmetric, and it is supplied by power stations of various types.

First of all, there are so-called "base-load" power plants that ensure a certain percentage of the entire consumption. When consumption falls below that amount [into the base-load area on the graph], you simply let off a bit of steam and dissipate the extra energy. That is more economical than shutting down such a plant, which will typically be a nuclear plant or a brown coal plant.

And how do we fill up the fields under the red curve [top curve]? Primarily by the production of coal-fired plants and natural gas-fired plants, and then, for fine-tuning, with pump-storage plants or hydroelectric plants. What results is a "power mix." (When our politicians today speak of "power mix," they are referring to something completely different, to nonsense, which is how the energy is produced—by The sun, the wind, etc.) The point is to arrange the power mix in such a way that you get exactly this balance.

Now, we've come to the magic formula, which is very simple: The Sun never shines at night; the wind is usually not at the right level; and power cannot be stored. Therefore, you can only conclude that it's absurd to produce power from these sources, because what do I do if the wind is not blowing at night, or if there's a sudden drop in wind velocity? My power plants will stop working, the balance will be upset, and you get a blackout.

Politicians seem to view the matter differently, since we have the so-called "Meseberg Resolution": On Aug. 8, 2007, the former government decided to increase the percentage of power coming from "renewable energies" to 30%, and some people then calculated that it would cost the economy EU527 billion. But that has done nothing to solve the problem that the Sun doesn't shine at night and that the wind is usually not cooperative.

Electricity Costs in Germany

Now, let us look at the facts in greater detail. What are the costs in Germany? Where do we stand compared to other countries? And how does the EEG work? Do these so-called "renewables" contribute anything at all, technically, to the energy supply? What are the repercussions of that today, in loss of purchasing power for consumers? What are the consequences for industry? Research and development into the matter, and the focus on saving energy—these are completely moronic. History shows that progress and technology and prosperity increase when certain resources were available in unlimited amounts: the ability to think, and energy.

The cost of electrical power in Germany is about EU70 billion per year. Of that, about EU22.5 billion is for the actual costs of production of all power plants, without counting the "renewables"—and added to that are the EU9 billion of EEG subsidies (these figures are from 2008).

The average price of electricity for industry per kilowatt hour is 10.9 euro cents, of which the state gets 27% and the EEG 10%. As you see, the production factor, known as the ex works,[1] is definitely still dominant here, at more than 50% of the base price (**Figure 2a**). A good 50% of the total price of electricity that an industrial entrepreneur pays, covers the cost of production, plus the profits of the utility companies. Transport costs are low, at 12.5%, and other items such as licence fees are relatively low.

It's not as advantageous for private consumers (**Figure 2b**). For them, the average price in 2008 was 21 euro cents, and it's now moving steadily toward 25 cents. Here, the ex works percentage only accounts for 37%. That is because transport costs are much higher, in order to pay for all the 220 V cables to residences, and also because licence fees account for a good part, since every municipal supplier holds out his hand and says: "E.ON, if you want to sell your electricity to my citizens here, I'd like to get a little money for that."

Now, how does Germany compare with others in terms of costs, with a special focus on industry, that is, bulk consumers? Given that that the U.K. is no longer an industrial country, as everyone knows, and Italy isn't either—the industrial countries being of course Germany, Belgium, Spain, Sweden, Finland, and France—then Germany is practically at the top of the list of industrially active countries, with 8.53 euro cents per KWh in 2008. France is at 5.39 cents, or more than one-third less, and the gap is growing (**Table 1**).

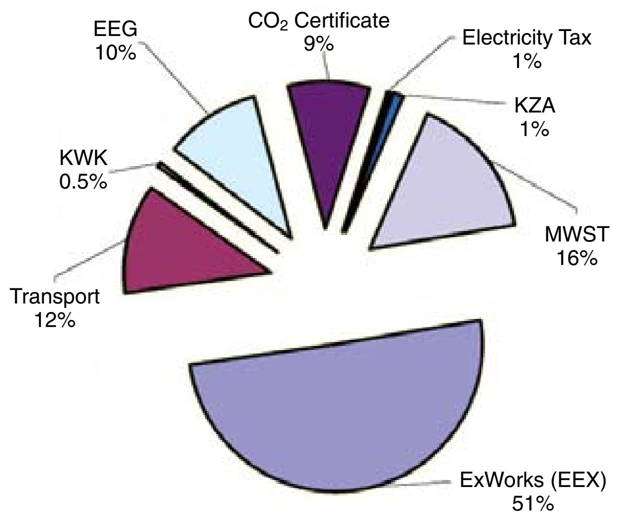
How Does the Renwables Law Work?

Let's look briefly at the Renewable Energy Law, the EEG. As soon as you become the owner of a wind generator or a solar generator, you can contact your municipal supplier or the nearest connection point, let them know that you are now running your generator, and then

1. A trade term signifying that the price invoiced or quoted by a seller includes charges only up to the seller's place of business. All charges from there on are to be borne by the buyer.

FIGURE 2a

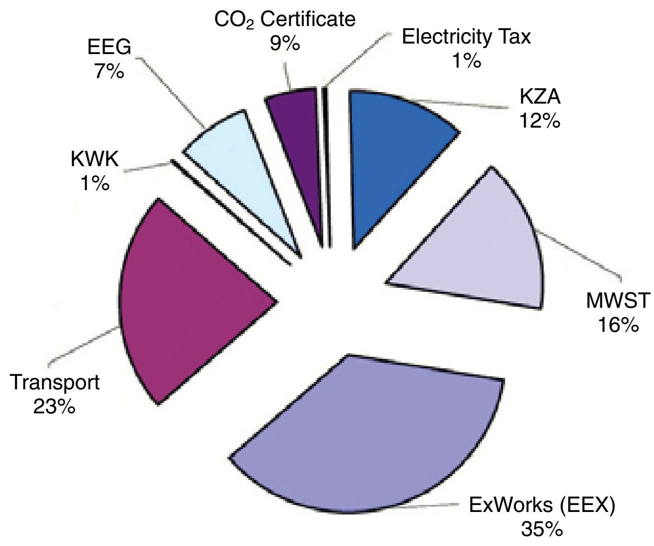
Electricity Costs for German Industry: 10.9 Euro Cents/kWh, Government Share 27%, EEG 10%



Source: NAEB.

FIGURE 2b

Private Customers/KMU: 21 Euro Cents/kWh, Government Share 34%, EEG 7%



Source: NAEB.

The share of the power producers (ExWorks) is about half of the cost for industrial customers and about one third of that for private customers. A considerable share of the costs is due to "renewable energy" EEG subsidies and CO_2 certificates. Acronyms on the graphs: Power-Process heat system (KWK), which is also subsidized; cooling tower auxiliary water treatment plan (KZA), also subsidized; value-added tax (MWST).

you're allowed to produce power (as best you can, depending on the force of the wind or the availability of sunshine). The municipal supplier is then *compelled to buy your electricity at prices set by the government and to dispose of it somewhere*. It has even reached the point that when there's too much wind power in Germany and it can't be sold on the Power Exchange, we *pay* other countries to take it. The electricity has to be left somewhere, when the wind is strong and plentiful.

Table 2 shows prices from 2003 to 2009, for Germany, both for industry and the private domain. As you see, the price rise for private customers was moderate. This is linked to the fact that cost factors other than actual production costs and EEG subsidies [not from the federal budget, but paid by electricity consumers—ed.], dominant in the private sphere. But not so for industry, where the costs of production have had a great impact, and the EEG subsidies even more so. Here you see that the costs of electricity for industrial firms have more than doubled from 2003 to 2009 (that's not completely correct; there are other factors involved as well).

TABLE 1

Electricity Prices for Industrial Bulk Consumers

(Euro Cents/kWh)

France	5.39
Finland	5.62
Sweden	6.23
Spain	7.25
Belgium	7.42
Germany	8.53
Great Britain	10.05
Italy	12.01

TABLE 2

Electricity Costs in Germany

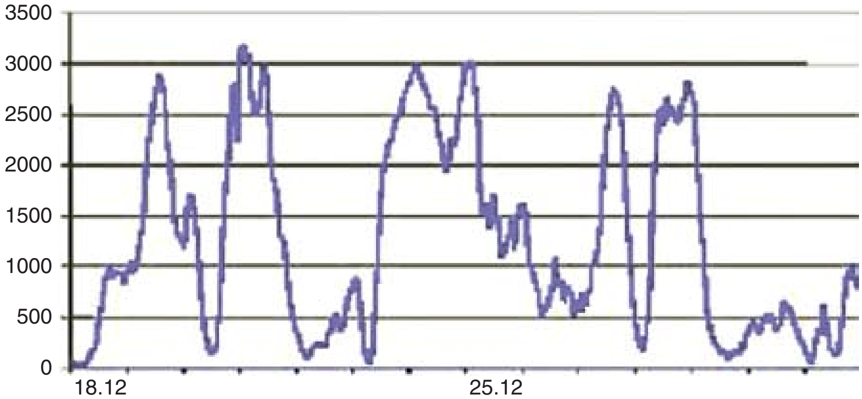
(Euro Cents/kWh Including VAT)

	2003	2004	2005	2006	2007	2008	2009
Industry	4.82	5.09	5.3	6.68	7.8	9.14	10.9
Private	17.12	17.96	18.66	19.46	20.64	22.7	24.4

Industrial customers: 6.55 MW; 40,000 MWh.6,000 h/a; Source: VIK Essen.

Private customers: 3,600 kWh, est. 2008-09; Source: BDEW.

FIGURE 3
Power Supplied by Wind Power Plants in Germany, End of 2001
(MW)



Source: E.ON-Nord.

Within a short period of time, fluctuations of up to 6,500 MW had to be compensated for from other sources. Since these data were collected, wind-power capacity has grown, making the fluctuations all the larger.

That is, of course, deadly for industry.

You can assume that 20% of the costs of an average industrial firm goes for energy. And this cost increase is what's costing us jobs in Germany. Leaving aside trade unions and such things, and salaries, which end up flowing back into consumption somewhere, and then contribute to turnover. But what's being skimmed off here, in the form of EEG subsidies to the suppliers, goes neither into consumption, nor the public coffers.

Sometimes It Blows, Sometimes It Doesn't

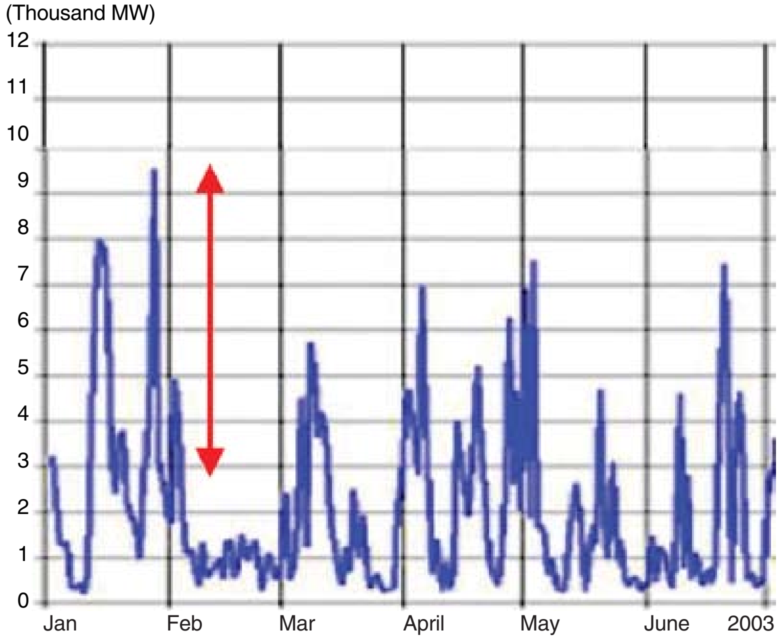
Figure 3 shows how dramatic the situation is with wind: This is again a diagram for a two-week period. (Although the graph is somewhat old, the principle remains unchanged: Sometimes the wind blows, and sometimes it doesn't. Dramatic climate changes might lead to totally different wind patterns, but in principle, it doesn't change.) You can see here that there are completely unsystematic changes in the wind, and consequently in the electricity fed in, so that it can't be integrated into the power supply in any rational way.

The power strains involved are shown in **Figure 4**. On Jan. 28, 2003 [see arrow], there was a sudden peak, at around 9,000 MW, and then, within a few hours, the wind slackened dramatically, and 6,500 MW of extra power had to be supplied in a very short period of time from other power plants.

That 6,500 MW means 5-6 nuclear power plants. Now, they run continuously in any case, unless they're undergoing maintenance, or have been shut down, so there's not much you can change about that. But to quickly produce 6,500 MW of power demands a huge effort for a power plant, or even the entire power plant network, because it takes a certain amount of time to start them up. It takes a full day to get a coal-fired power plant up and running.

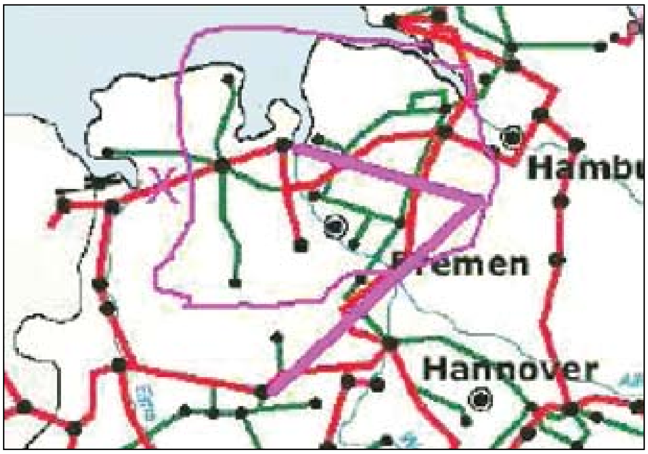
The first omens of the consequences this can have have appeared on Nov. 6, 2006, when a newly constructed cruise liner from the Meyer Shipyards was to be taken via the Ems River to the North Sea, and the

FIGURE 4
Power from Wind Power Plants in Germany, January-June 2003
(Thousand MW)



Source: ISET.

FIGURE 5
Power Diverted Due to Excess Wind, Blackouts Result



Source: NAEB.

On Nov. 6, 2006, the power line over the Ems River was switched off (marked with an X), to allow a newly built cruise liner to pass underneath and travel safely from the shipyard in Ems to the North Sea. The power from the wind power plants in the North Sea had to be diverted to the east (wide line). Since the wind forecasts were wrong—it was windier than expected—the power grid was overloaded, and the generators had to be shut down. Parts of Germany, France, Belgiuim, Italy, Austria and Spain were subjected to blackouts for up to two hours, and the effects were felt as far away as Morocco

high-voltage power line spanning the Ems was switched off (**Figure 5**) to avoid the danger that the liner would touch the power line.

The problem arose because of erroneous wind forecasts. There is a particularly high density of windmills in this region, and the power is diverted either via a route parallel to the Ems, but which first crosses the Ems, or via a route in the direction of Hamburg, and then from Bremen to Hanover, and then back into our region [eastern Westphalia].

This switch-off led to a blackout in many regions in Europe, much more so than we experienced in the surrounding area. We didn't notice much, but in France, and partially in the Czech Republic and Poland, it was dramatic.

What exactly happened? At 20:30, a slight drop of wind was forecast, which was to remain at that level until 23:30, after which there was supposed to be a leap upwards towards. So, the supply operator said: Okay, we should switch off between 21:00 and 23:00, when there is very little power from wind.

But the actual feed-in rose sharply and continued until 22:11, when the blackout occurred. After the blackout, all wind plants shut down.

In addition to its unpredictability, wind power has another inherent deficit. All of you who have sat on an airplane during air turbulence know how *hard* air is. The strain on wind power installations from severe winds is massive, and therefore, investment costs are very high. Maintenance of one of these installations amounts to about 50% of what an entire normal coal-fired power plant needs to produce electricity.

Even More Expensive: Solar Energy

Let's look briefly at solar energy. In terms of cost, photovoltaic energy is a much, much bigger problem. **Table 3** shows the amount of subsides paid for electricity fed in by solar installations. In 2001, it amounted to a measley EU76 million, compared to the EU70 billion overall turnover. But by 2009, that figure had risen to EU3 billion—about one sixth of the total cost of production, which amounts to about 20 billion. So, we increased our costs by one-sixth, because some neighbors built solar panels on their roofs.

Solar installations provide less than 1% of the electricity consumed in Germany, but account for one-sixth of the costs.

But that's not all. We are going to see a dramatic increase not only in the absolute amount of money flowing into the pockets of the EEG profiteurs, but also in the net costs, because these many, many small supply inputs now suddenly need a transformer, they require extra local amplification in the grid. This is not economical, and of course transport over long distances to take the power somewhere far away, is not either. It will surely lead to a doubling of grid costs in the next 5-7 years.

And the new rules on 32 cents per kilowatt hour,[2] which are supposed to be in force as of October, will not help. Why not? As I said before, the EEG is a German issue. If China, for example, installs solar energy and recognizes that breakeven lies at 16.5 cents, and still the Chinese are investing in it today, it has to be seen on this backdrop: Given the great economic collapse in the world and a certain collapse in the solar energy branch, the production capacities for solar energy—and well

2. As a concession to the anti-green currents within the government coalition (and a reaction to exploding costs of legally mandated subsidies), the coalition agreed to lower subsidies to solar installations to 32 euro cents/kWh (from about 46 cents/kWh).

TABLE 4

Costs for Wind and Solar Power, 2001-09

(Euros, Est.)

	2001	2002	2003	2004	2005	2006	2007	2008	2009
EEG Subsidies (Millions), Wind	1,055	1,480	1,730	2,304	2,300	2,733	3,442	3,574	3,382
EEG Subsidies (Millions), Solar	76	82	153	282	679	1,176	2,300	2,238	2,925
Total, Solar and Wind	1,131	1,562	1,883	2,586	2,979	3,909	5,742	5,812	6,307
Euros per Capita, Solar and Wind	13.66	18.86	22.74	31.23	35.98	47.21	69.35	70.19	76.17

over 50% of solar equipment comes from China—have only been operating at 25%. And the Chinese simply decided not to send people home and stop production, but rather say, "We'll continue producing and we'll install the things here in our country. At 16.5 cents, it's still much too expensive, but all in all it makes more sense economically, because at some point, the Germans and the French and some others will start buying it again."

But we see that at 32 cents, the two EEG sources—wind and solar—will continue to grow, and the costs will increase accordingly.

I'm not here to talk about environmental issues, but I must say I'm not afraid of nuclear power plants. Already 20 years ago, I got myself a contamination meter and a dosimeter, and the notion of protecting oneself from x-rays with a briefcase makes sense. But where I cannot protect myself, is if someone who lives within 500 meters from my house puts a solar panel on his roof, which is a so-called "thin-film panel," and his house burns down: Suddenly particles will be released into the air which are just as poisonous as cyanide.

That is an elementary threat for all of us. But this issue is still relatively taboo in Germany.

Further Costs of Green Electricity

Let's take a look at the total costs in the sector. The EEG costs are the subsidies to the operators. But there are other things to factor in: The electricity then has to be transported somewhere, at a loss; the back-up power plant has to be maintained for use when the wind is not blowin; and there are direct subventions and tax breaks for operators, who are allowed to deduct all of their start-up losses.

We just said that in 2008, we had around EU3 billion of EEG subsides for solar power and EU3 billion for wind, which makes EU6 billion. We have to add to that about EU2.5 billion more for other potential items such as subventions and tax cuts. And I still haven't taken into account the additional charges (**Table 4**).

In 2009, that burden amounted to EU76 for every German citizen. You can't export these costs, so the citizens end up paying them, in one way or another. For an ordinary family of three people, it comes to somewhere between 200 and 250 euros, and it will rise dramatically.

At this point, people say: "Yes, but we're saving CO_2!" Let's not discuss the CO_2 issue here, but are we really saving primary energy? What happens to the electricity that we've produced? Don't forget that we have to ensure our three stars, our triad, otherwise we'll have a blackout.

All in all, we can say that the back-up plants have to run at the same time, and even if not in full-load, they need a good deal of primary energy in the middle-load range. Roughly speaking, one-third of the electricity coming from these two types of energy, wind and solar, is consumed just to make the back-up plants run.

Then, you have the losses in transport. You can't transport power over long distances without losing some. If I wanted to bring electricity from the Sahara Desert to Germany over a normal 400-KV power line, almost nothing would remain of it on arrival. Okay, it would then be done with direct current, which is somewhat different. But in our grid, when we transmit our wind power to Holland, for example, or from Brandenburg to the Czech Republic or Poland, we have losses. And those losses account for another one-third.

In addition, solar power has particularly poor—very, very poor—energy amortization. You have to run such a thing for several years before you have even produced as much energy as was required to produce it. And that eats up the final third.

So I end up with zero.

Job Losses

Now we come to the effects on production in Germany. I'll quote two people from the steel industry, from personal statements. Prof. [Dieter] Ameling, who was the long-time chairman of the Steel Association, said: "Production of steel in Germany is not economical." And [Detlev] Hunsdiek, who heads a department at Thyssen, said: "In recent years, we have invested EU10 billion in steel works in Brazil." That's a large chunk of costs for Thyssen-Krupp, and as a result, the amount produced in Brazil is already two-thirds of that produced yearly in Germany. Germany has two large steel corporations, Salzgitter and Thyssen-Krupp. After learning that it's much cheaper to produce steel in Brazil, Thyssen will certainly continue doing so. It's just a matter of time before Thyssen-Krupp stops producing steel in Germany.

Take the case of Heidelberg Cement, which astounded German politicians. Heidelberg Cement calculated that two new sites in China could deliver cement to my Gütersloh construction site for less than any of the seven sites in Germany, in spite of the incredibly high transport costs. That is because China doesn't charge for certificates.

The Fallacy of Saving Energy

Why is it so fundamentally mistaken to focus research and development on cutting energy use? In the past, the first power stations in the form of windmills were placed near the sea, where the wind blows constantly. Then at some point, we moved into the mountains, because of hydraulic power. Then there was coal-mining, and prosperity arrived. Then power plants with cooling towers were set up on river banks. Today, the whole thing is being moved to China, simply because energy costs are the lowest, and one can best produce there.

Mrs. Zepp-LaRouche, you mentioned nuclear plants, and we should take note of the fact that we have an operative capacity of about 360,000 MW of nuclear power worldwide, with an additional 410,000 MW of nuclear power plants on the horizon. The 20,000 MW in Germany that are to be shut down are not counted here.

It would be relatively unproblematic to increase that figure. There were times when 20, 20, 30, 40, or 50 nuclear plants were built every year, and that was 50 years ago. Today, it would be no problem to have an output of 100 to 150 nuclear plants going into operation per year. That means de facto a boundless amount of energy available, and practically for free.

We should also mention here that the Social Democratic Party says we have uranium for the next 60 years. But with the technologies of the fast breeder and with MOX, that is reprocessing, we have stocks of usable uranium that can last for 20,000 years.

Therefore, all the talk about putting an end to squandering energy here—that's a waste of R&D. What's the expression they use? "The last one to leave turns out the light."

What have the consequences been in Germany? In 2000, there were about 11 million jobs in the processing industry and no EEG subsidies. In 2009, we have EEG subsidies of EU10 billion and we've lost 1 million jobs in production. I don't mean to say that there's a direct relationshipo, but it's an interesting correlation, and it certainly has had a substantial effect.

Big Industry Plays the Game

What are the overall lethal effects, so that you can draw your own conclusion? Let me sum up: A rise in electricity prices for 2011 of more than EU500 per family, that is the figure I expect. Why this is so lethal—and on this point I somewhat disagree with you—is that German industry has already learned to a great extent to accommodate.

Look at some of the names: ABB is a major supplier of both solar and wind power. Ditto for Bosch. Flender is mainly in the wind branch, Eickhoff as well. Lapp-Kabel is everywhere, because it works on the grids, Liebherr is mainly in the wind branch. The situation with Otto [Dr. Michael Otto, head of the Otto Group], a real dreamer, is somewhat unclear, but he's the manager of the Two-Degree Initiative,[3] and he obviously has to defend certain interests. Siemens, Schüco, Thyssen, and ultimately the VDMA, the German Engineering Federation, are firmly wedded to the EEG concept—that skims off profits and lets them flow into these companies.

It is simply unrealistic to assume that a change can be brought about through the good sense of the manufacturers. In my view, given my last point, which is that the media love wind energy—solar a bit less, but wind very much, you see that every day in the newspaper—it's not realistic to assume that we have much chance of winning.

In fact, you could say that I'm fighting windmills. So why am I fighting, anyway? I'll tell you why: I want my progeny to say of me—and I always blamed my parents for not fighting in other times, on another issue—I want to be sure that my children will say: He did everything he could.

Thank you.

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3. The Two-Degree Initiative is a group of German companies whose "declared goal," according to its website, "is to limit global warming to 2° Celsius compared to pre-industrialisation levels."