

TRANSFORMING JAPAN INTO AN ENERGY RICH COUNTRY – WHAT CAN BE DONE?

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Executive board chair Japan Renewable Energy Foundation

In the 20th Century Japan was energy-poor

Scarcity of Energy Resources in Japan

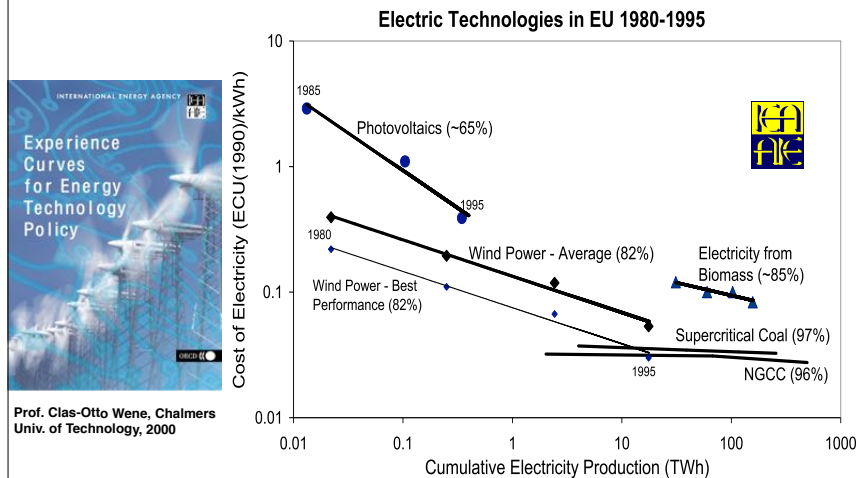
Japan is very poor in natural resources, relying on imports for approximately 80% of its primary energy requirements. In particular, nearly 90% of crude oil is supplied from the Middle East. Since the oil crises of 1973 and 1979, Japan has diversified energy sources by introducing nuclear energy as well as liquefied natural gas (LNG) and coal. As a result, about 30% of electricity in Japan now comes from nuclear power and dependence on oil as primary energy supply has been lowered from 77% in FY1973 to 42% in FY2009.

From the web-site of:

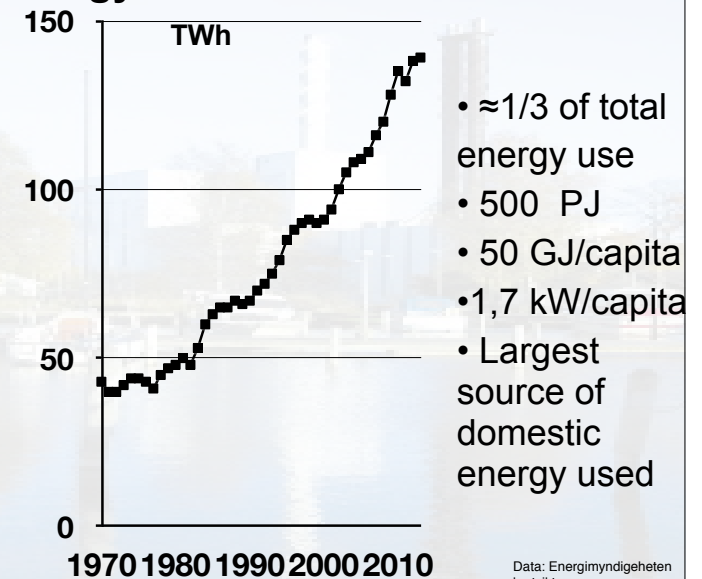
FEPC

The Federation of Electric Power Companies of Japan.

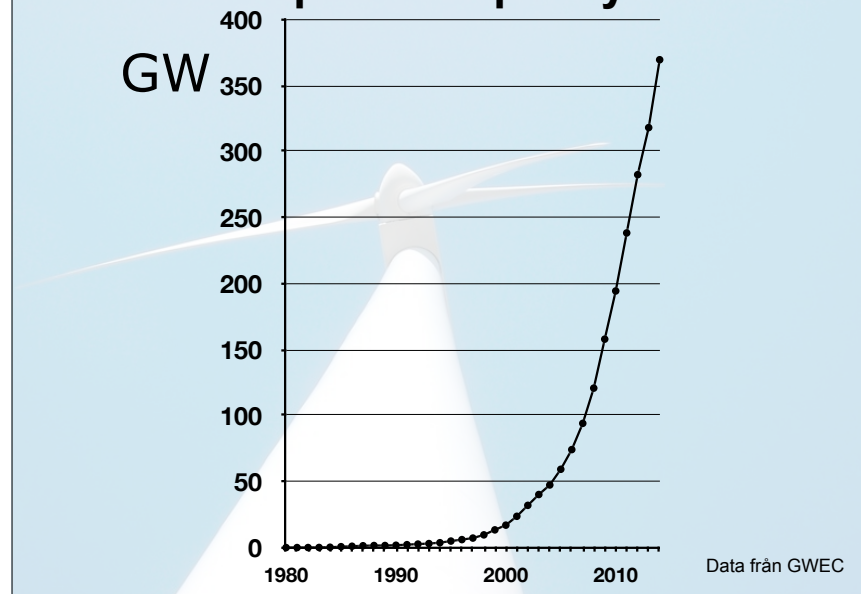
Industrial learning by experience



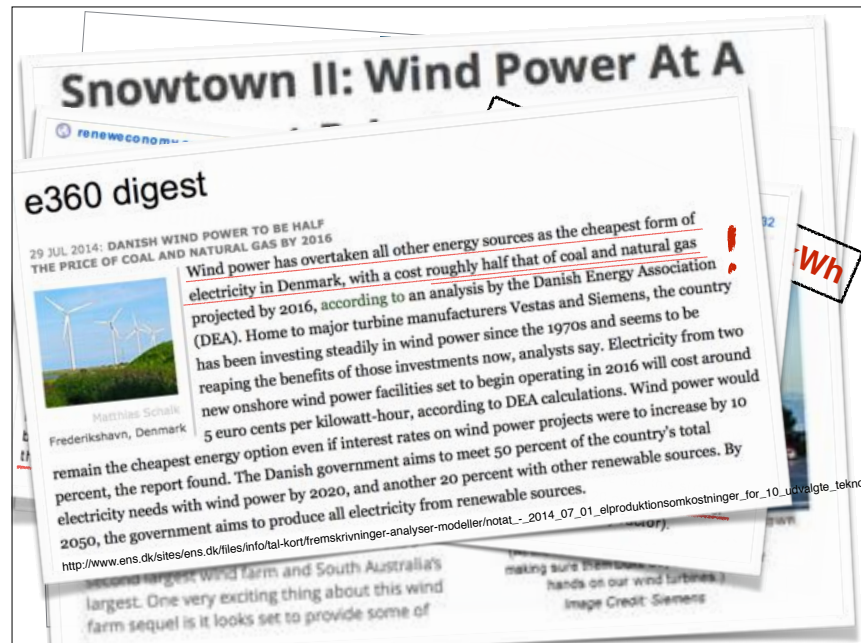
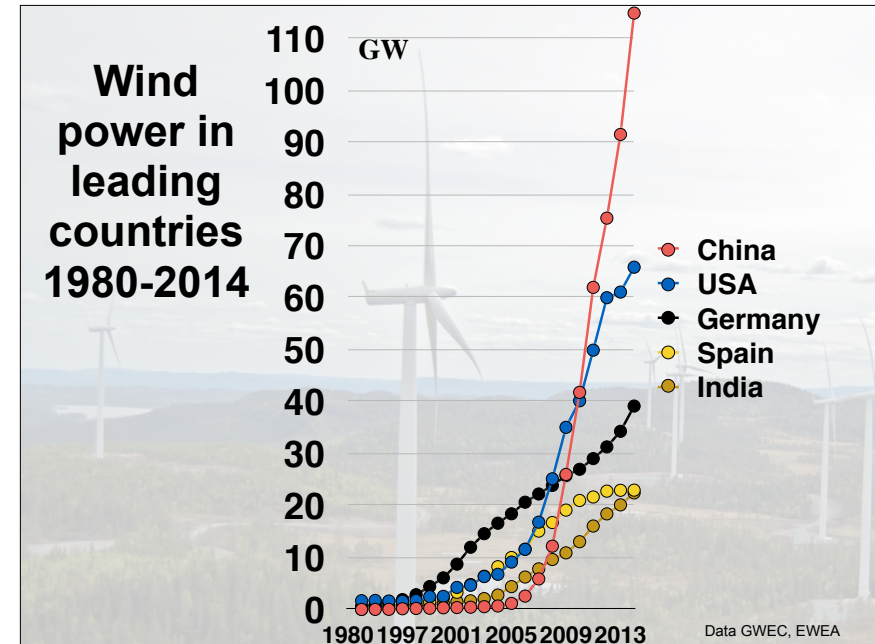
Bioenergy use in Sweden 1970-2013



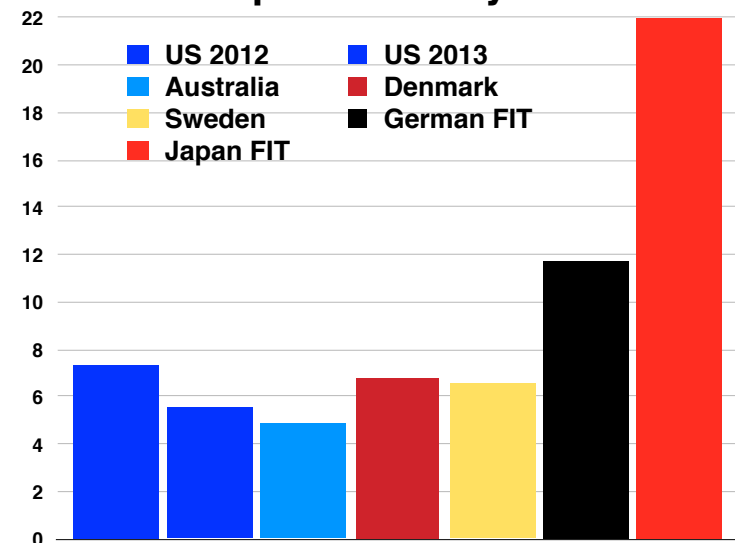
Global Wind power capacity 1980-2014

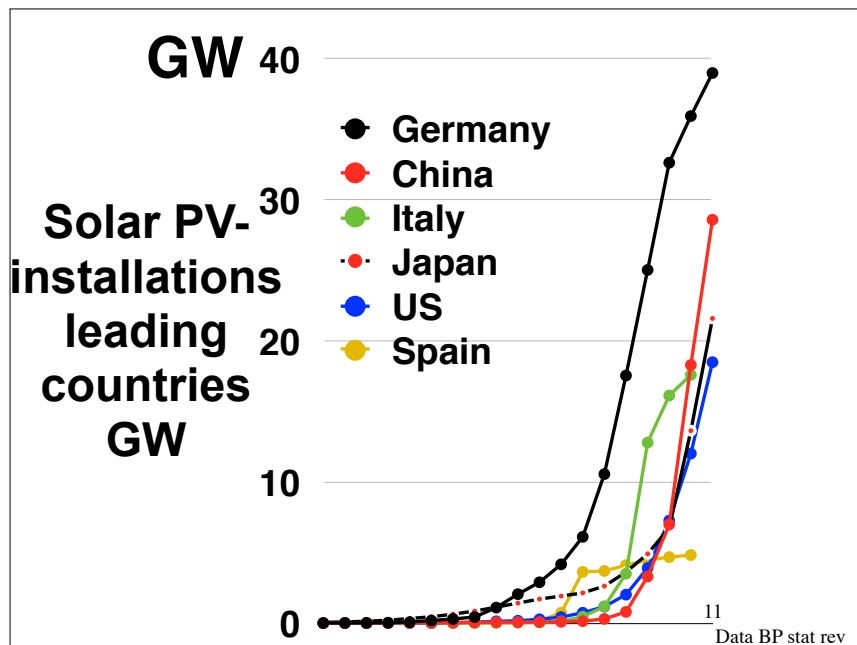
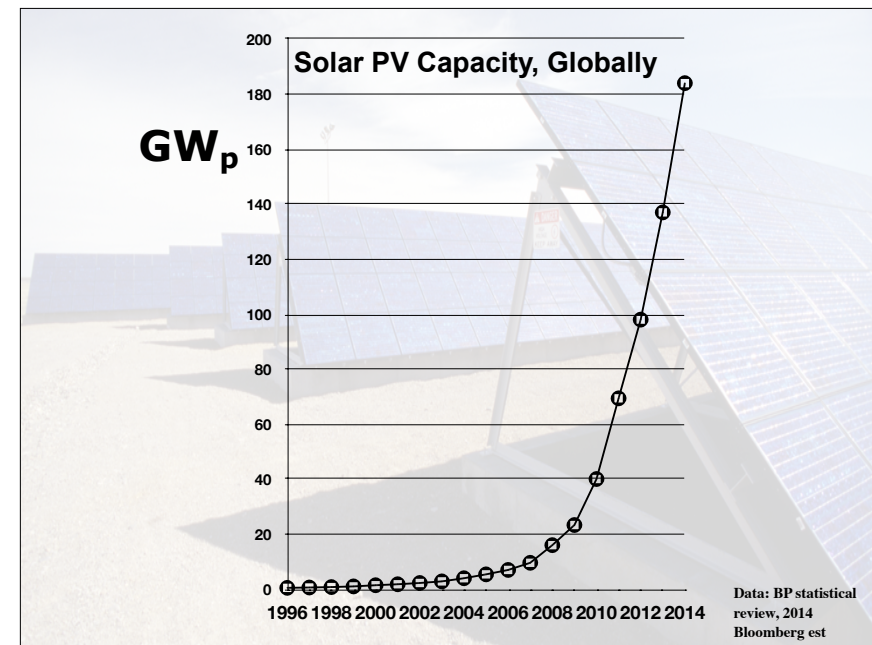
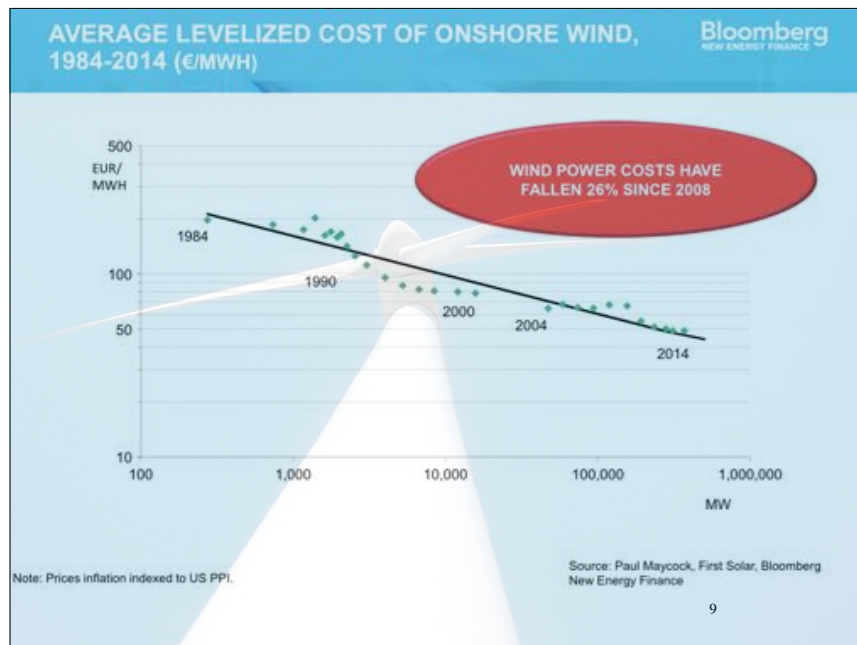


Wind power in leading countries 1980-2014



Wind power cost yen/kWh





BloombergBusiness

Now Heading:
China Adds Solar Power the Size of France in First Quarter

China Adds Solar Power the Size of France in First Quarter

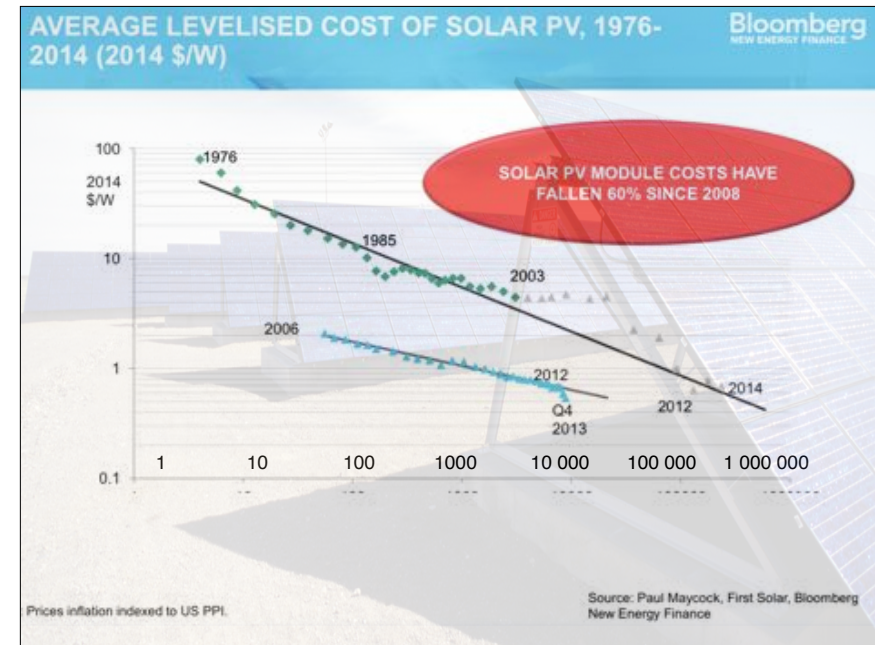
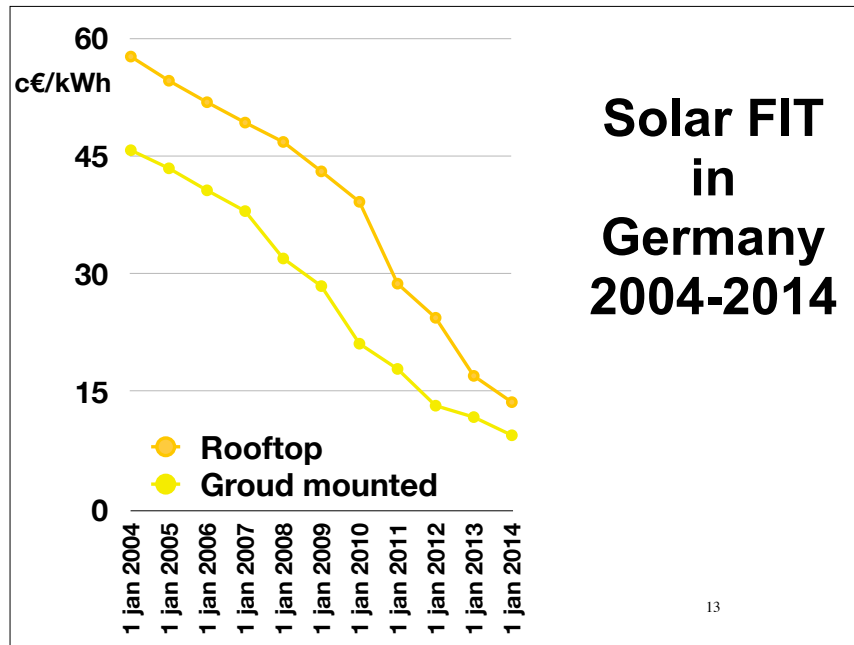
Don't Miss Out — Follow us on: f t i

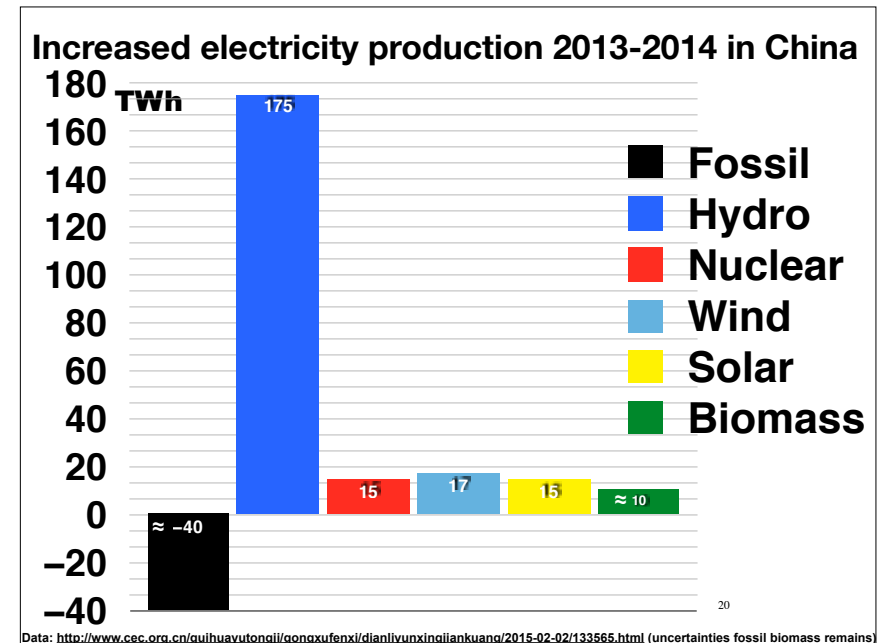
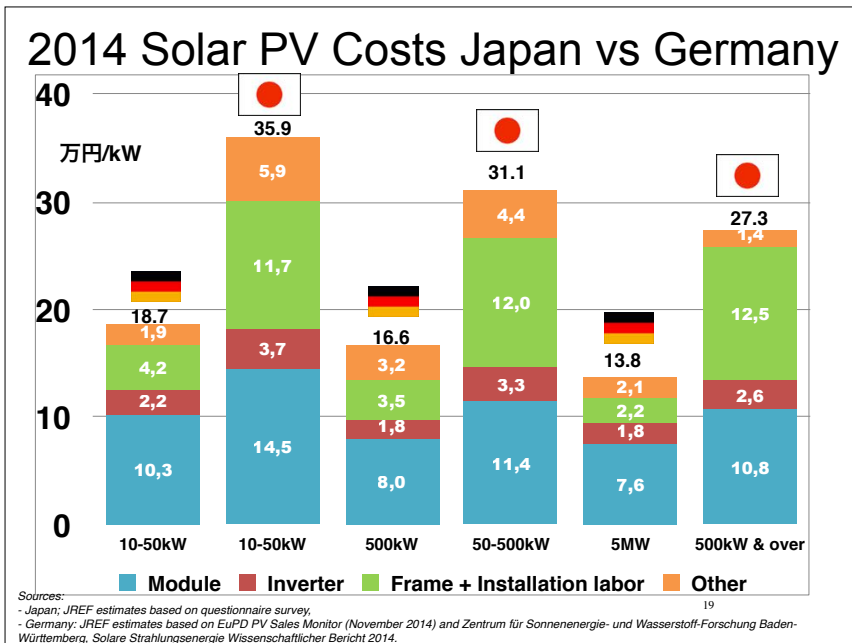
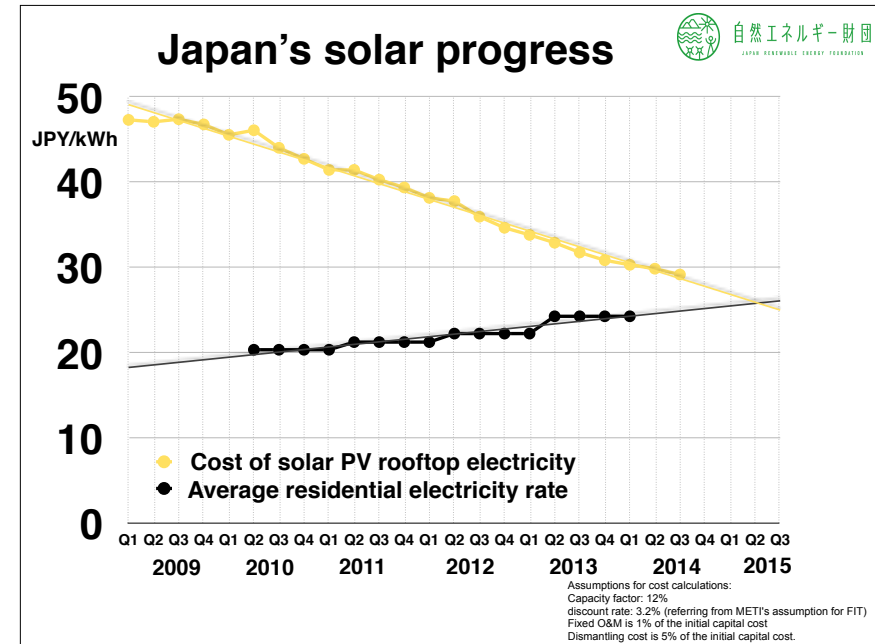
6:54 AM CEST
April 20, 2015

China's solar installations in the first quarter were almost equal to France's entire supply of power from the sun.

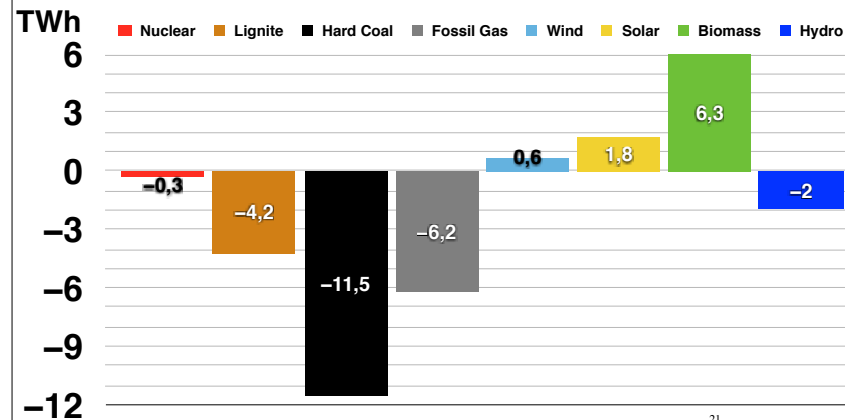
China connected 5.04 gigawatts of solar capacity to grids in the three months ended March 31, the National Energy Administration said in a [statement](#) on Monday. The Asian nation now has a total 33 gigawatts of solar-power supply.

"Construction of most additions in the first quarter began last year after securing local approvals," said Nick Duan, a Beijing-based analyst from Bloomberg New Energy Finance. In China, developers must start construction within a year after approvals are given and validated.





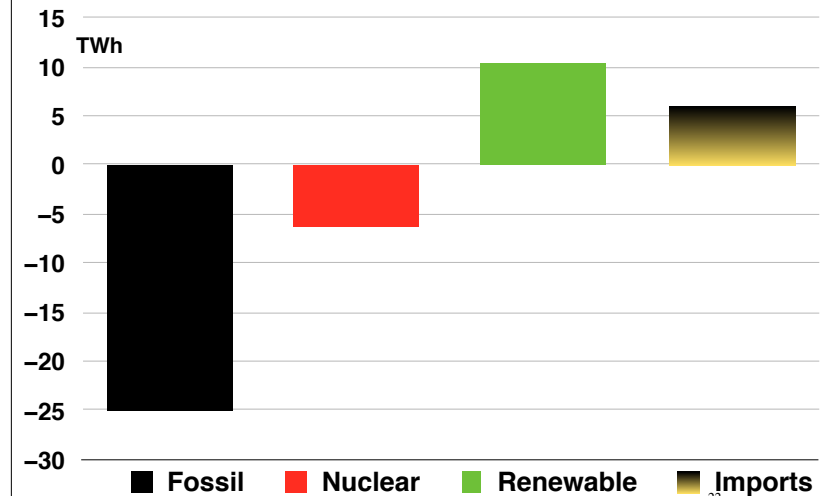
German change electricity generation 2013-2014



<http://www.isa.fraunhofer.de/de/downloads/pdf-files/data-nivc/-stromproduktion-aus-solar-und-windenergie-2014.pdf>

21

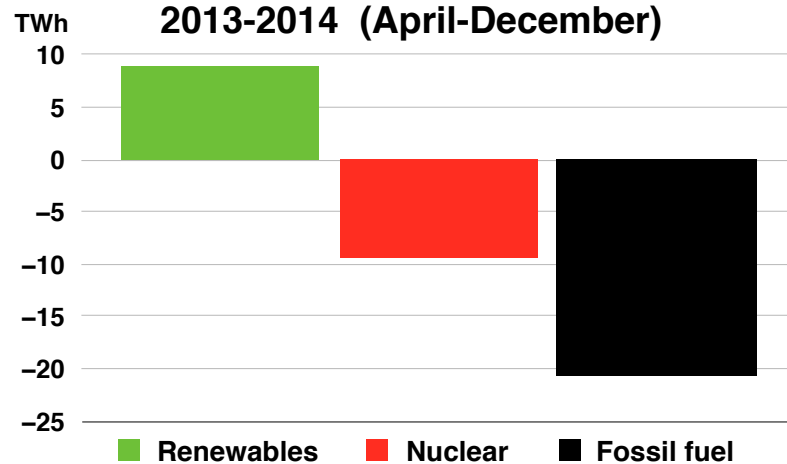
UK electricity generation 2014-2013



https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415997/electricity.pdf

22

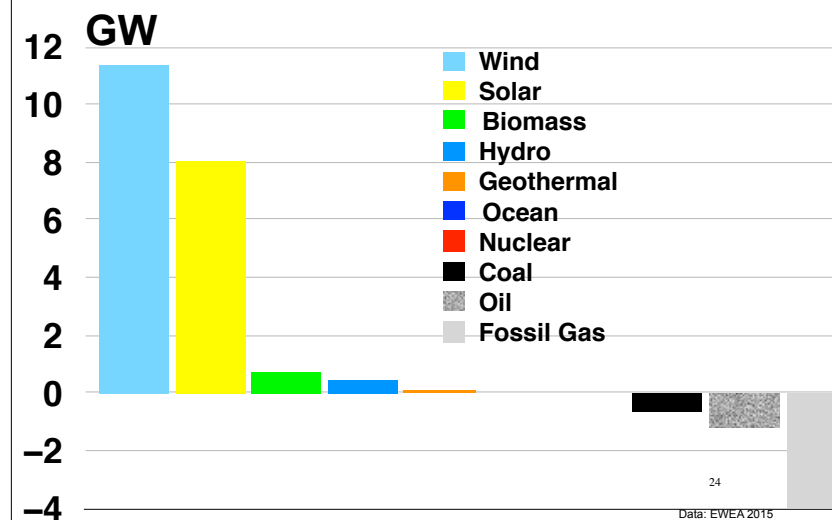
Change in Japan's Electricity Generation 2013-2014 (April-December)



Data: METI Electricity Research Statistics

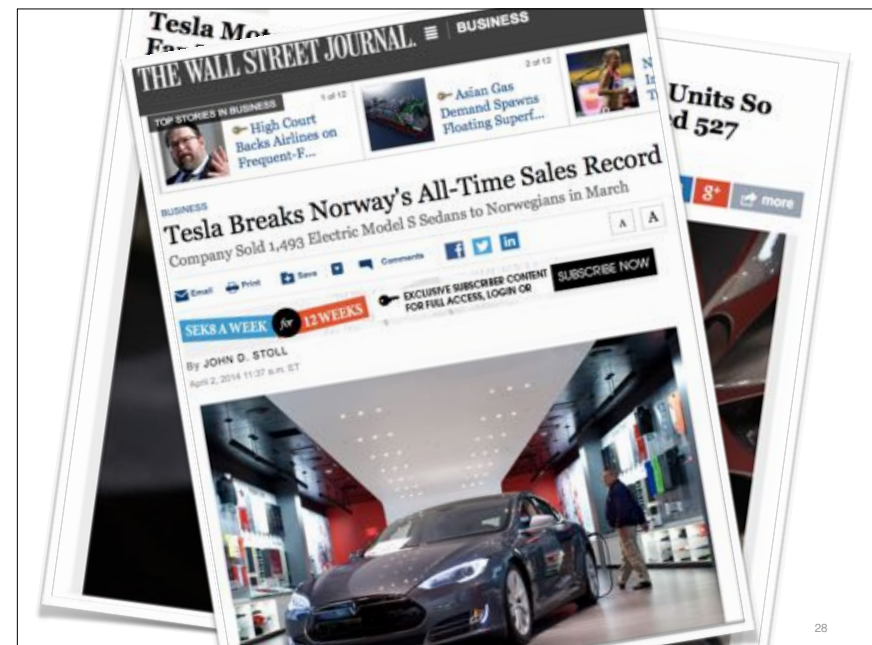


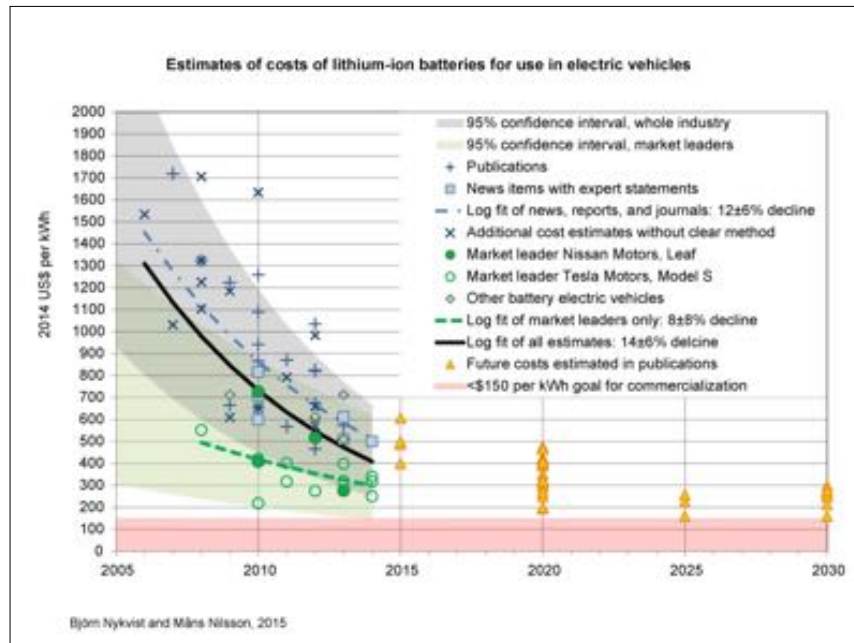
New net electricity generation capacity in the EU 2014



Data: EWEA 2015

24





Citibank: Utilities are dinosaurs waiting to die

By Jesse Berst
Published October 10, 2013
Tags: Corporate Strategy, Energy & Utilities, More... [Email](#) | [Print](#) | [Single Page View](#)

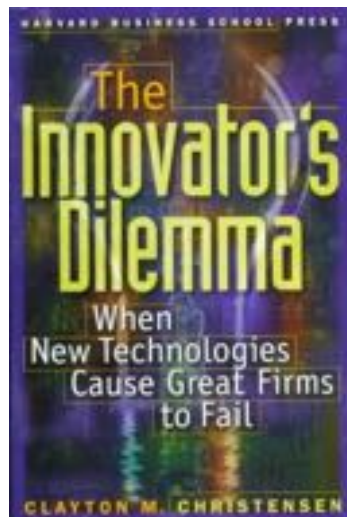
Today's electric power utilities could lose half their addressable market to energy efficiency, solar and storage, and other distributed generation, according to "Energy Darwinism – the evolution of the energy industry," a new report (PDF) from the investment banking arm of Citibank.

"Consumers face economically viable choices and alternatives in the coming years which were not foreseen five years ago," the analysts write.

According to REneweconomy, the price fall of solar panels has exceeded all expectations, resulting in cost parity being achieved in certain areas much more quickly.

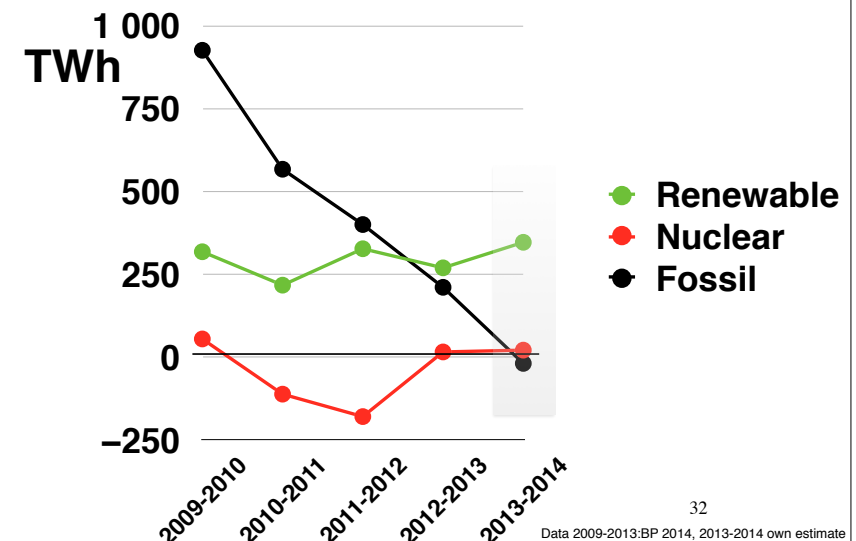
30

Disruptive innovations




- ☹ Solar and wind power are too expensive...
- ☹ Intermittent power is not sufficient...
- ☹ Solar and wind do not fit our business model...

Global, year-on-year change in electricity production 2010-2014





32



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Global energy-related emissions of carbon dioxide stalled in 2014

IEA data point to emissions decoupling from economic growth for the first time in 40 years

13 March 2015

Data from the International Energy Agency (IEA) indicate that global emissions of carbon dioxide from the energy sector stalled in 2014, marking the first time in 40 years in which there was a halt or reduction in emissions of the greenhouse gas that was not tied to an economic downturn.

"This gives me even more hope that humankind will be able to work together to combat climate change, the most important threat facing us today," said IEA Chief Economist Fatih Birol, recently named to take over from Maria van der Hoeven as the next IEA Executive Director.

Global emissions of carbon dioxide stood at 32.3 billion tonnes in 2014, unchanged from the preceding year. The preliminary IEA data suggest that efforts to mitigate climate change may be having a more pronounced effect on emissions than had previously been thought.


RECENT

- Global energy carbon dioxide emissions
- IEA releases March
- Explore the world with IEA Energy
- IEA Chief Economist Fatih Birol
- IEA releases February

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Fossil Fuels Just Lost the Race Against Renewables

This is the beginning of the end.

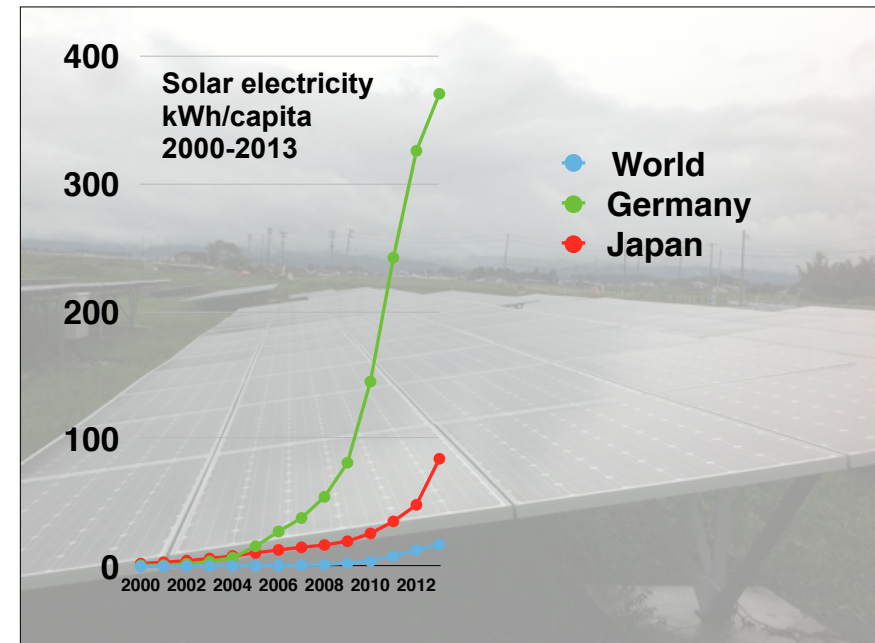
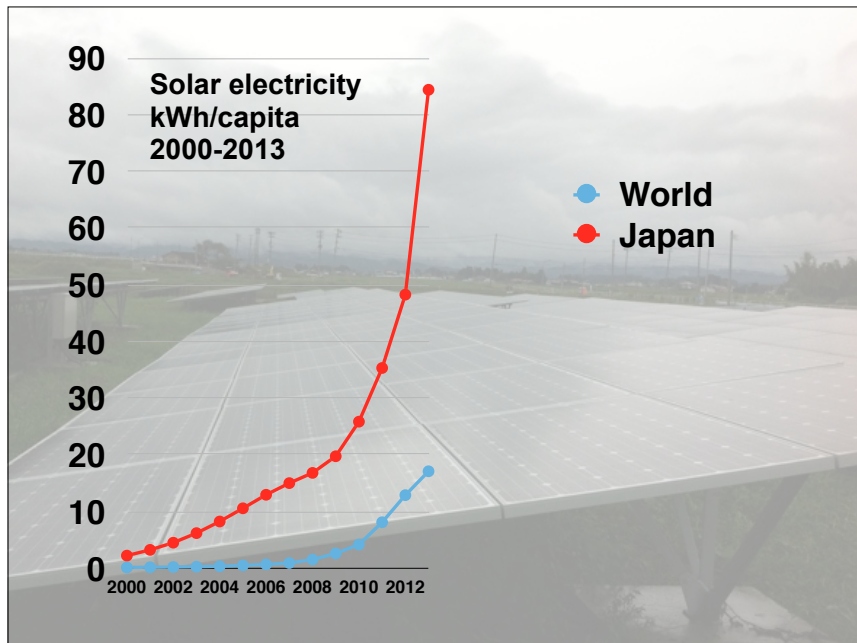


by Tom Randall

10:27 PM CEST
April 14, 2015

The race for renewable energy has passed a turning point. The world is now adding more capacity for renewable power each year than coal, natural gas, and oil combined. And there's no going back.

The shift occurred in 2013, when the world added 143 gigawatts of renewable electricity capacity, compared with 141 gigawatts in new plants that burn fossil fuels, according to an analysis presented Tuesday at the Bloomberg New Energy Finance annual summit in New York. The shift will continue to accelerate, and by 2030 more than four times as much renewable capacity will be added.



Die Zeit, July 30, 1993

Wer kritisch fragt, ist noch längst kein Kernkraftgegner.

Viele junge Leute empfinden Kernkraftwerke als bedrohlich. Wir, die deutschen Stromversorger, haben ihre Kritik nie leichtfertig abgetan. Im Gegenteil: Wir stellen uns dieselben Fragen, die sie bewegen.

Kann Deutschland aus der Kernenergie aussteigen? Ja. Die Folge wäre allerdings eine enorme Steigerung der Kohleverbrennung, mit allen Emissionen des Treibhausgases CO₂. Denn regenerative Energien wie Sonne, Wasser oder Wind können auch langfristig nicht mehr als 4% unseres Strombedarfs decken.

Können wir ein solches Vorgehen verantworten? Nein. Der steigende Energiebedarf der dritten Welt verpflichtet die reichen Staaten, ihre CO₂-Emissionen zu mindern.

Schaffen wir das ohne Kernkraft, allein durch Energiesparen? Nein. Kernkraftwerke liefern 34% des deutschen Stroms und ersparen der Atmosphäre jährlich 160 Mio. Tonnen CO₂ – bei einem international vorbildlichen Sicherheitsstandard. Also: Treibhaus oder Kernkraft? Das ist hier die Frage!

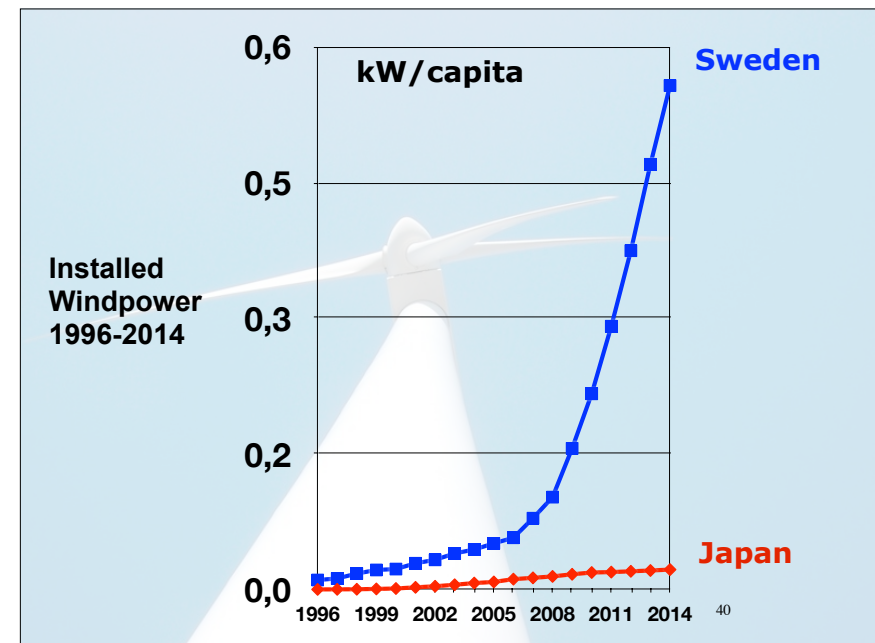
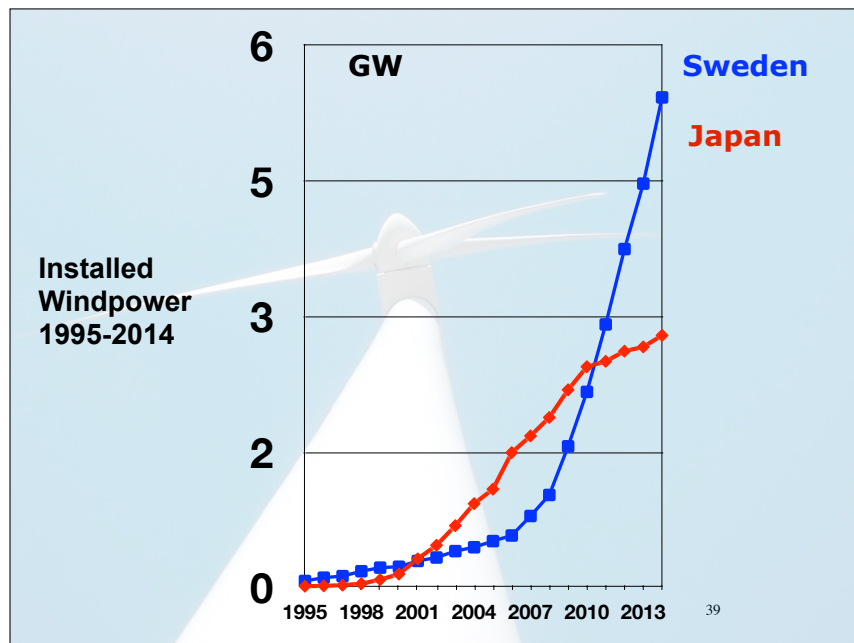
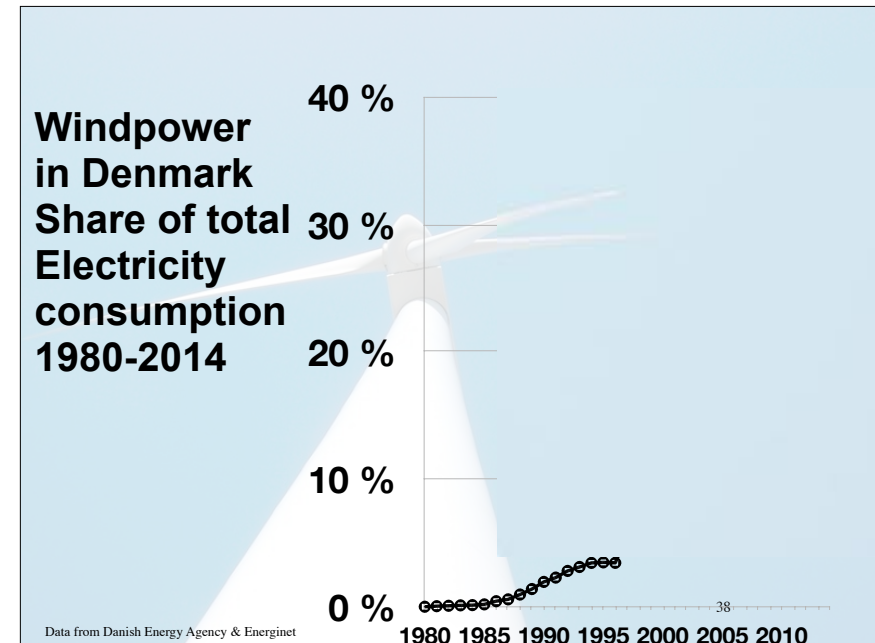
Viele junge Leute stellen kritische Fragen. Wir auch. Denn unsere schärfsten Kritiker sind wir selbst.

Ihre Stromversorger

2013: Renewable energy provided 25% of electricity demand in Germany. (Solar alone: 5%.)

“Renewable energy, such as solar, hydro or wind in the long run cannot provide more than 4% of our electricity demand.”

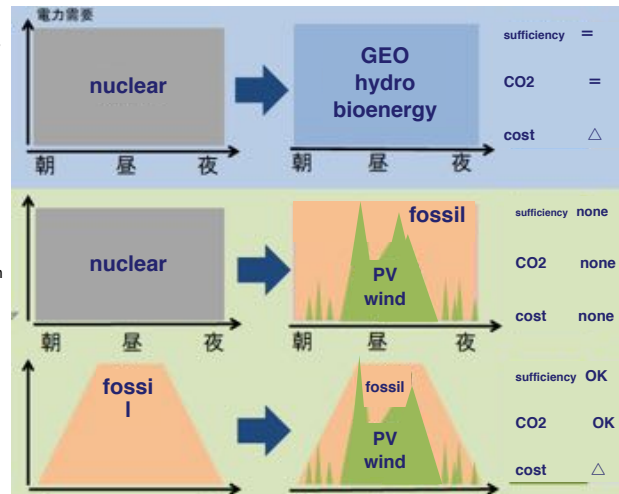
Bayerwerk Karlsruhe · Bayernwerk München · E.ON Stuttgart · Innogy Energie München · Netze der E.ON Energy · PreussenBrenco Hannover · RWE Energie Essen · TSB Stuttgart · VEW Osnabrück



Information monopoly makes it possible to miss-lead politicians

GEO, hydro, bioenergy

secure the stable generation
not relying on natural
conditions



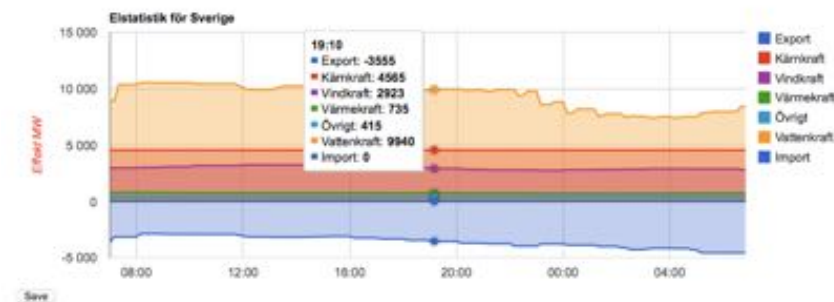
source: Ministry of Economy, Trade and Industry, 28 April 2015



<https://www.energy-charts.de/price.htm>

13-14 May 2015 Swedens Electricity production
available real-time from elstatistik.se

Senaste dygnet, separerat



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Japan CO2 emissions from fossil fuels 1990-2013

