

The politics of increasing and reducing RES-E support in Germany

Volkmar.Lauber@sbg.ac.at

University of Salzburg, Austria

Staffan.Jacobsson@chalmers.se

Reform Group Meeting, Leopoldskron

26-30 August 2013

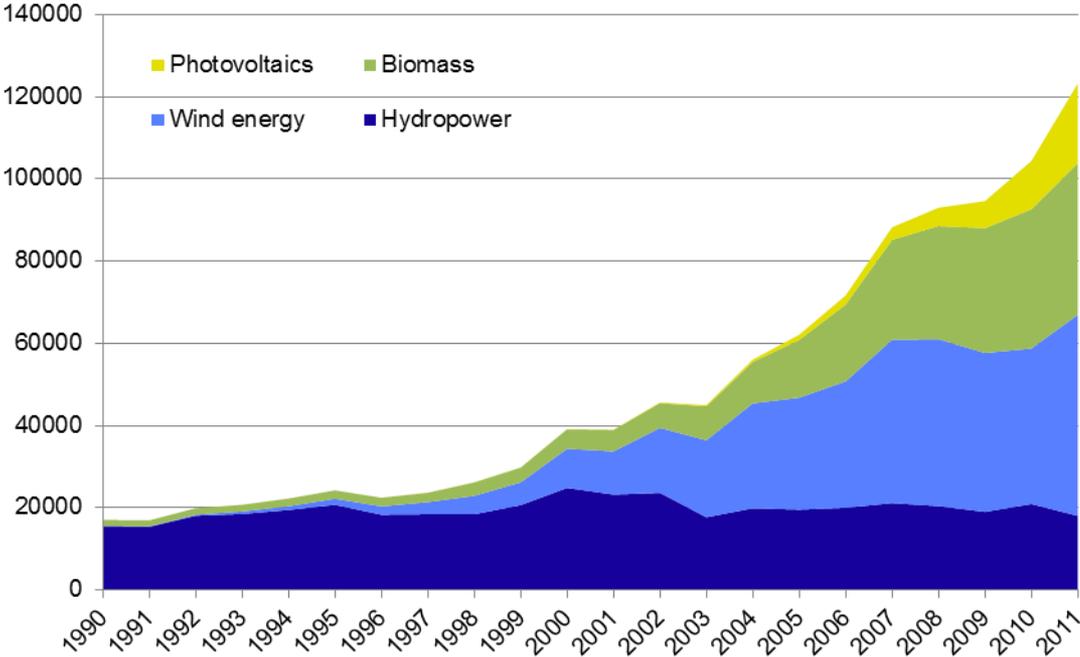
Outline

- Current German government claims to be first to take *Energiewende* seriously
- At the same time its chief efforts aimed at slowing down this transformation
- This was justified by conservative-liberal economic discourse
- But the new passion inspiring this effort since 2012 is due to structural clash between RES-E and coal generation

From the positive view of EEG...

- From 1990 to 2009, German RES-E policy – centred around the Feed-in Law of 1990 and the Renewable Energy Act of 2000/2004 – was widely perceived as a success story
- Generation grew rapidly after 2000, at very moderate costs and with considerable external benefits; a substantial RES-E equipment industry arose; employment in the sector grew steadily; conventional generation started to be reduced in the late 2000s; reduction of GHG emissions...

Germany: Development of new renewables-based electricity generation, 1990-2011, in GWh (from about 1.5 TWh to 105 TWh): 70x, excl hydro



Adapted from: FME (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) (2012).

... to criticism and promises of/ attempts at reversal by:

- Conservative Party (CDU/CSU) until 2005 was opposed to FIT, or at least beyond the short/medium term
 - Liberal Party (FDP) until spring 2009 rejected FIT in favour of quota/certificate system, did so again in 2012
- Both pledged to reverse nuclear phase-out of 2000 but achieved a government coalition only in 2009
- The four electricity oligopolists and nuclear operators RWE, E.on, EnBW and Vattenfall favoured a quota/certif. system "to keep down costs" (but not windfalls), limiting RES-E expansion and reversing nuclear phase-out
 - Energy intensive industry feared competitiveness problems
- Major attempts at system change in 2005, 2008 (EU), 2012

Criticism/reform of EEG in **2009/2010**:

“Normal” Cons.-Lib. ideology and spin

- During grand coalition CDU/CSU-SPD (2005-09), Conservative criticism had become subdued, while incumbents still tried to reverse policies
- 2009, first Cons-Lib govt since 1998 is planning to reorient RES-E policy but Fukushima intervenes
- Spin:
 - “**make *Energiewende* affordable**” (“it’s not now”)
 - “moderate RES-E deployment” (i.e. “slow it down”)
 - “avoid grid overload, blackouts” (“not safe now”)
 - “market integration of RES-E” (into liberalised market)
 - “nuclear as bridge technology” (delay phase-out)

A few examples of government spin

Misrepresenting impact of EEG FIT payments on consumer costs

- “Affordability” discourse identifies large and growing surcharge as driver of consumer price increases
- But size of surcharge depends on several factors – RES-E costs for non-privileged consumers constituted about 2.3 cents/kWh and industry privilege 1.29 out of a total of 5.2 cents. Why should households pay for industry exemptions?
- 2.3 cents out of a final consumer price of about 26 cents is not a strong driver!

Shifting focus from total cost of electricity to consumer costs

- Focus on consumer costs ignores a) external costs and b) subsidies via the government budget
- Total costs for 2012:
 - Coal 15.3 Eurocent (4 ct "consumer cost" on EEX)
 - Wind, hydro, PV (weighted average): 16.3 ct
 - Wind onshore: 8.0 ct
- Total cost for new PV is now 11-16 ct and CO₂ related externalities will increase – PV is competitive with coal in terms of total costs...
- "Burden" of RES-E is a fiction/exaggeration

Shifting focus from long-term benefits to short-term costs

- Long time-scale is required for developing/deploying new technologies
- We need to develop technologies and build capital goods industries capable of massive deployment 2020-2050
 - Onshore wind, PV can be deployed at low social cost
 - Offshore wind the next major development project
- Short-term focus ignores large inter-generational equity problems and long-term benefits of RES-E
 - Current investments should not be judged by their present costs but by their ability to avoid future climate costs

Some government arguments rather simple (e.g. grid overload and costs)

- Grid needs overhaul now after about 50 years of functioning. This normal upkeep is added by Altmaier to cost of Energiewende (Kemfert 2013)
- Counting the cost of expansion of N-S grid towards Energiewende (to take wind energy to the South and solar energy to the North) when this expansion serves primarily coal plants built on the shore for consumers in the South (ibid.)
- Near hysteria about grid overload among FDP, some CDU. when situation is considerably less dramatic (DIW, Stakeholder study 2012) and alternatives exist: RES-E generation close to consumption (Consentec), storage...

2012-2013: Radical attacks on EEG

- Dramatic increase of conflict in fed. govt coalition. Part of CDU (ecological wing) still wants EEG reform, but FDP and part of economic wing of CDU now want to ditch EEG or central elements of it (priority access; fixed tariffs; take-off obligation; absence of cap)
- Impulses came in 2012 in two steps: when figures on 2011 PV installations (7.5 GW) came in (January) and when 50% increase in EEG surcharge takes shape (late summer) – seems to confirm Con-Lib preconceptions
- Government's new radical position not all translated into policy in 2012 (EEG reform) and 2013 ("cost brake") due to opposition from upper chamber of parliament *Bundesrat* where the territorial subunits are represented; decision postponed until Sept. elections

What explains radicalisation?

Three non-exclusive interpretations

- Cons-Lib ideology and spin were confirmed by 2012 events; this showed that RES-E regime had to be adapted accordingly
- This is a battle about market shares between coal generators (owned by incumbents) and RES-E sector (only a few percent incumbent ownership)
- This conflict is driven by a fundamental clash between coal vs. RES-E generation making coexistence difficult

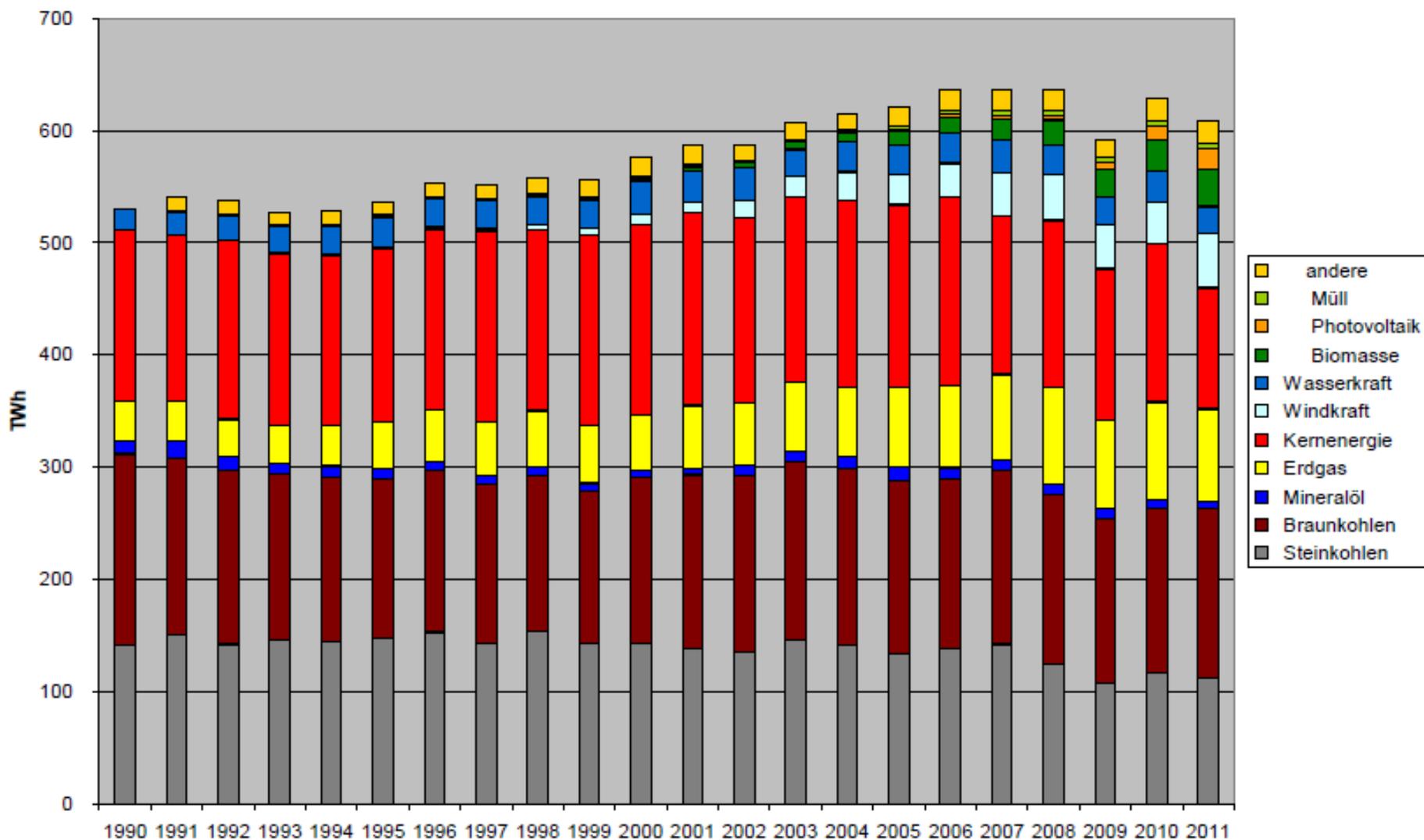
The big clash

- Peter Becker (2011) uses image of two trains running at high speed towards each other to describe the situation of an imminent clash between the electricity oligopolists (incumbents) and the RES-sector
- Michael Rogol (2011) expects dramatic change in the electricity sector due to the practically unstoppable “explosive growth” of PV and its devastating impact on conventional generation resulting from negative network effects

Clash 1. PV without storage reduces profitability of coal plants

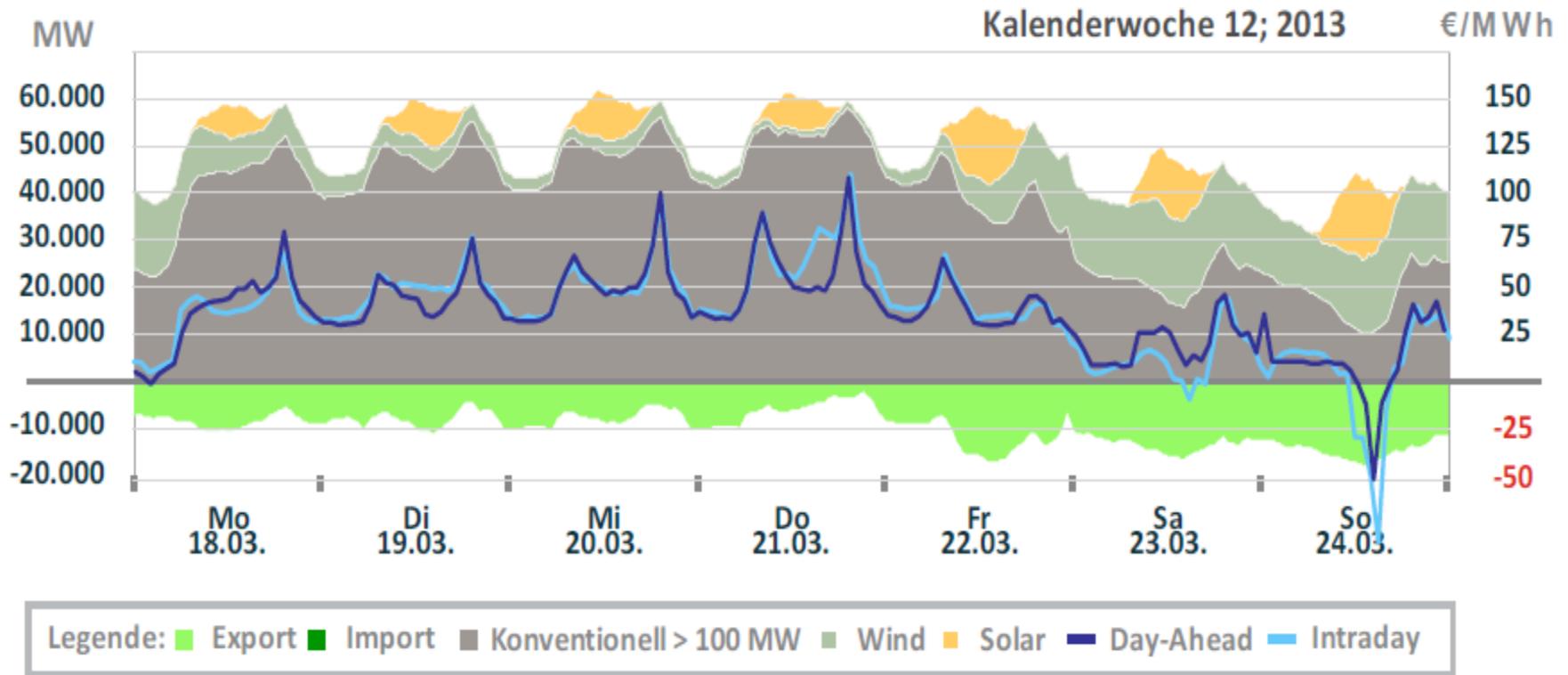
- Growing RES-E strongly **reduced hours** for hard coal), far below the expected 7.500 hours/yr. This is reinforced by demand decline (1 slide fwd) and led to **increased competition**, reducing profitability
- Coal plants used to make substantial profits at times of noontime peak load . But due to PV less coal generation is needed at noon. Sunny days show a **noontime trough for EEX prices** (see 2 slides fwd),
- Thus PV with a small market share (about 5%) dramatically cut profitability for coal and gas plants

Bruttostromerzeugung in Deutschland



Quelle: AGEB, AGEE-Stat

Electricity exchange prices, conventional and renewable generation from 18 to 24 March 2013. Negative electricity prices on Sunday



Quelle: N. Mayer et al. (2013): Kohleverstromung zu Zeiten niedriger Börsenstrompreise. Fraunhofer Institut für Solare Energiesysteme, Abb. 2. Abgerufen von <http://www.ise.fraunhofer.de/de/downloads/pdf-files/aktuelles/kohleverstromung-zu-zeiten-niedriger-boersenstrompreise.pdf>, 22.08.2013.

Clash 2: Big wave of new coal plants

- Germany faces “one of biggest investment waves in domestic coal capacity since the post-war reconstruction” (IEA 2013). These plants usually flexible but less than gas plants
- These plants probably decided some ten years ago; many more given up due to public opposition. Reaction to nuclear phase-out 2000? Expectation of EEG termination/failure? Challenge to RES-E?
- Electricity oligopolists “threaten” to shut down large coal capacities (just E.on and RWE 18.000 MW), hint at danger for supply security, demand capacity payments to keep plants on standby

An RES-E regime for optimal supply or for keeping incumbents afloat?

- PV cost is no longer the problem. Environment minister Altmaier predicted that expected 2013 PV installations will increase the EEG surcharge by only 0.1c/kWh.
- Nevertheless, a 52 GW cap was set in 2012 for EEG-supported PV installations (currently about 35 GW installed). And in summer 2013 the FDP called for a complete moratorium on new PV and wind installations until a new support scheme was designed.
- Keeping *Energiewende* going will not demand inordinate financial efforts. It may be expensive however to soften the decline of coal generation and to take future-oriented reforms at the same time

The End

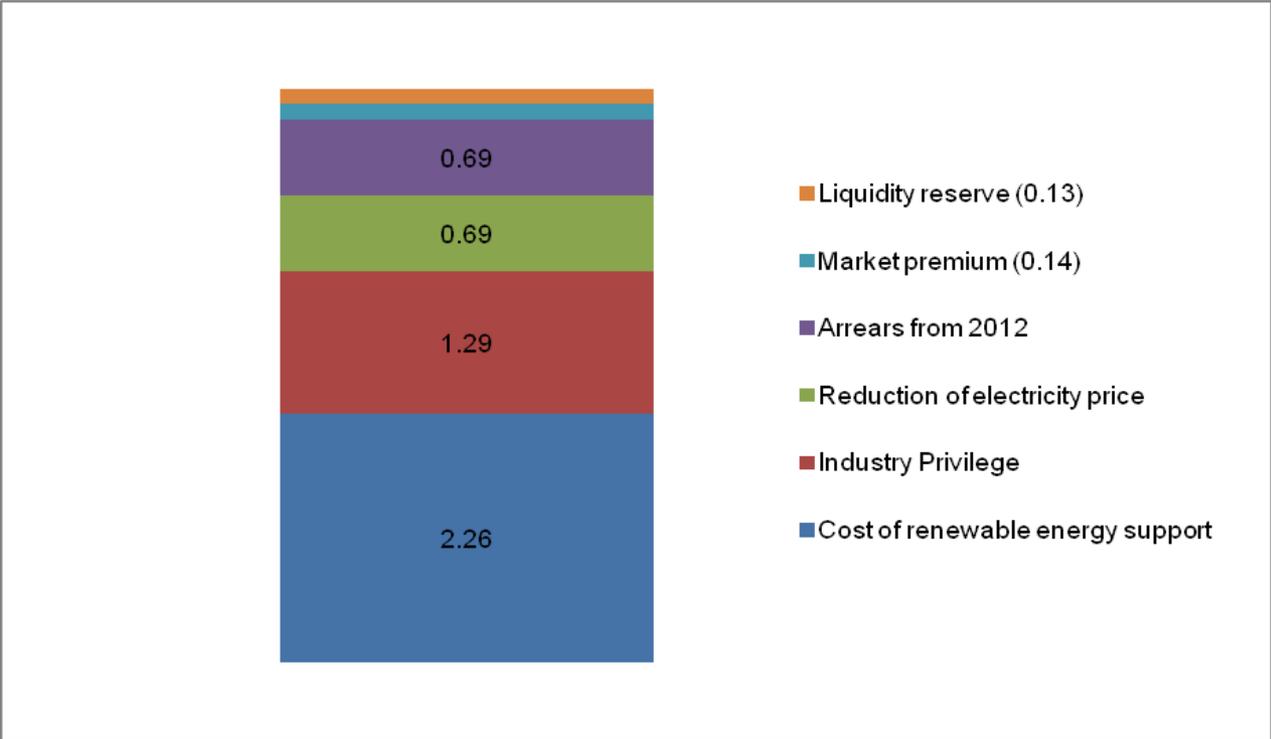
- Thank you

- Thank you

Appendix

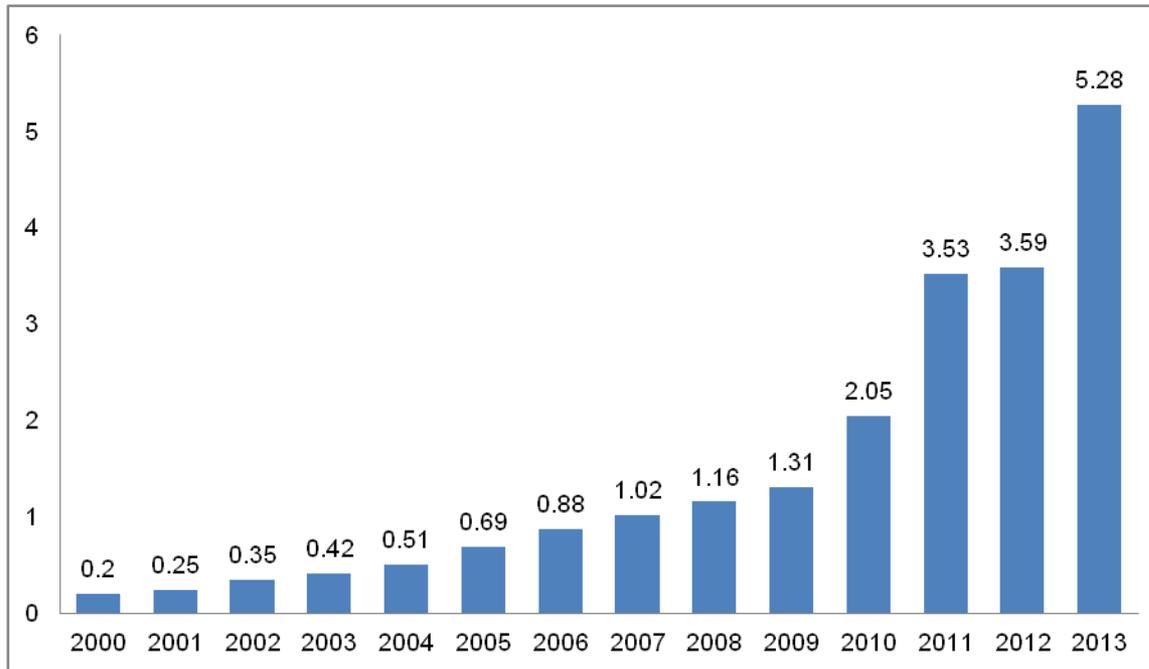
- Breakdown of EEG surcharge 2013
- Evolution of surcharge, 2000-2013
- RES-E ownership structure in Germany, 2010
- Electricity generation by sources, 18-24 March 2013

Breakdown of German renewable electricity (EEG) surcharge paid by small consumers in 2013 (5.2 Ct/kWh)



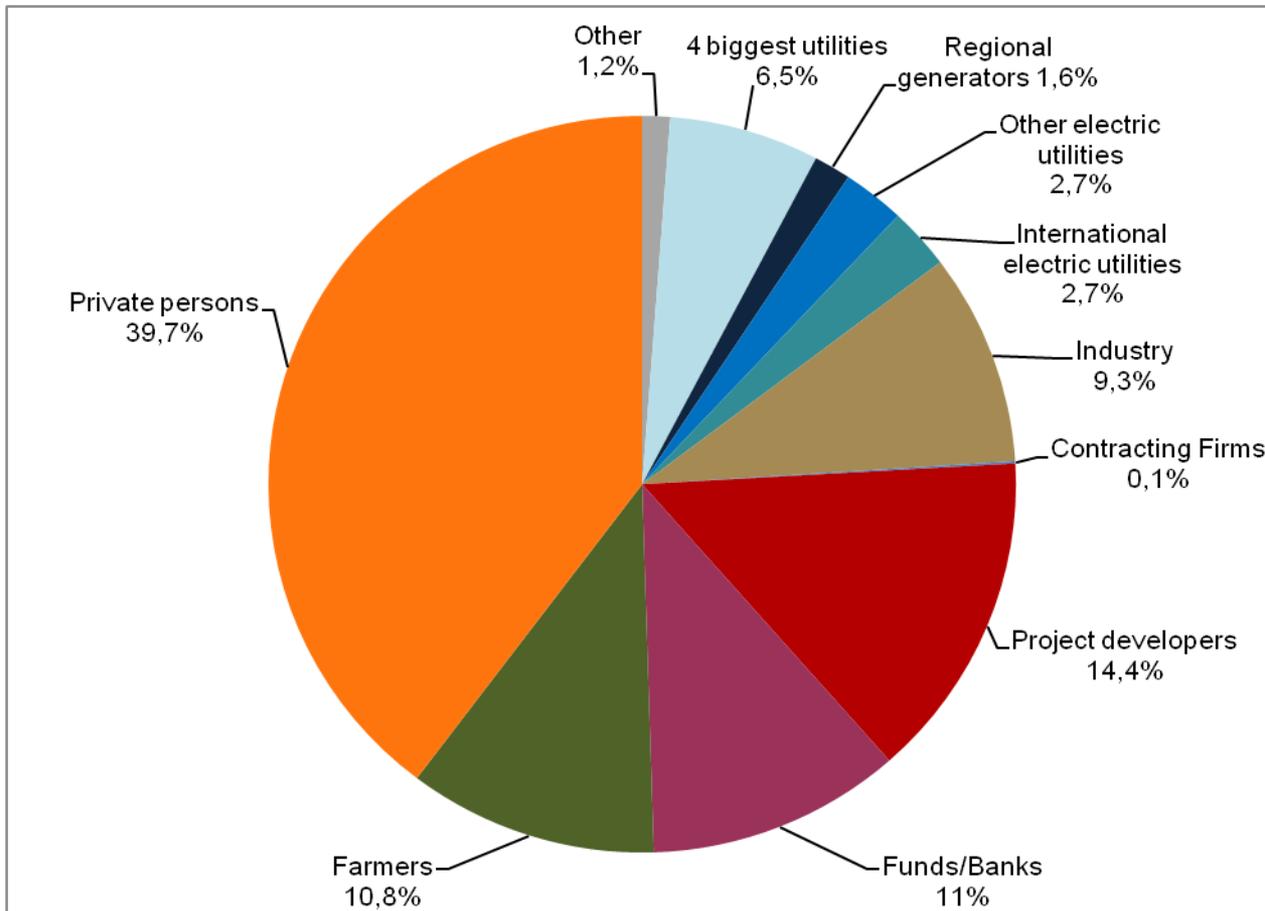
Source: Ahmels, Jan (2012): *Kostenentwicklung bei der Förderung der erneuerbaren Energien in Deutschland. Modellierung für mögliche künftige (Politik)Szenarien*, Master thesis, University of Oldenburg, p.62.

Evolution of RES-E surcharge, 2000-2013



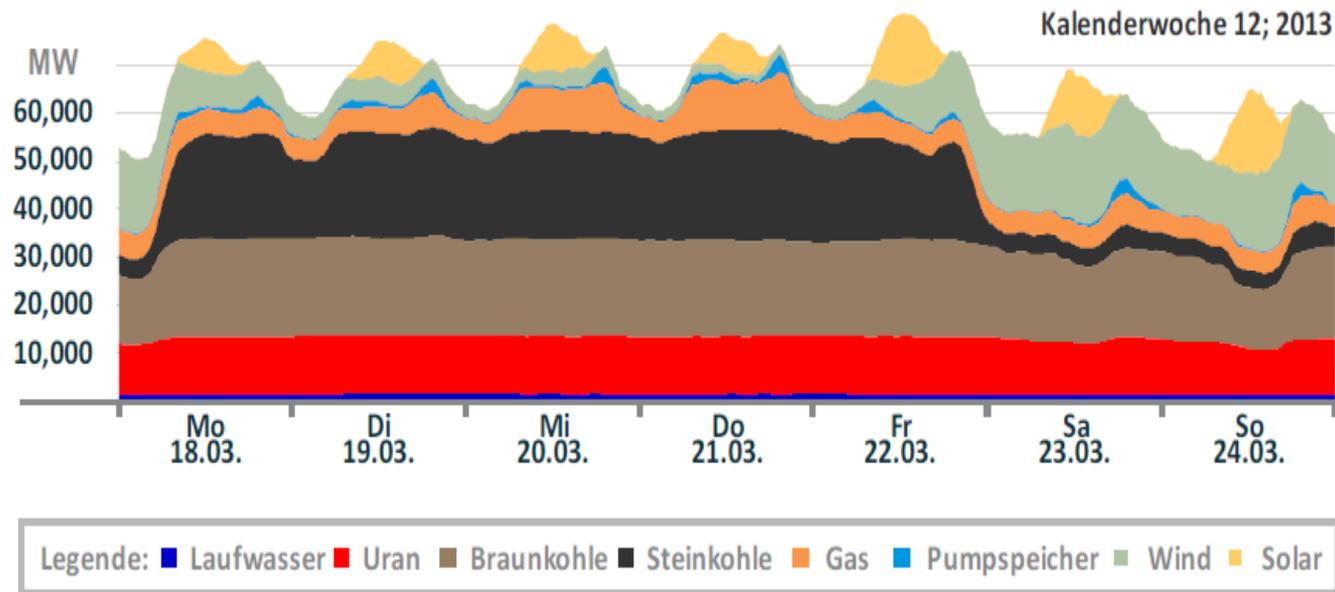
Adapted from: Jan Ahmels (2012): Kostenentwicklung bei der Förderung der erneuerbaren Energien in Deutschland. Modellierung für mögliche künftige (Politik)Szenarien, Master thesis, University of Oldenburg, p.15.

Figure 1. Ownership structure in 2010 of renewable electricity installations in Germany (not including pumped storage) (Total installed capacity: 53,0 GW)



Adapted from: trend:research (2011), p.45.

Actual production of electricity by source of generation for 18-24 March 2013



Quelle: N. Mayer et al. (2013): Kohleverstromung zu Zeiten niedriger Börsenstrompreise. Fraunhofer Institut für Solare Energiesysteme, Abb. 3. Abgerufen von <http://www.ise.fraunhofer.de/de/downloads/pdf-files/aktuelles/kohleverstromung-zu-zeiten-niedriger-boersenstrompreise.pdf>, 22.08.2013.