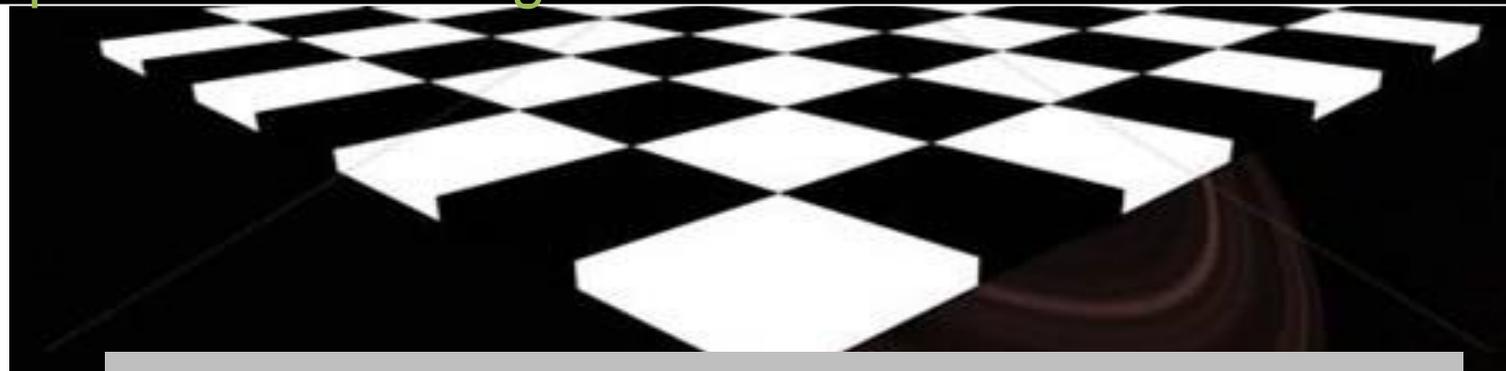


Final Conference of the Helmholtz-Alliance ENERGY-TRANS: „Future Infrastructures for meeting energy demands. Towards sustainability and social compatibility“, 14th/15th of March 2016, Berlin



On the Conflict over the Extension of the German Power Grid – Viewpoints and Strategic Action



Structure

1. Conflict Reasons
2. Frames
3. Focus on Participation-Frame
4. Status Quo Grid Extension
5. Discussion

1. Main Conflict Reasons

- Health Risks
- Nature Conservation
- Modifications of Landscape/ Visual Impacts
- Value Loss of Real Estate/ Visual impacts
- Doubts/Criticism about the Purpose of Grid Extension
- Insufficient Participation (Lack of Transparency Included)

2. Predominating Frames of the Conflict Coalitions

Counter Coalition (Challengers)

- Local protest initiatives
- Local politicians and local institutions (local and district councils)
- Political actors on state level (e.g. Bavaria and Lower Saxony)
- Political actors on federal level: green and left party
- Counter Experts



Pro Coalition (Incumbents)

- Transmission grid operators
- Federal government (esp. Ministry of Economics)
- Power plant operators
- Dena (energy agency)
- Federal Network Agency
- BDEW (Federal Association of Energy and Water Companies)
- Pro Experts

2. Predominating Frames of the Conflict Coalitions

Counter Coalition (Challengers)

| Frame „Health Protection“ | Frame „Participation“ | Frame „Energy Transition“ | Frame „Nature and Landscape Protection“ | Frame Adoption „Security of Supply“ | Frame Adoption „Economy“ |
|---------------------------|------------------------------|---------------------------|---|-------------------------------------|--------------------------|
| 18 | 44 | 17 | 14 | 5 | 14 |

In total, 61 cited passages (in 55 documents) – Participation = Masterframe (72% of cited passages)

Pro Coalition (Incumbents)

| Frame „Security of Supply“ | Frame „Economy“ | Frame Adoption „Energy Transition“ | Frame Adoption „Participation“ | Frame Adoption „Nature Protection“ | Frame Adoption „Health Protection“ |
|----------------------------|-----------------|---|---------------------------------------|------------------------------------|------------------------------------|
| 35 | 24 | 47 | 40 | 5 | 1 |

In total 89 quoted paragraphs (80 documents) – adopted frames „Energy Transition“ and „Participation“ are of high relevance

3. Focus on Participation: The Pro-Coalition

- Participation as „adopted frame“
- Traditionally: Participation = Implementing legal requirements
- Since 2011/2012 participation became an issue at both levels: legislation and planning



3. Focus on Participation: The Counter Coalition – Local Concernment

Local people generally

- feel badly informed
- are concerned about lack of influence on the planning process
- demand to have a greater say, if the local surroundings are supposed to change

- **In particular:** There are specific demands and the local citizens would like to see specific reactions.

Participation = something that is missing
(and that is specific in cases of open conflict)

3. Focus on Participation: The Counter Coalition – Doubts on the „official story“ and alternative narratives

- (1) Brown-coal-export-at-windy-times (alternative story: „Grid extension is not for energy transition, but for securing the economic viability of brown coal power plants“)
- (2) TSOs in favour of grid extension because of 9% guaranteed profit margin („...but for profits“)
- (3) Grid extension prevents decentralized energy transition (and makes small CHP redundant); („...but to secure the leading market position of the big energy players“)
- (4) Resistance against grid extension for European energy market („...but for improving market conditions of international acting energy companies“)

Participation = Articulation of the will to discuss the basics

4. Status quo – Grid Extension (EnLAG projects)

| Year | Implemented EnLAG projects (km) | Yearly built |
|-------|---------------------------------|--------------|
| 2011 | 214 (of 1.807) | |
| 2012 | 268 (of 1.855) | 54 |
| 2013 | 322 (of 1.876) | 54 |
| 2014 | 463 (of 1.883) | 141 |
| 2015 | 614 (of 1.816) | 151 |
| 2016* | 806 (of 1.816) | 192 |
| 2017* | 999 (of 1.816) | 193 |

* TSO prognoses (2/2016), own calculations

Source: Federal Grid Agency

- * Planned start of operation for most projects was 2015 or 2010
- * 8 of 22 power line projects were completed in 2015
- * Slight acceleration since 2014 (but not a breakthrough)
- * TSO-prognose: 55% installed till 2017 (999 km); average for 2016 and 2017: 192,5 km
- * Reasons for acceleration: More acceptance or the effect of finishing undisputed projects?

5. Discussion

Thesis 1 The adoption of the participation frame did not lead to increased implementation speed (especially not in conflicted regions).

- Protests against HVDC power lines display that the new planning system and friendlier acting TSOs did not succeed in achieving more acceptance. These new protests especially (but not only) in Bavaria even reached a higher level of escalation.
- EnLAG 2, 3, 4 and 6 are further examples of „old“ conflict cases that were not settled.

5. Discussion

Thesis 2 In cases of conflict the opponents' frame of participation results in specific demands (e.g. „underground cable“). Successful participation must consider the particular dimension of each conflict.

- Underground cable sections as route-modifications (would) have a high capability of conflict settlement (examples: EnLAG 1, 2, 3, 5 and 6). HVDC Corridor C + D = ?
- Settlement of the conflict over EnLAG 1 „below“ underground cable section

5. Discussion

Thesis 3 The official justification of grid extension is not sufficient. At least, it seems incomplete and ambiguous. Thus consequently repeating that grid extension is necessary for the energy transition does not help to settle the conflicts. Instead, it is hardening the front line.

-

What can be done to increase the acceptance of grid extension?

First, stop reproducing the „energy-transition-grid-extension-frame“. Rather, an open discourse is required.

Second, prove commitment to the energy transition. Make a plan for the coal phase out.

Third, integrate the European power market (but) for renewable energies.



Thank you!

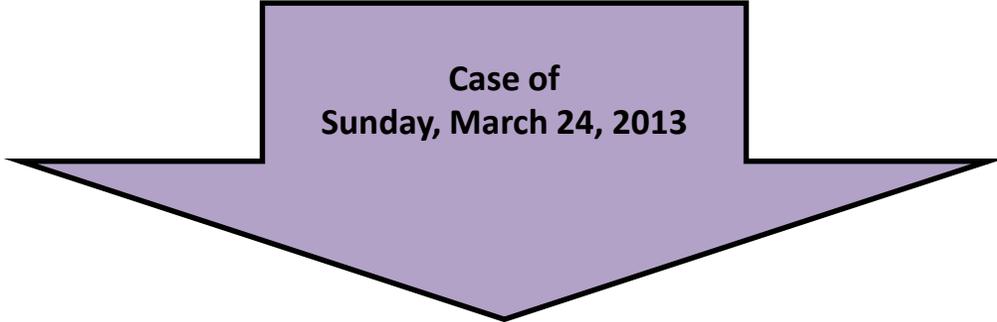
Appendix

„....but for brown coal export at windy times“

Fraunhofer, 2013 (p.18): In times of low prices (< 10 €/MWh): Still 83 % average load (brown coal) and 96% (nuclear power).

Times of negative prices: 42 % brown coal and 49% nuclear power.

Gas and hard coal power plants reduce the load to about 10 %



Case of
Sunday, March 24, 2013

Appendix – Fact Sheet (1)

„...but for brown coal export at windy times“

„The energy exports are developing proportional to the number of hours with low prices.“
(Fraunhofer 2013:11)

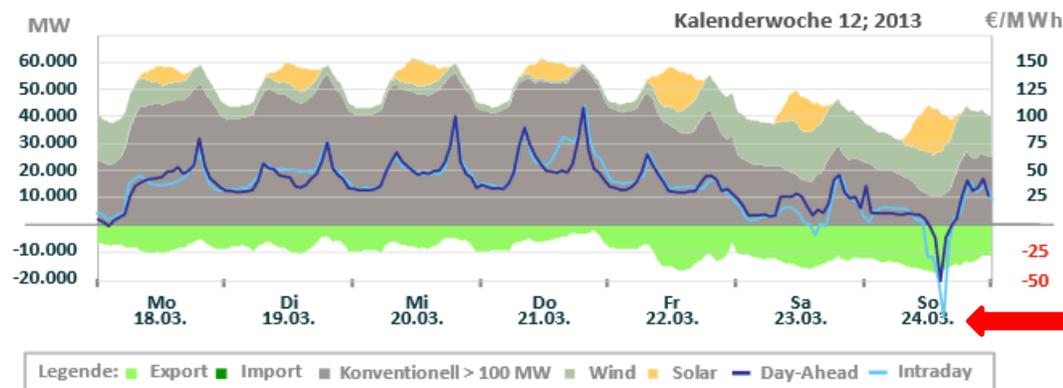


Abbildung 3: Beispiel für Wochenverlauf von Börsenstrompreisen, konventioneller und regenerativer Stromerzeugung im März 2013. Negative Strompreise am Sonntag [6].

Negative day-ahead and intraday prices at 24th March, 2013

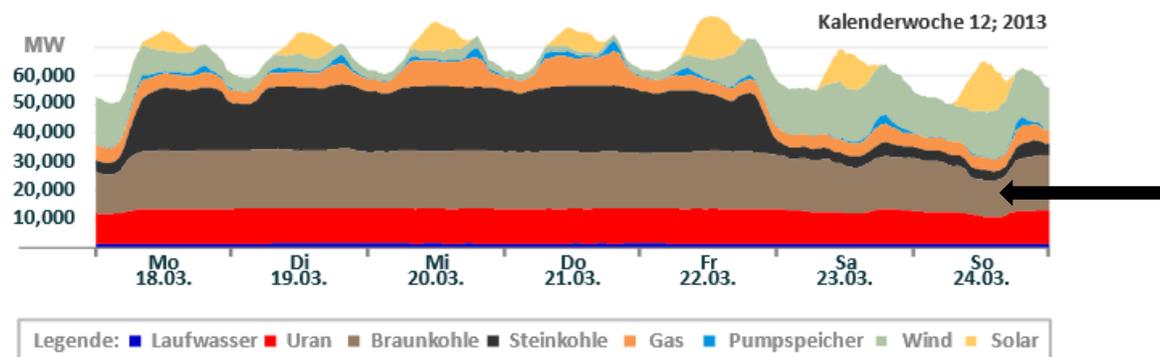


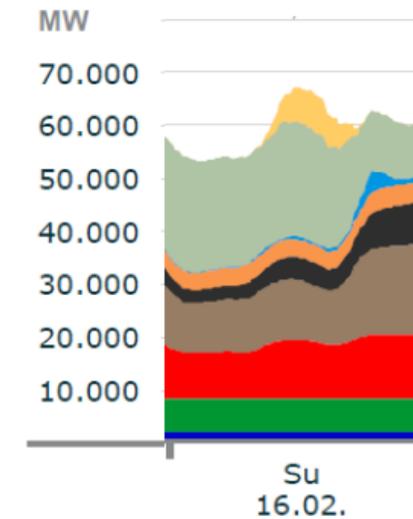
Abbildung 4: Tatsächliche Produktion nach Energieträger für die Beispielwoche im März 2013 [7].

Tabelle 1: Auslastung und Erzeugung nach Energieträger 24.03.2013 14:00–15:00 Uhr [6]

| 14:00-15:00 | LW | Uran | BK | SK | Gas | Pu Sp | Wind | Solar |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Erzeugung (GW) | 1,2 | 9,3 | 12,0 | 3,1 | 4,7 | 0,3 | 16,6 | 14,1 |
| Auslastung | 32,4% | 77,3% | 56,6% | 12,3% | 19,2% | 2,8% | 54,9% | 42,4% |

Analysis of the negative Intraday prices on 16.02.2014

- In the night from Saturday to Sunday nine hours of negative Intraday prices occurred between 0:00 and 08:00 am, reaching a minimum of – 53.6 €/MWh.
- The production from wind power was app 2 GW higher than projected the day before during the negative price peaking (see following slide).
- Utilization ratio of power plants (03:00 – 04:00):



| 03:00-04:00 | Hydro | Bio | Uran | BC | HC | Gas | PSt | Wind | Solar |
|--------------------|--------|-----|--------|--------|--------|--------|-----|---------|-------|
| Production | 1,7 GW | - | 8.7 GW | 9.8 GW | 2.5 GW | 3.4 GW | - | 21.0 GW | 0 GW |
| Plant Utilization* | - | - | 71.7 % | 50.7 % | 12.7 % | 11.9 % | - | - | - |

*compared to available capacity

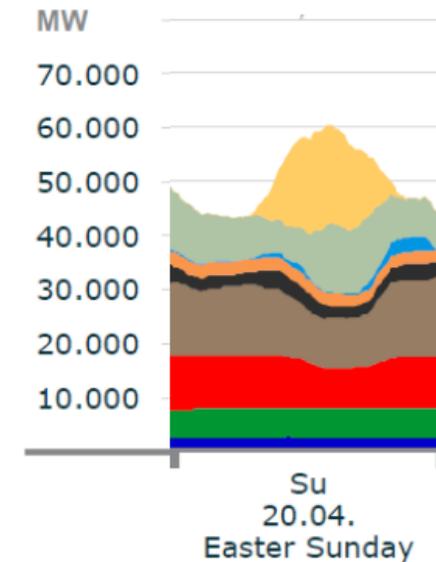
Source: Johannes Mayer, Fraunhofer Institute for Solar Energy Systems; Data: EEX

Back to month chart 

Back to week chart 

Analysis of the negative Intraday prices on 20.04.2014

- On Easter Sunday April 20th Intraday prices were negative during the day between 11:00 and 18:00, reaching -39.18 €/MWh between 2 and 3 pm. Day-Ahead prices for the same hour were positive.
- PV and wind production combined were about 4 GW higher than projected, the actual load was up to 4 GW lower than projected. The combined projection error was over 7 GW between 1 and 2 pm, explaining the negative intraday prices.
- Utilization ratio of power plants (14:00 – 15:00):



| 14:00-15:00 | Hydro | Bio | Uran | BC | HC | Gas | PSt | Wind | Solar |
|--------------------|--------|-----|--------|--------|--------|--------|-----|---------|---------|
| Production | 1.5 GW | - | 7.7 GW | 9.2 GW | 2.3 GW | 2.1 GW | - | 12.5 GW | 17.5 GW |
| Plant Utilization* | - | - | 75.0 % | 59.6 % | 13.1 % | 8.6 % | - | - | - |

*compared to available capacity

Source: Johannes Mayer, Fraunhofer Institute for Solar Energy Systems; Data: EEX

Back to month chart

Back to week chart

„....but the grid extension is preventing a decentralized energy transition and it will secure the leading position of the big energy companies“

-

Centralized energy transition path is preferred by the government

- Drastic reduction of the photovoltaic sector
- Step-by-step improvements for the offshore-wind sector
- Planned bidding system for onshore-wind power will worsen the market position for citizens' projects



European market integration „...but for improving market conditions of international acting energy companies“

- Looking at France and Poland, renewable energies are rather limited
- In fact, these countries are situated next to the large brown coal fields
- Neighbour countries with high shares of renewable energies are Austria, Denmark and Norway