



Recommendations for political action

PLAN

PLAN N : Recommendations for political action for the future integration of renewable energy into the grid

10th Conference on Applied Infrastructure Research (INFRADAY

Realizing large scale infrastructure projects

TU Berlin
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Federal Ministry for the
Environment, Nature
Conservation
and Nuclear Safety

German Environment Aid

- Founded in 1975
- German environmental NGO working e.g. on issues of nature conservation, sustainable energy and consumer protection
- Since 2008 moderation of the „Forum for the Integration of Renewable Energy into the grid“



Challenges

(C) S. Hainz, pixelio



(C) Rohmund



(C) Hänlein

- Is the power grid the bottleneck for a 100 % renewable energy system?
- Challenges in the Transmission Grid
 - Germany Energy Agency 2005: 850 km
 - German Energy Agency 2010: 1700 to 3.600 km



Pickets at a planned Power line

Action „Yellow arrow“:

Underground cables instead of overhead lines



Forum for Integration of Renewable Energy

Steering Committee (June 2009 – September 2010):

- TSO 50 Hertz Transmission GmbH and TenneT
- BDEW (German Power and Water Industry Association)
- BEE (Renewable Energies Association)
- Residents´ protest group: No 380-kV-Overhead Power Line in Werra-Meißner-Area
- Residents´ protest group 110 kV: Put high voltage underground
- 100%-RE-Regions (deENet)
- German Energy Agency
- DSO EWE Netz GmbH
- Germanwatch
- WWF
- Association for Grid Integration of RE
- Juwi Holding
- Schmal + Ratzbor Planning Agency
- Federal Environment Agency (UBA)





Plan N Signatories Dec 2010

17 companies
49 organisations
7 private people
+
Letter from 3
TSOs



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Policy recommendations

Before grid expansion: Optimising the system

- Regional grid concepts on all voltage levels
- Smart Grids, creating new energy markets
- Support of flexible renewable power plants
- Central/decentralised storages, R&D
- Temperature monitoring
- Application of high temperature power lines

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Policy recommendations

Planning procedure

- Transparent, early information and participation
- EU-wide grid planning based on Environmental Impact Assessment (EIA)
- Data transparency
- Online-publishing of planning documents
- Establishing infrastructure corridors

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Policy recommendations

- **OHL / Cable 220/380 kV:**

Position A:

Pilot projects according to German Power Grid Extension Act (EnLAG) should be used for underground cables on **certain parts**

Position B:

Pilot projects according to German Power Grid Extension Act (EnLAG) should be checked for underground cables **up to the whole length**

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Policy recommendations

- **OHL / Cable 220/380 kV:**
 - Use experience with EnLAG pilot projects for other 380 kV projects, binding legal framework required
 - Consideration of all investments in grid costs
 - Test of new transmission technologies such as DC as underground cable

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Policy recommendations

Local acceptance – distance regulations

Position A:

New distance regulation,
possibly connected to
compensation measures

Position B:

New distance
regulation:
400 m / 200 m

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Policy recommendations

**Local acceptance – 26. regulation German
Federal Immision Control Act (BImSchV)**
(health risks EM-fields)

Position A:

Check of limit value
(100 μT) according to
scientific discussion to
improve residents' health
in planning procedure

Position B:

Introduction of stronger
precautionary values
according to dutch or
swiss example (**<1 μT**)

Letter

3 TSO:

No need for
additional
precautions, no legal
change necessary

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Policy recommendations

New regulation:

§ 1 EnWG (German Energy Act): Purpose of the law should include support of renewable energies

→ Redefinition of duties of the national regulator (German Federal Network Agency = BNetzA)

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Policy recommendations

Bird protection

- 110 to 380 kV:
- → Installation of bird protection markers on ground wires

New Legislation 1 since August 2011

▪ Energy act

- Transparency of load data for experts
- Grid development plan with 3 alternatives, public consultation and decision by act of parliament every 3 years

New Legislation 2

▪ In Federal grid plan:

- To use **pilot**-undergroundcable in an „economic and technical efficient section“ on demand of planning authority.
- Mandatory Environmental Impact Assessment (EIA)

New Legislation 3

▪ **Grid Extension on the Acceleration Act**

- Public participation at conference of proposals
- mandatory deadlines set by the regulator
- Publishing of the entire process in the web
- Recognition of additional costs (factor 2,75 * instead of 1,6) of 110 Kilovolt-lines

Thank you for your attention!

- Contact: Deutsche Umwelthilfe e.V. (German Environment Aid)

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