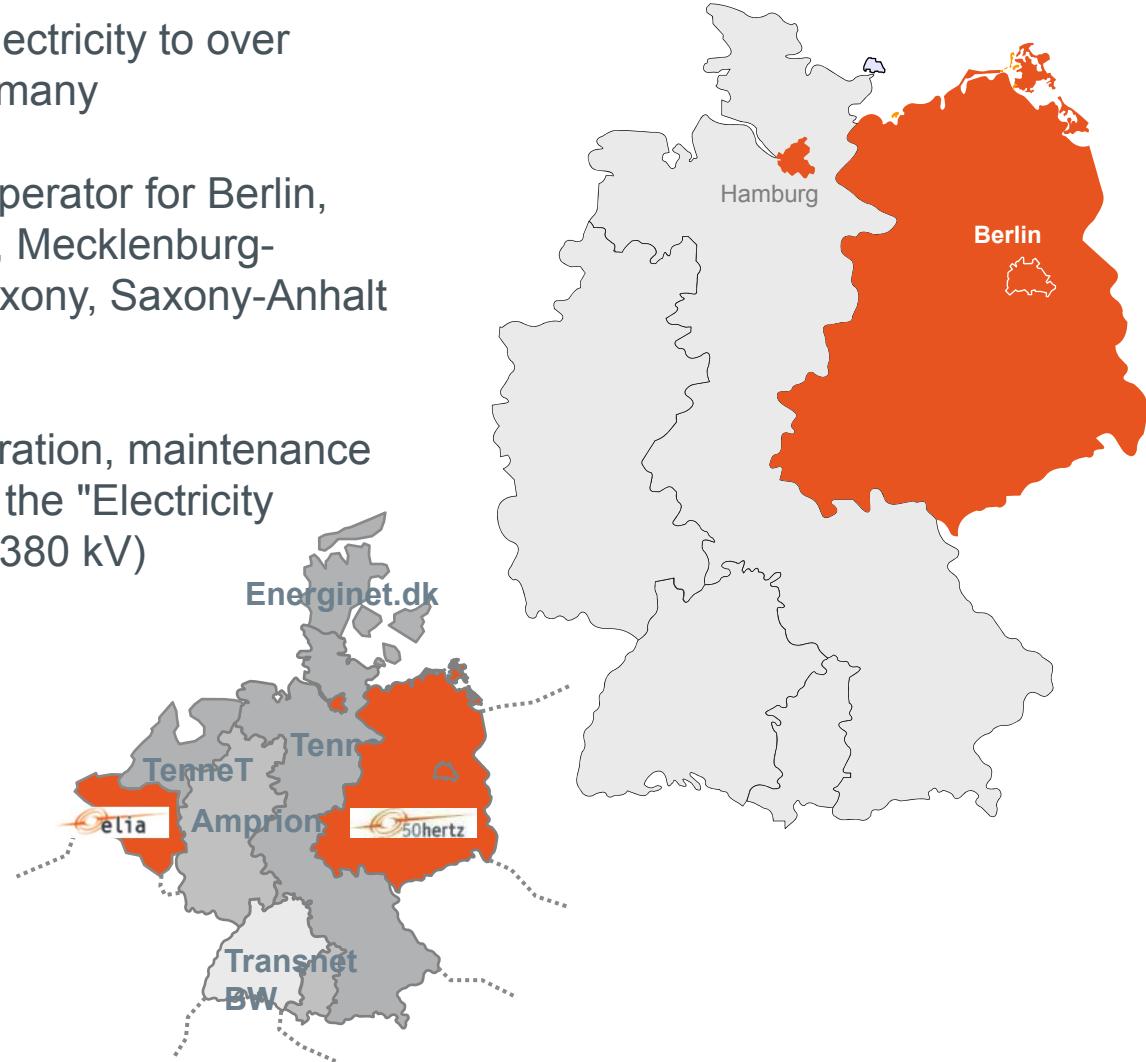


The Transmission System Operator 50Hertz

- Ensures the supply of electricity to over 18 million people in Germany
- Transmission System Operator for Berlin, Brandenburg, Hamburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia
- Responsible for the operation, maintenance and the development of the "Electricity Highways" (220 kV and 380 kV)
- Part of the Elia Group



Partner NGOs in the pilot project



German NGO with focus on climate policy, partner BESTGRID consortium



German NGO specialised in energy policy and round tables on moderation of transmission grid projects



German branch of Birdlife Europe, special expertise in bird and nature protection as well as energy policy

Tasks in BESTGRID

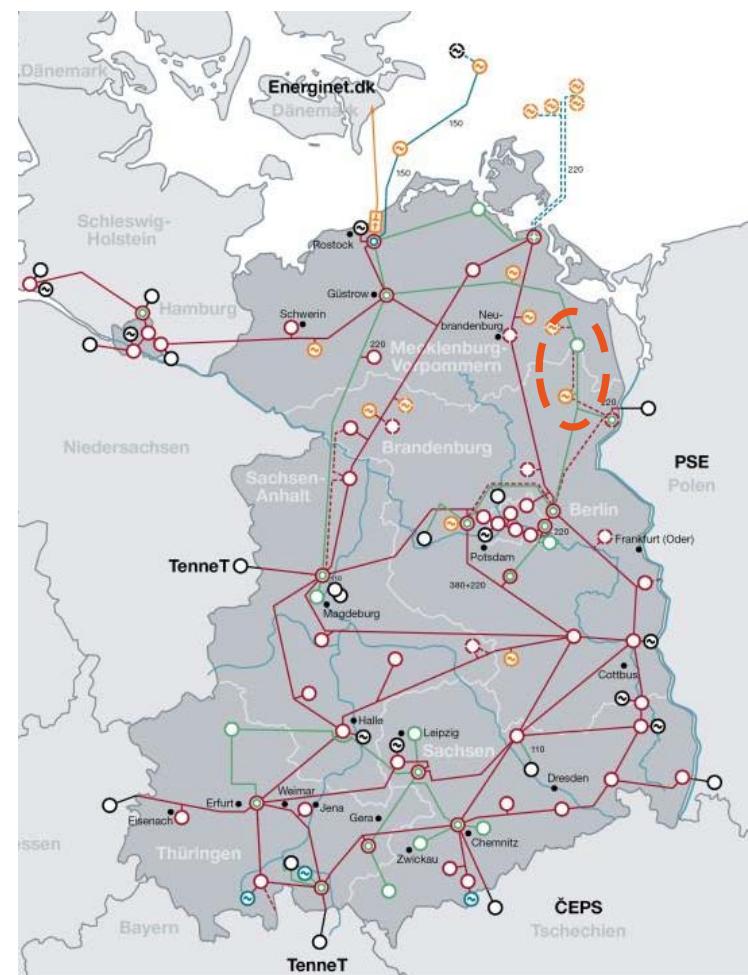
- Evaluation of the project and reflection on lessons learned
- Handbook on participation and transparency

- Design and implementation of round tables
- Observation mobile citizens office

- Design and implementation of round tables and field trips
- Input data avifauna
- Observation mobile citizens office

The 50Hertz pilot project: 380 kV overhead line Bertikow – Pasewalk

- Planning area: north-east of the 50Hertz control area
- Two federated states are affected: Mecklenburg-Western Pomerania and Brandenburg
- Objective: increasing the power transmission capacity of the 220 kV overhead line over a distance of approx. 30 km
- Commissioning planned for 2019/2020
- Competent authority for the procedure: Federal Network Agency / Bundesnetzagentur



Framework conditions and conservation demand

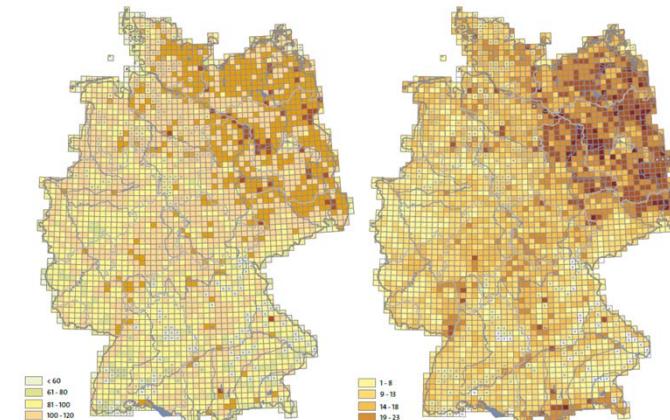
Framework conditions

- **Replacement of the existing 220-kV overhead line** with a more powerful 380-kV overhead line
- **Rural area** with low population density
- First national project after **NABEG legislation**
- **Pilot project for BESTGRID**; special focus on EMF
- Construction of **wind turbines as the next central theme** in public perception



Conservation demand

- **6 SPAs** surround planning area
- **Collision risk** (cranes, geese, waders, rails)
- **Habitat dissection** for resting and breeding birds
- **Cumulative effects with wind turbines** and other infrastructures
- Dissection of Pasewalker Kirchenforst
- **Data availability** insufficient in Brandenburg



Anzahl der Brutvogelarten je TK25 in den Jahren 2005–2009 aus ADEBAR (Atlas Deutscher Brutvogelarten, Gedeon et al. 2014) – Number of breeding bird species per topographical map 1:25.000 (c. 120 km²) between 2005 and 2009 from ADEBAR (Atlas of German Breeding Birds, Gedeon et al. 2014).

Anzahl von Triggerarten je TK25 (c. 120 km²) in den Jahren 2005–2009 – Number of trigger species (species triggering SPA classifications) per topographical map 1:25.000 (c. 120 km²) between 2005 and 2009.

More transparency through cooperation



New formats pilot project

| | |
|--|--|
| Cooperation with environmental protection associations | <ul style="list-style-type: none"> Joint development of Action Plan in cooperation with Germanwatch Joint conception and organisation of workshops on the subjects of EMF and bird protection in cooperation with DUH and NABU |
| Tour of the mobile citizens office | <ul style="list-style-type: none"> Information tour visiting eleven locations in the area along the line Cooperation with the University of Duisburg-Essen (on-site EMF measurement) |
| Information material | <ul style="list-style-type: none"> BESTGRID project website, brochures and video explaining EMF |
| Scientific support and evaluation – EMF | <ul style="list-style-type: none"> Scientific support of the information tour by the University of Duisburg-Essen Evaluation of the information tour by TU Berlin Evaluation of the 50Hertz pilot project by IIASA |

50Hertz approach

| | |
|----------------------|--|
| Stakeholder contacts | <ul style="list-style-type: none"> Early involvement of regional and local decision-makers, 1-to-1 or 1-to-many talks |
| Corridor workshops | <ul style="list-style-type: none"> Organisation of two corridor workshops in the area along the line |
| Public relations | <ul style="list-style-type: none"> Public relations go hand in hand with the early information of the public |
| Information material | <ul style="list-style-type: none"> Project website, project flyer, information letter |

Round tables targeting environmental stakeholders

Description:

- **4 round table events, organized in cooperation** with NABU Germany and DUH
- Target group: environmental stakeholders, representatives of local authorities and municipalities
- Discussion topics included **bird protection and EMF**
- Including a **field trip** to the existing power line with on-site discussion of environmentally relevant topics
- Moderation: NABU and DUH

Cooperation:

- Joint invitation, development of concept and agenda, evaluation

Observations:

- Impacts of power line on nature for some NGO stakeholders **less relevant than wind power; occasional distrust** of single stakeholders towards collaboration with TSOs
- Unrestricted common stakeholder mapping, demands are treated unprejudiced by TSO, **high participation by local authorities**

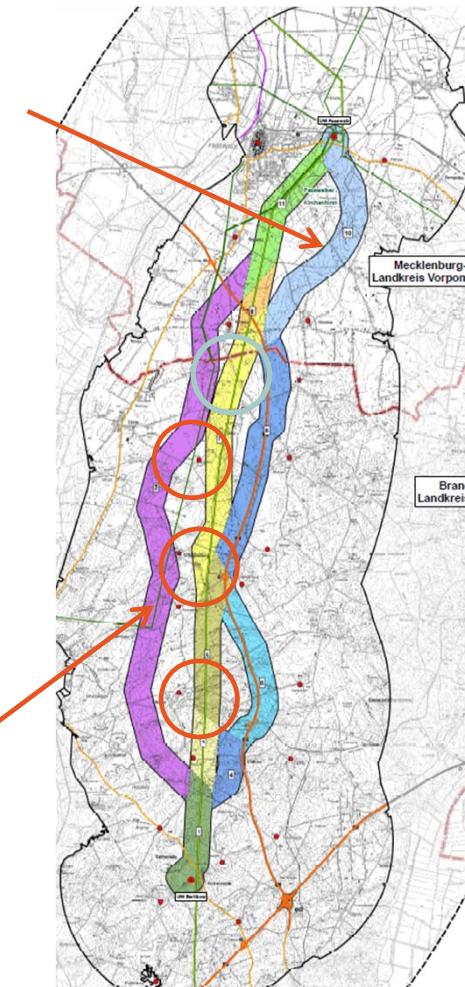
Recommendations:

- **Continuous dialogue** during further planning



Approach generated valuable input for project planning

- **Demanded alternative corridor option** became additionally integrated in the alternative portfolio
- **Weighing the use of collinear pylons**
- **Sustainable line corridor management** taken into consideration by 50Hertz in general on all future grid projects
- **Getting direct feedback** from TSO and **placing direct feedback** on TSO plans is possible **beyond BESTGRID**
- **Open points:**
 - handling specific kinds of protected habitats earlier in the planning
 - which type of bird protection markers to be used



Tour of the mobile citizens office

Description:

- Visit to **eleven locations** along the proposed corridor for the new line
- Information on status quo of the planning and authorization procedure, electric and magnetic fields discussion, protection of the environment
- **Information by expert team on site**, consisting of 50Hertz employees, scientists and NGO representatives

Cooperation:

- **Scientific support** by experts of the University of Duisburg-Essen
- Germanwatch, RGI, DUH, NABU present as **observing partners**

Recommendations:

- Better communication on **how proposals** and suggestions from citizens are **taken into consideration in the official planning** and authorization procedure
- **Use tools for visualization** of the project: Maps, photos, 3D-visualisation tools
- **Presence on the ground** helps to facilitate dialogue and to build trust



Measurements of electric and magnetic fields

Description:

- Measurement of electric and magnetic fields (EMF) at stops along the existing 220-kV overhead line
- Information materials support communication activities: **brochures and video on EMF**
- Practical explanation of the **correlation between measured field intensities and the distance** to the conductors to remove any (remaining) doubt concerning EMF

Cooperation:

- **Scientific support** by experts of the University of Duisburg-Essen (on-site EMF measurements)
- **Evaluation** of the measurements by Technical University of Berlin

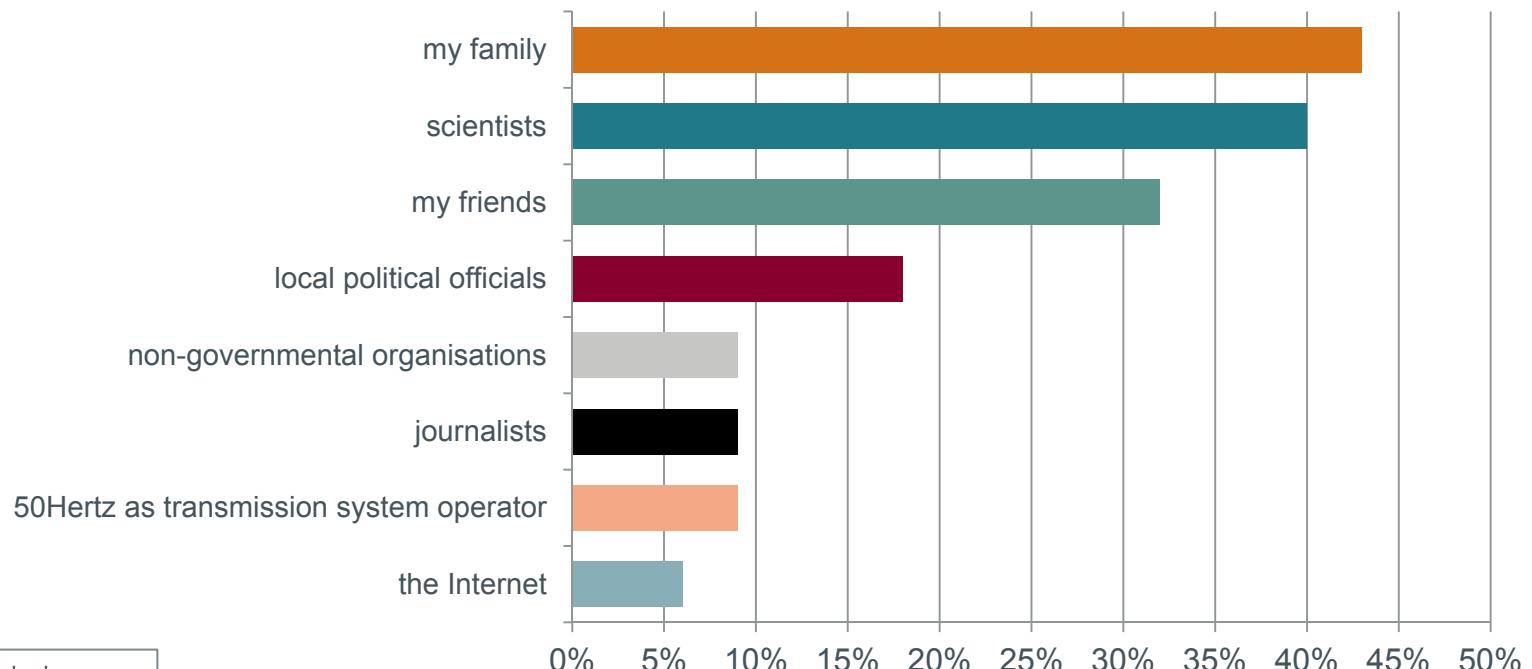
Recommendations:

- Explaining impacts of EMF by scientists is an issue of interest for local dialogue
- Measuring the field intensities under an existing 220kV line and explaining the respective fields on the planned 380kV line **needs to be explained in its context**
- Measurements especially interesting for people living close to line/ should be an optional part in portfolio of measures



Results of survey on pilot project:

Information sources on electric and magnetic fields:
"I trust:"



Method: representative telephone survey

Number of cases: n = 750

Period of implementation: April 2015

Continuity as a key to improved dialogue



Our goal: The project partners want to maintain and further the sustained dialogue that was started in the scope of BESTGRID, even after the pilot project.

Thank you very much for your attention.

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Brussels, 09/09/2015