Best practices in lignite production: public participation in the planning and the rehabilitation of lignite sites to win acceptance

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Holistic opencast mining concept

1. Lignite's necessity for energy supply

2. Complex approval procedures
   - Overall concept approved by Lignite Commission
   - Individual aspects and details under mining, water and public law
   - Public participation, stakeholder dialogue, information

3. Mining process meets high standards
   - …from start
     - Technical: emission control
     - Ecological: recultivation
     - Social: resettlement
   - …to finish

4. Diverse activities to ensure public acceptance
   - Public acceptance depends on dialogue at all levels
   - Highly visible projects and activities support the development in the region
Lignite makes a crucial contribution to security of supply and price control in Germany's energy mix.

Lignite is a mainstay of Germany's electricity supply.

Lignite, hard coal and RES closed the capacity gap formed since 2010.

Lignite will also be a mainstay of the energy mix of the future.

* Energy balances working group, 12/12/2013
Ways to make use of lignite

1. Necessity for energy supply

- Industrial processes
- Natural gas
- Fuels
- Synthesis gas
- Chemicals
- Engines

Lignite

Dry lignite

Drying → Gasification → Gas treatment → Synthesis

Use of CO₂

Synthesis gas

Other energy carriers

- Use of RES-H₂
- Grinding/conditioning; direct liquefaction
- Lignite slurry coal oil

Fuels

Engines

The energy to lead
Lignite Commission as a committee of experts and policymakers for overall lignite planning

The Lignite Commission acts in collaboration with stakeholders from the region and specialist representatives and draws up a Lignite Mining Plan incl. environmental and social impact assessments.

Further individual aspects and details are reviewed under mining, water and public law in subsequent procedures.

Jointly developed regional planning decision:
Scope of action for the region AND improved long-term planning and investment reliability for the mining company by committing municipalities.
Approval procedure in brief

**State planning procedure** for the entire mining project

**Approval procedure under mining law**
- General information about technical execution and timetable

**Approval procedure under mining law**
- Development and management of mine for 2 years as a rule

**Master Operating Plan**

**Public proceedings/permits under water law**

**Lignite Mining Plan**

**Subsequently also:**
- Lignite sectional plans/resettlement

**State/regional planning procedures**

**Special Operating Plans**

**Approval procedures under public and water law**

- Approval procedures under public and water law

- Approval procedure under mining law
  - For certain mine parts or for certain projects of independent significance

**Monitoring**
Public participation at several stages of the planning procedure

<table>
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<tr>
<th>Informal participation</th>
<th>E.g. replanning of recultivation (Inden residual lake)</th>
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<tr>
<td>Formal participation</td>
<td>Lignite Mining Plan</td>
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<td>Master Operating Plan (resettlers, owners)</td>
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<td>Special Operating Plan (species protection)</td>
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<td>Participation of resettlers in workshops</td>
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3 billion tons (2014) of approved deposit reserves provide a reliable basis for long-term energy supply

- Output: approx. 100Mt/a
- Power prod.: approx. 70 – 75TWh/a
  (40%: NRW or 13%: GER)
- Approx. 11,250 employees

Power plants | Capacity
---|---
Frimmersdorf | 600MW
Neurath | 4,300MW
Niederaussem | 3,400MW
Weisweiler | 1,800MW

Mine | Output | Reserves
---|---|---
Garzweiler | 35 – 40Mt/a | 1.2bn tons
Hambach | 35 – 45Mt/a | 1.5bn tons
Inden | 20 – 25Mt/a | 0.3bn tons

Complex approval procedures
Update on the situation of Garzweiler II

• In its judgement of 17 December 2013 the Federal Constitutional Court (BVerfG) confirmed the constitutionality of the Garzweiler II opencast mine as legitimate public interest objective; crucial for power generation.

• In March 2014, the state government reaffirmed the necessity of extracting lignite from all three opencast mines.

• Restriction: The 4th resettlement section of the Garzweiler II opencast mine, required for extraction after 2030, is to be dispensed with.

• A guideline decision is to be elaborated until 2015.

• This would fundamentally alter basic assumptions underlying the Garzweiler II Lignite-Mining Plan, so that it would have to be amended.

• This declaration of the state government as early as today comes as a surprise; it is important that this process will be well-ordered and free from premature decisions.

• We adhere to the approved extraction boundaries; still, it is necessary that we deal with possible consequences – particularly as regards planning required in future and additional costs.

• We also assess the chances for success of an action.
High technical standards: emission control – continuous development and adjustment

- Operation in a densely populated area requires numerous planning, technical and organisational mitigation measures
High ecological standards: biodiversity-protection measures and diversified recultivated landscape

- In the Rhenish mining area, over 20,000ha have been recultivated to date
- Compared with pre-mining land use:
  - fewer industrial surfaces,
  - fewer settlements and roads,
  - more new, attractive leisure and recreation areas
- 2,200 animal and > 700 plant species identified after recultivation [incl. 429 endangered "red-listed" species]
High social standards: resettlement follows individual and shared tangible and intangible values

**Social compatibility**
- Civic participation
- Joint resettlement
- Optimisation of infrastructure

**Transparency**
- Compensation declaration applicable to the entire Rhenish mining area
- Evaluation by district government and Lignite Commission
- Mediation body

**Sustainability**
- Innovative energy concepts
- Resource-preserving construction methods
Lignite acceptance – 
Partnership-based cooperation on several levels

Innovationsregion 
Rheinisches Revier 
(Innovation region 
Rhenish mining area)

Inter-municipal planning associations Indeland and terra nova; in future: initiatives in the environs of Hambach and Garzweiler

Framework agreements at local-government level
Examples of inter-municipal planning associations

:terra nova – Regionale 2010
New kinds of recultivation and promotion of structures
Forum :terra nova multi-purpose building as meeting place, information centre and viewing platform on the rim of the Hambach opencast mine

Recultivation Careful rehabilitation enables re-use for leisure, nature, agriculture and forestry
A former conveyor belt route has been turned into a wide path for walkers, cyclists and inline skaters

Industry and SME
Promotion of industrial and SME structures by relocation of jobs
Laying of foundation stone for a logistics centre offering 750 jobs (Hammer GmbH & Co. KG)

Renewable energies in the Rhenish mining area
Development of wind and solar projects
Bedburg-Königshovener Höhe wind farm
(21 turbines; 67.2MW of installed capacity)
Upshot: sustainable long-term lignite mining balances energy mix and avoids supply and price risks

Lignite’s necessity for energy supply
- Lignite will be a mainstay of the energy mix of the future
- Lignite does not require any subsidies and ensures price control and security of supply

Complex approval procedures
- From state/regional planning to mining law and other specific law procedures
- Public participation takes place at several stages of the planning and approval procedure

Mining process
- High technical standards: emission control
- High ecological standards: biodiversity-protection measures and recultivation
- High social standards: resettlement

Diverse activities to ensure public acceptance
- Partnership-based cooperation at several levels