

# Mining- and Environmental Rehabilitation

**A sustainable investment into future**



## Rehabilitation of former state-owned Lignite Mining in Eastern Germany – results and tasks

Ass. Forst. Jörg Schlenstedt  
Head Office LMBV  
[joerg.schlenstedt@lmbv.de](mailto:joerg.schlenstedt@lmbv.de)

# Map east German mining regions



Lusatian Lignite Mining Region

Central German Lignite Mining Region



# Serious environmental problems

**Bitterfeld 1992**

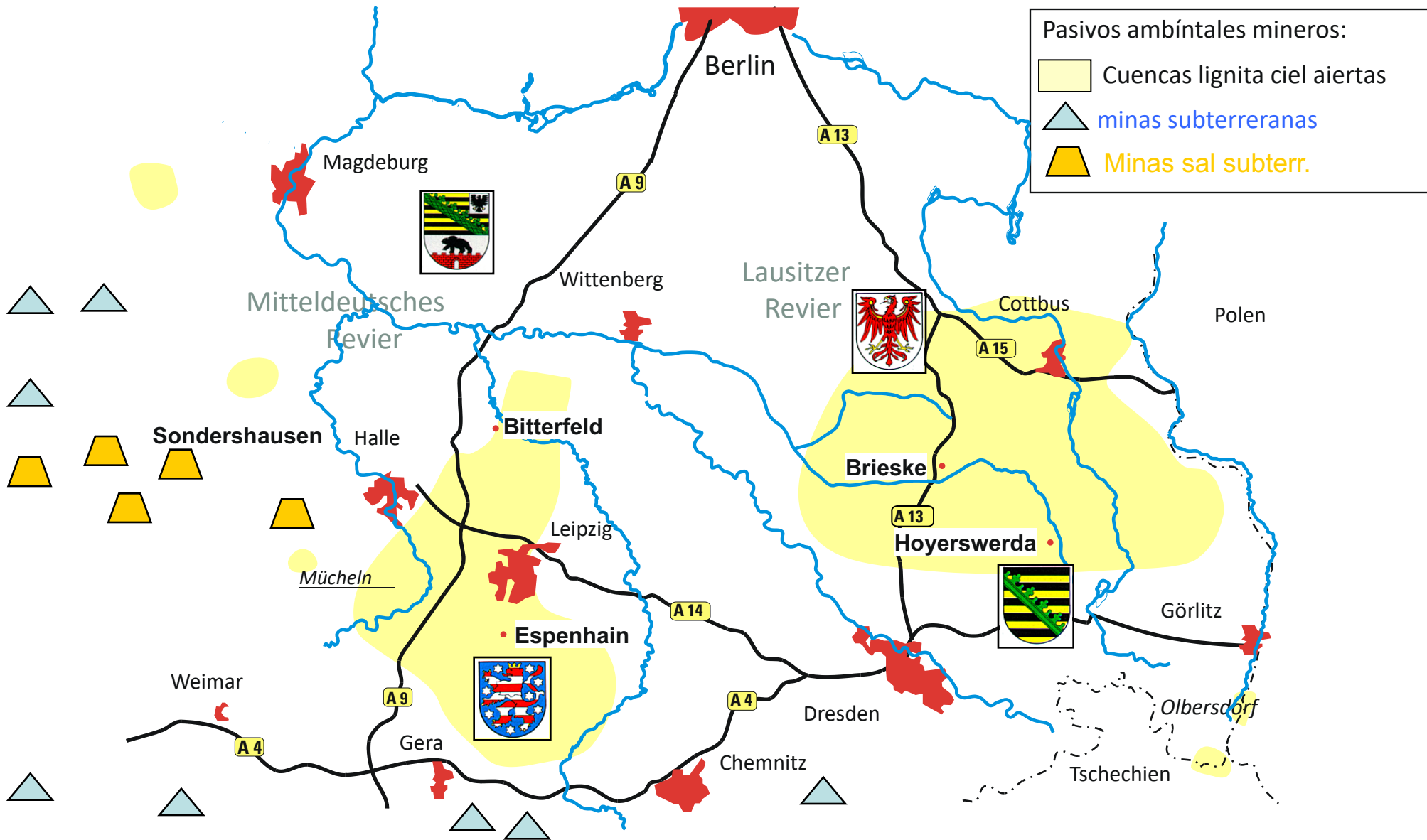




**Non-rehabilitated and devastated area on over 30.000 ha (300 km<sup>2</sup>)**









# Starting position for the establishment of LMBV 1995

**32 open-cast mining areas with 224 open pits**

**1.200 km unsecured slopes**

**13 bill. m<sup>3</sup> groundwater deficit with cone of depression of 2000 km<sup>2</sup>**

**97.000 ha property of areas used by mining activities**

**5 active mines to be closed until 31.12.1999**

**46 refinement- and 42 thermal power plants**

**app. 1.200 legacy areas**

Open-pit Meuro 1997





Last shift of workers



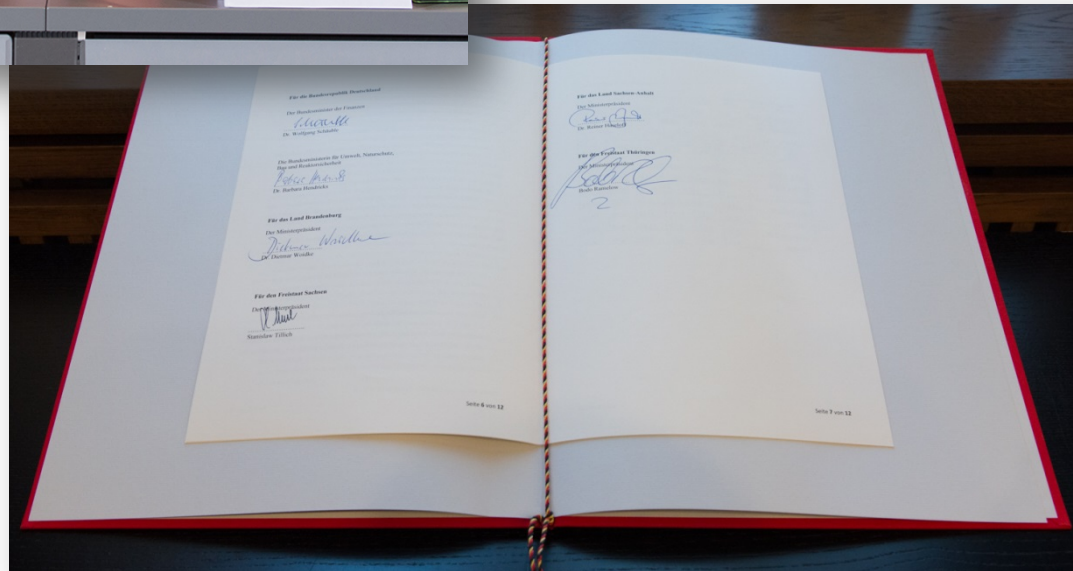


- **State owned company (Ministry of Finance)**
- **Responsibility: Decommissioning and rehabilitation of sites used by the lignite mining industry of the GDR**
- **Includes:**
  - **the re-cultivation of dumps feasible for re-use in the public interest**
  - **the restoration of a self regulating water balance according to water quantity and quality**

# Financing the work of LMBV



**Signing of the VI Administration Agreement on “Lignite Mining Rehabilitation” on 2<sup>nd</sup> June 2017. Federal State represented by Ministry of Finance and Ministry of Environment and the four states affected by the lignite mining (Brandenburg, Saxony, Saxony-Anhalt and Thuringia)**





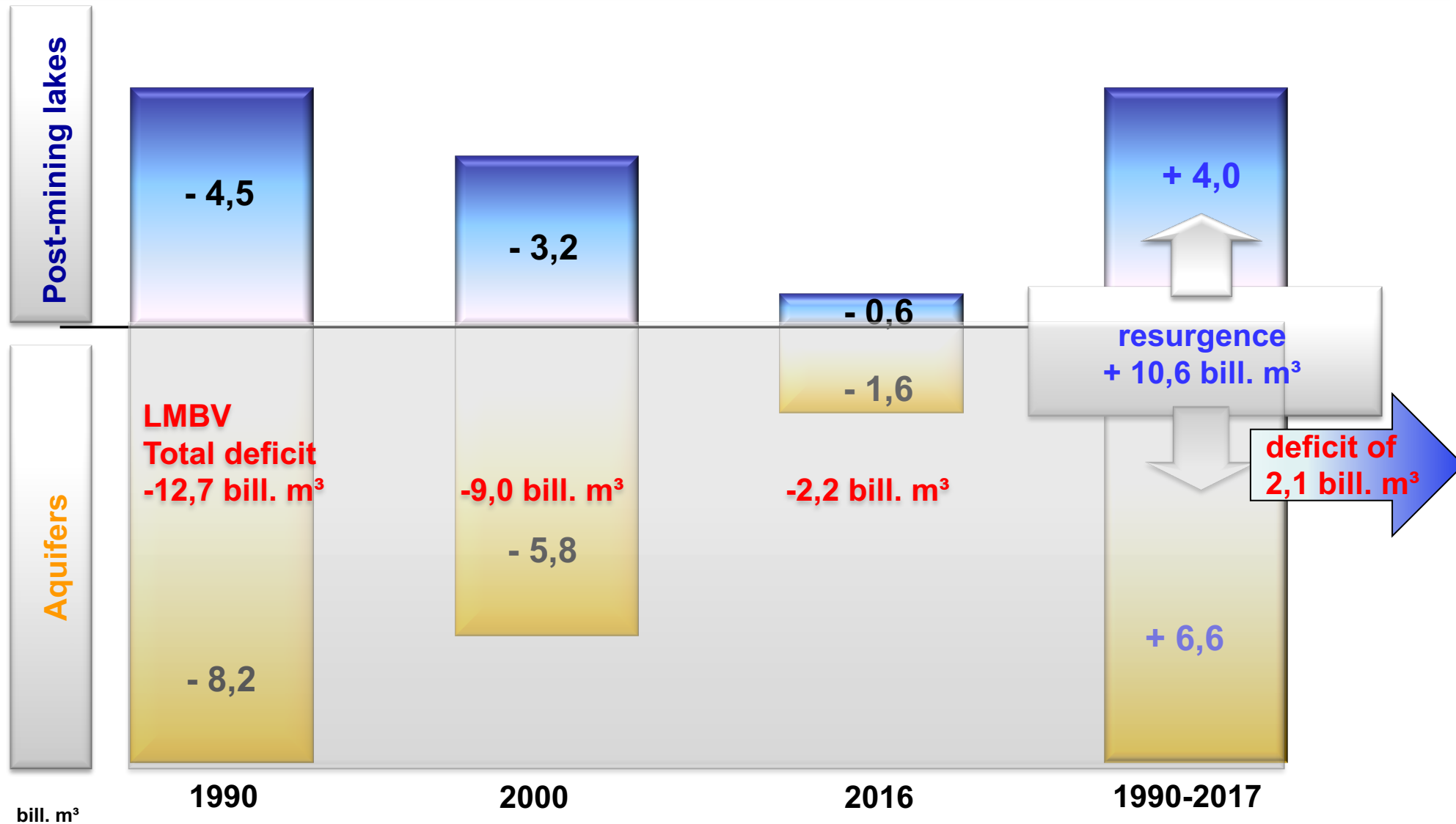
# Geotechnical tasks



Open-cast Meuro 2013

In total: compaction of  
1,167 bill. m<sup>3</sup> of masses  
on LMBV dump slopes

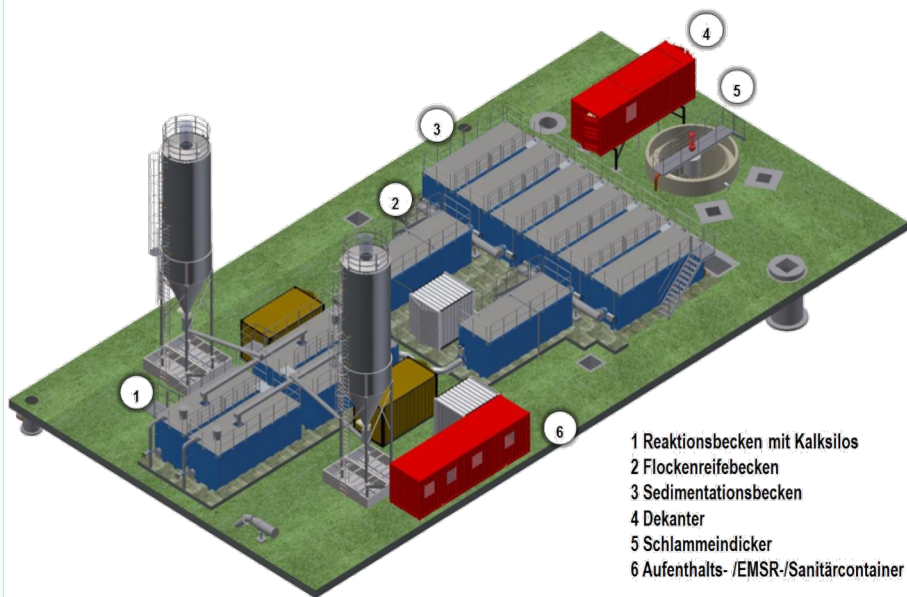
# Groundwater deficit in 1990 and resurgence until 2017





# Modern water treatment plants

- Mobile and flexible water treatment plants in the catchment area of rivers
- Avoidance of inflows of acid groundwater into the rivers



## Area of groundwater lowering

Conflict between groundwater level  
after mine closure and

Infrastructure

Abandoned  
mining

Building  
structure

Legacies

Rivers



# Afforestation and Nature protection



Natural succession





## Harbour of Senftenberg

- Public investment and
- Private investments



# Touristic investments



Canal and sight seeing point “Rusty Nail”



# Conclusions

- After 25 years of mining rehabilitation by LMBV significant changes are visible:
  - *most of the contaminated sites have been cleaned,- and re-used by new owners;*
  - *former open-cast mines develop into attractive tourist destinations;*
  - *post-mining landscapes are extremely worthy for nature protection goals;*
- Mining rehabilitation on time, during the excavation is necessary for acceptance and far cheaper than starting afterwards.
- Early involvement of the authorities and the public is absolutely necessary,
- Sufficient monitoring and control of the processes are required,
- Environmentally sound re-cultivation enables social and economic development,
- Creating a market for rehabilitation is an ongoing success story,
- There are no standard solutions – science & technological innovation are crucial.