

# *RAFF – THE GENESIS OF THE PROJECT*

ADAM BAJCAR

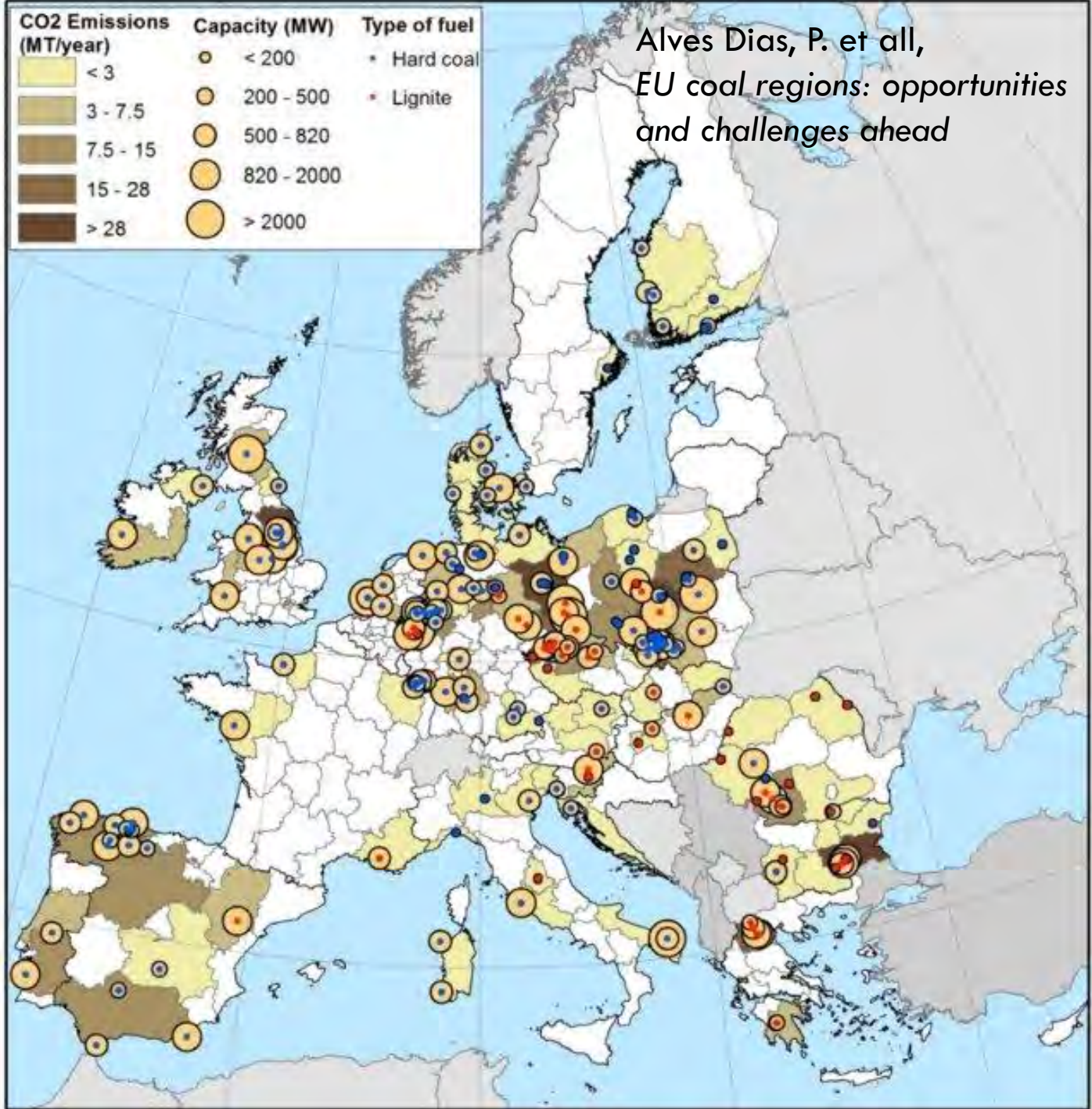
The logo for RAFF features the word "RAFF" in a bold, green, sans-serif font. A blue, curved swoosh underline is positioned beneath the letters, starting under the 'R' and ending under the 'F'.

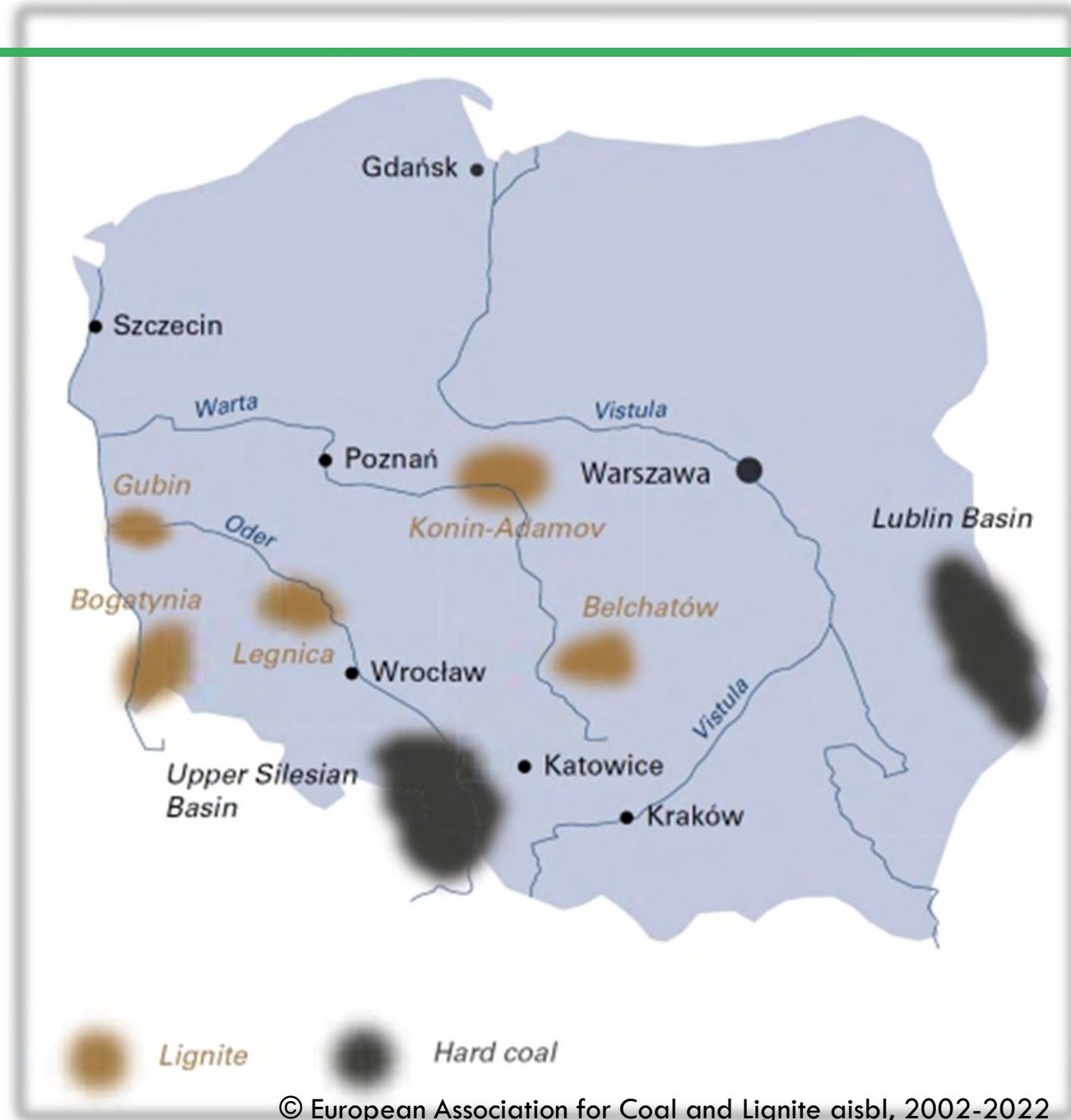


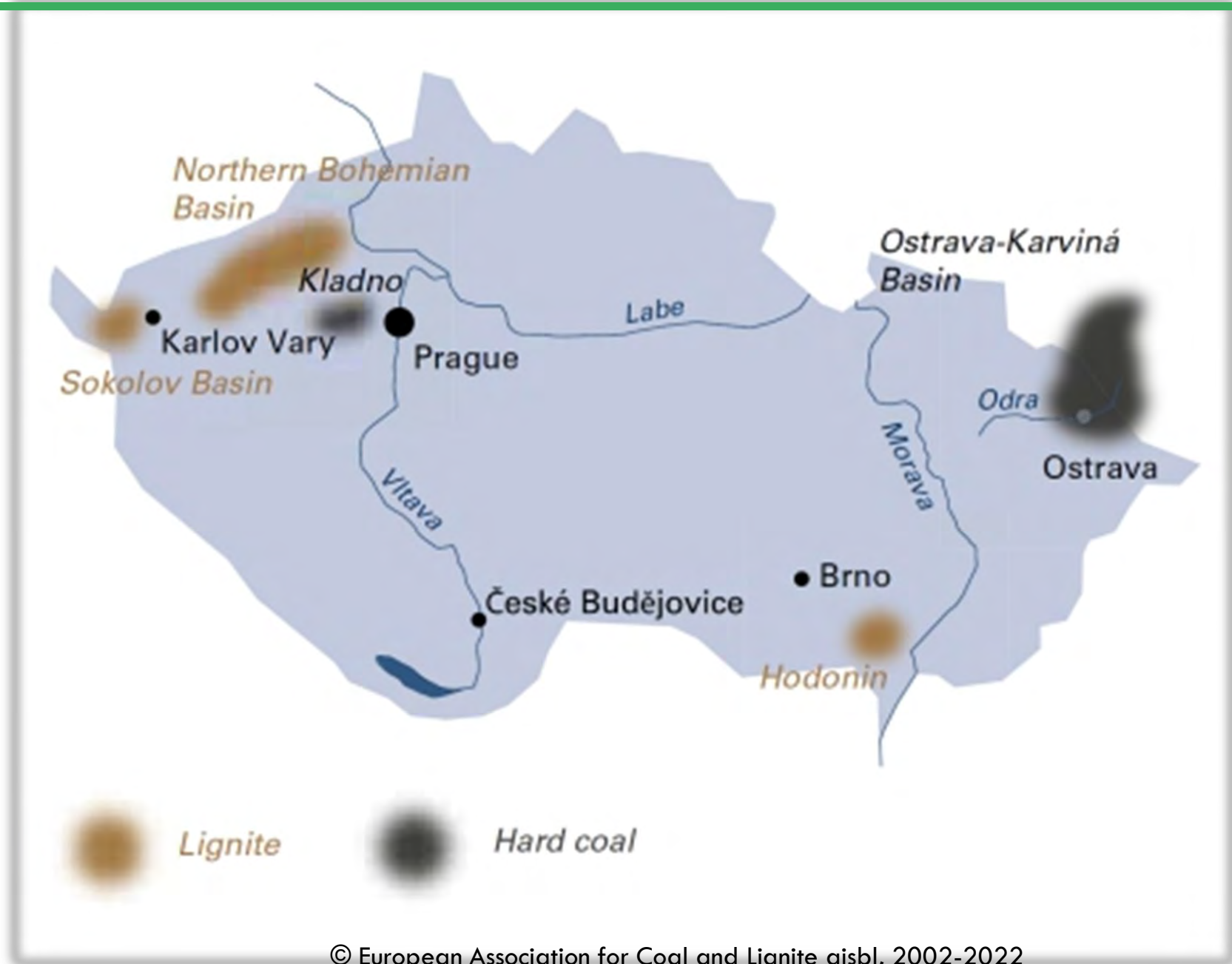
# FACT 1

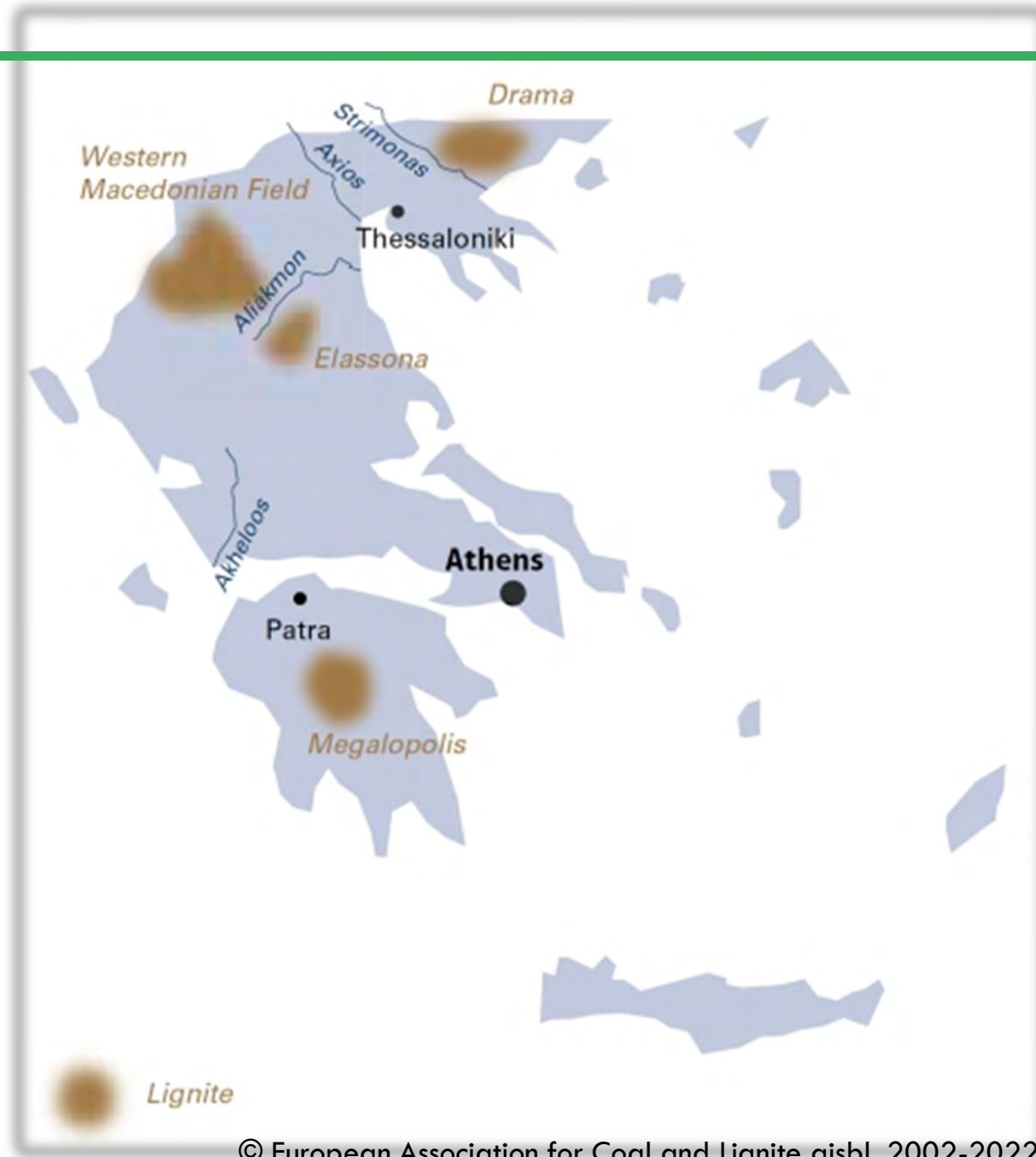
- ALMOST ALL POST EXPLOITATION OPEN PIT VOIDS IN THE WORLD ARE SHAPED AS A FINAL RESERVOIRS INTENDED TO BE FILLED WITH WATER.
- IN EUROPE, THE CREATION OF WATER RESERVOIRS IS THE MOST COMMON WAY OF RECLAIMING POST EXPLOITATION VOIDS.

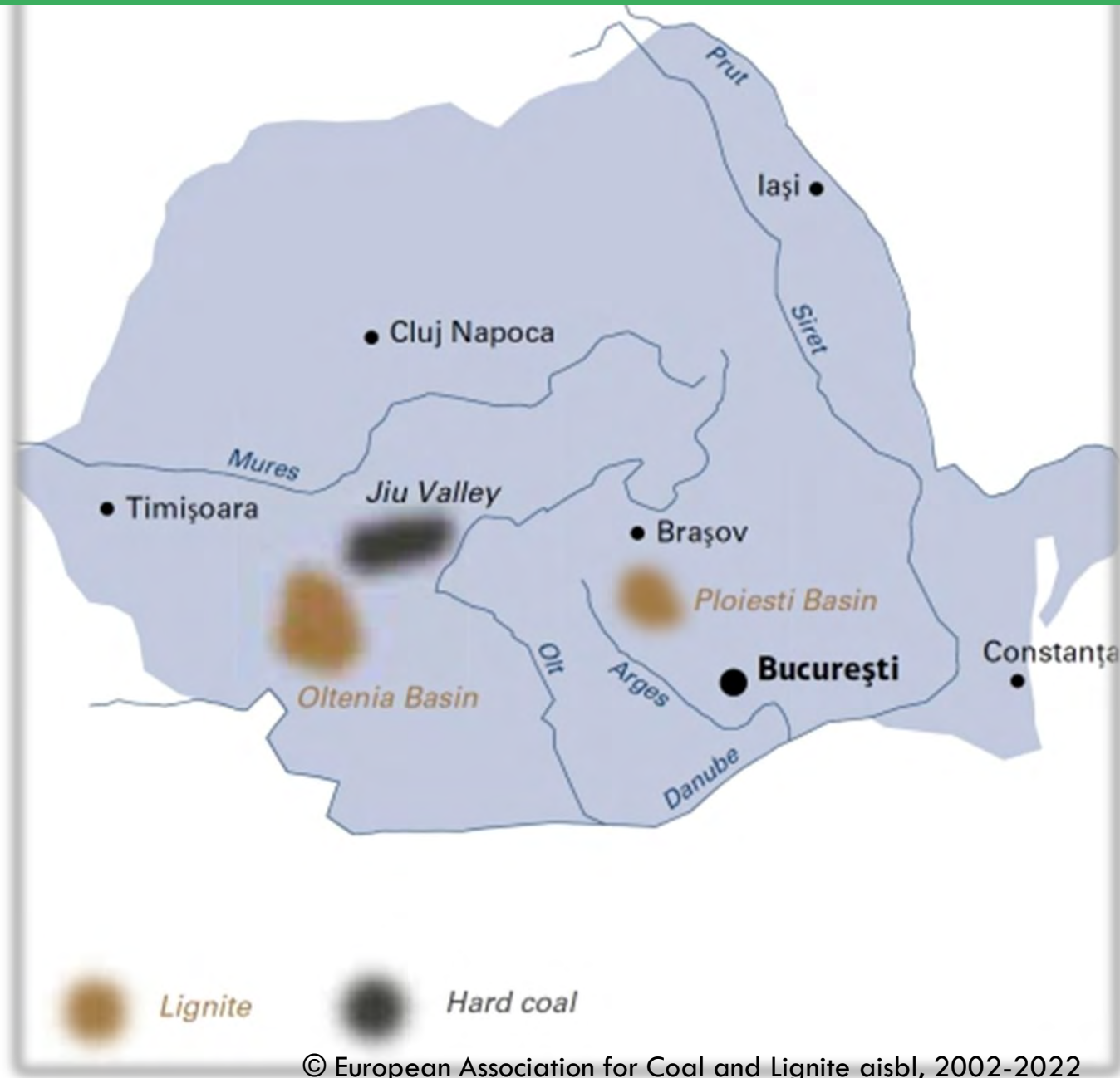
Alves Dias, P. et all,  
*EU coal regions: opportunities  
and challenges ahead*



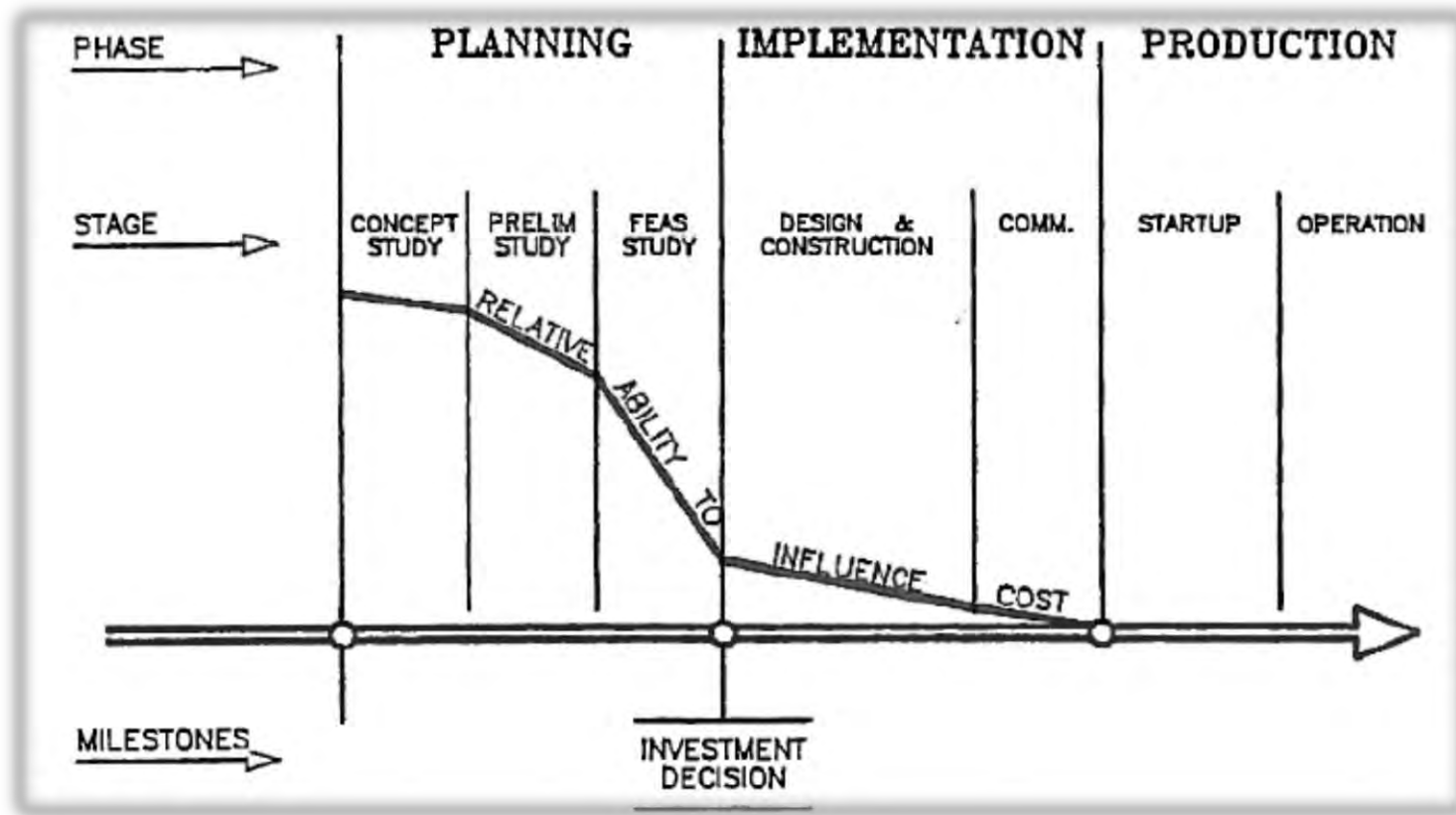












- The open pit mines are predicted to be partially backfilled and flooded with water creating pit lakes
- The environment protection and safety regulations are becoming more restrictive
- Gaining better knowledge about flooding processes will allow the risks connected with open cast mine closure to be minimized.

## FACT 2

- PIT-LAKES OFFER THE OPPORTUNITY TO ENHANCE THE RECREATIONAL OR ECOLOGICAL BENEFITS BY RE-LANDSCAPING AND RE-VEGETATING THE SHORELINE, BY CREATING AQUATIC LIFE, AND MAINTAINING WATER QUALITY.
- THEIR VALUE AS RESOURCES FOR RECREATION, FISHERIES, WATER SUPPLY FOR INDUSTRY AND AGRICULTURE, HEAT PUMP APPLICATIONS, SCIENTIFIC STUDIES AND WILDLIFE HABITAT, DEPENDS MOSTLY ON THEIR TOPOGRAPHY, THEIR SAFETY CHARACTERISTICS (SUSCEPTIBILITY TO SLIDES, ROCK FALLS, ETC.), THEIR HYDROLOGICAL CHARACTERISTICS (INTERACTION WITH GROUNDWATER AND SURFACE WATERS AND THE QUALITY OF BOTH) AND CLIMATE.













[www.rpv.westsachsen.de](http://www.rpv.westsachsen.de) (10.10.2019). Tagebau Goitsche Holzweißig Rösa



## FACT 3

- THERE ARE MANY EXAMPLES OF FLOODED SMALLER FINAL PITS AND IN SOME OF THESE, DURING THE PROCESS OF FILLING WITH WATER, SERIOUS GEOTECHNICAL PROBLEMS HAVE BEEN ENCOUNTERED.
- DURING RECLAMATION OF OPEN PITS OF BEŁCHATÓW'S SIZE THE SCALE OF GEOTECHNICAL PROBLEMS WILL BE SIGNIFICANT AND MAY IMPEDE THE PROCESS OF FILLING THE VOIDS WITH WATER.







The occurrence of the landslide displaced the embankments of the reservoir by more than 200 meters and created a bay of about 5 hectares. Approximately 600,000 m<sup>3</sup> of earth moved under the water, causing the water level to rise by 56 cm.

## PROBLEM TACKLED BY RAFF

The majority of post exploitation open pits are shaped as final reservoirs intended to be flooded with water. In Europe, the creation of pit lakes is the most common way of post mining areas reclamation.

The RAFF project addresses, among others, the geotechnical and hydrogeological uncertainties associated with the process of final pits flooding and thus creating pit lakes.



## MAIN OBJECTIVES

- To develop a reliability methodology for assessing the long-term stability of flooded final pits.
- To produce operational guidelines for multicriteria risk assessment of final pits during flooding.

THANK YOU FOR YOUR ATTENTION