



Bayerisches Landesamt für  
Umwelt



# ENERGY TURNAROUND – CHANCES AND RISKS FOR THE RAW MATERIAL INDUSTRY IN BAVARIA

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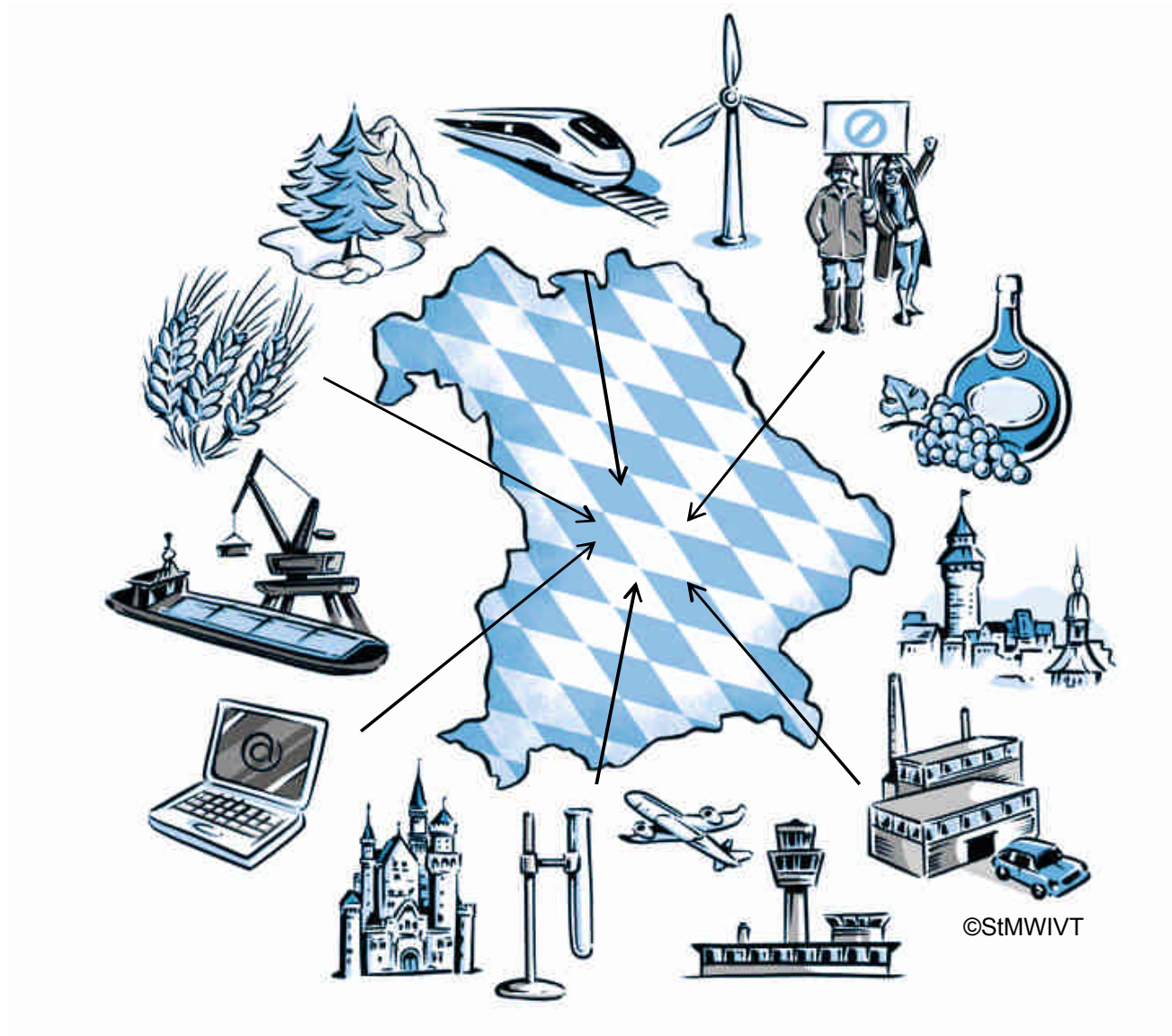
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BIV / LfU  
Bologna  
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## Energy turnaround

- Target 2021:  
more than 50 % electricity should be generated through renewable energy
- energy turnaround will take place mainly in rural areas (biomass, wind power, solar or geothermal energy)





# Areas of Mineral Resources and Competing Uses



**Residential and Industrial Areas**



**Nature and Habitat Protection**



**Agriculture**



**Drinking Water Production**



**Wind Power**



**Forestry**



**Transport Routes**



**Archaeology**

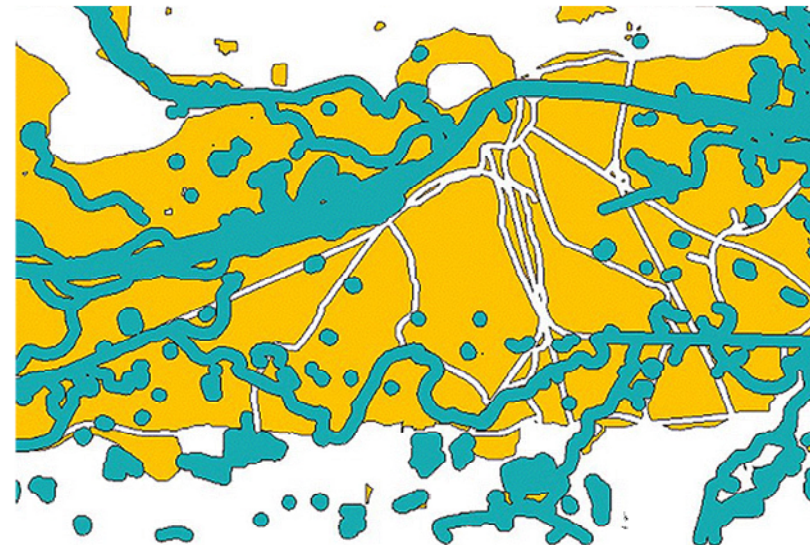
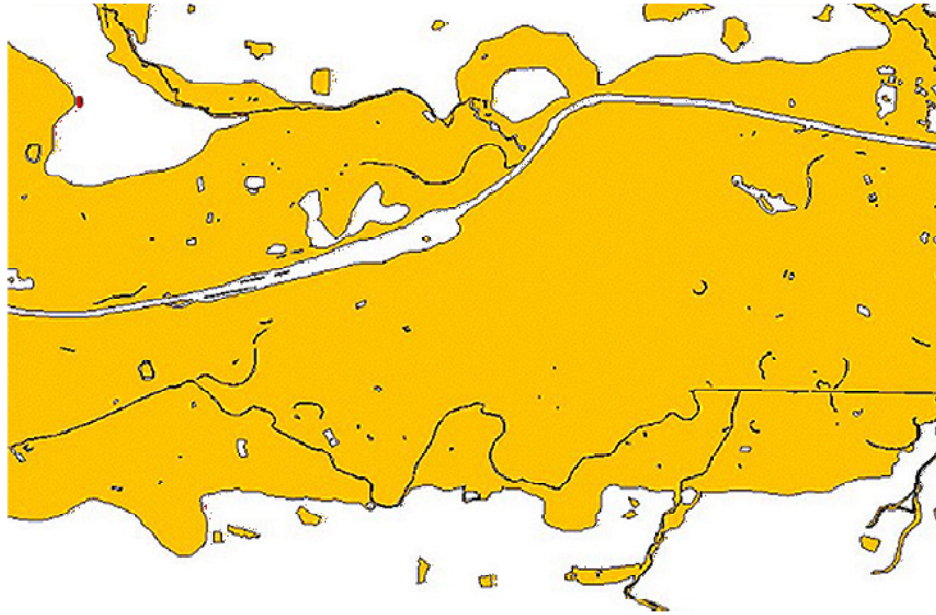


**Landscape**



**Recreation**







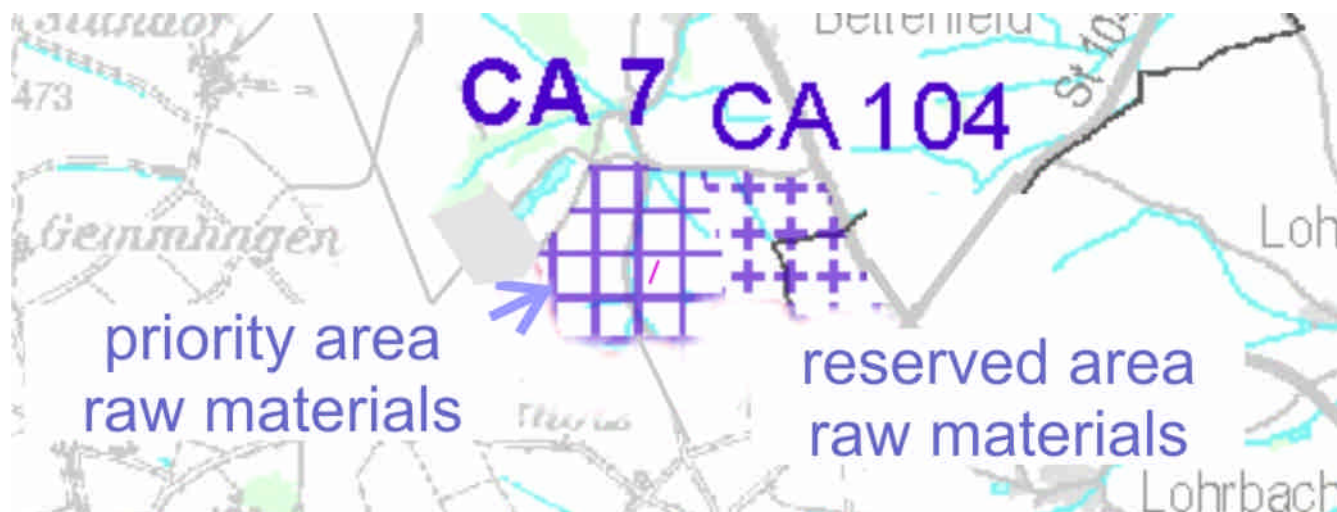
## Land development program (LEP)

One main goal: secure the supply of the raw materials

→ a shortage of the resources leads to extensive rising prices  
in the building sector

→ production of mineral resources is of **public interest**

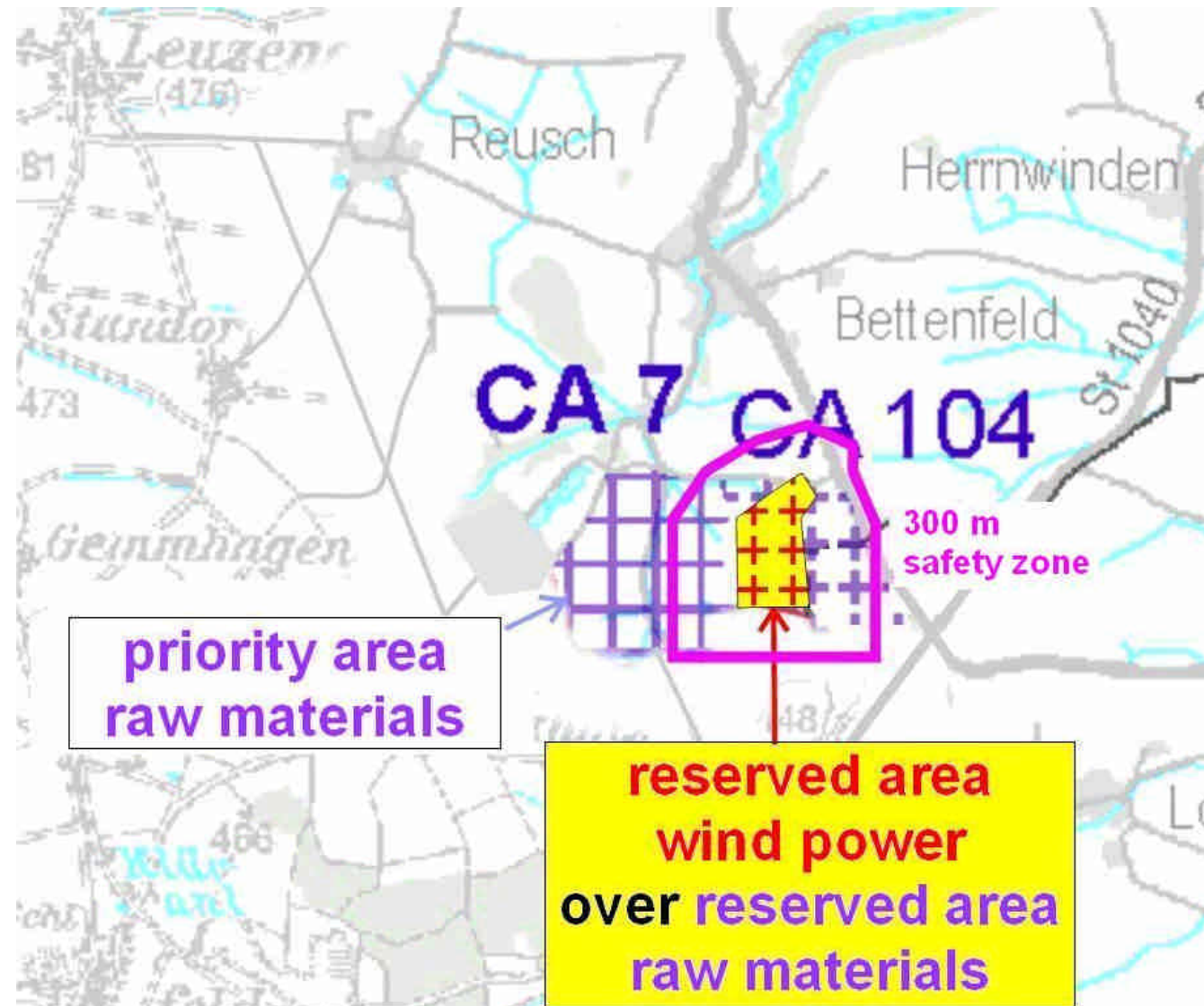
→ coordination by the dint of regional planning





## Problem:

Reduced priority  
area for raw  
material  
extraction  
through the  
reserved area for  
wind power







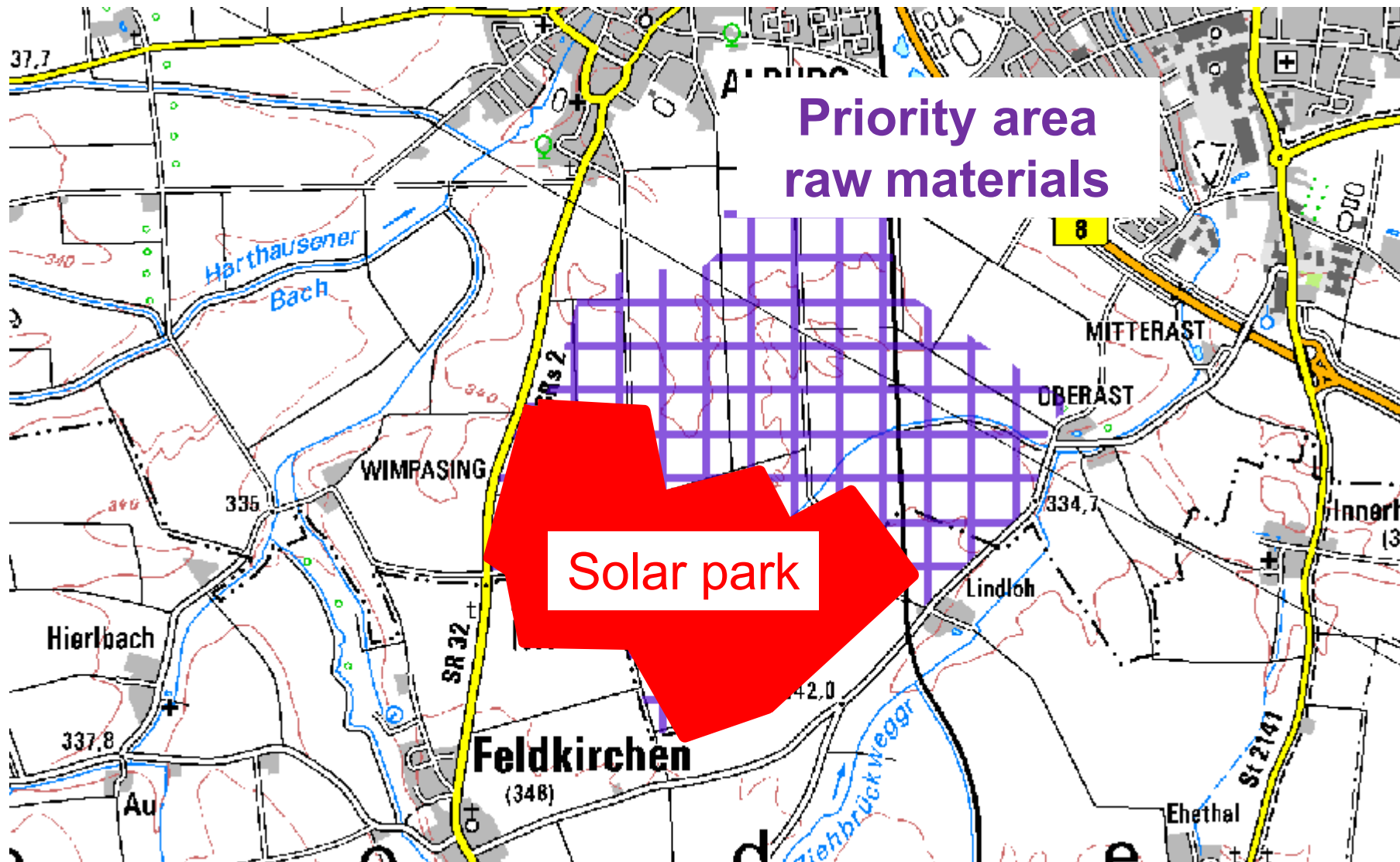
- Overlap planning as a solution?
- Limited durability of wind power plants (~25 years) is a chance?

**NO:**

**There is no legislation!  
Repowering of wind turbines is  
possible**









- No areas in regional development planning for solar panel surface





## Chances

- (Filled) gravel pits are ideal location for solar panels (and for on-shore wind power)
  - since 10 years in Southern Bavaria (Allgäu)





**Solar park after gravel mining in Southern Bavaria**



## Chances

- (Filled) gravel pits are ideal location for solar panels (and for on-shore wind power)
  - since 10 years in Southern Bavaria (Allgäu)
- Dredging lakes can also be used for solar platforms (East Germany)
  - Area of 12 football fields ( $86.000\text{m}^2 = 8,6 \text{ ha}$ )
    - 6.500.000 kWh p.a.
    - Energy for 6000 people





© <http://www.perebo.de/2010/06/16/solaresee/>

## ***Floating solar platforms***





## Chances

- (Filled) gravel pits are ideal location for solar panels (and for on-shore wind power)
  - since 10 years in Southern Bavaria (Allgäu)
- Dredging lakes can be used for solar platforms (East Germany)
  - Area of 12 football fields ( $86000\text{m}^2 = 8,6 \text{ ha}$ )
    - 6.500.000 kWh p.a.
    - Energy for 6000 people
- Abandoned quarries as a new location for solar panels
  - projected in Switzerland





## Chances

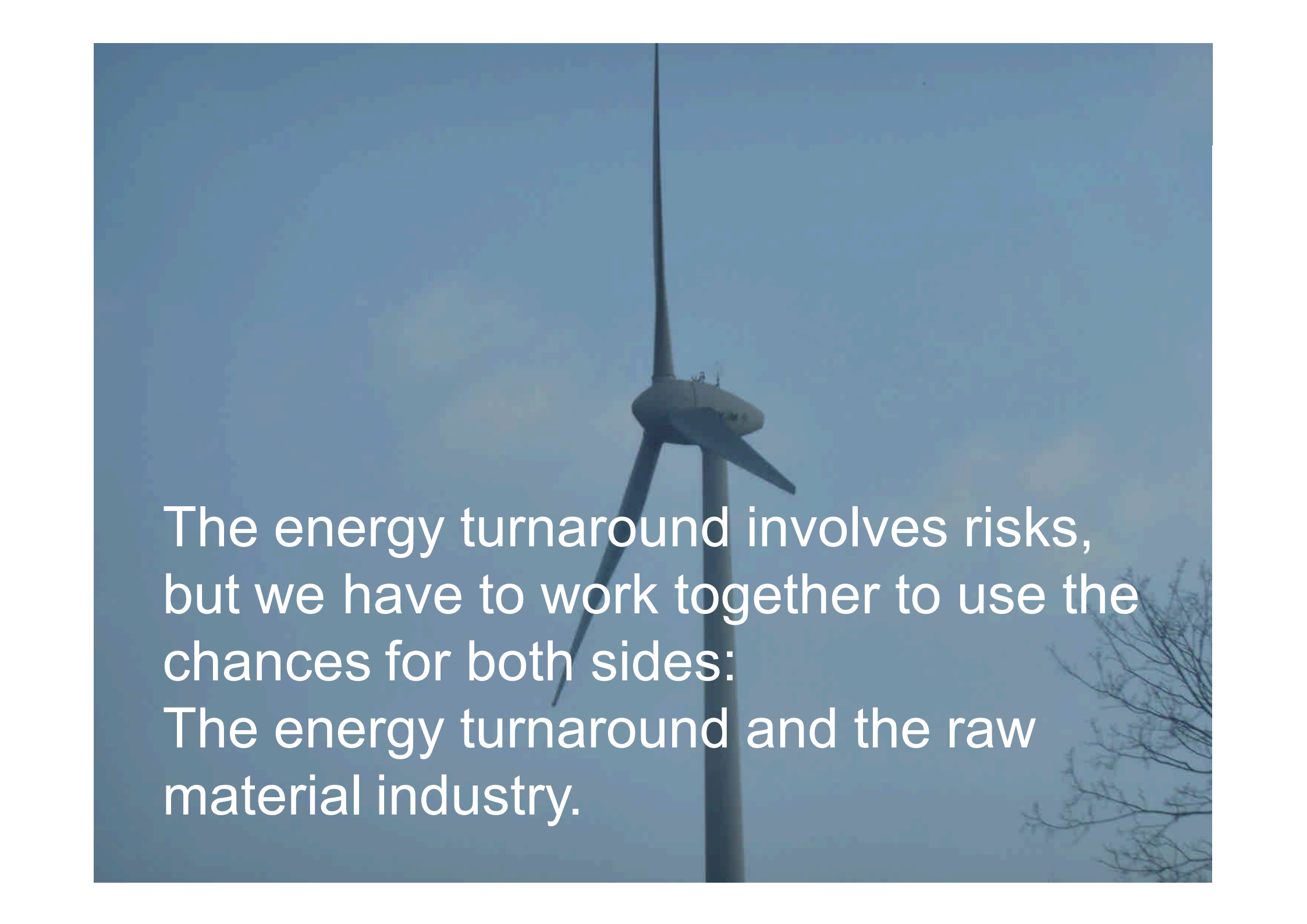
- Another important fact is that big solar panel surface areas also secure raw material areas for the future and other land usages:

The economic useful life is limited to 25 years!









The energy turnaround involves risks,  
but we have to work together to use the  
chances for both sides:  
The energy turnaround and the raw  
material industry.

**THANK YOU FOR YOUR  
ATTENTION !**

