

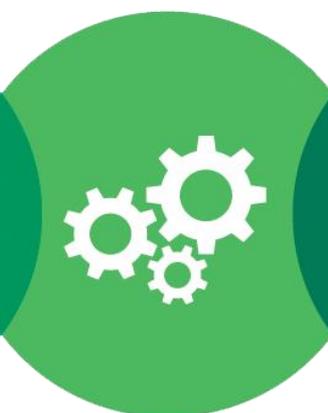
RESOURCE  
ACQUISITION

MANUFACTURE

PACKAGING AND  
TRANSPORTATION

USE

END-OF-LIFE



Round Table Discussion:

**“Projection to the future: Energy mix and price”**



*Discussion Co-ordinator:*

Dr. Dimitrios Giannopoulos (NTUA)







# AMANAC – CSA LCA Workshop Round-table Discussion



## Case Study

**Subject of Study:** The operation of innovative high-temperature microwave powered system for the thermal treatment of cement – glass – ceramics, consuming **Electrical Energy**.

- Conducting LCA ① →

Present:

Lab-scale operation

- Conducting LCA ② →

Future:

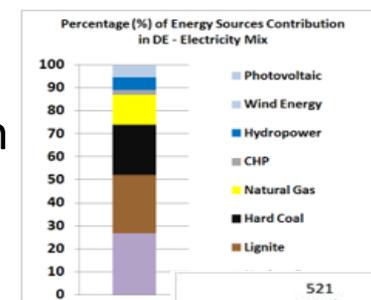
Industrial scale.

→ Future Energy Data required!!!



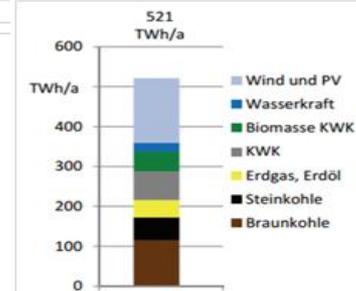
### Scenario 2015:

Current German Electricity Mix



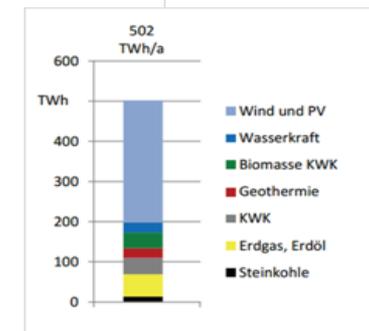
### Scenario 2030:

Generation 40% from RES.



### Scenario 2050:

Generation 80% from RES.





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## Case Study

**Subject of Study:** The operation of innovative high-temperature MW system for the thermal treatment of cement – glass – ceramics, consuming **Electrical Energy**.

### Approach followed:

Documented scientific forecasting studies provide future data on electricity mix composition which can be introduced into the LCA.

#### Indicative Sources:

- [Electrical Power Vision 2040 for Europe](#), Study by EUREL
- VDE-Studie: [Energiespeicher für die Energiewende](#) (Germany)
- ...





# AMANAC – CSA LCA Workshop Round-table Discussion



## Thinking ahead in LCC

- Life Cycle Costing (LCC) is a methodology for systematic economic evaluation of life-cycle costs over a period of analysis.
- All the costs are discounted to a **present day** value (Net Present Value – NPV).
- NPV takes into account the **future depreciation** of money.
- The cost categories introduced into a LCC analysis are direct and indirect costs.
- The “Indirect Costs” category includes the **energy costs**.







