

Decentralized Energy supply – Strategy and Best practice

Jan Kallok

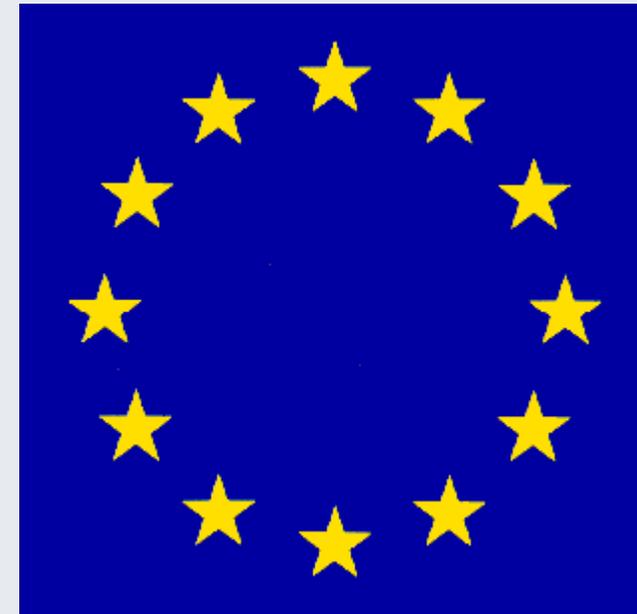
deENet | Competence Network Distributed Energy Technologies

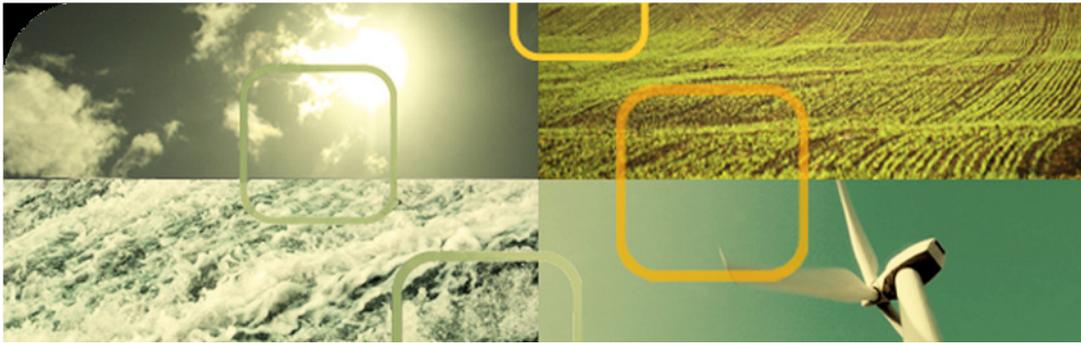


Climate and energy targets of the European Union

Until 2020:

- cutting greenhouse gases by 20% of 1990 levels (fewer emission allowances)
- increasing share of Renewables to 20% of total consumption
(national binding targets: from 10%/Malta to 49%/Sweden)
- cutting Energy consumption by 20% (improving Energy Efficiency)





Regional Energy supply

New Structures of Energy Supply: Close Cooperation of Renewables and Energy Efficiency

Requirements:

- An increase of energy efficiency requires technological progress as well as completely new user's behaviour
- A massive expansion of RES requires maximum utilisation also of regional RES potentials
- Both requirements are supported by regional supply structures





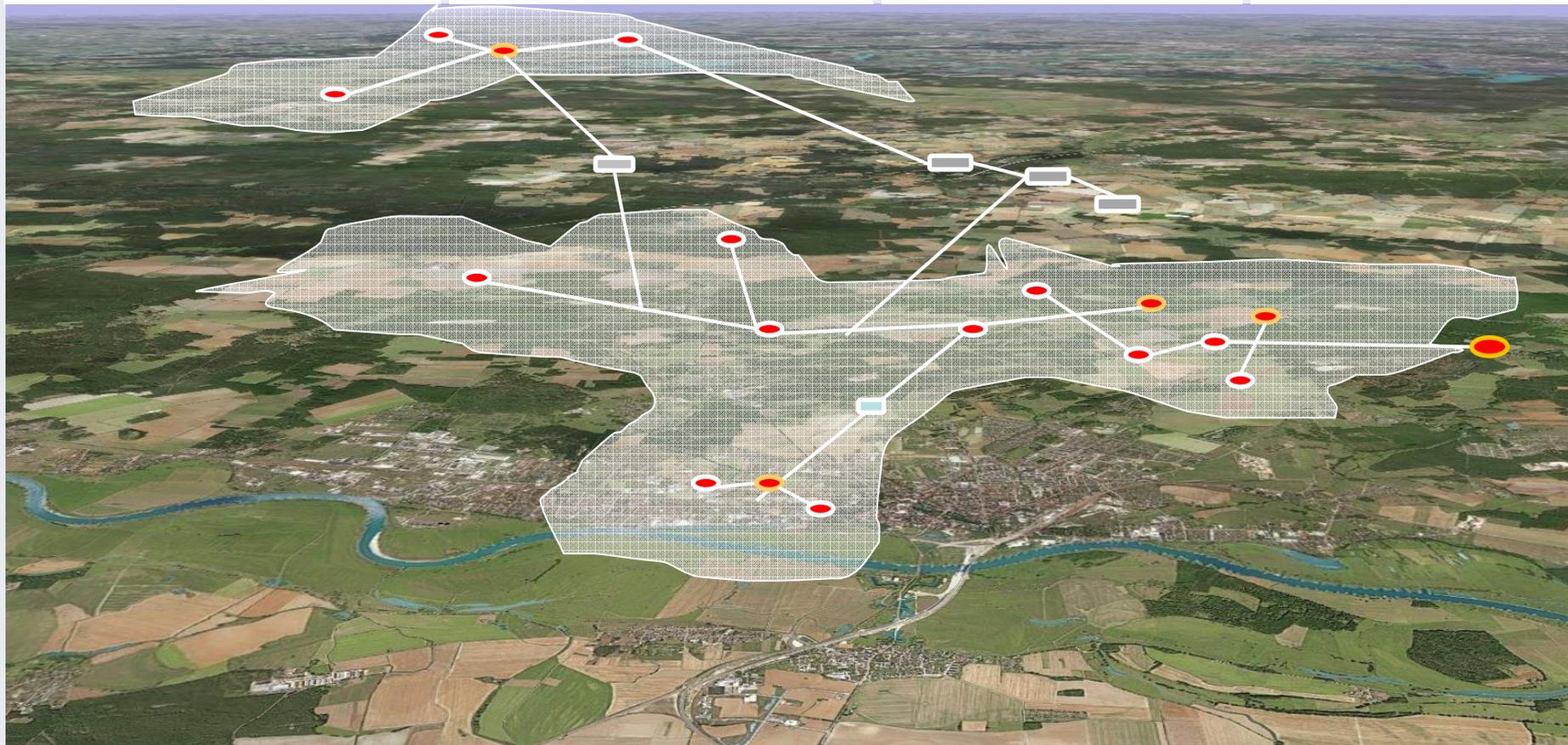
Regional Energy supply

Region

Municipality

Settlement

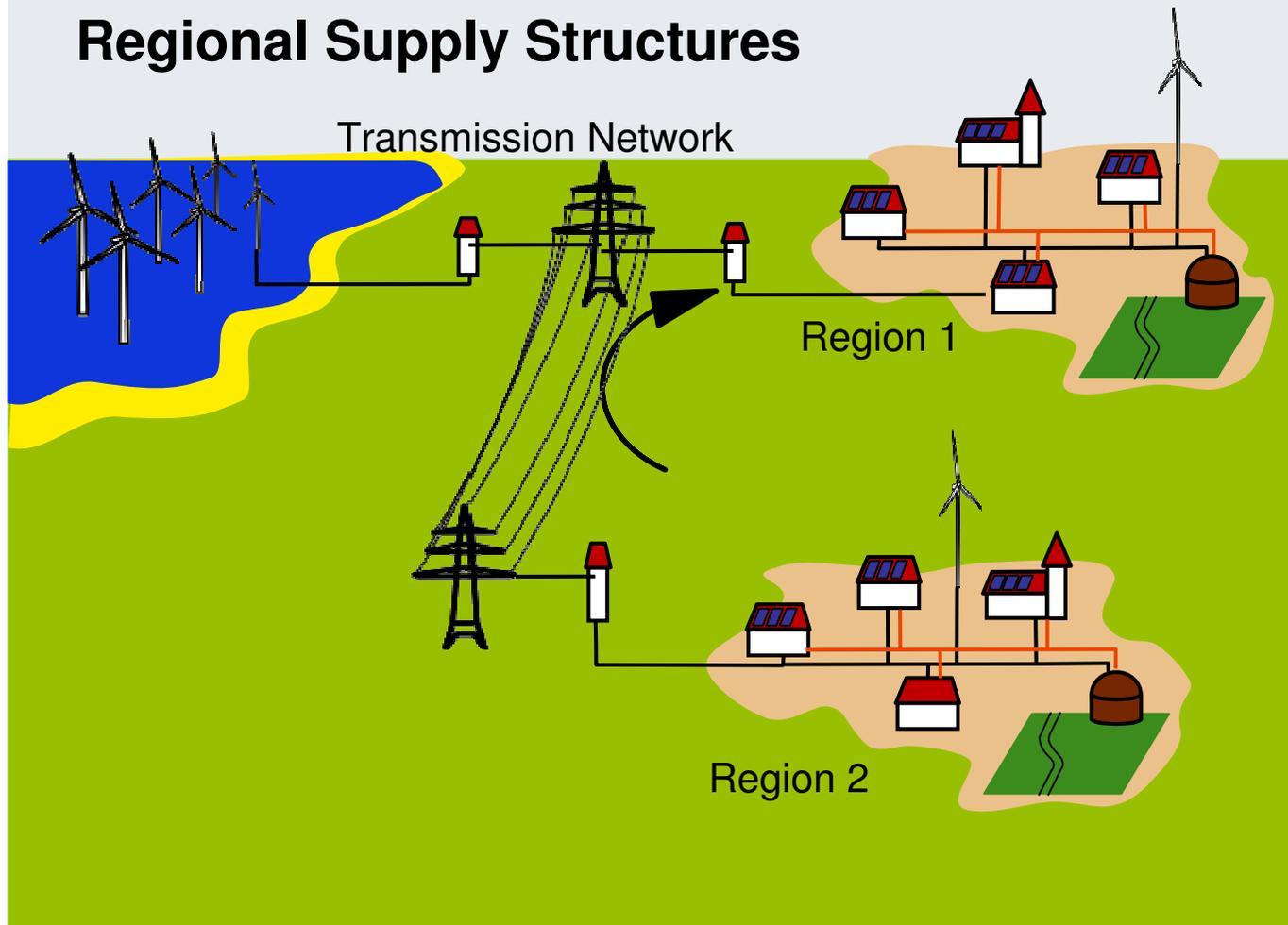
Building



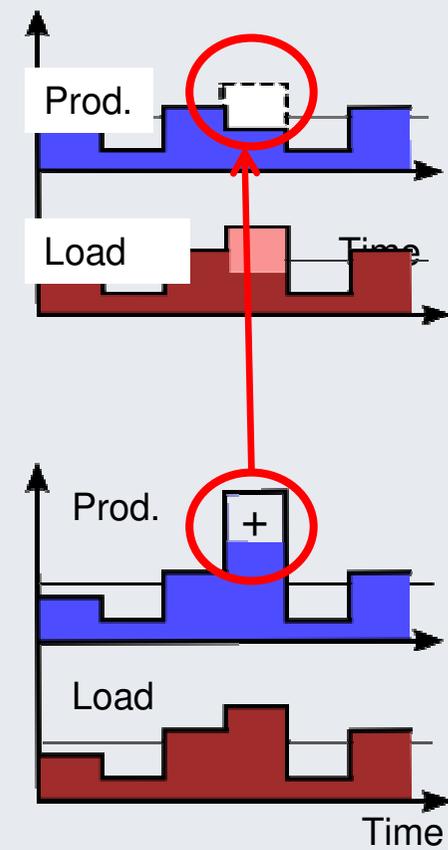


Regional Energy supply

Regional Supply Structures



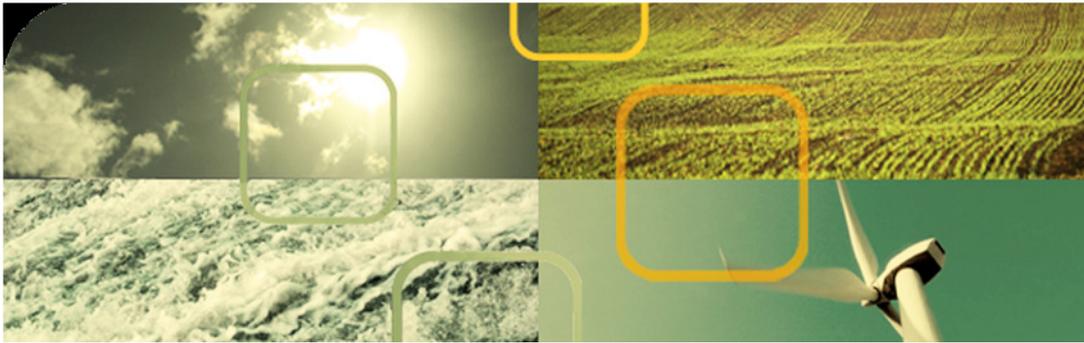
Energy Flow (15-min-intervall)



Changing Energy Economy Framework Conditions as a Chance for Regions

To be expected until 2030:

- Electricity from RES is abundant and gets less expensive than fossil fuels:
 - At coastlines wind energy will be the cheapest way to generate electricity
 - PV achieves „grid-parity“ around 2015, afterwards electricity from solar energy is cheaper than from the grid
- The heat demand for buildings gets negligible, the solar heated house is standard
- The local traffic is operated predominantly electrical, biomass goes into combined heat and power (CHP)



Regional Energy supply

Regional Energy Supply as an Economical Pillar for Regions:

- An all-embracing approach allows the formation of new industrial complexes / clusters
- New structures of supply will be the **economical and social motor for regions!** Effects on...
 - Work and employment
 - Research and development
 - Construction and habitation
 - Tourism
 - Education and qualification
 - Finance
 - City marketing



- For this reason the regional energy policy is the **centre zone of business development**

Creation of new Jobs in Regions

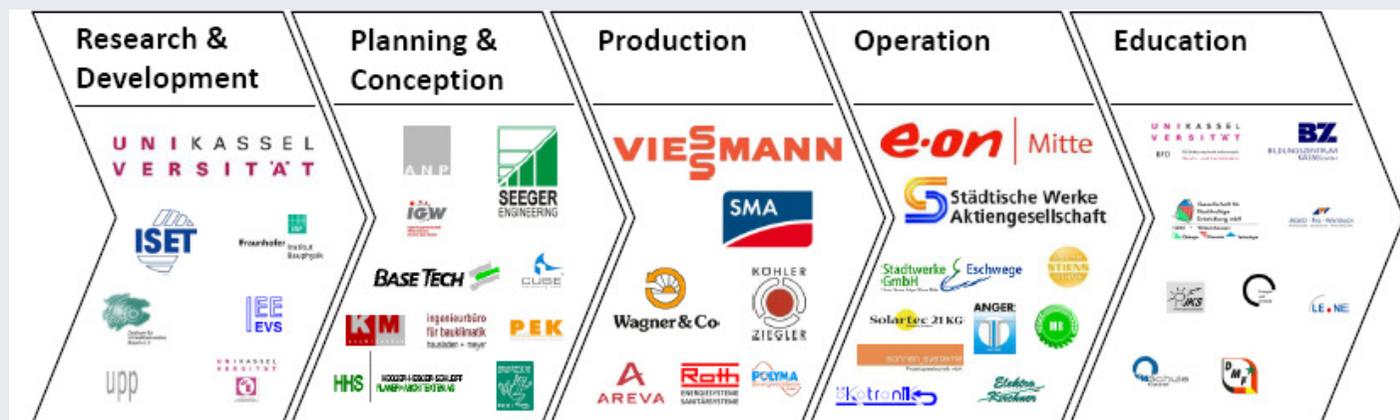
- Preferably **wide value chains** in the region
 - R&D, purchase (raw materials), production (trade), sales etc.
- Application of RES / energy rehabilitation of buildings etc. in the region - **small trade firms**
- Participation of the sector in booming global markets for decentralized energy technology –**technology firms**
- Utilisation of the regional raw material base (wood, biomass etc.) – **agricultural sector**
- Successful marketing of regional generated products on regional markets – **strengthen regional cycles**
- Close networking and regular exchange, realization of synergy effects – **formation of clusters**



deENet – Competence Network Distributed Energy Technologies

deENet - Facts & Figures

- Founded in **2003** by regional Industry and University in Kassel as an association
- Today deENet has more than **110** members (Companies, University Departments, Research Institutes, Associations etc.)
- 9 fields of competence
- Main objectives is regional value creation: common R&D activities, joint initiatives to open new markets, development of demonstration and pilot projects etc.





Nothern Hesse – a model region

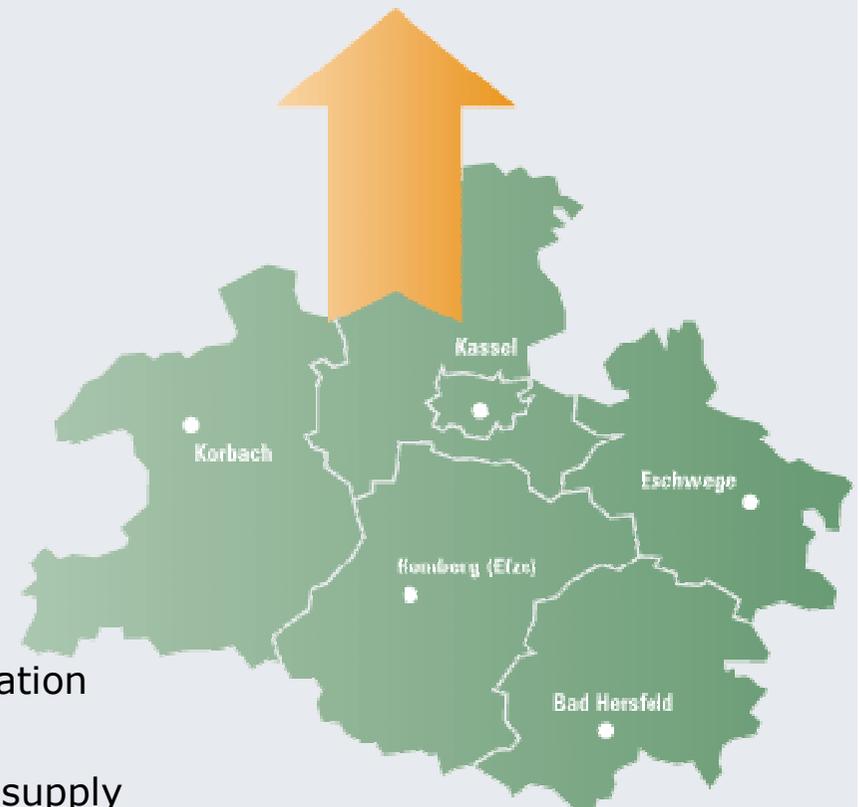
Development of a „Roadmap 2020“ for Northern Hesse

Methodology:

- External Environment Analysis
- Trend Scenarios
- Interviews
- Best Practise Examples
- Workshops

Main Objective:

- Creation of 20.000 new jobs (2020)
- 100% regional / decentralized electricity generation (2035)
- Innovation leadership for decentralized energy supply and energy efficiency





Carbon neutral production

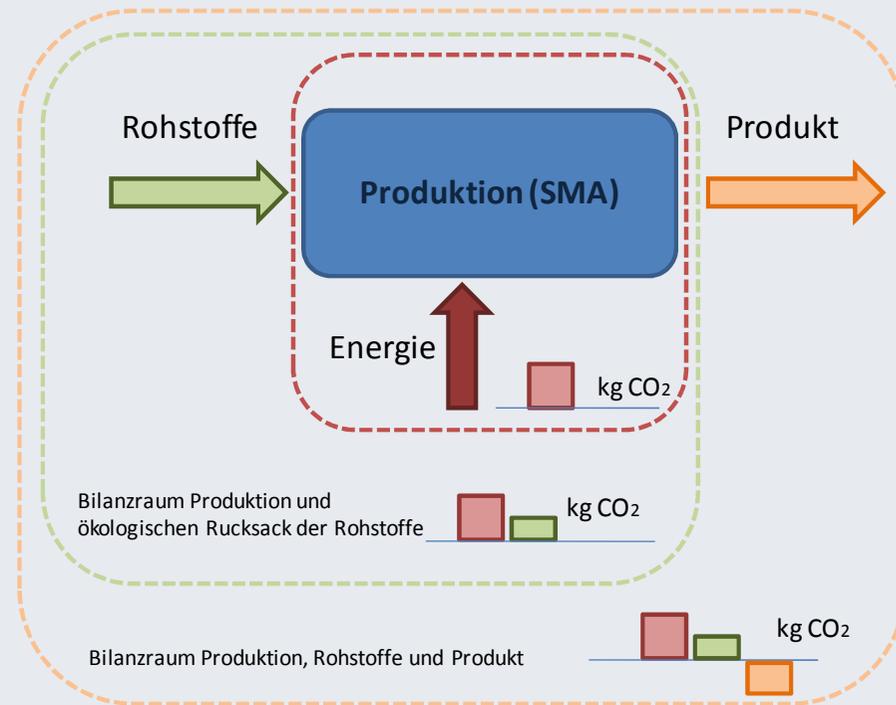
Carbon neutral Factory

- Building and technical equipment
- Climate efficiency by RES
- Avoidance of CO₂-Emissions over the life-cycle of the product

Funded by: Hesse environmental Ministry

Duration: 2007-2008

Partners: upp, ZUB, Seeger, SMA





Thank you for your attention!

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