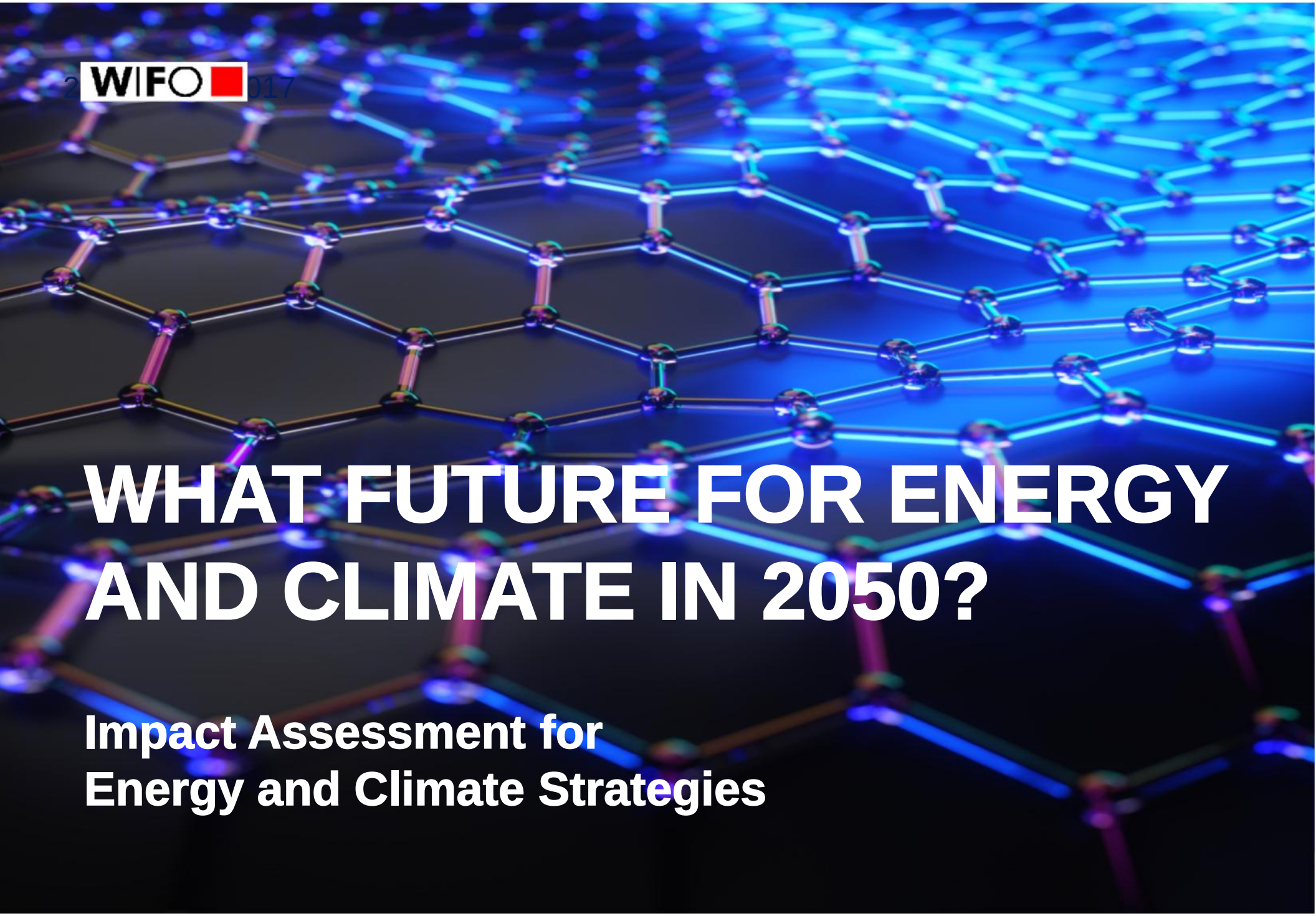
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2017
WHAT FUTURE FOR ENERGY AND CLIMATE IN 2050?
Impact Assessment for Energy and Climate Strategies

The Project Partners

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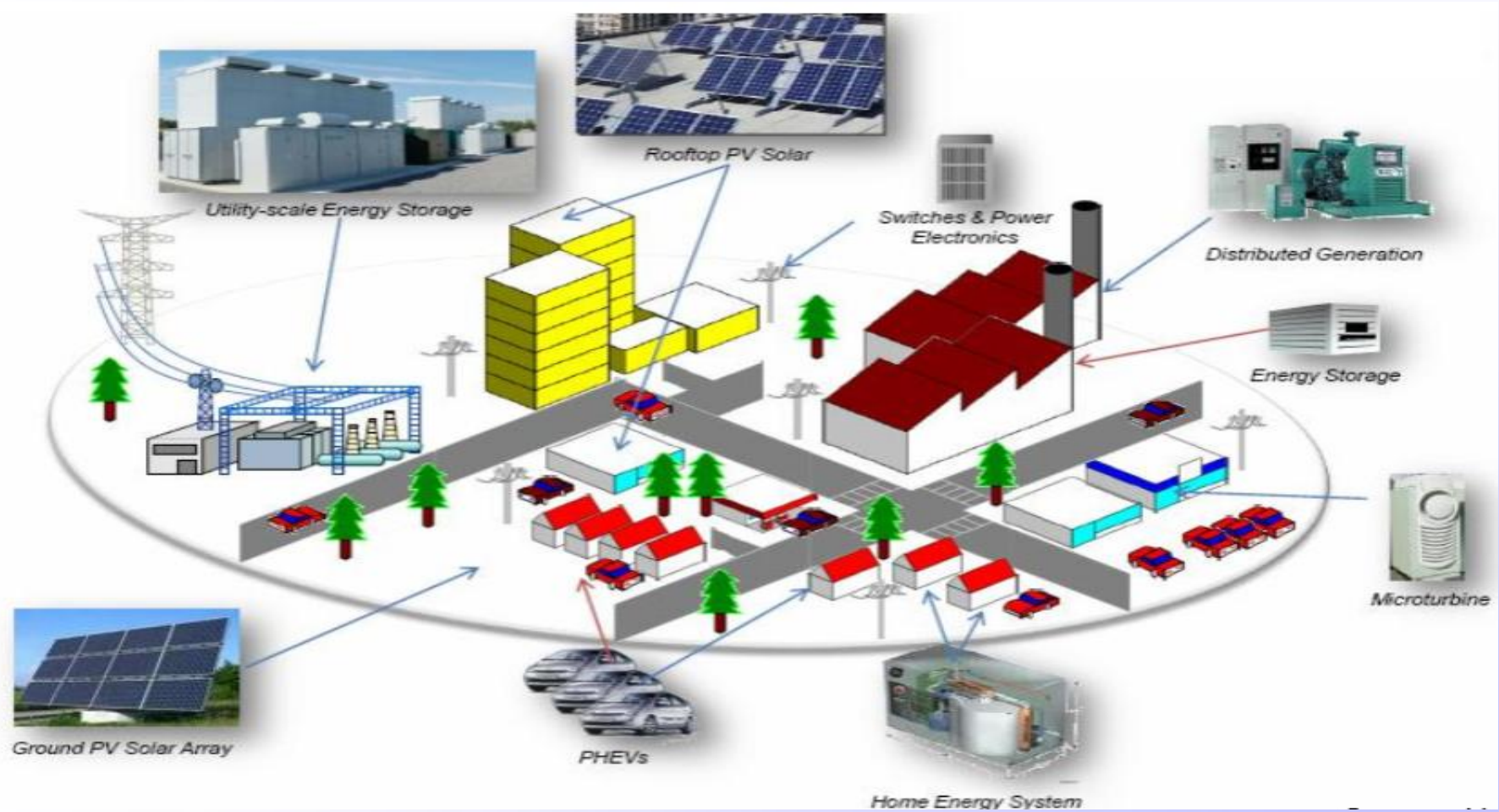
The challenge:
How to deal with the emerging 3d-structures?
Decentralized, decarbonized and digitalized



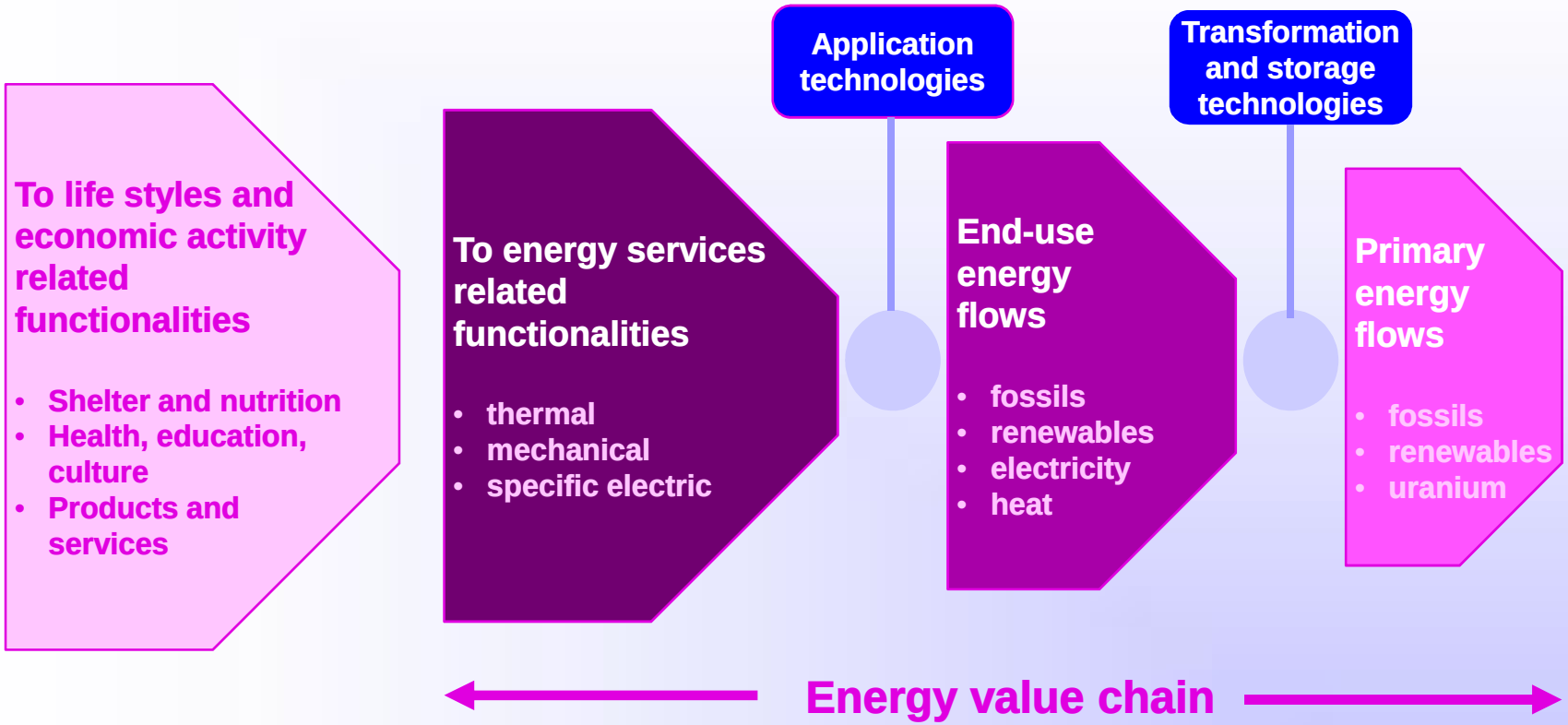
Our approach:

Shifting to the 3i-mindset

INVERSION
INTEGRATION
INNOVATION

INVERSION

Starting with the required functionalities, we investigate options on the whole energy value chain up to primary energy

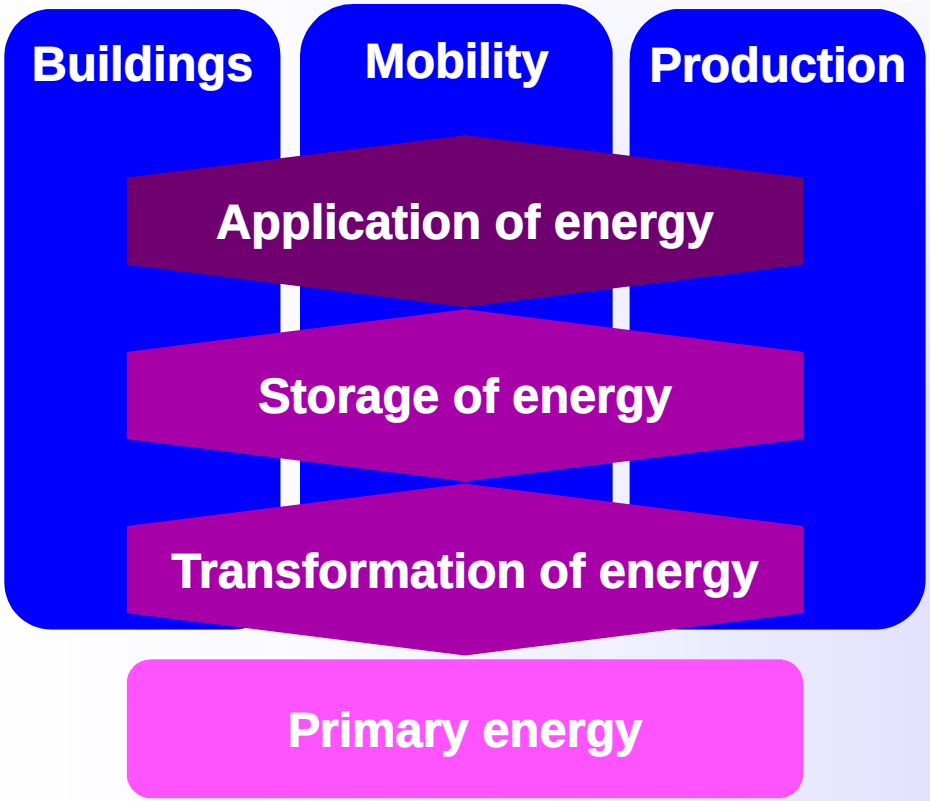


❑ What's new

- ❑ The full cascade of the energy value chain
- ❑ The focus on energy related functionalities
- ❑ The reversal of the analysis starting with functionalities

INTEGRATION

Harvesting synergies by linking all elements of the energy system serving for application, transformation and storage



- **What's new**
  - **The traditional separation between providers and users of energy is becoming blurred**

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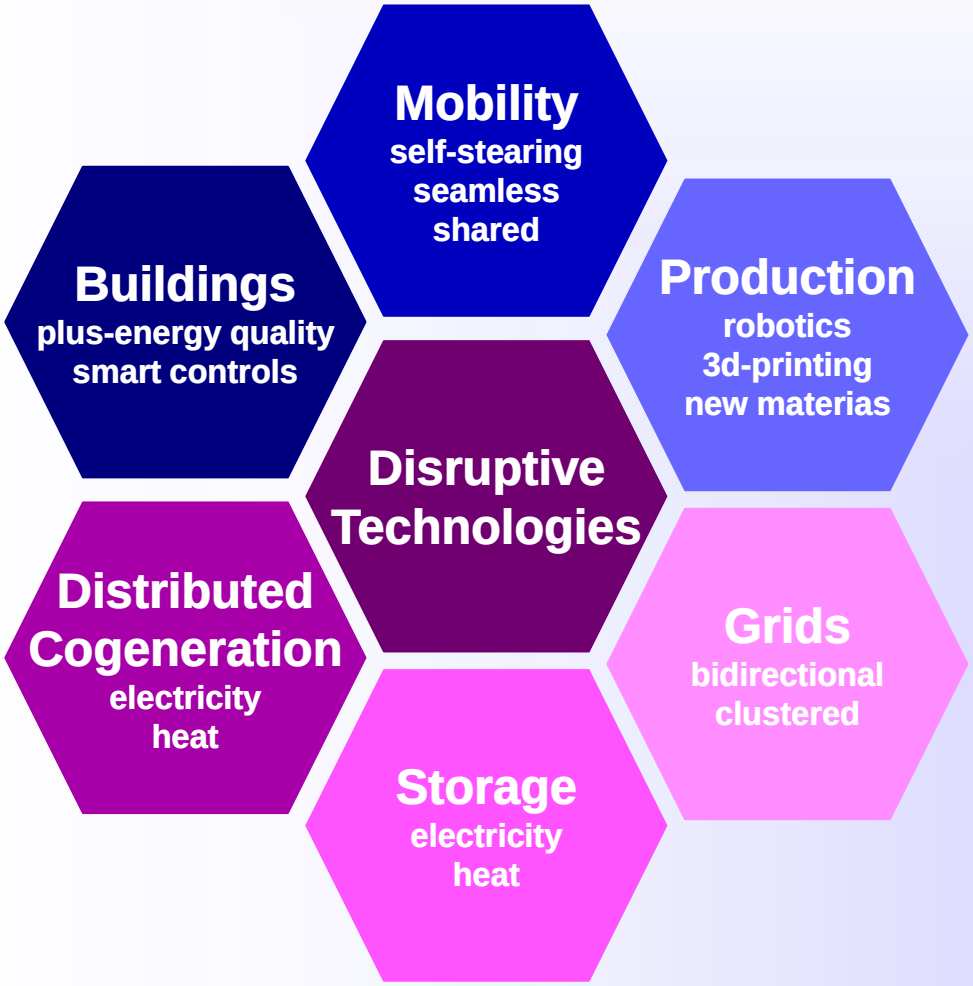
INNOVATION

All elements of the energy system will face disruptive technologies with a high potential for innovative changes



- **What's new**
  - Innovative potentials of all elements are analyzed
  - New (decentralized) structures are identified
  - This will require new business models

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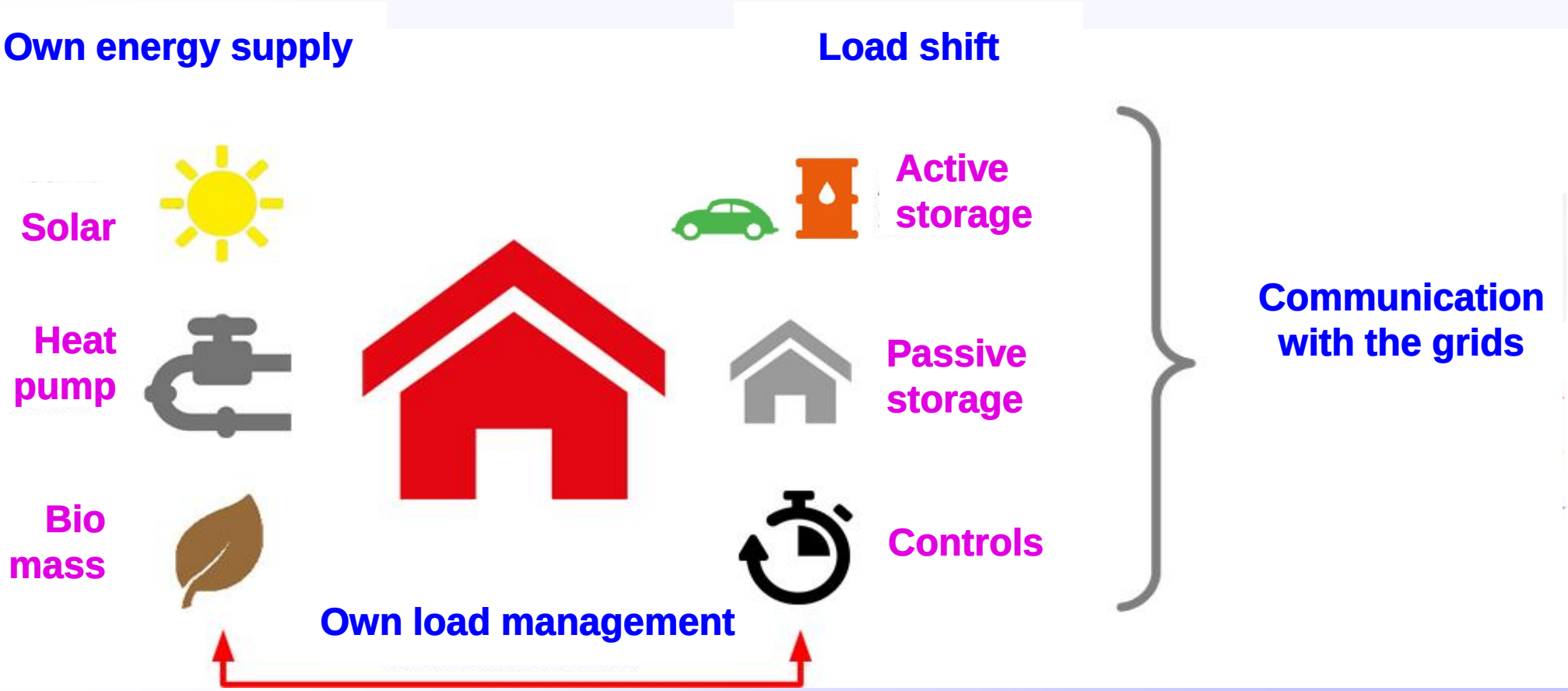
Our recomended actions:

Prioritizing three activities

Multifunctional Buildings
Linked Mobility
Integrated Grids

Multifunctional Buildings
become active elements in the energy system

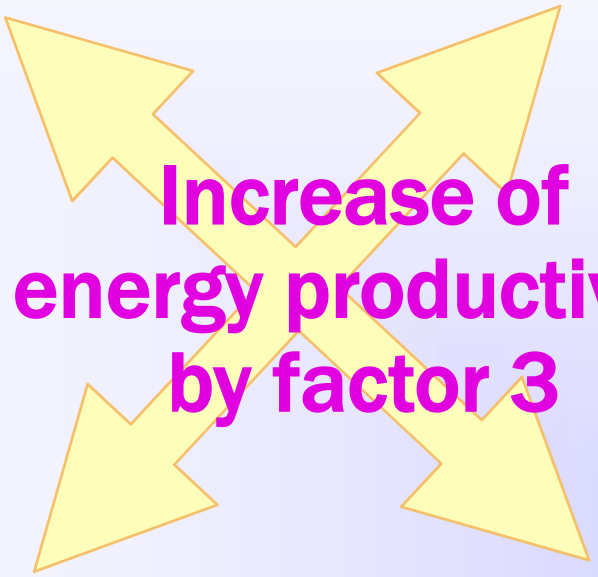


- What's new
  - Buildings belong to "Prosumers"

Linked Mobility
by integrating all modes of transport

Electric drives

Autonomous vehicles



Increase of energy productivity by factor 3

Shared use

Integrated modal split

- **What's new**
  - **Sharing instead of ownership**
    Increases resource efficiency
  - **Electric drives**
    Enable decarbonization

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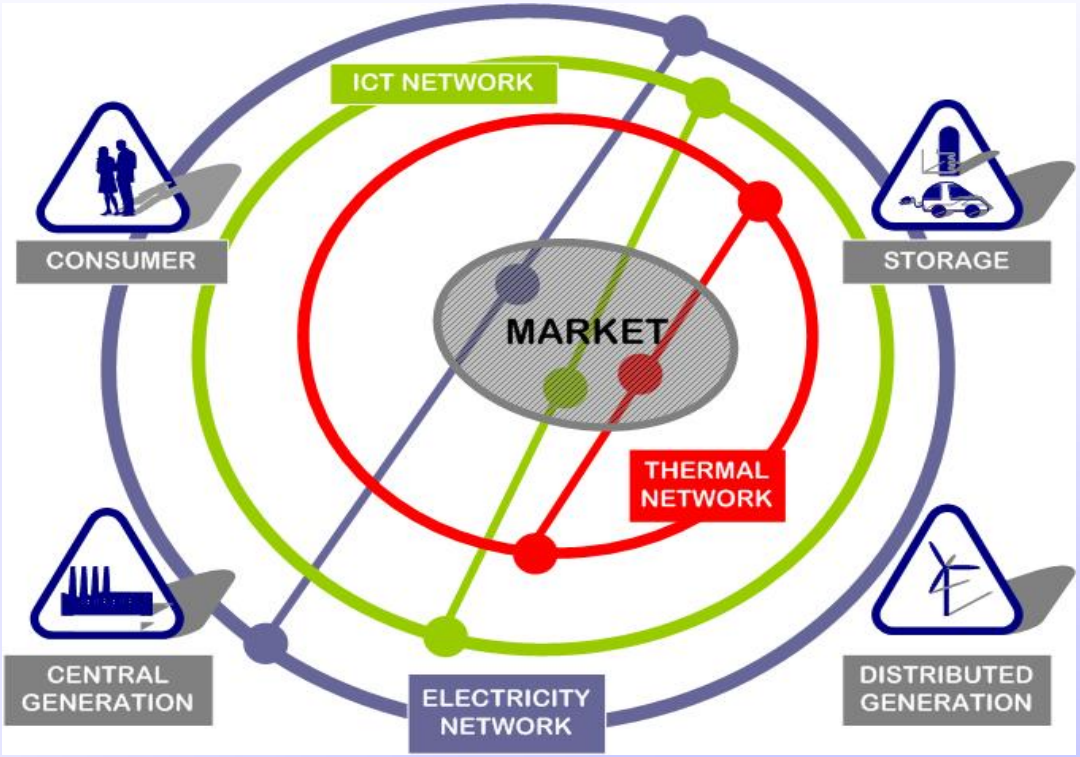
Integrated grids
for optimizing all elements of the energy system

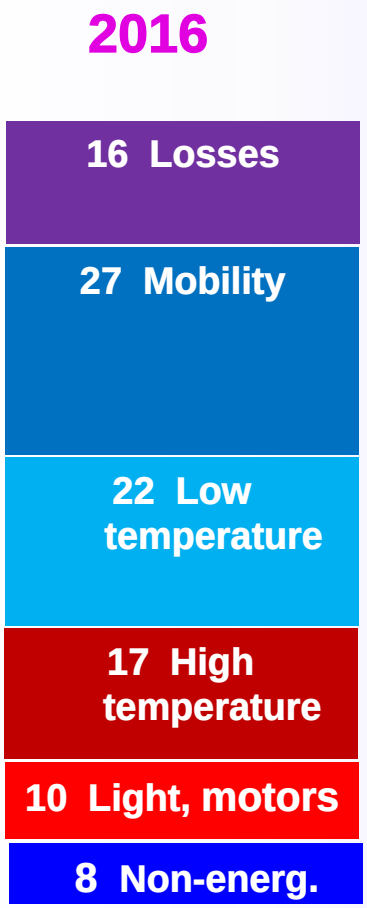
- **What‘s new**
  - **All grids interact (electric, thermal, gas, IT)**
  - **Grids are used for load shift**
  - **Users react on real-time information about the grid**

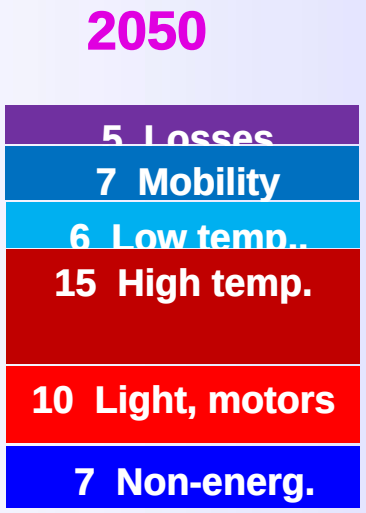


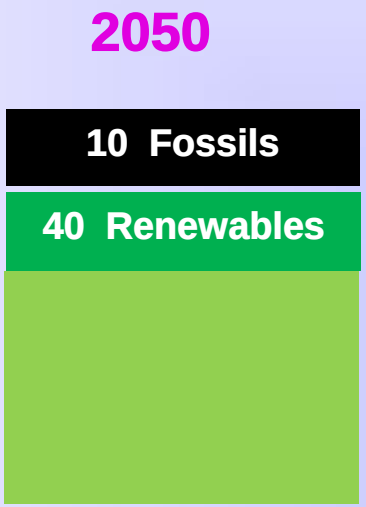
Our vision for a low-carbon energy system by 2050

Radical innovations along the energy value chain

- **What's new**
  - A prerequisite for reducing 80% of fossils is halving the energy flows without compromising functionalities
  - This can be achieved by radical innovations along the energy value chain







Web tool:
EnergyFutures.net

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