

# Sustainable Energy Priority Research Area

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A Műegyetem a horizonton

Kiválóság a tudományban • Ipari vezető szerep • Társadalmi kihívások



Motivation & Characteristics  
Research Topics  
Strategic goals  
Results – some examples  
H 2020 activity

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# Motivation and challenges

Plenty of topics & plans . . .

Mission? - working out solutions at least give options & proposals

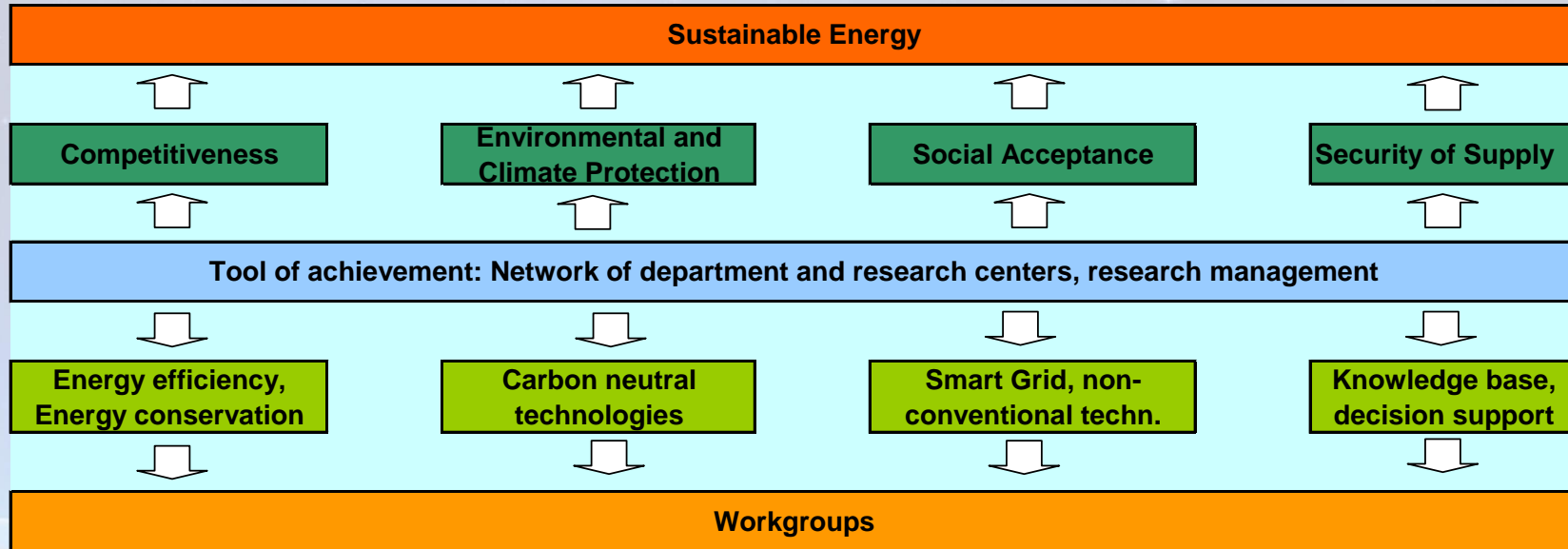
Global challenges – local solutions

Sustainable development →

(new) Energy politics needed

*„Research serving the economy and society”*

# Structure of the platform



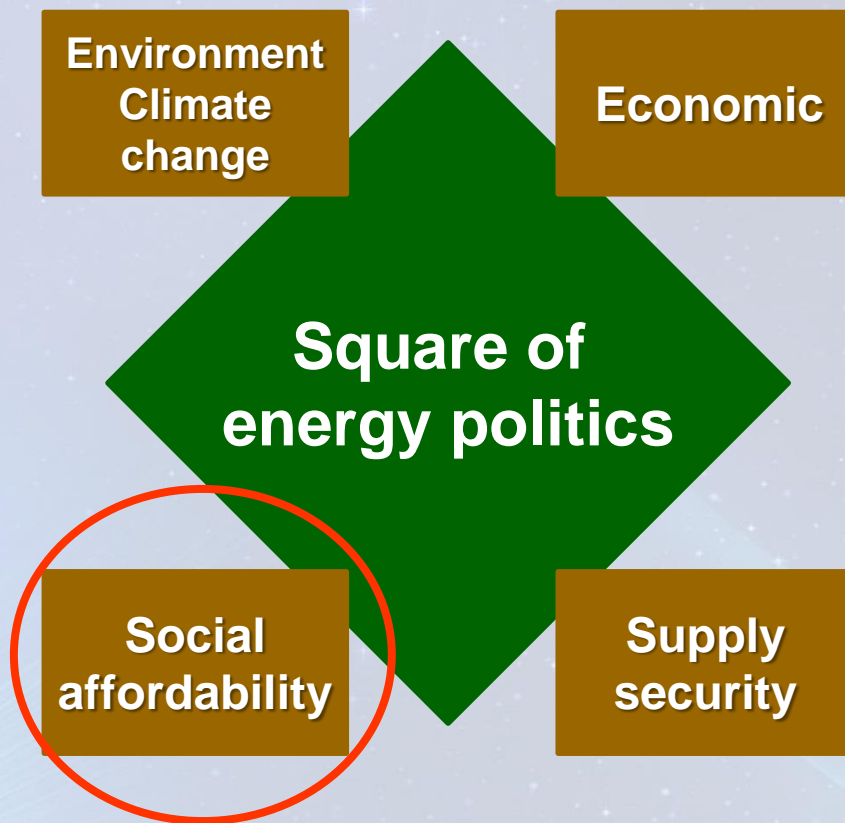
- Workgroups are working on 10 projects, that cover the BME research potentials
- One project covers 4-6 topics

# The platform characteristics

- 10 projects cover the BME research potentials
- Topics and achievements of the research projects conform to the pan-European objectives and national goals
- Successful programs in FP6 & FP7
- New Proposals in frame H2020



# Change of paradigm of the energy politics



# Strategic goals

- intensifying the information exchange
- implementing technology programs
- widening knowledge base for supporting decision makers
- strengthening established relationships
- sustaining motivation mechanism



# Results

- Increased success in participation of international and national programs
- Solar Decathlon
- Climate KIC: URBMOBI – in cooperation of SE, VTL and IEE
- Danube Strategy - Danube Universities, preparation program for Horizon 2020
- Visegrád Cooperation – V4 Green Energy Platform, cooperation in fields of renewable energy utilization
- GoFastR – Allegro experimental gas cooled fast reactor
- Virtual Power Station – Hungarian cooperation project for accounting accredited „negaJoul”
- BME is a key institution in energy related R&D granted programs

# Successful stories

- Embedded systems optimizing street lighting, GE Hungary
- Power converter optimization technology in e-vehicle, Siemens
- New approaches regarding MV network structure & operation, Ripple Control in Terms of Smart Metering, EON AG
- Renewable energy utilization – „Energy Farm” RWE –ELMÜ
- Simulation of electricity market, MAVIR
- Tokamak services for diagnostic, ALISA and ARCADIA program in nuclear energy
- Thermal investigation standard for LED lights
- Participation in the Leonardo da Vinci Multilateral Projects - Transfer of Innovation

## New proposals and consortia for H2020

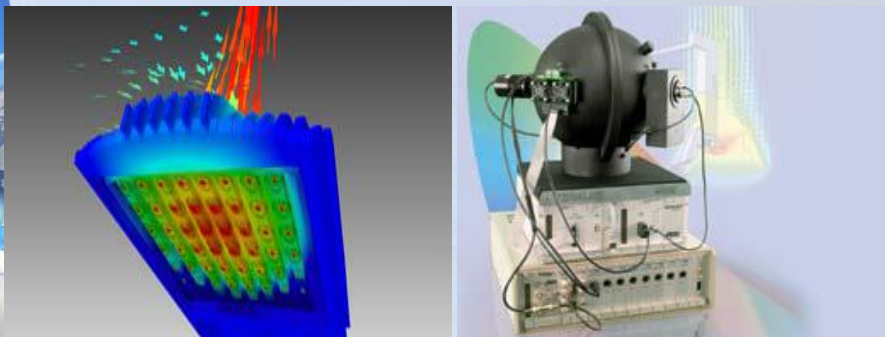
- Smart Cities and Communities solution integrating energy, transport, ICT sectors through lighthouse projects
- Smart Grids Innovation Circle - submitted
- Local/small-scale storage of electricity - submitted
- E-brick research and demonstrate a global, adaptable, precast and plug 'n play solution for simpler and faster renovation the existing building stock - submitted
- Improving energy efficiency and heat recovery technologies in large scale food factories



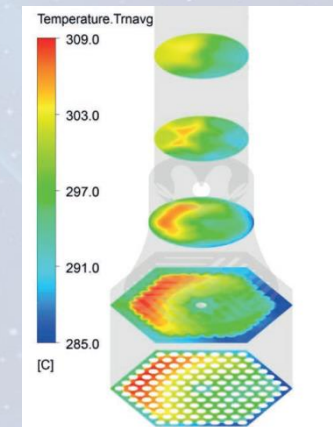
BME Solar Decathlon Building



Energy Storage by Superconductor



LED Light Source Development



Temperature profile in VVER 440 cassette in asymmetric power prod.



Energy Crops Harvester



Test Facility for Renewable Energy



Micro Electric Power Converter



2nd Generation Bio-alcohol Production

Thank you for attention!

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