Institute for Future Energy Systems

izes gGmbH
Institut für ZukunftsEnergieSysteme
Institute for Future Energy Systems
- Associated research institute of the Saarland University of Applied Sciences
- Promoting environmental and climate protection
- Doing applied research and development
  - renewable energies
  - decentralised energy production and distribution
  - energy efficiency
  - regional material flow and resource management
Shareholders of IZES gGmbH

- German federal state of Saarland
  - (Main shareholder, share ~70 % of the stock)
- Saarland University of Applied Sciences
- University of Saarland
- 4 regional energy companies
Organisational Structure

Management Board
Dr. Michael Brand, Dr. Frithjof Spreer

Scientific Director
Prof. Dr. Uwe Leprich

RESEARCH DEPARTMENTS

Energy Markets
Prof. Dr. Uwe Leprich

Material Flow Management
Prof. Frank Baur

Buildings
Prof. Dr. Horst Altgeld

TECHNOLOGY & HARDWARE UNITS

Technology Innovations
Dr. Bodo Groß

Accredited Test Facility for
Solar Thermal Systems and Photovoltaic (TZSB)
Danjana Theis
2011 Status

~around 65 in place

~ 35 researchers from engineering, natural, economic and social sciences
The Executive Team

Dr. Michael Brand
Management Board

Dr. Frithjof Spreer
Management Board

Prof. Dr. Uwe Leprich
Scientific Director
Director of Department of Energy Markets

Prof. Dr. Horst Altgeld
Deputy Scientific Director
Director of Department of Buildings

Prof. Frank Baur
Deputy Scientific Director
Director of Department of Material Flow Management

Dr. Bodo Groß
Technology Innovation

Danjana Theis
Director of Accredited Test Facility for Solar Thermal Systems and Photovoltaic
Material Flow Management

Main focus
• Application and integration of sustainable material flow and energy management systems into existing economic and regional structures

This includes
• A holistic, target-orientated supervision and control of material flows over the entire life time cycle considering in particular ecological, economical and social aspects

by especially addressing the intersection of waste management, biomass utilisation and energy production
Material Flow Management

- Development of regional material flow management systems
- Ecological integration of waste and biomass management systems in regional social and economic structures
- Improvement of the socio-economic aspects of waste and biomass management systems
- Initiation of regional added value by introducing / improving material flow management
- Utilisation and application of global emission trading as financing instrument in waste management
- Development and modelling of material flow and waste management scenarios (life cycle assessment)
Energy Markets

- Analysing the regulatory policy conditions within the power market for energy industry
- Surveying and improving of regulatory instruments to promote energy efficiency, renewable energies and combined heat and power units
- Development of marketable internet based tools for energy companies to support them in terms of energy consulting and consumption analysis
- Consulting service for companies to participate within the emission trading (Joint Implementation and Clean Development Mechanism)
Buildings

- Test facility for energy converters
- Decentralised energy concepts for municipalities, companies, commercial and housing estates
- Restoration of buildings especially considering energy efficiency and distribution
- Integration of renewable energy sources into energy supply concepts
- Lean gas utilisation
Technology Innovations

- Test and measuring systems for different energy sources and converters, e.g.:
  - biogas treatment
  - smoke gas dust removal
- Subsequent development and optimisation of different mini-scale testing plants

Accredited Test Facility for Solar Thermal Systems and Photovoltaic

- Tests, inspections and certifications „Solar KEYMARK“ and „DIN proven“ on behalf of DIN CERTCO
- accredited by SRCC - Solar Rating and Certification Corporation (USA)
- Customer-specific tests of solar thermic collectors, storage units and systems
- Standardisation and research, e.g. in international research projects like QAiSt
Experimental biogas mini-fermenter
- used to assess the potential of different raw materials for biogas production
- tests with several different substrates and substrate mixes
- capacity of ~ 15 m³

Experimental compactor
- utilised to analyse the briquettability of different organic & anorganic raw materials (e.g. Miscanthus, crop straw, textiles, plastics)
- subsequent analysis of the calorific value and incineration and emission properties of the briquettes
- Hydraulic press with press cylindre (7,5 kW)
Thank you for your attention

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