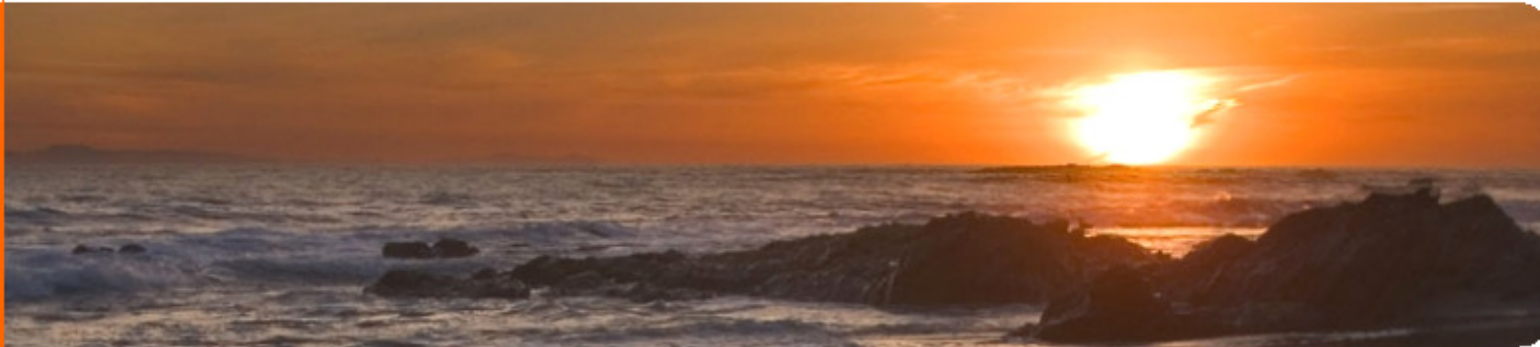


ESEE Conference, Ljubljana, June 30th, 2009



Modelling Austrian Energy Scenarios for Renewables, Energy Efficiency and Behavioural Changes

Lisa Bohunovsky and Andrea Stocker

Guide through presentation

- e-co project
- methods (e3.at model, participatory process)
- scenarios
- outlook



Economic Effects of Sustainable Energy Consumption

- Acronym: e-co
- Project funded by the Austrian Klima- und Energiefonds and is conducted within the programme “NEUE ENERGIEN 2020”.
- Duration: 12/2007 – 12/2009
- Further information:
www.energiemodell.at



Projectteam

- Sustainable Europe Research Institute (SERI)
 - Andrea Stocker
 - Lisa Bohunovsky
 - Harald Hutterer
- Ges. für Wirtschaftliche Strukturforschung (GWS)
 - Marc Ingo Wolter
 - Anett Großmann
- E.ON Energy Research Center, RWTH Aachen
 - Reinhard Madlener
 - Gesine Arends
 - Yasin Sunak



E.ON Energy Research Center

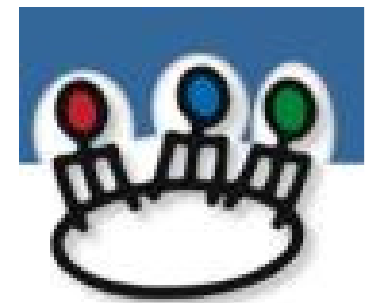
Aims of the project

- analyses the effects of sustainable energy consumption on the economy, the environment and on society
- focus on renewable energy, energy efficiency and behavioural changes
 - detailed analysis of heat demand of private households
 - mobility and electricity is integrated on generic level
- analysis by integrated environment-energy-economy model

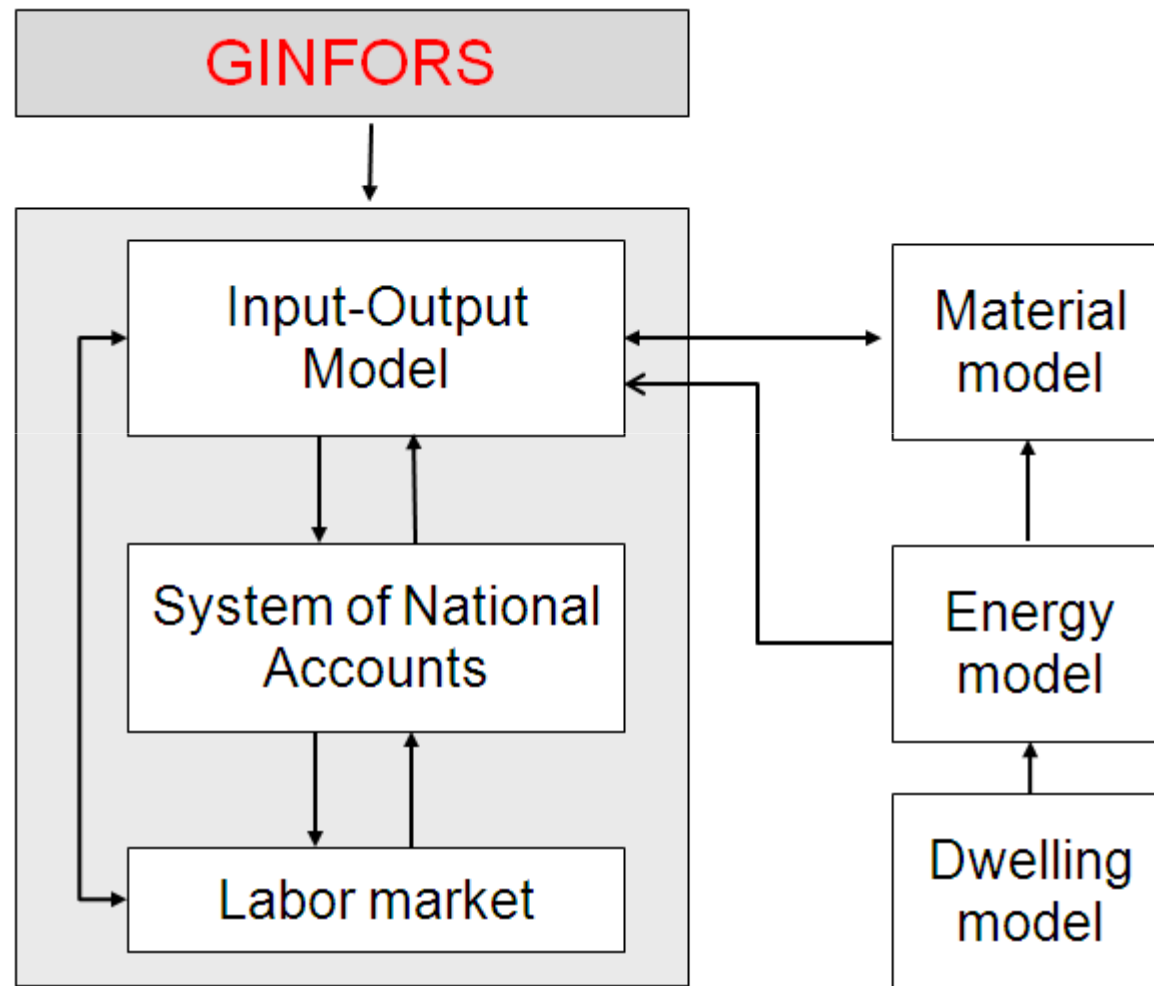
e3.at

Participatory Process

- process of scenario development and modelling is accompanied by stakeholder group
- lobbyists, CSO, administration and experts in the fields of energy policy and energy provision
- three workshops: group discussions, questionnaire for individual feedback



The 3.at model

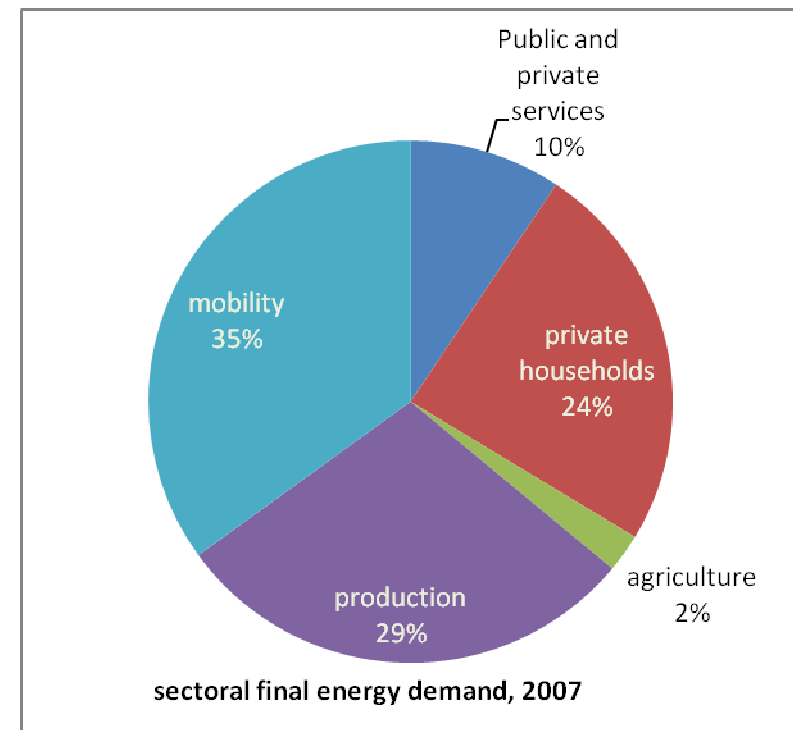


e3.at

further information:
Stocker, A. , Großmann
A. , Madlener, R. and
Wolter M.I.(2008):
Renewable energy for
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potential development
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Output-Conference in
Sevilla, 2008

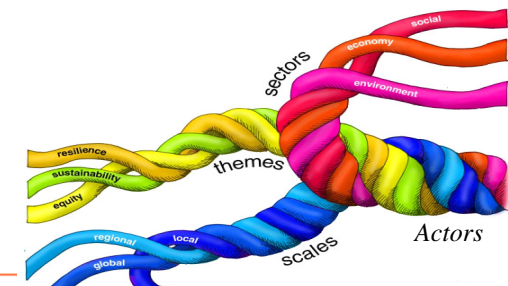
The Austrian Energy System

- gross domestic energy consumption
 - 1400 PJ (2007, Statistic Austria)
- relatively high share of renewables:
 - Share of renewables in gross inland energy consumption: 23,8% (2007, Eurostat)
 - share of renewables for electricity (e-control.at): 60,40 % (42,7 TWh) – mainly from hydropower (52%)



Aim of the scenarios

- showing opportunities for a fundamental restructuring of the Austrian energy system
 - no trends, no forecasts
- allowing for a comprehensive analysis of potential developments in the Austrian energy system until 2020
- basis for stakeholder discussion in the frame of an accompanying participatory process



Sustainable Energy Scenarios

- oriented at Austrian energy and climate policy goals until 2020
- Business-as-usual (BAU) describes development along current policies
- description and analysis of three separated alternative scenarios
 - We use the right energy! (renewable energies)
 - We use energy efficiently! (technical efficiency)
 - We use energy conciously! (sufficiency, behavioural changes)
- integration scenario „We use the right energy efficiently and conciously“

We use the right energy!

- Focus: Renewable Energies
- Goal: 34% renewables (Austrian target in the European energy and climate package)
- basic assumptions:
 - ambitious potentials from literature and interest groups
 - no new technologies until 2020, but intensive growth of so far expensive energies (PV)
- energy demand increases according to BAU

We use energy efficiently!

- Target: 20% increase of efficiency (2020 baseline)
- efficiency through technical improvements (thermal insulation, energy efficient appliances, etc.)

Key assumptions

- heat
 - building standard of new buildings will be improved to passive house standard
 - rate and quality of thermal renovation will be increased
- electricity
 - improvements of energy requirements of electronic devices did not lead to reduction of energy use so far (rebound effect) – low saving potential
- mobility
 - improvement in fuel demand of vehicle stock

We use energy consciously!

- Aim:
 - show possible behavioural changes which lead to a reduction of private energy demand w/o technical measures or investments
- Basic assumptions:
 - sustainable lifestyle will become „cool“
 - changes of lifestyles initiated through local/regional collective processes
- behavioural changes in 10 fields (heating and cooling, electricity, mobility)

What will happen next?

- Finalize scenarios and integrate stakeholders' feedback
- Implement them into e3.at model
- Model results and interpretation in fall 2009
- Final stakeholder workshop presumably in January 2010

- Further information:
 - www.seri.at
 - www.energiemodell.at (German only)



Thank you for your attention!

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