GENESwIS

Frank Vöhringer, EPFL & Econability

1st Workshop Swiss Modeling Platform
ETH Zürich, December 9th, 2015
GENES$^WIS$

- single country CGE
- small open economy
- dynamic

GENES$^WMOD$

- global trade model
- multiregional
- GTAP & IEA data
- calibrated fossil fuel supply
- dynamic recursive or static
GENESwIS

- single country CGE
- small open economy
- dynamic
Climate change (mitigation)

- Linking the Swiss ETS with the EU ETS (for FOEN)
- Social cushioning for CO$_2$ levies (for SFOE)
Climate change (mitigation)

- Linking the Swiss ETS with the EU ETS (for FOEN)
- Social cushioning for CO₂ levies (for SFOE)

Climate change (adaptation)

- Adapting to climate extremes under uncertainty, especially to flood events (for SNF Sinergia)
GENES

Econability
Sustainable Economics in Research and Practice

Climate change (mitigation)
- Linking the Swiss ETS with the EU ETS (for FOEN)
- Social cushioning for CO\textsubscript{2} levies (for SFOE)

Energy
- Electricity market modeling with bottom-up top-down coupling (with PSI for SFOE)

Climate change (adaptation)
- Adapting to climate extremes under uncertainty, especially to flood events (for SNF Sinergia)

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GENESWIS

- single country CGE with Armington trade
- fully dynamic Cass-Koopmans-Ramsey growth model
- detailed tax and transfer system, equal-yield mechanism

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Adaptation

- stochastic flood damage
- imperfect foresight
- adaptation measures
- bounded rationality
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Energy

- largely based on Energy IOT 2008, possible update to 2011
- detailed representation of energy demand, sectors and carriers
- user-differentiated energy prices to model physical energy flows
- baseline which replicates the „weiter wie bisher“ scenario

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ELECTRA
• coupled to PSI’s CROSSTEM model
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Multiple households

- income categories
- working vs. retired
- with vs. without children
- urban vs. rural

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GENES\textsuperscript{WIS}: CES nesting in production

![Diagram of CES nesting in production]