

Update on modelling activities at
the Energy Research Centre,
University of Cape Town

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ETSAP meeting
Paris, France
21st of June 2004

New name ERI→ERC

- As of 1st January 2004, the Energy Research Institute and Energy for Development Research Centre have merged into one unit, the *Energy Research Centre*.

Current MARKAL and TIMES projects

- Goal Programming MARKAL
- COMMEND: Evaluating the costs of generating grid electricity from renewable resources. TIMES, hourly load profiles, ramp-rates
- MSc's and PhD's

Upcoming projects

- Sensitivity studies for the DME. SWH,EE
- Energy for sustainable development. ESD indicators for the IAEA.
- 2005 Integrated Energy Plan for the DME. An energy outlook for SA.

Proposed projects

- SADC regional energy study
 - New SAPP pool plan
- Biofuels and the diesel/petrol imbalance
- Renewable energy in Eskom's generation mix

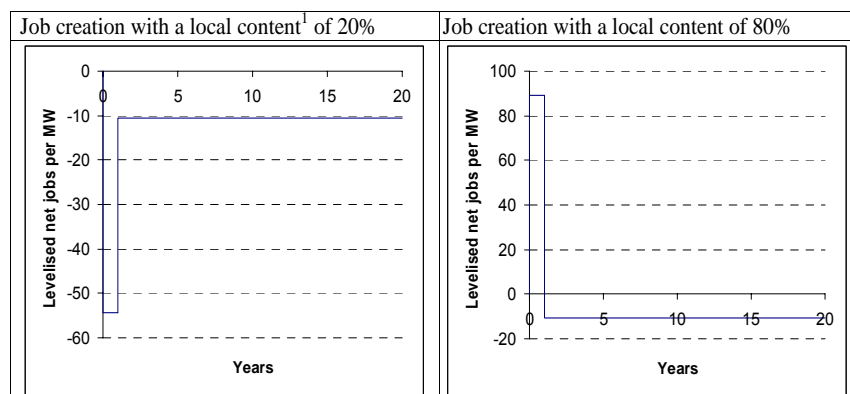


GHG Mitigation and development Goal programming

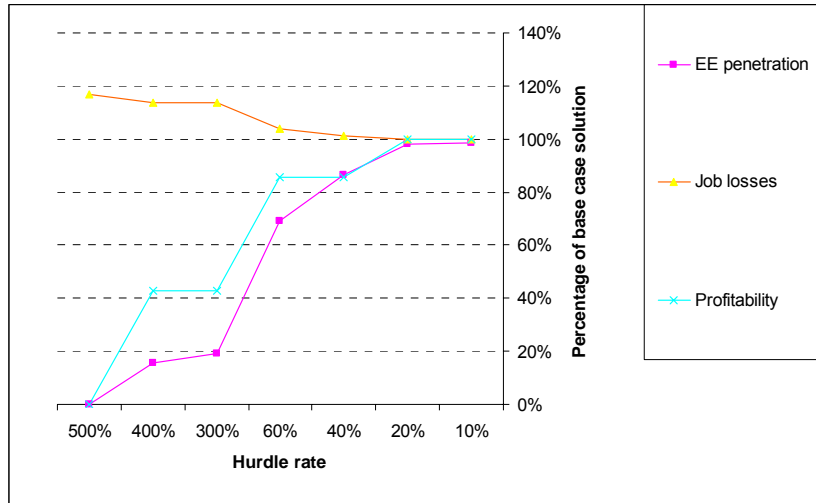
- Consider solving for multiple goals:
 - **Gaseous Emissions (CO₂, SO_x, NO_x, PM)**
 - **Water usage,**
 - **Total system cost,**
 - **Reliance on local technology,**
 - **Job losses**
- Consider (electrical) energy efficiency measures and PPA wind

GP MARKAL:

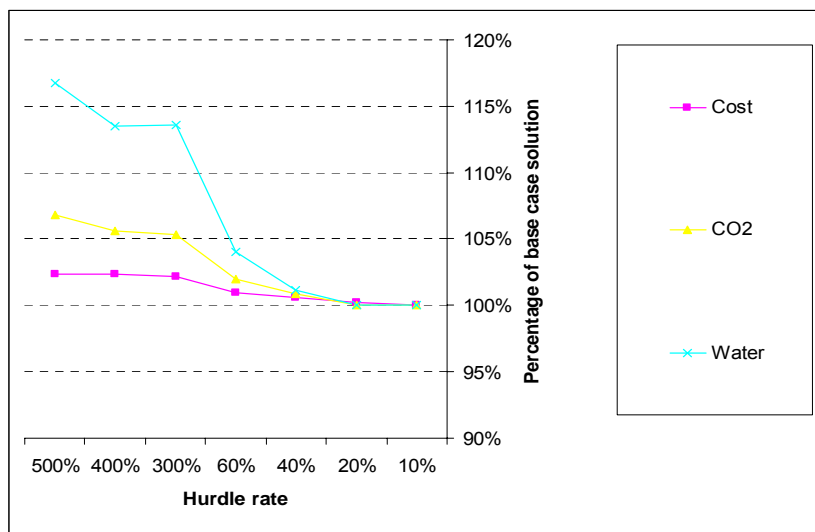
Integration with I/O economic model for Job creation and “takeback”



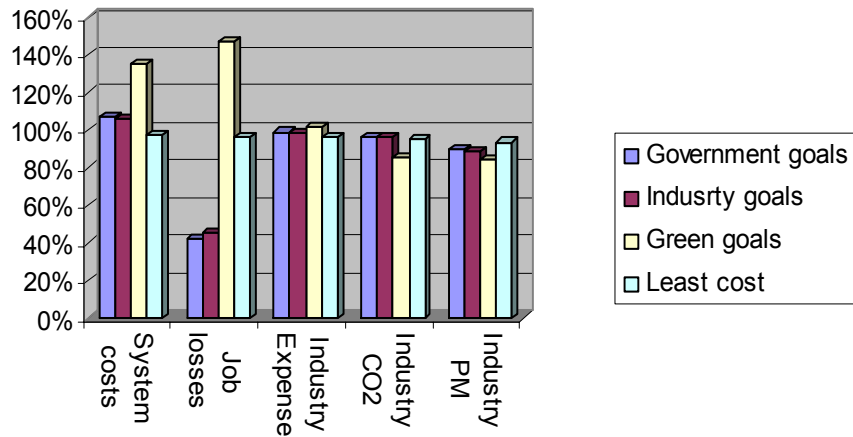
GP MARKAL: hurdle rate and development goals



GP MARKAL: hurdle rate and development goals



GP MARKAL: Development scenarios



ERC Modeling vision

- Develop world class energy planning capacity for the South (Africa)
 - Developing and maintaining national models
 - Providing a base for capacity building and international co-operation
 - Planning for development in implementation
 - Critical mass of modelers (have 4)
- Beginnings of 12 national models: need expanding
- MARKAL and TIMES
 - Better description of load and its consequence
- Training and degrees
 - Many thanks for the support
 - Manuals
 - Flexible standardized approaches
- An ETSAP meeting or two ;)