

**Energy, Environment and  
Climate Change programme  
“E2C2”**

**Energy Research Centre  
University of Cape Town**

# Energy, environment and climate change

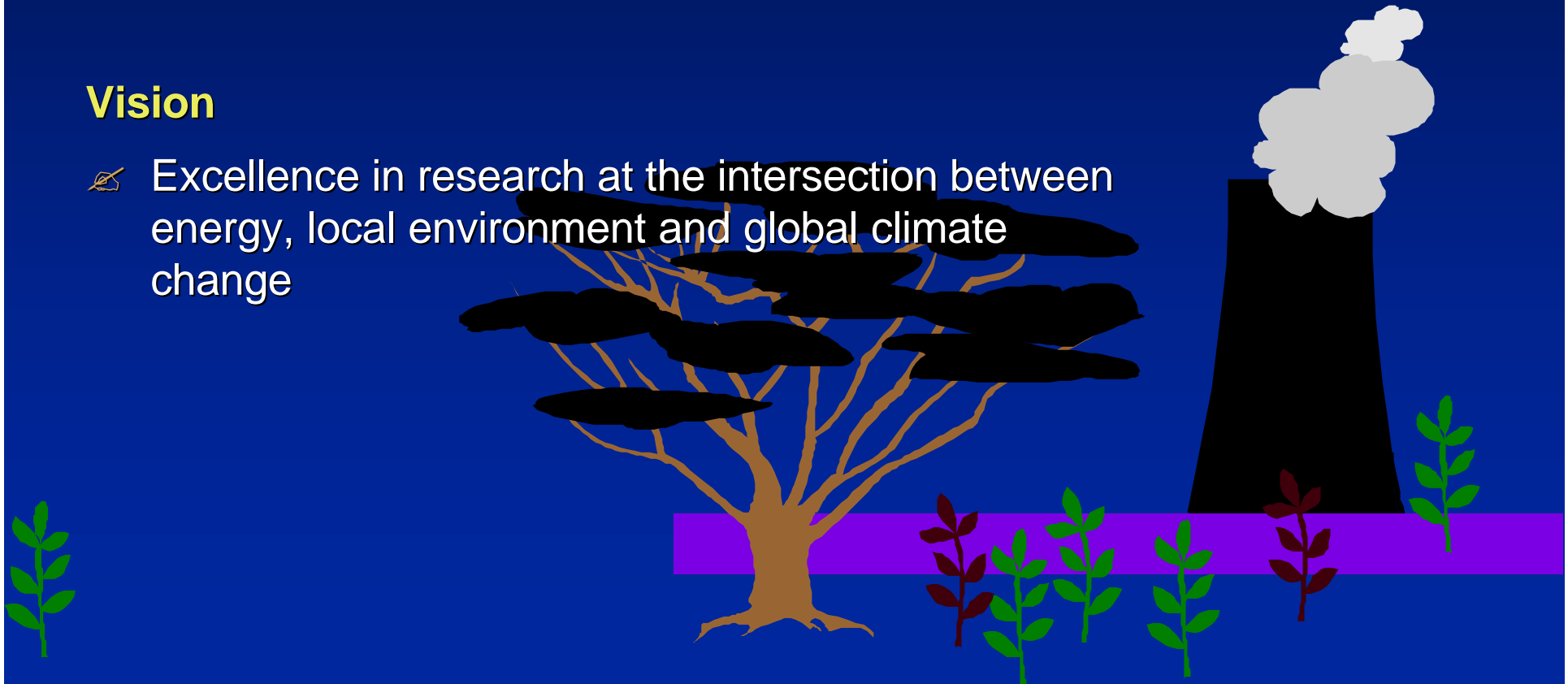
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## Problem

- ✍ Internationally and in South Africa, energy is the sector contributing most to global climate change and to local air pollution

## Vision

- ✍ Excellence in research at the intersection between energy, local environment and global climate change

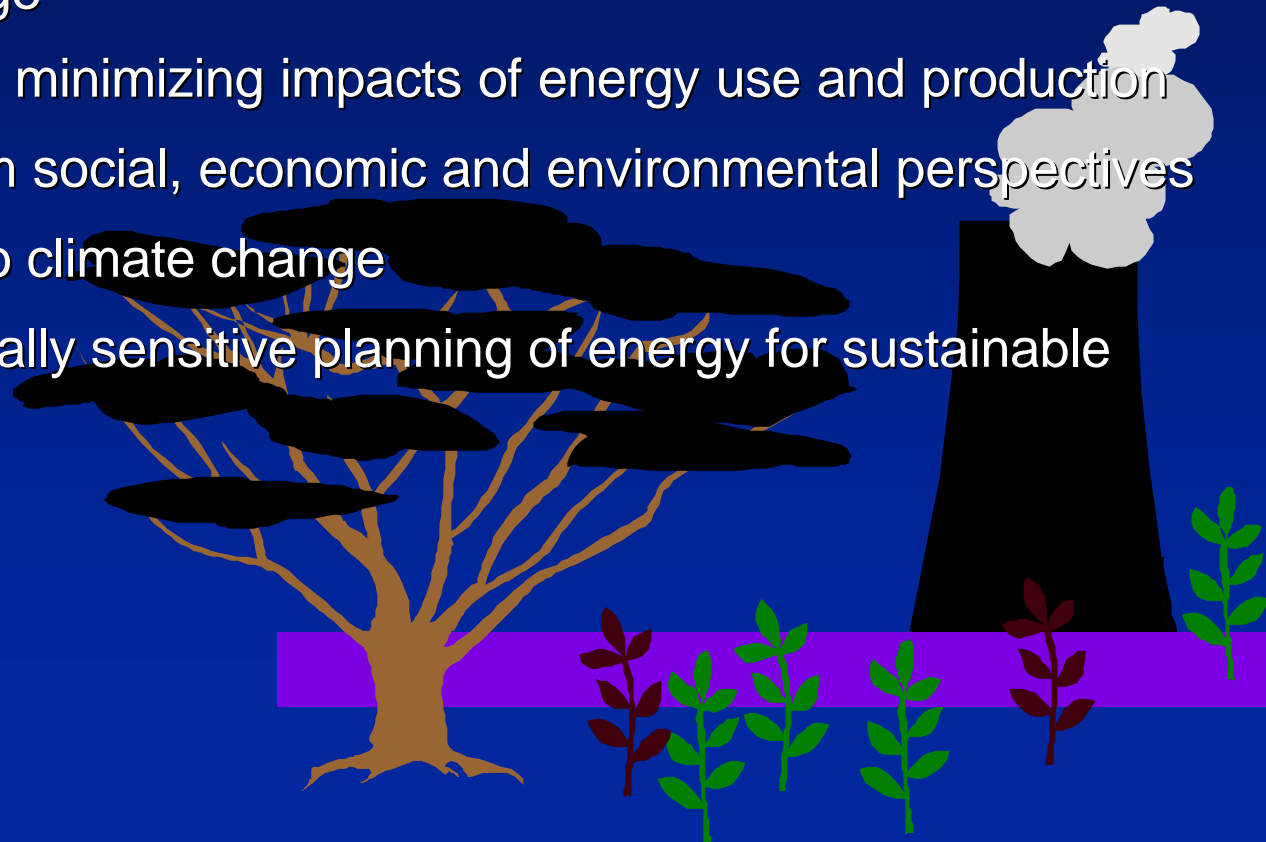


# Energy, environment and climate change

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## Research focus

- ✍ Core focus: energy and climate change mitigation
- ✍ Policy and economic analysis to develop energy solutions for climate change
- ✍ Research on minimizing impacts of energy use and production
- ✍ Analysis from social, economic and environmental perspectives
- ✍ Adaptation to climate change
- ✍ Environmentally sensitive planning of energy for sustainable development



# Teaching, training and presentations

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## Formal education

- ✍ Masters course on Energy & Climate Change
- ✍ Supervision of theses

## Training and public education

- ✍ Short courses on energy and climate change for policy-makers and analysts
- ✍ Guest lectures in other departments
- ✍ UCT Summer School



# Teaching, training and presentations

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## Presentations, conferences, meetings

- ✍ Equity in the Greenhouse – side event organised by us (with project partners) at SB-20 in Bonn, June 2004
- ✍ Future of the CDM – OECD side event at SB-20 in Bonn, June 2004
- ✍ Bonn RE conference – Stanford organised side-event, presentation also by Nthabi
- ✍ Carbon capture and storage workshop organised by Climate Network Europe, Stanford in Brussels, June 2004
- ✍ Methodology Panel of the CDM Executive Board, meetings in February and April, Harald
- ✍ Global Forum for Sustainable Energy, February 2004, Stanford

# Current research projects

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## Future commitments beyond 2012, with a focus on South Africa and developing countries

- ✍ Equity in the Greenhouse – South-North dialogue of researchers
- ✍ Dialogue on future international actions to address global climate change – inputs to an informal dialogue of delegates to the UNFCCC process
- ✍ 2 background papers: for the Swedish Energy Agency and UNEP Riso

## Clean Development Mechanism (CDM)

- ✍ “CD4CDM”: Capacity building for CDM in Uganda and Mozambique
- ✍ Monitoring of SouthSouthNorth CDM projects in South Africa
- ✍ Paper with OECD taking stock of the CDM and its future

# Current research projects

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## **Adaptation to the impacts of climate change**

- ✍ Costs & Benefits of Alternative Adaptation Projects in Africa
- ✍ Policy considerations for water resource management and adaptation strategies in response to climate change in South Africa

## **Capacity building for climate change**

- ✍ Strengthening Human and Institutional Capacity in Developing Countries for Policy Analysis and Effective Negotiation on Climate Change
- ✍ GHG inventories - Training for DEAT

# Future directions

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## Mitigation and poverty

- ✍ Exploring the links between climate change, poverty and development in the energy sector

## Country-specific work on future actions to mitigate climate change

- ✍ Emphasis on equity
- ✍ Development, climate and energy
- ✍ Workshops with National Climate Change Committee

## Linkages between climate science, adaptation and mitigation

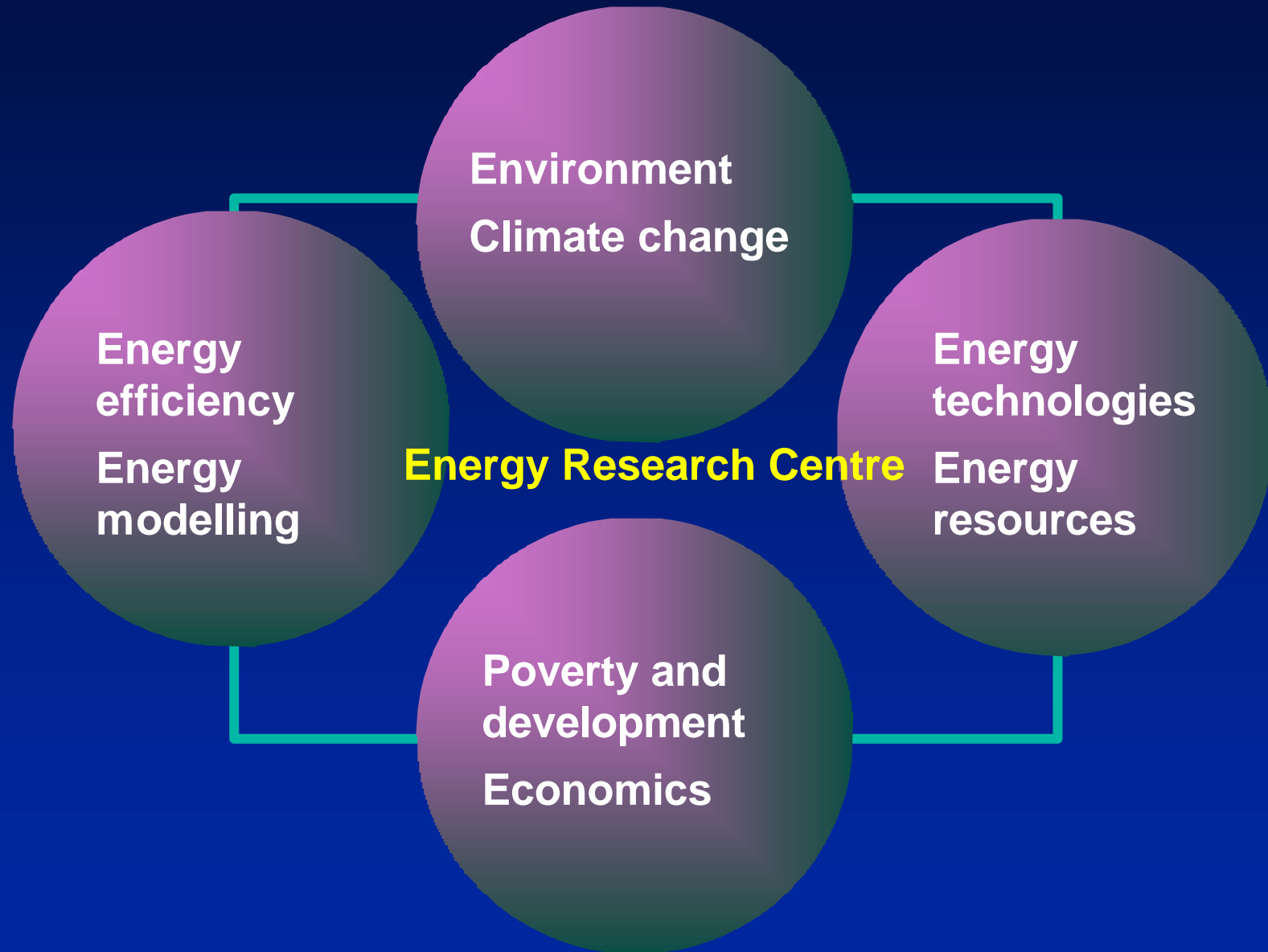
- ✍ Climate change, water and energy in Africa (with CSAG)
- ✍ Possible collaboration on 2nd National Communication





# E2C2 links with other ERC groups

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# Linkages: within South Africa

## GOVERNMENT

Parliamentary  
Committees  
- Energy  
- Environment

Department of  
Environment Affairs  
& Tourism

Department of  
Minerals & Energy

**E2C2**

## STAKEHOLDERS

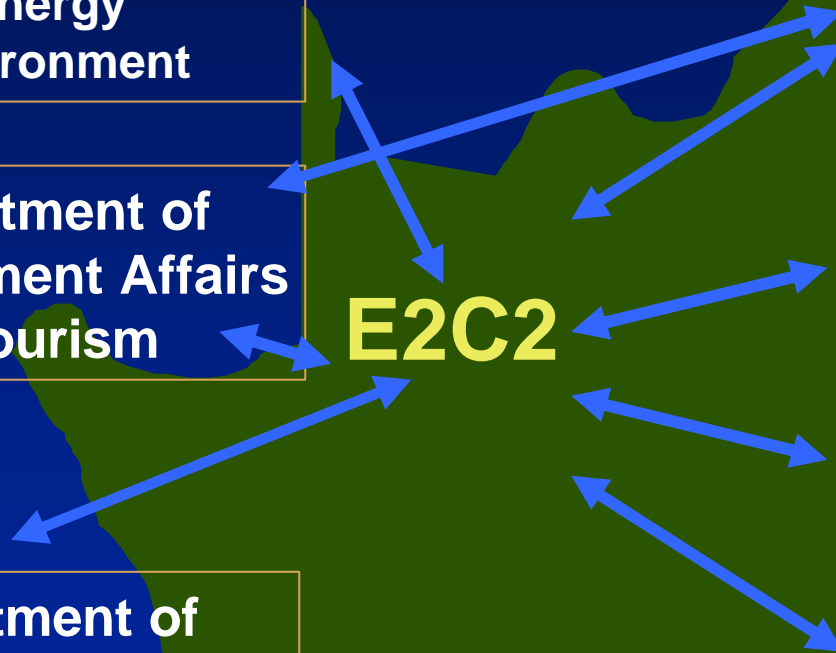
National Committee on  
Climate Change

ESKOM, CSIR

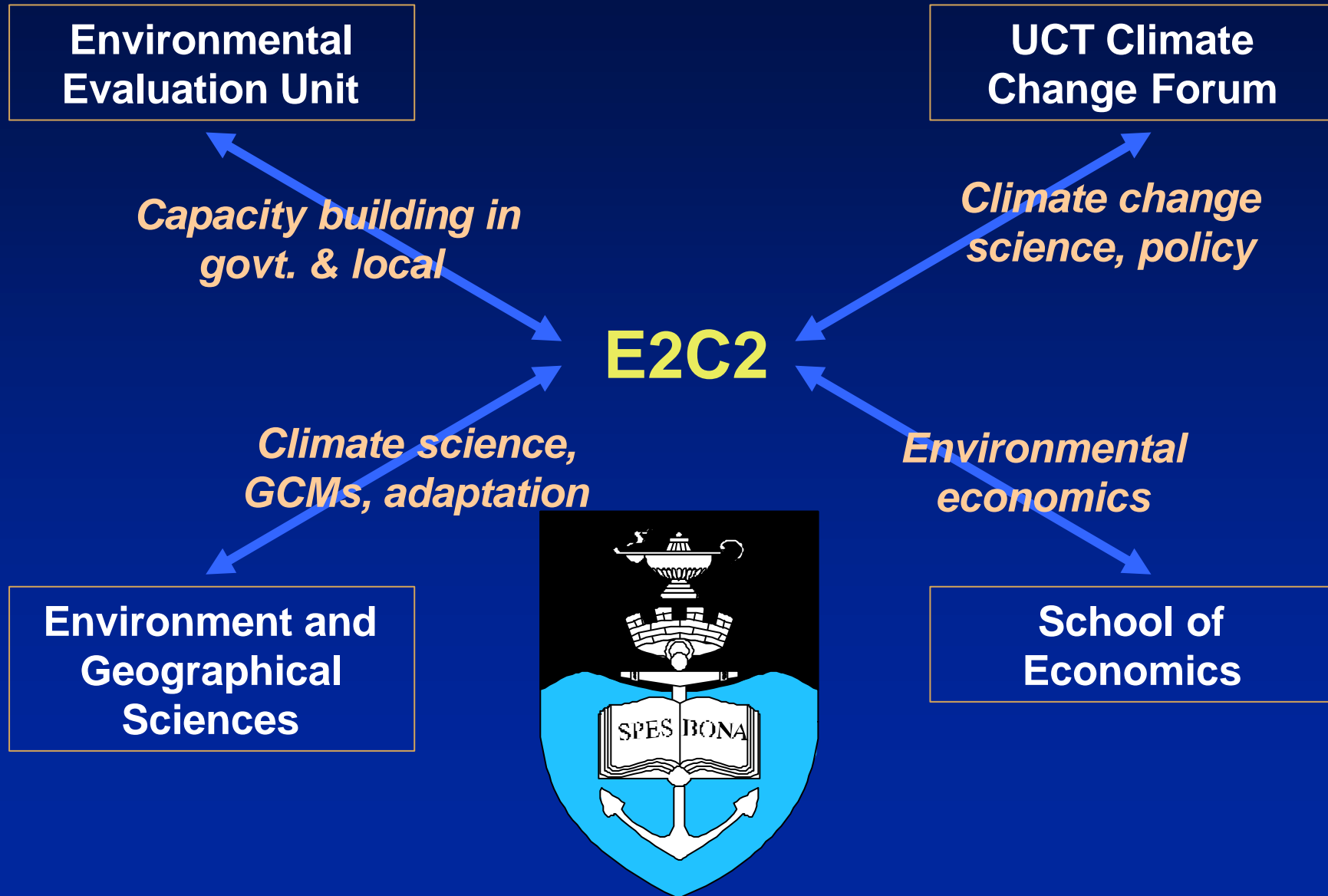
Energy & Environment  
NGOs (climate change)

SSN, Econ, PDG, MEPC

## RESEARCH



# Linkages: Within the University of Cape Town



# Recent publications on environment and climate change

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- ✍ Winkler, H 2004. Renewable energy policy in South Africa: Policy options for renewable electricity. *Energy Policy* 33 (1): 27-38.
- ✍ Spalding-Fecher, R, Winkler, H & Mwakasonda, S 2004. Energy and the World Summit on Sustainable Development: What next? *Energy Policy* 33 (1): 99-112.
- ✍ Ellis, J, Corfee-Morlot, J & Winkler, H 2004. Taking stock of progress under the Clean Development Mechanism (CDM). Paris, OECD & IEA
- ✍ Ott, H E, Winkler, H, Brouns, B, Kartha, S, Mace, M, Huq, S, Kameyama, Y, Sari, A P, Pan, J, Sokona, Y, Bhandari, P M, Kassenberg, A, La Rovere, E L & Rahman, A 2004. South-North dialogue on equity in the greenhouse. A proposal for an adequate and equitable global climate agreement. Cape Town & Wuppertal, Wuppertal Institute & Energy Research Centre.
- ✍ Turpie, J, Winkler, H & Midgley, G F 2004. Economic impacts of climate change in South Africa: A preliminary assessment of unmitigated damage costs. J. Blignaut and M. De Wit (Ed.) *Sustainable options: Development lessons from applied environmental economics*. UCT press: 130-160.
- ✍ Mwakasonda, S. 2004. Linking energy to environment, poverty and development: African perspectives. *NER Quarterly Journal* 2 (1): 26-34.

## Recent publications on environment and climate change (2)

- ✍ Sathaye, J, Murtishaw, S, Price, L, Lefranc, M, Roy, J, Winkler, H & Spalding-Fecher, R. 2004. Multiproject baselines for evaluation of electric power projects. *Energy Policy* 32 (11): 1303-1317.
- ✍ Callaway, J, Hellmuth, M, Nkomo, J, Sparks, D & Louw, D. 2003. Estimating and comparing the benefits and costs of avoiding climate change damages. *AIACC Notes* 2 (2).
- ✍ Davidson, O, Halsnaes, K, Huq, S, Kok, M, Metz, B, Sokona, Y & Verhagen, J. 2003. The development and climate nexus: the case of sub-Saharan Africa. *Climate Policy* 3 (S1): S97–S113.
- ✍ EDRC (Energy & Development Research Centre) 2003. Policies and measures for renewable energy and energy efficiency in South Africa. Prepared for the Sustainable Energy & Climate Change Partnership. Cape Town, EDRC.
- ✍ Mukheibir, P & Sparks, D. 2003. Water resource management and climate change in South Africa: Visions, driving factors and sustainable development indicators. Cape Town, EDRC.
- ✍ Sparks, D, White, N & Mwakasonda, S. 2003. Environmental and health impacts of the basic electricity support tariff. Proceedings of the International Conference on Domestic Use of Energy, Cape Town, 31 March – 3 April, 29-34.

[www.erc.uct.ac.za/recent.htm](http://www.erc.uct.ac.za/recent.htm)

# E2C2 Research Staff

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Harald Winkler



Stanford Mwakasonda



Debbie Sparks

*Other staff doing substantial amounts of climate change research:*



Jabavu Nkomo



Pierre Mukheibir

**Further details: [www.erc.uct.ac.za](http://www.erc.uct.ac.za)**