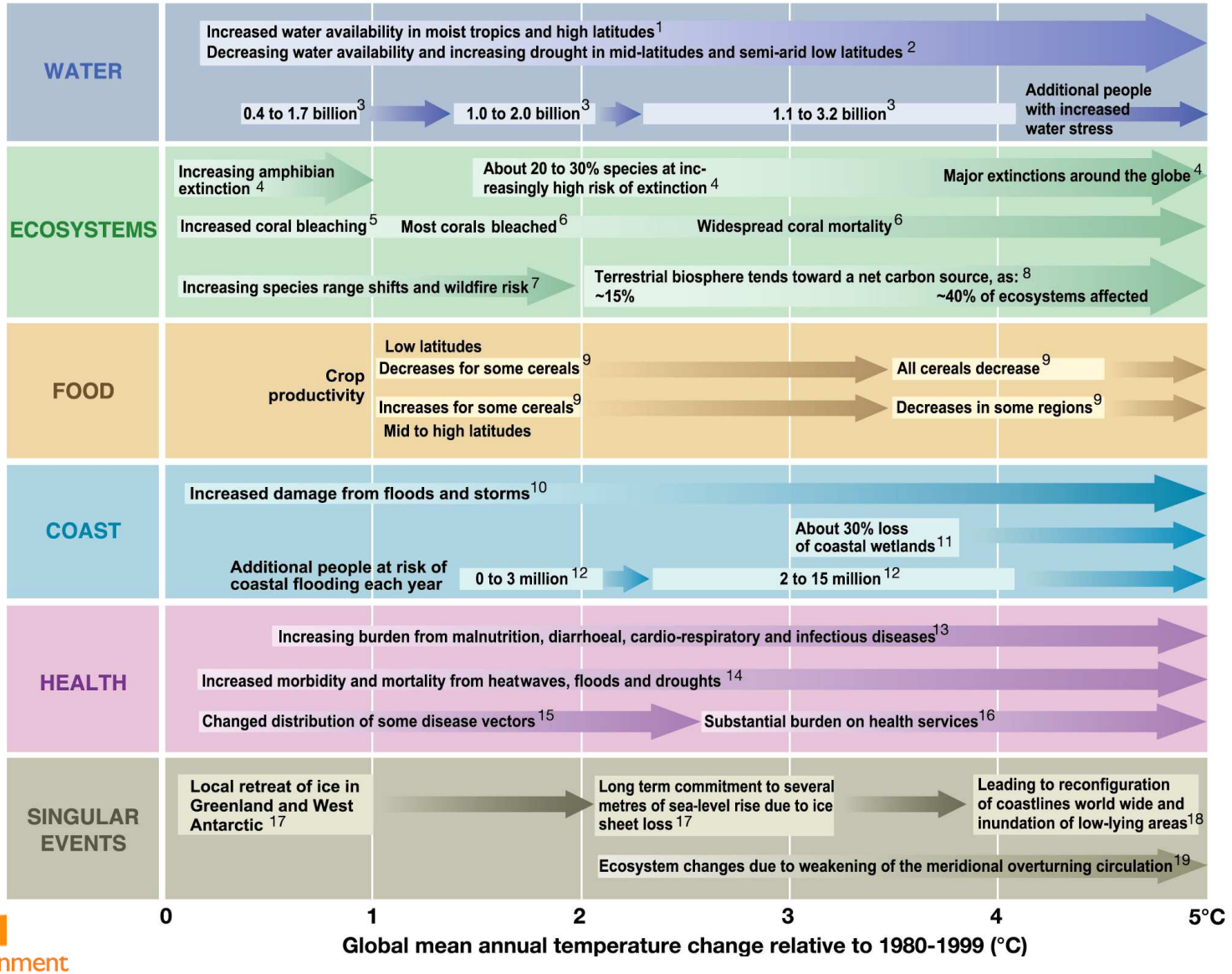
environment
& tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

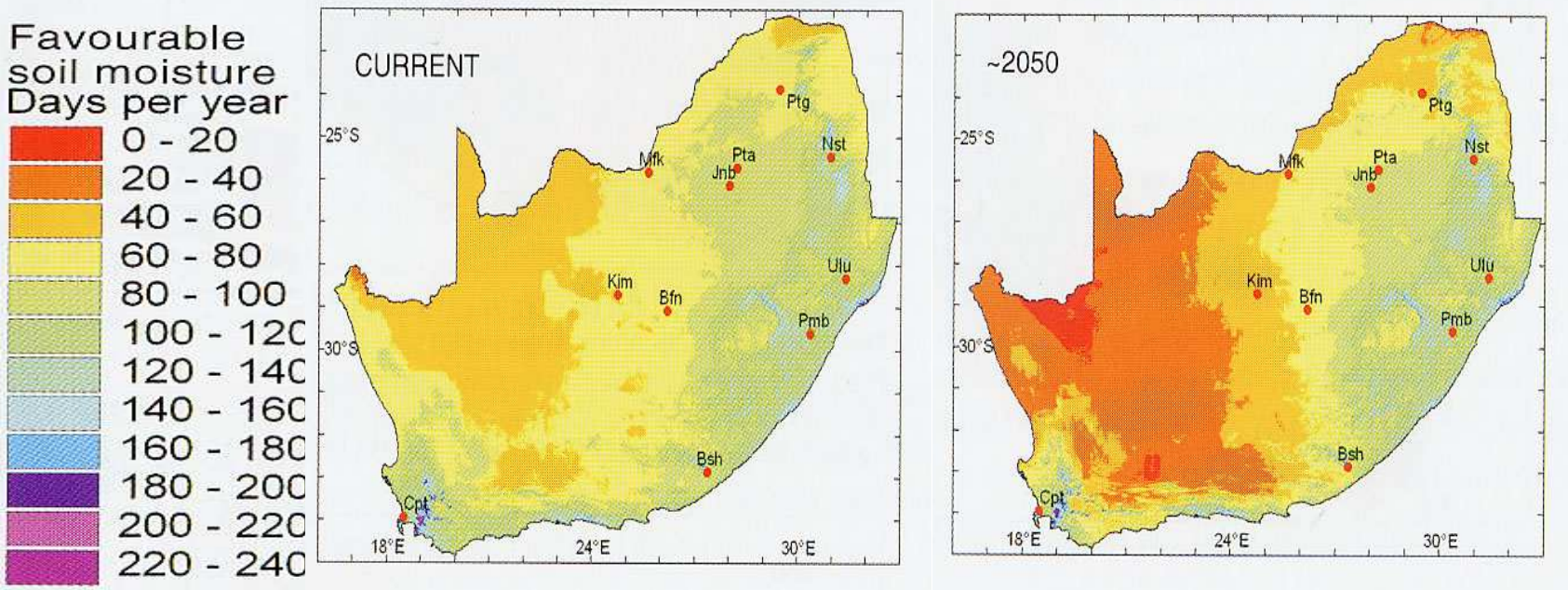
Government's Vision, Strategic Direction and Framework for Climate Policy

Beyond 2℃ it becomes dangerous for us

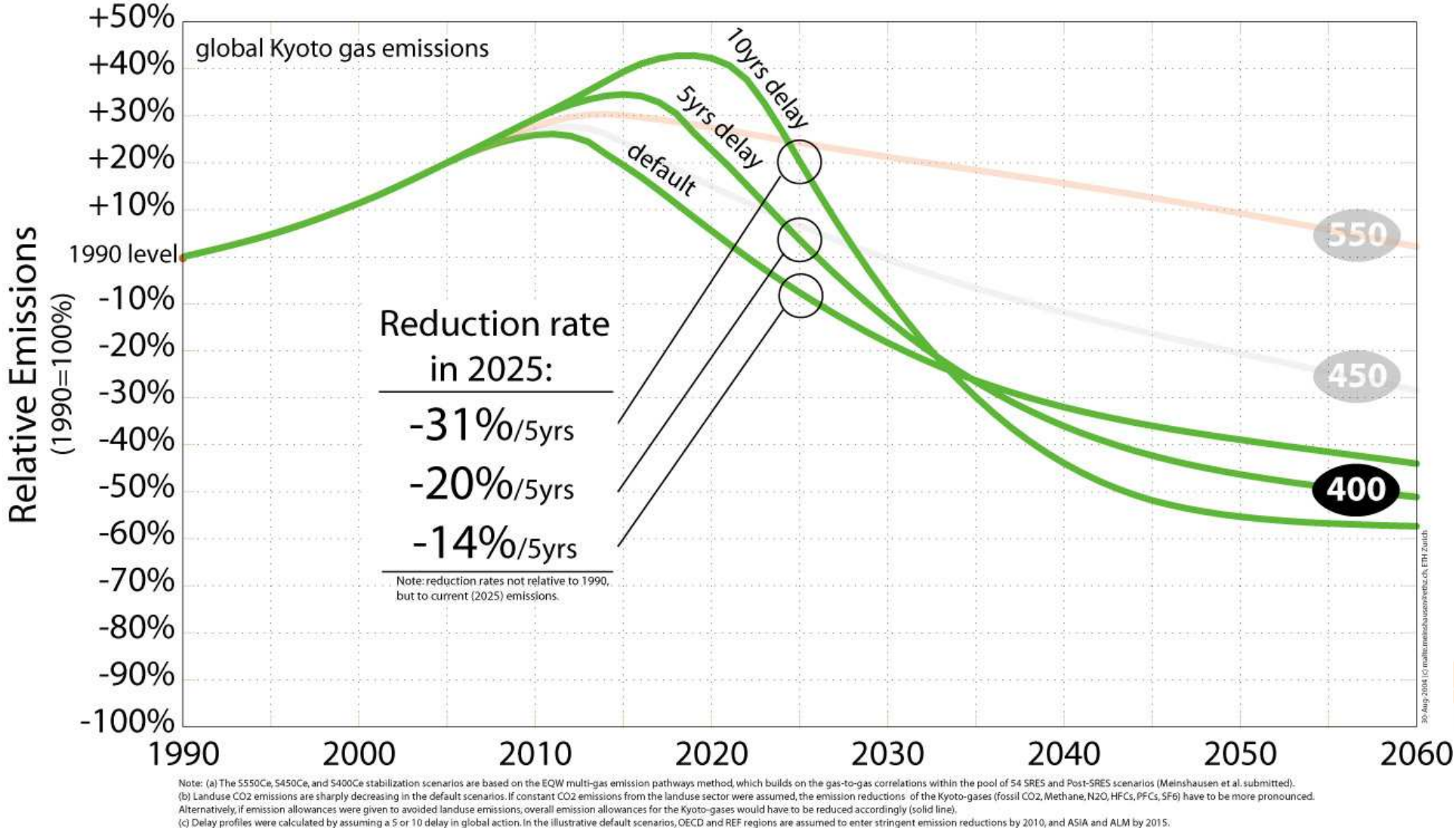


Food security in South Africa will be impacted

*The effect of global climate change on '**soil moisture days**' in South Africa (number of days when both soil moisture and temperature are suitable for plant growth)*



Mitigation is urgent; time to bend the curve is short; otherwise adaptation will become unaffordable



Note: (a) The S550Ce, S450Ce, and S400Ce stabilization scenarios are based on the EQW multi-gas emission pathways method, which builds on the gas-to-gas correlations within the pool of 54 SRES and Post-SRES scenarios (Meinshausen et al. submitted).
(b) Landuse CO2 emissions are sharply decreasing in the default scenarios. If constant CO2 emissions from the landuse sector were assumed, the emission reductions of the Kyoto-gases (fossil CO2, Methane, N2O, HFCs, PFCs, SF6) have to be more pronounced. Alternatively, if emission allowances were given to avoided landuse emissions, overall emission allowances for the Kyoto-gases would have to be reduced accordingly (solid line).
(c) Delay profiles were calculated by assuming a 5 or 10 delay in global action. In the illustrative default scenarios, OECD and REF regions are assumed to enter stringent emission reductions by 2010, and ASIA and ALM by 2015.

“Required-by-science” includes a burden sharing discount

Box 13.7 The range of the difference between emissions in 1990 and emission allowances in 2020/2050 for various GHG concentration levels for Annex I and non-Annex I countries as a group[a]

Scenario category	Region	2020	2050
A-450 ppm CO_2-eq[b]	Annex I	–25% to –40%	–80% to –95%
	Non-Annex I	Substantial deviation from baseline in Latin America, Middle East, East Asia and Centrally-Planned Asia	Substantial deviation from baseline in all regions
B-550 ppm CO_2-eq	Annex I	[illegible] to -30%	[illegible]
	Non-Annex I	Deviation from baseline in Latin America and Middle East, East Asia	Deviation from baseline in most regions, especially in Latin America and Middle East
C-650 ppm CO_2-eq	Annex I	0% to -25%	-30% to -80%
	Non-Annex I	Baseline	Deviation from baseline in Latin America and Middle East, East Asia

IPCC

INTERNATIONAL MITIGATION ACTIONS

- Launched negotiations in Bali with view to package deal by end 2009:
  - Deeper emission cuts for developed countries responsible for historical cumulative emissions through the renegotiation of Kyoto targets beyond 2012 – absolute reductions
  - "Comparability of effort" by non-Kyoto developed countries (USA) - absolute reductions

    leveraged through…
  - Measurable, Reportable and Verifiable (MRV) mitigation responses by developing countries, enabled/supported by MRV financing & technology – reductions relative to BAU

GLOBAL ECONOMY

- Global shift to low carbon economy
- South Africa needs to find opportunities in a carbon-constrained world – we must avoid the risks and turn our potential comparative advantages into competitive advantages

LTMS:
Process and research

Robust and broadly supported results achieved through technical methodology and extensive stakeholder involvement

http://www.erc.uct.ac.za/Research/LTMS/LTMS-intro.htm

The LTMS Scenario Building Team

Government

- DEAT Environment
- DME Minerals & Energy
- DST Science & Technology
- DoT Transport
- Treasury
- Foreign Affairs
- DTI Trade & Industry
- DPE Public Enterprises
- DWAF Water Affairs & Forestry
- Presidency
- SAWS Weather Services
- CEF / SA Nat'l Energy Research Institute
- NERSA Energy Regulator
- W Cape Province (DEADP)
- City of Johannesburg

Business

- SASOL
- Eskom
- EIUG Energy Intensive Users Group
- Engen
- Grain SA
- Anglo Coal
- BHP Billiton
- Chamber of Mines
- Aluminium – AFSA
- Kumba Resources
- Chemical – CAIA
- Engen
- Forestry SA
- AgriSA
- Business Unity SA
- Sappi
- Envitech (Waste)

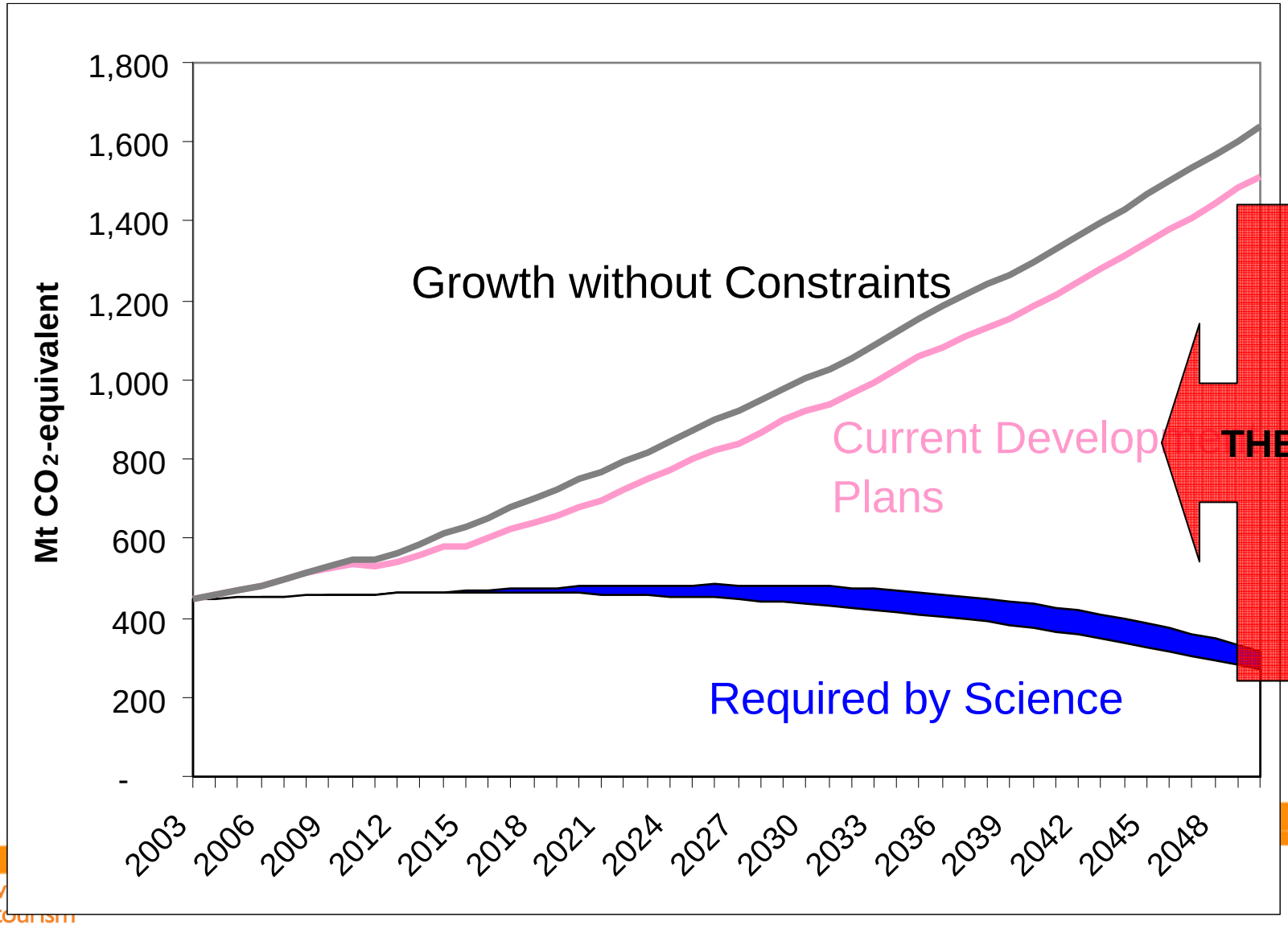
Civil society

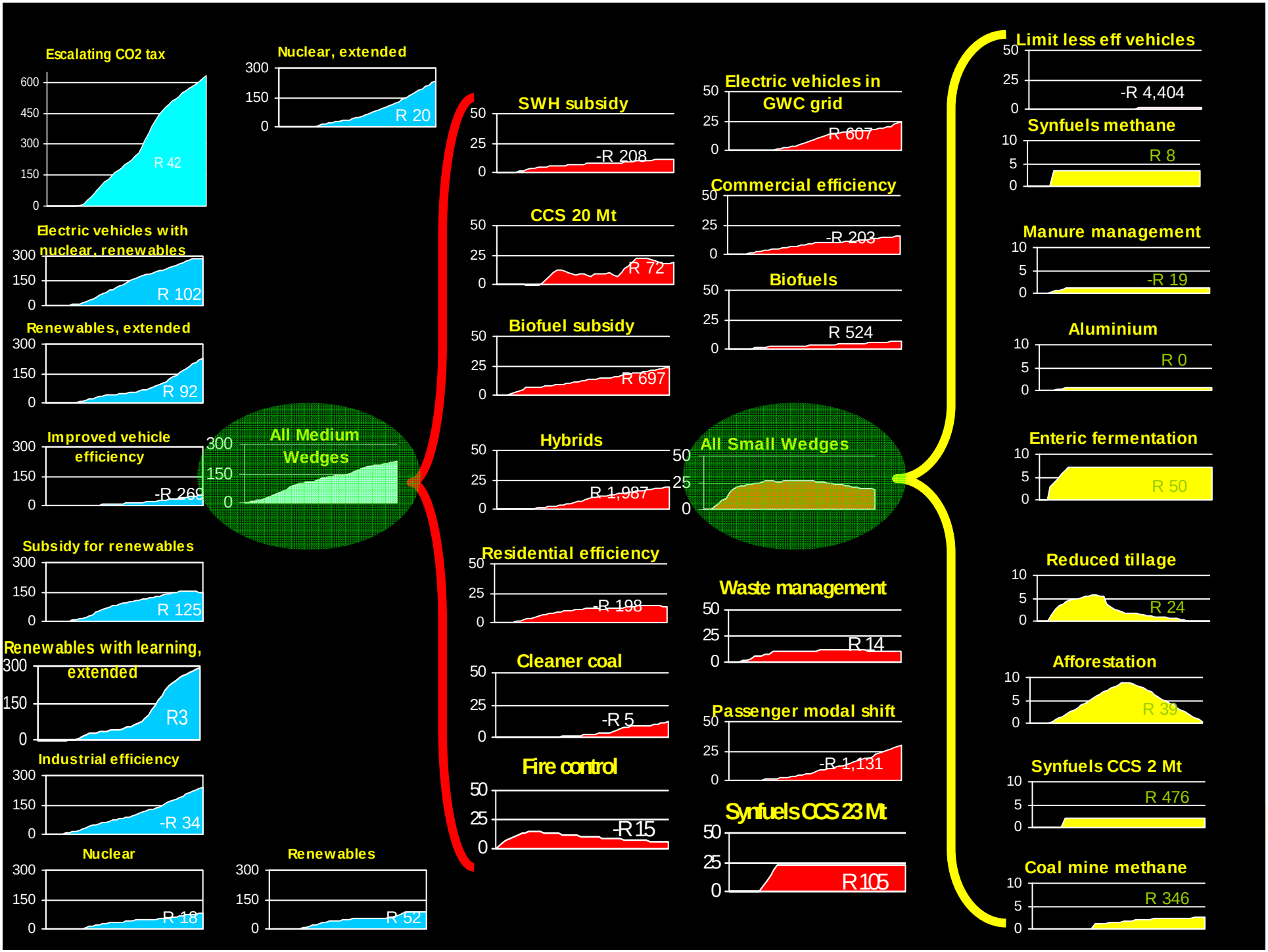
- EcoCity/CURES
- SESSA
- Labour (NUM)
- SEA
- SACAN
- COSATU
- SALGA
- WWF-SA
- Earthlife Africa

Four research teams and inputs from stakeholder experts

- **Energy Emissions (led by ERC modeling)**
  - **Alison Hughes, Mary Haw, Harald Winkler, Andrew Marquard, Bruno Merven**
  - Markal model reviewed by Stephen Pye (AEAT, UK)
  - Expert input from stakeholders: Sonwabo Damba (Eskom); Energy Efficiency Technical Committee special meeting: Ian Langridge (Anglo American), Valerie Geen, Tsvetana Mateva, Hermien vd Walt (all three National Business Initiative); Chesney Bradshaw (ABB); Barry Bredenkamp (Nat'l Energy Efficiency Agency); Burt Buissine (British American Tobacco); Rochelle Chetty Sonwabo Damba, (both Eskom); LJ Grobler (NW University); Chris Teffo (Chamber of Mines); Alan Munn (Engen); Egmont Otterman (PPCement); Nico Smith (Mittal Steel); Neal Smither (BP); Theresa Maree (Eon)
- **Non-Energy Emissions (led by CSIR)**
  - **Rina Taviv, Marna van der Merwe, Bob Scholes and Gill Collet**
  - Industrial process emissions: G Kornelius (Airshed), A Marquard and H Winkler
  - Expert input from stakeholders: Linda Godfrey (NRE CSIR), Antony Phiri (NRE CSIR), Harma Greben (NRE CSIR), Susanne Dittke (EnviroSense CC), Saliem Haider (City of Cape Town) and Stan Jewaskiewitz (Envitech Solutions); John Scotcher ForestLore Consulting, Howick and Johan Bester from the DWAF. Johan Claasen from NDA, Pietman Botha from GrainSA, Sylvester Mpandeli and Matiga Motsepe from the ARC, Koos van Zyl and Nic Opperman from AgriSA; Guy F Midgley from SANBI and Brian van Wilgen from CSIR.
- **Economy-wide research (led by UCT economics)**
  - **Kalie Pauw, with Celeste Coetzee**
  - Reviewed by Dirk van Seventer (TIPS)
  - 2 special meetings of economists: Roger Baxter (Chamber of Mines). Raymond Parsons (Nedlac); Theo van Rensburg, Louise Du Plessis, Marna Kearney (all three Naitonal Treasury); Ashraf Kariem (Presidency); Stephen Gelb (Edge Institute); Michael McClintock (Sasol); James Blignaut (University of Pretoria); Simi Siwisi BUSA
- **Climate Change Impacts (led by SANBI)**
  - **G Midgley, with Pierre Mukheibir**
  - Expert authors: R Chapman, P Mukheibir, M Tadross, B Hewitson, S Wand, R Schulze, T Lumsden, M Horan, M Warburton, B Kgope, B Mantlana, A Knowles, A Abayomi, G Ziervogel, R Cullis and A Theron

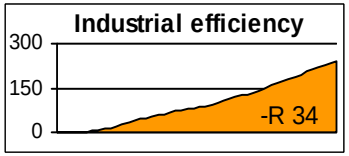
Two Scenarios frame the choice for South Africa

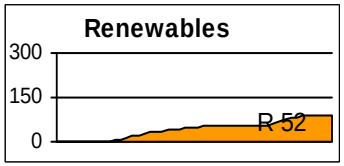


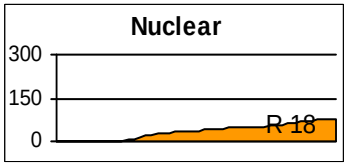

Escalating CO2 tax
600
450
300
150
0
R 42
Nuclear, extended
300
150
0
R 20
Electric vehicles with nuclear, renewables
300
150
0
R 102
Renewables, extended
300
150
0
R 92
Improved vehicle efficiency
300
150
0
-R 269
Subsidy for renewables
300
150
0
R 125
Renewables with learning, extended
300
150
0
R3
Industrial efficiency
300
150
0
-R 34
Nuclear
300
150
0
R 18
Renewables
300
150
0
R 52
All Medium Wedges
300
150
0
SWH subsidy
50
25
0
-R 208
CCS 20 Mt
50
25
0
R 72
Biofuel subsidy
50
25
0
R 697
Hybrids
50
25
0
R 1,987
Residential efficiency
50
25
0
-R 198
Cleaner coal
50
25
0
-R 5
Fire control
50
25
0
-R 15
Electric vehicles in GWC grid
50
25
0
R 607
Commercial efficiency
50
25
0
-R 203
Biofuels
50
25
0
R 524
All Small Wedges
50
25
0
Waste management
50
25
0
R 14
Passenger modal shift
50
25
0
-R 1,131
Synfuels CCS 23 Mt
50
25
0
R 105
Limit less eff vehicles
50
25
0
-R 4,404
Synfuels methane
10
5
0
R 8
Manure management
10
5
0
-R 19
Aluminium
10
5
0
R 0
Enteric fermentation
10
5
0
R 50
Reduced tillage
10
5
0
R 24
Afforestation
10
5
0
R 39
Synfuels CCS 2 Mt
10
5
0
R 476
Coal mine methane
10
5
0
R 346

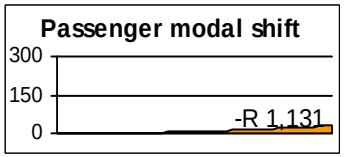
Key steps by Strategic Option

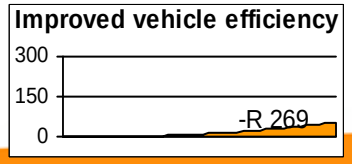
Start Now



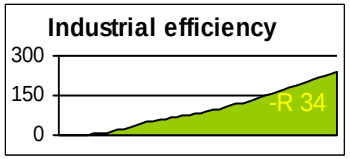


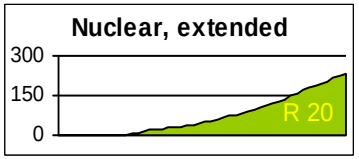


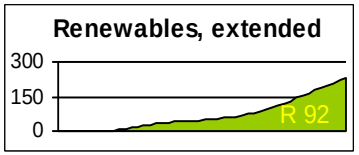


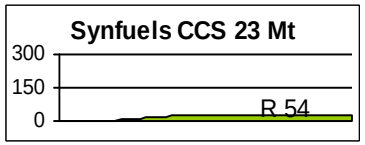


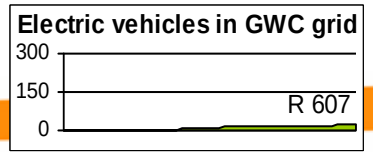
Scale Up



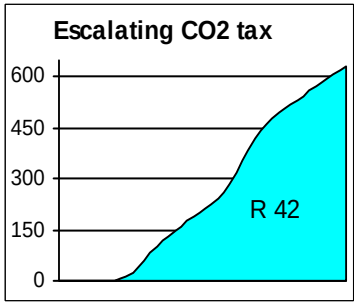


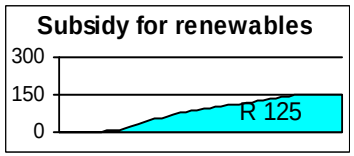


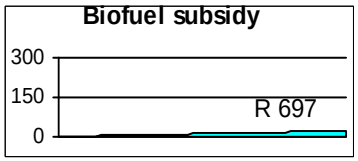


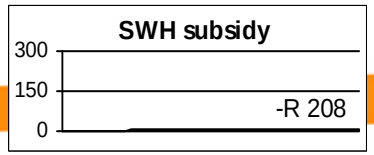


Use the Market





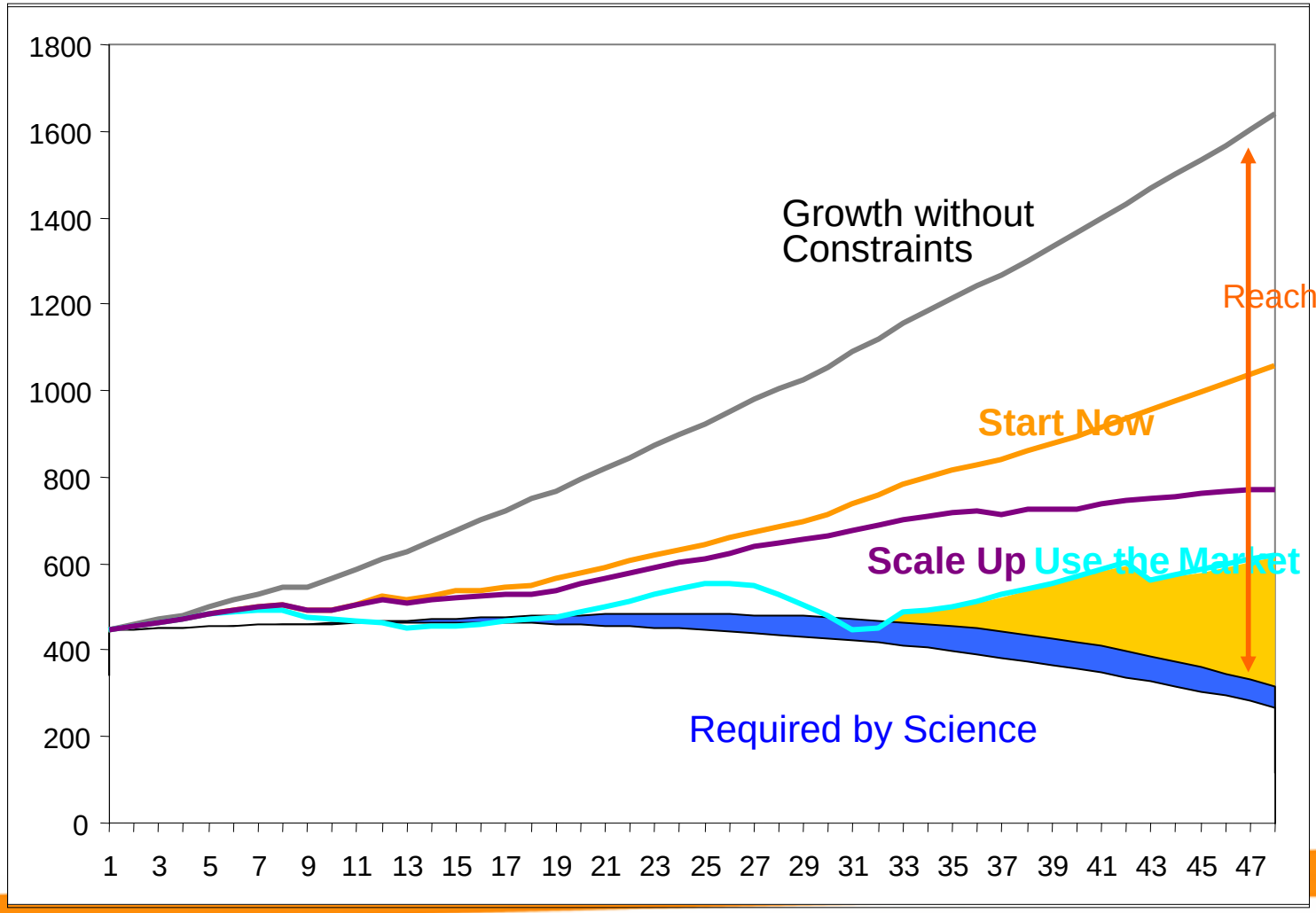




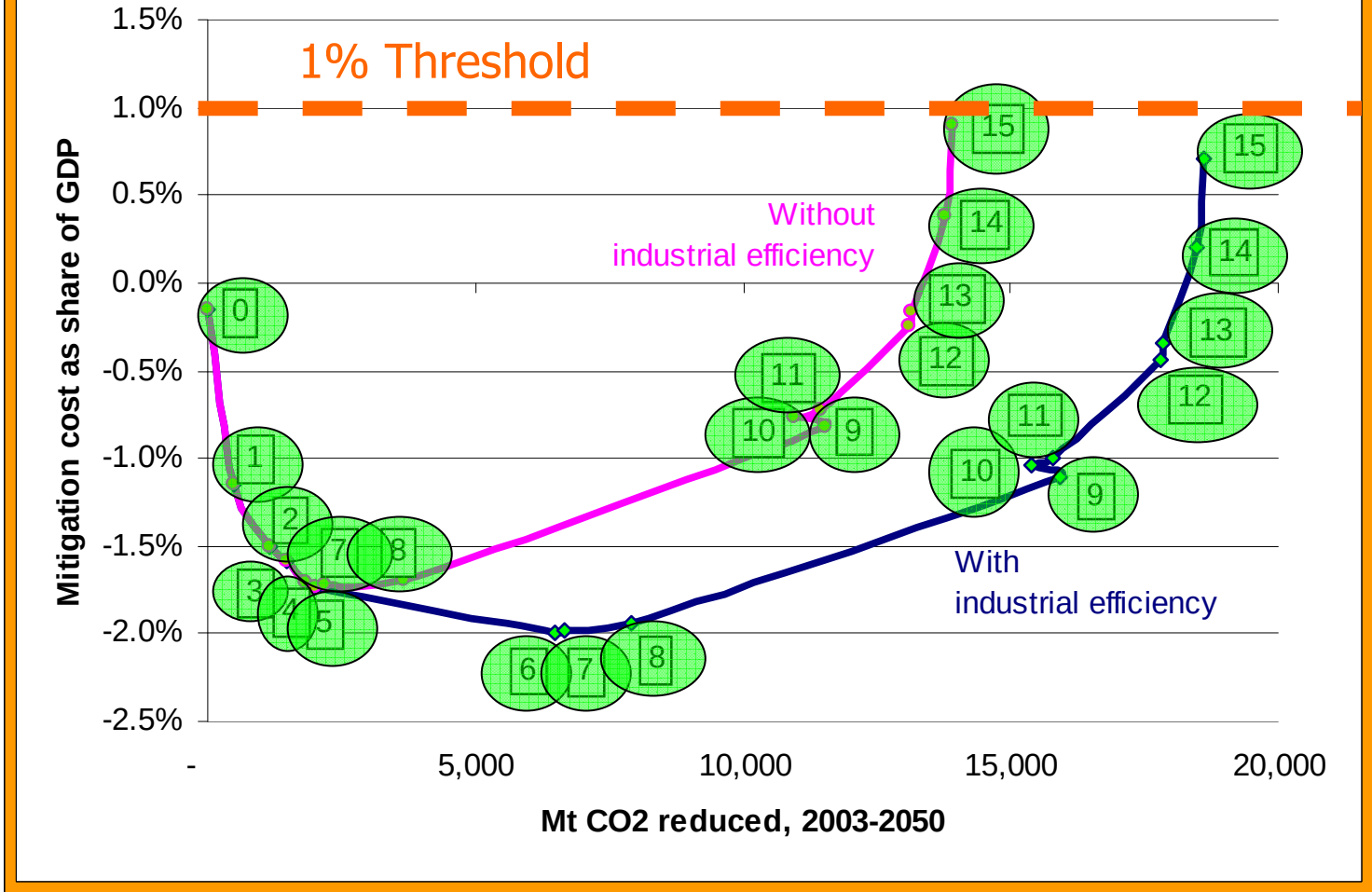
Reach for the Goal

- New technology
- Identify resources
- People-oriented measures
- Transition to low carbon economy

Four Strategic Options



What will it cost?



0 Limit on low-efficiency vehicles
1 +Passenger modal shift
2 +Improved vehicle efficiency
3 +SWH subsidy
4 +Commercial efficiency
5 +Residential efficiency
6 +Industrial efficiency
7 +Cleaner coal
8 +Nuclear
9 +Escalating CO2 tax
10 +Renewables
11 +CCS 20 Mt
12 +Subsidy for renewables
13 +Biofuels
14 +Electric vehicles in GWC grid
15 +Hybrids

Mitigation costs as share of GDP, for runs of combined wedges - each time adding another as in list at right

POLICY PILLARS

POLICY DIRECTIONS

- The feedback from the LTMS high-level process, taken with Cabinet's direction and a policy alignment analysis, has been translated into **6 broad policy direction themes**.

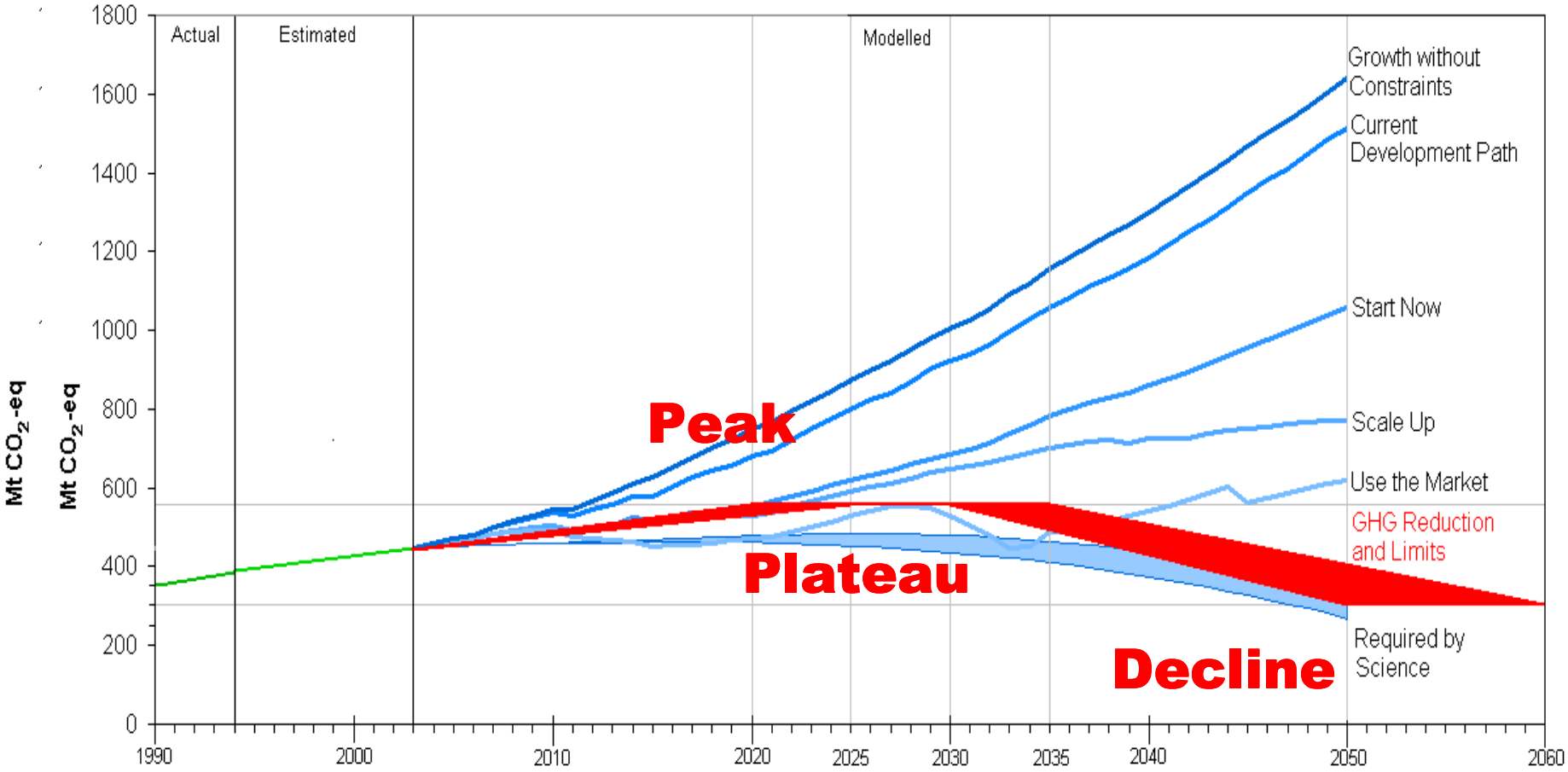
  - Theme 1: Greenhouse gas emission reductions and limits
  - Theme 2: Build on, strengthen and/or scale up current initiatives
  - Theme 3: Implementing the "Business Unusual" Call for Action
  - Theme 4: Preparing for the future
  - Theme 5: Vulnerability and Adaptation
  - Theme 6: Alignment, Coordination and Cooperation

See Annexure A – LTMS Policy Directions

Theme 1: GHG emission reductions and limits

- Climate change mitigation interventions should be informed by, and monitored and measured against the following “plateau and decline” emission trajectory
  - Greenhouse gas emissions stop growing (start of plateau) in 2020-25
  - Greenhouse gas emissions begin declining in absolute terms (end of plateau) in 2030-35

Theme 1: GHG emission reductions and limits (Cont.)



Theme 2: Build on, strengthen and/or scale up current initiatives

- Current energy efficiency and electricity demand-side management initiatives and interventions must be scaled-up and reinforced through available regulatory instruments and other appropriate mechanisms (*made mandatory*).
- Based on the electricity-crisis response, government's energy efficiency policies and strategies must be continuously reviewed and amended to reflect more ambitious national targets aligned with the LTMS
- Treasury will study a carbon tax in the range modelled by the LTMS, starting at low levels soon and escalating to higher levels by 2018/ 2020, with sensitivity to higher and lower tax levels, and report to Cabinet on its findings.

Theme 3: Implementing the "Business Unusual" Call for Action

- The renewable energy sector is identified as a key "business unusual" growth sector and policies and measures are put in place to meet a more ambitious national target for renewable energy.
- The transport sector is identified as another key "business unusual" growth sector and policies and measures are put in place to meet ambitious and mandatory national targets for the reduction of GHG emissions from this sector.
- In committing to national GHG emission limitation and reduction targets, government must promote the transition to a low-carbon economy and society and all policy and other decisions that may have an impact on South Africa's GHG emissions must take this commitment into regard.

Theme 4: Preparing for the future

- There is increased support for the new and ambitious research and development targets that are being set, especially in the field of carbon-friendly technologies – with the focus on the renewable energy and transport sectors.
- Formal and informal forms of education and outreach are used to encourage the behavioural changes required to support the efficient and effective implementation of the climate change response policy.

Theme 5: Vulnerability and Adaptation

- South Africa continues to identify and describe its vulnerabilities to climate change.
- We describe and prioritise what adaptation interventions must be initiated, who should be driving these interventions and how implementation will be monitored.
- Affected government departments will ensure that climate change adaptation in their sectors are included as departmental key performance areas.

Theme 6: Alignment, Coordination and Cooperation

- The roles and responsibilities of all stakeholders, particularly the organs of state in all three spheres of government, will be clearly defined and articulated.
- The structures required to ensure alignment, coordination and cooperation will be clearly defined and articulated.
- Climate change response policies and measures are mainstreamed within existing alignment, coordination and cooperation structures.

PROCESS GOING FORWARD: 2009 to 2012

- National Climate Change Response Policy Development Summit (February 2009) (Adopt Framework)
- Sectoral policy development work (February – June 2009)
- Post-2012 negotiation positions (Up to July 2009)
- UNFCCC post-2012 negotiations concluded (Copenhagen, December 2009)
- National policy updated for implementation of international commitments (March 2010)
- Green Paper published for public comment (April 2010)
- Final National Climate Change Response Policy published (end 2010)
- Policy translated into legislative, regulatory and fiscal package (from now up to 2012)

Government's vision for the road ahead on climate change (1)

1. Transition to climate resilient and low-carbon economy and society – balance our mitigation and adaptation response
2. Our climate response policy, built on six pillars, will be informed by what is *required by science* – to limit global temperature increase to 2℃ above pr e-industrial levels
3. Continue to pro-actively build the knowledge base and our capacity to adapt to the inevitable impacts of climate change, most importantly by enhancing early warning and disaster reduction systems and in the roll-out of basic services, infrastructure planning, agriculture, biodiversity, water resource management and in the health sector
4. GHG emissions must peak, plateau and decline - stop growing at the latest by 2020-2025, stabilise for up to ten years, then decline in absolute terms
5. Long term: redefine our competitive advantage and structurally transform the economy by shifting from an energy-intensive to a climate-friendly path as part of a pro-growth, pro-development and pro-jobs strategy
6. Implementing policy under the six themes will lay the basis for measurable, reportable and verifiable domestic emission reduction and limitation outcomes
7. This would constitute a fair and meaningful contribution to the global efforts, demonstrating leadership in the multi-lateral system by committing to a "substantial deviation from baseline", enabled by international funding and technology

Government's vision for the road ahead on climate change (2)

On mitigation, our immediate task: *Start Now* based on accelerated energy efficiency and conservation across all sectors (industry, commerce, transport, residential – incl. more stringent building standards); invest in *Reach for the Goal* by setting ambitious research & development targets focussing on carbon-friendly technologies, identifying new resources and affecting behavioral change; and combine regulatory mechanisms under *Scale Up* and economic instruments (taxes and incentives) under *Use the Market* with a view to:

1. Setting ambitious and mandatory (as distinct from voluntary) targets for energy efficiency and in other sub-national sectors. In the next few months each sector will be required to do work to enable it to decide on actions and targets in relation to this overall framework.
2. Based on the electricity-crisis response, government's energy efficiency policies and strategies must be continuously reviewed and amended to reflect more ambitious national targets aligned with the LTMS.
3. Increasing the price on carbon through an escalating CO_2 tax, or alternative market mechanism
4. Diversifying the energy mix away from coal whilst shifting to cleaner coal, e.g. by introducing more stringent thermal efficiency and emissions standards for coal fired power stations

Government's vision for the road ahead on climate change (3)

5) Setting similar targets for electricity generated from both renewable and nuclear energy sources by the end of the next two decades
6) Laying the basis for a net zero-carbon electricity sector in the long term
7) Incentivising renewable energy through feed-in tariffs
8) Exploring and developing carbon capture and storage (CCS) for coal fired power stations and all coal-to-liquid (CTL) plants, and not approving new coal fired power stations without carbon capture readiness
9) Introducing industrial policy that favours sectors using less energy per unit of economic output and building domestic industries in these emerging sectors
10) Setting ambitious and where appropriate mandatory national targets for the reduction of transport emissions, including through stringent and escalating fuel efficiency standards, facilitating passenger modal shifts towards public transport and the aggressive promotion of hybrids and electric vehicles

THANK YOU

http://www.erc.uct.ac.za/Research/LTMS/LTMS-intro.htm