

Climate and Energy Crisis Response: National EE and RE policies for Municipal implementation

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What we face as local government

Poverty - unemployment

Lack of funds - revenue base shrinking, dwindling resources for services

Lack of staff and capacity

Increasing populations - rural areas, other countries - and these are poor people

Water shortages, land degradation, no space for landfill, infrastructure for electricity stormwater and sewage reaching capacity/collapsing....



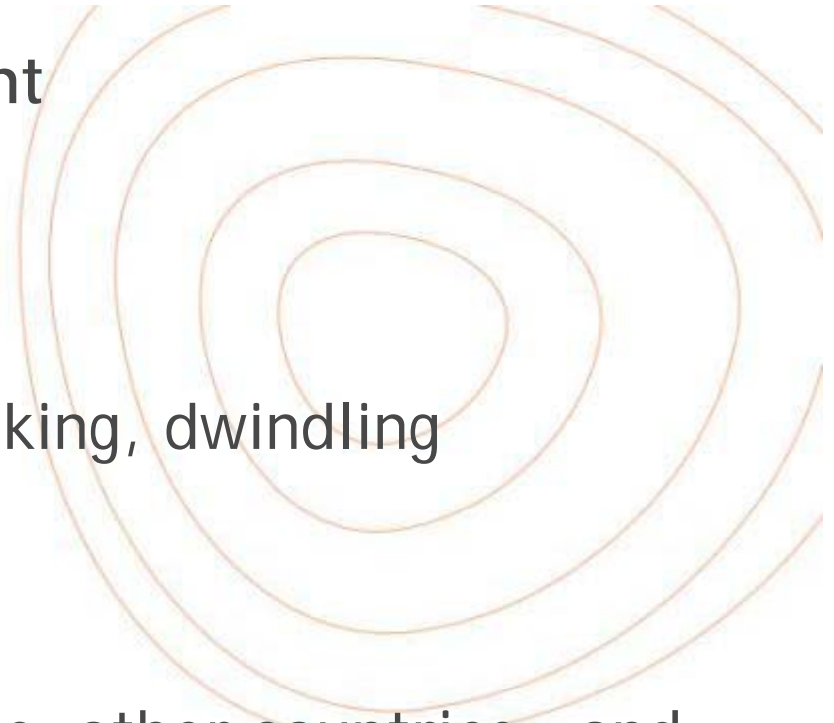
Energy crisis; climate crisis



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“not our mandate”

VS

“the biggest risk lies in doing nothing”

- Constitution of SA makes local government the epicentre of development and provides it with a strong institutional status.
- New mandates, such as local economic development, sustainable service delivery, poverty alleviation, and emerging imperatives of energy security and climate change, have extended the role of local government into the complex web of demand-driven energy management.

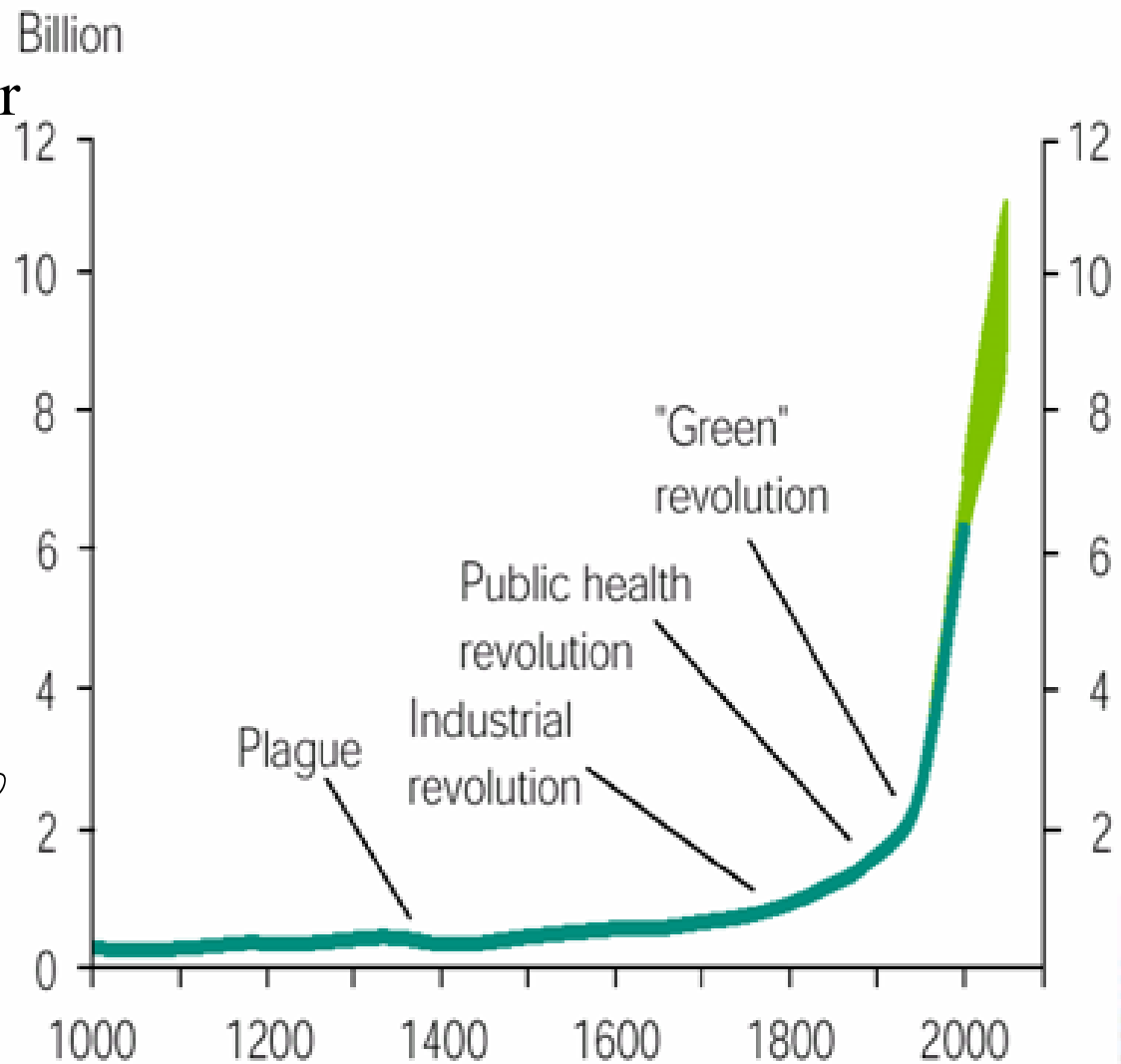


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- 1850 Wood accounts for 90% world energy use
- 1910 Coal accounts for 60% world energy use (and 15% urbanised)
- 1960 oil surpasses coal as world's primary energy source and (30% urbanised)



World Energy Consumption, 1970-2020

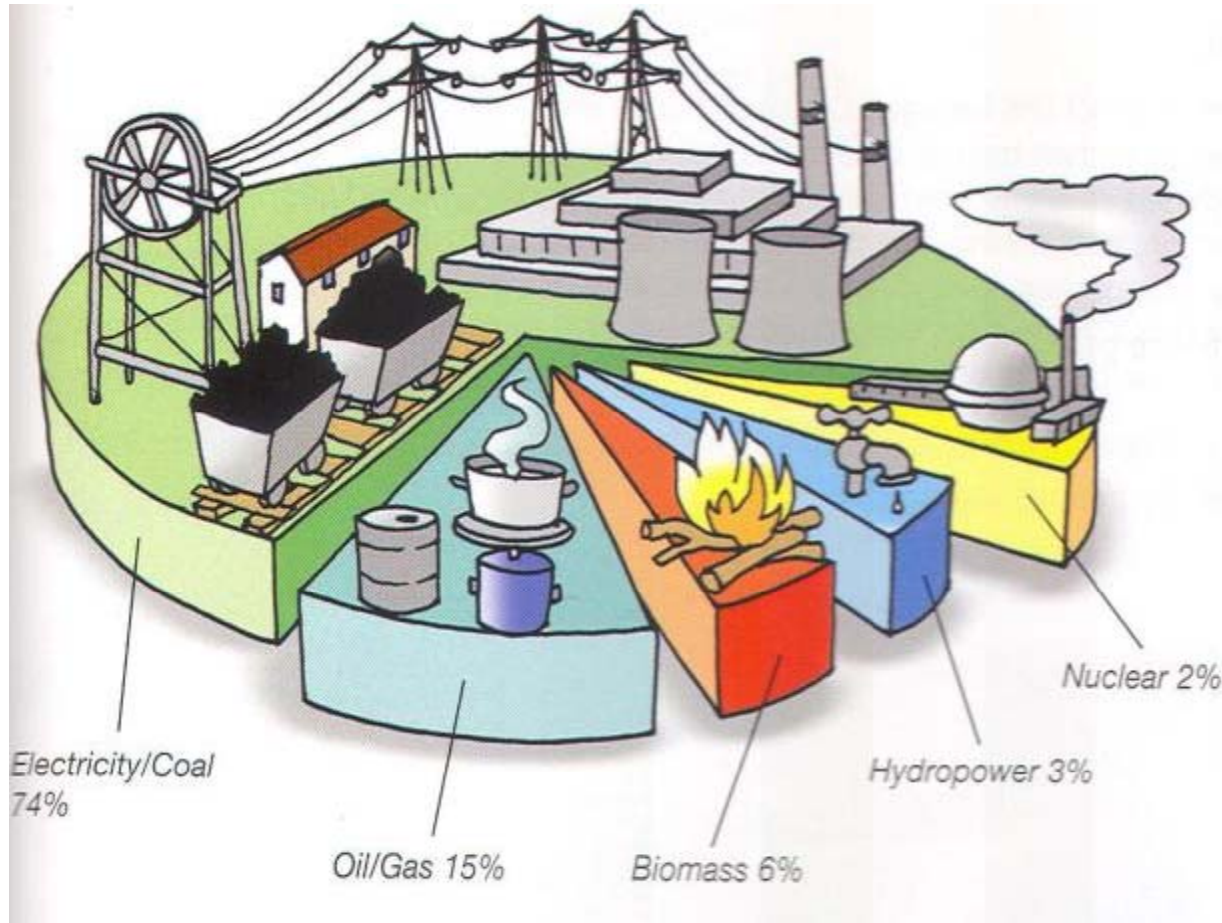


Inequity

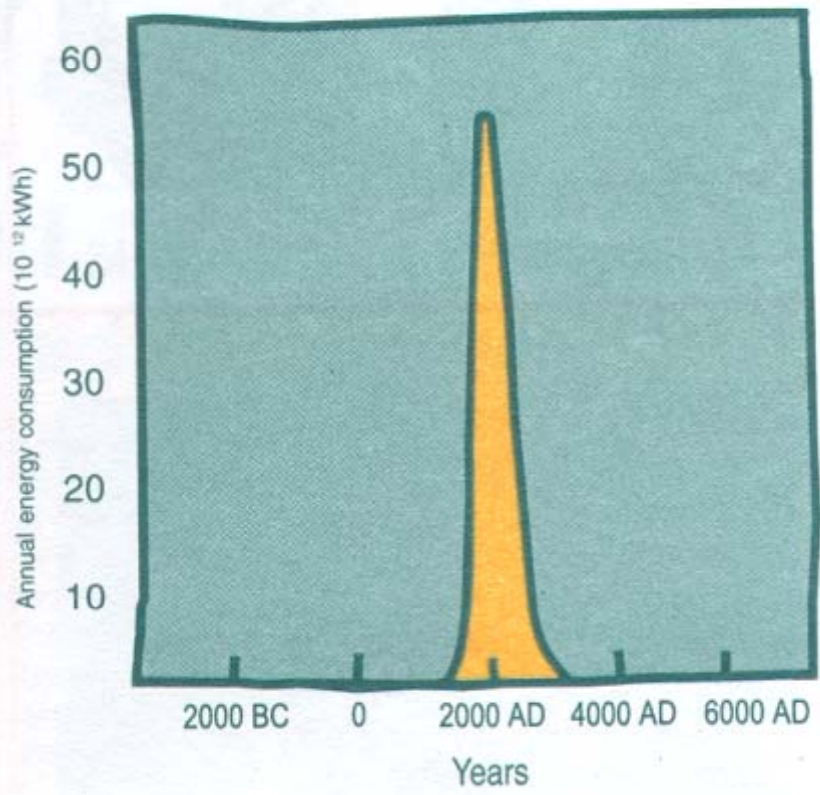
...and it's getting worse



Where does ENERGY come from?



- Electricity
- Paraffin
- LPGas
- Diesel
- Petrol
- Candles
- Dung
- Batteries
- Firewood
- Muscle power



A long-term view of world consumption of fossil energy

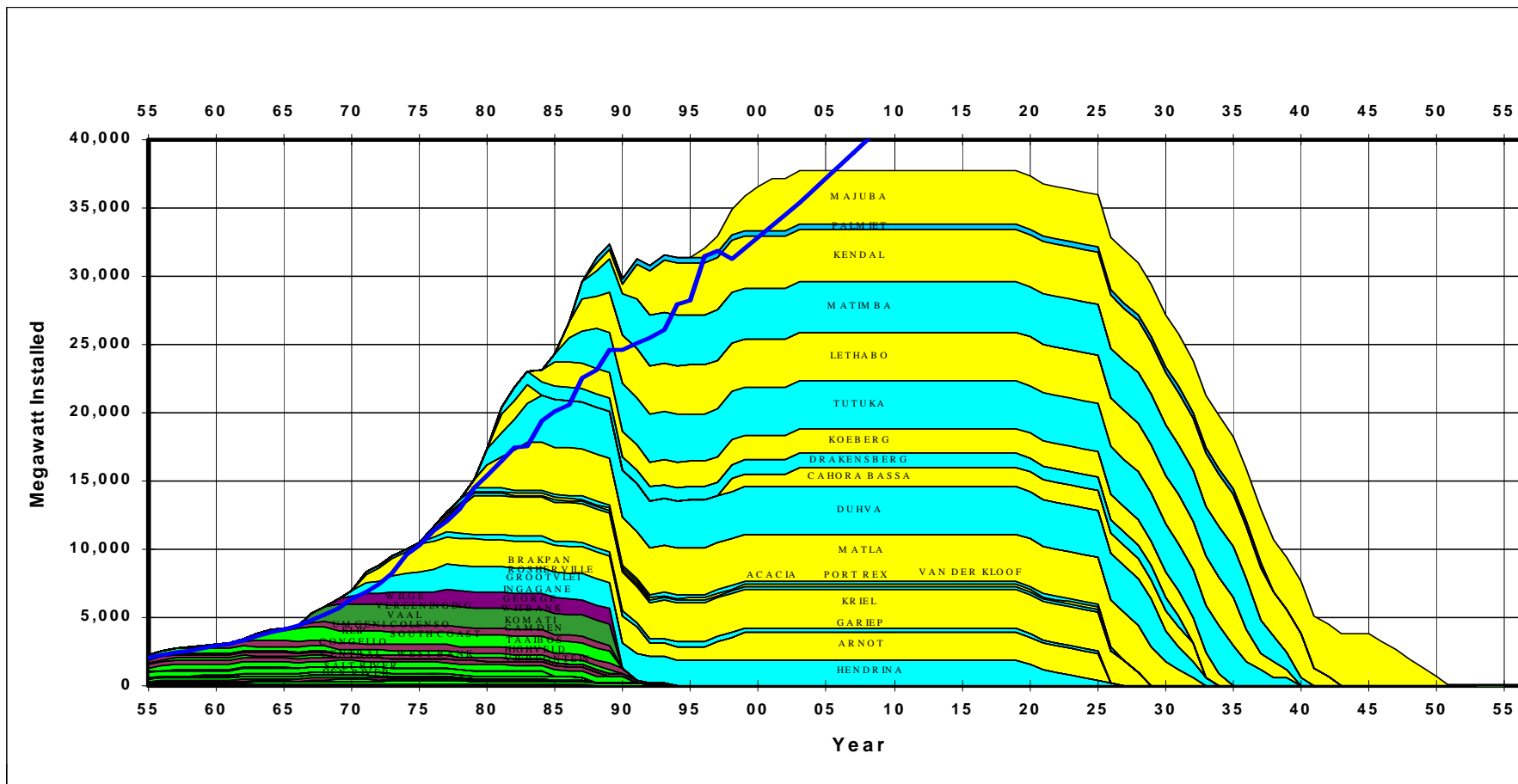
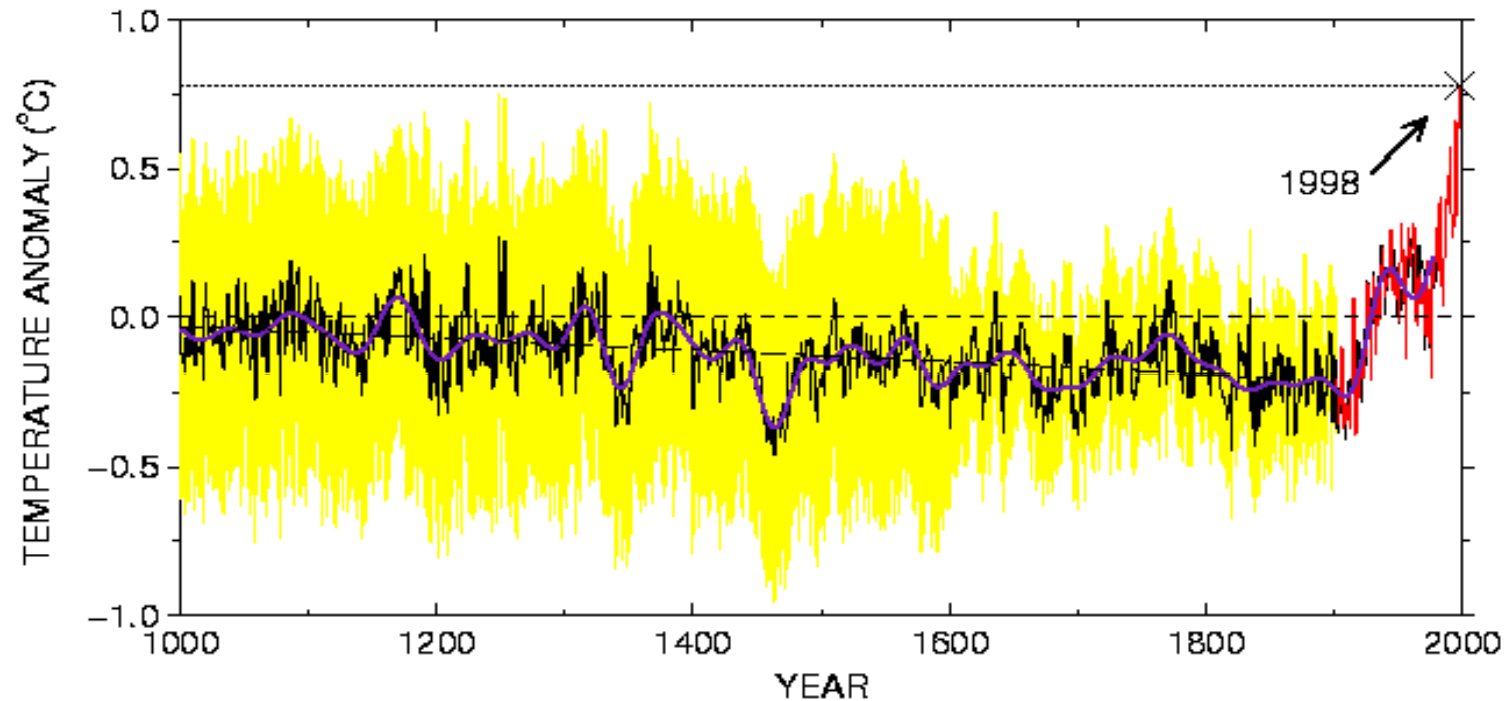


Figure 5: Eskom Electricity generating capacity as a function of time - the solid line indicates actual and projected demand

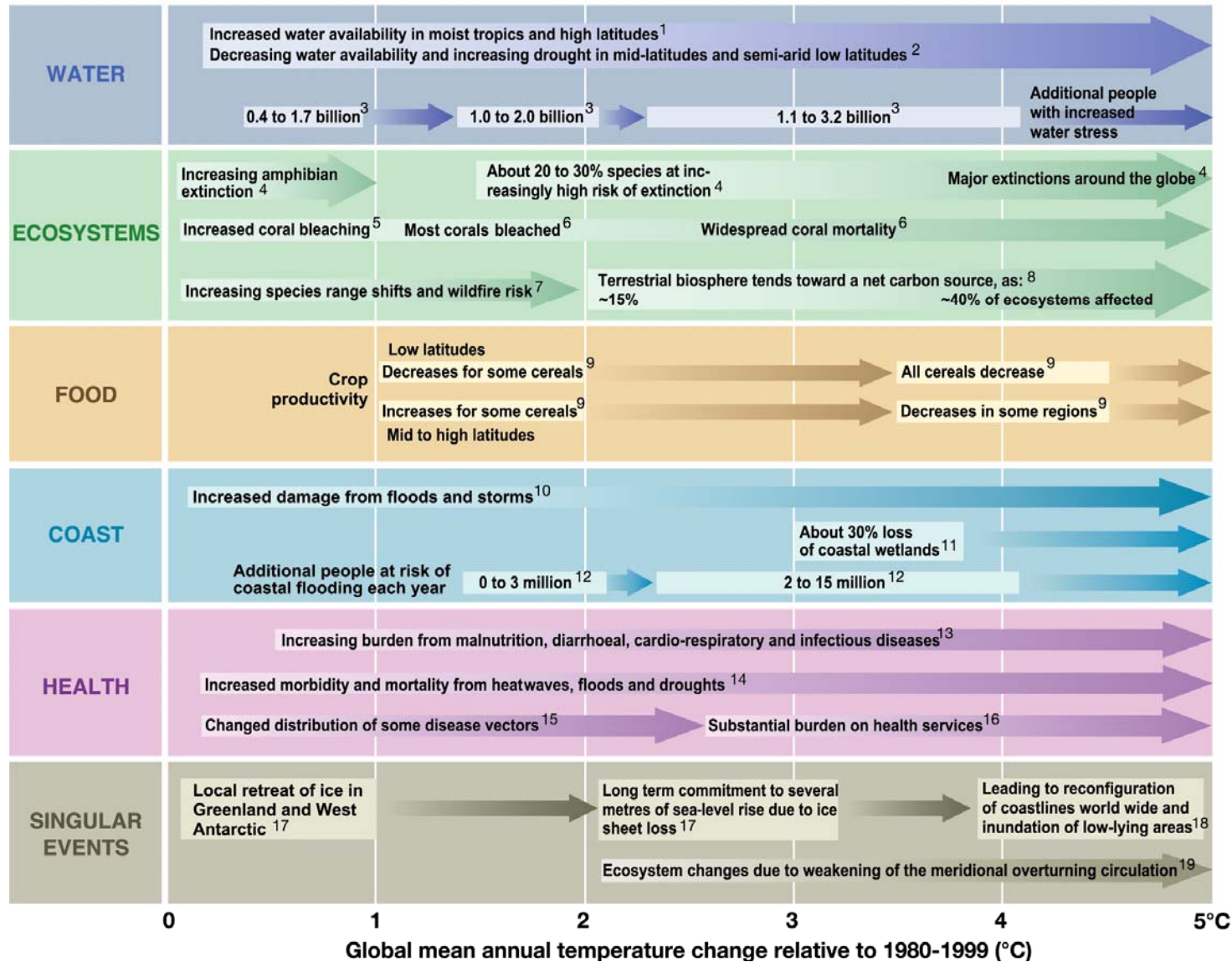
Climate Change: global warming caused by fossil fuel combustion (mostly)



- reconstruction (AD 1000–1980)
- instrumental data (AD 1902–1998)
- calibration period (AD 1902–1980) mean
- reconstruction (40 year smoothed)
- linear trend (AD 1000–1850)

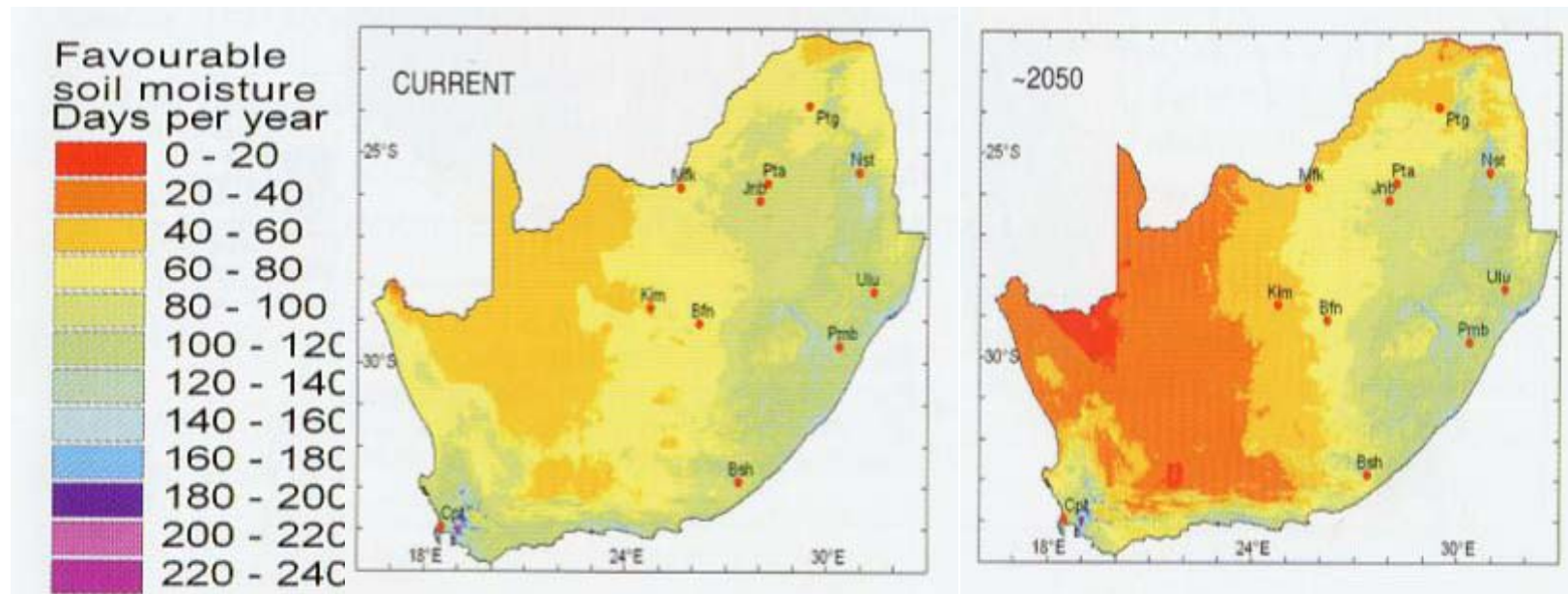
Government's Vision, Strategic
Direction and Framework for
Climate Policy

Beyond 2°C it becomes dangerous for us

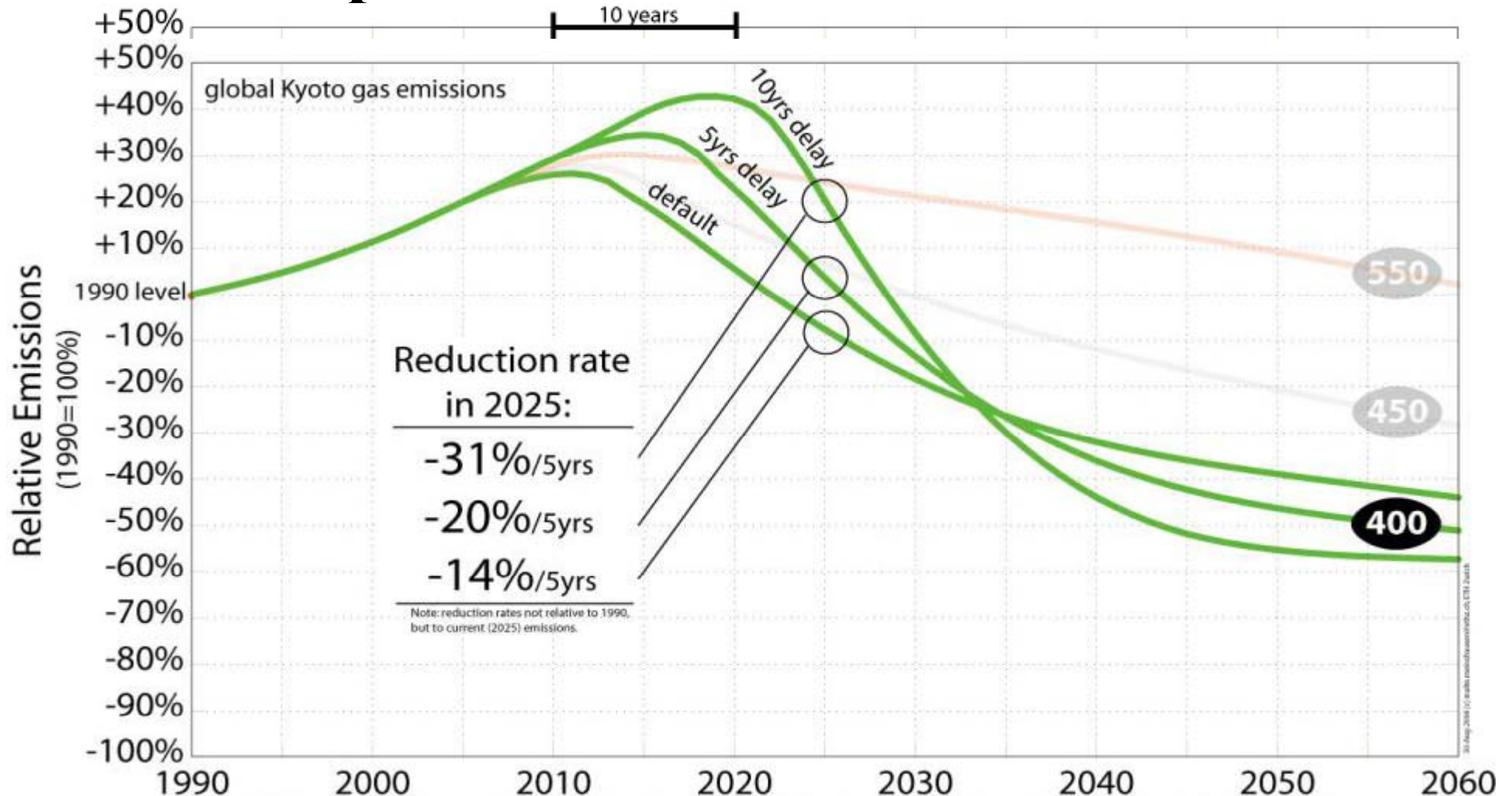


Food security in South Africa will be

*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 5550Cc, 5450Cc, and 5400Cc 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 ALN by 2015.

LTMS

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
- Dept of Agriculture
- Presidency
- SAWS Weather Service
- CEF / SA Nat'l Energy Research Institute
- NERSA Energy Regulator
- W Cape Province (DEADP)
- City of Johannesburg
- ARC

Business

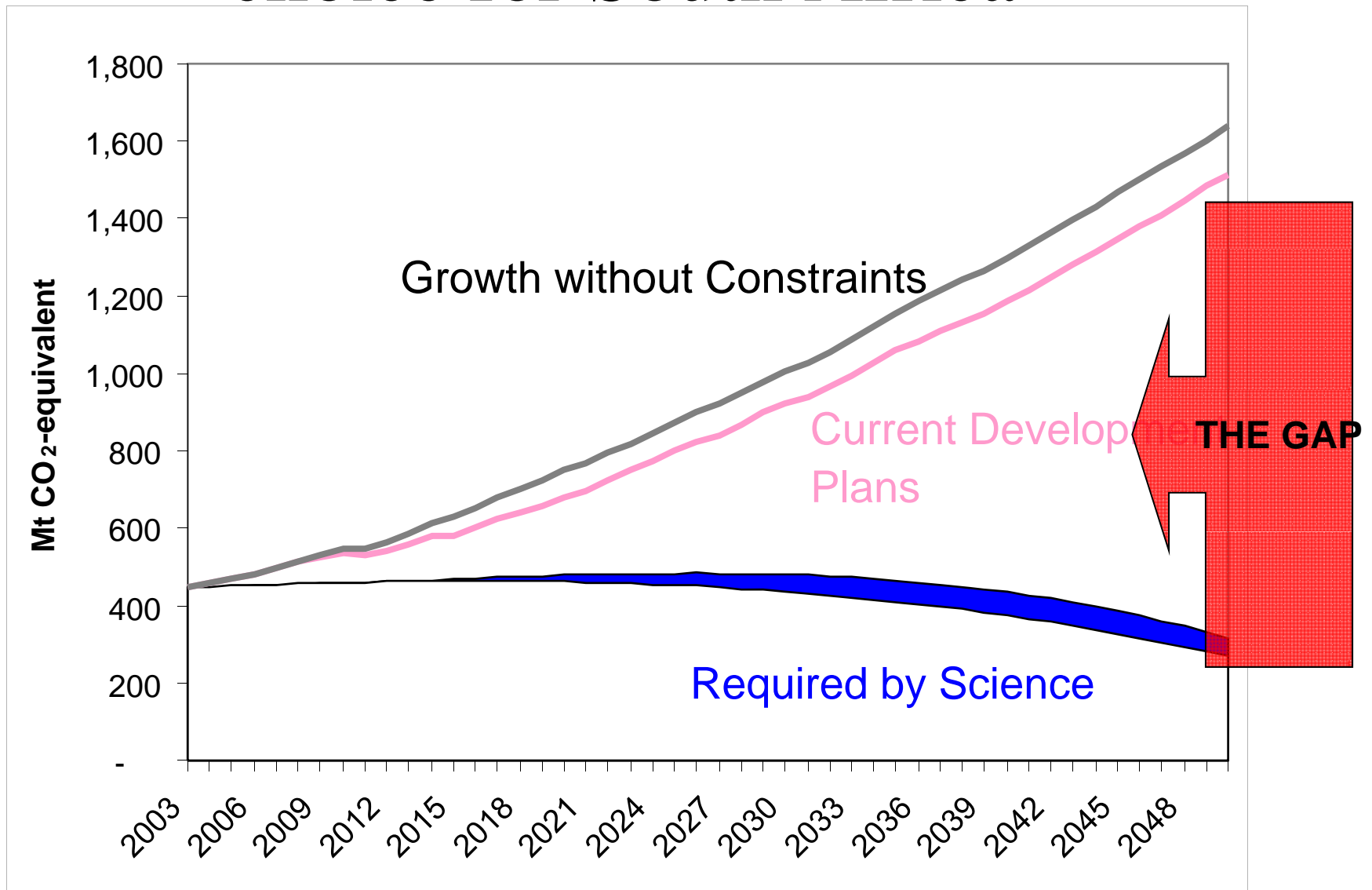
- SASOL
- Eskom
- EIUG Energy Intensive Users Group
- Engen
- Grain SA
- Anglo Coal
- BHP Billiton
- Chamber of Mines
- Aluminium – AFSA
- Kumba Resources
- Chemical – CAIA
- Engen
- Forestry SA
- AgriSA
- Business Unity SA
- Sappi
- Envitech Solutions (Waste)

Civil society

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

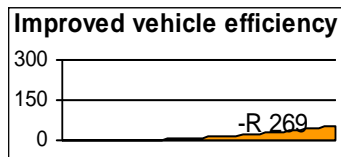
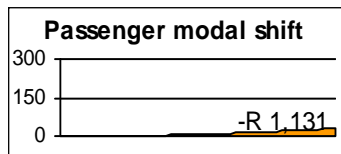
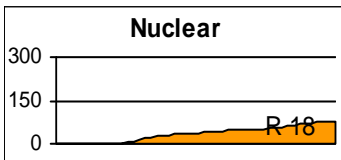
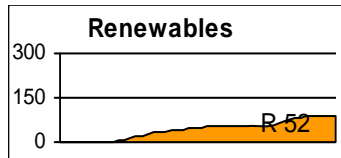
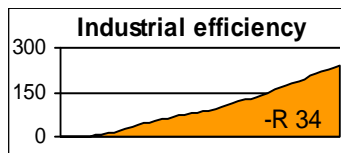


Two Scenarios frame the choice for South Africa

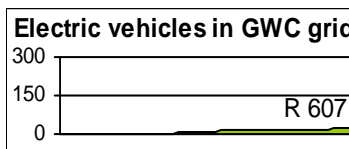
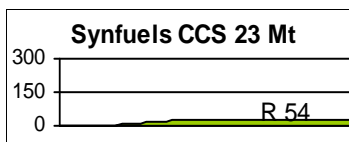
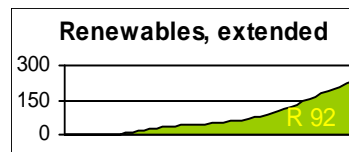
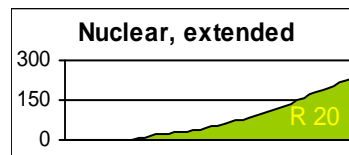
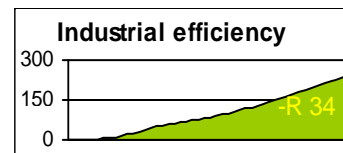


Key steps by Strategic Option

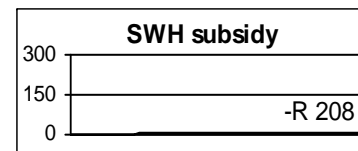
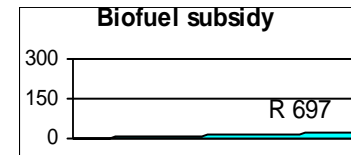
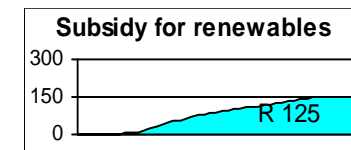
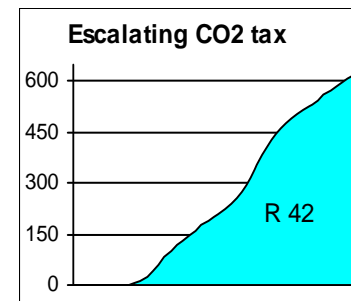
Start Now



Scale Up



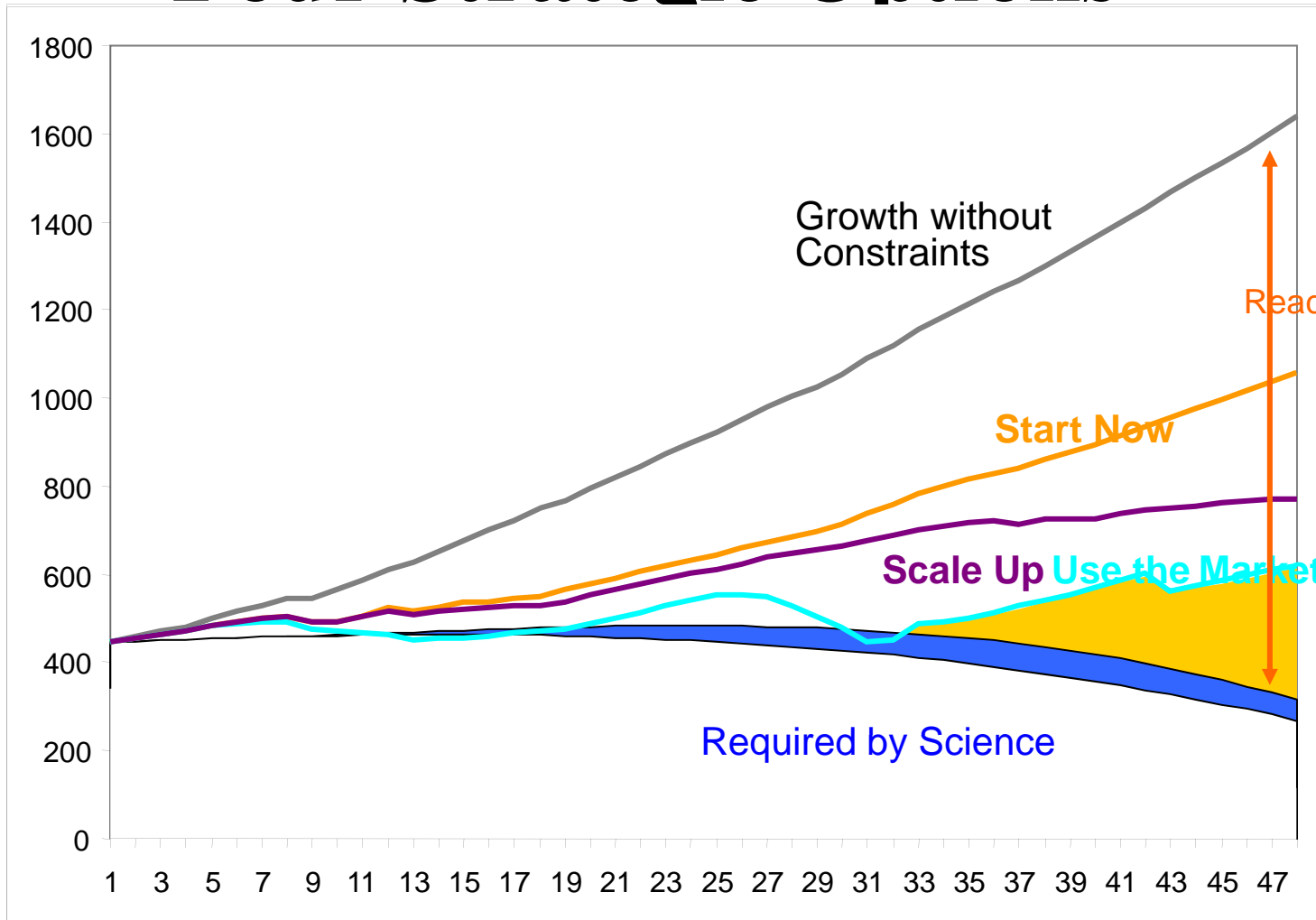
Use the Market



Reach for the Goal

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

Four Strategic Options

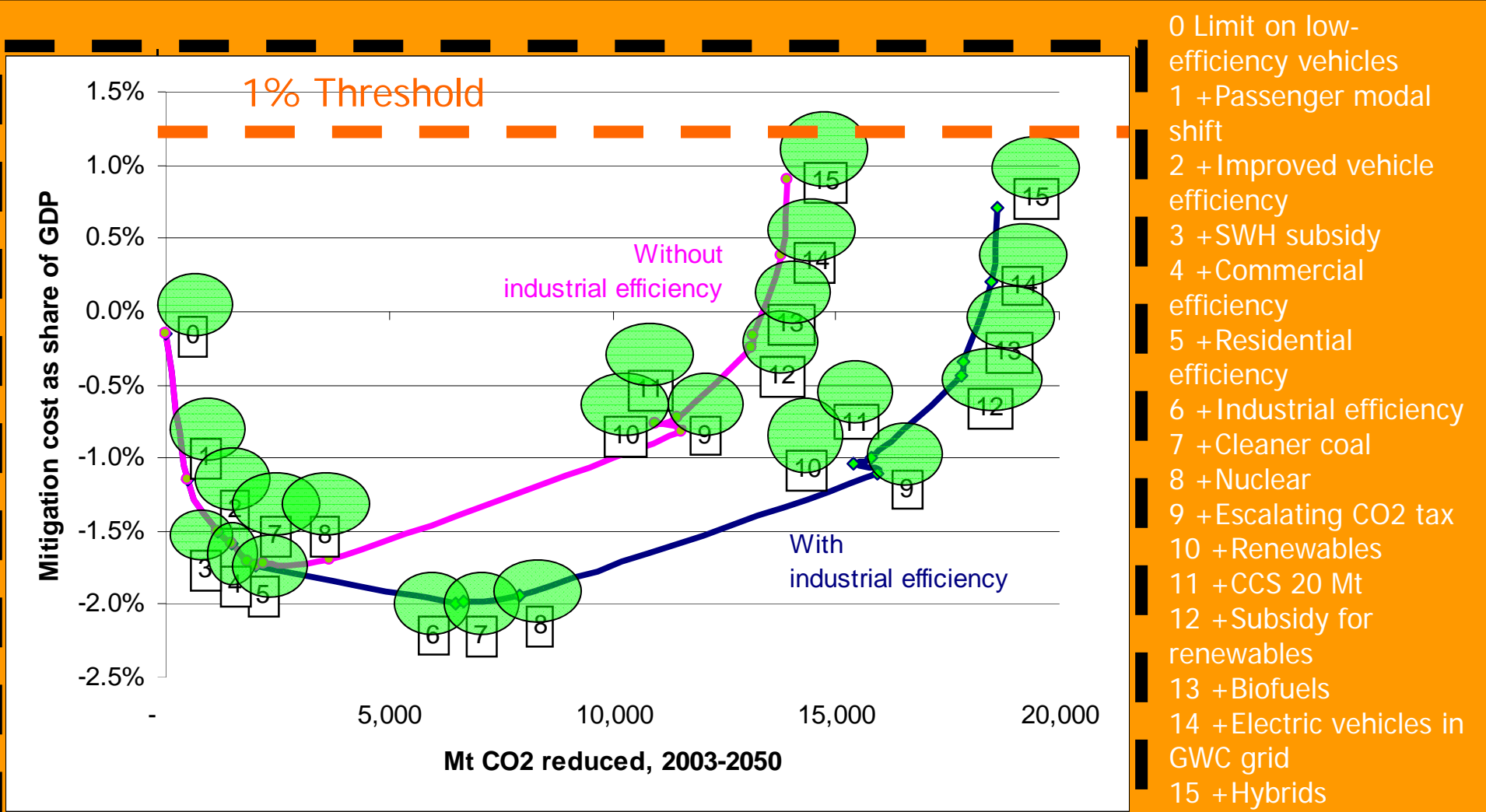


ECONOMY-WIDE MODELLING

Economy-wide implications – dynamic modelling

- **Start Now:**
 - GDP impacts negative over the period – less than 1/10th of a percent.
 - Modelling does not fully account for savings from energy efficiency being spent elsewhere in the economy.
 - Pattern of socio-economic impacts is confirmed – decreases in jobs for lower-skilled households.
 - However, most households are better off due to lower energy prices.
- **Scale Up:**
 - High growth effect due to higher levels of investment.
 - GDP impact even more positive (from 1 to 1.3%) than under static model.
 - Wage income increases for all skills groups (between 17% and 29%).
 - Welfare improves for low-income groups, with a decline in welfare among richer households who derive most income from capital, not wages.
- **Use the Market:**
 - Impact on GDP is mildly positive (0.73%) instead of the previous minus 2%.
 - Price increases are overshadowed by higher investments.
 - Income from employment increases for all household groups.
 - Differences in welfare effects are marginal.

What will it cost?



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

POLICY PILLARS

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 (*made mandatory and more ambitious targets*).

- Streetlights
- Efficient buildings
- Ceilings in houses
- Solar water heating
- Efficient industry
- Stepped/TOU tariffs



Treasury introduction of a **carbon tax**

Theme 3: “Business Unusual”

- The **renewable energy** sector
- Government must promote the **transition to a low-carbon economy** and society and all policy and other decisions
 - Planning decisions – people and activities close together
 - Green building regulations
 - Localising – food, materials, energy sector
- The **transport sector** : efficient vehicles and public transport

Theme 4: Preparing for the future

- **Research and development** : carbon-friendly technologies – renewable energy and transport sectors; new planning approaches.
- Formal and informal forms of **education and outreach** to support implementation of the climate change response policy.



Theme 5: Vulnerability and Adaptation

- LOCAL
- identify and describe **vulnerabilities** to climate change.
- identify and prioritise **adaptation interventions** (infrastructure, location of development and informal settlements, appropriate service delivery, disaster management) and include these in all LG 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.

National Energy policy and direction

National Energy Efficiency Strategy (2005; 2008)

- 12% by 2015 (mandate from White Paper, 1998 and Energy Act 2008), with sector specific targets

White Paper on Promotion of Renewable Energy (2004)

Target of 10 000GWh of RE contribution to final energy by 2013 (approx 4% of projected energy demand by 2013), includes elec generation and non-elec technologies e.g. SWHs and biofuels.

Recognise need for a regulatory framework for electricity tariffs that should be based on full cost accounting - REFIT (NERSA)

Financial support: RE fund (REFSO - small; RMTP - World Bank/DBSA).



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National policy and direction ctd

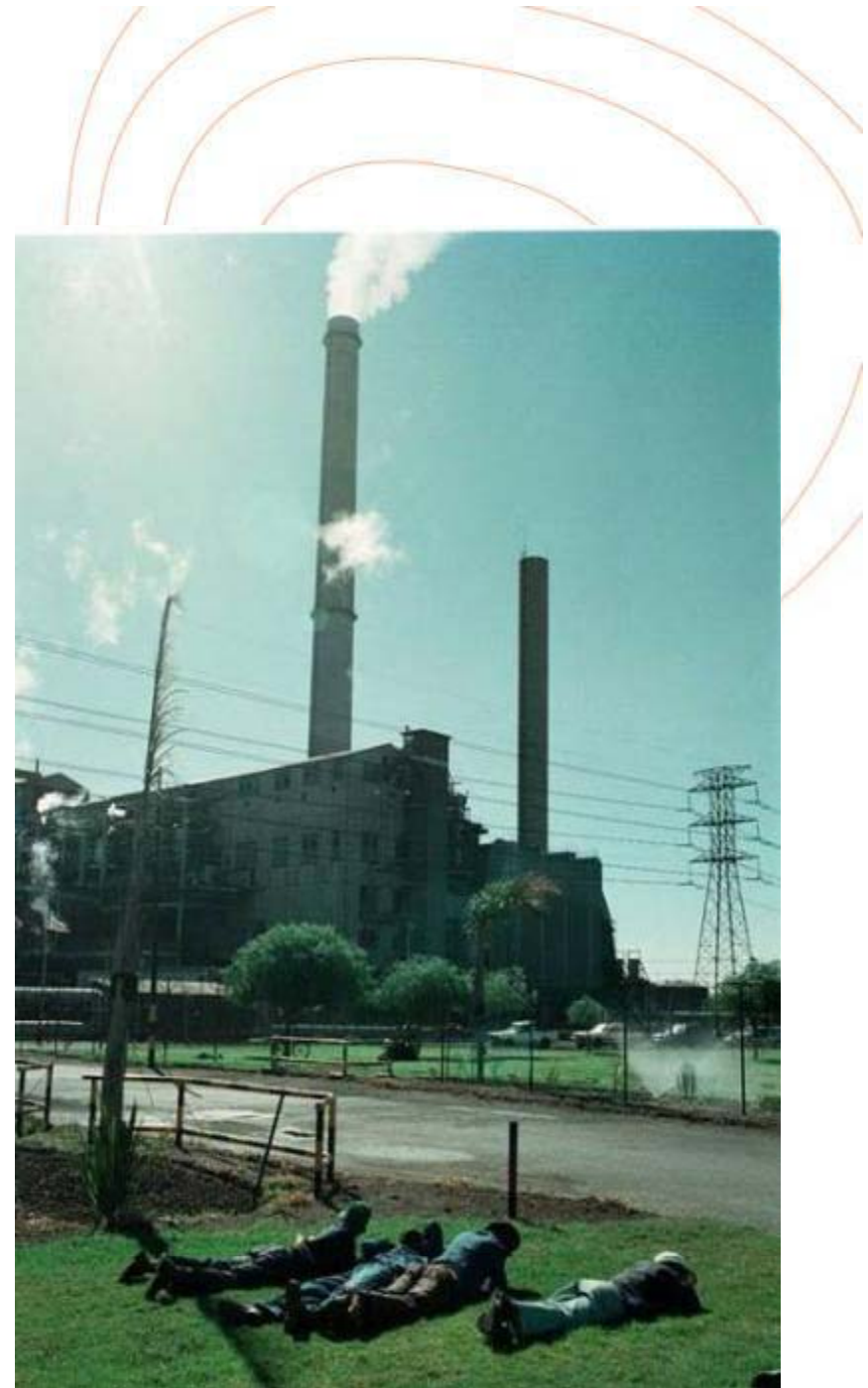
National Electricity Response Plan, Eskom/NIRP 3 targets of 3000MW by 2012 and additional 5000MW by 2025; Power Conservation Programme - broadly a 10% reduction off peak to stabilise the grid.



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Institutional development for RE/EE implementation

Political support: council resolution; IDP priority area; champion; exec management score cards

Policy and regulation: Energy and CC strategy; EE strategy; IDP; efficient building/water heating by laws

Resources and capacity: dedicated departments/unit/team with staff and budget - systematic, reliable and ongoing; plus cross-cutting team of staff from all depts with

Action plan/work streams: delivery on programme goals part of KPI's

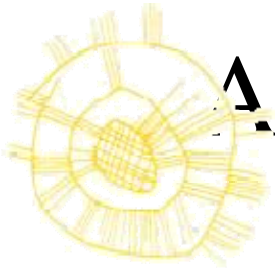


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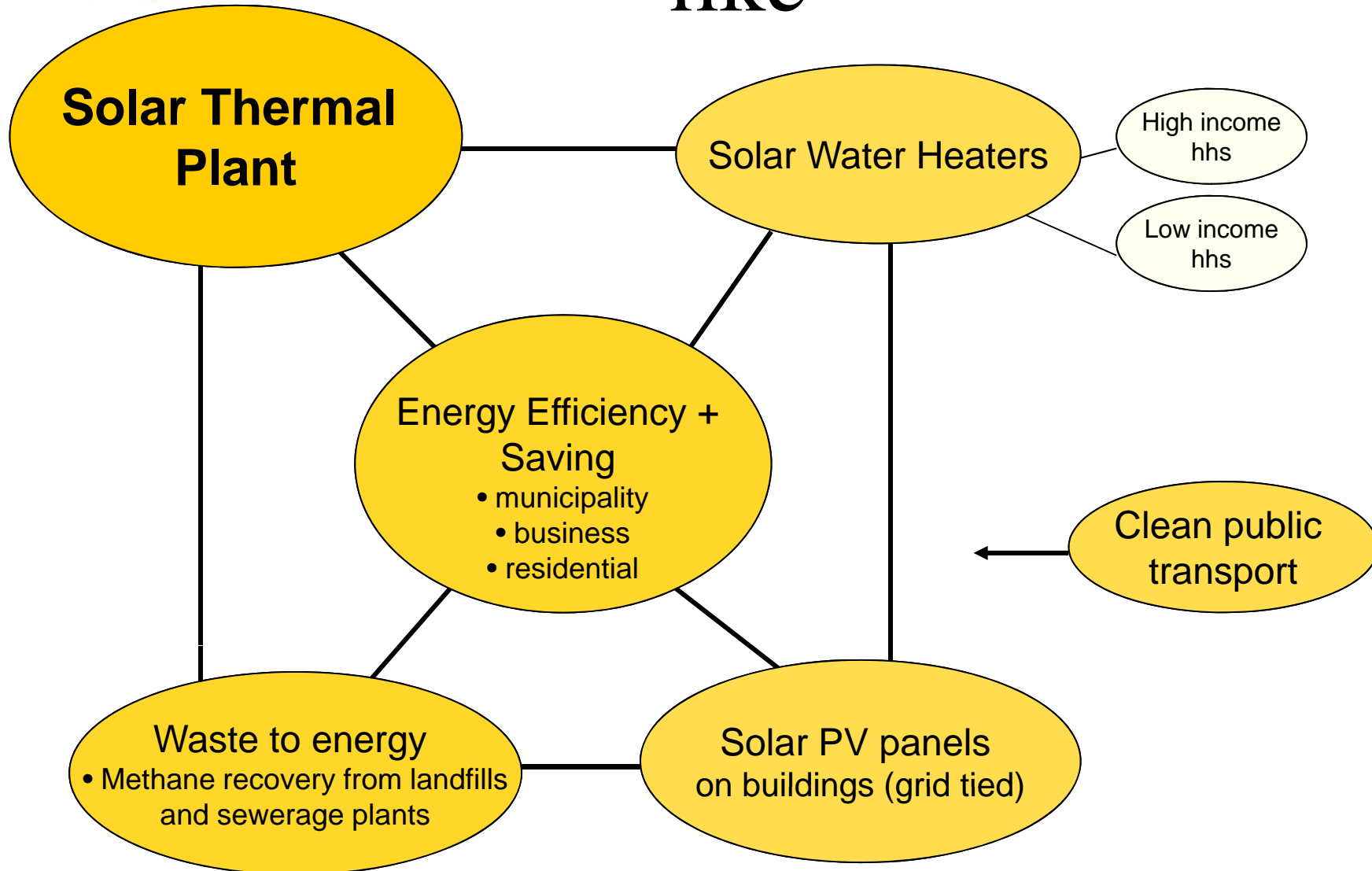
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A solar focus: what it could look like





Thank You



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