
Low Carbon Study South Africa

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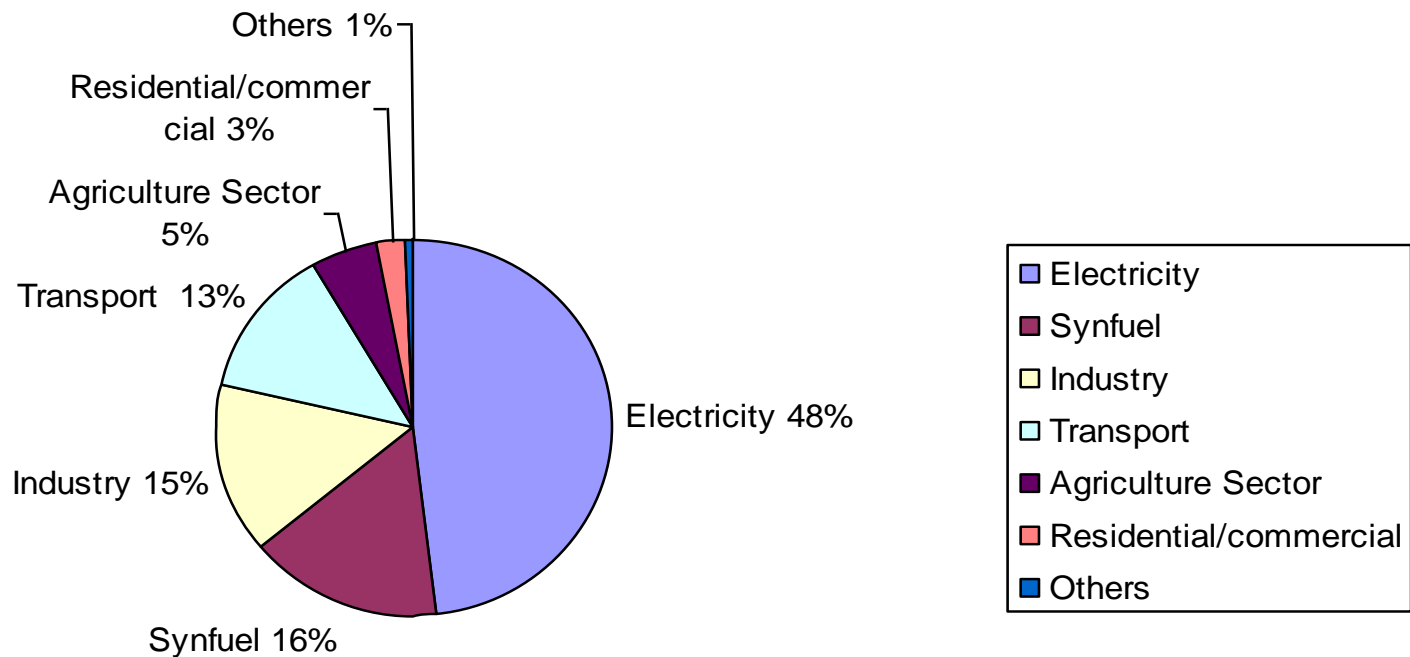
South Africa's Greenhouse Gas Emissions

- 11th largest emitting country worldwide (1.5% of the total global emissions), largest emitter in Africa
- More than 90% of CO₂ emissions from energy (power, industry, and transport)
- Heavy reliance on coal: 75% of total energy consumption
- Sasol's Secunda plant: the single largest source of GHG emissions in the world



Energy sector contributes to more than 90% of CO₂ emissions

Figure 3. Sectoral CO₂ Emissions in South Africa

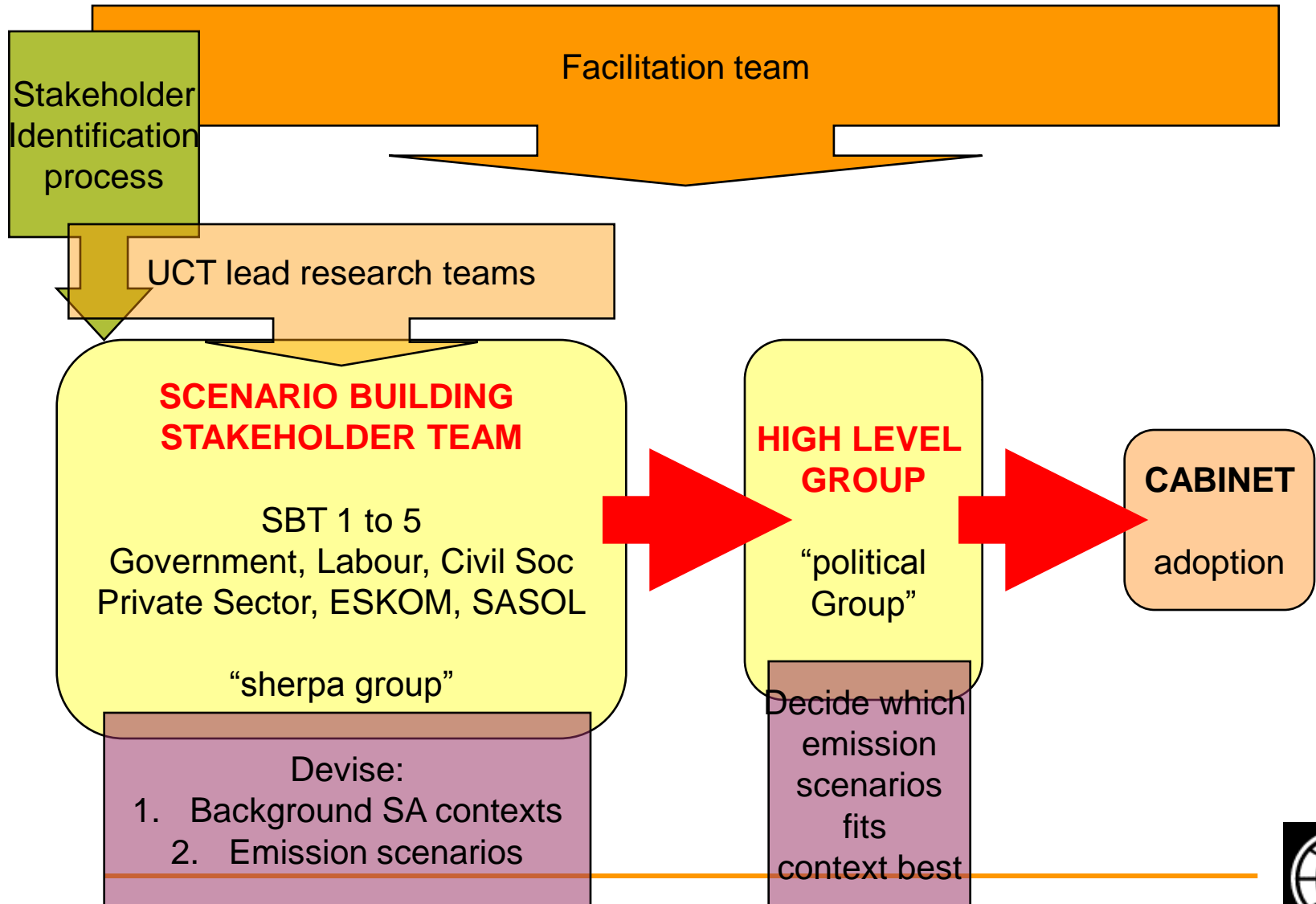


Long-Term Mitigation Scenario (LTMS)

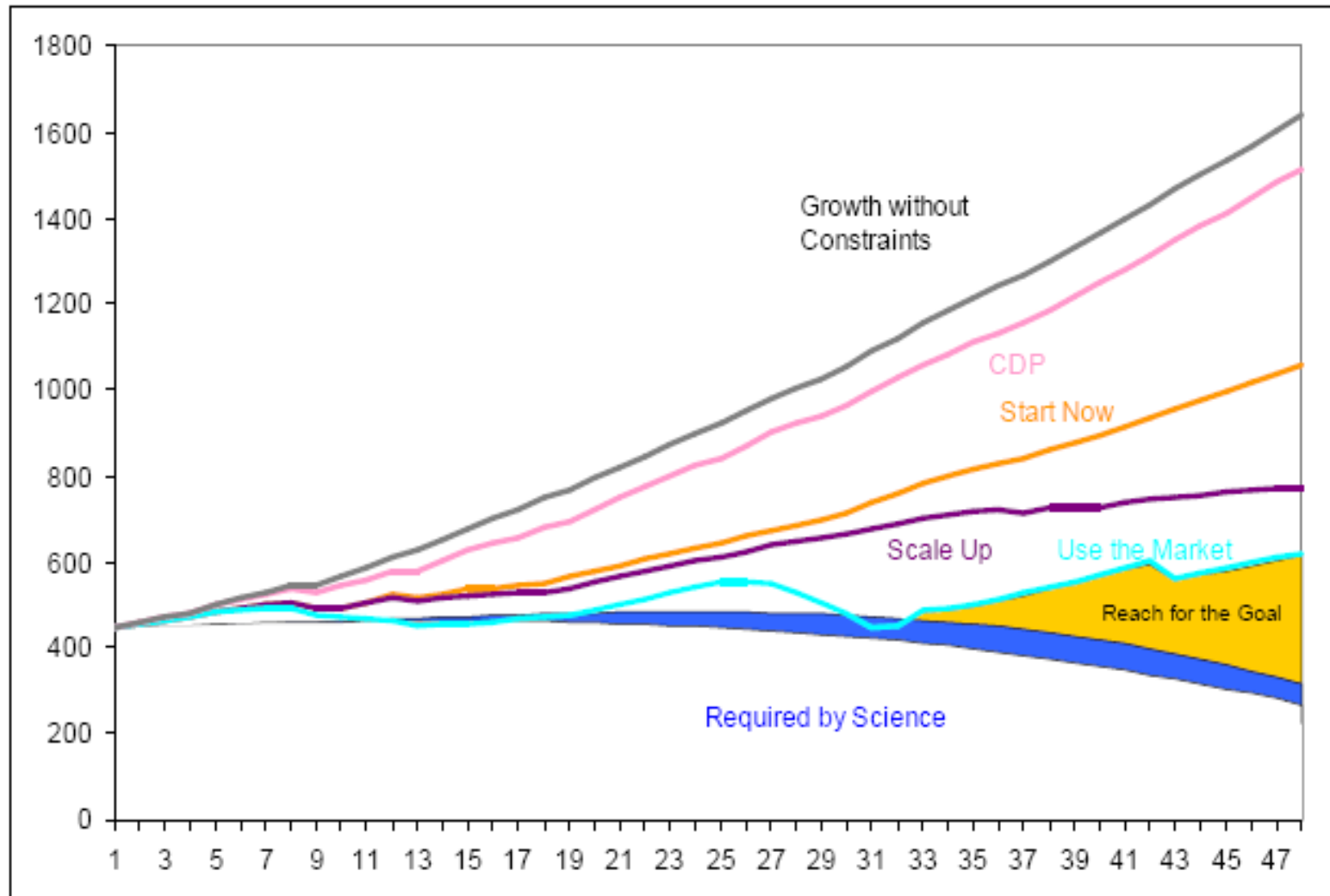
- Combine high-quality research-based **scenarios** with extensive **stakeholder consultation process**
- **Goal:** to limit global temperature increase to 2°C above pre-industrial levels
- Emission must **peak at 2020-2025, plateau** for a decade, and then **decline** in absolute terms
- **Economic instrument:** carbon pricing
- To reach the goal requires **R&D, behavior changes, and structural changes**



LTMS PROCESS



LTMS Scenarios



Big Five Mitigation Wedges



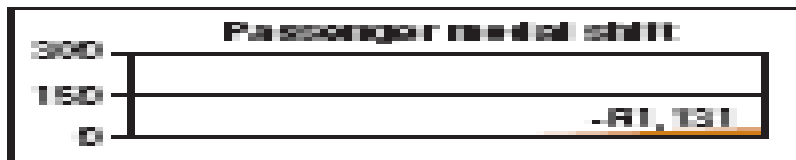
Industrial Energy Efficiency



Renewable Energy



Nuclear



Modal Shift



Vehicle Fuel Efficiency



Low Carbon Study: Implementation Support to LTMS

- **International Peer Review of the LTMS**
- **TA on energy efficiency and demand side management**
 - ***Institutional Arrangement—support institutional champions***
 - Utility-based EE/DSM program, National Energy Efficiency Agency, and Department of Public Works
 - TA provided: building capacity and providing incentives
 - ***Financing Mechanisms—help spend domestic funds effectively***
 - Funding sources
 - Who administrate the funds and implement the programs
 - How to most efficiently and effectively use the funds
 - ***Short-term Response to Power Crisis—advise demand response as crisis management***
 - Market-based power rationing – Brazil and California experience

In parallel, GEF-funded Renewable Energy Market Transformation Project (REMT)



Supporting Institutional Champions

- **National EE Strategy:** 12% EE improvement by 2015
- **ESKOM EE/DSM program:** the main institutional mechanism
 - **Target**--3,000 MW savings over five years: bulk procurement of 30 million CFLs and 1 million solar water heaters
 - **EE/DSM Fund**--tariff surcharge (2 billion Rand/yr): TA provided to streamline the fund
 - **But enabling framework has to be in place:** decouple revenues from electricity sales
- **National Energy Efficiency Agency (NEEA)**
 - NEEA established but lacks of mandates and resources
 - **TA provided for organization development:** responsibilities and business plan (learn from NYSERDA experience)
- **Department of Public Works**
 - TA on energy performance contracts for energy efficiency in public buildings



Recommending International Best Practice of EE/DSM Fund

- **Funding sources:** tariff levies (not government budget) are the most reliable and sustainable funding source
 - *adopted in the proposed Money Act*
- **Fund management:** utilities, dedicated government agencies, or third parties can administer EE/DSM funds
 - *government plans to move EE/DSM fund to NEEA*
- **Efficient and effective use of the funds:** standard offer approach
 - *adopted by ESKOM and Department of Energy*



Transferring Standard Offer Model

What is a Standard Offer?

- Energy users or energy service companies (ESCOs) are paid a fixed amount of pre-determined and pre-published subsidy based on verified energy and/or demand savings (R/kWh and/or R/kW)
- Standard offer is based on the value of the energy savings but not the cost of the project implementation

Why the Standard Offer Approach?

- Streamlined implementation - easier and faster for ESCOs to generate projects.
- Simplified contracts between fund manager and ESCOs
- Reduced burden for fund administration
- Leveraging commercial financing



Scaling Up Renewable Energy

- **RE White Paper:** 10,000 GWh target by 2013
- **REMT Project:**
 - RE Policy and regulatory frameworks
 - Capacity building and matching grant to RE power developers and solar water heater industry
- **Feed-in tariffs in place** for CSP, wind, small hydro, and landfill gas
- **Solar water heaters:** A government priority, but slow progress
 - Identify an institutional champion: National SWH Utility?
 - Increase affordability: consumer leasing model through municipalities
 - Build a local manufacturing industry
 - Provide training to installers



Main Messages

- The South Africa Government is committed to deep GHG emission reductions
- The LTMS outlines climate mitigation priorities, most of them at relatively low abatement cost
 - energy efficiency, renewable energy, nuclear, modal shift, and vehicle efficiency
- The Low Carbon Study provides implementation support to LTMS and inputs to CTF
- Main challenges for implementation
 - Policy and regulatory frameworks
 - Institutional arrangement and alignment
 - Financing mechanisms

