

South Africa's Industrial Energy Efficiency Programmes

Driving Impacts and Outcomes

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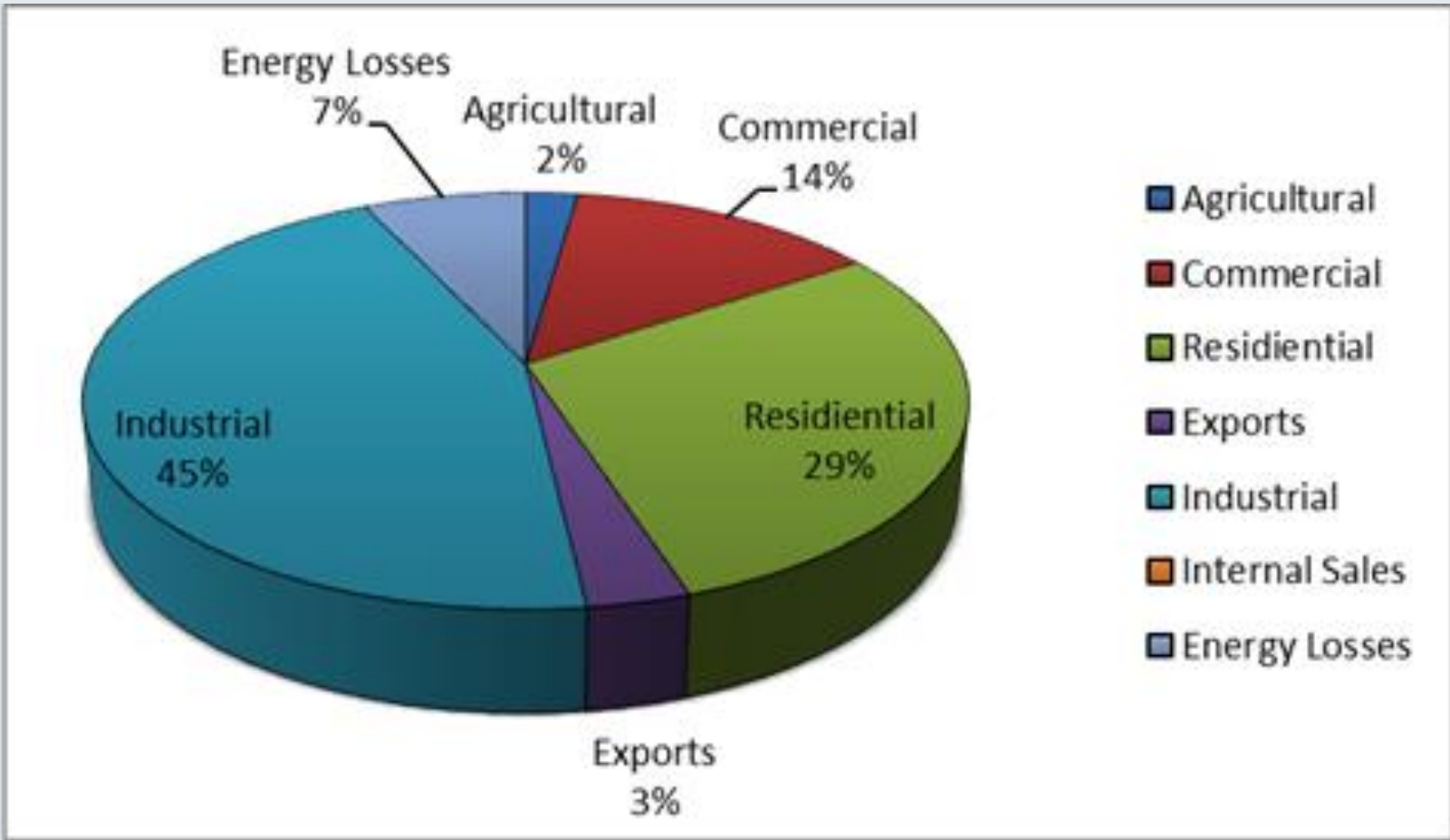


Presentation Points

- National Response to Climate Change
- Industrial Energy Efficiency Project
- Key Lessons



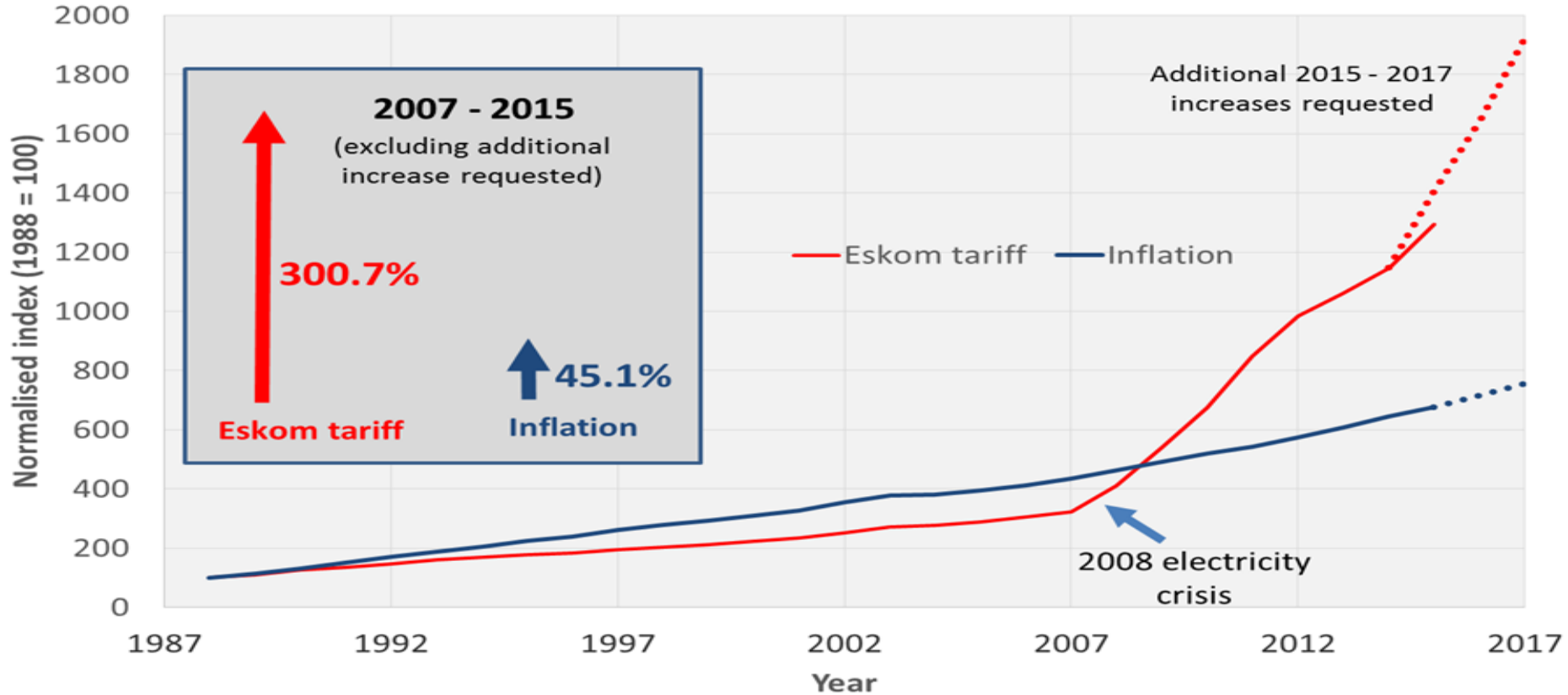
South African Energy Use by Sector





Electricity Tariff Escalation

Eskom average tariff vs. inflation (CPI)



Relevant National Priorities

The Presidency

Overarching development plan (NDP)

Climate Change Mitigation (NCCRP)

Department of Energy

Energy Efficiency Policy & Energy Plan (EE & IRP/IEP)

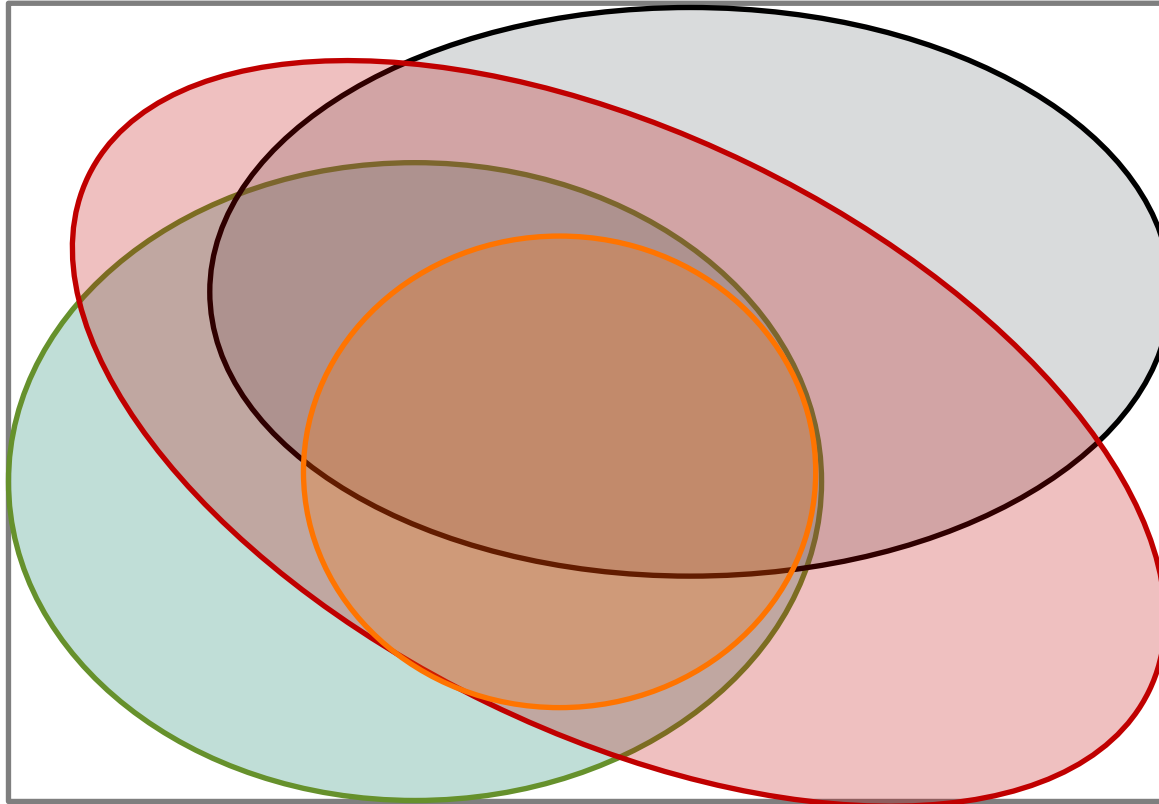
Green Economy

Industrial Policy (IPAP)

Department of Environment Affairs

National Treasury

Department of Trade & Industry





Near Term Priority Flagship Programmes

- Public Works
- Water Conservation and Demand Management
- Renewable Energy
- Energy Efficiency and Energy Demand Management
- Transport
- Waste Management
- Carbon Capture and Sequestration
- Adaptation Research

- Energy White Paper - 1998
- National Energy Efficiency Strategy (NEES): (2005-2015), (2016-2030)
- Renewable Energy White Paper – 2003
- Electricity Basic Services Support Tariff Policy - 2003
- Biofuels Industrial Strategy - 2007
- National Climate Change Response Strategy (NCCRS)
- National Energy Act No. 34 of 2008
- Integrated Resource Plan for Electricity 2010-2030 (IRP2)
- Integrated Energy Plan (IEP) (not yet promulgated)
- Income Tax Act Amendments (12i/k/l...) – Tax incentives for EE savings
- SANS 941 – Energy Efficiency of Electrical and Electronic Apparatus
- 2nd National Communication to UNFCCC
- Energy Efficient Leadership Network (EELN)

Primary Development Goal

‘to **increase industrial energy efficiency** in South Africa and thereby contribute to national efforts to improve energy security while ensuring that GDP growth is not constrained by energy shortages and rising energy prices’

Component 1
IEE Policy Development

Component 2
Energy Management
Standards

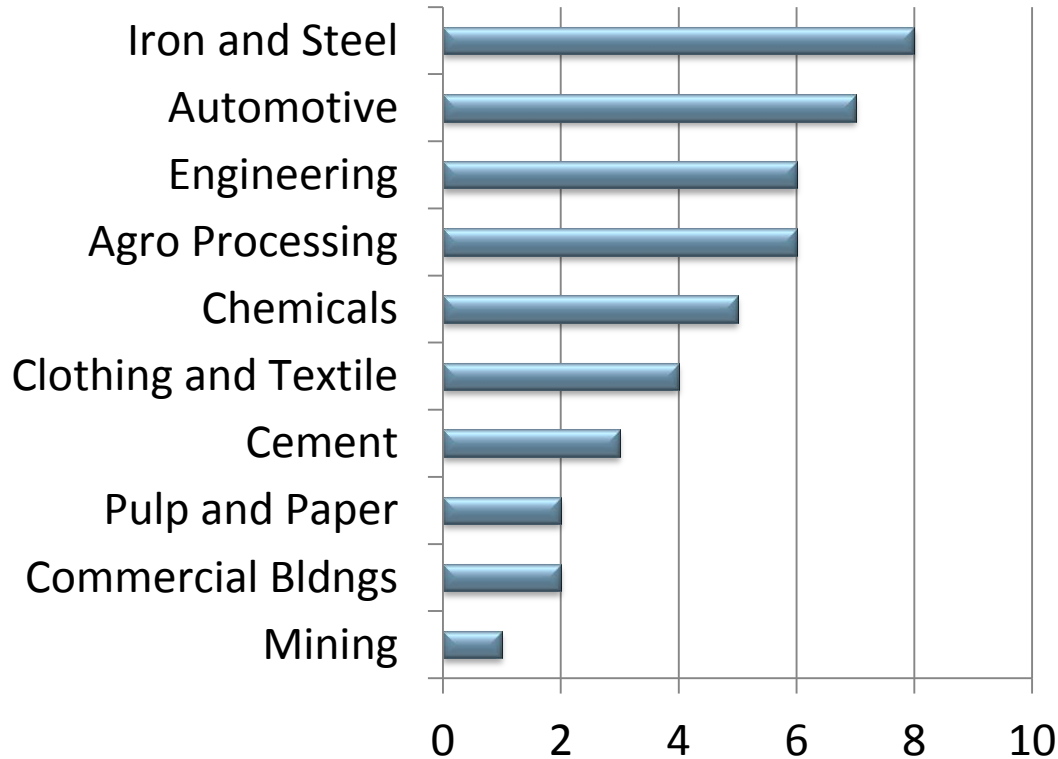
Component 3
Training

Component 4
EnMS and ESO industrial
demonstration plants



Engagement Footprint

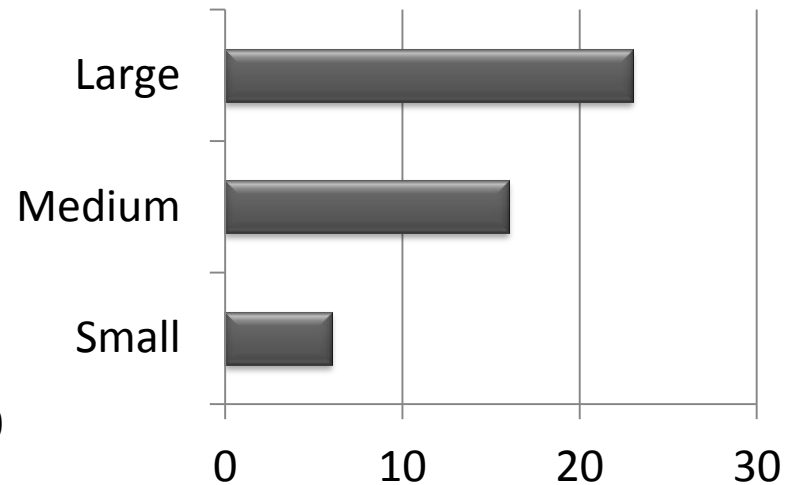
By Sector



Annual Energy Consumption

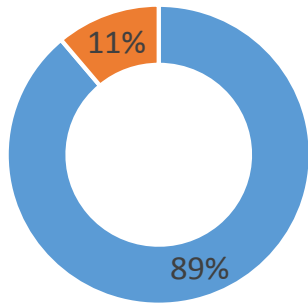
- Small: € 20 000 – € 55 000
- Medium: € 55 001 – € 1.7M
- Large: > € 1.7M

By Company Size



Project Results (2010-2015)

EnMS Implementation



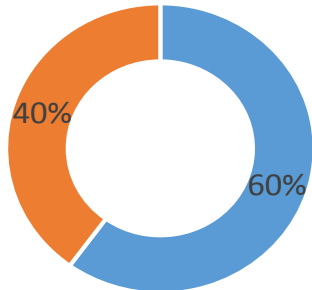
EnMS TA recipient plants: 81

Successful implementation: 77

Reporting data to IEE: 25

■ Successful Implementation ■ Withdrawals

ESO Implementation



Assessments (incl. host & candidate plants): 185

Implemented recommendations: 65

Reporting data to IEE: 20

■ Successful Implementation ■ Recommendations Not Taken Up

Training

- 3200 Engineers and Managers trained (40 Lead Auditors; 156 EnMS/ESO Experts; 53 National Trainers)

Case Studies

- 58 completed

Energy Saved

- 2 119 GWh
- € 125M

GHG Mitigation

- 1.9m tCO₂e

Policy Development

- 2nd National Energy Efficiency Strategy
- Energy consumption reporting and 5 yr EnM Plans

Energy Management Standards

- Operationalization of ISO 50001
- Published ISO 50002/3/4/6/15



Qualitative Outcomes

- Role of UNIDO, CSIR and NCPC-SA in driving success
- Fostered growth of a viable energy service sector in South Africa
- Pioneered focus change from component to system optimisation
- Promoted dialogue within sectors, industrial supply chains and equipment vendors
- Elevated the importance of behaviour change in driving and sustaining gains
- Created conditions for similar inspired Energy Efficiency programmes in the country and the region



Key Lessons

1. Active participation and co-ordination of all stakeholders

2. Remove barriers to Government incentives and establish funding mechanisms for SME's

3. Integrated policy development & implementation

4. Top-down and bottom-up approach drives sustainability

5. Pervasive communication and awareness raising

6. Consideration of the Human Factor and socio-economic value-add

7. Importance of effective sub-metering

8. Understanding Energy Performance measurement



THANK YOU

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