



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

Energy Services Company Opportunities in South Africa

ESCos demands according to NEES post 2015 and V-NAMA

2017 SAEEEC Conference, Emperors Palace, Ekurhuleni, Gauteng

Wednesday, 15 November 2017

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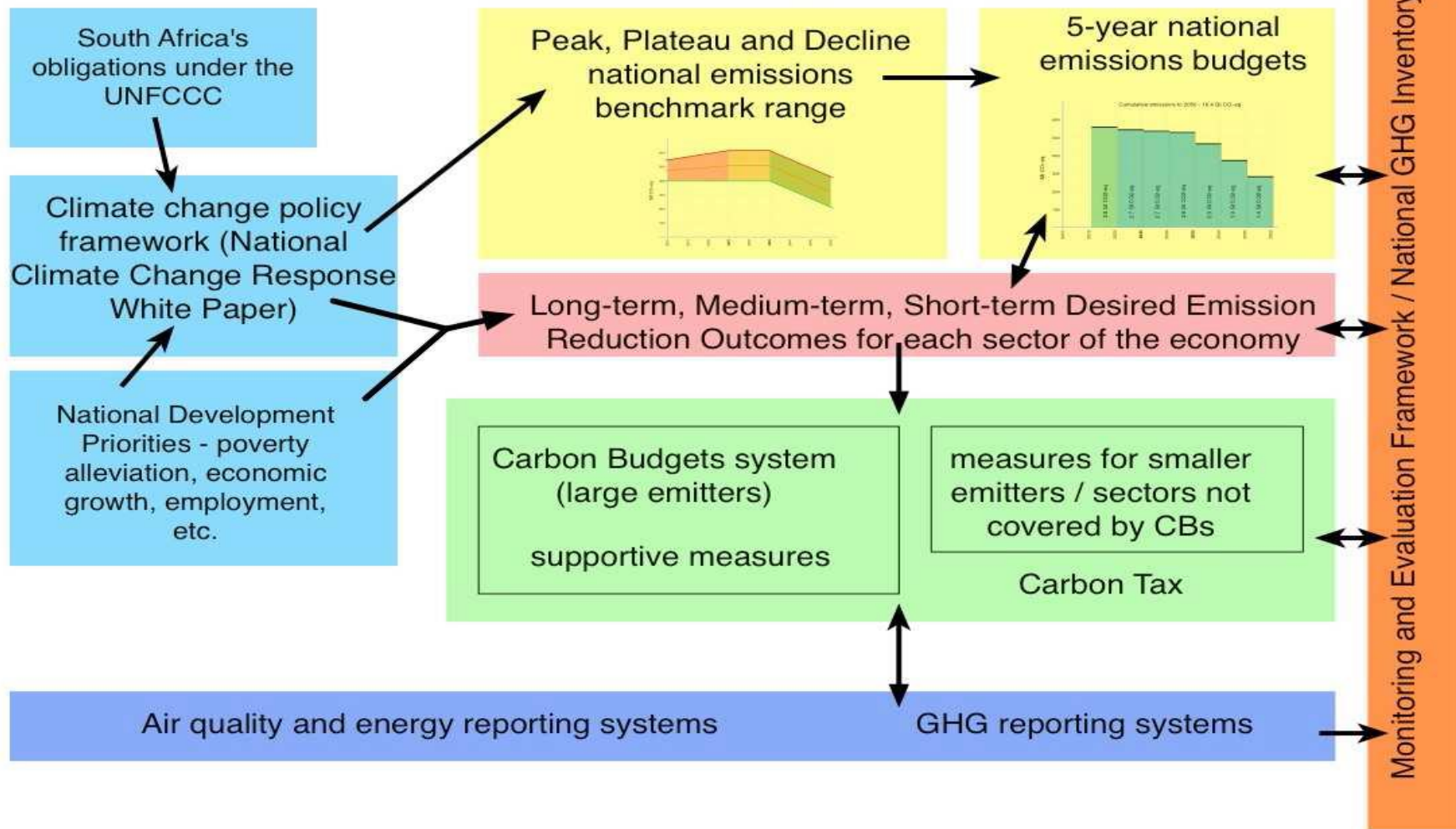
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South African German Energy (SAGEN) Programme

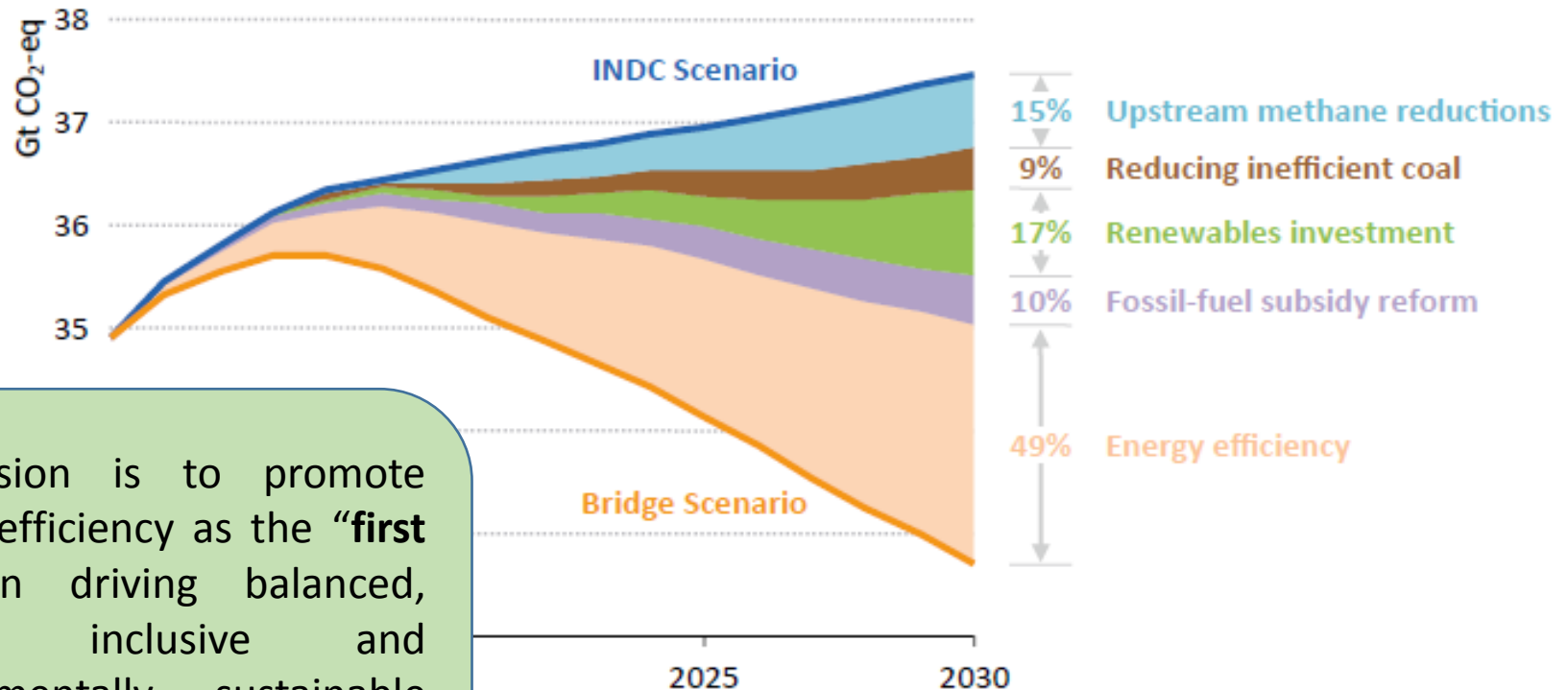
- ❖ Collaboration Agreement between the South African and German governments for the implementation of the South African German Energy (**SAGEN**) Programme.
- ❖ Focus on **Energy Efficiency** and Renewable Energy Technical Support including capacity building and training, system development and advise on policy development.
- ❖ Energy Efficiency & Demand Side Management Programme include support on:
 - implementation of the Solar Water Heating Programme.
 - Installation of LED Street Lighting Technologies.
 - planning and installation of energy efficient technologies in public infrastructure.
 - planning and implementation of co-generation projects.
 - development of the ESCO market.

South Africa's Mitigation Process



Source: Department of Environmental Affairs (DEA), Energy Research Centre, University of Cape Town, 2015

Why is Energy Efficiency important?



SA's vision is to promote energy efficiency as the “**first fuel**” in driving balanced, socially inclusive and environmentally sustainable economic growth, boosting job creation, and leading innovation across the region.

Source: IEA, World Energy Outlook Special Report (Climate and Energy) 2015

National EEDSM Programme: under post-2015 NEES

Cross-cutting energy efficiency measures

Municipal Energy Efficiency

Building energy efficiency

Industrial energy efficiency

Residential Energy Efficiency

Other sectors incl. Transport,
Agriculture, Power



Institutional
measures

- Support the professionalisation of ESCOs
- Energy endorsement label
- Energy efficiency technology hub

Fiscal measures



- Continuous improvement of 12L to become more relevant

Legal &
regulatory
measures



- Tightening of building standards
- Energy performance certificates for buildings
- Tightening and broadening of minimum energy performance standards



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Energy Efficiency Measures – residential



Institutional measures

- Awareness-raising targeting households and including school curriculum
- Engaging municipalities in the delivery of household energy efficiency
- Energy performance certificates for buildings
- Energy endorsement label
- Energy Efficiency technology hub

Financial measures



- Financial incentives for thermal retrofits of dwellings
- Scrappage scheme for appliances

Legal & regulatory measures

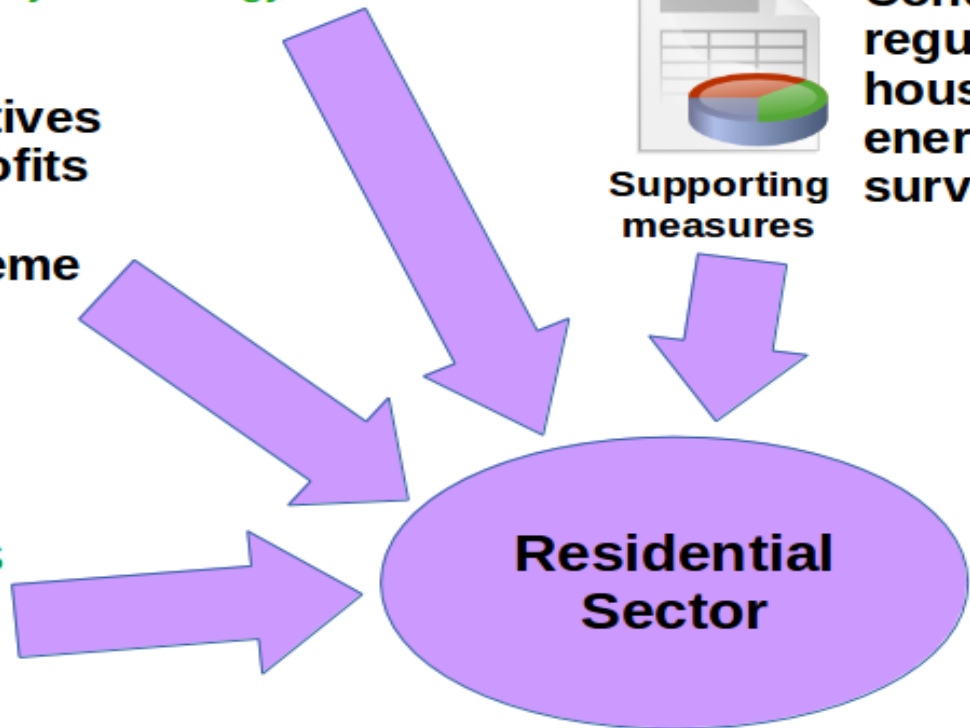


- Tightening of MEPS for appliances
- Tightening of building standards



Supporting measures

- Conduct regular household energy surveys

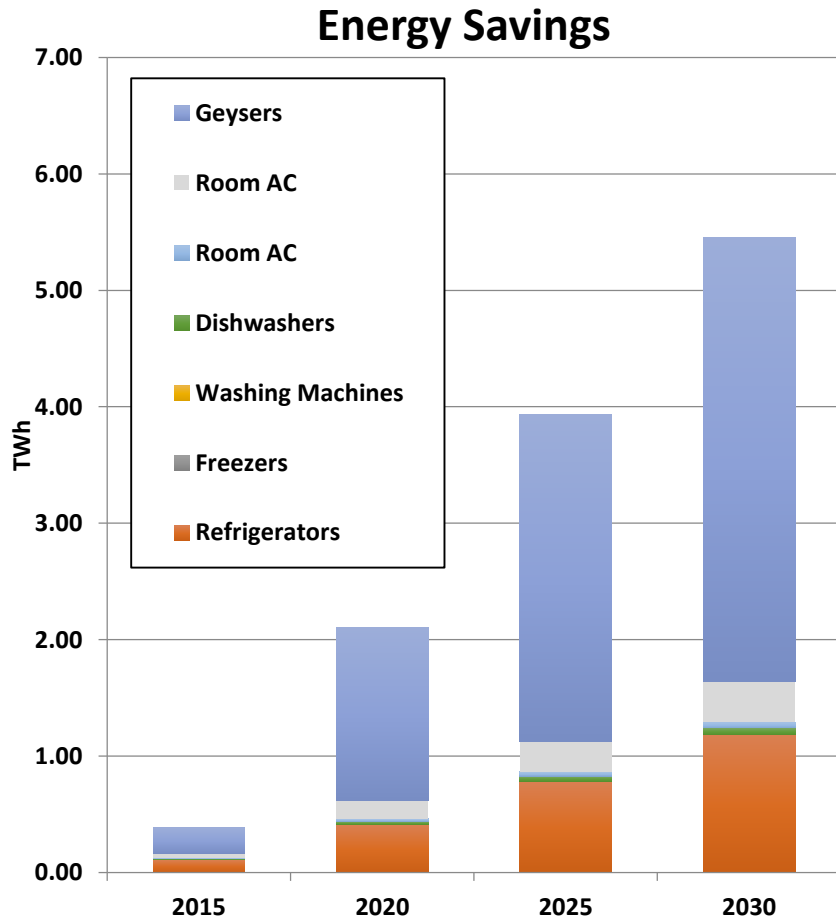


SA Minimum Energy Performance Standards (MEPS) for Residential Sector

	New MEPS	EU MEPPS	Share of Residential Energy Use
Geysers	B	A	40%
Refrigerators	B	A+	17%
Lighting	Not covered	B	17%
Air Conditioners	B	A	5%
Freezers	C	A+	4%
Washing Machine	A	A	3%
Tumble Dryers	D	C	3%
Dishwashers	A	A	3%
Audio & Visual Equipment	Passive standby power $\leq 1W$	Passive standby power $\leq 0.5W$	3%



South Africa 1st Mandatory S&L Programme



- The new S&L program implemented by DOE is contributing to save 5.5 TWh by 2030
- the equivalent of approximately a **800 MW Coal Power Plant**


Case Study

Municipal EEDSM programme



Purpose of the municipal EEDSM Programme

- To **provide subsidies** to municipalities to implement Energy Efficiency and Demand Side Management (EEDSM) initiatives within municipal infrastructure in order to reduce electricity consumption and improve energy efficiency.
- The municipal EEDSM programme is fully (100%) **financed** through the fiscus by National Treasury under section 5B of the Division of Revenue Act (DoRA), and is managed by the Department of Energy (DoE).
- Support with respect to strategic and administrative management of the programme is provided by the South African-German Energy Programme (**SAGEN**) implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (**GIZ**) GmbH.



“municipal EEDSM is one of the world’s largest and most successful energy efficiency programmes at municipal level.”

Technologies eligible for the municipal EEDSM

- The programme has been implemented for the **past seven years** with annual allocated budget.
- Municipalities are expected to prepare and submit an energy consumption **baseline information** with possible retrofits of the following:
 - Traffic signals
 - Public street lights
 - Building lights
 - HVAC system
 - High masts lights
 - Water services plants
 - Co-generation



Implementation strategy of EE Street Lighting Retrofit Project – SAGEN funded through SECO

Key Driver

Energy management and efficiency improvement in municipalities

Pre-Pilot / LED Demo site

- 1) Demonstration Projects in 1) Ekurhuleni (high masts) and 2) Tshwane (Street lights) to showcase innovative technology
- 3) These include project planning, design, and implementation

LED Pilot

- 1) Project planning, design, implementation and monitoring
- 2) Retrofit of High Masts of 40m height in Matjhabeng to test innovative technical specifications and realise massive savings (1000W HPS to ~400W LED)

EEDSM project cycle 16/17

- 1) Technical Assistance (EEDSM project planning & design) to four municipalities: Dr Beyers Naude, Makhado, Mbombela and Msunduzi

EEDSM project cycle 17/18

- 1) Technical assistance (EEDSM project planning & design) to six municipalities to pilot centralised planning etc.
- 2) Technical & financial support (EEDSM project planning, design, implementation, M&E) to 2-3 non-EEDSM municipalities to simulate a transversal procurement approach

Energy Efficiency Measures – Municipalities



- Develop energy efficiency strategies
- Support identification/ implementation of energy efficiency measures
- Energy rating scheme for municipal services
- Professionalisation of ESCOs



- Establish rating system for rating of municipal services



- Identify innovative financial solutions for service improvements



Energy Efficiency Measures – Public Buildings



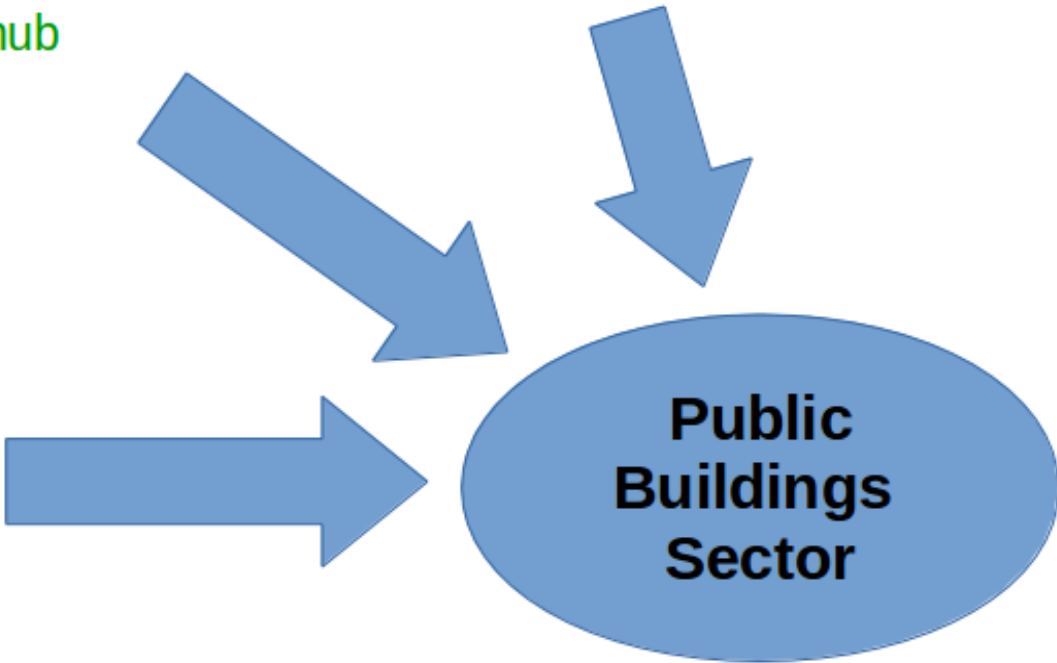
- **Leading by example – developing the brand**
- **Green procurement**
- **Super ESCO**
- **Energy management**
- **Professionalisation of ESCOs**
- **Establish sectoral technology hub**



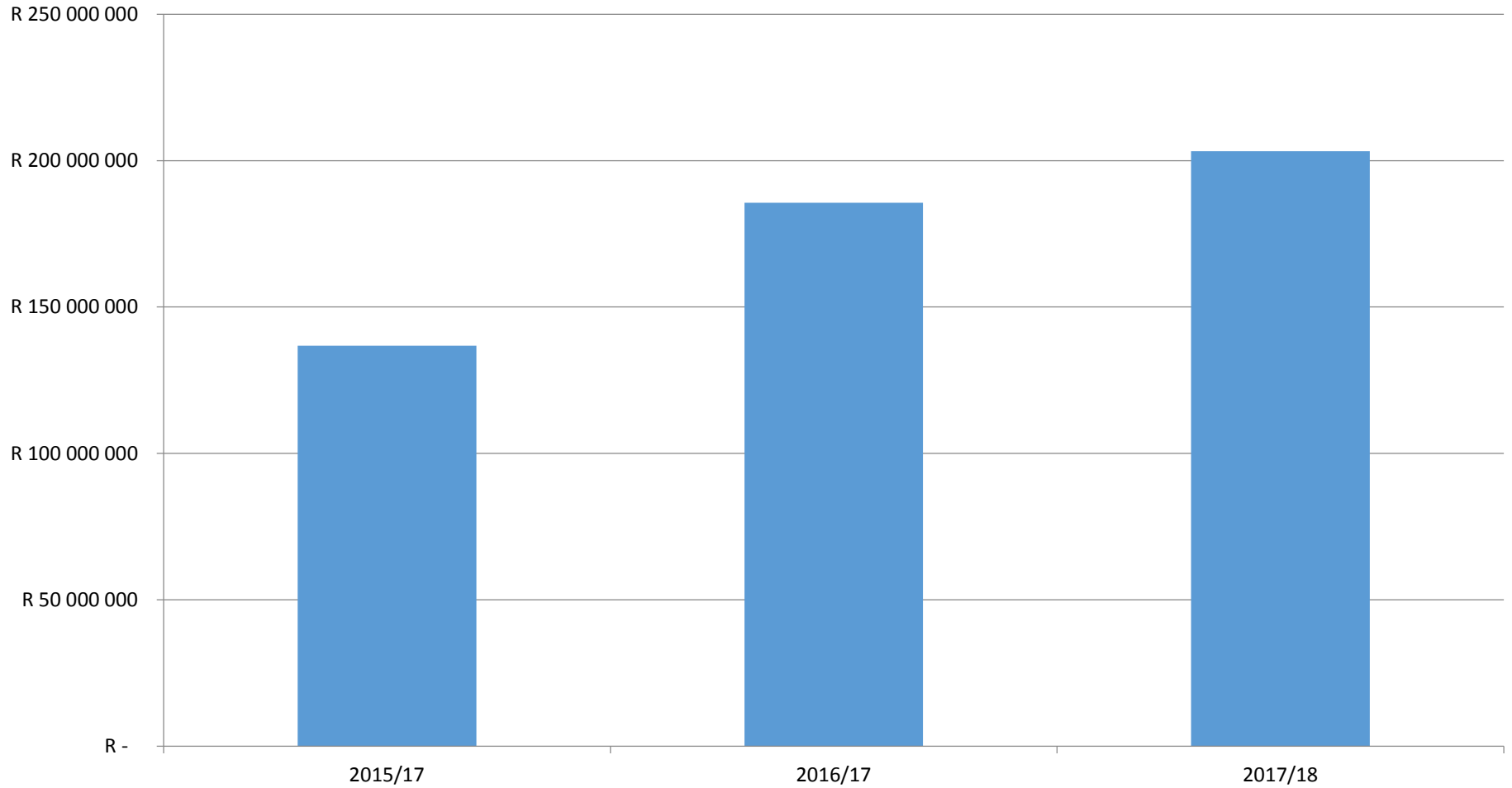
- **Expansion of mandatory EPCs**
- **Expansion of standards & labelling**
- **Tightening of buildings codes**



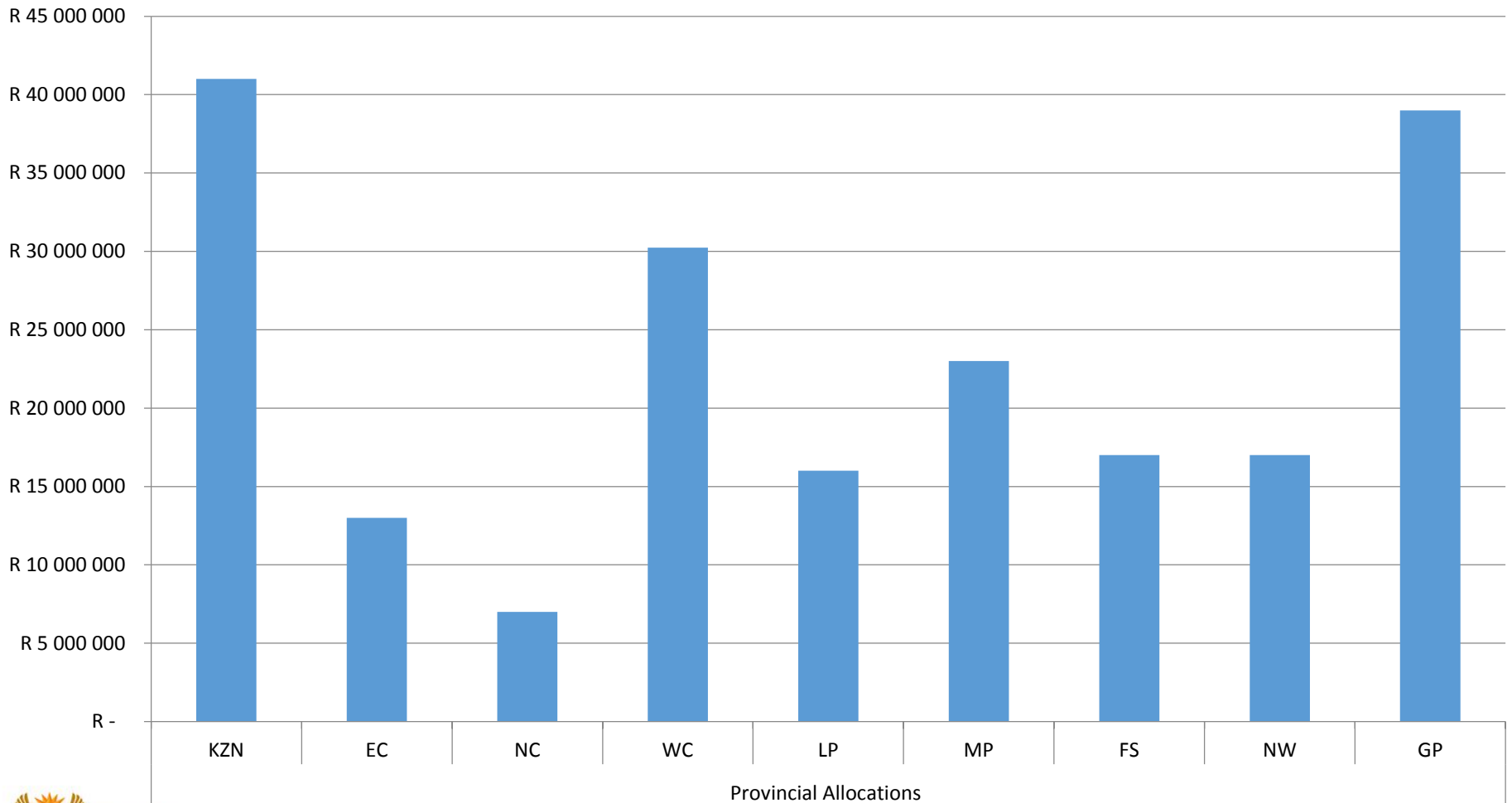
- **Identify innovative financial solutions**
- **Super ESCO**



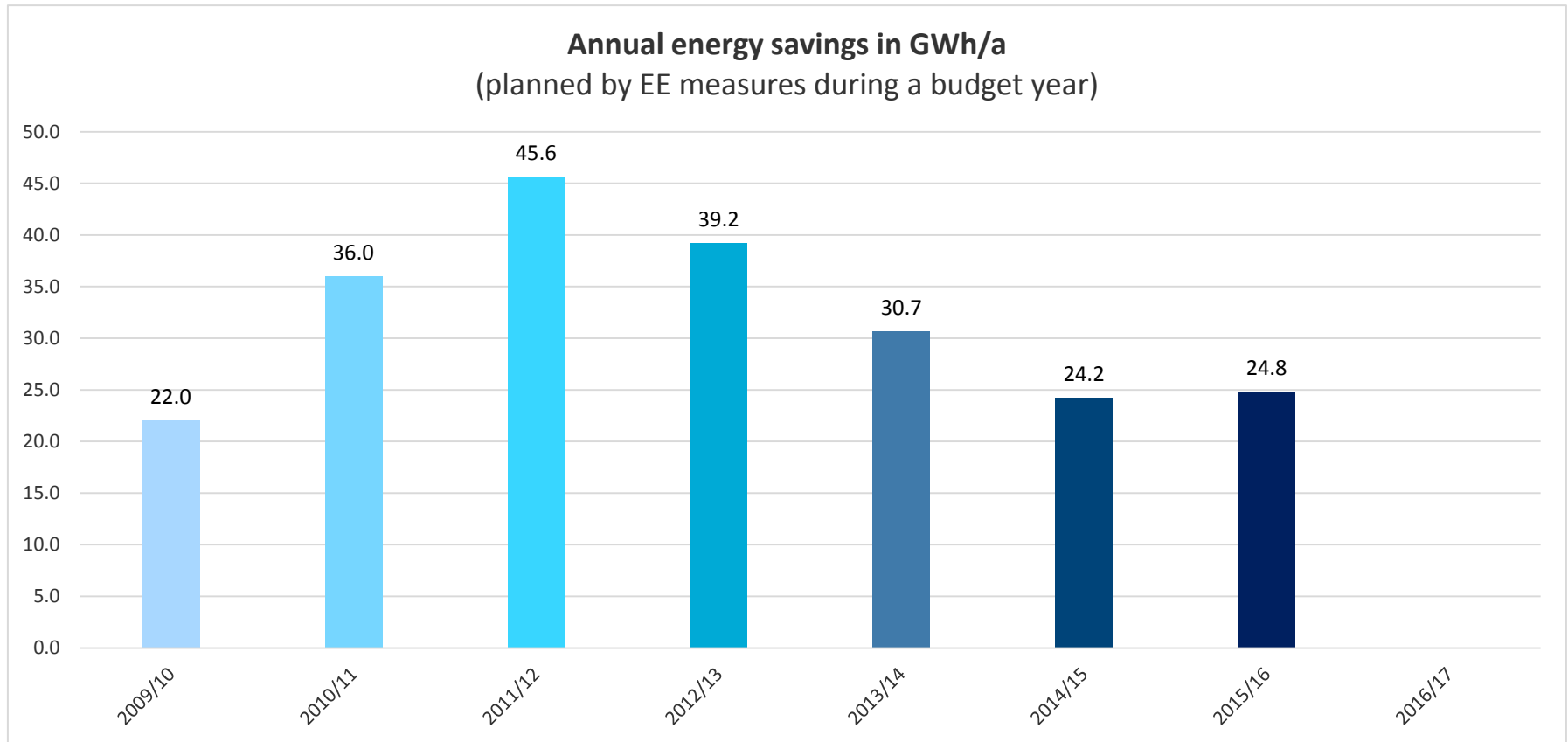
municipal EEDSM allocations



Provincial 2017/18 EEDSM Allocations



Annual energy savings in GWh/a – budget year



Energy Services Company Opportunities

Climate Change EE Flagship Projects

- 1) Energy Efficiency in Public Buildings and Infrastructure – V-NAMA Initiative
- 2) Deployment of energy efficient appliances and SWH units – Global Climate Fund Project

Carbon Off-set scheme

- 1) Support of the climate change mitigation through Carbon Tax

Municipal EEDSM project

- 1) Various energy efficiency measures including co-generation and possible small scale renewable energy technologies

Private Sector Energy Efficiency

- 1) Partnership with the National Business Initiative (NBI)
- 2) Provision of Energy Management Plans, and deployment of Energy Efficiency in the Industrial Sector
- 3) Income tax Allowance (12L) for Energy Efficiency

Conclusion

- ❖ An **Energy Service Company (ESCO)** that is either a commercial or non-profit business offering but not limited to the following broad range of energy solutions:
 - ✓ designs and implementation of energy saving projects,
 - ✓ retrofitting of inefficient technologies,
 - ✓ energy efficient infrastructure,
 - ✓ co-generation,
 - ✓ capacity building and training,
 - ✓ Project financing,
 - ✓ Monitoring, reporting and evaluation,
 - ✓etc

- ❖ SAGEN through DoE, SANEDI & GIZ has established an **ESCO register**.
- ❖ The next step is to implement an **ESCO incubation process** that will support the implementation of the EEDSM programmes across sectors.

THANK YOU FOR YOUR ATTENTION

