

A healthy, modern, affordable energy supply for all

Presentation on the
**Draft 2012 Integrated Energy Planning Report
(IEP2012)**

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Project 90 by 2030.



SMART ELECTRICITY

Planning and building a modern infrastructure for South Africa

Overview

- **Project 90 by 2030**
- **Challenges we face**
- **The Base Case**
- **Energy Efficiency**
- **Distributed Generation**
- **In Summary**

Project 90 by 2030

PROJECT 90
BY 2030 | Inspire.
Mobilise.
A low-carbon generation.

We envision a world that sustains humanity, where people are valued and earth systems are preserved.

Our four work areas:

- **Policy and Research**
- **Youth Leadership**
- **Community Partnership**
- **Communicating Change**

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Challenges we face:

'I can only afford food or electricity'

Zara Nicholson
Metro Writer

ONE West Six, three lozags and half a cup of rice.

On most days, that's all that Tafelieg resident Masteira Colop can afford.

Last week Colop displayed small R1 plastic packets of salt, rice, coffee and half a bar of soap to show a panel from the National Energy Regulating Authority of SA (Nersa) why the poor could not afford another electricity tariff increase.

On occasion, she can afford to buy only R15 worth of groceries for the day from the "Rand-a-rand" shops run by a number of Tafelieg residents.

Colop, 49, was speaking at the Cape Town public hearings of Eskom's application for a 16 percent electricity tariff increase each year until 2018.

This would more than double the price of electricity over the five years.

Eskom says the increase is necessary to finance its operations and new capacity.

"I want to show you what people live with each day," Colop said.

"One West Six. If people can't even afford to buy a box of West Six or food for the week, how can they afford an electricity increase? If petrol and food increases hit us this hard, then what will electricity do?"

Colop buys R5 worth of electricity a day when she can.

Many nights we go without electricity because you must decide between that and food, and how much of each you can afford.



BREADLINE: Masteira Colop, from Tafelieg, shows the R1 packets of basic groceries that are all she and other residents can afford. **Picture:** DAN LANDSBERG

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Challenges we face:

- **Unemployment.**
- **No access to the grid.**
- **Electricity is unaffordable.**
- **Energy choices impacts on environment and people.**
- **Climate change.**

The Base Case

- The BASE CASE ...is most closely informed by...the existing suite of policies and government programmes.

AND:

- From this base, policy **options**...are evaluated.

Existing policies, such as the Nation Climate Change Response White Paper (NCCRWP) and the National Energy Efficiency Strategy (NEES) **are not optional** and shall be **included in the base case and in all test cases**.

Energy Efficiency

IEP2012:

- **Objective 6: Promote energy efficiency** in the economy.
- **BUT: “Further analysis is required to quantify...”**

IRP2010:

- **7.12: Further research is required** on a number of potential technology options, including:
- **7.12.5: Energy efficiency demand side management**

No. 34 of 2008: National Energy Act, 2008.

CHAPTER 1 – Definitions and Objects:

2. The objects of this Act are to-

- **(f) ensure collection of data and information relating to energy supply, transportation and demand;**

No. 34 of 2008: National Energy Act, 2008.

CHAPTER 2 - ENERGY SUPPLY, OPTIMISATION AND UTILISATION- **Provision of data** and access to data sources

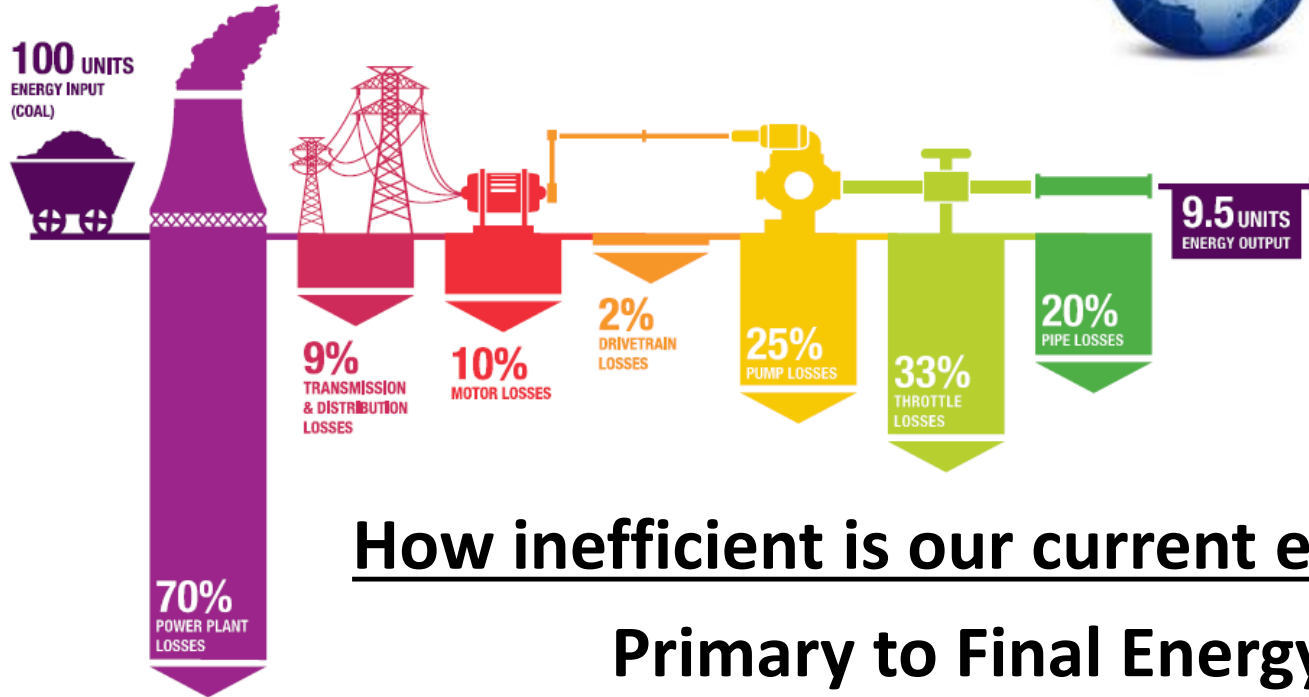
3. (1) The Minister **must** establish mechanisms to **ensure**—
- (a) **provision of any data** and information reasonably required for the purposes of conducting analysis required for energy planning from any person and the time period for the provision of such data and information, where such data is not already made available to any other public institution; and

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A SMART Energy system?



5 times
cheaper to
save than
to build!



How inefficient is our current energy system?

Primary to Final Energy > 70% losses.

Primary to End Use Energy > 85% losses.

Can we be SMARTer than this?

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A SMART Energy system -

**Energy Efficiency and
Demand Side
Management creates
and retains jobs!**

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EEDSM – Industry:

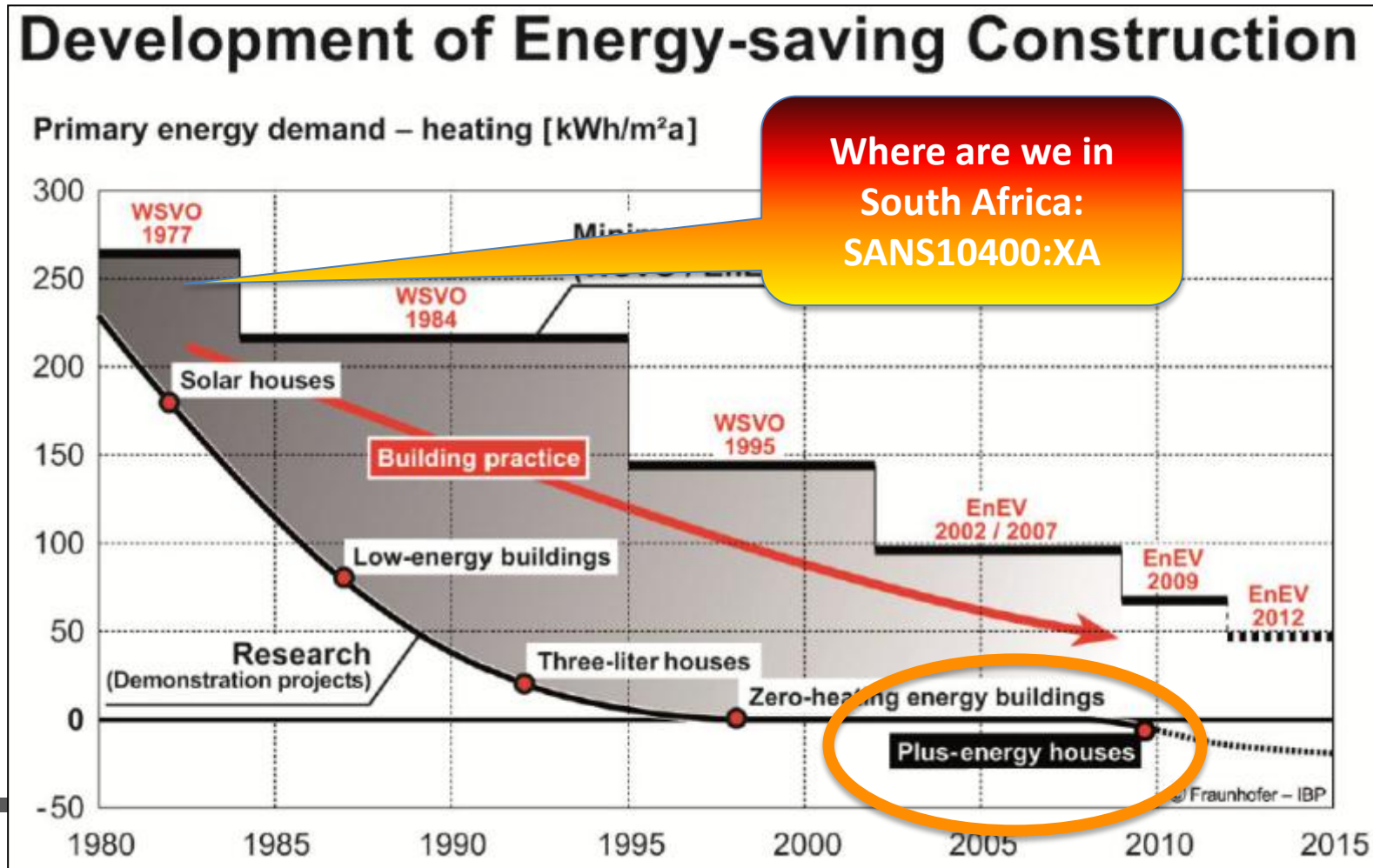
ESKOM's CEO B. Dames (M&G, 26/04/2013):

“Dames told the *Mail & Guardian* that many large industrial customers have voluntarily shaved off as much as 10% of their demand, but there is more that can be done.

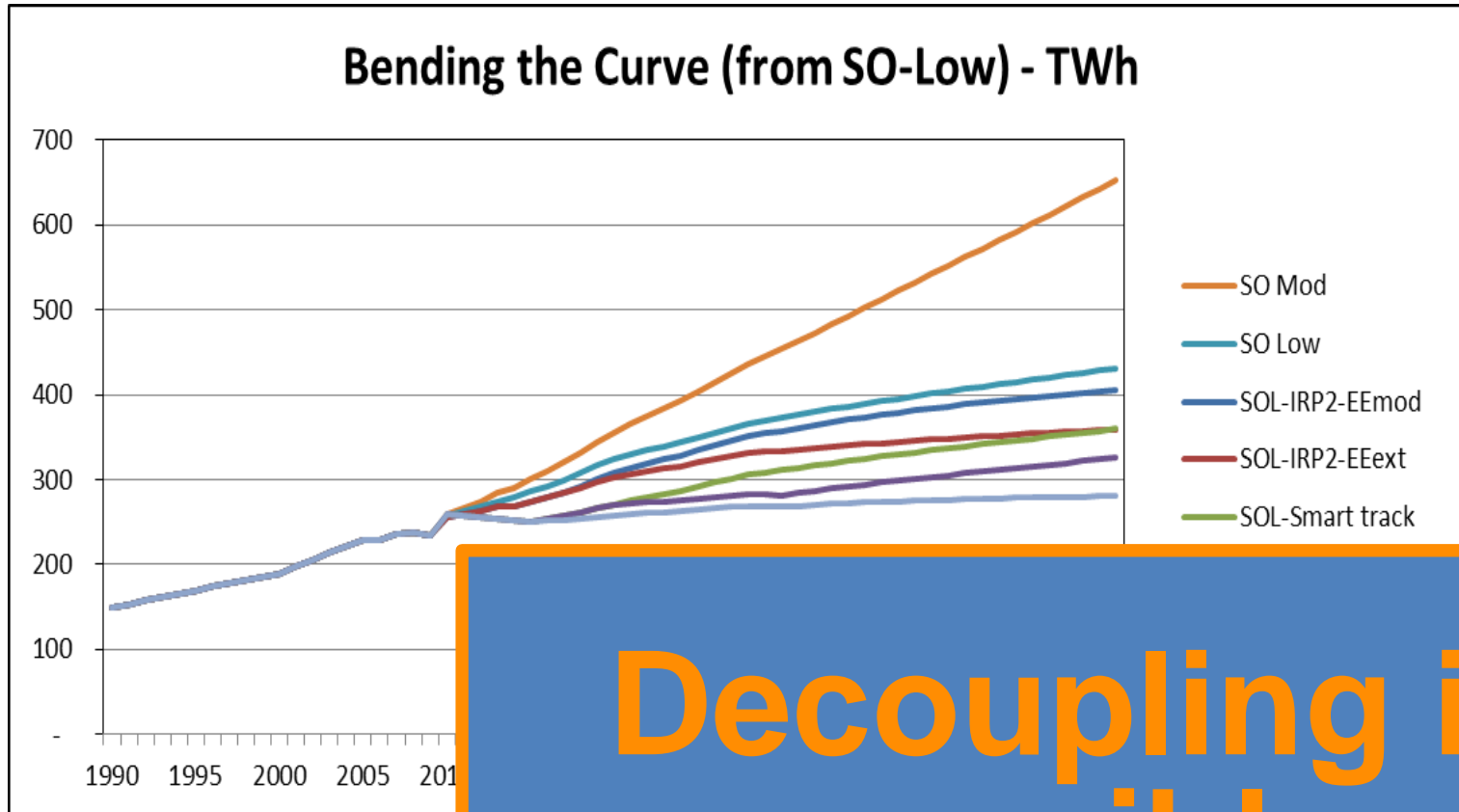
He estimated that **industry could save between 25% and 35% more power.”**

EEDSM – Buildings:

Evolution of the energy performance requirements in buildings:



SMART Electricity Planning report (EGI-SA)



Decoupling is possible.

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Request to DoE/IEP on Energy Efficiency:

Include
significantly higher
efficiency gains in
ALL test cases.

3.2.2 Distributed Generation and Off-Grid Solutions

IEP-draft, page 77:

- *At the next level, distributed generation can include generation, energy storage, on-site management (i.e., dispatch, control, communications), and all ancillary devices and services (Petrie et al., 2009).*
- *As the electricity supply sector evolves, there is likely to be greater use of distributed generation.*

It can be assumed with great certainty that within the IEP-planning period distributed generation will overcome the listed challenges in the IEP-draft, including dispatch and storage.

Add Solar Thermal Potential (see UKZN seminar), see also SETRM.

Request to DoE/IEP on Distributed Generation:

Consider a high
penetration of distributed
generation within the IEP-
planning period for ALL
test cases.

In summary – Our requests are:

- (1) Existing policies, such as the Nation Climate Change Response White Paper (NCCRWP) and the National Energy Efficiency Strategy (NEES) are not optional and shall be included in the BASE CASE and in ALL test cases.
- (2) Include significantly higher efficiency gains in ALL test cases.
- (3) Consider a high penetration of distributed generation within the IEP-planning period for ALL test cases.

SMART Electricity Planning

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Thank you!

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<http://www.90x2030.org.za/>

**Member of the Electricity
Governance
Initiative of SA**



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Transition to a renewable energy powered society.

<http://www.egi-sa.org.za/smart/>

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