

Smart Grids project feedback

The future vision, the current reality, and how to align the two

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SMART GRID?

In essence, electricity network + two-way communications

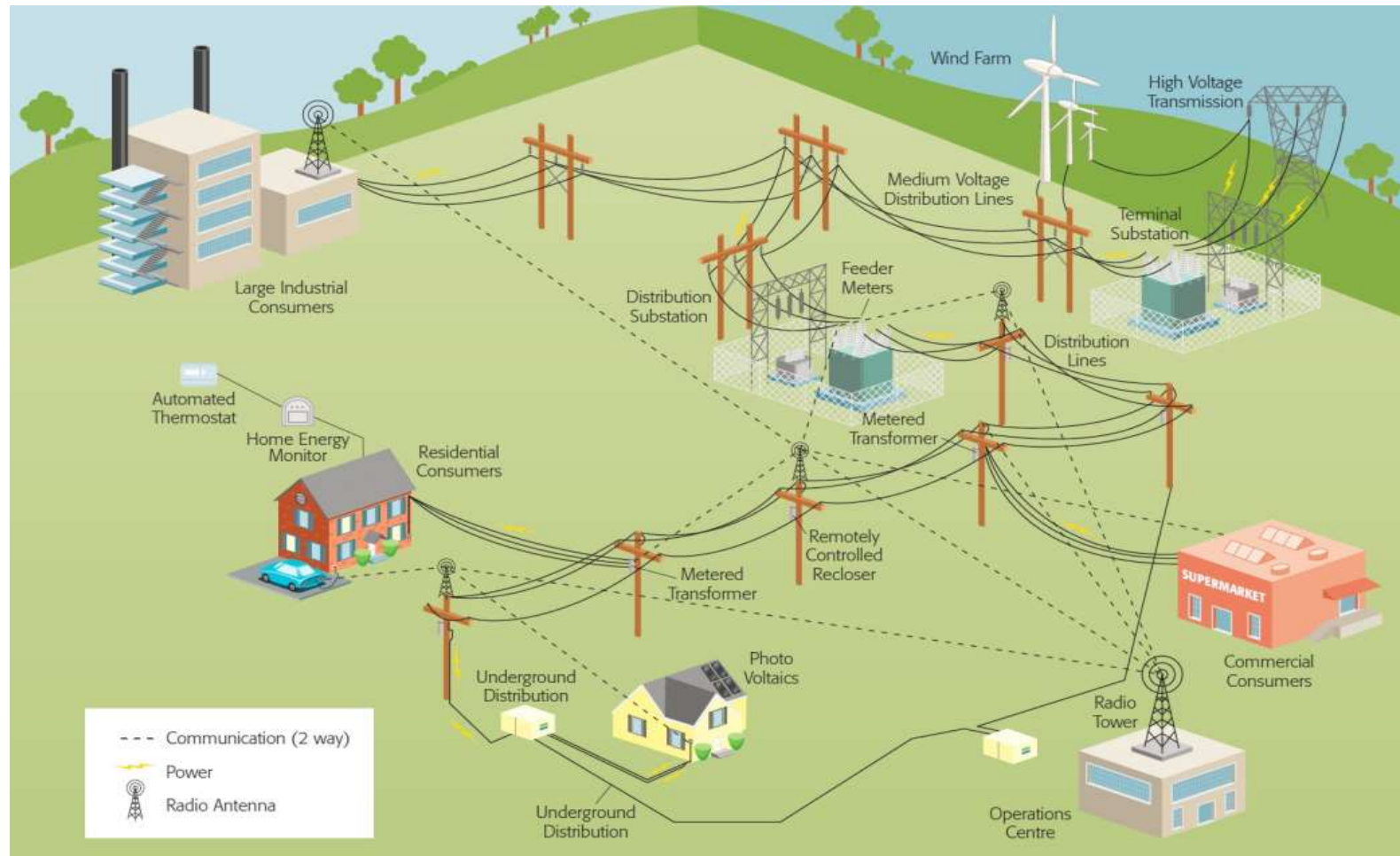
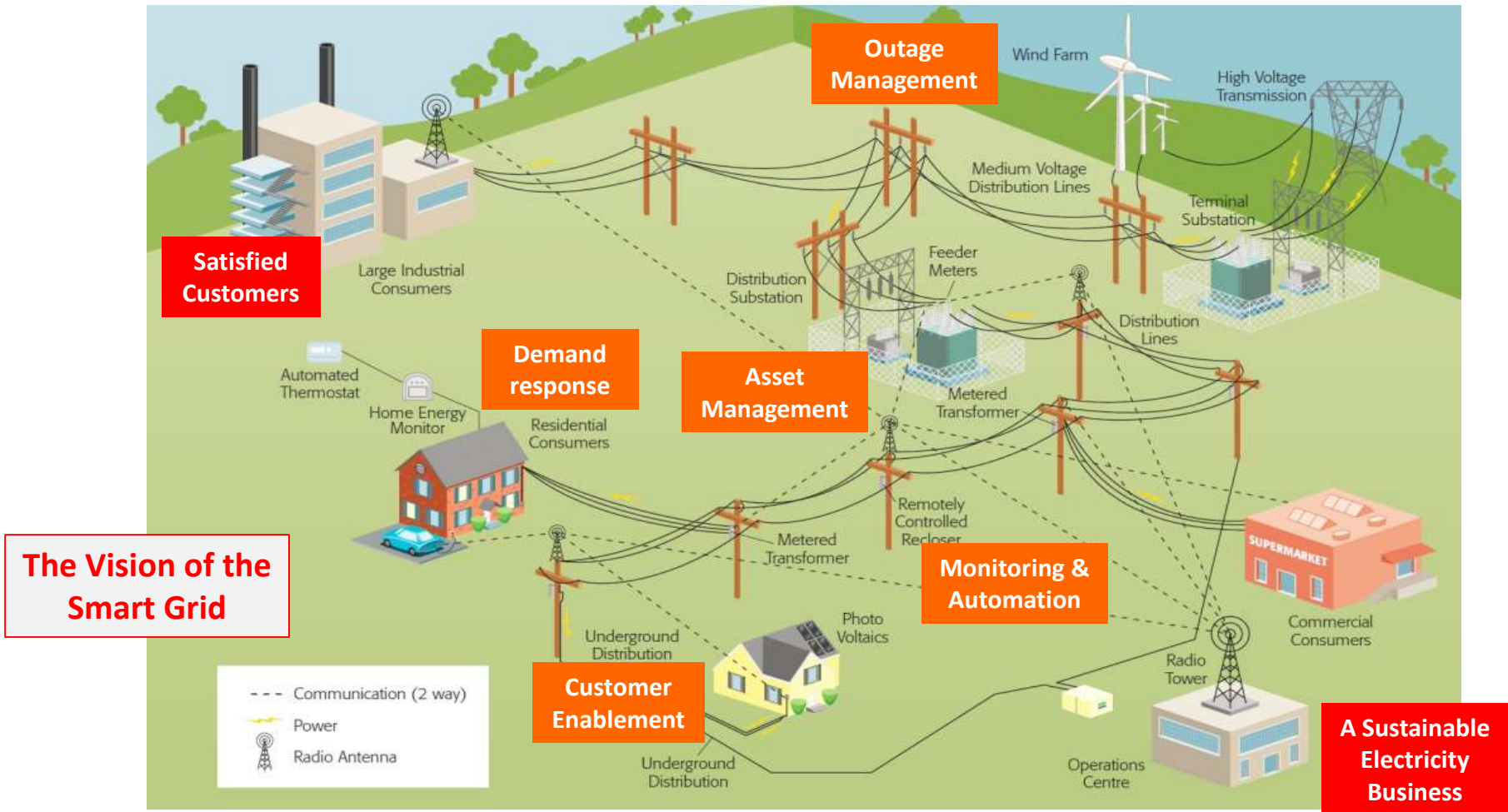


Image from www.eco.on.za

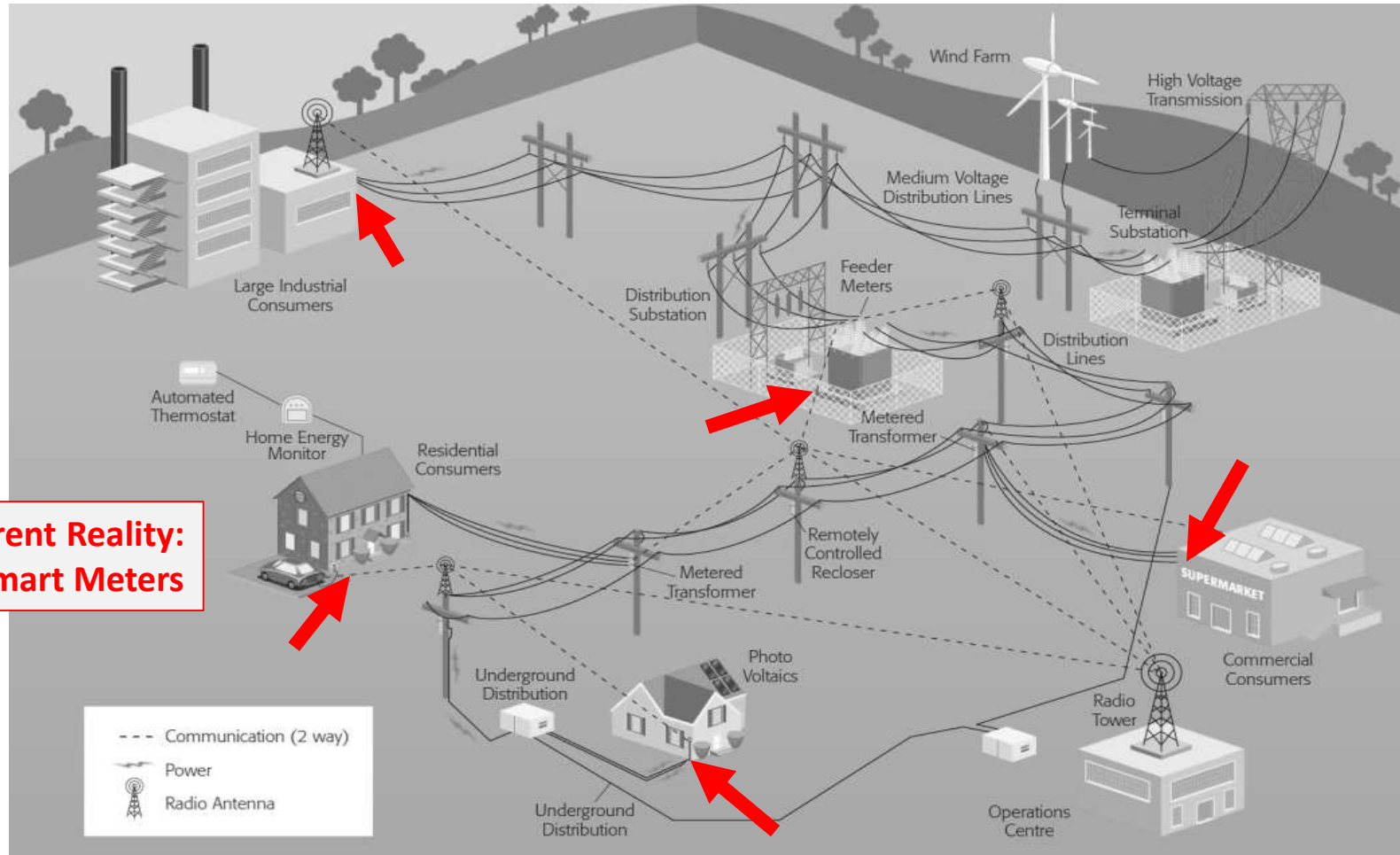
SMART GRID?



The Vision of the Smart Grid

Image from www.eco.on.za

SMART GRID?

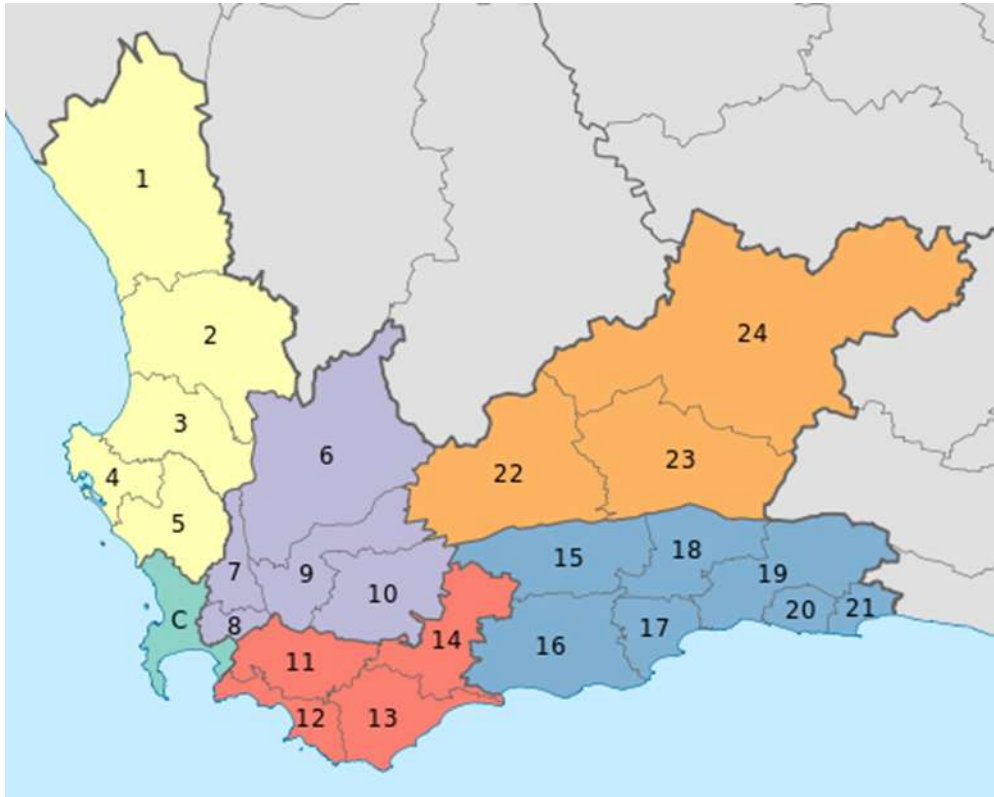


**The Current Reality:
A few Smart Meters**

Image from www.eco.on.za

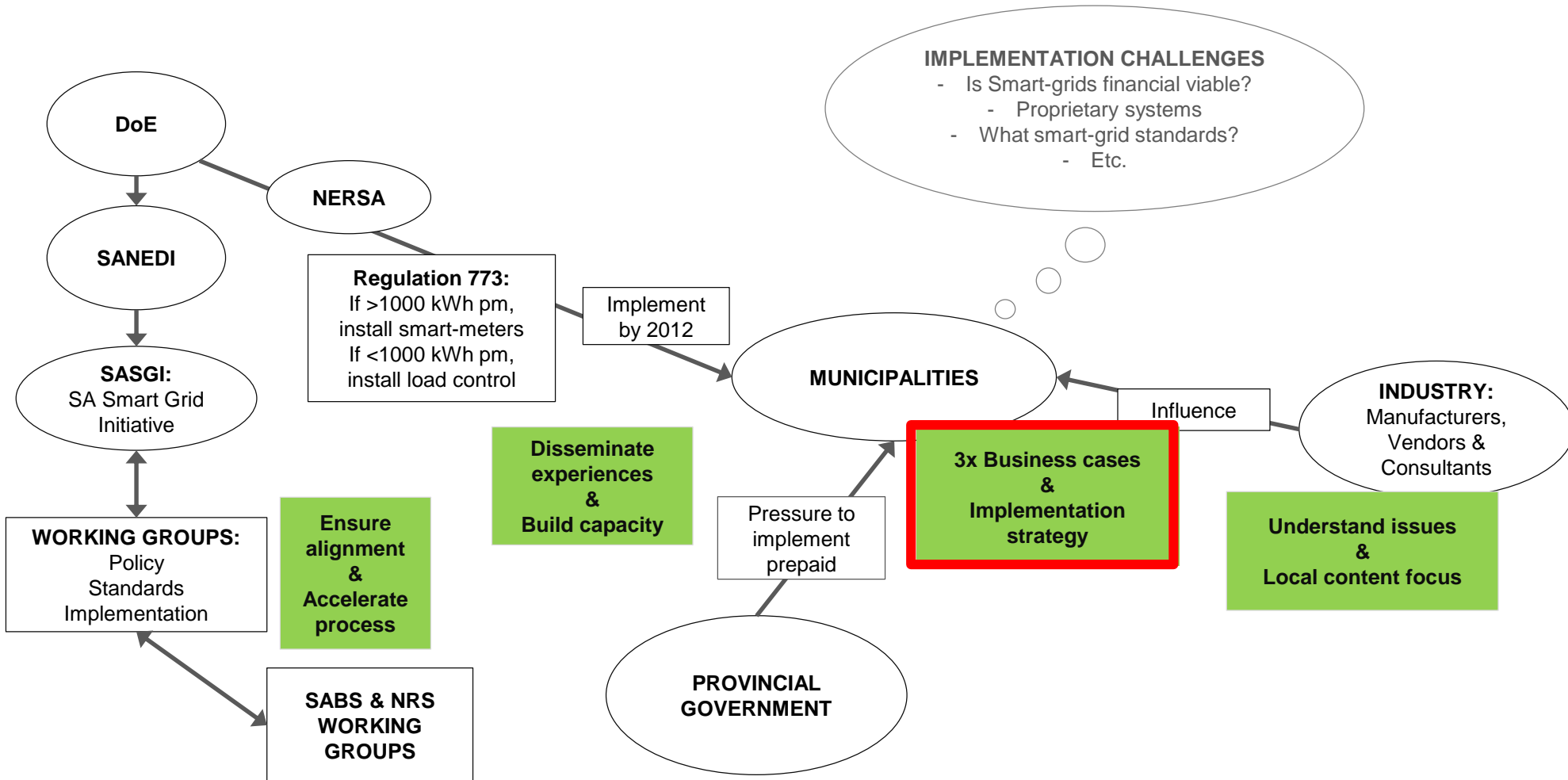
MOVING TOWARDS A SMART GRID

Hmmm, easier said than done...

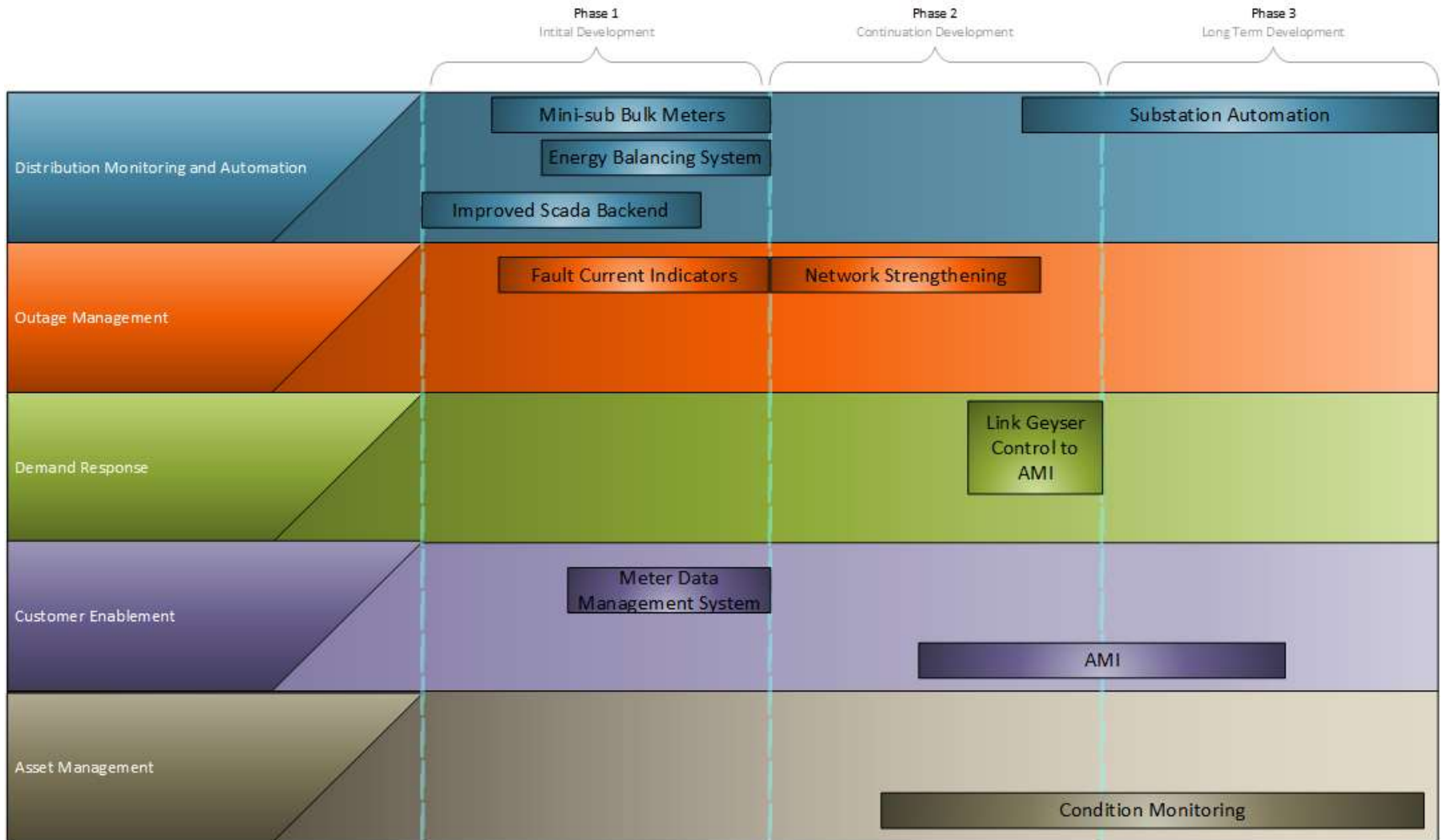


- No South African standards
Risk of stranded assets
Interoperability?
- Who will fund this?
- Where do I start?

GREENCAPE PROJECT



MOVING TOWARDS A SMART GRID



MOVING TOWARDS A SMART GRID

1. LONG-TERM SMART-GRID ROADMAP



2. SHORT-TERM SMART-GRID PROJECT



3. BUSINESS CASE FOR BOTH

Roadmap:
general
results from
international
studies



Project:
detailed cost /
benefit
analysis +
sensitivity
analysis

Cost and pricing pressures

By 2050, the Electric Power Research Institute estimates that the average electric bill will probably go up by about 50 percent if the smart grid *is* deployed.

ca. 400%

is the expected increase in the average electric bill if the smart grid *is not* deployed

MOVING TOWARDS A SMART GRID

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MOTIVATION FOR BUSINESS CASE?

Electrical Engineer: Factual motivation for funding requests +
Template for future requests

Politicians: Justification for support of funding requests

PROJECT PROGRESS?

- Two business cases 90% complete
- All three business cases completed by end April 2014
- www.green-cape.co.za

SOME LESSONS LEARNED

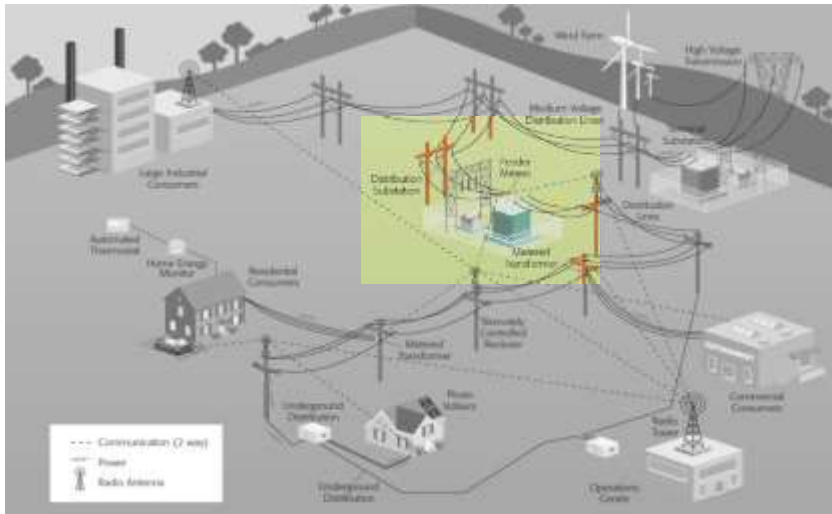
- Intentional (vision-driven) roll-outs can leverage the most benefits
- Taking the customer along on this journey is crucial (needs-driven)
- Economic ROI is key, but not sufficient

"Economic return on investment (ROI) is becoming a key commercial, public and political issue for smart grid projects and plans around the world. It is simply not enough to promise benefits for society. " [Dr Philip Lewis, VaasaETT 2013:p50]
- Smart Metering must form part of a larger Smart Grid perspective
- Data means nothing without interpretation

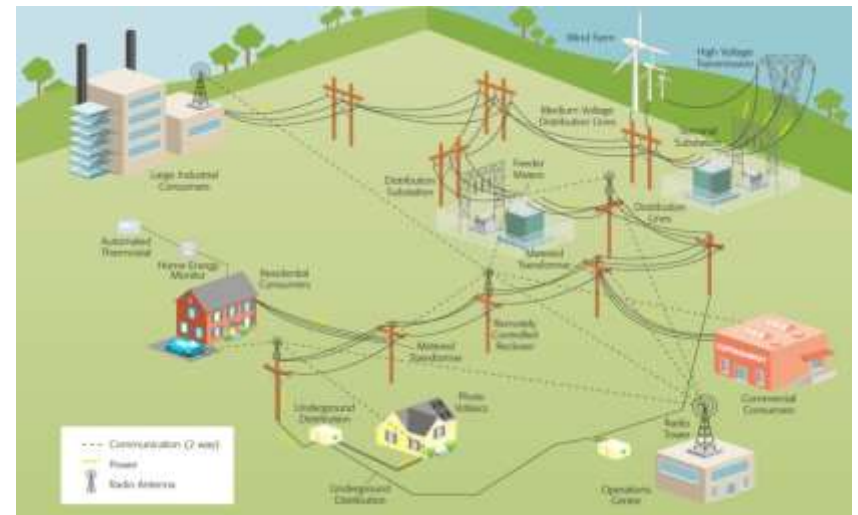
SOME PRACTICAL ASPECTS

- Lack of SA standards will remain a challenge for a while
- For communications platform, Internet Protocol is a safe bet
- Open rather than proprietary = interoperability
- Firmware upgradable components = future proofing

ALIGNING THE CURRENT REALITY WITH THE FUTURE VISION



Needs & benefits driven,
rather than technology driven



1. Develop a context-specific roadmap
2. Decide on communications platform
3. Identify most viable business cases in roadmap
4. Implement these first
 - gradually: learning and improving

