

Eskom's Air Quality Offsets Implementation Plan for Lethabo Power Station

Public Meeting

Vanderbijlpark, 14 March 2016



What are we talking about today?



Why is Eskom doing offsets and how did they develop the plan?



What is Eskom proposing for their high-level plan?

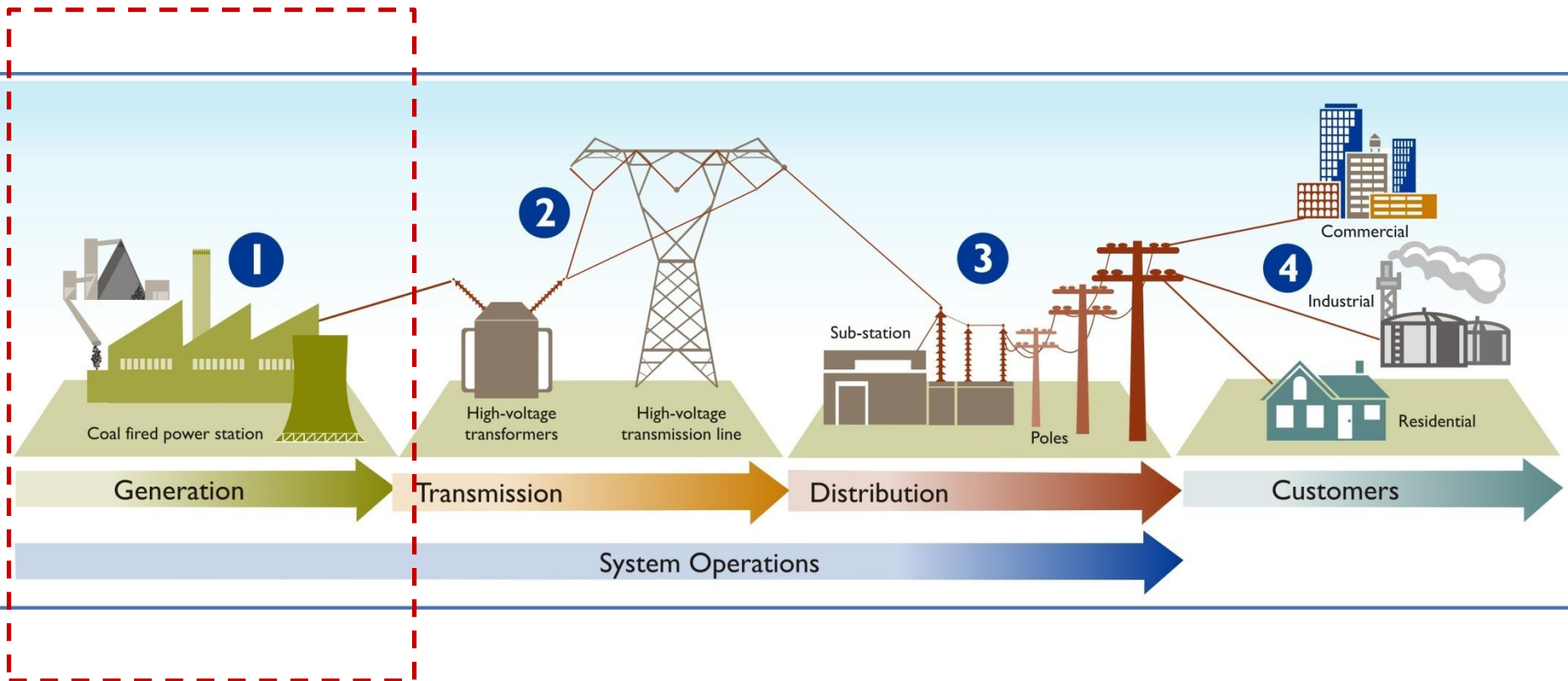
How can Eskom's plan be improved?



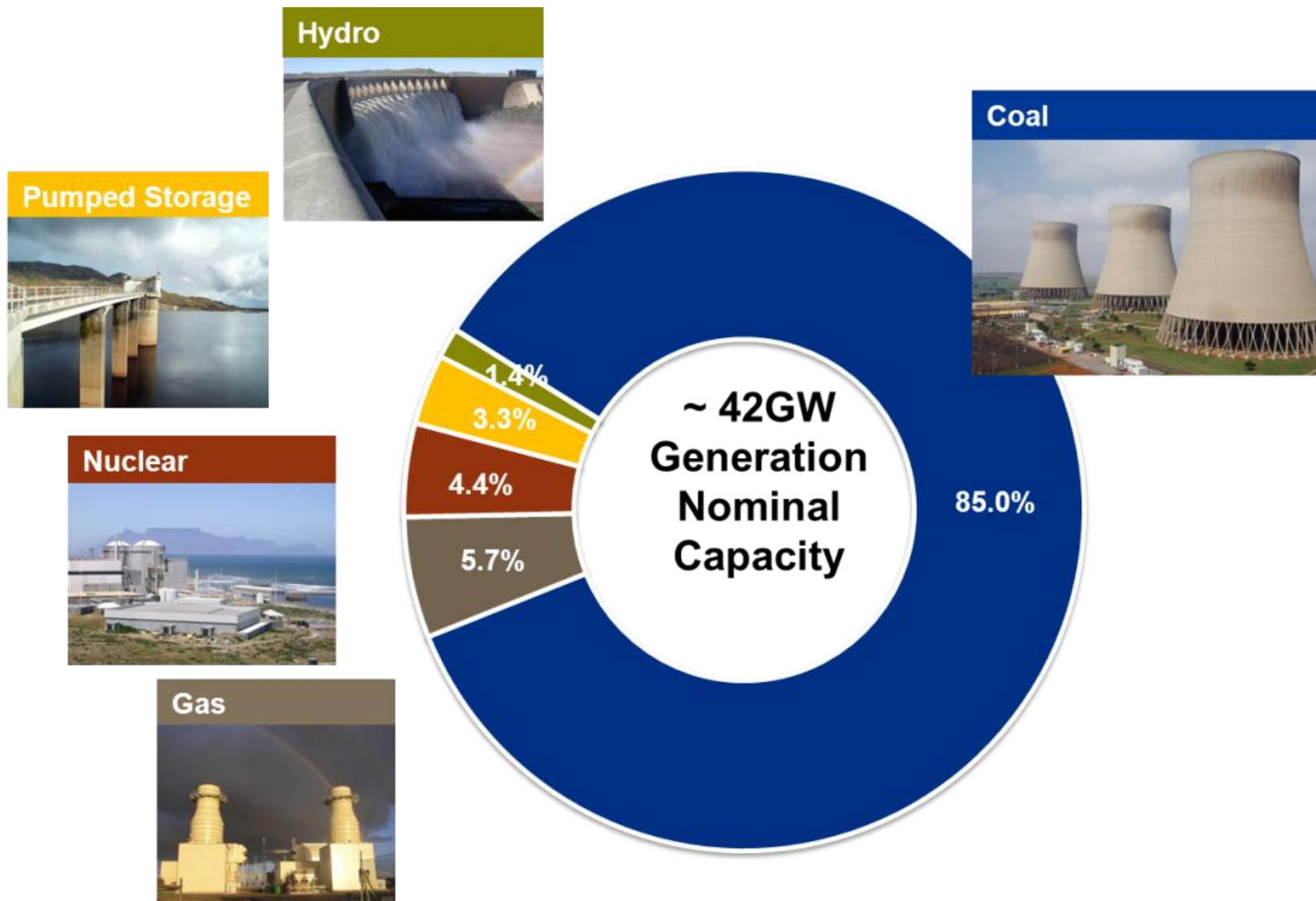
Peace!



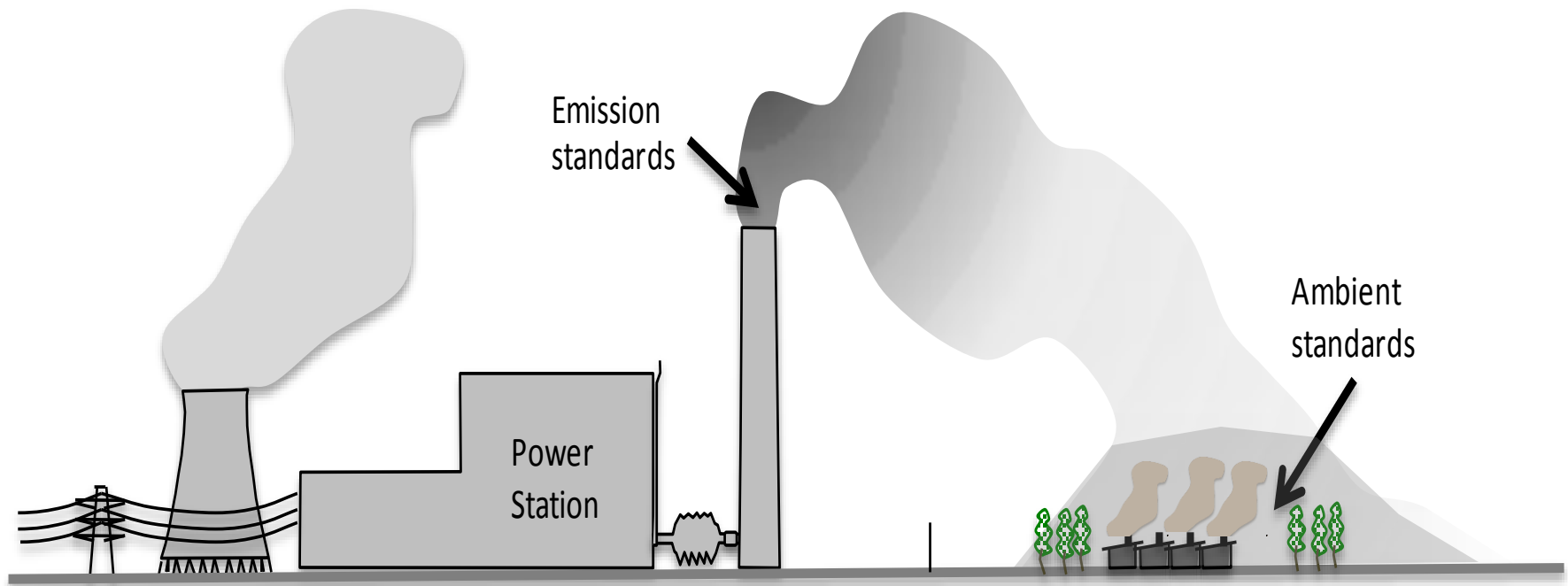
The Eskom electricity value chain



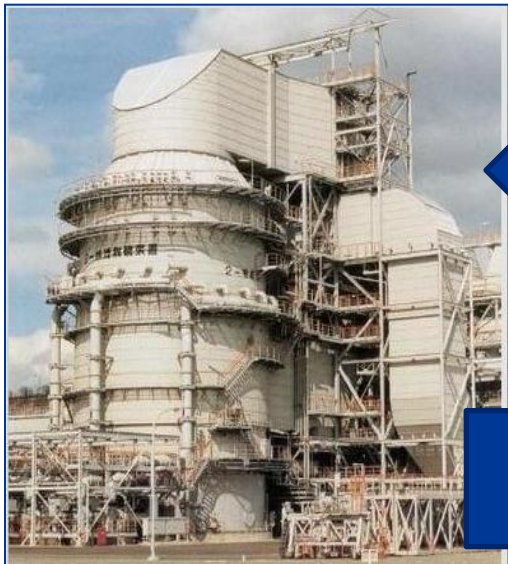
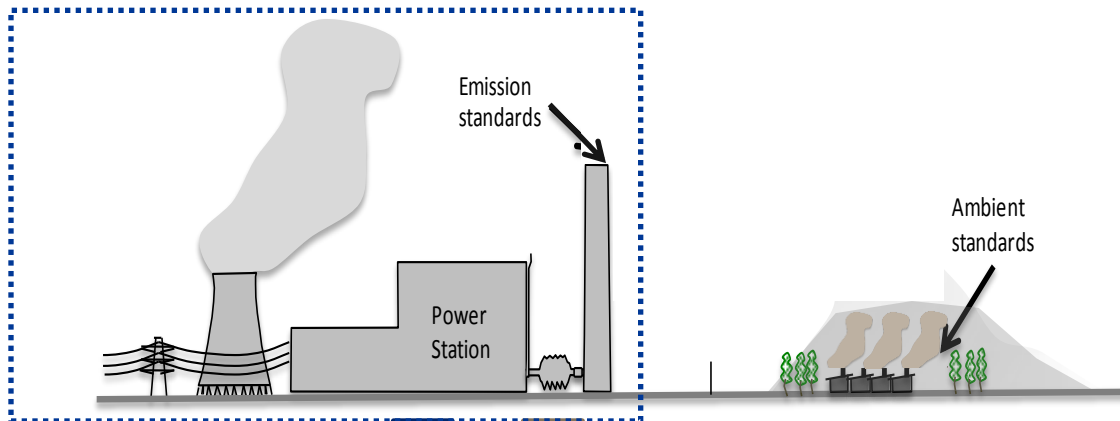
Did you know that 85% of the power Eskom produces is from coal?



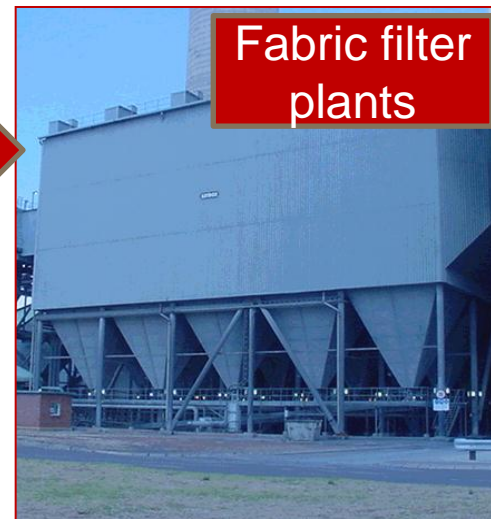
- Eskom generates the bulk of South Africa's electricity, which sustains the economy and livelihoods of all South Africans
- As a by-product of electricity production, Eskom power stations emit combustion gases and particulate matter which have an impact on the air we breathe



1. Upgrade power stations

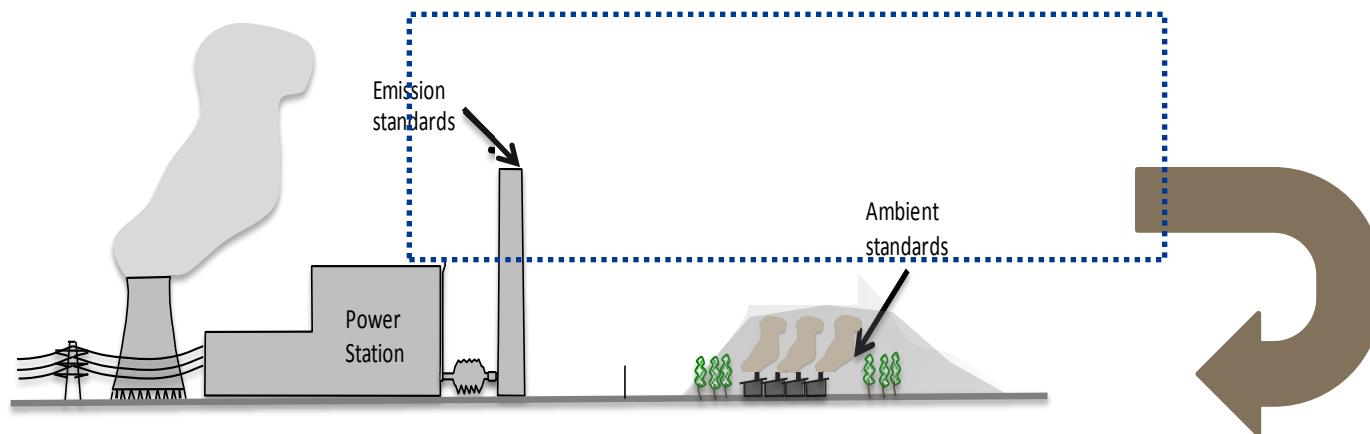


Flu gas
desulphurisation



Fabric filter
plants

2. Install more renewables and nuclear

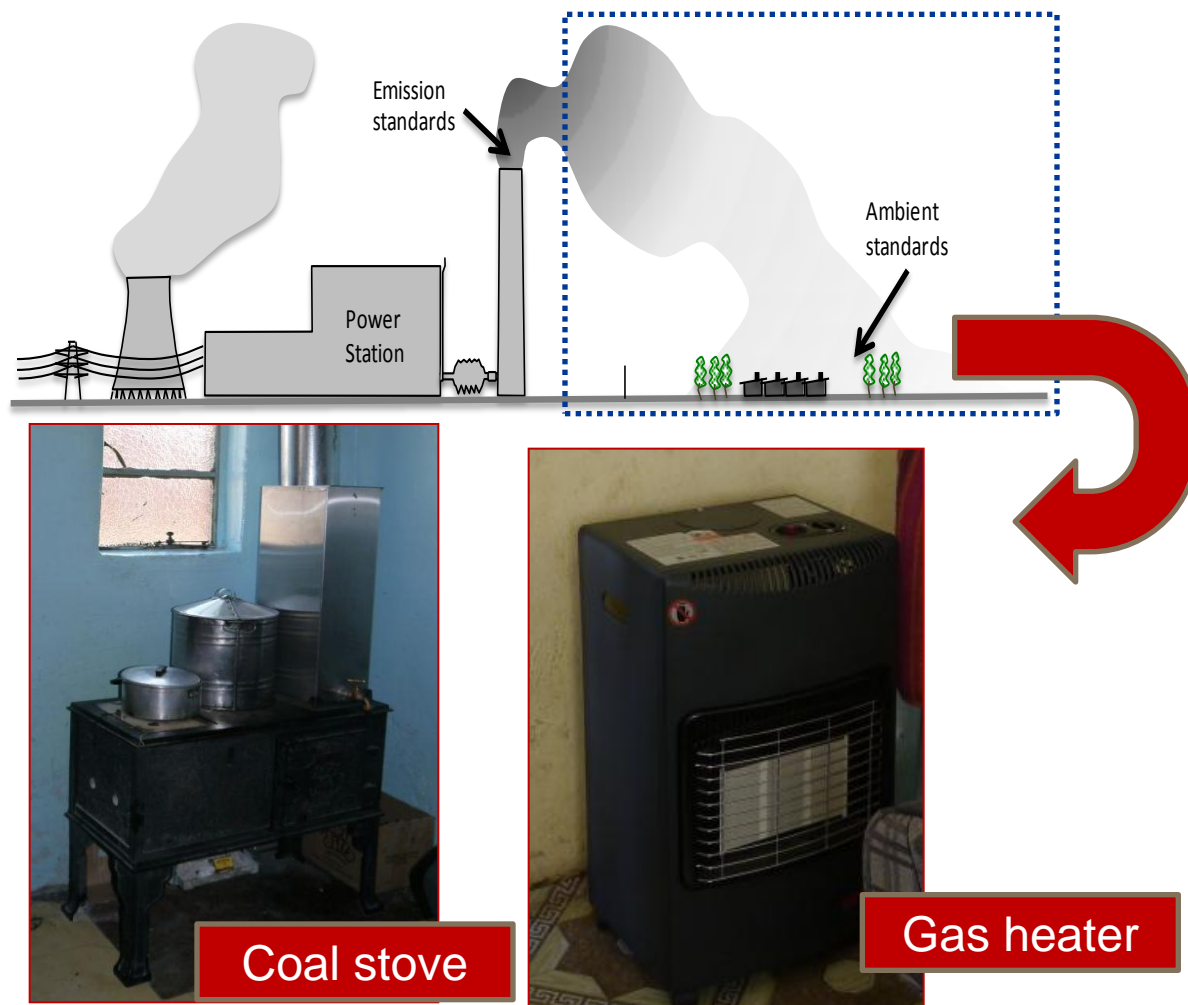


Wind turbines



Koeberg Nuclear Power Station

3. Improve ambient air quality in communities



What is an air quality offset?

Department of Environmental Affairs's Draft Air Quality Offsets Guideline (26 June 2015):

*an offset is an intervention, or interventions, specifically implemented to **counterbalance** the adverse environmental **impact of atmospheric emissions** in order to deliver a net ambient **air quality benefit** within the affected airshed/s.*

*"affected airshed" means the closest area to the facility in question, wherein **ambient air quality standards** are being or have the potential to be **exceeded** and **opportunities** for offsetting exist.*

Examples: Switching households to cleaner energy sources, low emission appliances and insulation; reducing domestic waste burning; reducing emissions from landfills



Waste burning



Unpaved road



Coal burning

- Section 4.4 of Lethabo Power Station's Atmospheric Emission Licence:

A definite offset implementation plan to reduce PM pollution in the ambient/receiving environment is to be presented to the NAQO and the Licencing Authority by 31 March 2016 and followed by an appropriate public participation process. The conditions associated with this will be included as an annexure to this atmospheric emission licence.

- National Air Quality Officer's decision on power stations' application for postponement of the Minimum Emission Standards:

Implement an offset programme to reduce PM pollution in the ambient/receiving environment. A definite offset implementation plan is expected from Eskom by 31 March 2016

PM is particulate matter

NAQO is National Air Quality Officer

What is the offsets plan being used for?

1. Obtain approval from the authorities on the proposed offsets methodology, the types of offsets to be implemented, and the areas for implementation
2. Form the basis of Eskom's request for offset funding in its Multi-Year Pricing Determination 4 (MYPD4) application to NERSA
3. Fulfil the requirement in the power stations' Atmospheric Emission Licences
4. **Get input from key stakeholders (YOU!) into the design of the offsets programme**

What can be achieved through offsets?

Primary aim

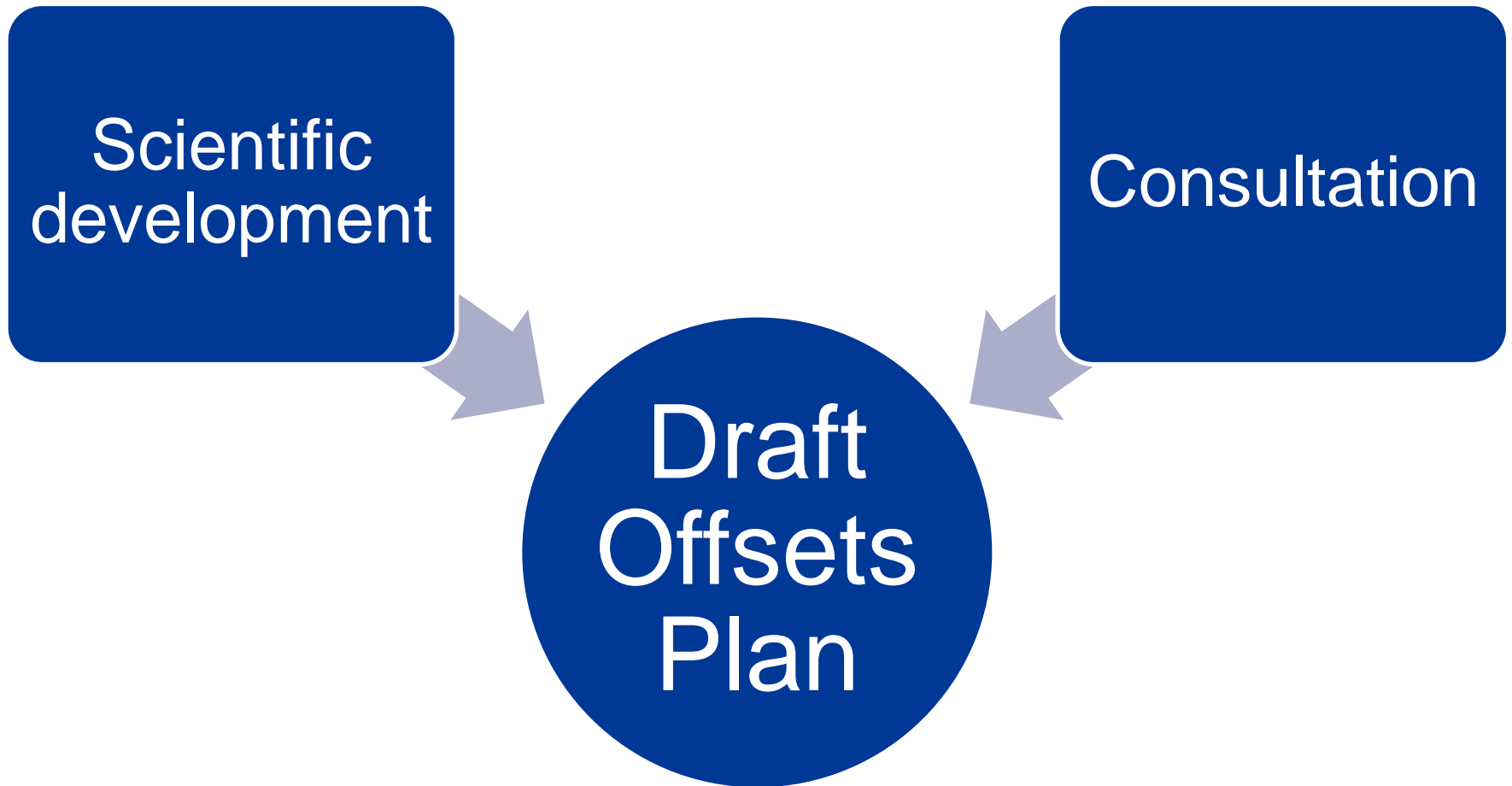
- Improve air quality



Secondary aims

- Local job creation and skills development
- Improve communities' health
- Improve quality of life
- Reduce energy poverty
- Cost effective channelling of resources
- Reduce CO₂ emissions





Process followed to develop Air Quality Offsets Implementation Plan: Scientific Development

Pre-feasibility study (2012-2013)

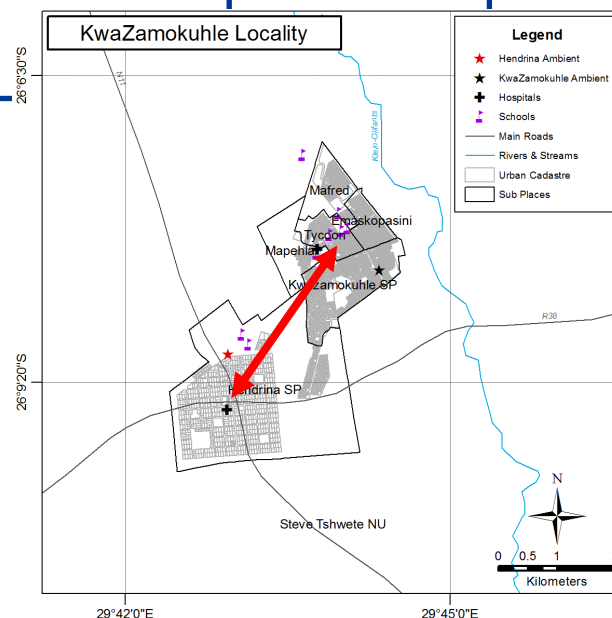
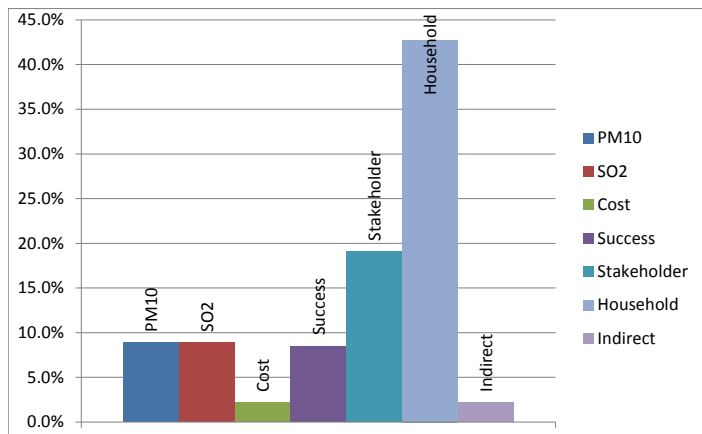
- Exhaustive list of household offsets evaluated against weighted criteria
- Identified six most feasible offsets

Pilot study (2014-2015)

- Test household acceptability and reduction in solid fuel use
- 140 households in KwaZamokuhle, Mpumalanga

Air Quality Offsets Implementation Plan

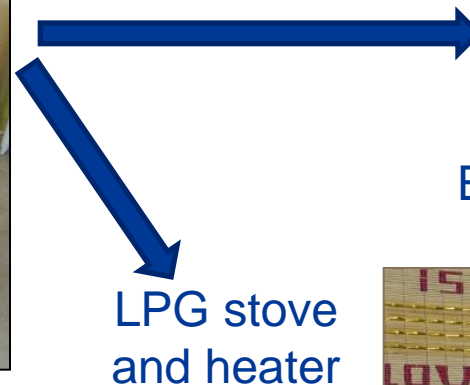
- Plan for large-scale roll-out of air quality offsets in at least one settlement per power station



Interventions for pilot study – fuel efficiency or switching



Efficient stove



LPG stove
and heater



Electricity subsidy



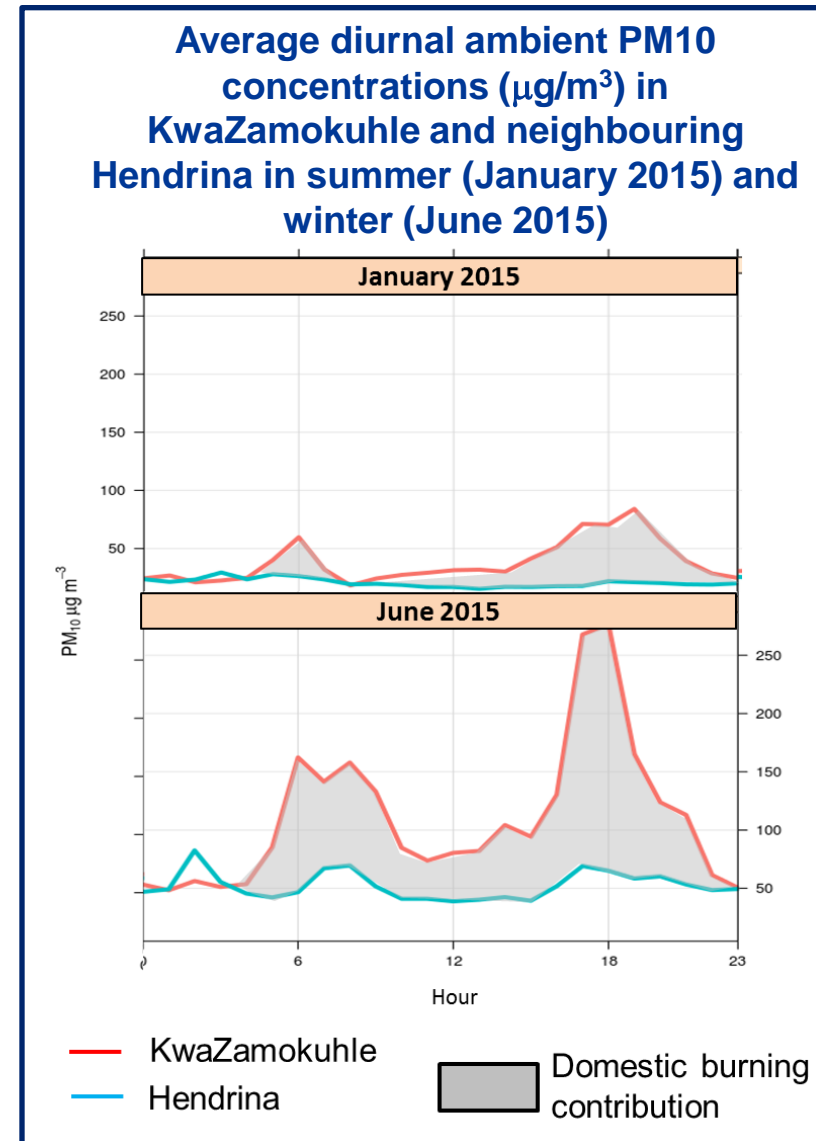
Ceilings



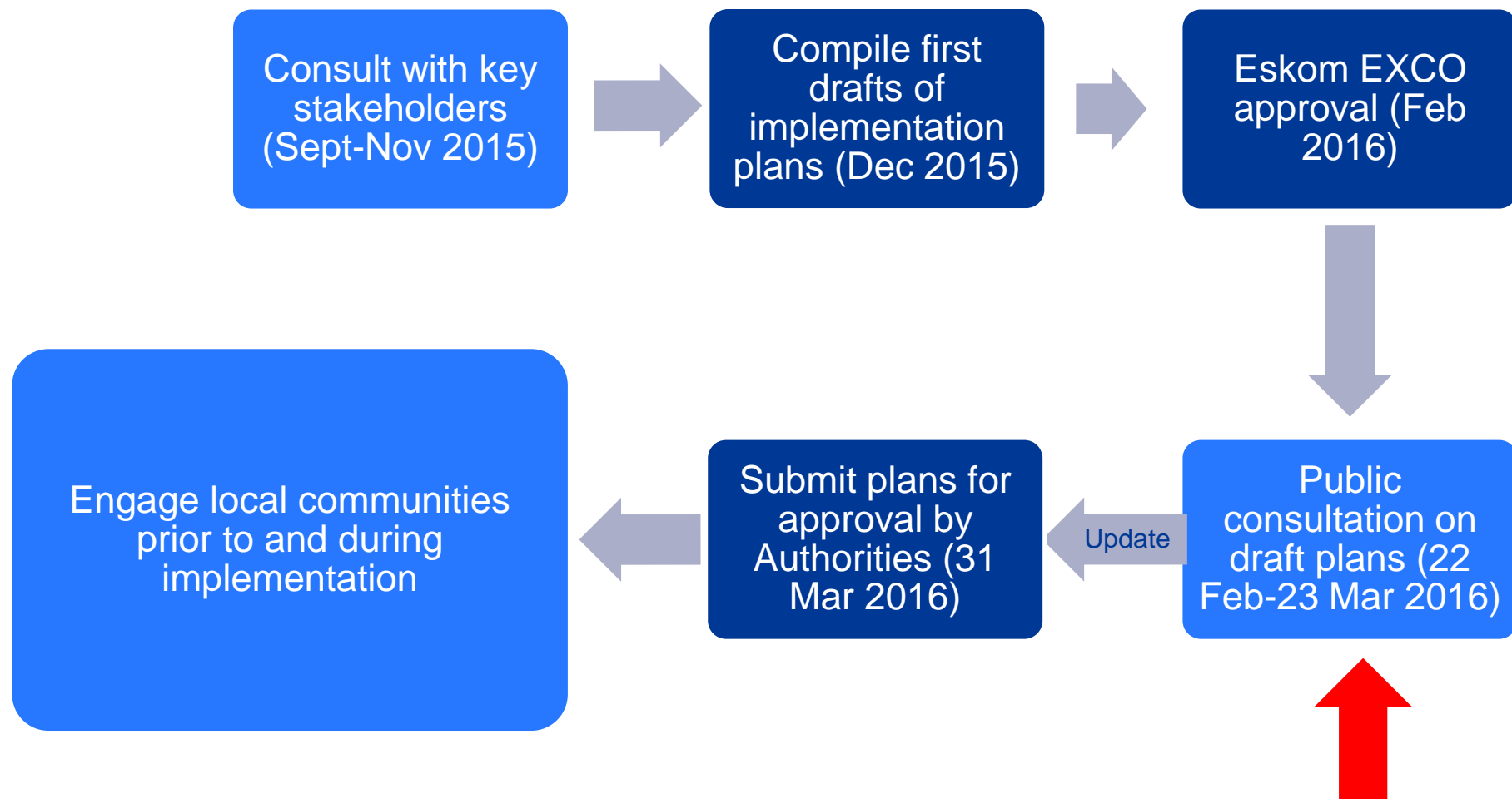
Full thermal insulation: ceilings + three insulated walls + Trombe wall



- Domestic coal burning in KwaZamokuhle accounts for around 50% of the ambient particulate matter
- Residents were very willing to participate in the project (>80%) and did not want their old coal stoves back at the end
- The electricity subsidy without a stove swap did not eliminate coal burning, but an LPG stove and heater did
- A stove swap and housing insulation (to raise the indoor temperature, especially on winter nights) are needed to reduce domestic coal burning



Process followed to develop Air Quality Offsets Implementation Plan: Stakeholder Consultation



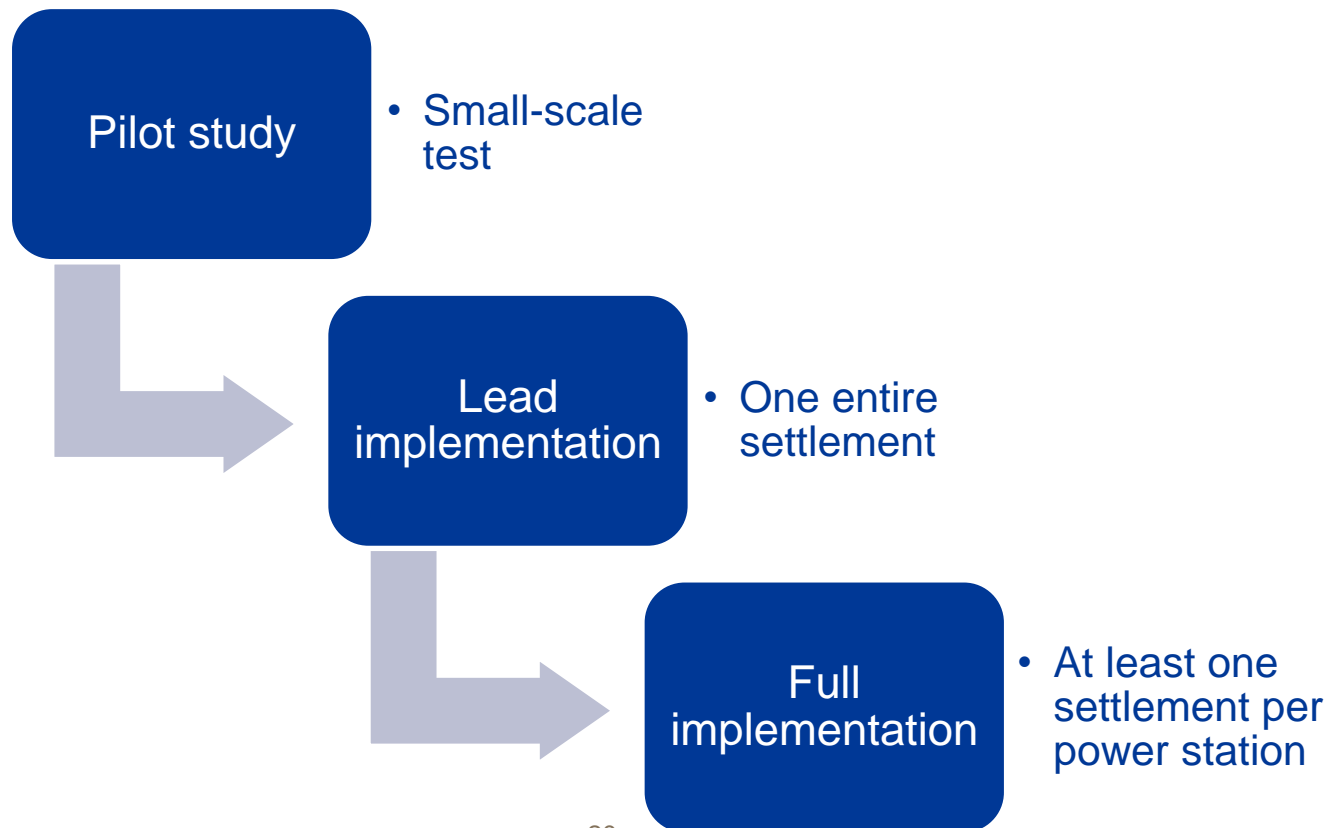
So what is Eskom proposing for the high-level offsets plan?

1. Principles

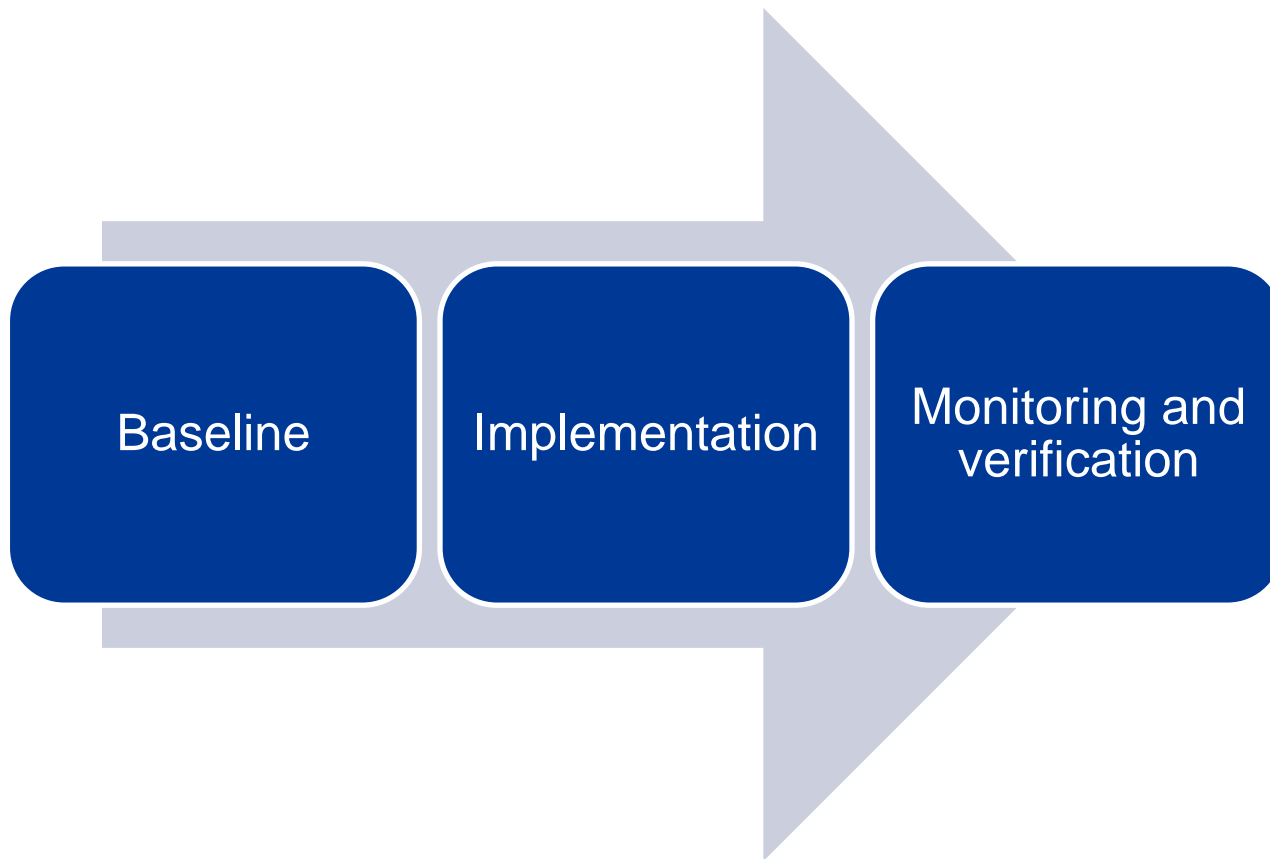
2. Plan specifics

Offset principles: **1** A phased approach

- Balance the need for quick implementation with the need to mitigate the risk of failed interventions.
- Offsets are a new field. Interventions must be properly tested and learnings incorporated before rolled out on a large scale



Process per settlement



Offsets principles: **2** Selection of interventions

Programme of activities:



Household
emission
reduction



Community
emission
reduction



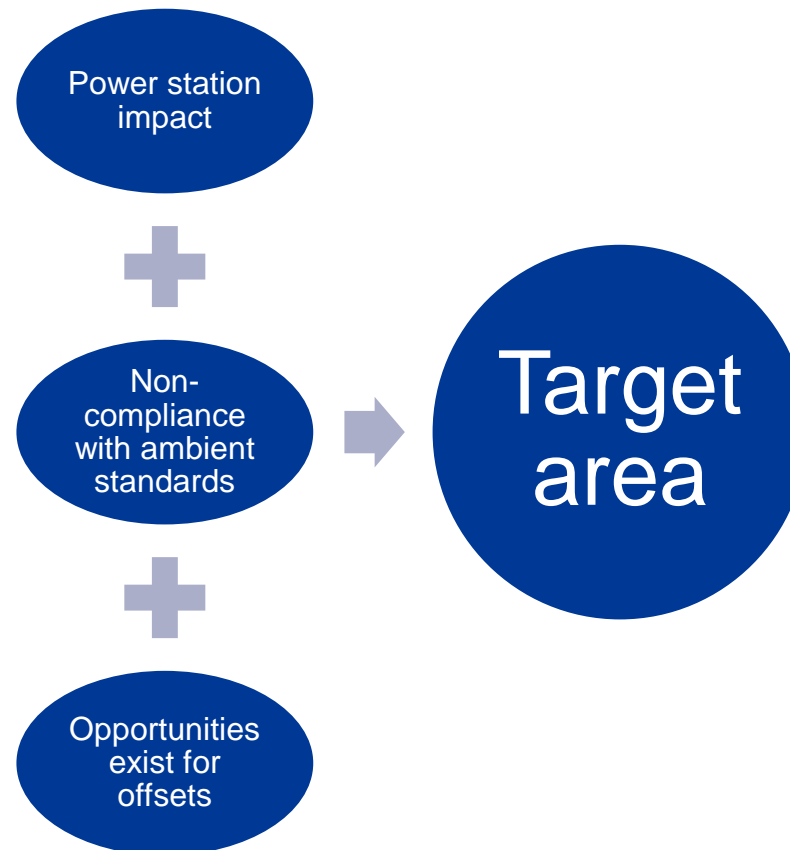
Education
and
awareness



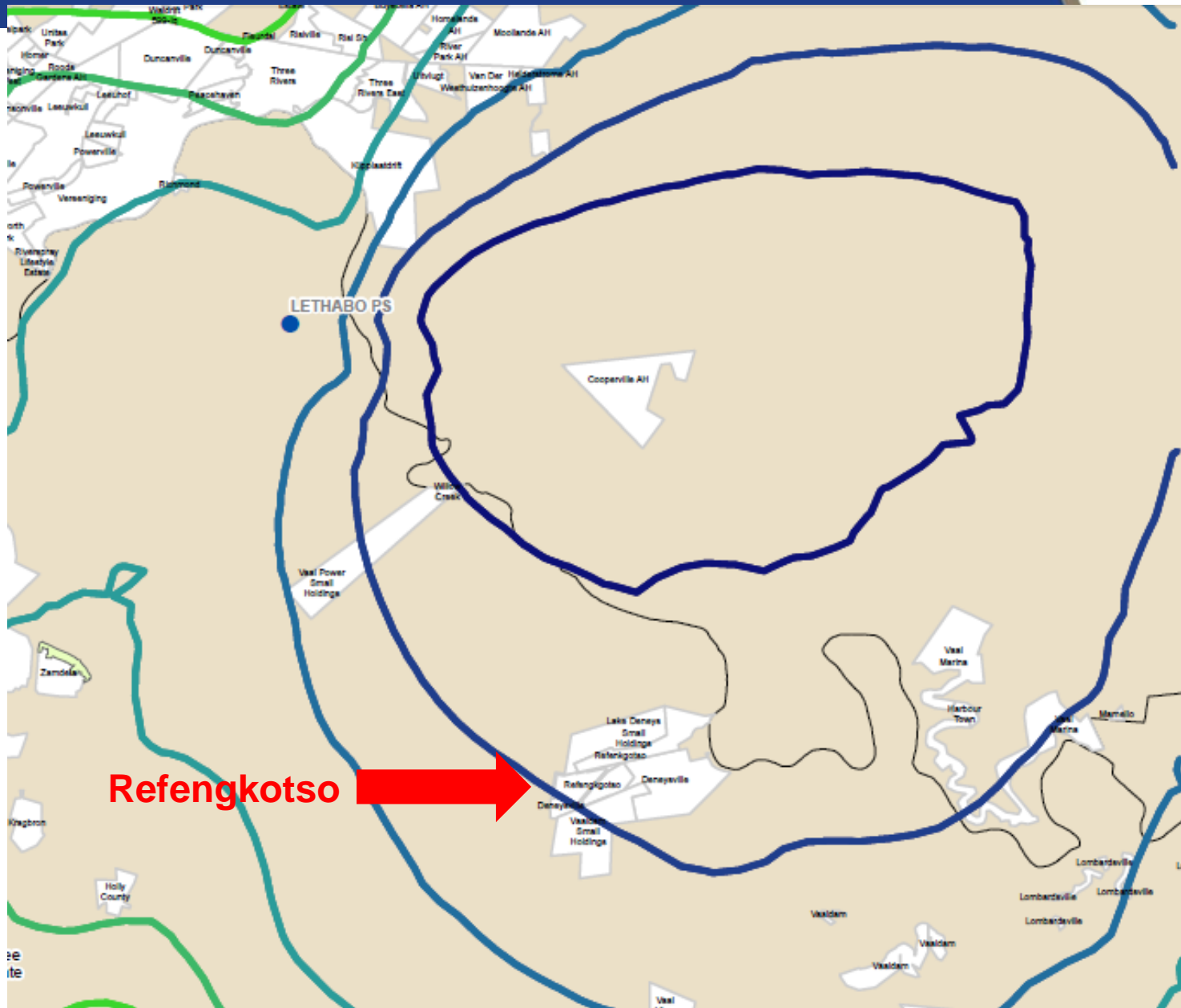
Projects in
development

Offsets need to be implemented on at least one settlement of reasonable size for each power station.

Area selection criteria:



Offsets principles: Selection of areas example



Objectives of community consultation:

- Get buy-in from the community
- Identify local emission sources and how they can best be addressed.
- Establish an energy usage and socio-economic baseline for a community
- Create awareness as to how air pollution affects health
- Educate on how to best employ and maintain the offset



Project Design

- A Local Stakeholder Reference Group (LSRG) will be set up in each community
- Key stakeholders for the LSRG include all households, political leaders, social leaders, local government, the South African Police Service, Eskom and Eskom contractors

Communication with the community may proceed in four stages:

- *Stage 1:* Engage licensing authorities, local government and formally elected leaders
- *Stage 2:* Establish and maintain a Local Stakeholder Reference Group, with meetings held at least 3 times a year
- *Stage 3:* Conduct public communication meeting(s) with a wider audience as needed.
- *Stage 4:* Communicate with qualifying households.

- Potential for local **temporary** employment creation
- Teams which conduct the socio-economic surveys and implement the interventions
- Establish a locally owned company which can assist with the maintenance of the installations in the longer term.

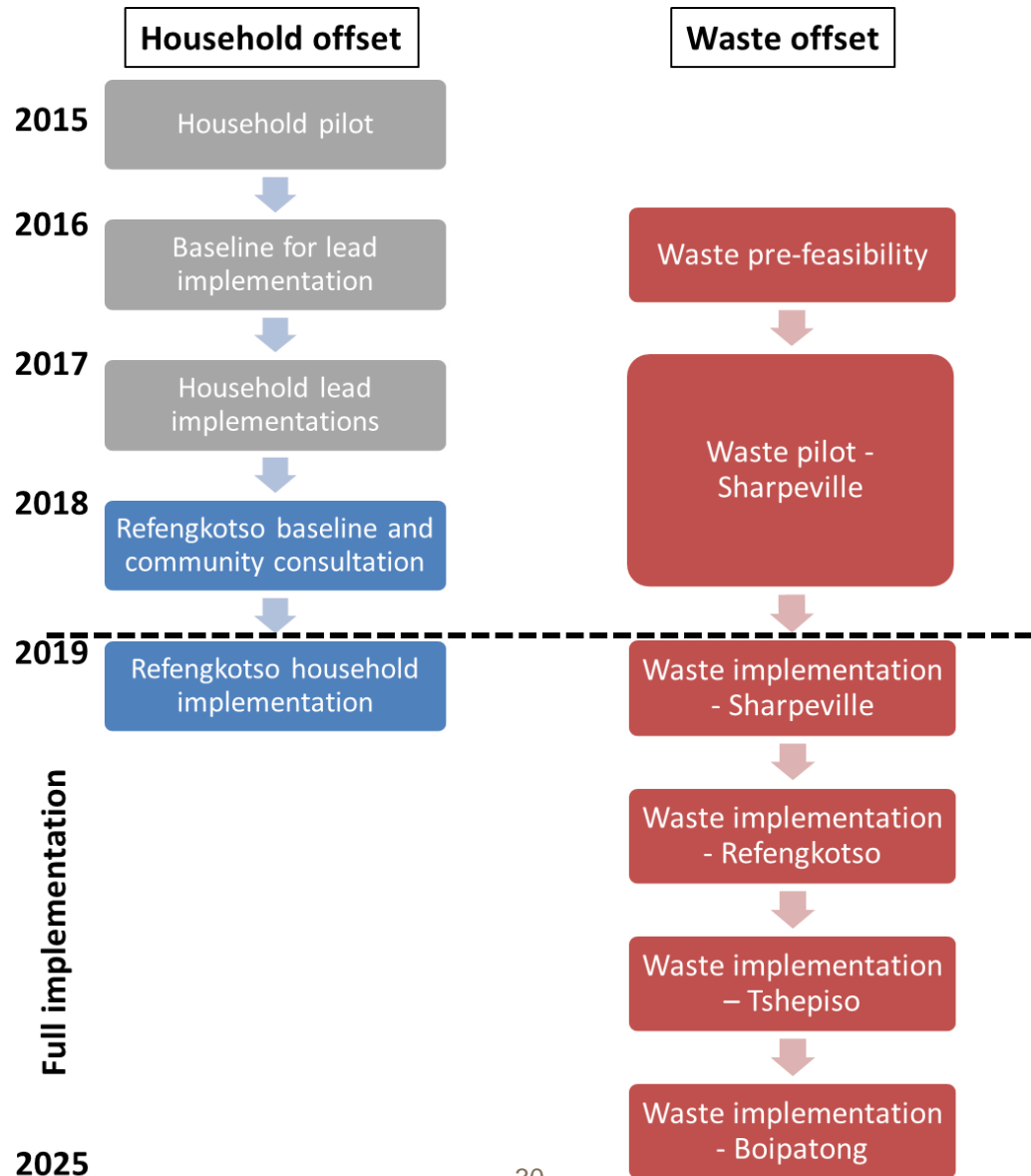


Power station	Settlement	Indicative no. of households	Intervention
Lethabo	Refengkotso	880	Household + waste
	Sharpeville	[12 200]	Waste pilot + waste
	Tshepisong	[9 000]	Waste
	Boipatong	[7 000]	Waste



- Questions to be answered during the waste pre-feasibility and pilot studies:
 - Why is waste burnt?
 - Who burns the waste?
 - Where is waste burnt?
 - What type of waste is burnt?

Offset plan: **3** Timeline for implementation



****Schedule is dependent on the authorities' approval of the implementation plan, and on NERSA's approval of the inclusion of the costs into the MYDP4 electricity tariff****

How can you input into the draft plan?

- Speak up today!
- Please submit comments to Ekoinfo by **23 March 2016**:

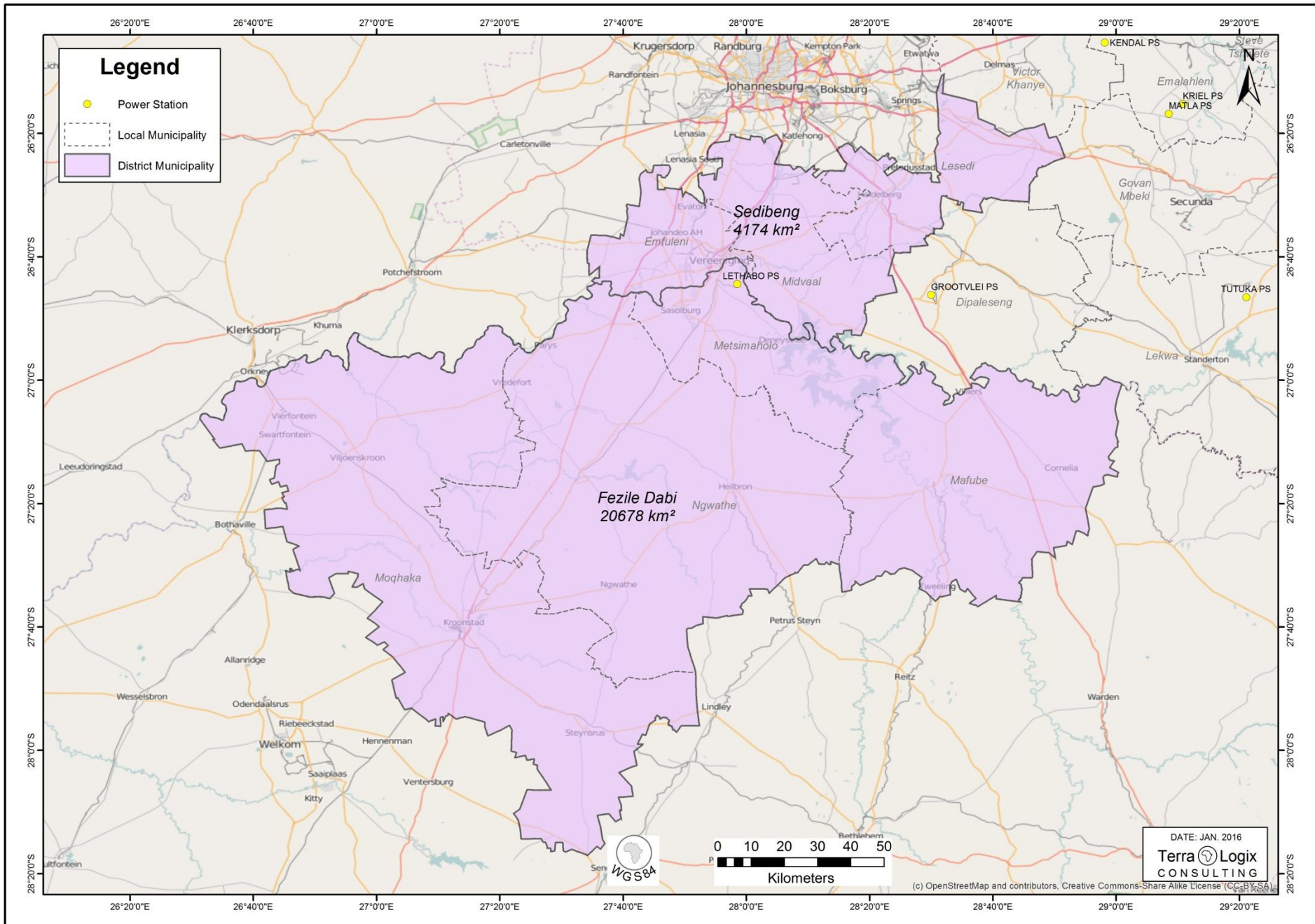
Contact person:	Sean Hutcheons
Telephone number:	012 365 2546 from 08:00 to 16:00
Fax number:	012 365-3217 or 086 515-5337 or 086 582-7427
Email address:	public@ekoinfo.co.za
Postal address:	PO Box 72847, Lynwood Ridge, Pretoria, 0040

Hard copies of the Draft Plan are available for viewing at:

Electronic copies of the Draft Plan can be downloaded from www.ekoinfo.co.za or requested from Ekoinfo

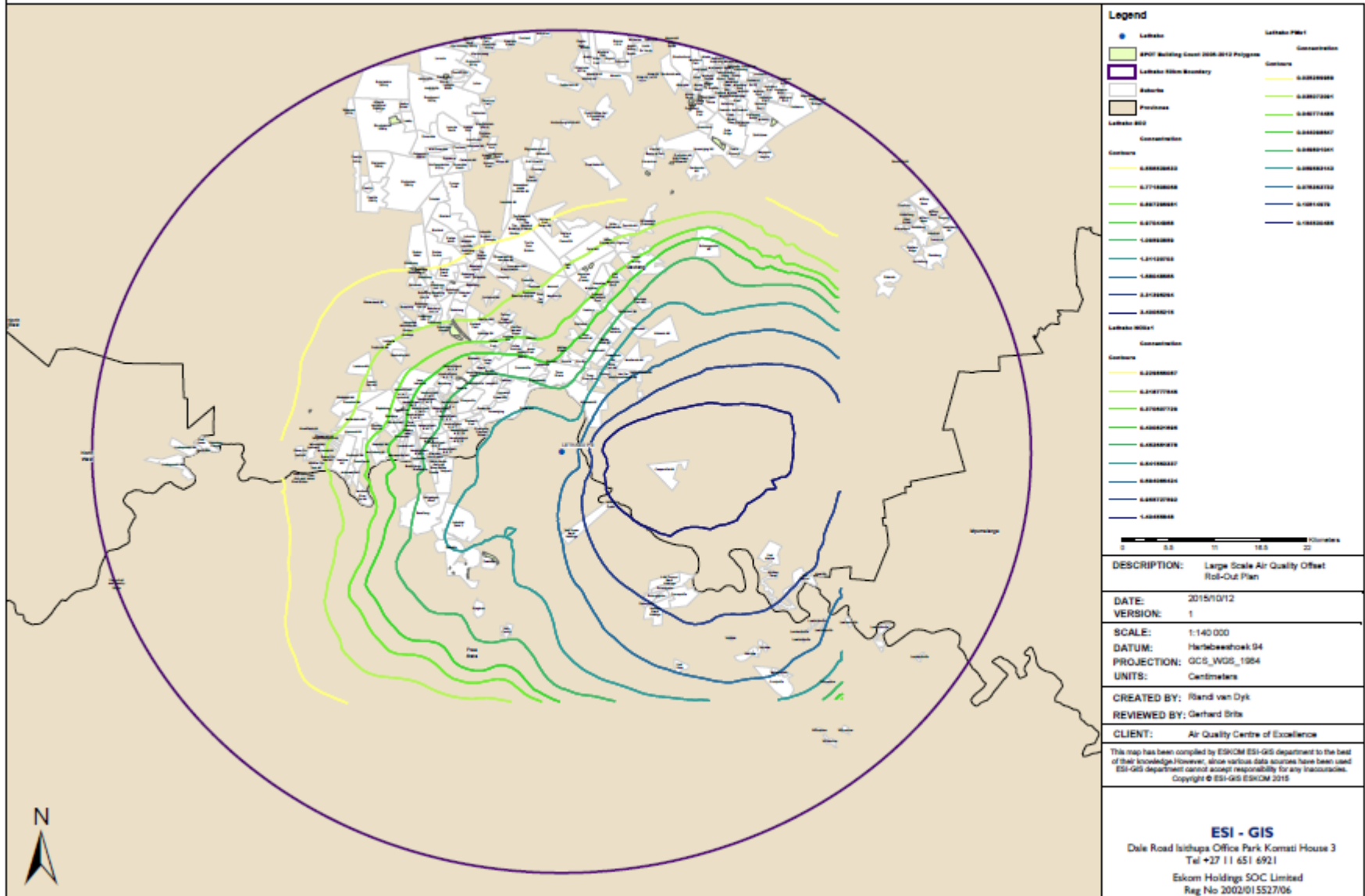
Venue	Address
Sharpeville Library	Cnr Seeiso and Zwane Streets
Sasolburg Public Library	John Vorster Road, Sasolburg
Vereeniging Public Library	Cnr Leslie Street and Mark Ave
Vanderbijlpark Public Library	Cnr Frikkie Meyer and Klasie Havenga St
Refengkotso Library	2195 Phomolong Road

BACK UP SLIDES



Impact of Lethabo's emissions

SETTLEMENT IDENTIFICATION: LETHABO



Areas selected for offsets

