DDM Impact Simulator

Project Concept

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Virtual meeting: IID Seminar

science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

CSIR

Touching lives through innovation

Project team

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The problem

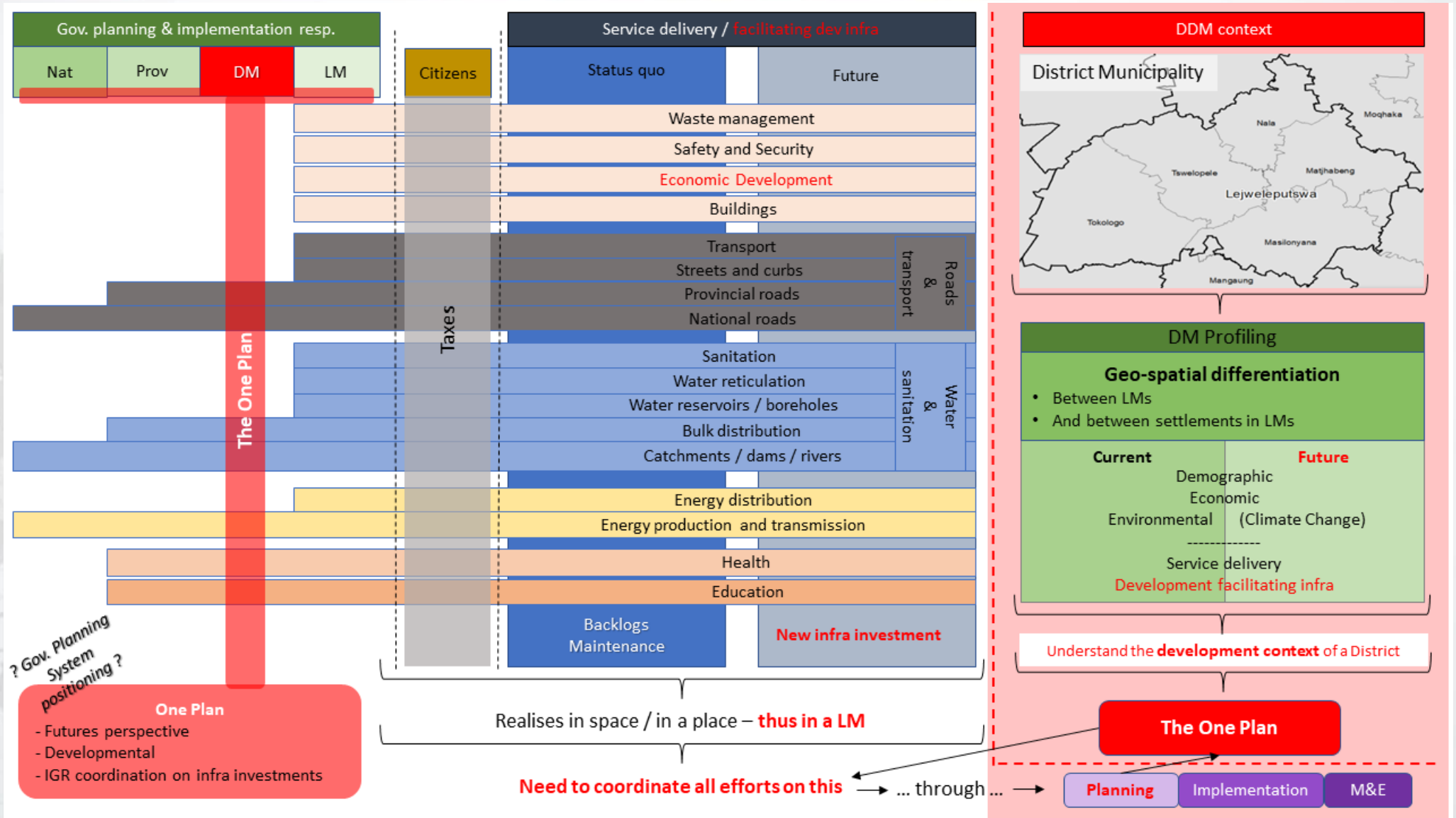
- SA invests R’billions every year in development initiatives
- The whole seems to remain less than the sum of the parts – poverty, unemployment and inequality largely persists
- Investments are:
  - Uncoordinated from an interdependency point of view
  - Spatial and temporal mis-aligned
    - Wrong place, wrong time
    - Wrong place, right time
    - Right place, wrong time
    - Right place, right time!

Background and objective

- An element of the DDM is to capture the intervention commitments
  - investment through projects to stimulate growth and development
- Objective is to develop a geo-spatial platform to simulate the impact of existing and planned DDM projects on:
  - socio-economic circumstances;
  - economic growth and development including job creation (short and longer term) and skills development;
  - and basic service delivery like access to water, energy, sanitation, roads, education and health care.
- The DDM impact simulator will **primarily use the DSI DDM interventions** which are collected through **various surveys in the DSI's DDM impact areas**

District development model

Follow the red
for unique contribution

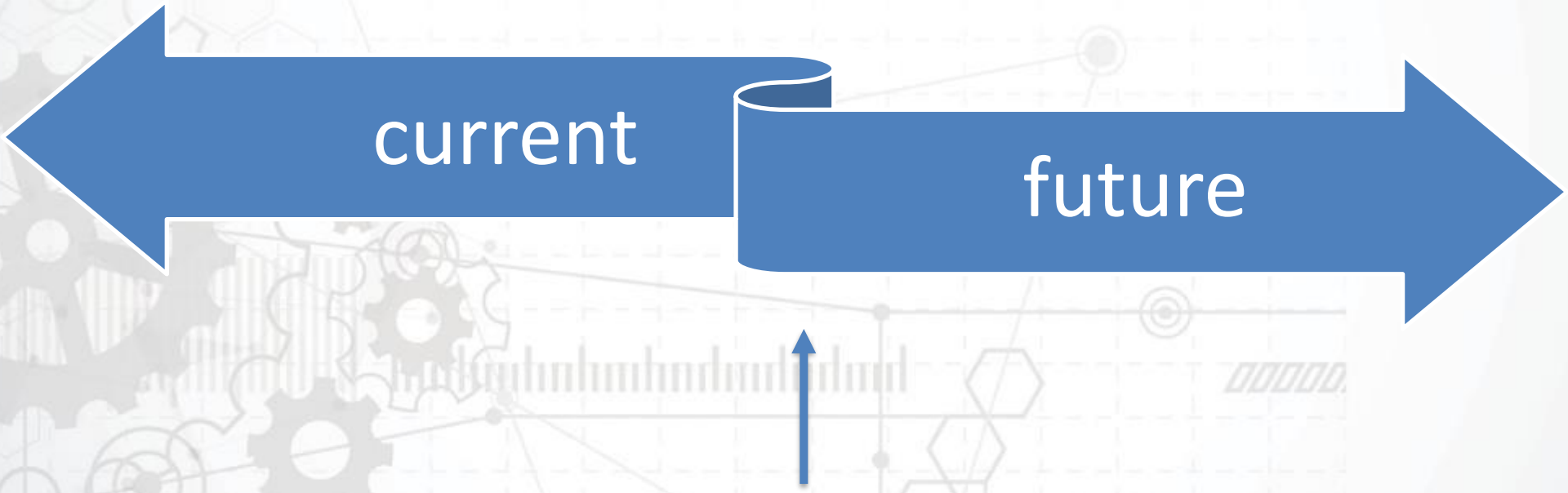


One plan pillars

A. Managing urbanisation, growth and development;
B. Determining and/or supporting local economic drivers;
C. Determining and managing spatial form, land release and land development;
D. Determining infrastructure investment requirements and ensure long-term infrastructure adequacy to support integrated human settlements, economic activity and provision of basic services, community and social services:
E. Institutionalize long term planning whilst addressing ‘burning’ short term issues

The idea in a nutshell

- Compare the **current state** of a DM to **what it may be** if all the DDM investments realise



Baseline information

Baseline profiling data needs

- housing provision and delivery
- access to basic services
- bulk service provision (water, electricity, ICT, and roads)
- basic education and skills development
- employment
- economic production (GDP)
- critical social infrastructure and services (health, education, social grants, etc.)
- (social progress e.g., crime statistics – not easy to model)

Interventions to be captured and impact modelled

- skills development,
- employment creation,
- economic activity and/or opportunities
- access to basic services
- access to social infrastructure
- (societal impact – still needs some further thinking)

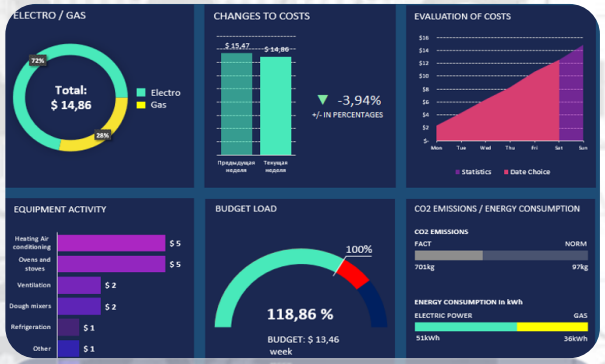
Simulation process

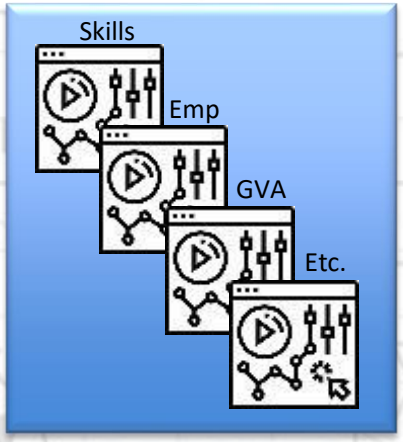
DDM interventions

current

future

As-is





Prediction models

What-may-be

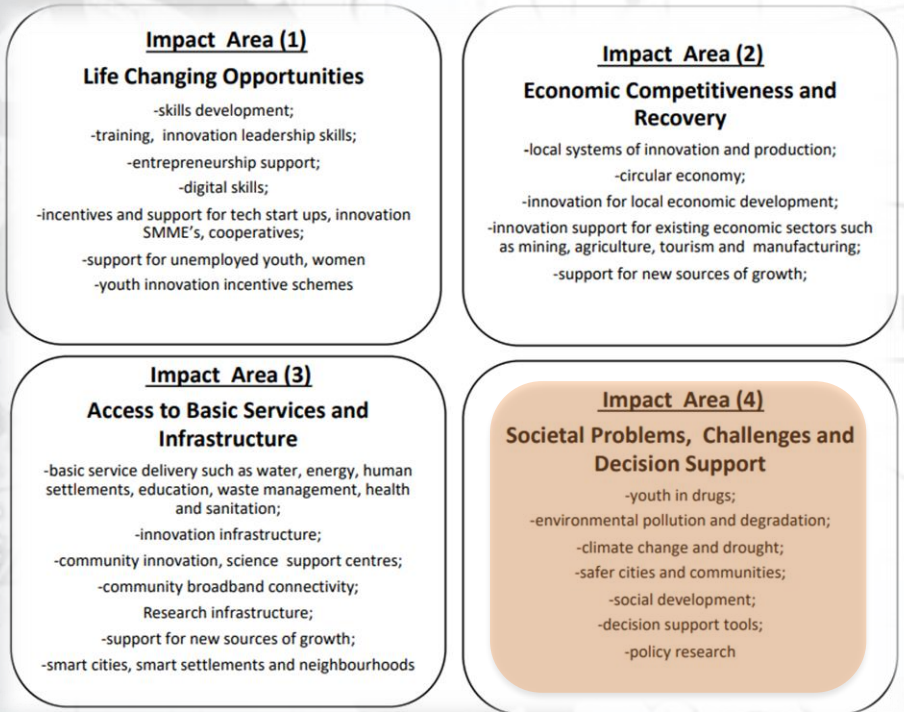
DSI impact areas >> DDM modelling

- (1) life changing opportunities
- (2) economic competitiveness and recovery
- (3) access to basic services and infrastructure
- (4) societal problems, challenges and decision support

- skills development
- employment creation
- economic activity and/or opportunities

- access to basic services
- access to social infrastructure

- societal impact (still needs some further thinking)

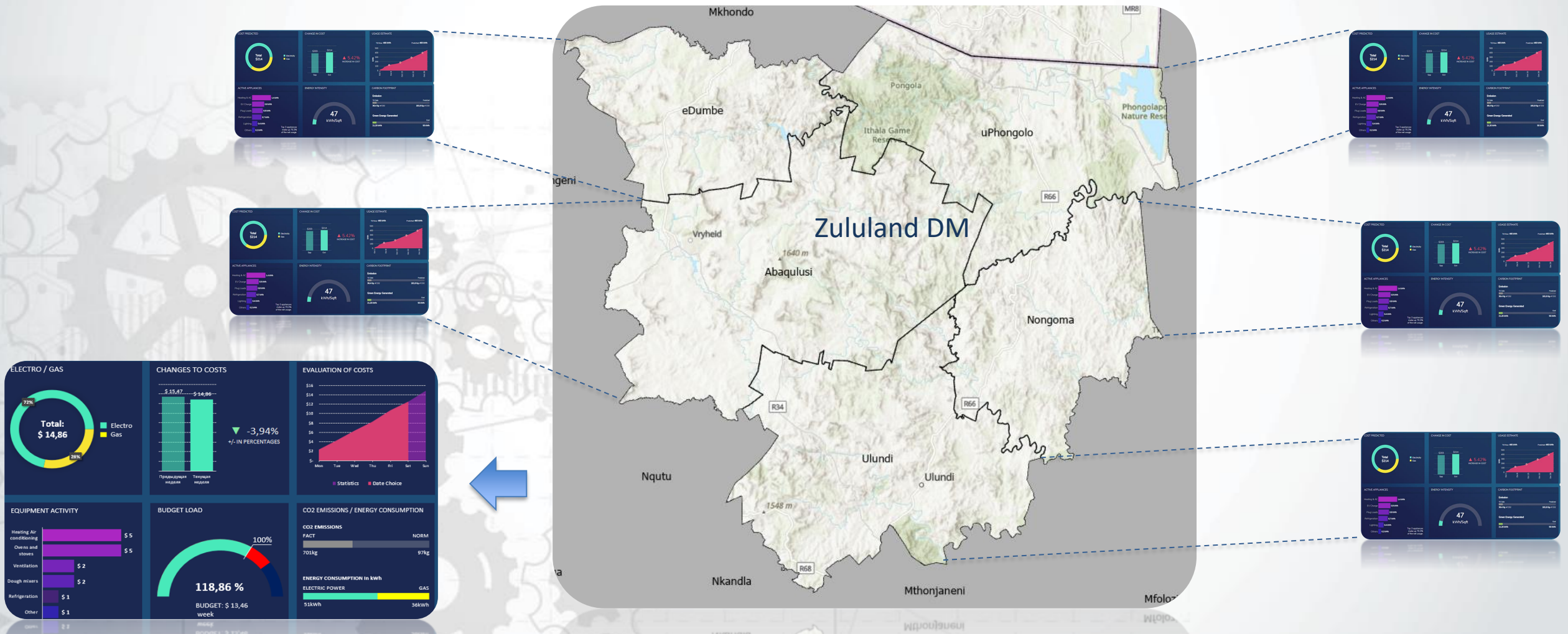


Suggested study areas

- Zululand
- Sedibeng
- West Rand

Analysis resolution

- Profiles and modelling outputs: municipal level of detail plus consolidated DM view



Where will the model add value

- DM or LMs can potentially use the model in their planning and implementation processes
  - Capture interventions in a database (spatially)
  - Evaluate the impact of current interventions
  - Can also evaluate alternatives (test based on scenarios)
    - get more insight on trade-offs
    - feed into longer term plans and prioritisation

Limitations of the model

- Need to manage expectations
  - Output resolution, LM-level
  - Modelling focus on a selection of variables (indicators)
    - predominantly economic development focus
- Start with specific case study areas

Stakeholders

- CoGTA
- Selected Districts
- Relevant Local Municipalities
- Sector departments (National and Provincial)

Process and deliverables

- **Stakeholder** selection and **engagements**;
- Model and associated **system specifications** – the system will not only be the model for running the simulation, but will also:
  - allow the capturing of data, including investment project data;
  - visualise the base line indicators as well as the simulation outputs;
  - draw certain reports for distribution
- **Base line indicator database**;
- **Life intervention database** (interactive interface to keep up to date) of DDM current and planned projects and/or initiatives;
- **Simulation model**
  - DM socialization of the model (use it)
  - Output reports on planning implications for LMs and DMs
  - Continues use: intervention data capture and impact modelling

END

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