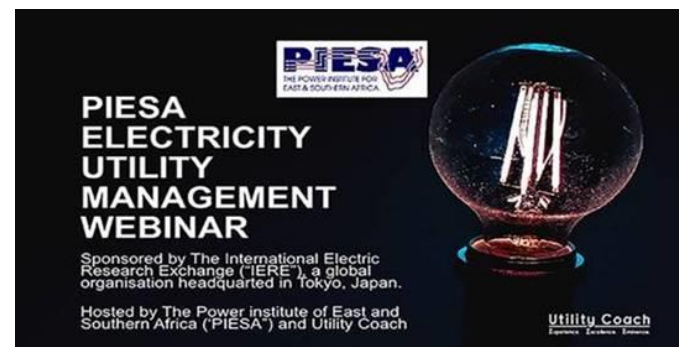




CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD



## Thoughts on New Business Models PIESA Session 2: Business Models

Leila Mahomed Weideman  
Director: Sustainable Energy Markets

Energy & Climate Change Directorate  
February 2021

Making progress possible. **Together.**

# Current challenges facing EDI in SA

---

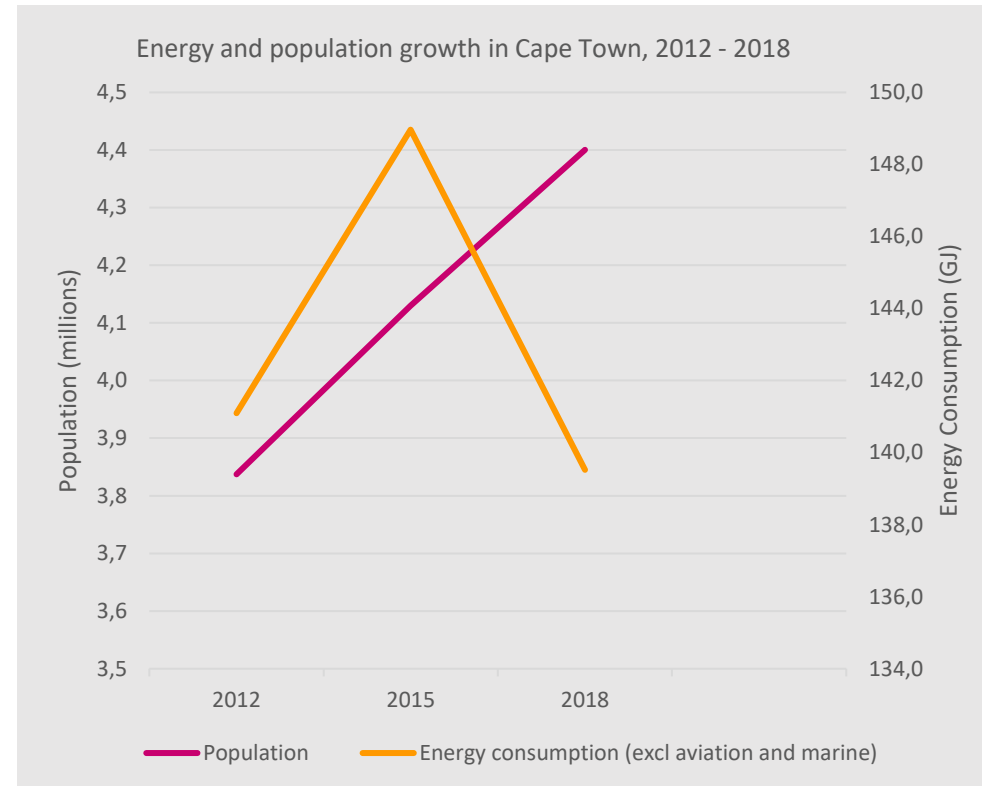
The challenges facing the Electricity Distribution Industry (EDI) in South Africa and the changing energy landscape globally to a decentralised and increasingly unbundled, market driven, distributed energy system means that an alternative business model for local government utilities needs to be explored and established. The City has to increasingly deal with the challenges of

- Reduction in electricity sales
- Customer retention
- Increasing tariffs above CPIX and customer's ability to pay
- City's growth in subsidised services
- Electricity bulk supply constraints (resulting in possible load shedding)
- Challenges associated with carbon emissions targets, the climate crisis
- The impact of energy efficiency, renewable energy and new technologies on existing systems and models

***City of Cape Town: Energy & Climate Changes Directorate's SDBIP 2018 - 2019***

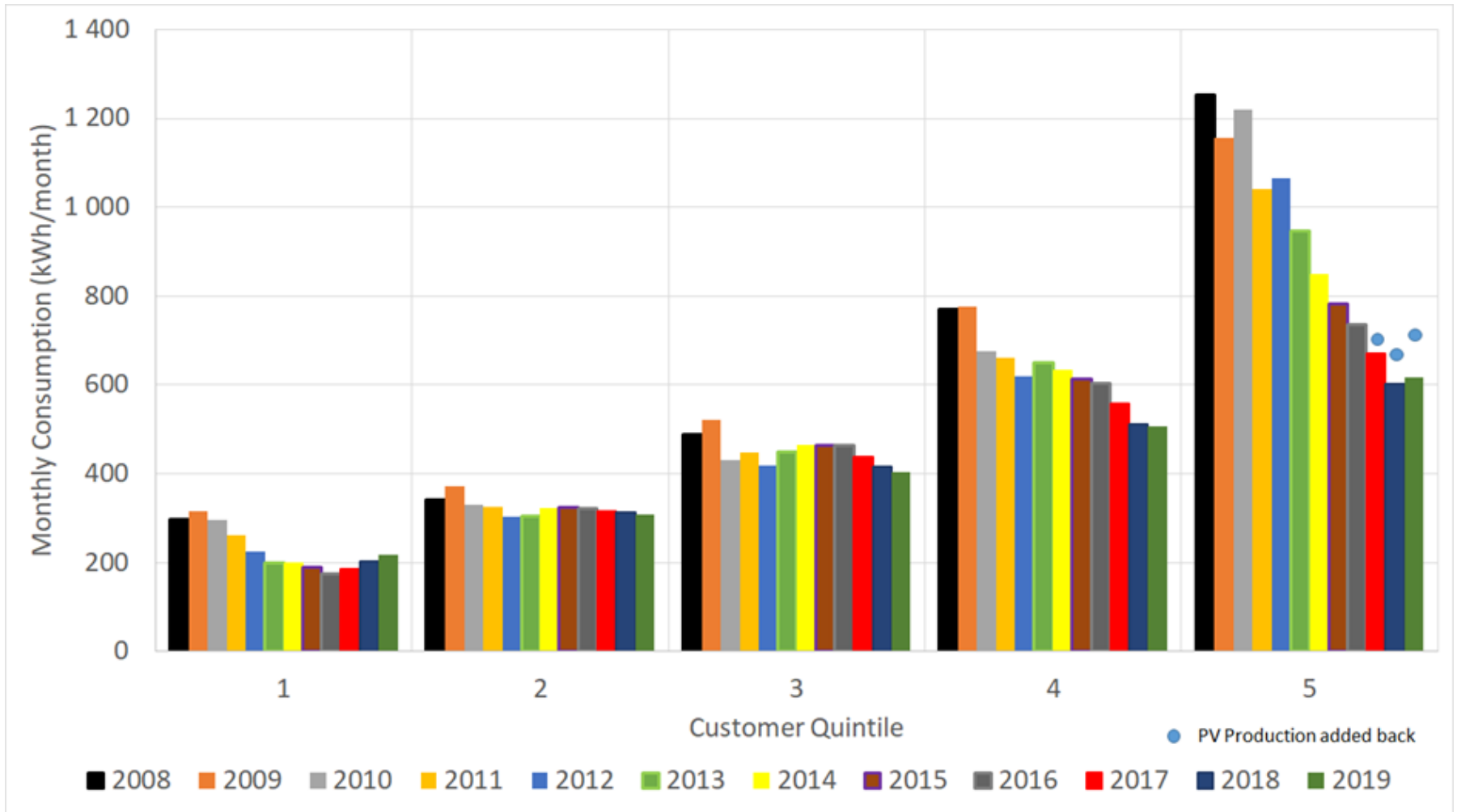
# Current Cape Town context

- **Although population grew 6.5% between 2015 - 2018, energy consumption in the City dropped by 6.3% over the same period.**
- Transport sector the dominant consumer of energy = 55% of the City's total energy demand.
- Followed by the commercial (13%), aviation (12%) and residential sectors (10%)
- All other sectors including manufacturing and agricultural sectors account for about 10% of the total energy consumed.
- Transport sector energy consumption (including aviation) increased - 64% in 2012 to 67% in 2018.
- Commercial sector energy consumption has remained constant at 13%.
- Residential sector has shown a decline from 13% in 2012.
- Manufacturing sector - slight decrease of 1% in the share of energy consumed in the over this period.

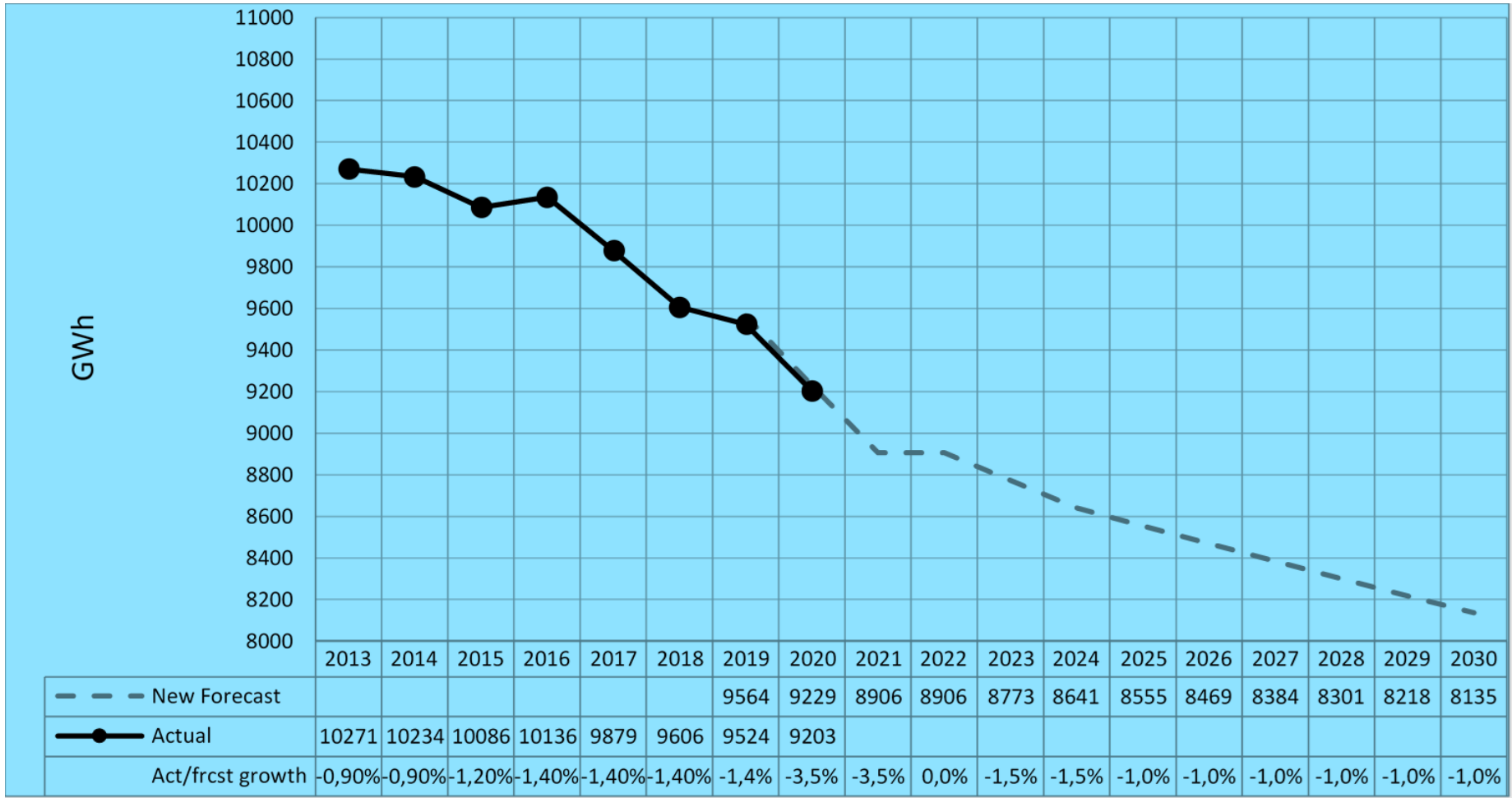


Energy and population growth in Cape Town, 2012 – 2018

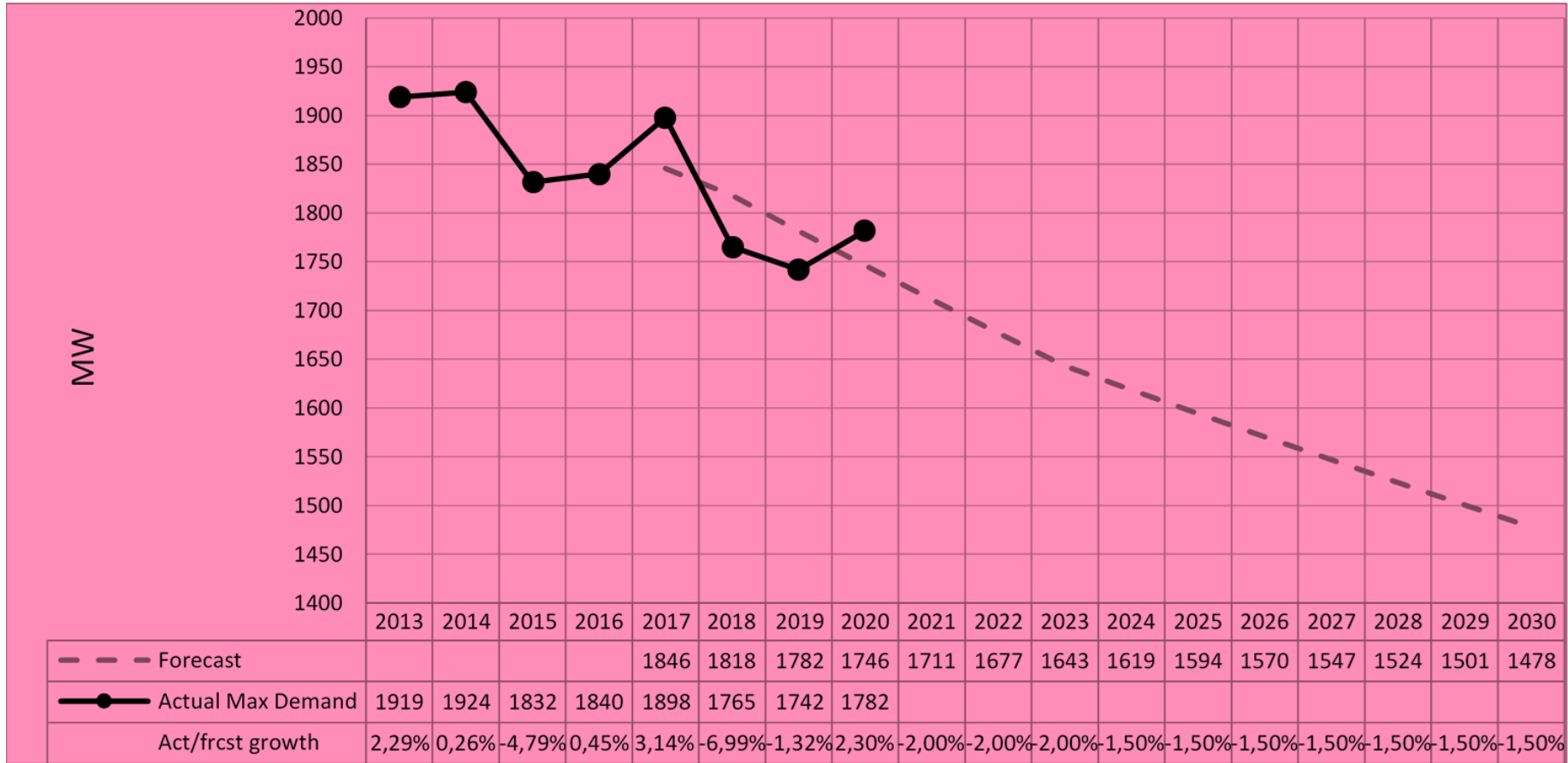
# The distribution of CCT Residential Elec. Demand over Time



# Electricity Consumption & Forecasted Consumption Cape Town Supply Area



# Electricity Demand & Forecasted Demand in Cape Town Supply Area



# Pre-requisites to a new business model

---

- Get on top of your numbers:
  - Basic numbers and trends; Cost of supply studies, cost of service studies, cost of network; scenario development, development of electricity price pathways
- Move to cost reflective tariffs:
  - Calculate it and work with your politicians to move towards a delinked tariff, separating out kwh and basic connection charges
  - In CT each customer would need to pay R450 monthly basic connection charge for the system to be cost reflective
- Separate out generation; wires; retail and ringfence:
  - Development of contractual and transactional relationships and SLA's between the 3 separate business areas
  - Protect wires, try to ensure sustainable business units
- Know your customer; communicate better with your customer
  - Customer of now and the future wants reliability, affordability; choice/options
  - Customer retention is key to the future of the business

# Pre-requisites to a new business model

---

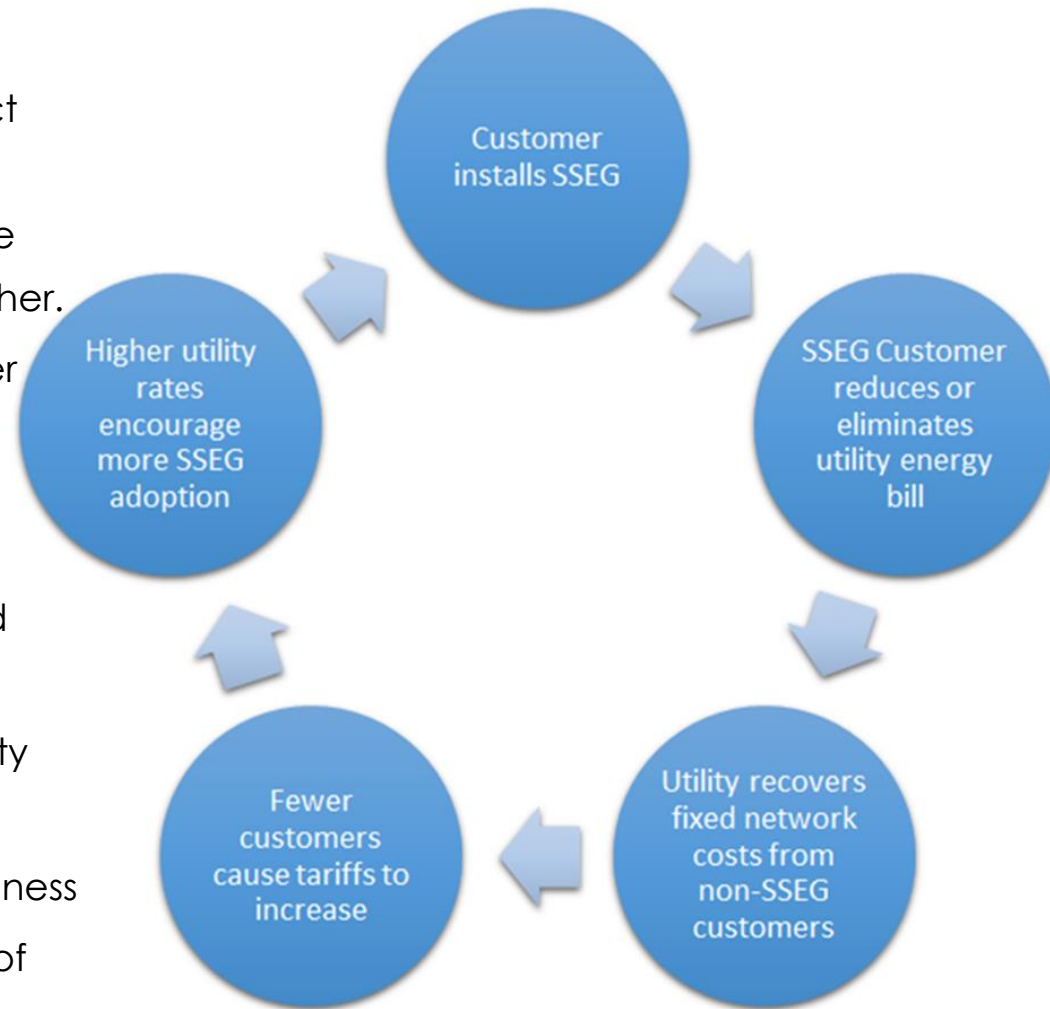
- Keep up with the global trends and work towards flexibility and agility
  - The electricity systems of the future will be more decentralised and electricity will be traded in a more liberalised and digitally enabled market.
  - Grids consisting of a multitude of small inverters instead of large spinning generators are proving challenging to control with respect to balancing supply and demand and sustained investment will be required in engineering and staff to ensure reliability of supply through a transition.
  - The trading of electricity and electricity ancillary services between multiple suppliers, utilities, aggregators and customers will require the development of new **retail platforms also requiring investment in research and development, systems and people.**
- Even then it is hard work, the solutions are not that clear due to dependencies and innovations are restricted by regulatory constraints at a SA local government level (we not the same as Germany for example).



# The transition : is the Utility death spiral inevitable?

## The conundrums

- Legislation supports private distributed energy systems, making it easier to defect from a municipality whose has many regulatory hurdles to transition and whose total cost of procurement will also be higher.
- Regulatory hurdles will decrease for larger systems, batteries will become more affordable.
- The tipping point is difficult to predict and timing is everything.
- What is the role of the municipal electricity utility of the future?
  - Prepare for a smaller, diversified business
  - The transition is likely to be a period of instability and uncertainty.



# What is Cape Town doing to transition?

---

## 1. **Creating space for modelling, data management, planning & research**

- State of Energy Report 2020; Cost of Supply Study; Energy Planning and Electricity Price Pathways

## 2. **Moving to cost reflective tariffs**

- Created efficiencies in the business from staffing to asset management
- Starting with SSEG customers, moving to the appropriate daily connection charge

## 3. **Separating out Generation – Wires – Retail**

- Ringfencing with contractual relationships

## 4. **Developing new options to retain the Customer**

- Innovative SSEG [financing] programme
- Rewards programmes?
- Engaging the customer – City app; information campaigns; surveys

## 5. **Seeking new Customers**

- Electrifying the Transport sector : EVs and bulk transport



# What is Cape Town doing to transition?

---

## 6. Securing and Building skills, tools and systems for the future

- LEAP modeling software; PVSyst
- Renewable Energy Project Managers
- Sustainable Energy Researchers
- Data Scientists
- Social Scientist

## 7. Investigating new and ancillary services

- Own generation of new renewable energy capacity at various scales
- Investigating Utility Scale Battery Storage stacking and ancillary services
- Investigating programmatic role in residential SSEG, battery storage, EV charging and DSM such as smart geysers role out
- Investigating role in alternative service delivery for informal and new

settlements



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

# What is Cape Town doing to transition?

---

## 7. Investigating new and ancillary services

- Working with the CSP to investigate municipal procurement of new generation capacity under different scenarios eg
  - Municipality owned generation that is able to supply surrounding municipalities
  - Municipalities providing a platform for multiple traders of electricity who buy and sell electricity
- Wheeling and trading platform development
- Investigating the role of hydrogen/molecular fuels and options for Cape Town

## 8. Gearing the Grid up for this new paradigm

- Investing in engineering, staff and maintenance of the grid

## 9. Investigating new cash flow options

- Selling advertising space on electricity vouchers?
- Leasing of land to IPPs?

## 10. Taking colleagues along in the process of visioning the future

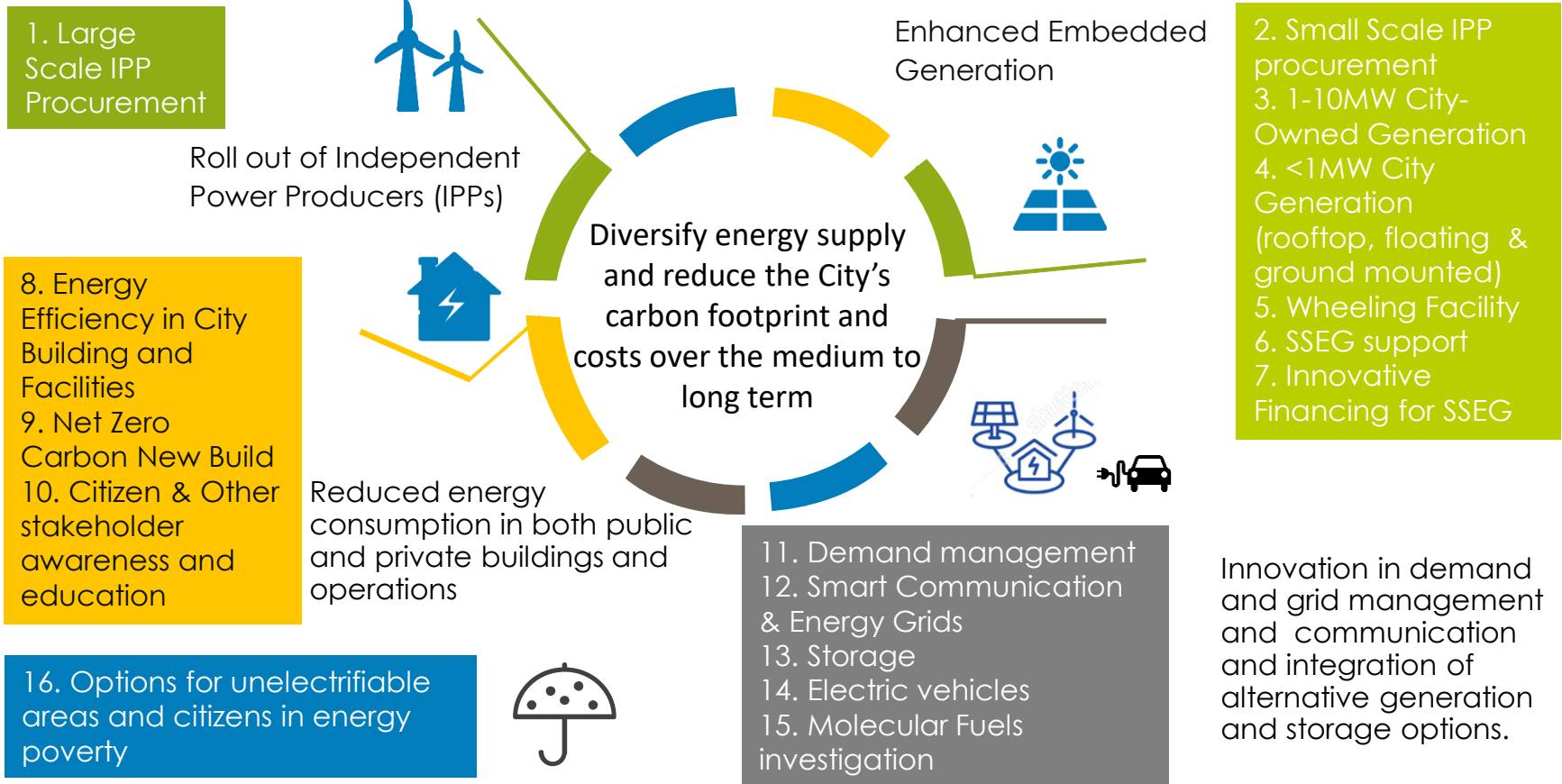
- Have a conscious process and engage for change. Change is uncomfortable, the transition with its unknowns will enhance this, create a supportive space for engaging.



# Energy secure - carbon neutral future for Cape Town

## PLANNING AND RESEARCH:

Energy Planning; Carbon Neutral Modelling & Planning; Feasibility Studies; Data Management; Policy Dev



## COMMUNICATION & COLLABORATION





**CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD**

**Thank You**

For queries contact: [Leila.mahomedweideman@capetown.gov.za](mailto:Leila.mahomedweideman@capetown.gov.za)

**Making progress possible. Together.**