

# Futurecasting Cape Town

## Session report - Exploring municipal energy resilience

7 May 2021

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### What is Futurecasting?

Futurecasting is an approach that aims to anticipate the changes in a sector or in society in the next 10-15 years. It incorporates past patterns and trends, combines current insights, and includes futures thinking to help shape the future and mitigate risks. It is an approach that can be applied to business, a specific sector, or a city.

The EDP and the City of Cape Town (CCT) are working together on a series of Futurecasting events, with the aim of providing an opportunity for all sectors to contribute to a shared, inclusive future in the city. These events are one of the key deliverables of the CCT Resilience Strategy, which is being driven by the Resilience Department, and which aim to lead to a more general participation in urbanisation solutions, access to shared knowledge and expertise, and the ability to tap into the economic opportunities inherent in rapid urbanisation and technological transformation.

### Exploring municipal energy resilience

The second Futurecasting event was held on 7 May 2021, and focused on exploring a clear and realistic understanding of the role of the City in creating a more resilient energy future, including challenges facing South Africa's electricity distribution industry to a decentralised and an increasingly unbundled market driven distributed energy system.

The aim was to help build collective understanding of the pathway, implications, benefits and challenges towards a new energy regime and business model in Cape Town.

The EDP and the City of Cape Town were joined by representatives from the Western Cape Government, academia, local government, international organisations, NGOs and NPOs, parastatals, and the private sector.

Four speakers shared their ideas, insights, and experiences on the subject of municipal energy resilience. The speakers addressed the financing, procurement and legal implications of a City commitment to generate or purchase electricity from utility scale renewable energy (RE) independent power producers (IPPs).

The panellists consisted of Leila Mahomed Weideman Director Sustainable Energy Markets, City of Cape Town; Louise Scholtz Senior Programme Manager: Urban Futures, WWF SA; Karin Kritzinger Senior researcher Centre for Renewable and Sustainable Energy, Stellenbosch University; Bruce Raw Chief Strategy Officer at GreenCape. The panel was moderated by Saliem Fakir Executive Director, The African Climate Foundation.



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## Why explore municipal energy resilience?

Load shedding by Eskom is having devastating economic and social impacts on households and businesses in Cape Town, putting the precarious economy under enormous pressure. Load-shedding decreases economic productivity, damages local infrastructure and domestic appliances, and increases traffic congestion and societal stress.

The City needs to increasingly deal with the challenges of reduction in electricity sales, customer retention, increasingly tariffs over CPIX and customers' ability to pay, City's growth in subsidised services, electricity bulk supply constraints resulting in load shedding, challenges associated with carbon emission targets and our climate crisis, finally, the impact of energy efficiency, renewable energy and new technologies on existing systems and models.

The City acknowledged that transitioning to this new energy regime necessitated co-visioning a future because while change is uncomfortable, it is unavoidable. The City aims to have customers who are well-informed, and a City network that is resilient; to be a quick learner responding to evidence-based research and requirements of residents and political leaders.

## Insights from the session

*The City of Cape Town (CoCT) is developing their own renewable energy assets:* The City is starting with a 10MW project in Atlantis, and over the next 10 years may build out 50MW of RE, either PV or waste to energy. Note that 50MW of solar that has a 28% capacity factor is only about 1% of the City's energy purchases from Eskom.

*The CoCT aims to launch a tender to call IPPs to supply renewable energy:* These projects will be a maximum of 20MW but on average 10MW, be located within the City's grid and collectively provide about 200MW.

*Larger-scale renewable IPP programme:* The aim is to secure about 300 to 500MW from projects located outside of the City. The power would then be wheeled across the Eskom network and fed into the City's local distribution network.

*The CoCT wheeling framework:* This would enable an RE generator to transact with an electricity off-taker within the City's grid that would like to use renewable and green energy for credits.

*Develop a tariff and policy for small-scale embedded generation (SSEG):* The CoCT was the first in SA to develop this type of tariff and policy, it enables citizens and the City to put up rooftop PV systems. Currently the City has about 50 – 80MW registered grid-tied SSEG systems and are hoping it will grow. Schedule 2 of the Electricity Regulation Act will increase the ceiling of those who can apply for a generation license to 10MW.

*CoCT scenario planning:* The City found the most cost-effective option is to build its own renewable plant with scaled energy efficiency. The second option is to build its own RE backed up by IPP or SSEG.

*Trading platform for regional supply:* The City is investigating whether it can create a trading platform and supply power to nearby municipalities.

*Systems focus:* The point was raised that the City should focus on systems not technology to achieve equitable outcomes, and evaluate progress through these goals: supporting economic development and growth; universal access to secure and reliable energy supply; and environmental sustainability across the energy value chain.

*Build private-sector coalitions:* The City should facilitate more impact investing opportunities. The City's challenges increase with increasing informality and ongoing in-migration resulting in more demand for services but no commensurate inflow in the City's fiscus.

*Being off-grid isn't always greener:* A common finding in projects supplying 100% carbon-free renewable energy is a strong growth in energy use.

*Grid defection and SSEG commonplace:* SA is well past price parity for rooftop PV and the market is responding strongly.

*The City is to offer grid provision as a service:* The constant trend of increasing electricity prices will shift. So, while RE will make power cheaper to produce, maintaining a balanced grid and similar services will become more expensive and more difficult.

*New markets within the City:* Supplying electricity to the transportation sector to charge electric and hydrogen powered vehicles. This will require the required infrastructure to be developed.

*Alternative service delivery:* Technology will catch up with ideas of equitable service delivery, and alternative service delivery will become more viable while requiring less subsidy.

*Carbon credits:* Residents and businesses want access to cleaner energy or an ability to show they have no carbon footprint through systems like banking of wheeled energy.

It is not clear that cheaper, least-cost technologies will deliver an overall systems-cost that is cheaper to the consumer. Without a cheaper systems-cost and lower

pricing for residents, further disruption through grid defection and other problems remain.

The City's resilience measure must include both the distribution of the power system and the fiscal space to be able to continue to manage generation capital costs and other infrastructure costs. Especially as the demand for energy grows among those who cannot pay for it.

In answer to a question of providing RDP homes a solar panel with a refit connection on a long-lease, views ranged from it being a practical way to expand equitable electricity access, to it being an expensive, unreliable and impractically low-voltage daylight-only solution that was less cost efficient than expanding the grid to those areas.

## Sharing the insights

The EDP will continue to work with public sector and private sector stakeholders to explore ways to share information, insights and effective work models to support growth and development, as well as build conversations that lead to collaborative action and collective impact.