City Power Alternative Energy Strategy

Presentation to PIESA Webinar 24 June 2021

Energy and sustainability, aspects to look at -

Greening of the supply, to meet carbon dioxide emission reduction targets in mitigation of climate change risks –

- By 2030, if the IRP is implemented 'as is' 34% of the energy generated in South Africa will be from carbon free sources. Some will be on Eskom networks, some on ours.
- The City of Johannesburg – EISD - has a slightly higher green energy aspiration, targeting 35% of electricity usage from renewable energy sources by 2030.
- For Johannesburg, this presently translates into 10 GWh of electricity per day, and if only from solar, this would mean that 2GW of PV generating capacity will be required.

Equally importantly - at the same time we need to:

- Improve the security of supply to all parts of the City
- Reduce the Cost of Supply from Eskom
- Reduce the cross-subsidy burden placed on Johannesburg's C&I customers
- Build resilience against load shedding and the economic havoc that it causes
- Support EVs, an opportunity for the greening of transport, both public and private
- Economic Development - igniting regional 'new energy' industries, local first, Africa next

The electricity business of tomorrow – is being built on the business of today.

While improving and using the same grid, we are moving away from the exclusive kWh business towards more of a network services based business model.

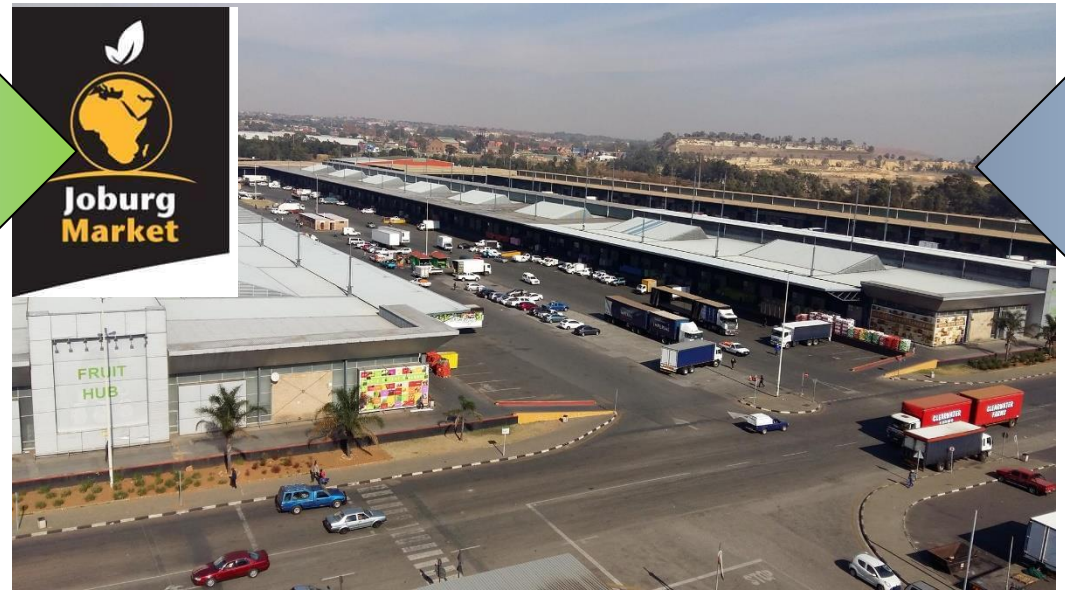
The Joburg Market - a fine 100 year old institution serving the community

An organized holding, trading and distribution system equipped with a convenient trading platform

Diverse Producers

Commercial farmers
Small holding producers

- Market certainty
- Bulk transport to one stop
- Opportunity to 'gap-fill'
- Safety standards applied



Cold storage facilities for temporal management of produce, able to smooth out supply and demand mismatches

Diverse Buyers

Supermarkets
Green Grocers
Restaurants

- Food Security
- Competitive prices
- Variety of products, generally available
- Quality control

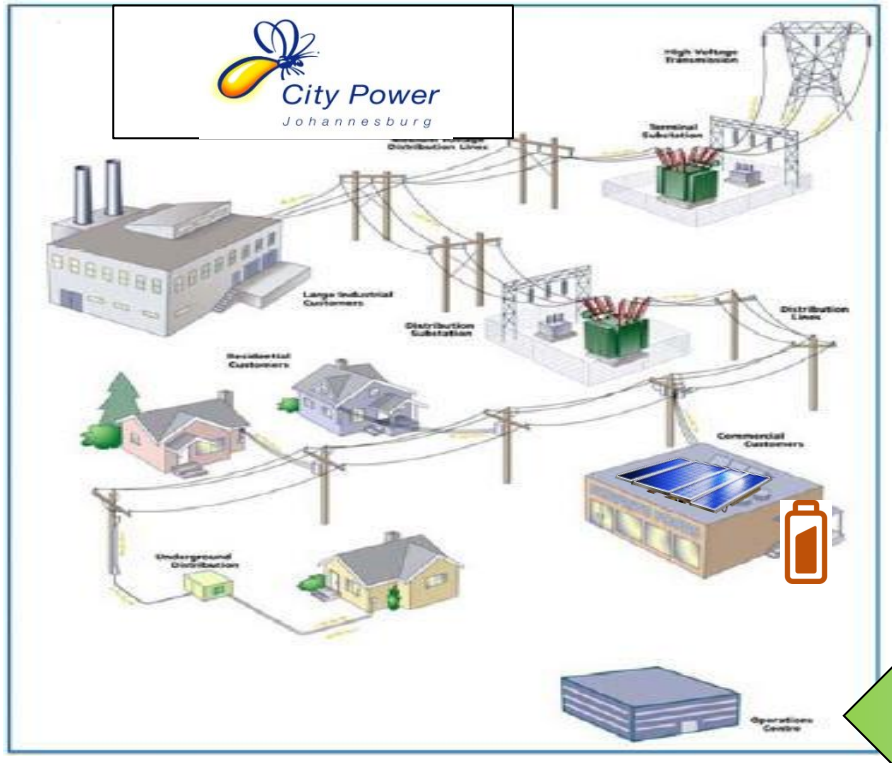
Some consumers may have their own veggie patch, but they still depend on produce that comes through the market. Some consumers don't have a garden.

City Power – another fine 100 year old institution, but…

A distribution system that is metered, currently working as a sole agent for Eskom and Kelvin power

Few Suppliers
Eskom 90%
Kelvin 10%

- Eskom is proving unreliable
- Kelvin is close to retirement
- Both use ‘dirty’ generating technologies



Geyser control systems can help to match supply and demand to some extent

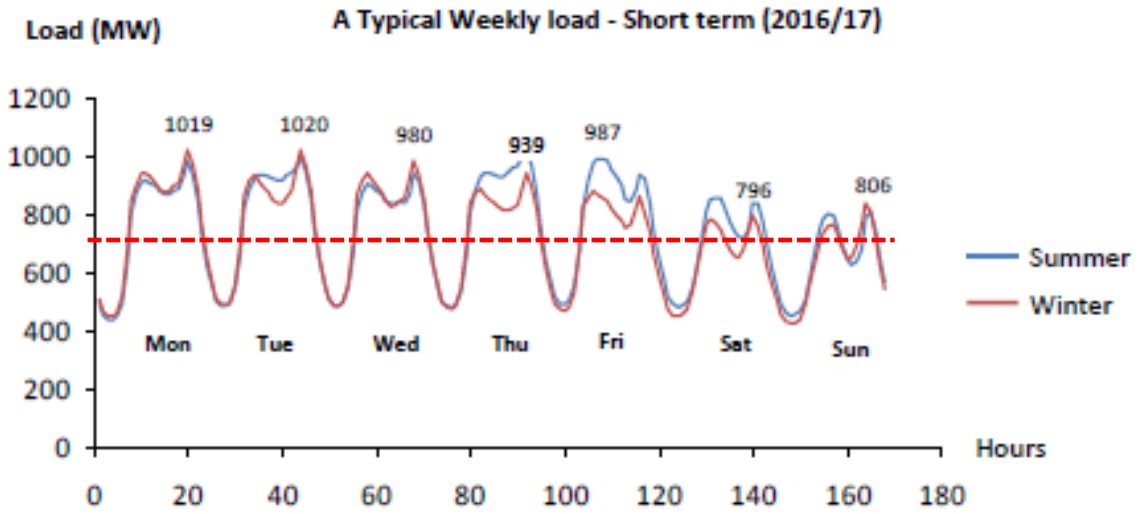
- Load shedding disruptions
- Regulated, escalating pricing
- Captive with limited options

Diverse Consumers
Residential
Industrial
Commercial

“Prosumers” are installing their own photovoltaic generating systems to reduce costs and energy storage systems to ride through load shedding. 44MW already permitted. Some don’t have suitable roof space

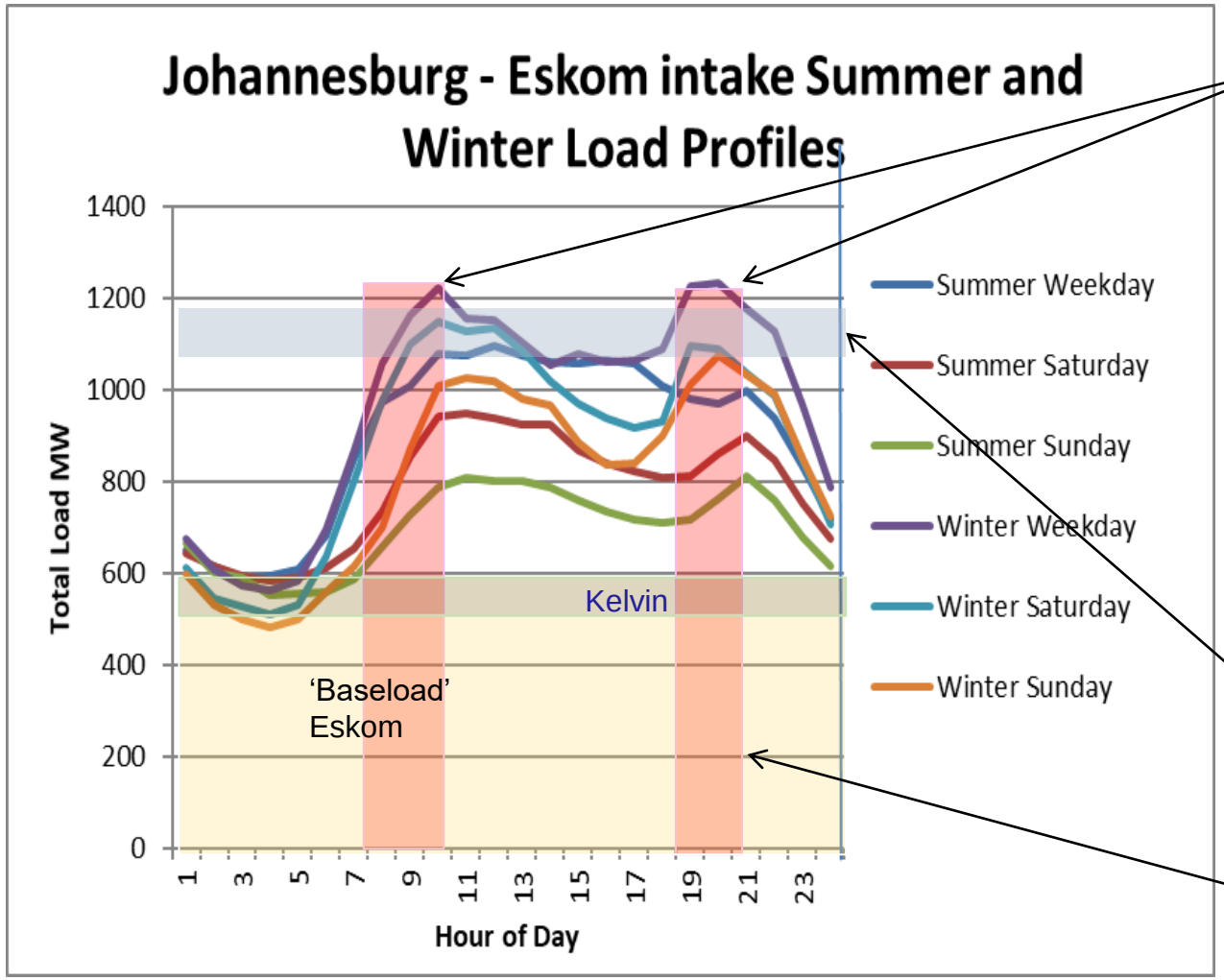
Reducing Cost of Supply from Eskom

- Peaky load costs a lot to service
- As a grid operator, we do benefit from the diversity that the community connected to the grid demands
- However, the more peaky the load of our own customers is, the more costly it becomes for us to both source the power and to deliver it.
- In reality very few loads are flat –
- Whatever can be done to remove the kinks in the load curve, will reduce costs of both cost drivers
- The supplier of last resort – this will be Eskom or the future ISMO's new role – will be the price setter
- The price for capacity will most likely become more and more costly over time, particularly during peak load periods.



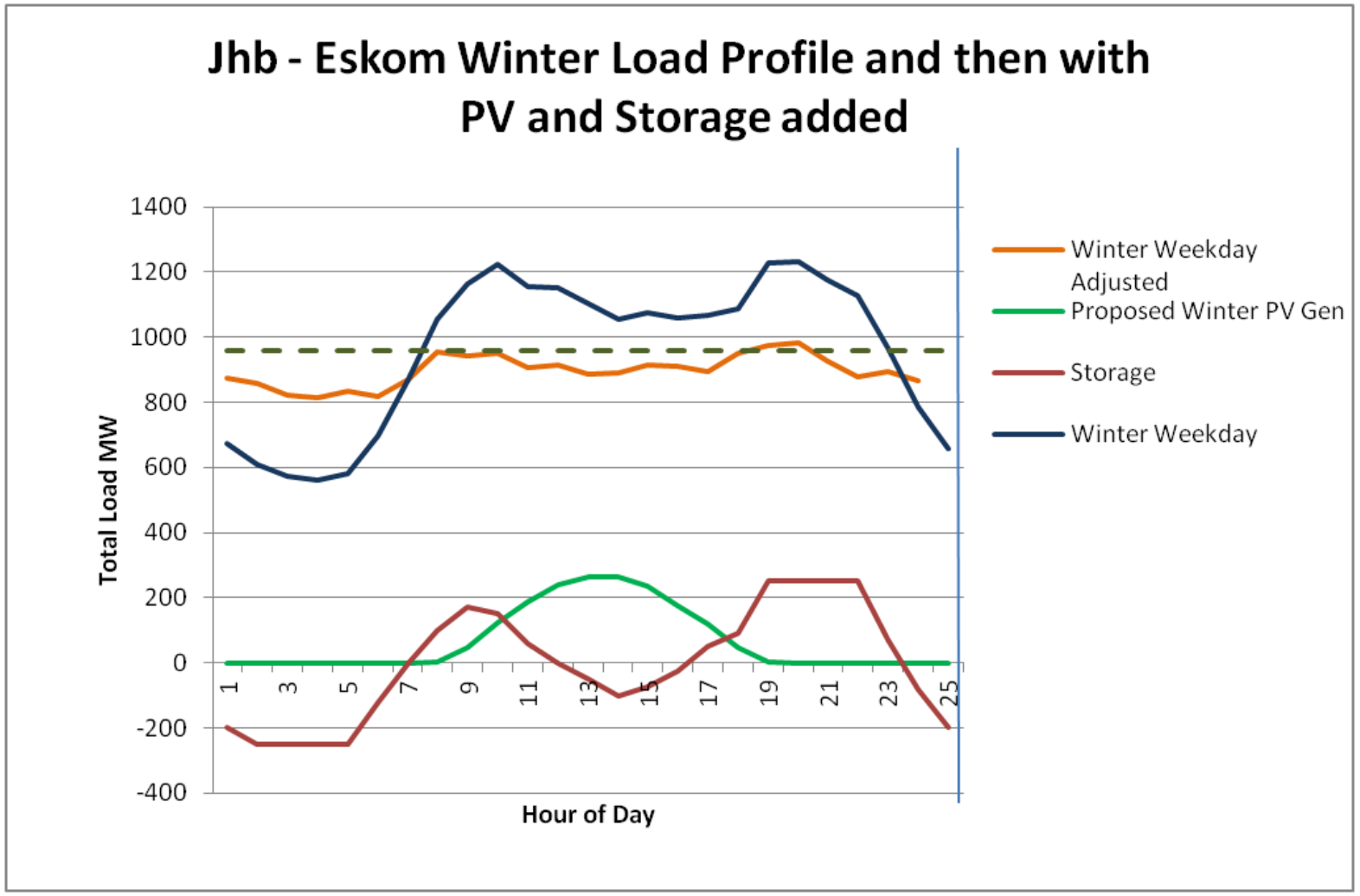
- **The ideal load – a flat line – is a constant demand and a predictable quantity of energy to be delivered**
- **All new energy options on our grids must contribute to this objective**

Analysing Current Energy Costs



- The graphic shows the load profile of the Johannesburg 275 kV power system
- The morning and evening peak periods are when Eskom power is most expensive.
  Summer peak cost is 109 c/kWh.
  Winter peak cost is 333 c/kWh.
- The average peak cost over a year is 165 c/kWh.
- Stage 1 Load Shedding approximates to 120 MW for these intake points
- The peak pricing extends all the way into the base-load portion of the load curve

We are designing an energy mix that reduces Eskom supply costs



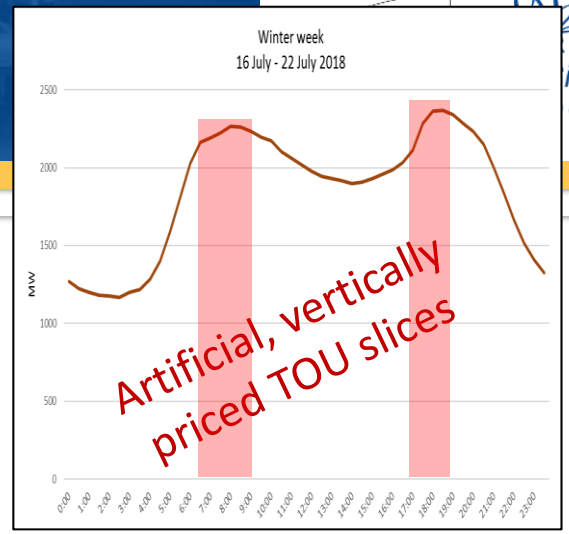
- The winter load profile could largely be flattened with a coordinated combination of:
  - 350 MW of PV generation
  - 250 MW (750 MWh) energy storage

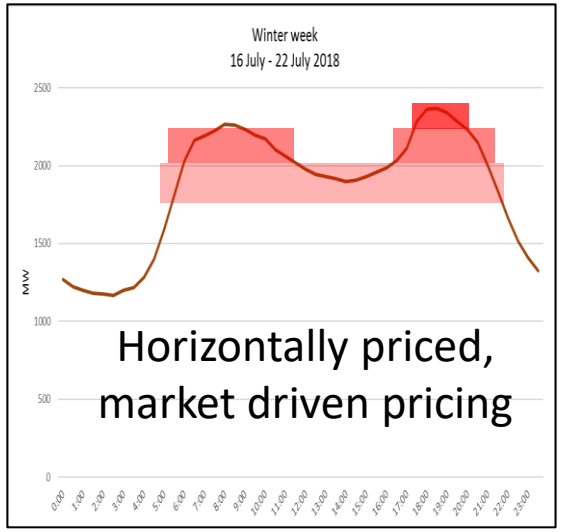
- Up to stage 1 load shedding can be averted by supplying load from energy storage systems

- The same combination applied to the Summer Load curve can both flatten the profile and begin to reduce peak energy purchases

Anticipated Market Evolution

- Part of the unbundling of Eskom will mean evolving from the current artificially priced Eskom tariffs to a competitive Electricity Market
- In the short to medium term, it is likely that bulk supply from Eskom will only be made available on a TOU basis. (First indicated two years ago, the Muniflex tariff)
- For new energy alternatives, the trick will be to avoid long term price lock-in and to maintain future competitiveness
- It is most likely that Eskom will fairly quickly restructure tariffs to place much more emphasis on capacity charges, leading to new capacity market options
- Market dynamics – this is a fast changing environment and new technological developments will require continuous review of the generation plan
- The second part of unbundling will also mean restructure of the distribution industry, with possible creation of a trading and retail industry





2020/2021 275 kV Network Charges:
Tx R 10,87 per kVA/m
LV Subsidy R 15,48 per kVA/m
Total : R 26,35 per kVA/m

2020/2021 275 kV Network Charges:
Tx R 11,62 per kVA/m
LV Subsidy R 16,55 per kVA/m
Total : R 28,17 per kVA/m

Increases are likely to accelerate over the next 5 years

NERSA Concurrence on DMRE IRP Determinations 1 & 2. What is still available in the IRP for our plans?

The IRP 2019

Recommended Plan IRP 2019	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen,Biomass,Landfill)
Current Base	37149		1860	2100	2912	1474	1980	300	3830	499
2019	2155	-2373					244	300		
2020	1433	-557					300			
2021	1433	-1403								
2022	711	-844				400				
2023		-555								500
2024			1860							500
2025						1000	1600			500
2026		-1219					1600			500
2027		-847					1600			500
2028		-475				1000	1600			500
2029		-1694			1575	1000	1600			500
2030		-1050		2500		1000	1600			500
TOTAL INSTALLED CAPACITY by 2030 (MW)	33364		1860	4600	5000	8288	17742	600	6380	
% Total Installed Capacity (% of MW)	43		2.36	5.84	6.35	10.52	22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)	58.8		4.5	8.4	1.2	6.3	17.8	0.6	1.3	

	Installed Capacity
	Committed/ Already Contracted Capacity
	Capacity Decommissioned
	New Additional Capacity
	Extension of Koeberg Plant life
	Distributed Generation Capacity for own use

Eskom confirmed as buyer (RMPPP)

Eskom also confirmed as buyer (IRP)

This part of the IRP is intended for embedded generation. It includes primary energy sources for the private sector, local government, end customers, as well as any distributed energy storage capacity

Regulatory changes and latest proposed ERA amendments

Promulgated New Generation Regulations-

In order to procure power from IPPs, a municipal distributor must:

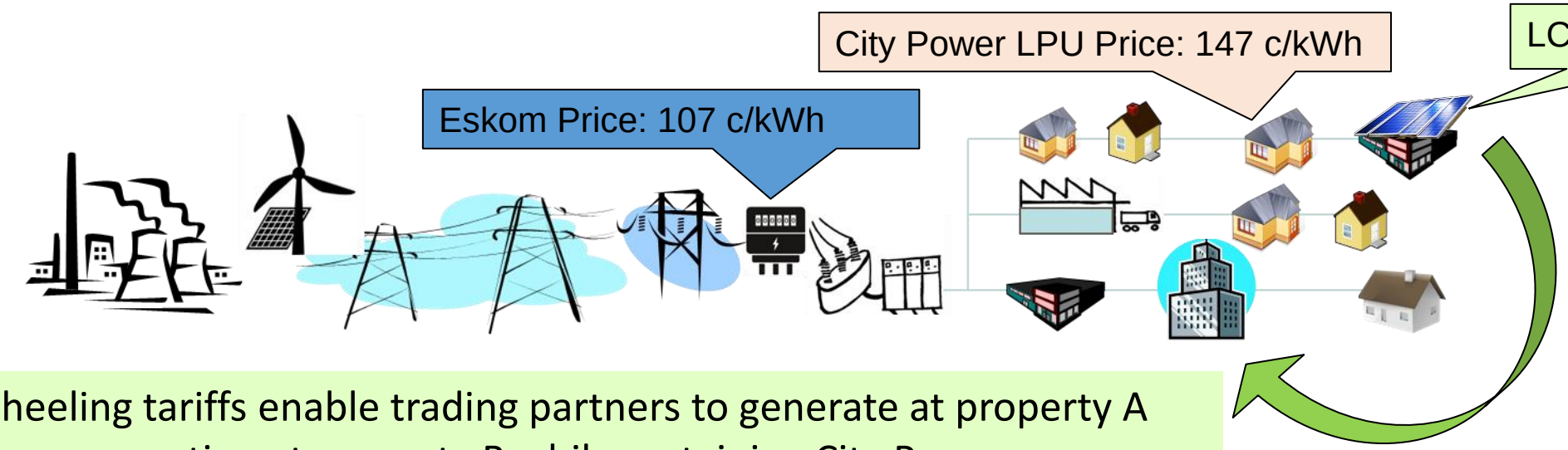
- Prepare a technical and financial feasibility study for any new generation or energy storage facilities
- Apply to the DMRE for a Ministerial determination for the proposed new capacity, in terms of the IRP
- Procure the new generating capacity by following Public Private Partnership procurement process, with authorization from National Treasury

Proposed ERA Schedule 2 Licensing Exemption amendments –

- Embedded generation systems below 100 kVA, register only with Municipality
- Systems above 100 kVA and up to 10MW, to register with NERSA
- Systems above 10 MW will still require NERSA licensing
- Generated power can only be used by an ‘end user’
- Where grid is used to connect generating site to consumption site, entities must be related to one another

New City Power tariff to enable Wheeling and Trading

- Up until now, City Power has exclusively ‘wheeled’ Eskom and Kelvin energy
- A sustainable new option is to offer our distribution grids for transportation services between all kinds of distributed energy sources to end customers, for the same ‘wheeling’ fee, so maintaining grid revenues
- Time discriminated wheeling tariffs will promote co-investment in energy storage systems
- Wheeling will cater for customers without suitable rooftops and connect them to those that do have and can partner
- Trading schemes also allow customers to ‘neutralize carbon’ by facilitating access to the Carbon Tax offset mechanism
- Wheeling has the potential to unleash significant private investment in clean energy at no cost to the City



Proposed Wheeling Tariffs 2021/22, c/kWh:
Peak periods – 29,3
Standard – 35,0
Off peak – 43,0

Wheeling tariffs enable trading partners to generate at property A for consumption at property B while sustaining City Power revenue

Energy Storage – 'Swiss Army Knife' of the new mix

Energy Storage can be applied to:

- Optimizing energy procurement costs
- Protecting the Economy
- Preserving overloaded distribution infrastructure
- Unlocking property development
- Supporting densification
- Optimizing Investment in renewable energy systems
- Providing basic energy services

However ~

It all depends on where it is placed on the distribution network and how it is operated:

- Benefits of stacking for better, improved DSM
- Putting storage at the door of the customer has advantages

Note also:

Energy storage is not a primary energy source. It is a facility that can change the time that the output from any low cost, true primary energy source is used, including coal fired generation.

While it is often associated with renewables firming, distributed or embedded energy storage on its own has significant DSM and alternative energy integration potential for distribution system operators.

Great Economic Development potential exists

Energy Storage Pays its own way

Analysis of simple break-even point of energy storage cost vs. maximum arbitrage potential of the Local Government Megaflex Tariff						
1kWh Storage used for 6 days of the week, one shot per day, to shift 1kWh from peak to off-peak, all year round						
Plant Parameters				**Megaflex 2020/21 Tariff Rates**		
				11kV Intake point, e.g. Randburg		
Technology Aspects	Units	Value		**Operational Aspects Energy**	Units	Value
Cost of Storage System	$/kWh	345		HV Distribution System Losses	%	4,00%
Storage System Expected Cycle Life	Number	7000		MV / LV Distribution	%	3,00%
Efficiency of Charge and Discharge cycle	%	80%		Value of Winter Evening Energy Arbitrage	c/kWh	305,11
Finance Aspects	Units			Value of summer Evening Energy Arbitrage	c/kWh	67,10
Simple payback period, no inflation considered	Years	9,14439		Loss-less average value of daily arbitrage	c/kWh	126,60
Rand to Dollar Exchange Rate	Ratio	16,09		Average daily rate to re-charge system	c/KWh	54,05
Local cost of Storage	R/kWh	5551,05		Cycle cost to overcome system recharging losses	c/kWh	10,81
Capital loan interest rate	%pa	5,0%		Cycle savings due shift of losses out of peak	c/kWh	3,80
Capital Loan Term	Years	10		Net average value of daily energy arbitrage	c/kWh	119,59
Cost of Finance	R/kWh	-1514				
Total financed plant cost	R/kWh	7065		**Operational Aspects Network and Demand costs**	Units	Value
Theoretical Plant Life, 6 days p/week, 1 cycle/day	Years	22,4		Peak Period Duration	hours	2
Expected Operational Lifespan	Years	15		Demand reduction potential per kWh of storage	kVA	0,5
Charge / Discharge Cycles Required	Number	4696		Monthly network charge per kVA	r/kVA	9,43
Staff Operating costs	R/kWh	1440		Monthly demand charge per kVA	r/kVA	35,83
R&M Plant costs @ 10% of capital cost	R/kWh	555,105		Daily network and demand charge savings potential	c/kWh	74,44
				operation during the annual half hour peak.		
Total Cost of Financed and Maintained Plant	R/Kwh	9060				
LCOE over expected plant life 1 shot per day	c/kWh	192,94		Total potential daily energy arbitrage and demand charge reduction value of 1kWh storage	c/kWh	194,03

GL Cost Element
890000
Bulk Purchases: Eskom

Network Access Ch.

+

Off-Peak Energy

+

Standard rate Energy

+

Peak rate Energy

+

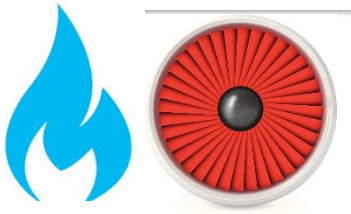
Network Demand Ch.

Savings on these charges can pay for storage services

From a Jo'burg perspective what do we know today?

National Capacity Shortage (Urgent!)	We will still need Eskom as our Backstop for a long time	At the same time we need to reduce our dependence on Eskom and Kelvin	PV is Gauteng's most viable RE generation option	Lots of local Energy Storage is key to the distribution industry's future
Gas Power Generation will soon be viable in Johannesburg	Wheeling of not only Eskom power will become the new norm	Gas for residential cooking and heating is a good option	Flexible load is needed, EVs are flexible loads	Our MV cable networks are strong and in place
Businesses with Energy Storage are protected from Load Shedding	Residential customers with ES are protected and can reduce the evening peak	Our obligation to cross-subsidize low income residential sector will not change	Our affluent customers think independence is their best option	We need to inform all customers of the value of being part of a grid community

What are our best options?



Find Own Capital – this is limited	Find Own Capital – this is limited	Find Own Capital – this is prohibitive
Engage IPPs – this requires PPPs long term	Engage IPPs – this requires PPPs Long term	Engage IPPs – this requires PPPs long term
Enable Wheeling and Trading	Customer Energy Storage Programs, DR back to back	Enable Gas Prosumers / Partnerships

Energy Targets to meet the City's Climate Change mitigation commitments

ENERGY TARGETS (MWh) Primary Energy	Baseline	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2027	2027/2028	2028/2029	2029/2030
Customer Embedded PV Generation - Own roof	78 894	89 413	105 192	126 230	147 269	175 320	201 618	236 682	280 512	350 640
Customer Embedded PV Generation - Traded	0	3 506	12 272	52 596	87 660	175 320	201 618	236 682	280 512	350 640
Municipal Building PV Generation	0	6 487	14 026	31 558	38 570	47 336	61 362	70 128	87 660	105 192
IPP/ FinancedMining Land PV program	0	0	8 766	43 830	122 724	262 980	315 576	350 640	525 960	701 280
IPP/ Financed Rooftop PV program	0	0	8 766	35 064	52 596	87 660	105 192	122 724	140 256	175 320
Lanfill Gas Generation and Solid WTE	26 079	26 079	26 079	26 079	249 612	249 612	249 612	249 612	249 612	249 612
Natural Gas Generation	0	0	0	0	43 830	43 830	131 490	219 150	328 725	438 300
Annual total clean energy targets (MWh)	104 973	125 485	175 101	315 357	742 261	1 042 058	1 266 468	1 485 618	1 893 237	2 370 984
Balance taken from Eskom (MWh)	10 395 027	10 689 515	10 964 349	11 158 277	11 075 581	11 130 320	11 271 081	11 428 058	11 407 849	11 329 135
Forecast Total Demand (MWh)	10 500 000	10 815 000	11 139 450	11 473 634	11 817 843	12 172 378	12 537 549	12 913 676	13 301 086	13 700 118
Forcast Annual Load Growth %	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%
Percentage of Eskom Power from Clean Energy	3,00%	3,00%	7,00%	12,00%	15,00%	18,00%	22,00%	22,00%	22,00%	22,00%
Eskom Clean Energy (As per IRP)	311 851	320 685	767 504	1 338 993	1 661 337	2 003 458	2 479 638	2 514 173	2 509 727	2 492 410
Eskom Brown Energy	10 083 176	10 368 829	10 196 845	9 819 283	9 414 244	9 126 862	8 791 443	8 913 885	8 898 122	8 836 725
Business As Usual CO2 Emissions (Tons)	10 665 298	10 967 442	11 249 422	11 448 392	11 363 547	11 419 708	11 564 129	11 725 187	11 704 453	11 623 692
Residual CO2 Emissions (Tons)	10 345 339	10 638 419	10 461 963	10 074 585	9 676 547	9 381 692	9 072 617	9 233 306	9 260 963	9 241 800
Annual CO2 Emission Reductions (Tons)	**319 959**	**329 023**	**787 460**	**1 373 807**	**1 687 000**	**2 038 015**	**2 491 512**	**2 491 881**	**2 443 490**	**2 381 892**
Percentage of Clean Energy used in CoJ	**4%**	**4%**	**8%**	**14%**	**20%**	**25%**	**30%**	**31%**	**33%**	**35%**

Targets translated into generation capacities

Key Performance Indicator	Baseline 2019/20	2021/22 Target	2022/23 Target	2023/24 target	2024/25 target	2025/26 target	2026/2027 target	2027/2028 target	2028/2029 target	2029/2030 target
EMBEDDED GENERATION (MW) - Primary Energy										
Customer Embedded PV Generation - Own roof	45	51	60	72	84	100	115	135	160	200
Customer Embedded PV Generation - Traded	0	2	7	30	50	100	115	135	160	200
Municipal Building PV Generation	0	3,7	8	18	22	27	35	40	50	60
IPP/ FinancedMining Land PV program	0	0	5	25	70	150	180	200	300	400
IPP/ Financed Rooftop PV program	0	0	5	20	30	50	60	70	80	100
Lanfill Gas Generation and Solid WTE	3,5	3,5	3,5	3,5	33,5	33,5	33,5	33,5	33,5	33,5
Natural Gas Generation	0	0	0	0	20	20	60	100	150	200
Annual total targets (MW)	48,5	60,2	88,5	168,5	309,5	480,5	598,5	713,5	933,5	1193,5
Annual capacity increments (MW)	n/a	11,7	28,3	80	141	171	118	115	220	260
EMBEDDED ENERGY STORAGE CAPACITY (MW)										
Customer Owned Energy Storage	0,4	3,3	6,7	16,7	26,7	33,3	36,7	40,0	43,3	46,7
Capital funded CP owned Energy Storage	0,0	3,1	5,1	6,7	8,3	10,0	11,7	13,3	16,7	20,0
IPP / Financed Energy Storage	0,0	0,0	0,0	6,7	16,7	23,3	33,3	40,0	53,3	66,7
Annual total targets (MW)	0,4	6,4	11,7	30,0	51,7	66,7	81,7	93,3	113,3	133,3
Annual capacity increments (MW)	n/a	6,0	5,3	18,3	21,7	15,0	15,0	11,7	20,0	20,0
TOTAL EMBEDDED GENERATION CAPACITY (MW) -										
Annual total targets (MW)	48,9	66,6	100,2	198,5	361,2	547,2	680,2	806,8	1046,8	1326,8
Annual capacity increments (MW)	n/a	17,7	33,6	98,3	162,7	186,0	133,0	126,7	240,0	280,0

Photovoltaic Generation Portfolio Options -

- Customer ‘own consumption, own roof’ option –
  - ➢ Our application process is in place, more than 44 MW has been commissioned
- Customer ‘own consumption, different roof’ supported by wheeling and trading
  - ➢ Our wheeling tariffs have been accepted by Council for 2021/22. NERSA engagement for approval is on-going.
- City Owned PV, located on City buildings and properties
  - ➢ As capital is made available, we will implement. R38 million application in the 2021/22 capital budget

- IPPs on City owned land (e.g. disused mining land) feeding into the grid
- IPP partnerships on private property (e.g. warehouse roofs) feeding into the grid
- IPPs on private land within City limits (e.g. disused mining land)

➢RFIs to be issued by September 2021. Process will lead to the establishment of PPPs.

- Energy traded in from the Eskom network
  - ➢ This option will attract Eskom wheeling charges. In the case City Power is the off-taker, it requires the establishment of Public Private Partnerships, endorsed by Treasury.

Energy Storage Portfolio Options -

- City owned Energy Storage, located at City buildings and property
  - ➢ As capital is made available, we will implement. Application for R35 million is in the 2021/22 capital budget
- Energy storage service providers (IPPs) located on City owned properties (e.g. substation sites and old transformer houses)
  - ➢ The service is to be funded through the Bulk Purchases Operating Budget, RFI to be issued in September 2021
- Residential customer DSM and Energy Storage program, and
- Residential Sectional Title / Reseller customer DSM and Energy Storage program
  - ➢ To partner with ESCOs to promote conversion to Time of Use Tariffs, coupled with the deployment of energy storage, renewable energy sources, gas cooking and heating appliances and DSM measures on a shared benefit basis.
- Key customer Energy Storage Program, aimed at:
  - ➢ Promoting LPU customer investment in energy storage systems to reduce energy costs through tariff arbitrage
  - ➢ At present to use as a protection measure against load shedding.
  - ➢ Subsequently developed into a demand response scheme for the ISMO, with City Power as the aggregator

Energy projects funded from 'Own Capital'

Projects funded through the normal MFMA regulated Capital budget:

- The City, guided by its Integrated Development plan compiles a CAPEX budget
- The amount of capital available is dependent on the City's balance sheet
- The available capital is not sufficient to cover all of the City's needs and aspirations - the budget is prioritized and allocations are made accordingly.
- In the case of capital for City Power projects, our top priorities at present are network refurbishment, network expansion and electrification projects
- In terms of power generation projects, limited capital funds are available for such projects and they are co-located and done in conjunction with energy efficiency projects on City owned buildings
- Application is also made to the DME for Energy Efficiency and DSM funding from the Division of Revenue Act allocations from National Treasury

Energy projects funded from 'Own Capital"

- Capital Project Pipeline

FY	Category	Project	Comment	Target	Budget Rm
20/21	Renewable Energy	First Phase EE and rooftop PV on City Power and CoJ Buildings	Feasibility Studies for 23 buildings complete, phase 1 to target first 3 large buildings. Tender documents to be issued in July 2021	3,7MW	8
21/22	Renewable Energy	Second phase EE and rooftop PV on City Power and CoJ Buildings	Phase 2 to target the next 12 buildings, continuing on above project	8MW	30
21/22	Energy Storage	Battery Energy Storage System for CP Reuven Complex	Specifications are being prepared to start procurement in July 2021	1,2 MWh	15
21/22	Energy Storage	Battery Energy Storage, Feeder Relief Program	Specifications are being prepared to start procurement in July 2021	4 x 1MW 6MWh	30

Energy projects funded through Green Bonds or IPPs

Status Quo | Energy Sustainability Market Report | Energy Sustainability Decision Support | Energy Sustainability Scenario and Strategy

The Minister of Minerals and Energy Gazetted New Generation Regulations for Municipalities, 16 October 2020:

- A needs assessment and feasibility study must be done to initiate the process
- Municipality must include the proposed energy mix in their Integrated Development Plans
- Municipality must apply to the Minister for a determination on the technologies and capacities required
- For CP, an RFI process will be conducted to confirm feasibility and test possible options
- As capital funding arrangements are outside of the normal municipal CAPEX process, the Municipality must follow Treasury Section 16 regulations – the Private Public Partnership procurement process has to be followed
- Typically, the PPP process will take 36 months to complete and is to be done on a 'per project' basis
- The process requires the engagement of Transaction Advisors and National Treasury approvals

Energy projects funded through Green Bonds or IPPs

Projects requiring the PPP procurement process:

FY	Category	Project Pipeline	Comment	Potential Yield	Investment Potential R Bn
21/22 For Impl. by 2025	Renewable Energy	Large Rooftop Customer IPP Partner, PV program	An RFI to be developed and advertised in September. The concept is to call for interest in an IPP program that uses warehouse type PV rooftops feeding into CP 11 kV network	50 MW	0,7
21/22 For Impl. by 2025	Renewable Energy	IPP PV farm program for CoJ owned old mining land / old Mining Company land	An RFI to be developed and Advertised by September. The concept is to offer old mining land, unsuitable for building construction for PV farms within the City Limits	150 MW	1,3
21/22 For Impl. 2025	Energy Storage	Battery Energy Storage System for Substations and Overloaded Feeders	An RFI to be developed and advertised in September. Energy Storage IPPs can offer energy storage services to CP for daily arbitrage revenues or source capital for BOT type contracts	25 MW 75 MWh	Fund from OPEX, Bulk Purchases Line Item
21/22 For Impl. by 2024	Gas Powered Generation	Cottesloe Gas Powered Generation Project	An RFI to be developed and advertised in September. Cottesloe is an existing Gas Turbine Site, the proposal is to renew the generating plant with modern technology	20 MW	1,8

Energy projects funded by the private sector

City Power has drafted wheeling tariffs for the 2021/2022 FY

- This should allow ‘private generators’ to supply ‘private off-takers’ on the City Power grid, for equivalent revenues that would have been earned by supplying the end customer with conventional Eskom Power
- The private off-taker remains a (captive) customer of City Power for network access and the balance of the power supply required
- The City of Johannesburg’s commercial customers have access to significant capital funding, both the businesses and the property owners
- All we aim to do is provide favorable business conditions (tariffs) and open grid access, and promote the concept
- Traders may play an aggregating role. Use of system and clearing agreements in development
- This is most likely the fastest route to economic development in the energy space

Energy projects funded by the Private Sector

- Customer partner programs

FY	Category	Project	Comment	Potential 2030 Target	Private investment Value
21/22	Renewable Energy	Customer trading and Wheeling Program	To promote customer investment in PV systems offering the Grid for trading and wheeling, earning revenues from the 'transport' of energy.	200MW	2,6 Bn
21/22	Energy Storage and DSM	Residential and Sectional Title ESCO partnership program	To promote investment in energy storage and DSM at residential customers, aimed specifically at reducing the evening peak	30 MW 90 MWh	0,3 Bn
21/22	Energy Storage	Customer Energy Storage Program	Target our top 300 key customers with tariff incentives to make their own investment in BESS systems, assimilate into a Demand Response Program for back to back Contract with Eskom.	100 MW 300 MWh	2,1 Bn
21/22	Gas Powered Generation	Gas Prosumer Program	There are Gas Generators willing to unlock developments with Gas Powered Generation, with surplus for sale to City Power	30 MW	0,9 Bn

Presentation Conclusion

Thank you