



**Western Cape  
Government**

**FOR YOU**

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# **WC ENERGY RESILIENCE PROGRAMME UPDATE**

**ENERGY COUNCIL**

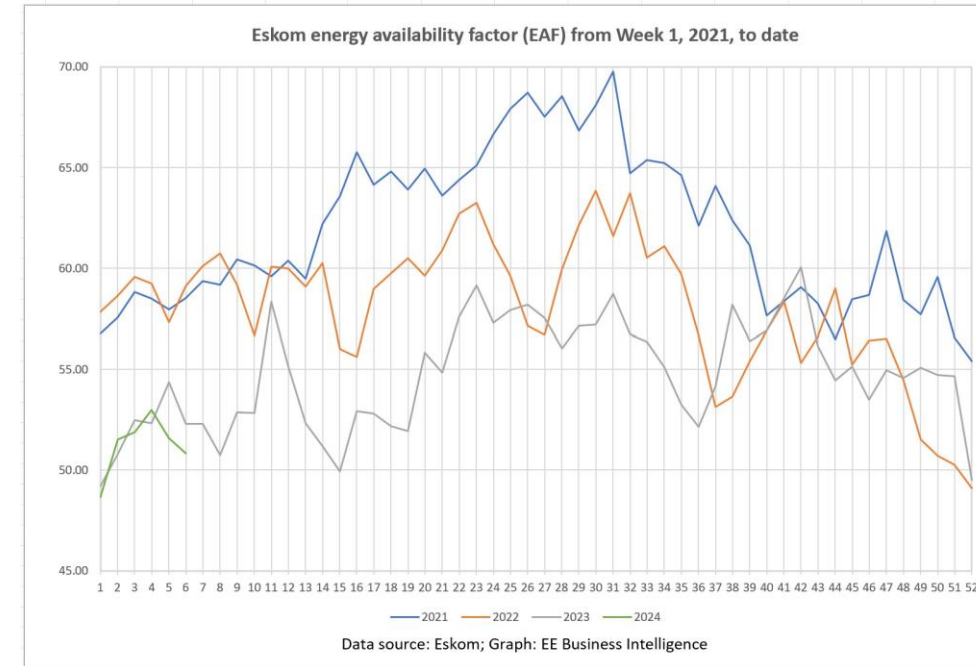
20 March 2024

# SA context: Eskom outlook - energy security & reliability future continues to look severe

1. The **52-week outlook** in terms of both the planned risk level and the likely risk scenario **remains bleak** as it indicates that stage 2 and higher should be expected for the next 52 weeks with no chance of meeting reserves.
2. Given the age of plant, unplanned breakdowns, and sabotage incidents there **may be higher incident of likely risk scenario** materialising i.e. stage 4 and higher
3. Koeberg maintenance: Unit 2 currently under refuelling & maintenance (each unit provides 920 MW equivalent to almost 1 stage load shedding).
4. Eskom to focus on 6 underperforming power stations (Medupi & Kusile, Kendal, Tutuka and Majuba).
5. Current energy availability factor (EAF) – **53.85%** (annual avg = 51.97%; 2023 avg 54.71% & 2022 avg 58%). **Required EAF** for grid stability of current network: **70% & 75%**.

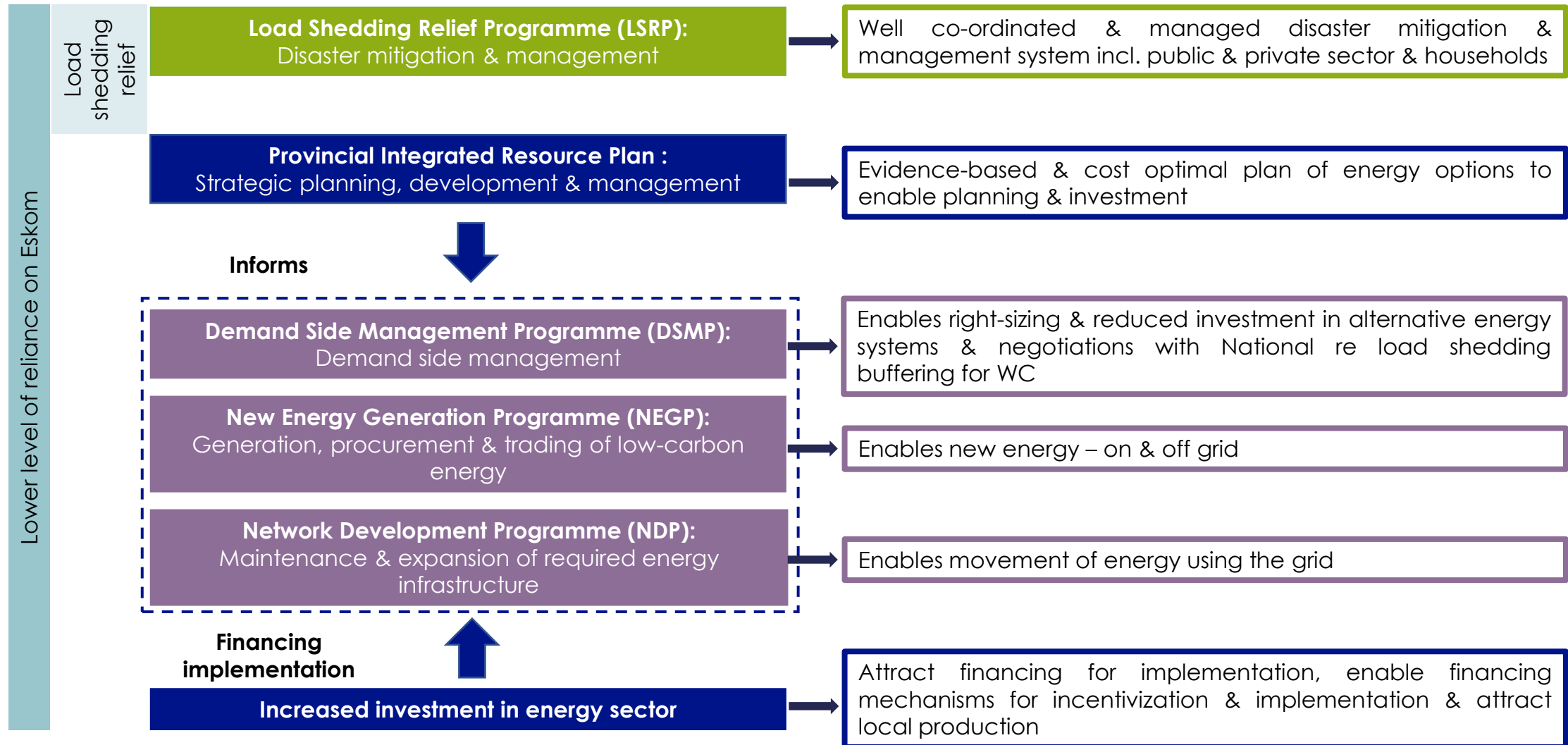
Week Start	Week	MW Planned Risk Level (-18200 MW)	MW Likely Risk Scenario (-20200 MW)
11-Mar-24	11		
18-Mar-24	12		
25-Mar-24	13		
01-Apr-24	14		
08-Apr-24	15		
15-Apr-24	16		
22-Apr-24	17		
29-Apr-24	18		
06-May-24	19		
13-May-24	20		
20-May-24	21		
27-May-24	22		
03-Jun-24	23		
10-Jun-24	24		
17-Jun-24	25		
24-Jun-24	26		
01-Jul-24	27		
08-Jul-24	28		
15-Jul-24	29		
22-Jul-24	30		
29-Jul-24	31		
05-Aug-24	32		
12-Aug-24	33		
19-Aug-24	34		
26-Aug-24	35		
02-Sep-24	36		
09-Sep-24	37		
16-Sep-24	38		
23-Sep-24	39		
30-Sep-24	40		
07-Oct-24	41		
14-Oct-24	42		
21-Oct-24	43		
28-Oct-24	44		
04-Nov-24	45		
11-Nov-24	46		
18-Nov-24	47		
25-Nov-24	48		
02-Dec-24	49		
09-Dec-24	50		
16-Dec-24	51		
23-Dec-24	52		
30-Dec-24	1		
06-Jan-25	2		
13-Jan-25	3		
20-Jan-25	4		
27-Jan-25	5		
03-Feb-25	6		
10-Feb-25	7		
17-Feb-25	8		
24-Feb-25	9		
03-Mar-25	10		
10-Mar-25	11		
17-Mar-25	12		

Risk Level	Description
Green	Adequate Generation to meet Demand and Reserves.
Yellow	< 1 000MW Possibly short to meet Reserves
Orange	1 001MW – 2 000MW Definitely short to meet Reserves and possibly Demand
Red	> 2 001MW Short to meet Demand and Reserves



Eskom outlook Week 10  
4 – 10 March 2024

# WC Energy Resilience Programme overview



# Energy projects summary: Loadshedding impact reduction

Project Name	Lead dept.	Updates & comments
Emergency load shedding packs	DoTP	<ul style="list-style-type: none"> <li>Initial <b>4 000 packs distributed</b> through the WCG-supported <b>DSD facilities</b> in Dec '23 &amp; Jan '24</li> <li>Further <b>96 000 packs</b> to be distributed via <b>WCED for 2024 matriculants and Grade 1s (NQ1-3)</b> and via DSD to additional facilities <b>between April &amp; June '24</b> - with first batch of 16 600 (for matrics) arriving by 23 March 2024.</li> </ul>



# Loadshedding relief packs – 1<sup>st</sup> phase distribution

Gender Based Violence Facility

Old Age Home

People with Disabilities

Gender Based Violence

424

Old Age Home

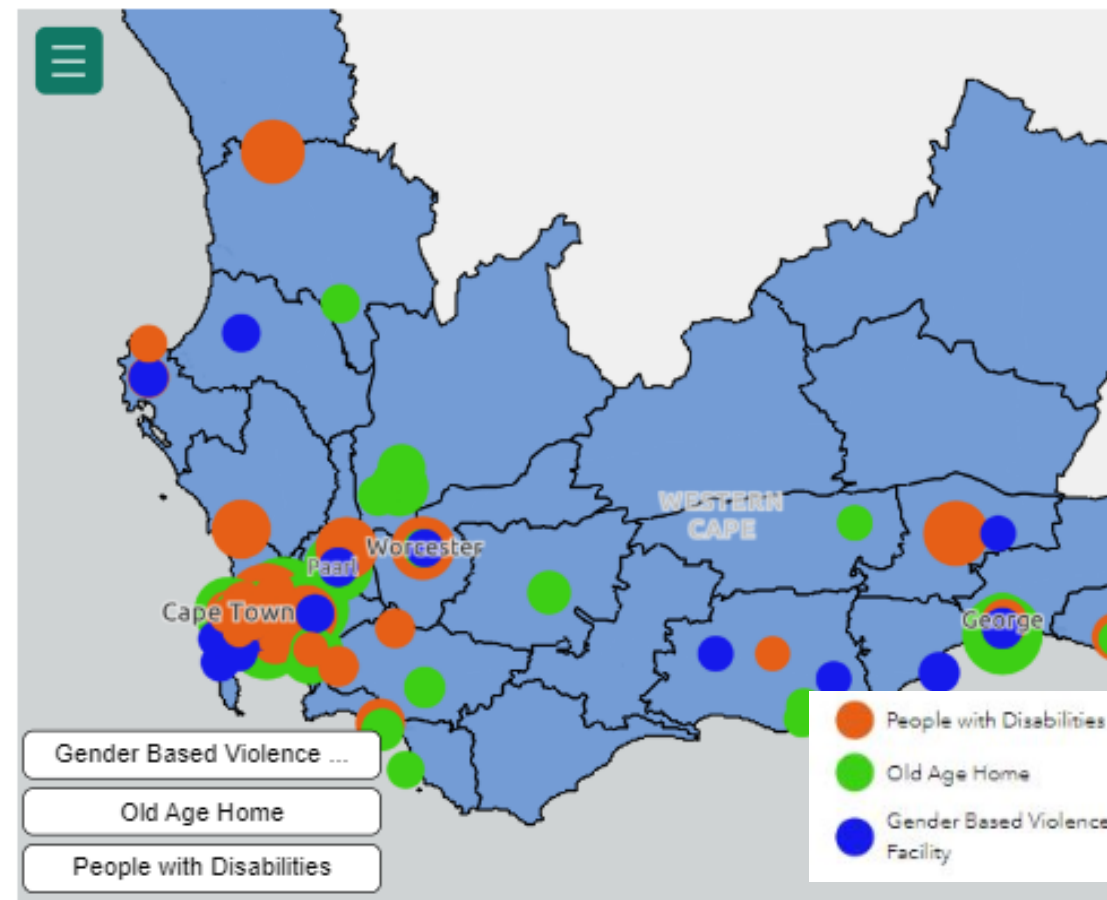
1,843

People with Disabilities

1,657

## Number of Individuals Provided With Loadshedding Relief

District Municipality	Gender Based Violence Facility	Old Age Home	People with Disabilities	Total
Cape Winelands	59	466	454	979
City of Cape Town	247	1,069	703	2,019
Garden Route	74	251	191	516
Overberg		39	95	134
West Coast	44	18	214	276
<b>Total</b>	<b>424</b>	<b>1,843</b>	<b>1,657</b>	<b>3,924</b>



# Energy projects summary: Loadshedding impact reduction

Project Name	Lead dept.	Updates & comments
Pilot renewable energy solutions in municipalities	DLG	<ul style="list-style-type: none"> <li>The project (Hessequa Municipality – Riversdale) is for a <b>solar generation plant with BESS that will be phased over 3 phases</b>. Phase 1 is a 5MWA solar plant with 2MWh battery storage (focused on the industrial area), Phase 2 is an additional 5MW solar plant with 2MWh battery storage and Phase 3 is 6MWh battery storage to provide a complete solution delivering a <b>10MW solar plant with 10MWh battery storage after 3 years</b>.</li> <li>EIA well underway, <b>funds have been transferred to the municipality and procurement is underway</b> for 4MW solar PV generation plant with 2MWh BESS.</li> </ul>
Alternative energy support: SMMEs	DEDAT	<ul style="list-style-type: none"> <li><b>Installations at 7 of the 12 municipal trading sites completed (PV &amp; battery backup systems) – supporting 100 SMMEs. Drakenstein (x2), Stellenbosch (x2), Cape Agulhas (x2), Theewaterskloof, Laingsburg, Oudtshoorn &amp; Mossel Bay (x3)</b></li> <li><b>Advanced work on further 5 sites in WC.</b></li> <li><b>Additionally, a service provider has been appointed to procure and deliver 135 mobile power solutions to individual SMMEs – delivery before end March 2024 - Booster intermediaries and then the individual SMMEs are collecting them from their respective support intermediary</b></li> </ul>



# Energy projects summary: Disaster mitigation & management

Project Name	Lead dept.	Updates & comments
<p>Distribution infrastructure risk &amp; vulnerability assessments &amp; network recovery plans</p>	<p>DoTP with PDMC (DLG)</p>	<ul style="list-style-type: none"> <li>• Following the Central Karoo power crisis</li> <li>• Working to engage with Eskom &amp; municipalities to identify vulnerable parts of the distribution network – age &amp; state of infrastructure, materials used, overloading of transformers, soil chemistry, wind channels etc.</li> <li>• Risk &amp; vulnerability map will inform where mitigation action is required &amp; where energy resilience efforts should be focused.</li> <li>• Also to engage on network recovery plans – i.e. what equipment available where &amp; how supplies can be procured etc. to ensure minimal disruptions should part of the network go down.</li> </ul>

# Energy projects summary: Strategic planning, development & management

Project Name	Lead dept.	Updates & comments
WC Integrated Resource Plan (IRP)	DoTP	<ul style="list-style-type: none"><li>• USAID / SA Energy Programme Letter of Co-operation signed with WCG</li><li>• USAID / SAEP <b>have finalised procurement of a service provider (CSIR) to do the initial phase of the WC IRP work and work has commenced.</b></li></ul>



## Energy projects summary: Demand side management

Project Name	Lead dept.	Updates & comments
Implementation of DSM external to WCG	DoTP	<ul style="list-style-type: none"> <li>• <b>Municipal DSM advisory support: Engaged with 19 municipalities</b> since October 2023 (determining actual DSM and energy efficiency needs) – underway with procurement of a service provider to work hands on with municipalities to design, access funding for &amp; implement DSM interventions. <b>If other municipalities still want to engage, please reach out to us.</b></li> <li>• Pipeline of DSM projects under development.</li> <li>• Developing a selection criteria for Municipalities to “select” Ripple control/Geyser control solutions.</li> <li>• <b>Drafting of DSM communications material</b> - to be shared with Municipal Communications functions - is still underway.</li> <li>• <b>National announcement of smart meter support to municipalities: indications that this is likely to be focused on municipalities <u>most in debt with Eskom</u> for yr 1 (and then broader for the next 2 years). PT is to support the 4 WC municipalities that are in debt with Eskom to apply for support.</b></li> </ul>
Implementation of DSM internal in government office buildings	DoI	<ul style="list-style-type: none"> <li>• Ongoing roll out of the WCG Office Modernisation programme</li> <li>• In general facilities, all new capital and scheduled maintenance projects include energy efficiency elements as an integral part of the project.</li> </ul>
DSM in Provincial health buildings & facilities	DHW	<ul style="list-style-type: none"> <li>• Interventions completed at for phase 1: Eerste River, Red Cross, Paarl Hospitals</li> <li>• Baseline report received for Mossel Bay Hospital – awaiting proposed interventions</li> <li>• To review the baseline audits for further 11 hospitals</li> </ul>
Schools LED lighting	WCED	<ul style="list-style-type: none"> <li>• 19 schools: work completed</li> <li>• 6 schools are in construction</li> <li>• 9 schools are in design with the Framework Contractor</li> <li>• 25 schools are in procurement</li> <li>• <b>Aiming for a minimum of 44 schools this FY</b></li> </ul>

# Energy projects summary: New energy generation

Project Name	Lead dept.	Updates & comments
Green Economy Ecosystem Support ("GEES")	DEADP	<ul style="list-style-type: none"> <li>• Support now available again to municipalities re SSEG frameworks, tariffs &amp; registration processes; re wheeling frameworks, tariffs; regulatory input; industry events; market awareness; engaging with energy developers etc.</li> <li>• Identification of which municipalities will receive what type of SSEG and wheeling support is underway, with some already receiving this support</li> <li>• Re net generator exemptions from NT:               <ul style="list-style-type: none"> <li>○ Despite the City obtaining an exemption for being able to procure excess electricity from SSEG systems (prosumers), NT does not appear to be allowing for further exemptions at other municipalities and has indicated that municipalities should (and are able to) amend their own SCM policies to allow for this. The City's exemption is only partial – i.e. they still need to run a S33 process, incl the names of all households &amp; businesses applying for the cash to power programme &amp; they need to identify all these as deviations in their SCM process.</li> <li>○ PT has, on behalf of WC municipalities attempted to obtain a blanket exemption from NT, but without success.</li> <li>○ PT and the Core Energy Team at DOTP are engaging on the matter to try to resolve this for municipalities.</li> </ul> </li> <li>• Request for municipalities to use the SALGA / SEA SSEG online platform for SSEG registration process – 9 municipalities using the platform thus far. See following slides</li> </ul>

## Energy projects summary: New energy generation

Project Name	Lead dept.	Updates & comments
High energy users mapping-profiling the future energy demand of high electricity users in the WC	Dol	<ul style="list-style-type: none"> <li>• Engaged / engaging with 5 municipalities who have asked for assistance.</li> <li>• Data gathered in this project included into grid infrastructure planning.</li> </ul>
Municipal Wheeling Enablement	Dol	<ul style="list-style-type: none"> <li>• Scope of work finalised for <b>national tracking of wheeling status (incl per municipality) (NECOM funded)</b> - currently with the NECOM team for approval</li> <li>• Working to resolve the issue of municipal debt in NECOM meetings:               <ul style="list-style-type: none"> <li>○ Eskom will not wheel to munics that are not in good standing, and no-one knows what the definition of good standing is that Eskom will use. This is a massive risk for private sector, as their long term wheeling agreements might not work because a municipality's status changes. NECOM is discussing some potential solutions to this.</li> <li>○ When wheeling to a municipality, an update to the supply agreement is needed, which triggers a deposit update. NECOM have resolved that this should not be an issue as long as certain conditions are met. We are waiting on official communication from Eskom regarding this, but engagement with your municipal Eskom account manager in the meantime should resolve it as well.</li> </ul> </li> <li>• The team has done specific training on the UOS agreements through SEA/SALGA at a national level. No further plans at present for such generic support, as there is specific support available through GEES.</li> </ul>

## Energy projects summary: New energy generation

Project Name	Lead dept.	Updates & comments
Municipal IPP procurement Stellenbosch: Transaction Advisor & Project Officer	DoI	<ul style="list-style-type: none"> <li>• <b>Feasibility studies for approx. 50MW plant</b> are underway – due for completion March / April '24 after which a go / no go decision will be taken by Council to proceed.</li> <li>• Project now to include <b>BESS</b></li> </ul>
Municipal Pooled Buying - Business case	DoTP	<ul style="list-style-type: none"> <li>• Business case completed</li> <li>• City has at this point indicated that they would not be able to take a lead role in an MSPV, they instead want to focus on their 3 tenders in the market &amp; explore using energy trading platforms for procurement, work on which they would do jointly with WCG &amp; share with WC municipalities.</li> <li>• Need updated communication with other municipalities</li> </ul>

## Energy projects summary: New energy generation cont.

Project Name	Lead dept.	Updates & comments
Project Preparation Facility	DoI	<ul style="list-style-type: none"><li>• The provision of highly experienced TA &amp; other relevant support to the municipalities in WC to take identified energy projects to bankability.</li><li>• <b>First service provider has been appointed.</b></li></ul>

## Energy projects summary: New energy generation cont.

Explore gas power	DoI	<ul style="list-style-type: none"> <li>• Project progressing well.</li> <li>• Detailed modelling underway</li> <li>• <b>Workshop held 12 March for report finalisation by end March</b></li> </ul>
Green Hydrogen development	DEDAT	<ul style="list-style-type: none"> <li>• Strategy &amp; roadmap advanced – incl. relevant municipalities.</li> <li>• Major projects support initiatives continuing (focus on top 5 investors) – all want a combined approach re shared infrastructure (network and water)</li> <li>• MoU with NC and EC - implementation in progress</li> <li>• World Bank – pre-feasibility study on bunker fuels issued – provided some nice solutions</li> </ul>
Land for utility-scale energy generation & energy storage (Gov & private owned)	DEADP & DoI	<ul style="list-style-type: none"> <li>• Continuing to work on private sector project pipeline database</li> <li>• Land Use Planning Guideline for Renewable Energy Infrastructure in draft format - has been subject to municipal comment.</li> <li>• Ad hoc requests for government land &amp; screening of this land to be assisted on demand by DoI and DEA&amp;DP: Spatial Planning</li> <li>• DEA&amp;DP: DDF to assist with facilitation iro NEMA and DEA&amp;DP: Development Management Regions to assist with land use planning regulatory facilitation on an ongoing basis where needed</li> </ul>

## Energy projects summary: New energy generation cont.

Project Name	Lead dept.	Updates & comments
WCG office rooftop solar PV programme	DoI	<ul style="list-style-type: none"> <li>• 1 458 Solar PV panels (663 kWp system) have been installed over the parking area serving the Green Building on the Karl Bremer campus which accommodates Department of Health officials – May '23</li> <li>• Battery installation linking to existing rooftop solar PV at CTLI ensuring uninterrupted power for matric paper exam marking completed Nov '23</li> <li>• Cape Teaching &amp; Leadership Institute in Kuilsriver, construction of 320-kWp solar PV system underway due soon – Jan / Feb '24</li> </ul>
PV systems in Provincial health buildings & facilities	DoHW	<ul style="list-style-type: none"> <li>• Issued task orders for Paarl Hospital &amp; Mossel Bay Hospital PV systems to obtain quotes.</li> <li>• Issued task order for Red Cross Hospital hybrid solar PV system to obtain quote</li> <li>• Due to budget cuts, rollout will only take place at these 3 facilities</li> </ul>
Solar PV at WCED Schools	WCED	<ul style="list-style-type: none"> <li>• 7 schools – construction completed</li> <li>• 8 schools are under construction</li> <li>• 18 schools in design phase with the framework contractor &amp; 28 schools currently in procurement</li> <li>• Aiming to complete a minimum of <b>32 this FY.</b></li> <li>• Work still underway to develop a guideline document on installing PV &amp; battery backup in schools - to be used by schools that are able to access own funds / enter into rental agreements</li> </ul>

# Schools with solar PV and/or LED lighting

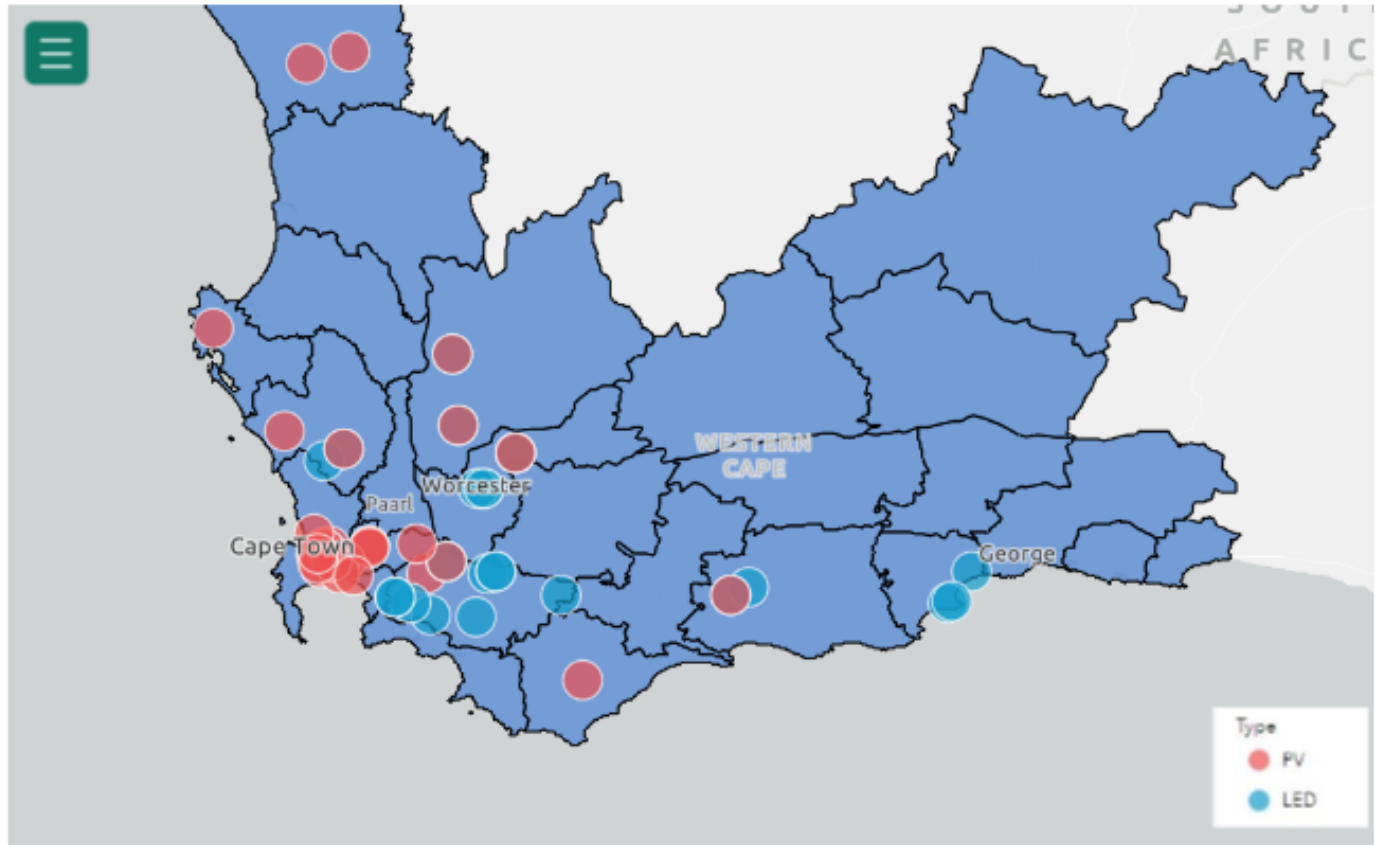
DSM   Schools   Hospitals

Number of LED Projects for Schools: **25**

Number of PV Projects for Schools: **30**

LED   PV

School	Total Learners	Type
BELLVILLE-SUID SEKONDÊR	162	PV
BEREA MOR PRIMÊRE SKOOL	1,019	LED
BISSETSDRIFT PRIMÊRE SKOOL	157	PV
BOTRIVIER PRIMÊRE SKOOL	41	LED
BREDASDORP PRIMARY SCHOOL	263	PV
CLARKE PRIMÊRE SKOOL	364	PV
CLOETESVILLE HOËRSKOOL	29	PV
CLOETESVILLE PRIMÊRE SKOOL	8	PV
DAGBREEK PRIMARY SCHOOL	1,598	PV
DARLING LAERSKOOL	97	PV
DE RIJST FUTURE AKADEMIE	150	LED



Indicative – projects still underway



# Energy projects summary: Network development

Project Name	Lead dept.	Updates & comments
Grid, transmission & distribution infrastructure upgrade planning	Dol	<ul style="list-style-type: none"> <li>• Further research into the existing infrastructure and needs of the municipalities. Progressed the mapping of municipal and other infrastructure plus data management.</li> <li>• SCM processes underway to recruit engineering resources to assist with this project</li> <li>• Next steps:               <ul style="list-style-type: none"> <li>• Create composite view of distribution infrastructure across WC (infrastructure &amp; asset plans)</li> <li>• Planning of information gathering sessions with WC municipalities</li> <li>• Prepare packages of support and test these with the municipalities before contracting in support</li> </ul> </li> </ul>
Municipal EMPs	DLG	<ul style="list-style-type: none"> <li>• Concluded all funds to 6 municipalities (<b>Beaufort West, Cedarberg, Drakenstein, Prince Albert, Swartland &amp; Theewaterskloof</b>) – most have panel of engineers so they can complete projects before end June '24</li> </ul>

# Energy projects summary: Increased investment in energy sector

Project Name	Lead dept.	Updates & comments
Financial and Funding Systems	PT	<ul style="list-style-type: none"><li>• Extensive work underway with the World Bank to design a blended finance platform to support private investments in energy in the WC.</li><li>• Next steps:<ul style="list-style-type: none"><li>• Finalizing of ToRs for WB legal and financial advisory firms to assist with design/setup of BFP</li><li>• Issuing ToR for energy consultant for WB BFP energy transtion roadmap project</li><li>• Ongoing follow-ups with City on their revenue modeling project</li><li>• World Bank &amp; SECO held their third mission to Cape Town during 19-23 Feb 2024</li></ul></li></ul>

# Energy Dashboard

An effective response to the energy crisis in the Western Cape requires an enabling governance arrangement and structure that will support planning and implementation at the required level of urgency, while assisting in unlocking potential opportunities and unblocking barriers and constraints.

While each of the projects are led by a specific WCG department, the delivery thereof requires support from several other departments. Additionally, all programmes, projects and operations interlink with others. The Energy Resource Team is therefore aimed at enabling the co-ordination of and information sharing between all departments on energy-related matters and thus includes officials from all relevant WCG departments who are working on energy programmes, projects and operational matters, whether funded or not.

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# Thank you

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All queries / offers of support / ideas / proposals: <https://www.westerncape.gov.za/110green/contact-us-2>

# Western Cape Government 23/24 energy resilience projects

WC ERP category	Project Name	Lead dept.
Loadshedding impact reduction	Emergency load shedding packs	DoTP
	Alternative energy support: SMMEs	DEDAT
	Pilot renewable energy solutions in municipalities	DLG
Strategic planning, development & management	WC Integrated Resource Plan (IRP)	DoTP
	GHG Emissions Reporting	DEADP
	Implementing the 2050 Low Emissions Pathway	DEADP
Demand side management	Demand side management programme (overall programme)	DoTP
	Implementation of DSM external to government	DoTP
	Implementation of DSM internal in government office buildings	DoI
	DSM in Provincial health buildings & facilities	DHW
	Schools LED lighting	WCED
	Support to WC municipalities for energy efficiency in public buildings	DoI

WC ERP category	Project Name	Lead dept.
New energy generation	Green Economy Ecosystem Support ("GEES")	DEADP
	High energy users mapping-profiling the future energy demand of high electricity users in the WC	DoI
	Municipal Wheeling Enablement	DoI
	Municipal IPP procurement Stellenbosch: Transaction Advisor	DoI
	Municipal IPP procurement Stellenbosch Municipality: Project Officer	DoI
	Municipal Pooled Buying - Business case	DoTP
	Municipal Pooled Buying - Establishment Phase	DoTP
	Project Preparation Facility	DoI
	Explore gas power	DoI
	Green Hydrogen development	DEDAT
	Land for utility-scale energy generation & energy storage (Gov & private owned)	DEADP & DoI
	WCG office rooftop solar PV programme	DoI
	Solar PV at WCED Schools	WCED
	PV systems in Provincial health buildings & facilities	DoHW
Network development	Grid, transmission & distribution infrastructure upgrade planning	DoI
	Municipal EMPs	DLG
	Protecting energy infrastructure	DOPOCS
Increased investment in energy sector	Western Cape Just Energy Transition Investment Plan (JET IP)	DEDAT
	Financial and Funding Systems	PT
	Electric vehicles	DoM
	Renewable energy local production	DEDAT
	Skills Development	DEDAT