



**LIMPOPO**

PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

**VIRTUAL MINISTERIAL BRIEFING SESSION**  
**ON THE IMPACT OF LOADSHEDDING IN THE**  
**PROVISIONING OF HEALTHCARE SERVICES**  
**21 FEBRUARY 2023**





# LDOH Standby Power Equipment

- Generator units (>136 fixed units)
  - Hospitals: x70 ( 2 hospitals X 5 generators )
  - (9 Hospital x 2 generators )
  - (1 hospital X 3 generators)
  - ( 27 hospitals x 1 generator each)
  - CHCs: x16 clinics out of 28 has generators)
  - Clinics: x50 clinics out of 452 has generators)
- EMS stations:x5 functional units .
  - EMS attached to hospitals not connected to backup generator
  - x12 non-functional units ,currently undergoing repairs .
  - Mobile (movable) units : x15
- Admin offices:
  - x1 Head office
- None
  - district offices; Malaria camps; stand-alone accommodation, nursing schools & colleges



# Number of Generators per hospital

Mopani District	Capricorn District	Sekhukhune District	Vhembe District	Waterberg District
Letaba x 2	Polokwane x5	Philadelphia x1	Tshilidzini x2	Warmbath x1
Nkhensani x 1	Mankweng x5	Matlala x1	Donald Fraser x1	MDR x1
Evuxakeni x1	Zebediela x2	Groblersdal x2	Hayani x1	F H Odendaal x1
Maphutha Malatji x1	Thabamooopo x1	St Ritas x1	Louis Trichardt x1	Thabazimbi x1
Van Velden x1	Lebowakgomo x1	Jane Furse x2 + 1EMS	Elim x1	Ellisras x1
	Seshego x1	Mecklenburg x1	Malamulele x1	George Masebe x1
	W F Knobel x2	Dilokong x1	Siloam x1	Voortrekker x1
	Helene Franz x2		Musina x1	Witpoort x1
	Botlokwa x2			Mokopane x1

# LDOH Standby Power Equipment (2)

- Uninterrupted power supply (UPS)
  - Special battery with control unit
  - Bridge between electricity breakdown and generator taking-on the load
    - Installed on critical HT equipment
    - Theatre equipment & lighting
    - ICU and high care units
- Rechargeable lights:
  - Mopani (x105 ) PHC facilities ,10 offering 24 hrs and 34 on call system
  - Vhembe( x75 )PHC facilities , 16 offering 24hrs ,45 on call system
  - Waterberg (x40): PHC facilities,12 Clinics offering 24hrs/ on-call system
  - Sekhukhune(x 37 ) PHC facilities ,4 Clinics offering 24hrs ,5 on call system
  - Capricorn ( x111) PHC Facilities, 5 facilities offering 24 hours and 14 offering on call





# Impact on standby power equipment

- Scheduled maintenance
  - LDOH units are for standby services
  - General capacity: 1000L, estimated power supply for 136 hours (~5days)
  - For Operation: need top-up: Fuel, oil, water and weekly test
  - Require maintenance every 250 hours ( equivalent to ~10 to 11 days) of standby use or annually (Whichever comes first)
  - Hospitals also have a reservoir tank for diesel ~4000L
- With regular Stage 4-6 loadshedding
  - LDOH units running more like prime power generators
  - LDOH units running longer hours, thus
    - Need more regular servicing
    - Frequent and extensive weekly tests
    - Needs more frequent refuelling
  - Breakdown maintenance
    - Treated as emergency
    - Often requires transfer of machine to workshop
    - Then need a rental unit at minimum rate R5000 for 800 kva per day and 500 kva at minimum of R3 500 per day



# Impact on LDOH services

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- Loadshedding directly affects
  - Water supply
  - Chiller plant & air conditioners (e.g. theatres)
  - All fridges & freezers (e.g. food, medicine, mortuaries)
  - Medical gas & vacuum pumps
  - HT equipment
  - Boilers
  - Washing of laundry
  - Cooking of patient food
  - Lighting (interior & exterior)
  - Etc.



# Impact on LDOH services (2)

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- Loadshedding indirectly affects
  - Theatre operations (scheduled & unscheduled)
  - High care and intensive care units
  - Provision of hot water
  - Renal dialysis
  - Care & treatment of patients
  - Etc.
- Loadshedding ultimately
  - Negatively affects on the effective provision of health care services
- The higher the loadshedding Stage
  - the lower the effectiveness of health care services
- More costs for LDOH taking away from other items



# Augmentaion plans by LDOH

- Plan to increase number of generators .
  - Limited number of the required KVAs in market also contribute to the challenge.
    - Minimum for clinics is from 25-50KVA.
    - For CHCs up to 100 KVA
    - Hospitals depend on the number of beds and level of care but range from 160 KVA to more than a 1000KVA (1MVA) for hospitals like Mankweng, Tshilidzini, Pietersburg etc where such capacity is a combination of more than one standby generator
  - The approval for diesel bulk storage designs by municipalities takes very long as the whole facility should be fire complaint. There is no special exemption given for the purpose of diesel storage given and this is a serious limitation .
- Diesel
  - Have RT contracts for delivery of diesel
  - Costs increasing of oil globally affects the department badly financially , for example Capricorn district spend 22 million for the procurement of diesel in the past 10 months of this financial year.



# Augmentaion plans by LDOH (2)

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- As a result of the unavailability of generators, high diesel costs and cumbersome fuel storage requirements,
- The Department is exploring the following alternative sources of energy :
  - PV solar panels
  - Inverters
  - Heat pump exchange for water heating
- The type of energy mix implemented will be determined by the results of the requirements per facility based on electricity use and/or demand



# Correspondence to ESKOM

- All hospital CEOs/HOIs requested to write to ESKOM to request exemption from loadshedding June 2022
  - Followed initiative by Mecklenberg Acting HOI and Dilokong CEO which yielded positive results
    - Dilokong exempted from load reduction only
  - Responses for 3 facilities received:
    - Mankweng was assisted as a result of the initiative as it could be connected to 2nd substations that uses different electricity line allowing alternative power source during loadshedding
    - Ellisras: exploring second powerline
    - Hayani: not able to assist
- Lebowakgomo is only hospital we know to have never experienced loadshedding
- Note: its possible to be exempted from load reduction but not necessarily loadshedding



# Eskom Timeframes To Complete Hospital Infrastructure - 12-14 months

Hospital name	Eskom/Munic supplied	Exempted (Y/N)	Possible solution/ scope	Total estimated costs (R/m)	Timeframe to provide for solution
Kgapane Hospital	Eskom	No	Install a feeder bay from Ga-Kgapane Substation with an 1km line to the Hospital	5,2	12 months
Sekororo Hospital	Eskom	No	Erect a new feeder bay at Nkowankowa Substation and build 1,7km cable to Sekororo Hospital.	6,2	12 months
Malamulele Hospital	Eskom	No	Install a feeder bay from Malamulele Substation with a 2,2km line to the Hospital	5,2	14 months
Hayani Hospital	Eskom	No	Install feeder bay at Sibasa Substation with a 2km line to the hospital	5,9	14 months



# Eskom Timeframes To Complete Hospital Infrastructure: 15-26 months

Hospital name	Eskom/Munic supplied	Exempted (Y/N)	Possible solution/ scope	Total estimated costs (R/m)	Timeframe to provide for solution
W F Knobel Hospital	Eskom	No	Install a 22kV Feeder bay at Knobel Substation, install a new Transformer 22kV/400V next to the existing transformer. Build a 22kV 21km Hare line from the substation... Decommission the existing transformer at pole KBK213,	15,4	24 months
Zebedelia Hospital	Eskom	No	Build a 22kV Feeder bay at Gompies Substation, Build a 22kV 16km Hare line from the Gompies substation to pole GDT160/2 . Create a N/O point at pole GDT160/1.	2,8	18 months
Botlokwa Hospital	Eskom	No	Install a feeder bay from Botlokwa Substation with an 4,3.km line to the Hospital	7,6	22 months
Evuxakeni Hospital	Eskom	No	Erect a new feeder bay at New Bendstore Substation and build 3 km cable to Evuxakeni Hospital.	6,6	22 months
DR CN Phatudi Hospital	Eskom	No	Erect a new feeder bay at Lenyenye Substation and build 7,7 km line to Shiluvane Hospital.	9,9	24 months





# Eskom Timeframes To Complete Hospital Infrastructure: 15-26 months

Hospital name	Eskom/Munic supplied	Exempted (Y/N)	Possible solution/ scope	Total estimated costs (R/m)	Timeframe to provide for solution
Tshilidzini hospital	Eskom	No	Build feeder bay and 2km line from Shayandima.	5,9	18 months
Elim hospital	Eskom	No	Erect 3.7km line and feeder bay	7,1	20 months
Jane Furse Hospital	Eskom	No	Built feeder bay from Jane Furse substation	5,6	18 months
St Rita Hospital	Eskom	No	Install feeder breaker from substation and a line	12,4	24 months
Donald Fraser Hospital	Eskom	No	Install feeder bay and 8.1km line	8,3	26 months
George Masebe Hospital	Eskom	No	Install a 22kV Feeder bay at Gilead Substation, Build a 22kV 40km Hare line from the substation to pole GKK396/8/2 a N/O at pole GKK396/8/1	25,2	24 months
Helena Franz Hospital	Eskom	No	Install a 22kV Feeder bay at Bochum Substation. Build a 22kV 6km Hare line from the substation to pole BHF51/4, Create a N/O at pole BHF51/2	7,7	18 months
Macklenburg Hospital	Eskom	No	Built feeder bay and a line from substation	18,3	24 months



# Eskom Timeframes To Complete Hospital Infrastructure: 26 months and above

Hospital name	Eskom/Munic supplied	Exempted (Y/N)	Possible solution/ scope	Total estimated costs (R/m)	Timeframe to provide for solution
Siloam Hospital	Eskom	No	Erect a new feeder bay at Paradise Substation and build a 14 km line to Siloam Hospital.	14,4	36 months



# LDoH Procurement of New Mobile Generators

District/Facility	Generator Output Capacity
Capricorn District	1X350kVA and 1X500kVA
Mopani District	2X400kVA and 1X500kVA
Sekhukhune District	2X500kVA and 1X800kVA
Vhembe District	1X350kVA and 1X500kVA
Waterberg District	1X440kVA and and 1X500kVA
FH Odendaal Hospital	1X500kVA
Mokopane Hospital	1X500kVA
Dr CN Phatudi Hospital	1X500kVA
<b>TOTAL COST: R39 million with estimated delivery of all by 15 March 2023</b>	



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Thank you