Zimbabwe Electricity Transmission & Distribution Company

2013 WINTER WHEAT POWER SUPPLY PREPAREDNESS REPORT

Commercial Department

March 2013

WINTER WHEAT POWER SUPPLY PREPAREDNESS REPORT

1. INTRODUCTION

Adequate electricity is key to national food security through Zimbabwe's self sufficiency in wheat production. The bulk of wheat grown is irrigated using electricity. To this end, ZETDC has been focusing on ensuring adequate power supply for the major winter wheat clusters in spite of persistent challenges of supply shortfalls that have been resulting in load shedding outside advertised schedules.

The slump in irrigated hectarage over the years has been partly attributed to inadequate power supplies. ZETDC has been engaging farmers unions in order to identify and prioritise power to the major wheat clusters so as to maximize production.

However, winter wheat farms are scattered and share power line feeders with various other customers. The exemption of the major winter wheat farms requires that the primary lines feeding the farms be added to the load shedding exemptions in Table 1 below.

Table 1 : Load Shedding Exemptions

LOAD SHEDDING EXEMPTIONS
CATEGORY
Major Referral Hospitals
Water Works, Pump Stations & Sewer Installations
Security Establishments(Prisons, Army, Presidential Guard, etc)
Central Business Districts (CBD's)
Airports, Major Border Posts, Oil Terminals
Broadcasting Stations, Earth Satellite
Small Thermals, Interruptible Demand Customers
Ring Fenced Customers
Special Agreement Customers (Zimplats, Mimosa, Unki)
Interruptible Supply Customers
Winter Wheat Clusters

2. ANTICIPATED POWER SUPPLY SITUATION

The anticipated power supply situation in winter is as follows:-

LOCAL GENERATION

Source	Dependable Capacity (MW)	Current Av. Capacity (MW)	Remarks
Kariba 	750	625	❖Reliable plant
Hwange 	780	558	❖ 5 units will be in service
Small Thermals	150	43	❖Bulawayo 23MW ❖Munyati 20MW ❖Harare 0MW
Total	1680	1226	

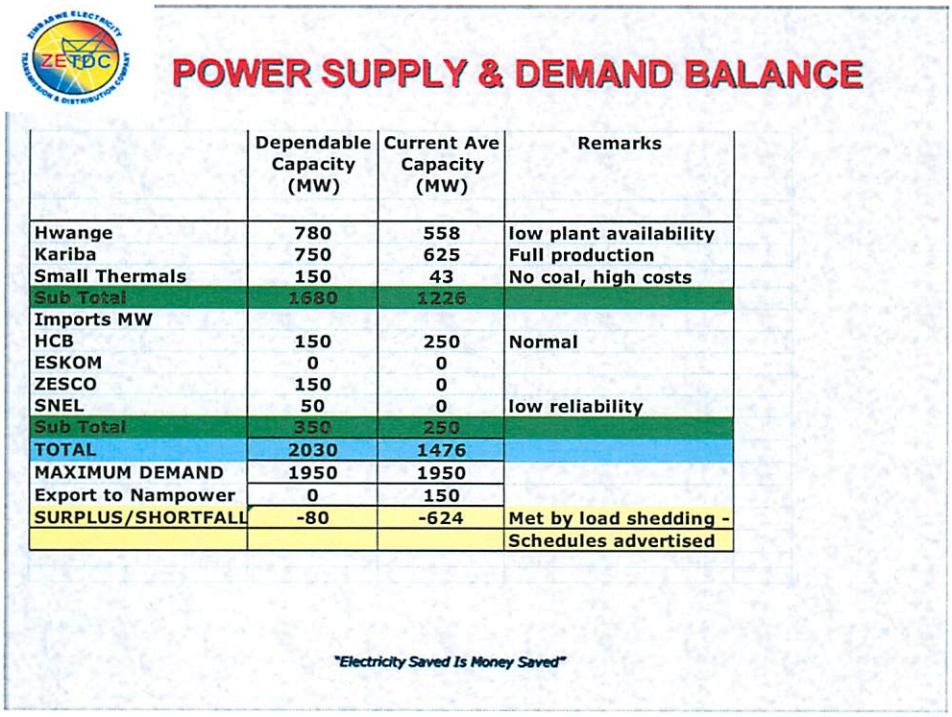
Full production is expected at Kariba whilst Hwange Power Station will has 5 units in Service.

POWER IMPORTS

Supplier	Contractual Capacity (MW)	Actual Capacity	Remarks
HCB (Mozambique)	100 (firm)	250	Supply increased following debt payment.
Eskom (South Africa)	(Non Firm)	0	❖ Emergency Source ❖ Capacity constraints in RSA ❖ High Cost
SNEL (DRC)	50 (Firm)	0	❖ Poor Reliability
ZESCO (Zambia)	150 (non-firm)	0	❖ Available off peak
TOTAL	100 (firm)	250	

"Electricity Saved Is Money Saved"

A firm 100MW contract is now in place with HCB following the armotisation of debt.



POWER SUPPLY & DEMAND BALANCE

	Dependable Capacity (MW)	Current Ave Capacity (MW)	Remarks
Hwange	780	558	low plant availability
Kariba	750	625	Full production
Small Thermals	150	43	No coal, high costs
Sub Total	1680	1226	
Imports MW			
HCB	150	250	Normal
ESKOM	0	0	
ZESCO	150	0	
SNEL	50	0	low reliability
Sub Total	350	250	
TOTAL	2030	1476	
MAXIMUM DEMAND	1950	1950	
Export to Nampower	0	150	
SURPLUS/SHORTFALL	-80	-624	Met by load shedding -
			Schedules advertised

"Electricity Saved Is Money Saved"

An average power deficit of about 624 MW is expected during winter and will be managed through load shedding of non-essential loads.

3. 2013 WINTER WHEAT POWER SUPPLY SECURITY MEASURES

ZETDC will commit 960MW uninterrupted power supply to the major wheat belt feeders in line with the irrigation cycle requirements for the various stages of the wheat crop.

3.1 Purchase of Operational Trucks

The Utility is procuring a further 293 trucks for operations in addition to 463 bought since 2009. Delivery of 60 trucks has already been taken place and these will go a long way in ensuring speedy reaction to faults.

3.2 Distribution Network Maintenance

100 circuit breakers are currently being installed to improve supply reliability on primary feeders. The breakers will also assist in managing the winter load shedding programme. The 2013 Planned Maintenance Programme is being implemented. Wayleave clearance and pole changes will be prioritized on power lines feeding the main wheat clusters. Priority in the replacement of vandalized transformers and lines was given to wheat clusters. To date over 4420 transformers and 5800km conductor was replaced at a cost of $32 million.

3.3 Proactive Communication

Proactive communication will be made through farmers associations to ensure that distressed crops are rescued. Contacts person in ZETDC are attached hereto.

4. SELECTION OF FEEDERS

Agritex will supply the inventory of wheat growers by farm name and hectarage. Farms with planned area of 100ha and above will be aggregated and the appropriate 33kV feeders identified using 11kV and 33kV diagrammatic drawings at Depots. Agritex and farmers associations will be invited to a stakeholder meeting scheduled for 21 March 2013.

5. AGRICULTURE SECTOR DEBT

The agriculture sector debt has increased and accounts for 13% of total debt. Table below shows the position as at 28 February 2013.

	current	30 days	60 days	+ 90 days	total	
Mining	5,423,767.69	11,220,233.68	6,928,036.63	83,717,020.91	107,289.058.91	14%
Industrial	2,347,152.32	8,829,274.70	2,101,455.03	23,644,920.15	36,922,802.21	5%
Agricultural	4,564,579.45	6,151,818.44	5,893,643.61	82,838.100.71	99,448,142.21	13%
Commercial	10,237,723.43	13,229,787.54	11,925,321.10	201,878,882.53	237,271,714.60	30%
Domestic	20,300,016.44	20,255,421.44	14,981,657.92	234,598,689.96	290,135,785.76	37%
P/Lighting	719,530.67	930,488.48	618,397.05	18,938,818.09	21,207,234.28	3%
Total	**43,592,770.00**	**60,617,024.28**	**42,448,511.33**	**645,616,432.35**	**792,274,737.96**	**100%**

It is prudent that consumers pay for what they consume if secure power is to be provided. Prepaid meters will be installed on all agriculture points 50kVA and below.

6. CONDITIONS PRECEDENT

All customers to benefit from the scheme should have their accounts paid up or have acceptable payment plans in place.

7. WAY FORWARD

A stakeholder meeting will be held on 21 March 2013 to discuss the implementation modalities at Regional level. The farmers associations will be provided with contact personnel in the Regions who will ensure adherence to the load shedding programme. Wheat farmers will be supported over and above the advertised schedules and this will be communicated through Network Managers in the Regions. Contract personnel details for the programme were given out.

Appendix 1

Calendar of Wheat/Barley Irrigation-Programme for the Middle and Highveld areas

Month	May		June	July			August	Sept	Oct
Days	Start Date 15th	Up to 42 days		40 to 63 days	62 to 84 days	80 to 98 days			
Stage of Growth	Planting	Germination	Tillering & Crown Root Development	Jointing	Shooting and booting	Flowering	Grain Fill and Maturity		Dry off and Harvest
Average Required Application of Water per Hectare (not including losses	66mm		88mm	88mm			132mm	132mm	
Timing of Applications	6 hour sets (22mm per set)		Working in 12 hour sets 44mm application every 14 days						
Remarks			Apply Top Dressing Fertiliser with Crown Root Development						
Electricity Requirements	3 weeks uninterrupted supply			Load shedding must tie in with irrigation sets			4 weeks uninterrupted supply	Load shedding must tie in with irrigation sets	

Notes:

Soil profile must be at field capacity when the wheat crop emerges following germination. Note that sandy soils have a low water holding capacity and will therefore require more frequent irrigation equating to more energy used.

A loss factor of 20% should be applied.