



*** THE ENERGY SECTOR ***

Date: February 25, 2013

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PRESENTATION OVERVIEW

1. POWER SUPPLY PLAN

2. TRANSMISSION GRID DEVELOPMENT PLAN



BOTSWANA POWER CORPORATION



POWER SUPPLY PLAN



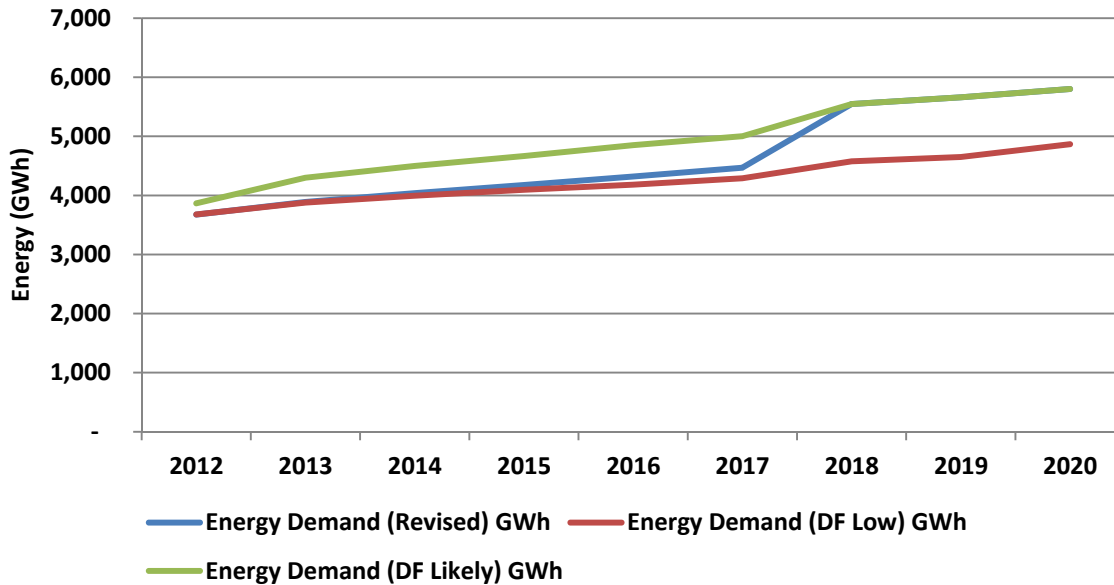
POWER SUPPLY PLAN OVERVIEW

- 1. Electricity Demand Forecast**
- 2. Power Supply Plan (2013 – 2020)**
- 3. Demand – Supply Balance**
- 4. Long Term Generation Projects**

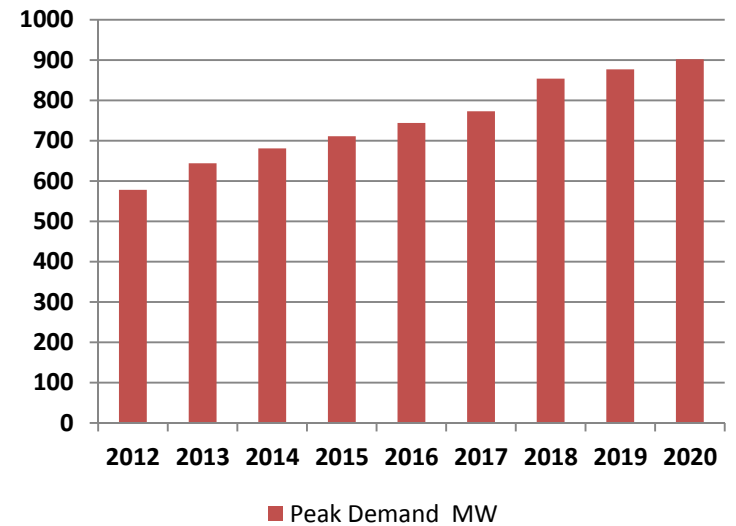


Botswana Electricity Demand Forecast

Energy Demand Forecast



Peak Demand (MW)



YEAR	UNIT	2012	2013	2014	2015	2016	2017	2018	2019	2020
Peak Demand	MW	578	644	681	711	744	773	854	877	902
Energy Demand (Revised)	GWh	3,676	3,890	4,038	4,177	4,320	4,468	5,547	5,660	5,801
Energy Demand (D/Forecast Low)	GWh	3,679	3,878	3,995	4,096	4,181	4,292	4,579	4,651	4,868
Energy Demand (D/Forecast Likely)	GWh	3,864	4,298	4,499	4,666	4,852	5,003	5,547	5,660	5,801



Sources

Morupule B



Morupule B 5&6



Morupule A



APR Rental



ORAPA 90MW



SAPP Imports



Power Supply Plan (2013 – 2020)

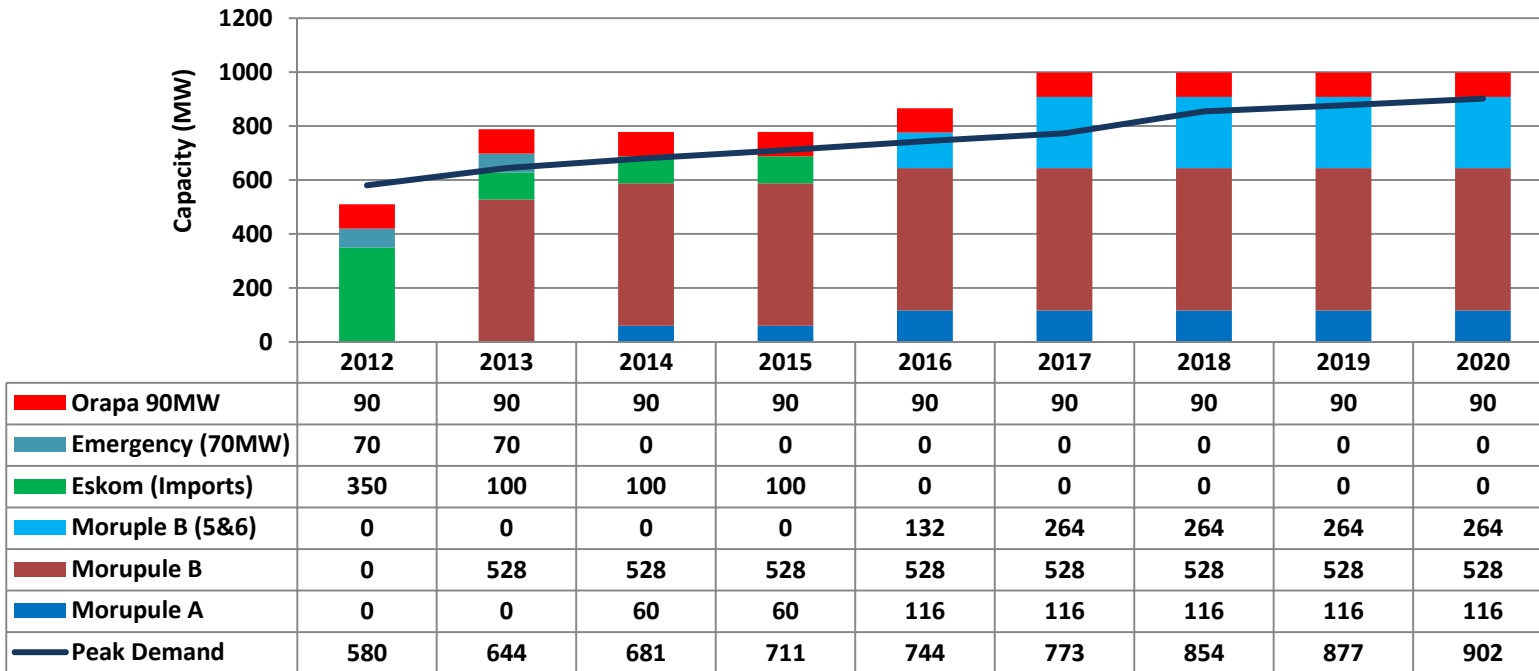
	2013 MW	2014 MW	2015 MW	2016 MW	2017 MW	2018 MW	2019 MW	2020 MW
Morupule B	264	528	528	528	528	528	528	528
Morupule B 5&6	0	0	0	132	264	264	264	264
Morupule A	0	60	60	116	116	116	116	116
APR Rental	70	0	0	0	0	0	0	0
ORAPA 90MW	90	90	90	90	90	90	90	90
SAPP Imports	100 + 200	100	100	0	0	0	0	0



BOTSWANA POWER CORPORATION

Capacity Balance (Best Case Scenario)

2012 - 2020 Capacity Balance



Total Supply	510	788	778	778	866	998	998	998	998
Peak Demand	580	644	681	711	744	773	854	877	902
Capacity Balance	-70	144	97	67	122	225	144	121	96



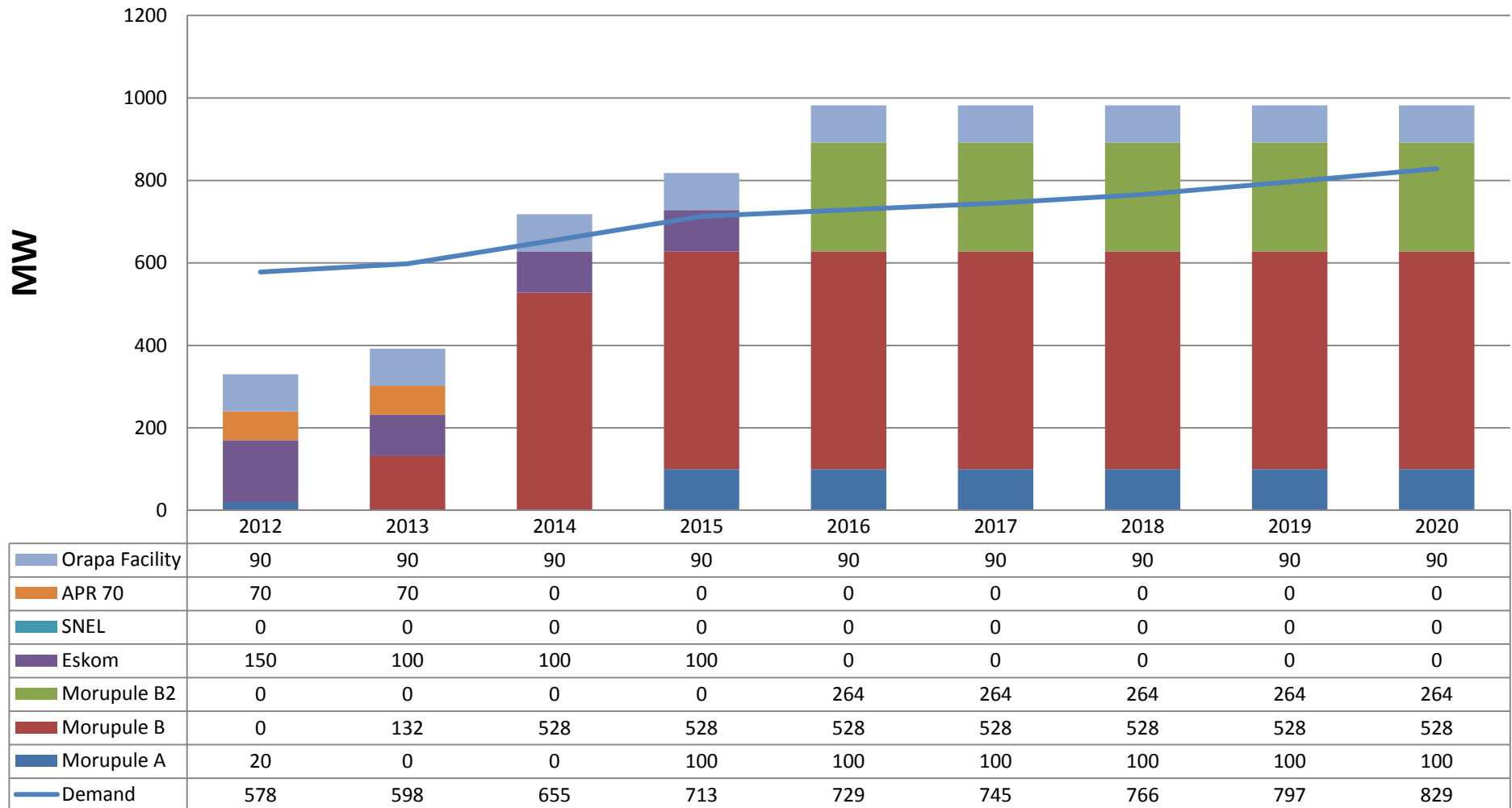
Assumptions

- **Morupule A: On Care & Maintenance.** Return to service 2015/16; 60MW secured by Winter of 2014.
- **Morupule B: In full commercial operation by August 2013;**
- **70MW Rented Diesel: Contract up to December 2013;**
- **Eskom Imports: 100MW (2013 – 2015);**
- **Eskom Imports: 200MW (1st January to 31st July 2013); and**
- **New Generation Capacity: Morupule B Units 5&6 secured 2016/17.**



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Supply - Demand Outlook (2012 - 2020)





Long Term Generation Projects

Sources

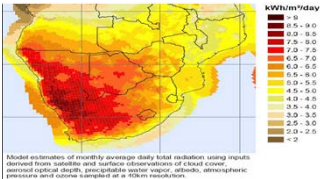
Morupule B 5&6



IPP Green Field



Solar Thermal



Coal Bed Methane



Renewable Energy



Capacity (MW)	Timing	Remarks
300	2017	Bankable Feasibility Study in place Call for Expression of Interest being prepared
300	2019	Green field coal fired project at planning stage Project linked to coal exports, long term coal monetization strategy – Coal Road Map Request for information to be released.
100	TBA	Bankable Feasibility Study Stage. (Report Dec 2012) 100MW CSTP; Central Tower with 4hrs TES at Jwaneng
90 +	??	Timing of Commercial Availability of CBM in sufficient quality and quantity to operate a gas fired power station remains unknown.
75MW	TBA	1.3MW Pilot project commissioned in August 2012 (Phakalane).



TRANSMISSION GRID DEVELOPMENT PLAN



GRID PLAN OVERVIEW

- 1. Tx Grid Development Constraints**
- 2. Tx Grid Development Plan**
- 2. Tx Grid Capital Outlay (2013 – 2018)**



Transmission Grid Constrains



Main Challenges to be addressed

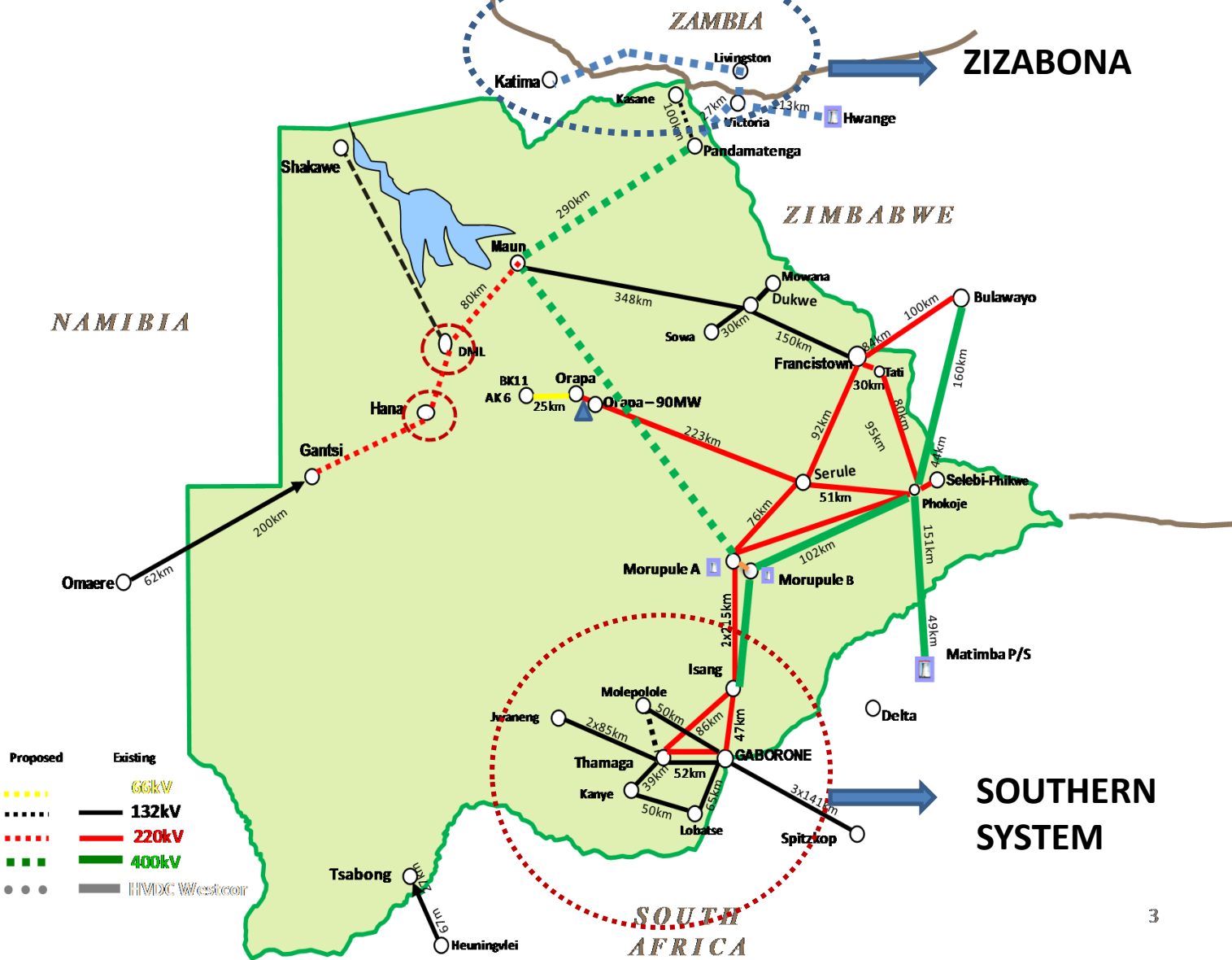
1. Lack of Grid Access in the Northwest Region
2. Demand Growth Outstripping Grid Capacity in the South
3. Inadequate Transmission capacity to support new generation investments (IPPs and Public Sector)

Impact of Challenges

1. Suppression of Economic development (mining)
2. Suppression of Coal Beneficiation
3. Unreliable Power Supply in the South

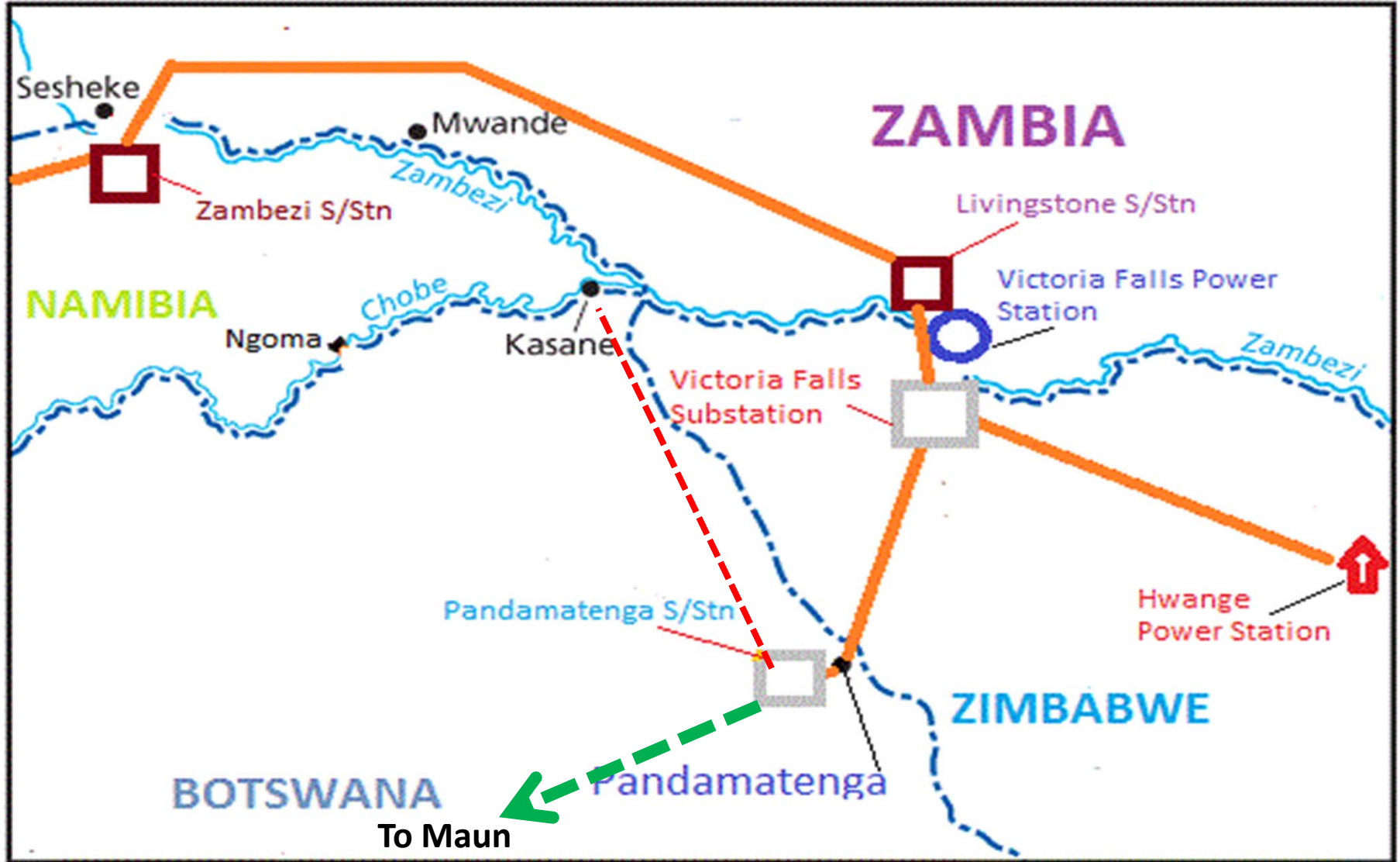


Transmission Grid Expansion Plan

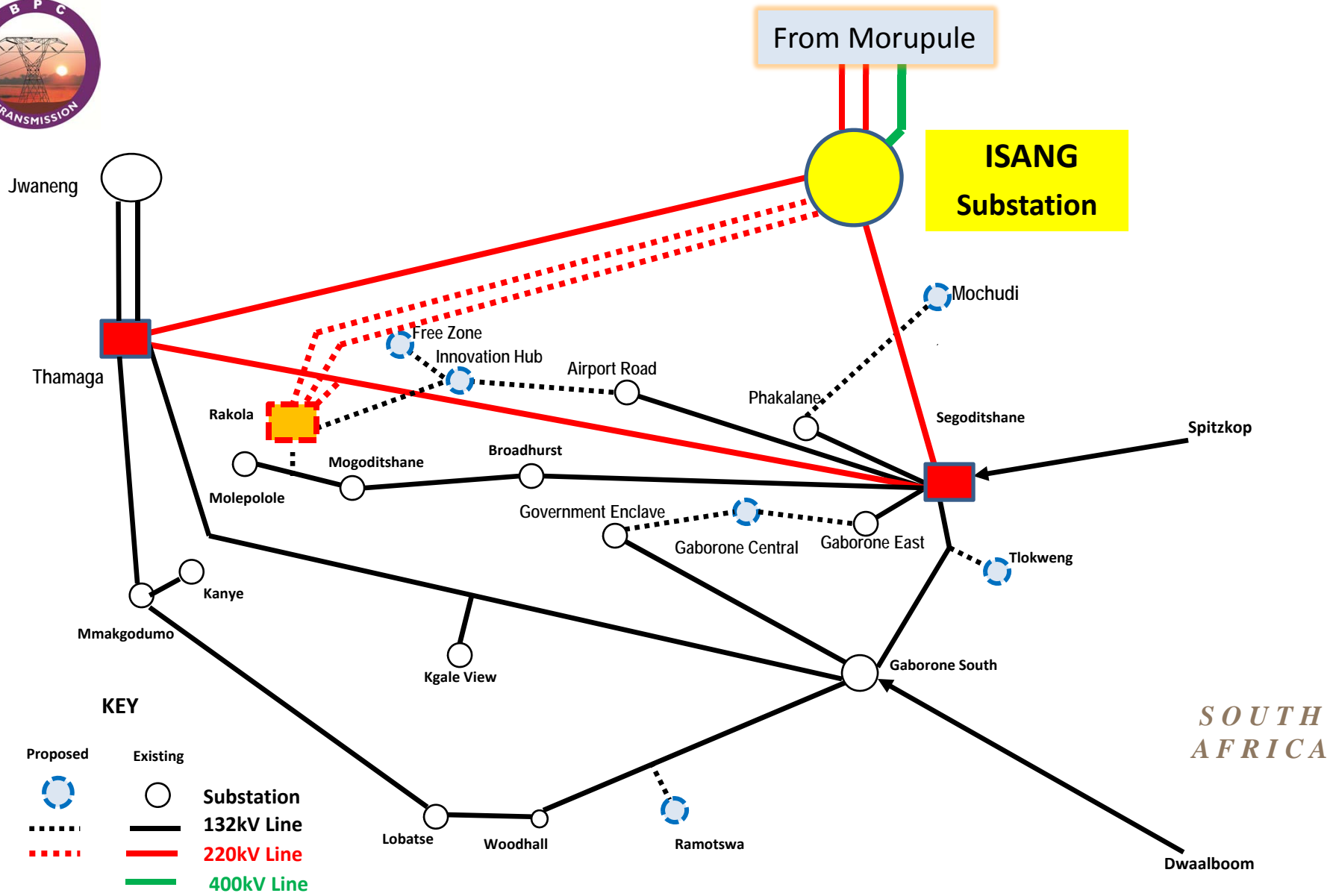




ZIZABONA PROJECT



SOUTHERN SYSTEM REINFORCEMENT & EXPANSION PLAN



KEY

- | | | |
|----------|----------|------------|
| Proposed | Existing | |
| | | Substation |
| | | 132kV Line |
| | | 220kV Line |
| | | 400kV Line |



Securing Power Supply Objectives (Access and Reliability)

No	Objective	Deliverable
1	Expand Transmission Grid Capacity as per Master Plan	Executed Transmission Projects as listed Below

PROJECT	TIMING	ESTIMATE COST (BWP)	Benefit
North West Grid Extension (400/220/132kV)	2013 - 2017	3.5 billion	New Customers (Mining)
ZIZABONA	2013 - 2016	100 million	Regional Access
Rakola 220/132kV S/S & Lines	2013 - 2015	476 million	Secure Power Supply
Ramotswa 132/11kV S/S	2014 - 2015	70 million	Secure Power Supply
Mochudi 132/33kV S/S	2014 - 2015	100million	Secure Power Supply
Tlokweng 132/11kV S/S	2014 - 2015	48 million	Secure Power Supply
Govt. Enclave 132/11kV S/S	2017 -2018	70 million	Secure Power Supply
TOTAL COST		BWP 4.364 Billion	



THANK YOU



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