The Southern African Power Pool

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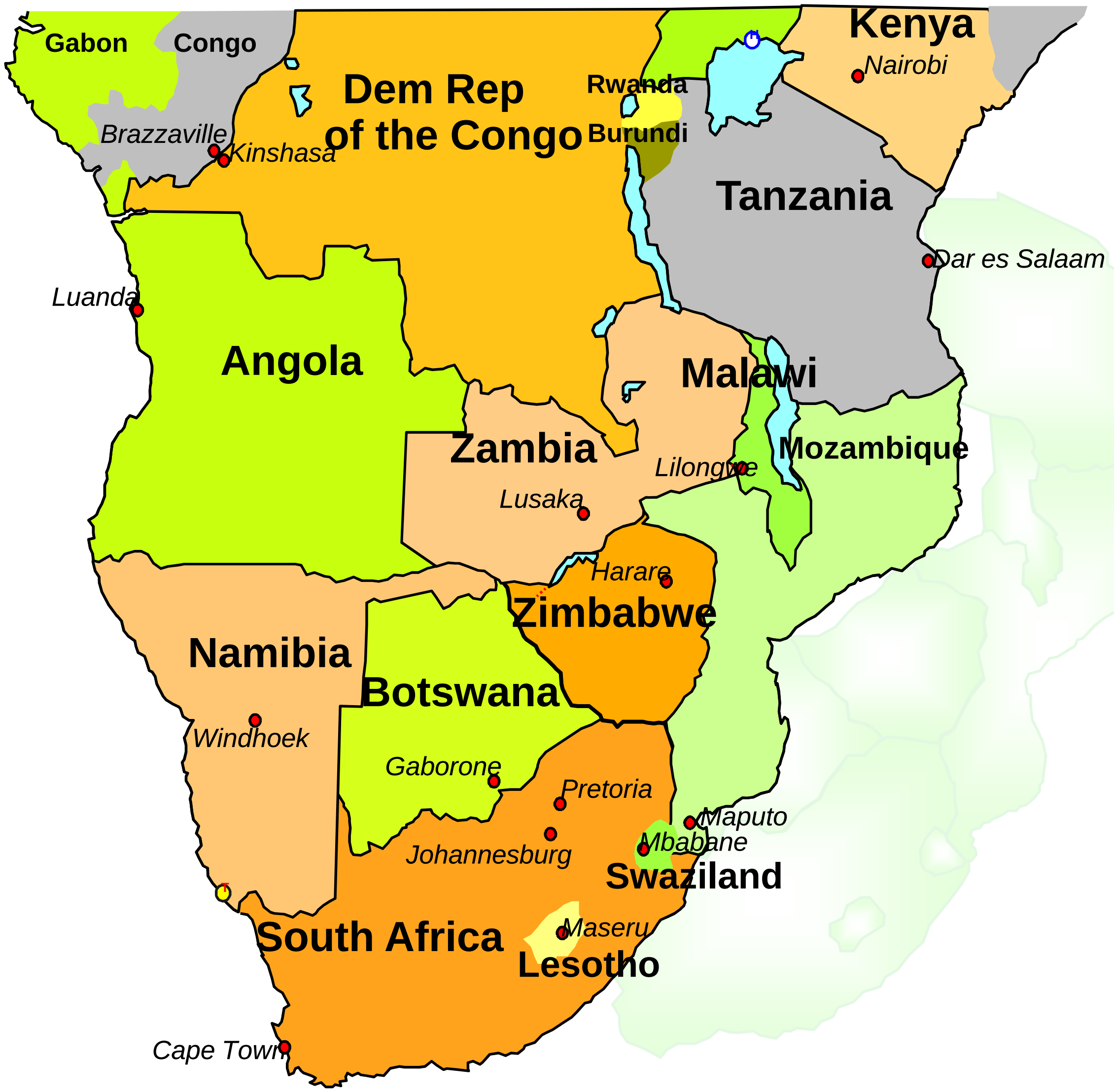
CONTENTS

1. INTRODUCTION TO THE SAPP

1.1 GEOGRAPHIC



Countries

1. Angola
2. Botswana
3. Democratic Republic of Congo (DRC)
4. Lesotho
5. Malawi
6. Mozambique
7. Namibia
8. South Africa
9. Swaziland
10. Tanzania
11. Zambia
12. Zimbabwe

POPULATION: 230 million

1.2 HISTORIC

- **Interconnection and regional trade started in the 1950s with a line connecting the Democratic Republic of Congo (DRC) & Zambia.**

- **Interconnection of Zambia and Zimbabwe systems started in the 1960s following the construction of Kariba Dam.**

- **In 1975 South Africa was connected to Mozambique via a DC line from Cahora Bassa to Apollo.**

- **Two networks were therefore developed as a result:**
  - **Thermal Southern network: Namibia, South Africa & Mozambique.**
  - **Hydro Northern network: DRC, Zambia, Mozambique & Zimbabwe.**

1.2 HISTORIC

- **The two networks were linked by weak lines 220kV & 132kV via Botswana until 1995 when the 400kV was constructed.**
- **The interconnection of the northern and southern networks created a platform for regional trade and cooperation.**
- **In 1995, the Ministers responsible for energy in the Southern African Development Community (SADC) signed an Inter-Government MOU that lead to the creation of a power pool under the name, Southern African Power Pool (SAPP).**

1.3 GOVERNING DOCUMENTS

The SAPP was created in Aug 1995 through a SADC treaty and is governed by four agreements as follows:

- **Inter-Governmental MOU - Enabled the establishment of the SAPP.**
- **Inter-Utility MOU - Establishes the SAPP Management & Operating principles.**
- **Agreement Between Operating Members - Establishes the specific Rules of Operation and Pricing.**
- **Operating Guidelines - Provide Standards & Operating Guidelines.**

1.4 SAPP VISION

The SAPP vision is to:

- **Facilitate the development of a competitive electricity market in the Southern African region.**
- **Give the end user a choice of electricity supply.**
- **Ensure that the southern African region is the region of choice for investment by energy intensive users.**
- **Ensure sustainable energy developments through sound economic, environmental and social practices**

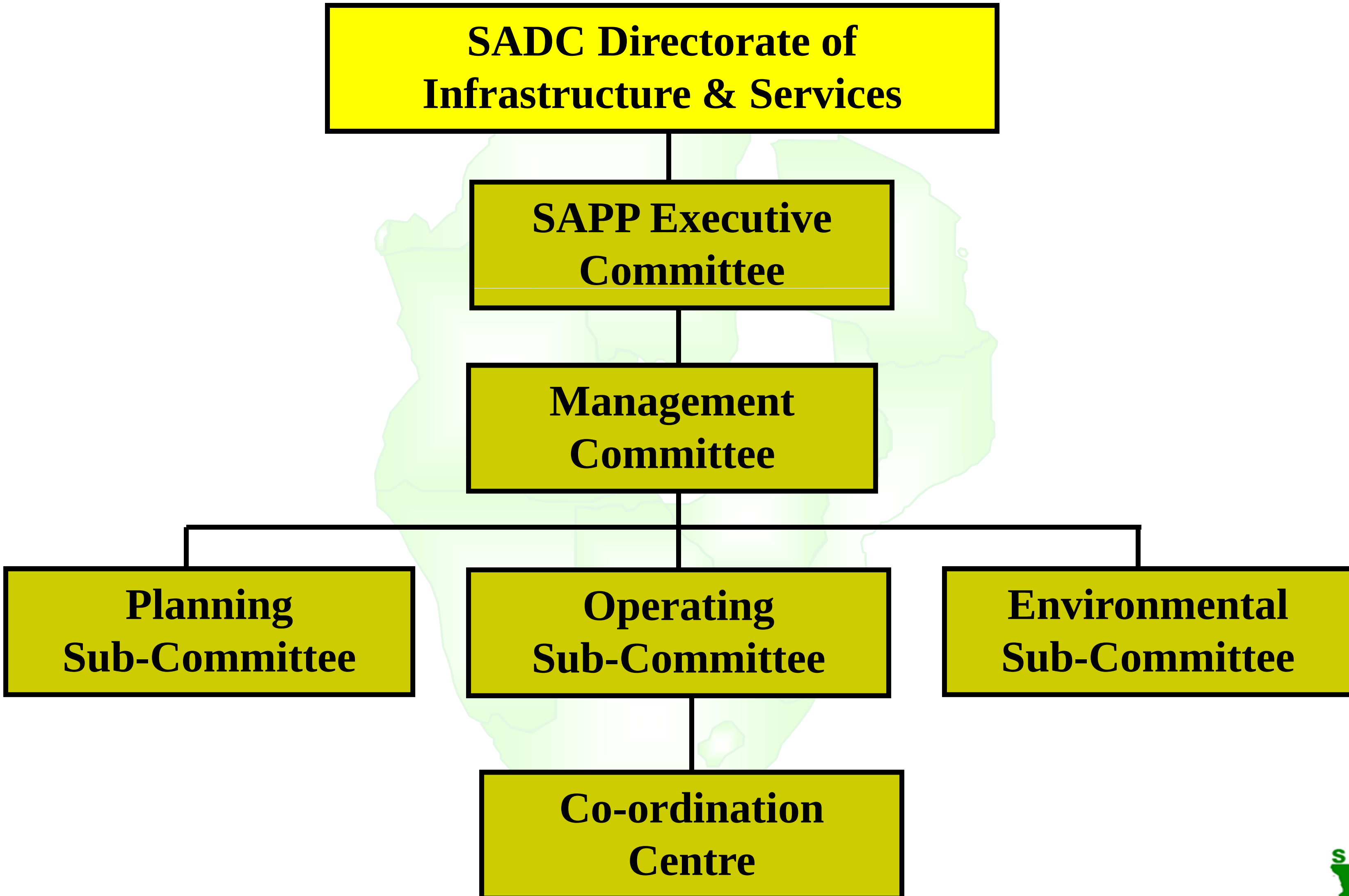
To promote its vision SAPP is

- Changing from a co-operative pool to a competitive power market.
- Reviewing membership to allow for more players.
- Expanding both the transmission and telecommunication links between members.
- Expanding generation capacity and attract high intensive energy users.

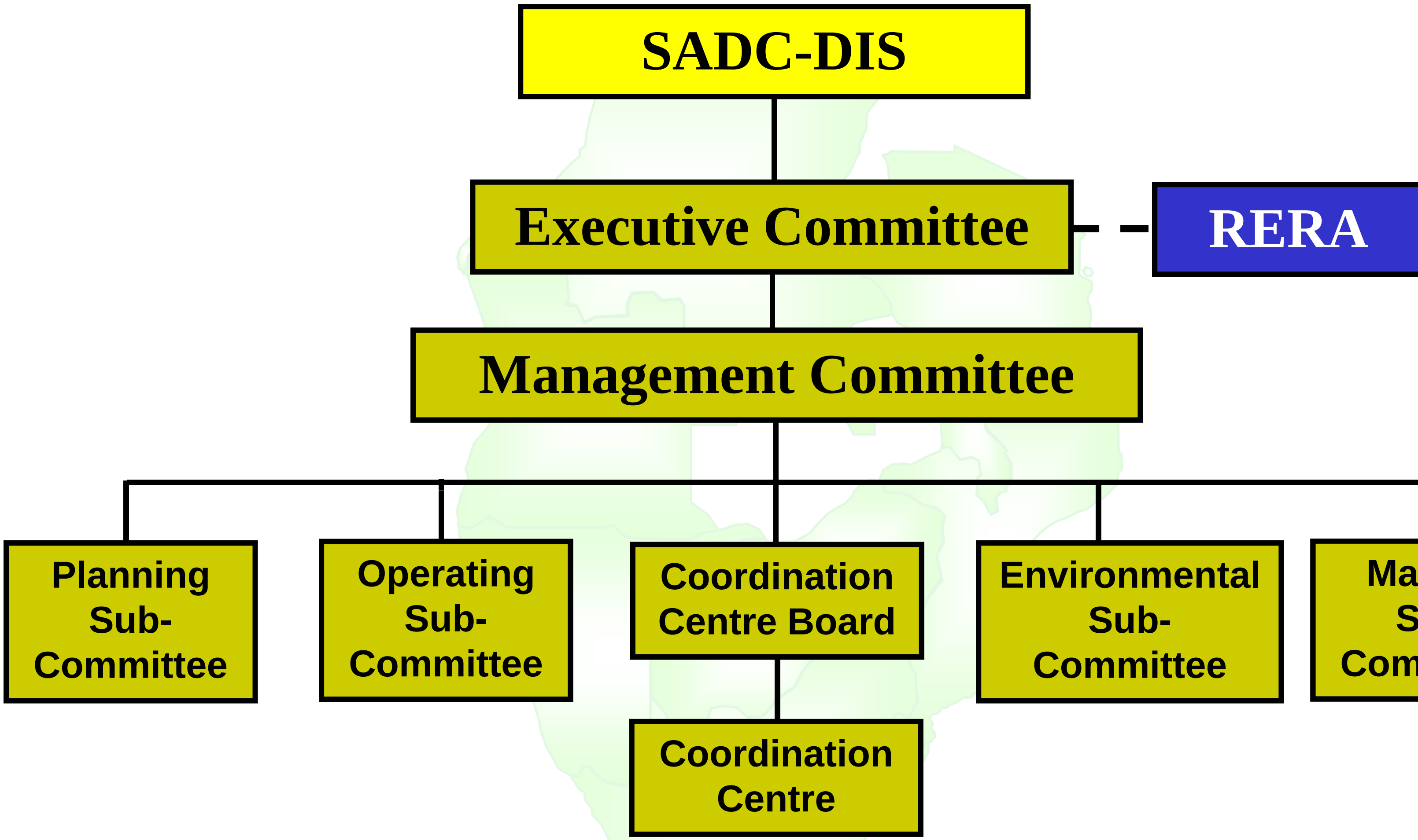
A Coordination Centre was established in Harare, Zimbabwe, in February 2000.

1.5 MANAGEMENT AND GOVERNANCE STRUCTURE

Current Management Structure



Proposed Management Structure



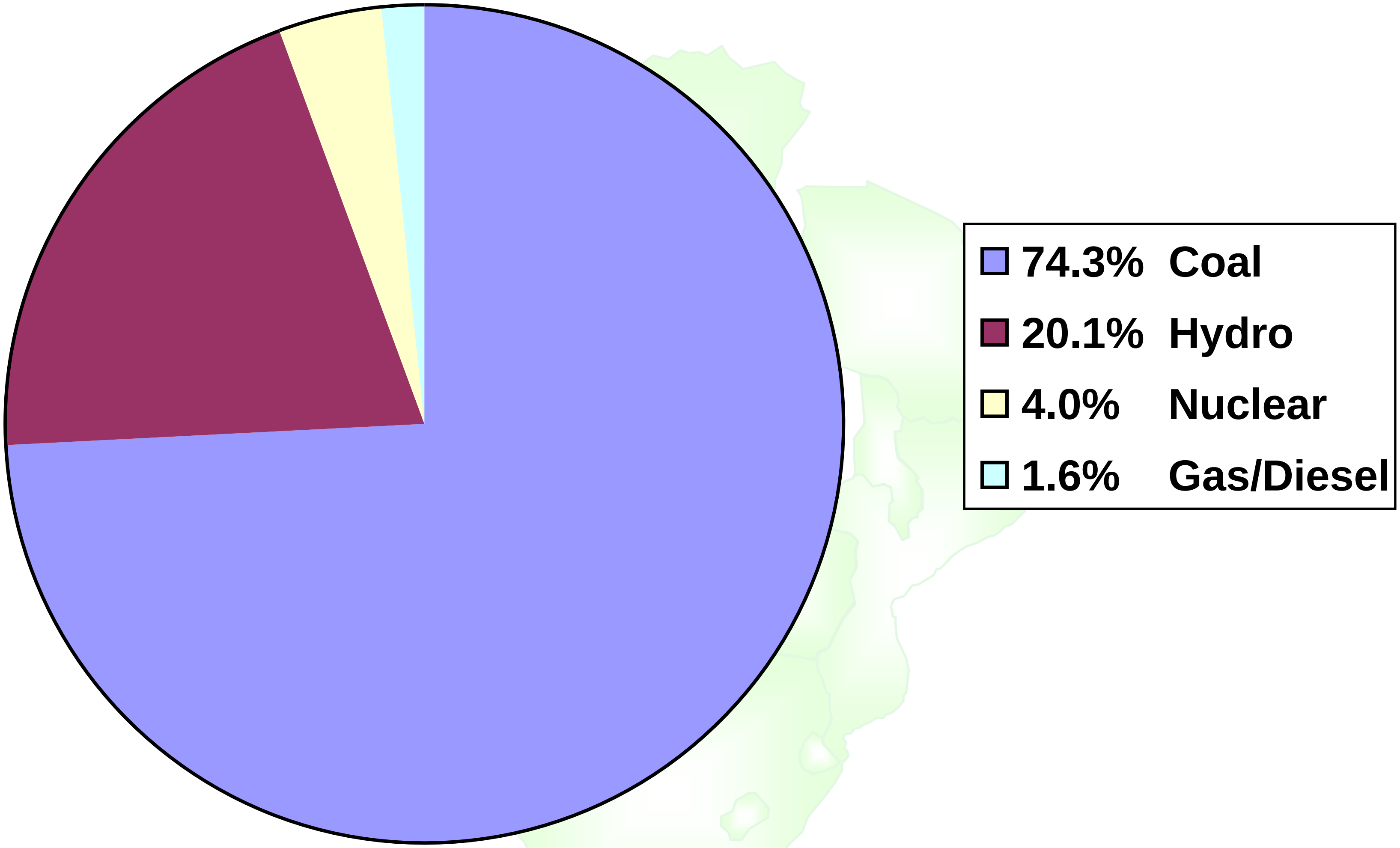
1.6 MEMBERSHIP

No	Full Name of Utility	Status	Abbreviation	Country
1	Botswana Power Corporation	OP	BPC	Botswana
2	Electricidade de Mocambique	OP	EDM	Mozambique
3	Electricity Supply Corporation of Malawi	NP	ESCOM	Malawi
4	Empresa Nacional de Electricidade	NP	ENE	Angola
5	ESKOM	OP	Eskom	South Africa
6	Lesotho Electricity Corporation	OP	LEC	Lesotho
7	NAMPOWER	OP	Nam Power	Namibia
8	Societe Nationale d'Electricite	OP	SNEL	DRC
9	Swaziland Electricity Board	OP	SEB	Swaziland
10	Tanzania Electricity Supply Company Ltd	NP	TANESCO	Tanzania
11	ZESCO Limited	OP	ZESCO	Zambia
12	Zimbabwe Electricity Supply Authority	OP	ZESA	Zimbabwe
	OP = Operating Member			
	NP = Non-Operating Member			

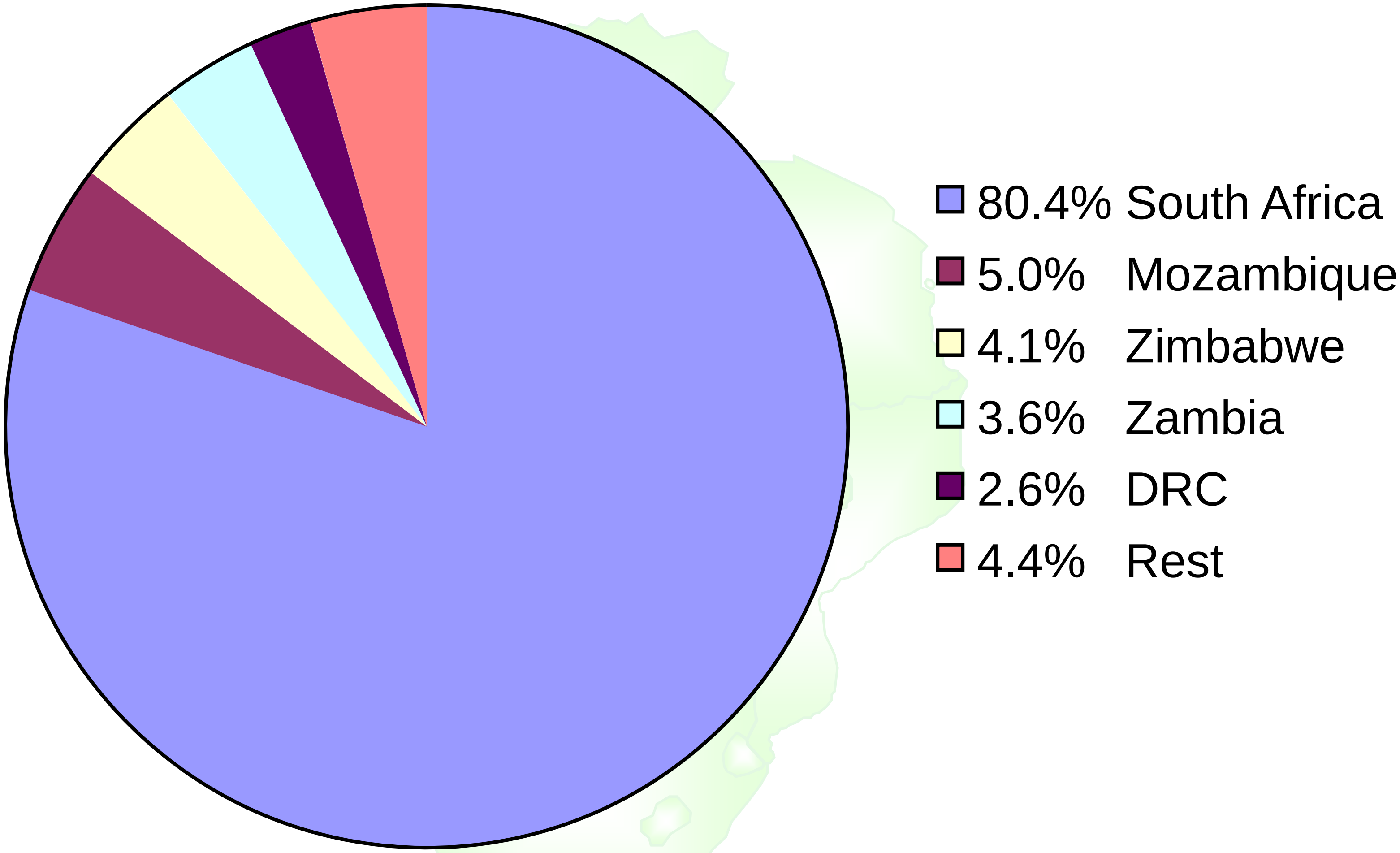
1.7 INSTALLED CAPACITY

SAPP POWER SUPPLY AND DEMAND				
Country	*Utility*	*Installed Capacity [MW]*	*Net Capacity [MW]*	*2004 Peak Demand, MW*
Angola	ENE	742	590	317
Botswana	BPC	132	120	402
Lesotho	LEC	72	70	70
Malawi	ESCOM	305	261	271
Mozambique	EDM	307		
	HCB	2,075	2,250	274
Namibia	NamPower	393	390	470
South Africa	Eskom	42,011	36,208	34195
Swaziland	SEB	51	50	172
Tanzania	TANESCO	591	480	508
DRC	SNEL	2,442	1,170	993
Zambia	ZESCO	1,632	1,630	1295
Zimbabwe	ZESA	1,990	1,825	2069
TOTAL		**52,743**	**45,044**	**41,036**

Generation Mix



COUNTRY CONTRIBUTION



2. SAPP ACTIVITIES

2.1 CURRENT ACTIVITIES

The current SAPP activities include the following:

i. Expanding Electricity Trading amongst Members

PREVIOUSLY

- **Bilateral contracts**

FUTURE

- **Bilateral contracts**
- **Day-Ahead Market (DAM)**

CURRENT

- **Bilateral contracts**
- **Short-Term Energy Market (STEM)**

ii. Generation & Transmission Infrastructure

Priority Projects

The SAPP priority projects have been agreed as follows:

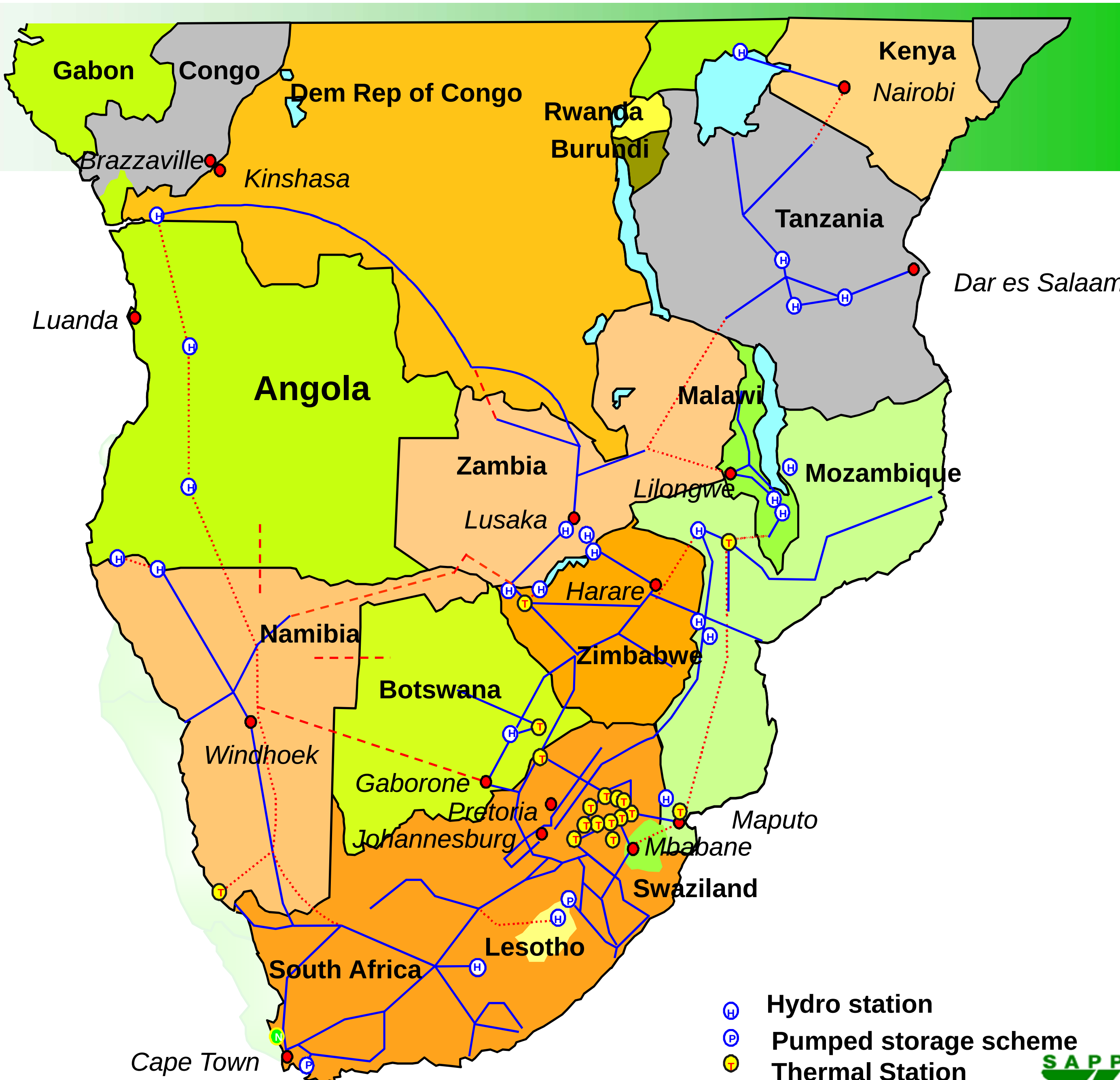
1. *Rehabilitation & associated transmission projects.*
2. *Short-term generation projects*
   - *Expected to be commissioned before 2010*
   - *Completed feasibility studies*
   - *Approved Environmental Impact Assessment*
3. *Transmission projects*
4. *Medium to Long-term generation projects*
   - *Expected to be commissioned after 2010*
   - *Most have no feasibility studies and EIA*

Transmission Projects

Transmission projects are divided as follows:

- *Outstanding transmission interconnectors whose aim is to interconnect non-operating members of the SAPP:*
  - *Malawi-Mozambique interconnector,*
  - *Zambia-Tanzania-Kenya Interconnector, and*
  - *Westcor project.*
- *Transmission interconnectors aimed at relieving congestion on the SAPP grid, and*
- *New transmission interconnectors aimed to evacuate power from generating stations to the load centres.*

SOUTHERN AFRICAN GRID



iii. *Expansion of the Telecommunications Infrastructure*

The communications infrastructure is being expanded to facilitate efficient communication between the three control areas of SAPP [South Africa, Zambia & Zimbabwe].

- **SHORT-TERM Solution is VSAT – was expected to be in place by end of September 2005.**
- **LONG-TERM Solution is fibre network.**

iv. *Expansion of SAPP*

The SAPP is reviewing membership criteria with a view to expand SAPP membership and allow IPPs and other regional players to participate in the SAPP activities.

V. Capacity Building

The SAPP attaches great importance to Human Resources. In this regard, the SAPP organises various training programmes and skills update for members ranging from:

- **Courses**
- **Hands on training**
- **Seminars and Conferences**
- **Workshops**
- **Exchange Programmes.**

2.2 FUTURE ACTIVITIES

1. **Development and establishment of a regional competitive electricity market for Southern Africa, leading to a spot market.**

    - **Project Period: Jan 2004 to Dec 2007**
    - **Financial Support from NORAD.**

2. **Development of the Ancillary Services Market.**

    - **Project Period: July 2004 to Dec 2007**
    - **Financial Support from Sida.**

3. **Implementation of the SAPP long-term Generation Projects.**

3. CHALLENGES

i. The migration from a cooperative to a competitive pool.

ii. The implementation of a competitive market at a time that the region is running out of generation reserve surplus capacity.

iii. The biggest challenge is the diminishing generation surplus capacity:

- The creation of an enabling environment for investors to invest in generation and transmission infrastructure.

- The embracing of the principle of cost reflective tariffs and the adoption of regulatory principles that will enhance those tariffs.

iv. The restructuring of the SAPP and the recognition and admission of new members into the SAPP.

THANK YOU