

The Proposed Approach of Japanese Official Development Aid for Electricity Power Sector Development in sub-Saharan Africa

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1. Introduction

Aid to developing countries as the most important areas and now, sub-Saharan African region is attracting much attention. Because the majority of the world's poor people are concentrated in the area. International aid agencies and other organizations in recent years in developed countries have increased aid to Africa, focusing on the development of infrastructures. Among them electricity power sector is recognized as the most important sector and future investment required is roughly estimated at 25 billion dollars (Infrastructure Consortium for Africa ; ICA, The Fourth General Meeting in Tokyo, march 2008). The content of this manuscript is the author's personal opinion, not JICA.

2. The Present Situation and Problems on Electricity Power Sector in Sub-Saharan African Region

In sub-Saharan African region four power pools have so far been established. The power pool is to be said that more than two power utilities make interchange of electricity between them to enhance the stability and the reliability of power supply on the basis of mutual accommodation. As the Southern African Power Pool (referred to as SAPP, including 12 countries), as compared with others, was established fastest and has the biggest power generation and transmission facilities, the status quo of SAPP is only shown here.

Southern African Power Pool (SAPP)

In 1995 SAPP was formulated under the Southern African Development Community (SADC). Average growth rate of electricity demand of SAPP is 3% per year. Since couple of years SAPP has suffered shortage of electricity due to the rapid economic growth in SAPP region and that resulted in supply cut now. The installed capacity and peak demand of 2007 in SAPP is shown in **table-1**. The table suggests that reserve margin is only 4 % in all.

From now on, coping with the power shortage for SAPP especially for South Africa, hydropower development along the Zambezi and the Congo Basin, gas-thermal generation development through utilization of buried gas at eastern coastal area and coal-fired generation making use of abundant coal in South Africa have been planned.

Major Common Problems of Power Pool

(1) Decline of Effective Capacity

The cause for the decline is deterioration of facilities for power generation and transmission line, in addition to that, due to insufficient maintenance. It leads to large power loss (20%~30%), especially in South Africa, generation effectiveness of coal-fired generation facilities being deteriorated due to more than 20 years operation.

(2) Lack of Reserve margin

Reserve margin rate of not only SAPP but also other power pools is less than 10%, especially South Africa and Malawi are only 2%.

(3) Insufficiency for International Transmission Line between Power Pools

(4) Poor Ability for Management and Maintenance for Power Related Facilities to Keep Stability of Power Supply

(5) Lack of Capable Persons for Power Trading, Contract, Institutional Building and so on

(6) Others

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3. The Proposed Approach of Japanese Official Development Aid

Africa is called the Back-Yard of Europe. That many European policy advisors and consultants have been working for African government organizations as well as international organizations in the region might be a cause of such argument. It is because that African countries were once colonized by European countries. Information, human relations and finance for Africa that European countries possess are very much plenty as compared to Japan. Recently China has launched into various sectors of Africa to seek natural resources, not excepting power sector. Japan could not contend with European countries or China on an equal footing. Whereas it is better for Japan that identifying technical cooperation item that can be applied Japanese advanced technology, Japan should put forward technical cooperation into specific area as first step. On that occasion, it is important that taking account of green house gas reduction and saving energy, Japan should grapple with the common problems which are described before. Providing the power sector with the pertinent technical cooperation will result in formulation of excellent grant aid or loan aid projects.

4. Possible Proposal for Technical Cooperation

- (1)FS implementation for Monontsa pumped storage hydropower generation (1,000MW) in Lesotho
- (2)General inspection for existing power related facilities aiming at looking deep into the cause of power loss (20%~30%) at each power pool
- (3)Participation in the Grand Inga Hydropower Development in Congo Basin (Democratic Republic of Congo)
- (4)Extension and improvement of Kafue Gorge Regional Training Center in Zambia for Capacity Development

5. Conclusion

It is said that there is no world peace without it of Africa. Since independent age Africa had been suffered from ordeals, famine, turmoil and war. That had led to impoverishment of countries and people's agony. However Africa recently shows favorable signs with turning economic growth rate into positive stage. Japan should promote development assistant for Africa which is the obligation as developed country as well as from the view point of security of natural resources for Japan. Based on the significant experiences and fruitful outcome of assistants in Asia, especially infrastructure development, Japan is required the meaningful cooperation for Africa in a way of Japan style differing from European countries.

END

Table—1 Installed Capacity and Peak Demand (SAPP, 2007)

(Overview of SAPP and SAPP Operations in January 2008)

COUNTRY	UTILITY	INSTALLED CAPACITY (MW) ①	EFFECTIVE CAPACITY (MW) ②	PEAK DEMAND of 2007 (MW) ③
ANGORA	ENE	1,127	943	476
BOTSWANA	BPC	132	120	493
D.R.OF CONGO	SNEL	2,442	1,170	1,075
LESOTHO	LEC	72	70	109
MALAWI	ESCOM	302	246	240
MOZAMBIQUE	EDM	307		343
	HCB	2,250	2,075	
NAMIBIA	NamPower	393	390	449
SOUTH AFRICA	Eskom	43,061	37,258	36,513
SWAZILAND	SEB	51	50	196
TANZANIA	TANESCO	897	680	635
ZAMBIA	ZESCO	1,632	1,630	1,468
ZIMBABWE	ZESA	2,045	1,125	1,758
合計		54,711	45,757	43,755
			83.6% (/)	95.6% (/)