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### Next three years electricity roadmap

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Ethiopia is in the process of designing and implementing various policies and strategies for rapid sustainable and persistent economic growth. To make this development vision a reality, establishing quality electrical infrastructure in terms of type and quantity is an essential task that has no alternative.

Ethiopian Electricity Power (EEP) is based on the country's potential natural resources that it is generating electricity from water, wind and underground steam to supply energy to the nation and neighboring countries. Consequently, the institute has prepared a long, medium and short term plans of 25, 10 and three years that will enable it to effectively fulfill its mission of providing energy to the country and neighboring countries.

Accordingly, this article focuses on the electrical infrastructure that the institute plans to build over the next three years.

EEP is expected to increase the nation's power generating capacity to more than 11,000 megawatts when other power generation projects including the Great Ethiopian Renaissance Dam are completed in the next three years. And, as power generation is not enough to ensure reliable electricity in the country, it is important

to build transmission lines and distribution stations that transmit the generated power in different kilovolt levels.

So far, the institution has built and manages more than 189 substations of different kilovolts and more than 20 thousand kilometers of high power transmission lines throughout the nation. And the power generation projects under construction are trusted to fill the gap between the constantly growing energy demand and supply when they are completed and start generating power.

Hence, EEP has prepared a three-year plan to build a power grid that is balanced with the electricity generated in the next three years (2015 E.C to 2017 E.C) that has already entered the implementation phase.

In these years, it is planned to build 62 new power distribution stations and to expand and to increase the capacity of 52 existing distribution stations, as well as the construction of 4314.15 km long high power transmission lines.

The works that the institution has identified in the short-term plan will increase the current energy supply and accessibility when the constructions are completed. In particular, the generated power will be able to reliably supply power to the agro industry, cement and other manufacturing industries without grid limitations.

In the first year of the plan implementation, construction of seven new distribution stations and expansion and capacity building of four existing distribution stations are planned. Currently, the 230 KV Gondar-Chilga, Mattu – Masha, Debreworkos – Dejen, and 400 KV Awash-Woldia railway power line and the 132 KV Butajira-Warabe high power transmission lines are under construction.

Furthermore, new 400 KV power distribution stations are being built in the cities of Kombolcha and Woldia. And other new power distribution projects are under construction, including Chilga, Dejen and Warabe. In the same fiscal year, it is planned to connect the Bokoji Distribution Station with the Melka Wakena-Koka power transmission line and the Debretabor Power Distribution Station with the Bahardar 2-Alamata line.

Besides, addressing the power cuts in the area, it is planned to develop a power grid to provide enough electricity for manufacturing industries, the service sector and the community.

When these projects are completed, they will increase the income of the institution by expanding the access to electricity, and it is believed that it will open the door for the development of manufacturing industries, service institutions and the whole society by addressing the power supply faced in these areas.

Similarly, in the 2016 fiscal year, connecting Dicheto, Waranso, Wolencheti, Methara, Gad 1 and 2 power stations respectively with Dicheto, Kombolcha-Semara, Koka-Hurso, Adama 2-Awash and Hurso-Adigala high power transmission lines will be done. Asela wind power with Melka Wakena-Koka, as well as the Dessie 2 power distribution station with the Kombolcha-Woldia high power transmission line will be also connected.

In the 2017 E.C fiscal year, the peak of the three-year plan, it is planned to build 33 new substations, to increase the capacity of existing substations, and to build 2,841 km of high power transmission lines. In particular, the high power transmission line extending from Hurso-Harar-Jigjiga, Walayta 2-Shigdan, Dedesa-Nekmet, and Semera-Djibouti (Nagad) will be built. And the power distribution stations built by Bahardar, Dire Dawa and Ararti Agro Industries will be connected to the main electricity grid.

At last, project construction cost is estimated to be more than 2 billion USD. More than half of this amount is obtained and efforts are being made to get the remaining investment from various financial sources, as stated on the plan document written in Amharic.

**Ethiopia's Electric Power Startup Process**

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