

to by the firm submitting the application

Why do you think this project should receive an award? How does it demonstrate?

Innovation, quality, and professional excellence

Transparency and integrity in the management and project implementation

Sustainability and respect for the environment

What services did the member firm provide to the project? Please describe briefly.

Hydrochina Corporation is the EPC contractor of this project and responsible for construction management and operation. Hydrochina Beijing Engineering Corporation Limited is the designer and consultant of this project. Hydrochina Xibei Engineering Corporation Limited is the constructor of this project.

1. A green, clean and new energy demonstration project in the East African Plateau, with many technological breakthroughs and a series of advanced innovations in the industry

- 1) This project is Ethiopia's first grid-connected new energy project. Both international and Chinese standards concerning equipment, materials and construction were followed. Also, challenges resulting from the differences between Chinese standards and Ethiopia standards on steel strength, concrete strength and electrical interface were solved during construction. It is a perfect combination of international standards and Chinese standards;
- 2) Statistical analysis of operation and maintenance in the past three years shows that the WTGs have an availability above 99.4%, a stable performance, a low fault rate, a stable power output and a high quality of grid-connected power energy;



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an important role in mitigating shortage of hydropower in dry seasons, easing tense power supply, improving power source structure and changing the current situation of heavy power load and poor impact resistance of power grid;

- 4) A book titled Management of International Wind Power EPC Projects is published to summarize the knowledge and experience obtained from project construction to combine theoretical innovation and practice. It will provide guidance and reference for planning, construction and operation of other international wind farm projects in the future.

Comparison of main technical indexes between Ethiopia ADAMA Wind Farm

Project and similar domestic/foreign projects

Item	Similar domestic/foreign projects	Ethiopia ADAMA Wind Farm Project	Comparative Analysis
Standard	Local applicable standard	Internationally highest standard	International leading
WTGs availability	97.33% (China Zhangbei Wind Farm) 96.71% (China Guazhou Wind Farm) 97.26% (China Luxi Wind Farm)	99.4%	International leading
Grid-connected full-load equivalent hours	2500~3000 hours (Pakistan SAPPHIRE Wind Farm, Pakistan DAWOOD Wind Farm and China Kangbao Wind Farm)	3294 hours	International leading

2. A demonstration project with advanced technologies and of high quality.

- 1) In planning and designing of the project, such principles as environmental protection, convenience for people, cost saving and practicality are considered. Specifically, a 25km long road is built in the plant area, 15km of which is reconstructed on the original country roads, and 10km of which is newly built without



land. Meanwhile, the road also makes the traffic convenient for local residents. The concrete mixing station is arranged in the middle of the wind farm, thus shortening concrete handling distance and saving cost.

- 2) Installation of WTGs: to ensure safety, progress and quality of installation and construction, one 400t crawler crane and two 75t truck cranes were used together for joint lifting, making the installation of WTGs complete 2 months ahead of the schedule. So far, this process has already been widely used in multiple wind farm projects.
 - 3) The rainy season lasting as long as four months and frequent strong wind in Ethiopia have an adverse impact on construction. In view of this, the project department made effective measures for construction in rainy seasons and windy days, thus preventing occurrence of safety accidents during the construction of the project.
 - 4) World-renowned companies such as SGS of Switzerland and CPMAX of Germany are selected to serve as the supervisor for equipment manufacturing. So far, the project has been in operation for three years with a low equipment fault rate and an availability of WTGs above 99.4%.
- 3. A demonstration project in environmental protection, green energy and green development**

This project is a clean-energy and environmental-friendly project in East African Plateau which sticks to the principle of “Green Energy and Green Development”. The project was connected to grid for power generation in March 2012, which has an annual on-grid generating capacity up to 168 million kWh. The clean energy provided reduces consumption of standard coal for thermal power generation by 54,000 tons and CO₂ emissions by 141,000 tons. Furthermore, resource-saving and environment-protecting measures are taken throughout project construction. The input for environmental protection and civilized construction exceeds 5% of



social responsibilities are actively fulfilled. To minimize the adverse impact on environment, low-noise construction equipment is used, and water is sprayed for dust reduction during dry season. All this promotes harmonious and sustainable development of project, society and environment.

This project has contributed to promoting the economic and social development of Ethiopia, enhancing the energy construction of Ethiopia and creating jobs for Ethiopian people. The internal rate of return of this project is 34.59%. Meanwhile, the project creates 630,000 person-days of workload for local people during construction period and offers jobs to about 80 people during operation period. Therefore, it is a notable mark for cooperation and friendship between China and Ethiopia and a demonstration project for green, clean and sustainable development of energy in Africa, setting an example for surrounding countries.

4. A transparent and honest project

- 1) Export-Import Bank of China provides a preferential loan for this project and conducts whole-process and all-around supervision and management of this project.
- 2) Special consultants are selected through transparent, high-efficiency and competitive bidding. World first-class consulting appraisal companies, such as SGS, are introduced to conduct appraisal and demonstration of technological achievements, thus ensuring technological transparency and openness.
- 3) Construction and procurement bidding give first priority on technology and take quality as basis, so as to provide professional, objective and fair services and suggestions for the owner and **safeguard the owner's interests**.
- 4) The project passed the audit of Export-Import Bank of China at the end of 2012 and the project capital was used in a reasonable and normative manner.

THE CLIENT/OWNER(S) OF THE PROJECT

