

**HRC's Annual Report
on Foreign Affairs in 2016
and its Work Plan for 2017**

Hangzhou Regional Center (Asia-Pacific) for

Small Hydro Power (HRC)

National Research Institute for Rural Electrification, MWR

In 2016, led by the Ministry of Water Resources of China (MWR) and its affiliated Nanjing Hydraulic Research Institute (NHRI), and supported by the Ministry of Commerce (MOFCOM) and the Ministry of Science and Technology of China (MOST), HRC comprehensively implemented the guiding spirits of the 18th National Congress of the CPC and fully grasped and put into practice the guiding principles of General Secretary Xi Jinping's addresses. All HRC staffs worked with full enthusiasm, rigorous attitudes and pragmatic style, so as to actively host international training, widely undertake external exchange and implement multi/bilateral S+T cooperation. It also strived to expand its overseas market, thus attaining fairly good achievement in the work of foreign affairs and getting off to a good start of "The Thirteenth Five-Year Plan".

I. International Training

In order to enhance the foreign-aid capacity-building, deepen the South-South Cooperation, popularize Chinese SHP technology and related E/M equipment, uplift China's international influence in the field of water resources and rural energies, while promoting exchange and



cooperation among the developing countries, especially with the countries along the Belt and Road. HRC has successfully organized 7 international training workshops (seminars) in 2016,

five of which are foreign-aid training programs of MOFCOM, and the other two belong to foreign-aid training program of MOST and Sinohydro Bureau 14 Co. Ltd respectively, with the participation of 157 officials and engineers in the field of water resources, SHP and rural electrification from 33 countries in total.

The five training courses (seminars) entrusted by MOFCOM include *2016 Seminar on Small*

Hydropower & Rural Electrification for Asian Countries, a 21-day one with the participation of 24 officials from 7 Asian countries; *2016 Seminar on Small Hydropower & Rural Electrification for English-speaking African Countries*, a 21-day training with the participation of 22 officials from 10 African countries; *2016 Training Course on Small Hydropower Technology for Rwanda*, a 30-day training in Kigali with the participation of 30 officials from Ministry of Infrastructure, Rwanda Energy Group, Integrated Polytechnic Regional Center, MINEGA Energy, Ltd, etc.; *2016 Training Course on Integrated Management of River Basins for Southeast Asian Countries*, a 21-day one with the participation of 18 officials from Cambodia, Myanmar and Vietnam; *2016 Seminar on Small Hydropower and Sustainable Development of Rural Communities for Officials of Asian and Africa Countries*, a 21-day seminar with the participation of 28 officials from 10 Asian and African countries.

The foreign-aid training program entrusted by MOST is *2016 International Training Workshop on Rural Electrification*, a 15-day seminar co-organized by HRC and ICSHP with the participation of 30 officials and engineers from 13 countries.

In addition to the programs entrusted by MOFCOM and MOST, in 2016 HRC firstly finished a special training program entrusted by Sinohydro Bureau 14 Co., Ltd. for its oversea EPC project, i.e. *2016 Training Course on Hydropower Operation & Maintenance*



for Sri Lanka, which is a 2-month one focusing on hydropower operation and maintenance, with the participation of 5 managers of hydropower stations in Sri Lanka.

In 2016, HRC not only successfully hosted international trainings, but also expanded training channels and enriched the training contents. The training programs have been not only



focused on SHP and rural electrification, but also involved with the expertise of hydropower operation & maintenance and integrated management of river basins as well. Moreover, HRC hosted another training course

on small hydropower technology for Rwanda successfully, and HRC's training there was welcome and highly evaluated by trainees and the Economic and Commercial Counselor's Office of Chinese Embassy to Rwanda.

These foreign-aid training programs, on one hand, aim to disseminate Chinese advanced experience and applicable technology to rest world and help cultivate the professionals for other developing countries, thus improving their competence in water resources management, small hydropower development and realization of rural electrification. On the other hand, all the training programs shall promote the economic and technical cooperation with developing countries especially those along *the Belt and Road* and further expand the export of China's hydropower technology, equipment and related standard, thus making the training programs mostly stimulate the manufacturing and supply of Chinese products so as to better realize the "Go Global" strategy.

II. Foreign Exchanges

1. Conferences and Meetings

(1) From March 16th to 18th, HRC staffs attended the Wrapping-up Meeting on 2015 Training Courses for Developing Countries and Work Plan for 2016, held by the Department

of International Cooperation, MOST in Wuhan.

(2) On April 9th, HRC staffs attended the “Working Meeting for Foreign-aid Training Organizers in Zhejiang Province” organized by the Academy for International Business Officials (AIBO), MOFCOM.

(3) On June 12th, HRC staffs attended “The 2nd Forum on China-South Asia Technology Transfer & Collaborative Innovation” held in Kunming. H.E. Mr. Yin Hejun, Vice Minister of the MOST, addressed a key-note speech and expressed his appreciation to HRC for setting up the “*China-Pakistan Joint Research Center for Small Hydropower*” and organizing the *Seminar on River Development Planning for South Asia Countries*.

(4) On Nov. 10th, entrusted by the Department of International Cooperation, Science and

Technology, MWR of China, HRC organized the “*China-Austria Seminar on Sustainable Hydropower Operation & Development*”.



H.E. Mr. Chen Lei,

Chinese Minister of Water Resources, H.E. Mr. Andrea Ruprecht, Austrian Minister of Agriculture, Forestry, Environment and Water Resources, and H.E. Ms. Ileana, Austrian Ambassador to China, attended the seminar and delivered speeches. Experts from HRC made presentations on “Green Hydropower Construction in China” and “Planning and Development of Green Hydropower for Small and Medium Rivers”.

(5) From Nov. 23rd to 24th, HRC staffs attended “*The 21st Annual Meeting of China South-South Cooperation Network*” organized by China Center for International Economic Exchanges (CCIEE) in Kunming.

(6) On Dec. 13th, HRC staffs attended “*2016 Training Course for Foreign Affairs Liaison Officers*” organized by the Department of International Cooperation, Science and Technology, MWR in Guangzhou.

(7) On Dec. 16th, HRC staffs attended “2016 Working Meeting on National Base for International S&T Cooperation”, which was held in Hangzhou and organized by the Science and Technology Department of Zhejiang Province.

2. Foreign Guests Visiting HRC

In 2016, HRC received 9 delegations of 28 visitors in total, respectively from Pakistan, Turkey, Cote d'Ivoire, Cuba, Laos, Nepal, Vietnam, etc. for technical exchange and project cooperation.

(1) From Jan. 19th to 26th, a delegation of 2 persons headed by Mr. Khalid Islam, former Director General of Pakistan Council for Renewable Energy Technology visited HRC. Both sides discussed cooperation on solar power and hydropower projects.

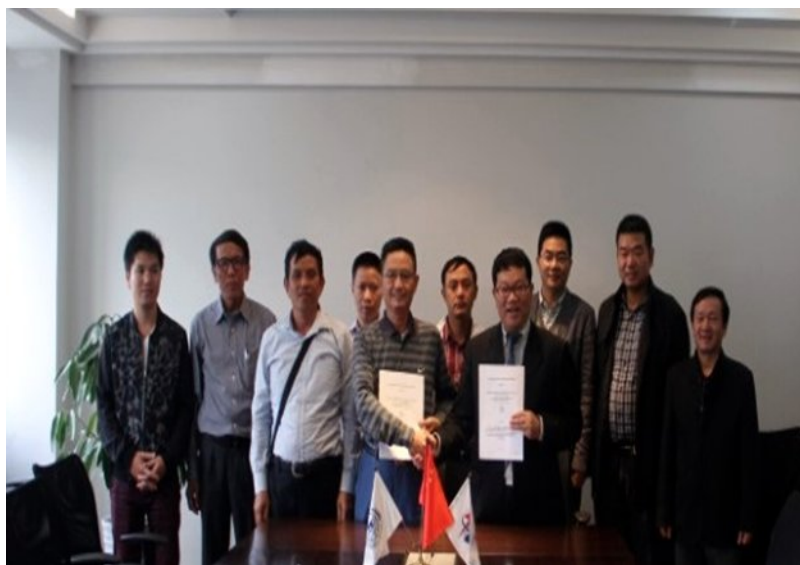
(2) From Jan. 28th to Feb. 1st, a delegation of 2 persons including Mr. Halit, an engineer from Fernas Construction Co. Ltd. in Turkey visited HRC for checking the E/M equipment to be supplied by HRC for Sirvan hydropower project in Turkey, and discussed the delivery and other issues. In addition, visits were also arranged to some equipment manufacturers, which laid a solid foundation for future cooperation.

(3) On May 3rd, a 2-member delegation headed by Dr. Bernard Salomé, the adviser to the President of the Republic of Côte d'Ivoire, visited HRC. Two sides reached a consensus on capacity-building, technical R&D, project demonstration and popularization in Côte d'Ivoire and other Western African countries.

(4) From July 17th to 31st, a delegation of 5 persons including Mr. Aneramos Frank, an operator of Mayari Hydropower Project in Cuba, attended the training course on power plant operation and management in HRC.

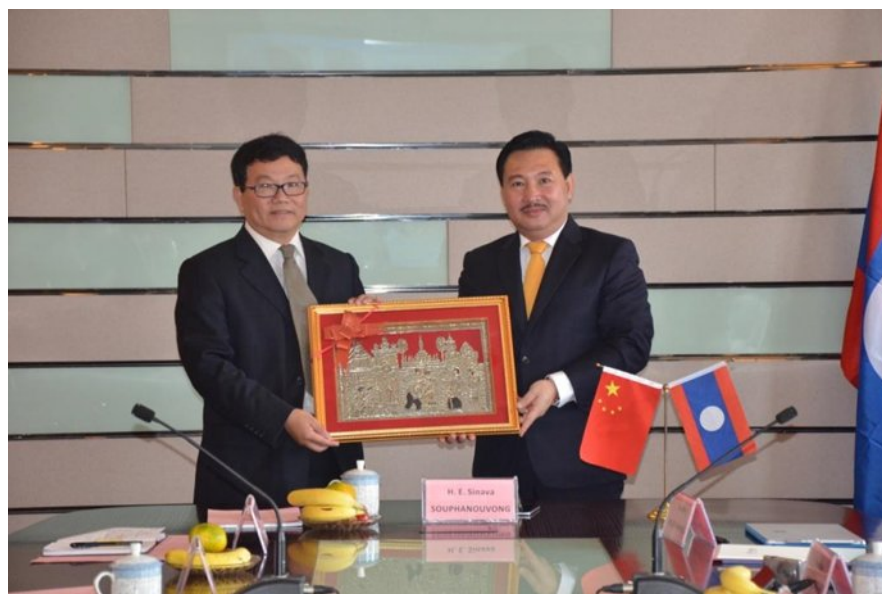
(5) On Sept. 24th, a delegation of 2 persons headed by Mr. Wasey, Chief of Marketing of Descon, Pakistan, visited HRC for discussing mutual potential cooperation.

(6) From Oct. 31st to Nov. 2nd, a 6-person delegation headed by Nguyen Hong Phong, Chairman of CONG LUC Investment & Construction Company in Vietnam, visited HRC, Zhejiang Jinlun Electromechanic Co., Ltd. and Hangzhou Sanhe



Electric Control Equipment Co., Ltd., etc., and signed a Preliminary Agreement on Cooperation.

(7) On Oct. 10th, a delegation of 6 persons headed by H.E. Mr. Sinava Souphanouvong, Vice



Minister of Energy and Mines of the People's Democratic Republic of Laos, paid a visit to HRC. Dr. Sinava was one of the participants of "1994 TCDC Training Workshop on Small Hydropower

Technology” organized by HRC. This visit aimed at promoting bilateral cooperation between HRC and the Institute of Renewable Energy Promotion (IREP), the Ministry of Energy and Mines of Laos. With the witness of Vice Minister, the Memorandum of Understanding (MOU) was successfully reached and signed, which initiated the bilateral cooperation on small hydropower and other renewable energies between HRC and IREP.

(8) On Oct. 28th, Mr. Sujit Acharya, Chairman of Energy Development Council in Nepal, paid a visit to HRC. A MOU was signed for promoting the bilateral cooperation on international training, information exchange and power plant construction in the field of renewable energy.

(9) From Nov. 1st to 4th, a 2-member delegation headed by Mr. Vilaysone Bouphalad, Deputy Director General of Department of Science, Technology and Innovation, the Ministry of Science and Technology of Laos, visited HRC for discussing mutual cooperation on four hydropower projects in Laos. A visit to E/M equipment manufacturers was also arranged.

3. HRC Visits to Other Countries

In 2016, HRC dispatched 4 delegations of 16 staffs respectively to visit Laos, Rwanda, Ethiopia, Uganda, Uruguay and Bolivia etc. for technical consultation, project cooperation and China's foreign-aid training.

4. Information Dissemination

In 2016, HRC edited and published 6 issues of *Small Hydropower* in Chinese and *SHP News* of 2016 in English. Besides, the training alumni database has been updated, and the website released nearly 100 pieces of news in Chinese and English. Tens of contributions have been submitted to China Center for International Economic Exchanges and China South-South Cooperation Network.

In addition, the national standard called “*Electromechanical Equipment Guide for Small Hydroelectric Installations*” has been translated from Chinese into English, and the final draft was submitted with the comments of the experts for final approval of the Ministry of Water Resources of China.

III International Scientific & Technology (S&T) Cooperation

In 2016, HRC actively worked for *Implementation Plan on Energy and Rural Electrification Cooperation with Countries along the Belt and Road*, and carried out inter-governmental S&T cooperation by taking advantage of training participants, with the main achievements shown as follows:

1. HRC completed site investigation for NamHam-I, NamHam-II hydropower projects and NamBo reservoir power plant in Laos, and signed Minutes of Meeting (MOM) with the Department of Science and Innovation, Ministry of Science and Technology of Laos, on the basis of which, HRC applied to the Ministry of Commerce of China for *Foreign-aid Reserved Project and Major Foreign Strategic Reserves Project* respectively called “*Refurbishment of NamHam-I Hydropower Station & Construction of Off-grid Solar Power Generation System in NamBo Area*” and “*River Development Planning in NamHam and Refurbishment of NamHam-I Hydropower Station*”.

2. HRC applied for a cooperative project of S&T Innovation of Zhejiang Province for the *Belt and Road* called “*Joint Research Center of Rural Electrification Based on Hydropower*”, and planned to cooperate on research, transfer and demonstration of rural electrification technology with PLN PUSHARLIS, Indonesia and the Technical R&D Center for Electricity and Renewable Energy, Ministry of Energy of Indonesia. The project has successfully passed the thesis evaluation.

3. HRC applied for *2017 Training Course on Small Hydropower and Rural Electrification for Ethiopia* and made efforts on the establishment of *Technical Transfer, Research and Training Center on Clean Energy and Rural Electrification for Africa*, the proposal for cooperation was drawn up and the project gained great support from the Mission of the People's Republic

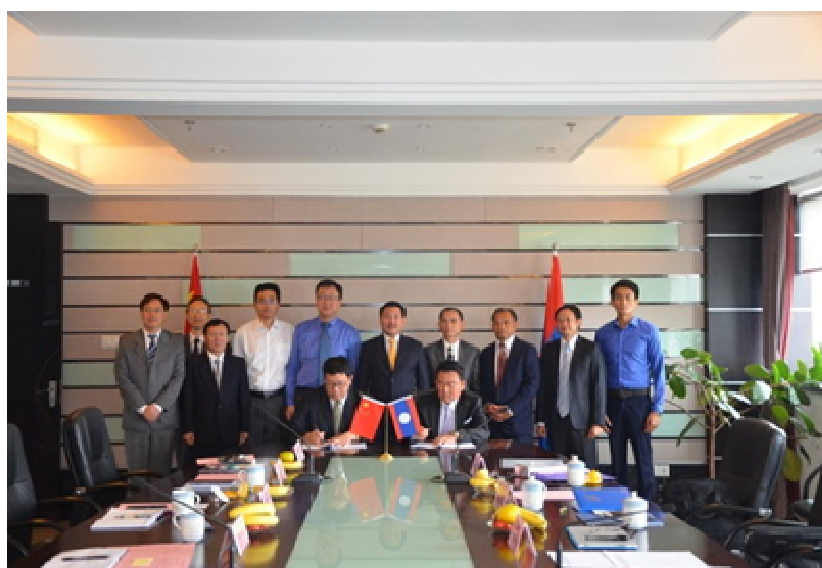


of China to the African Union. Also, HRC signed a Memorandum of Technical Cooperation (MOC) with Addis Ababa Science and Technology University (AASTU) and ZTE (H.K) Limited Ethiopia Branch (ZTE), with the purpose of

promoting the establishment of *Technical Transfer, Research and Training Center on Clean Energy and Rural Electrification for Africa*.

4. HRC submitted the Department of Science & Technology of Zhejiang Province the self-evaluation report as the provincial international cooperation base, which summarized HRC'S achievements in international cooperation of science and technology during the period of 2014-2015.

5. HRC signed MOU with the Institute of Renewable Energy Promotion, Ministry of Energy and Mines of Laos to carry out mutual cooperation on human resource training, joint research on renewable energy technology and project demonstration, etc



6. HRC has been actively preparing for *Seminar on Hydropower Development Planning for South Asian Countries* financed by Perez-Guerrero Trust Fund (PGTF) of UNDP, which is to be held in Katmandu, Nepal.

Moreover, HRC's application for 2017 PGTF-financed project called *Seminar on Renewable Energy and Off-grid Hybrid Power Generation System for East African Countries* has been approved.

IV. International Marketing & Trading

In 2016, HRC accomplished a large amount of work in SHP planning, design, consultation, E/M equipment supply and on-site installation as well as overhaul or maintenance for old



hydropower stations, etc. These services not only meet the demands of other developing countries, but also really benefit the local governments and people and even show Chinese technical capability in the field of water resources and hydropower to the international community, which has achieved favorable economic and social benefits as a final result.

1. E/M Equipment Supply, Installation and Commissioning

HRC supplied the E/M equipment for Sirvan hydropower project in Turkey, and finished the on-site installation instructions for Ikiler hydropower project in Turkey and the right bank

station of Mayari hydropower project in Cuba. HRC also provided after-sale services and spare parts for Ozluce, Kale, Garzan, Yalnizca, Binek hydropower projects in Turkey, and in Pakistan, HRC implemented on-site installation instructions for three hydropower stations. In Benin, HRC supplied a solar off-grid power system and instructed the owner to install and commission.

2. Hydropower Project Planning, Design and Consultation



HRC designed for Thuan Hoa hydropower station in Vietnam, and Chianali and Deg Outfall hydropower stations in Pakistan. The design was started for Upper Baluchang hydropower project in Myanmar, the feasibility study contract was

signed for Nam Ming hydropower station in Laos, and the feasibility and site investigation are to be commenced for Ragati hydropower project in Kenya soon.

3. Development of New Projects

HRC actively explored the opportunities for the EPC contracting of hydropower projects in Laos and Kenya, and signed a preliminary agreement on Nam Ming hydropower station in Laos. HRC cooperated with CNOOD Shanghai to jointly explore the market in Serbia and undertook the site investigation on BH cascade hydropower project. Also, HRC continuously made commercial offers and technical proposals for potential hydropower projects in Turkey, and developed the hydropower markets in Vietnam and Indonesia, as well as prepared to

provide off-grid solar power systems to Africa.

V. Work Plan for 2017

In 2017, HRC will earnestly observe the relevant principles and policies of foreign affairs formulated by the Central Government. Under the leaderships of Department of International Cooperation, Science and Technology of the Ministry of Water Resources and Nanjing Hydraulic Research Institute, and with the strong supports from Ministry of Commerce and Ministry of Science and Technology of China, HRC will continuously host the foreign-aid trainings, especially the training in other countries and the training on operation, maintenance and management for Chinese EPC contractors aiming to improve its overseas marketing capability. Meanwhile, by taking advantage of being “Zhejiang International S&T Cooperation Base of Renewable Energy and Rural Electrification”, and following the strategy of *the Belt and Road* construction, HRC shall strive to establish technical transfer center, R&D center, or demonstration and training base respectively in Southeast Asia, Africa, Eastern Europe and other regions, in order to further promote the economic and technical cooperation.

1. International Training

HRC will continue to carry out the foreign-aid training programs. While doing the “*coming-in*” training, priority shall be given to the “*going-out*” training programs including the training courses on small hydropower and rural electrification for Rwanda, Ethiopia and Pakistan. In addition, HRC will hold *Seminar on Hydropower Development Planning for South Asian Countries* in Nepal, *Seminar on Renewable Energy and Off-grid Hybrid Power Generation System for East African Countries* in Uganda, and carry on the 2nd training for *M Dam* hydropower project in Sri Lanka. Furthermore, HRC shall organize the training course on hydropower development for Eastern Africa jointly with Kenya Power, and plan to start the training on operation, maintenance and management of two hydropower stations in Uganda.

2. International S&T Cooperation

HRC will actively apply for the key project of strategic international innovative cooperation on science and technology, and popularize the achievements of *China-Pakistan Joint Research Centre for Small Hydropower Technology* to Nepal, Bangladesh, Sri Lanka and other South Asian countries, thus striving to develop it into a *R&D and Demonstration Base on Small Hydropower Technology for South Asia*. HRC shall continue to carry out bilateral and multilateral cooperation with Indonesia, Malaysia, Vietnam, Laos and other ASEAN countries, communicate with Addis Ababa Science and Technology University (AASTU) and ZTE (H.K) Limited Ethiopia Branch (ZTE), and carry out technical exchanges and cooperation with all African countries to promote the establishment of *Technical Transfer, Research and Training Center on Clean Energy and Rural Electrification for Africa*. Also, HRC shall take the advantage of existing friendly cooperative relationships to conduct R&D on small hydropower technology, and develop and apply the proven technology and equipment for West Asia, Eastern Europe, Caucasus countries including Turkey, Macedonia and Georgia, so as to establish the “*Development Base of Small Hydropower Technology and Equipment for West Asia, Eastern Europe and Caucasian Regions*”.

3. Overseas Engineering Design & Consultation

HRC will continue with the final part of the design and on-site technical service for Thuan Hoa hydropower station in Vietnam, the construction drawing design and on-site monitoring for Upper Baluchang hydropower project in Myanmar, and also complete the feasibility design of Nam Ming hydropower station in Laos and the feasibility study report of Ragati hydropower station in Kenya. Meanwhile, HRC shall broaden the cooperation channel and try the best to undertake more projects about design and consultation.

4. Development of Oversea Market

Based on the Belt and Road construction, HRC will continuously develop markets in Southeast Asia, including Myanmar, Laos, Indonesia and Vietnam. HRC shall follow and provide technical services and E/M equipment for these low-head hydropower stations in

Eastern European countries such as Serbia, Macedonia and Romania. Meanwhile, HRC will explore the African market, and relying on the existing projects in Turkey, Peru, Kenya and other countries, the cooperation between HRC and any other country is going to be enhanced.



5. Fully taking the advantage of being the “Family of Small Hydropower in the World”, HRC will strengthen the extensive exchange with other governmental departments or counterparts, and further enhance the cooperation with World Bank, Asian Development Bank and other international financing organizations, thus expanding the business scope and deepening the influence of HRC itself.

6. HRC will improve its management on foreign affairs, and take measures to compile the two magazines named *SMALL HYDRO POWER* in Chinese and *SHP NEWS* in English, as well as renew the HRC website, and also contribute papers to the magazines such as the *South-South Cooperation Network*, thus strengthening the advertising.