

INSHP Newsletter



COMESA-ICSHP SMALL HYDRO POWER TRAINING



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International Center on Small Hydro Power (ICSHP) and COMESA has jointly conducted a training course on small hydropower development involving 10 member countries of the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA).

The training was held in Kenya from 20 to 24 June 2016, aiming at capacity building of these countries for small hydropower development. The Principal Secretary in the Ministry of Energy and Petroleum in

Kenya Eng. Joseph Njoroge officially opened the training. Mr. Dong Guofeng, Senior Engineer of ICSHP read the statement of Ms. Cheng Xialei, DG of ICSHP. In the statement, she said the training was a good beginning for the cooperation between COMESA and the center. Our expert team shared SHP technical innovation, technology transfer, China's rural electrification experience and SHP case studies with the trainees. During the training, our experts and trainees visited two small hydropower plants. One was built by

a Chinese company with 5KW of total installed capacity. Besides dam, diversion canal and power house, this plant also has a fishpass and sand basin. The other one was built in 1940s with 7400 kW of total installed capacity. It is a very old plant but it still works well now.



Welcome Our New Director-General Ms. Cheng Xialei

Biography:

Ms. Cheng Xialei has engaged in small hydropower scientific research, new technology development, design and consultation and international cooperation over 30 years. She hosted more than 20 national and provincial and ministerial level scientific research projects, edited 6 national standards, published 4 monographs and over 40 papers. She won several times of the provincial and ministerial level scientific and technological progress awards and she has four national patents.

2016 Director General of International Center on Small Hydro Power
1983.7 – 2015 working within National Research Institute for Rural Electrification

2002.10 – 2002.12 studied at Advanced Course on Business Administration and Management organized by Zhejiang Provincial Department for Science and Technology

1990.5 – 1991.5 studied at State University of New York at Stony Brook, USA

1979 – 1983 studied at Hohai University—Majored in Automation for Hydro-power Station and graduated from the university with a Bachelor Degree.

She says:

Welcome to the first issue of the INSHP Newsletter in 2016. I am so glad to work with all of you! Now the first half of 2016 has just passed, let us review the results of INSHP within this e-newsletter.

First, I am very pleased to share with you that the GEF-6 project “Upgrading of China SHP Capacity Project” was finally approved by GEF council. They gave us a high praise and credit. I would like to congratulate all who have worked very hard to the success of the final CEO document.

In June, Mr. Marcelo K. Peterson, the governor of State of Pohnpei, the Federated States of Micronesia visited ICSHP. Within the same month, we successfully held a training course on SHP development with COMESA in Nigeria. In May, we called an inception meeting for our scaling up project and in April, a delegation of three experts visited Zambia to provide technical site-selection service under the China-Zambia Renewable Energy Technology Transfer Project.

This November we will hold the 7th Hydro Power for Today Forum in Hangzhou with the theme of “Small Hydropower and Green Development”. There will be a total of 150 participants, including our CC members, attending this big event.

Readers of the INSHP newsletter are encouraged to keep in touch and send us news by email or directly via our LinkedIN group (International Center on Small Hydro Power).



Ms. Cheng Xialei
Director-General of ICSHP

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GEF-6 Project Finally Approved

On 3rd June 2016, the GEF-6 project “Upgrading of China SHP Capacity Project” was finally approved by GEF Council, and the CEO document has been highly praised and credited by GEF.

This project was jointly applied by Ministry of Water Resources and UNIDO and its PMO was set in ICSHP. The aim is to improve the river environment, safety management and automation levels of China’s existing SHP plants, which will promote the sustainable development of China’s small hydropower. The project will be expected to start within this year.

Governor of State of Pohnpei of Micronesia Visited ICSHP

On 16 June 2016, Mr. Marcelo K. Peterson, the Governor of State of Pohnpei, the Federated States of Micronesia visited ICSHP. Director General Ms. Cheng Xialei introduced the development of ICSHP and the projects ICSHP carried out in the State of Pohnpei in past years. Both sides exchanged ideas on SHP development in Pohnpei, investment and further cooperation.

Mr. Marcelo Peterson expressed gratitude for the warm reception of ICSHP and hoped to further promote and strengthen the cooperation with ICSHP. The State of Pohnpei has abundant water resources but it still relies on diesel generation. He hoped that the further SHP development might gradually change current power supply mode and guarantee the sustainable development.

During the meeting, Mr. Peterson said that the State of Pohnpei welcome the private enterprises of Zhejiang Province to invest the renewable energy, and he also introduced

the investment policies of Pohnpei.

Micronesia is located in the Pacific region with the land area 705 square kilometers of land and 2 million 980 thousand square kilometers of sea. The capital of the Federated States of Micronesia is located in Pohnpei. In June 2014, Nanpil Hydropower Station (installed 1 x 725kW) revolution project in Pohnpei carried out by ICSHP was put into operation. As of this June, Nanpil Hydropower Station has generated 1.5 GWh, and its annual output accounts for about 12% of Pohnpei’s power supply.



Inception Meeting on “Scale up SHP Development Project”

4th May 2016 – sponsored jointly by the United Nations Industrial Development Organization (UNIDO), the International Center on Small Hydro Power (ICSHP), the Inception Meeting on “Scale up SHP Development Project” was launched at ICSHP. The objectives of this project, in the context of UNIDO’s global vision on “Inclusive and Sustainable Industrial Development (ISID)”, are to provide technical assistance, conduct feasibility studies and make potential investment plans for 5 selected countries including Ethiopia, Nigeria, Kyrgyzstan, Myanmar and Peru, in order to scale up SHP development in the above countries. Meanwhile according to the initiative of “The Belt and Road (B&R)” in China, this project is aimed to provide opportunities for outstanding Chinese SHP companies and investors to go abroad for further development.

Officials from UNIDO, Ministry of Commerce of China, Ministry of Water Resources of China, Ministry of Water, Irrigation and Electricity of Ethiopia, Federal Ministry of Water Resources of Nigeria, Ministry of Economy of Kyrgyz, Ministry of Hydraulic and Energy of Cameroon attended the meeting, along with other invited Chinese hydropower development and investment enterprises.



After the meeting, ICSHP and Investment Promotion Agency under the Ministry of Economy of Kyrgyz signed a strategic cooperation memoire, in which ICSHP will provide technical support and services for SHP development, refurbishment of existing hydropower stations, investment of hydropower projects, and technical training in Kyrgyz.

Green SHP Evaluation Standards Expert Consultation Meeting

On 25 April 2016, the Hydropower and Rural Electrification Development Bureau of the Ministry of Water Resources hosted an expert consultation meeting for the Water Conservancy Industry Standards -‘Green SHP Evaluation Standards’. The meeting served to review and provide expert consultation on the results thus far of the compiled Standards.

In total seven expert representatives from the Ministry of Water Resources, Nanjing Hydraulic Research Institute, Xiaolangdi Water Control Project Construction and Management Bureau, Power Construction Corporation of China, Hubei University of Technology, and Changjiang River Scientific Research Institute attended the meeting.

The Hydropower and Rural Electrification Development Bureau of the Ministry of Water Resources is the managing agency of the Standards. Mr. Xing Yuanyue presided over the meeting. The International Center on Small Hydro Power (ICSHP) is the organization chiefly responsible for compilation of the Standards. Prof. Liu Deyou, managing director of ICSHP reported on the status of the Standards and work progress. Prof. Cheng Xialei, Director General of ICSHP, Mr. Chen Dayong, deputy chief of Hydropower and Rural Electrification Development Bureau of the Ministry of Water Resources, Prof. Liu Heng,

deputy director of Hydraulic Research Institute and members of the Standards compilation committee were present. At the meeting experts agreed on the immense necessity of the Standards. Formulation of the Standards will guide and benefit management standards for Chinese rural hydropower resource development, as well as promote Chinese green small hydropower construction and pilot work.

The Standards evaluation content includes four categories for environment, social, management and economic considerations, divided into 14 key factors and 21 evaluation indicators, including: appropriate equipment installation, selection criteria, basic installation indicators, proper evaluation methods, and a holistic framework.

Experts carried out in-depth discussions to address several issues with key features of the Standards; raised detailed suggestions, and several constructive suggestions and proposals to guide next step revision work. In summary the meeting achieved its expected results.

China-Zambia RE Tech. Transfer Project

From April 2-13 2016, an ICSHP delegation of three experts visited Zambia to provide with technical site-selection service under the China-Zambia Renewable Energy Technology Transfer Project, which is facilitated by the UNDP and has been developed with the Ministry of Mines, Energy and Water Development, China's Ministry of Science and Technology.

It is a 4-year project that aims to support the access to electricity for rural communities in Zambia. This project is an opportunity to build capacity and identify such good practice for using the Chinese development experience to support Africa's development.

Invited by UNDP, ICSHP experts implemented capacity building on site selection tasks to support the Construction of the demonstration Mini Hydro Plant. Engineers from ZESCO Ltd, Ministry of Mines, Energy and Water Development, Rural Electrification Authority, Kafue Regional Training Centre and UNDP representatives participated in the training. The capacity building lessons include hydropower planning, site selection, feasibility study and related information. Also it was followed by a technical survey and on-site training in three potential hydropower sites separately in SERENJE, MPOROKOS and MBALA areas to support site-selection for the demonstration project.



[SHP Capacity Expansion and Efficiency Improvements Programme during the 13th Five-Year Plan](#)

Ministry of Finance and Ministry of Water Resources decided to continue to support the rural hydropower capacity expansion and efficiency improvement by central finance during the 13th five-year plan. The refurbishment will improve the river environment and further promote the development of energy saving and emission reduction and renewable energy. During the 13th five-year plan, the project will optimize the existing plants through river environmental remediation and capacity expansion and efficiency improvement, finally eliminating the safety risks and increase the renewable energy supply. The duration of the project is five years from 2016 to 2019.

[SHP Poverty Alleviation Pilot Project was launched](#)

On June 14, NDRC and MWR jointly issued a Notice on 2016 Central Budget Investment Plan for the Pilot Project of SHP Poverty Alleviation, deciding to invest 0.3 billion RMB within the central budget to construct the SHP poverty alleviation pilot projects in Jiangxi, Hubei, Hunan, Chongqing, Guizhou and Shaanxi provinces.

Under the framework of poor alleviation strategy of the central government, NDRC and MWR decided to implement the pilot projects of SHP poverty alleviation in some state-level poor counties with abundant water resources, exploring a new mode for poverty alleviation, and two ministries jointly issued the Implementation Plan for Pilot Project of SHP Poverty Alleviation.

[China to accelerate Tibet's clean energy development](#)

China will speed up the development of clean energy in Tibet Autonomous Region from 2016 to 2020, under the principle of "putting the environment first," according to an energy official.

The initiative will boost the local economy and increase strategic reserves of clean energy, Nur Bekri, head of the National Energy Administration, said on Thursday at a conference on Tibet's energy development held in the regional capital of Lhasa.

The government will construct new hydropower projects to meet local demand, the official said.

In addition, the government encouraged the utilization of solar power, including photovoltaic generation, and called on companies to explore the abundant geothermal sources in Tibet.

Research will be carried into the feasibility of a pipeline to transport petroleum and natural gas from Golmud City in Qinghai to Lhasa.

By the end of last year, installed power capacity and power generation in Tibet increased by 136 percent and 75 percent, respectively from the 2010 levels, and the number of people having access to the main electric grid rose by around 33 percent from the same period.

Also, the share of clean energy in the region's total energy consumption climbed to 43.3 percent by the end of 2015 from 31.9 percent in 2010. (Source: Xinhua, 17 June 2016)

[China says Lancang-Mekong Cooperation to bridge development gaps within ASEAN](#)

China said the new Lancang-Mekong cooperation mechanism will help development of the five countries in the sub-region and narrow the development gap in Southeast Asia.

Vice Foreign Minister Liu Zhenmin was speaking at a press conference on the upcoming first Lancang-Mekong leaders' meeting to be held in Sanya, Hainan Province on March 23.

Premier Li Keqiang and leaders from Cambodia, Laos, Myanmar, Thailand and Vietnam will attend the meeting on cooperative initiatives and measures.

The Lancang-Mekong cooperation began in 2014 and the first foreign ministers' meeting was held last November.

The Mekong River, known as Lancang in China, rises in China's Danggula Mountains and drains through five other countries.

"The five countries are lagging behind in ASEAN, especially Laos, Cambodia and Myanmar. Cooperation will help narrow the development gaps within the ASEAN, and promote prosperity in the sub-region," Liu said.

Lancang-Mekong cooperation will focus on security and development, as well as political, social and cultural fields. Communication, production capacity, trade, water resource, agriculture and poverty reduction are five priority directions for cooperation.

"These directions accommodate to the needs of the six countries along the river. China's experience, technology, equipment and funds will benefit those countries, which are backward in infrastructure and industrialization," said Chen Fengying, a senior researcher with the China Institute of Contemporary International Relations.

Lei Zhuning from Yunnan Academy of Social Sciences, said there is tremendous potential for cooperation in agriculture and poverty reduction since China has rich experience in these fields.

Agreement has already been reached on 78 early-harvest projects, and some new projects will also be put forward during the leaders' meeting.

Liu also pledged that the mechanism will be "open and inclusive."

"It complements rather than competes with existing mechanisms such as the Greater Mekong Sub-region (GMS) and the ASEAN-Mekong Basin Development Cooperation (AMBDC). It will also be complementary to China-ASEAN relations," Liu said.

Chen said the Lancang-Mekong Cooperation will also bring opportunities to the cooperation between multilateral development institutions such as the Asian Development Bank (ADB), the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund, facing the huge financing demand for infrastructure construction in this area. (Source: Xinhua, 13 June 2016)

[China to start nationwide inspection of water law enforcement](#)

China's top legislature announced Wednesday the beginning of a nationwide inspection on water conservation law enforcement to aid agricultural water conservation and strengthen protection of water resources.

The inspection team should focus on investment in farmland water conservation facilities and promote the use of water-saving irrigation technology, said Ji Bingxuan, vice chairman of the Standing Committee of the National People's Congress (NPC) at a plenary meeting in Beijing.

The inspection should boost water resources and protection of facilities and speed up reform of the property rights system for small farmland water facilities, Ji said.

Farmers should be encouraged and receive guidance in water conservation construction, and reform of the irrigation water pricing mechanism should be accelerated to encourage more economical water use by farmers.

The inspection will start in early May in Inner Mongolia, Jilin, Jiangsu, Anhui, Hunan, Guangdong, Guangxi and Yunnan. The standing committee of the NPC will also authorize another eight

provincial-level regions, including Shanxi and Ningxia, to inspect water law enforcement.

China has established a legal system for all aspects of water conservation, including water law, flood control law, soil and water conservation law, water pollution prevention law and regulations on combating drought. Nearly all water-related affairs now are addressed by the laws, according to the NPC meeting proceedings. (Source: Xinhua, 4 May 2016)

[Five-Year Plan considers environment](#)

China 13th Five-Year Plan includes provisions that make environmental stewardship an integral component of the nation's economic development strategy, said speakers said at a United Nations forum called Planning for a Sustainable Future: China's 13th Five-Year Plan on Wednesday.

"Economic restructuring and sustainability are a key focus of the 13th Five-Year Plan," said Dr. Patrick Ho, deputy chairman and secretary-general of the China Energy Fund Committee, which sponsored the event along with the UN Department of Economic and Social Affairs.

China's Five-Year Plans guide the country's economic and social development, and the 13th version will cover the period from 2016 through 2020. It was officially introduced last month. The plan addresses several of China's most pressing environmental challenges, including air and water pollution and climate change. Ho spoke about the economic transformation that is taking hold in China as the government guides the economy to achieve annual gross domestic product growth of 6.5 to 7 percent and shifts the emphasis from manufacturing to services and the development of a consumer or middle class.

"This plan is a pivotal one for China," said Jeffrey Sachs, director of the Earth Institute at Columbia University and a special adviser to UN Secretary-General Ban Ki-moon on SDGs (Sustainable Development Goals).

Sachs said China's mission to upgrade to a service and high-technology economy and addressing SDGs are aligned. Noting that the transformation is not a simple task, Sachs said the country's Belt and Road Initiative and Asian Infrastructure Investment Bank (AIIB) initiatives will help "integrate China more deeply in the (Asian) region" and bring more resources for green or sustainable development".

David O'Connor, permanent observer for the International Union for Conservation of Nature to the UN, said China is aware of the need to develop a finance system for the funding of projects to achieve green and sustainability development goals.

Nicholas Robinson of Pace University in New York, a pioneer in environmental law education, said China has quickly begun to develop an environmental law system. "China has been making remarkable progress in the evolution of environmental law in the last 15 years," he said. (Source: China Daily, 21 April 2016)

[China issues guidelines promoting green consumption](#)

Ten Chinese ministries jointly issued guidelines on green consumption, the latest move to boost green and sustainable development in a country battling to rein in pollution and waste.

The document, issued by 10 ministries including the National Development and Reform Commission and the Ministry of Fi-

nance, aims to ensure that the country adopts a "green and healthy" consumption mode by 2020.

China has been pushing for green consumption in recent years as the country has faced a series of "urban diseases" after three decades of rapid economic growth. These urban ills include traffic jams, limited ability to handle sewage and garbage, and polluted air, water and soil.

"New energy vehicles shall account for more than 30 percent of new vehicles bought by public institutions in 2016, and by 2020, new energy vehicles will be widely used nationwide," according to the guidelines published at the official website of the the National Development and Reform Commission.

The country will continue to promote the use of energy-saving products, with energy-efficient appliances expected to account for at least 50 percent of market share by 2020, the guidelines said.

China will improve economic policies to boost development of green industries and introduce new incentives to encourage green consumption, the guidelines said.

The country will introduce policies to steer people away from heavily polluting lifestyles and industries, and raise people's awareness of a healthy lifestyle, environmental protection, and energy conservation in their pursuit of a comfortable life, the guidelines added. (Source: Xinhua, 1 March 2016)

[Investment in water projects tops 2 trln yuan 2011-2015](#)

China invested more than 2 trillion yuan (300 billion U.S. dollars) in water conservation during the 12th Five-Year Plan period (2011-2015), the Ministry of Water Resources said on Friday.

The investment benefitted hundreds of millions of people through projects related to drinking water in the countryside, flood control, drought relief, irrigation and rural hydropower, the ministry said.

"The coming five years is a critical period for China to quicken reform and development in water projects and improve water safety. Good planning is key," said Jiao Yong, vice minister of water resources.

Jiao said the government will keep investing in major water projects and encourage private capital to contribute. (Source: Xinhua, 17 February 2016)

[Gilkes begins construction of three small hydroelectric plants in Scotland](#)

Hydroelectric power developer Gilkes Energy has begun construction on a trio of small hydro projects, all of which are to be located on the Attadale Estate near Loch Carron, Scotland. The package includes the:

- 500-kW Strathan, a low-flow project fed by a 177-meter-high head that will use a high-pressure pipeline to generate from a Gilkes twin-jet Pelton turbine;
- 1-MW Loch an Laoigh, a low-head, high-flow project with a single intake and one Gilkes Francis-type turbine; and
- 2-MW Uisge Dubh, a low-head, high-flow project with twin intakes and two Gilkes Francis turbines.

"Thanks to everyone who has worked on bringing these ambitious projects to fruition," Gilkes Energy director Carl Crompton said. "The three projects will support approximately full-time jobs at a very local level for the duration of the construction period, along with 7-8 highly skilled engineering and project management jobs, all based in Scotland."

"Once operational, the project will employ a permanent part-time local caretaker, and maintenance and routine servicing will be provided to the projects by the Gilkes Service Centres in Invergordon and Fort William."

The Kendal-based subsidiary of Gilkes Gilbert & Gordon Ltd. said the Attadale Estate plants bring the total amount of capital invested into Gilkes Energy to more than US\$94.6 million, with other recent group projects including an installation at Scotland's Blair Castle, Callander and Culligran Estate, amongst others. (Source: HydroWorld, 29 June 2016)

[CNEEC to construct US\\$230 million 40-MW Vitebsk hydroelectric project in Belarus](#)

The China National Electric Engineering Company (CNEEC) on June 28 announced it would construct the run-of-river 40-MW Vitebsk hydroelectric facility on the Western Dvina River in Vitebsk, Belarus. The estimated cost of the facility is US\$230 million, it will be the country's largest hydro facility and is one of four projects in Belarus' 2020 Energy Security Plan.

The other proposed projects mentioned for a cascade of facilities on the Western Dvina River included in the security plan are: the 22-MW Polotsk; 33-MW Beshenkovichi; and 13-MW Verkhnedvinsk.

Yao Han Wu, executive director at CNEEC, made the announcement during a roundtable on Belarus' advantages and prospects in the construction of the Silk Road Economic Belt, according to the state-run Belarusian Telegraph Agency.

The Silk Road Economic Belt is the land-based component that together with the oceanic Maritime Silk Road forms: "One Belt, One Road," a Chinese government economic development framework for integrating trade and investment in Eurasia.

The \$50 billion One Belt, One Road fund was established by Chinese President Xi Jinping to finance projects intended to connect China to Europe over land through Central Asia and Russia, and by ports through a separate maritime route.

The Vitebsk hydroelectric facility is expected to begin generating power in 2017. (Source: HydroWorld, 29 June 2016)

[New hydro unit at 10.2-MW Black Canyon Dam in Idaho one step closer to reality](#)

A final environmental assessment and Finding of No Significant Impact point to adding a third hydro unit at the 10.2-MW Black Canyon Diversion Dam in Idaho.

Dam owner the U.S. Department of Interior's Bureau of Reclamation [previously completed an EA and FONSI](#) for the project, on the Payette River, in October 2011 but [developed this new EA](#) after receiving data from geological testing conducted in 2012 and 2013.

The final EA analyzes a proposal to add a 12.5-MW generating unit in a new powerplant, with the power produced integrated into the grid to serve 10 irrigation districts in southern Idaho and eastern Oregon and the Shoshone-Bannock Tribes.

In addition, this final EA analyzes:

- Installation of a new penstock and intake structure
- Replacement and relocation of the switchyard to address personnel and equipment safety concerns
- Replacement of the existing administration building, which will be displaced by addition of the third unit.

Control upgrades for the two existing units

[In the FONSI](#), Reclamation selected Alternative B, which would mean adding the third unit. This additional unit will take advantage of water that is being discharged via the spillway, as well as provide operational flexibility when one of the two original units is shut down for maintenance.

Reclamation anticipates this unit will generate an additional \$3.56 million in revenue annually.

Most of the project will be funded by Bonneville Power Administration, which markets hydropower generated at Reclamation facilities in the Pacific Northwest. The most recent costs estimate for the project was not available, but a 2013 report indicated Reclamation expected it to cost about US\$53 million.

The tentative schedule for this work has construction beginning in January 2017 and being completed in summer 2019.

Black Canyon Diversion Dam was built by Reclamation in 1924 as part of the Payette Division of the Boise Project. It is a multi-purpose facility that provides water for irrigation, hydropower, recreation and fish and wildlife resources. (Source: HydroWorld, 28 June 2016)

[PPA signed for 10.5-MW Serpentine Creek Hydro project in British Columbia, Canada](#)

Purchase Agreement for the 10.5-MW Serpentine Creek Hydro project.

This agreement kicks off the pre-construction activities for this small hydro facility, along with the 10.5-MW Clemina Creek project, whose agreement was signed two months ago, Sorgent.e says.

"The Serpentine and Clemina projects will create a flow of benefits to Simpcw First Nation and local communities, maximizing the social, environmental and economic impact of these new develop by TransAlta Corp.

Sorgent.e Hydro Canada is part of Italian group Sorgent.e Holding, which has operated in the clean energy sector since 1995 and owns and operates more than 20 renewable plants in Europe and South America. (Source: HydroWorld, 27 June 2016)

[Kennebunk utility will not relicense the 600-kW Lower Mousam hydroelectric project](#)

The Kennebunk Light & Power District (KL&P) last week announced it intends to surrender its license for the 600-kW Lower Mousam hydroelectric project along the Mousam River in Kennebunk, Maine. The project includes three small hydroelectric facilities, all located in Kennebunk.

KL&P trustees voted to alert the Federal Energy Regulatory Commission by March 2017 that they will let the licenses expire on March 31, 2022 for project's three hydroelectric facilities that include the 300-kW Twine Mill, 150-kW Dane Perkins and 150-kW Kesslen.

The project, in aggregate, provides 1.5% of the company's power, according to Todd Shea, KL&P general manager, and all three schemes include dams: The Kesslen Dam, built in 1954, is located in downtown Kennebunk at Route 1; and two upstream dams, the Twine Mill and Dane Perkins dams.

It is unclear whether all three dams will be removed, or have fish passages added to help fish swimming upriver to spawn.

The Mousam is the largest river system in Maine and has 15 dams, but contains no fish ladders, according to Maine Rivers, a project of the Natural Resources Council of Maine. Of the 15 dams, 11 are on the Mousam River mainstem between the outlet of Mousam Lake in Shapleigh and the head-of-tide in Kennebunk, a stretch of river only 24-mi long.

According to figures released last March in a study focusing on whether to relicense the project -- the *Wright-Pierce Alternatives Assessment Study* -- estimates for relicensure could cost a minimum of US\$8.8 million. The cost for ceasing operation and surrendering the licenses is estimated at \$2.3 million, and includes the cost of removing the dams. The net cost with anticipated revenue for relicensure is estimated at \$3.5 million, and the net cost for surrendering the licenses and removing the dams is estimated at \$1.6 million.

Shae said KL&P will work with federal regulators, state agencies and other interested parties to determine what happens to the dams.

Local conservationists and sportsmen support the removal of the dams to allow the lower nine miles of the Mousam River to freely flow. (Source: HydroWorld, 20 June 2016)

[Ukraine seeks to double hydropower share in electricity output](#)

The Ukrainian government has set a target to double the share of hydroelectric power in the country's overall electricity output by 2026, Prime Minister Volodymyr Groysman said on Friday.

"Now, hydropower accounts for 8.6 percent of our electricity generation and we have a potential to boost it to 15.5 percent. We should achieve this target within the next 10 years," Groysman was quoted as saying by the government's press service.

The premier said that the development of hydro-energy projects would help Ukraine reduce the costs of electricity, ease dependence on imported fuel and make energy generation more environmentally friendly.

According to the State Statistics Service, about 60 hydro-power stations functioning in Ukraine last year generated 6.9 billion kilowatt-hours of electricity, down 25.2 percent from 2014. (Source: Xinhua, 10 June 2016)

[Zambian power utility reduces power rationing hours](#)

Zambia's power utility said on Wednesday that it has reduced power rationing from eight to four hours daily after an improvement of water flows at one of its reservoirs for hydro power.

For almost a year, Zambia has been rationing electricity after erratic rains hit its hydropower generation. About 90 percent of Zambia's electricity comes from hydro power plants.

But Zesco Limited said water levels at Itezhi-tezhi dam has improved and that the firm was now able to generate full capacity of 120 megawatt at the Itezhi-tezhi power plant.

"This development, coupled with the increase in imports has made it possible for Zesco to reduce load shedding (power rationing) from eight to four hours," Bessie Banda, the company's senior manager for marketing and public relations said in a statement.

She said the electricity rationing will ease even further as the power utility was in the process of commissioning projects that were nearing completion.

Last month, Zambian President Edgar Lungu said the power deficit would reduce from 1,000 megawatts to below 400 megawatts by mid-June after an improvement in water levels.

He further said the country will this month start importing about 300 megawatts of electricity from South Africa. (Source: Xinhua, 09 June 2016)

[Afghanistan inaugurates India-funded hydropower dam](#)

Visiting Indian Prime Minister Narendra Modi and Afghan President Mohammad Ashraf Ghani jointly inaugurated an India-funded hydropower dam in the country's western province of Herat on Saturday.

The two leaders joined hundreds of Afghan and Indian officials at a ceremony held in Herat city, capital of Herat province, to launch the operation of Salma Dam, the largest infrastructure project since the fall of Taliban in 2001, which is also called Afghan-Indian Friendship Dam.

"Inauguration of the Afghan-Indian Friendship Dam is a historic moment of emotion and pride in the relations between Afghanistan and India," Modi said at the inauguration ceremony.

The dam, built on Harirod River in Chishti Sharif district, east of Herat city, is capable of irrigating 80,000 hectares of agriculture land and producing 42 megawatts of power, bringing light to more than 250,000 families in the province.

"This is a project that will irrigate lands and light up homes. The dam is a generator of optimism and belief in the future of Afghanistan," Modi added. The Indian prime minister said that India supports Afghan government's efforts to promote peace, stability and development in the country and will deepen cooperation with Afghanistan in various fields.

President Ghani expressed gratitude for India's assistance to the country's reconstruction efforts.

The reconstruction of Salam Dam was first initiated in 1970s but the prolonged conflicts in the country have deterred efforts to complete the project. In 2006, India committed to funding the completion of the project.

"Today, with India's help, an old dream of Afghan people is realized after 40 years of waiting. On behalf of the people of Afghanistan and the Afghan government, I'd like to express sincere thanks to the Indian people and the government for providing assistance to Afghanistan," Ghani said at the event.

The dam consists of a rockfill wall of 550 meters in length. The height of the structure is some 107 meters.

Observers believe the 290-million-U.S.-dollar project will boost economy and agriculture in the land-locked country.

India has contributed more than 2.2 billion U.S. dollars to Afghanistan since 2002.

The Afghan security forces were deployed in all sensitive roads in the city, 640 km west of Kabul, to ensure security during the ceremony. (Source: Xinhua, 04 June 2016)

[Pakistan's effort to build 350 micro hydro plants rolls on](#)

Khyber Pakhtunkhwa's march to install 350 micro hydro-power projects within the Pakistani province took another step forward with the inauguration of a further three plants this week.

The trio includes the 200-kW Bela Bala, 75-kW Shagai and 30-kW Beesa Khait -- all of which are located in the Battagram District in northern Khyber Pakhtunkhwa.

HydroWorld.com said earlier this month that 37 other micro plants were completed under Pakistan's power enhancement initiative, which ultimately seeks to create 35 MW of new capacity from small hydro projects.

The total cost of the 350 plant program is reported as being more than US\$82.3 million with financing through Pakistan's Hydel Development Funds, though local sources say additional funding from agencies like the Asian Development Bank could increase the total number of plants built to 1,000. The projects are intended to reduce load shedding and provide an uninterrupted power supply within the province, which is also home to a number of large hydropower plants, including the 243-MW Warsak and 3,480-MW Tarbela projects. (Source: HydroWorld, 24 May 2016)

[Argentina looking to expand small hydroelectric capacity by up to 20 MW](#)

A program unveiled this week by Argentine President Mauricio Macri could see the addition of 20 MW of small hydroelectric power capacity added to the South American country's grid.

The plan, called RenovAr, seeks to lower Argentina's greenhouse gas emissions by increasing its portion of renewable generating assets to 20% of the country's total power supply by 2025.

RenovAr will add about 1 GW of new renewable capacity through a tendering process, with wind making up the bulk with 600 MW planned, and solar (300 MW), biomass (65 MW), small hydro (20 MW) and biogas (15 MW) trailing.

Argentine regulator Compania Administradora del Mercado Mayorista Electrico (CAMMESA) will oversee implementation of the plan, with investments expected to total US\$2 billion.

Further terms of the tender can be found from CAMMESA here. (Source: HydroWorld, 19 May 2016)

[Brazilian small hydro association looks to spark investments](#)

Brazil's Associacao Brasileira de Fomento as Pequenas Centrais Hidreletricas (ABRAPCH) has signed a technical cooperation agreement with the Far South Regional Development Bank (BRDE) to support small hydropower growth in the South American country.

The two-year deal, signed earlier this week, calls for the partners to develop joint activities to increase investments from companies focused on hydroelectric plant construction.

Chief amongst these is making developers aware of BRDE's procedures and conditions for project financing, the bank said, with Brazil having a significant potential for small hydro capacity.

Brazilian power regulator Agencia Nacional de Energia Eletrica (Aneel) said more than 140 small plants are currently awaiting licensing from the government. (Source: HydroWorld, 14 April 2016)

[Fact-finding continues into 22-MW Agua Zarca hydroelectric project](#)

On April 1, the Central American Bank for Economic Integration (CABEI), which is involved in financing the Agua Zarca project, announced it would send emissaries on a fact-finding mission to speak with members of communities near the hydroelectric project and also government officials.

The 22-MW Agua Zarca small hydroelectric project located on the Gualcarque River, is estimated to cost more than US\$30 million, is planned for Santa Barbara and Intibuca in Honduras. Agua Zarca is being developed by energy company Desarrollos Energeticos S.A. (DESA). CABEI co-financed a loan for up to \$24.4 million to DESA to partially finance the development, construction, installation and start up of the Agua Zarca project, pursuant to the global investment plan approved by CABEI.

After the visits, the bank said, it will analyze "actions to be taken with regards to the Agua Zarca hydroelectric project" in conjunction with the Dutch development bank FMO.

FMO reportedly finances about US\$86 million worth of projects in Honduras.

FMO said last month that it was suspending its operations in Honduras -- including for the Agua Zarca project -- following the killings of indigenous leader Berta Caceres. Caceres was shot four times by gunmen who broke into her home, and one of her colleagues was killed two weeks later.

CABEI has offices in five Central American countries that include: Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. The organization also conducts business in Belize and Panama.

Meanwhile, Honduran authorities said last week that they had carried out a raid March 13 on DESA offices in search of possible evidence in Caceres' killing.

Prosecutors' spokesman Yuri Mora said agents confiscated some documents and weapons used by company guards that will be examined.

It was not clear why the raid, which took place March 13, was not made public before. Company officials have not commented on the raid. (Source: HydroWorld, 04 April 2016)

[Rwandan developer to build 2 MW small hydro plant](#)

African power company Ngali Energy has announced its plan to build a 2 MW small hydro plant in Rwanda's Nyaruguru District. The US\$11 million project will be called Ntaruka and is expected to be complete in 2018.

The project is intended to increase the region's access to energy with only 20% of all households currently having electrical connections.

Officials from Rwanda's Southern Province said Ntaruka and other projects like it will help spur the area's economy. The province has a goal of increasing its total generating capacity to more than 560 MW over the next two years.

Ngali Energy is currently working to develop several other Rwandan projects as well, including the 2.6-MW Base One, 2.6-MW Base Two and 2.4-MW Ngororero plants.

Seventh Hydro Power for Today Forum Small Hydropower and Green Development Hangzhou, China ~ 1 to 2 November 2016

Hosted by

**Ministry of Water Resources
the People's Republic of China**



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INDUSTRIAL DEVELOPMENT ORGANIZATION

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We are pleased to announce that the 7th Hydropower for Today Forum-Small Hydropower and Green Development will take place in Hangzhou, China from 1st to 2nd November, 2016.

The 7th Hydropower for Today Forum is to seek an innovative, coordinative, green, open and shared development concept, guiding the green development of global small hydropower and sharing the successful experience of China on SHP development. The Forum is also set to provide a platform for international communication and cooperation on SHP sector. The Forum is hosted by MWR and UNIDO, and organized by ICSHP, and co-organized by the Hydro Power Committee of Chinese Hydraulic Engineering Society and Small Hydro Power Committee of Chinese Hydroelectric Engineering Society as well as related foreign institutions. Representatives from both Chinese and foreign governments, international organizations, national hydraulic societies (special committees), scientific & research institutions and universities, provincial water authorities, hydropower development enterprises as well as equipment manufacturers will be invited to the Forum.

Theme: Small Hydropower and Green Development

Topics including:

- Policies and legal system of green SHP development
- Innovation on technologies and management of green SHP development
- Global SHP status and demand
- International cooperation on SHP

Meanwhile, World Small Hydropower Development Report 2016 will be published during the forum. The Coordinating Committee (cc) meeting of International Network on Small Hydro Power will be held in parallel.

In this regard, on behalf of the organizing committee, we take great pleasure in inviting you to attend this Forum. Your participation is important to further enhance and promote the green development of global SHP.

Call for Paper

Abstracts of up to 500 words, in English, are now invited on the themes listed or related topics. Please email abstracts to the address below. A short CV of each author should be included. Your abstracts should summarize precisely the scope and content of the paper proposed. In the case of any project described, please mention its current status. Please email the abstract as a Word File, using the author's name as the file name. Please note that abstracts should only be submitted if the author would be able to attend the Forum (or send a representative). The deadline for receipt of abstracts is 30 June 2016. Full papers of up to 6000 words will be required by 31 August 2016, and format guidelines will be sent to all authors whose papers are accepted. Please send abstracts to the address: secretariat@icshp.org.



THE 2ND HYDROPOWER FOR INDONESIA 2016, 22-23 NOVEMBER 2016, JAKARTA, INDONESIA

The 2nd edition of Hydropower for Indonesia 2016 is scheduled to be held in Jakarta, Indonesia from 22 – 23 November 2016 in conjunction with the hosting of the 2nd Renewable Energy for Indonesia 2016 (**RE4I 2016**).

Indonesia, the Southeast Asia's largest economy; a country with a population of 257 million announced an addition of 35,000 MW of energy program by 2019 with an allocation of 23% to be Renewable Energy. Launched by the Indonesian President Joko Widodo and Ministry of Energy and Mineral Resources (MEMR), the entire energy program is estimated to aggregate investment of more than USD 110 billion to the country.

The 2nd Hydropower for Indonesia 2016 is set to provide a platform for potential investors & energy leaders to understand the key development issues of investing in the Indonesia's renewable energy sector; get updated on the new market directions, opportunities and economic priorities of the Indonesia's renewable energy sectors at the same to build potential business networks with the local authorities and industry players.

The benefits of attending the summit including:

- Get first-hand information on the outlook and investment opportunities in Indonesia
- Be updated with the latest policies and regulation
- Network with government authorities and potential business partners
- Pre-arrange business matching meeting with local & International industry players]

Should you have any enquiries, please do not hesitate to contact the undersigned or the Renewable Energy for Indonesia 2016 Secretariat, Ms. Fish Leong at +603-2771 1668 or email to fish.leong@confexhub.com.

More details please visit: www.theRE4I.org.

International Seminar on 'Water Resilience in a Changing World' in Bali, Indonesia 29 - 31 July 2016

The 5th International Seminar on 'Water Resilience in a Changing World' will be held in Bali, Indonesia 29 - 31 July 2016.

The event is organized by the Indonesian Association of Hydraulic Engineers (HATHI) in cooperation with local and national ministries of Indonesia and Japan.

The seminar serves as an opportunity for local, regional and international participants to gain a better understanding of water resilience and available solutions, for experts to exchange knowledge and best practices on the topic, and as a platform for participants to strengthen their network in the field of water resources management.

Sub-themes include:

Water Conservation and Risk and Impact of Extreme Events

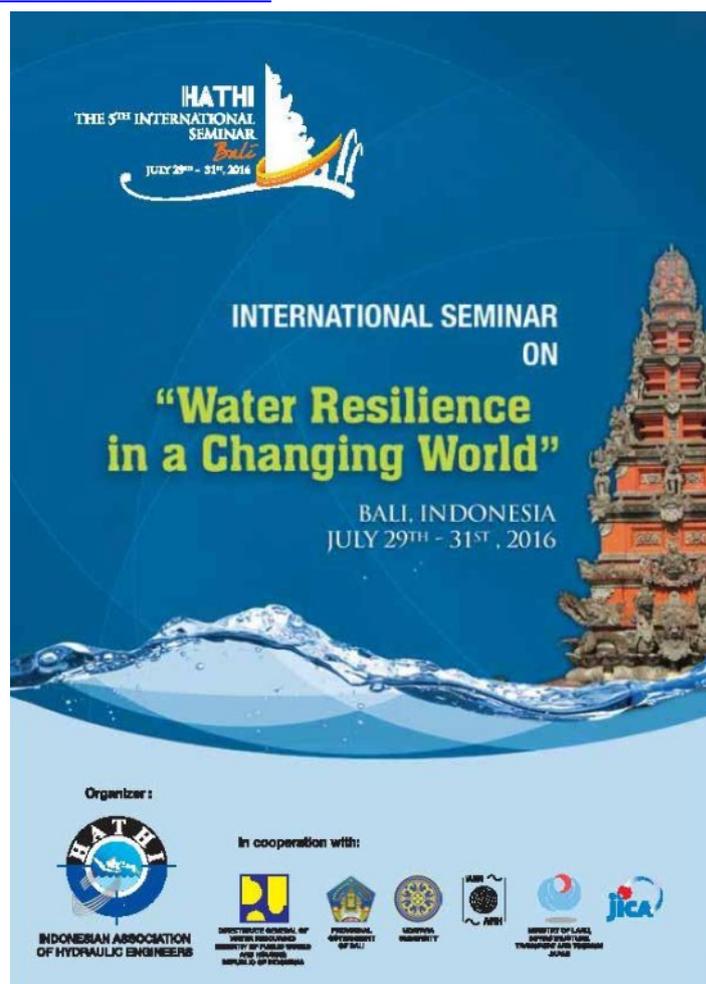
Water Security for All

Water Governance and Partnership

Interested parties are invited to submit presentation abstracts for consideration.

For event details and to access the Registration Form please [visit the official event website](http://www.excodaequ.co.kr/eng/pr/notice.html?mode=cont&idx=142&bid=e1news).

<http://www.excodaequ.co.kr/eng/pr/notice.html?mode=cont&idx=142&bid=e1news>.



CONTACT IN-SHP NEWSLETTER TEAM

This e-newsletter is a free publication, keeping hundreds of people and organizations informed on the many factors that affect the development of SHP and their impact on creating a brighter and greener world.