

IN-SHP

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- ▶ 2 Events of IC-SHP
- ▶ 4 World News
- ▶ 6 CDM News
- ▶ 8 Report
- ▶ 11 Coming Events

*International Network
on Small Hydro Power*



NEWSLETTER

Message from the Director General



Prof. Liu Heng
Director General, IN-SHP

Welcome to the 13th issue of our IN-SHP newsletter. We are an international organisation that strives to promote the use of small hydropower (SHP) as a clean energy solution to meet the growing demand for energy in the world, especially in developing countries.

The ICSHP base directors and key members of IN-SHP met in Gansu Province, China, at the end of September for the annual IN-SHP work report conference. Rural small hydropower remains very important in China's future and ways to use the advantages of IN-SHP to promote SHP development in other developing countries were discussed.

The issuance of the Green Credit Guideline by the China Banking Regulatory Commission (CBRC) earlier this year has given ICSHP the opportunity to strengthen the contact and cooperation with financial enterprises in order to promote the sustainable development of China small hydropower, since financing is of central concern.

In order to promote the global extension of China's small hydropower technologies, ICSHP, entrusted by UNIDO, attended one of the most important expos supported by the Ministry of Commerce this year. Our stand at the "2012 Business Exhibition of Zhejiang, China" was well visited and many potential collaborative opportunities were identified.

We are tremendously grateful for your continued support and welcome any news, comments or suggestions that you would like to share with us and the international small hydropower community.

Events of IC-SHP

1. **INSHP Annual Work Report Conference**
2. **Training on Green Credit Guideline by CBRC-WWF**
3. **2012 Business Exhibition of Zhejiang, China**

INSHP Annual Work Report Conference



The “INSHP Annual Work Report Conference of INSHP Key Members and Bases Directors” was held in Zhangye, Gansu Province on September 22, 2012. It was hosted by INSHP and organized by Zhangye Base of ICSHP. Tian Zhongxing, Chairman of INSHP and Managing Director of the Bureau of Rural Hydropower and Electrification Development (Ministry of Water Resources); Liu Heng, DG of ICSHP, local government leaders and other key members attended the conference.

Mr. Tian introduced China’s development target for rural hydropower in the new era. He said that the construction of “livelihood hydropower, safe hydropower, green hydropower and harmonious hydropower” is not only a development result of rural hydropower but also a new direction for reform and development. Currently, the main tasks include capacity expansion, rural electrification by hydropower, small hydropower replacing fuel, rural hydropower safety management, and green hydro evaluation. The aim of the conference was to identify a way to promote the development of small hydropower in China and other countries, while using the advantages that INSHP can offer.

Prof. Liu presented a work summary of INSHP in 2012, which includes for example several international conferences, the “Lighting Up Rural Africa” project, the compilation of the first World Small Hydropower Development Report as well as the research on domestic hydropower activities. During the conference, the representatives also visited Zhangye Base of ICSHP, Xiao Gushan hydropower plant of Zhangye Base and a solar power project.



Training on Green Credit Guideline by CBRC-WWF

Finance is the base for resources allocation and loans from banks are the main source for small hydropower construction. However, the lack of access to good funding channels is one of the main problems for small hydropower development.

The Green Credit Guideline was issued by China Banking Regulatory Commission (CBRC) on January 29, 2012, in order to develop the basic function of finance in resources allocation, promote industrial structural adjustment and economic development transformation, and put forward the implementation of energy saving and emission reduction. The Guideline requires financial institutions to carry out the evaluation for green credit per two year at least.

To this end, CBRC and WWF (World Wildlife Fund) developed a training for green credit guideline with the theme of water resources and risk management. National experts of water resources and hydropower were invited to give the lectures. Tan Xiangqing, Assistant Chief Engineer of ICSHP gave a presentation on Small Hydropower Investment Evaluation and Risk Control, introducing investment and risks of small hydropower stations. ICSHP will take this opportunity to strengthen the contact and cooperation with financial enterprises in order to promote the sustainable development of China small hydropower.



2012 Business Exhibition of Zhejiang, China



Entrusted by UNIDO, ICSHP attended the “2012 Business Exhibition of Zhejiang, China” with the aim to promote the global extension of China’s small hydropower technologies.

The expo was hosted by Zhejiang Province’s Commerce Department with the theme of “Business helps enterprises to enhance their values”. This was one of the most important expos supported by Ministry of Commerce in 2012, with over 60 foreign enterprises from more than 20 countries attending.

The 2-day expo opened on September 14, 2012. During this period, ICSHP received over 150 visitors and reached

cooperation intention with many organizations and institutions.

World SHP News

1. Africa
2. America
3. Asia
4. Europe

Africa

[Uganda planning two new hydropower plants for West Nile region](#)

Hydro World (October 30, 2012)

Officials in Uganda's Zombo District say the recently completed 3.5-MW Paidha hydroelectric plant is only the beginning in assuring the region has reliable energy. The US\$8.5 million Paidha (also called Nyagek 1) hydropower project, located on the Nyagek River, also includes a 1-km-long, 33-kV transmission line that connects to Nebbi, Arua and Koboko. Leaders in the West Nile area say they want it connected to the national grid, however, and that a pair of new hydropower projects downstream from Paidha are being developed.

Uganda's Minister of State for Mineral Development, Peter Lokeris, told Ugandan sources that the funds for Nyagek 2 and 3 are available but did not specify the projects' capacities or anticipated locations.

America

[Hydro Ottawa recognized by Ontario Energy Association for accomplishments](#)

Hydro World (October 19, 2012)

Utility company Hydro Ottawa Holding Inc. has been named the 2012 Large Company of the Year in the Ontario energy sector by the Ontario Energy Association. The award recognizes Hydro Ottawa for its achievements, such as financial operations, customer service, distribution operations and energy production, corporate social responsibility, environmental leadership and human resources management.

"I am very proud to accept this award on behalf of Hydro Ottawa," says President and CEO Bryce Conrad. "Our recent achievements have built a strong foundation to grow our business in future years." The company says it has increased its shareholder value by more than US\$135 million over the past four years, while building a customer base of more than 305,000. HydroWorld.com reported in June that the utility had purchased three generating stations at the Chaudiere Falls hydropower complex via its subsidiary, Energy Ottawa. That deal gave Hydro Ottawa control of six of the seven plants at Chaudiere Falls, which combine for an output capacity of 38 MW. The company said that capacity could be expanded to 60 MW in the future.

Asia

[China Hydroelectric announces sale of 30-MW Yuheng hydropower facility](#)

Hydro World (October 22, 2012)

Small hydropower developer China Hydroelectric Corporation has entered into a Share Transfer Agreement for the sale of its 30-MW Yuheng hydro plant. The Yuheng hydropower facility is one of China Hydroelectric's 26 stations and located in China's Fujian province.

The company says the US\$44.3 million deal is expected to close in early 2013 and includes the assumption of debt by the buyer, resulting in a small profit for China Hydroelectric. An official from China Hydroelectric told HydroWorld.com that the buyer would not be disclosed until the deal is complete. "The sale not only helps the company move a step closer to fixing its current liquidity situation, but also reaffirms the fundamental value of the company's assets," says Amit Gupta, chairman of the board. Gupta was one of several board members named at an Oct. 15 meeting, which followed the ousting of founder and former CEO John D. Kuhns earlier this month.

Morgan Stanley-led group invests another \$150 million in Chinese hydropower company

Hydro World (September 6, 2012)

A consortium led by financial group Morgan Stanley has invested US\$150 million into China's Zhaoheng Hydropower Holdings Ltd. The consortium -- which consists of the Morgan Stanley Infrastructure Fund, FountainVest Partners Co. and Olympus Capital Holdings Asia -- doubles a previous investment in Zhaoheng made in 2010.

Morgan Stanley says this investment (combined with its 2010 investment) now represents the largest private investment in China's renewable energy and hydroelectric sector with a value of about \$300 million. Zhaoheng says it will use the investment to buy hydropower plants and increase its total generating capacity to exceed 1 GW over the next two years. The company currently operates more than 30 hydroelectric plants in seven provinces, which combine for a total installed capacity of about 650 MW. The company acquired its first hydropower plant in 2003.

Europe

Rouby of Cognac wins bid for work at France's 5.9-MW Panneciere hydroelectric project

Hydro World (October 29, 2012)

Hydropower engineer Hydrostadium has awarded a contract to Rouby of Cognac for work at the 5.9-MW Panneciere hydropower plant on France's Yonne River. Hydrostadium, a subsidiary of Electricite de France (EDF), last took bids for the work in June. As per the contract, Rouby of Cognac is to refurbish the valve of the project's compensating basin and design and construct upstream and downstream cofferdams. The value of the contract was not specified in the award notice, but the work is required to take eight months. Panneciere Dam was built in 1949 for flood control of the Seine River. EDF added its hydroelectric component in 1950.

Modernizations under way at France's 5-MW Pont Baldy hydropower plant

Hydro World (October 23, 2012)

Energie Developpement Services du Brianconnais (EDSB) is modernizing its 5-MW Pont Baldy hydroelectric plant in Briancon, France. Alstom is working on the rehabilitation, replacing the automatic voltage regulator with a digital control system known as "SMARTGEN." This regulator can produce electricity at constant voltage, allowing the Pont Baldy hydropower facility to remain operational and free of downtime caused by voltage fluctuations that result in power outages.

Alstom says the system is "perfectly suited to the specific requirements of owners of small hydro power stations" and that when paired with maintenance diagnostic software, it can "help operators to independently intervene and retain control of equipment maintenance." The company says it took three days to replace Pont

Baldy's previous voltage regulators. Pont Baldy was commissioned in 1966 with a 5-MW horizontal Francis turbine supplied by Alstom that produces 18 GWh of electricity annually.

Alstom installed a new speed regulator at Pont Baldy in 2006 but says the installation of the SMARTGEN system is the first step in a new modernization project.

[EBRD approves loan for two Albanian hydropower projects](#)

Hydro World (September 25, 2012)

The European Bank for Reconstruction and Development (EBRD) has announced it will fund a pair of SHP plants with a US\$7.73 million loan. The recipient, the Hydro Power Plant of Korca sh.p.k., will use the money to finance Verbe-Selce 1 and 2, which, when completed, will provide eastern Albania with an additional 5 MW. The loan is part of EBRD's Western Balkans Sustainable Energy Direct Financing Facility (WeBSEDF). "The construction of the Verbe-Selce SHPP Cascade reaffirms the EBRD's great interest in renewable energy in Albania," says Fabio Serri, head of EBRD's Resident Office in Albania. "This project will help improve security of energy supply and clearly demonstrates that the sector has the potential to become a key driver in the development of the Albanian economy."

Hydro Power Plant of Korca is owned in part by Italy-based Fidia Ambiente and EdilEurope srl, along with Albania's Xhemi sh.p.k. "The financial support of the EBRD represents an important endorsement and recognition of the quality of our investment and our commitment in the region," says EdilEurop owner Claudio Barbano. "This project will set an excellent example of financially viable investments in renewables, we look forward to more projects in the Balkan region." EBRD says it has now invested more than \$906 million into the country's economy, including \$3.9 million for the construction of the 5.1-MW Cerruje 1 and 2 hydropower projects in December 2011.

Clean Development Mechanism

- [1. CDM Policy Dialogue](#)**
- [2. CDM Helpdesk](#)**
- [3. Green Climate Fund](#)**

The volume of issued CERs crossed 1 billion on 13 of September 2012. A few days later, on September 17th, a historical low for issued CERs was reached at a price of 1.54 Euro. So while CER prices have crashed and the project pipeline is drying up, the future of CDM cannot be easily dismissed yet. Notably, the first trades in the Emissions Trading System (ETS) of China's province Guangdong have given a price of 7.3 Euro. If prices are sustained at that level and China allows the use of domestic offsets, this could lead to a shift of Chinese CER use to China, and drive up the world market price for CERs.

CDM Policy Dialogue

A report by the CDM Policy Dialogue rightly urges the international community not to abandon the CDM, but to

strengthen it for the future. Some reform proposals are indeed visionary, such as linking CDM and the Green Climate Fund. Other key recommendations include:

- Non-Kyoto countries (such as the US and Canada) should be allowed to buy CERs
- CERs should be purchased and cancelled by public funds
- CER issuance should be delegated to national or regional institutions
- A central bank for CERs should be considered
- REDD and sectoral mechanisms should be integrated into the CDM
- The EB should only revise rules at predefined points in time
- Benchmarks and positive lists should replace project-specific additionality tests
- Contribution of CDM projects to sustainable development should be checked by independent evaluators; the EB should be enabled to reject projects due to lacking sustainability

These are the results of an extensive research programme on the Kyoto Protocol's clean development mechanism released on the 31st of October 2012 by the high-level panel on the CDM policy dialogue. The panel was established to conduct an independent review of the lessons learned from the CDM to date, and to assess if and how the CDM may continue to have a role beyond 2012. The final report, which was released in September, included 51 specific recommendations on how to position the CDM for the future. The wide research materials underpinning the recommendations are now released in their entirety.

The research is presented in three main reports on the impact of the CDM, the governance of the CDM, and the future context for the CDM. In addition, eleven topic-specific reports have been released in areas ranging from the sustainable development impact of the CDM and the financial set-up of the mechanism to the potential for cooperation with the Green Climate Fund and the potential for REDD in the CDM.

The research reports can be accessed at the links below:

<http://www.cdmpolicydialogue.org/research> and <https://cdm.unfccc.int/about/policy/index.html> .

CDM Helpdesk

The UNFCCC Secretariat has launched a CDM helpdesk for stakeholders in Africa, LDCs, Small Island Developing States and countries with 10 or fewer registered CDM projects as of 31 December 2010. The help desk shall provide technical assistance for activities in the process of validation or verification. Queries can be made at: CDM-HelpDesk@unfccc.int and are to receive an acknowledgement of receipt and a response from the help desk team within 15 working days. See also www.cdm.unfccc.int

Green Climate Fund

The committees governing the \$7 billion Climate Investment Funds (CIFs) – the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF) – will meet in Istanbul November 4-7, 2012. Alongside these meetings, a range of stakeholders from civil society, indigenous groups, and the private sector will participate in a series of events organized as part of the annual Partnership Forum. Click [here](#) for the WRI article.

Reports

**Technology Roadmap for Hydropower
Reports Reflecting CDM Practice in China and India
EU-27 SHP Roadmap
World Small Hydropower Development Report**

The International Energy Agency (IEA) recently published a [Technology Roadmap for Hydropower](#) as well as a [synopsis](#). This is part of a series that the IEA is developing covering 19 technologies under international guidance and in close consultation with industry. The hydropower roadmap has been developed in collaboration with CEPEL, the Brazilian Electric Energy Research Centre, representing the Brazilian Ministry of Mines and Energy. The rationale is that current and future development of hydropower will take place in emerging economies.

The Climate and Development Knowledge Network (CDKN) published an article on “[Harnessing market mechanisms to promote sustainable development – Lessons from China](#)”. And Ideas for India published “[The Clean Development Mechanism in India – is it working?](#)” For general information, the International Emissions Trading Association (IETA) published the [Greenhouse Gas Market 2012](#) on 1st of October, which provides a comprehensive guide to the latest developments in global carbon markets. Highlights include preparing for carbon trading in Australia, China’s pilot emission trading schemes, and innovative financial mechanisms for the Green Climate Fund.

The [Stream Map](#) is a project coordinated by ESHA and co-financed by the IEE Programme of the European Commission under the responsibility of the EACI (2009 – 2012). For the first time ever the Stream Map project gathers together detailed energy, market and policy data to a central HYDI (Hydro Data Initiative) database which is free of access to the public. Based on the collected data a [EU-27 SHP Roadmap](#) together with recommendations for the future is available now.

World Small Hydropower Development Report



World Small Hydropower Development Report



The International Centre on Small Hydro Power (IC-SHP) is the Secretariat of the [World SHP Development Report](#). The aim of the report is to give a global overview of the status of SHP and thereby inform SHP practitioners, policy- and decision-makers, investors on the opportunities that SHP has to offer as a clean, renewable and local energy for sustainable development.

The following is a summary of the preliminary results:

- Using the general SHP definition of up to 10 MW, the world-wide installed SHP capacity (based on preliminary results) is estimated to be more than 71.4 GW, with a rest potential of around 114 GW. Asia has the greatest installed SHP capacity of all major continental regions (64%), followed by Europe (24%), Americas (10%), and Oceania (1%) and Africa (1%).
- Worldwide, there are 149 countries and or territories that use SHP. Small hydropower is being used in all countries of East, South and Central Asia, as well as in most countries of South East Asia (except Singapore and Brunei). Parts of Western Asia are not suitable for SHP due to its climate and water scarcity. However, eight of eighteen countries in Western Asia use SHP. While both Western and Central Asia have in the past been mostly dependent on their oil and gas resources, SHP is being rediscovered, as countries start seeking solutions for climate mitigation. Therefore SHP can help reach renewable energy targets and diversify their fuel mix.
- Within Oceania, both Australia and New Zealand use SHP. The Pacific Islands region comprises of Melanesia, Micronesia and Polynesia, which are mostly small islands states and territories. Presently eight countries use small hydropower there: Fiji, New Caledonia, Papua New Guinea, Solomon Islands, Vanuatu, French Polynesia and Samoa. The Federated States of Micronesia only have one operating SHP plant.
- In Africa small hydropower is now used in two thirds of the countries. Parts of this continent has unsuitable climate for SHP, and while large hydropower is well-known, SHP is still a relatively new concept to some governments.
- All European Union (EU) Member States use small hydropower, except Malta and Cyprus. Among the non-EU countries, fourteen use SHP.
- Most of North, Central and South American countries use SHP, while its use in the Caribbean is limited by the geography and island characteristics. The following Caribbean countries or territories use SHP: Cuba, Dominican Republic, Jamaica, Puerto Rico, Dominica, Saint Vincent and the Grenadines. The Caribbean Renewable Energy Development Programme (CREDP-GIZ) is currently investigating systematically St. Lucia's hydropower potential with a GIS-based tool. A hydropotential study was done for Grenada in the 1980s. Up-to-date information on the SHP situation in Haiti was not available.
- Increasing oil prices and environmental considerations make it worthwhile to re-evaluate the economical feasibility of SHP in decentralized island regions such as the Caribbean as well as Pacific Island Countries, where national grids are not possible, and diesel has been one of the off-grid solutions.
- SHP has a high potential to continue to play an important role in rural electrification and development

solutions in Africa, Asia, Pacific Island Countries and the Caribbean, since many regions are still suffering from low electrification rates, particularly in rural areas.

Furthermore, the World SHP Development Report includes technology case studies. Ongoing innovative technology in the SHP sector includes low head research and fish friendly turbines. The exploitation of potential in existing water resource projects (e.g. dams, irrigation channels) has started in a few places and is under consideration in many countries. Its success is highly dependent on the continued progress of low head turbine technology research.

Adding on to existing infrastructure is one solution to use small-scale hydropower while avoiding environmental impacts. In South Asia, such as Pakistan, Afghanistan, India, Iran and Sri Lanka, there are high possibilities of adding SHP to existing water resource projects built for irrigation and drinking water purposes. In India, the SHP potential of irrigation networks has been developed up to 986 MW. Most of the remaining sites are very low head (below 2 m) and currently not economically attractive due to non-availability of cost effective equipment. In Armenia, evaluations of off-stream SHP have determined a potential capacity of 7.5 MW to install SHP in potable water pipes of existing supply systems. The water supplies are moved under high pressure from mountain areas, and often have pressure reducing valves which could be replaced with generating units to produce electricity.

Refurbishment of existing SHP plants is another way to increase installed capacity and efficiency. Many countries are actively refurbishing their aged plants. In October 2011 a pilot refurbishment programme started in five provinces of China, i.e. Zheijiang, Hubei, Hunan, Guangxi, Shan'xi as well as in Chongqing city. The experience collected will be very valuable when the programme goes nationwide.

Please note that ICSHP is currently editing and starting the peer-review stage and are therefore not accepting anymore contributions. However, since this is an on-going project, we are always glad to hear from practitioners of countries that would like to provide information for their country. Countries, where we are still seeking contacts include e.g. Colombia, Bolivia, Nicaragua, Venezuela.

Additional information and some preview case studies are provided on the now [updated World SHP Development Report](#) homepage section.

Forthcoming events

World Future Energy Summit 2013

Others



Overview

The World Future Energy Summit (WFES) 2013 will bring together global leaders in policy, technology and business to discuss the state of the art, develop new ways of thinking and shape the future of renewable energy.

Building on the high profile successes of WFES 2012, the sixth annual gathering of future energy's world leaders will be home to brilliant minds and inspiring thinkers for three days of expert debate and world class innovation in the heart of Abu Dhabi.

January 2013 will mark the first year of the International Water Summit which will be held in conjunction with the World Future Energy Summit. The International Water Summit is the only event that focuses specifically on the water energy nexus and the challenges of this within arid environments. The event will include a political summit, expert conference and exhibition for delegates and water experts from all over the world.

Now, as the centerpiece of Abu Dhabi Sustainability Week, WFES 2013 will work seamlessly with a string of other global conferences in sustainability, renewable energy and cleantech, including the inaugural International Water Summit and IRENA to create an unrivalled global hub of expertise and connections.

With truly worldwide reach and authoritative subject matter expertise, WFES 2013 will bring together depth of knowledge and breadth of talent to inspire audiences, share insights, stimulate debate – and influence the agenda for the years in prospect. It is a platform from which conventions can be challenged and new thinking shaped.

Conference speakers, delegates and exhibitors are truly world class. WFES 2012 Opening Ceremony speakers included the Premier of China and the Prime Minister of Korea as well as the President of the United Nations General Assembly and the Secretary General of the United Nations. Heads of State and Heads of Government have used WFES as a unique global platform from which to launch initiatives, announce investment, make policy statements and deliver targeted media messages designed to raise awareness and increase business.

More information: www.worldfutureenergysummit.com.

Other events

9th Annual Southern Cone Energy Summit Swissotel Lima Peru 2-3 November, 2012	6th Renewable Energy India 2012 Expo India Expo Centre & Mart, Greater Noida NCR Delhi, India 7-9 November, 2012
World Future Energy Summit 2013 ABU Dhabi National Exhibition Centre 15-17 January, 2013	

CONTACT IN-SHP e-NEWSLETTER

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

For more information, please visit our website: www.inshp.org

We value your comments and suggestions. Please send these to the Editor at report@icshp.org