



U.S.-CHINA CLEAN  
ENERGY RESEARCH CENTER  
中美清洁能源研究中心

# U.S. – China Clean Energy Research Center

## Energy and Water Track Update

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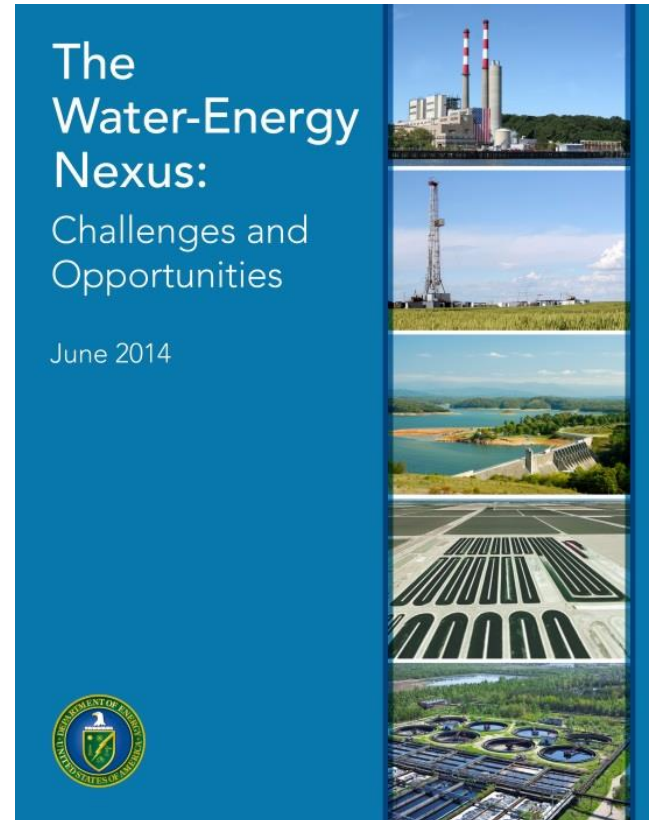
**CERC Steering Committee Meeting, June 1, 2015**



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## Energy-Water Nexus: DOE's Interest

- DOE has strong expertise in technology, modeling, analysis, and data and can contribute to understanding the issues and pursuing solutions across the entire nexus.
- Our work has broad and deep implications
  - User-driven analytic tools for national decision-making supporting energy resilience with initial focus on the water-energy nexus
  - Solutions through technology RDD&D, policy analysis, and stakeholder engagement
- We can approach the diffuse water area strongly from the energy side
  - Focus on our technical strengths and mission
  - Leverage strategic interagency connections



Download the full report at  
[energy.gov](http://energy.gov)



## Energy & Water Timeline

<b>Energy and Water Track Discussions Begin</b>	<b>August 2014</b>
<b>Energy and Water Track Announcement (Beijing)</b>	<b>November 12, 2014</b>
<b>US &amp; China Topic Decisions (Beijing)</b>	<b>February 5-6, 2015</b>
<b>US Solicitation Issue Date:</b>	<b>March 4, 2015</b>
<b>US Submission Deadline for Applications:</b>	<b>May 4, 2015</b>
<b>US Expected Date for Selection Notification:</b>	<b>July 21, 2015</b>
<b>US Expected Timeframe for Award Negotiations:</b>	<b>July to September 2015</b>



# Energy & Water Topics of Interest

## Topic Area 1

- Water Use Reduction at Thermoelectric Plants

## Topic Area 2

- Treatment & Management of Non-Traditional Waters

## Topic Area 3

- Improving Sustainable Hydropower Design and Operation

## Topic Area 4

- Climate Impact Modeling, Methods, and Scenarios to Support Improved Energy and Water Systems Understanding

## Topic Area 5

- Data and Analysis to Inform Planning, Policy, and Other Decisions



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## Energy & Water Estimated Post-Award Schedule

<b>U.S. &amp; Chinese Consortia Formed</b>	<b>Fall 2015</b>
<b>U.S. Consortium Meets with Chinese Counterparts</b>	<b>Fall 2015</b>
<b>Joint Work Plans Completed, Accompanied by Signing Ceremony</b>	<b>January 2016</b>
<b>IP Framework Agreement Concluded</b>	<b>Spring 2016</b>
<b>Project Execution Finalized</b>	<b>Spring 2016</b>
<b>Collaborative Research Begins</b>	<b>Spring 2016</b>
<b>Joint Meetings of Consortia</b>	<b>Annually</b>



## Energy-Water Nexus: Key to China's Concerted Security of Energy and Water

- Non-concerted energy-water distribution, eg. less than 5% water for 80% coal reserves in northwestern China.

### Water supply is critical for energy development

- Hydropower, 8% of China's total energy supply, is important for China's energy security and CO<sub>2</sub> emission reduction
- Coal and oil and other fossil energy exploitation, impact groundwater aquifers and surface water bodies
- Water consumption for energy in total industrial water use takes up over 30%; energy consumption is over 0.5kWh/m<sup>3</sup>. Energy conservation and water-saving is highly interdependent.





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**MOST、MWR and CEA active in and fully consider Energy-Water Nexus research in planning and decision-making process**



- **September 2013**
  - Seminar on China's Energy-Water Constraints to discuss water issues in energy activities
- **January 2014**
  - NEA's preliminary research subject for 13<sup>th</sup> Five-year Period Plan (2016-2020): Research on Impact of Water Resources Constraints on Energy Exploitation and Utilization
- **September 2014**
  - Carry out WB's case study in China on Thirsty Energy
- **2015**
  - MOST press ahead with CERC Energy-Water Track Chinese consortium preparation work and ST major special project on Energy-Water Nexus



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## Chinese consortium of Energy-Water Nexus established and proceeds smoothly

- ✓ Select and decide the first batch of 20 Chinese consortium members based on voluntary application and selection of excellent ones ;
- ✓ Draw on experience of CERC's 3 other consortia and formulate a consortium working plan :
  - objectives and tasks;
  - institutional set-up and working mechanism;
  - major working arrangements
- ✓ On May 22, MOST held the inaugural meeting of the Chinese consortium, reaching consensus on key issues on consortium operation, indicating the Chinese consortium step into preliminary official operation stage



**“能源与水” 中方产学研联盟支持单位**  
(排序不分先后)

单位名称	单位签字	代表签名
中国水利水电科学研究院	中国水利水电科学研究院	王世军
中国电机能源技术研究院	中国电机能源技术研究院	王世军
中国石油勘探开发研究院	中国石油勘探开发研究院	王世军
中国科学院工程热物理研究所	中国科学院工程热物理研究所	王世军
中国宣环环保科技园	中国宣环环保科技园	王世军
国家发改委能源研究所	国家发改委能源研究所	王世军
国家海洋局天津海水淡化研究所	国家海洋局天津海水淡化研究所	王世军
亚太水资源研究和利用中心	亚太水资源研究和利用中心	王世军
北京大学水中心	北京大学水中心	王世军
清华大学环境学院	清华大学环境学院	王世军

中国电力建设集团有限公司	科技部	王世军
国际应用能源技术创新研究院	国际应用能源技术创新研究院	王世军
神华集团有限责任公司	科技部	王世军
丹甫(北京)石油技术服务有限公司	丹甫(北京)石油技术服务有限公司	王世军
陕西延长石油(集团)有限责任公司	陕西延长石油(集团)有限责任公司	王世军
德源江流域水电开发有限公司	德源江流域水电开发有限公司	王世军
华能澜沧江水电站有限公司	华能澜沧江水电站有限公司	王世军





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## Scheduled timeline for ST major special project of Energy-Water Nexus

**Formulating the implementation plan for ST special major project of Energy-Water Nexus**

**Now**

**1. Application guidance issued**

**2. Project application launched**

**3. Comprehensive evaluation and examination concluded**

**4. Application awards completed**

**By the end of  
2015 step by step**

**1. Joint working plan and collaborative mechanism concluded**

**2. IPR agreement completed and the first batch of funds put in place**

**3. Collaborative research begins**

**Spring 2016**



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## Summary of current work by China-US consortia on Energy-Water Nexus

- **Effective bilateral communication**
- **Well-defined direction and tasks**
- **Step-by-step working progress**
- **Clear implementation roadmap**



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***THANKS FOR YOUR ATTENTION.***

