



U.S.-CHINA CLEAN
ENERGY RESEARCH CENTER

中美清洁能源联合研究中心

Annual Meeting年度会议

3/15-16/2017

cercwet.berkeley.edu

CERC-WET Annual Meetings



2nd CERC-WET Annual Meeting
March 15-16, 2017
Berkeley, CA US
第二次CERC-WET年会
2017年15-16日
伯克利，美国

1st CERC-WET Annual Meeting
December 9-10, 2015
Beijing, PRC
第一次CERC-WET年会
2015年12月9-10日
北京，中国



Growing a CERC Center-成长中的CERC

Identify and Grow Partnerships

确定并加深伙伴关系

**Recognizing Not All Project Align 100% - But Aim High, Be Creative,
Leverage Other Partnerships**

认识到不是所有项目100%重合，但目标更高的、创造性的整合其他伙伴关系

Launching Research Collaborations

启动研究合作

Excellence in Science

在科学上要出色

Input from Industry and Government

企业伙伴和政府的投入

Translating Research into Technologies and Policy-guidance

将研究转化为技术和政策导则

Impact on Utilities and Marketplace

对公共事业和市场地位产生影响



Five Technical Topic Areas 五大技术主题

- **Topic Area 1: Water Use Reduction at Thermoelectric plants**
主题 1: 热电厂节水技术
Per Peterson, UCB, and ZHAO Lifeng, IET - CAS
- **Topic Area 2: Treatment & Management of Non-Traditional Waters**
主题 2: 非传统水资源的处置与管理
David Sedlak, UCB, and YANG Qinghai, RIPED
- **Topic Area 3: Improving Sustainable Hydropower Design & Operation**
主题 3: 可持续性水电技术与运行的改进
Soroosh Sorooshian, UCI, and PENG Qidong, IWHR



Five Technical Topic Areas 五大技术主题

- **Topic Area 4: Climate Impact Modeling, Methods, Science for Energy-Water Systems**
主题 4:水-能源 体系的气候影响研究模型、方法与科学
Alan Di Vittorio, LBNL, and XIAO Chan, NCC-CMA
- **Topic Area 5: Data/Analysis to Inform Planning, Policy, and Other Decisions**
主题 5: 为规划、政策及其他决策的数据/分析
Arpad Horvath, UCB, and WANG Jianhua, IWHR



CERC-WET China Organizational/Campus Leads

RIPED	LIU He
IWHR	WANG Jianhua
CNPC	ZHU Ronggai
CAS	ZHAO Lifeng
SOA	ZHANG Yushan
NPU	JIANG Minzheng
BNU	DUAN Qingyun
NCC	XIAO Chan
PKU	LIU Jie



中国石油



雅砻江流域水电开发有限公司
YALONG RIVER HYDROPOWER DEVELOPMENT COMPANY, LTD.



中国国电
CHINA GUODIAN

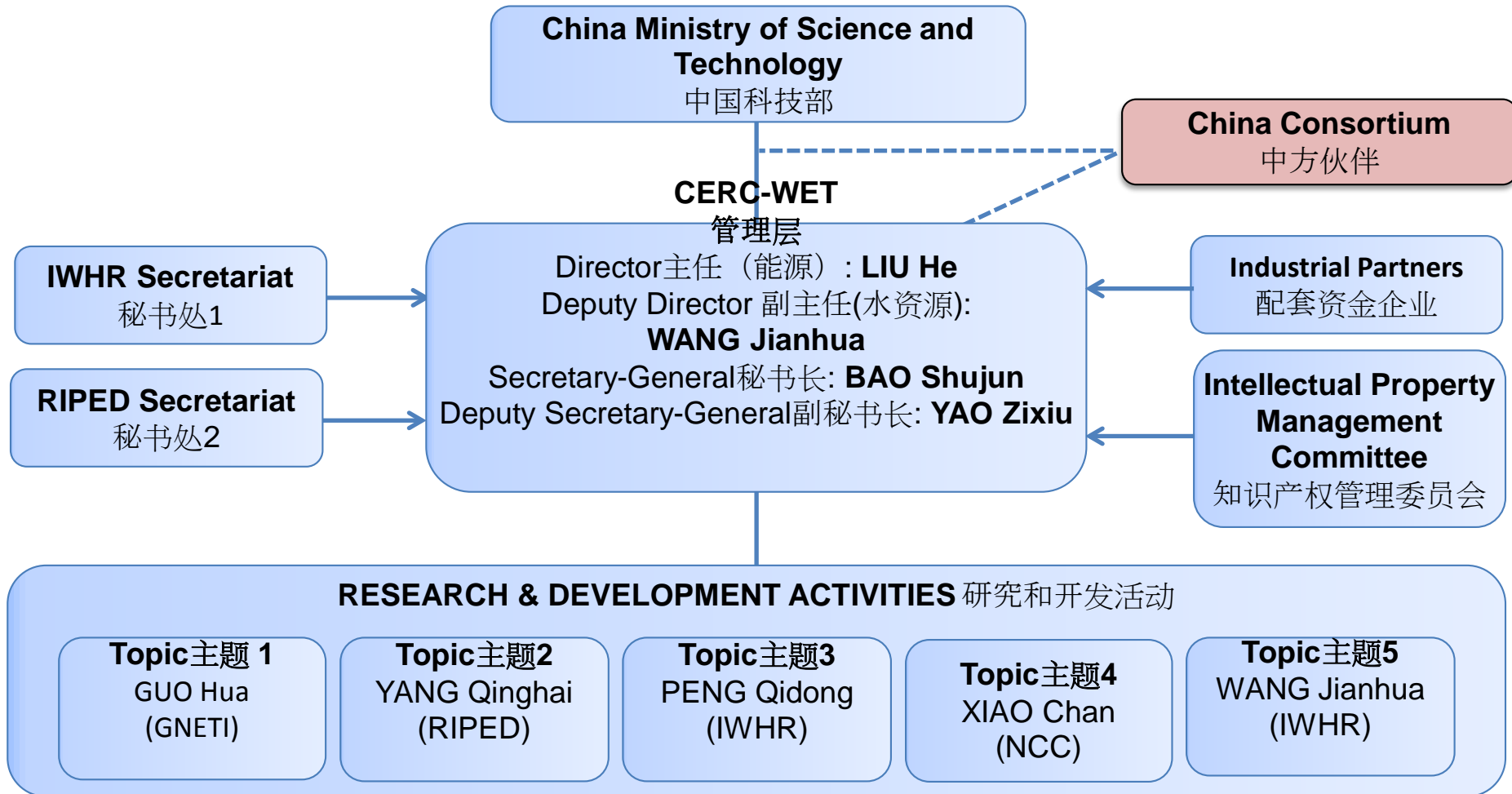


中国石油吉林油田公司
PETROCHINA JILIN OILFIELD COMPANY



Management Structure and Reporting Lines for CERC-WET

CERC-WET管理结构和汇报关系



Management Structure for CERC-WET US

管理结构和汇报关系

Reporting Lines for
Other Sponsors not
Shown

未包含与其他发起方的汇报关系

U.S. DEPARTMENT
OF ENERGY

美国能源部

China Consortium

中方伙伴

CERC-WET Management

运营中心

Faculty Director主任: **Gadgil**

Faculty Co-Director (Hydro)副主任(水力):
Sorooshian

Faculty Co-Director (Energy)副主任(能源):
Samuelsen

Executive Director执行主任: **Remick**

Internal Review
Committee

内部审核委员会

Industry Advisory
Board

工业咨询委员会

RESEARCH & DEVELOPMENT ACTIVITIES 研究和开发活动

Topic主题 1

Peterson (UCB)
Ma (UCM)

Topic主题 2

Sedlak (UCB)
Kostecki (LBNL)

Topic主题 3

Sorooshian (UCI)
Lund (UCD)

Topic主题 4

Di Vitorrio (LBNL)
Sorooshian (UCI)

Topic主题 5

Zhou (LBNL)
Horvath (UCB)



Advisory Boards 咨询委员会

- Executive Board 执行委员会
- Industrial Advisory Board 工业咨询委员会

Together these boards inform CERC-WET decisions to renew funding for projects, change direction, and add or retire projects

以上委员会向CERC-WET提供关于项目资助、改变项目方向、新加或退出项目的决策。



U.S. Coordinating Diverse Funding Sources

资金来源

- Dept. of Energy 美国能源部
- California Energy Commission 加州能源委员会
- University of California, Office of the President
加州大学校长办公室
- Campus matching funding 园区配套资金
- Campus/organizational in-kind 园区/机构的非现金支持
- Industrial Partners 产业合作伙伴
- Philanthropic Partners 慈善合作伙伴



China Coordinating Diverse Funding Sources

中方资金来源

- Ministry of Science and Technology 中国科技部
- Industrial matching funding 企业配套资金
- Organizational in-kind 项目参与机构的非现金支持
- Industrial Partners 产业合作伙伴



中国石油



中国国电
CHINA GUODIAN



雅砻江流域水电开发有限公司
YALONG RIVER HYDROPOWER DEVELOPMENT COMPANY, LTD.



中国石油吉林油田公司
PETROCHINA JILIN OILFIELD COMPANY

Role of Student Researchers and Workforce Development 学生研究人员的角色和劳动力发展

- We are committed to developing a new generation of researchers and experts working on the water-energy nexus 我们在能源与水的研究领域上要培养新一代的研究者和专家
- Developing an advanced workforce that understands the Water-Energy issues of concern to U.S. and China 发展能够理解中美关心的能源与水方面的问题的高端劳动力
- Doctoral students play a key role in CERC-WET Research 在CERC-WET研究中博士研究生将发挥关键作用



Important Next Step: 10 Point Plans for Each Project

后续重要工作: 项目的10要点方案

- CERC Leadership requires a 10 Point Plan for each project
CERC管理层要求各项目制定10要点方案
- 10 Point Plans are joint agreements between US-China partners
10要点方案是中美合作方之间的协定



Important Next Step: 10 Point Plans for Each Project

后续重要工作: 项目的10要点方案

- SOPOS may be a useful reference, but 10 Point Plan emphasizes partnership and joint progress

SOPOS可作为有用的依据，但10要点方案强调的是合作与协作过程

- This is the vehicle to understand your research partners
- 10要点方案便于研究伙伴相互了解



Important Next Step: 10 Point Plans for Each Project

后续重要工作: 项目的10要点方案

- Plans are dynamic and can change based on research findings, but DOE and MOST need to be kept current
具体方案可以依据研究成果进行调整（美国能源部和中国科技部进行跟踪）
- Next two slides show what these 10 points are
下一页PPT显示10个要点的具体内容



Creating a 10-Point Plan for Joint Research Projects 制定联合研究项目的10要点方案

What are these 10 points ? 10个要点是什么?

1. Research Objective

研究目标

2. Background and Technical Approach

背景及技术途径

3. Task Statements

任务说明

4. Roles and Responsibilities of Collaborating Leads, Performers, Partners

联合领导、执行者、成员间的角色和职责

5. Equipment, Resources, Sites, Facilities to be Supplied

所需设备、设施、资源、场址



Creating a 10-Point Plan for Joint Research Projects

制定联合研究项目的10要点方案

What are these 10 points ? 10个要点是什么？

6. Work Schedule, with Interim Milestones (or Decision Points)
工作计划（期中节点、决策节点）
7. Deliverables and Dates
交付成果及日期
8. Estimated Costs (or Person-Hours Equivalents) and Commitments
估算费用（或等效工作时长）及相关承诺
9. Reporting Requirements (Interims, Final)
汇报要求（中期及最终）
10. Technology Management Plan with Sub-Agreements
技术管理方案及补充协议



Defining and Measuring Collaboration

合作定义及程度

- **Collaborative Research** – related work, but no mutual dependence



联合研究—工作相关，但彼此不交集

- **Joint Research** – participation of both parties is integral to achieve the objectives



合作研究—参与双方合作完成目标

- These terms are reflected in 10-point plan

以上词汇在10要点方案中有表述



Defining and Measuring Collaboration

合作定义及程度

Indicators of Partnership 合作形式

- Short visits
短期访问
- Exchange – time at partner institution, host researchers (each visit longer than 6-weeks, 2-3 visits per Topic Area, per year)
主要研究人员交换访问（6周时长，每年每个主题2~3次）
- Joint publications, eventually joint patents
合作发表研究成果，最终合作申请专利



Intellectual Property 知识产权

- Modeled on Existing CERC Protocol

依据现有CERC协议

- Technology Management Plan – Between US and China Teams

中美团队间的技术管理方案

- IP Plan – all campus SPOs have approved, including SEI and LBNL

IP方案—所有园区经SPO批准，包括SEI和LBNL



Intellectual Property 知识产权

- Industrial Partner Agreement – Individual Agreement between CERC-WET and industry is standardized

工业合作协议—CERC-WET和工厂间的工业合作协议，均有相同的模板依据

- CERC has prepared an IP guide for addressing IP and technology transfer

CERC提供IP指南处理IP和技术的转让

http://www.us-china-cerc.org/Intellectual_Property.html



CERC-WET Industrial Partnerships

CERC-WET 产业合作

Research Partnerships 研究合作

- Business, industrial, and non-governmental entities collaborate with research teams

商业、工业、非政府实体合作研究

Access, Input, and Insight 对接、输入、了解

- Can inform new policies/initiatives, stimulating the market penetration of new water and energy technologies

发布新政策、创新成果、对新型能源和水资源利用技术的市场评估

- Direct access top-tier US researchers and Chinese research and policy institutes and companies

与中美顶级的研究人员、研究机构、政策机构、公司进行对接



CERC-WET Industrial Partnerships

CERC-WET 产业合作

- Gain access to research test-beds at research consortium sites
与研究同盟所在地的实验平台进行对接
- Early insight into research pipeline and outcomes
先期了解研究路径及成果
- Market Development and Special IP Protections
市场发展和特别知识产权保护
- Better ability to expose new technologies to large markets in China and the US
在中美广大市场发布宣传新技术的优势
- Enhanced IP protection and assistance in China-side licensing agreements
加强知识产权保护，帮助获得中方许可协议



CERC-WET: A Second Home for Research in California

You are always welcome here. We look forward to hosting your team for integrated, collaborative, and successful research projects.



欢迎你们。我们希望能够接待您的研究团队共同开展整合的、协作的、成功的研究项目。

