



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

U.S. - China CERC Steering Committee Meeting

Overview by U.S. & China CERC Directors

Dr. Robert C. Marlay

U.S. Director

U.S.-China Clean Energy Research Center

Policy and International Affairs

U.S. Department of Energy

Counselor LIU Zhiming

China Director

U.S.-China Clean Energy Research Center

International Cooperation

Ministry of Science and Technology

Washington, DC

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U.S.-China Clean Energy Initiatives



President Barack Obama and President Hu Jintao

November 2009

Seven Joint Clean Energy Initiatives (2009)

- Electric Vehicles Initiative
- Energy Efficiency Action Plan
- Renewable Energy Partnership
- 21st Century Coal
- Shale Gas Resource Initiative
- Energy Cooperation Program
- U.S.-China Clean Energy Research Center



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CERC's New Model for Enhanced Collaboration

Cooperation (Traditional)

- Work Plans Coordinated, but Separate
- Independent Work on Similar Projects
- Interactions Characterized by Research Visits, Personnel and Student Exchanges
- R&D Focuses on Institutional Strengths
- Relationships Collegial
- R&D Results Shared Externally
- Benefits Mainly Academic. Transfer of Knowledge via Technical Papers & Reports
- No guaranteed IP Rights in Other's Territory. IP Provisions Not Flexible
- Few IP Advantages for R&D Partners

Collaboration (New) *

- Work Plans Developed Jointly
- Work Together on Same Projects
- Research Characterized by Division of Labor Among Participants on Joint Tasks
- R&D Exploits Complementarities
- Relationships Interdependent
- R&D Results Can Arise Jointly
- Benefits are Embedded among Partners and Extended by Interests in Commercialization
- Guarantees a Right to IP in Other's Territory. IP Terms & Conditions May be Negotiated
- Potentially More Attractive IP Platform



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CERC's Five-Year Funding Plan

Planned CERC Awards (Over 5 Years)

| Technology Area | U.S. | | China | Total Project Funding |
|------------------|---------|-----------|-----------------|-----------------------|
| | DOE | Partners | MOST & Partners | |
| CERC-ACTC | \$12.5M | ≥ \$12.5M | \$25.0M | \$50.0M |
| CERC-CVC | \$12.5M | ≥ \$12.5M | \$25.0M | \$50.0M |
| CERC-BEE | \$12.5M | ≥ \$12.5M | \$25.0M | \$50.0M |
| Planned | | | | \$150.0M |

Note: \$ = U.S. Dollars
M = Millions



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Summary of Research Activities

| CERC Technical Track | Joint Work Plan Research Areas | Number of Research Activities | Number of Joint Research Activities | Present Extent of Joint Work | Goal for Joint Work |
|-------------------------------------|--------------------------------|-------------------------------|-------------------------------------|------------------------------|---------------------|
| Advanced Coal Technology Consortium | 9 | 38 | 27 | 71% | 100% |
| Clean Vehicles Consortium | 6 | 33 | 18 | 55% | 100% |
| Building Energy Efficiency | 6 | 17 | 14 | 82% | 100% |
| Summary | 21 | 88 | 59 | ~ 67% | 100% |



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Researchers Supported by CERC

| | US | China | Total |
|--|------------|------------|-------------|
| Advanced Coal Technology Consortium | 40 | 200 | 240 |
| Clean Vehicles Consortium | 127 | 320 | 447 |
| Building Energy Efficiency | 79 | 320 | 399 |
| Total | 246 | 840 | 1086 |



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CERC Partners

| Technology Area | U.S. | | China | | Totals |
|------------------|------|----------|--------|----------|--------|
| | Lead | Partners | Lead | Partners | |
| CERC-ACTC | WVU | 10 | HUST | 16 | 26 |
| CERC-CVC | UM | 15 | THU | 19 | 34 |
| CERC-BEE | LBNL | 15 | MOHURD | 37 | 52 |
| Totals | | 40 | | 72 | 112 |



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Intellectual Property

- Innovative Bi-Lateral Approach to IP Enabled by CERC Protocol & Annex
- Technology Management Plans (TMPs)
 - Strengthen IP Protections
 - Enable Robust Research Agenda
 - Encourage Sharing the Best of IP
 - Supports Fair Resolution of Disputes
- Successful IP Conference, Hainan, March 2012
- Follow-Up Conference – Palo Alto, Feb 2013



Two governments sign endorsement letters supporting the jointly agreed upon & signed Technology Management Plans *

Observers:

Secretary of Energy Steven Chu
Minister of Science & Technology WAN Gang
Vice Minister QIU Baoxing , MOHURD

Signatories:

Assistant Secretary David B. Sandalow, DOE
Deputy Director General MA Linying, MOST

Country Directors of CERC:

Dr. Robert C. Marlay (for U.S.)
Counselor LIU Zhiming (for China, Not Shown)



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Independent Evaluations of CERC

- Four (4) independent evaluations of CERC in 2012 found as follows.
- The domestic and international context for CERC has changed since its inception in 2009, which has increased CERC's positive and strategic importance.
 - CERC is a milestone initiative for the development of scientific and technological cooperation between the U.S. and China.
 - CERC is a pragmatic, win-win clean energy collaboration that deals with the global challenges posed by climate change.
 - CERC enables a new kind of S&T relationship because progress under CERC demands mutual trust, understanding, friendship, and agreement on IP rights.
- Each country has strong R&D capacity in the CERC research areas.
- Each side has its own comparative advantages and CERC exploits complementarities.
- Chinese and U.S. CERC participants are qualified for high-level research collaboration.
- CERC established a governance structure that includes formal leadership and oversight, which helps facilitate collaborative work and R&D outcomes.
- The Technology Management Plans, with government endorsements, are a groundbreaking framework for bilateral S&T collaboration, a vital instrument for promoting innovation and commercialization of results, and provide the necessary structure for IPR dispute settlement.



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Independent Evaluations of CERC

Other Findings and Areas Needing Attention:

- Too many small, scattered, or rebranded projects;
- Too many projects lacking partners from the U.S.;
- Despite many partners, less engagement by industry on China-side;
- Many projects appearing to be mostly China-centric;
- Some internal management issues need attention in both countries;
- Uncertainty about Chinese funding, timing and project approval processes.

Steps Taken:

- Deliberate joint R&D planning processes form more strategic portfolios;
- New selection criteria prohibit CERC projects without joint partners;
- New or renewed projects must exhibit strong benefits for both countries;
- Projects must evidence participation by businesses in both countries;
- Research must be focused on technology and innovation with potential for IP;
- U.S. has strengthened its operational management at CERC-leading institutions.



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Secretariat Encourages New Partners to Join CERC

- New Partners Are Encouraged to Join CERCs
- Prospective New Partner Must:
 - Support the Mission of CERC
 - Add Value to CERC Capacities and Work Programs
 - Support Projects that Meet CERC Criteria
 - Agree to be Subject to Rights & Obligations of Existing Partners
 - Agree to be Subject to Technology Management Plan (TMP)
 - Apply to Respective Country's CERC Director
- CERC Director:
 - Consults with Existing Business Partners
 - Consults with Other-Country CERC Director
 - Recommends Favorable Consideration to CERC Secretariat
- CERC Secretariat:
 - Approves/Disapproves



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Meeting Agenda

- 🌐 Three Technical Discussions
 - Advanced Coal Technology
 - Clean Vehicles
 - Buildings Energy Efficiency
- 🌐 Update on CERC Intellectual Property
- 🌐 Partners Meeting & General Discussion
- 🌐 Closing Remarks
- 🌐 Signing Ceremony
 - Joint Procedure for Adding New Partners



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CERC LOGO



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