

Carbon Capture and Sequestration Leadership Forum

September 21 2011

WORLD BANK CAPACITY BUILDING CARBON CAPTURE AND STORAGE TRUST FUND: STATUS AND PROGRAM ACTIVITIES



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CSLF POLICY GROUP MEETING

BEIJING

SEPTEMBER 21 2011

CCS TF
resources

- **Established in December 2009**
- **Total contributions to the Trust Fund are \$11 million:**
 - **Government of Norway – \$9 million**
 - **Global CCS Institute – \$2 million.**



**Main objectives
of the CCS TF**

- **Main objectives guiding its work at the international, regional and national levels:**
- To support strengthening capacity and knowledge building to create opportunities for developing countries to explore CCS potential
- To facilitate inclusion of CCS options into developing country low-carbon growth strategies and policies
- **Work is done in co-operation with leading international and bilateral initiatives (Global CCS Institute, Carbon Sequestration Leadership Forum, IEA Programs and others)**



**CCS TF
Work
Program**

- ▶ ▶ ▶ ▶ ▶
- **The work program consists of the following two components:**
 - **Country-level component focusing on nine country- or project-specific activities (\$6.9m)**
 - **Analytical component:**
 - **Studies to address issues at the strategic level of importance for all developing countries and CCS related inter-regional issues**



Country Programs: areas for capacity building for country-level dialogue





□ **Projects include:**

- **Assessments of geological storage**
- **Training and workshops**
- **Assessments of applicability of capture technologies**

Country/region	Amount allocated (US \$m)
Botswana	1.4
Republic of South Africa	1.1
China	1.8
Kosovo	0.4
Indonesia	0.85
India	0.5
Egypt	0.3
Jordan	0.15
Maghreb	0.4
TOTAL	6.9



WB TF Analytical Component

Carbon Capture and Storage in Developing Countries: a Perspective on Barriers to Deployment:

<http://go.worldbank.org/MJIXOTRABO>

ENERGY AND MINING SECTOR BOARD DISCUSSION PAPER

PAPER NO. 25

JUNE 2011

Carbon Capture and Storage in Developing Countries: a Perspective on Barriers to Deployment

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THE WORLD BANK
GROUP



The Energy and
Mining Sector Board



September 21 2011

Carbon Capture and Storage in Developing Countries: a Perspective on Barriers to Deployment

	Work program element	Location and scale
1	Review of Regulatory and Institutional Frameworks on CCS in the Southern Africa and Balkan regions	Regional, sector scale
2	Techo-economic assessment of CCS deployment in power systems in the Southern Africa and Balkan regions	Regional, sector scale
3	Assessment of climate finance sources to accelerate CCS deployment in developing countries	Global, sector scale
4	Financing model for CCS projects	Project scale



WB TF Analytical Component

INDUSTRIAL CCS IN DEVELOPING COUNTRIES

Match
industrial
CCS
potential
with
regional
storage
potential

Focus on
particular
regions –
e.g. Middle
East - gas
production
&
processing;
China –
cement and
steel

An analysis
of costs
and
impacts of
CCS
industrial
installations
in case
study
regions

**Policies to
encourage
early
projects in
industry**



PROGRAM IN CHINA: CHINA POWER INVESTMENT CORPORATION

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Overview of China Power Investment Corporation

- Established in 2002, One of the big five generation companies in China
- Main Business (by end of 2010)
 - ▣ Power Generation: 70.7 GW
 - ▣ Coal Production: 54.1 million tonnes
 - ▣ Others: Aluminum production 1.71 Mtons (2nd in China)
 - ▣ Has form a coal-electricity-aluminum-railway-port industry chain, with electricity and coal as its core business
- CPI has a total Fixed Assets of US\$ 68 billion. It owns:
 - ▣ Power plants in 28 provinces
 - ▣ 5 listed companies in China
 - ▣ Large coal mines

Power Plants Owned by CPI (2010)

□ ~30%: Hydropower and Wind Power

□ ~70%: Coal and Nuclear Power

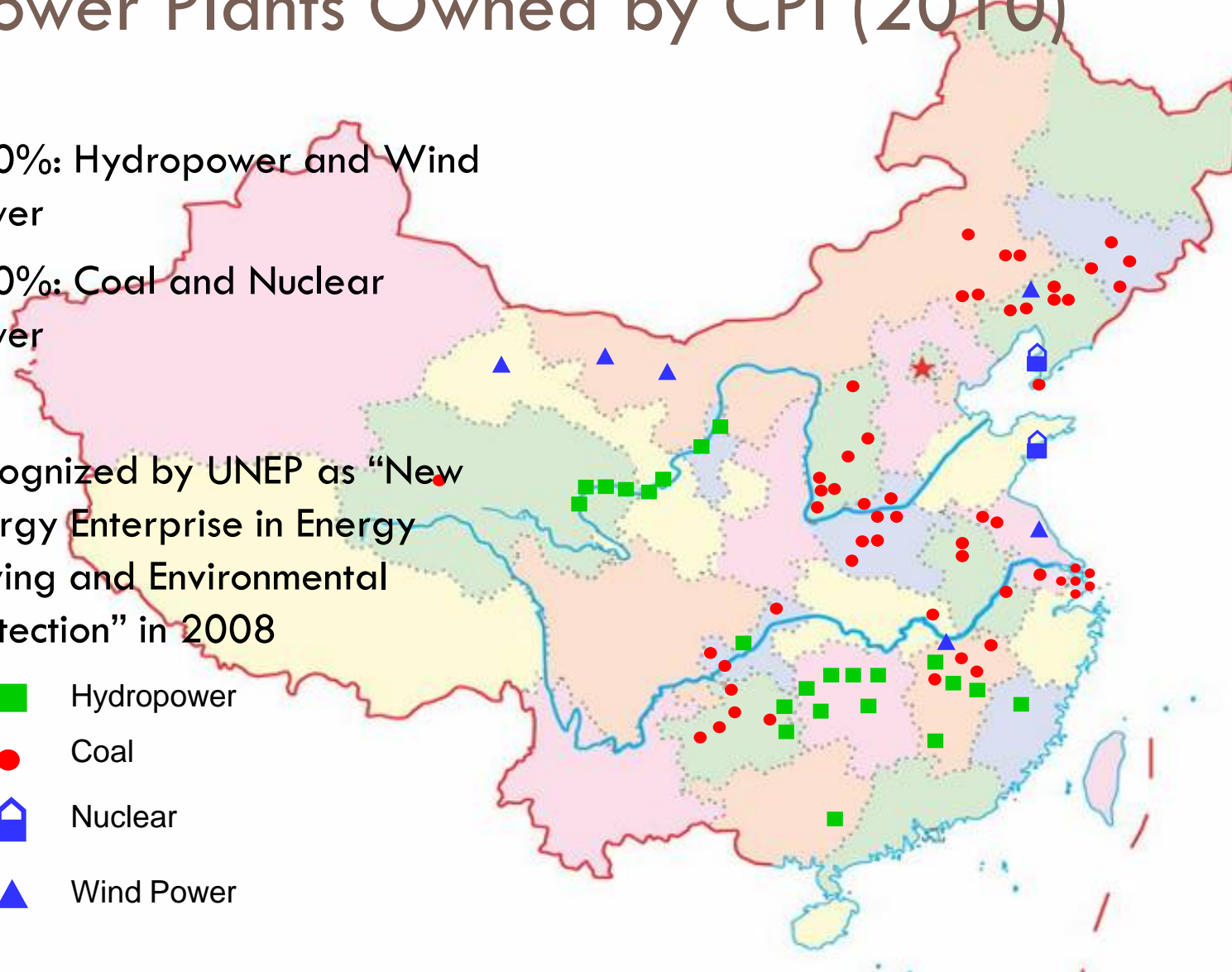
□ Recognized by UNEP as “New Energy Enterprise in Energy Saving and Environmental Protection” in 2008

■ Hydropower

● Coal

■ Nuclear

▲ Wind Power



Overview of China Power Investment Corporation

- CPI commits to develop itself as a low-carbon and green generation company
 - 50% clean energy by 2020, though its total installed capacity will be doubled from 70 GW in 2010 to 140 GW in 2020
 - Coal Consumption rate decreases from current 332 gce/kWh (2010) to 315 gce/kWh (2020)
 - Initiatives in IGCC/CCS/CCUS

CPI's Initiatives in CCS/CCUS

- Post-Combustion Carbon Capture in Chongqing Hechuan Power Plant
 - 10,000 tons/year CO₂ captured
 - Commissioned in January 2010 (1st 10,000 tons level in China)
 - Next Steps:
 - Be expanded to 150,000 tons/year
 - Integrated Platform for CCS R&D
 - Pilot Carbon Utilization for Degradable Plastics

CPI's Initiatives in CCS/CCUS

- R&D in Pre-Combustion Carbon Capture
 - ▣ Potential IGCC Projects: Shanghai, Hebei
 - ▣ Government approval is to be secured
 - ▣ Next Steps:
 - Full cycle pre-combustion CCUS R&D and test
- Other On-going CCS Work
 - Researches on CCS in Coal Chemical Industry
 - National and International Cooperation

THANK YOU
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