ESCO Development in China

China-America EE Forum

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Contents

1. Fast development
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Officially started in 1998;

It is a key international cooperation project in the field of energy conservation by Chinese government and World Bank/GEF;

The main purpose of the project is to promote Energy Performance Contracting (EPC) mechanism and develop ESCO industry in China
Project progress-1st phase

Phase I

3 pilot ESCOs:
Beijing
Liaoning
Shandong

EC information Dissemination Center(ECIDC)
Project progress - 2nd phase

EMCA

Technical support

New and Potential ESCOs

Phase II

I& G

Financial support
EMCA---provide practical technical assistance and services to emerging ESCOs and potential ESCOs and to foster their rapid growth.
I&G---ESCOs Loan Guarantee Program, offer effective financing assistance to new ESCOs by using limited amount of guarantee fund to provide loan guarantee for ESCOs.
Project achievement-1st phase

- 475 EE projects
- EE project investment: $170 million
- Energy Conservation Capacity: 1.51 million tce/year
- CO2 emission reduction capacity: 1.45 million tc/year
Project achievement-1st phase

EC Information Dissemination Center

- The Center
  - 73 EC case studies
  - 14 EC Tec. guidelines
  - 27 EC case studies
  - 14 EC Tec. guidelines
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- Number of EMCA members over the years:
  - 2003: 59
  - 2004: 89
  - 2005: 158
  - 2006: 212
  - 2007: 302
  - 2008: 389
  - 2009: 450
  - 2010: 560

The graph shows a steady increase in the number of EMCA members from 2003 to 2010.
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- Revenue (B):
  - 2003: 0.27
  - 2004: 0.52
  - 2005: 0.72
  - 2006: 1.27
  - 2007: 3.33
  - 2008: 6.42
  - 2009: 9.03
  - 2010: 12.8

- Years: 2003 to 2010
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Energy saving and CO2 Emission reduction by EPC projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Saving</th>
<th>CO2 Emission Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>55.99</td>
<td>0</td>
</tr>
<tr>
<td>2004</td>
<td>72.24</td>
<td>500</td>
</tr>
<tr>
<td>2005</td>
<td>86.18</td>
<td>1000</td>
</tr>
<tr>
<td>2006</td>
<td>124.47</td>
<td>1500</td>
</tr>
<tr>
<td>2007</td>
<td>319.51</td>
<td>2000</td>
</tr>
<tr>
<td>2008</td>
<td>569.27</td>
<td>2500</td>
</tr>
<tr>
<td>2009</td>
<td>952.78</td>
<td>3000</td>
</tr>
</tbody>
</table>

Number of Projects:
- 2003: 55.99
- 2004: 72.24
- 2005: 86.18
- 2006: 124.47
- 2007: 319.51
- 2008: 569.27
- 2009: 952.78

Comparison with 2003 (Base Year):
- 2003: 0
- 2004: 55.99
- 2005: 72.24
- 2006: 86.18
- 2007: 124.47
- 2008: 319.51
- 2009: 569.27

Growth Rate:
- 2004 to 2005: 22.24%
- 2005 to 2006: 24.18%
- 2006 to 2007: 52.47%
- 2007 to 2008: 89.27%
- 2008 to 2009: 164.85%

Note: The diagram shows the increase in energy saving and CO2 emission reduction from 2003 to 2009.
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ESCO --- Energy Service Company

- EE Analysis
- Project design
- Financing/investment
- Equipment procurement
- Installation/construction
- M&V of energy savings
- Personnel training
- Operation and Management
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types of EPC contract in China

- Shared Savings
- Guaranteed Energy Savings
- Outsourcing of energy management
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Development trend:
(1) shared savings: keeps as main stream
(2) energy saving guarantee: increasing
(3) outsourcing energy management: HUSH market
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Market distribution:
(1) Shared savings: buildings and industries
(2) Energy saving guarantee: industries
(3) Outsourcing energy management: commercial buildings such as hospital, hotel and market etc.
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- **Some characteristics:**
  - Shared savings: average 4.5+y, 20y max
  - Outsourcing energy management: average 10y, 30y max.
  - Combination of 3 types
  - Equipment leasing & project financing: started
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- 3 types of ESCOs in China
  - Technology oriented:
  - Market oriented
  - Capital oriented
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Technology oriented ESCO:

- Based on specific technologies (patent) to gain the core competence
- Supported by financial institutions, grows very quickly
- Very specific and clear market segment, risk controlled
- Keep on innovation and cooperation with financial institutions carefully
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Market oriented ESCO:
- Good relation with energy consumers
- Better understanding about market demand for technology
- Solution provider
- Selection of best practice technologies, investors and risk control
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- Capital oriented ESCO
  - Abundant investment is the key advantages
  - Led by market demand
  - Flexible in technology and market
  - Selection of technology and operation of project esp. risk control are critical
EMCA’s Launching Ceremony:
April, 3rd, 2004, Beijing
Mission of EMCA

Our mission:
To promote the sustainable development ESCO industry;
To support the fast and healthy growth ESCOs
Our tasks:

- Promote and disseminate EPC mechanism in China
- Work closely with government to disseminate energy conservation policy and regulations
- Conduct trainings and marketing activities, enhance communication and cooperation
- Set up EMCA information platform and display key features of ESCO industry development to the whole society
- Conduct policy study to build up friendly external environment for ESCO industry
- Advocate self-discipline of the industry and achieve the sustainable development
EMCA function & activities

- Investigations
- Training
- Policy studies
- Marketing
- Info.development
- Technical assistance
Our Main Activities

Dissemination and Promotion
EMCA function & activities

Training

100+ Training courses
10000+ people trained

Basic training  Senior training  Thematic training  Other
EMCA function & activities

Marketing

Industry:
- Iron & Steel
- Cement
- Textile

Buildings:
- Hospitals
- Hotels
- Commercial buildings

Transports:
- Petrol stations
EMCA function & activities

Exhibition
EMCA function & activities

- Technical assistance
- Financial mgt.
- Project mgt.
- Risk mgt.
- Contract mgt.
- EPC
- etc.
EMCA function & activities

Technical Assistance
EMCA function & activities

International Cooperation and exchange
EMCA function & activities

1. EPC for industries - barriers and opportunities
2. EPC for public funded facilities - barriers and challenges
3. Guide to promote energy service industry

Policy studies
EMCA function & activities

Website: www.emca.cn
EMCA function & activities

- Internal Journal<ESCO IN CHINA>: 30000 copies, 65 issues, to members, government agencies, ESCOs, energy users, other stakeholders
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- Barriers:
  - Financing
  - Standard
  - Technical capacity: EA, M&V etc.
  - Policy support
  - Customer awareness and acceptance on EPC
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- **Opportunities**
  - Government set target for energy conservation
  - Enterprises: reduction of production cost
  - Great market appears
  - More investor involved: banks, investment company, fund, WB, ADB, etc.
Thank You!

www.emca.cn