



Identifying Strategies for ESCO based energy efficiency market in India

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Outline

- ICF overview
- Energy Efficiency Scenario in India
 - Opportunities & need of energy efficiency services
 - What is an energy service company (ESCO)?
- ESCO Industry in Brazil, China and US
 - Status of energy service companies
 - Financing of energy service companies
 - Enabling factors
- ESCOs in India
- Cross Country Analysis
- Recommendations



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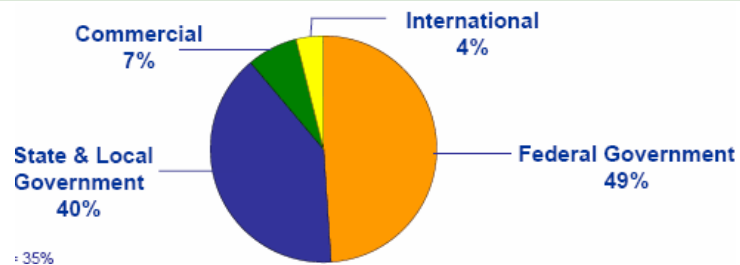


ICF Snapshot

- ❖ Advisory-led **consulting and implementation services**
- ❖ **Founded in 1969, Management buyout in 1999, and IPO in 2006**
- ❖ **Global presence** with 30 offices and headquarters in **Washington DC area**
- ❖ **Over 3,500 staff world-wide**
- ❖ **Over 350 staff** specializing on climate change issues
- ❖ **New Delhi office** opened 2005, currently has 40 staff

Clients

CYE 2009
\$ 660 - \$ 680
million



Approximate % of Revenues



ICF in India combines local expertise and international expertise

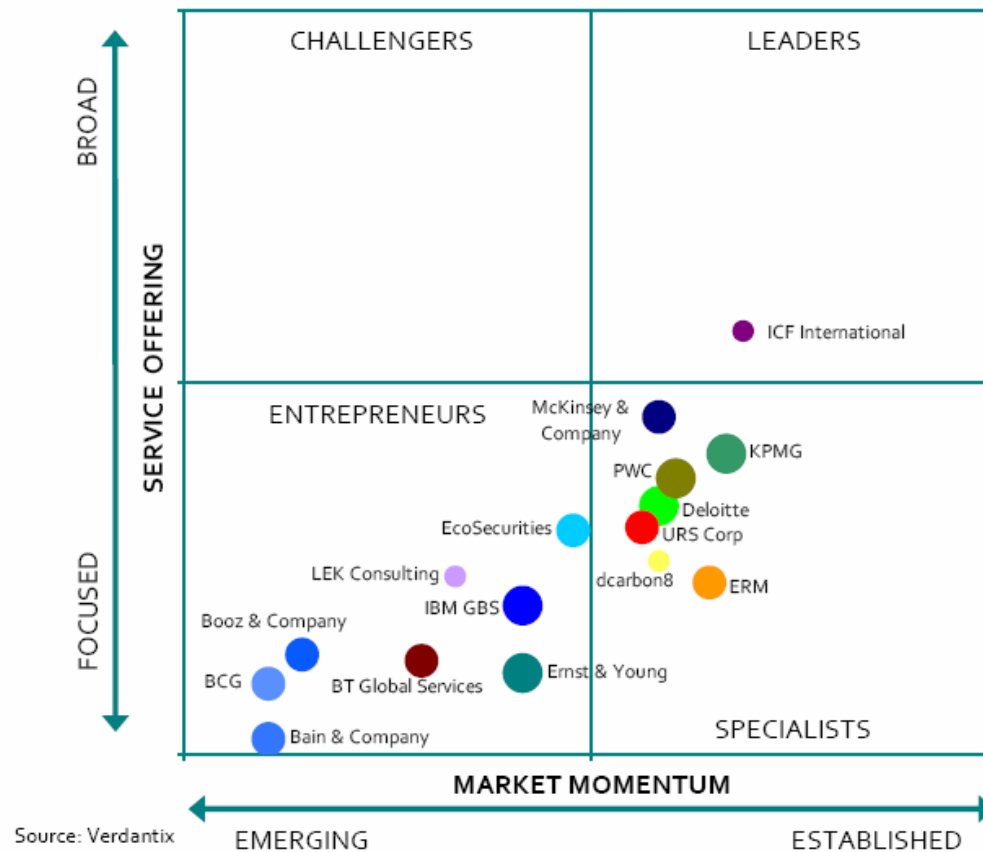
- Started operations February 2005
- Located at Connaught Place, New Delhi
- Supporting clients globally on energy and environmental issues
- Key areas of focus: energy efficiency, climate change, power and fuels,
 - Current strength: 40 professional staff



ICF is a Carbon Neutral Company



Verdantix, an independent research firm, names ICF as the leading climate change consulting firm



Key Conclusions Of The Research

- ICF leads the market
- Broader service offering than competitors
- Wider range of named customer references
- Recommended for several services

Source: Verdantix, "Green Quadrant: Climate Change Business Consulting," July 2008



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10bUS\$ Investment Potential in India in Energy Efficiency

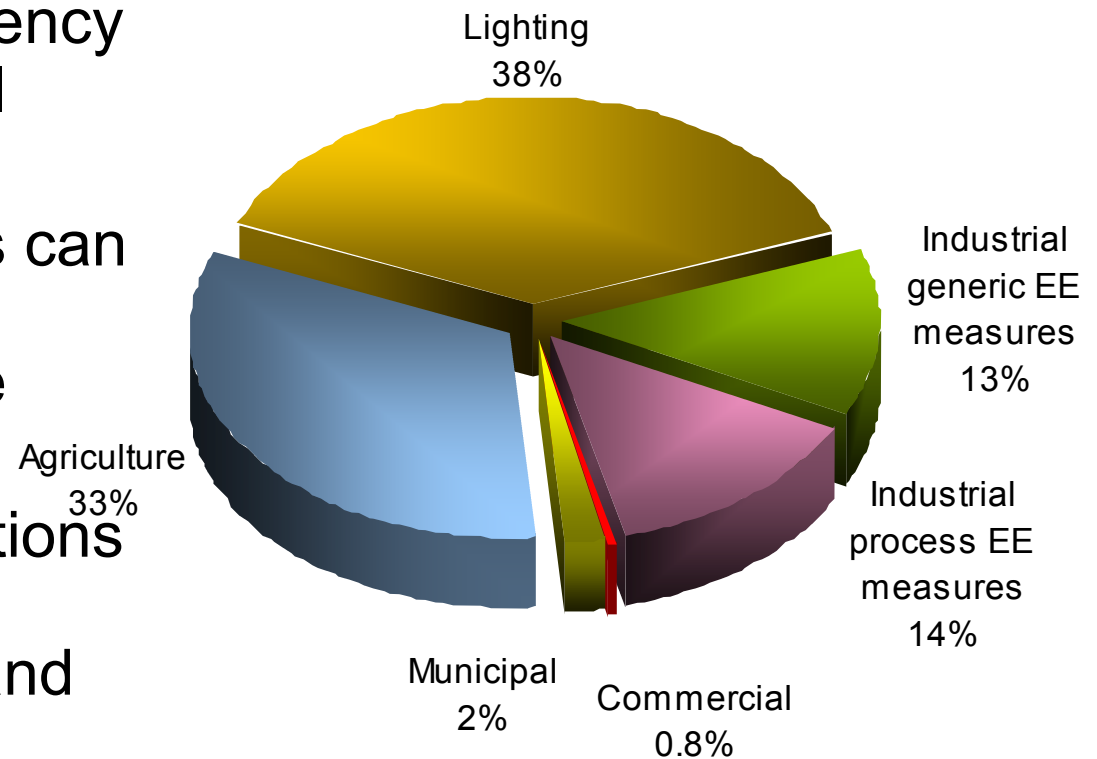
Market Type	Investment Potential	Energy Savings	Energy Savings
	INR Billions (\$ mill)	(Billion kWh)	(MW)
Industrial: generic EE measures	42.0 (\$1,050)	23.8	3,400
Industrial: process EE measures	79.0 (\$1,975)	25.2	3,600
Commercial	6.6 (\$1,647)	0.8	290
Municipal	13.0 (\$325)	3.7	1,688
Agriculture	150.0 (\$3,750)	60	
Lighting	40.0 (\$1,000)	70	
Total	\$9.77 billion	183.5	

Source: WRI Indian ESCO Survey, 2008.



Opportunities & Need of Energy Efficiency Services

- Potential of energy efficiency improvement exists in all sectors
- Large amount of savings can be achieved in lighting, Industrial and agriculture sectors
- Strong need of organizations that can provide energy efficiency technologies and services





What is an ESCO??

“An ESCO is a company that provides energy-efficiency-related and other value-added services and for which performance contracting is a core part of its energy-efficiency services business.”

Source: the Lawrence Berkeley National Laboratory (LBNL) and the National Association of Energy Service Companies (NAESCO).



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ESCO Status in Brazil

- Estimated energy efficiency market of Brazil is around US\$ 5 billion
- The market potential of energy efficiency projects was estimated around 19,000 GWh/yr (ABESCO, 2004)
- The importance of ESCOs in Brazil was better understood during the 2001-2002 mainly due to energy crises
- 72 ESCOs, actively involved in implementing energy efficiency projects
- Among all the lighting projects are the most common type however, there are also process control, motor drives and cogeneration projects



Financing of ESCOs in Brazil

- ESCOs in Brazil either finance their own projects via own capital or involve a third party for financing EE projects
- The biggest financial resource of ESCOs is the 0.5 % wire charge tax from utility companies:
- A special guarantee fund called PROESCO to provide financial guarantees for ESCOs



Key Enablers

- Early recognition of the importance of energy efficiency has triggered efforts towards ESCO development
- Governmental policies and projects facilitated the access to the energy efficiency market
- Financial guarantee facility for ESCOs (PROESCO)
 - The Brazilian National Development Bank (BNDES) shares up to 80% of the credit risk and the remaining 20% is assumed by the intermediary bank which reduces the time needed for the whole borrowing procedure.



ESCO Status in China

- The ESCO in China is often referred to as EMC, or Energy Management Company
- The first ESCO started operating in 1998 with assistance from World Bank/GEF
- There are more than 200 active players in the market
- Focus on commercial and industrial buildings projects; thrust on centralized heating/ air conditioning area



Financing of ESCOs in China

- ESCOs, being small in size, cannot bear the entire financial risk of projects
- The majority of the ESCO projects have been financed by project operators
- Lack of awareness in the Chinese banking system of financing energy efficiency projects through third party financing
- Energy cost contracting model also followed in China
 - ESCO guarantee that the customer's energy bill will be reduced
 - Energy fee are paid to the ESCO to cover management.



Enabling Factors for China ESCO Industry

- 20% reduction in China's energy intensity implies a large market potential for ESCOs to realize
- International and governmental support
- Transfer of advanced technology and know-how
- Energy performance Contracts (EPC) combined with the Clean Development Mechanism (CDM)



ESCO Status in US

- The United States is the oldest and mature ESCO market in the world
- US ESCO industry revenues was around 5.2–5.5 billion US\$ in 2008
- 63 real ESCOs offer performance contracting in US Goldman et al. (2005)
- The US National Association of Energy Service Companies (NAESCO), comprises about 100 members (NAESCO 2006)



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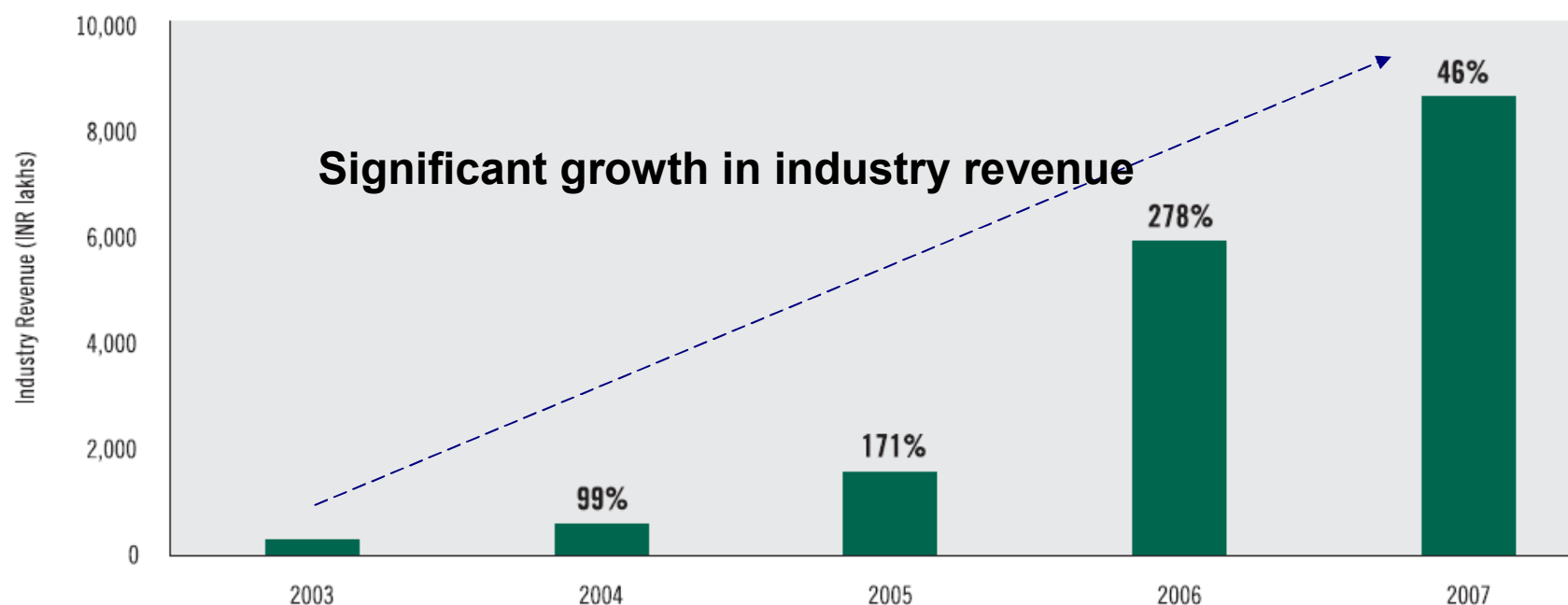


ESCO Status in India

- India's ESCO industry is relatively young
- The first three ESCOs in India were established in the early 1990s, initiated in large part by funding from the U.S. Agency for International Development (USAID).
- As per the WRI survey (2008), there are around 25 active ESCOs in India
 - majority of them are located in states like Maharashtra, Madhyapradesh and Karnataka
 - Total revenue around INR 8,640 lakhs (USD 17.7 million)
- Bureau of Energy Efficiency (BEE) has shortlisted 37 ESCOs which in turn would help State Governments/ SDAs in taking up energy efficiency improvement projects in their existing buildings/ facilities.



ESCO Industry Revenue and YoY Growth

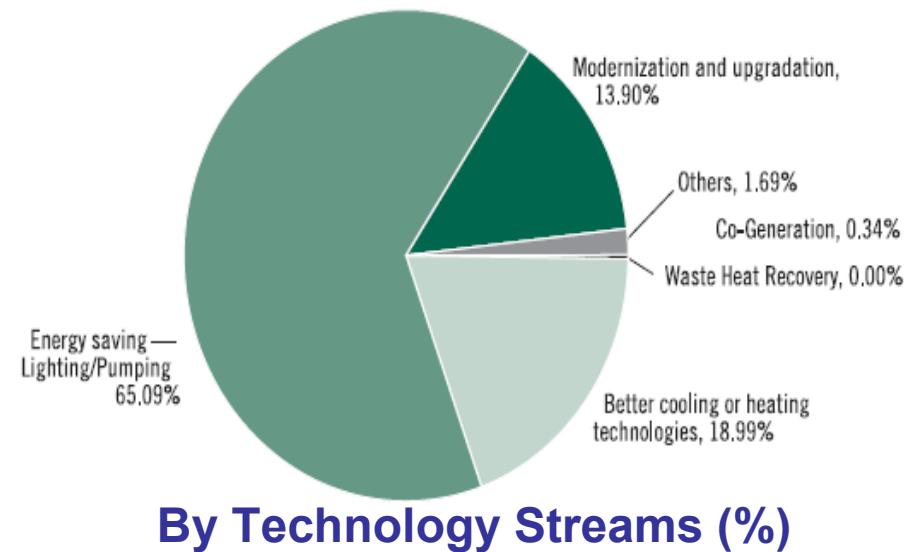
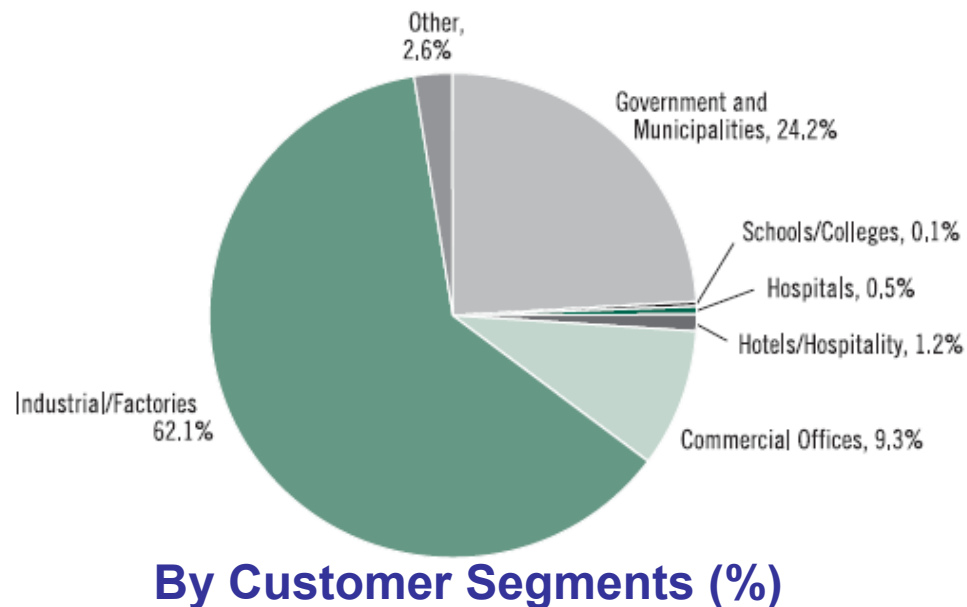


Source: WRI Indian ESCO Survey, 2008.

- From 2003 to 2007, total revenue of ESCOs grew at a compounded annual growth rate of 95.6 percent, from a low base of less than 500 lakhs (USD 1.02 million).



Percentage of Industry Revenue



- The ESCO projects are generally carried out under the guaranteed savings scheme but in a few cases the shared savings scheme is also used.

Source: WRI Indian ESCO Survey, 2008.



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Analysis of Country Statistics

Country	United States	China	Brazil	India
Revenue	USD 3.6 billion (2006)	USD 121 million (2006)	USD 280 million (2007)	USD 17.7 million (2007)
Annual growth rate	22% (2004 to 2007)	53.1% (2003 to 2006)	27% (2007 to 2008)	95.6% (2003 to 2007)
Total energy consumption units: thousand tons of oil equivalent (ktoe)	2,320,696 (2006)	1,878,744 (2006)	224,129 (2006)	565,820 (2006)
Per capita energy consumption (ktoe)	0.0076	0.0014	0.0012	0.0005
Largest customer sectors	Government	Commercial/industrial	Commercial/industrial	Industrial

Source: WRI Indian ESCO Survey, 2008.



Lessons to Learn

- The utilities in Brazil are mandated to invest 0.5% its revenues in energy efficiency projects, including demand-side projects and R&D efforts.
 - This investment amounts to around US\$ 150.5 million
 - Most of the projects are implemented by ESCOs
- Approved 100-million-reais line of credit for energy efficiency projects called PROESCO in Brazil
 - This fund generally go to ESCOs and ESCO clients
- Presence of strong lobbyist and promoter of the ESCO industry
 - NAESCO in US, China ESCO Association and ABESCO in Brazil



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Recommended Strategies

- Accreditation of ESCOs for easy access and financing
- Creation of a support fund for ESCOs for easy financing of the projects
- Formation of a national level association of ESCOs
- Government and international funding support for capacity building of ESCOs.
- Demonstration of technology expertise and major energy saving projects



Thank You!

Contact

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