



Asia ESCO Conference 2010

(Le Meridien Hotel, New Delhi)



Recent Activity of the ESCO Industry in Japan & Asian countries

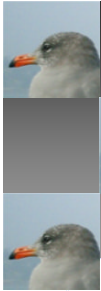
14/15 January 2010

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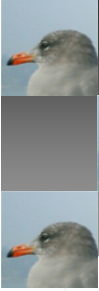




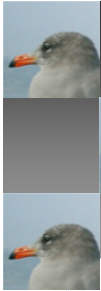
Overview of Presentation



- Definition of ESCO in Asia
- Market size of ESCO industries in Asia
- Promotion program of ESCO industry
- Conclusion



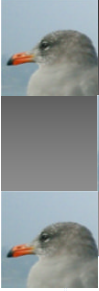
● Definition of ESCO in Asia



Definition of ESCO

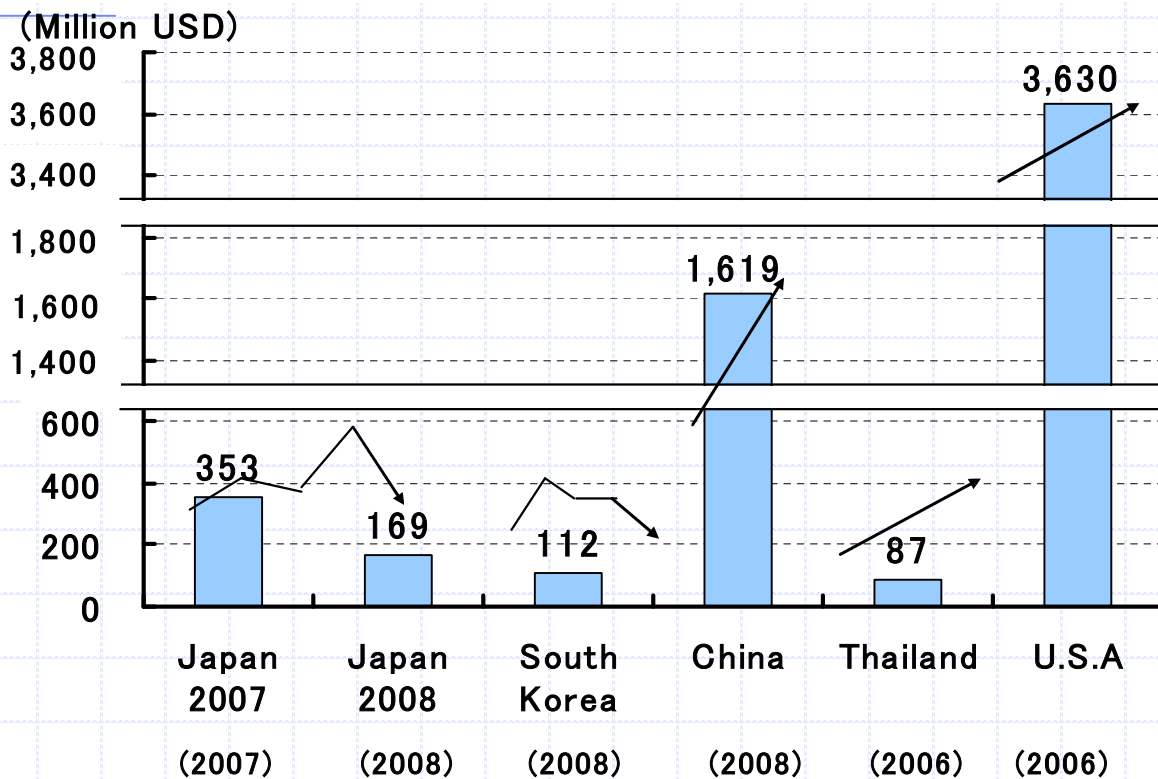


- The definition of ESCO in Asia is simple.
- ESCOs provide energy efficient retrofit projects with performance contracts that guarantee energy savings.
 - Introduction of ESCOs to Asia took place in the 1990s.
 - Almost all countries learned the ESCO concept from USA.
 - The definition of an ESCO in Asian countries is similar to the traditional ESCO concept in USA (before utility restructuring).



- **Market size of ESCO industries in Asia**

Market size of ESCO Industries in Asia



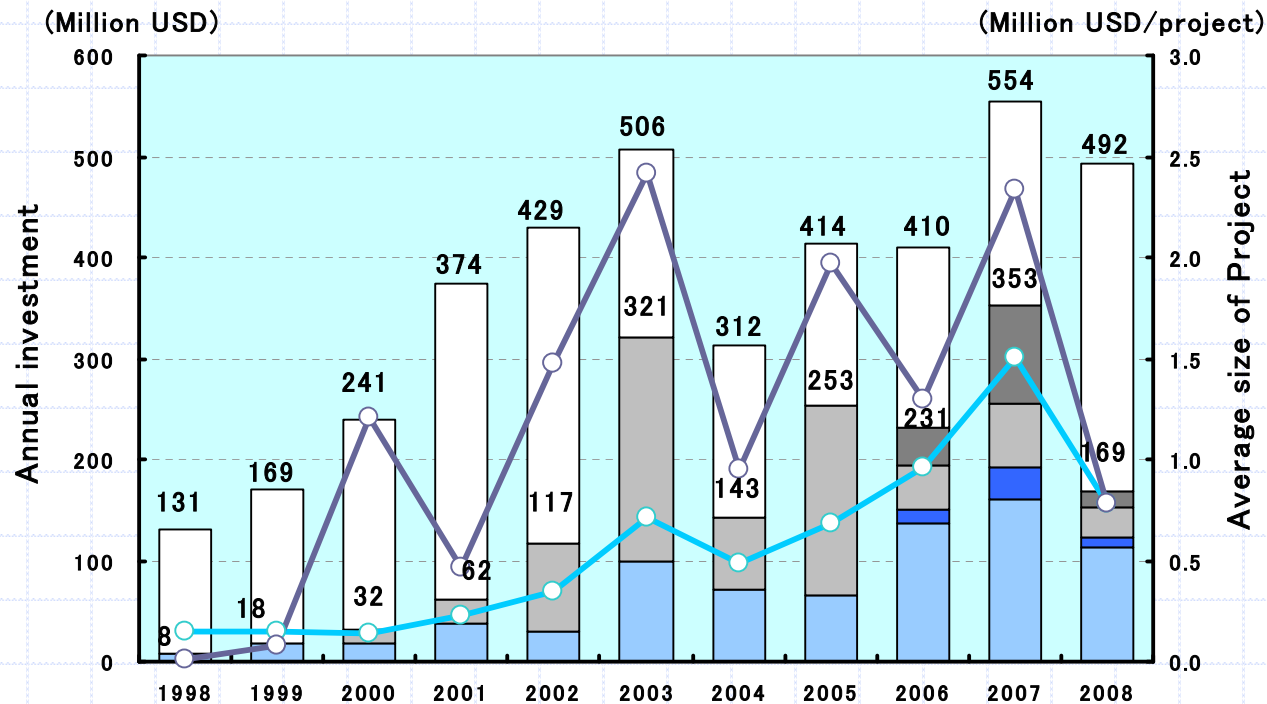
- Japan, South Korea, China and Thailand is limited performance contract based, and 69% is performance contract projects in USA.
- Growth is seven times in China by 2006, 20% annual in Thailand and USA, decreased in Japan and South Korea in recently.

Market trends of ESCO industry in Japan



Annual investment

Ave size of project



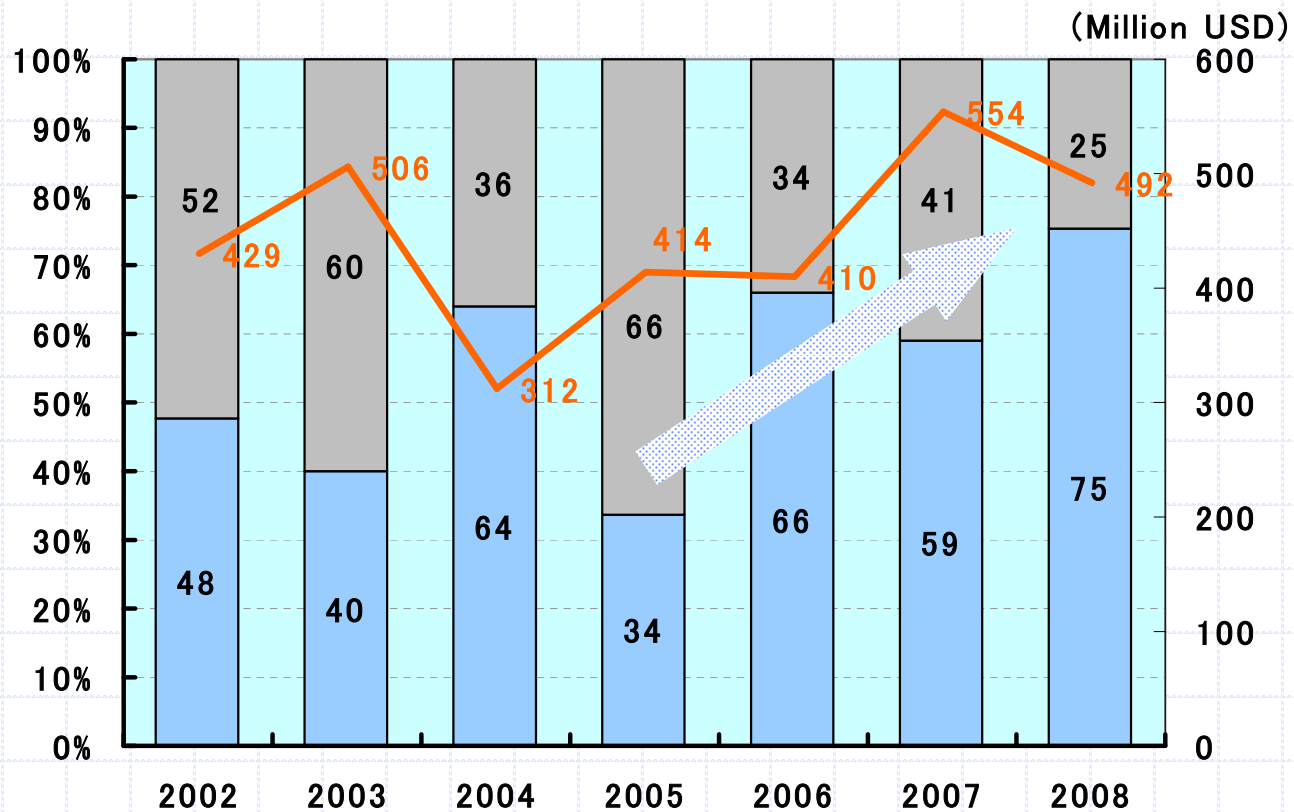
PC:Performance Contract / ESP:Energy Service Provider



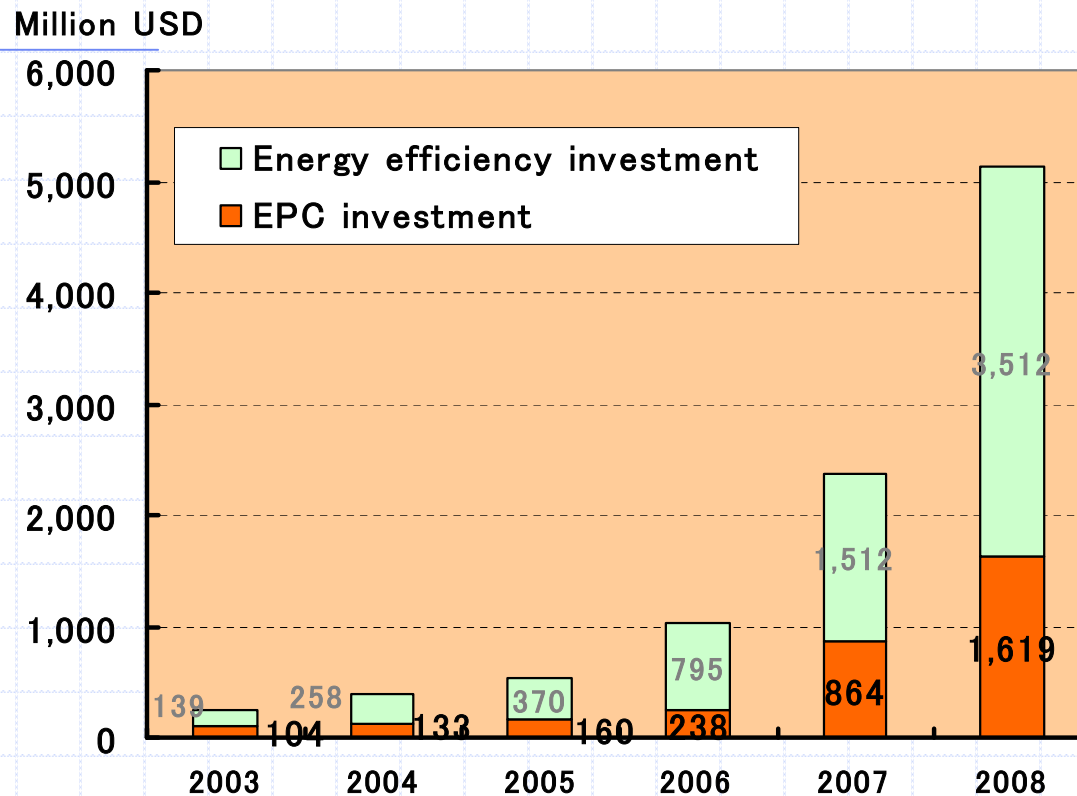
Market share by sector of EE retrofit projects in Japan



Commercial Sector Industrial Sector Total Investment



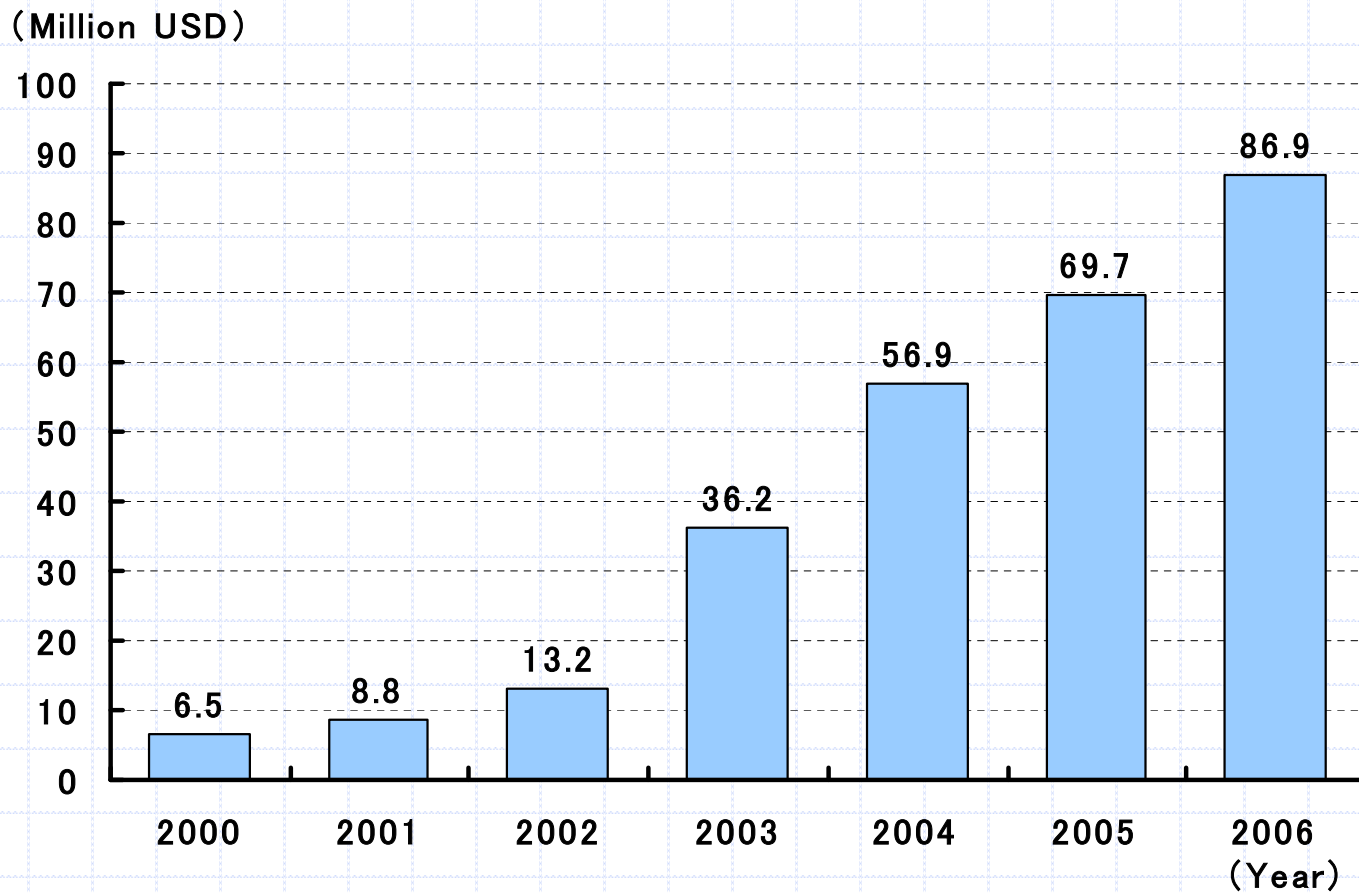
Market trends of ESCO industry in China



- Investment for EE projects with PC in 2008: 1,619 Million UDS
 - ✓ The market share in 2008: industry, building and transportation is 63.1%, 33.4% and 3.5%, but number of building projects is major
 - ✓ Energy savings in 2008: overall investment in EE as 12.4 Mtce/year, investment in EE with PC as 8.0 Mtce/year

Data source: EMCA survey, 2009

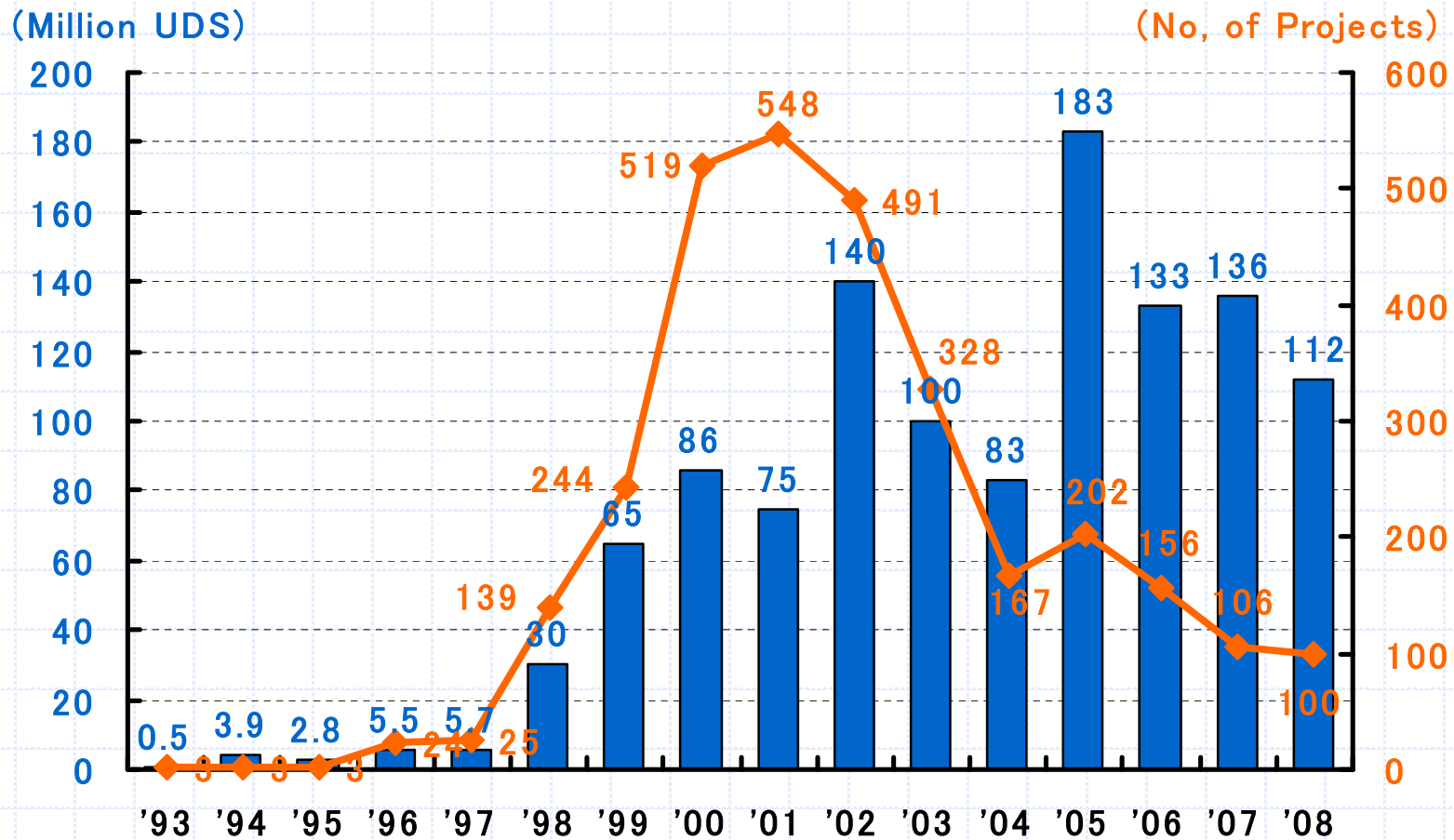
Market trends of ESCO industry in Thailand



Investment for EE projects with Performance Contract

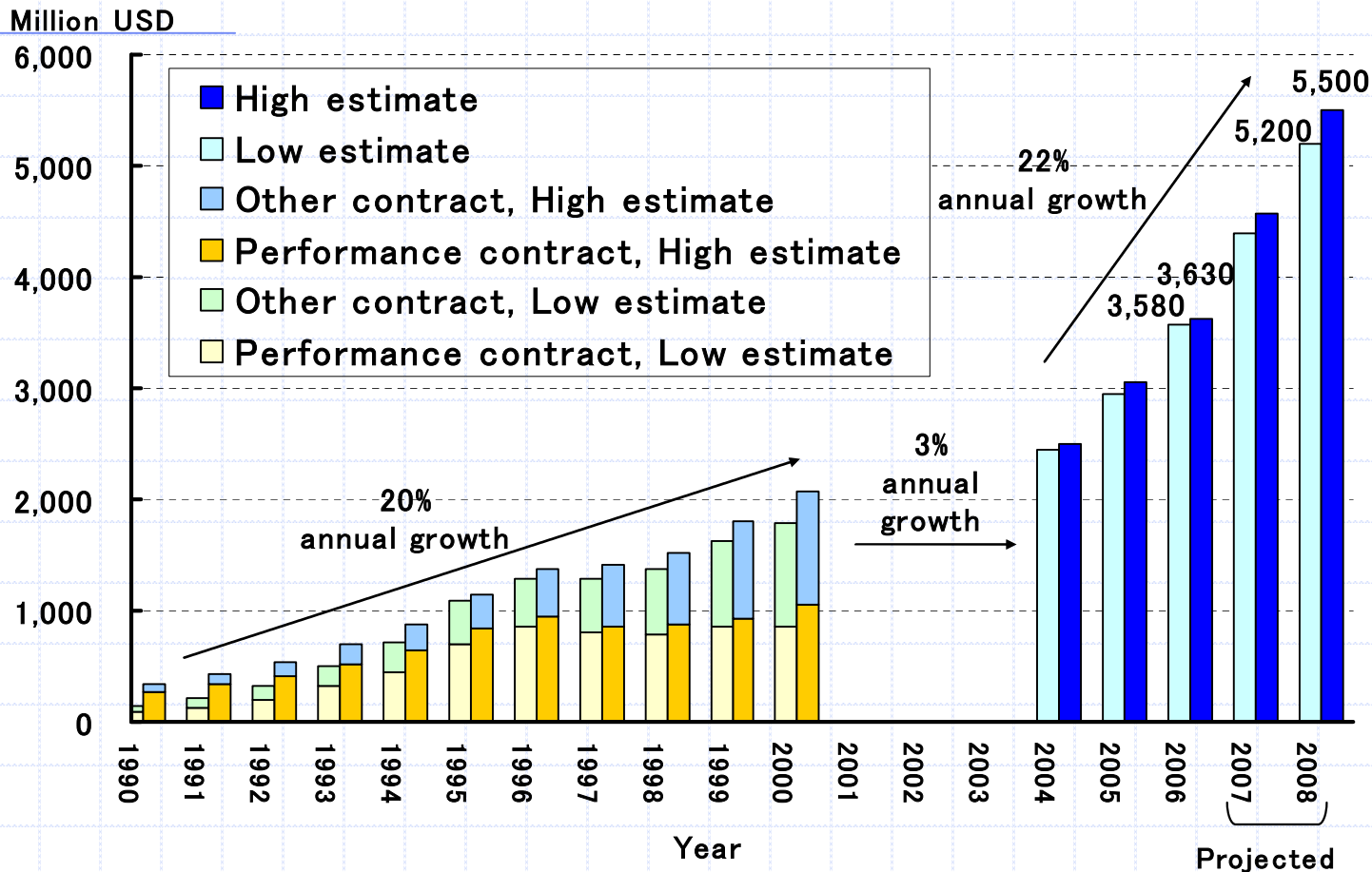


Market trends of ESCO industry in South Korea

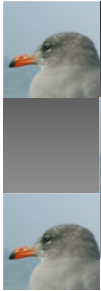


Data source: Korean Association for Energy Service Companies (2008)

Market trends of ESCO industry in U.S.



Data source: Nicole Hopper and Charles Goldman: A Survey of the U.S. ESCO Industry: Market Growth and Development from 2000 to 2006, Ernest Orlando Lawrence Berkeley National Laboratory, May 2007



- **Promotion program of ESCO industry**



Promotion program of ESCO industry (1)



<Preliminary review>

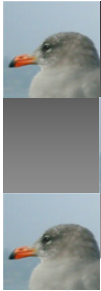
- Basic research for ESCO introduction such as FS and estimate potential market size

<Capacity building>

- Preparation of technical guidelines (M&V, standard contract, etc) and ESCO introduction manuals for customer
- Capacity building for ESCOs and financial institutes
- Survey ESCO market and analyze

<Promotion program>

- Publish successful case studies/ hold Seminar, conference and exhibition / provide information such as news letters, websites etc.
- Commendation program for excellent ESCO projects



Promotion program of ESCO industry (2)



<Establishment of project body/operation support>

- Set up of ESCO association/operation support of the association
- Support to set up ESCOs
- ESCOs accreditation program

<Development of business>

- Implementation of energy audit , pilot project and IRP/DSM programs
- Introduction of ESCO projects into governmental facilities

<Financial support>

- low interest finance, subsidies, loan guarantee programs and tax rebate



Promotion program of ESCO industry (3)



<Reinforcement of policy/ reformation of acquisition regulation>

- Reinforcement of regulations for energy conservation
- ✓ Japanese Government revised ECL in 2002, 2005 & 2008, and developing bench mark standard which set up higher target of EE level
- Develop carbon trade market
- Reform acquisition regulations to introduce ESCO in governmental facilities



Programs which had not adopted in Japan



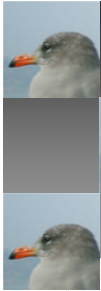
- Tax incentive
- Low interest loan
- Loan guarantee program
- Reform of the procurement system in the national government



Success factors of ESCO in Asian countries(1)



- Similar programs had been in effect in Japan, India, China and Thailand but success factors of these countries vary.
- Japanese case: active in Asia
 - government initiative, regulation for energy efficiency (ECL), and the contributions of JAESCO and leasing companies as private sector participants
- Indian case: still small market but expected high growth
 - first step: initiative by international organizations
 - now: initiatives by BEE
 - huge potential



Success factors of ESCO in Asian countries(2)



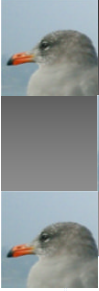
- Chinese case: most active in Asia
 - huge growth
 - initiative and intensive investment by WB/GEF to pilot ESCOs and a loan guarantee program
- Thai case: middle developed in Asia
 - government initiative, regulation for energy efficiency (ENCON Act), and financial incentives



Conclusion(1)



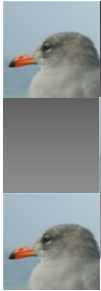
- Asian countries introduced ESCO, with reference to the US model. In this process, measures to introduce and spread ESCO have been carried out in each country.
- Market size with performance contracts of ESCO industry exist 169 million USD in Japan(2008), 1.6 billion USD in China(2008), 112 million USD in Korea(2008), 87 million USD in Thailand(2006) and 3.6 billion USD in USA(2006).
 - This data limited performance contract based in Asian countries and 69% is performance contract projects in USA. Annual growth is seven times by 2006 in China, 20% annual in Thailand and USA, decrease in Japan and Korea recently.



Conclusion(2)



- Similar ESCO promotion programs had been in effect in many Asian countries but success factors of these countries vary.
- It is important to strengthen energy efficiency policy, reform procurement systems of government, develop financial mechanisms, receive intensive investment by government or international organizations and develop an ESCO association.
- Japanese target (25% CO₂ reduction until 2020 by 1990) is very hard. It would be follow wind for ESCO market.



Conclusion(3)



- Regulation and incentive for EE will strengthen After COP15.
- Asian EE market leached turning point.
- Invest in energy efficiency will contribute future profitability and global warming countermeasure as well.

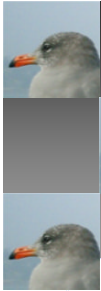
**Thank you for
Listening !!**



Idea source: Thomas Friedman "Green Revolution"



● Back ground slides

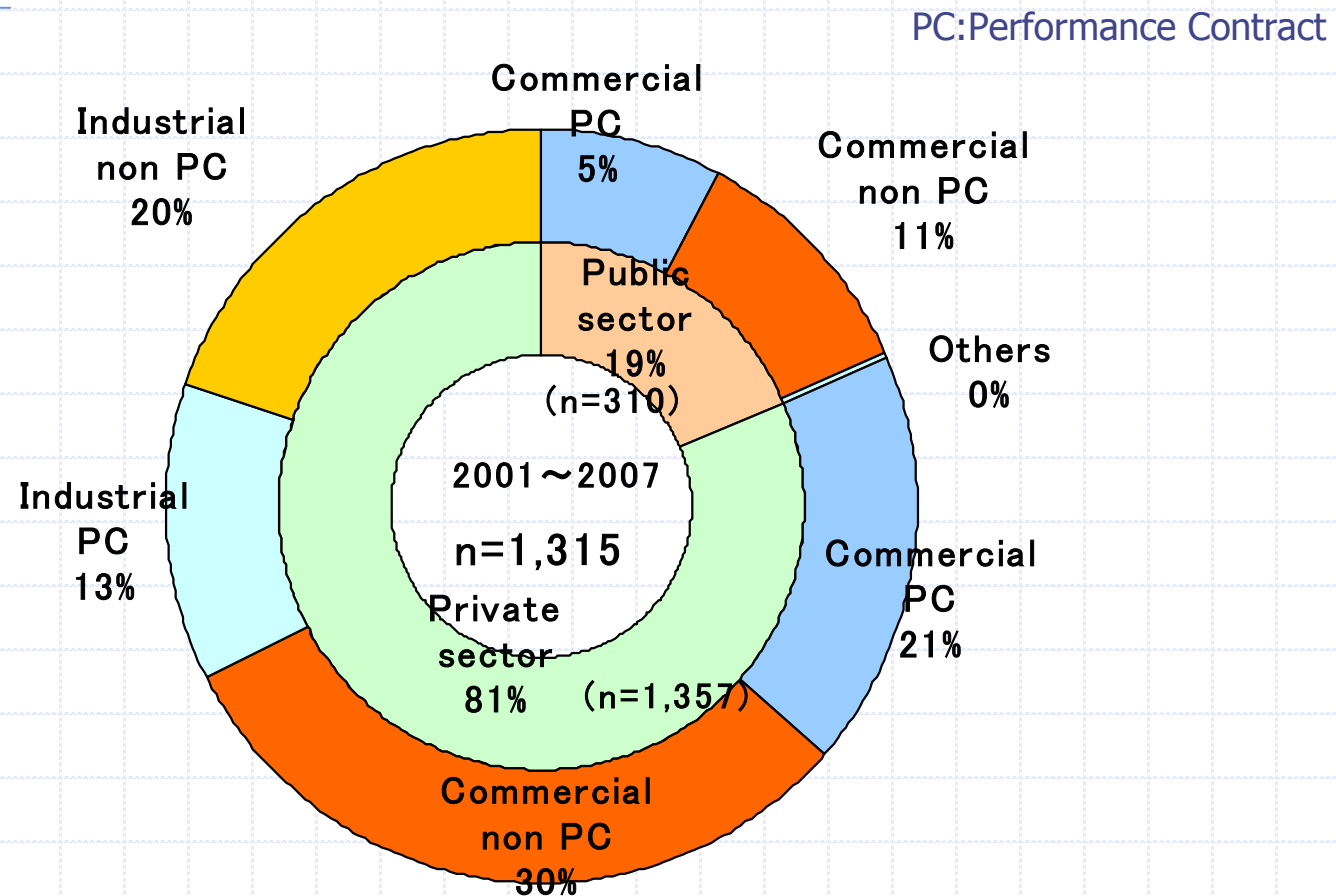


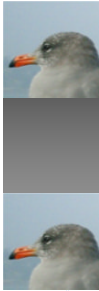
Asian EE market leached turning point



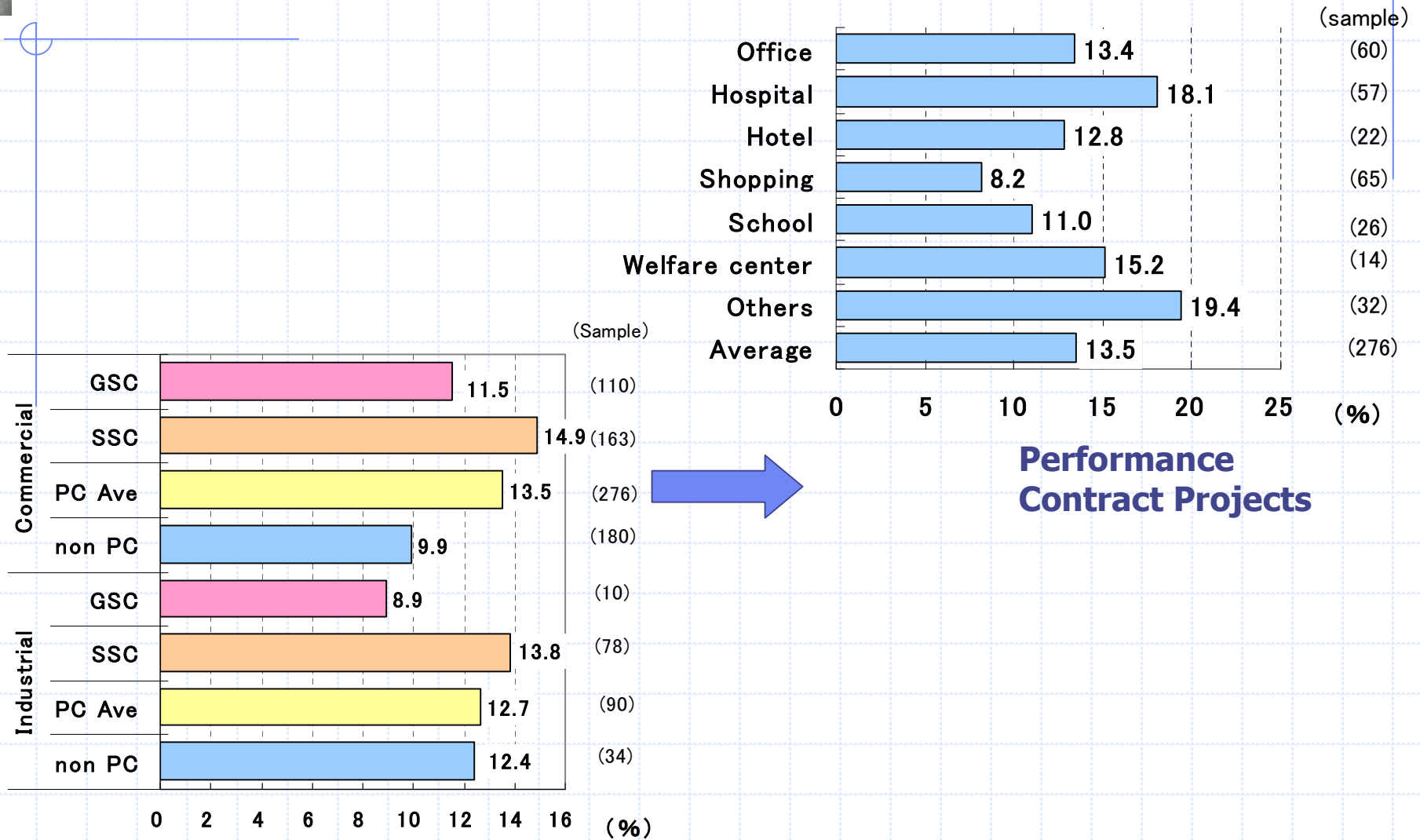
- ✧ EE market would be increase under steady economic growth condition
 - Target of EE: increase profitability
 - ✓ Bakery with long line: Focus investment to increase products
 - ✓ Bakery with no line: Focus investment to increase profitability and quality
 - It would be leached turning point in Asia
- ✧ Jump in oil price
- ✧ Strengthen EE policy and regulation
 - Set up production by investment to EE
 - Reinforcement of competitiveness and increase employment by development of EE innovation

Detail survey for ESCO activities from 2001 to 2007 year

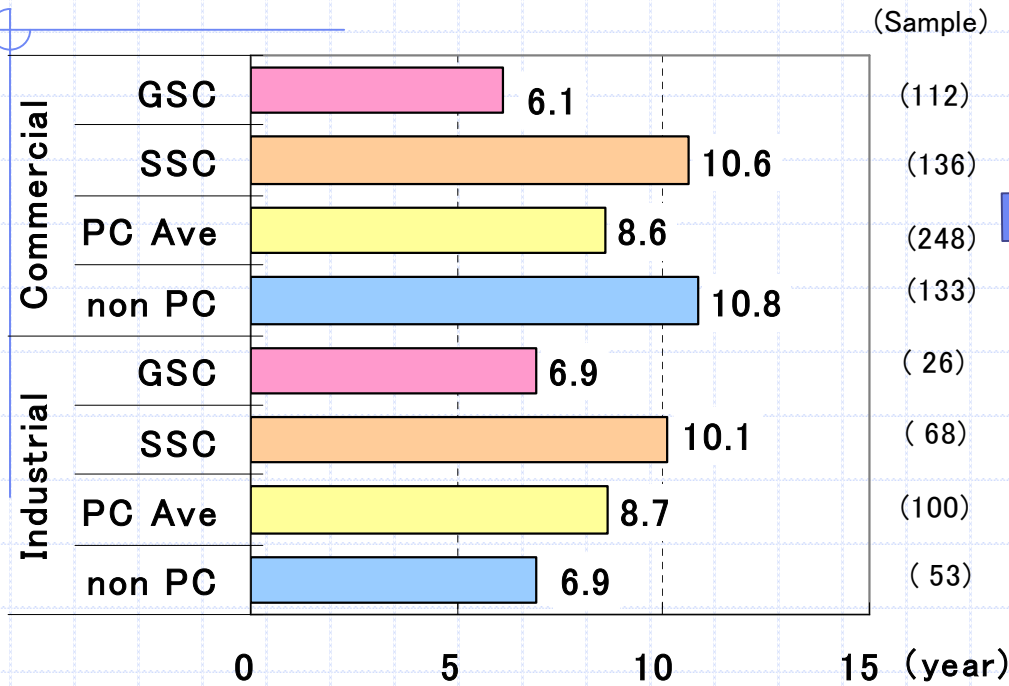




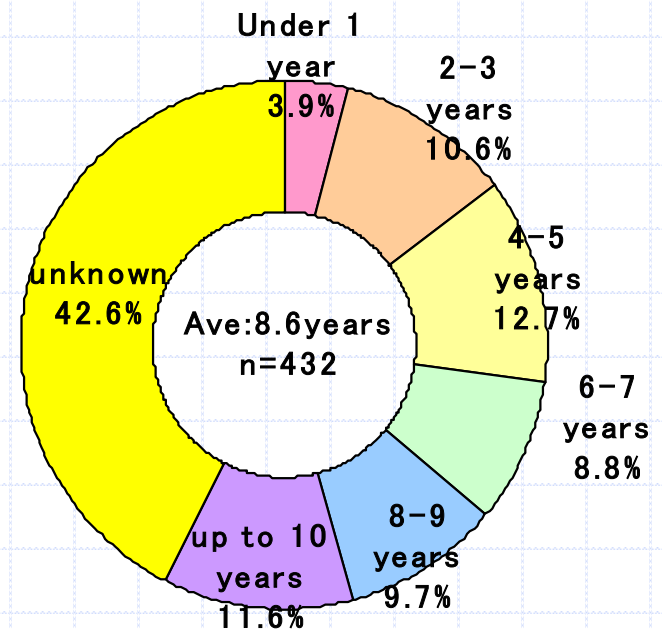
Ratio of energy savings



Simple pay-back period

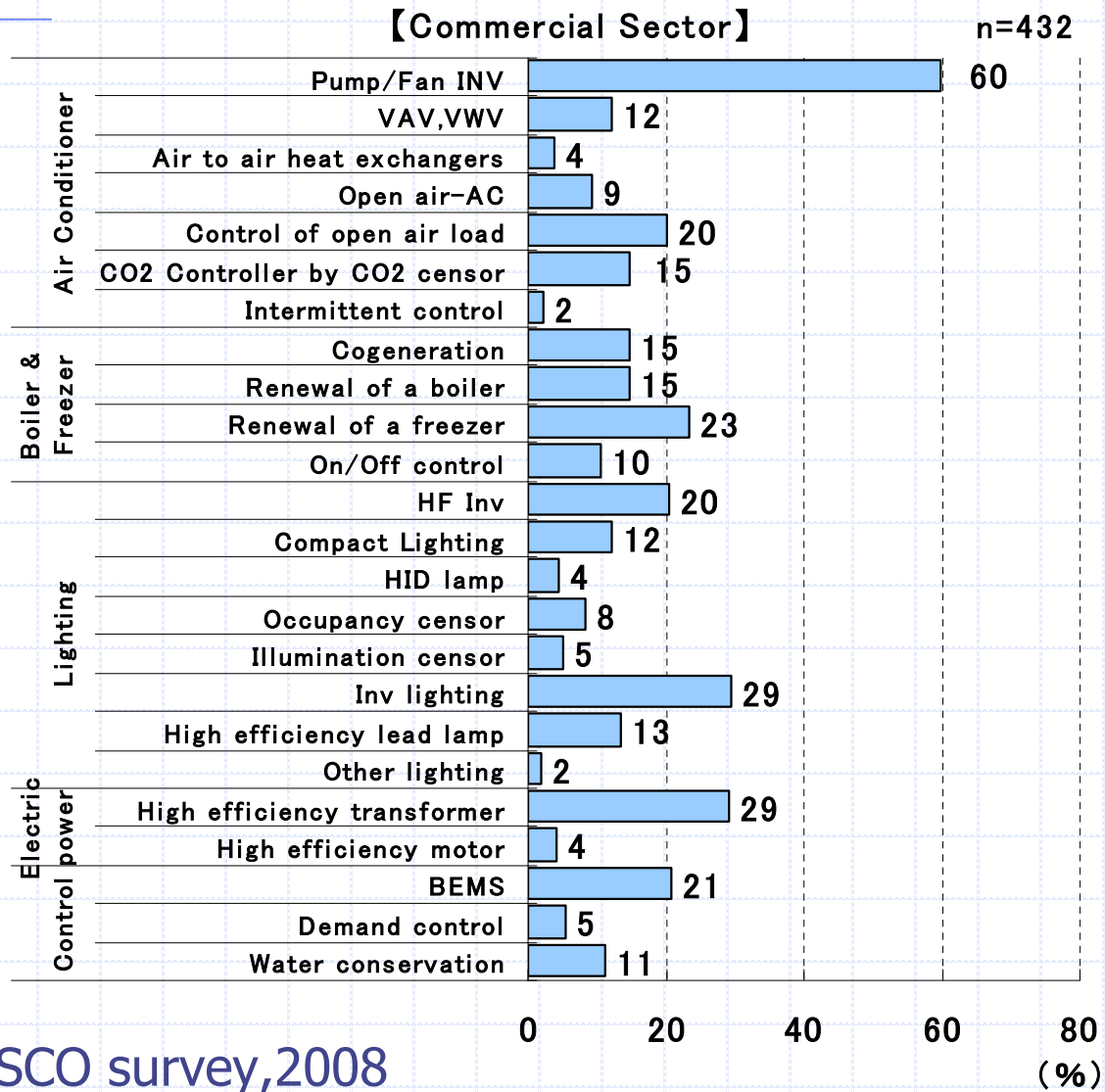


Performance Contract Project of commercial buildings





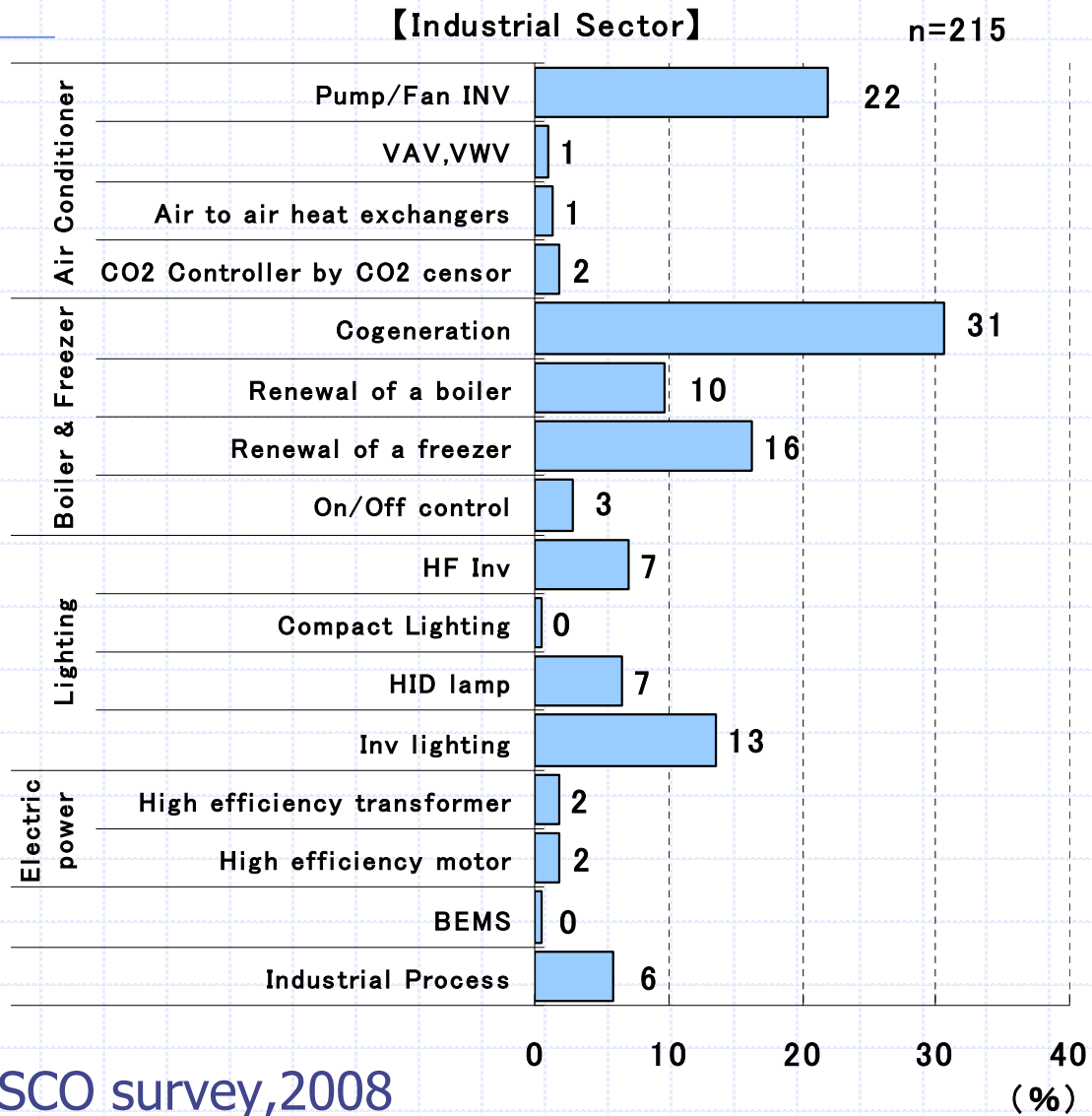
Energy efficiency measures for commercial sector PCPs



Data source:JAESCO survey,2008



Energy efficiency measures for industrial sector PCPs



Data source:JAESCO survey,2008