

India-Japan Energy Forum



Recent Activity of the ESCO Industry in Japan

6-7 December 2006

Hotel Intercontinental, Nehru Place, New Delhi

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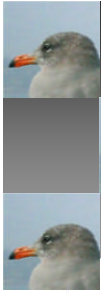
**Vice president, Japan Association of Energy Service
Companies:JAESCO**



Overview of Presentation



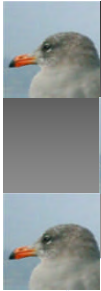
- Definition of ESCO in Japan
- The step of market development of ESCO industry in Japan
- Market size of ESCO industry
- Governmental support system to promote ESCO business
- Activities of JAESCO
- Conclusion
- Activities of ESCOs in India



Definition of ESCO



ESCO business contributes to customer's benefit as well as protection of global environment, by entering into the energy service contract on which comprehensive service is offered for energy conservation and attainment of a specific target of energy savings is guaranteed.

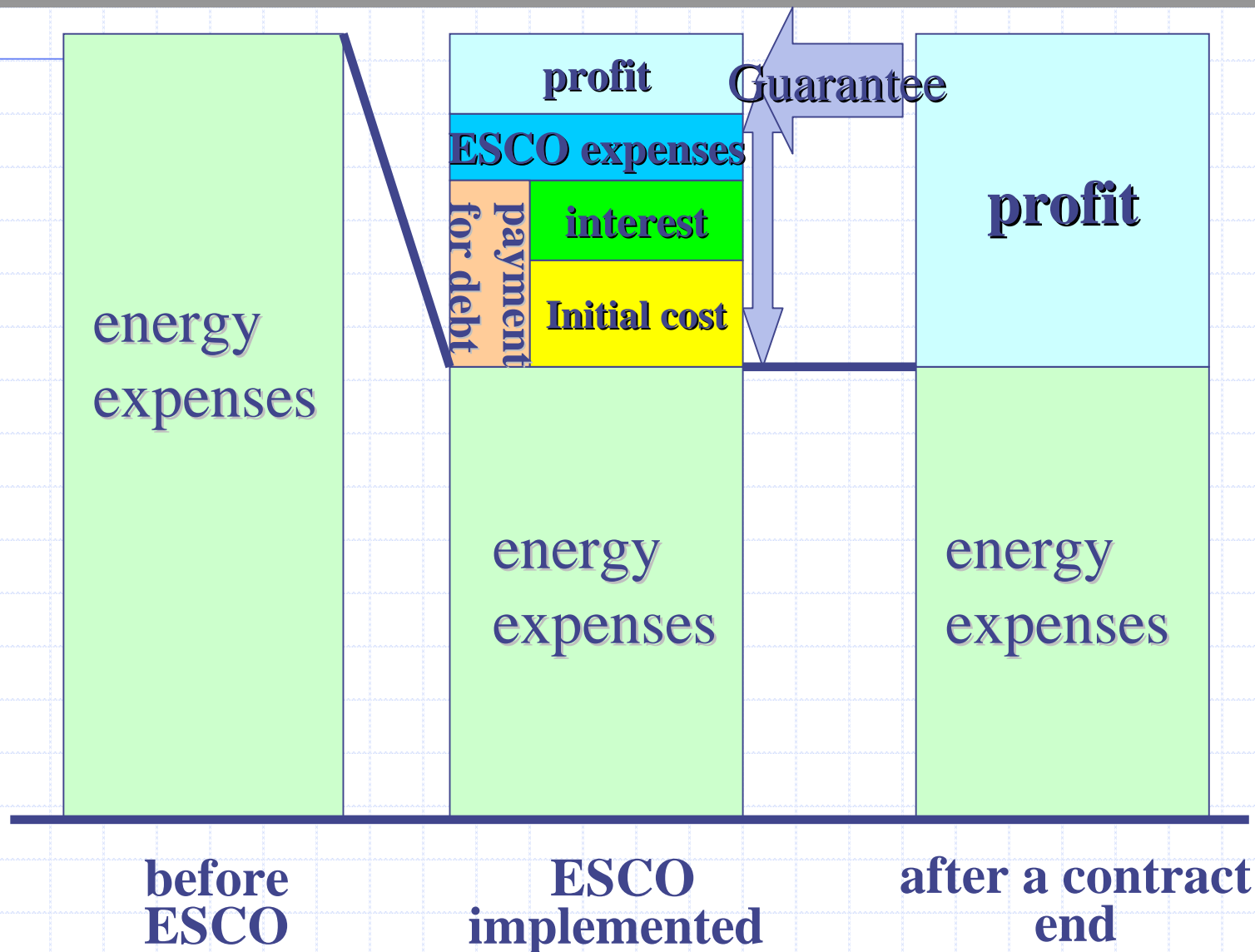


Characteristics of ESCO



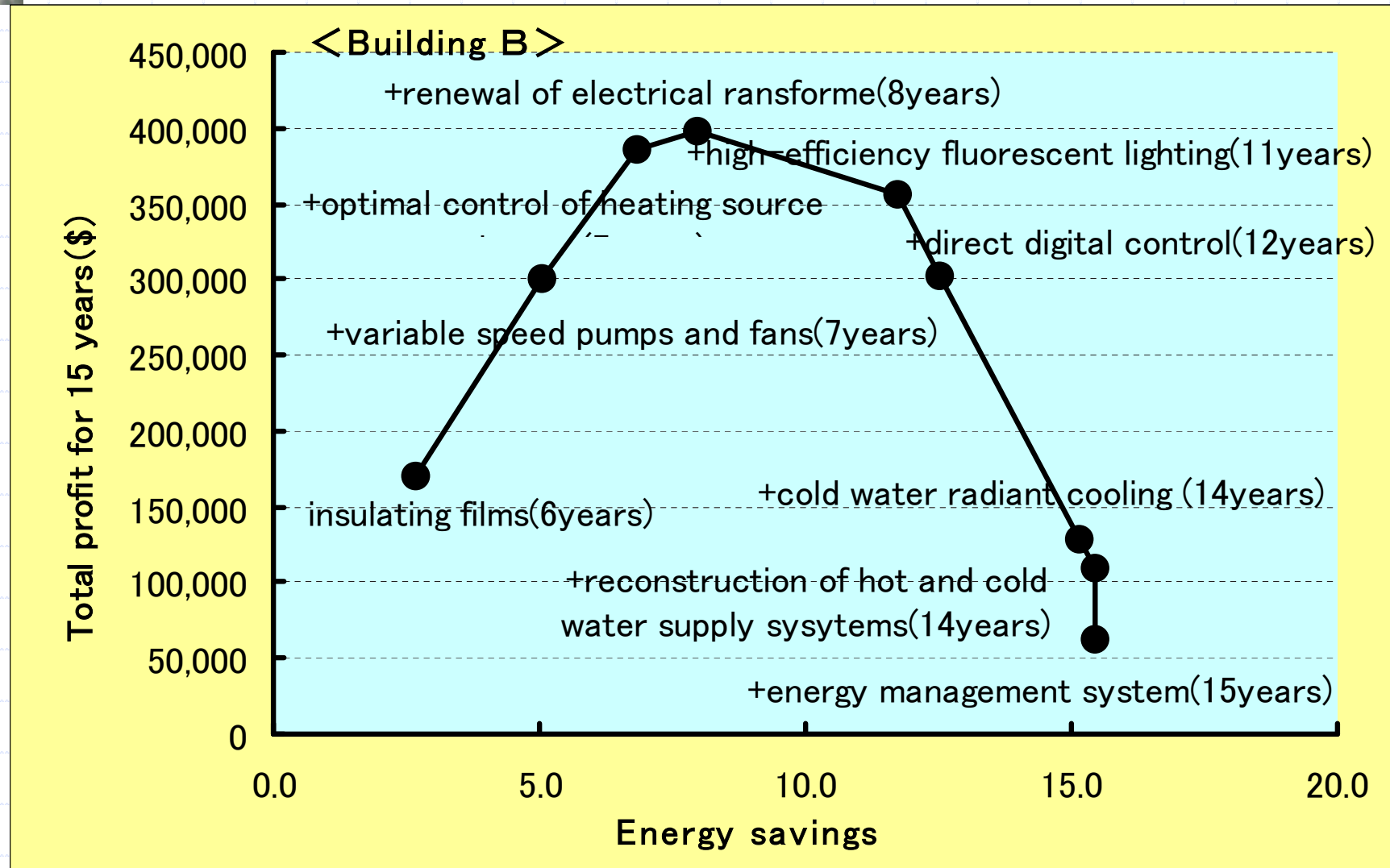
- Offering comprehensive services beginning with energy saving audit and concluding with maintenance of energy efficient equipment after planning and construction
- Guaranteeing attainment of energy savings target
- Achieving high level of energy savings by intensive Measurement & Verification (M&V)
- Arranging for fund-raising or offering fund
- Repaying a part of generated cost savings as compensations to ESCOs

Repaying a part of generated cost savings as compensations to ESCOs





Total profit for 15 years



Concept of ESCO business and Performance Contracting



Compensate all expenses with reduction of energy cost

Guarantees

One stop service

Performance contracting

Clarification of operating balance

Comprehensive verification of EEMs

Energy efficiency effect of long duration

Intensive M&V

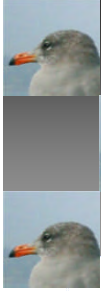
Comprehensive proposal

Thorough management of operation

Proposal on method of O&M

Investigation of fund-raising and financial affairs

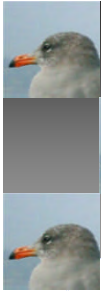
Adjustment of new financing environment



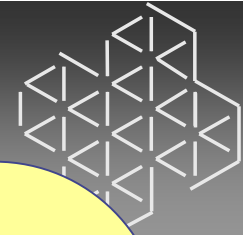
Performance contract integrate the ESCO concept



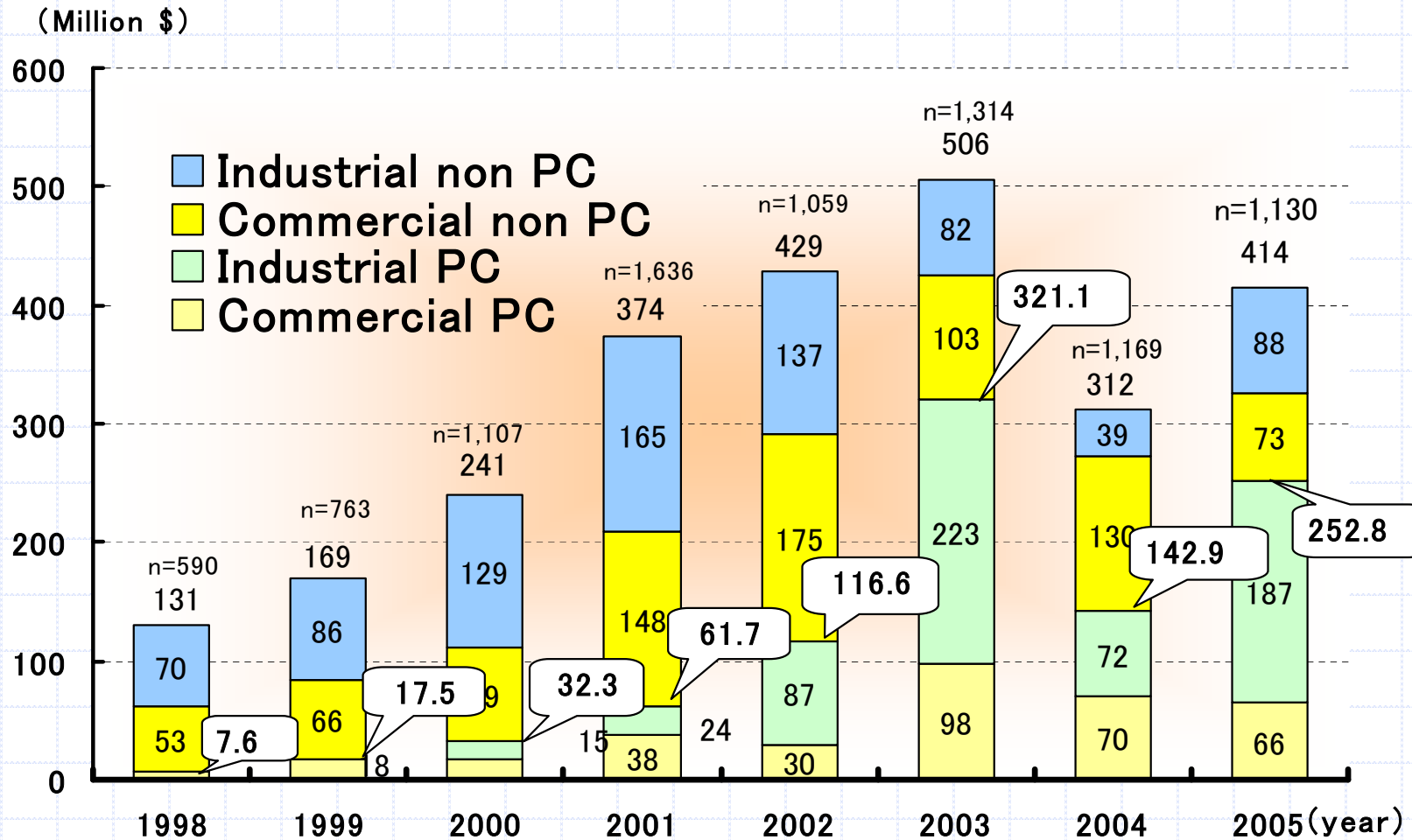
- ESCO guarantees compensate all expenses with reduction of energy cost by performance contract
- Provide comprehensive proposal
 - ✓ more opportunity of business extend
 - ✓ necessary of choose the most beneficial technique for customers
- Intensive M&V
 - ✓ maintain initial energy efficiency performance in a long term
- Adjustment of new financing environment
 - ✓ risk hedge for financial institutions



The step of market development of ESCO industry

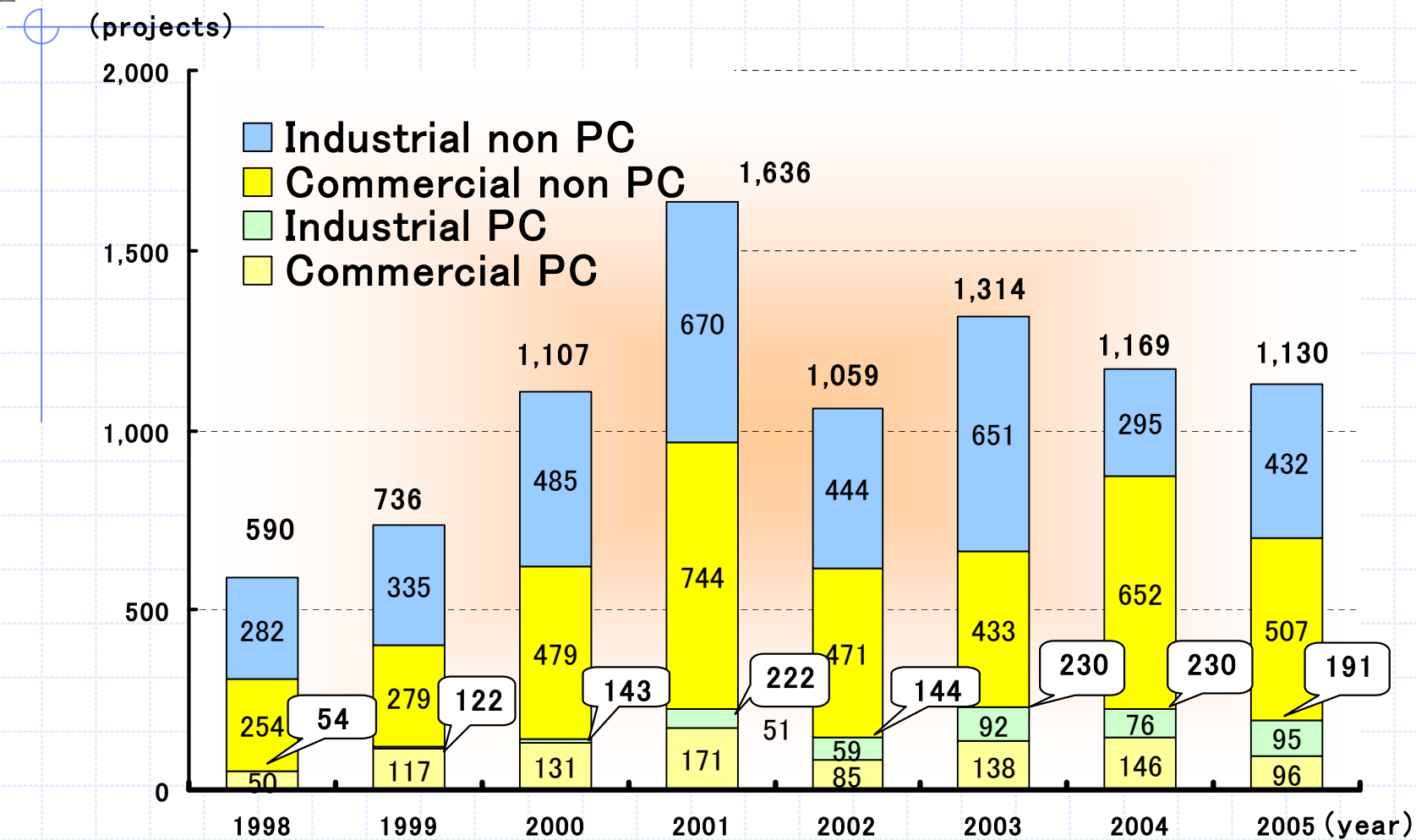
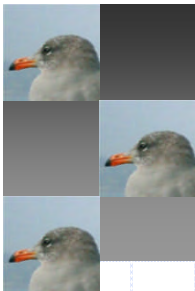


Market size of EE retrofit and PC projects/type of contract

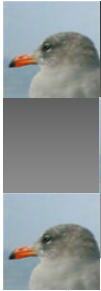


Data source: JAESCO survey, 2006

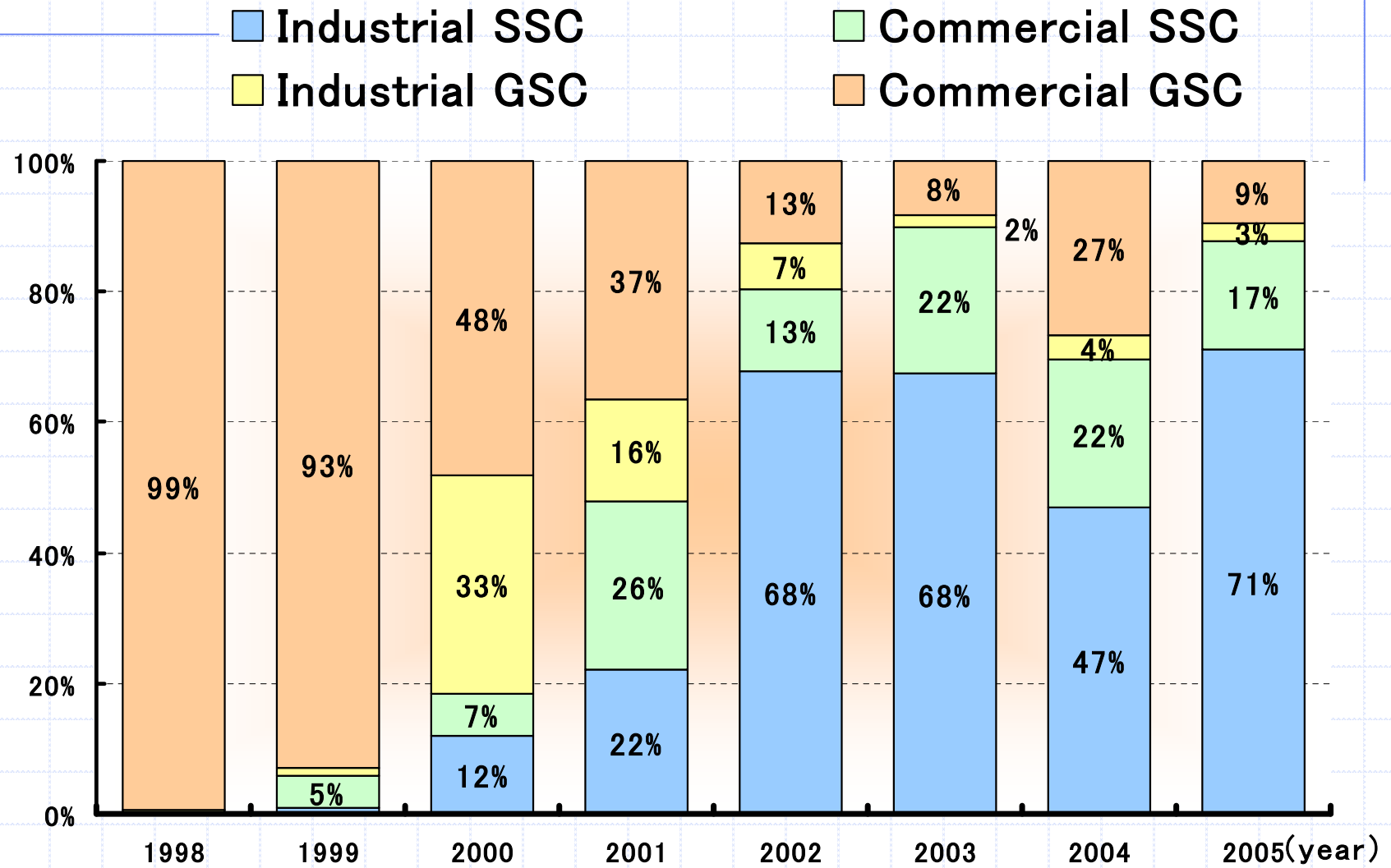
Number of projects by EE retrofit and PC /type of project



Data source: JAESCO survey, 2006

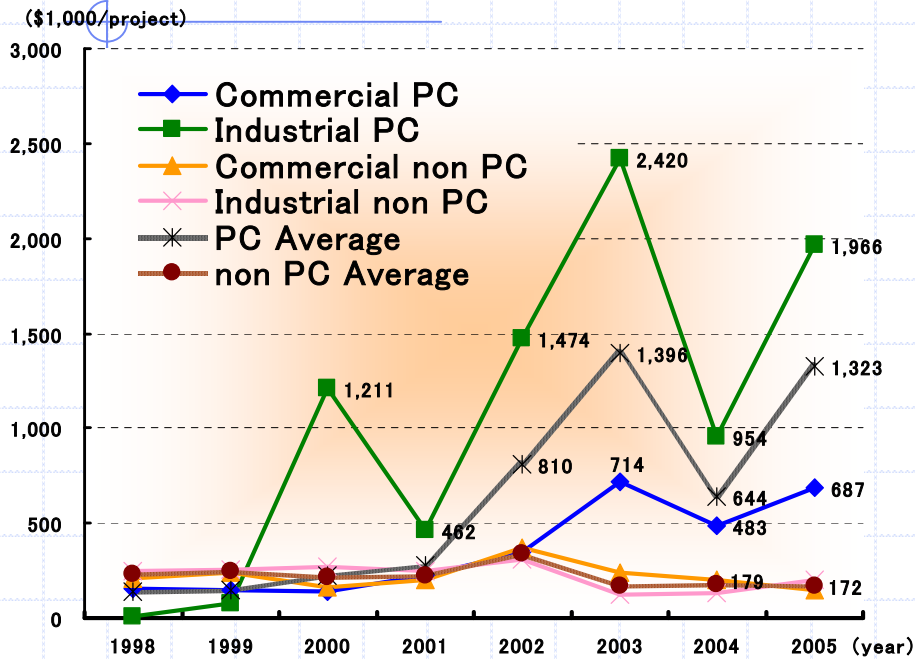


Share by type of contract

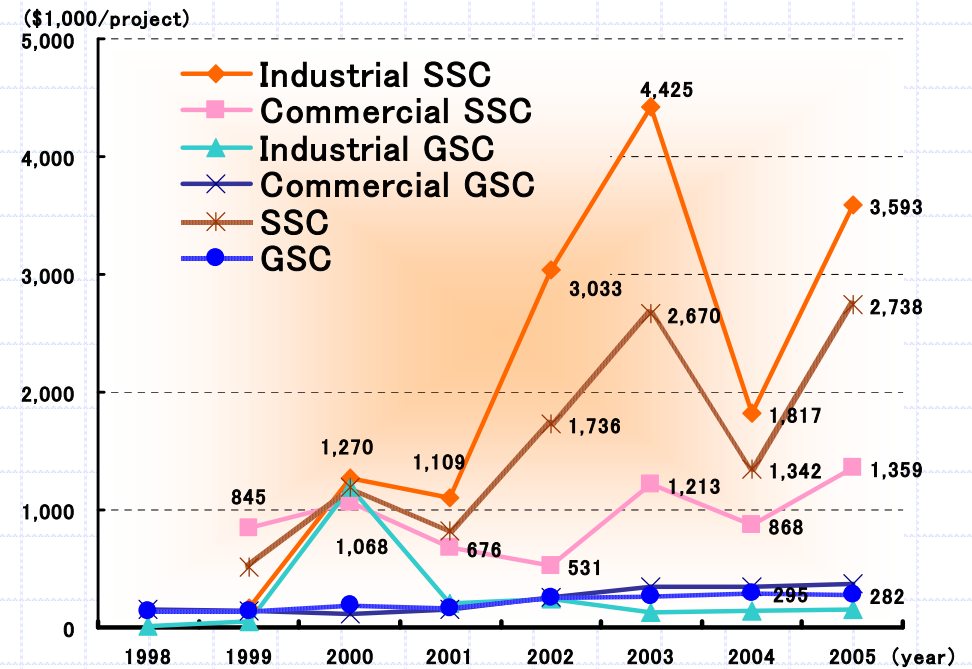


Data source: JAESCO survey, 2006

Investment per project



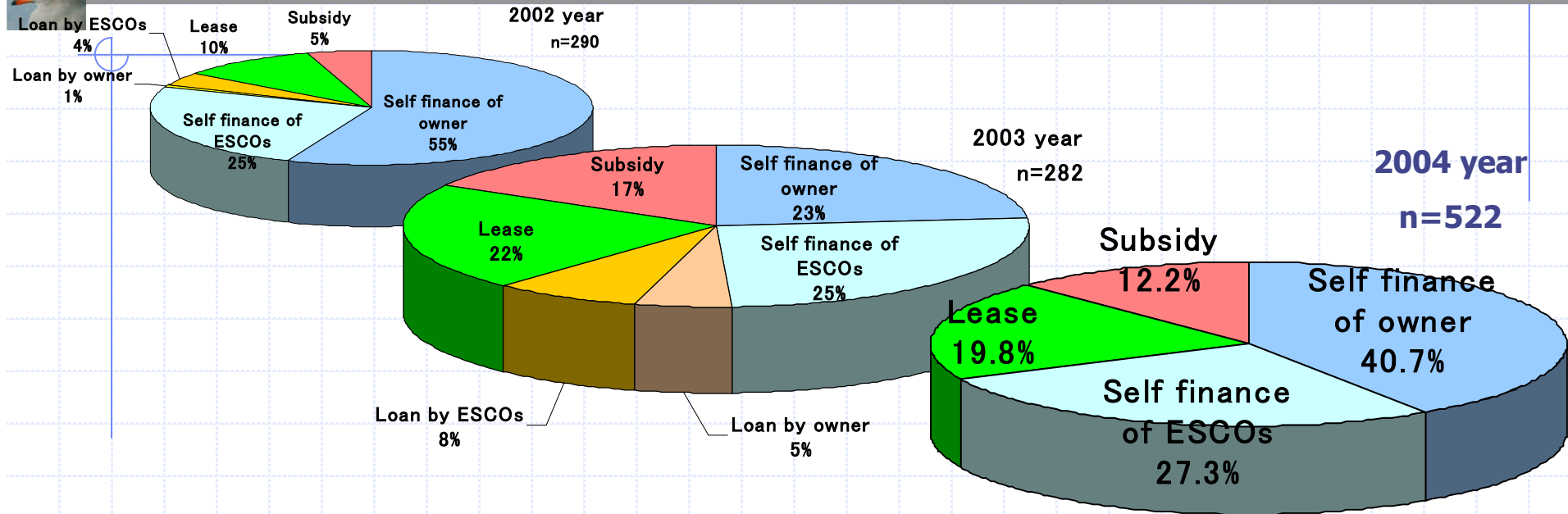
Energy-efficiency retrofit projects



Performance contract projects

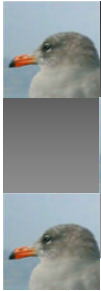
Data source: JAESCO survey, 2006

Source of fund for energy efficiency retrofits



- Afford to execute energy efficiency retrofits are limited to the wealthy ones
- Financial environment for energy efficiency retrofits lags behind

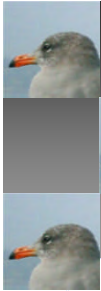
Data source: JAESCO survey, 2003-2005



Revision of Energy Conservation Law (ECL) in April 2003 & 2005



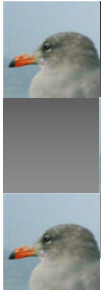
- All large-scale commercial facilities are targets
- Facilities using more than 3000 kL/year
 - Required to prepare plans to implement energy efficiency improvements
 - Required to improve energy efficiency by 1% annually
 - On-site survey for all facilities by government
- Indicated to installation of BEMS and high-efficiency equipments
- Suggested that necessary studies be subcontracted to ESCOs



Governmental support system to promote ESCO business(2006)



- Subsidy programs for energy efficiency retrofit
 - project to introduce equipment with rational use of energy(\$200 M:1/3)
 - project to introduce and promote high energy efficient system in residence and buildings (\$12 M:1/3)
 - energy efficiency building projects cooperation with Utilities (\$9 M:1/3)
 - spread of building and energy management systems (\$22 M:1/3)

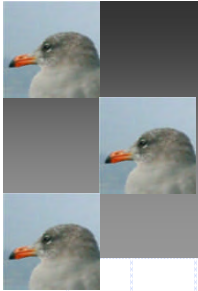


Objectives of JAESCO



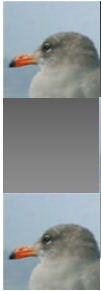
- JAESCO was established to support development of ESCO market
- as well as ensure sound evolution of ESCO industry
- to provide customers energy efficiency with comprehensive services of high cost-performance
- thereby, resulting in progress of energy conservation and global environment protection.





Organization





Activities of committees



Committee on public information

Carrying out plans to popularize ESCO industry such as advertising via mass media, cooperating to news reporters and taking part in various related projects

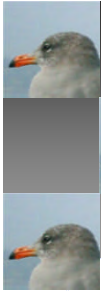
Conference committee

Holding annual conference & vendors showcase on the latest activity surrounding ESCO industry.

Lectures and panel discussion are held with leader of each business world and professionals.

Wide-ranging discussion is extended together with more than 300 participants on topics directly linked to business including governmental policies & programs, technology, finance and contracts.





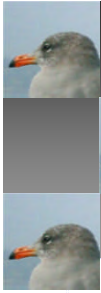
Activities of committees:continue



Project committee

- ✓ exploring measures to encourage adoption of ESCO projects by governments as well as seeking solution to difficulties confronted for introduction of ESCO projects
- ✓ fulfilling data based on a in-depth market survey and collecting actual performance data of member's ESCO projects
- ✓ holding seminars for members on the latest activity close about ESCOs three or four times annually, taken part by 100-200 members
- ✓ organizing and leading the study mission concurrently with attending the conference of NAESCO(National Association of Energy Saving Companies) or other international conferences





Activities of committees:continue



ENEX committee

Running booths at ENEX (Energy & Environment Exhibition) held by the Energy Conservation Center Japan in Tokyo and Osaka

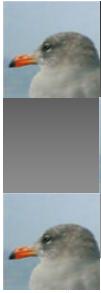
2nd Asia ESCO Conference program committee

Planning and organizing 2nd Asia ESCO Conference

Committee on accreditation scheme study

Studying to establish a system to accredit ESCOs for capacity building of well-performing ESCOs and serve as a useful reference when choosing ESCOs for energy saving projects



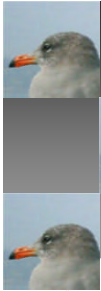


Feature of JAESCO Members



- JAESCO established with 16 members in 1999
- 150 members have joined in 2006
- Large companies most members and all most utilities have joined JAESCO
- Although small and medium-sized companies close one third, a half is the subsidiary of large companies
- Over 30 ESCOs which is experienced in PC



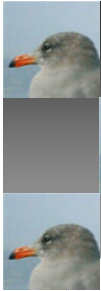


Activities of JAESCO



- pursuing activities to popularize ESCO industry by advertising via mass media, displaying for exhibition, dispatching lecturers to various seminars and so on
- aiming at the most effective evolution of ESCO industry and its contribution to society by exploring and advising measures to improve business environment surrounding ESCOs
- holding annual conference and broadly transmitting ESCO related information
- holding ESCO exhibition and provide members with opportunities to exchange information among members and with parties concerned



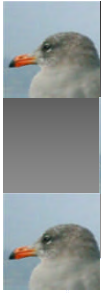


Activities of JAESCO:continue



- holding seminar for members and transmit in-depth ESCO related information
- publishing newsletters quarterly for members
- grasping the latest activity of both domestic and international ESCO industry and deepening exchange with ESCO related organizations
 - ✓ figuring out the size of ESCO industry market by collecting actual performance data of member's ESCO projects
 - ✓ organizing and leading the overseas study mission in order to get hold of the latest business climate of foreign ESCOs and exchange views with them





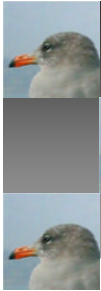
Asia ESCO Associations Network: AEA-Net



Objectives of AEA-Net

- Shear information about activities of ESCO industries in the world
- Support upbringing ESCO industry of each countries
- Built international relationship of ESCO associations to cope with countermeasure against global warming, especially Asia





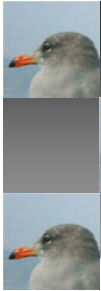
Asia ESCO Associations Network: AEA-Net:continue



Role of AEA-Net

- Have a 1st meeting on Feb 2007 in Tokyo.
 - ✓ Each association's directors or representative attend the meeting.
- Each members give a presentation for activities of ESCO industry.
- Discuss how to develop ESCO market in Asia and possibility of relationship of ESCO associations.
- JAESCO host the meeting.





Second Asia ESCO Conference



- ESCO industry contribute in progress of energy efficiency and global warming countermeasure.
- The ESCO industry in Asia is now on the way in development.
- In order to develop ESCO market, it is effective that each country cooperate and share information.
- We planning to hold 2nd Asia ESCO Conference for promoting ESCO industries on September 2007 in Beijing.
- Let's develop (\$10 Billion) ESCO market in Asia together.

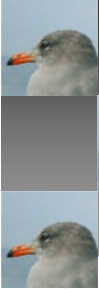




Conclusion(1)



- **It has been 10 years since the approach toward the ESCO business in Japan started in 1996**
- **The ESCO business is expanding the market with strengthening of governmental support**
- **In the meantime, the number of entities who enter into ESCO business are increasing primarily with the participation from the large companies**
- **ESCO business have mainly been “blue chip” companies in good standing**
- **Financial environment for ESCO business is delay**



Conclusion(2)



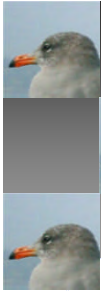
- **ESCO (EPC) market are extending doubling annually, it grew up into \$253 Million in 2005**
- **Major ESCOs are large companies**
- **Private sector building hold the major market share**
- **Shared savings contracts are over 90% in 2003, 70% in 2004 and 90% in 2005.**
- **Average rate of energy savings is at 12% for both commercial and industrial facilities**
- **Average simple payback period for PC projects is at 8 years for commercial facilities and 9 years for industrial facilities**



Conclusion(3)



- **Japan is pressed to promote energy saving measures toward the ratification of the Kyoto Protocol**
- **The ESCO business is expected to play one of the important roles with government's countermeasures against the global warming**



**Thank You for
Listening !**

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