ESP(Energy Saving through Partnership) Scheme and Application to EMS

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Presentation Outline

1. Status of ESP program in Korea
2. Current Problems in ESP Scheme
3. Lessons from ESP Experience
4. Conclusion (ESP Ideas’ Application to EMS Scheme)
<Industry Energy Efficiency Programs in Korea>

### Planning
- **Voluntary Agreement (since 1998)**
  - Contracted with heavy energy consuming companies
  - (1,358 workplaces in 2007)

### Identification of Energy saving factors
- **Energy Audit (since 1980)**
  - Heavy energy consuming companies (2,000 toe per year) should perform by 5 year periods
- **ESP (Energy Saving through Partnership) (since 1999)**
  - Technology or information shares on the common processes (9 industries and 203 companies in 2007)

### Investment
- **Low interest loans and 10% tax reductions** for specified energy efficient facilities
- **Facilitate private sector investment through the ESCOs (152 companies in 2007)**

### Monitoring & Assessment
- **Report on the energy saving and GHG reduction in VA workplaces**
- **Assessment for the activities and achievements in energy efficiency improvements**

1. Status of ESP program in Korea (1/5)

- What is ESP?
  - Energy Saving through Partnership is a kind of Peer-to-Peer Networking
  - ESP scheme has been operating since 1999 in order to achieve energy savings efficiently by sharing information and technology among the similar types of business

- ESP Council (9 types of business)
- Sharing Information on Good Practices & Problems
- Benchmarking & Joint Project

- Improving Energy Efficiency & Energy Saving effectively
1. Status of ESP program in Korea (2/5)

9 types of ESP Council

- Chemical (19)
- Steel (21)
- Electrical & Electronics (28)
- Chemical Fiber (16)
- Cement (11)
- Automobile Assembly (12)
- Petrochemical (45)
- Paper (26)
- Food (26)

Condition for joining

- More than 20,000 (toe/year) of total amount of energy consumption (6 of 9)
- More than 10,000 (toe/year) of total amount of energy consumption
  → Electrical & Electronics, Food, Automobile Assembly industries (3 of 9)

Incentives

- Overseas study tour for excellent members
- Add points when VA evaluation

Total number of participants: 204 (Jan. 2008)
1. **Status of ESP program in Korea (3/5)**

- **Main Activities**

  - **Regular conferences on practical technologies**
    - 2 times/year/each council, at the member’s plant in rotation
    - Presentations and discussions on energy saving issues of each plant
    - Plant tours to examine member’s energy saving systems

  - **Workshop**
    - 1 time/year, all members of ESP
    - Presentation and discussions on best practices undertaken by ESP members
    - Awards to ESP members for achieving energy saving
    - Seminars on energy saving technologies by expert in the field

  - **On-line networking (in ESP homepage)**
    - offers the opportunity for members to exchange information in real-time
    - provide the latest news and information on energy saving technologies etc.
1. Status of ESP program in Korea (4/5)
### 1. Status of ESP program in Korea (5/5)

#### Benefits of ESP Projects

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Improvements</th>
<th>Energy Savings</th>
<th>Investment (thousand USD)</th>
<th>Payback (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fuel(toe)</td>
<td>Power(MWh)</td>
<td>Total(toe)</td>
</tr>
<tr>
<td>2000</td>
<td>11</td>
<td>4,060</td>
<td>9,940</td>
<td>6,545</td>
</tr>
<tr>
<td>2001</td>
<td>31</td>
<td>7,021</td>
<td>39,432</td>
<td>16,879</td>
</tr>
<tr>
<td>2002</td>
<td>44</td>
<td>18,410</td>
<td>27,942</td>
<td>25,396</td>
</tr>
<tr>
<td>2003</td>
<td>70</td>
<td>21,904</td>
<td>75,619</td>
<td>40,809</td>
</tr>
<tr>
<td>2004</td>
<td>71</td>
<td>37,185</td>
<td>54,074</td>
<td>50,703</td>
</tr>
<tr>
<td>2005</td>
<td>69</td>
<td>45,396</td>
<td>77,817</td>
<td>64,850</td>
</tr>
<tr>
<td>2006</td>
<td>44</td>
<td>80,336</td>
<td>29,120</td>
<td>87,616</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>340</td>
<td><strong>214,312</strong></td>
<td><strong>313,944</strong></td>
<td><strong>292,798</strong></td>
</tr>
</tbody>
</table>

e.g.) Installation of low pressure turbo-compressor, steam saving by heat recovery from refrigerator, Improvement of operating method in gas driven heat pump, Modification of raw mill duct, Installation of high efficiency pump or heat exchanger, Integration of boilers, Method to apply power rates scheme, etc.

2. Current Problems in ESP Scheme (1/2)

![Graph showing trends in Good Practice Submission, Attendance, and Number of Members from 1999 to 2007.]

- Rate of Good Practice Submission
- Rate of Attendance
- No. of members

2. Current Problems in ESP Scheme (2/2)

- What is the main reason of reduction at percentage of attendance in spite of great benefits of energy saving from ESP?

< Results of survey (ESP members, Jun.2007) >

- Insincere Members
- Limit of Ideas
- Heavy Work - Load
- Lack of Interest and Support from Top Management
3. Lessons from ESP Experience

Needs of cooperation among similar industries

- short payback time (average 1.2 years)
  - benchmarking of best practices
  - more effective and technically intensive implement of projects
- energy saving know-how is not a secret

Importance of interest and support from top management

- unanimous opinion of energy people
- best solution to achieve performance of energy saving
4. Conclusion (ESP Ideas’ Application to EMS Scheme)

< ESP experience>
- Sharing information and collaboration among similar industries are effective way to achieve better energy saving.
- Top management’s interest and support is one of the most significant parts for energy saving activities.

<Application to EMS>
- Share & Development of EMS best practices classified by the types of industry by operating programs similar to ESP in order to achieve energy saving efficiently
  - It is highly likely to get higher energy saving performance by sharing best practices of technical aspect as well as management aspect among the similar industries.
- Emphasis on top management’s commitment in EMS specification
- Revitalization of EMS specification by EMS certification scheme (competition & incentive)
Thank you for your attention!

If any question, Email address

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