

Bridging
the Policy and the Demand-side towards
promoting Energy Efficiency
and Carbon Neutrality

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Joji KOIKE

The Energy Conservation Center, Japan

Guidance for Session 2 & 3

【Session1】

Demand-Side Policy Framework

- Setting Targets
- Providing Incentive
- Providing direction and Guidance
- ...etc.

【Session2,3】

End-User Action

- ◆ Session2 → Best Practice Cases
(Motive? How? With Whom?, etc.)
- ◆ Session3 → Focus on Technology
(Benefits? How fitted into
actual end-user application?)

Possible **Key elements** (for End-User Action), e.g.,

- ✓ Commitment and appropriate organizational structure
- ✓ Collaboration (technology supplier and End-User coordination)
- ✓ Visualization of energy use → digitalization
- ✓ Bridging function between policy and implementation
(diagnosis, consultation, information dissemination...)

Overview of ECCJ

ECCJ : The Energy Conservation Center, Japan

Core organization for promoting energy efficiency and conservation in Japan, established on 16th Oct.1978.



Legal status

General
Incorporated
Foundation



Supporting
member

2,000
companies



Office

Tokyo Head office
& 8 branches



Business size

14 million USD
(2022FY)

Examples of ECCJ “Bridging”

- **How can we abide by the EE Law? How can we meet various requirements?**
 - Provide articulated information on the EE Laws & regulations aligned with end-users’ characteristics and needs.
- **How can we assign qualified Energy Managers and Administrators as required by the EE Law?**
 - Carry out qualification Test for Energy Managers (as designated Institution)
 - Providing Training courses to qualify Energy Administrators (as designated Institution)
- **How can we economize energy use or reduce CO2? Don’t know where to begin.**
 - Carry out Energy Audits and provide proposals (mid to long term)
 - Provide consultations to support CO2 reduction planning

Energy Management Audit – 1/2

Case 1 – Example of a metal parts manufacturing factory

1. Issues Identified and Action Proposal

a. Short term actions (operational) including :

- *Excessive air supplied to large-scale heat furnace*
→ **Reduction of air ratio** to an optimal level to realize efficient burning
- *Excessive pressure level of compressor (causing air leakage)*
→ **Reduction of pressure level and air leakage** → Reduction of electricity consumption
- *Redundant operation of production facilities (excessive use of electricity)*
→ **Suspension of operation of unnecessary equipment** during night

b. Mid to long-term actions – investment for efficiency improvement

- *Unused exhaust gas from industrial heat furnace*
→ **Introducing heat exchangers** to recover exhaust heat → fuel reduction
- *Inefficient use of air blower*
→ **Introduction of inverters** for optimum air supply → Reduction of electricity
- **Usage of LED lamps** for lighting

2. Evaluation of Actions taken

- ✓ Energy consumption reduction : 31kl/yr.
- ✓ CO2 reduction : 58t-CO2/yr.

Energy Management Audit – 2/2

Case 2 – Example of supermarket

1. Issues Identified and Action Proposal

a. Short term actions (operational) including :

- **Appropriate temperature setting** of air conditioners
- **Switching off** unnecessary lightings
- Maximizing the reduction of electricity consumption through **utilization of Demand Monitoring equipment** → Suspension of operation of unnecessary equipment during night

b. Mid to long-term actions – investment for efficiency improvement

- *Inefficient use of exhaust fan in the kitchen*
→ **Introduction of inverters** for optimal control fan motor
→ Reduction of electricity
- *Conventional thermal water heating system*
→ Introducing **heat pump water heating system** → Reduction of energy
- **Introducing Solar Power** Electricity System
→ Reduction of electricity purchase from grid power

2. Evaluation of Actions taken

- ✓ Energy consumption reduction : 40kl/yr.
- ✓ CO2 reduction : 62t-CO2/yr.

Energy Conservation Grand Prize

- ◆ Awarding outstanding products, business models, innovative initiatives (METI Minister's Award, etc.) to:
 - ✓ Provide motivation towards EE improvement and CO2 reduction
 - ✓ Enhance application of promising technologies and business models by end-users (publication, website, seminars)

- ◆ Examples of recent trends of awardees :
 - ✓ Growing utilization of electricity and Heat Pumps in the Heating Process (keyword) steamless, use of exhaust heat in HPs, hybrid heating
 - ✓ Increased interest in Zero Energy Building (ZEB) (keyword) passive design, integration of Energy Conservation and well being, etc.
 - ✓ Pursuit of efficient energy use through Digital use - Visualization of production and energy consumption → to cope with redundant fixed energy arising from structural shift in manufacturing (from mass production to customization)

- ◆ A number of awardees apply through collaboration among stakeholders (e.g., equipment/technology suppliers, academics, end-users)



You can find best practice and products

Energy Conservation Operation in Winter.

Energy Conservation activity is the first step toward Carbon Neutrality



Demand response
Optimal electricity use



Setting
Heat temp. 20C,
Keeping comfortableness

20℃

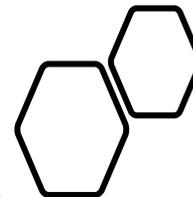


Waste heat recovery
Enhanced Heat insulation

Visualization for
efficient energy use



WARM BIZ
(Wear layers)



Examples of Energy Saving Dissemination
Enlightenment through posters

Point of Consideration for ECCJ



Continuous updating of knowledge on technological development

to be reflected to the output of audits and consultation (proposing the use of new technologies and digital means, etc.)

Growing importance of Digitalization, against the backdrop of:



- a. **Rising demand for visualization of energy use and CO2 emission**
- b. **Increased use of renewables (the role of end-user increasing to optimize electricity demand and supply)**



Way forward

9

THANK YOU

<Contacts;>

Joji KOIKE

j.koike@eccj.or.jp

The Energy Conservation Center, Japan (ECCJ)

<For More Information:>

The Energy Conservation Center, Japan

<https://www.eccj.or.jp>

Japanese Business Alliance for Smart Energy Worldwide

<https://www.jase-w.eccj.or.jp/eng/index.html>