

Activities of ECCJ

How to Promote Energy Conservation

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The Energy Conservation Center, Japan

Contents

1. Framework of Activities
2. Promotion of Energy Conservation for Factories & Buildings
3. Energy Conservation Grand Prize
4. Energy Conservation Information Service
5. Support for Energy Conservation in Households & Local Communities
6. Support for Development of Human Resources
7. Implementation of National Examination

1. Framework of Activities

Promotion of Energy Conservation/Electricity Saving for Factories, Buildings, Stores, etc., and Reduction of CO₂ Emission

- Instructions, survey and analysis based on energy conservation audit for factories, buildings, etc.
- Provision of information on case examples of energy conservation/electricity saving, etc.
- Support for countermeasures for CO₂ reduction

Support for Energy Conservation Activities in Households and Local Communities, etc.

- Dissemination of energy conservation practices and activities in local communities
- Provision of information on energy efficient equipment by means of energy saving labeling, etc.

Support for Development of Human Resources for Energy Conservation and its Activities

- Development of human resources for energy conservation through educational seminars, etc.
- Support for development of human resources through the qualification system
- International Standard ISO50001 Auditors Evaluation and Registration Body
- Provision of information on energy conservation through publications

Promotion of International Cooperation for Energy Conservation

- Dispatch of experts and acceptance of trainees
- Collaboration with the "Japanese Business Alliance for Smart Energy Worldwide"

Implementation of National Examinations, etc. for the Qualification of Energy Managers

- Examinations and training for qualified energy managers
- Training for type 2 energy managers, etc.

2.Promotion of Energy Conservation for Factories & Buildings



The energy conservation of factories, buildings, etc. which consume a great deal of energy is implemented by introducing new equipment or improving existing technologies at each workplace based on the Energy Conservation Act.

To support these activities, the Center implements instructions, survey and analysis by using energy conservation audits of factories, buildings, etc. and provides information on the Energy Conservation Act and the latest energy conservation technologies. The Center also undertakes the measures for electricity saving and CO₂ reduction support using the method of the energy conservation audit, smart technologies, etc.

«Benefits of energy conservation»

●The trump card to become Carbon Neutral

Japan is also aiming to become "carbon neutral" by 2050, meaning that greenhouse gas emissions will be reduced to zero. In this context, energy conservation is a key strategy for decarbonization, alongside the introduction of renewable energy.

It will also contribute to corporate social responsibility as part of the SDGs.

●Cost reduction

Energy savings reduces costs and increases "profits". (This is the same effect as an increase in sales.)

In addition, once energy savings are made, the benefits will last for years.

●Compatibility with productivity improvement

By reviewing production and service methods from the perspective of energy conservation, streamlining production lines and improving the efficiency of service delivery, we can both save energy and CO₂ and improve productivity.

2.Promotion of Energy Conservation for Factories & Buildings

Energy Audit and Consultation

The Center dispatches energy conservation experts to small and medium sized factories or buildings and provides advices on specific techniques for improving energy efficiency (target of the energy conservation effect: 7 to 8%). Case examples of the advice so far made are widely introduced at seminars, etc.

Meanwhile, following the current needs of electricity saving, the Center provides the audit specific to that needs and holds electricity saving seminars for the industry including the household sector.

[Approximately 20 thousand energy audits and consultations were executed by FY2024 (for over 30 years since the establishment of the Center)]



Audit of thermal insulation and heat retention of a factory furnace



Visualization of indoor cold air which is constantly discharged outdoor through a ventilation fan
Advice was made to make the improvement easy to understand by visualizing it

2.Promotion of Energy Conservation for Factories & Buildings



Contents of Diagnostic Report

Diagnosis and Proposal Items

- Improve efficiency of individual facilities and equipment, and reduce waste such as heat exhaust
- Systematic energy conservation throughout the entire facility
- Energy savings through cost-free operation
- Utilization of data from BEMS, FEMS, smart meters, etc.
- Introduction of renewable energy facilities such as solar power generation, biomass, etc.



Report Contents

- It consists of advice and improvement proposals based on energy management and analysis of usage conditions, etc.
- The proposals will include specific details for each measure, such as the amount of labor saved, energy cost reductions, CO2 reductions, and the number of years required to recover the investment.

Energy Conservation Grand Prize

From among various energy conservation/electricity saving activities of companies, municipal bodies, educational institutes, etc. and energy saving products, business models, etc. newly developed, those which are especially excellent are awarded the “energy conservation grand prize”.

Those activities or products are also publicized and introduced at energy conservation conventions or by the publication of excellent case examples to be used as hints for practical energy conservation activities.



Energy conservation grand prize example cases to be used as hints for energy conservation of workplace

3-1 Energy Conservation Grand Prize History



Transition of the Energy Conservation Grand Prize

Energy Conservation Best Practices Category: The "Energy Conservation Best Practices Presentation Contest" began in 1975 and awards have been given for best practices. This year (FY2024) marks the 49th in total.
 Product and Business Model Category: Launched the "Award of 21st Century Energy Conservation Equipment and Systems (Energy Conservation Vanguard 21)" in 1990 and awarded the energy-saving products. This year (FY2024) marks the 34th in total.
 Since 2011, the award system (Energy Conservation Grand Prize) became the project organized by the Energy Conservation Center, Japan, and this year (FY2024) marks the 14th in total.

FY	1975	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Case example	1st	16th	17th	18th	19th	20th	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st	32nd	33rd	34th	35th		36th	37th	38th	39th	40th	41st	42nd	43rd	44th	45th	46th	47th	48th	49th
Product		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th		21th	22th	23th	24th	25th	26th	27th	28th	29th	30th	31th	32th	33th	34th

New "Energy Conservation Grand Prize"

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th
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Name of award	Award of Energy Conservation Best Practices in Factory & Building													
	Award of 21st Century Energy Conservation Equipment and Systems (Energy Conservation Vanguard 21)													
Energy Conservation Products, etc.	Award of 21st Century Energy Conservation Equipment and Systems (Energy Conservation Vanguard 21)													
	Award of Energy Conservation Best Practices in Factory & Building													
Sponsor/Organizer	Project subsidized by the Ministry of Economy, Trade and Industry													
	Project consigned by the Ministry of Economy, Trade and Industry (Implemented by the Energy Conservation Center, Japan)													

Energy Conservation Grand Prize

○Energy Conservation Best Practices Category

- 2019 "Small Group Activity Field" was newly established in the Energy Conservation Best Practices Category
- 2021 "ZEB/ZEH Field" was newly established in the Energy Conservation Best Practices Category
 "ZEB/ZEH Field" and "Energy Conservation Communication Field" were newly established in the Product and Business Model Category
- 2023 "Industrial Field" was newly established in the Product and Business Model Category

★ In 2023, both the Energy Conservation Best Practices Category and Product and Business Model Category have expanded to include nine fields each.

Independent project of the Energy Conservation Center, Japan

3-1. History and Overview



History of Energy Conservation Grand Prize

- **Awarding of Successful Case of Energy Conservation in Factory & Building:** Started an “Energy Conservation Best Practice Presentation Convention” since 1975 to award the successful activity cases.
- **Awarding of energy-saving products, etc.:** Started “Awarding of 21st-century energy-saving equipment and systems (Energy Conservation Vanguard 21)” to award the energy-saving products, etc.
- **2009:** Integrated best practice awarding and product awarding into the “Energy Conservation Grand Prize”.
- **2011:** Restarted the “Energy Conservation Grand Prize” as the project sponsored by the Energy Conservation Center, Japan.
- **2021:** Newly added the ZEB and ZEH fields to the energy conservation best practice category, and product and business model category.
- **2023:** Newly added the industrial field to the product and business model category, covering all fields in both categories.

3-2 Awarding Categories and Sectors/Fields ECCJ

Areas of Commendation

Energy Conservation Case Study Category All 9 Fields		Products and Business Models - 9 categories in total	
field	subject (of taxation, etc.)	field	subject (of taxation, etc.)
CGO, company, etc.	Organization-wide energy conservation activities from a management perspective	industry	Energy-saving products and systems used in industry
industry	Energy conservation activities at factories and manufacturing/construction sites	business	Energy-saving products and systems used in schools, office bis, etc.
business	Schools, office buildings, hospitals, commercial facilities, etc.	family	Energy-saving products and systems used in homes
ZEB/ZEH	Energy saving by ZEB in buildings and ZEH in houses	transport	Energy-saving products and systems for logistics and automotive
transport	Transportation and logistics, shipper and supply chain coordination	construction	Energy-saving products in buildings (including elemental products, materials, etc.)
Support and Services	Energy conservation through third-party support at companies, factories, business sites, etc.	ZEB/ZEH	Products that have achieved ZEB/ZEH status, and have functionality and design that takes into account the surrounding environment.
joint implementation	Energy conservation through third-party support at companies, factories, business sites, etc.	Electricity Demand Optimization	Equipment and systems with peak power control, load leveling, and raise/lower DR effects
Electricity Demand Optimization	Peak power control, load leveling, and DR response activities	business model	Target industries, businesses, households, transportation, etc. Providing customized equipment and systems, operation, after-sales service, etc.
small-group activities	Site-based energy-saving initiatives in the departments in charge, such as in business sites	Energy Conservation Communication	Information service to promote energy conservation provided by energy suppliers, etc. All fields including households (free of charge in principle for households)

3-2. Awarding Categories and Sectors/Fields ECCJ

[Example of energy conservation activities]

1. Activity which instructed the energy conservation activities of an entire company from a management viewpoint, generating excellent energy conservation results
2. Energy conservation activity by development, improvement, etc. of a production technology or manufacturing process in a factory
3. Energy conservation activity by introduction of high-efficiency equipment, management systems, etc.
4. **Energy conservation activity at a business facility (office, commercial facility, accommodation facility, information communication facility, medical facility, educational facility, etc.)**
5. Energy conservation activity by operational improvement of equipment or introduction of a high-efficiency cogeneration system, heat pump, etc.
6. **Energy conservation activity across the building by its owner, tenants, etc. all together**
7. Energy conservation activity in transport and logistics
8. **Energy conservation activity with social impact on the ZEB and ZEH**
9. Energy conservation activity by organic cooperation in a community or at a nearby facility
10. Energy conservation activity by cooperation with other business operator (third party, etc.)
11. Energy conservation activity by a small group in a factory, business establishment, etc.

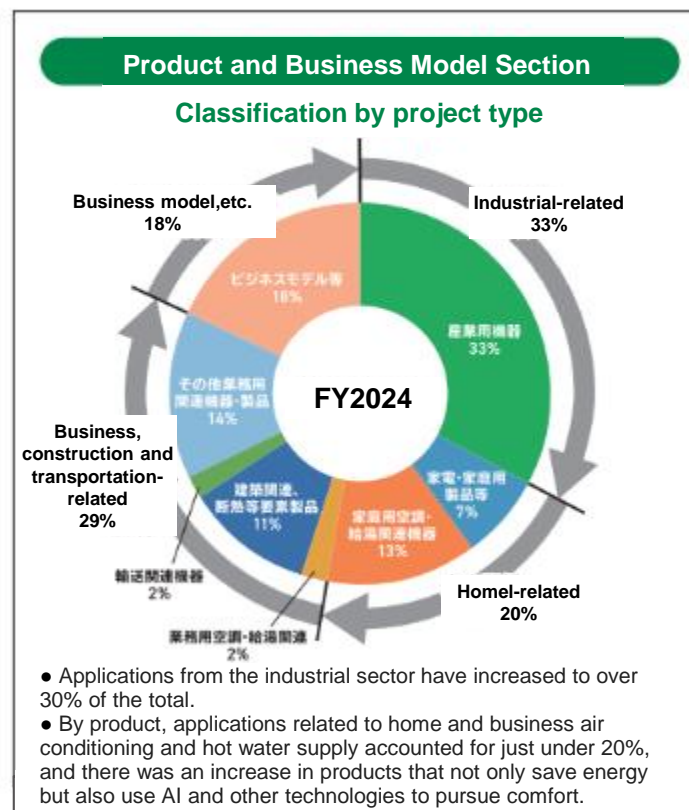
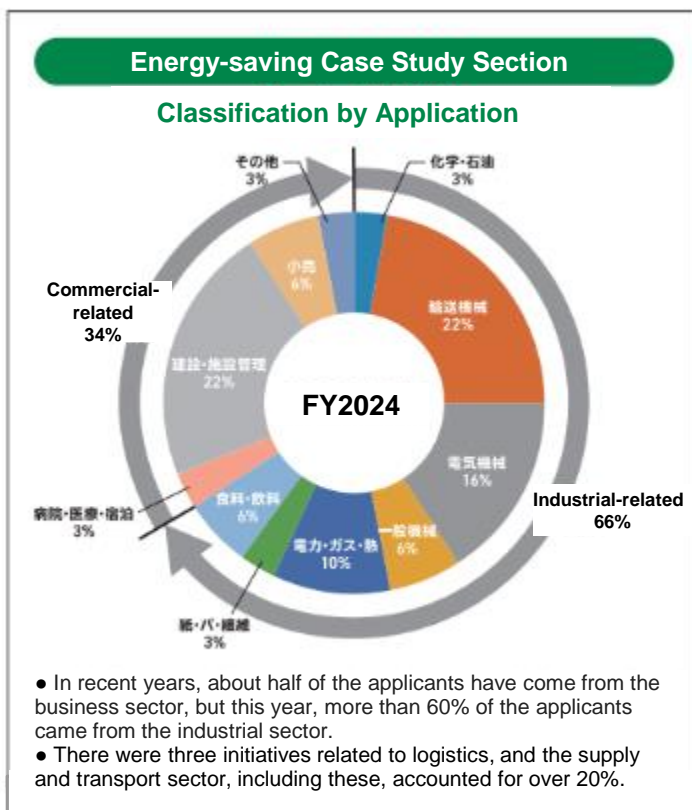
[Examples of energy-efficient products, etc.]

1. Industrial equipment and products
2. Household products
3. Commercial products (offices, commercial, accommodation, information communication, medical and educational facilities, etc.)
4. Logistics- and automobile-related products
5. **Structures such as houses and buildings, and building materials**
6. **Products which have achieved the ZEB/ZEH**
7. Power generation, power storage, systems, products, etc.
8. Energy management, control, measurement and network technologies
9. Element products, components, etc. contributive to energy conservation
10. **Business models such as energy operation management and service, and energy conservation solution proposal**
11. Information service activities and systems leading to energy conservation promotion conducted by energy suppliers, etc.

3-3. Tendency of Applications

Application Trends

1. Recent trends include an increase in energy-saving activities and the use of natural energy as part of carbon-neutral initiatives, as well as activities aimed at the efficient and optimal operation of renewable energy and energy use. There is also an upward trend in the number of products, systems and business models that support these activities.
2. In addition, against the backdrop of recent issues with the supply and demand of electricity, there has been an increase in demand response and other projects to optimize supply and demand, as well as projects to electrify heat pumps and other appliances. There have also been initiatives to address the 2024 logistics problem, such as modal shifts.



3-4. Examination Flow

1) Secondary examination; Presentation examination (Energy conservation best practice category)

- The energy conservation best practice category openly holds a regional presentation examination in Tokyo and Nagoya.
- After presentation, answer to examiners' questions on the spot.
- About 5 cases are awarded “Excellent Presentation” every presentation day.



2) Secondary examination; Video examination (Product and business model category)

- The details of activities are examined based on videos and supplementary materials.



3) Secondary examination; On-site check

- Conduct on-site check on the cases considered necessary to be checked in presentation examination and video examination.
- The examiners, etc. (3 persons or so) visit the applicant's factory, office, etc. to conduct on-site check on the details of the application.

3-5. Awarding and Public Relations

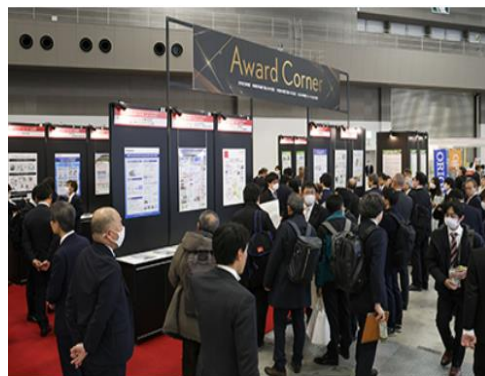
1) Awarding ceremony

An awarding ceremony is held simultaneously with the ENEX2024 “Energy and Environment Exhibition” sponsored by the Energy Conservation Center, Japan in January. An “Award Corner” is installed within the venue of the ENEX2025 to exhibit the panels and award-winning products to outline the award-winning cases.

Appearance of awarding ceremony



Award Corner of Energy Conservation Grand Prize ENEX2024)



3-6. Awarding and Public Relations

2) Online delivery of awarded cases

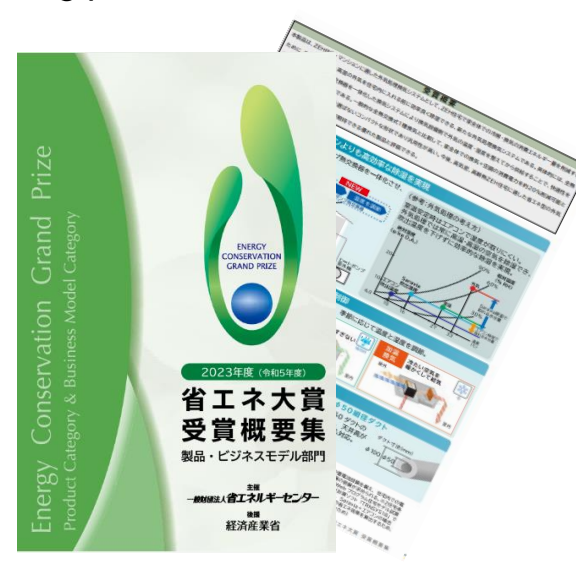
- Award winning cases of the METI/ANRE Commissioner's Award or above in the energy conservation best practice category are delivered online in case introductory videos from the middle of February to the end of March.

3) Collection of all applications and outline of awarded cases

- A “Collection of All Applications” is prepared as to all applications in the energy conservation best practice category and distributed for a fee.
- For the award-winning cases in the product and business model category, an “Outline of Awarded Cases” is prepared and distributed free from charge within the venue of the ENEX, etc. for the purpose of notification and dissemination of award-winning products, etc.



Collection of All Applications



Outline of Awarded Cases

3-7. Award Winning Cases (2022)

Hareza Tower / Tokyo Tatemono Co., Ltd.
(METI Minister's Award)



Multi-purpose building including stores, movie theaters and offices, with a total floor area of approx. 68,600 m², and 33 stories above the ground and 2 basements.

Employing the general-purpose products, a high-efficiency lighting design plus a structural design allowing utilization of natural energy as much as possible despite being a skyscraper, this is the first case of ZEB Ready certification as a multi-purpose skyscraper.

Technologically, it features a design to minimize transport power, development of grid-type air conditioner and grid-type humidifier, refrigerant temperature variable control, and a lighting design not to cause any operational problem at 500 lx in consideration of human sensitivity.

3-8. Award Winning Cases (2023)

Energy-saving Improvements following the achievement of ZEB Ready certification for Panasonic Kyoto Building / Electric Works Company, Panasonic Corporation
(METI Minister's Award)



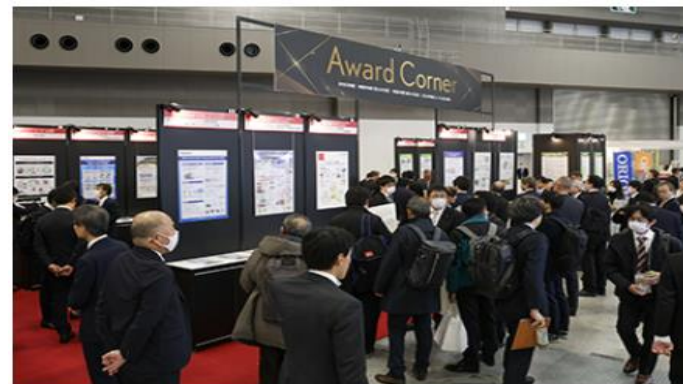
This building was constructed in 2012 while incorporating energy solutions comprising energy creation, energy conservation and energy management. However, taking the opportunity of the passage of more than 10 years since the building's completion, a "ZEB feasibility study" was implemented as an advance model for realizing an improved ZEB, and designing was started. Specifically, taking a hard look at the future development of the existing building, large-scale work on the frame was not implemented, and measures were taken instead to improve efficiency by downsizing the existing facilities and equipment in addition to adopting high efficiency air conditioning and lighting. This achieved ZEB Ready certification with a BEI of 0.47 excluding renewable energy. Additionally, from an operational aspect, AI control and remote control of the air conditioning system were implemented to enable continuous energy-saving operations even in this building where an energy manager was not to be stationed. This case example consisted of activities implemented in an aim to realize ZEB Ready certification by limiting the costs as far as possible instead of making improvements to the building frame, and these measures will also provide reference for promoting the realization of ZEB in similar types of existing buildings going forward.

4. Energy Conservation Information Service ECCJ

ENEX, Energy and Environment Exhibition, Aiming at the Harmony of the Global Environment and Energy

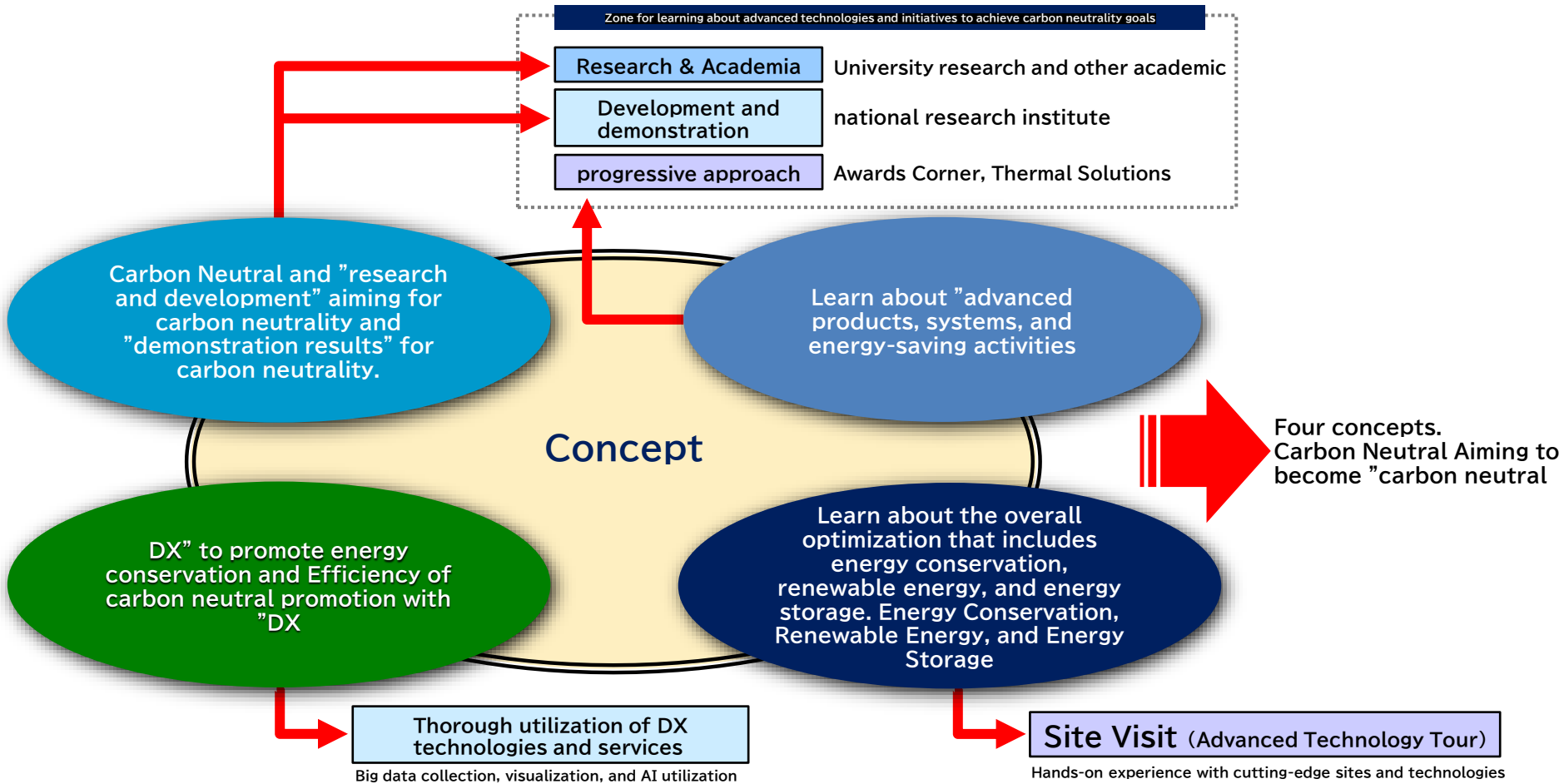
The Center holds the ENEX in February which is designated as the month for promoting energy conservation. The ENEX is a comprehensive exhibition for energy conservation and new energy.

It not only introduces excellent energy conservation/new energy equipment, energy conservation/electricity saving activities, but also provides various seminars and awarding ceremonies, contributing to the expansion of the business network.



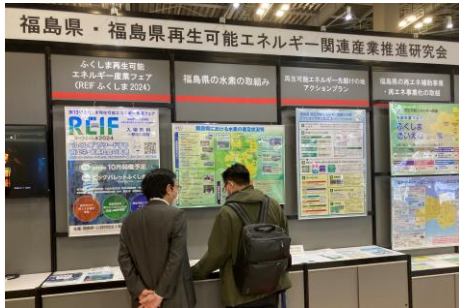
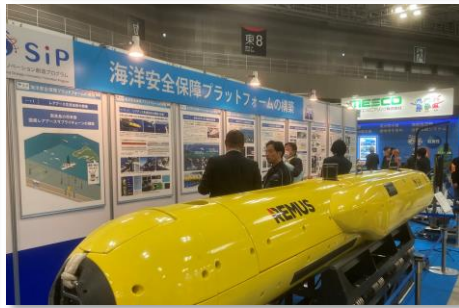
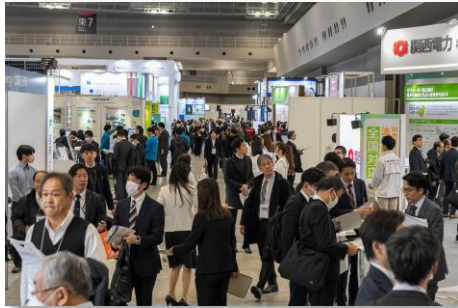
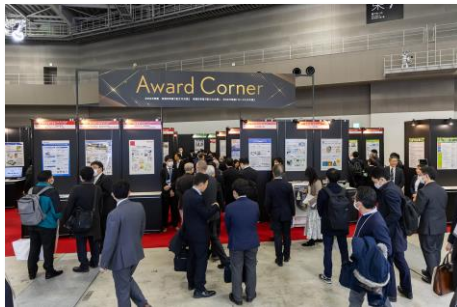
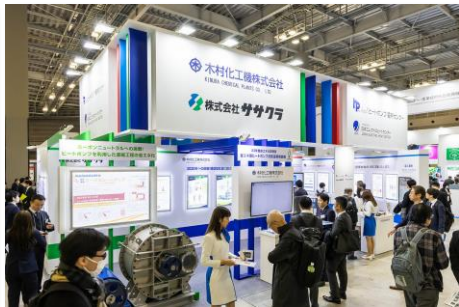
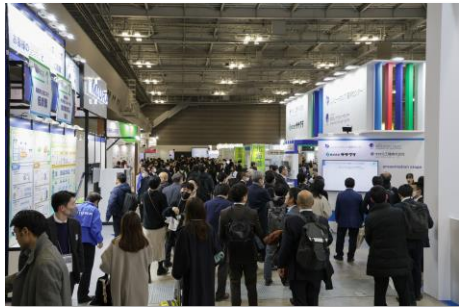
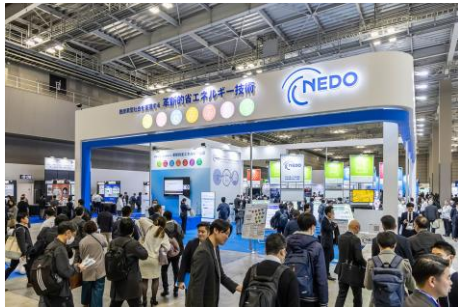
4. Energy Conservation Information Service

ENEX2025 Concept



4. Energy Conservation Information Service ECCJ

Exhibition Highlights - ENEX2024



4. Energy Conservation Information Service

Provision of Information through Publication

Monthly Magazine “Energy Conservation”

The Center publishes a monthly magazine “Energy Conservation”, the only magazine dealing with energy conservation in Japan. It provides wide and high-quality information concerning promotion of energy conservation including information on energy policies and the “Revised Energy Conservation Act”, the latest technologies and knowledge of energy management, measures for electricity saving, etc.



Monthly Magazine
“Energy Conservation”

4. Energy Conservation Information Service

Promotion Goods for Energy Conservation Activities

The Center distributes various goods (at cost) which can be used to promote energy conservation activities in factories or offices.

- Posters, energy conservation check seals, etc. that advocate energy conservation practice of individuals
- LCD temperature meter seals which are useful for controlling indoor temperature
- Display boards, flags, banners, etc. which help people of factories or offices implement energy conservation activities together



5. Support for Energy Conservation in Households & Local Communities

To promote energy conservation/electricity saving by the power of the country as a whole, it is very important to create an environment in which homes, workplaces, local communities, etc. can actively and continuously promote adequate energy conservation/electricity saving activities.

For this purpose, the Center supports energy conservation practice in homes, schools, workplaces, etc. in collaboration with local governments, companies, etc., while providing useful information on the latest energy saving equipment, products, etc. in an easily understandable way.

Energy Conservation Practice, Collaboration with Local Communities

Collaboration with Local Governments, etc.

To promote energy conservation practice in local communities, the Center implements lectures or seminars and supports energy conservation audit for homes in collaboration with local governments, companies, etc. When doing this, "Home energy conservation experts" [see P5] qualified by the Center actively support those activities.

Energy Conservation Seminar Delivery Service for Elementary Schools

"Energy Conservation Home Electric Appliance Concierges" (daily life energy conservation experts) visit elementary schools across the country to deliver special classes which make students think about the global warming issue and energy conservation in homes.



Energy conservation class delivered to an elementary school

6.Support for Development of Human Resources



To effectively promote energy conservation/electricity saving and CO₂ reduction in companies and local communities, it is important to develop and secure human resources who can take initiative in leading energy conservation/electricity saving activities.

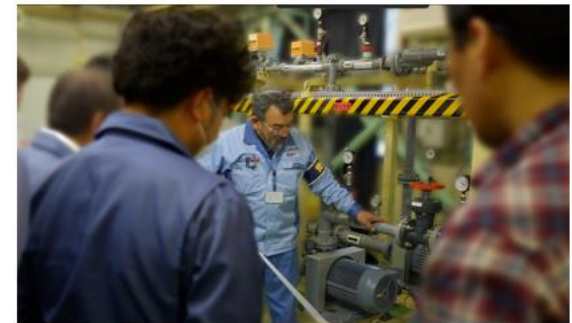
The Center actively implements various seminars to develop people who can undertake energy management in companies, etc. and, at the same time, supports the activities of people implementing energy conservation/electricity saving by using the Center's original qualification system.

Development of Human Resources by Means of Seminars, etc.

Educational Seminars for Engineers

The Center provides educational seminars for people in charge of energy conservation or equipment of workplace in factories or buildings as follows.

- Technical seminars providing knowledge concerning the Energy Conservation Act, the latest energy conservation technologies and measures for electricity saving
- Practical seminars that teach practical technologies using demonstration equipment



Practical Training Seminar

7. Implementation of National Examination ECCJ

Under the Energy Conservation Act, companies which consume a great deal of energy must appoint overall managers who are responsible for the energy management of their company and staff members of factories, etc. who have a qualification of "qualified energy manager", etc. The people who have a qualification of the "qualified energy manager" are playing an active role not only at the workplace of their factory but also in various fields as an expert giving advice for the energy conservation and CO₂ reduction.

The Center is a designated organization for implementing national examinations, training, etc. for these qualifications.