

New Roles of ESCOs in Japan Toward Net Zero Society

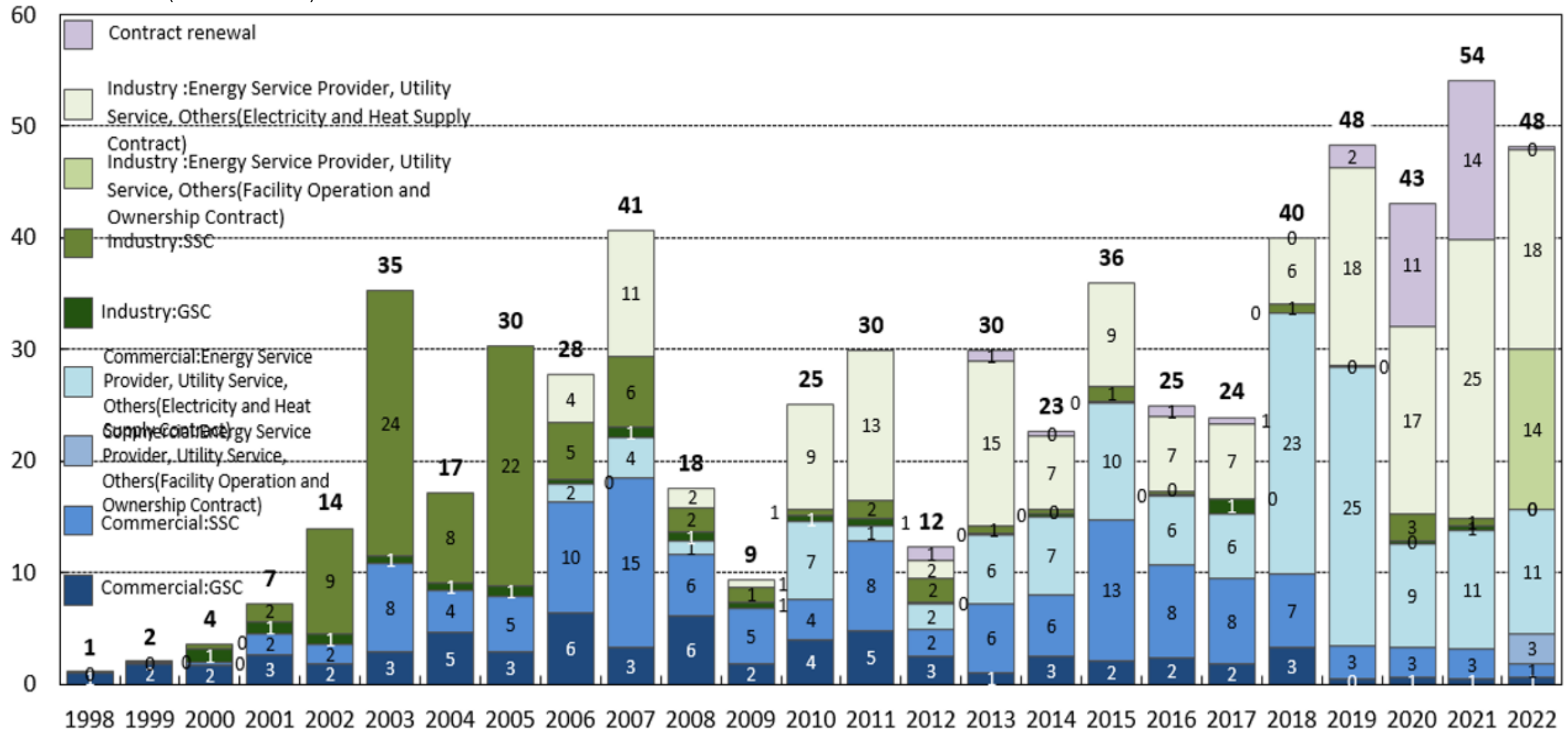
1. ESCO & JAESCO
2. ESCOs in the World
3. New policies for Net Zero
4. ESCO's New Roles for Net Zero

1. ESCO & JAESCO

ESCO Market in Japan



(Billion Yen) (1USD=150JPY)



Number of ESCO projects introduced in selected company's homepages

Company	Customers of ESCO Projects									
	factory	hospital	Local Gov't Incl. Street light	shopping	hotel	office	Univ.	Data center	Sports	Total
A	11	9			2	5	1			28
B	10	2				1				13
C			1				3			4
D	34	7	2	16	1	2				62
E	8	9		7	2		1	3		30
F	7	21	42	17	11	4	7	1	3	113
Total	70	48	45	40	16	12	12	4	3	250

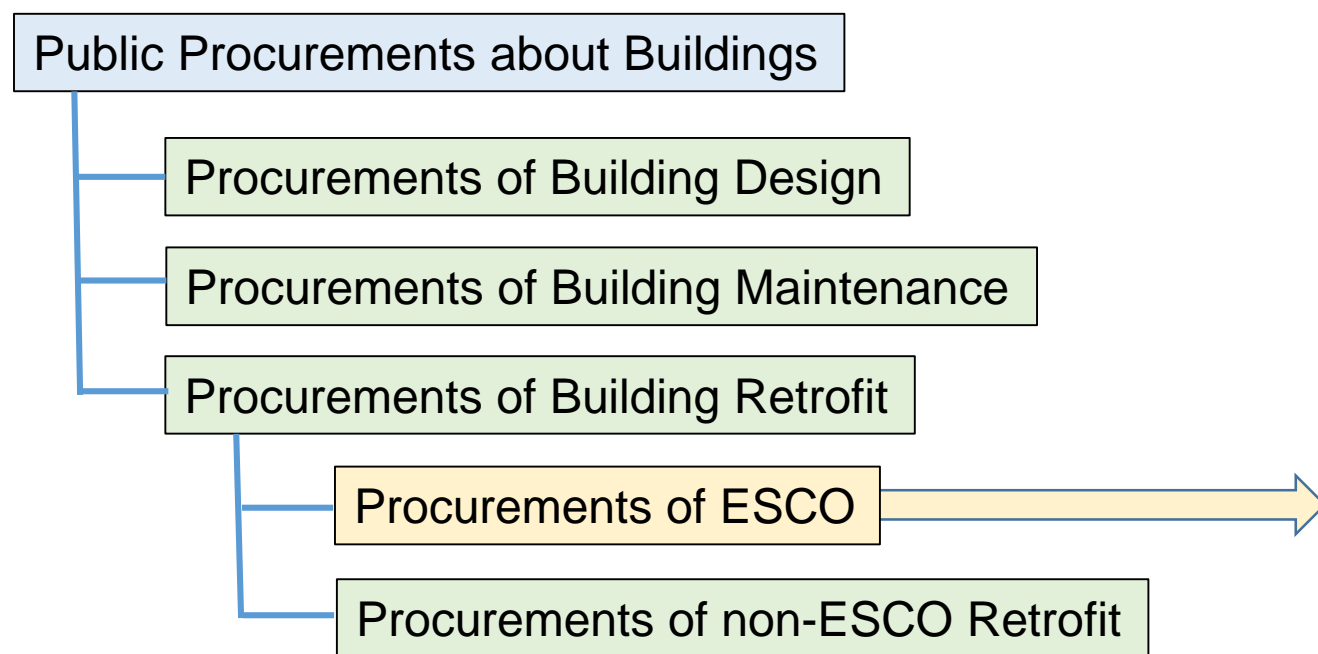
Selected Facts about ESCOs

- Bureaucrat engineers in Central Government are the biggest barriers for ESCO.
- There are no exclusive subsidy for ESCO.
- Non-members of JAESCO are often competitors for JAESCO members.
- Some ESCO projects guarantee GHG reductions as well as cost reductions.

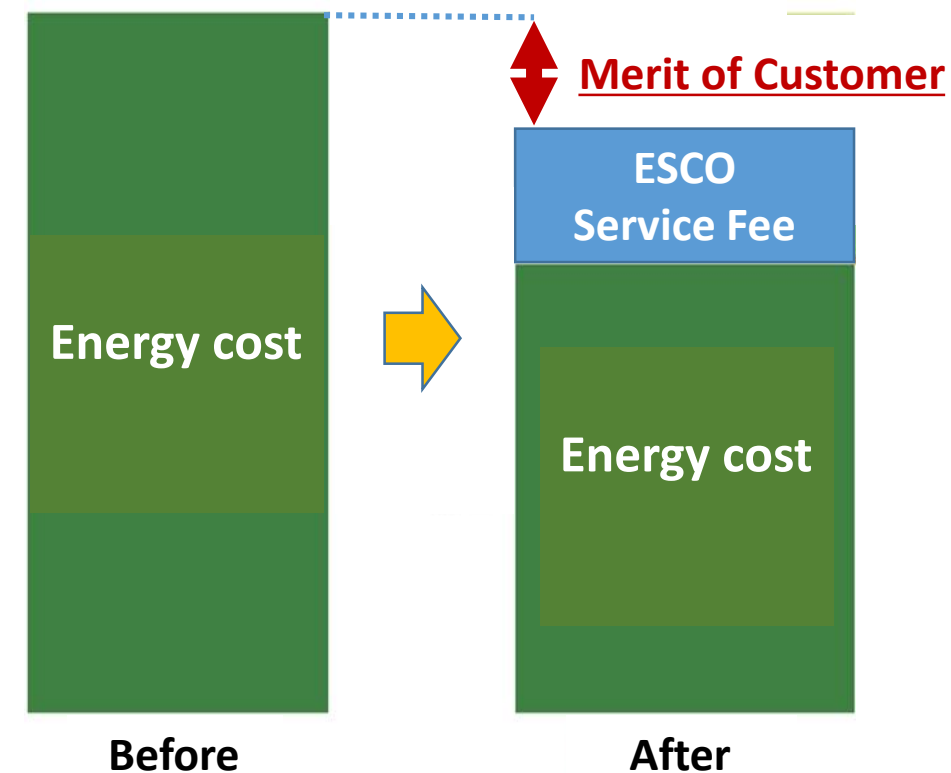
(1) Law for environmentally considered procurements by public organizations

ESCO is defined in this law.

“**Performance Guarantee**” and “**Pay from the Saving**” are necessary.



See next page!



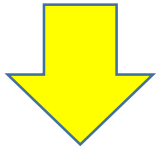
ESCO service for replacement of equipment

<This is **not** 'Pay from the Savings' !

But this can also provide merit for customer!>



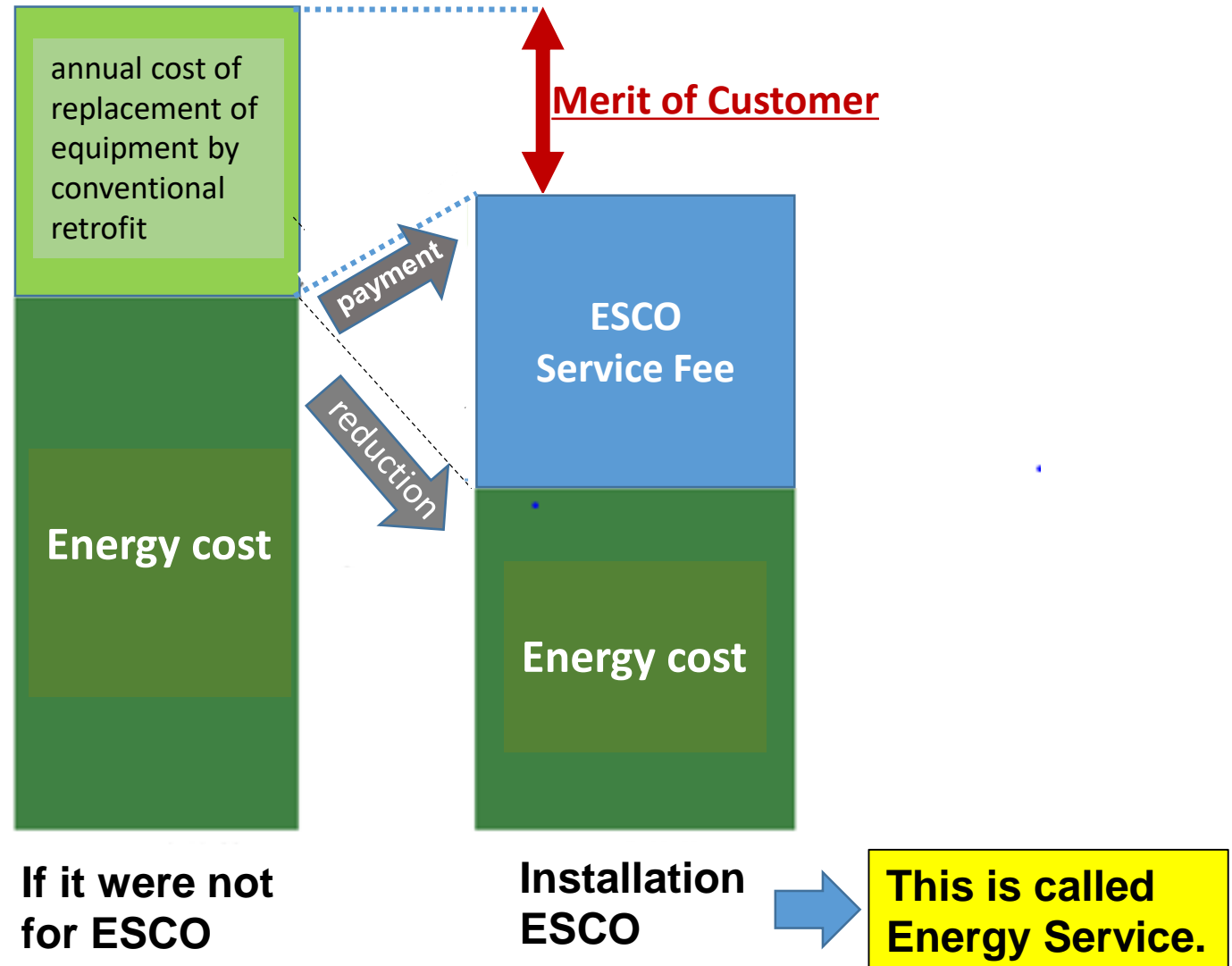
The traditional ESCOs are decreasing.



On the other hand, varieties of advanced ESCOs are increasing.

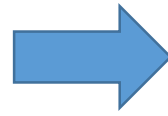
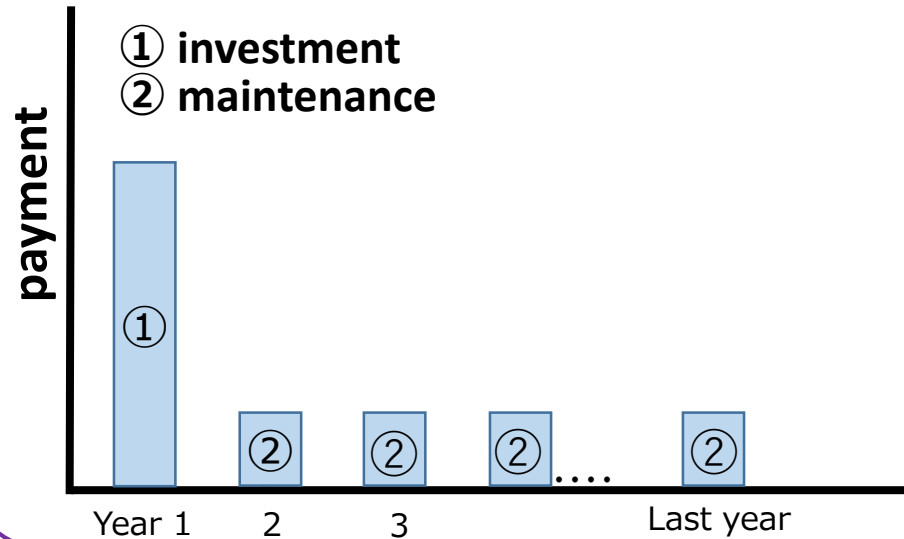
For example;

- Energy Service
- Energy Service Provider Service

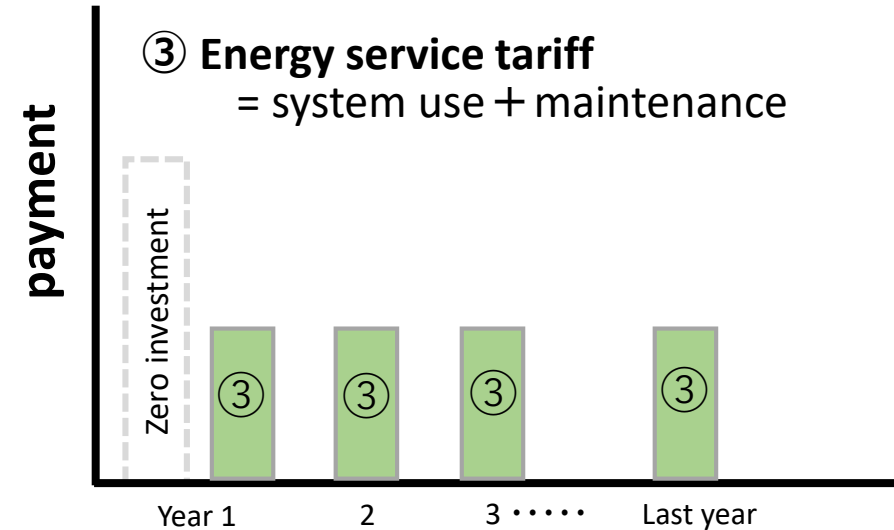


What is Energy Service?

<Conventional Investment>



<Energy Service>



Most of Energy Service provide;

- measurement & Verification
- no guarantee of performance

(1) Definition of ESCO

		Performance Guarantee	Pay from the Savings	With Sales of energy	Monthly payment
Traditional ESCO	Shared Savings	○	○	×	○
	Guaranteed Savings	○	×	×	×
Advanced ESCO	Energy service or Utility Service	×	×	×	○
	Energy Service Provider*	×	×	○	○

* ESP = Energy Service with sales of energy (kWh and/or Nm³)

(2) Definition of Energy Management

Hard ware	Measuring and monitoring devices for building control
Soft ware	Labor work for analysis based on the measured data

(3) Vision of JAESCO (under discussion)

Mission	Contribute the realization of Carbon Neutral from demand side of energy
Value	Encourage ESCO and Energy Management
Vision	Support member companies

About JAESCO



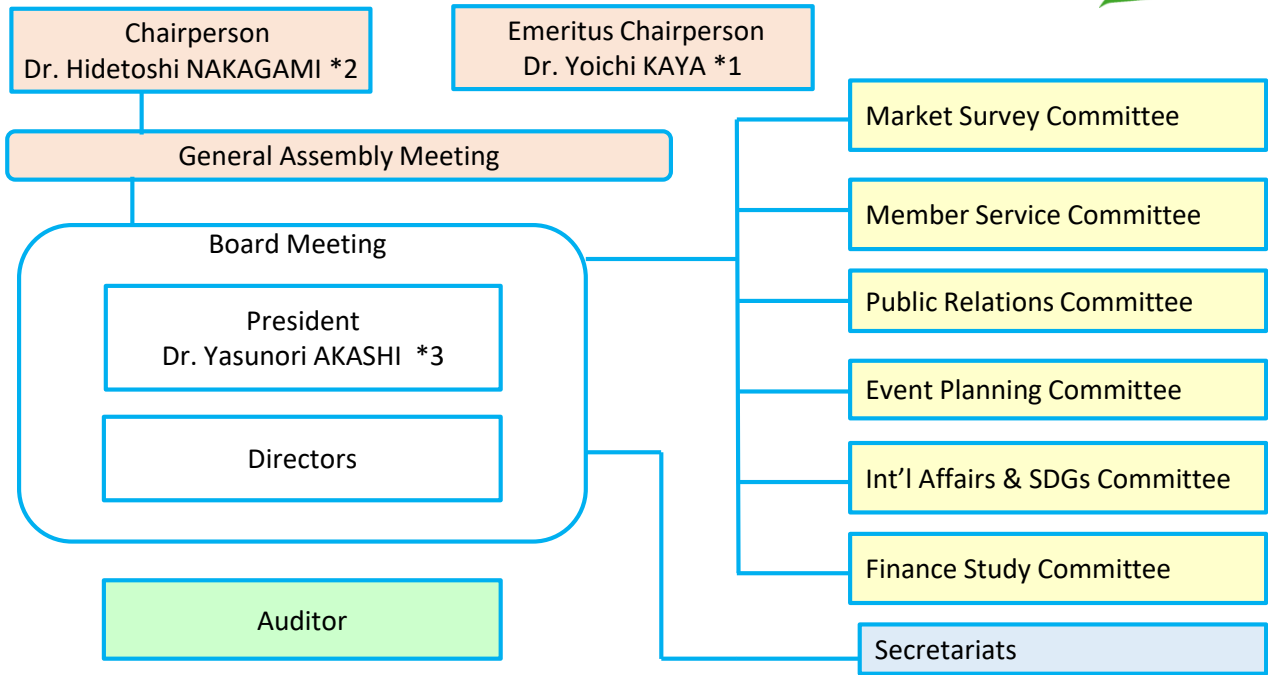
Members

Regular Members ----- 23 companies
 Supporting Members ----- 45 companies
 Special Members ----- 8 individuals
 Friends of JAESCO ----- 20 individuals

History

Year	Contents
1996	ESCO Study Committee was established within the Ministry of Economy, Trade & Industry (METI)
1999	JAESCO was established as a private organization.
2007	Environmentally - considered Procurement Law was enacted.
2010	JAESCO was re-established as a registered non-profit organization
2016	Japanese name of JAESCO was changed to cover Energy Management as well as ESCO.
2018	Asia Pacific ESCO Industry Alliance established ---- 12 members (currently).

Structure



*1: Professor Emeritus of Tokyo University
 *2: Chairman of Jyukankyo Research Institute (JYURI)
 *3 : Professor of Tokyo University

JAESCO hosted 3 Asia ESCO Conferences

year	venue	participation			Subsidy from
		countries	persons	papers	
Oct., 2005	Bangkok	15	300	52	METI (Japan)
Sep., 2007	Beijing	10	200	41	METI (Japan)
Jan., 2010	New Deli	12	300	40	NEDO (Japan)

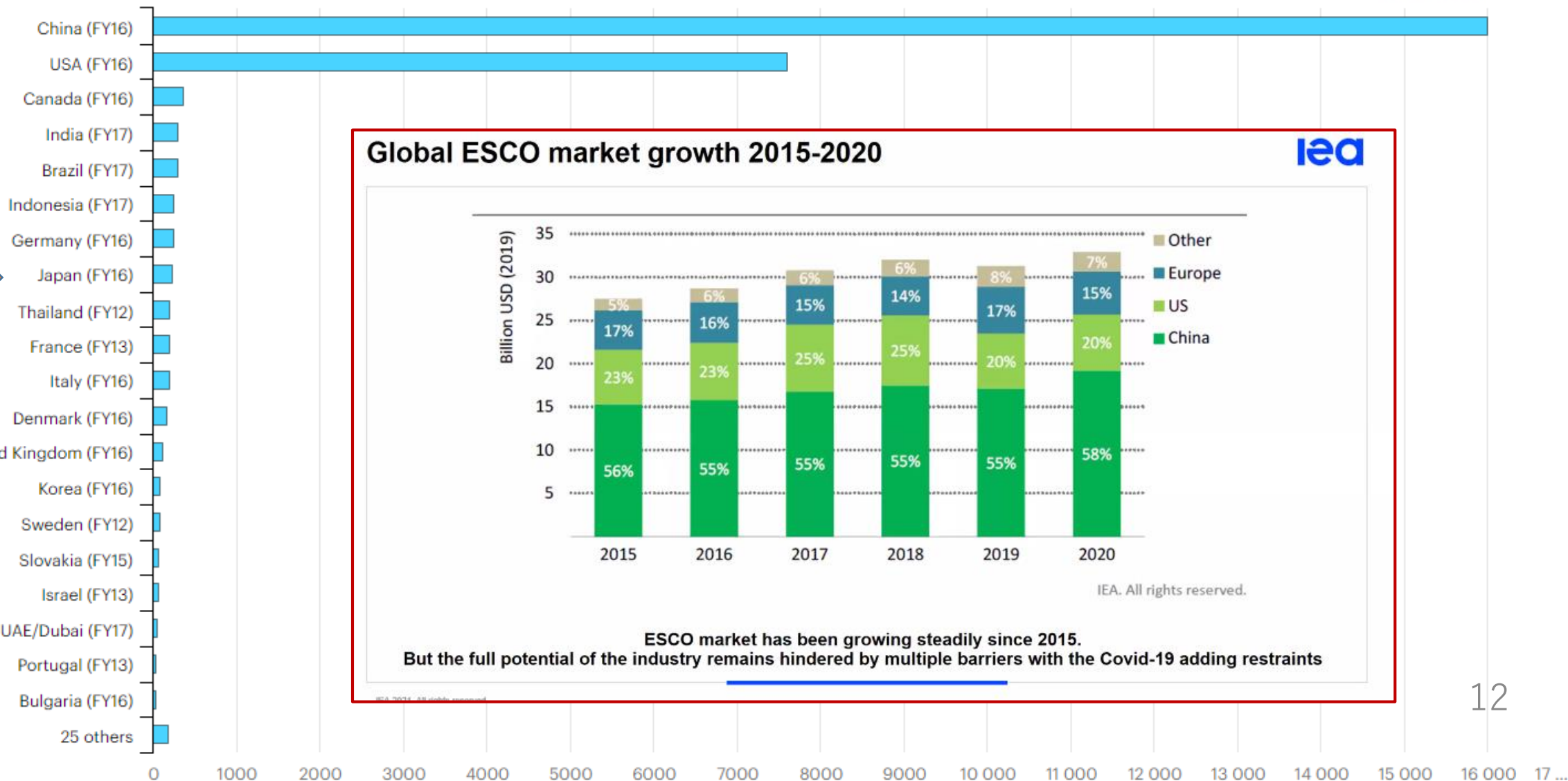


2. ESCOs in the World

IEA (2022). World Energy Investment 2022; source: IEA calculations and estimations based on IEA annual ESCO market surveys (2022 in collaboration with the Global ESCO Network)

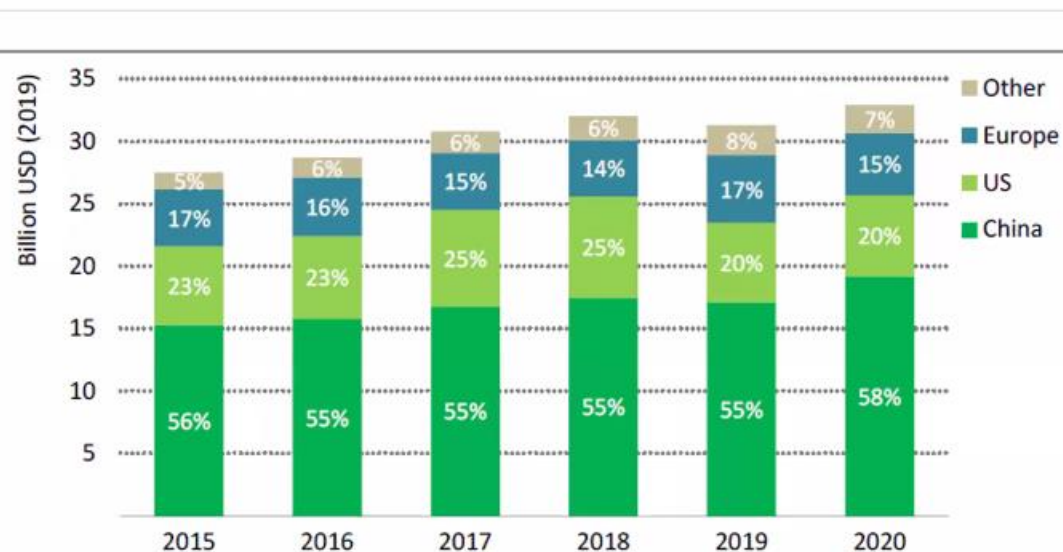
Million USD

iea



Global ESCO market growth 2015-2020

iea



IEA. All rights reserved.

ESCO market has been growing steadily since 2015.
But the full potential of the industry remains hindered by multiple barriers with the Covid-19 adding restraints

【Million USD】

(1) Regional Associations

World	Global ESCO Network*1	Copenhagen
America	Efficiency Evaluation Organization (EVO)	Washington DC
Asia	APEIA*2	Singapore
Europe	eu. ESCO	Brussels
	EFIEES	



(2) National Associations (43 countries • 47 associations)

Africa	4	South Africa, Uganda, Mali, Egypt	
America	6	USA, Canada, Mexico, Brazil, Chile, Colombia	
Asia/ Pacific	13	APEIA*2	China(2), India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand
		Non-APEIA	Australia, New Zealand
Europe	19	Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Italy(3), Netherlands, Portugal, Romania, Slovakia, Spain(2), Switzerland, UK, Hungary	
Middle East	5	UAE, Saudi Arabia, Oman, Iran, Turkey	

*1 : Global ESCO Network

(Internal organization of Copenhagen Climate Centre which is supported by UNEP)

*2 : Asia Pacific ESCO Industry Alliance

Paris Meeting

	Day1 (28 May 2024)	Day2 (29 May 2024)
Contents	Gathering of ESCO Associations	Int'l ESCO Symposium
Participants	28 from 19 countries	81 from 37 countries
Venue	UNEP Building	UNESCO HQ
Host	Global ESCO Network	



(1) Coming activities of GEN in 2024-2025

The Global ESCO Network will focus on:

- Provide general understanding of common ESCO related needs.
- Analyse and inform how ESCO markets work

The network developed a **survey to map ESCO markets together with the IEA**, and in consultation with EU JRC (Paolo Bertoldi) and with inputs from associations

- Best practices for **ESCO accreditation** and advocacy for ESCO accreditation
- Inform and advocate on what ESCOs can accomplish, including in the space of climate change. Including the ESCO in Nationally Determined Contributions **(NDCs) to the Paris**

Agreement

- ESCO University

There seemed to be a general consensus to expand on the existing knowledge sharing and **capacity building** activities, from webinars to dedicated training offers.

- Need to have ESCO success stories

ESCO **success stories** shall better be shared and penetrated.

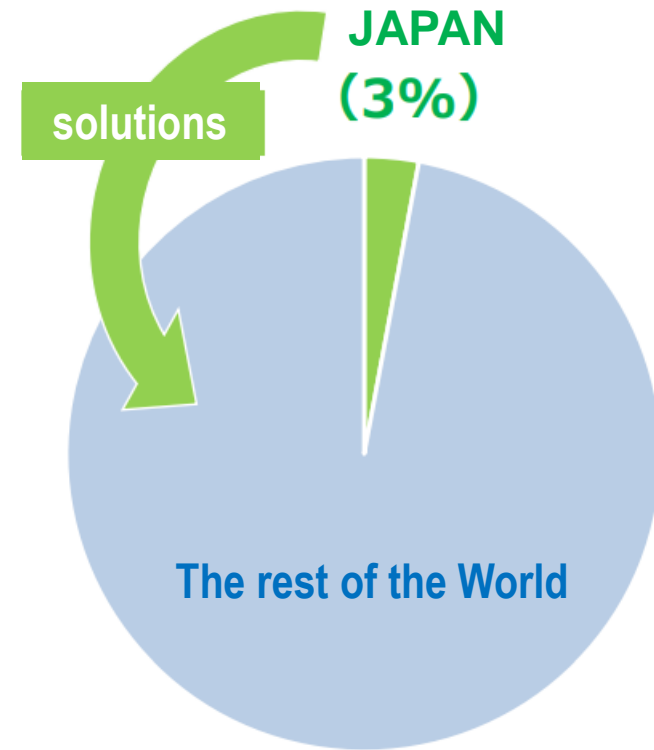
Next meeting will be in 2026.

(2) Presenters at ESCO Symposium

<u>Policy + Public Sectors (4)</u> Ministry for the Ecological Transition, Spain Federal Energy Management Program, U.S. Department of Energy Industrial Development Officer, UNIDO Energy and Climate Branch, UNEP
<u>ESCO Associations (4)</u> US, Malaysia, SPAIN, Southern Africa
<u>ESCOs (9)</u> Siemens, EnerSave Capital, SRC Global Inc., Solas Capital, SOFIAC Fonds Africain de l'Efficacité Énergétique, DENEFF EDL_HUB, (D) GreenYellow, Econoler
<u>Research (2)</u> Joint Research Centre of European Commission Adamek & Adamek Consulting
<u>Others (3)</u> Copenhagen Climate Centre International Copper Association Efficiency Valuation Organization

	Panelist	Contents
1	Mr. Unruh (NAESCO, USA)	<ul style="list-style-type: none"> - Today, 95% of the ESCO market in the United States is public facilities (federal government: veterans affairs, housing, Department of Defense; local governments: elementary and junior high schools, state universities, state governments, cities and towns), so there are no credit issues. - NAESCO's roles are integrity, accreditation, and ombudsman. - ESCO's enemies are architects, general contractors, and craftsmen's unions, and the company spends \$60,000 (9 million yen) on countermeasures against them. NAESCO is headquartered in Washington DC and has three full-time employees.
2	Dr. Bertoldi (EC/JRC)	<ul style="list-style-type: none"> - The EU Directive on energy conservation in buildings (member states are required to enact domestic laws) was enacted in 1992, and was subsequently amended in 2012 and 2018, with the current regulation being the Energy Performance of Buildings Directive of 2023. - EC/JRC's "ESCO Country Surveys" were published in 2005, 2007, 2012, 2017, and 2023. - In addition, a "Survey of Performance Guarantee Contracts in the EU" was published in 2023.
3	Ms. Satos (US/DOE)	<ul style="list-style-type: none"> - The Department of Energy has a 50-year history. The latest policy on energy management was four years ago, which states that more than half of the energy conservation diagnosis projects that receive subsidies must be realized with an effect guarantee contract. Construction subsidies are only provided for effect guarantee contracts, and the budget is 1 billion dollars (150 billion yen), called the EPC (Energy Performance Contract) Challenge. - In order to popularize ESCOs, DOE has supported the "reliability of ESCOs." Specifically: the development and publication of standard contracts, the dispatch of advisors (business operators + customers), case studies, performance evaluation, etc.

3. New policies for Net Zero

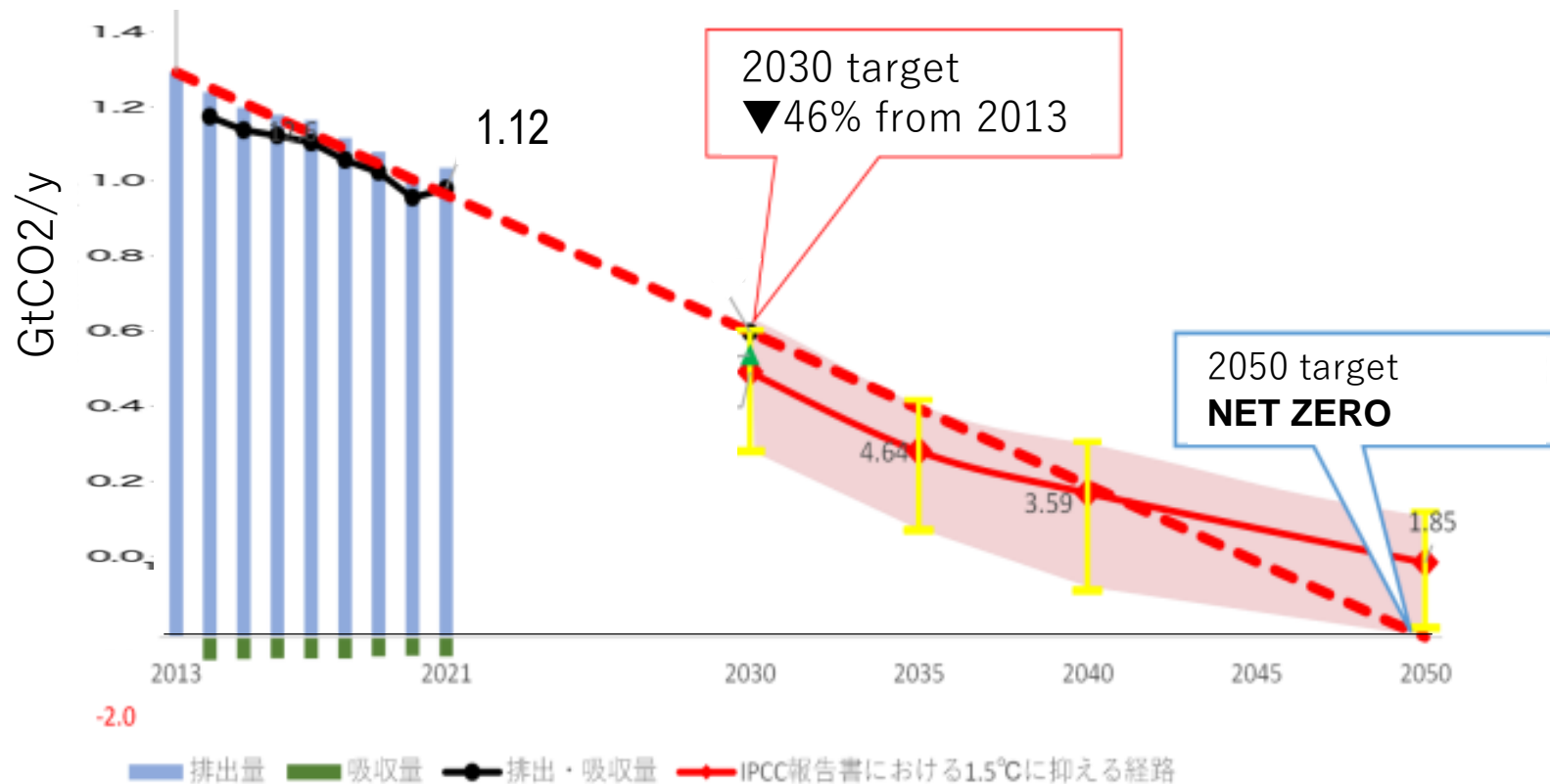


https://www.iges.or.jp/jp/publication_documents/pub/policy/jp/13805/GST_Japan_NDC.pdf

Trend of CO2 Emission toward 2050 Net Zero

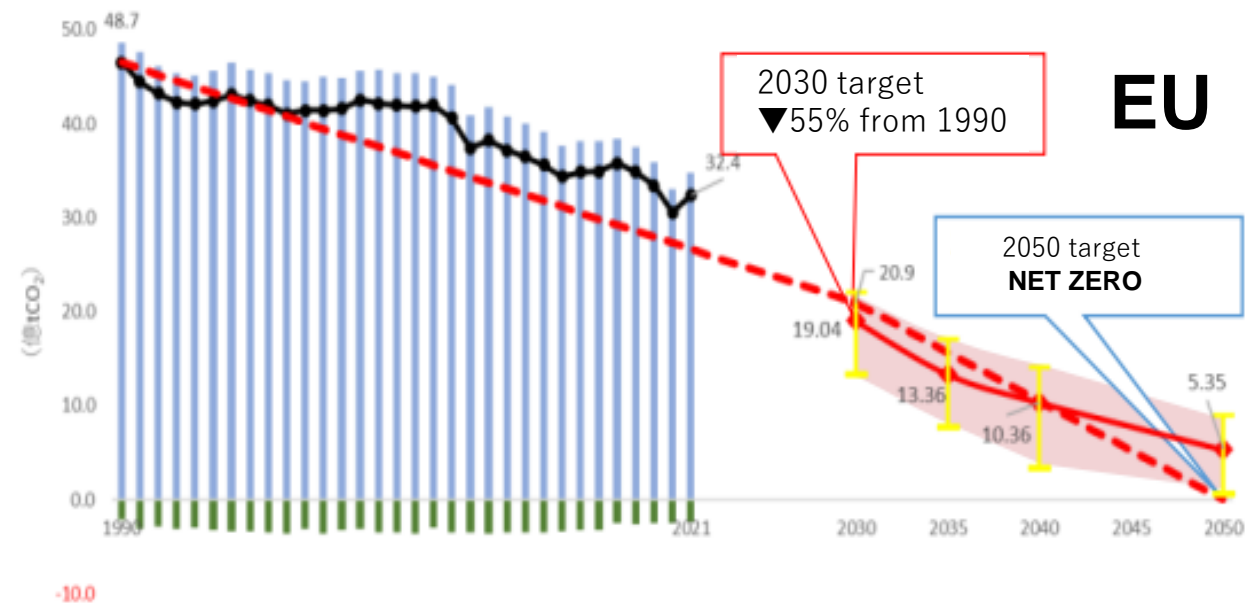
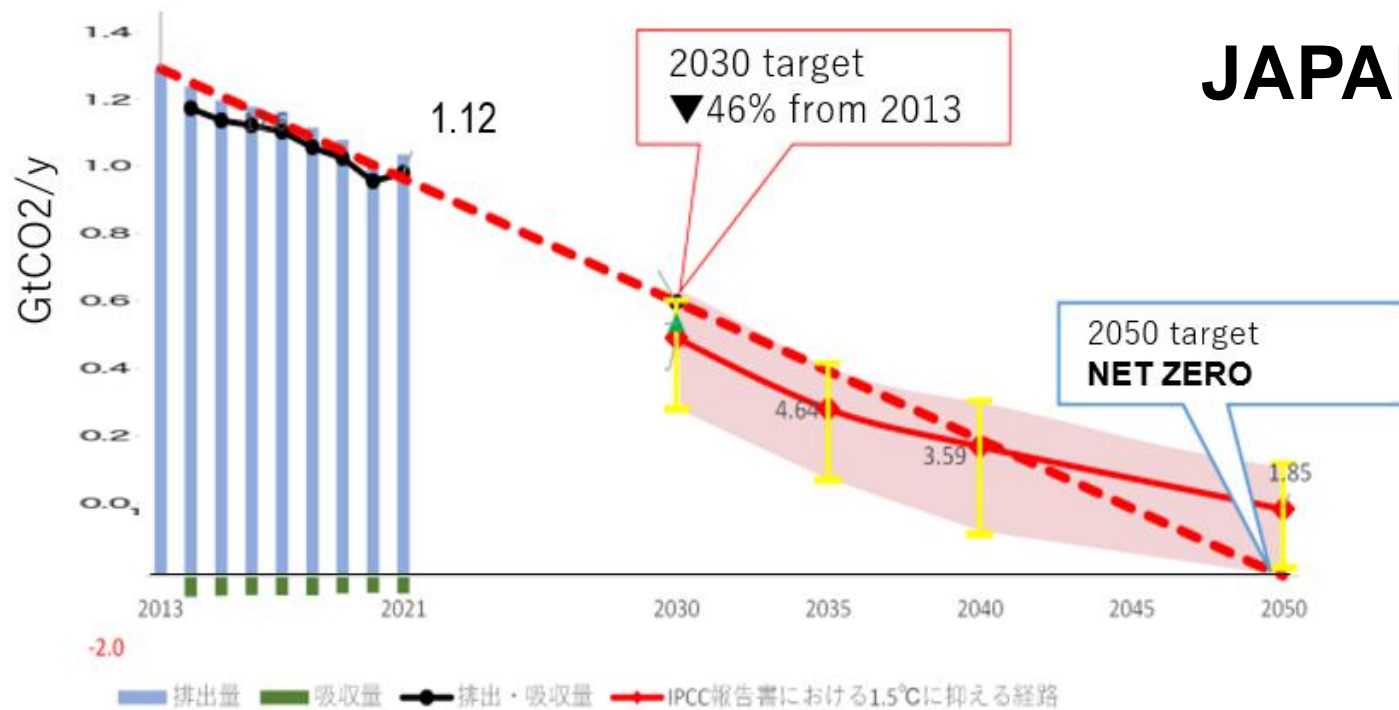


Japan reduced appx. 20% since 2013, and the trend is on track for the 2030 & 2050 target.

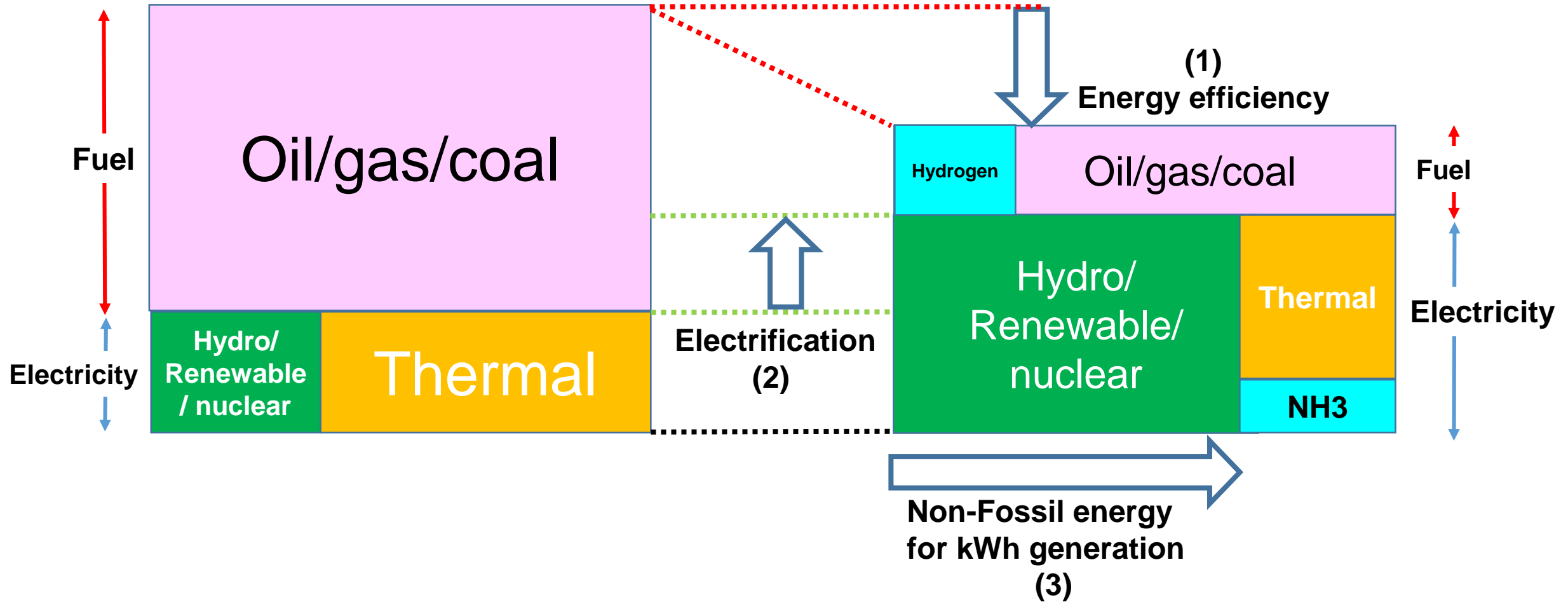


Source: Ministry of Environment

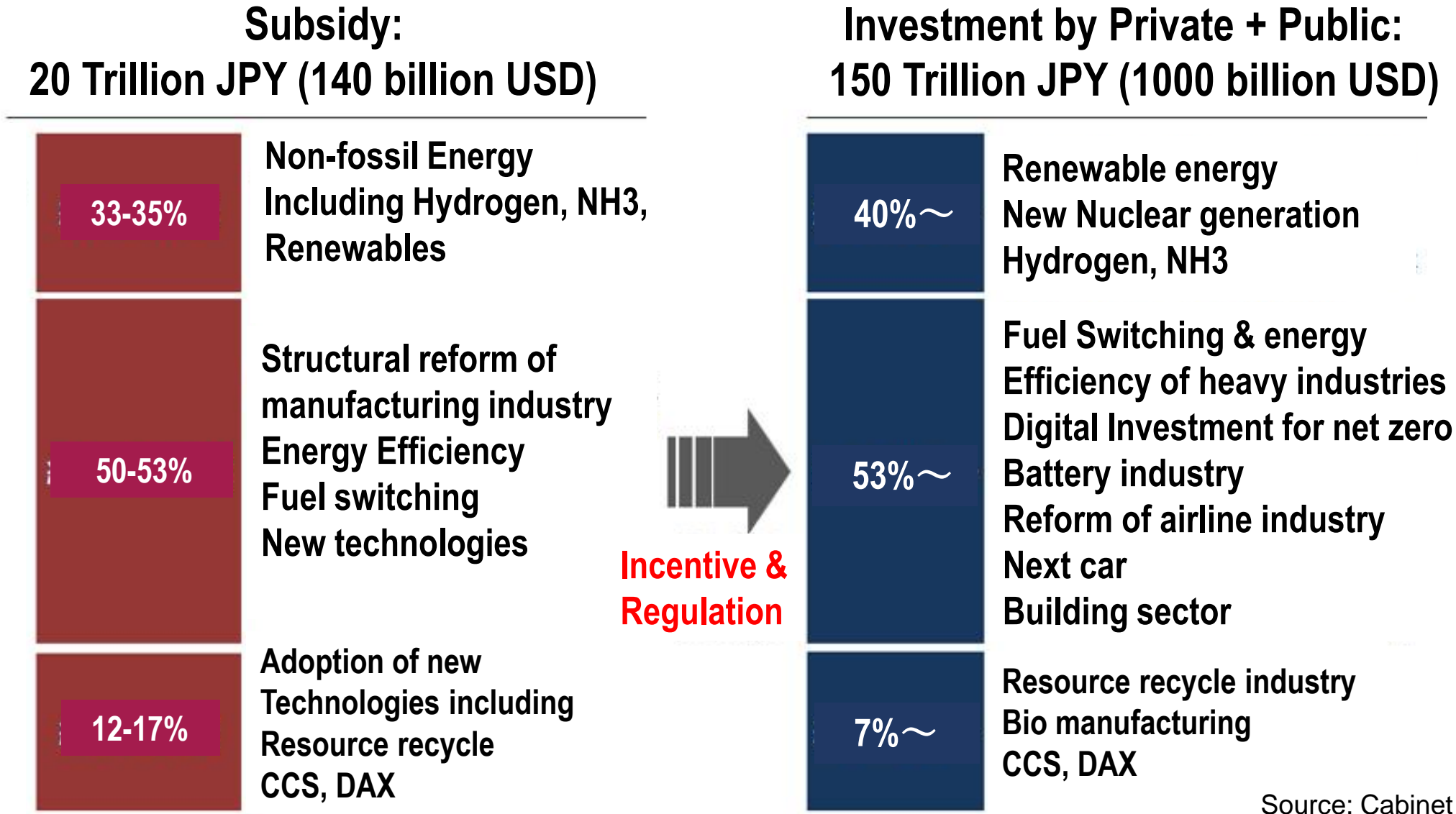
JAPAN



3 Ways for Net Zero



GX (Green Transformation) Investment in coming 10 years



Source: Cabinet Office

4. ESCO's New Roles for Net Zero

1. Unfortunately, JAESCO is not a member of the Governmental discussion about NDC*.
2. But, JAESCO discussed with METI and MOE about the advantages of ESCOs from the view point of NET ZERO.

* : Nationally Determined Contribution

3. The KEY WORD is;



Performance Contract

- **Guarantee** the reduction of energy consumption and/or CO2 emission.
- This contract is included in **private contract** which does not require regulators.
- So, policy makers can **rely on** private sector about the reduction performance.



Law for environmentally considered procurements by public organizations

ESCO is defined in this law. (see slide #5)

Governmental committee has been organized every 5 year

- (1) Feb. 2023 : Basic policy regarding contracts related to building renovations was enacted.
- (2) Feb. 2024 : Explanatory document (textbook) was published

Law for environmentally considered procurements by public organizations

(1) Basic policy regarding contracts related to building renovations

- Building renovations shall be “ESCO projects” or “Other energy-saving renovation projects”.
- When considering building renovation plans, we should check the possibility of adopting ESCO scheme.
- When ordering “other energy-saving renovation projects”, we should select the contract method that contributes to the reduction of energy consumption and/or emissions of greenhouse gases.

(2) Explanatory document (Textbook) was published.

Performance Contract was mentioned in this document.

This explanatory document explains the details of the contract method, assuming that either the proposal method, which calls for technical proposals that include the reduction of energy consumption or greenhouse gas emissions as one of the evaluation themes, or the comprehensive evaluation bidding method can be selected. **On the other hand, there are also contract forms that guarantee energy conservation effects and reduction of greenhouse gas emissions through performance contracts (effect guarantee contracts), such as ESCO projects, and one option is for the client to consider the possibility of adopting such contracts, taking into account the characteristics of the facility and the purpose of the renovation.** However, when concluding a performance contract, it is necessary to clarify in advance the allocation of risks at each stage of the work and responses when problems arise, and to appropriately incorporate this into the contract.

Thank you for your kind attention !

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