Introduction of NEDO, our international projects and Trends in Vietnam

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New Energy and Industrial Technology Development Organization
Frontier Department

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Overview of NEDO

About NEDO

NEDO is Japan's largest funding agency focusing on technology innovation.

Mission:

- Address energy and global environmental problems
- Enhance industrial technology development

Organization: Established in 1980

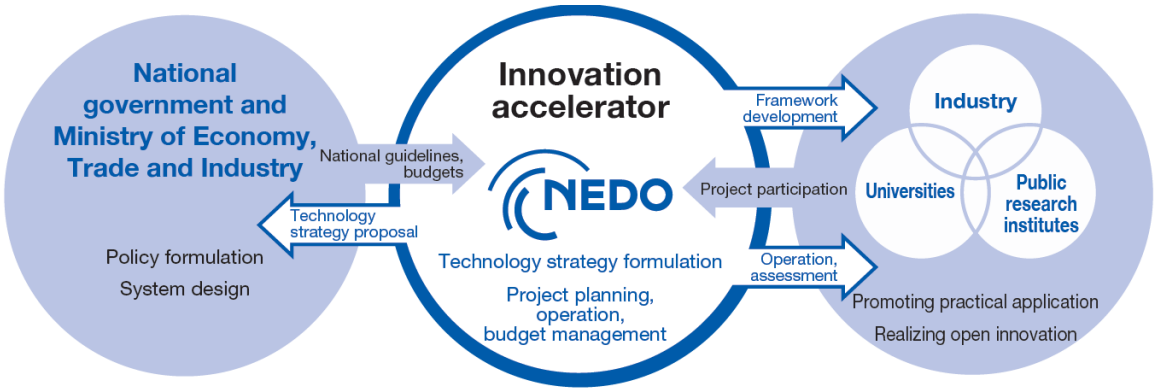
Minister in Charge: the Ministry of Economy, Trade and Industry of Japan

Head Office: Kawasaki City, Japan

Personnel: 1,525 (as of April 1, 2024)

Budget: Approximately 1.17 billion US dollars (FY 2024) *156JPY = 1USD

(*In addition, total 53.6 billion US dollars funding programs are also being implemented.)



What is NEDO?

Supports by Government of Japan

Financial Support
JBIC, NEXI, JICA and JOGMEC etc.

Technology Support
NEDO and JOGMEC etc.

Capacity Building
JICA, IEEJ, ECCJ, AOTS and JETRO etc.

Ref: https://www.meti.go.jp/press/2023/12/20231218004/20231218004-5.pdf (Page9)

Our Activity Fields

FY 2024 Budget total 174.9 billion yen (ca. $1.1B)

Energy Systems (52.5 Billion yen)

Areas of focus

- Grid control technology
- Energy storage technology such as batteries
- Technology related to hydrogen production, storage, transport, and use
- Renewable energy technology

Energy Conservation and Environment (36.5 Billion yen)

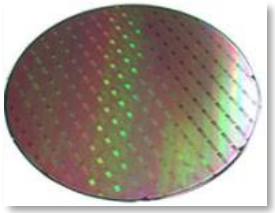
Areas of focus

- Innovative energy conservation technology
- Environmentally-friendly process technology
- Development of high-efficiency coal-fired power generation technology
- CCUS technology
- Fluorocarbon control technology
- 3R technologies including resource sorting/metal refinery technology
- International demonstrations, JCM

Industrial Technology (31.6 Billion yen)

Areas of focus

- Robot and AI technology
- IoT, electronics, and information technology
- Manufacturing technology
- Materials and nanotechnology
- Bioeconomy

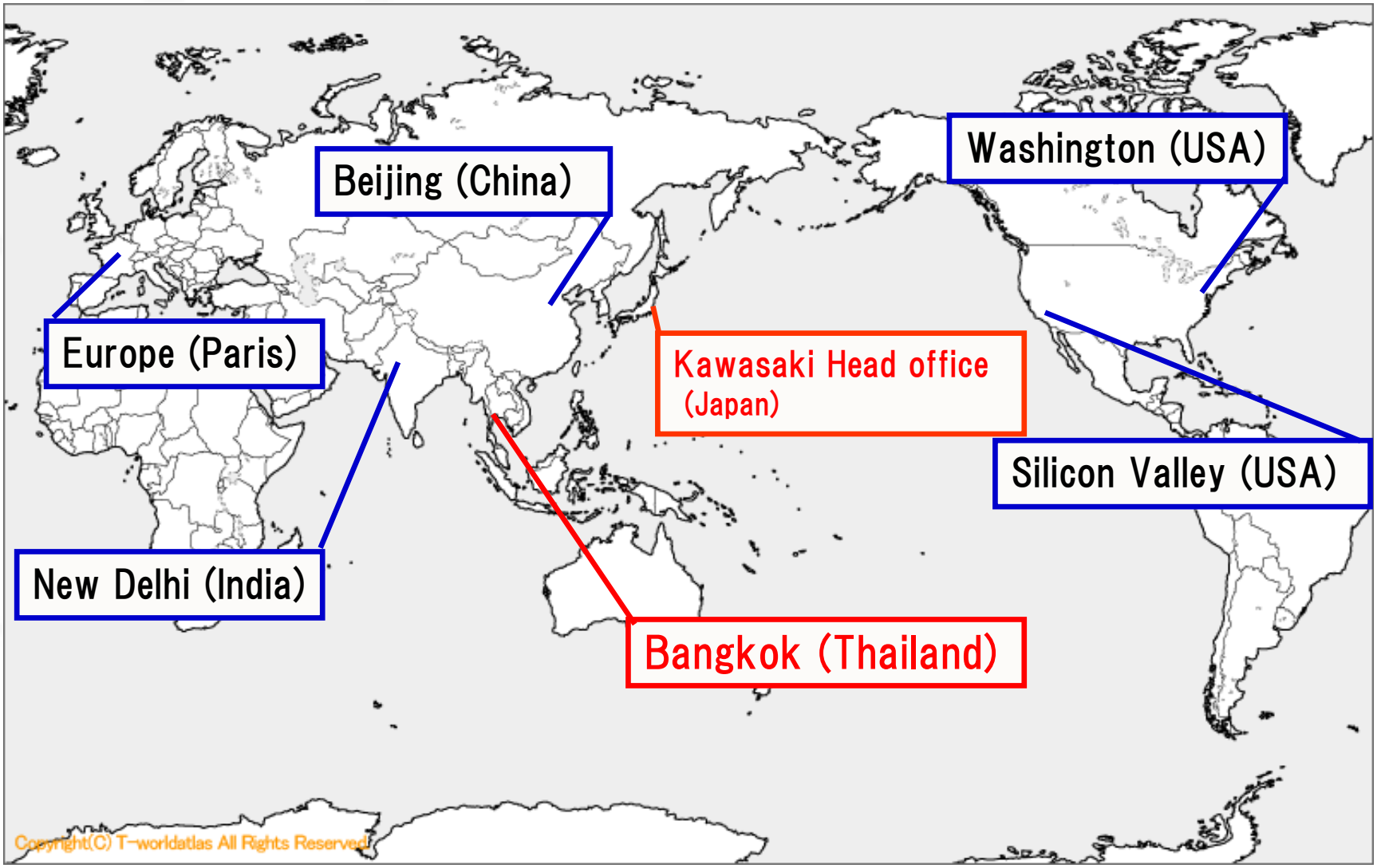


New Industry Creation & Discovery of Technology Seeds (54.3 Billion yen)

Areas of focus

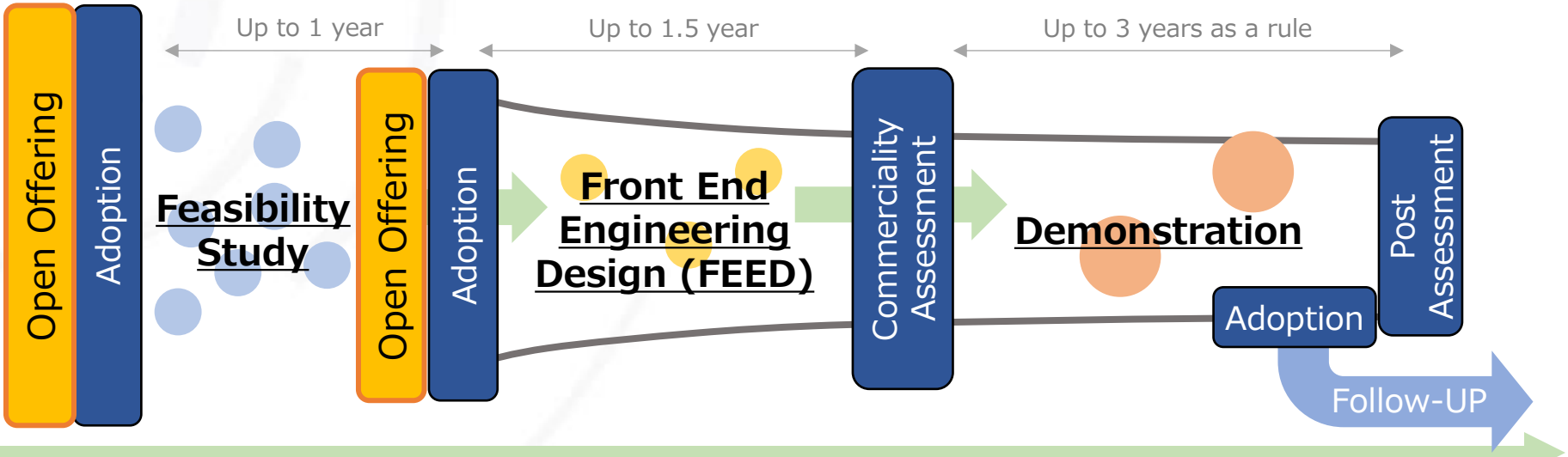
- Fostering technology-based startups
- Promotion of open innovation

Overseas Offices



International Demonstration Project of NEDO

International Demonstration Project
Flow of Demonstration Project



- Survey of partner country's energy situations, related policies, business environment, etc.
- Consideration of demonstration elements, goals and possibility of dissemination

- Design of demonstration equipment and systems
- Detailed plan of demonstration research
- Commercialization plan after demonstration research
- Negotiations with partner country's company, etc.

- Design, procurement, manufacture, transport and installation of demonstration equipment and systems
- Demonstration operation

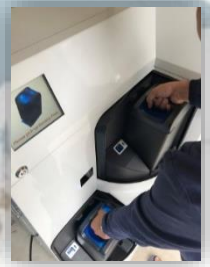
- Hosting of/participation in open days, seminars and exhibitions
- Human resource development, dispatch of experts, etc.

Purpose of International Demonstration Project

To demonstrate Japan's advanced technologies contributive to realization of S+3Es (Safety, Energy security, Economic efficiency and Environment) in overseas countries, and furthermore, to contribute to dissemination and development of Japan's energy-related industry, domestic and overseas energy transformation and decarbonization, and Japan's energy security through demonstration in institutionally advanced overseas energy markets.

Demonstration of large-scale hybrid storage battery system (Germany)

Demonstration of portable storage battery sharing (Indonesia)



Demonstration of expansion of EV's range (U.S.)

Demonstration of operations of large EV buses by 10-min. charging (Malaysia)

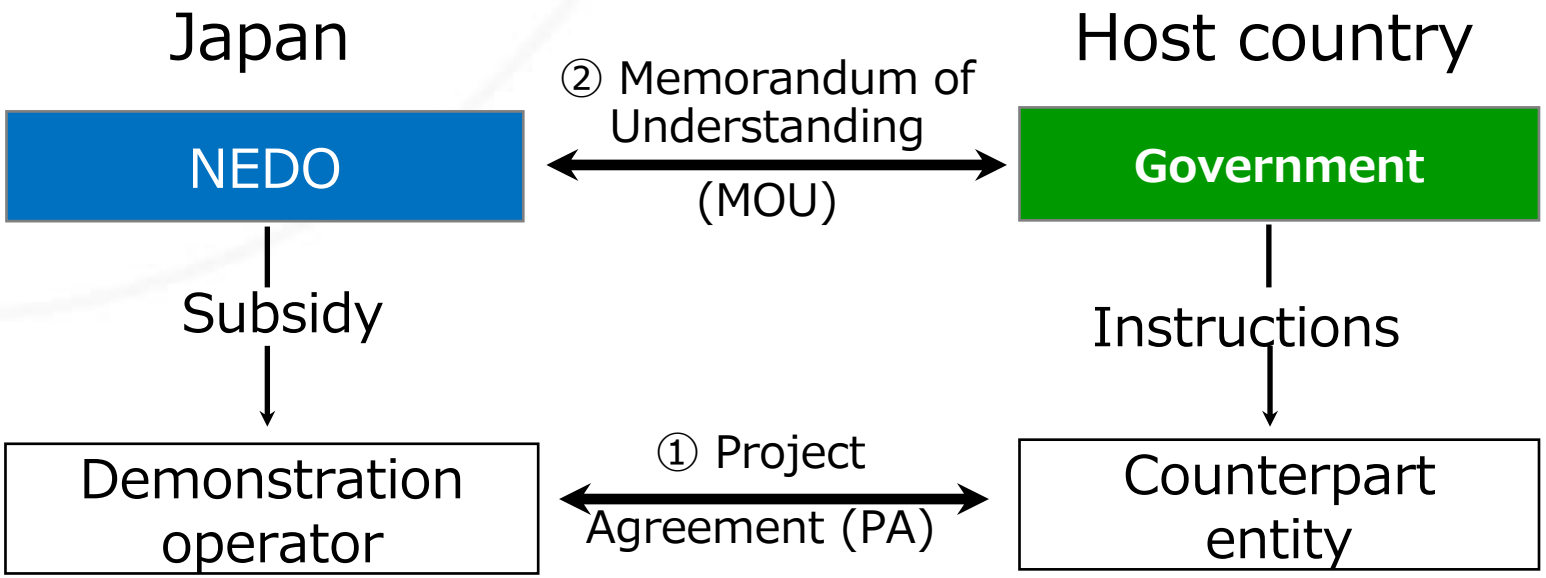
Demonstration of energy-saving cellulose sugar manufacturing system from surplus bagasse raw materials (Thailand)

Demonstration of combined operation of power transmission and distribution of storage batteries (U.S.)

Cooperative Framework for Demonstration

① Demonstration operator and counterpart entity sign project agreement (PA) which stipulates details of demonstration, rights, and duties.

② NEDO and host country government may exchange LOIs (Letters of Intent) or conclude MOU (Memorandum of Understanding) to support implementation and dissemination.



*Entrustment projects have a similar framework.

Last Year's Seminar

Participants
Number of in-person participants: 72
Number of online participants: 50

One of the participating company, Innovative Design & Technology was adopted by International Demonstration Project on Japan's Technologies for Decarbonization and Energy Transition.

Scene from the venue

Greeting

exterior

Inside view

Trends in Vietnam (Chemical Industry)

Understanding on the Policy Related to the Vietnamese Chemical Industry Energy Saving

- The Ministry of Industry and Trade set Circular No. 02/2014/TT-BCT on solutions for economical and efficient use of energy in industries.
- The subsectors of chemical industry are needed to satisfy with the standards below.

Subsectors	Capacity of Production	Standards
Natural rubber manufacturing	<5,000ton/year	44 kOE/(product-base)ton
	5,000ton/year < 10,000ton/year	36 kOE/(product-base)ton
	>10,000ton/year	28 kOE/(product-base)ton
Fertilizer manufacturing	<4,000ton/year	14.8kOE/(product-base)ton
	4,000ton/year < 9,000ton/year	16.8kOE/(product-base)ton
	>9,000ton/year	19.7kOE/(product-base)ton
Liquid paintings manufacturing	-(Every organization)	12.1kOE/(product-base)ton
Solvent paint manufacturing	-(Every organization)	17.7kOE/(product-base)ton

- To satisfy the standards above, the energy-saving is the first option to tackle in term of it's economical aspect and energy consumption aspect.

Needs Based on the Questionnaire Survey for Vietnamese Chemical Companies

- To nominate the SME Japanese energy-saving technology providers for the matching with Vietnamese chemical companies, a questionnaire survey has conducted Dec 2024.
- The survey shows the potential needs in Vietnam

Category	Needs for energy-saving at the Chemical industry in Vietnam
High-efficiency power and heat supply	-Efficient energy conversion technologies, particularly in rubber products, plastics, chemical industries, fertilizers, and food. **-Technologies for boiler optimization and waste heat recovery and utilization.** **-Utilization of untapped heat.**
Effective utilization of thermal energy	- Efficient energy conversion technologies, particularly in rubber products, plastics, chemical industries, fertilizers, and food. **- Effective utilization of thermal energy through insulating coatings.** **- Heat pump technology.** **- Optimization of heating furnaces and waste heat recovery and utilization.**
Energy conservation in manufacturing processes	**- Efficient utility management technologies, such as water treatment, particularly in the fertilizer, food processing, and chemical industries.** **- Technologies for optimizing chiller efficiency.** **- Technologies to enhance compressor efficiency and reduce compressed air losses.** - Technologies for the recovery and utilization of biogas from wastewater. - Implementation of inverters and harmonic suppression devices to reduce power loss. - Energy-saving measures for lighting systems.

Note: the bold and underlined sentences are the needs related to the companies which attends to today's event

Thank you for your kind attention!!

More about NEDO