



NEDO's Contribution to Enhancement of Bilateral Cooperation between Japan and Russia

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New Energy and Industrial Technology Development Organization
(**NEDO**)

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NEDO's Outline



Mission:

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

Organization: Established in 1980; under the Ministry of Economy, Trade and Industry of the Government of Japan

Head Office: Kawasaki City, Japan

Personnel: approx. 920

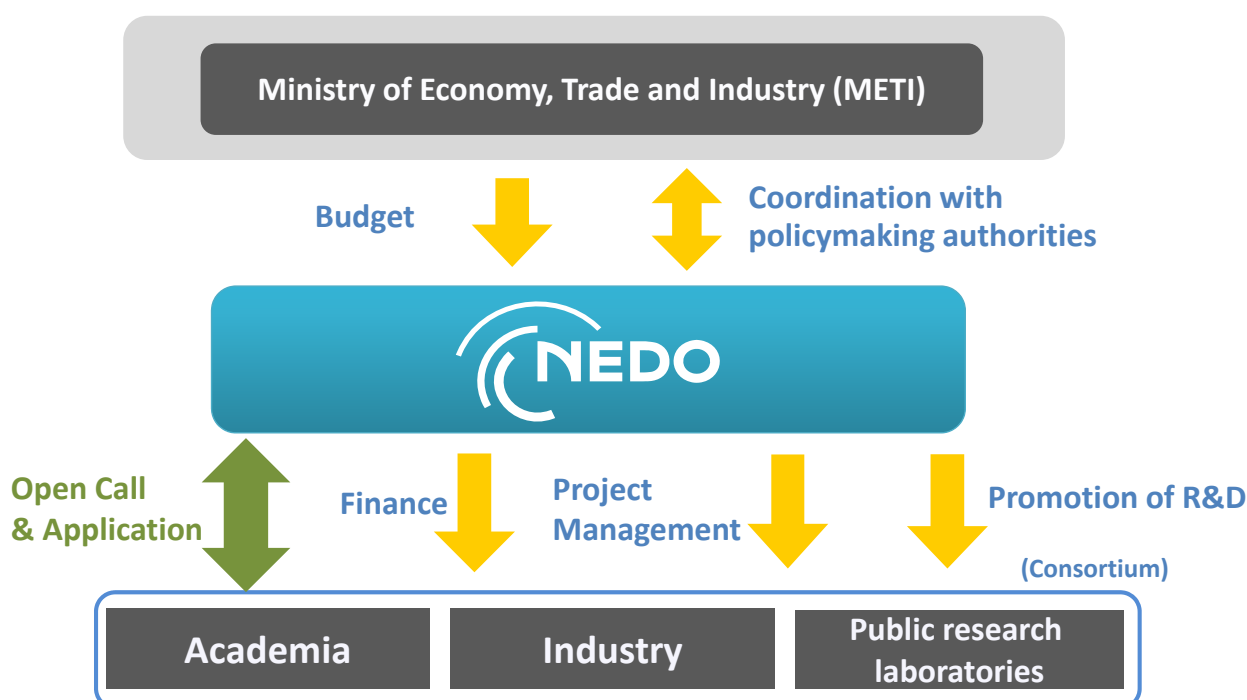
Budget: Approximately 129.8 billion yen (FY2016)

Chairman: Mr. Kazuo Furukawa



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NEDO's role



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NEDO's Project Activities



National Projects (120.8 billion yen)

Energy and Environmental Field

- New Energy (43.1 billion yen)
- Energy Conservation (10.8 billion yen)
- Rechargeable Batteries and Energy System (4.8 billion yen)
- Clean Coal Technology (16.6 billion yen)
- Environment and Resource Conservation (2.3 billion yen)
- Global Warming Mitigation Technologies (2.5 billion yen)

Industrial Field

- Electronics, Information, and Telecommunications (14.2 billion yen)
- Materials and Nanotechnology (13.5 billion yen)
- Robot Technology (6.5 billion yen)
- New Manufacturing Technology (2.0 billion yen)
- Crossover and Peripheral Field (0.1 billion yen)

FY2016 Budget
129.8 billion yen

Public Solicitation for Proposal Activities
(4.6 billion yen)
International Demonstration Activities
(7.0 billion yen)

** Due to budget sharing, individual budget amounts shown above do not equal the total.*

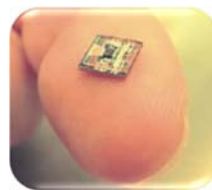
NEDO's Technology



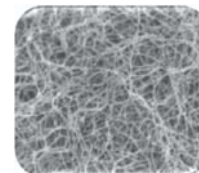
Renewable Energy



Energy Conservation



Electronics / IT



Materials/Nanotech



Energy Storage

Water Treatment



Smart Community

Environment/
Clean Coal

Robotics

Crossover and
peripheral fields



NEDO's Outcomes



NEDO has been promoting the development and introduction of new energy and energy conservation for more than 30 years, including photovoltaic power systems.



Residential fuel cell

Succeeded in generating power from a 1kW module in fiscal 1995.



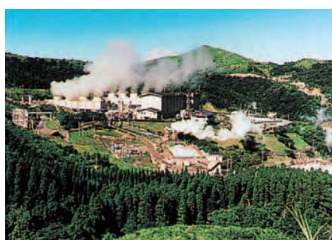
Photovoltaic power

Successfully reduced the cost of solar power cell production to less than 1/200 (20,000 ~ 30,000 yen/W → 100 yen/W).



Energy storage

Testing of a 10Mh single cell battery using those materials and accumulated data needed to develop a 100Wh single cell battery and a multi-kWh battery pack.



Geothermal

greatly improved the economical viability of deep geothermal resource exploration.



Superconductivity

Developed the world's first 70,000kW superconducting generator, and succeeded in producing 80,000kW over 700 hours.



Gas turbines

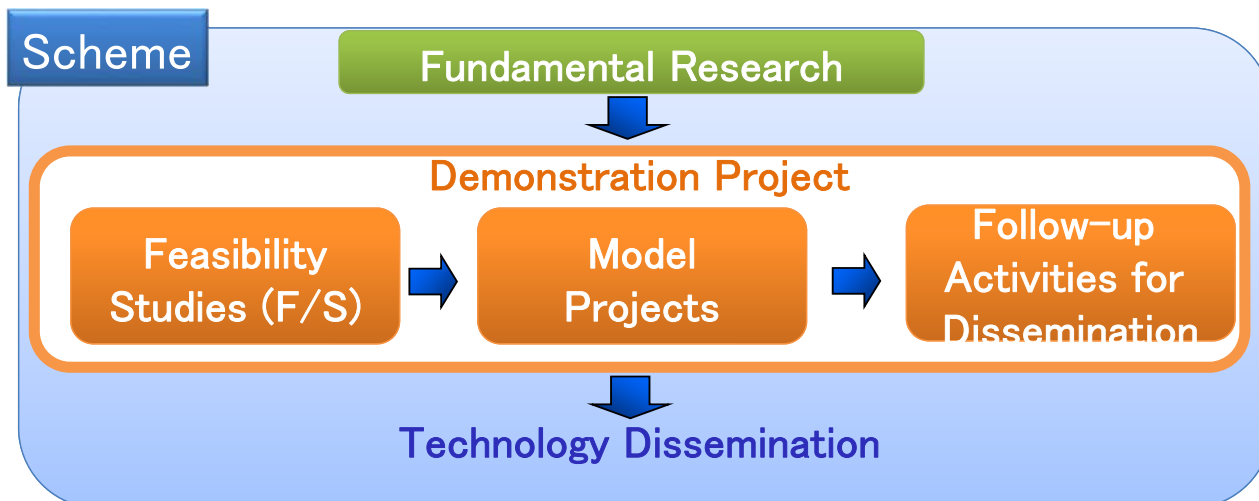
Succeeded in operating a ceramic gas turbine with an inlet temperature of 1,350° C, and achieved thermal efficiency of 38.6%.

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International Demonstration Projects

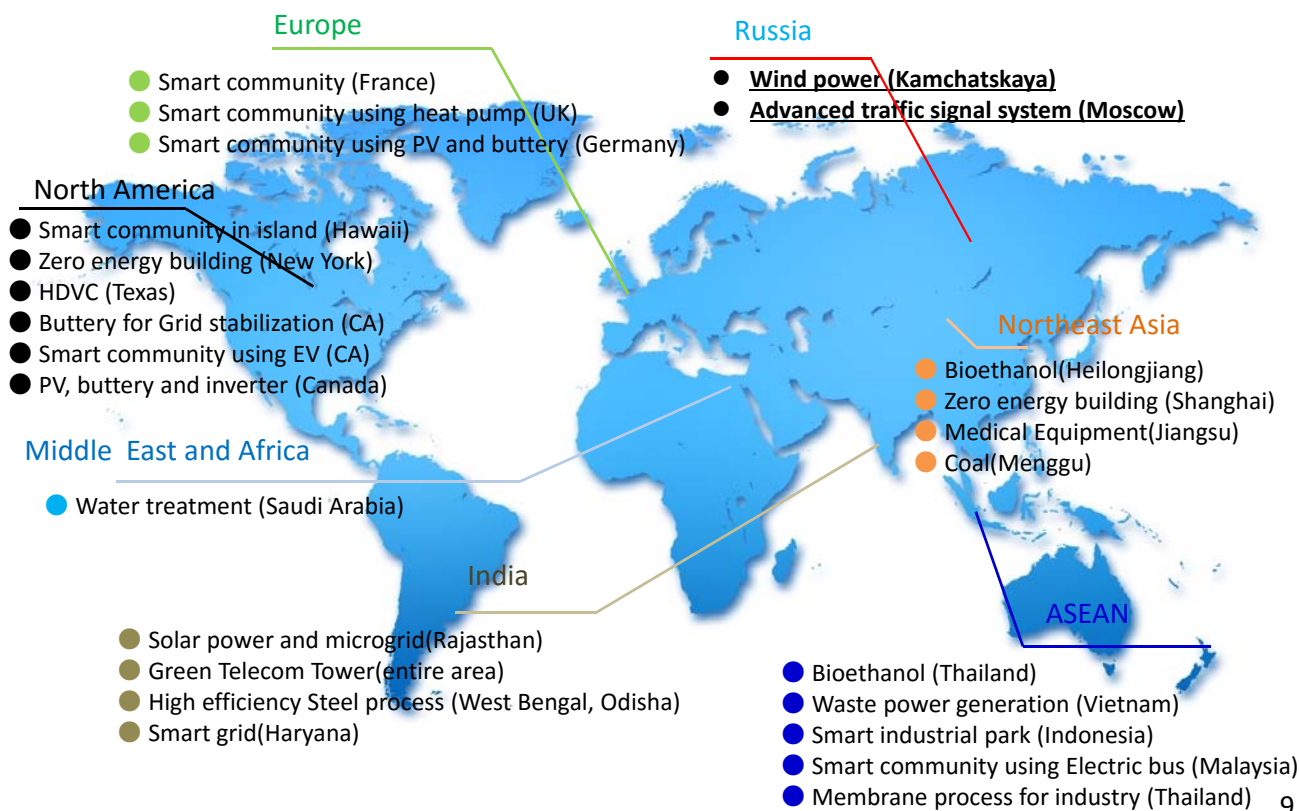


NEDO has been demonstrating the effectiveness of advanced Japanese energy and environmental technologies to address energy and global environmental problems through the introduction of such technologies in overseas countries.



Costs are shared between Japan and the host country

International Demonstration Projects

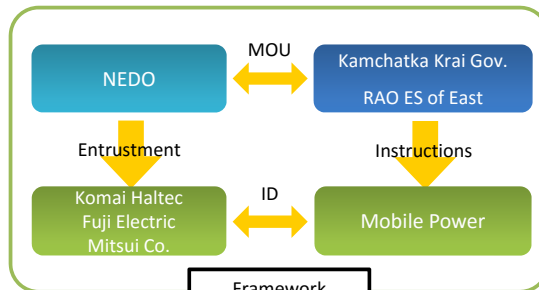
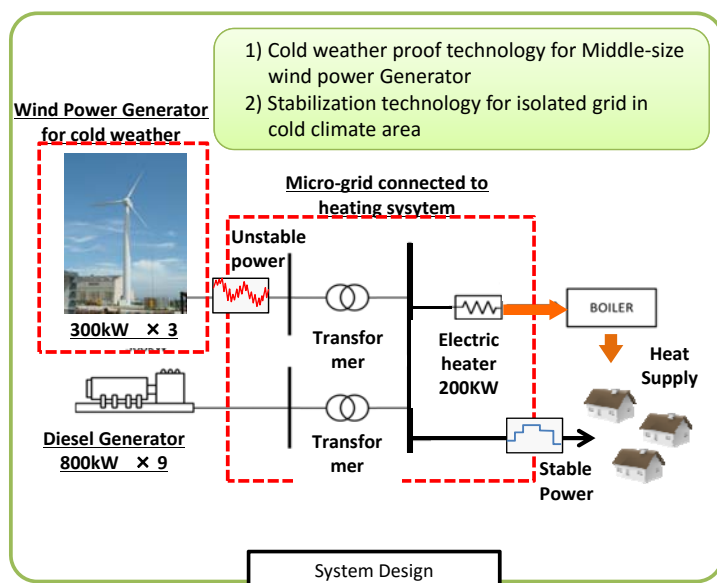


Project example in Russia (1)



Demonstration Project on Cold Climate Wind Power Generation System in Kamchatka Krai

- In Far East of Russia which power grid is independent from central electric trunk-line system, small-sized diesel fuel power generator are common.
- Wind power system can contribute to not only stable energy supply but also realizing lower generation cost.



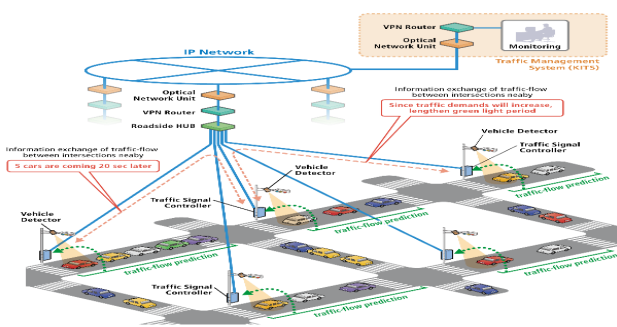
Project example in Russia (2)



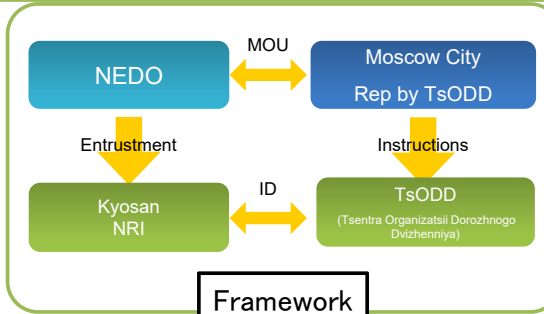
Demonstration Project on Self-controlled Advanced Traffic Signal System in Moscow

- In Moscow the traffic jam by fast city growth is serious problem in loss of time and effort for society and resulting inefficient use of fuel.
- Self-controlled Advanced Signal System is easier to deploy in new growth area and will reduce traffic jam by optimizing signal control for smoother flow of traffic.

- Optimization of signal control by local communication among signal controllers.
- Control from centralized signal control system can be done.
- Realized 16% traffic time reduction in Japan example.



System Design



Framework



Project started for demonstration at 5 intersections in Moscow

Status

Progress



Demonstration Project on Cold Climate Wind Power Generation System in Kamchatka Krai

- Nov., 2014 MOU Signing, ID Signing
- Jan., 2015 Starting Operation (Single Wind Turbine)
- Sep., 2015 Opening Ceremony and Dissemination
- Nov., 2015 Starting Operation (3 Wind Turbine and Micro-grid System)

- For wind power system, the validity of the counter measure technologies for cold region (Operation control system at low temperatures etc.) is proved throughout the study in the winter. We achieved 90.1% windmill utilization and 20.0% utilization factor.



Opening Ceremony

Demonstration Project on Self-controlled Advanced Traffic Signal System in Moscow

- Dec., 2015 MOU Signing
- In preparation for the equipment certification

MOC between NEDO and ATD



A Memorandum of Cooperation (MOC) on information exchange was signed by NEDO Chairman Kazuo Furukawa and ATD(*) Director General Maxim Shereykin in Vladivostok on September 2, 2016.

The signing ceremony was held with the attendance of Minister of Industry and Trade Denis Manturov.

Under the MOC, NEDO and ATD agreed to cooperate in energy, environment and industrial technology, such as by holding expert meetings, organizing joint conferences and other events.

(*) Agency of Technological Development of the Russian Federation



Maxim Shereykin, Director General of ATD (left)
Kazuo Furukawa, Chairman of NEDO (right)
Denis Manturov, Minister of Industry and Trade (middle)

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Conclusion



- NEDO promotes demonstration projects on the advanced technologies overseas.
Projects aim the facilitating diffusion of related technologies and addressing global issues through the business by Russian and Japanese companies, after demonstration phase completed.
- These 2 projects in Russia are also essential to contribute to spread of the technologies. Especially, as “Cold Climate Wind Power Generation System” in Kamchatka Krai completed demonstration operation this Autumn, NEDO expects that Russian side will decide to promote the diffusion of the technology.
- Since NEDO signed the MOC with ATD recently, NEDO would like to enhance the cooperation with Russia.

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