



NEDO's Contribution to Enhancing Bilateral Cooperation between Japan and Russia

30 January, 2019

New Energy and Industrial Technology Development Organization
(NEDO)

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Background Information



New Energy and Industrial Technology Development Organization

【NEDO's Missions】

- Addressing Energy and Global Environmental Problems
- Enhancing Industrial Technology

【History】

- 1970's Oil Crisis (necessity for development of alternative energy)
- 1980 New Energy Development Organization established
- 1988 Industrial technology research and development added, name changed to New Energy and Industrial Technology Development Organization

Number of Staff : 926

Budget(2018) : Yen 159.6 billion

Japan's largest public research and development management organization

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NEDO's Technology Development Fields



NEDO covers a wide range of technology development field, and it promotes the development of technologies necessary for the future.

Energy and Environmental Fields

New energy



Clean coal technologies



Energy conservation



Rechargeable batteries and energy systems



Environment and resource conservation

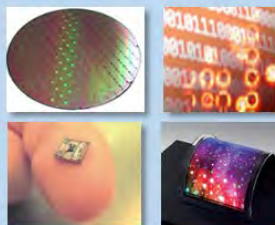


Support for International expansion



Industrial Technology Fields

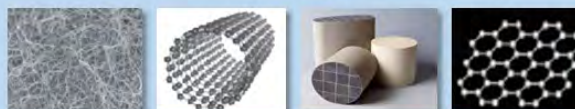
Electronics, information and telecommunication



New Manufacturing technology



Materials and nanotechnology



Crossover and peripheral fields



Robot technology



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Outcome of Technology Development



Tokyo Gas
「ENE・FARM」
fuel cell for practical home use



Mazda
「SKYACTIV-D」 Engine



SONY
「Blu-ray Disc」



Hitachi, TOSHIBA
HDD
(perpendicular magnetic recording)



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NEDO's Projects in Russia



Based on the eight point cooperation plan, NEDO implements international demonstration projects, aiming to address issues Russia has faced with.

Smart Traffic Signal (Moscow)

Energy Infrastructure including Wind Power Generator (Sakha Republic)

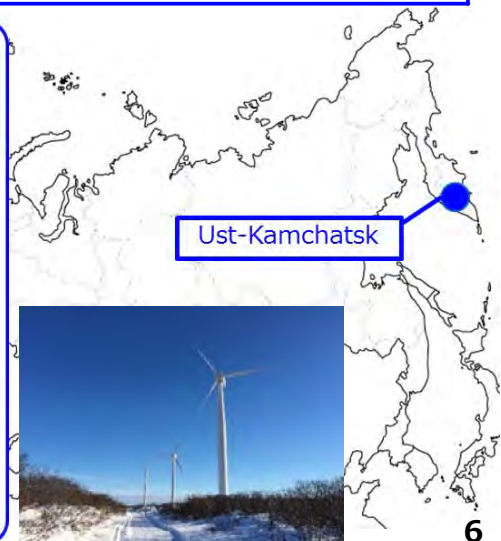
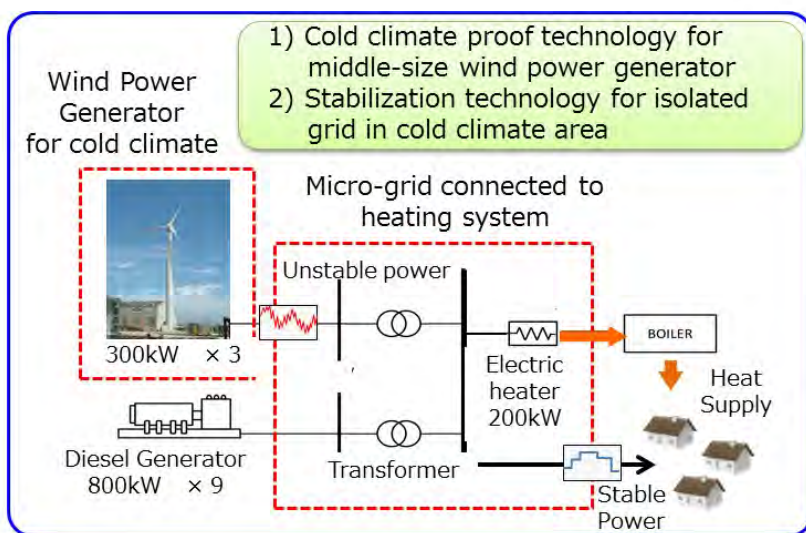
Wind Power Generator (Kamchatka Region)

Wind Power Generator in Kamchatka



- In the Russian far east, there are lots of independent electric power system areas not connected with any large-scale power grid. The cost of electricity is very expensive.
- NEDO implemented a demonstration project for cold-resistant wind power generator and technology to use surplus electricity for heating in pursuit of stabilizing the grids.
- This project achieved 8% reduction of fuel for diesel power generator.

Period : August 2014 ~ October 2016
 Participants : KOMAIHALTEC Inc., Mitsui & Co., Ltd, Fuji Electric
 Facilities : Wind Power Generator (300kW×3), Grid Stabilization System



Energy Infrastructure including Wind Power Generator in Sakha

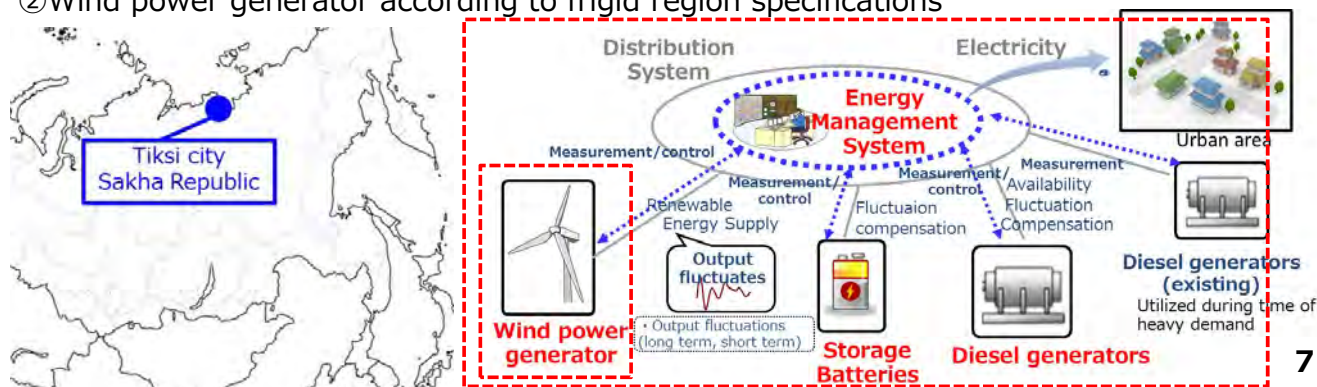


- NEDO is implementing demonstration project to realize low-cost and stable energy supply technology in frigid regions, combining wind power generators, diesel generators, storage batteries and energy management system.
- Efficient operation of the wind power generator and diesel generator is expected to reduce the consumption of diesel fuel about 16% per year .

Period : February 2018~
 Participants : TAKAOKA TOKO CO.,LTD, KOMAIHALTEC Inc., Mitsui & Co., Ltd
 Facilities : Wind Power Generator(300kW×3), Diesel Generator(1MW×3),
 Storage Battery, Energy Management System

Demonstration technology :

- ①Energy management system that optimally controls various power supplies to realize maximum use of wind power generator
- ②Wind power generator according to frigid region specifications

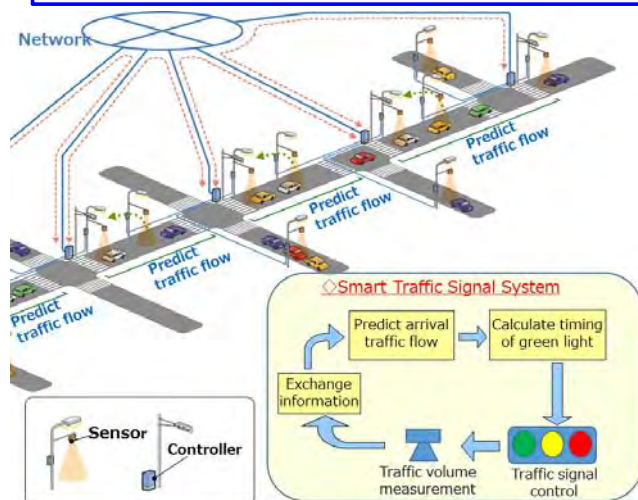


Smart Traffic Signal in Moscow



- Russian major cities have been suffering from chronic traffic congestion.
- NEDO implemented demonstration project on smart traffic signal, which can exchange information between each signal to estimate traffic volume flowing into intersection, and autonomously controls signal cycles to minimize waiting time.
- After NEDO's project, Smart traffic signal installed in Voronezh city, the model city of Japan-Russia cooperation in urban development field.

Period : December 2015~ November 2017, May 2018~
 Participants : Kyosan Electric Manufacturing Co., Ltd., Nomura Research Institute, Ltd
 Facilities : Smart traffic signal



After the signal was installed at 5 intersections in the suburb of Moscow, transit time in the test area of about 2km was found to have been significantly reduced, from around 8 minutes to about 5 minutes.

Before	After	Reduction	Ratio
7m54s (474s)	4m46s (286s)	3m8s (188s)	40%



Before and after images showing improved traffic flow during the morning rush hour