



THE PROSPECTS OF CREATION THE CENTER OF ENERGY-SAVING AND ALTERNATIVE ENERGETICS ON THE BASIS OF FAR_EASTERN FEDERAL UNIVERSITY

Prof. Gulkov A.N.
*Far Eastern Federal University
Vladivostok*

**PROMISING DIRECTIONS OF
FEFU DEVELOPMENT**

World Ocean Resources



Energy resources and energy-saving



Nanosystems and nanomaterials industry



Transporting complex



Cooperation with Asia-Pacific countries



Biomedicine technologies



FEFU is a bridge between Russian Far East and Asia-Pacific Region

FEFU is a point of growth the innovative economy in the Far East.

The University is aimed to provide:

Conditions for free exchange the newest knowledge and technologies in the region

Attracting the investment and transforming Far-Eastern economy from primary to innovative model

Making Far East the attractive place for high-qualified and active people

Integration Far East to cultural economic and scientific space of Asia-Pacific Region

Japan–Russia Energy and Environment Dialogue in Niigata

CENTER OF ENERGY-SAVING AND ALTERNATIVE ENERGETICS (CESAE)

- ❖ Currently, FEFU started a project "Energy efficient technologies and alternative energy " in partnership with the Federal Hydro Company JSC "RusHydro" (Moscow) and machine-building company «SchneiderElektrik» (Rueil -Malmaison , France).
- ❖ The main objective of the project is the creation of the Far Eastern Federal University research and education and world-class manufacturing center, which has logistical, intellectual and human resources necessary for the implementation of knowledge-based research projects in the field of resource-saving technologies based on traditional and renewable energy.

Japan–Russia Energy and Environment Dialogue in Niigata

CENTER OF ENERGY-SAVING AND ALTERNATIVE ENERGETICS (CESAE)

To achieve this goal in FEFU campus on Russkiy island there will be implemented scientific training , production and testing site, the first phase of which will be composed of :

- 1.The basic source of energy: WIND- ES 270 kW: 150 kW wind power plant, diesel generator 120 kW , an automated system to work with arbitrary additional sources and consumers;
2. Additional resources: - heat pump and solar collector -24 kW;
3. Control and monitoring system of integrated ES;
4. The complex energy management of FEFU campus facilities

Japan–Russia Energy and Environment Dialogue in Niigata

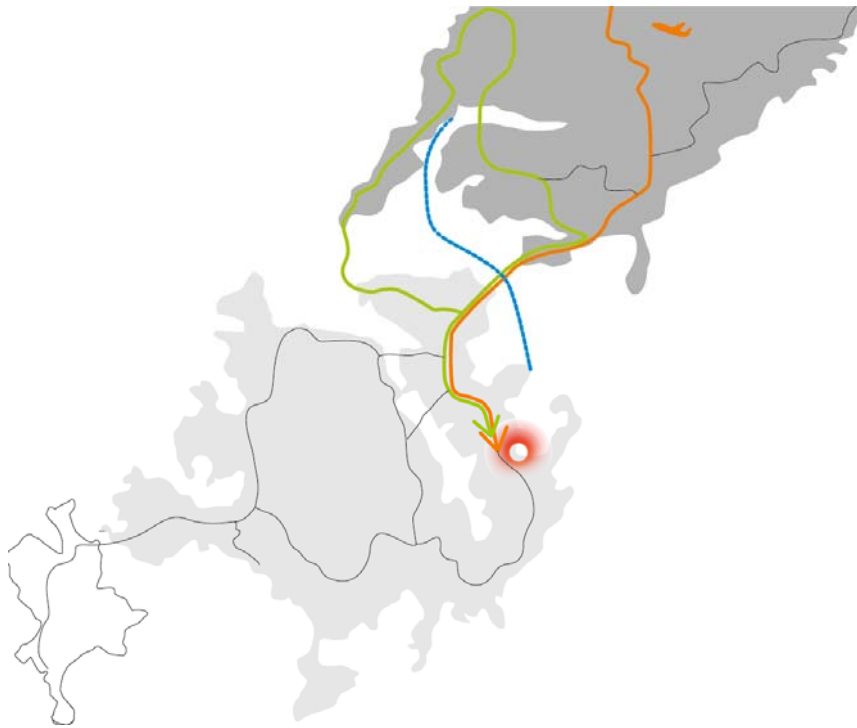
CESAE MAIN OBJECTIVES:

The project will address the following objectives:

- 1.Science and technology , design and engineering and technological potential energy and renewable energy industry of the Far East of Russia .
- 2.Workforce development aimed at the training of new engineers and technicians
- 3.Developing FEFU as a leading research and education and innovation center of Russia , which provides the scientific modernization of the energy sector and high technology between Russia and the countries of Asia Pacific Region.
- 4.Development of cooperation with leading business organizations , industrial enterprises and corporations Russia and the Asia -Pacific Region for establishment the joint research projects, joint research laboratories and test sites for engineering and technology in the field of traditional and renewable energy.

Japan–Russia Energy and Environment Dialogue in Niigata

CESAE ON THE RUSSKIY ISLAND



Japan–Russia Energy and Environment Dialogue in Niigata

FAR EASTERN FEDERAL UNIVERSITY



Japan–Russia Energy and Environment Dialogue in Niigata

It is planned to include in CESAE project :

- Operating models of wind turbines , photo voltage power , thermal generation plant based on solar collectors , heat accumulators , heat pumps and geothermal well field;
- Experienced co-generation power plants and binary, fuel cells, hydrogen and natural gas;
- Apparatus for producing and storing hydrogen fuel;
- Storage of electricity on the basis of today's lithium- ion batteries , kinetic storage , etc.;
- Equipment for the full-scale simulation of grid and management processes of production, transport and distribution of energy;
- Experimental turbine and installation of energy of ocean currents , tides and waves of the sea;
- The center of a complex buildings designed on the principles of energosberezheniye , based on the experience of designing and building structures such as " Smart House " , equipped with instrumentation for monitoring, control and management of the operation of power pilot demonstration sites and existing generation facilities;

Japan–Russia Energy and Environment Dialogue in Niigata

PROSPECTS OF RUSSIAN-JAPANESE RANGE ENERGY EFFICIENT TECHNOLOGIES (REET)

The purpose of the project:

- ❖ Justification of the prospects for creating a demonstration of energy-efficient landfill development of Japanese companies in FEFU campus
- ❖ Choice of the technologies for joint production of energy-saving equipment in the Russian Federation
- ❖ Cooperation in the development of devices for the use of renewable energy sources

Japan–Russia Energy and Environment Dialogue in Niigata

REET OBJECTIVES:

- ❖ Creating a demonstration and exhibition range on the basis of the advanced models of power plants made by companies in Japan, using renewable energy sources and implementing the most effective ways of saving;
- ❖ Establishing on the basis of FEFU some enterprises for the production and introduction of energy-saving equipment on the basis of joint development of the Japanese and Russian sides;
- ❖ Further technical exchange in the field of renewable energy and energy conservation technologies subject to the mutual interest of the parties in the development and expansion of the market of energy efficient products;
- ❖ Carrying out basic measures to introduce energy-efficient plants of Japanese companies in FEFU campus, the design and construction of life support systems at the level of the structure of the building of the " smart house".

Japan–Russia Energy and Environment Dialogue in Niigata

"Road Map" of REET project

- ❖ Detailed study of the feasibility study with a choice of areas to accommodate the landfill and " Smart House ";
- ❖ Detailed design of the landfill on the basis of the proposals of the Japanese companies - suppliers of display equipment ;
- ❖ Construction of the building of the " smart house ", installation and commissioning of equipment by Japanese companies at the demonstration site in FEFU campus ;
- ❖ Development and implementation of joint research and development work in " saving technologies " on the basis of installations to be placed in the landfill ;
- ❖ Forming and implementation of a program the basic research in order to create a new energy-saving technologies.

Japan–Russia Energy and Environment Dialogue in Niigata

FIRST STEPS:

- ❖ The association agreement between the small business of the Far Eastern Federal University, LLC "HTUM" with "WINPRO" in the field of energy-saving technologies.
- ❖ Seminars were held in the Far Eastern Federal University by "WINPRO" on the issues of alternative energy.
- ❖ The issue of supply in the Far Eastern Federal University of Modern wind turbine of low power.
- ❖ The question of the possibility the assembling low-power wind turbines in Russia and their subsequent sale.

Japan–Russia Energy and Environment Dialogue in Niigata

Architectural design of the energy-efficient low-rise buildings for residential development zone in FEFU campus



Fifth Japan–Russia Energy and Environment Dialogue in Niigata



Thank you for your attention

Japan–Russia Energy and Environment Dialogue in Niigata