




**TECHNOLOGY PLATFORM
"BIOENERGY"**

**WAYS OF INTERNATIONAL
COOPERATION**

Raif VASILOV
Russian Bioenergy Technology Platform
National Research Centre "Kurchatov Institute"

20 May 2014
Moscow


**RUSSIAN BIOENERGY TECHNOLOGY PLATFORM
(TP "BIOENERGY")**



Technology Platform "BIOENERGY"

- Established: **November 19, 2010** on the General Assembly Meeting
- Approved: **April 1, 2011** by the decision of the Government Commission on High Technologies and Innovations

- **TP "Bioenergy"** brings together **145 organizations** involved in different areas of biotechnology and bioenergy.
- **NRC "Kurchatov Institute"** – **Coordinator** of the TP "Bioenergy" activity



NRC "KURCHATOV INSTITUTE"

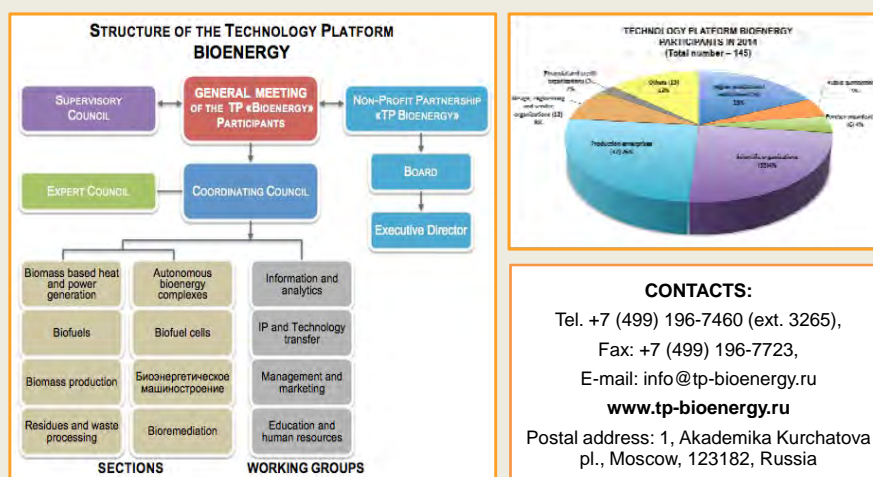


- Russian **leading centre in science and technology** which includes a number of specialized institutes and scientific-technical complexes.
- Total staff: **5,000 employees**.

■ Basic scientific and technical directions of its activity: **fundamental and applied researches, nuclear energy, biotechnology and bioenergy, nanotechnologies and nanomaterials, information systems and technologies, biomedical technologies and nuclear medicine**, etc.

■ NRC «Kurchatov Institute» represents Russia in such global research projects as **ITER, CERN, XFEL**

TP "BIOENERGY": STRUCTURE AND PARTICIPANTS



SPECIAL SIGNIFICANCE OF BIOECONOMY FOR RUSSIA IN THE XXI CENTURY

The main challenge for Russia in the XXI century is the need to provide a sustainable development of the **large territory** in the conditions of **decrease in population** and **undeveloped infrastructure**

This problem can be solved on the basis of BIOECONOMY development

CENTRALIZED AND AUTONOMOUS POWER SUPPLY ON THE TERRITORY OF RUSSIA



Fortov V.E., O.S. Popel, 2011

DEVELOPMENT OF RENEWABLE ENERGY IN RUSSIA

- Renewable energy has not been a priority in Russia, mainly due to huge fuel resources.
- Situation has substantially changed the last few years.
 - Ecological and social reasons & global “greening”;
 - Strategic task to increase energy efficiency;
 - Increasing prices of traditional energy sources restrict development of remote areas in Russia;
 - Centralized energy supply covers only 1/3 of the country.

→ Possibilities for alternative energy and new technologies

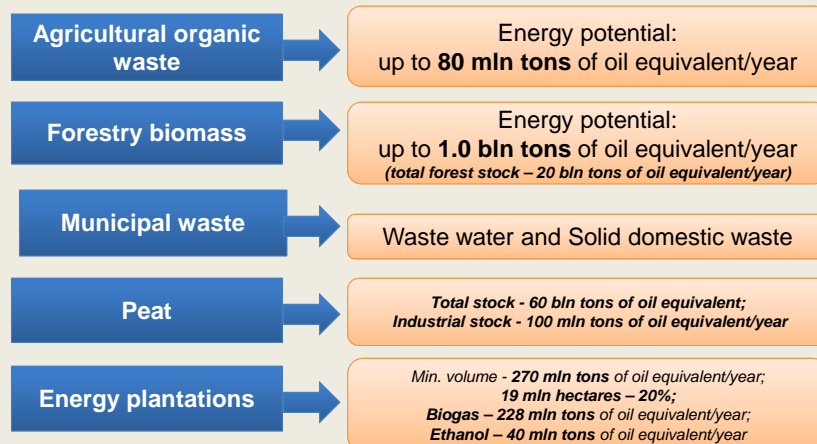
Prime Minister Medvedev: “I can see that the approach of different countries and their leaders to green energy, sustainable growth and renewable energy is changing. Obviously, we are adjusting our views, too. We believe that the renewable energy has huge potential.” 28 May 2013

T. Karjalainen, Metla, 2013

GOOD BASIC CONDITIONS TO PUSH RE

- All Russian regions possess the principle renewable energy sources (*solar, wind, small hydropower, biomass*) and have the necessary capabilities for **creation of integrated energy systems to produce heat, electricity and transport fuels** and to meet the demand of population and industry in any kind of fuel and energy
- Alternative energy sources are able **to provide up to 30% of the fuel and energy consumption** in Russia i.e. **916 mln t** of oil equivalent/per year
- There are a number of domestic bioenergy technologies capable **to provide the economic and social development of the remote and rural Russian regions.**

MAIN SOURCES OF ENERGY BIOMASS IN RUSSIA



RUSSIAN BIOENERGY PRIORITIES

1. Biomass based heat and power generation
2. Biomass feedstock and logistics
3. Biomass deep processing, biorefinery
4. Waste-to-Energy conversion technologies (gasification combustion, pyrolysis)
5. Biogas technologies
6. Solid biofuels
7. Motor biofuels
8. Bioelectrochemical technologies: electrobiosynthesis, biofuel cells and biosensors
9. Energy use of peat
10. Bioenergy complexes based on autonomous energy supply (biophytotrons for plants cultivation biocopolises settlements, etc.)
11. Bioenergy engineering
12. Bioremediation of the petroleum industry effluents, oily sludge and oil spills

RUSSIAN-EU COOPERATION IN BIOENERGY AND BIOECONOMY

- Biomass supply chain
 - Pellets
 - Biogas, Biomethane, etc.
- Biomass-based Bioenergy Technologies
 - Biorefineries
 - Power generation (Combustion, Gasification, etc.)
 - Biofuels production (Pyrolysis, Bio-Oil, etc.)
- Bioenergy-Based Sustainable development
 - Decentralized Bioenergy supply
 - Bioecopolis

TP “BIOENERGY” INTERNATIONAL COOPERATION WITH EUROPEAN PARTNERS

- **IEA Bioenergy**
 - June 2012. “Conference on International Cooperation in Bioenergy” on the base of the RF Ministry of Agriculture (Moscow)
- **RWE (Germany)**
 - June 2012. “Workshop on Research Collaboration in Bioenergy” on the base of the NRC “Kurchatov Institute”(Moscow)
 - April 2013. “International Workshop on cooperation of Russia, Germany and Netherlands in bioenergy (Netherlands)
- **Bio Fuel Systems S.L. (Spain)**
 - June 2013. Roundtable on possible joint research activities in the field of algal biomass cultivation (Spain)
- **Joint Research Centre of the EC (Ispra, Italy)**
 - October 2013. Workshop “International cooperation in the field of bioenergy” within the framework of the Joint Research Centre Enlargement & Integration Programme on the base of the NRC “Kurchatov Institute” (Moscow)
- **Rohstoff-Forum (Germany)**
 - April 2014. Presentation of Russian bioenergy development and prospects for international cooperation (Dresden)

WORKSHOP

“International Cooperation in the Field of Bioenergy” organized by IRC and NRC “Kurchatov Institute” (October, 2013)

- **Participating countries: total number – 16**
 - Austria, Albania, Belgium, Croatia, Finland, France, Germany, Moldova, Montenegro, Netherlands, Norway, Russia, Serbia, Slovakia, Turkey, Ukraine
- **Highlights:**
 - Autonomous biomass based electricity and heat generation;
 - Biorefinery based on biomass deep processing (food, feed, fuel, biomaterials, green chemistry and others);
 - Production and use of biogas from agricultural and other organic wastes;
 - Production and use of solid biofuel;
 - Mechanisms of public support and public-private partnerships for bioenergy and biotechnology development;
 - Role of planning and road mapping for bioenergy development;
 - National strategies of bioenergy development and the role of international cooperation.

TP “BIOENERGY” INTERNATIONAL COOPERATION WITH EUROPEAN PARTNERS: : UPCOMING EVENTS

- **IV EU-Russian Innovation Forum “Green Growth Economy”**
 - *June 2014. Business-mission of the TP “Bioenergy” delegation (Finland)*
- **IEA Bioenergy – RF Workshop**
 - *October 2014. “Workshop on the Bioenergy Roadmap Development” on the base of the NRC “Kurchatov Institute” (Moscow)*
- **III International Partnering Congress and EXPO
“EurAsiaBIO”**
 - *April 2015. The biggest event in the Russian Federation in the field of bioeconomy & bioenergy held by the TP “Bioenergy” (Moscow)*

TP "BIOENERGY": FOCUS ON EUROPEAN AND ASIAN INTEGRATION

EURASIAN BIOTECHNOLOGY PLATFORM

- **Established:** February 17, 2014
- **Foundation parties:**
 - Russian Biotechnology Society, Moscow, Russian Federation
 - National Biotechnology Centre, Astana, Republic of Kazakhstan
 - Institute for Microbiology, Minsk, Republic of Belarus
- **Goals:**
 - Promotion and effective applications of biotechnology for development of science, education, economy and social sphere.
 - Creation and productive use of interstate Eurasian biotechnological infrastructure.

EurasiaBio™

III МЕЖДУНАРОДНЫЙ КОНГРЕСС-ПАРТНЕРИНГ-ВЫСТАВКА ПО БИОТЕХНОЛОГИИ, БИОЭНЕРГЕТИКЕ И БИОЭКОНОМИКЕ + 21-23 ОКТЯБРЯ 2014 + МОСКВА, РОССИЯ

✓ **СТРУКТУРА МЕРОПРИЯТИЯ:**
3 основных блока: Конгресс-Партнеринг, Выставка, серия Сателлитных мероприятий

✓ **ШИРОКАЯ ПРОГРАММА САТЕЛЛИТНЫХ МЕРОПРИЯТИЙ:**

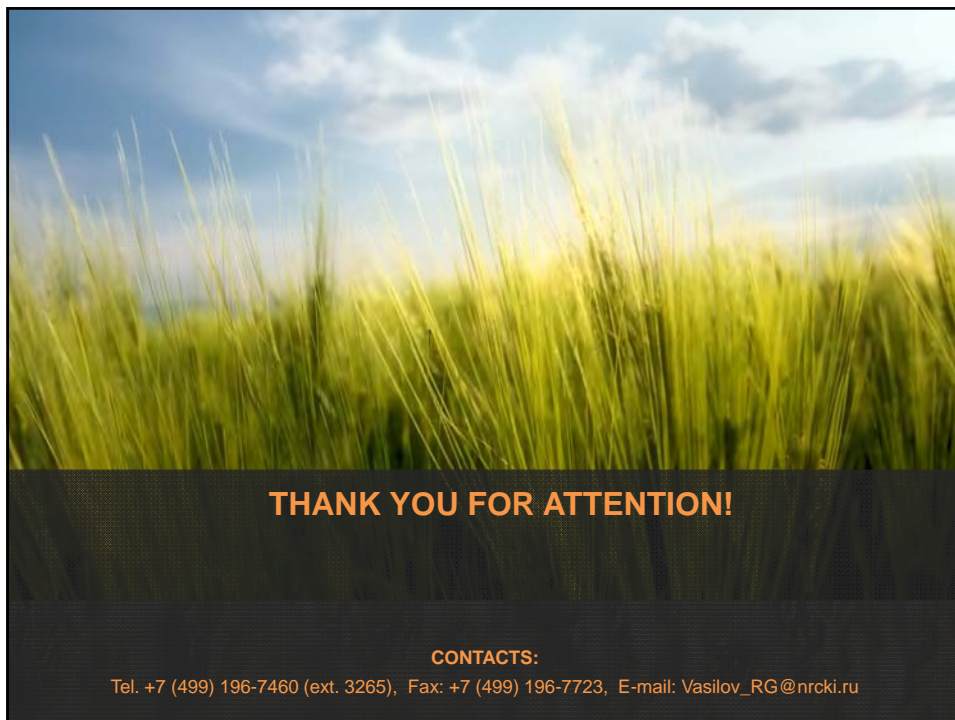
II ФОРУМ «БИОТЕХНОЛОГИИ И ОБЩЕСТВО»
СМИЛОЗИМ ПО БИОЭНЕРГЕТИКЕ
КОНКУРС ЖУРНАЛИСТОВ
КОНКУРС МОЛОДЫХ УЧЕНЫХ
ОБУЧАЮЩИЕ КУРСЫ ПО БИОЭКОНОМИКЕ

✓ **ГЛАВНЫЕ ТРЕКИ ПРОГРАММЫ:**
СИСТЕМАЯ БИОЛОГИЯ И БИОТЕХНОЛОГИЯ
МИРОВАЯ БИОТЕХНОЛОГИЯ И БИОЭКОНОМИКА
БИОЭНЕРГЕТИКА
БИОФАРМА И БИОМЕДИЦИНА
БИОИНДУСТРИЯ И БИОПРОДУКТЫ
АГРОБИОТЕХНОЛОГИЯ
АКВАБИОТЕХНОЛОГИЯ
ЛЕСНАЯ БИОТЕХНОЛОГИЯ

✓ **Контакты Организаторов:**
Тел./Факс +7(495) 648-0913
E-mail: obr@biosinfo.ru www.eurasiabio.ru

2-й Международный Конгресс-Партнеринг-Выставка
ЕвразияБио: 13-15 апреля 2014 г. Центр Международной Торговли (Москва)
→ Более 200 компаний
→ 130 докладов в 8 секциях
→ 1500 участников
→ 30 стран - 45 иностранных делегаций

1-й Международный Конгресс-Партнеринг-Выставка
ЕвразияБио: 16-18 апреля 2014 г. Центр Международной Торговли (Москва)
→ Более 180 компаний
→ 400 участников
→ 25 стран - 32 делегации России



THANK YOU FOR ATTENTION!

CONTACTS:

Tel. +7 (499) 196-7460 (ext. 3265), Fax: +7 (499) 196-7723, E-mail: Vasilov_RG@nrcki.ru