

U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

RUSSIAN AMERICAN FUEL CELL COMMERCIALIZATION INITIATIVE

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The Russian American Fuel Cell Commercialization Initiative is a collaborative initiative for non-proliferation between the Russian Federation and the United States. The intent is to employ the resources at former weapons manufacturing facilities to launch a fuel cell industry in Russia.

U.S. Fuel Cell Developers will be matched with Russia's national gas company, Gazprom, and one of Russia's National Institutes of Science. NETL's Strategic Center for Natural Gas will facilitate the partnership, building on the network of DOE-funded fuel cell developers and technical expertise.

The projects will be funded with venture capital, not U.S. or Russian government dollars, and Credit Suisse First Boston Funds (CSFB) have been identified as the source. These funds have been targeted to provide investment into infrastructure projects that boost Russia's economy and participation in international trade. Investors have both short-term (3-4 year return) and long-term (7-10 year return) investment interests, and employees of the joint venture projects will have at least 10 percent ownership in the company.

Venture capital funds are ideal for this initiative in that:

- Involves Gazprom
- Has Russian government support
- Has U.S. DOE support
- Are in the \$100-500 million project range
- Have international as well as domestic sales potential
- Focus on manufacturing

The U.S. fuel cell developers will provide the stacks for manufacturing, but the Russian National Institute will manufacture the other parts and assemble the power plant. Gazprom will provide the initial market and distributed power generation needs, building gas transfer stations as needed. Gazprom will purchase the fuel cells from the National Institute and sell the electricity. All parties to the joint venture, the U.S. developer, National Institute, and Gazprom, are expected to share in all profits.

This is an opportunity for Russian and U.S. researchers to work together to solve technology challenges. The result will be lower-cost fuel cells and the benefits will be felt worldwide.



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Program Benefits

The program is unique because it's a win-win situation. Each partner benefits.

The National Institute of Science will profit from the creation of new jobs and the conversion of weapons researchers to fuel cell scientists. Researchers will be able to continue their fundamental and applied research programs without worrying about funding shortages and the laboratory will have an opportunity to develop businesses that sell fuel cell components in an international market. Both the laboratory and its employees will enjoy profit-sharing bonuses.

Gazprom's strategic goals can be met with fuel cells because they are environmentally friendly, reliable, and have large profit potential. Gazprom could purchase fuel cells from the National Institutes and sharehold in their development.

The initiative will accelerate the commercialization of fuel cell technology, and U.S. developers will benefit from an increased market size, possible reduction in component cost, and the option to sell and trade components with Russian counterparts. The developer will share in profits and the program has low- to no-additional cost to the U.S. government and developer.

GOALS

Near-term

- Roadmap / DONE
- Business Plan / DRAFTING
- Acquire Venture Capital
- Develop Process for Selecting Projects
- Research, Design, and Development

Long-term (2006 and beyond)

- Design Manufacturing Facility
- Manufacturing Facility Construction
- Manufacturing and Commercialization



PEM Fuel Cell



Phosphoric Acid Fuel Cell