

Tech Valley companies produce powerful 'green energy' advances

Recent spikes in the price of gasoline and home heating oil, along with continued turbulence in the Middle East, have drawn the nation's attention to the alternative energy sector.

The rise of renewable energy is further highlighted by media reports that the Statue of Liberty will soon be 100 percent powered by "Green Power," an assertion by President Bush in his State of the Union address that the nation is "addicted to imported oil" and reports that Bill Gates has recently invested in ethanol technology.

Advances in alternative energy, which will allow us to power homes, vehicles and electronic devices while reducing our dependence on imported oil and preserving the environment, are currently being developed by Tech Valley companies.

In fact, 31 of 35 patents granted to New York state companies in 2005 and early 2006 in the renewable energy field including fuel cells, wind power and other green energy sources, were granted to Tech Valley companies.

During the same period, an additional 25 renewable-energy patent applications assigned to Tech Valley companies were published.

MTI Micro Fuel Cells Inc. of Albany was awarded seven patents in 2005 and early 2006 for advancements in direct methanol micro fuel cells for powering portable electronic devices, including U.S. Patent No. 6,866,952, and U.S. Patent No. 6,991,865.

Concurrently, **Plug Power Inc.** of Latham was granted nine patents for various fuel-cell innovations for powering homes and automobiles.

For example, U.S. Patent No. 6,887,607, is directed to a fuel-cell system that not only provides electrical energy but also captures the heat produced by the system.

Reflecting the strong international interest in fuel-cell technology, two Russian companies plan to invest \$217 million in Plug, one of the

investors being Interros, a major Russian investing firm, and the second, Norilsk Nickel, the world's largest producer of nickel and palladium.

Fifteen alternative energy-related patents were granted to researchers working at General Electric's Tech Valley installations in Niskayuna and Schenectady during 2005 and thus far in 2006.

These patents range from fuel-cell technologies such as U.S. Patent No. 6,844,100, to wind technology, U.S. Patent No. 6,850,821.

General Electric also had 11 patent applications published during 2005 and early 2006 running the gamut of renewable-energy technologies, including one related to fuel cells, U.S. Patent No. 2005/01702342, one directed to a wind turbine and a battery for storing energy generated by the wind turbine, in U.S. 2005/0102818657, and one, U.S. 2006/0012320, for a train braking mode that generates electrical energy, and one related to an energy-management system for use with a hybrid-energy off-highway vehicle in U.S. 2006/0005736.

Intermagnetics General Corp.'s IGC-Superpower subsidiary in Schenectady was granted U.S. Patent No. 6,664,875, which relates to using components made of superconducting and non-superconducting electrical conductive materials.

Also, IGC-Superpower had 12 patent applications published in 2005 and 2006 for various aspects of superconducting materials and processes including U.S. Patent Application No. 2005/0139380 for a superconducting tape suitable for use in power generators and motors.

Two of IGC-Superpower's published applications, including No. 2005/0014653, are shared with **X-Ray Optical Systems Inc.** of East Greenbush.

This groundswell of patents is not the only indication of the intense interest in renewable energy in Tech Valley.

Other developments include the opening of the **Saratoga Technology + Energy Park (STEP)** in Malta, which has been designed by the **New York State Energy Research and Development Authority** as the nation's first tech park dedicated to renewable and environmentally friendly, clean energy technology.

Also, a cluster of New York companies, operating under the umbrella of "New Energy New York" (NENY), will be hosting a "New Energy Symposium" in June with the **University at Albany's** Energy and Environmental Technology Application Center to capitalize on the concentration of new energy companies in Tech Valley and New York state in general.

NENY's members include renewable energy heavyweights such as Plug Power, MTI Micro Fuel Cells, **GE Global Research**, IGC-Superpower, **Albany Nanotech**, **AWS Truewind**, **DayStar Technologies** and other entities such as Cornell's Fuel Cell Institute, the Rochester Institute of Technology, Delphi and General Motors.

Also, **Rensselaer Polytechnic Institute** has recently established a Center for Future Energy Systems with the goal of aiding New York's energy industry via research and development, tech transfer, economic development, work force training and entrepreneurial support.

Tech Valley's concentration of renewable energy companies and their focus on achieving advanced technologies through research and development, as shown by the above described patents and patent applications, make it likely that many of the solutions to our future energy needs will be generated right here at home.

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