

University of Toledo:

Where Research and Innovation Mean Business

By Diane Miller

The University of Toledo's Clean and Alternative Energy Incubator is drawing on experience to lead the nation in researching new forms of energy by giving alternative energy companies a place to be nurtured and grow.

Many communities are trying to do more within the area of advanced energy, sustainability and economic development, but the University of Toledo (UT) has taken these efforts one step further in Northwest Ohio by establishing the Clean and Alternative Energy Incubator. UT has translated their successes in the area of photovoltaics research into smart business practice by forming a business incubator to help grow emerging advanced energy companies. Recently this success has been recognized nationally and even internationally with mentions in articles in publications including *The Economist*, *Newsweek*, and the *Wall Street Journal*.

For more than two decades, UT has been involved with advancing solar technology and has become an internationally recognized leader in fundamental research in photovoltaics related materials, developing photovoltaics cells, and improving performance and reliability of solar cells, modules and systems. The nation's largest manufacturer of solar cells, First Solar, located in nearby Perrysburg, Ohio, actually had its origins in laboratories on the campus of the University of Toledo.

In 2001, UT committed to building a program of national excellence in alternative and renewable energy—beginning with a focus on solar energy and then expanding into fuel cells,

biomass, hybrid vehicles, and now wind energy. As the possibilities for alternative energy expand, the University of Toledo is drawing on this experience to lead the nation in researching new forms of energy that are sustainable, renewable and efficient.

The University of Toledo's Clean and Alternative Energy Incubator is taking the next step in this commitment by giving university spin off businesses and start up alternative energy companies who want to collaborate with the University a place to be nurtured and grow into stable, expanding businesses that can enhance the business community of Northwest Ohio and the surrounding region.

The incubator assists early stage companies to bring next generation technologies to the marketplace through the services it offers to its tenants including office space and infrastructure, links to university research, access to University Technology Transfer services, access to university interns, connection to the university and other community business resources, connection to financial resources and investment opportunities, and networking opportunities with other technology based businesses.

The Clean and Alternative Energy Incubator's current tenants include the Wright Center for Photovoltaics Innovation and Commercialization, Advanced Distributed Generation, Green Energy Ohio, H₂



The University of Toledo's Clean and Alternative Energy Incubator

Engine Systems, SuGanit Systems, Ugly Data, Xunlight Corporation, and the University of Toledo's Intermodal Transportation Institute and University Transportation Center. At press time the newest incubation tenant is the University Clean Energy Alliance of Ohio (UCEAO), a statewide organization promoting Ohio's leadership position in advanced energy research and development.

The Wright Center for Photovoltaics Innovation and Commercialization, also known as PVIC, is an important partner in the University of Toledo's commitment to alternative and renewable energy and its Clean and Alternative Energy Incubator. PVIC was created with \$18.6 million in support from the Ohio Department of Development, along with matching contributions from federal agencies, universities, and industrial partners. PVIC is the incubator's anchor tenant, currently occupying nearly a third of the facility. PVIC's goal of strengthening the photovoltaics research and manufacturing base in Ohio neatly supplements that of the University's Clean and Alternative Energy Incubator. PVIC has already succeeded in bringing multiple industrial, educational, and organizational partners together to collaborate in its innovation and commercialization activities.

The incubation program at the University of Toledo is already nurturing companies into national powerhouses. For example, Solar Fields, one of the first companies to graduate from this alternative energy incubation center, developed a new technology to manufacture low cost, high-quality, thin-film solar cells. The company, now located in Perrysburg, Ohio, merged their activities in the production of Cadmium Telluride photovoltaic modules with Q-Cells and its subsidiary Calyxo GmbH into the newly formed Calyxo USA Inc. in late 2007.

Another recent graduate, Xunlight Corporation, formerly Midwest Optoelectronics and a University of Toledo technology spin off company, was founded by Dr. Xunming Deng, professor of physics at UT. Xunlight develops, manufactures, and markets photovoltaic modules. Their thin-film amorphous-silicon based solar module is flexible and lightweight and utilizes manufacturing techniques that manage to keep production prices low. While Xunlight Corporation has graduated from the Clean and Alternative Energy Incubator, they maintain a satellite office at the incubator, and have located into the University of Toledo's burgeoning Science and Technology Corridor.

UT and its Science and Technology Corridor have made it their mission to collaboratively grow, diversify and transform the regional economy by facilitating the development and attraction of science and technology-based organizations and by applying the knowledge resources of the University of Toledo to enhance the global competitiveness of the area and its employers.

The Incubator fulfills an important part of this mission by giving these emerging alternative energy companies an opportunity to work together with the university to develop and expand their businesses and advance energy research and the economic development of Northwest Ohio.

To learn more about the Clean and Alternative Energy Incubator or its services, contact Megan Reichert-Kral, director of the Clean and Alternative Energy Incubator at megan.reichert@utoledo.edu.