



Refrigeration for Developing Communities

MEETING THE UNITED NATIONS MILLENNIUM DEVELOPMENT GOALS

TARGET: To develop and manufacture an innovative, inexpensive refrigeration device powered by green energy for vaccine & food preservation.

Refrigeration is fundamental to meeting the United Nations Millennium Goals of poverty & disease eradication and protection of the environment. Renewable energy powered refrigeration has the capability to address these urgent needs in the developing world, and stimulate economic development.

Nivalis is designing, building, and commercializing a prototype of an inexpensive, reliable, and mobile refrigeration system that operates on clean, renewable energy. The refrigerator will be sold in developing countries to medical facilities for rural vaccine distribution, consumers for food preservation, and to small and medium sized enterprises (SME) for food product preservation. The refrigerator will be micro financed through local banks.

The refrigerator relies on existing technology applied to meet emerging market needs. It is a novel application of stable and reliable thermo-electric cooling partnered with variable renewable energy sources including plug ins for AC, DC, solar, wind, and most importantly a hand crank. This allows for operation in rural communities without access or need for any power source or fuel supply.

Nivalis will initially deploy in Haiti to medical clinics. Beside the low cost & limited environmental impact, the modular design allows flexibility in deployment to hard to reach communities. Customers include NGO's, foundations, and private & government run medical facilities.

Following this initial deployment, Nivalis will micro finance the refrigerator for sale to consumers to solve food security issues. The refrigerator will also be marketed to SME's centered on food. By extending saleable product life, vendor income will increase. Health of the population, and development of local businesses will improve access to healthcare, create jobs, stimulate growth, and create investment opportunities.

FINANCIALS: Micro Financing modeling has demonstrated retail costs of \$350.00 per unit to be within reach of most individuals and cooperatives.

STATUS: Nivalis has produced a working prototype and will deploy four units in Haiti during the first quarter 2006. After real world testing, refinement and commercialization will occur within six months. Sale and production of the first fifty units will occur within the first year of operation.

Time Magazine featured Dave Williams and dissigno in the *New Innovators* section in the September 12, 2005 issue.

Pacific Beat, Australian Radio Broadcasting and Radio Ecuador BBC interviewed Dave Williams for pieces about new technologies.

ACTION: Nivalis is seeking \$500,000.00 to develop and commercialize the prototype. This money will go to the research & development of the prototype, testing, commercialization, and marketing and manufacturing of the first fifty units.