



entrepreneurs for energy efficiency

the eeeluminator

The quarterly newsletter of E-3

www.e3energy.org

July, 2006

Vol.4 No.3

Our mission: to promote successful commercialization of energy efficient technologies developed with the support of the Department of Energy's Inventions & Innovations

I & I Funding in Peril

On June 29, the Senate Appropriations Committee unanimously approved a \$30.7 billion Energy and Water Appropriations bill. The \$30.7 billion measure is \$1.25 billion over the budget request, and provides \$24.7 billion for the **Department of Energy** (a \$650 million increase), but omitted any funding for Inventions and Innovation.

The bill provides \$380 million to support energy-related activities authorized in the Energy Policy Act of 2005, including, among other things:

- Solar - \$148 million, a \$65.5 million increase, which includes \$18 million for a solar-hydrogen pilot plant;
- Biomass - \$213 million, a \$63 million increase;
- Geothermal - \$22.5 million restored for geothermal research and development;
- Hydropower - \$4.0 million to support advanced hydropower; and,
- Building Technology - \$95.3 million split evenly to support energy conservation demonstration projects and to implement solid state lighting like high-efficiency LED lights.

The bill also provides \$25 million support the math and science training for teachers, as intended by the Protecting America's Competitive Edge (PACE) Act.

The U.S. House of Representatives passed their version of the FY 2007 Energy and Water Development Appropriations on May 25, which provides \$24.373 billion for the Department of Energy, \$327 million above the FY2006 level and \$299 million above the request.

Energy Supply and Conservation programs are funded at \$2.0 billion, \$102 million above FY06. The bill restores reductions in other essential energy programs, such as support for university nuclear energy education (funded at \$27 million) and weatherization assistance (restoring \$78 million cut for a total of \$250 million), and Inventions and Innovation (funded at \$2 million).

The bill reduces total earmarks by \$200 million, or 16 percent, compared to last year's House bill.

Time is running out. Write your Senators. Help save the I&I.



New Member Introductions

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Bonal Technologies, Inc. Commercializes Energy Saving Innovation to Dramatically Reduce Energy Consumption

In October 2002, George Hebel, President and CEO of Bonal Technologies, accepted an award from the Entrepreneurs for Energy Efficiency, Inc. (E-3) for successfully commercializing the energy savings innovation Meta-Lax® Stress Relief that resulted from the grant the company received in 1989. Bonal has tracked its progress in energy savings since the technology was first commercialized.

According to a cumulative energy savings summary sheet, companies using Meta-Lax stress relief as of March 31, 2006 have saved a tremendous amount of energy. In comparison to the numbers identified from the 1997 U.S. Department of Energy's IMPACTS booklet, Bonal estimates Meta-Lax stress relieving has generated the following savings:

- Saved 260.7 trillion BTUs; Which is the equivalent of
- 45 million barrels of oil saved; and,
- Reduced air pollutants, including carbon dioxide (CO₂), equivalent to the output of 5,435,000 automobiles.

In a Department of Energy Tech Brief, it is stated that *"Meta-Lax is a proven substitute for 80-90% of heat treatment stress relief in metalworking applications."* Most precision tolerance and long-lasting metal workpieces need to be stress relieved during manufacturing before going into service.

Today, the most common way to stress relieve metal parts is to place the parts into a natural gas-fired furnace for a long period of time. The Department of Energy found that "heat treatment stress relief" is the process that can be replaced to a large extent



Steward Machine, Birmingham, AL uses the Meta-Lax stress relief equipment for post weld stress relief of this 480,000 lb overhead lock door. The door is part of the U.S. Army Corps of Engineers Olmsted Lock and Dam Project on, Ohio River.

by Meta-Lax stress relief, at an estimated 98% reduction in fuel consumption. The company also sells its products to traditional heat treaters so they can provide their customers with the convenient option of Meta-Lax, which takes less time and is a cleaner process.

Bonal Technologies has continued to increase awareness about the product and has developed two product lines that use the Meta-Lax® Stress Relief technology namely Pulse Puddle Arc Welding® (PPAW®) and Black Magic®. PPAW® helps solve welders' challenges of distortion and cracking. PPAW® helps welders have less straightening, rework, preheat and other secondary steps, creating better quality welds in less time. Black Magic is the ultimate distortion controller and is specifically designed to control distortion in metal parts weighing less than 300 pounds. Bonal is a GSA contract holder, allowing the ease of product acquisition for federal agencies and their qualified tier one suppliers. All three product lines are available through the GSA Advantage website.

"Although Bonal Technologies developed Meta-Lax stress relief several years ago, its market potential is still very good. The technology is currently being used by less than 1% of the metalworking market," George Hebel said. "Despite the good record of savings, Bonal can assist more companies in saving energy, money and the environment."



A 1983 market study concluded that nearly 56,000 metal working companies in the United States could benefit from the use of Meta-Lax.

"Once we have these companies benefiting from the technology, the savings to the United States in natural gas would theoretically be nearly 1.6 trillion cubic feet per year," said Hebel.

Bonal Technologies' products are sold in the US and in 49 countries and serves customers in a wide range of industries – aerospace, automotive, construction equipment, defense/ homeland security, die casting, engine building/racing, foundries, machine tool/mold making, mining, petroleum, power, plastic molding, shipbuilding, structural steel construction, steel producers and welding/fabricating industries. To learn more about Bonal Technologies, Inc., visit www.bonal.com or call (800) METAL-29 or (248) 582-0900.

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Shivers, Incorporated, began in 1968, when Charles Shivers developed the patented tapered sweep auger, the basis for the first commercially successful counter-flow drying system. Shivers has designed, manufactured, and marketed In-Bin Continuous Flow Drying Systems and related products like fans, floors, spreaders and controls for over 35 years.

In the early 1980's, Shivers was the first grain drying company in the industry to design, patent and market computer controls for grain dryers. Over the years, Shivers has continued to lead the industry with the best, most accurate moisture control on the market.

Today, Shivers remains a family owned and operated business with Carl Shivers as President and Steve Shivers as Vice President and Grain Drying Chief Engineer.

Shivers is based out of Corydon, Iowa, 75 miles south of the Iowa capital, Des Moines, and 15 miles



Grain Drying 101

1) CompuDry Command Center 2) Circu-Lator 3) Drying Floor/Steel Supports 4) Blue Flame Dryer 5) Transfer Auger 6) Grain Spreader

With grain in the bin, air is heated and blown into the plenum, the area under the perforated drying floor. Air flows up through the grain, drying the layer of grain on the floor, and warming the grain above. The tapered sweep augers bring a grain sample from the floor up to the moisture sensor where it determines the moisture content.

If the grain has reached the desired setting, the Command Center turns on the Continuous Flow Auger to take the grain to the storage facility.

If the grain has not reached the desired moisture, the Continuous Flow Augers are left off and the center vertical auger spreads the grain sample back on top in the drying bin.

north of the Missouri border. With a population of 2000, Corydon has been the home of Shivers for over 35 years and employs approximately 120 people from the local and surrounding areas.

The Shivers factory is located on 20 acres with nearly 3 acres under roof that house state of art CNC controlled machining centers that manufacture our own quality controlled gearboxes.

Shivers Manufactures Zero-Turn Mowers

The Country Clipper Division of Shivers Manufacturing is a pioneer in the zero turn mower industry. Country



Clipper first began production of high quality, innovative zero turn mowers in 1986. Over the past 20 years, Shivvers Manufacturing has produced tens of thousands of quality zero turn mowers for both the commercial mower industry, and the residential and estate homeowner.

In 1988, Shivvers began production of mid-mount zero turn mowers for Snapper™, and in 1995 expanded to include supplying additional major OEM's. In January of 1996, Shivvers created the Country Clipper Division and began production of the Country Clipper brand of zero turn mowers. In March of 1996, Country Clipper out-front mowers came rolling off the assembly line of the Country Clipper Division of Shivvers Manufacturing in Corydon, Iowa. Production of the mid-mount Country Clipper and a full line of accessories soon followed. This was just the beginning of a new signature mower line and a new division of an older, established manufacturing company, Shivvers Manufacturing.

Today, marketing of Country Clipper zero turn mowers is exclusively through two-step distribution, and distributorships are currently in place over a wide area of the United States. Our distributors, in turn, offer a high level of service and support to a network of over 600 dealers across the country. Consequently, Country Clipper continues to experience strong growth in the zero-turn mower market, and more than likely there is a qualified dealer near you to meet the ever-increasing demands for our products and services. More and more, commercial users and homeowners alike are discovering that Country Clipper mowers truly are some of the world's most desirable zero-turn mowers.

Throughout its long history, Country Clipper has consistently been first with innovations that are still used by us and other zero-turn mower manufacturers today. Some of Country Clipper "firsts" include:

- The patented stand-up deck.
- Joystick steering control.
- Single 11-gallon fuel tank.
- Shaft-driven grass collection blower motor.
- Articulating front axle and deck.

Shivvers Manufacturing, Shivvers Inc., and Shivvers Holding Company are privately owned companies with annual retail sales of over 20 million dollars in agricultural

and outdoor power equipment. As the company continues to grow and expand, Country Clipper is committed to offering high quality, innovative products that are unsurpassed in the industry.

E-3 Member News

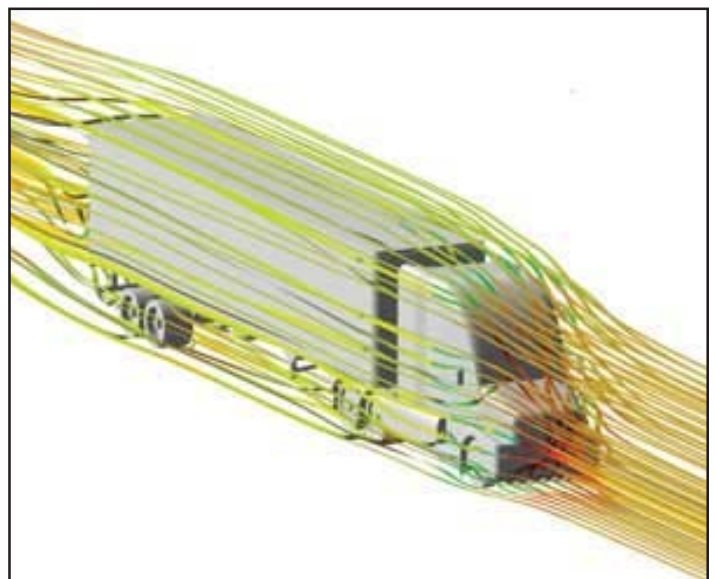
Seeing the Drag

Solus Solutions in *Mechanical Engineering*

Results you can see help you understand problems much better than results returned as a list of numbers.

Take the case of engineers at a consulting company that helps vehicle makers improve the fuel efficiency of motor vehicles. The engineers rely on specialized software to graphically depict the drag around trucks.

Consultants at Solus Solutions and Technologies LLC use computational fluid dynamics software coupled with a post-processing, plotting, and graphing application to evaluate several drag-reduction devices installed on trucks to increase fuel efficiency, said Craig Hunter, vice president of CFD and aerodynamics at the company in Virginia Beach, Va.



Consultants at Solus use CFD to analyze drag around large trucks. Then, they turn to post-processing software to make analysis results into meaningful pictures.



He and his team are testing three drag-reduction devices. One is a cross-flow vortex trap that looks like a series of vertical boards mounted on the front face of the trailer. It controls airflow that might get trapped in the gap between the truck and the trailer. Another consists of vortex stakes installed on the side, back, and top of the trailer to energize the big wake of air behind the trailer. The third is an undercarriage device that looks somewhat like a mud flap and controls flow behind the trailer.

For tests, Hunter ran simulated airflow around these devices with a NASA-designed CFD program called TetrUSS. He combined that with the post-processing

application Tecplot from Tecplot Inc. of Bellevue, Wash., to get results graphically.

Hunter said he likes the CFD model to be as realistic as possible so his clients can visualize and understand results themselves.

"If the trucking industry doesn't buy into it, then they won't really believe the results even if they are good results," Hunter said.

With CFD, his team evaluated the effectiveness of each device when used alone and in combination. Results are pending, Hunter said.

Affinity Marketing and Aggregated Purchasing: Economic Catalyst for the Creation, Retention, Expansion and Attraction of Energy Efficient Entrepreneurs

Mark H. Clevey, MPA, Vice President for Entrepreneurial Development
Small Business Association of Michigan
Executive Director, Small Business Foundation of Michigan

Introduction

The combined pressures of globalization, environmental concerns and rapidly rising energy costs are driving a world-wide demand for energy efficient products and renewable energy technologies. As engines of economic growth, entrepreneurs are well positioned to make the U.S. a market leader in the research, development and commercialization of breakthrough energy efficiency and renewable energy technologies, products and processes. As small businesses, however, energy-entrepreneurs face formidable regulatory, economic and public policy barriers to their creation, retention, expansion and attraction at the local, state and federal level. This paper will outline a model program in Michigan designed to overcome these barriers and foster the growth of energy-related entrepreneurs.

State Energy Programs

Many states have initiated programs to foster the increased use of energy efficient products and renewable energy technologies by consumers. These

initiatives generally fall into two basic approaches: education and promotion; and product rebates. The experience of most state programs is that education and promotion alone do not result in the robust purchase of energy efficient products and renewable energy technologies. In many states, Consumer programs operate with funding that is derived from a Public Benefits Charge (PBC), or surcharge on utility bills. Three major limitations arise with PBC funded programs aimed at increasing the use of energy efficient products and/or renewable energy technologies.

First, without a Public Benefits Charge, rebate programs cannot be sustained in any effective way as they need a continued funding stream in order to work. Second, consumers often see the PBC as an unfair "tax increase." PBC detractors note that all rate payers are "taxed" in order to subsidize energy efficient product purchases by select consumers. Lastly, these state-operated programs tend to be labor intensive and thus the cost per energy unit saved versus generated with new capacity is debatable.

Aggregated Purchasing

Seeking to avoid the pitfalls of command and control-type regulations and/or PBC charges, many



advocates are seeking to harness market forces to stimulate greater use of energy efficient products and renewable energy sources. One of the most promising approaches is in the area of Aggregated Purchasing.

A central tenet of retail capitalism is that the larger amount of an item that is purchased (volume), the lower the unit price. Aggregated purchasing is a process where purchasers group together to increase the volume of a purchase so as to secure favorable pricing and terms from vendors.

Central to the Aggregated Purchasing is the concept of **"Affinity Marketing and Affinity Sales."**

"Affinity Marketing" is defined as the targeting of messages about products or services to specific groups of people that share similar interests, and are therefore likely to be interested. Traditionally, magazines have been the main vehicle of Affinity Marketing. Because of its ability to segment and target messages to affinity groups and facilitate immediate purchasing, the worldwide web has an even greater potential for Affinity Marketing.

Interest Groups also are a prime target for Affinity Marketing because they share the common interest embodied in the mission of the organization (social, religious, professional or cultural, etc.). Contacting members of an organization via the organization itself is an efficient way to reach them with messages about products or services that are compatible with the mission of the organization. Furthermore, if their actions benefit their organization (either directly through financial support, or indirectly by making progress towards the mission), they will be even more inclined to take these actions.

A good example of Affinity Marketing to supporters of nonprofit organizations was the 2005 Stonyfield Farm "Bid With Your Lid" promotion. Stonyfield Farm produces organic dairy products geared directly toward those who are interested in the quality of the natural environment. According to Stonyfield's website:

"Each year through our Profits for the Planet (PFP) Program, Stonyfield Farm donates 10% of profits to efforts that help protect and restore the earth. This year, we will donate \$100,000 of our PFP funds to three organizations that help the earth: American Farmland Trust, National Audubon Society and Rainforest Alliance. Each organization

will receive \$20,000 plus a percentage of \$40,000, based on your voting!"

Buyers of Stonyfield Farm yogurt were asked to vote for their favorite association by sending in the lids from their yogurts with a selection for one of the three groups. The organizations received a higher bonus of funds, based on their percentage of votes. As a result, the three organizations had prominent descriptions and links on their home pages to the promotion and descriptions of Stonyfield Farm's company and product offerings.

"Affinity Sales," the mate to Affinity Marketing, can be defined as selling products or services or packages thereof directly to specific groups through established membership or other aggregated groups. The most common forms of Affinity Sales are services that are packaged and sold to members of professional organizations. In the main, affinity purchasing works best for those organizations where membership is driven by a strong desire to secure discounted products and services as a membership service. These organizations house staff whose job is to identify products which members need and then to negotiate bulk discounts with vendors on behalf of the members.

There are numerous examples successful Affinity Sales including health insurance, life insurance, car rentals, and long distance telephone services sold at a discount directly to members of local, regional or national chambers of commerce, Boards of REALTORS, and other professional societies. Typically, these are professional services that any professional might need. Discounts and special packages are offered to members of these associations based on the direct access and lower customer acquisition costs that the service provider perceive before the sale. *It is important to note that, in most instances, the membership association acts as any other sales channel, and will frequently enjoy a commission to the organization in addition to the discounts passed on to the members.*

Some of the most successful Aggregated Sales programs are operated by industry associations that represent members who have a professional and/or personal affinity. For example, school business officials often collaborate on the purchase of supplies and, in some cases, deregulated energy. Local chambers of



commerce and other business groups also routinely negotiate discounts on products and services for their members (e.g., health insurance, office equipment, etc.). Rutgers University offers one of the best examples of “distributed” Aggregated Purchasing program, designed to overcome the lack of affinity by purchasers. Rutgers announces purchasing plans in advance to local non-profit corporations which can then join in on the purchase and thereby benefit from the favorable purchasing terms.

Affinity Sales operations can either be national or local in scope, depending on the situation. Earthlink is an example of a national Affinity Sales leader. Affinity sales can also be a highly structured process or fairly simple proposition. For example, neighborhood associates across the U.S. annually negotiate bulk purchases with flower vendors. Industry groups also group together to jointly purchase discounts on items ranging from raw materials to employee health care to energy.

Another form of Affinity Sales plays up the fundraising possibilities of simply buying products or services that customers need to purchase anyhow. MBNA is well-known for its credit cards that are branded to match Universities across the nation. Alumni are then targeted for the cards, and are sold not only by the picture of their alma matter on the credit card, but also on the knowledge that some small percentage of all of their purchases is donated to that University. In Michigan, Meijer stores have a nonprofit fundraising program where nonprofits register with Meijer, and seek to enroll their constituents in a rewards program, where a percentage of all their store purchases go to the nonprofit. Children across the nation sell chocolate, frozen pizza kits, cookie dough, candles and many other things to their parents, family, and friends in order to raise money for their schools. Parents also collect specially marked cereal box tops and soup can labels to send back to the manufacturers to solicit donations to their schools. In short, many companies donate small percentages of sales to nonprofit organizations in order to get the business of those nonprofits' constituents.

A third form of Affinity Sales actually custom designs services or products catered directly to the members or constituents of Affinity Groups. For instance, Looksmart, an internet search engine, customized its

“landing pages” with content directly relevant to Affinity Groups. Concentric Network Corporation, which offers dial-up internet service, struck an agreement with Intuit to grant limited free internet access to Quicken customers for the use of technical support. Once users installed the limited access software, they were solicited to acquire full internet access services.

Michigan ENERGY STAR Aggregation Program

Despite the obvious benefits (e.g., lower energy costs, environmental impacts, productivity improvements), deep market penetration of energy efficient products has not occurred in most sectors of the economy. For a variety of reasons, residential, commercial, non-profit and small business consumers have not taken many energy efficiency actions. Often, these products are difficult to identify, quality and finance. Additionally, consumers consistently make short term purchase decisions based on the sticker cost of an appliance or product, without giving considerable attention to the **long term operating costs and related environmental and natural security implications** of energy inefficient appliances, products and practices.

To overcome these barriers, Michigan has piloted a model Aggregated Purchasing program for energy efficiency and renewable energy products. The Michigan “model” links together an ENERGY STAR Congregations and Small Business program. Because of its success, the U.S. Environmental Protection Agency has funded a project to replicate the Michigan Aggregation Model in other states.

The key underlying assumptions of the “affinity marketing” approach include:

- Potential customers will respond relatively more favorably to procurement suggestions and processes provided by groups in which they have affinity.
- Aggregating potential buyers within and across affinity groups will enhance the project's ability to secure favorable pricing and delivery terms from vendors, thereby **reducing costs for end-user customers**.
- ENERGY STAR and other environmentally conscious product vendors will want to work cooperatively and productively with the project



as it will effectively be **funneling pre-qualified customers** on a low cost, low risk basis. Vendor concessions will include pricing discounts.

- Ability to **leverage other funding** (e.g., reallocate received referral fees from vendors and other funding (grants, etc.) to the Aggregation Partners will enable these partners to secure an additional source of revenue that can be used to further enhance its aggregation activities.

Components of Michigan Energy Aggregation Program

In Michigan, a confluence of five (5) resources led to a model aggregated purchasing program for energy efficient products. These resources are described below.

1. **EPA ENERGY STAR Program** (<http://www.energystar.gov/index.cfm?c=home.index>) The ENERGY STAR program was created by the U.S. Department of Energy and U.S. Environmental Protection Agency to help consumers become aware of the ENERGY STAR concept and to promote the availability of ENERGY STAR products. ENERGY STAR helps consumers by providing an easily identified, third party verification of energy efficient products. ENERGY STAR is a registered trademark that indicates a product exceeds the minimum Federal energy use standards or uses less energy than similar products. ENERGY STAR products have high performance, long life and low environmental impact as well as save you money through lower maintenance and utility costs over the life of the products.

One part of the EPA ENERGY STAR program is the ENERGY STAR for Congregations and Small Business. Led by Jerry Lawson, EPA ENERGY STAR, this program encourages the use of ENERGY STAR products by both congregations and small businesses. Small businesses can typically save as much money and prevent as much pollution, per square foot, as large organizations. The ENERGY STAR label supports a congregation's concern for financial and environmental stewardship. EPA ENERGY STAR assists congregations in making decisions on facilities and equipment that save money and prevent pollution. Congregations that commit to substantial energy

savings can cut utility costs 25-30%, and make significant contributions to a cleaner environment

2. **NSBU** (<http://www.nsba.biz/>) The National Small Business Association was founded in 1937 to advocate for the interests of small businesses throughout the United States, and has remained one of America's strongest small-business advocates. Under an EPA Cooperative Agreement in mid-1996 NSBU launched a program called EnSave that surveyed the energy concerns of association members and developed related programs. In 1997 NSBA added a new initiative -ENERGY & ENTERPRISE – that promoted energy-related innovation, efficiency and savings for small business.

NSBU's goal in the programs was to connect a strong economic message with the environmental message as a means of attracting the most positive reaction from members and other small business operators. For the NSBU and related business audiences, the primary message for the ENERGY & ENTERPRISE program was to tell members that paying attention to energy efficiency was an excellent bottom-line business decision. The secondary message was how energy efficiency improves the environment. In early 1998, ENERGY & ENTERPRISE (E & E) was introduced to existing and potential NBSU members in the annual "Guide to NSBU Member Benefits" booklet.

3 **Michigan Energy Office** The U.S. Department of Energy, State Energy Program provides formula grants to each state. In Michigan, the Start Energy Office is operated by:

John Sarver, Project Manager
Energy Division, State of Michigan
Department of Labor and Economic Growth

Energy Office
611 W Ottawa
P.O. Box 30221
Lansing, MI 48909

State Energy Program funds are used by individual states to develop and implement renewable and energy efficiency programs in accordance with state priorities. Each year individual states must apply to DOE State Energy Program for funding and must describe their program and how it supports the state energy initiative. Some states also augment the DOE



funds with state dollars (e.g., Wisconsin, etc.). Individual grants are available, in turn, from most State Energy Offices for local initiatives in accordance with state priorities.

4. **SBAM** (www.sbam.org) Formed in 1969, the Small Business Association of Michigan (SBAM) is a 501 (c) 6 organization and one of the largest state-based organizations in the nation focusing on the interests of small business. SBAM is affiliated with NSBA and, for well over 20 years, SBAM has routinely aggregated members into buying pools to secure access to and/or discounts on products and services (e.g., group health and workers compensation insurance, merchant processing, airborne express, training, discounted electricity, computers/office equipment, etc.). The SBAM brand speaks of the unity and power gained through SBAM when small businesses band together to achieve more than they could on their own. SBAM harnesses the power in numbers of thousands of small businesses, using it to influence the public policy process and purchase services at a reduced rate through economies of scale. SBAM has a staff of roughly 22 people and a broad range of programs and services designed to remove barriers to growth for small businesses.

SBAM began working in energy efficiency during the energy crisis in the early 1980's. Under federal and state grants, SBAM operated the Kalamazoo Energy Office and piloted several programs including a Community Energy Management Program (CEM), a small business energy audit program, a shared saving financing program and a solar photovoltaics demonstration program. In the mid 1980's, SBAM operated a Small Business Energy Audit program under a contract with the Michigan Department of Commerce, Energy Administration. SBAM also partnered with the Alliance to Save Energy, to publish a "Performance Contracting For Energy Efficiency Improvements: A Guide for Small Businesses in Michigan." In 1984 SBAM also represented small business interests on a Consumers Power Corp. Citizens Advisory Board and helped underwrite the formation of the Michigan Association of Energy Management Professionals.

During the 1990's, SBAM operated a Small Commercial Business Energy Analysis program providing energy

assessments to over 200 small businesses and launched the EnerTech Program (SBIR Support Program for Energy related technologies). In FY 2000/01 Michigan deregulated electricity (PA 141) and SBAM became a Power Marketer/Aggregator of both renewable and non-renewable electricity for resale to small businesses and congregations. Currently, SBAM retails discounted electricity to over 75 small commercial and industrial customers.

In 2000, SBAM secured a contract from the Michigan Energy Office to operate a state-wide ENERGY STAR Promotion Program. The overall purpose of the Michigan ENERGY STAR Aggregation program is to develop and demonstrate the ability to significantly accelerate the deployment of energy efficient and emission reducing products (ENERGY STAR and other environmentally conscious products) to homes and commercial, industrial, and institutional facilities through the effective harnessing of organized affinity groups (trade and membership organizations) in order to rapidly educate and aggregate multiples of potential customers.

The State of Michigan, Energy Office was keen to support SBAM because of their market-based approach to energy efficiency outreach and deployment, growing expertise in market aggregation to accelerate sales of ENERGY STAR products and strong collaborations with partner organizations. SBAM teamed with the National Small Business United (NSBU) to step their national ENERGY STAR program down to a state level in order to extend the "aggregation" model to the Michigan ENERGY STAR program. As part of this effort, SBAM helped launch a new Affinity Group - the Michigan Interfaith Power and Light - to facilitate Affinity Sales of ENERGY STAR products to congregations in the states.

SBAM formed a Sponsoring Organization (SO) Agreement with MiIPL for additional benefits (See Appendix I). The success of this effort was evidenced by the fact that in 2006, SBAM officially transferred the Michigan Energy Officer, ENERGY STAR Promotion Project contract to the Michigan Interfaith Power and Light (MiIPL) LLC.

5. **Michigan Interfaith Power and Light (MiIPL)** Across the U.S., many congregations are building on their natural affinity to encourage the purchase of



energy efficient products that reduce emissions. Lunched in 1998, the Interfaith Power and Light (IPL) program is working to mobilize religious communities to promote renewable energy, energy efficiency and conservation. This effort began with the formation of the Episcopal Power and Light (EP&L) and the support of Grace Cathedral. EP&L was a unique coalition of Episcopal churches aggregated to purchase renewable energy. In 2001, EP&L co-founded California Interfaith Power and Light (CIP&L), which helps people of faith in California to organize and promote positive environmental change around energy and global warming. With funding support from both the Rockefeller and Turner foundations, this effort has led to the formation of IPL's in numerous states.

In 2002, Father Charles Morris,¹ St. Elizabeth Catholic Church, Wyandotte, MI, teamed with the Small Business Association of Michigan (SBAM) to launch an IPL in Michigan. SBAM provided funding to underwrite the formation of MiIPL, SEED grants, technical support and, under the ENERGY STAR Promotion Project, annual grants to operate an ENERGY STAR Congregations Project. MiIPL built upon the Affinity Marketing/Sales expertise held by SBAM to effectively promote ENERGY STAR to congregations.

In the main, MiIPL provides a Faith Based Initiative to promote, exhibited, demonstrate and most importantly, facilitate the purchase of ENERGY STAR products by congregations, congregants and businesses, professionals, consumers, educational institutions, environmental organizations and members and the general public that reside in the local communities serviced by the member congregation. MiIPL provides technical assistance to congregations and their members to purchase ENERGY STAR rated appliances and products (e.g., refrigerators and other appliances, lights, electronics, office equipment, etc.) at deep discount over retail. Because MiIPL's leadership is value based there is little overhead and MiIPL can offer deep reduction on upfront costs of ENERGY STAR products.

MiIPL was able to remove barriers to energy efficiency in congregations by: (1) lowering the cost of energy

efficient and renewable energy products through bulk and aggregated purchasing and low-cost financing; (2) removing the knowledge barrier to energy efficiency and renewable energy by serving as an "objective" technical specialist for its members²; (3) removing the product "risk" to congregations by creating a stable of pre-qualified product vendors that members can choose from; (4) developing a network and support system of congregations interested in the cultivation of creation awareness; (5) stimulating the market for the creation, retention and expansion of green businesses that research, develop, manufacture and sell environmentally conscious products.³

MiIPL was founded on the principle that congregations offer a UNIQUE opportunity to craft an ENERGY STAR Promotion initiative that can FORCE MULTIPLY the program's funding and resources, effectively educate and promote energy efficiency on a state-wide basis to all rate classes, and, more importantly, effectively foster the actual purchase of these products by consumers.

- Need - According to the EPA ENERGY STAR Congregations program, Congregations also offer opportunities for significant energy savings and a 3-year simple payback. In Michigan, the average annual energy cost for a religious building is between \$.48/ft² and \$.68/ft². A congregation with an annual energy expense of \$25,000 can reduce energy use by 30%, saving \$7,500 per year.
- Force Multiply - As clearly demonstrated by the Faith Based Initiative, Congregations have a unique and tremendous capacity to EFFECTIVELY LEVERAGE and FORCE Multiply the effect of tax payer dollars. Congregations

¹ Father Morris has received national recognition for his work in the energy efficiency and renewable energy.

² A key problem with energy efficiency is that energy auditors that also sell products typically skew the audit results towards their products. Thus, low cost high performance products (that do not have high profit margins) are often not specified for purchase and high cost items (such as furnaces, window treatments, etc.) are specified. MiIPL Energy Audits specify and prioritize products based solely on payback.

³ Green Businesses have the potential to create jobs and economic development that will offset economic losses to communities due to globalization and the off shoring of traditional businesses.



house a stable of technically skilled and dedicated volunteers that can be effectively marshaled to augment the programs and services funded by their sponsors.

- Mission – Congregations embody the view that if you give a man a fish he will eat for a day, but if you give him a fishing pole, he will eat every day. The MiIPL project is dedicated to Faith In Action whereby religious ideals are actualized through the efficient use of energy.
- Positioning – On average, each MiIPL Congregation member has 500 congregants. These congregants represent ALL RATE CLASSES. In addition, MiIPL Members ARE GROUNDED IN THEIR COMMUNITIES and are ideally positioned to promote ENERGY STAR programs locally by drawing upon existing and new partnerships with local service providers, businesses, community foundations, colleges and universities and governmental entities.
- Resources – MiIPL is uniquely suited to develop partnerships with organizations that can provide HIGH VALUE SUPPORT. In addition, support of MiIPL can be constructed as a Tax Deductible Contribution.

MiIPL's goal is to accelerate the deployment of ENERGY STAR and other environmentally conscious products to Congregations, congregants and residential, commercial, industrial, and institutional facilities within their communities through an effective Affinity Marketing program. Through their "Faith In Action," MiIPL leverages the Affinity of congregations by effectively funneling pre-qualified customers to pre-qualified vendors who provide pricing discounts to MiIPL program participants.

As a result of increasing the use of ENERGY STAR products and services aggregate energy savings and emission reductions are realized in the State. The following chart illustrates the emissions reductions that have occurred to date via the MiIPL program [all actions taken since July of 2004 and are representative of lifecycle estimated offsets]:

TOTAL EMISSIONS REDUCTIONS TO DATE

CO2 (Global Warming) - 5,548 Tons

SO2 (Acid Rain) - 27 Tons
Nox (Smog) - 13 Tons
Particulates (Asthma/Heart Attack) - 1,079 lbs.
Mercury (Cancer & Birth Defects) - .241 lbs.

- This comes to lifecycle savings of 7,759,762 kilowatt-hours (kWh) or \$775,987.00 on energy bills.
- This is the equivalent of planting 1,511.8 acres of forest or keeping 959.91 cars off of the road for a year.

Fostering an Energy Entrepreneurial Economy

An Entrepreneurial Economy is an economy characterized by the robust creation, retention, expansion and attraction of first and second stage entrepreneurial small businesses. Energy Entrepreneurs have the greatest potential to both foster economic development and energy security in the U.S. This author recommends that states adopt the following public policies designed explicitly to foster the growth of energy entrepreneurs.

- 1. Energy Efficiency and Renewable Energy Portfolio Standard as an Economic Development Strategy** – States need to integrate their economic development strategies with a comprehensive Energy Efficiency and Renewable Energy Portfolio Standard. A key part of such an effort is to stimulate the growth of energy entrepreneurs in the state. Such a policy would leverage the aggregated buying power of Affinity Groups in the state (including state and local governments), establish energy benchmarks for the state as well as empower entrepreneurs to need and exceed these benchmarks.
- 2. Entrepreneurial Education** –Despite the excellent and pioneering leadership and a number of leading universities and colleges in the U.S., entrepreneurial degree programs at U.S. colleges and universities continue to be a rarity. Entrepreneurial education is an essential component of a robust entrepreneurial economy and the U.S. needs to make inter-nationally-



recognized degree programs at our colleges and universities a clear priority.

3. Economic Development Strategy – The “vertical” economic development paradigm of “business attraction” (vs. the “horizontal” strategy of business creation, retention and expansion) continues to be the norm for most economic development programs in the U.S. It is imperative that states take the leadership in the creation of a clear, consistent and robust “horizontal” approach to complement their “vertical” economic development strategies. Such an approach should be clearly focused on the robust creation, retention, expansion and attraction of first and second stage entrepreneurial small businesses.

4. Access to Capital - The lifeblood of first and second stage entrepreneurial small businesses is capital. While much progress has been made of late in improving access to capital for certain targeted segments of the U.S. economy (e.g., Defense industries, Life Sciences), there continues to be a need for a dramatic improvement in how first and second stage entrepreneurs access capital for the research, development and/or commercialization of breakthrough technology, process and product innovations. Two areas require immediate attention:

- **Transferable R&D Tax Credit** - In order to foster greater commercialization of tax payer funded research and develop grants, individual states and the U.S. government should enact a new Transferable R&D Tax Credit whereby the value of R&D performed by a small business can be transferred to their commercialization investor/partner in the form of a tax credit. Such a tax credit will offset the commercialization startup costs and foster the development of new supplier relationships between technology developers and manufacturers.
- **Federal R&D Funding** - Federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer programs fund research and development

of breakthrough technology innovations. It is inexcusable that the vast majority of these grants are awarded to projects with little or no commercial potential. The federal government and complementary state programs should make fostering commercially viable SBIR/STTR projects a top economic development priority.

5. Commercialization of Technology – Research clearly illustrates that economic growth occurs best in regions where there is robust technology innovation and transfer and entrepreneurial dynamism. While much improvement has occurred in the area of university technology transfer there continues to be a need for a dramatic improvement in how universities and colleges transfer the successful results of their tax-payer funded research to entrepreneurial small businesses (i.e., Innovation – Entrepreneurship nexus). States should begin to evaluate universities and colleges on the percent of their annual budgets that are derived from the sale of technology that results from their research, development and engineering.

- **Entrepreneurial Business Climate** - The burdens of government fall heavily upon early stage and fast growing companies. States need to establish an entrepreneurial business climate that matches the “burden of government” to business growth stages and associated risks. Two areas require immediate attention.
- **Entrepreneurial Impact Statement** – States should enact a new Entrepreneurial Impact Statement that would require them to review rules and regulations with regard to their positive and negative impact on first and second Stage Entrepreneurs.
- **Entrepreneurial-Based Tax System** – In their deliberations about tax reform states should consider the following:
 - a. A tax system should capture how taxes, at all levels of government, interact to affect both short and long-run profitability of first and second stage small businesses.



- b. A tax system should take into account all taxes paid by the small businesses entrepreneurs (e.g., personal property taxes, sales taxes, personal income taxes, etc.).
- c. A tax system should enhance the creation, retention, expansion and attraction of entrepreneurial first and second stage entrepreneurial small businesses.
- d. A tax system should encourage entrepreneurs to investment in research that follows through with the development and commercialization of breakthrough innovations, products and processes.



About the Author

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Mark H. Clevey is a strong advocate for, and specialist in, cutting-edge entrepreneurial business development. He is a veteran of the U.S. Air Force and a Western Michigan University Honors College Graduate where he received two academic scholarships. He holds a Masters Degree in Public Administration (MPA), with emphasis in new industry development and public-private partnerships. He also holds an Advanced Business Counselor Certification from the Michigan Small Business Development Center Network (MI-SBDC). He is a member of Kappa Delta Pi (Honors Society in Education) and has extensive experience in corporate training. He has also been an Adjunct College Instructor in Renewable Energy and American Government and lectured extensively in Entrepreneur Development. In 2006, Mark received the Adjunct Faculty of the Year, 2006 Award from Oakland Community College (MI).

Mark has worked in both the public and private sectors and has over 30 years of experience in cutting-edge business development. Currently he is the Vice President, Entrepreneurial Development with the Small Business Association of Michigan (SBAM). In this capacity, Mark also serves as the Executive Director for the Small Business Foundation of Michigan (SBFM). Founded by the past SBAM Directors, SBFM is dedicated to fostering and Entrepreneurial Economy in the state. SBFM funds research and demonstration projects designed to investigate the NEXUS between Entrepreneurship and other economic drivers (e.g., education, etc.)

Mark has written numerous articles for a host of publications. Presently he writes a column for the Small Business Journal on technology issues affecting small business growth titled BizTech.™ He has also served as the Senior Editor for several industry newsletters, most recently the Michigan Interfaith Power and Light, LLC. In 2004 he received a contract from the U.S. Environmental Protection Agency to write a book focusing on economic development specialists can use aggregation models as a business development and expansion tool for emerging green businesses and industries.