



MARYLAND

CLEAN ENERGY CENTER

FY' 12 ANNUAL REPORT

July 2011 – June 2012

9636 Gudelsky Drive Bldg. III 4th Floor Rockville, MD 20850

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Letter from the Chairman



Ladies & Gentlemen:

As I reflect on the status of the Maryland Clean Energy Center at this point in our life cycle, I am proud of what the Board and staff have accomplished and where the organization is heading.

With very little public investment, MCEC is clearly adding value to statewide efforts to advance clean energy and energy efficiency and building capacity within the sector.

Helping consumers understand and take charge of their energy consumption and costs, along with a focus on removing barriers for access to capital have a priority over this past year. To that end the Maryland Home Energy Loan Program was established to enable consumers to more easily finance energy efficiency improvements, and the “power to choose” web pages launched this year to provide guidance to consumers on retail choice and need-to-know information before contracting with an energy provider.

MCEC successfully hosted the Maryland Clean Energy Summit with a theme of “Investing in Energy to Generate Jobs” and called attention to those employers in Annapolis at, what has now become, the annual Legislative Reception. The convening role of MCEC, time and time again, results in professional relationships that are valued in terms of consumer to business, business to business, and government to business interface.

In the year ahead I look forward to seeing what MCEC can do now that we have laid a solid foundation upon which to build!

Sincerely

A handwritten signature in black ink, appearing to be 'JECKEL', written in a cursive style.

Jeff Eckel
Chairman of the Board
President & CEO; Hannon Armstrong

Executive Summary

The Maryland Clean Energy Center (MCEC) is an instrumentality of the state, created by the legislature in 2008 to advance adoption of clean energy and energy efficiency technologies and practices as an economic development strategy. MCEC assists consumers, supports businesses and advises policymakers providing access to information, capital, and markets.

FY' 12 was a turning point year for MCEC. With two years of operation now having passed a work plan and much clearer value proposition has been established for the organization. Removing one of the barriers for access to capital for residential consumers was a top priority in the FY'12 work plan. The Advisory Council committee structure has been established to identify and support work plan priorities. Goals identified are listed in this report and many have been met or addressed but, lack of consistent funding and limited depth of bench continues to be a factor hindering MCEC from achieving its mission overall.

With the evolution of the Maryland Home Energy Loan Program (MHELP) from a pilot to a fully implemented model using Federal ARRA funding, MCEC engaged Mariner Finance as a lending partner, brought qualified contractors up to speed on the program and is now focused on driving consumer participation. The MCEC Board undertook a new initiative developing a financing structure, using the statute enabled bonding capability of the entity, to provide access to capital to enable energy improvements for the municipal, university, school, hospital and not-for-profit sector.

Maryland Clean Energy Summit 2011, the second of its kind, established the event as an annual gathering of industry, academic and government thought leaders considering best practices, discussing policy initiatives and networking. B2B opportunities facilitated at this high level gathering have generated some remarkable outcomes.

Outreach and education to improve energy literacy with senior consumers was a key focus in FY'12. MCEC partnered with the Maryland Department of Aging on several related efforts. Certain informative collateral pieces were designed, produced and distributed and senior information aides were trained to better assist clients engaged via the state senior center network. MCEC participated in the "Innovations in Aging" Trade Show in May of 2012.

Another notable outreach effort undertaken in FY'12 was the launch of the "Power to Choose" web pages designed to help consumers better understand their options for retail choice and what they should consider or avoid when entering into a related contract.

Advocacy events were held to help business representatives become more familiar with and lend their voices to the policy development process undertaken by the General Assembly in Annapolis each year. In FY'12, MCEC became more of a clearing house for energy policy discussion between stakeholders with the establishment of the Legislative Committee.

Support of business development opportunities was also on the radar in the FY' 12 work plan targets. The center executed a survey of business stakeholders to better identify and discuss common barriers and potential opportunities for success; the results of which are included in this report. (Appendix D). MCEC continued to prop up the CETI (Clean Energy Technology Incubator) and support meet-ups between entrepreneurs, mentors and technical supporters. An analysis of the status of this effort is included as a separate report (Appendix E) which documents growth in both the number and size of start-up companies.

Management

Board Members

Jeff Eckel, Chair

Hannon Armstrong

Jill Sorensen, Vice Chair

Baltimore Electric Vehicle Initiative

George Ashton, Treasurer

SOL Systems

Eric Wachsman

University of Maryland
Energy Research Center

Carol Collins

Spiralcat

Jeremy Butz

Chesapeake Green Fuels

Ken Connolly

Goldman Sachs

Malcolm Woolf, Ex Officio

Maryland Energy Administration

Staff

I. Katherine Magruder Executive Director

Terry Daly Loan Program Manager

Deborah Parrish Administrator

Advisory Council

Annual meeting April 25, 2012

Role, Responsibilities & Committee Charges

The MCEC Advisory Council exists to develop a work plan and set the framework for activity of the organization, advise the Executive Director and inform the Board of Directors. The Advisory Council reviews proposed policy and regulatory matters, facilitates relationship building and builds awareness of MCEC to encourage adoption of its mission. This group is comprised of representatives from industry, government and academia that identifies and work to remove barriers for the success of the energy sector. The Advisory Council meets annually as a whole with certain standing committees working throughout the year to direct activity related to finance, outreach & education, policy & legislation, advancing innovation, and measuring outcomes.

***See: [Advisory Council Member List/ 2011 Appendix A & 2012 Appendix B](#)**



Advisory Council Committees:

FINANCE

Develop and implement options and programs to increase access to capital for consumers, small businesses and through venture investment in energy efficiency, renewable energy and related business development.

LEGISLATIVE & POLICY

Set filters through which proposed policy and pending legislation is reviewed to inform policy makers and appointed officials on the local, state and federal level. Hosts the annual MCEC Legislative Reception and offers testimony on appropriate matters.

OUTREACH & EDUCATION

Develop and promote critical messaging content and marketing plans, coordinate promotional partnerships and activities to encourage consumer adoption of energy efficiency and renewable energy practices and technologies. Works to promote MCEC core programs, products, services while building awareness of MCEC as a resource.

SUMMIT PLANNING

Organizes and hosts this annual fundraiser. Review proposals solicited and select venue, develop agenda and program content including conference theme, identify and invite speakers, sponsors and attendees. Assist with sponsorship development and event promotion.

INNOVATION NETWORK

Works to advance access to markets, access to capital and business development assistance for commercialization of technologies, as well as start-up entrepreneurial ventures. Facilitates opportunities for business to business networking, to provide technical support and develop funding to support the Clean Energy Technology Incubator network.

METRICS

Identify, collect and monitor performance metrics indicative of both external industry wide activity and internal MCEC measures. Work with appropriate professional service providers, government agencies and business organizations to obtain information. Maintain a dashboard of data and issue an annual report.

Collaboratives:

The Advisory Board occasionally gathers input from technology specific stakeholder collaborative groups as warranted. These include but may not be limited to:

- Retail Choice/Service Providers
- Energy Efficiency/ Built Environment
- Solar
- Geothermal
- Wind
- Biomass
- Bio fuel

MCEC Value Proposition

Over the course of FY'12 MCEC leadership and advisors worked to identify and promote the value proposition distinguishing the instrumentality from various other organizations operating in the state. The following list was identified as ways MCEC could function best to advance its statute directed mission and serve its stakeholder audiences:

- **Advances Access to Capital**
- **Facilitates Outreach, Education & Networking**
- **Serves as a Clearinghouse**
- **Promotes & Advocates for Industry Stakeholders**
- **Supports Business Development especially through the Innovation & Commercialization Pipeline**

Two main challenges continue to plague the successful establishment of the Center since it opened for business in June 2009, establishing a sustainable source of operating capital and lack of recognition of its role in the state. Leadership and staff remain committed to addressing both of those considerations in FY'13 and beyond.

With dedicated funding resources at its disposal overall, the MCEC Board believes the organization will be in a better position to articulate its goals, establish and report on related tangible metrics year after year.



FY'12 Work Plan

Advance Access to Capital


GOAL: Sustain and Enhance Maryland Home Energy Loan Program (MHELP)

An ongoing need exists for investment in Energy Efficiency and Clean Energy measures. MCEC in partnership with MEA and Mariner Finance have implemented the Maryland Home Energy Loan Program (MHELP). Contractors are helping customers use MHELP and over \$1M in loans have been made to date. MCEC will advocate with the PSC to invest funds from the EmPOWER ratepayer surcharge for program promotion and additional interest rate buy down to sustain this effort.

MHELP began in January 2011 making loans directly to consumers with AFC First acting as program marketing and servicing capacity using ARRA funds with MCEC owning the loans. **During FY'12, the decline rate for customer loans issued through AFC First at 70% had an adverse effect on retaining contractors in the program.** This issue, along with the DOE mandated time limit on expending the ARRA funding for MHELP, caused the Board to consider making a change from AFC to another lender. MCEC released an RFP soliciting financial partners to assist with program expansion and operation now leveraging the remaining funding with advantageous terms. Baltimore based, Mariner Finance was the only vendor responding to the RFP MCEC released for related contractors.

The Board directed MHELP cease making direct loans through AFC First and enter into the leveraged lending model partnership with Mariner Finance beginning in October 2011. For a period of time, programs overlapped while MCEC closed out the AFC contract, and the transition from AFC to Mariner Finance was completed in January 2012.



PROGRAM METRICS		
	FY'11	FY'12
TOTAL # Loans in period	22	148
TOTAL # Cumulative Loans	22	148
TOTAL \$ Loan Volume in period	\$113,278	\$1,173,709
TOTAL Cumulative \$ Loan Volume	\$113,278	1,286,987*
TOTAL kWh savings in period	N/A	258,548
TOTAL Cumulative kWh savings	N/A	258,548
TOTAL FTE Job Hours in period	N/A	1,882
TOTAL Cumulative FTE Job Hours	N/A	1,882

(*Includes: AFC First: Jan. 2011 -June 2012/ \$435,886.83 Mariner Finance: July 2011 – June 2012/ \$861,100.41)
 The new lending model utilized private sector capital backed by a loan loss reserve and interest rate buy down to enable consumers to access capital at advantageous rates.

GOAL: Promote Bonding Capabilities & “monetize” EE savings as a “tradable asset”

MCEC should begin work on deploying its bonding capabilities to advance EE with university facilities which will over time provide sustainable operating capital for the organization. MCEC welcomed potential new project partners and will begin to investigate use of the model for RE applications in 2012.

During this period, MCEC initiated the RFP process of hiring bond counsel which was handled through assistance from the Assistant Attorney General at the Maryland Department of Business & Economic Development. The Board hired the firm of McGuire Woods as Bond Council in March of 2012 and began working to implement a unique financing structure to provide access to capital to enable energy improvements for the municipal, university, school, hospital and not-for-profit sector.

GOAL: Conclude Local Funding Assistance Awards Program

Projects Begun in FY’10 were finalized.



Facilitate Outreach, Education & Networking

MCEC maintains a website, produces and circulates “The Current” as a monthly electronic newsletter; and hosts the annual Maryland Clean Energy Summit conference in keeping with its efforts to increase energy literacy and facilitate access to information. The conference is a regional event that attracts over 350 attendees and features a variety of knowledgeable speakers and presenters.

GOAL: Host Maryland Clean Energy Summit 2011



The Maryland Clean Energy Summit, held for the second year in a row, has become an annual conference that draws participants from the Baltimore Washington metropolitan region and surrounding states. The theme for this year was “Investing in Energy to Generate Jobs”.

This year the event was originally scheduled to occur in Montgomery County at the Marriott Inn & Conference Center in Rockville over the dates of August 25th through the 27th with a Consumer Show as part of the agenda. The event dates and venue were changed to October 27th through the 29th at the Baltimore Hilton Inner Harbor as a result of the unusual earthquake that occurred in August which caused significant damage at the original host hotel.

Despite rescheduling, the event saw attendance of 375 participants, and was supported by almost \$95,000 in sponsorship funds and in kind contributions. Coordinating and hosting this



conference allowed MCEC to achieve certain additional strategies set for FY'12, including:

- Create a bridge to engage the Natural Gas sector in 2012.
- Target outreach to building & facility owners, operators, managers.
- Hold sector specific collaborative group meetings for solar, geothermal, biomass, biofuel, energy efficiency, etc.
- Encourage interface between urban and rural community audiences.
- Facilitate strategic partnerships between suppliers and contractors.



GOAL: Present Annual Awards

During the Maryland Clean Energy Summit host Awards Luncheon as an annual tradition. Continue to recognize certain individuals and organizations for their efforts in association with advancing the statute directed mission of the instrumentality.



MCEC Award Winners and dignitaries celebrate their recognition at the Maryland Clean Energy Summit 2011

Dr. Henry Kelly; Acting Assistant Secretary, US Dept. of Energy, Office of Energy Efficiency & Renewable Energy was the featured speaker during the luncheon and helped present the awards.

See: Awards category descriptions for eligibility provided in APPENDIX C.



2011 AWARD WINNERS

Advocacy	Mike Healy Skyline Innovations, Inc. Rick Peters Solar Energy Services, Inc.
Bright Light	Gary Skulnik Clean Currents
Entrepreneur of the Year	Dr. Jackson Yang Advanced Technology & Research
Legislative Leadership Senate	Robert J. Garagiola
Legislative Leadership House	Derek E. Davis
Industry Leadership	Tony Clifford Standard Solar
Partnership	Paul Zanecki Nexus Energy Homes
Clean Energy Champion	Mike Tidwell Chesapeake Climate Action Network
Special Appreciation	Martin Lampner Chimes, International

GOAL: Sponsor University of Maryland Solar Decathlon Entry

A group of University of Maryland Students, including MCEC intern Scott Tjaden, won first prize in US Department of Energy Solar Decathlon challenge in 2011. MCEC was proud to have sponsored the team that built a uniquely designed and modularly constructed living space with important emphasis on water conservation as part of the initiative! Go Terps!



secure
your energy
independence

- Make a proactive retail electric service choice to lock in your rates
- Use renewable solutions to control long term costs
- Purchase only Energy Star® rated appliances
- Control your consumption with affordable measures



www.mdcleanenergy.org

Goal: Engage in Senior Outreach

Facilitate energy literacy with senior consumer audiences and stakeholders. MCEC sponsored and participated in the Maryland Department on Aging "Innovations in Aging" Trade Show and Seminars held in May of 2011.

The center also developed and distributed informative print materials for distribution by Senior Information Aides, to facilitate accessibility by seniors through the Senior Center network in Maryland. MCEC also hosted a train-the-trainer work session with those aides so they could be more helpful to their constituent audiences.

www.mdcleanenergy.org



make smart energy choices!

Understand your energy choices to Save Costs and ensure your comfort! It's **EASY!**

Energy Audits are a good first step.
Affordable Actions are easy to take.
Select a preferred service supplier.
Your Choices Matter!

www.mdcleanenergy.org

MCEC SUGGESTS AFFORDABLE ACTIONS:

1. Select Compact Fluorescent Lightbulbs (CFL)
2. Install programmable thermostats
3. Use a water heater jacket
4. Invest in power management strips
5. Plug drafts with gaskets or caulk
6. Insulate windows with film, shades, quilts
7. Launder in cold water: *hang out clothes to dry*
8. Turn off lights when not in the room
9. In hot weather...use fans to circulate air: *turn air conditioning thermostats up*
10. In cool weather...change furnace filters regularly: *turn furnace thermostats down*

VISIT the MCEC website www.mdcleanenergy.org to:

- Find a Maryland Home Performance with Energy Star® qualified energy auditor, and make cost-effective improvements using Maryland Home Energy Loan Program (MHELP) financing.
- Research your electricity provider options through our "Power to Choose" resource.
- Consider renewable energy options.

MCEC directly impacted over 2000 senior consumers through this initiative.

A rack card designed and distributed in FY'12 focused on helping senior realize savings from simple energy efficiency measures they could do with minimal investment.

Maryland Clean Energy Center in partnership with Maryland Department of Aging provides energy-related decision support to Maryland seniors through statewide deployment of American Recovery and Reinvestment Act funds made available through the U.S. Department of Energy.

Making Smart Energy Choices!

GOAL: Conclude Renewable Energy Boot Camp for Local Planners & Policy Makers

This program began in August 2011 and ran through October 2011.

GOAL: Implement a K-12 outreach effort

Reach out to students who are primary influencers for adults.

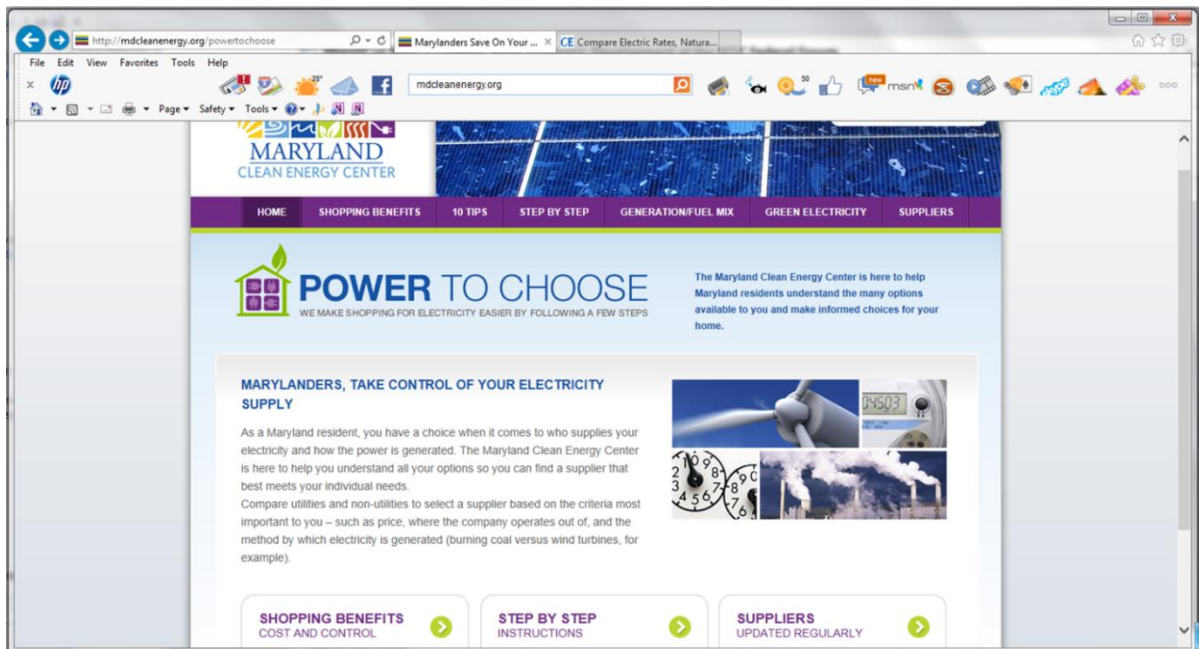
Not addressed due to lack of resources.

Serve as a Clearinghouse

GOAL: Maintain and improve website.

Provide resource information for all audiences. Make the website more of an information clearinghouse. Include a metrics dashboard related to MCEC goals.

In FY'12, MCEC developed the content for and launched new “Power to Choose” webpages with the idea of MCEC becoming more of an information clearinghouse on the subject of retail choice for consumers. See: <http://mdcleanenergy.org/powertochoose>



GOAL: Collect and disseminate industry specific data

In May of 2012, MCEC collected data from a sampling of business representatives to get a pulse on the status of the clean energy, energy efficiency and utility sector. The survey instrument was deliberately simple and designed to solicit input on existing and potential employment opportunities as well as general economic impact from the sector. Questions also focused on barriers to success and how MCEC might be helpful in removing those barriers.

In general, the results indicate that the employment outlook for Maryland’s clean energy industry is strong and growing; and that the most important policy consideration businesses believe could support continued momentum is to implement a stronger and expanded RPS. Results of the entire survey are provided in APPENDIX D.

The employment outlook for Maryland’s clean energy industry is strong and growing!

Nearly 50% of surveyed businesses expect to employ more workers in 2012 as compared to 2011, and an additional 31% expect to employ the same amount of workers in 2012 as in 2011.

GOAL: Organize and host quarterly “mixer” events and “meet ups”.

During FY’12, mixer and meet up events hosted on a variety of topics by the MCEC Clean Energy Technology Incubator (CETI), were well attended. Average attendance at each of the five specific events exceeded 50 and follow up collaboration between attendees was not unusual.

GOAL: Capture and feature related case studies that show financial viability and benefits of CE and EE. *Identify and utilize “messengers” and “champions” to tell their stories, include project financing information and/or model pro formas for residential and commercial applications.*

Not addressed due to lack of resources.

Promote & Advocate for Industry Stakeholders

MCEC serves as a technology agnostic neutral third party voice to guide policy makers and public administrators on policy, regulation and program investment conducive to the successful delivery of advanced energy and energy efficiency solutions. MCEC hosts a Legislative Reception during the General Assembly sessions in Annapolis each year to foster productive relationships between stakeholders and elected or appointed officials.

GOAL: Host Annual Legislative Reception

Build awareness of industry policy considerations and recognition for stakeholders with policy makers.

Event held and well attended on January 27, 2012 despite “Snomaggeddon!” While registration was at 175 the weather impacted attendance, which was down to only 75. MCEC held an additional event in March 2012 so those who were “snowed in” could get involved later in the session.

GOAL: Coordinate Government Relations Efforts

In FY’12 the MCEC Legislative Committee was formed to analyze, monitor and weigh-in on policy and legislation. The Committee determined certain filters through which proposed legislation would run in order for MCEC to take a position on any given bill. Weekly Committee conference calls were initiated and took place throughout the session, and staff prepared and delivered testimony as appropriate. Over all committee members analyzed over 80 bills, took positions on 24, and testified on 10.

Top to Bottom: MCEC Chairman Jeff Eckel welcomes the audience; Bob Mroz and the Hy-Tek Bio team showcased their technology at an exhibit; DHCH Deputy Secretary Bill Ariano and MDE Deputy Secretary David Costello; Senate Finance Committee Chairman, Thomas “Mac” Middleton shares his perspective; and MCEC Vice Chair Jill Sorensen networks with industry leaders at the annual MCEC Legislative Reception in 2012.



Support Business Development

GOAL: Continue to support the Clean Energy Technology Incubator (CETI); and assist companies through the Innovation & Commercialization Pipeline to make clean energy and clean tech a top tier innovation industry sector in Maryland.

Throughout FY'12, MCEC supported the efforts of a contractual Entrepreneur-in-Residence through its association with the umbc@bwtech incubator located on the campus of UMBC in Catonsville.

Dr. Bjorn Frogner coordinated events and worked closely with a number of companies in various stages of commercialization to foster their success. MCEC also interfaced with members of the Maryland Business Incubator Association (MBIA), and tenants of the Bethesda Green incubator to provide assistance as appropriate. Dr. Frogner provided a report for MCEC board consideration, which is indicative that these efforts are “working”, both broadly and company specific.

See: APPENDIX E: “Analysis of Growth in Clean Energy Startups in Maryland”; by Bjorn Frogner, PhD

GOAL: Develop and launch a web portal interface focused on entrepreneurial efforts to coalesce resources and promote connections.

Not addressed due to lack of resources.

GOAL: Identify and discuss common barriers to success (Business Survey in 2012).

See: page 15 above and APPENDIX C

GOAL: Build and expand MCEC partnerships with other affiliates and organizations with similar missions. Solicit financial resources to support this activity.

Throughout this period MCEC began to more proactively engage and build partnership relationships with specific organizations, which are intended to be promoted in FY'13.



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JUNE 30, 2012

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REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

We have audited the accompanying statements of net assets of the Maryland Clean Energy Center (the Center), as of June 30, 2012 and 2011, and the related statements of revenue, expenses, and changes in net assets and cash flows for the years then ended. These financial statements are the responsibility of the Center's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America, and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Center as of June 30, 2012 and 2011, and the respective changes in its financial position and its cash flows, thereof for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Center will continue as a going concern. The net asset as of June 30, 2012 was \$2,496,698, of which \$2,828,764, was restricted for the loan program and other grants or program. As of June 30, 2012, the Center had \$400,000 of debt outstanding, and did not have sufficient grants and other revenue to cover its expenses. These matters raise substantial concern about the Center's ability to continue as a going concern. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

In accordance with *Government Auditing Standards*, we have also issued our report dated December 13, 2012, on our consideration of the Center's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audits.

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Accounting principles generally accepted in the United States of America require that management's discussion and analysis be presented to supplement the basic financial statements. Such information, although not part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquires of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with evidence sufficient to express an opinion or provide any assurance.

SB & Company, LLC

Hunt Valley, Maryland
December 13, 2012



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**REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS
ON INTERNAL CONTROL OVER FINANCIAL REPORTING
AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT
OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH
GOVERNMENT AUDITING STANDARDS**

To the Board of Directors
Maryland Clean Energy Center

We have audited the basic financial statements of the Maryland Clean Energy Center (the Center) as of and for the year ended June 30, 2012, and have issued our report thereon dated December 13, 2012. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States of America.

Internal Control over Financial Reporting

Management of the Center is responsible for establishing and maintaining effective internal control over financial reporting. In planning and performing our audit, we considered the Center's internal controls over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Center's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of the Center's internal control over financial reporting.

Our consideration of internal control over financial reporting was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control over financial reporting that might be significant deficiencies or material weaknesses. And therefore, there can be no assurance that all deficiencies, significant deficiencies, or material weaknesses have been identified. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weakness. However, as discussed in the accompanying schedule of findings and questioned costs item 2012-01, we identified a deficiency in internal control over financial reporting that we consider to be significant deficiencies.

A significant deficiency is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Center's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* and which are described in the accompanying schedule of findings and questioned costs as item 2012-02.

The Center's responses to the findings identified in our audit are described in the accompanying schedule of findings and questioned costs. We did not audit the Center's response and, accordingly, we express no opinion on it.

This report is intended solely for the information and use of management, the Board of Directors, management, Federal awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.

SB & Company, LLC

Hunt Valley, Maryland
December 13, 2012



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**REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS
ON COMPLIANCE WITH REQUIREMENTS THAT COULD HAVE A
DIRECT AND MATERIAL EFFECT ON EACH MAJOR PROGRAM AND ON
INTERNAL CONTROL OVER COMPLIANCE IN ACCORDANCE WITH
OMB CIRCULAR A-133**

To the Board of Directors
Maryland Clean Energy Center

Compliance

We have audited the compliance of the Maryland Clean Energy Center (the Center) with the types of compliance requirements described in the U.S. Office of Management and Budget (OMB) *Circular A-133 Compliance Supplement* that could have a direct and material effect on each of the Center's major Federal programs for the year ended June 30, 2012. The Center's major Federal programs are identified in the summary of independent public accountants' results section of the accompanying schedule of findings and questioned costs. Compliance with the requirements of laws, regulations, contracts, and grants applicable to each of its major Federal programs is the responsibility of the Center's management. Our responsibility is to express an opinion on the Center's compliance based on our audit.

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States of America; and OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major Federal program occurred. An audit includes examining, on a test basis, evidence about the Center's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion. Our audit does not provide a legal determination of the Center's compliance with those requirements.

In our opinion, the Center complied, in all material respects, with the requirements referred to above that could have a direct and material effect on each of its major Federal programs for the year ended June 30, 2012.

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EXPERIENCE • QUALITY • CLIENT SERVICE

Internal Control Over Compliance

The management of the Center is responsible for establishing and maintaining effective internal control over compliance with requirements of laws, regulations, contracts and grants applicable to Federal programs. In planning and performing our audit, we considered the Center's internal control over compliance with requirements that could have a direct and material effect on a major Federal program in order to determine our auditing procedures for the purpose of expressing our opinion on compliance and to test and report on internal control over compliance in accordance with OMB Circular A-133, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Center's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a Federal program on a timely basis. A material weakness in internal control over compliance is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a Federal program will not be prevented, or detected and corrected, on a timely basis.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be deficiencies, significant deficiencies, or material weaknesses. The results of our tests disclosed instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards* and which are described in the accompanying schedule of findings and questioned costs as item 2012-02.

The Center's responses to findings identified in our audit are described in the accompanying schedule of findings and questioned costs. We did not audit the Center's response and, accordingly, we express no opinion on it.

This report is intended solely for the information and use of management, Maryland State agencies, Federal awarding agencies and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties.

SB & Company, LLC

Hunt Valley, Maryland
December 13, 2012

MARYLAND CLEAN ENERGY CENTER

Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2012

<u>Federal Grantor/Pass Through Grantor/Program or Cluster Title</u>	<u>Federal CFDA Number</u>	<u>Grant Number</u>	<u>Federal Expenditures</u>
U.S. Department of Energy			
State Energy Program (Outreach Program) - ARRA	81.041	2011-01-471FA	\$ 513,140
State Energy Program (Loan Program) - ARRA	81.041	2010-01-516F3	2,904,731
TOTAL EXPENDITURES			<u>\$ 3,417,871</u>

The accompanying notes are an integral part of this schedule.

MARYLAND CLEAN ENERGY CENTER

**Notes to the Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2012**

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

All Federal grant operations of the Maryland Clean Energy Center (the Center) are included in the scope of Office of Management and Budget (OMB) Circular A-133 audit (the Single Audit). The Single Audit was performed in accordance with the provisions of the OMB Circular A-133, Compliance Supplement (the Compliance Supplement). Compliance testing of all requirements, as described in the Compliance Supplement, was performed for the grant program noted below. For fiscal year 2012, we perform audit on programs and covered at least 50% of Federally granted funds. Actual coverage is 100% of total cash and non-cash Federal award program expenditures.

<u>Major Programs</u>	<u>Federal CFDA Number</u>	<u>Grant Number</u>	<u>Federal Expenditures</u>
U.S. Department of Energy			
State Energy Program (Outreach Program) - ARRA	81.041	2011-01-471FA	\$ 513,140
State Energy Program (Loan Program) - ARRA	81.041	2010-01-516F3	2,904,731
TOTAL MAJOR PROGRAMS			<u>\$ 3,417,871</u>

2. BASIS OF PRESENTATION

The accompanying schedule of expenditures of Federal awards includes all Federal grants to the Center that had activity during the fiscal year ended June 30, 2012. This schedule has been prepared on the accrual basis of accounting.

3. STATE ENERGY LOANS

During the year ended June 30, 2012, the Center issued \$282,718 of loans under the State Energy Program. As of June 30, 2012, the Center has \$343,395 outstanding loan balance under this program.

During the year ended June 30, 2012, the Center also received \$1,500,000 for the loan loss reserve fund, and \$1,000,000 for the interest rate subsidy fund from the State Energy Program.

MARYLAND CLEAN ENERGY CENTER

**Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2012**

Section I – Summary of Independent Public Accountants’ Results

Financial Statements

Type of Report of Independent Public Accountants issued Unqualified

Internal control over financial reporting:

- Material weakness(es) identified? None Reported
- Significant deficiency(ies) identified? Yes
- Noncompliance material to financial statements? Yes

Federal Awards

Type of Independent Public Accountants’ report issued on compliance for major programs: Unqualified

Internal control over major programs:

- Material weakness(es) identified? Yes
- Significant deficiency(ies) identified? None Reported
- Any audit findings disclosed that are required to be reported in accordance with Section 510(a) of Circular A-133? Yes

Identification of Major Program:

<u>Major Programs</u>	<u>Federal CFDA Number</u>	<u>Grant Number</u>	<u>Federal Expenditures</u>
U.S. Department of Energy			
State Energy Program (Outreach Program) - ARRA	81.041	2011-01-471FA	\$ 513,140
State Energy Program (Loan Program) - ARRA	81.041	2010-01-516F3	2,904,731
TOTAL MAJOR PROGRAMS			<u>\$ 3,417,871</u>

Dollar threshold used to determine Type A programs: \$ 300,000

Did the Center qualify as a low risk auditee? No

—
—
MARYLAND CLEAN ENERGY CENTER

—
—
**Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2012**

—
—
**Finding Number 2012-02 Loan Underwriting
Federal Program: State Energy Program (Loan Program) – ARRA
CFDA Number: 81.041**

—
—
**The Loans underwriting was not properly monitored.
Type of Finding: Internal Control over Compliance, Material Weakness**

—
Condition:

—
During the audit, we noted the Center did not review the application and underwriting documents of loans made by the loan services or approve the underwriting.

—
Criteria:

—
Per the grant agreement, the Center shall use the funds to design, develop, and promote a program that provides financing for energy-efficiency improvements and renewable-energy installations.

—
Cause:

—
The Center has not established monitoring procedures for the underwriting by the third party loan servicer.

—
Effect:

—
The Center uses a third party loan servicer to underwrite the loans and does not review the documents obtained to perform the underwriting. The loans may not be used for financing for energy-efficiency improvements or renewable-energy installations.

—
Questioned Cost:

—
Unknown.

—
Recommendation:

—
We recommend the Center to design internal control procedures to ensure the loans are made in compliance with the grant agreement and monitor the underwriting of the loan servicer to ensure they comply with the guidelines established.

—
Management's Response:

—
MCEC Staff have requested that the MHELP lender now provide MCEC with the credit scores for all borrowers, as well as the list of measures to be covered by the loan that are currently provided for review. The credit score will be included with the monthly interest rate subsidy invoice. Prior to MCEC approving the invoice, there will be a review to insure the credit scores are in compliance with MHELP guidelines. If any score is not in compliance, the subsidy will not be paid on that loan. This insures that DOE funds are not being used on ineligible projects. Additionally, MCEC will modify its practice with the lender to be able to randomly review a portion of the lenders files, on a quarterly basis, to insure that the credit scores provided to MCEC for borrowers match the scores provided to the lender by credit rating agencies.

—
—
MARYLAND CLEAN ENERGY CENTER

—
—
**Summary Schedule of Prior Year Audit Findings
For the Year Ended June 30, 2012**

—
—
**Finding Number 2011-01 Loan Receivable Recording
Federal Program: State Energy Program (Loan Program) – ARRA
CFDA Number: 81.041**

—
—
**Loan Receivable was recorded as expenditure instead of receivable.
Type of Finding: Internal Control over Financial Reporting, Material Weakness**

—
—
Condition:
During the audit, we noted the loan disbursements were recorded as expenditure instead of loan receivable.

—
—
Criteria:
Per the grant agreement, the Center shall retain all repaid principal amounts or initial investments, and use those funds in a revolving fund for additional loan program development, capitalization, and deployment.

—
—
Cause:
The Center used a third party loan servicer to administrate the loans. After the loan is underwritten and issued, the Center reimburses the loan servicer for the amount of the loans made to the customers. The personnel responsible for recording these transactions did not fully understand the transaction. The loans were treated as expenditure when the payments were made to the loan servicer.

—
—
Effect:
The loan receivable was understated by \$124,949, and the expenditure was overstated by \$124,949.

—
—
Questioned Cost:
None noted.

—
—
Recommendation:
We recommend the Center to communicate with its third party loan servicer to get an understanding of the ownership of the loan. We also recommend the Center monitor the loan balance and reconcile the cash disbursed to the loan servicer to the loan trial balance and loan documentation it receives from the servicer and reconcile the cash receipt of principal and interest from repayment of loans to the loan trial balance.

—
—
Management's Response:
Management concurs with the finding. The adjusting entry was recorded for the financial statements. Management will implement new procedures going forward.

—
—
Status:
Resolved.

Appendix A

MCEC ADVISORY COUNCIL Membership List 2011				
First Name	Last Name	Company	City	State
John	Ackerly	Alliance for Green Power	Takoma Park	MD
Steve	Arabia	NRG	Darnestown	MD
Ted	Atwood	City of Balt Dept. of Gen Services	Baltimore	MD
Bill	Blanchette	Chesapeake Geo Systems	Baltimore	MD
Jan	Brinch	Energetics	Columbia	MD
Claire	Buchner	Law Offices of Clair Buchner	Annapolis	MD
Paula	Carmody	MD Office of the People's Council	Baltimore	MD
Tony	Clifford	Standard Solar	Rockville	MD
Bill	Cole	Pfister Energy	Baltimore	MD
John	Congedo	AC Wind	Grantsville	MD
Jean-Paul	Crouzoulon	AREVA	Bethesda	MD
Kerinia	Cusick	Sun Edison	Beltsville	MD
Sophie	Dagenais	Advisory Board Member	Baltimore	MD
Robin	Davidov	Northeast Waste Disposal Authority	Baltimore	MD
Vanessa	Duetschmann	Gro Solar	Jessup	MD
Stewart	Edelstein, PhD	Universities at Shady Grove	Rockville	MD
Matt	Ferguson	Reznick Group	Vienna	VA
Carlos	Fernandez-Bueno	Potomac Wind Energy	Dickerson	MD
Michael	Giangrandi	A.J. Michaels Company	Baltimore	MD
Josh	Goldberg	Astrum Solar	Annapolis Junction	MD
Brad	Heavner	Environment Maryland	Baltimore	MD
Ellen	Hemmerly	bwtech at UMBC	Baltimore	MD
R. Thomas	Hoffman	Ballard Spahr	Washington	DC
Lynn	Hogg	Strategic Services International	Baltimore	MD
Brent	Hollenbeck	TimberRock Energy Solutions	Frederick	MD
Bob	Hoyt	Montgomery County Dept. of Environment	Rockville	MD
Connie	Lausten	New Generation Biofuels	Washington	DC
Carl	LaVerghetta	MES	Millersville	MD
Peter	Lowenthal	Johnson Controls	Capitol Heights	MD
Andrew	Maus	Soliel Solar	Baltimore	MD
Jim	McDonnell	Avalon Energy	Bethesda	MD
Anthony	Millin	Lerch Early & Brewer	Bethesda	MD
Rob	Minnick	Minnick's	Laurel	MD
Dan	Nadash	Potomac Energy Fund	Frederick	MD
Geri	Nicholson	Sage Energy	Annapolis	MD
Sean	O'Neill	Ocean Renewable Energy Coalition	Darnestown	MD
Dr. Cindy	Parker	JHU	Baltimore	MD
Steve	Pattison	Greenhorn & Omara	Laurel	MD
Rick	Peters	Solar Energy Service	Millersville	MD
Michele	Peterson	Honeywell	Pasadena	MD
Robert	Phinney	HDR, Inc	Alexandria	VA
Liz	Porter	Lockheed Martin	Rockville	MD
Earl	Post	A Quality Heating	Westminster	MD
Brian	Quinlan	Lars Energy	Severna Park	MD
Bernard	Reynolds	MD Dept of Labor, Licensing & Reg. Government Workforce Invest. Bd.	Baltimore	MD
Dan	Rider	Maryland Dept of Natural Resources	Annapolis	MD
Derek	Robertson	Wave Bob	Annapolis	MD

Appendix A: Continued

MCEC ADVISORY COUNCIL Membership List 2011				Pg 2
First Name	Last Name	Company	City	State
Rebecca	Rush	Renewable Energy Stewardship	Hagerstown	MD
Jerry	Sanders	BITH Energy	Baltimore	MD
Melanie	Santiago Moser	Public Service Commission	Baltimore	MD
Mark	Schultz	Earth River Geothermal	Annapolis	MD
Grant	Shmelzer	IEC-Chesapeake	Odenton	MD
Gary	Skulnik	Clean Currents	Rockville	MD
Michael	Smith	Constellation	Baltimore	MD
Kelly	Speaks-Backman	Maryland Energy Administration	Annapolis	MD
John	Spears	Sustainable Design Group	Gaithersburg	MD
Ken	Stadlin	Kenergy	Millersville	MD
Bill	Stone	Mobern Lighting	Laurel	MD
Joanne	Throwe	Md. Environmental Finance Center	College Park	MD
Mike	Tidwell	Chesapeake Climate Action Network	Takoma Park	MD
Peter	Van Buren	TerraLogos Energy Group	Baltimore	MD
Hilari	Varnadore	Frederick Co. Office of Environmental Sustainability	Frederick	MD
Eric	Wachsman	University of MD Energy Research Ctr.	College Park	MD
Kim	Watson	PEPCO	Washington	DC
Brian	Webster	Aztec Solar	Wayne	PA
Paul	Wittemann	Greenspring Energy	Timonium	MD
Hannah	Wood	Sentech	Bethesda	MD
Larry	Zarker	BPI	Washington	DC

Appendix B

MCEC ADVISORY COUNCIL 2012				
First Name	Last Name	Company	City	State
John	Ackerly	Alliance for Green Heat	Takoma Park	MD
Dave	Ager	Townscape Design	Clarksville	MD
Dave	Buemi	Suniva, Inc	Annapolis	MD
Calvin	Butler	Exelon Corporation	Chicago	IL
Robert	Campbell	Qvinta, Inc.	Fort Washington	MD
Paula	Carmody	Office of the People's Counsel	Baltimore	MD
Tony	Clifford	Standard Solar	Rockville	MD
Bill	Cole	Pfister Energy	Baltimore	MD
David	Costello	MDE	Baltimore	MD
Tony	Crane	Efficient Home, LLC	Burtonsville	MD
Jean Paul	Crouzoulon	AREVA Renewable	Bethesda	MD
Mark	Crowdis	Think Energy, Inc.	Silver Spring	MD
Vanessa	Deutschmann	Solar City	Jessup	MD
Rebecca	Eaton	ICF International	Fairfax	VA
Ted	Evans	Ground Loop Systems	Darlington	MD
Steve	Faehner	American Wood Fibers	Columbia	MD
Matt	Ferguson	Reznick Group	Vienna	VA
Dave	Ferguson	Carrington Services Group	Manchester	MD
Scott	Friedman	Greenavise	Silver Spring	MD
David	Friend	US Windforce, LLC	Greenburg	PA
Michael	Giangrandi	A.J. Michaels Company	Baltimore	MD
Josh	Greene	Patton Boggs	Crofton	MD
Jim	Hayden	BDO, Intl.	Bethesda	MD
Ellen	Hemmerly	bwtech at UMBC	Baltimore	MD
Francis	Hodsoll	MDVSEIA/ EE Frontiers	Herdon	VA
R. Thomas	Hoffmann	Ballard Spahr	Washington	DC
Lynn	Hogg	Solargen	Baltimore	MD
Fred	Hoover	MEA	Annapolis	MD
Abigail Ross	Hopper	Office of Governor O'Malley	Annapolis	MD
Bob	Hoyt	Montgomery County Dept. Environmental Protection	Rockville	MD
Andrew	Kays	Northwest Md Waste Disposal Auth.	Baltimore	MD
Joan	Kleinman	Office of Congressman Chris Van Hollen	Rockville	MD
Pranay	Kohli	Amidus	Baltimore	MD
Dan	Kuegler	Md. Environmental Finance Center	College Park	MD
Todd	Larson	Green America	Washington	DC
Connie	Lausten	Clausten, LLC.	Washington	DC
Alvin	Lavoie	DOW	Springhouse	PA
Arthur	Lazerow	Alban Eco Systems	Bethesda	MD
Curt	Mackinson	Mariner Finance	Baltimore	MD
Elaine	McCubbin	DBED	Baltimore	MD
Jim	McDonnell	Avalon Energy	Bethesda	MD
Kevin	McTigue	Renewable Energy Solutions	Germantown	MD
Markian	Melnyk	Atlantic Wind Connection	Chevy Chase	MD
Anthony	Millin	Anthony L. Millin	Bethesda	MD
Shannon	Moore	Frederick Co. Office of Environmental Sustainability	Frederick	MD

Appendix B: continued

MCEC ADVISORY COUNCIL 2012				Page 2
First Name	Last Name	Company	City	State
Andy	Moser	Maryland Workforce Development Corp.	Millersville	MD
Bob	Mroz	Hytek Bio, LLC	Dayton	MD
David	Musyt	Noveda Technologies	Roanoke	VA
Dan	Nadash	Potomac Energy Fund	Frederick	MD
Robert	Nicholson	OTEC	Baltimore	MD
Alex	Nunez	Constellation Energy	Annapolis	MD
Roger	O'Donnell	Eaton	Hanover	MD
Cindy	Parker, MD MPH	Johns Hopkins Environment, Energy, Sustainability, & Health Institute	Baltimore	MD
Steve	Pattison			
Rick	Peters	Solar Energy Service	Millersville	MD
Andi	Puckett	All In Energy Solutions	Swan Point	MD
Bernie	Reynolds	Towson University Center for Professional Studies	Towson	MD
Dan	Rider	Maryland Dept of Natural Resources	Annapolis	MD
Rebecca	Rush	Renewable Energy Stewardship	Hagerstown	MD
Grant	Schmelzer	IEC-Chesapeake	Odenton	MD
Steve	Schnieder	Lockheed Martin	Bethesda	MD
CP	Shankar	American Grid	Columbia	MD
Paul	Skrochod	Balt. City DGS	Baltimore	MD
Gary	Skulnik	Clean Currents	Rockville	MD
John	Spears	International Center for Sustainable Development	Gaithersburg	MD
Pat	Thompson	Energyworks	Annapolis	MD
Calvin	Timmerman	MD Public Service Commission	Baltimore	MD
Brian	Toll	ecobeco	Rockville	MD
Ross	Tyler	Business Coalition for Maryland Offshore Wind	Washington	DC
Linda	Walker	Complete Home Solutions	Lothian	MD
Robert	Wallace	BITH Group Technologies, Inc.	Baltimore	MD
Harry	Warren	Washington Gas Energy Services	Herndon	VA
Charles	Washington, Jr	PEPCO & Delmarva Power	Washington	MD
Hannah	Wood	SRA, International	Rockville	MD
Larry	Zarker	BPI	Washington	DC

Appendix C:

MCEC AWARDS CATEGORIES ELIGIBILITY

Legislative Leadership

Presented to a member of the Maryland General Assembly who have been actively engaged in support of the MCEC legislative agenda and a definitive leader on policy initiatives to support job creation, reduction of greenhouse gas emissions and demand management practices in the State.

Industry Leadership

Acknowledges the dedicated efforts of a businessperson that has made an exemplary commitment of time and resources to encourage the success of the industry as a whole or a specific sector of the industry. This individual will have served in a leadership capacity in an organization somehow affiliated with the MCEC mission.

Advocacy Award

Recognizes the work of an individual, group or organization actively engaged in advancing and improving opportunities for business expansion, policy creation, and workforce development. This individual will have demonstrated efforts to work across various sectors for the good of the industry overall and partnership with MCEC.

Bright Light Award

This individual or group shines for their contribution to MCEC efforts to remove barriers to success, promote the MCEC mission and bridge gaps between industry and policy.

Entrepreneur of the Year

Recognizes an individual or new company that brings new technologies, products or services to the market in Maryland through the Maryland Clean Energy Technology Incubator Network.

Partnership Award

Presented to an individual, group or organization that has committed laudable resources to encourage the success of MCEC and its mission, or has facilitated successful partnerships between stakeholders in the state to advance adoption of clean energy products, services and technologies and energy efficiency practices.

Clean Energy Champion of the Year

Presented to an individual who has clearly demonstrated vision and proactive leadership to advance clean energy generation and adoption of energy efficiency practices, encouraged the success of the industry sector, and heightened or improved consumer awareness in support of the clean energy economy.

Appendix D: Industry Survey Results

2012 Maryland Clean Energy Industry Survey

Conducted by the Maryland Clean Energy Center

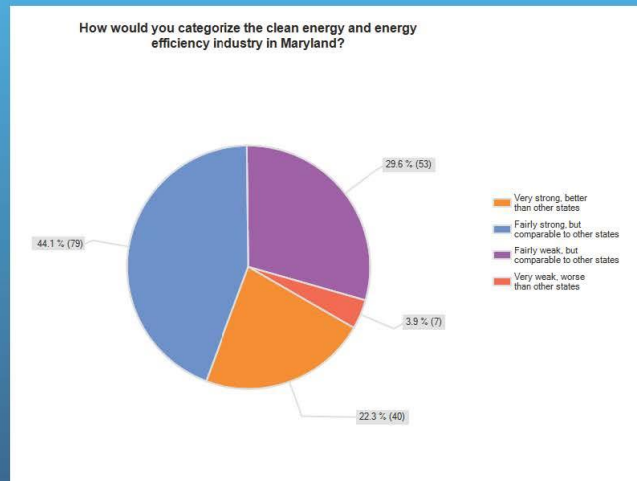


State of the industry

Maryland represents an ideal environment for businesses in the clean energy industry.

Two-thirds of surveyed businesses said the state's clean energy industry was either very strong or fairly strong, and 23 percent said the state's clean energy industry was better than other states.

Only three percent said it was worse than other states.



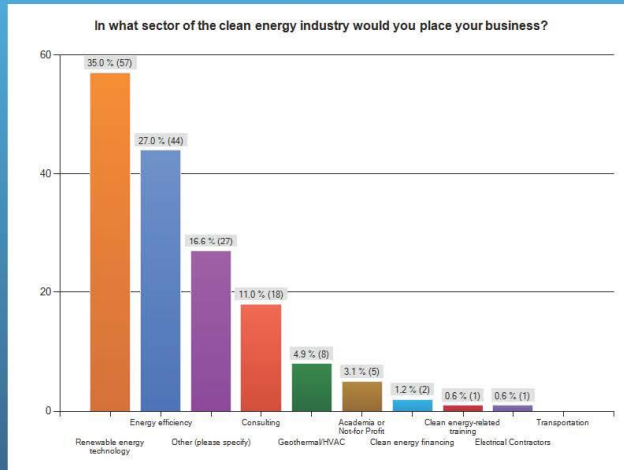
Appendix D: Industry Survey Results (cont.)

Renewables, energy efficiency

Renewables and energy efficiency businesses dominate the state's clean energy industry.

35% of surveyed businesses are focused on renewable energy, while 27% are focused on energy efficiency.

A large portion of other surveyed businesses work in association with the industry, through consulting, training, financing, or analysis.

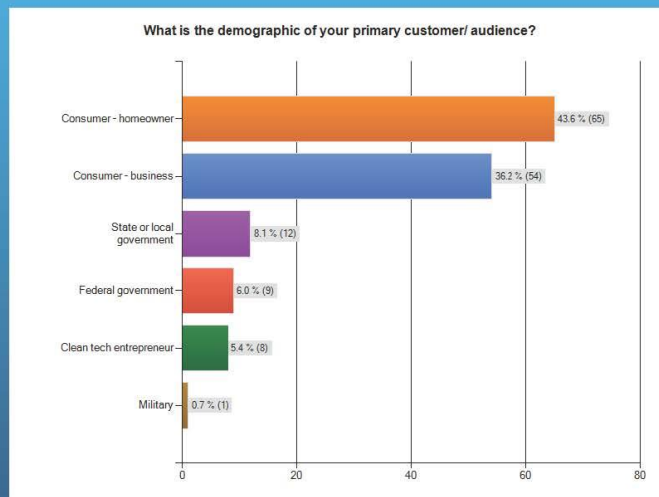


Mainly consumer-focused

Consumers - both homeowner and other businesses - are the largest demographic (nearly 80%) served by Maryland's clean energy industry.

44% of respondents said homeowners were their primary customer, while 36% listed other businesses.

Nearly 15% say government or the military are their primary customer demographic.



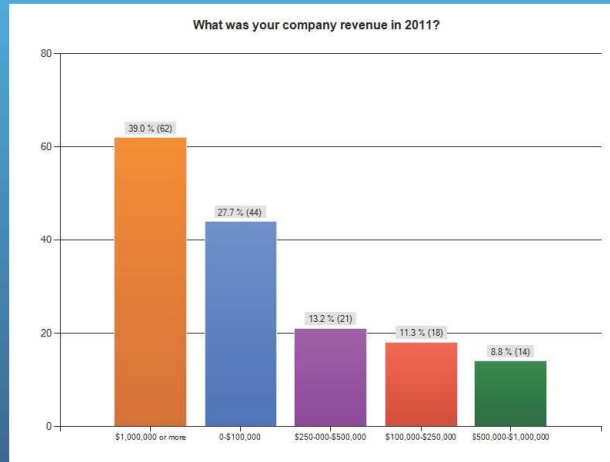
Appendix D: Industry Survey Results (cont.)

Significant economic impact

The clean energy industry represents a significant economic interest to Maryland.

Nearly 40% of surveyed businesses reported more than \$1 million in revenue in 2011.

However, the small business sector of the state's clean energy industry is significant - 27% reported less than \$100,000 in 2011 revenue.

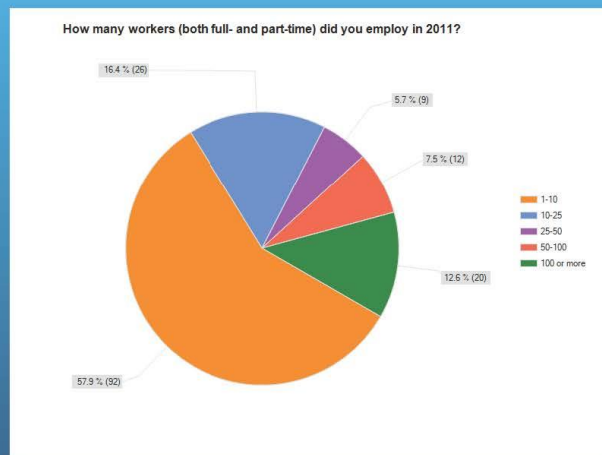


A mid-sized industry

A majority of Maryland's clean energy industry businesses are small- to medium-sized.

Nearly three-quarters of surveyed businesses employed 25 or fewer workers in 2011.

However, nearly 13 percent employed more than 100 workers in 2011.



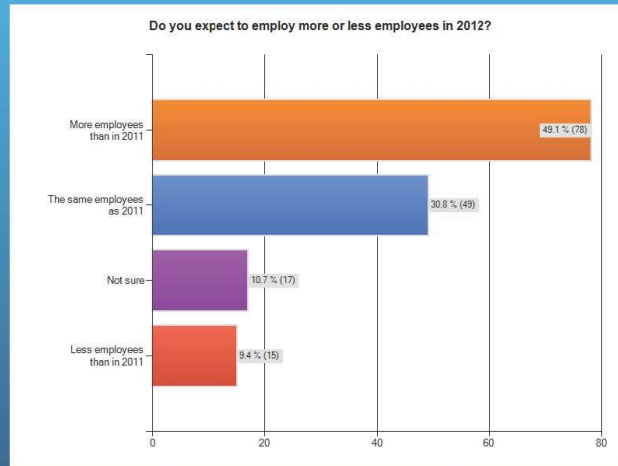
Appendix D: Industry Survey Results (cont.)

Green collar jobs growing fast

The employment outlook for Maryland's clean energy industry is strong and growing.

Nearly 50% of surveyed businesses expect to employ more workers in 2012 as compared to 2011, and an additional 31% expect to employ the same amount of workers in 2012 as in 2011.

Less than 10% of surveyed businesses expect to employ less workers in 2012 as in 2011.

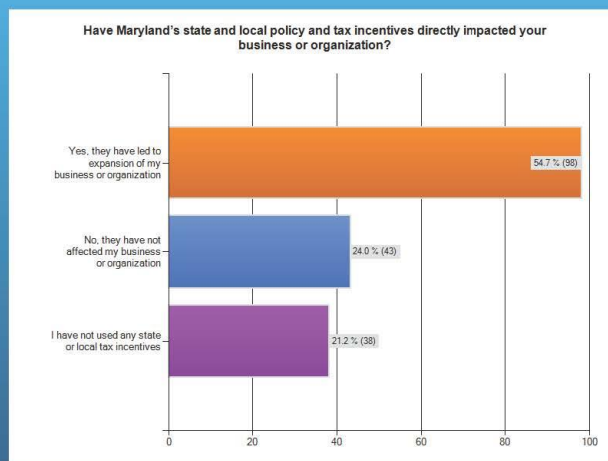


State & local policies are key

Government policy and incentives are an important driver for Maryland's clean energy industry.

Nearly 55% of all respondents said state and local policy or tax incentives have led them to expand their business.

However, 21% said they have not used state or local incentives, indicating additional outreach could return benefits.



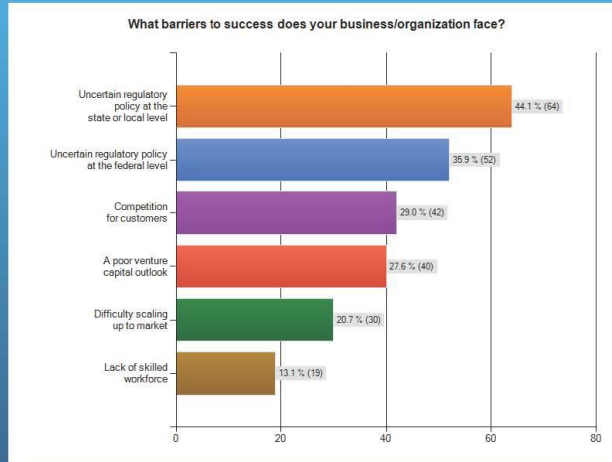
Appendix D: Industry Survey Results (cont.)

Uncertain policy a barrier to success

While state and local policy has been key to growth this far, policy uncertainty is by far biggest barrier to clean energy industry success.

Roughly 80% of businesses cited uncertain government policy as the biggest barrier to success.

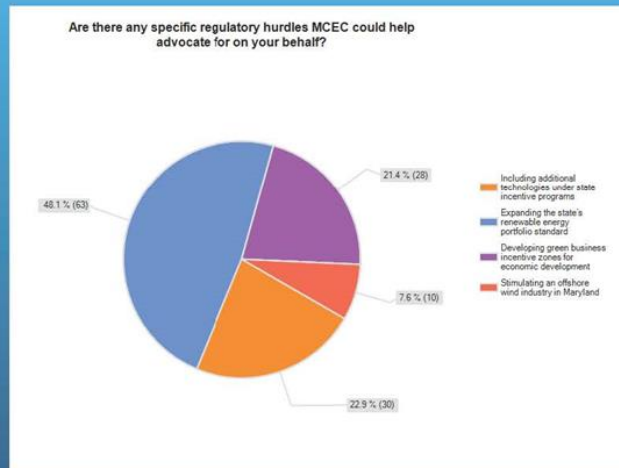
Lack of a skilled workforce was the lowest-ranked barrier, indicating training programs are helping provide enough green-collar workers.



Expanding the RPS is most important

Nearly half of all respondents said expanding the state's renewable energy portfolio standard was the top regulatory hurdle they would like to see addressed.

An additional 22% said they would like additional technologies to be covered by state incentive programs, and 21% wanted green business incentive zones to be developed.

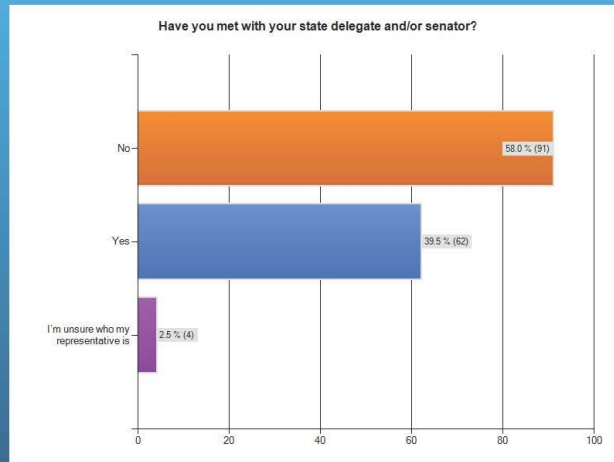


Appendix D: Industry Survey Results (cont.)

Government outreach lacking

Even though government policy is key to the clean energy industry, and surveyed businesses have clear policy imperatives, respondents are not meeting with their elected officials.

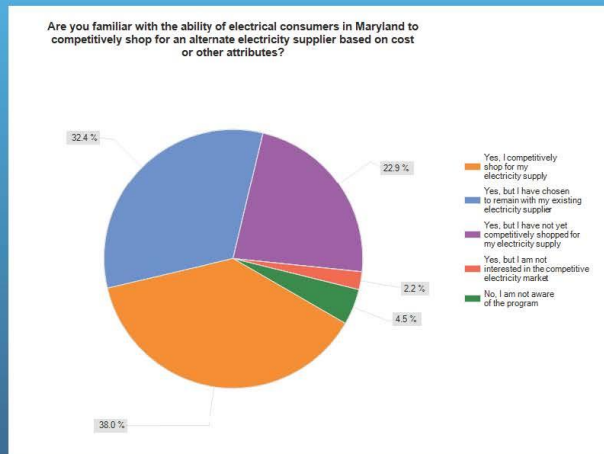
58% of survey respondents have not met with their state delegate and/or senator, and an additional 2.5% were unsure who their representative is.



Electricity shopping lagging

Nearly every surveyed business was aware of Maryland's competitive electricity market, but an overwhelming majority aren't shopping for their electricity supply.

Two-thirds of respondents have either chosen to remain with their incumbent utility, have not yet shopped in the competitive market, or are not interested in shopping for their electricity supply.



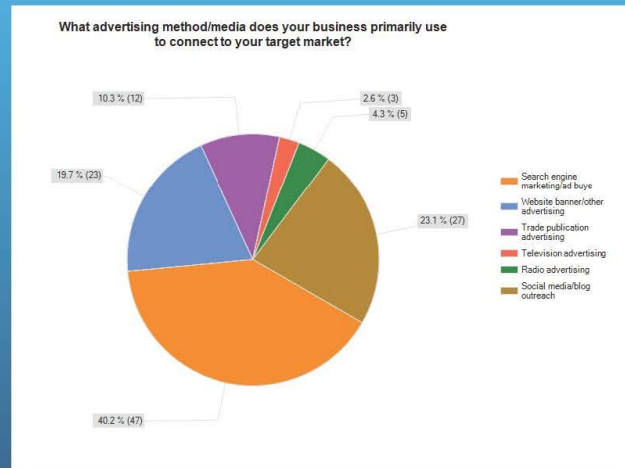
Appendix D: Industry Survey Results (cont.)

Online advertising dominates budgets

Roughly half of all surveyed businesses have annual advertising budgets below \$5,000, but online advertising dominates available spending.

40% of businesses depend on search engine marketing ads, while 20% primarily use website banners or other online ads.

23% of businesses use online word-of-mouth advertising via social media or blog outreach.



Survey methodology

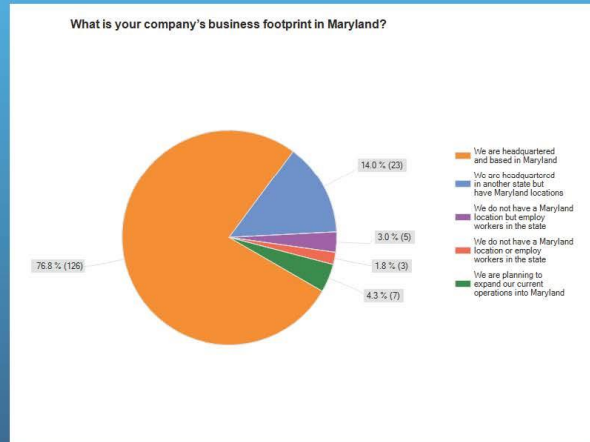
- Survey was conducted among businesses registered with the MCEC in order to benchmark the state of Maryland's clean energy industry and hone future advocacy efforts.
- 179 businesses replied to the survey, and responses were limited to one reply per business.
- Survey was conducted online using SurveyMonkey, and was completed between May 1 and June 15, 2012
- See next slide for in-state footprint of surveyed businesses

Appendix D: Industry Survey Results (cont.)

Survey respondent snapshot

78% of surveyed businesses are headquartered or based in Maryland, and 17% either employ workers or have locations in the state.

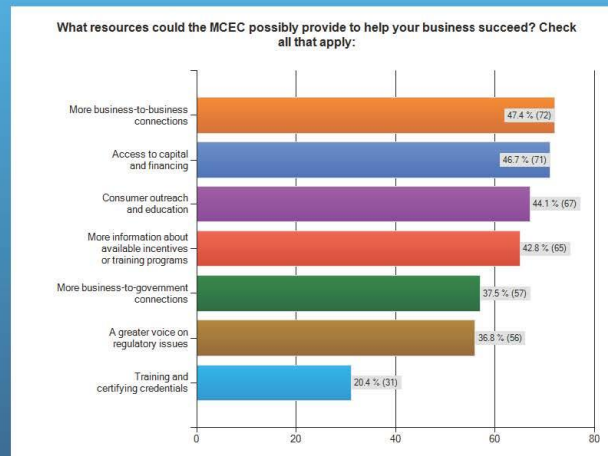
Four percent of survey respondents are planning to expand their current out-of-state operations into Maryland.



Internal MCEC findings

Businesses ranked nearly every potential resource MCEC could provide as applicable to their operations, but four options stood above the others.

Top-ranked resources were more business-to-business connections (47%), access to capital and financing (47%), consumer outreach and educations (44%), and more information about available incentives and training programs (43%).



Appendix D: Industry Survey Results (cont.)

Internal MCEC findings

- 77% of respondents are aware of the MHELP program.
- 66% of respondents have not yet attended an MCEC legislative reception.
- 52% of respondents receive the monthly MCEC e-newsletter, but 25% were not aware of it.
- 51% of respondents have not yet attended the Maryland Clean Energy Summit, but that number may soon shrink.
- 43% of respondents plan to attend the 2012 Summit, and 9% will participate as a vendor. In addition, 31% wanted more information about the summit (38 email addresses were submitted for follow-up information).

Appendix E

Analysis of Growth
in
Clean Energy Startups
in
Maryland

by

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Objectives

This document is an analysis of the startup activities in the clean energy field in Maryland. A statistical approach is used to gain insight into the growth of the small energy companies. The number of companies available for analysis is quite small; thus, the confidence in the conclusions needs to be improved during the next few years by expanding the database.

Conclusions

Based on the numbers presented in this document, we believe it is justifiable to make the following statements:

- *Growth in number of companies:* Clean energy activities among small startup companies in Maryland have seen growth since 2008/2009. However, there are indications that the rate by which new energy companies are created reached its peak in 2011.
- *Growth in size of companies:* Among the companies we are tracking (i.e., companies that are, or have been, tenants or affiliates of CETI), the year-to-year aggregate growth rate from mid-2011 to mid-2012 in number of employees was approximately 52%. This is much higher than other major industry segments.
- *Growth potential:* During the coming decade, as the clean energy market expands, there are reasons to believe that the number of energy companies in Maryland will increase from about 300 in June 2012 to approximately 1300 in 2022. This is a much faster growth rate than other high tech markets. Approximately 60% of all companies are estimated to have less than 5 employees.
- *Seed funding:* The clean energy companies seem to get their fair share of Maryland's seed funds from the MIPS (by Mtech) and MTTCF (by TEDCO) programs. Other funds have not been analyzed in detail; however, energy certainly does not have special funds like those that are available for the bio, life sciences and medical fields.
- *Subsidy incentives:* The stimulus funding that was available in 2009 through 2011 had a strong positive effect on the entrepreneurs' ability to sustain their activities. However, the end of the stimulus funding is resulting in a decline in rate of growth. The decline in government subsidies and tax incentives related to clean energy are also having a negative effect.
- *Is the ROI improving or declining?* The cost of clean energy solutions (particularly the cost of solar panels) has declined substantially during the last several years and it continues to go down. However, there are many indications that the rapid emergence of large quantities of cheap natural gas is making it more difficult for entrepreneurs in solar, wind, bio-fuel, building efficiency, and other markets to justify their solutions.

These tentative conclusions are based on the analysis of a small dataset and they need to be validated by continued analysis in the future to determine if it is a real trend or just an aberration. All discussions in this document are limited to Maryland.

The rest of this document is a discussion of the data that substantiate most of the statements made above.

Number of Clean Energy Companies in Maryland Incubators

There are 21 incubators in Maryland. The total number of clean energy companies in these incubators is shown below:

	2010	2011	2012
Number of energy companies	21	41	25
Energy companies as % of total number of incubator companies	5.8%	9.4%	6.2%

This table and other data confirm anecdotal observations: *The early enthusiasm for creating clean energy startups peaked in 2011*. This should be expected in a market that was given a significant jolt by stimulus funding from Department of Energy and now experience declining government subsidies.

The table above indicates that the number of energy companies is 5% to 10% of all startup companies. Since the total value of energy consumption in the US is about 8% to 10% of US GDP, it is reasonable to expect that the number of energy startups should be somewhere in the same range. So, the numbers in the above table are only one or two percentage points less than expected.

In the extreme case that there were no energy companies in the incubators, it would be reasonable to expect that few inventions would be made in the clean energy market. In the opposite extreme of the energy companies dominating the incubator population, it would be reasonable to expect that more innovations would be made in energy than in other markets. I.e., by deliberate policy and resource allocation, we can produce the type of companies we want.

Let us assume that energy startups behave in a similar manner as most other high tech companies; i.e., if the companies are provided funding, mentoring, networking, etc., they are likely to be more innovative and integrate more technologies into their solutions. Thus, the quality of the ecosystem that the state provides for the startups determines the quality of the companies we will get in the future.

Number of Clean Energy Companies in Maryland

During 2011, and with increasing intensity during 2012, CETI has hosted several meetings of entrepreneurs in different fields (solar, bio-fuel, energy efficiency, smart grid, etc). These meetings typically had about 30 participants from across Maryland. By creating a "network" of these companies, we have become acquainted with a significant fraction of the entrepreneurs in Maryland and we have established a database (as of July 18, 2012) of 122 entrepreneurs in 103 companies.

After sorting the companies by number of employees, we found the distribution shown in columns number 2 and 3 below. We then added the distribution for high tech companies reported by a US Census Bureau study which is summarized on the next two pages.

Company size	Number of Companies ⁽¹⁾	Percentage of Total	% of total for High Tech Companies ⁽²⁾
>500	4	3.9%	1.5%
25 to 499	14	13.6%	11.5%
5 to 24	27	26.2%	26%
1 to 4	58	56.3%	61%
Total	103	~100.0%	~100%

(1) Source: Database developed by Bjorn Frogner for MCEC, 2012

(2) Source: http://www.mdp.state.md.us/msdc/CBP/HighTech_MD/2006/HighTechnology-2006.pdf

It is well known that most new products and ideas start in small companies. Those companies that are successful will either grow or be acquired by larger companies. This type of “large fish eats small fish” is natural in all market segments and is vital for the overall growth of every market.

The next set of questions we want to address are as follows:

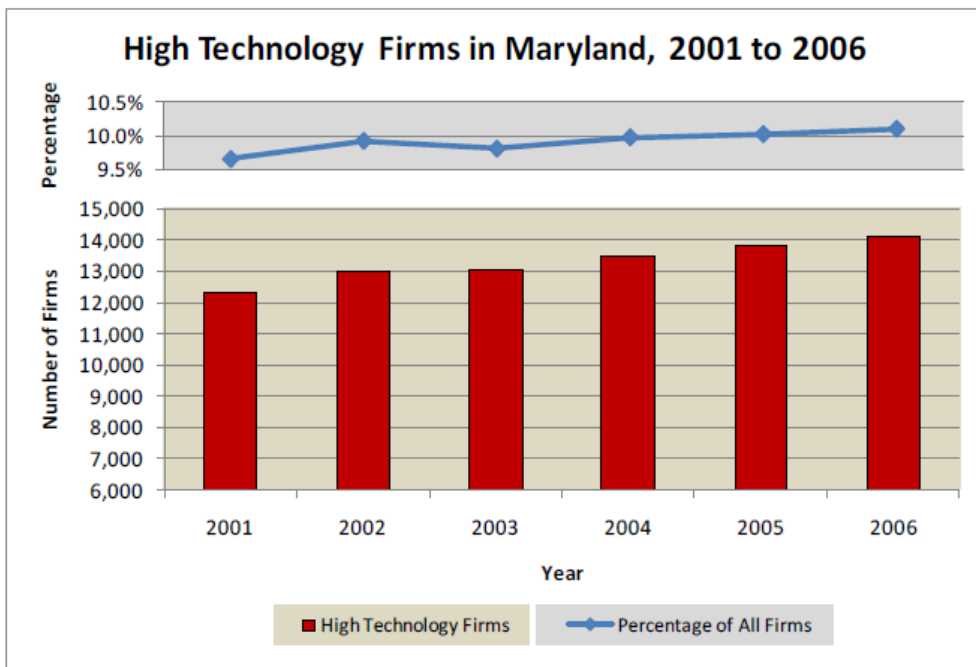
- How many small energy companies are there in Maryland? I.e., how many energy companies we have not identified?
- How many energy companies should we expect as the field matures?
- Is the pipeline of startups able to find the resources needed for them to perform their expected function?
- Do the energy companies get their fair share of the resources that are available to high tech companies?

I believe that the number of energy companies in Maryland is approximately three times what I have identified so far; i.e., 300. This number depends partially on how we count LLCs and private consultants; e.g., should we include a retired part-time consultant who has an LLC with no intentions of creating new technologies?

Number of High Tech Firms in Maryland

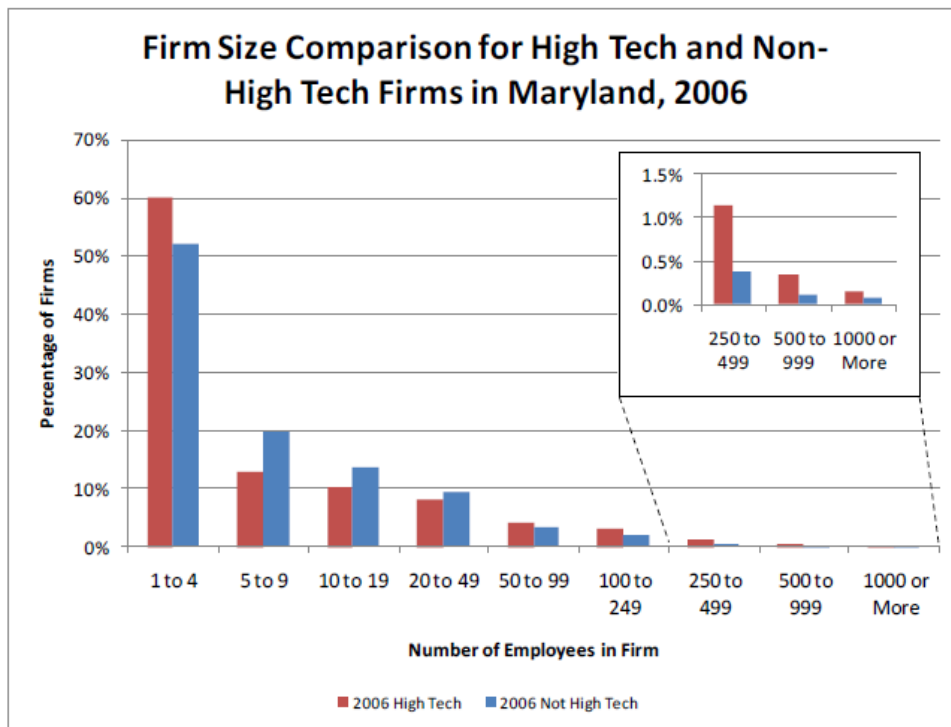
To gain insight into the growth of number of high tech firms in Maryland, let us look at the next figure. The average growth from 2001 through 2006 in number of high tech firms is 2.7% per year. Let us assume (for subsequent calculations) that the number of high tech firms is 16,000 in 2012.

The second figure on the next page shows the distribution of the size of the high tech companies in Maryland. That distribution is the basis for the numbers in the fourth column in the table on top of this page.



Source: U.S. Census Bureau, ZIP Code Business Patterns, 2006

Source: http://www.mdp.state.md.us/msdc/CBP/HighTech_MD/2006/HighTechnology-2006.pdf



Source: U.S. Census Bureau, ZIP Code Business Patterns, 2006

Comparing the size distribution of high tech companies in Maryland to the distribution I found for the energy companies in my database, we can see that they are surprisingly similar. As a result, I make the following conclusion:

- The database I have developed is statistically representative of the actual population of Maryland’s energy companies.

If we want the number of energy companies to be proportional to their share of GDP, then we reach the conclusion that we should expect to find approximately $8\% * 16,000 = 1,300$ clean energy companies. This is approximately 1000 companies more than currently exists in Maryland.

Let us assume that Maryland wants to stimulate 1000 new companies to enter the clean energy field within a decade from now; i.e., by 2022. To achieve this, it is necessary to grow the ecosystem that supports these companies.

Number of MIPS Awards to Energy Companies

Let us look into the recent past funding of clean energy companies in Maryland so see how the current ecosystem is supporting the energy companies. Funding of energy-related MIPS projects is shown in this table.

Year	# of Energy Projects	Value	Percent of Total Value
July 2008	2 of 22	\$166K	4.6%
Feb 2009	1 of 17	\$51K	1.1%
July 2009	6 of 17	\$1,136K	30.7%
Aug 2010	2 of 16	\$375K	11.4%
Feb 4, 2010	2 of 17	\$293K	9.8%
Feb 17, 2010	3 of 16	\$530K	14.3%
Aug 2011	3 of 15	\$474K	11.3%
Feb 2012	5 of 16	\$2,016K	49.2%

Feb 2012 was dominated by one large energy project for development of a climate control system that enables automated energy efficiency and demand response based on real-time, hyper-local weather conditions. Thus, 2012 is considered to be non-representative and it does not represent a trend.

This table shows that energy projects have received a substantial share of the MIPS awards starting with 2009. Based on these numbers, it is reasonable to conclude that clean energy has received its fair share of MIPS awards.

Number of TEDCO Awards to Energy Companies

TEDCO funding during the last four years is shown in the table below. It appears that TEDCO has only been funding energy projects through its MTTCF program which provides \$75K for each award. A total of 10 awards at a value of \$750K during the last four years has been awarded to energy companies. It seems reasonable to suggest that TEDCO ought to establish an energy fund similar to FDTTI, UTDF, etc., to give the clean energy entrepreneurs equal opportunity to find funding for their technologies.

Award Type	Date	# of awards	Total Amount	% Clean Energy Firms	Focus
FDTTI	Jul-08	0 of 2	\$100K	0%	Bio research
MTTF	Sep-08	2 of 7	\$525K	29%	Misc
TechStart	Dec-08	0 of 5	\$ 75K	0%	Misc
MTTF	Jan-09	2 of 10	\$727K	20%	Misc
UTDF	Mar-09	0 of 6	\$360K	0%	Medical research
JJAwards	Apr-09	0 of 2	\$225K	0%	Misc
MTTF	Apr-09	0 of 7	\$5,121K	0%	Misc
MSCRF	May-09	0 of 59	\$18,900K	0%	Stem cell research
FDTTI	Jun-09	0 of 12	\$600K	0%	Medical research
NanoBioTech	Jun-09	0 of 12	\$3,000K	0%	Nano bio tech
TechStart	Aug-09	0 of 5	\$68K	0%	Medical research
MTTCF	Jan-10	2 of 9	\$675K	22%	Misc
MSCRF	May-10	0 of 42	\$11,700K	0%	Stem cell research
MTTCF	Aug-10	2 of 15	\$1,122K	13%	Misc
MRASC	Aug-10	0 of 6	\$700K	0%	Army research
UTDF	Nov-10	0 of 8	\$400K	0%	Medical research
FDTTI	Feb-11	0 of 26	\$1,300K	0%	Medical research
MSCRF	May-11	0 of 36	\$10,400K	0%	Stem cell research
MTTCF	Jul-11	2 of 15	\$1,125K	13%	Misc
UTDF Tech Start	Dec-11	0 of 12	\$485K	0%	Medical research
JTTI	Apr-12	0 of 6	\$457K	0%	Army + DHS

Longitudinal Growth of Energy Companies

Markets expand by the suppliers growing in numbers and the successful firms becoming larger. We already discussed the increasing number of suppliers. This section discusses longitudinal growth of companies. Understanding this growth is useful for entrepreneurs and investors who are involved with startup companies because they are looking for models of growth for their companies.

We use the companies that have been tenants or affiliates at CETI as indicators for growth. This assumes that the CETI companies are representative of the clean energy companies across Maryland; however, it is well known that companies in incubators are doing better than average. We justify the use of CETI companies by the ease by which we can get data from these companies due to the close relationship we have with them.

Company	Entered CETI	Tenant, Affiliate,	Energy Employees	Energy Employees	Approx Growth
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		or Exit	mid-2011	mid-2012	Rate
Amidus	2010	T	3	5	67%
Clean Green Chesapeake	2010	T	4	10	150%
Plant Sensory Systems	2010	E	2	5	150%
StormCenter Communications	2010	T	5	8	60%
Plasmonix	2010	T	4	5	25%
SemaConnect	2010	E	9	20	122%
Strategic Services International including SolarGEN which is a recent spin-off	2010	E	5	7	40%
Total for 2010 group			32	60	88%
Advanced Technology & Research Corp	2011	E	5	3	-40%
KENERGY Solar	2011	E	4	5	25%
Energy Conversion Research Ventures	2011	A	2	3	50%
Harness Industries	2011	E	4	0	-100%
Differential Dynamics Corporation	2011	E	1	1	0
Spiralcat Energy Services	2011	E	2	4 ?	100%
Total for 2011 group			18	16	-11%
Agira	2012	T		2	
Innovate Bios	2012	A		2	
Soony Solutions	2012	A		1	
Total number of employees 2010+2012			50	81	52%

Longitudinal growth from 2011 to 2012 in terms of employees for companies that entered in 2010+2011: **52%**. This is an attractive growth rate which is believed to be higher than the average for the clean energy firms. It is well known that companies (of any kind) in incubators fare better than other companies due to the supportive entrepreneurial environment in the incubators.

By following the companies above plus new companies that enter CETI, we will increasingly be able to accurately determine the longitudinal growth in the clean energy market in the future.