

DRAFT
MINUTES
MASSACHUSETTS CLEAN ENERGY TECHNOLOGY CENTER
BOARD MEETING

May 17, 2022

Attendees:

Directors:

Secretary Beth Card (EEA)
Commissioner Patrick Woodcock (DOER)
Migdalia Diaz (Designee of Secretary Rosalin Acosta) (LWD)
Tom Galvin (Director, RES Hydro)
Terry Moran (Executive Director, Massachusetts Workforce Alliance)
Aisha Francis (President, Benjamin Franklin Institute of Technology)
Bob Haber (CIO and Partner, Proficio Capital Partners)
Ramprasad Balasubramanian (Designee of President Martin Meehan, UMass)
Mark Fuller (Designee of Secretary Mike Kennealy) (HED)
John Cook (President, Springfield Technical Community College)

Staff:

Jennifer Daloisio (CEO)
Rachel Perez (CFO and Acting Treasurer)
John Hitt, Esq. (General Counsel and Secretary)
Connor Crowley, Esq.
Galen Nelson
Bruce Carlisle
Tamika Jacques
Ariel Horowitz
John Gorman
Kathleen McCormack
Shayla Brown-Peddy
Sarah Bokuniewicz
Jade Lu
Jordan Meier
Elizabeth Cleveland
Emily Baron
Leslie Nash
Rees Sweeney-Taylor
Rhys Webb
Paige Asbury
Peter McPhee
Janel Granum

Fatema Alkhalifa
Susan Mlodozeniec
Elizabeth Youngblood
Lauren Farnsworth
Rachel Ackerman
Meg Howard
Christine Lumbres
Lisa Dobbs
Karl Adrianza
Jayne Lino
Madison Zeliff
Camilla Bacolod
Ian Campbell
Leslie Nash
Amy Barad
Heidi Cadavieco
Sophia Napoletano
Sarah Smails
Carniya Gale
Kailey Murphy
Hannah Boylan
Jessi Duston
Nikhil Teja Nama
Karl Adrianza
Hailey Boccuzi
Robert FitzPatrick
Kathryn Niforos
Hilary Flynn

Others: Heather Tackle (President, PowerOptions, Inc.)
Meg Lusardi (Executive Vice President, PowerOptions, Inc.)
Patrick Murphy (CREF, LLC)
Erin Kempster (Energy Solutions)

The one hundred-second (102nd) meeting of the Massachusetts Clean Energy Technology Center (“MassCEC”) Board of Directors (the “Board”) was held on May 17, 2022 jointly at MassCEC’s office at 294 Washington Street, Boston, MA 02108 and via remote video conference. All participants could hear and be heard by each other throughout the meeting.

Seeing a quorum, Secretary Card called the meeting to order at 10:04 am.

Ms. Daloisio introduced Secretary Beth Card to the other members of the Board, explaining Secretary Card was appointed by Governor Baker following former Secretary Theoharides’ departure from the Executive Office of Energy and Environmental Affairs.

I. Adoption of the Meeting Minutes from the March 15, 2022 Meeting of the Massachusetts Clean Energy Center Board of Directors

As the first order of business, the Board reviewed the draft minutes. Upon a motion made by Mr. Haber and seconded by Dr. Francis, the following roll call vote was taken at 10:05 am:

Secretary Card: Yea
Commissioner Woodcock: Yea
Ms. Diaz: Yea
Mr. Galvin: Yea
Mr. Moran: Abstain
Dr. Francis: Yea
Mr. Haber: Yea
Dr. Balasubramanian: Yea
Mr. Fuller: Yea

With 8 yeas, 0 nays, and 1 abstention, it was VOTED, without discussion, at 10:06 am:

To adopt the Meeting Minutes from the March 15, 2022 Meeting of the MassCEC Board of Directors.

II. Chair and CEO Updates

Ms. Daloisio then invited members of the Board, as well as present MassCEC staff, to introduce themselves for Secretary Card's benefit, which all those present did in turn.

Secretary Card provided board members an overview of her background at EEA, the Massachusetts Water Resource Authority (MWRA), and the Massachusetts Department of Environmental Protection (DEP). In terms of updates, Secretary Card highlighted Governor Baker filing the Forward Act, to include billions of dollars in environmental and energy infrastructure, including \$750 million for workforce training, ports investment, and programming at MassCEC. Secretary Card affirmed that renewable clean energy is a critical part of the Commonwealth's portfolio and that the state is positioning itself to be ready to adopt all of the necessary innovations to reach its climate goals.

Ms. Daloisio noted for the Board that her CEO update email contained several important updates for members' review. Ms. Daloisio indicated that staff have heard the input from the Board looking for more opportunity for strategic engagement and updates from staff about how programs have run and lessons learned post-authorization and that board meetings would feature these aspects moving forward.

III. Overview: MassCEC Approach to Market Development

Ms. Daloisio introduced Galen Nelson, MassCEC's Chief Program Officer, to provide a presentation regarding MassCEC's approach to market development as part of MassCEC's programming efforts. Mr. Nelson began his presentation with a reminder to the Board about MassCEC's four focus areas (Offshore Wind, Clean Transportation, Net Zero Grid, and High-Performance Buildings), explaining that MassCEC undertakes various activities in support of

those focus areas, including technology development, investments, market development, and workforce development, with DEI principles incorporated across the spectrum. Mr. Nelson explained that the goal of the presentation was to discuss market development to provide the Board with a better understanding of the work MassCEC staff does in this regard.

Mr. Nelson stated that MassCEC endeavors to catalyze private investment and adoption in clean energy solutions, and that MassCEC's role in this process can be mapped onto a typical market adoption curve, with our biggest effect happening between the early market and mainstream market where a gap exists between early adopters and an early majority of adopters. Mr. Nelson provided the Board with an overview of five steps staff evaluate as part of program development, including: (i) sector/subsector mapping and characterization (where in staff assess how best to describe a sector); (ii) target sector prioritization/alignment with CECP/state's climate objectives (assessing which subsectors and related market barriers MassCEC should address); (iii) market intervention analysis (assessing what tactical approaches MassCEC might use to overcome targeted market barriers and outcomes approaches may produce); (iv) program development and administration with stakeholder input; and (v) program handoff to the private sector and evaluation of the program.

Mr. Nelson proceeded to walk the board through each of the steps in more detail. For Step 1, Mr. Nelson showed the board an example of a sector/subsector mapping chart from the buildings sector, including building category (e.g., residential, commercial, industrial, small, large), building typology, and vintages (e.g., pre-1950, 1950-1979, 1980-2000, Post-2000, and new construction). For Step 2, Mr. Nelson indicated that MassCEC staff ask a set of key questions, including: (i) what the emissions impact of the sector in question is; (ii) timing from the standpoint of whether the market is ripe for intervention; (iii) equity in terms of whether progress in the sector will address Environmental Justice communities concerns and/or broaden opportunity for participation by underrepresented groups; (iv) barrier persistence; (v) fit for MassCEC involvement; and (vi) cost effectiveness in terms of whether anticipated level of investment is necessary to facilitate transformation commensurate with the potential GHG emission reduction impact. Mr. Nelson presented an example of subsector prioritization for buildings, highlighting that of many site emissions to address, MassCEC would home in on things like small multi-family, space heating demands and large multi-family hot water demand as areas not being addressed by others in the marketplace.

Mr. Nelson then moved on to Step 3 - the market intervention analysis – indicating that after addressing the following key steps, MassCEC staff begin to home in on a program recommendation to present to the Board: (i) clarifying the market challenge via market discovery and stakeholder engagement; (ii) confirming MassCEC's assumptions about boundaries, dynamics, and barriers and seeking out areas of uncertainty; (iii) considering what strategic partnerships or program design considerations would impact success if market challenges are particularly acute or prevalent in EJ communities; (iv) gauging the pace of market adoption and surfacing possible approaches to catalyzing private investment; and (v) finalizing recommendation as to the role and scale of MassCEC's involvement in solving a market challenge. Mr. Nelson stressed that MassCEC is strongest when leveraging other efforts, public or private, and related investments.

Mr. Nelson proceeded to provide detail about an example program tactic – the pilot project, which are meant to: (i) help catalyze and accelerate market activity and investment by connecting technology developers/companies to customers and other market actors around a single, or a small number of replicable scalable projects; and demonstrating a technology or system of technologies and in doing so generate credible, relevant performance data meaningful to potential customers, investors, and other market actors. Mr. Nelson discussed details regarding where and why MassCEC should engage in private sector pilot projects and how MassCEC measures the success of pilot projects.

Mr. Nelson then wrapped his presentation by explaining the Step 4 - Program Design and Administration, and Step 5 – Evaluation and Hand Off. Under Step 4, MassCEC: (i) seeks board approval; (ii) develops its solicitation; (iii) develops a marketing and outreach plan; (iii) releases it solicitation and reviews applications; (iv) awards and contracts with awardees; and (v) monitors awardee performance, tracks metrics, amends contracts as necessary. Under Step 5, MassCEC (i) concludes the program and conducts an evaluation of the program; and (ii) hands the program off to the private sector.

Members of the board proceeded to ask several questions, including which programming efforts may be prioritized with 2030 approaching and goals needing to be met and how many pilots MassCEC runs at any given time, each of which was addressed in the ensuing discussion. Members of the Board encouraged MassCEC staff to maintain a focus on real world lenses of economic development, to assemble a list of active programs and which programs are headed towards the hand-off phase, and to run programming in parallel versus in sequence to meet pressing climate goals.

[Dr. Cook joined the meeting at 10:18 am.]

IV. Buildings: Strategy Overview and Program Re-Authorization

Secretary Card introduced Peter McPhee to present a strategy update and re-authorization request for MassCEC’s High-Performance Buildings programming. Mr. McPhee began by explaining that buildings represent a large sector of energy use, carbon production, and monetary investment, noting 27% of all emissions are from combusting fossil fuels in buildings. Mr. McPhee explained that energy costs disproportionately effect low-income families, presenting a map of energy costs in the Commonwealth evidencing this point. Mr. McPhee then presented a slide explaining how building electrification will lead to lower GHG emissions, indicating that by looking at strategies to decarbonize buildings, we can increase efficiency of buildings and existing systems, but in order to meet our goals the adoption of new clean energy systems will be critical. this will not result in the dramatic GHG reduction we require to meet goals. Mr. McPhee also presented the Board with an overview of a high-efficiency electric home, demonstrating the target model of a decarbonized home.

Mr. McPhee continued on to explain some of the policy drivers for building decarbonization, including the Interim Clean Energy Climate Plan for 2030, the Draft Final Clean Energy & Climate Plan for 2030, and the Massachusetts Decarbonization Roadmap for 2050, noting that to date less than 5% of buildings in the Commonwealth had undertaken the necessary changes identified in these drivers. Mr. McPhee then presented an overview of the strategic planning process of the Buildings team, including: (i) identifying the 2050 arrival point

for buildings; (ii) evaluating the current state to identify the trajectory to 2050; (iii) identifying pathways to meet the trajectory; (iv) analyzing what a “business as usual approach” will yield on the trajectory; (v) identifying gaps in current state of affairs; (vi) identifying barriers responsible for gaps; (vii) identifying interventions to overcome barriers; (viii) prioritizing interventions; and (ix) mapping resources against top priorities to identify which interventions can be undertaken. Gave overview of strategic planning process to buildings programming identifies approaches to buildings decarbonization.

Mr. McPhee proceeded to present a graphic demonstrating the steep path needed to reach the total number of buildings in Massachusetts considered “2050 ready.” This information led to several questions and comments from members of the Board, including what the cost for achieving our goal on the path would be and whether it made sense to describe the likely path in a less linear fashion than what was presented in the graphic, encompassing subsidies and innovation as drivers of meeting 2050 goals. Mr. McPhee addressed these questions and comments in turn.

Mr. McPhee then provided an example overview of how the Buildings team approaches evaluating barriers and solutions mapping, citing things like technology, regulation, equity, and insufficient capital of lack of awareness on the part of consumers as barriers and enhanced financing, incentives, and on-bill financing as example solutions. Mr. McPhee indicated the barrier analysis is an iterative process of learning from stakeholders and working with other teams at MassCEC as subject matter necessitates. Mr. McPhee went on to describe an example tactical framework for addressing an industry barrier regarding industry not installing heat pumps as a sole heating source in homes, walking through tactical options for addressing this issue, state actors involved, and the prioritization of whether certain options are a good fit for MassCEC to address versus being better suited for others. Mr. McPhee explained that perhaps the most important step in this process is the prioritization step to ensure an effective deployment of MassCEC’s resources.

Mr. McPhee noted for the board that, in the Building’s team’s overall strategic planning, there are several tactics that rose to the top, specifically: (i) generating comprehensive technical building decarbonization solutions; (ii) fostering consumer engagement and innovative financing approaches; (iii) establishing pathways for more equitable access to clean energy benefits; and (iv) research and innovation. Mr. McPhee explained that influence and coordination are key factors in the team’s process – as MassCEC has no regulatory authority, the organization needs to do its best to share information and lessons learned with other stakeholders. Mr. McPhee concluded by presenting future research topics and potential programs, key priorities for 2022-2024, and a quick look at the members of the Buildings Team at MassCEC.

Members of the Board proceeded to ask questions and provide comments on various subjects, including working with community development corporations in Gateway Cities across all MassCEC programming, whether a focus on larger commercial buildings will be needed sooner than is currently planned, each of which Mr. McPhee addressed in the course of the ensuing discussion.

Mr. McPhee then shifted focus to the reauthorization request for funding for buildings programming at MassCEC, explaining that the request was for \$9,600,000 to prepare building decarbonization solutions for broad scaling by 2025. Mr. McPhee noted the overall timeline for decarbonization advancement, explaining that the period from 2013-2018 can be considered the market seeding period, the current period from 2019-2024 is for pathway development, and the period from 2025-2029 will be for market expansion. Mr. McPhee discussed priority areas for the Buildings team, including: (i) demonstrating building decarbonization solutions; (ii) consumer engagement (e.g., Clean Energy Lives Here marketing campaign); (iii) expanding access to clean energy (e.g., EmPower); and research & innovation. Mr. McPhee provided the Board with information of how funds are spent across these priority areas, as well as existing authorizations versus new authorizations, then showed a chart diagramming FY22 and FY23 timing of programs as a function of the priority areas.

Commissioner Woodcock stressed to the other members of the Board how important MassCEC's building programming is to reach the Commonwealth's goals and stated he was appreciative of MassCEC's efforts, noting that building decarbonization over the next 10 years is essential and that MassCEC's work has informed some of DOER's policy-making in this space.

Upon a motion made by Dr. Cook and seconded by Dr. Francis the following roll call vote was taken at 11:38 am:

Secretary Card: Yea
Commissioner Woodcock: Yea
Ms. Diaz: Yea
Mr. Galvin: Yea
Mr. Moran: Yea
Dr. Francis: Yea
Mr. Haber: Yea
Dr. Balasubramanian: Yea
Mr. Fuller: Yea
Dr. Cook: Yea

With 10 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 11:38 am:

To authorize the expenditure of up to an additional \$9,600,000 for the High-Performance Building Program, for a total authorization of \$20,450,000 and further to authorize MassCEC's Chief Executive Officer (i) to enter into contracts and issue individual awards under the program in a manner consistent with the staff memorandum and (ii) to make program modifications, including modifications to award levels, provided that such modifications are consistent with the program goals set forth in the staff memorandum.

V. Authorization: PowerOptions Memorandum of Understanding

Secretary Card transitioned to the next subject, introducing John Hitt, MassCEC's General Counsel, to discuss authorization of a Memorandum of Understanding (MOU) with PowerOptions, Inc. ("PowerOptions") Mr. Hitt began by noting the purpose of the MOU was to clarify and formalize an existing relationship between MassCEC and PowerOptions and indicating that Heather Tackle and Meg Lusardi, PowerOptions' President and Executive Vice President, were present and available for questions.

Mr. Hitt then provided the Board with background information regarding PowerOptions, explaining that it was designed conduct periodic public bidding for non-profits and governmental agencies to secure cost-effective energy sources. Mr. Hitt explained that PowerOptions is a facilitator in that it arranges transactions and conduct RFPs, but does not take title to energy supply, and does not contract for energy supply, services, or products. Mr. Hitt further explained that the Higher Education Finance Authority (HEFA) served as the governmental entity originally charged with administering PowerOptions' activities from 1997-2010, at which point MassCEC assumed responsibility for this administration role. Mr. Hitt indicated that the Board approved this role in December of 2010 and that, aside from the resolution in 2010, there has not been further written agreement between MassCEC and PowerOptions governing the relationship.

Mr. Hitt continued on to explain that, since 2010, PowerOptions has expanded the scope of its activities beyond the scope of its charge under M.G.L. c. 164 § 137 to include decarbonization efforts outside of energy supply chain and that staff sought the Board's approval to enter into the MOU to formalize the relationship, reinforce the scope of PowerOptions' activities under the aforementioned statute are limited, and provide for indemnification of and reporting to MassCEC by PowerOptions.

Commissioner Woodcock asked for an elaboration of near-term activities planned by PowerOptions regarding building decarbonization, to which Ms. Tackle explained the organization planned to develop the capability to offer assessment work for its "customers" prior to actually engaging in procurement work.

Upon a motion made by Mr. Haber and seconded by Ms. Diaz the following roll call vote was taken at 11:48 am:

Secretary Card: Yea
Commissioner Woodcock: Yea
Ms. Diaz: Yea
Mr. Galvin: Yea
Mr. Moran: Yea
Dr. Francis: Yea
Mr. Haber: Yea
Dr. Balasubramanian: Yea
Mr. Fuller: Yea
Dr. Cook: Yea

With 10 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 11:48 am:

To authorize MassCEC, by its Chief Executive Officer, to enter into a memorandum understanding (“MOU”) with PowerOptions, Inc. in substantially the form presented to the Board with such changes and modifications as the Chief Executive Officer may deem necessary or advisable.

VI. Update: Clean Energy Lives Here Education and Awareness Campaign

Secretary Card transitioned the discussion to the next topic, introducing Susan Mlodozeniec, MassCEC’s Marketing Director, to provide an update on the Clean Energy Lives Here Education and Awareness Campaign (“CELH”). Ms. Mlodozeniec indicated she wanted to refresh the Board as to what CELH is, as it has been two years since the last update on the topic, explaining that CELH is a Public awareness campaign to educate and inform MA residents about decarbonized alternatives to common household systems and appliances.

Ms. Mlodozeniec stated that the need for consumer engagement on the topic is well-documented and that awareness for clean heating and cooling solutions in the Commonwealth is still relatively low. For instance, Ms. Mlodozeniec noted the goal in the 2030 CECP of 1 million homes being adequately electrified and weatherized stands at about 5% adoption. Ms. Mlodozeniec reaffirmed from earlier presentations that MassCEC’s Buildings team identifies consumer engagement and consumer planning as a top priority.

Ms. Mlodozeniec reminded the Board of the background of the campaign, indicating the Board authorized \$1.3 million in funding in partnership with DOER for a multi-year campaign (FY18-21) with the following goals: (i) engaging consumers on opportunities for home electrification, efficiency, and renewables; (ii) providing resources to inform consumer evaluation and decision making; (iii) supporting residents in developing long-term plans for transitioning home energy systems prior to failure; and (iv) connecting residents with installers. Ms. Mlodozeniec discussed products of CELH, noting they are geared towards comprehensive home decarbonization under the headings of weatherization, hot water, electricity supply, appliances, heating/cooling, and electric vehicles.

Ms. Mlodozeniec provided an example of how each product is set out on the CELH website, noting pages offer individuals the opportunity to look at a guide for detailed information on technology in question, but otherwise provide a general summary of technology in question and why a home-owner may want to adopt it. Ms. Mlodozeniec continued to explain that each page provides a description of how a given technology works, why individuals should consider adoption, and promotes benefits and answers questions. Additionally, Ms. Mlodozeniec explained that, elsewhere on the site, CELH provides an example of consumer cost comparison showing annual costs versus form of heating and cooling system, a GHG emission comparison versus the same systems and an overview of incentives available to promote technology adoption.

Ms. Mlodozieniec then provided an overview of the CELH campaign elements (market research, the website, guides, "how-it-works" explanations, incentives chart, videos, advertising, and email/pledge campaign, and a discussion of metrics associated with the CELH FY 22 Scorecard (including impressions on the website and technology guide downloads). Subsequently, Ms. Mlodozieniec provided the board with a discussion of some additional outcomes of CELH, including digital marketing awards, and shared next steps of CELH, including extending through FY23 and FY24, modestly expanding consumer website resources and marketing content, and experimenting with different forms of messaging to reach EJ populations.

Members of the Board proceeded to ask several questions, including whether this a topic metric for measuring success of CELH, whether CELH is reaching millennials and younger generations, what MassCEC's role for advertising is relative to other state entities, and how best to reach HVAC professionals, each of which Ms. Mlodozieniec addressed in the course of the ensuing discussion. Mr. Fuller noted that coordination with the Office of Travel and Tourism may be a cost-effective way of promoting our advertising messages.

[Ms. Diaz departed the meeting at 12:08 pm.]

VII. Update: MassCEC 2021 Industry Report

Secretary Card then shifted to the final topic for the meeting, reintroducing Ms. Daloisio to discuss MassCEC's 2021 Industry Report. Ms. Daloisio began by explaining that this report is a legislative requirement MassCEC has satisfied annually since 2010 to report on the status of the clean energy industry. Ms. Daloisio noted that Massachusetts was the first state to produce such a report and that other states have since begun publishing similar report, and that this iteration of the report reflects true impact of COVID-19 on the clean energy industry in the state.

Ms. Daloisio provided several statistics the relative to the industry to the board, including:

- the industry is currently powered by small businesses, with 61% of clean energy firms consisting of 10 or fewer workers;
- clean energy companies represent more than \$13.7 billion in Gross State Product; and
- that Massachusetts ranks second for clean energy workers per capita next to Vermont.

Ms. Daloisio then addressed the COVID-19 impact on the industry, explaining that the report shows the primary impact occurred from March to May of 2020 when there was a loss of approximately 20,000 jobs. Ms. Daloisio further explained that the net jobs lost over 2020 was approximately 13,000 and that, for 2021, MassCEC has used estimates on unemployment data to determine the ongoing effect on industry with the result being that there appears to be a recovery but that the industry has not yet reached pre-COVID levels of employment, with the primary increase of 4,000 jobs over 2021 occurring in the latter half of 2021.

Ms. Daloisio then highlighted the economic contribution analysis showing 101,208 direct clean energy jobs in Massachusetts, which in turn support 34,735 indirect jobs (those outside of the clean energy sector providing critical supply chain goods and services) and 66,488 induced

jobs (those resulting from increased spending in the economy). Ms. Daloisio noted that the growth of the clean energy industry in 2021 outpaced overall state growth. Ms. Daloisio also shared a demographic breakdown of workers in the industry, explaining that this information was based on companies self-reporting data. Ms. Daloisio then explained the report taking a regional approach to evaluating clean energy data, noting that the northeast region of the state represents the highest concentration of clean energy workers and businesses.

Members of the Board proceeded to ask several questions, including the percent of GSP the industry needs to represent to meet the Commonwealth's goals, whether we can induce workers to take up clean energy jobs during the "Great Resignation", and how best to distill what jobs are actually available to the workforce, each of which Ms. Daloisio and MassCEC staff addressed in the course of the ensuing discussion.

[Dr. Balasubramanian departed the meeting at 12:31 pm.]


VIII. Adjourn.

Upon a motion made by Mr. Haber and seconded by Dr. Cook the following roll call vote was taken at 12:34 pm:

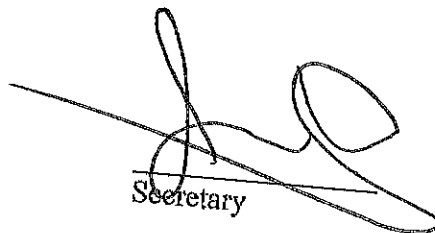
Secretary Card: Yea
Commissioner Woodcock: Yea
Mr. Galvin: Yea
Mr. Moran: Yea
Dr. Francis: Yea
Mr. Haber: Yea
Mr. Fuller: Yea
Dr. Cook: Yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 12:34 pm:

To adjourn.



Chair



Secretary

Public Meeting Documents and Exhibits:

- Meeting Agenda
- PowerPoint Presentation on MassCEC Approach to Market Development
- PowerPoint Presentation on Buildings: Strategy Overview and Program Re-Authorization
- PowerPoint Presentation on PowerOptions Memorandum of Understanding
- PowerPoint Presentation on Clean Energy Lives Here Education and Awareness Campaign
- PowerPoint Presentation on MassCEC 2021 Industry Report