

MINUTES
MASSACHUSETTS CLEAN ENERGY TECHNOLOGY CENTER
BOARD OF DIRECTORS MEETING

February 9, 2023

Attendees:

Directors: Secretary Rebecca Tepper (EEA), Chair
Secretary Yvonne Hao (HED)
Secretary Matthew Gorzkowicz (ANF)
Katelyn Kelly (Designee of Secretary Lauren Jones, LWD)
Dr. Ramprasad Balasubramanian (Designee of President of the University of Massachusetts Martin Meehan)
Terry Moran (Executive Director, Massachusetts Workforce Alliance)
Patrick Woodcock (Commissioner, DOER)
Dr. John Cook (President, Springfield Technical Community College)
Bob Haber (Principal, Proficio Capital Partners)
Dr. Aisha Francis (President, Franklin Cummings Tech)
Lisa Theriault (Manager of Business Development, IBEW Local 103/
National Electrical Contractors Association)
Rear Admiral Francis McDonald (President, Massachusetts Maritime Academy)
Tom Galvin (Director, RESHydro)

Staff: Jennifer Daloisio (CEO)
John Hitt, Esq. (General Counsel and Secretary)
Rachel Perez (CFO and Treasurer)
Alexandra Zaltman (Chief of Staff)
Connor Crowley, Esq.
Galen Nelson
Kathryn Niforos
Michelle Beadle
Hilary Flynn
Bruce Carlisle
Aleezah Madraswalla
Lauren Farnsworth
Heather Roe
Elizabeth Zoroff
Madison Zelif
Susan Mlodozeniec
Tom Chase
Rhys Webb
David Wilson
Malia Ching
Rachel Ackerman

Janel Granum
Camilla Bacolod
Jordan Meier
Rees Sweeney-Taylor
Ariel Horowitz
Rodney Gomez
Emily Pittsley
Elizabeth Youngblood
Tim Griffin
Jeremy Belknap
Beverly Craig
Amy Barad
Mary Bancroft
Nils Bolgen
Tamara Kamis
Elizabeth Cleveland
Kelsey Read
Anna O'Brien
Leslie Nash
Jess Hiltz

Other Attendees: Kaitlyn Connors, (Assistant Secretary, ANF)
Melissa Hoffer (Climate Chief, Office of Climate, Innovation and Resilience)
Jonathan Schrag (Deputy Climate Chief, Office of Climate, Innovation and Resilience)
Maria Hardiman (Director of Communications, EEA)
Allison Markowski (The Novus Group)
Paul Scapicchio (The Novus Group)
Kristen Gowin (Boston Chapter, National Electrical Contractors Association)
Gideon Emmanuel (MA Candidate, Tufts University – Urban and Environmental Policy and Planning)
Ashley Stolba (Undersecretary of Community Development, Executive Office of Housing and Economic Development)

The one hundred ninth (109th) meeting of the Massachusetts Clean Energy Technology Center (“MassCEC”) Board of Directors (the “Board”) was held at 10:00 am on February 9, 2023 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.

Secretary Tepper observed the presence of a quorum of the Board and called the meeting to order at 10:00 am.

I. Approval of Meeting Minutes from the December 8, 2022 Meeting of the Board of Directors

As the first order of business, the Board reviewed the draft minutes. It was noted that Mark Fuller, formerly Undersecretary of Business Growth at the Executive Office of Housing and Economic Development, should be added to the list of attendees.

Upon a motion made by Mr. Galvin and seconded by Dr. Cook, the following roll call vote was taken at 10:01 am:

Secretary Tepper: Yea
Commissioner Woodcock: Yea
Dr. Balasubramanian: Yea
Dr. Francis: Yea
Ms. Kelly: Yea
Mr. Haber: Yea
Dr. Cook: Yea
Secretary Hao: Yea
Rear Admiral McDonald: Yea
Ms. Theriault: Yea
Mr. Moran: Yea
Ms. Connors (serving as Secretary Gorzkowicz's designee): Yea

With 12 yeas and 0 nays it was unanimously VOTED, without abstention, at 10:02 am:

To adopt the December 8, 2022, Board Meeting Minutes, in the form provided to the Board with the modification described above.

II. Update from Chair Secretary Rebecca Tepper and CEO Jennifer Daloisio

Secretary Tepper proceeded to invite members of the Board and MassCEC staff present at the meeting to introduce themselves to one another. Secretary Tepper welcomed all participants, indicating her enthusiasm to work with MassCEC and providing an overview of her professional history.

Ms. Daloisio referred each of the Board members to the MassCEC update email she circulated the day before the meeting, indicating this was one of her main methods to appraise Board members of various ongoingings at MassCEC that may not be pertinent to a given meeting.

[Commissioner Woodcock departed the meeting at 10:06 am.]

[Secretary Gorzkowicz joined the meeting at 10:10 am.]

III. MassCEC Overview

Ms. Daloisio indicated the overarching purpose of the meeting was to provide context about MassCEC for the benefit of the new members of the Board, indicating there were no voting items for the meeting. Ms. Daloisio noted that the ordinary structure of Board meetings centers on one of MassCEC's focus areas (e.g., offshore wind or clean transportation), including a general overview of that focus area, a request for authorization for expenditures regarding that focus area's budget for the year, and a highlight of at least one program MassCEC has run in that focus area since the last Board meeting covering the focus area. Ms. Daloisio indicated that the Board's next meeting would focus on high-performance buildings, and explained that the June meeting of the Board is when MassCEC's annual budget is reviewed and approved. Ms. Daloisio explained that MassCEC's Board meetings can be attended remotely for as long as emergency relief related to the Open Meeting Law permits this arrangement.

Ms. Daloisio began her formal presentation by highlighting MassCEC's mission, namely to accelerate the clean energy economy while assisting the Commonwealth to achieve its ambitious climate goals. Ms. Daloisio explained that MassCEC approaches its work largely through supporting innovation, market development, and workforce development in the clean energy industry. Ms. Daloisio emphasized that MassCEC also works to ensure Massachusetts is a world leader in the clean energy and climate sectors, and that the organization seeks to understand and tackle some of the hardest to solve problems to reach our decarbonization goals.

Ms. Daloisio provided the Board with a brief historical overview of MassCEC, indicating that since 2010 MassCEC has awarded over \$400 million in programs and investments, attracting over \$2.5 billion in private and federal capital, and supported over 5,400 interns. Ms. Daloisio showed the Board a graphic demonstrating the scope of various clean energy projects supported across the Commonwealth by MassCEC between 2010 and 2022.

Ms. Daloisio continued on to explain the key roles in the clean energy and climate landscape across the Commonwealth and MassCEC's role in that landscape, through: (i) confronting difficult climate challenges; (ii) utilizing program design excellence; (iii) leveraging private and federal capital; (iv) centering equity and environmental justice; and (v) bridging the public and private sectors. Ms. Daloisio noted that MassCEC programs are often informed by existing state targets (set, for example by the 2030 and 2050 Clean Energy and Climate Plans (CECPs) published by EEA), and gave examples from the building and clean transportation industries.

Regarding innovation and market development, Ms. Daloisio provided the Board with a graphic indicating where critical gaps exist for companies seeking to develop new clean energies technologies, services and new markets, highlighting how MassCEC grant making, investment, workforce and other programs are designed to help companies bridge those gaps. Ms. Daloisio highlighted Ascend Elements, a lithium ion battery recycling company spun out from Worcester Polytechnic Institute, noting MassCEC supported this Company through grants prior to COVID, and when the pandemic struck MassCEC created the BRIDGES program to give a capital infusion to companies within our grant or investment portfolio to help them manage through the pandemic, including Ascend Elements. Ms. Daloisio noted Ascend Elements recently was awarded nearly \$500 million from the federal government and is building a facility in Kentucky

while maintaining its corporate headquarters and research and development operations in Massachusetts.

Secretary Hao noted her support for MassCEC's activities and indicated that efforts should be made to keep companies such as Ascend Elements operating in Massachusetts to the maximum extent possible.

In terms of Market Development, Ms. Daloisio referenced the Advancing Commonwealth Energy Storage (ACES) program, explaining a partnership with DOER to fund storage projects to demonstrate commercial viability and pathways to interconnect to the electric grid. Ms. Daloisio explained that we have a vibrant and growing energy storage industry in Massachusetts that was assisted by the ACES program, and that the ACES program also helped inform the Clean Peak Standard and SMART Programs at DOER.

Ms. Daloisio moved on to highlight MassCEC's infrastructure, beginning with the Wind Technology Testing Center (WTTC) funded through Federal ARRA funds and state funds. Ms. Daloisio explained the WTTC is the only facility in North America capable of testing commercial scale blades for offshore wind blade manufacturers, and that is able to simulate life cycle within 6 months against hurricane force winds. Ms. Daloisio reported that, since its opening, the WTTC has essentially been a breakeven operation and that MassCEC is seeking to expand the facility to continue testing blades as they are growing in size. Ms. Daloisio also gave overview of the New Bedford Marine Commerce Terminal (NBMCT) the first purpose-built facility for offshore wind project staging, pre-assembly, and installation in the U.S. Ms. Daloisio noted the NBMCT is based on European design, is critical for attracting and supporting offshore wind projects in Massachusetts, and that MassCEC has leases with Vineyard Wind and Southcoast Wind to utilize the NBMCT in the near term.

Ms. Daloisio then highlighted MassCEC's role in developing the clean energy workforce and some of MassCEC's workforce development activities, beginning with an explanation of the \$12 million in funding MassCEC receives from the Legislature specifically for developing an equitable clean energy workforce. Ms. Daloisio noted that MassCEC is conducting a workforce needs assessment expected to be complete in March and highlighted that the preliminary results indicate an additional 30,000-40,000 workers will be necessary by 2030 in this industry for the Commonwealth to achieve its decarbonization goals. Ms. Daloisio spotlighted the Clean Energy Internship Program, MassCEC's flagship program since 2010, whereby MassCEC provides matchmaking on the student and employer side, as well as reimbursement to employers up to certain dollar thresholds to support the clean energy employers' taking on the interns. Additionally, Ms. Daloisio referenced MassCEC's workforce equity programs, indicating over \$3.6 million has been awarded in programming to support minority and women-owned businesses to provide planning and implementation grants to help community based organizations, training providers, and employers identify, recruit, train and hire a diverse pool of employees to participate in the clean energy economy.

Ms. Daloisio concluded with a general overview of MassCEC's funding, including some of the more recent actions by the Legislature to provide funds to MassCEC, and emphasized that MassCEC programs are innovative, with many being first in the nation and several having been replicated by other states and the Federal Government.

IV. MassCEC Approach to Market Development

Ms. Daloisio then introduced Galen Nelson, MassCEC's Chief Program Officer, to provide a presentation regarding MassCEC's approach to market development of clean energy technologies.

Mr. Nelson began by reinforcing MassCEC's four focus areas and noting that innovation, market development, and workforce development activities take place across those focus areas. Regarding the concept of companies facing critical gaps and barriers to developing innovative technologies and services and creating new markets, Mr. Nelson explained that development cycles are repeated across industries, including clean energy and that the deployment and market transformation stages are where MassCEC's market development work comes into play, whereas R&D, field validation and demonstration, and scaling to commercial launch are where the MassCEC's innovation activities are focused.

Mr. Nelson explained that its helpful to consider a general technology adoption curve to situate where MassCEC views its role, trying to build a bridge between early adopters and early majority adopters, shifting the curve and accelerating the pace of adoption. Mr. Nelson provided the Board with a graphic to this effect and stressed that MassCEC's involvement is necessary to accelerate the pace of adoption of new technologies and approaches in order to meet our climate goals.

Mr. Nelson proceed to explain MassCEC's 5 steps towards market development. Regarding Step 1, sector mapping, Mr. Nelson showed an example of the building sector whereby staff mapped buildings in the Commonwealth by category, typology, and vintage. For Step 2, sector prioritization, Mr. Nelson indicated that MassCEC staff ask a set of key questions directed towards answering whether MassCEC's intervention will accelerate cost effective climate solutions towards broad scale adoption, while attracting third party investment. For this step, Mr. Nelson provided a graphic illustrating Massachusetts building site emissions by typology and end use, showing a need to address pre-1950 heating buildings like "triple deckers" and explained this led to MassCEC's Triple Decker Design program. For Step 3, the market intervention analysis, Mr. Nelson explained that staff evaluate what tactical approaches MassCEC could implement to overcome targeted market barriers, noting MassCEC is most effective when leveraging other efforts and related public and private sector investment. Mr. Nelson noted that MassCEC has a varied toolkit to overcome barriers, including research studies, pilot projects, and dialogue with industry stakeholders. Mr. Nelson honed in on the nature of pilot projects, using the example of MassCEC's Passive House Design Challenge, which led to de-risking of the passive house concept, and subsequent accelerated and broader adoption of the passive house model, with Mass Save since scaling adoption by incentivizing passive house construction, DOER's proposal of a stretch building code requiring passive house elements for

multifamily buildings, and the Department of Housing and Community Development also adding passive house incentives to their tax credit program.

Mr. Nelson concluded by explaining Step 4 – program development and administration, and Step 5, program handoff and evaluation, explaining the steps taken from staff work, to board approval, to award and contracting, to ultimate conclusion and ideally hand off of the program to private sector actors to scale adoption based on business models de-risked through MassCEC’s efforts. Members of the Board proceeded to ask a series of questions, including inquiring about MassCEC’s solicitation/procurement process and how DEI considerations factor into MassCEC’s programming, each of which were answered in the ensuing discussion.

V. MassCEC 2022 Industry Report.

Ms. Daloisio then introduced Elizabeth Cleveland, MassCEC’s Senior Director for Special Projects – to provide the Board with an overview of MassCEC’s 2022 Industry Report.

Ms. Cleveland began by noting that MassCEC is statutorily required to produce an industry report each year. Ms. Cleveland explained that the presentation was an overview of the 2022 report, but the data underlying the report was as of December 2021, so year-over-year comparisons are December 2021 versus December of 2020. Ms. Cleveland noted that Massachusetts has seen a 73% growth rate in the clean energy industry since 2010, outpacing the general growth of the economy over the same time period. Ms. Cleveland explained that the preliminary analysis shows that there are approximately 107,000 clean energy jobs in the state today. Ms. Cleveland noted the industry was not free from the effects of COVID-19, but that approximately 65% of the clean energy jobs lost due to COVID-19 had been recovered as of September 2022. Secretary Hao indicated a desire to understand the growth of the clean energy industry in Massachusetts as compared to the growth of the industry in other states. Ms. Cleveland noted that MassCEC does not have concrete data on this due to differing definitions of what constitutes the “clean energy industry” in other states, but that MassCEC does track the industries in similar states such as California and New York. Ms. Cleveland provided the Board with statistics regarding the clean energy industry in Massachusetts relative to other states on some metrics (e.g., highest clean energy median wage by environmental entrepreneurs, #2 for energy efficiency in the U.S. by ACEEE). Ms. Cleveland also provided the Board with additional statistics regarding the clean energy industry in Massachusetts (e.g., clean energy jobs represent 3% of jobs in Massachusetts; 70% of clean energy workers are based outside of Route 128; and Massachusetts has 4% of all clean energy jobs in the U.S. while representing 2% of the country’s population).

Ms. Cleveland explained the economic contribution analysis of the clean energy industry in Massachusetts to the state’s broader economy, noting that clean energy supports 33,508 “indirect jobs” (those that support supply chain, goods, and services) and 61,538 “induced” jobs (those that result from increased spending in the economy in general). Additionally, Ms. Cleveland noted that clean energy worker demographics indicate that the industry is largely white and male, though in some respects is more diverse than the general workforce in Massachusetts. Ms. Daloisio noted the demographic data is largely self-reported by employers, and other broadly available workforce data is not necessarily specific to the clean energy industry.

Ms. Cleveland indicated that MassCEC has historically inquired with employers about their experiences hiring qualified talent, and that MassCEC has seen a 3% increase relative to pre-COVID-19 data in terms of employers having a somewhat difficult or very difficult time finding qualified talent.

Members of the Board proceeded to ask a series of questions, including whether MassCEC knew how employer responses to questions were clustered by region or type of work, when the workforce needs assessment would be completed, and the involvement of MassHire workforce boards, each of which was answered in the ensuing discussion. Members of the Board also discussed necessary levels and forms of education relative the jobs needed in the clean energy industry.

Ms. Daloisio thanked staff and the members of the Board, and indicated she was excited to work with the Board to achieve Massachusetts' climate goals.

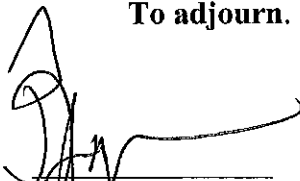
VI. Adjourn.

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

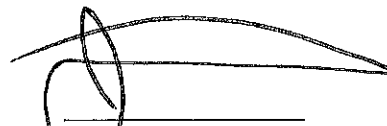
Secretary Tepper: Yea
Dr. Balasubramanian: Yea
Dr. Francis: Yea
Ms. Kelly: Yea
Mr. Haber: Yea
Dr. Cook: Yea
Secretary Hao: Yea
Rear Admiral McDonald: Yea
Ms. Theriault: Yea
Mr. Moran: Yea
Secretary Gorzkowicz: Yea

With 11 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 11:39 am:

To adjourn.



Chairman



Secretary

Public Meeting Documents and Exhibits:
Meeting Agenda

MassCEC Overview PowerPoint
MassCEC Approach to Market Development PowerPoint
2022 Industry Report Presentation PowerPoint

