

MINUTES
MASSACHUSETTS CLEAN ENERGY TECHNOLOGY CENTER
BOARD MEETING

July 26, 2022

Attendees:

Directors:

Secretary Bethany Card (Executive Office of Energy and Environmental Affairs (EEA) and Chair)
Commissioner Patrick Woodcock (Department of Energy Resources (DOER))
Dr. Ramprasad Balasubramanian (Designee of President of the University of Massachusetts Martin Meehan)
Mark Fuller (Designee of Secretary Mike Kennealy) (Executive Office of Housing and Economic Development)
Dr. John Cook (President, Springfield Technical Community College)
Terry Moran (Executive Director, Massachusetts Workforce Alliance)
Tom Galvin (Director, RES Hydro)
Bob Haber (CIO and Partner, Proficio Capital Partners)

Staff:

Jennifer Daloisio (CEO)
John Hitt, Esq. (General Counsel and Secretary)
Alexandra Zaltman (Chief of Staff)
Bruce Carlisle
Rahul Yarala
Ariel Horowitz
Connor Crowley, Esq.
Michelle Beadle
Shayla Brown-Peddy
Carla Concha
Jordan Meier
Leslie Nash
Janel Granum
Susan Mlodozeniec
Elizabeth Youngblood
Lauren Farnsworth
Rachel Ackerman
Amy Barad
Heather Roe
David Wilson
Edward Hsieh
Erica Hines

Jeremy Belknap
Ashley Cornwell
Jess Hiltz
Camilla Bacolod
Thomas Chase
Nils Bolgen
Madison Zeliff
Emily Baron
Ian Campbell
Jeannie Houde
Elizabeth Cleveland
Tim Griffin
Nikhil Teja Nama

Others: Emily Ment, Well Fleet Rentals
Daniel Kroytor, RSM
Julia Fox, DOER
Paul Cleary, Autonomous CRE

The one hundred-fourth (104th) meeting of the Massachusetts Clean Energy Technology Center (“MassCEC”) Board of Directors (the “Board”) was held on July 26, 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.

I. Adoption of the Meeting Minutes from the June 21, 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. Galvin and seconded by Mr. Haber the following roll call vote was taken at 10:05 am:

Secretary Card: yea
Mr. Galvin: yea
Mr. Moran: yea
Dr. Cook: yea
Dr. Balasubramanian: yea
Mr. Haber: yea
Mr. Fuller: yea

[Commissioner Woodcock joined the meeting at 10:07 am and was therefore not present for this vote.]

With 7 yeas and 0 nays it was VOTED, without discussion, at 10:07 am:

To adopt the Meeting Minutes from the June 21, 2022 Meeting of the MassCEC Board of Directors.

II. Chair and CEO Updates

Secretary Card began with updates regarding legislation, highlighting two bills making their way through the legislature: first, an economic development bill titled “An Act relating to economic growth and relief for the commonwealth”, which is a follow up bill to the Governor’s FORWARD Act; and second, a climate bill titled “An Act driving clean energy and offshore wind”. Secretary Card indicated to the Board that the climate bill was sent to Governor Baker, who had ten (10) days to review and evaluate the bill. Secretary Card also noted that an updated version of the Clean Energy and Climate Plan (CECP) for 2030 was filed with the Legislature, as required by law prior to the end of the year. Secretary Card turned the conversation over to Jennifer Daloisio, MassCEC’s Chief Executive Officer. Ms. Daloisio introduced Jennifer Applebaum, MassCEC’s new Managing Director of Workforce Development. Ms. Daloisio reiterated the importance of the bills discussed by Secretary Card and noted that she would provide an update regarding the status of the bills once the legislative session ended. Lastly, Ms. Daloisio noted that, based on feedback from Board members during the June Board Meeting, as part of its restructuring negotiations with Greentown Labs MassCEC secured a one percent (1%) premium on the interest rate above what Greentown Labs’ new senior loan requires for MassCEC’s new subordinated loan to Greentown Labs.

III. Investments: Continuation of Strategy Overview & Authorization of 2030 Fund

Secretary Card transitioned to the Investments Strategy Overview and Authorization of 2030 Fund, noting that this item was initially discussed at the Board’s meeting in June. Ms. Daloisio also reminded the Board that Hilary Flynn, MassCEC’s Managing Director of Investments, had proposed a \$5 million budget for FY2023 and re-investment of proceeds, along with the 2030 Fund concept.

Ms. Flynn then began presenting on the proposed strategy of MassCEC’s Investment team. The proposed strategy includes continuation of funding for early-stage start-ups. Ms. Flynn noted that there was an ongoing need for and interest in clean tech investment, but most money invested in the sector is funneled into later-stage start-ups and specifically goes towards mobility and transportation focused companies. Ms. Flynn indicated the vision for the proposed 2030 Fund is that it will continue much of the same investment work MassCEC has historically done. Ms. Flynn explained that branding the proposed fund as a “fund” will generate additional interest based on the terminology matching the venture capital industry standard terminology, in addition to signaling to the market that MassCEC is committed to decarbonization goals in the Commonwealth.

Ms. Flynn highlighted that the Investments team framed their investment thesis to focus on job creation and advancing technology in climate solutions. Ms. Flynn noted that the requested \$50 million commitment through 2030 would be used for new investments, follow-on investments, and venture debt. Ms. Flynn also noted that the top targeted outcomes for the fund

would be maintaining momentum on metric areas she presented, while also recognizing that MassCEC is entering a challenging economic market, and therefore expects that valuations will be lower. As a result, Ms. Flynn indicated the Investments team has modified some of its targets, while still allowing for potential large impacts within the Commonwealth.

Ms. Flynn reminded the Board that, at the June Board meeting, questions and a discussion regarding return on investment (ROI) ensued. In response, Ms. Flynn noted that the Investments team is proposing returns comparable to long term benchmarks MassCEC has evaluated itself against in the past. Mr. Haber, summarizing the Investment Committee's work, noted that the Investment Committee was impressed with the proposal for its thoroughness and for highlighting the need for MassCEC to continue playing a role as an early-stage investor. Mr. Haber noted a couple of areas to monitor, mainly (i) staffing levels for MassCEC to be effective and (ii) funding for venture capital in general, bearing in mind MassCEC's ability to be a consistent investor in a cyclical industry. Mr. Haber indicated the Investment Committee advocated for a positive, competitive ROI, but not for that to be the primary purpose of MassCEC's investment activities. The Board expressed approval for the adoption of the 2030 Fund concept, subject to annual expenditure authorization(s).

Upon a motion made by Mr. Galvin and seconded by Mr. Fuller the following roll call vote was taken at 10:19 am:

Secretary Card: yea
Commissioner Woodcock: yea
Mr. Galvin: yea
Mr. Moran: yea
Dr. Cook: yea
Dr. Balasubramanian: yea
Mr. Haber: yea
Mr. Fuller: yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 10:20 am:

To authorize the expenditure of up to \$5,000,000 in the Investments program for early-stage investments as well as for venture debt, and further to authorize MassCEC's Chief Executive Officer (i) to enter into contracts and issue individual investment under the program and (ii) to make program modifications, including modifications to investment levels, provided that such modifications are consistent with the program goals set forth in the staff memorandum.

IV. Net Zero Grid: Strategy Presentation and Program Authorization

Ms. Daloisio then introduced Ariel Horowitz, MassCEC's Senior Program Director for Net Zero Grid (NZG) to present on overall strategy for MassCEC's NZG activities and to make an authorization request. Dr. Horowitz began her presentation by providing background on the Commonwealth's approach to decarbonization, noting that, in line with many developed

economies in the U.S. and Europe, it is focused on electrification to reach decarbonization by 2050. Dr. Horowitz explained that, in the context of an “electrifying everything” approach, this means the Commonwealth will increase the load traveling through the grid most hours of the day through the course of a year. Dr. Horowitz continued to explain that, unfortunately, the current grid was not built to support this system, considering that most wires are “tapped” from a load perspective.

Dr. Horowitz indicated that, in Massachusetts, the grid is controlled by electric utilities, mainly Eversource and National Grid and that the policy framework concerning the grid is determined by legislation, MassCEC’s colleagues at EEA, DOER, Department of Environmental Protection (DEP), and the work of utilities is regulated by the Department of Public Utilities (DPU). Dr. Horowitz explained that MassCEC’s views its role as one of market facilitation, assisting the various parts of the system to ensure a more seamless process. Dr. Horowitz noted that navigating the utility regulatory system can be exceedingly difficult, and that the NZG team’s tactics are similar to the Offshore Wind teams. Similar to offshore wind, MassCEC rarely funds steel-in-the-ground, demonstration projects for the grid as they are extremely expensive and physical demonstration of technology on the grid requires collaboration with a number of players including the DPU, utilities, and municipal/local permitting authorities.

Dr. Horowitz noted that although the NZG team historically awards lower dollar values through its grants, each award requires a high level of investment of staff time. MassCEC’s work is based on impacting some aspect(s) of the work done by regulated entities or regulators themselves, and while utilities are inherently risk-averse and somewhat informed by limitations placed by DPU on grid innovation, the route to scaling a solution is relatively smooth once an idea has been de-risked. Dr. Horowitz also noted that collaboration is particularly important because utilities have no legal mandate to achieve “net zero” as there is no regulatory docket requiring utilities to support the Commonwealth in this endeavor, and while utilities are generally large corporations, they do not have much cash available to spend on advancing net zero initiatives.

Dr. Horowitz also noted that MassCEC’s TechDev programs are helpful for advancing NZG aims. Dr. Horowitz highlighted that, since 2019, the programs have awarded over \$4 million to NZG TechDev grantees. In addition to TechDev, Dr. Horowitz noted that the NZG team also oversees the Commonwealth Hydro Program, mandated as part of M.G.L. 23J, citing this program as a meaningful source of clean energy generation in the commonwealth, totaling in approximately 296 MW of capacity and approximately 1100 Gwh of annual generation.

Dr. Horowitz noted MassCEC’s top priorities for NZG, including: (i) integrating 2050-critical resources into the distribution grid; (ii) fostering productive stakeholder relationships; (iii) supporting access to federal (IIJA) funding; and (iv) research and innovation. Dr. Horowitz noted other topics of interest for future work, including transmission integration for offshore wind, clean resilience, and gas/electric system interactions. Regarding stakeholder relationships, Dr. Horowitz noted that the NZG team plans to convene stakeholders to discuss how to build infrastructure currently needed for NZG without disproportionately disrupting the communities where the infrastructure is most needed. Questions regarding MassCEC’s role in infrastructure development and funding for the Commonwealth Hydro Program arose and a discussion ensued.

Upon a motion made by Mr. Fuller and seconded by Mr. Galvin, the following roll call vote was taken at 10:56 am:

Secretary Card: yea
Commissioner Woodcock: yea
Mr. Galvin: yea
Mr. Moran: yea
Dr. Cook: yea
Dr. Balasubramanian: yea
Mr. Haber: yea
Mr. Fuller: yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 10:56 am:

To authorize the expenditure of up to \$2,000,000 for Net Zero Grid programming, 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. OSW: Strategy Presentation and Re-Authorization of Offshore Energy Program

Secretary Card then transitioned to the next topic, and introduced Bruce Carlisle, MassCEC’s Managing Director, Offshore Wind to provide a strategy presentation regarding MassCEC’s offshore wind (OSW) programming and an authorization request. Mr. Carlisle provided the Board with a reminder regarding the legislative and policy landscape for the OSW industry, noting that the Commonwealth will need a minimum of 15 GW by 2050 in order to meet net zero goals, and thus far the Commonwealth has procured 3.2 GW.

Mr. Carlisle then provided the Board with information on the market status of the OSW industry in the U.S. Mr. Carlisle noted that the OSW industry is fully poised to launch after a 10-year period of planning, project development, and permitting. Mr. Carlisle stressed that Massachusetts is well positioned as a leader in the OSW industry based on early investments in New Bedford Marine Commerce Terminal, the Wind Technology Testing Center, and workforce development.

Next, Mr. Carlisle presented the Board with barriers and challenges to the OSW industry, including export cable location and commercial interests such as the fishing industry. Additionally, Mr. Carlisle noted that the nascent supply chain, growth of and training of local workforce, investments in ports and vessels, transmission, and technological development are all additional barriers and challenges. Mr. Carlisle then introduced priorities for MassCEC’s OSW activities in FY2023, which include planning, analysis, and engagement, sector development, and research and innovation.

Mr. Carlisle then provided the Board with a breakdown of the requested authorization for FY23. Mr. Carlisle presented a slide regarding the overall Offshore Energy Program Budget for FY2023, comprised of monies from the Renewable Energy Trust (RET), the Offshore Wind Energy Career Training Trust Fund, OSW Developer Accelerator Programs, and the Bureau of Ocean Energy Management (BOEM). Lastly, Mr. Carlisle provided more detail on the external sources of funding MassCEC has received from state and federal sources, as well as agreements with OSW developers. Questions regarding input MassCEC receives from developers regarding OSW programming, concerns raised by the fishing industry and responses in Europe to similar concerns, and the planned exploration of a Marine Energy Innovation Center, and a discussion ensued.

Upon a motion made by Mr. Haber and seconded by Mr. Galvin, the following roll call vote was taken at 11:42 am:

- Secretary Card: yea
- Commissioner Woodcock: yea
- Mr. Galvin: yea
- Mr. Moran: yea
- Dr. Cook: yea
- Dr. Balasubramanian: yea
- Mr. Haber: yea
- Mr. Fuller: yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention, at 11:43 am:

To authorize the expenditure of up to \$14,500,000 for the Offshore Energy Program, 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.

VI. OSW: Update re: New Bedford Marine Commerce Terminal and Authorization of Additional Funding for Site Remediation and Redevelopment of 80 Wright Street

Mr. Carlisle transitioned to the next item and introduced the Tim Griffin, MassCEC’s new Terminal Director of the New Bedford Marine Commerce Terminal (the “Terminal”). Mr. Griffin introduced himself to the Board of Directors and provided a high level summary of his education and prior work experience.

Mr. Carlisle then provided the Board with an update on the Terminal’s business activities, showing that in FY2022 the Terminal hosted various customers, including offshore wind geotechnical/geophysical survey companies and specialized project cargo. Mr. Carlisle next

discussed the current status of MassCEC's leases with OSW developers for the Terminal, including the Vineyard Wind lease, the Mayflower Wind Lease, and Mayflower Wind's 2nd Lease Option. Mr. Carlisle also provided an update to the financial information of the Terminal, noting that FY2022 Terminal revenues exceeded operating expenses.

Mr. Carlisle also noted that MassCEC is currently working closely with Vineyard Wind and its contractor General Electric (GE) on a series of improvements to the Terminal, requested or otherwise required. Mr. Carlisle explained that the main site of the Terminal requires improvements and security updates, and that the recently acquired 80 Wright Street property needs to be redeveloped to meet the specifications of the Terminal prior to Vineyard Wind's occupancy of the Terminal in January 2023.

Mr. Carlisle then presented a request for an additional \$600,000 for site remediation and redevelopment at 80 Wright Street. Mr. Carlisle reminded the Board they had previously authorized \$1.5 million for this work and that, based on solicitations by MassCEC for this work resulting in bids that exceeded cost expectations in October of 2021, this additional funding would permit MassCEC staff to fully consider each bid to make a good faith determination of the value proposition of each bid. Mr. Carlisle indicated these higher-than-expected costs were believed to be associated with inflation in the construction industry in terms of materials and employee compensation. Questions arose regarding the sufficiency of the updated requested funding and inflationary impacts on the long-term vision for the Terminal, and a conversation ensued.

Upon a motion made by Mr. Fuller and seconded by Mr. Galvin, the following roll call vote was taken at 12:05 pm:

- Secretary Card: yea
- Commissioner Woodcock: yea
- Mr. Galvin: yea
- Mr. Moran: yea
- Dr. Cook: yea
- Dr. Balasubramanian: yea
- Mr. Haber: yea
- Mr. Fuller: yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention was VOTED at 12:06 pm:

To authorize MassCEC, by its Chief Executive Officer, to enter into agreements for site remediation and redevelopment of the Property for up to an aggregate total of \$2.1 million.

To authorize MassCEC's Chief Executive Officer to take, or cause to be taken, any and all actions to execute and deliver any and all agreements, certificates, instruments and other documents and to do any and all things that, in the judgment of the Chief Executive Officer, may be necessary or advisable to effectuate the preceding resolution; such execution and delivery by the Chief Executive Officer of such agreement, certificate, instrument or other document or the doing by the Chief Executive Officer of any such act (including the

authorization of any change in any such agreement, certificate, instrument or other document) shall conclusively establish both the authority of the Chief Executive Officer to so act from MassCEC and the approval of the Board.

VII. OSW: Update re: Wind Technology Testing Center

Ms. Daloisio transitioned to the next topic and introduced Rahul Yarala, MassCEC's Executive Director of the Wind Technology Testing Center (WTTC). Mr. Yarala began the presentation by providing a WTTC overview, reminding the Board that the facility opened in 2011 with \$13 million in funding from the RET and approximately \$24 million in Federal ARRA funding. Mr. Yarala explained that the WTTC is a structural testing facility specifically built to test utility scale and offshore wind turbine blades up to 85 meters in length and provide marketplace certification.

Mr. Yarala noted that the facility is able to perform a full suite of static and fatigue tests and can perform twenty years of lifecycle testing in six to eight months. Mr. Yarala also provided a WTTC track record of success, noting that the WTTC is the only one of its kind in the United States, with only six or seven comparable facilities in the world. Mr. Yarala explained that customers and partners of the WTTC include global blade manufacturers, smaller composite companies, and universities and research centers. Mr. Yarala noted that historically the facility has done well since opening, with the last five consecutive years generating strong revenues exceeding operating expenses.

Mr. Yarala then provided a summary of the outlook of the WTTC, noting that the WTTC will be upgrading its actuator systems and equipment in order to test the longer blades that are now being used in offshore wind projects. The facility currently tests these blades by severing the tip and testing the remainder of the blade and has been working on plans for future expansion of the facility in order to accommodate the testing of blades over 85 meters fully intact. Mr. Yarala noted that the facility needs to be expanded in three ways: (i) the concrete test stand needs reinforcement to increase root bending moment capability; (ii) the building needs to be increased in length; and (iii) the building needs to be increased in height. This will allow WTTC to accommodate blades up to 130 – 140 meters in length and to test the full blades. Ms. Daloisio noted that MassCEC has always been aware that a need to expand would arise, and that from its initial construction the facility was designed to be expanded. Questions regarding the expansion, blade size, and the market for blade testing arose, and a conversation ensued.

VIII. Adjourn.

Secretary Card thanked the MassCEC team and all the Board members for their attention and participation.

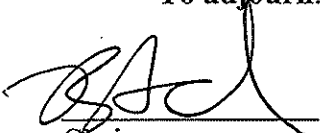
Upon a motion made by Mr. Fuller and seconded by Mr. Haber, the following roll call vote was taken at 12:27 pm:

Secretary Card: yea
Commissioner Woodcock: yea
Mr. Galvin: yea

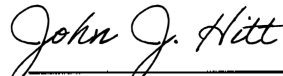
Mr. Moran: yea
Dr. Cook: yea
Dr. Balasubramanian: yea
Mr. Haber: yea
Mr. Fuller: yea

With 8 yeas and 0 nays it was unanimously VOTED, without discussion and abstention,
at 12:27 pm:

To adjourn.



Chair



Secretary

Public Meeting Documents and Exhibits:

Meeting Agenda

PowerPoint Presentation on Investments Strategy & MassCEC 2030 Fund
PowerPoint Presentation on Net Zero Grid Strategy and Authorization
PowerPoint Presentation on Offshore Energy Program Strategy and Authorization
PowerPoint Presentation on New Bedford Marine Commerce Terminal Updates
PowerPoint Presentation on Wind Technology Testing Center Updates