

# Quarterly Funding Opportunities Webinar – Winter 2019

February 26, 2019





# Introductions and Agenda

## 1. Introduction and Overview

Kori Groenveld, *MassCEC, Program Administrator*

## 2. Catalyst

Michele Bernier, *Massachusetts Technology Transfer Center, Senior Program Manager*

## 3. AmplifyMass

Leslie Nash, *MassCEC, Program Manager*

# MassCEC's Mission

Grow the state's clean energy industry while helping to meet the Commonwealth's clean energy, economic development and climate goals.

## INVEST

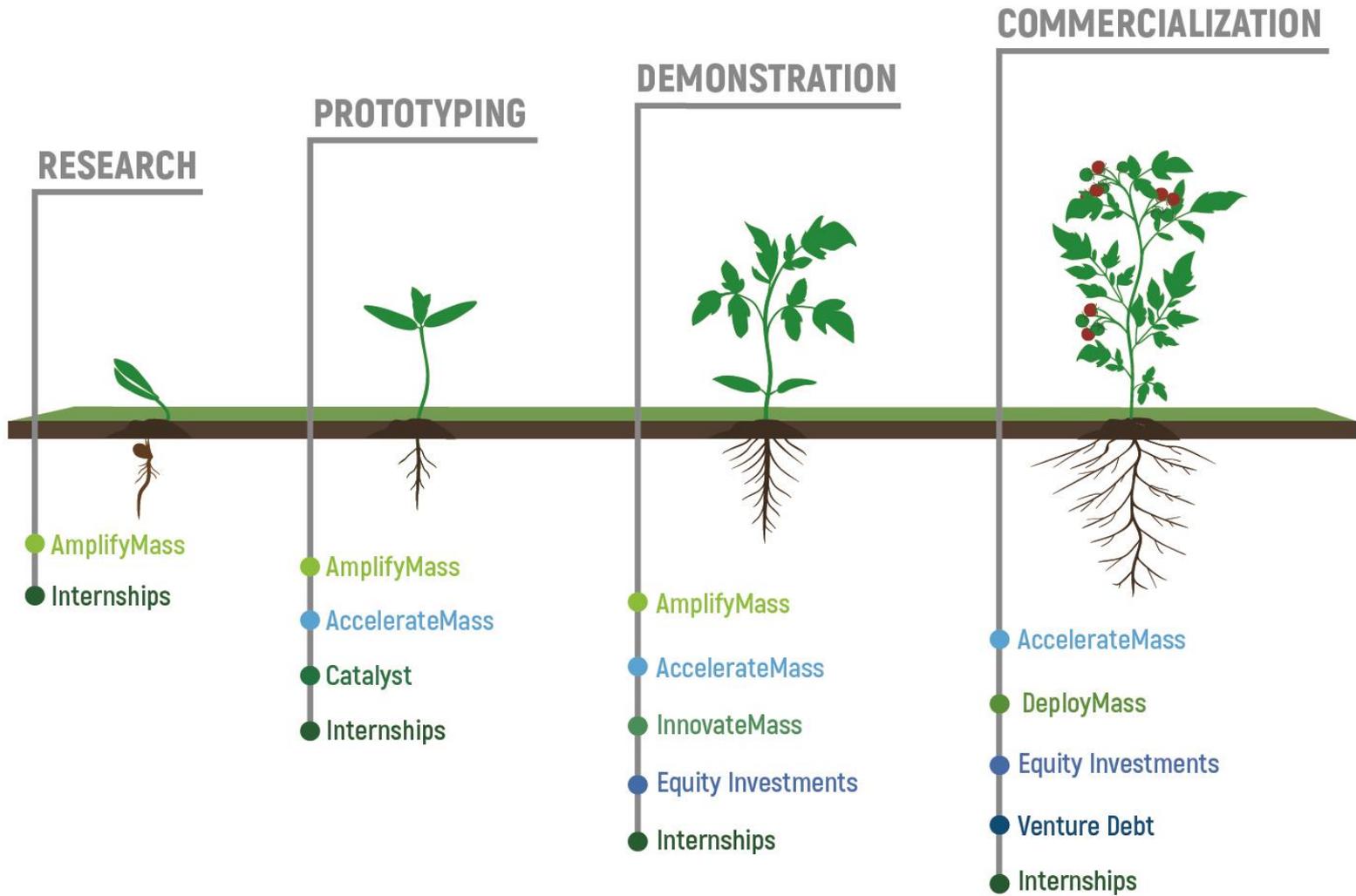
Invest in programs that increase renewable energy adoption by residents, businesses and communities.

## CONNECT

Connect employers, job seekers, students, communities and investors to the clean energy industry.

## INNOVATE

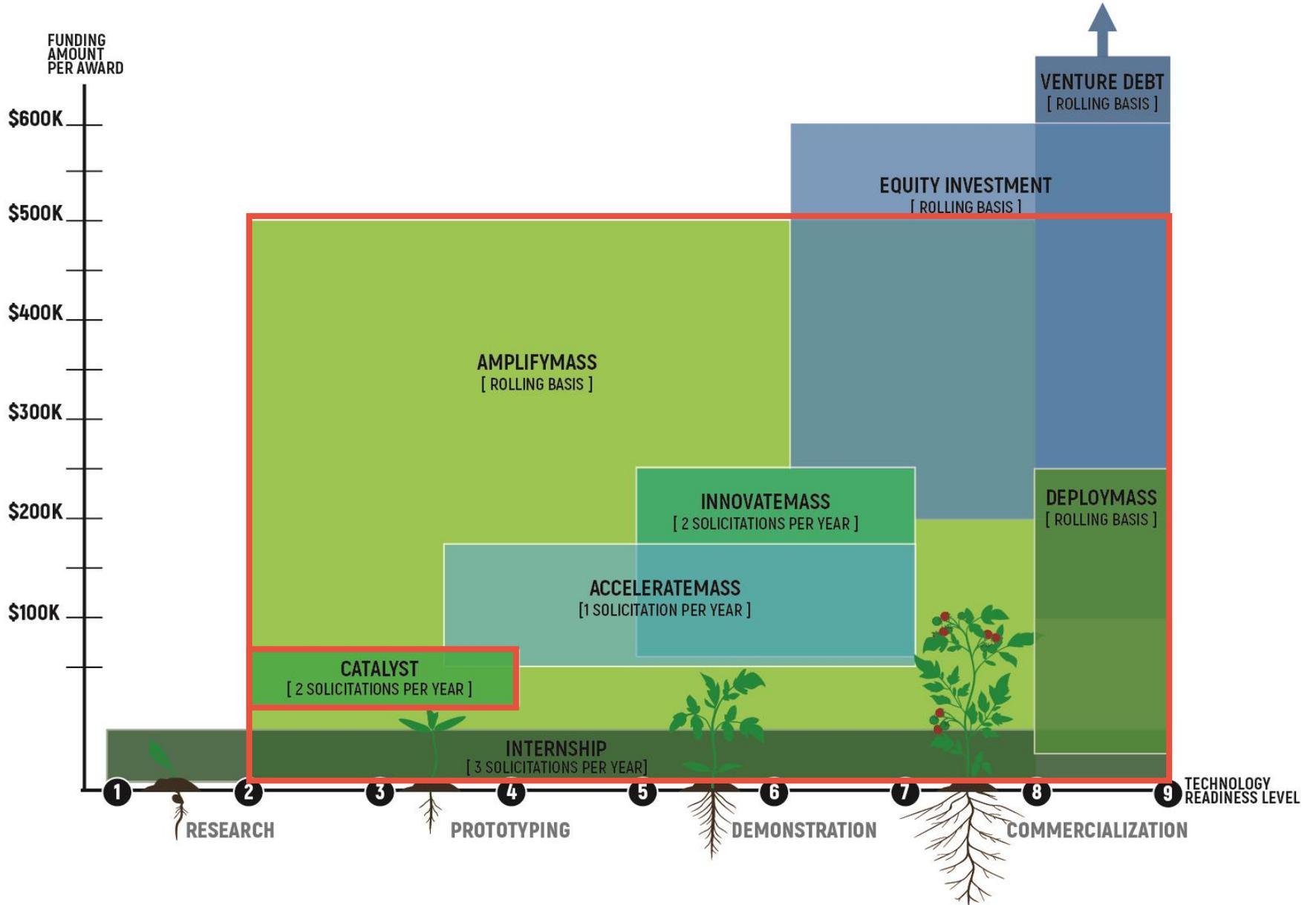
Help to spur innovation through infrastructure, funding and technology development support.



*MassCEC innovation funding – from ideation to commercialization*

# Funding Opportunities

GRANTS INVESTMENTS



# About MTTC



Assist entrepreneurs within the state of Massachusetts with licensing or creating startups.

## COACH

Provide entrepreneur feedback program which assists with strategy and prepares entrepreneurs for investment meetings; researcher training; facilitate grants.

## CONNECT

Connect entrepreneurs, technology transfer offices, investors, companies and industry professionals by providing conferences and industry showcase events.

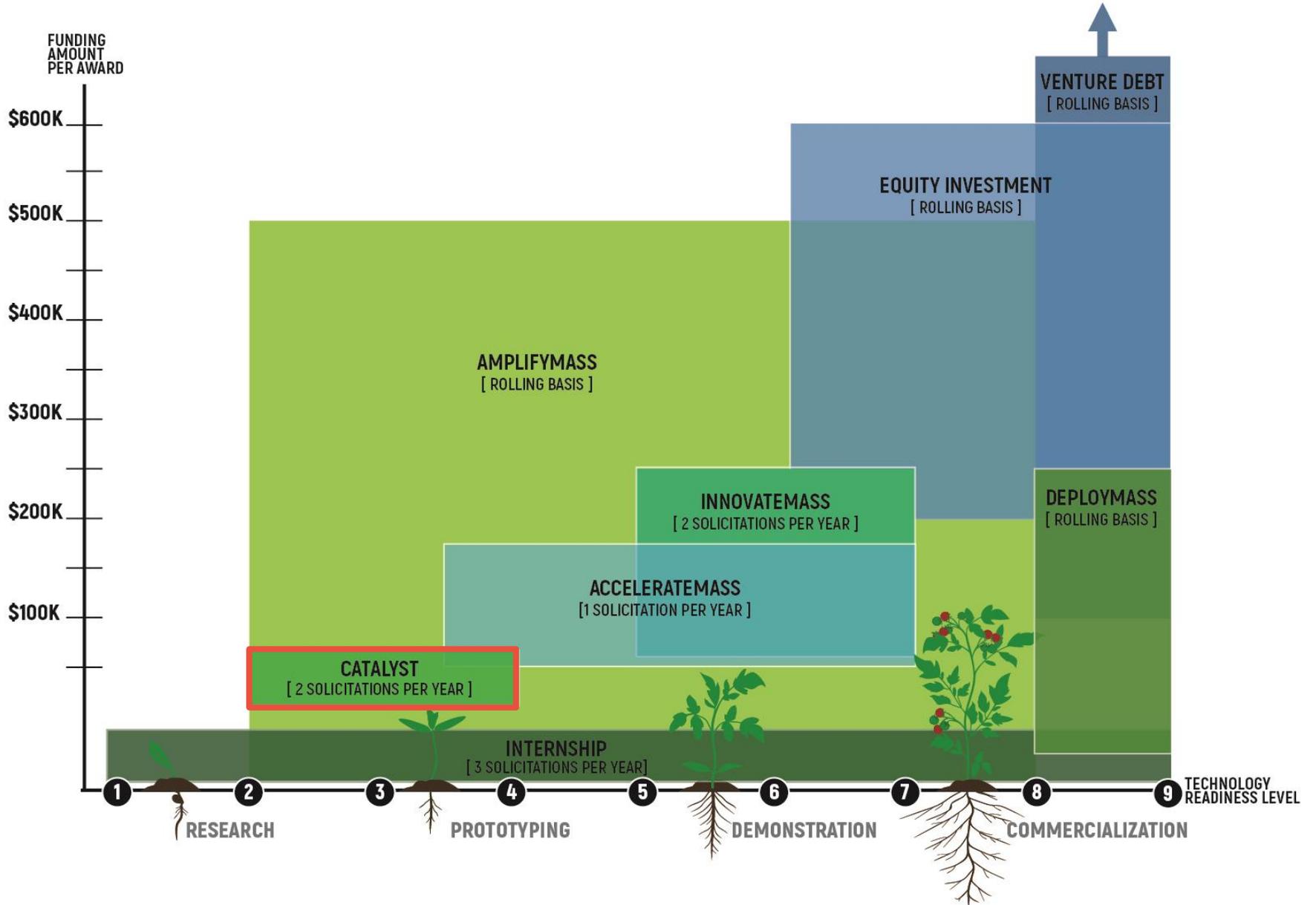
## TRAIN

Provide training for technology transfer offices with best practices, handling of IP, etc.; researcher seminars for SBIRs, grant writing, etc.

Catalyst

# Funding Opportunities

GRANTS INVESTMENTS



# Catalyst



Grants of \$65,000  
Technical Support from  
MTTC



Solicitations 2x / year  
Spring & Fall

Spring 2019:  
**Due March 14 by 4pm to:**  
[companycatalyst@masscec.com](mailto:companycatalyst@masscec.com)



- MA-based early-stage companies & MA-based nonprofit research institutions & students
- Clean energy & water-energy nexus innovation prototypes

# Application Requirements

- ✓ Overview of technology and merit
- ✓ Clean energy impact (for all proposals)
  - ✓ GHG avoidance from cost declines, efficiency improvements, etc.
- ✓ Water impact (for water-energy nexus proposals)
  - ✓ Note: water technologies must also demonstrate a clean energy impact
- ✓ Commercialization potential and proposed business model
- ✓ Project plan (what, when, where, how much)
- ✓ Project budget summary
- ✓ Information on team members

# What are we looking for?

## STRENGTHS OF THE PROJECT ✓

- ✓ Technical merit
  - ✓ Technology is promising, new, and disruptive!
- ✓ Commercialization potential
  - ✓ Market is large and/or growing, strong value proposition
  - ✓ Market need exists
- ✓ Strong project plan
  - ✓ Achievable within timeline and budget
  - ✓ Will result in meaningful product development progress
- ✓ Knowledgeable team members
  - ✓ Clear understanding on the steps needed for commercialization
- ✓ **High likelihood of success**

## PROGRAMMATIC FIT



- ✓ Clean energy (and water) impacts
  - ✓ Proposed technology demonstrates potential for measurable climate impacts through reduction of fossil fuel use
- ✓ Potential for follow-on funding
  - ✓ Likelihood of market entry for university projects
  - ✓ Likelihood of attracting private investment for start-ups
- ✓ **High likelihood of success mattering**

# What do we mean by “prototype”?

- “a first, typical or preliminary model of something, especially a machine, from which other forms are developed or copied”  
(*Dictionary.com*)
- NOT basic research
- Early stage technology design, development, and validation
- Test a concept, use to evaluate your design
- You are creating a “thing” – not an idea
- Real, working system or product
- Generating data to show the invention works

# What do we mean by “clean energy impact”?

MGL c. 23J s. 1 defines this as “...advanced and applied technologies that significantly reduce or eliminate the use of energy from non-renewable sources, including, but not limited to: energy efficiency; demand response; energy conservation and those technologies powered in whole or in part by the sun, wind, water, biomass, alcohol, wood, fuel cells any renewable, non-depletable or recyclable fuel...”

- Must show a clear path to reducing greenhouse gas emissions
- Examples include:
  - Reducing cost or improving performance of carbon-free generation
  - Energy efficiency (on the demand side) and process energy reduction
  - Grid modernization for easier integration of renewables
- Examples without a clean energy impact:
  - Projects that improve the economics of using fossil fuels
  - Projects that have no or minimal impact on reducing GHGs compared to business-as-usual
  - Water treatment technologies that have no substantial energy impact
  - Projects that reduce pollution and improve the environment but have no fossil fuel reduction

# Application Tips

Application Section	Tips for Success	What to Avoid
Technical merit	<ul style="list-style-type: none"> <li>In layman’s terms, clearly and concisely explain what you’re proposing</li> <li>If applied research, demonstrate you are solving a problem</li> <li>What is the <i>specific application</i> of your technology?</li> </ul>	<ul style="list-style-type: none"> <li>Writing for an academic journal audience</li> <li>General research with a lack of application and direction</li> <li>Using too many acronyms</li> <li>No one proofreads the final copy</li> </ul>
Commercialization potential	<ul style="list-style-type: none"> <li>Know your customer(s) and what they need/want</li> <li>How large is your target market and who are your competitors?</li> <li>Is your innovation protectable?</li> <li>Business model exists and it delineates a clear path to commercialization</li> </ul>	<ul style="list-style-type: none"> <li>Target market/potential customers are either too general/too vague, or not appropriate</li> <li>Not listing any customers or target market</li> </ul>
Strong project plan	<ul style="list-style-type: none"> <li>Plan is meaningful and will contribute to commercialization</li> <li>Project plan shows next steps beyond initial prototyping</li> </ul>	<ul style="list-style-type: none"> <li>General milestones without measurable items</li> <li>Unrealistic given the 1-year term</li> </ul>
Knowledgeable team members	<ul style="list-style-type: none"> <li>Do you have someone with business experience as well as technical experience?</li> </ul>	<ul style="list-style-type: none"> <li>Lack of resume submissions</li> <li>Insufficient expertise</li> </ul>

# FAQs

**Who's eligible?**

PI at a Massachusetts-based research institution (including students), or Massachusetts-based early-stage clean energy company with no more than 4 employees\*

**How many awards will be given?**

Awards of up to \$65k  
Maximum of 5 Clean Tech and 2 Water Challenge

**What qualifies as "clean energy"?**

General Laws of Massachusetts  
Section 1, Chapter 23J

**\*some restrictions apply**

# FAQs

What is the Water Challenge?

MassCEC seeks to select up to 2 water technologies that impact the intersection of water & energy

How much \$?

Awards of up to \$65k

What is the expected duration of the project?

Maximum of 12 Months

# Success Story

## Littoral Power Systems

Location: Fall River

Technology: Hydrokinetic Energy



- Littoral Power Systems has developed a novel hydrokinetic energy conversion device specifically suited to the low current velocities that are characteristic of the majority of sites.
- Littoral Power Systems received a \$65,000 grant through MassCEC's Catalyst program in 2017.
- The company recently won a DOE grant worth \$3.6 million in funding, which it will use to improve on its turbine design to increase power, reduce costs, and test a fully integrated sub-scale prototype.



# Timeline and Logistics

Application available at: <http://www.masscec.com/catalyst>

Questions due on: March 8, 2019

Responses posted by: March 11, 2019

Applications due by: **March 14, 2019 by 4pm**

Finalists notified by: April 12, 2019

Mandatory pitch coaching: April 22 – May 3, 2019

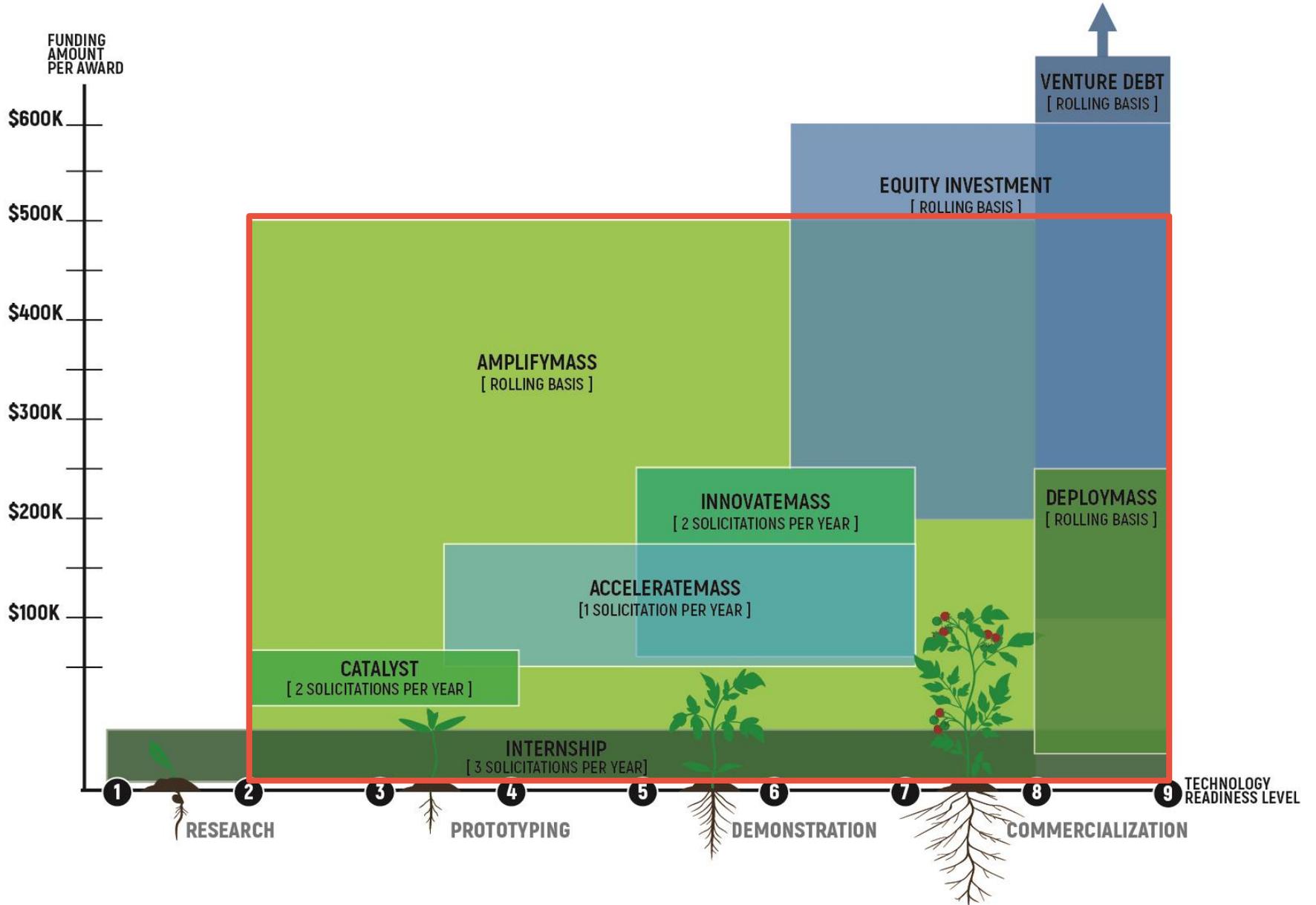
Pitch session: Week of May 14, 2019

Winners notified: June 2019

AmplifyMass

# Funding Opportunities

GRANTS INVESTMENTS



# AmplifyMass



Cost-share or adder grants  
for a prime award

\$5k - \$500k



Applications are accepted on  
a **rolling basis**

Applications must be  
submitted before the primary  
funding is contracted



- Companies must be a small business and be based in MA
- MA-based universities or non-profits

# Application Requirements

## Description of technology:

- ✓ Technology overview and project summary (context, challenge, solution)
- ✓ Commercialization potential and business model
- ✓ Total Addressable Carbon Analysis (potential for avoidance of future carbon emissions)

## Project info:

- ✓ Principal Investigator, project partners, and contributors
- ✓ Project plan (what, when, where, how much)
- ✓ Project outcomes and next steps
- ✓ Project budget summary

## Prime funding proposal and information:

- ✓ For example: your National Science Foundation proposal and status of the proposal

# What is a Total Addressable Carbon (TAC) Analysis?

- The TAC is an estimate of the greenhouse gas emissions that can be reduced, avoided, or remediated assuming wide adoption of a technology or practice.
- What makes a strong TAC?
  - Clear connection between proposed technology/project and greenhouse gas emissions reduction/avoidance
  - Realistic understanding of the TAC at varying scales of technology commercialization
    - For instance: if you reach your beachhead market, how much carbon is reduced, avoided, or remediated? If you enter a larger market, how much?
  - Strong research leveraged from credible public data sources

# What goes into the AmplifyMass budget?

Prime Grant

Prime funding entity:  
 Prime funding amount (in \$):


E.G., U.S. DOE  
 Total amount of prime grant

Recipient(s) of prime funding: \*

Name	Amount (\$)

Allocation of prime grant funds among project participants (including applicant)

*\*If multiple recipients, please list how much of the total prime award each entity will receive (in \$)*

# What goes into the AmplifyMass budget?

Other Project Funds

Required cost share funding (\$):

Cost share or adder support *not* required by prime grant (\$):

**Total Project Budget:**

**Amount Requested from MassCEC:**

**MassCEC grant request**

Additional Funding Sources:

Name	Amount (\$)

MA Leveraged Funds:\*

Leveraged Funds Factor:

*Cost share requirement*  
*Additional budget desired for the project (I.E., not required by prime award agency)*

*Prime grant + required cost share + discretionary additional cost share/adder – Must equal: prime grant + MassCEC grant request + funding from additional sources*

*Other sources of cost share or project funding (I.E., not prime grant and not MassCEC)*

\*Total project budget (including prime award and other sources of funding) to be spent in Massachusetts, less the amount requested from MassCEC

# What goes into the AmplifyMass budget?

Project Expenses					
<i>Please list award amounts (\$) allocated to each expense</i>					
	<i>Prime Award</i>	<i>MassCEC Funding</i>	<i>Additional Funding</i>	<i>Total</i>	<i>Notes</i>
Project Staff/PhD Students: <i>(Input # FTE in notes section)</i>				\$0.00	
IP/Patent-Related Costs:				\$0.00	
Services: <i>(Describe in notes section)</i>				\$0.00	
Infrastructure Development: <i>(Describe in notes section)</i>				\$0.00	
Consumable Materials: <i>(Describe in notes section)</i>				\$0.00	
Travel/Conferences: <i>(Describe in notes section)</i>				\$0.00	
Other Expenses: <i>(Describe in notes section)</i>				\$0.00	
				<b>\$0.00</b>	

# What are we looking for?

## STRENGTHS OF THE APPLICATION ✓

- ✓ Technical merit
  - ✓ Technology is proven, yet new and disruptive!
- ✓ Potential impact to the energy sector
- ✓ Potential impact to Massachusetts
- ✓ Value of MassCEC support
  - ✓ We are filling a meaningful gap
- ✓ Knowledgeable team members
  - ✓ Clear understanding on the steps needed for commercialization
- ✓ **High likelihood of success**

## PROGRAMMATIC FIT

- ✓ Clean energy impacts
  - ✓ The industry and the applicant learn something important from the project
- ✓ Potential for market entry
  - ✓ For companies: improve competitiveness in existing market
  - ✓ For research: clear path to industrial relevance
- ✓ Strong leveraged funds factor
- ✓ **High likelihood of success mattering**

# Tips for Making a Strong Project Proposal

- ✓ Clear, positive impacts to Massachusetts
- ✓ Demonstrated value of and need for MassCEC funding
  - ✓ Strong clean energy impact
- ✓ The higher the grant request, the more leveraged funds

## Research Proposal

- Disruptive idea being pursued by a team with the appropriate expertise
- Direct path from research to commercialization; clear strategy
- MassCEC funds used for, e.g., PhD students and capacity-building

## Company Proposal

- Logically developed business plan, including early-stage price modeling
- Clear identification of partners and customers
- MassCEC funds used for, e.g., new hires or equipment

# Unsuccessful Proposals

- x MassCEC funds not crucial to project success
- x Clean energy impact is small or has poor risk/reward ratio
  - x Weak technical review
- x High grant request, small leveraged funds amount

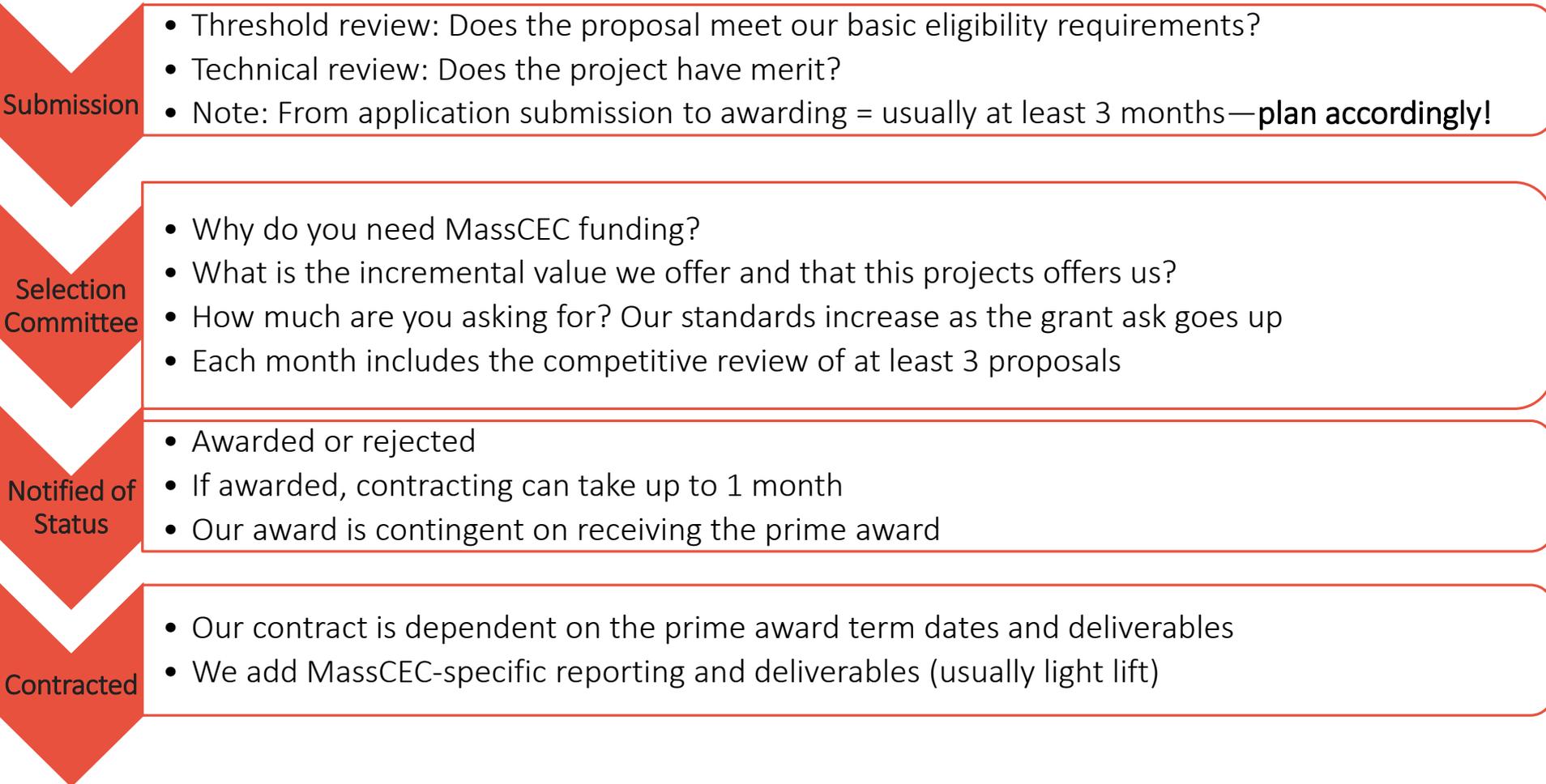
## Research Proposal

- Basic research with limited industrial relevance
- Unclear differentiation
- High overhead rates

## Company Proposal

- Unclear business model
- Lack of understanding of market and competitive landscape
- Weak budget justification

## Review Process



# FAQs

What defines a MA-based company?

*Must have a majority of the following:*

- ✓ Company headquarters
- ✓ Primary manufacturing operations
- ✓ Primary sales & marketing
- ✓ Primary research & development operations

What is the award amount?

Awards range between \$5,000 and \$500,000

How long after submitting an application should I expect a response?

The review process can range from 3 to 6 months

# FAQs

**Who's eligible?**

**Small businesses based in MA; or  
MA-based non-profits/universities (does not include students)**

**At what point in my prime  
award application process  
should I apply to Amplify?**

**Ideally, concurrently or soon after.  
Anytime before contracting with  
the prime funding authority.**

**What qualifies as  
“clean energy”?**

**General Laws of Massachusetts  
Section 1, Chapter 23J**

# Success Story

## New Grid, Inc.

Location: Somerville

Technology: Smart Grid



- Dr. Pablo Ruiz of Boston University received a \$26,000 grant through the AmplifyMass program in March 2015, to develop a grid optimization technology with the potential to reduce the cost of grid congestion by 25-50%, saving over \$1B annually.
- In August 2015, Dr. Ruiz and his team spun out their technology to form NewGrid, Inc. and secured \$290,000 in angel and founder investment funding.
- NewGrid also received a \$40,000 Catalyst grant from MassCEC, and was featured in several prominent scientific publications, including publications of the Institute of Electrical and Electronics Engineers (IEEE). Most recently, the company received a \$100,000 MassVentures START award in August 2016.

# Other Opportunities

# MTTC Platform Meeting

- Do you need help with developing or delivering an investor's presentation? Do you need a strategy plan? Do you need feedback?
- We provide:
  - Template for investor's pitch
  - Coaching session
  - Round table discussion with local industry professionals who offer feedback and strategy
- Interested?
  - Contact Michele Bernier at [mbernier@umassp.edu](mailto:mbernier@umassp.edu) or go to <http://www.mttc.org/programs-and-events/platform-program/>

# Other Funding Opportunities of Note

External to MassCEC:

- [Greentown Labs- InNOVAte 2019 Challenge](#)- The Challenge is actively seeking entrepreneurs and innovators with an eye to disrupt the built environment value chain.
  - Application deadline April 8, 2019 at 11:59 PM EST
- [Greentown Labs, Fraunhofer TechBridge, and Urban Future Lab- H2 Refuel Accelerator](#)- is seeking innovations for the adoption of hydrogen infrastructure and supply chain technologies through cost reduction, reliability and new capabilities.
  - Application deadline March 13, 2019
- [ARPA-E – ATLANTIS Program](#) - seeks to develop new technical pathways for the design of economically competitive Floating Offshore Wind Turbines (FOWT)
  - Concept paper deadline March 18, 2019 9:30 AM EST
- [DOE, Israel Ministry of Energy, and the Israel Innovation Authority – BIRD Energy](#) – This program develops innovation through US-Israel cooperation on a range of clean energy technologies
  - Executive summary due July 2, 2019; Final proposal due August 21, 2019
- DOE Office of Science– Up to \$250 million for projects in the following program areas: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics
  - [Application deadline September 30, 2019](#)
- [USDA](#) – Up to \$500,000 in loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements.
  - Application deadline April 1, 2019

Upcoming MassCEC Solicitations:

- [InnovateMass](#) - RFP anticipated April 2019

# Questions?

Thank you for attending!

Catalyst Program information and materials can be found at:

<http://www.masscec.com/catalyst>

Questions? [companycatalyst@masscec.com](mailto:companycatalyst@masscec.com)

AmplifyMass Program information and materials can be found at:

<http://www.masscec.com/amplifymass>

Questions? [amplifymass@masscec.com](mailto:amplifymass@masscec.com)