American-Made Solar Prize: Gearing Up to Win

8.21.21

CLEAN ENERGY BUSINESS NETWORK®

AGENDA

CEBN Overview and Resources for Competitors
Lynn Abramson, President, Clean Energy Business Network

American-Made Solar Prize 5 – Contest Structure and Key Details
Rebecca Bennett, Project Lead, American-Made Challenges, National Renewable Energy Laboratory

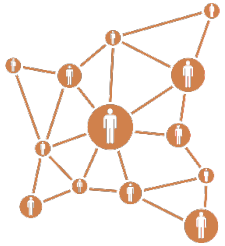
Case Study from Solar Prize Round 4: NanoSpray
Jason Lipton, COO, NanoSpray

CLEAN ENERGY BUSINESS NETWORK®

the small business voice for the clean energy economy

Policy Support

Market & Technology Education



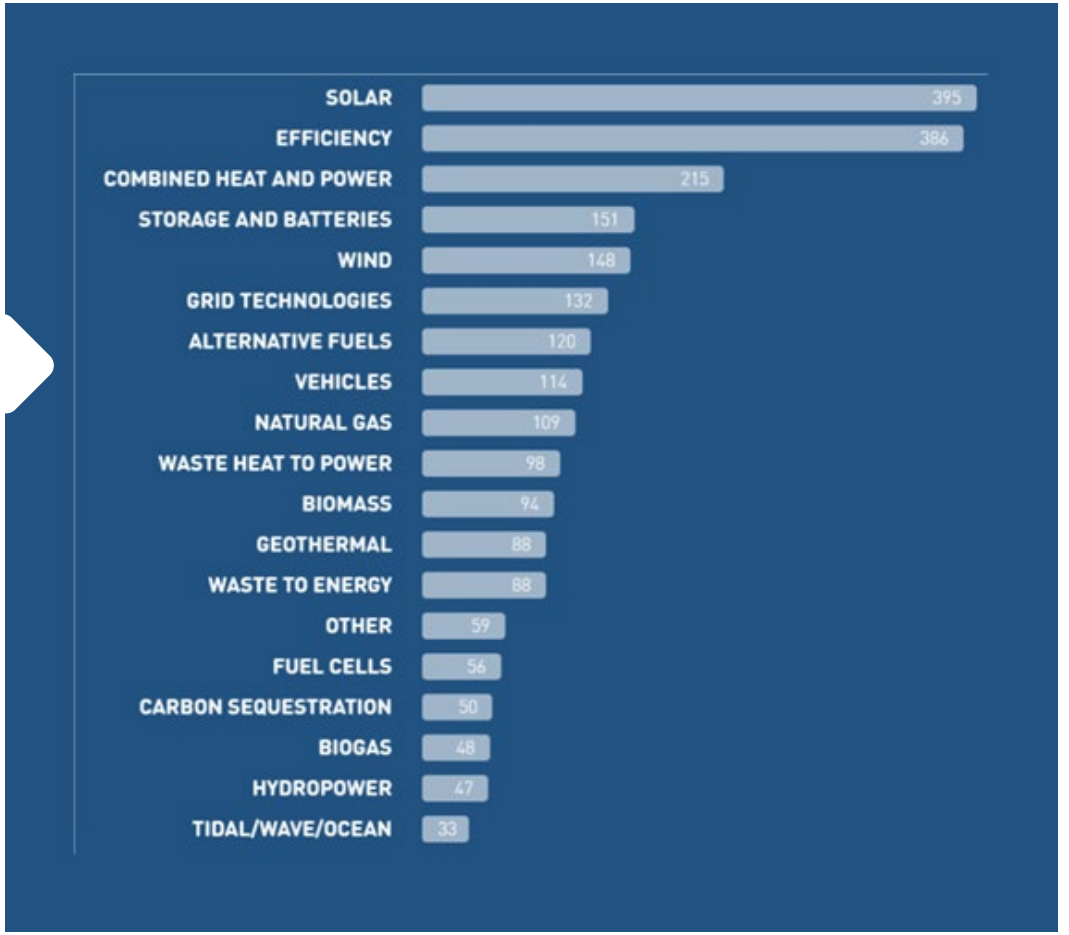
Business Development Assistance

OUR MISSION

OUR REACH

5,500+ small and midsize business leaders across 50 states

Diverse technologies



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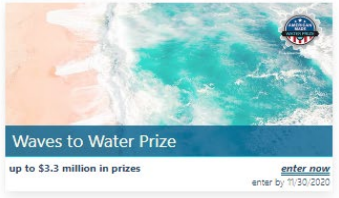
POWER CONNECTOR 2021

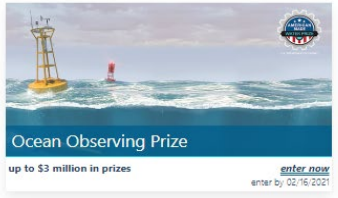
Event Management

Outreach

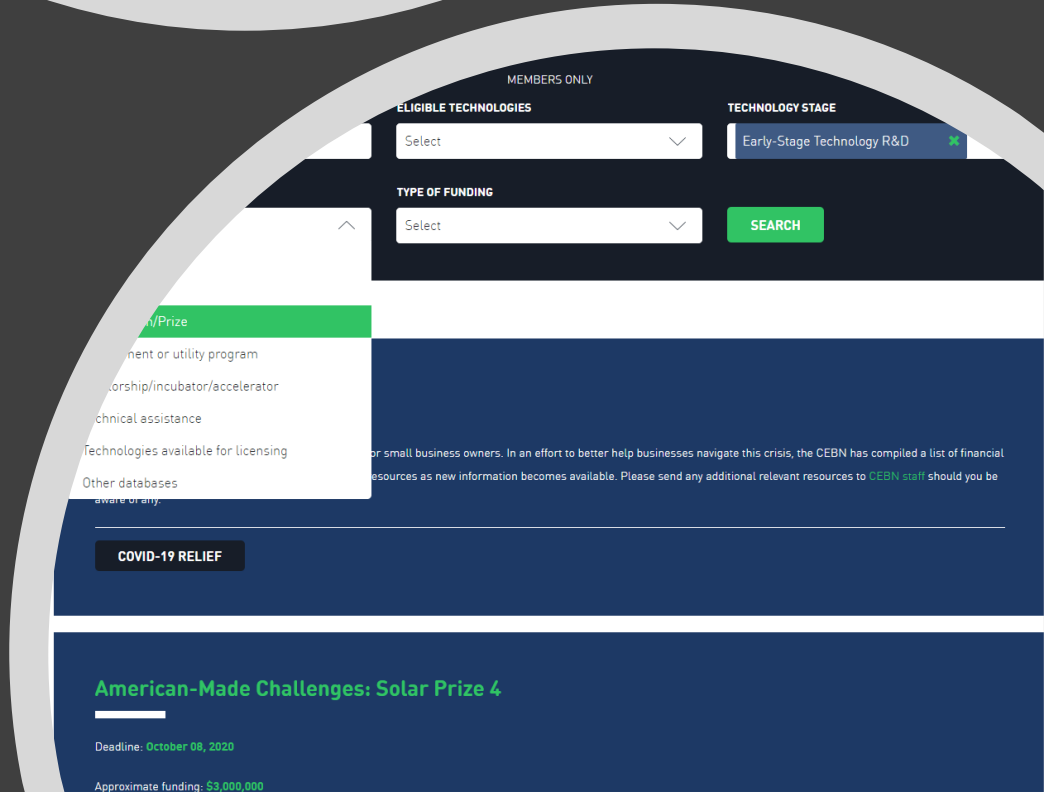
Team Support

Network/Partnerships





CEBN RESOURCES FOR AMERICAN-MADE SOLAR PRIZE COMPETITORS



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ROUND 5 Informational Webinar

Disclaimer: All details needed to participate in the American-Made Solar Prize program are provided in the Official Rules document online. The information provided in this presentation is not intended to amend, modify or substitute details provided in the Official Rules. Information presented should be used in conjunction with the Official Rules. In addition, any reference in presentation to any specific commercial product, process, or service, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement, recommendation, or preference by the U.S. Department of Energy. Visit americanmadechallenges.org

Agenda

- Solar Prize Overview
- Eligibility
- Important Dates
- The American-Made Network

The Solar Prize is Back!

Same prize you know and love

But There's More!

With two tracks–Hardware and Software

More winners and more cash prizes

Submission Deadline: OCTOBER 5

ENERGIZE

American ingenuity in solar **innovation.**

EMPOWER

innovators to rapidly transform **ideas into prototypes.**

ENGAGE

a network of labs, facilities, and partners to **prepare for market.**

PURPOSE

WHAT IS THE SOLAR PRIZE?

Multi-million-dollar prize competition

Ready!, Set!, and Go! Contests

National Network of support organizations

American-Made Network

ENERGIZE INNOVATION
IN U.S. SOLAR TECHNOLOGIES

AMERICAN MADE SOLAR PRIZE™

U.S. DEPARTMENT OF ENERGY

ROUND 5

Two competitive tracks

Hardware Track
$3 million prize
focused on solar hardware components

Software Track
$1.6 million prize
seeking new solar software technology

SUBMIT BY OCT 5 americanmadechallenges.org/solarprize/round5

WHICH TRACK IS RIGHT FOR YOU?

AMERICAN MADE SOLAR PRIZE
U.S. DEPARTMENT OF ENERGY
ROUND 5

Hardware Track

Focus on solar hardware components

- **$3 million** in cash prizes
- **$900,000** in support vouchers

3 Sequential Contests

READY! → **SET!** → **GO!**

READY!	SET!	GO!
20 teams	*10 teams*	*2 teams*
$50,000 each	*$100,000 each*	*$500,000 each*

Software Track

Focus on solar software technologies

- **$1.6 million** in cash prizes
- **$100,000** in support vouchers

3 Sequential Contests

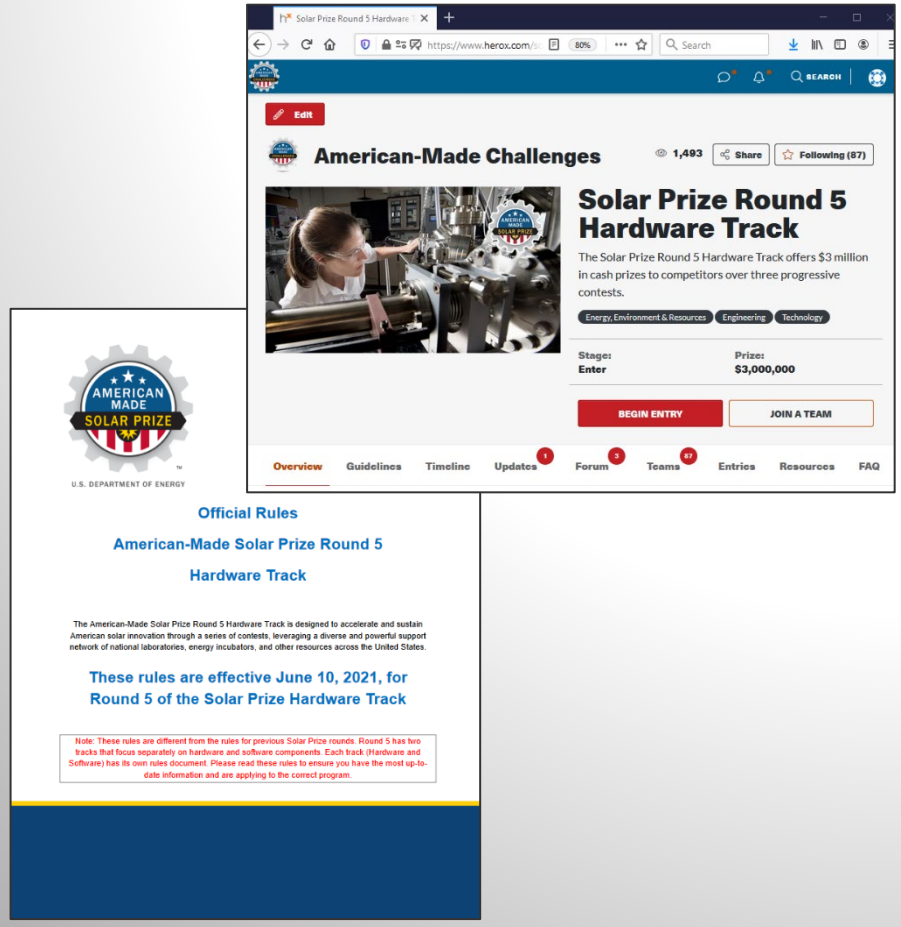
READY! → **SET!** → **GO!**

READY!	SET!	GO!
20 teams	*10 teams*	*2 teams*
$30,000 each	*$60,000 each*	*$200,000 each*

American-Made Network

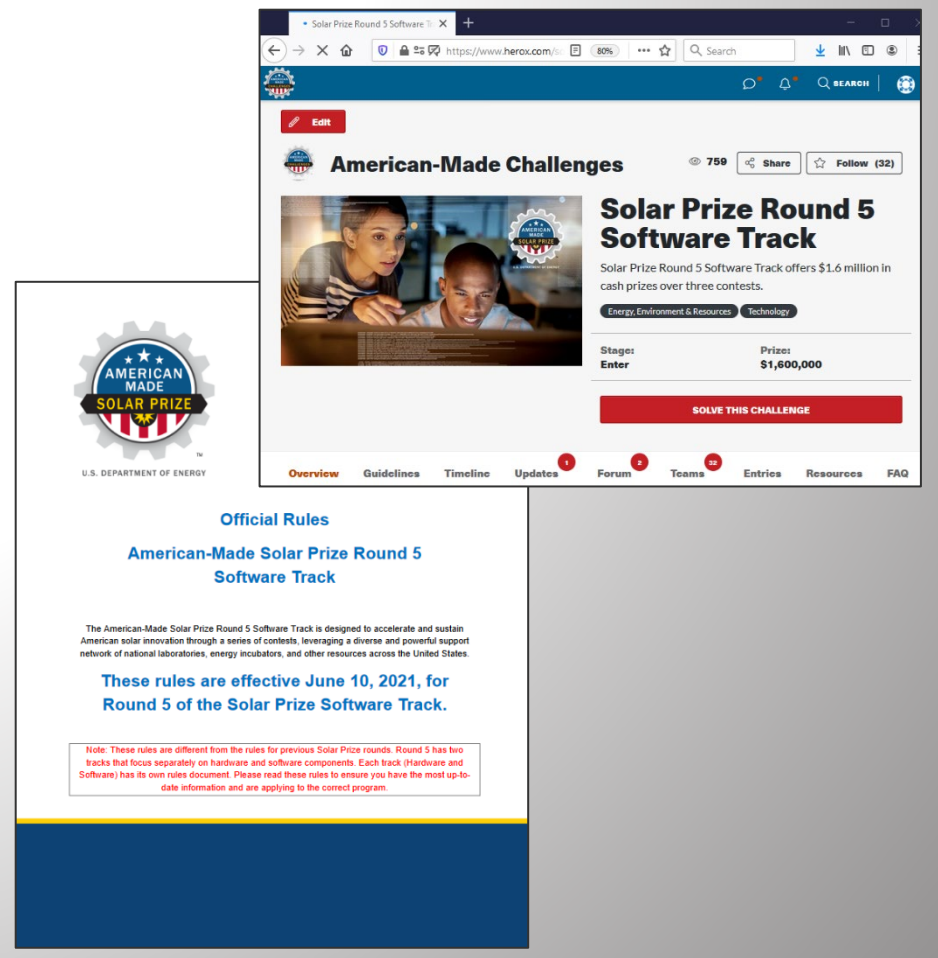
2 Different Tracks = 2 Different Submission Paths

Hardware Track



https://www.herox.com/solarprizeR5hardware

Software Track



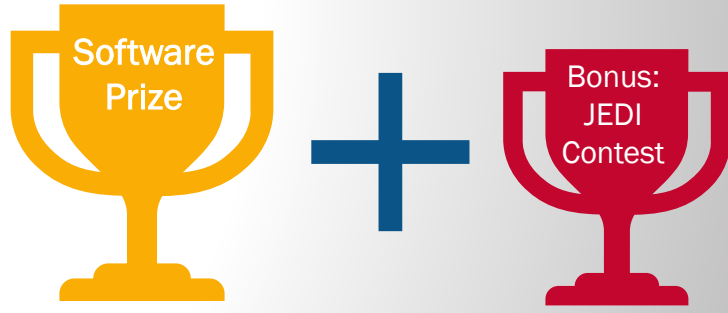
https://www.herox.com/solarprizeR5software

Prize Contests

Hardware Track		Software Track
Make a plan to innovate *20 winners* *$50K cash each*	Ready!	**New software idea** *20 winners* *$30K cash each*
Create a proof-of-concept *10 winners* *$100K cash + $75K voucher each*	Set!	**Minimum viable product** *10 winners* *$60K cash each*
Build a prototype & find pilot partner *2 winners* *$500K cash + $75K voucher each*	Go!	**Paying customers & business model** *2 winners* *$200K cash + $50K voucher each*

Software Track – JEDI Contest

- JEDI = Justice, Equity, Diversity, and Inclusion
- $300,000 additional prize funds
- Optional component
- Describe how solution addresses solar market barriers facing underserved communities and work to substantially advance their approach toward JEDI goals as they progress through the competition
- Additional funding available at each contest (Ready!, Set!, and Go!) for successful JEDI submissions
- Must win the Ready! Contest in order to win the JEDI Contest.



$300,000 in additional prizes

	JEDI Contest Winners	Prize*
Ready!	Up to 10 Ready! semifinalists	$10,000 to $30,000 in cash
Set!	Up to 5 Set! finalists	$20,000 to $60,000 in cash
Go!	Up to 1 Go! competitor	$100,000 in cash

*Prizes are shown as funding ranges when they depend on the number of winners.

WHO?

CAN COMPETE

Any U.S.-based individual or team with a desire to transform ideas into impactful new solutions

Scientists

Students & Faculty

Entrepreneurs

Anyone with a BIG! idea

Important Dates

Now!

Follow the Challenge on HeroX and start working!

October 5, 2020 at 5 p.m. ET

Last day to complete a submission for the Ready! Contest

American-Made Network

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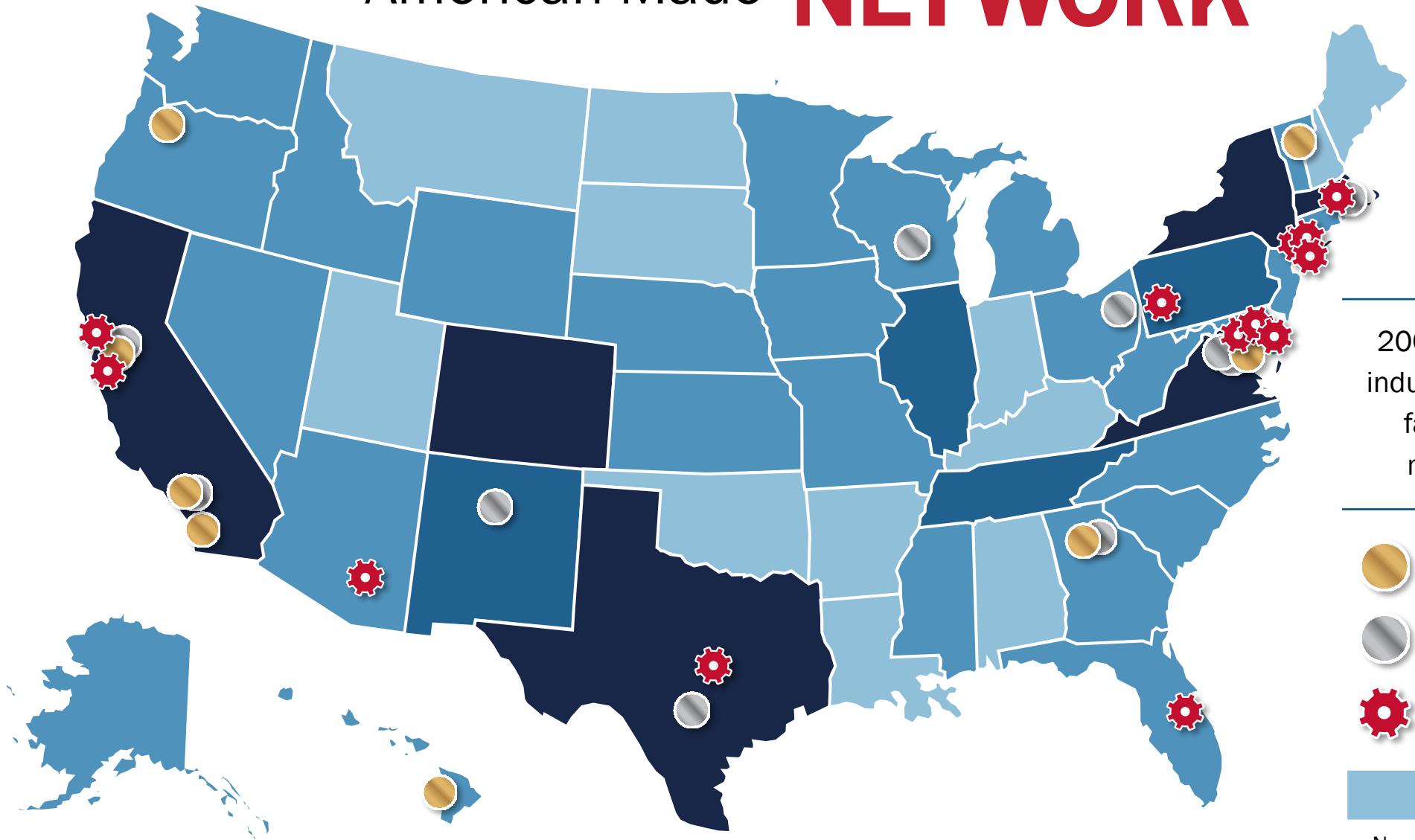


200+ National labs, industry experts, and fabrication and manufacturing facilities

Gold Connectors

Silver Connectors

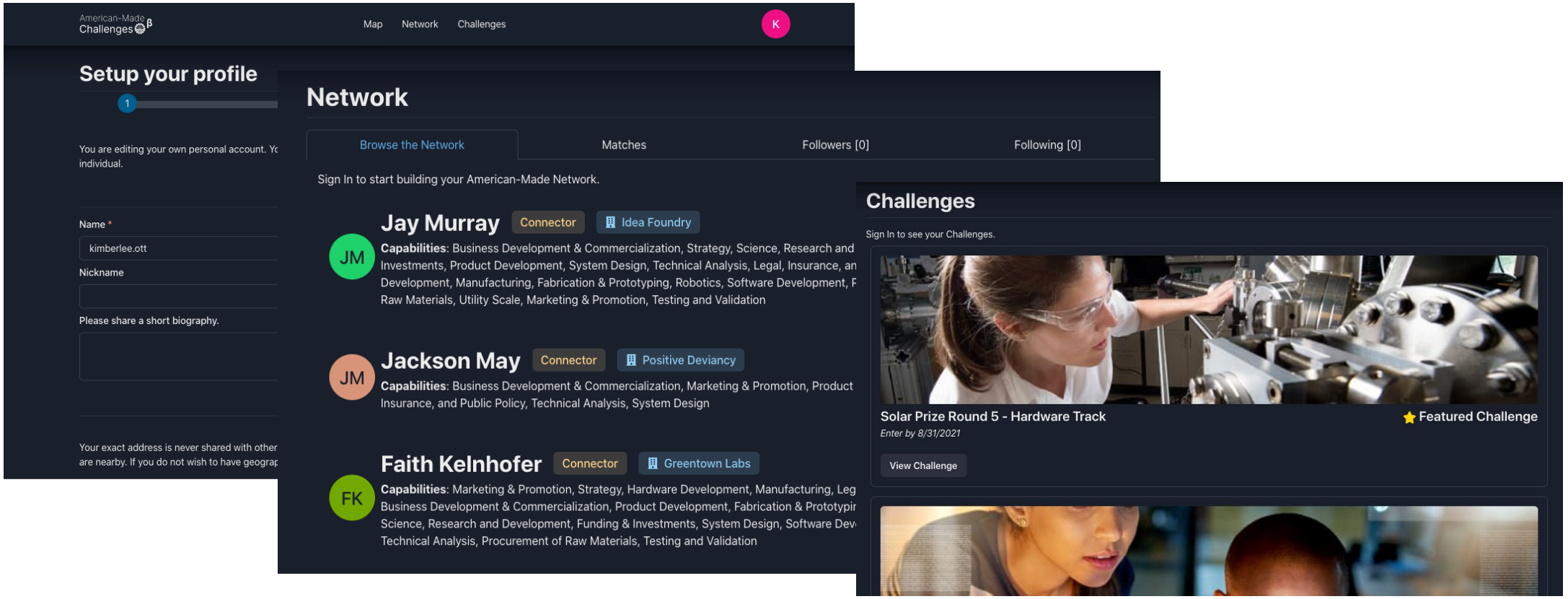
Power Connectors

None 1-5 6-9 10+

How Do I Find and Connect with a Connector?

Through the Network Matching Tool (also where you generate your TAR)

https://network.americanmadechallenges.org/



Want Even More Help? Reach Out to a Power Connector

Carnegie Mellon University
Wilton E. Scott Institute
for Energy Innovation

NEWLAB

THE UNIVERSITY OF ARIZONA
CENTER FOR
INNOVATION

CLEAN ENERGY
BUSINESS NETWORK

ADL VENTURES

For the JEDI Contest specifically:

NEW ENERGY
NEXUS

HALVATZIS & ASSOCIATES, LLC

What's Next?

1. Follow the challenges on HeroX
   https://www.herox.com/solarprizeR5hardware
   https://www.herox.com/solarprizeR5software

1. Read the rules
   https://americanmadechallenges.org/solarprize/docs/rules/r5/American-Made_Solar_Prize_Rules_Hardware.pdf
   https://americanmadechallenges.org/solarprize/docs/rules/r5/American-Made_Solar_Prize_Rules_Software.pdf

2. Sign up in the Matching Tool and connect
   https://network.americanmadechallenges.org/

1. Start innovating

2. Apply by **October 5.**

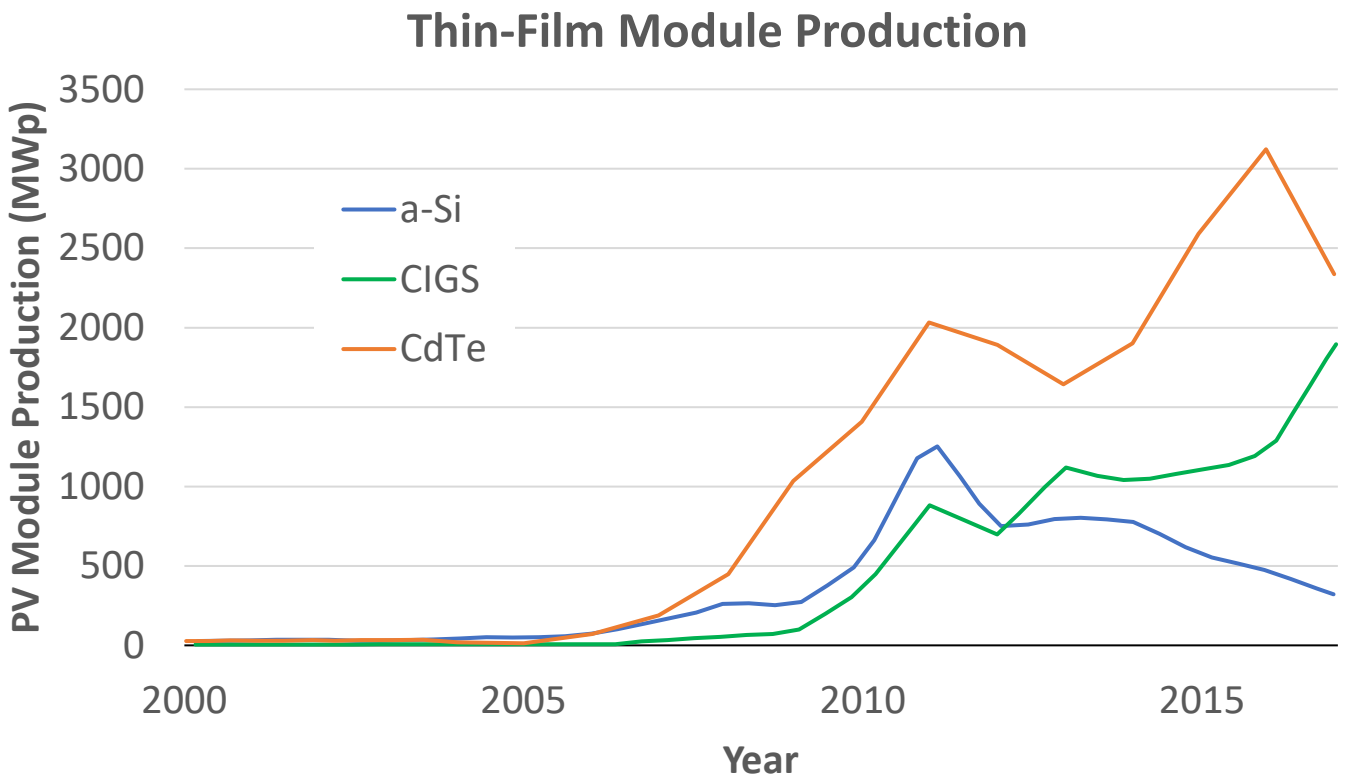
QUESTIONS?

Email: solar.prize@nrel.gov

U.S. DEPARTMENT OF ENERGY

www.americanmadechallenges.org/solarprize

NANO
SPRAY



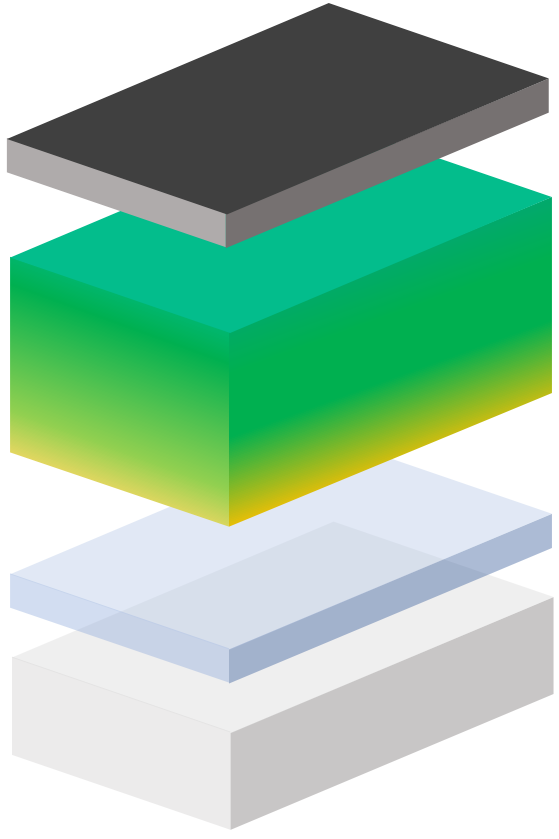
Cadmium Telluride

CdTe PV is a rapidly growing sector of the PV market

>5% of global PV with growing domestic manufacturing

Feldman, David, Eric O'Shaughnessy, and Robert Margolis. "Q3/Q4 2019 Solar Industry Update," n.d., 56.

CdTe PV is held back by the performance of the *back contact*



Back Contact

CdTe
Absorber

Transparent
Front Contact

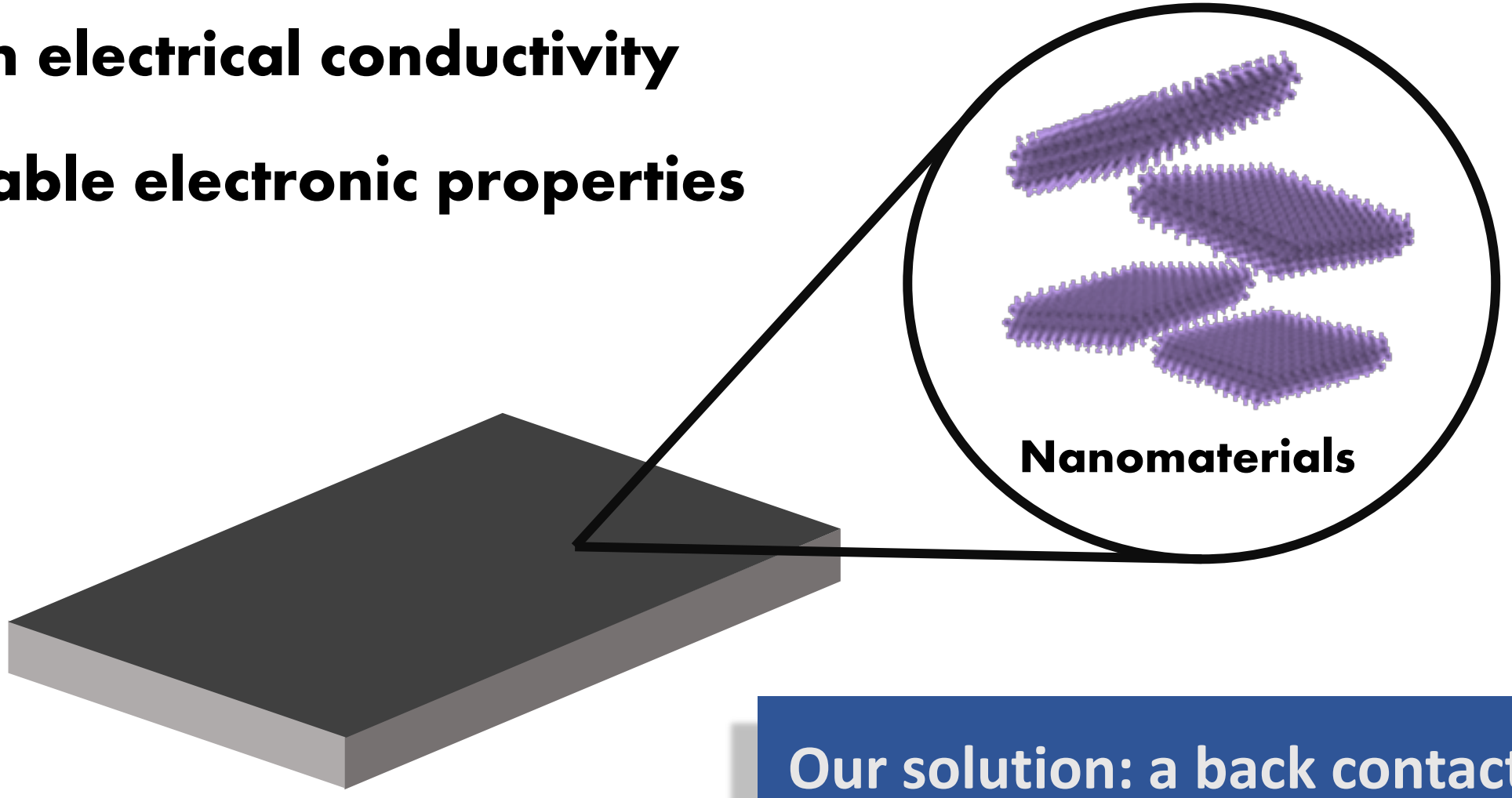
Glass

Poor Electricity Collection

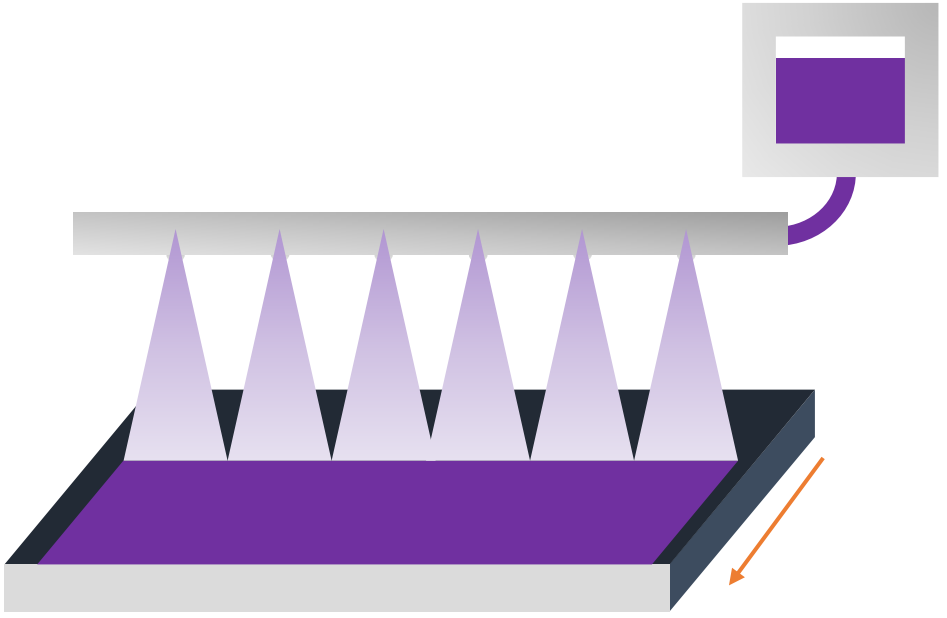
High cost of Fabrication

High electrical conductivity

Tunable electronic properties



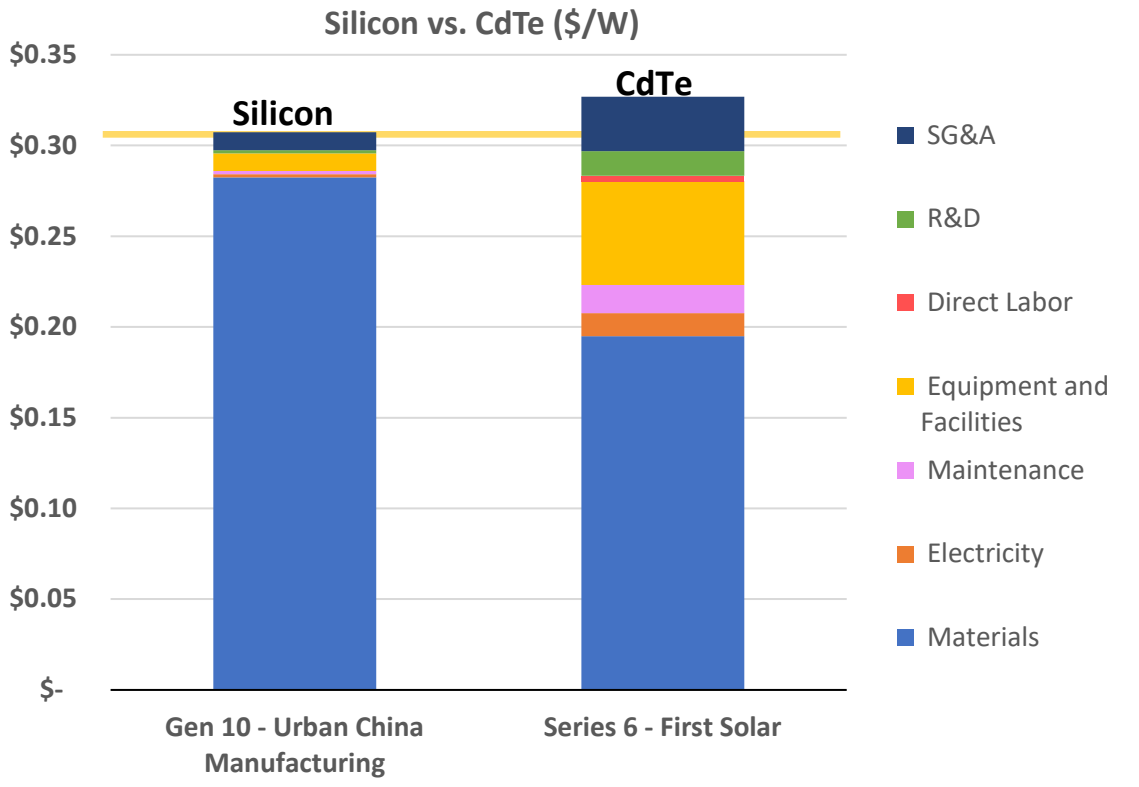
Our solution: a back contact using specially engineered nanomaterials

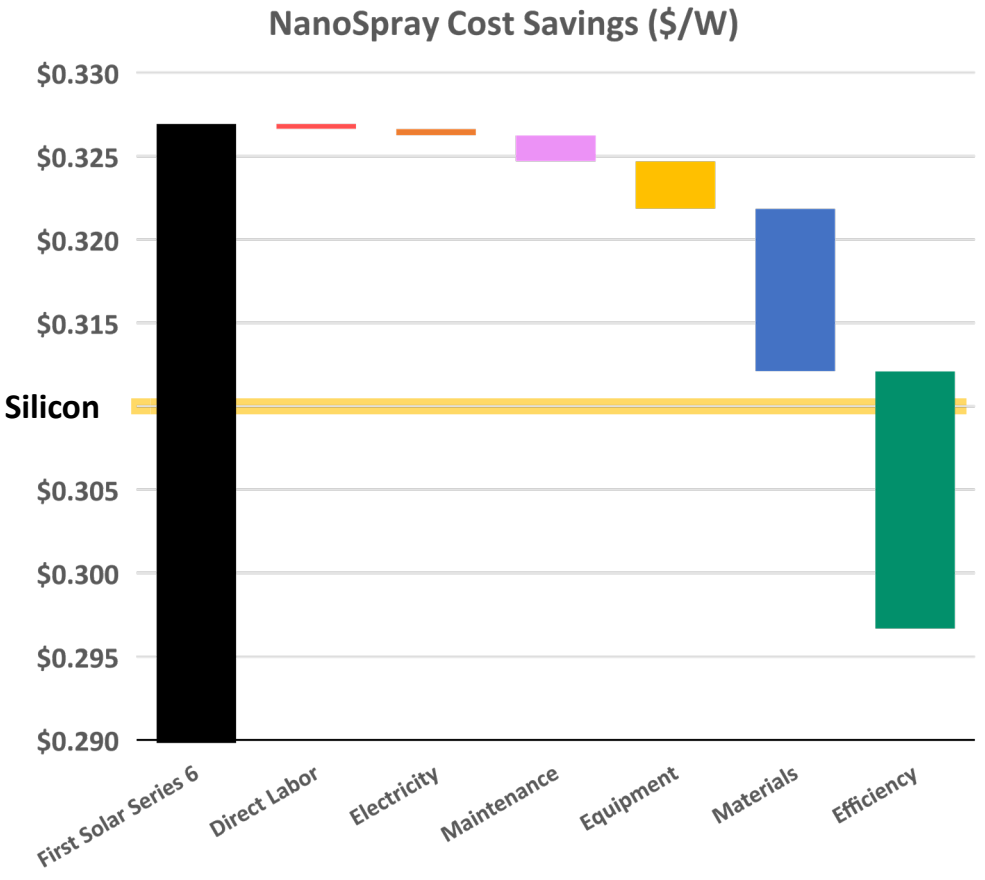


NanoSpray Coater

NanoSpray Inks

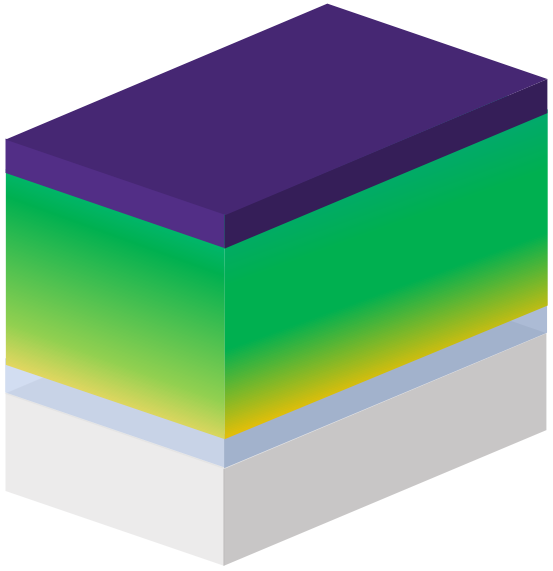
Our products: conductive inks for back contact production and the means to deposit them





$300 Million in annual value to CdTe Manufacturers, bringing the cost of CdTe PV below that of silicon

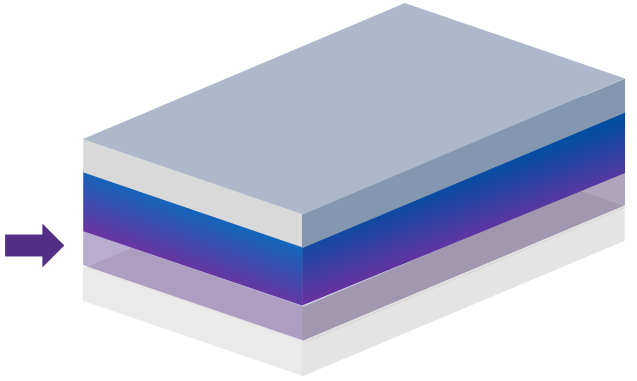
Beachhead Market



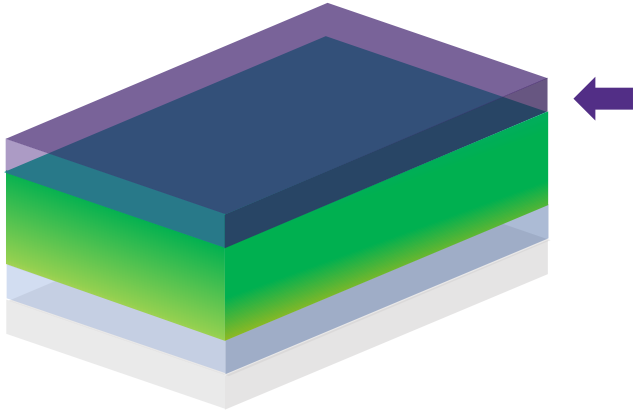
CdTe Back Contact

Future Markets

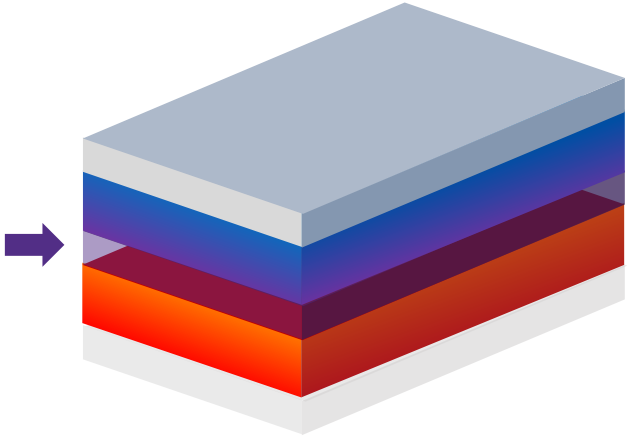
Silicon, Perovskites, CIGS



Transparent Front Contact



Semi-transparent Back Contact (Bifacial)



Tandem Recombination Junction

NanoSpray Leadership

CEO
Ed Sartor

COO
Jason Lipton

Co-founder
Jason Röhr

Technical and Business Advisors

Andre Taylor

Rebecca Silver

Al Compaan

Howard Branz

Steven Wood

Work completed in collaboration with:

TOLEDO SOLAR™

THE UNIVERSITY OF ARIZONA CENTER FOR INNOVATION

NREL National Renewable Energy Laboratory

NYU

AMERICAN MADE CHALLENGES™

U.S. DEPARTMENT OF ENERGY