EESI
Environmental and Energy Study Institute

Materials will be available at:
www.eesi.org/093020workforce

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CONGRESSIONAL BRIEFING

Low-Carbon Small Business and Post-COVID Recovery

Briefing Series: Workforce Wednesdays

Wednesday, September 30, 2020

About EESI...

EESI
Environmental and Energy Study Institute

NON-PROFIT

Founded in 1984 by a bipartisan Congressional caucus as an independent (i.e., not federally-funded) non-profit organization

NON-PARTISAN

Source of non-partisan information on environmental, energy, and climate policies

DIRECT ASSISTANCE

In addition to a full portfolio of federal policy work, EESI provides direct assistance to utilities to develop “on-bill financing” programs

SUSTAINABLE SOCIETIES

Focused on win-win solutions to make our energy, buildings, and transportation sectors sustainable, resilient, and more equitable

...About EESI

EESI
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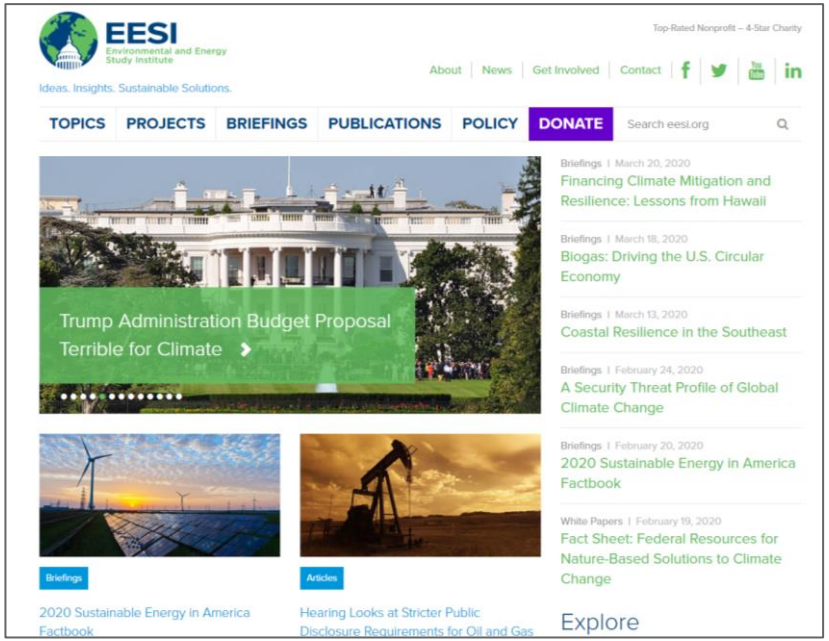

HILL BRIEFINGS

Video recordings and written summaries of Congressional briefings

CLIMATE CHANGE SOLUTIONS

Bi-weekly newsletter with all you need to know including a legislation tracker

SOCIAL MEDIA (@EESIONLINE)

Follow us on Twitter, Facebook, LinkedIn, Instagram, and YouTube

FACT SHEETS

Timely, science-based coverage of climate and clean energy topics

BUILDING PERFORMANCE ASSOCIATION

Invest in Energy Efficiency to Create Local Jobs & Restart the Economy

Building a Skilled Green Workforce, Supporting Small Businesses, Improving America's Buildings

EESI Workforce Wednesday Briefing

Leticia Colon de Mejias
Owner, Energy Efficiencies Solutions
Policy Co-Chair, Building Performance Association

September 30, 2020

BUILDING PERFORMANCE ASSOCIATION

Energy Efficiency Jobs in America: Prior to the Pandemic

- ***2.3 million*** Americans worked in energy efficiency in 2018.
- **Largest and fastest growing jobs sector in the energy industry**, representing ¼ of all U.S. energy jobs. 7.8% growth was projected for 2019.
- **Small businesses**: 79% of companies had fewer than 20 employees.
- **Local jobs** across the country – in virtually every county in the U.S.

BEYOND THE BIG CITIES

317,890
Americans living in rural areas work in energy efficiency

308,375
U.S. energy efficiency jobs are in counties with fewer than 100,000 residents

1 Million+
energy efficiency jobs are outside America's top 50 metro areas

E4TheFuture, 2019 Energy Efficiency Jobs in America Report https://e4thefuture.org/new-report-energy-efficiency-workforce-grows-to-over-2-3-million/

COVID-19 Impacts on Jobs

- Cumulative **345,000 energy efficiency jobs lost** since pre-COVID (nearly 15% of workforce)
- Job recovery stalled despite state reopenings (0.4% growth in August)
- Over 40 states have double digit unemployment in the energy efficiency sector

Research memos on COVID job impacts available here:
https://e4thefuture.org/clean-energy-jobs-august-2020-brings-anemic-growth-worrisome-trend/

Energy Efficiency = Job Creator, Economic Stimulus

- New report: energy efficiency stimulus can jump-start America's economic recovery
- If Congress appropriated $60.7 billion for the energy efficiency sector, it would:
  - add ***$254.7 billion to U.S. economy***
  - create ***737,200 full-time jobs***

Report available here; https://e4thefuture.org/wp-content/uploads/2020/07/E2E4-Build-Back-Better-Faster-Stimulus-Projection-Report-July2020.pdf

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Economic Development that Works

- EES is a SMWOB, employs 22 people who were unemployed or underemployed
- We have trained over 120 people for local EE workforce and plan to train more.
- Long term career paths, from entry level jobs to office jobs, planners, COO, and CEO roles.
- As we grow EE in our nation, we grow EE jobs.
- If your town has buildings with a B then you can develop EE jobs. We have jobs for everyone.

What we need to grow:

- DOL codes = ensure EE jobs are recognized for the benefits they offer the economy and workforce development
- Create funding resources to train a growing workforce.
- Lack of trained workforce
- Lack of knowledge of this growing industry

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HOPE for HOMES Act of 2020

- Bipartisan and bicameral (H.R. 7325/S.4052). Included in the recently passed *H.R.2 INVEST in American Act* and *H.R. 4447 the House Energy package*.
- **Home Online Performance-Based Energy-Efficiency (*HOPE*) Training - $500 Million**
  - Immediate support for small businesses; equitable access to training
  - Grants for provider organizations to develop online training curriculums
  - Provide up to $10,000 to contracting companies to cover training costs for rehired/retained employees
  - $1,000 stipend for contractors who complete HOPE Training
- **HOMES Rebate Program - $6 Billion**
  - Rebates to homeowners who invest in energy efficiency upgrades (up to $4,000 based on energy savings)

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Workforce Grants for Small Businesses

- **Blue Collar to Green Collar Jobs Development Act of 2019** (H.R. 1315) – Would establish an ***Energy Workforce Grant Program*** to assist businesses seeking to educate and train new hires and existing employees in the energy efficiency and renewable energy industries.

Similar legislation:

- **Clean Energy Jobs Act of 2019** (S. 2393) – Grant program to support on-the-job training in energy efficiency and renewable energy.
- **American Energy and Innovation Act** (S.2657) – includes a similar energy workforce grant program in the Workforce Title.
- **Green Neighborhoods Act of 2020** (H.R. 8021) – grants for training via registered apprenticeship programs

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Other Policy Opportunities to Expand EE

- **Weatherization Enhancement and Local Energy Efficiency Investment and Accountability Act - S. 983/H.R. 2041**
  - Reauthorizes DOE Weatherization Assistance Program (WAP) and uses TnTA monies to support workforce training.
- **Robust appropriations for important DOE efficiency programs**
  - WAP
  - State Energy Program
  - Building Technologies Office

BUILDING PERFORMANCE ASSOCIATION

Thank you!

Leticia Colon de Mejias
Owner, Energy Efficiencies Solutions
Policy Co-Chair, Building Performance Association
lcolonees@gmail.com

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Workforce Wednesday Briefing

Low-Carbon Small Business & Post-COVID Recovery

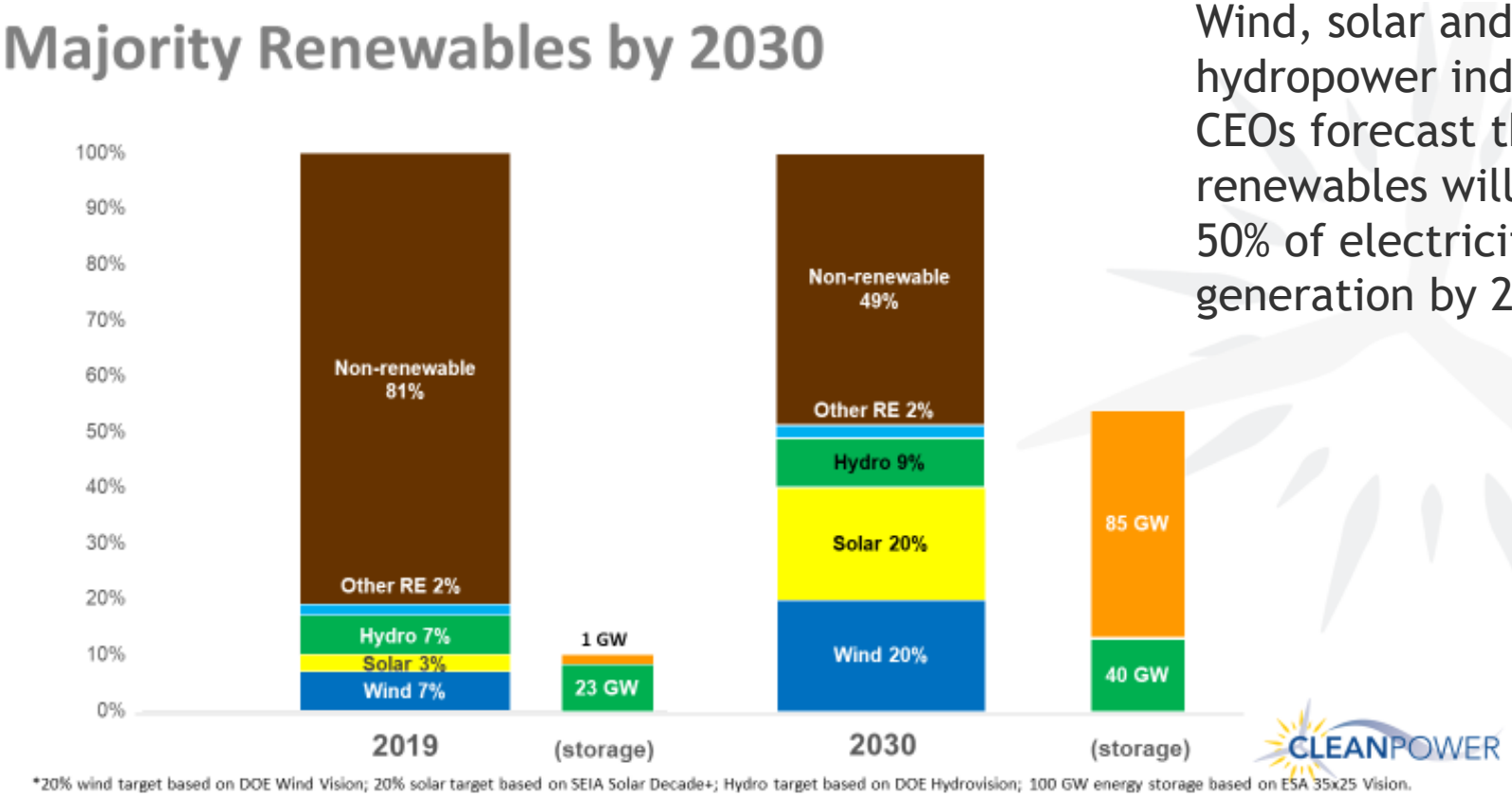
September 30, 2020

ORPC

Stuart Davies, CEO

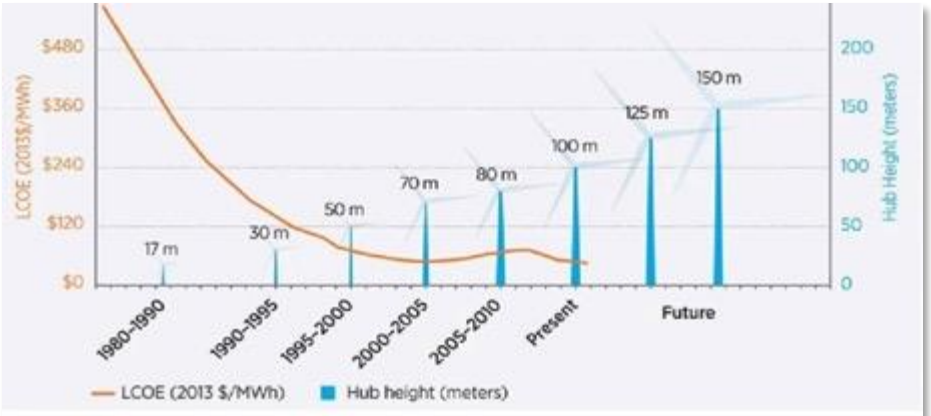
Improving people's lives, and their environment, through sustainable energy solutions

Growth in Renewable Energy



Wind, solar and hydropower industries' CEOs forecast these renewables will reach 50% of electricity generation by 2030.

The challenge for wind and solar is that they can't fully replace baseload power and are already forecasting massive growth in storage.



Cost Reductions

Like wind and solar, the costs of marine hydrokinetic (MHK) energy will reduce quickly.

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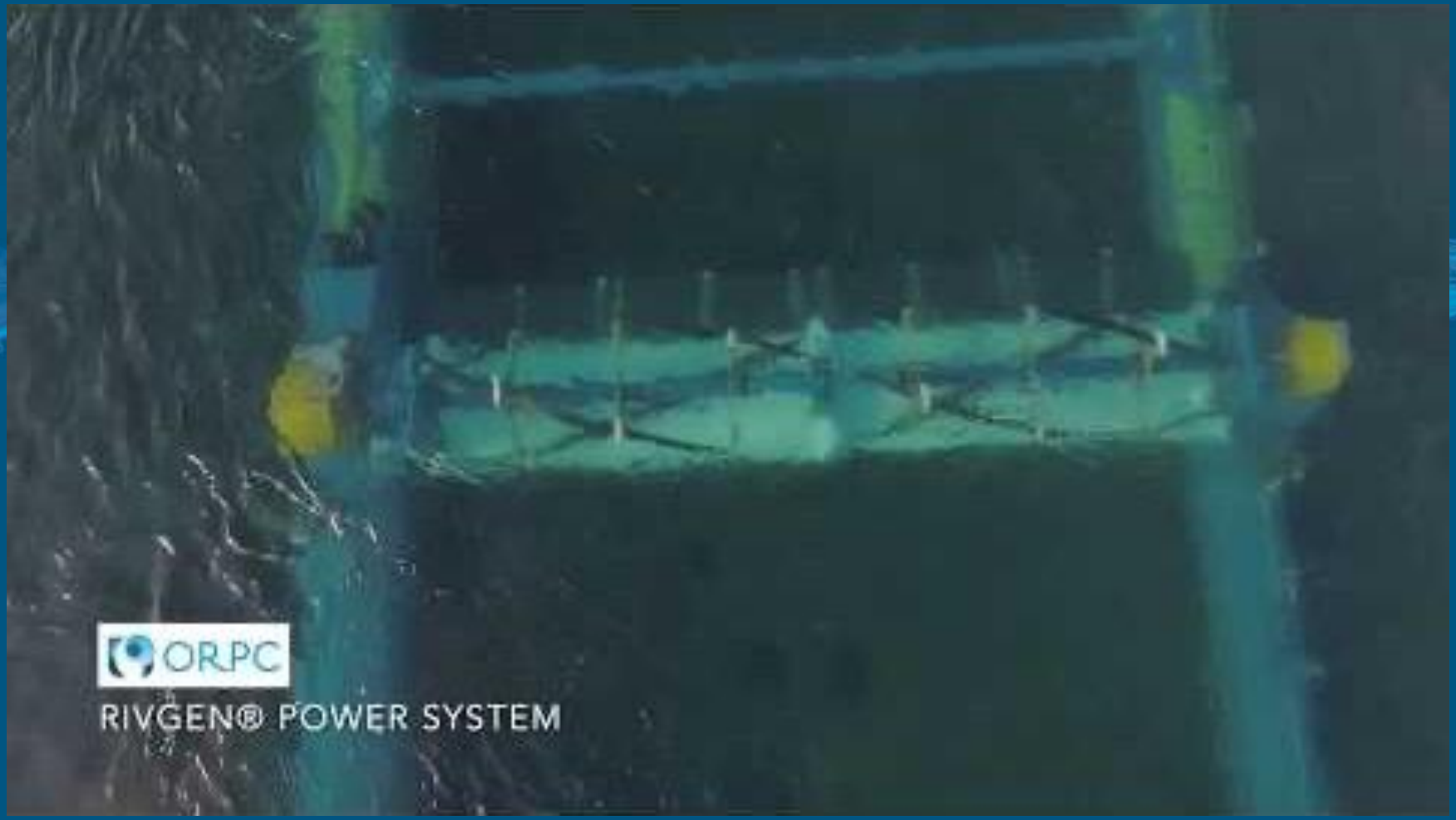
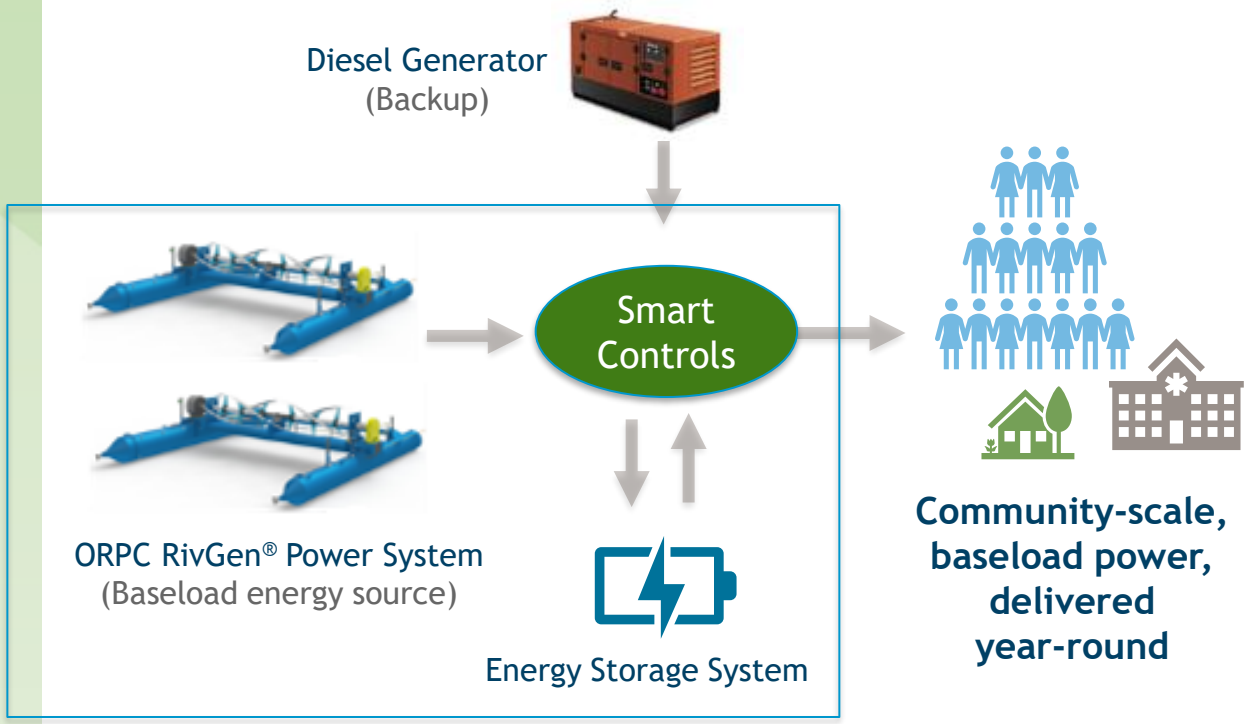


https://youtu.be/BgNXgPpK2Co

The RivGen Power System provides baseload renewable energy from free-flowing rivers and tides.

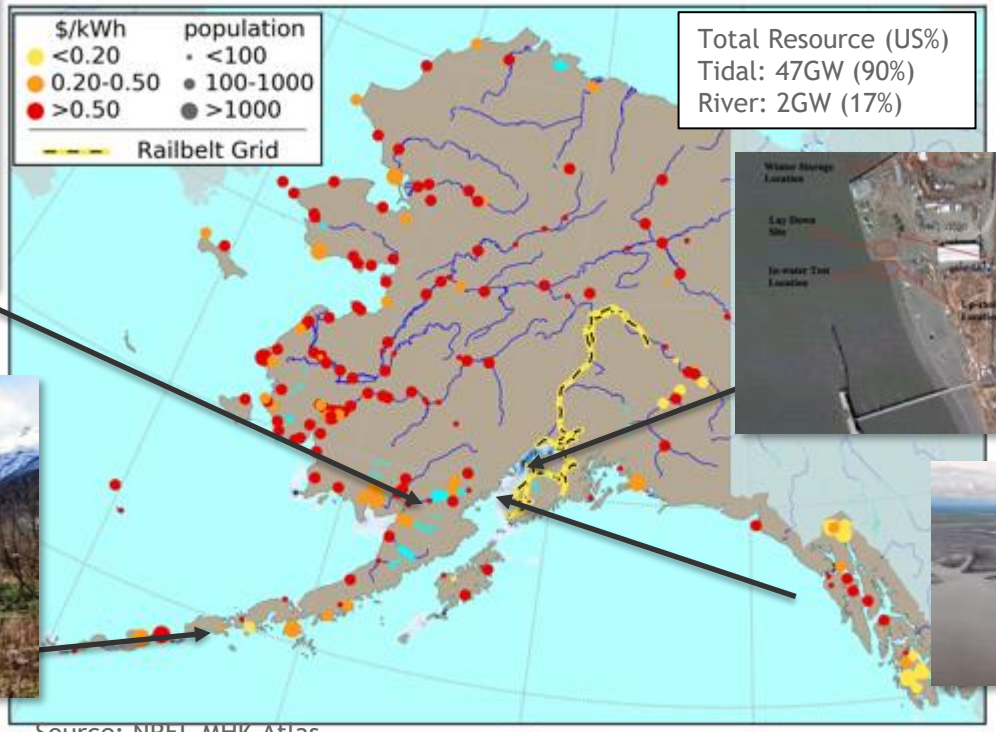
- A RivGen-powered smart microgrid can relegate diesel generators to backup only.
- RivGen® provides constant, predictable power (baseload).
- Energy storage and smart controls, coupled with RivGen® baseload power, allow incorporation of intermittent sources like wind and solar.



USA/Alaska - Areas of Focus (2020)

Igiugig

False Pass



Source: NREL MHK Atlas

East Foreland

Cook Inlet

ORPC is very active in Alaska and successful development of this industry will create good, middle-class jobs.

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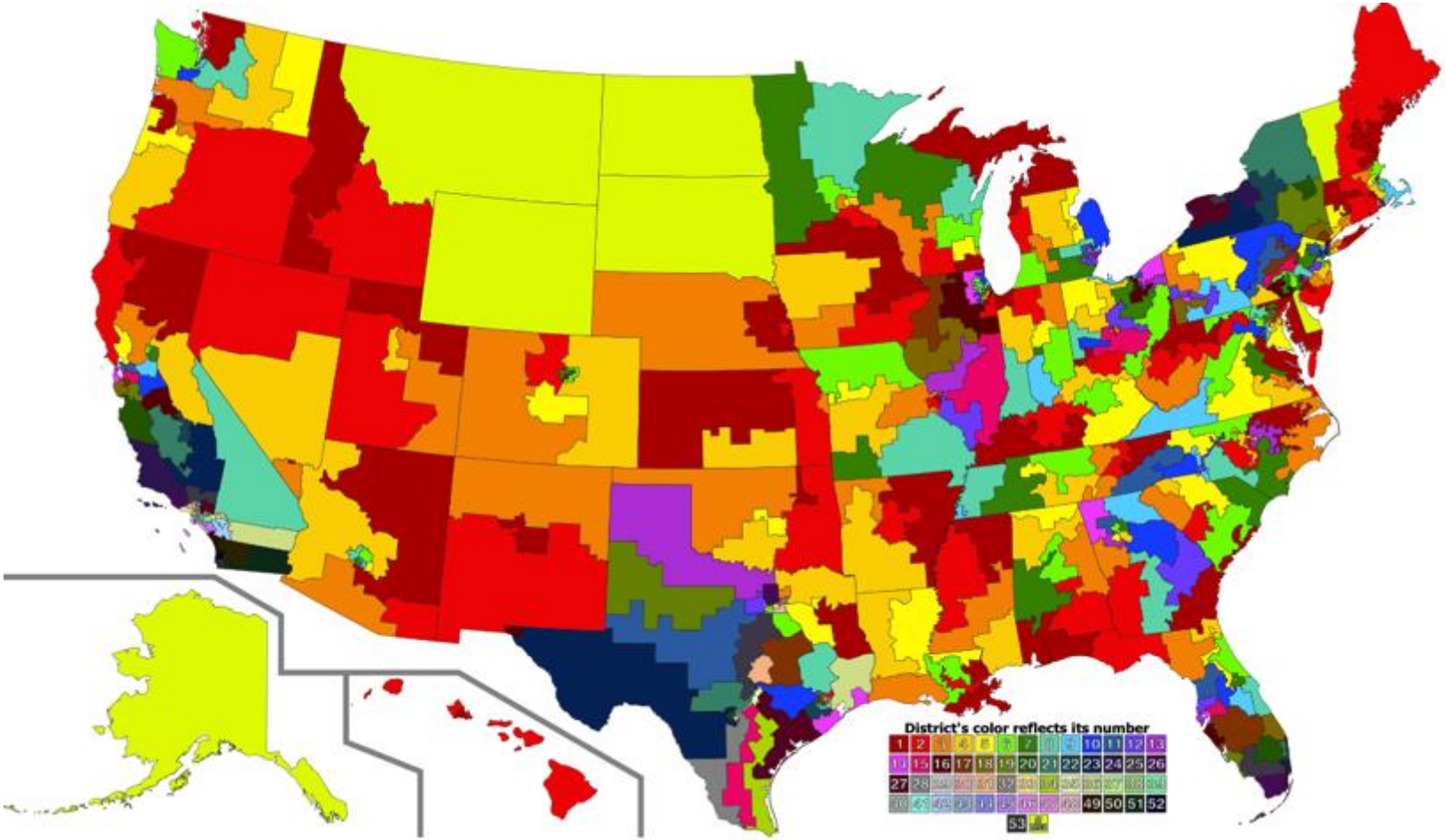
Many people imagine this when they think of the Lower 48.

ORPC

And some of you might see this…



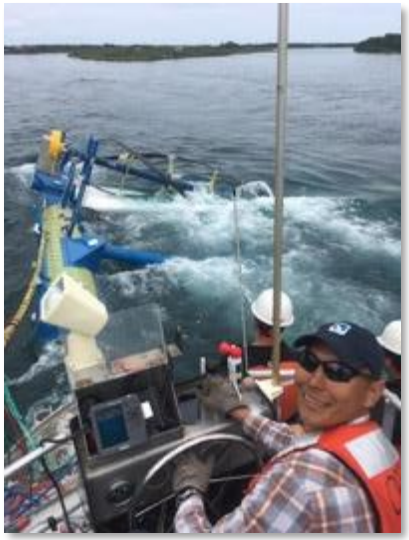
ORPC

…and ORPC sees this.

The latest research suggests that the Lower 48 has enough river energy to power over 100 million people.

Potential for Hundreds of Thousands of Jobs

Remote Communities



U.S Marine Industry

U.S. Manufacturing

U.S Manufacturing and Marine Industry Can Scale Quickly

ORPC

Major Export Opportunity for U.S. Manufacturing

- 500,000 people
- Paying more than $0.40/kWh for power
- Located near robust tidal & river resources
- $15 billion Market

Chile and Canada

Worldwide

- 1.5 billion people
- Market Size 250 billion

ORPC

The EU Sees MHK's Job-Creating Potential

EU governments allocating €670 million from 2021 to 2025 to dominate ocean energy industry (similar to how they created jobs in wind industry).

EU 2050 Forecast

€53B
Annual Revenue

400,000
Jobs Created

100 GW
10% of EU Electricity

EU-recommended policies emphasize putting devices in the water to create supply chains and drive down manufacturing costs.

Source: European Technology & Innovation Platform: Strategic Research and Innovation Agenda for Ocean Energy May 2020

MHK Industry Needs Funding to Get Devices in Water & Create Jobs

Wind and solar received $75 billion in subsidies over the past 10 years which helped create 500,000+ jobs.

Community Grants

- Provide Direct Funding
- Enable Communities to Buy & Test Devices

Loan Funding/ Guarantees

- Amend Title XVII
- Create $500M Basket for $2M to $10M Projects with Lower Approval Costs

Tax Incentives

- Keep ITCs & Opportunity Zones
- Keep Programs in Place & Treat MHK Same as Solar/Wind

ORPC

Thank You!

Stuart Davies, CEO

sdavies@orpc.co

azavea

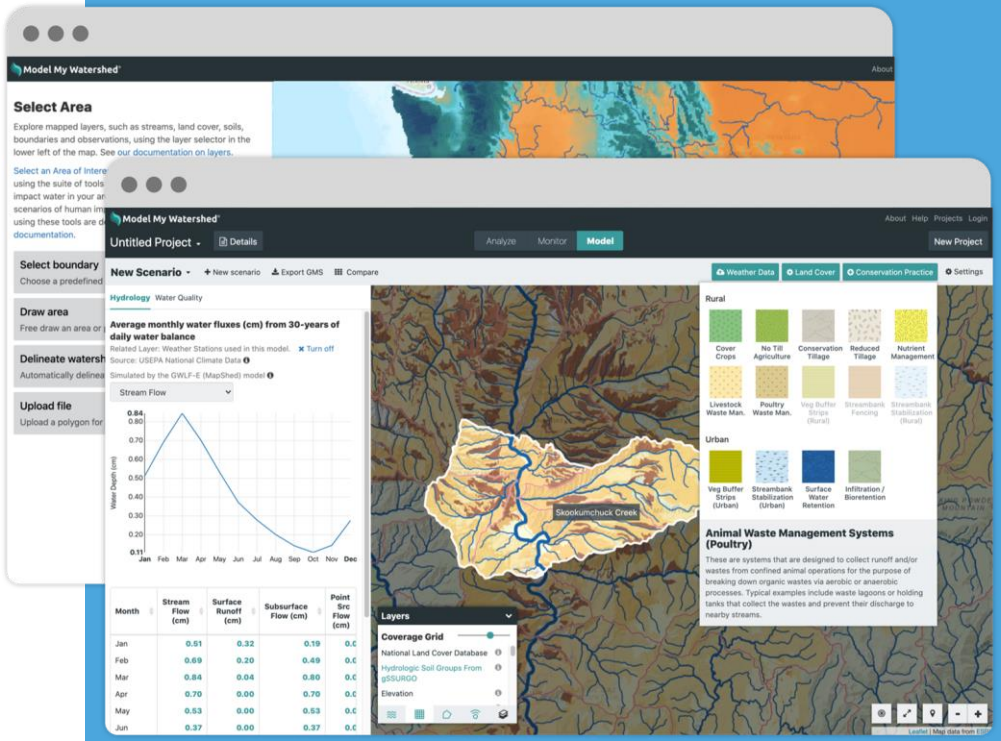
EESI - Low-Carbon Small Business and Post-COVID Recovery | 09/30/2020 | @azavea

Supporting Small Businesses with SBIRs

Jessica Cahail (she/her)
Product Manager, Temperate / Raster Foundry
jcahail@azavea.com

About Azavea

- 50 person small business
- Philadelphia based
- We build technologically advanced solutions for geospatial data visualizations and analysis



Our Mission

Advance the state of the art in geospatial technology and apply it for civic, social and environmental impact.

SERVICES WE OFFER

- Software Engineering
- User Experience Design
- Data Analysis & Visualization
- Machine Learning & AI
- Code & Architecture Review
- Research & Development

AREAS OF EXPERTISE

- Civic engagement
- Climate change
- Conservation
- Disaster Risk Management
- NewSpace
- Transportation
- Remote Sensing


COMMUNITY
WORKERS
ENVIRONMENT
GOVERNANCE
CUSTOMERS
Certified
B
Corporation


USING
BUSINESS
AS A
FORCE FOR GOOD
MEET the B CORPS
BEN & JERRY'S
new resource bank
HAPPYFAMILY
patagonia
Etsy
dansko
revolution FOODS
WARBY PA
RALLY
NEWCHAP
Ogden
THE HONEST CO.
beneficial st

Small Business Innovation Research Grants

(SBIR)

- https://www.sbir.gov/
- Eligibility
  - US- based for-profit
  - >50% owned/controlled by citizens or permanent resident
  - <500 employees
  - Project must focus on research & development

Goals

- Meet federal **research and development needs**
- Increase private-sector **commercialization** of innovation derived from federal research and development funding
- Stimulate technological **innovation**
- Foster and encourage **participation** in innovation and entrepreneurship by women and socially/economically disadvantaged individuals
- Foster **technology transfer** through cooperative R&D between small businesses and research institutions (STTR)

https://www.sbir.gov/sites/default/files/SBA_SBIR_Overview_March2020.pdf

https://www.sbir.gov/sites/default/files/SBA_SBIR_Overview_March2020.pdf

SBIR Awards

Phase I

10 since 2006

Current example-
flood inundation modeling using synthetic aperture radar

Phase II

8 since 2008

Current example-
hyperspectral imagery processing for oil spill and tree mortality detection

Resulting products

5 products

OpenTreeMap
Raster Foundry
HunchLab
GroundWork
Temperate

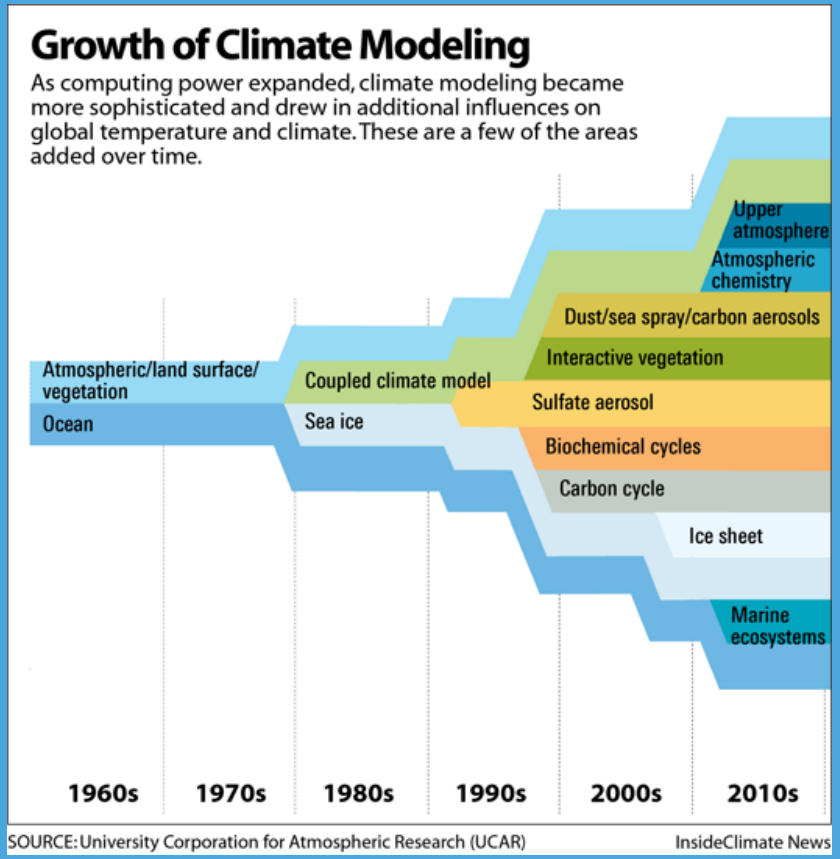
Awarding Agencies

Impact of Awards

- Roughly $7.5m awarded between the agencies over 15 years (avg $500K/yr)
- We've supported a number of engineering positions over the last decade with this funding
- In 2019, our research/tools that began as SBIR projects accounted for more than 40% of Azavea's revenue - commercialization of innovation and additional R&D investment has driven growth of the company
- We default to open source. These projects have led to thousands of lines of open-source code, leading to positive Impacts for countless companies and individuals
- Many awards focus on fast employment growth sectors (e.g., New Space and remote sensing over past 5 years)

Making public data usable

- Temperature and precipitation data from 1950 to 2100 (historic and projected)
- Based on the Intergovernmental Panel on Climate Change (IPCC)'s Coupled Model Intercomparison Project Phase 5 (CMIP5)
- Localized Constructed Analogs (LOCA) for North America
- Global Daily Downscaled Projections (NEX-GDDP) for the remainder
- Two carbon scenarios (RCP 4.5 and RCP 8.5)



https://insideclimatenews.org/content/graphic-growth-climate-modeling

TEMPERATE

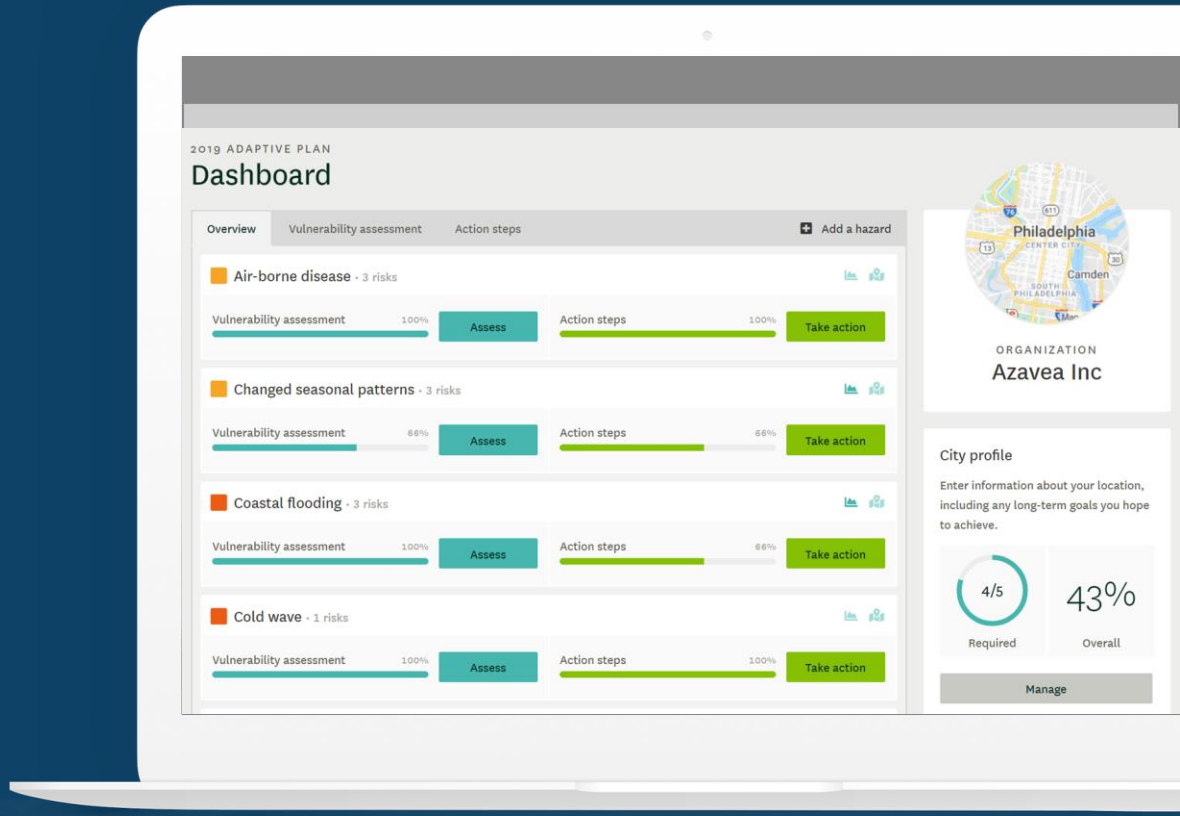
your adaptation planning companion

US Dept. of Energy (DE- SC0011303)
Phase I&II

US Dept. of Agriculture (NIFA-SBIR-006649)
Phase I

azavea

Data in Action
Temperate.io



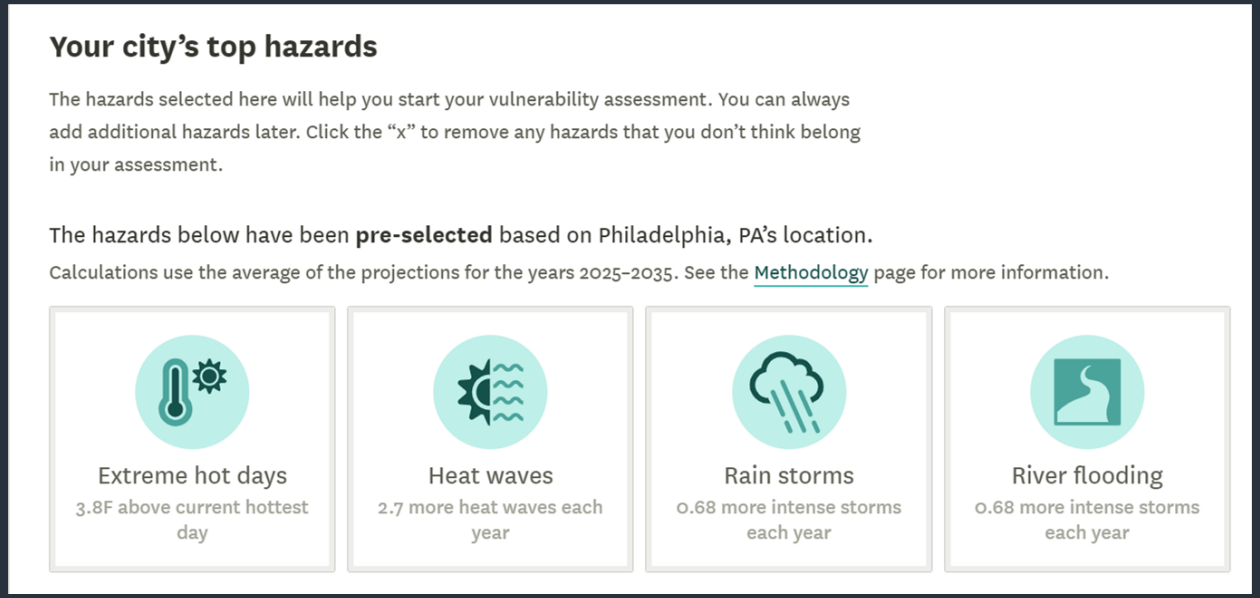
azavea

TEMPERATE

- Low-cost subscription-based decision support tool
- Designed for small- to mid-sized communities with limited planning resources
- Enables generalists to create vulnerability assessments and adaptation plans with confidence
- Addresses a workforce capacity issue that continues to exist as communities can’t afford to focus on sustainability

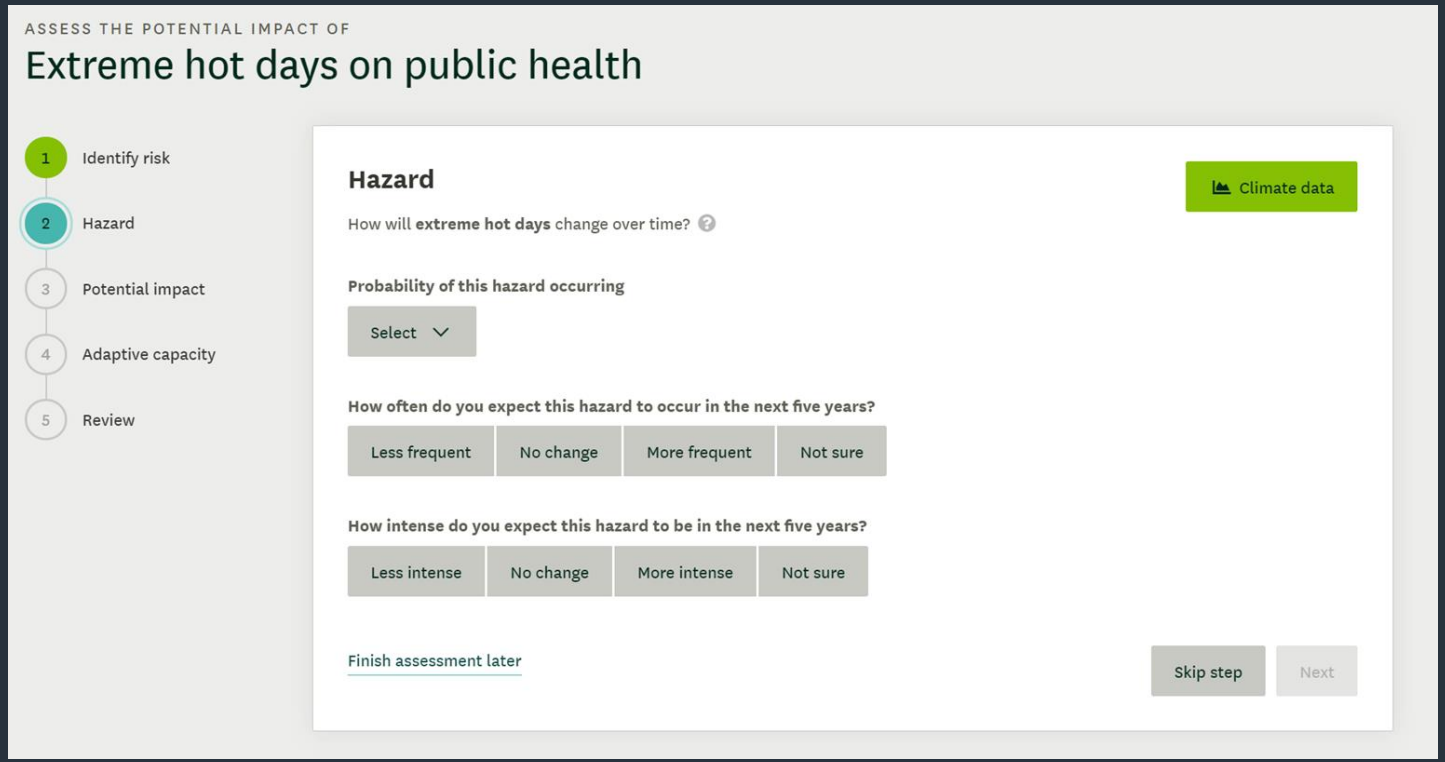
TEMPERATE

Highlight potential priorities



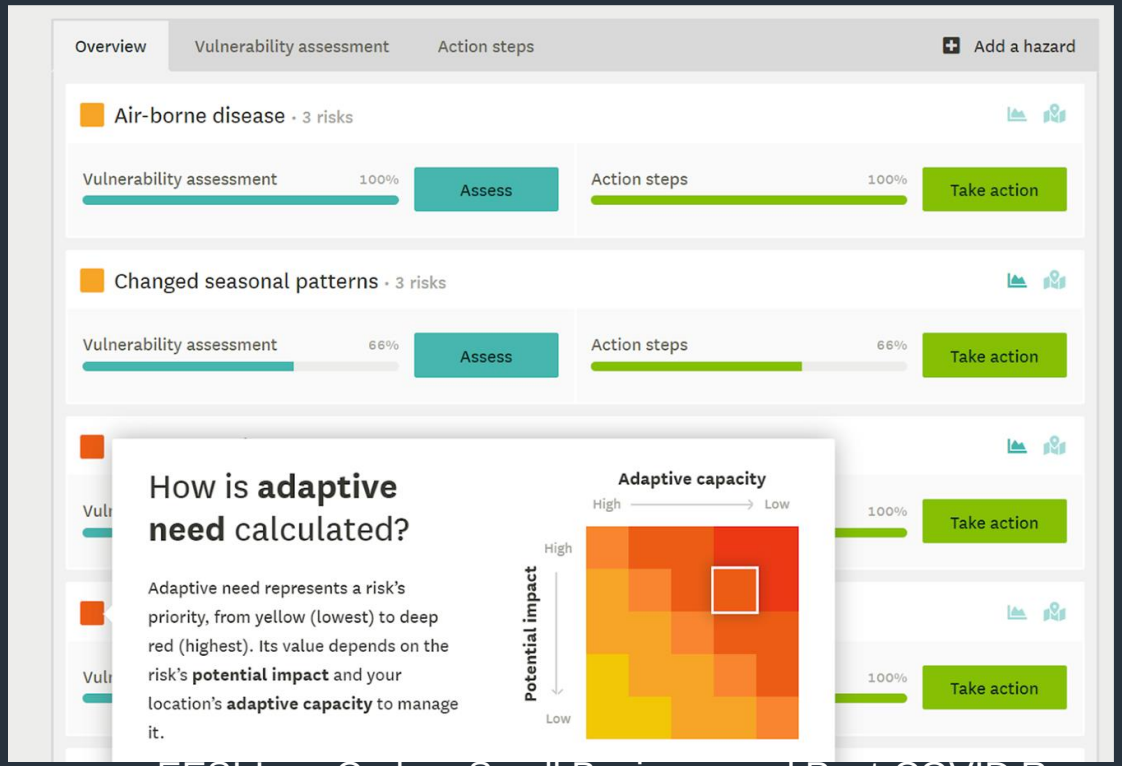
TEMPERATE

Contextualize climate data in decision-making



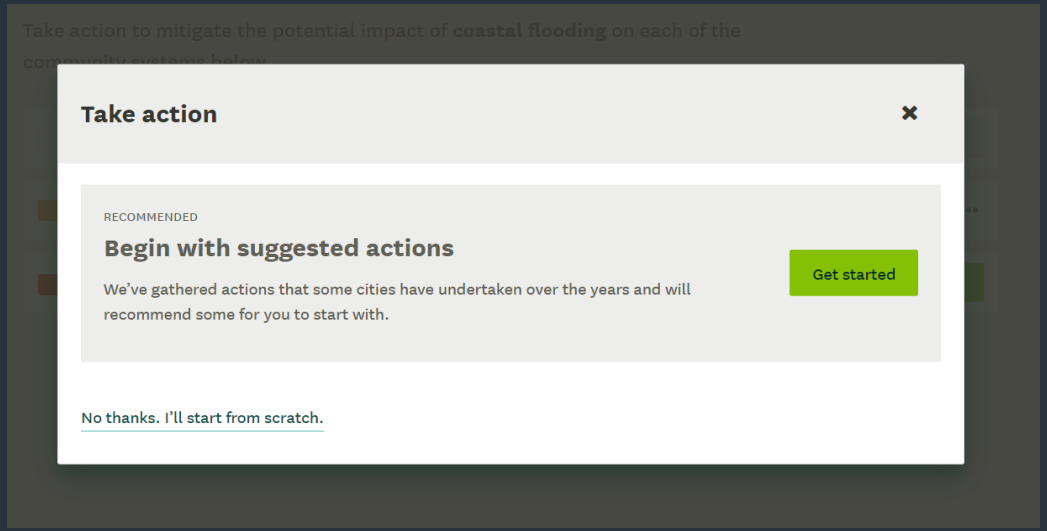
TEMPERATE

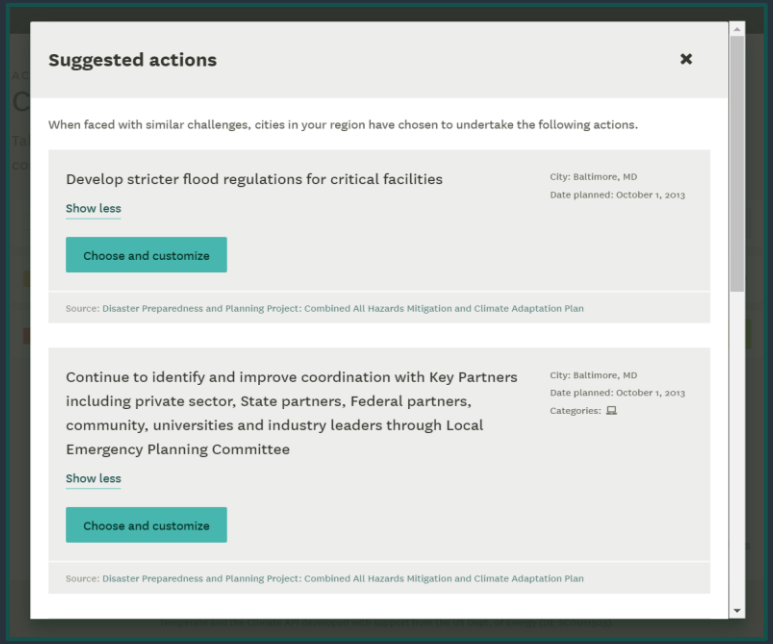
Prioritize action according to assessment



TEMPERATE

Accelerate learning through shared strategies





azavea

For most of the communities we work with, adaptation work has come to a halt.

Impact of COVID

Coronavirus makes investing in climate adaptation more urgent than ever

ARAME TALL | JUNE 10, 2020

This page in: English

2 February 2019 - Bargny, Senegal. A young girl holds her sister. Her house is partly destroyed now because of the rising waters. Photo: Vincent Tremeau/The World Bank

https://blogs.worldbank.org/climatechange/coronavirus-makes-investing-climate-adaptation-more-urgent-ever

“

Building long-term resilience is seldom seen as a priority, least of all during a pandemic. But there is a wealth of evidence to demonstrate that doing so is a smart investment.

ARAME TALL

https://blogs.worldbank.org/climatechange/coronavirus-makes-investing-climate-adaptation-more-urgent-ever

SBIR funding helps companies like Azavea enable communities to build climate resilience. Those funds can impact us all.

Thank you!

Jessica Cahail (she/her)
jcahail@azavea.com

azavea

EESI
Environmental and Energy Study Institute

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Please take 2 minutes to let us know at:
www.eesi.org/survey

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