

VertueLab

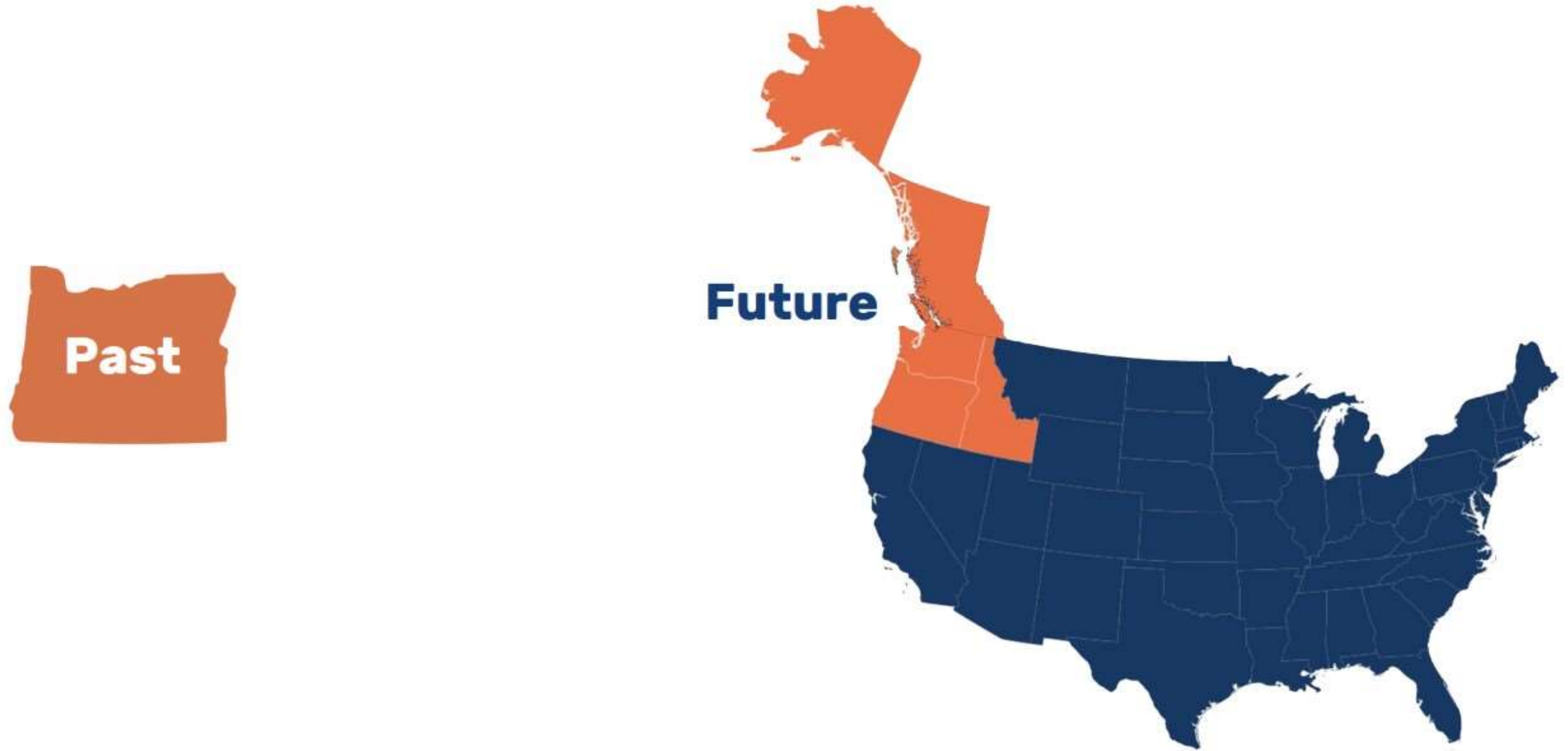
Green Technologies For Good





VertueLab is a climate impact accelerator

Investment Geography



What We Do

VertueLab partners with funders and innovators in clean technologies to make a global environmental impact. Through focused programs and funding opportunities, we advance promising technologies to market and help innovators find the resources they need to move their vision forward.



How We Accelerate Climate Solutions



Holistic Assessment

- Evaluate team & technology quality
- Forecast potential for climate impact
- Evaluate business potential
- Assess diversity, equity, & inclusion
- Identify how VertueLab can help



Long-Term Support

- Mentorship/Coaching
- Cascadia CleanTech Accelerator
- SBIR Grantwriting Assistance
- Connections to other Capital (Government & Private sources)



Specialized Capital

- Informed by expertise
- Patient
- Risk-tolerant
- Impact before returns





Climate change is the challenge of our time

The good news is that the solutions are known
Research tells us new technology is needed



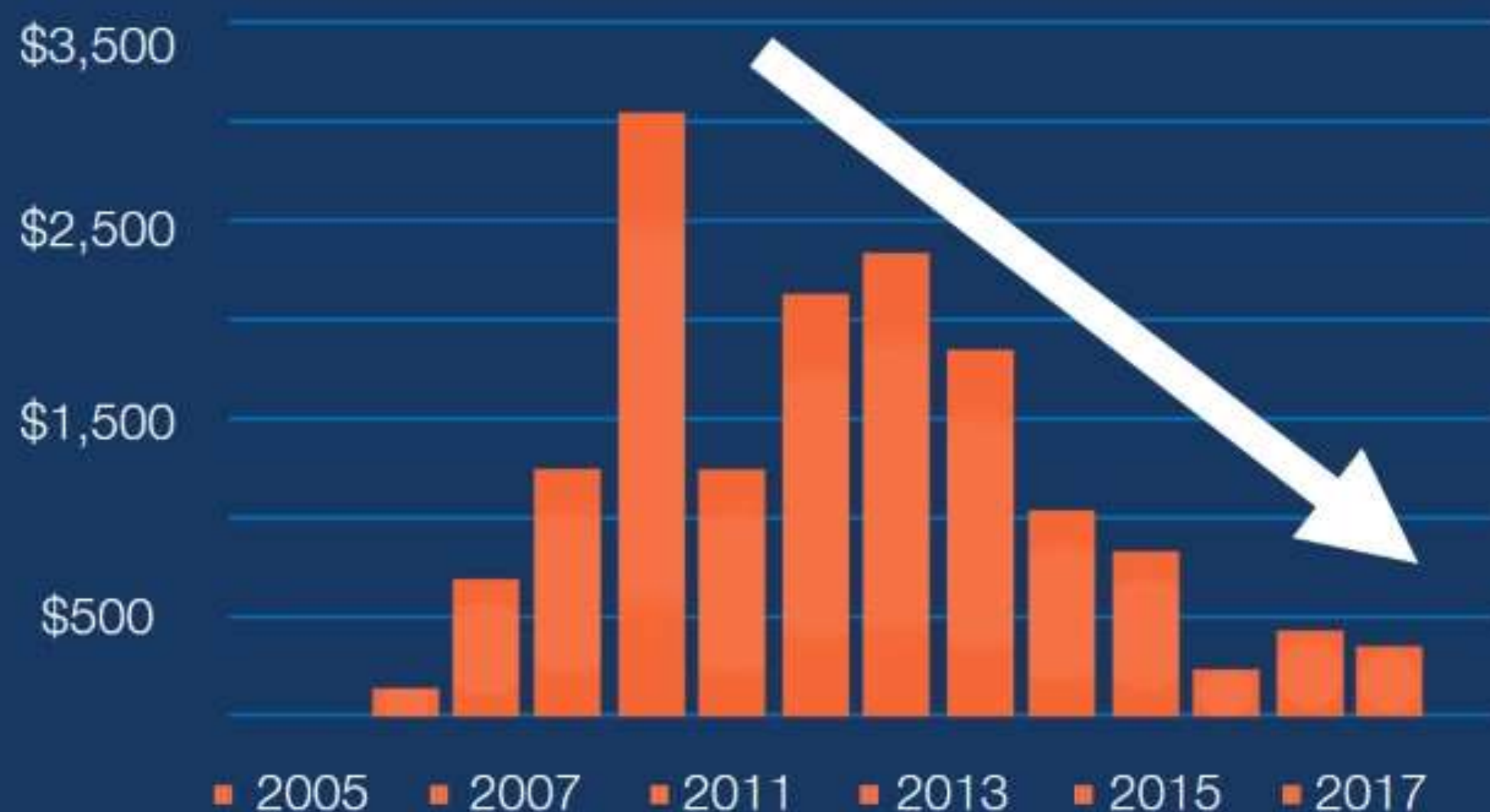


The global seed and pre-seed stage investment needed for climate solutions by 2050

\$14.38 billion

State of Climate Impact Funding

Climate change solutions are vastly underfunded in both investment and philanthropy initiatives



Venture Capital into U.S. Cleantech Startups Declining



Based on 2011-2015 giving data from *The State of Global Giving Report 2011-2015*, Foundation Center & The Council on Foundations

Solution: Catalytic capital fills gaps through an approach that accepts disproportionate risk and/or concessionary returns

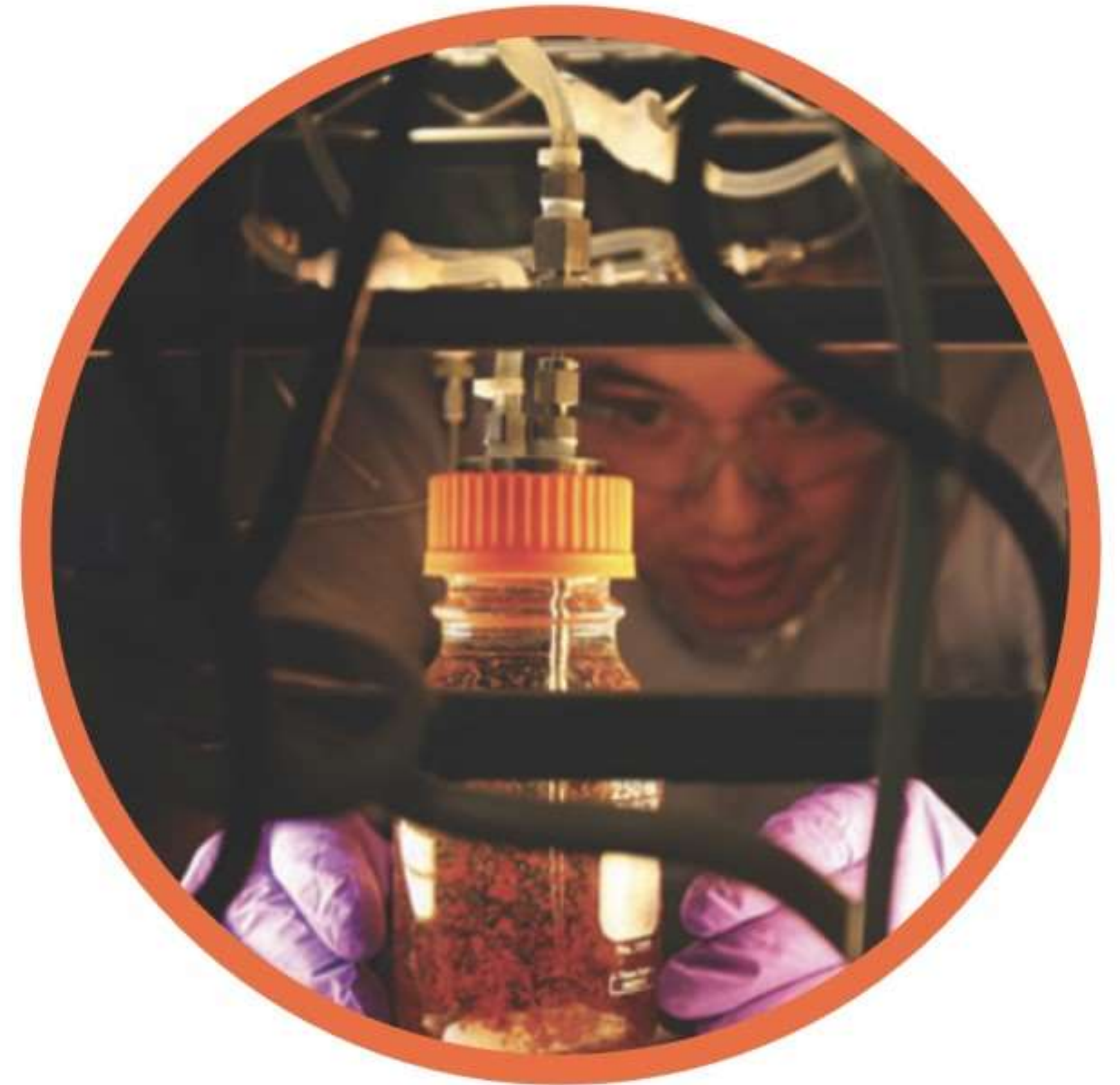
Catalytic Investments

Catalytic capital is investment capital that is patient, risk-tolerant, concessionary, and flexible in ways that differ from conventional investment.

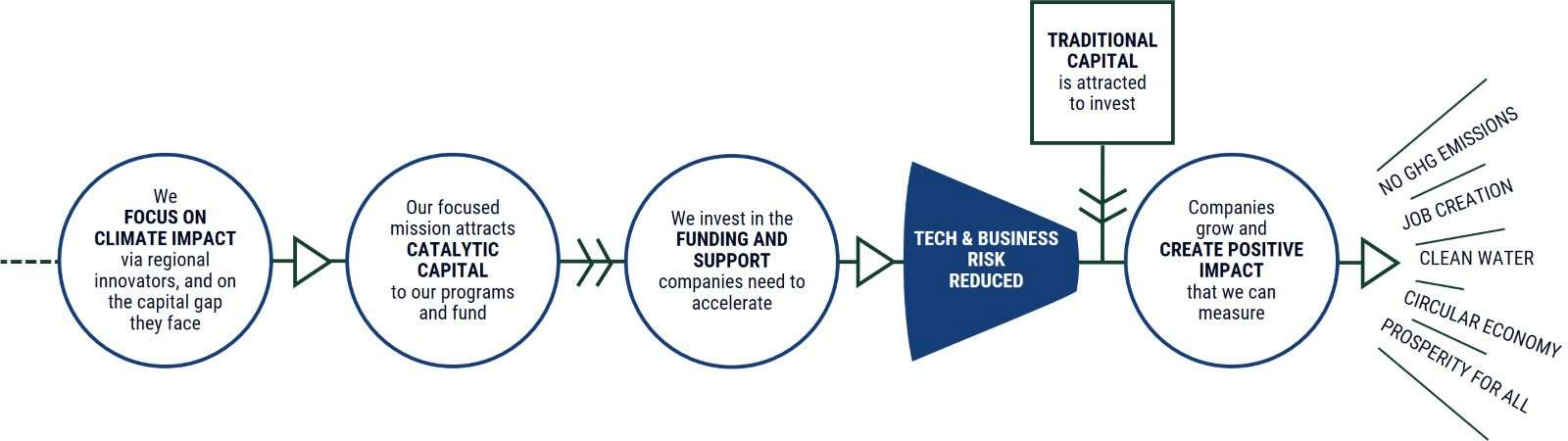


DEBRA SCHWARTZ,
MACARTHUR FOUNDATION

"No longer an idealistic niche, impact investing is becoming a dynamic, diverse market, brimming with optimism and confidence."



VertueLab's Theory of Change





Without more **catalytic capital** available, critical technology solutions that can **reverse climate change** will never have a chance



Grid-scale redox flow battery with all-iron electrolyte chemistry

- Company founded in 2011
- DOE Research grant in 2013 – **VertueLab provided catalytic matching grant**
- First units sold in 2015
- \$13 million raised in Series B in 2018
- Expanded into 100k square feet manufacturing space
- Entered global markets
- \$30 million raised in Series C in 2019



Bill Gates-backed fund leads Wilsonville battery maker's \$30M raise

Oct 28, 2019, 1:00pm PDT Updated: Oct 28, 2019, 5:45pm PDT

A clean-tech fund spearheaded by Bill Gates and backed by a roster of fellow billionaires is getting behind the Wilsonville battery company ESS Inc.

ESS, maker of an underdog type of battery used for large-scale energy storage, said Monday it raised \$30 million in a Series C round. The round was led by the Breakthrough Energy Fund, launched by Gates in December 2016, and SoftBank Group's SB Energy.



ESS co-founders Craig Evans and Dr. Julia Song have now raised \$47 million to scale up production of their battery-in-a-box system.



opconnect[®]

Electric Vehicle Charging System

Accelerating the adoption of electric vehicles by transforming the vehicle charging experience

- Company founded in 2012
- **VertueLab funding for testing (2016)**
- **VL funded mentorship with Entrepreneur-in-Residence (2017)**
- Early demonstration project with Hawaiian Electric (HECO)
- Focus on 3 key markets:
 - Multi-family residential
 - Workplaces
 - Fleets
- Go-to-market partnership with Clipper Creek



ARCIMOTO

Three-wheeled electric vehicle

- Company founded in 2007
- **VertueLab provided funding for early prototype in 2015**
- Raised \$19 million in 2017 via Regulation A IPO
- Shipped Signature Series and Beta Series in 2018
- Built manufacturing plant in Eugene
- Production units began shipping in September 2019





Mass-customized thermal window inserts

- Company founded in 2010
- **VL introduced research partner at Portland State Univ for first proof of concept tests in 2010**
- **VL provided funding for field testing in 2012**
- **VL funded intern to create a GIS tool for strategic market identification**
- Raised over \$5 in follow-on funding
- Product installed in thousands of homes in the US and Canada, saving homeowners an average of 20% on their home energy bills



“VertueLab’s funding essentially catapulted us into the next phase of our growth; they helped guide our national expansion through their strategic support.” - Sam Pardue



VertueLab was the first in the nation to apply catalytic capital to cleantech innovations and has pioneered a proven model for climate change innovation acceleration

Our track record & performance



The background is a solid orange color. In the top right and bottom left corners, there are partial circular shapes. Each circle has a white border and contains a white topographic map pattern with various contour lines. The text is centered horizontally in the middle of the page.

Cleantech and Job Creation

Manufacturing:

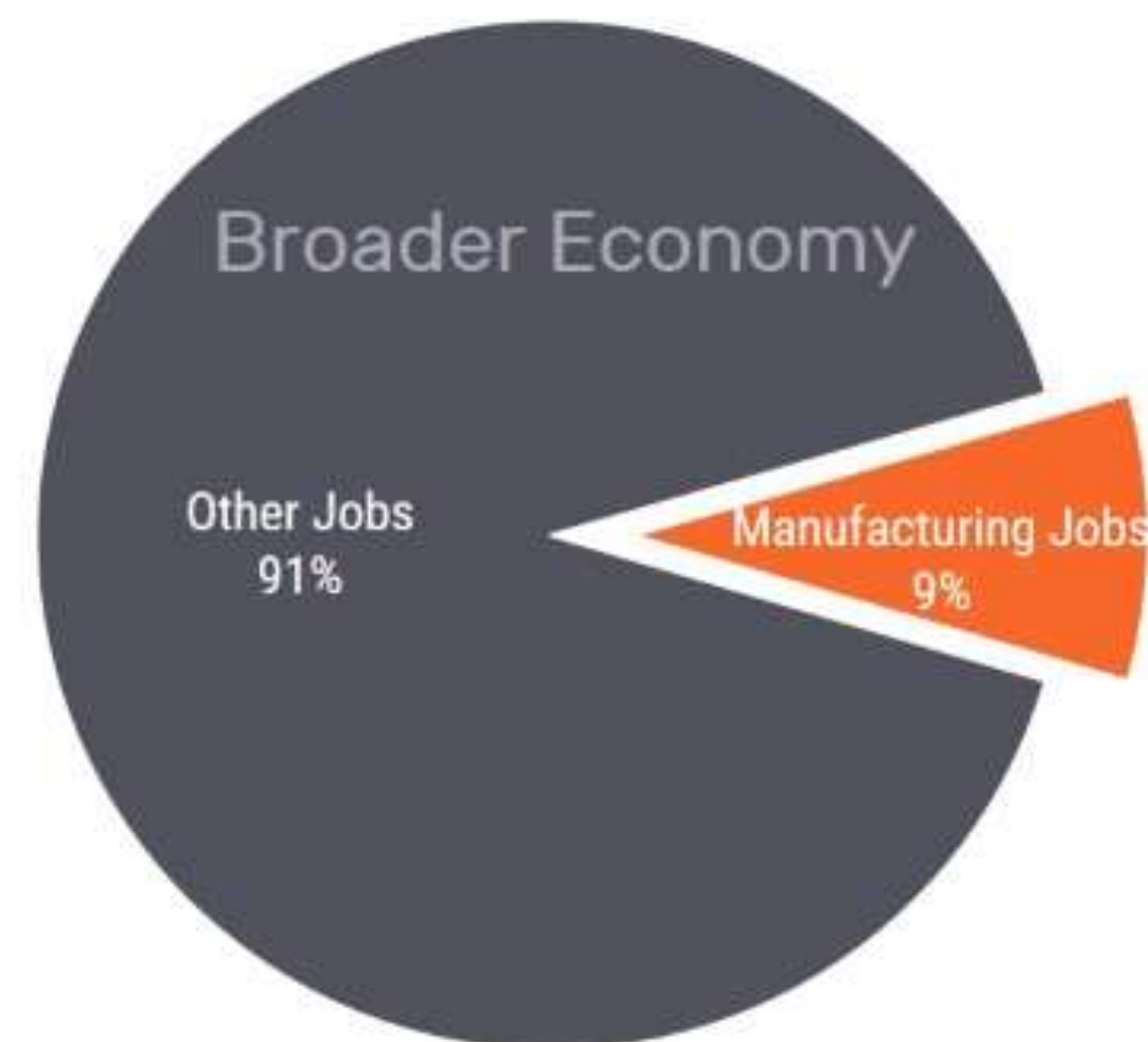
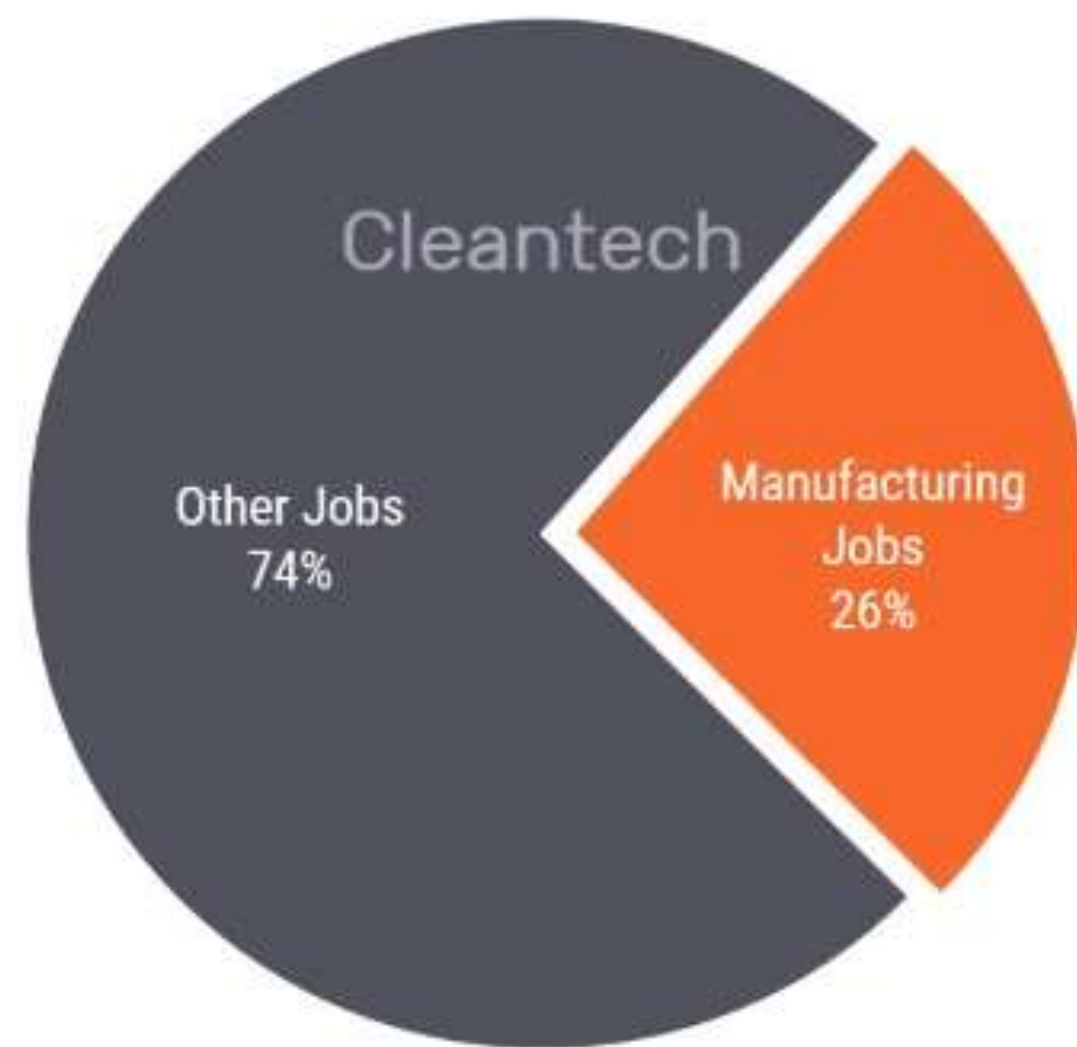
Cleantech creates white collar jobs (science & tech) and blue collar jobs (making hard goods)

- **40% of VertueLab companies are actively manufacturing and shipping**

Rural Jobs:

Cleantech jobs are geographically distributed and they improve the rural/urban economic balance

- **Over 50% of VertueLab's manufacturing companies are outside the Portland Metro region**

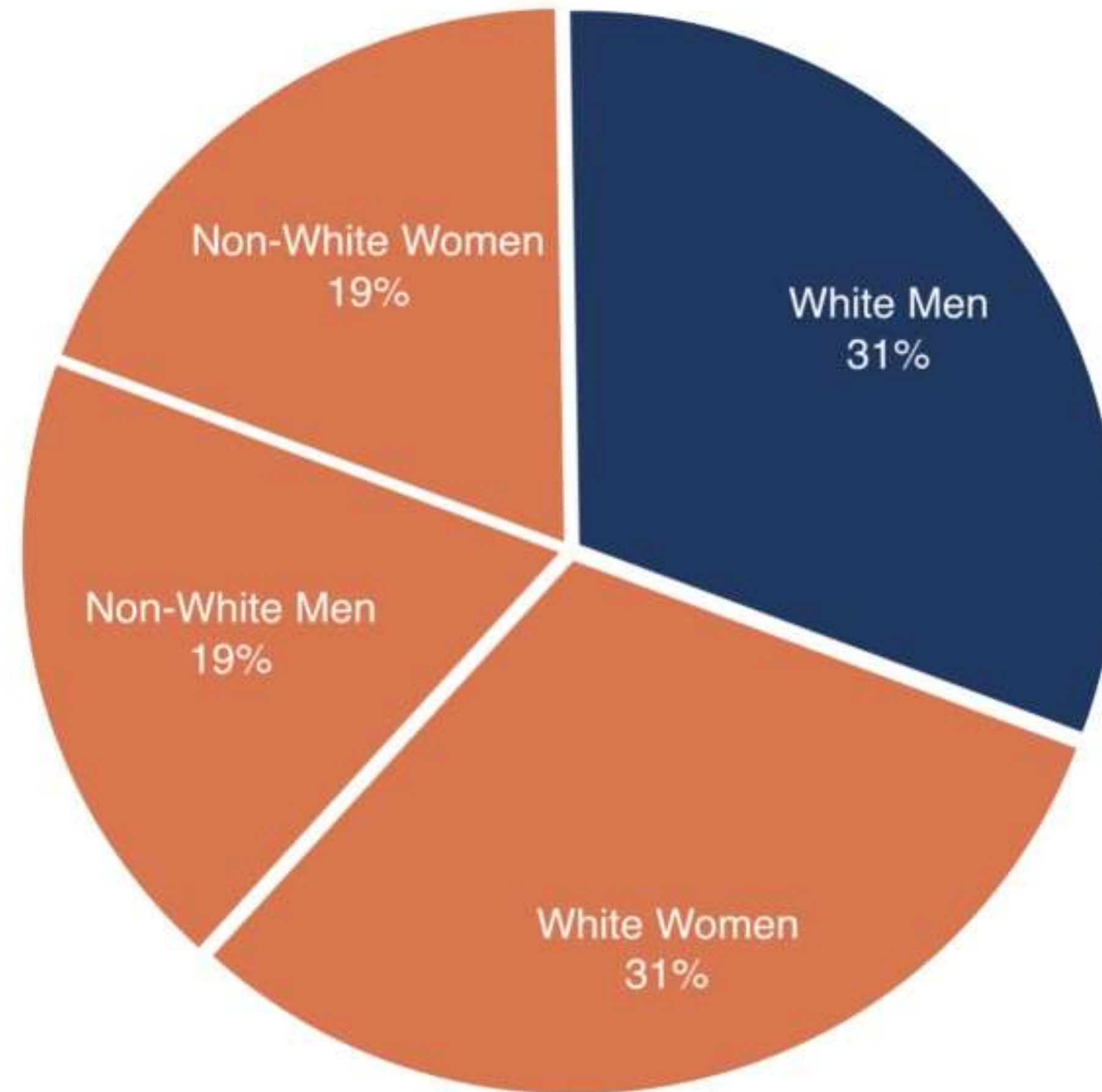




Diversity, Equity, and Inclusion

Diversity, Equity, and Inclusion (DEI)

U.S. Population



Source: U.S. Census, 2019



Diversity, Equity, and Inclusion (DEI)

Seeking to ensure that the new, clean economy increases prosperity for all, DEI is central to our success:

- Minority populations are **DISPROPORTIONATELY IMPACTED** by climate change
- **DISCOVER OPPORTUNITIES** missed by mainstream investors – avoid overlooking **69%** of the population
- **BETTER COMPANIES** with reduced risk
- **MORAL IMPERATIVE** to have strong ESG positioning across our portfolio
- **DIVERSE TEAMS PERFORM BETTER** - DEI within VertueLab will make us better
- Our prospective **FUNDERS** share this priority



Source: U.S. Census, 2019

Available Levers



People

- Hiring and educating staff
- Board recruitment
- Vendor selection
- Interns placed with investees



Policies & Processes

- How we assess startups
- Influencing investees' policies
- Cultivating an inclusive culture

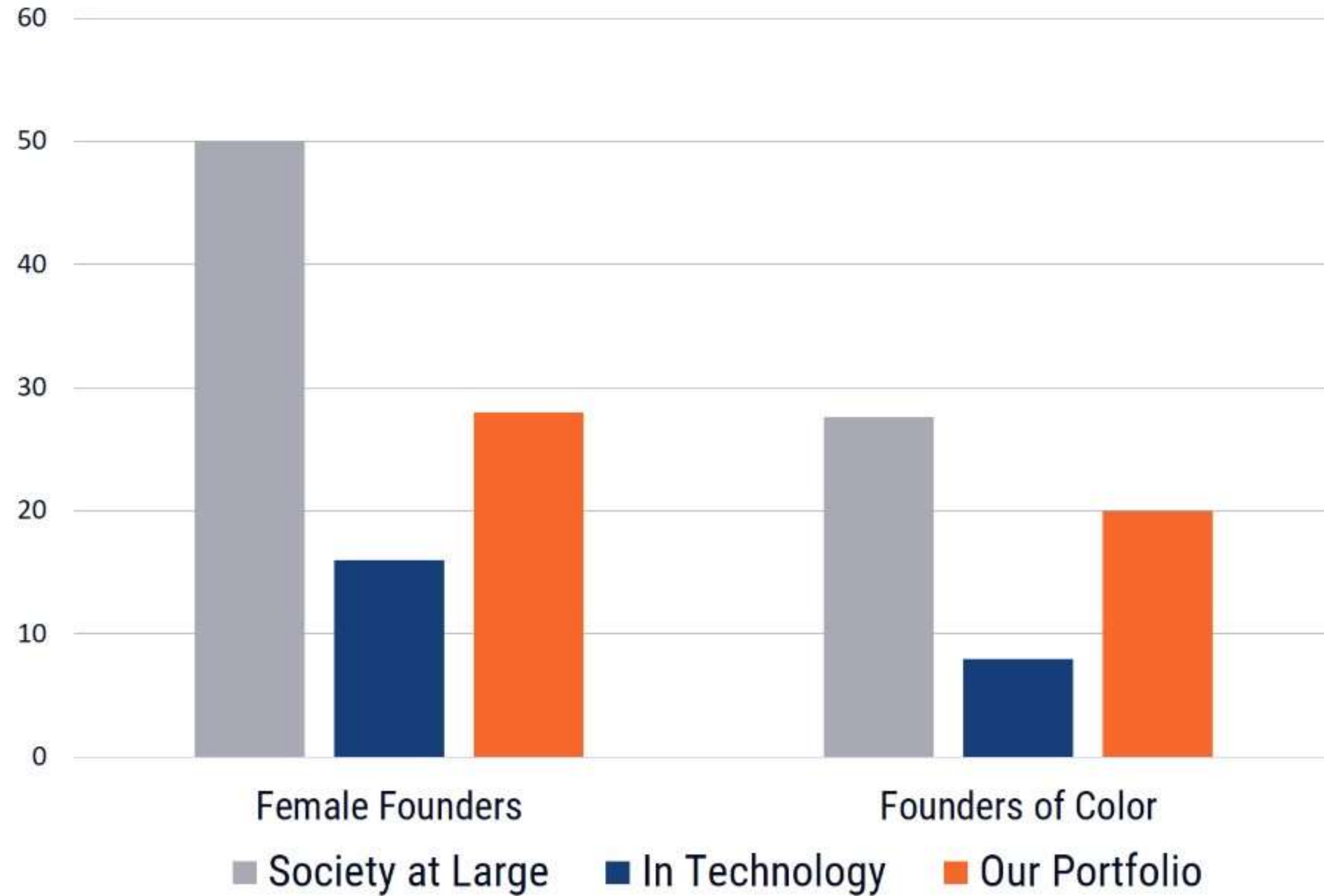


Public Face

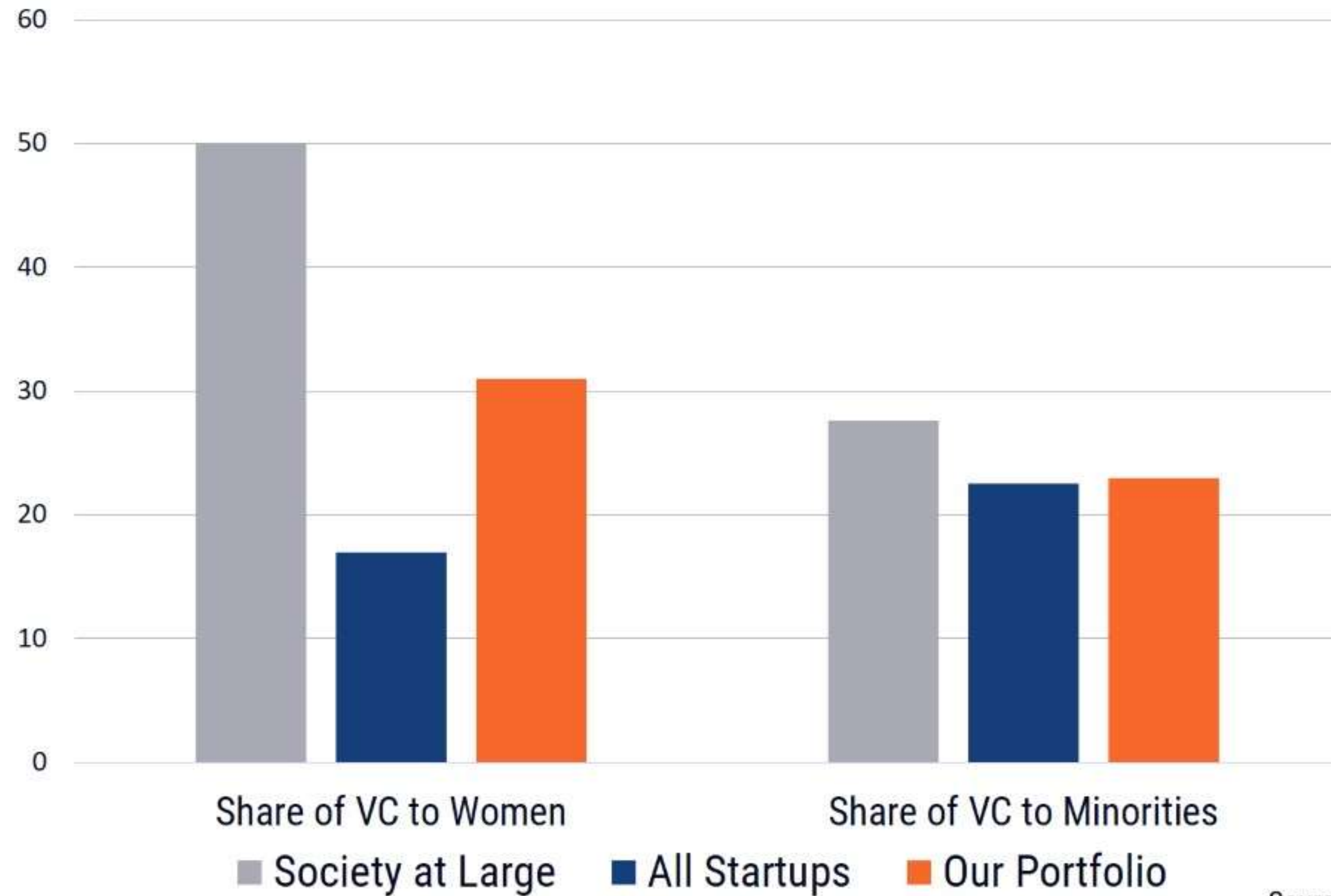
- Transparency in goals & progress
- Educating investors we work with
- Showing up
- Hosting themed events
- Speaker selection



Improving DEI in Our Portfolio



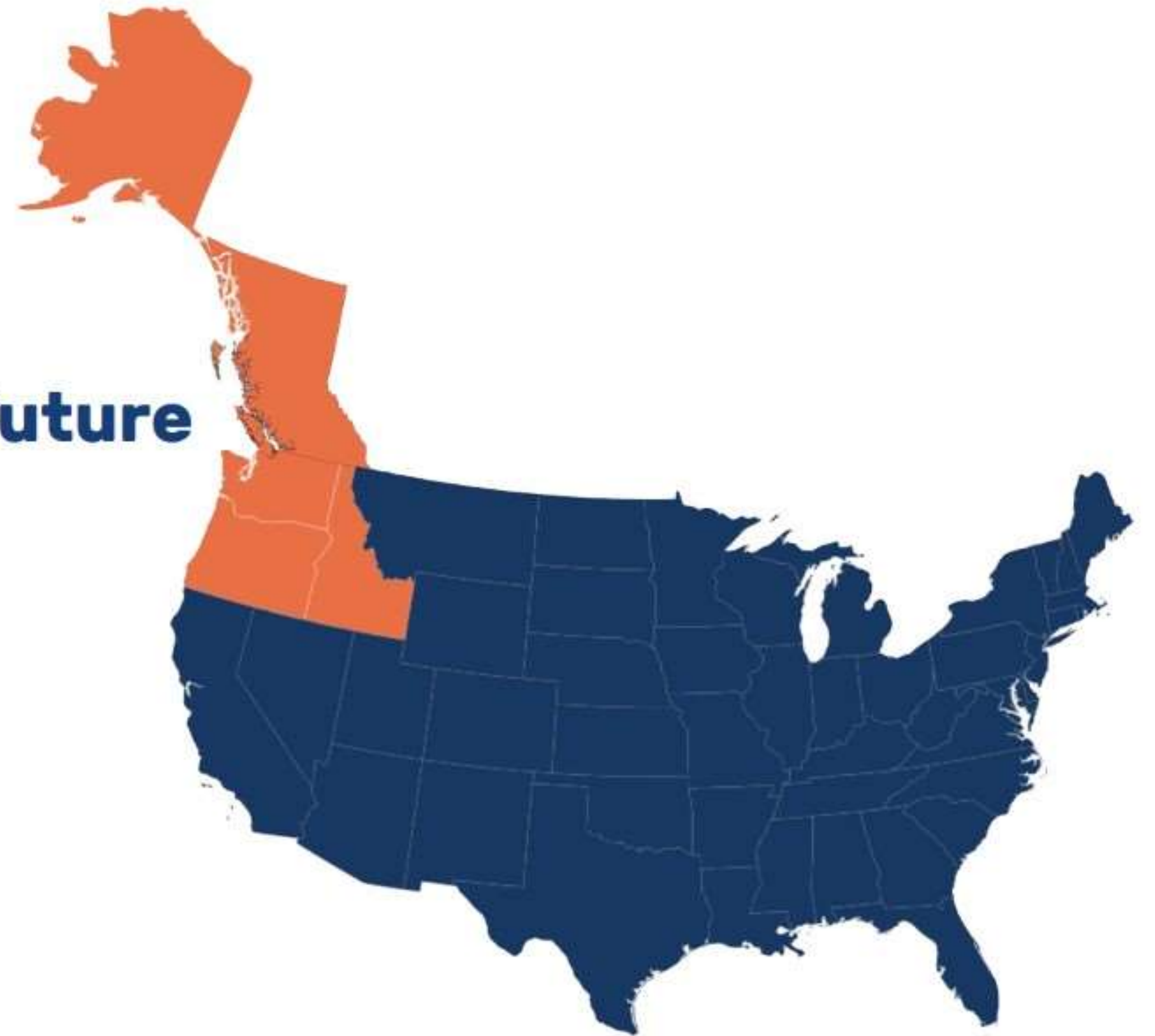
Improving Access to Capital for Underserved Populations



Sources: *Harvard Business Review*, *TechCrunch*



Future





JO BRICKMAN

Deputy Director, Director of Impact Strategy
Jo.Brickman@VertueLab.org



Investment Criteria



The company's product will deliver significant impact in achieving **VertueLab's** climate impact objectives if it reaches commercial scale.



The company currently has the necessary ingredients for achieving commercial success or, by virtue of participating in **VertueLab** programs, it is believed that the company can acquire the needed ingredients for commercial success.



The company qualifies for a program-related investment as it is unable or unlikely to attract private capital investments at its current stage of development or private capital will not invest without intervention by **VertueLab**.



Climate Impact Fund I Team

Investment Committee

Selection of investments



Ken Vaughn

Fund Manager &
VertueLab Director of Impact
Investments



Kirk Washington

Cleatech Investor &
VertueLab Board Chair



David Kenney

VertueLab
Executive Director



Abigail Sarmac

Impact Investing
Consultant



Jeff Canin

Cleantech Investor & E8
Fund Manager

Advisory Committee

Advising on fund strategy and investments



Alison Shaw
E8 Angels



Jim Huston
Portland Seed Fund



Jon Maroney
Oregon Venture Fund



Juan Barraza
Portland State University



Karin Berardo
ABREN



Katherine Fox
Arnerich Massena



Marilyn Waite
Hewlett Foundation



Marc Manley
Willamette Valley Capital



VertueLab Leverages its Expanding Network

Our Connections

Regional universities

National laboratories

Incubator/accelerators

National peers

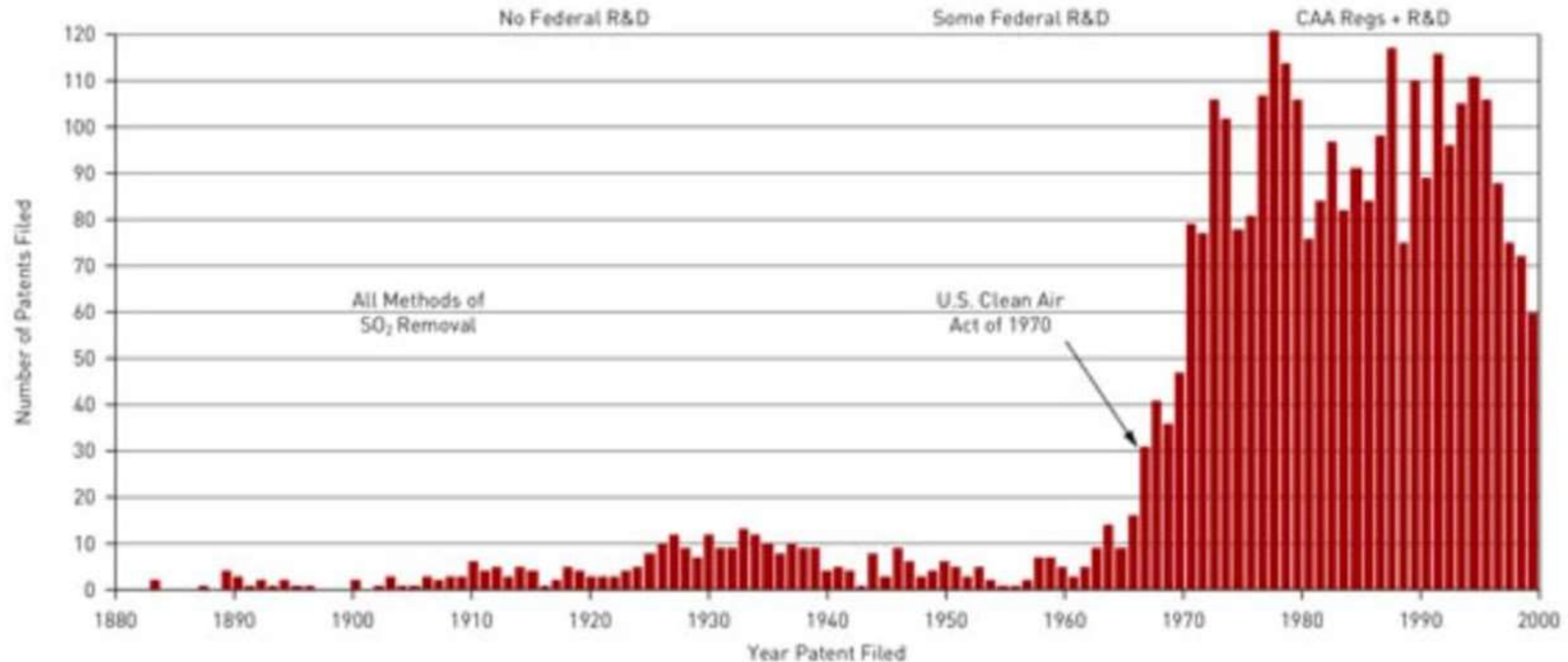
Downstream investors

VertueLab partners with an established network of innovation centers & downstream investors



Regulation & Innovation Are Connected

Figure 8. US patenting activity in sulfur dioxide removal technologies, 1880-2000 (Source: Taylor, et al., 2005)



Demonstration Projects

Tech Development and Demonstration are key paths to impact in cleantech:

Cleantech venture capital investors prefer the funding of technology demonstration projects over all other forms of direct public policy interventions.

Why?

Proving performance potential = reduced technology risk

Testing business model strategies in real market settings = reduced business risk

Actions to take:

- Incubatenergy Labs Challenges, via EPRI (Electrification 2020 conference)*
- Incentivize utility innovation and new tech demonstration projects*

Source: Burer and Wustenhagen

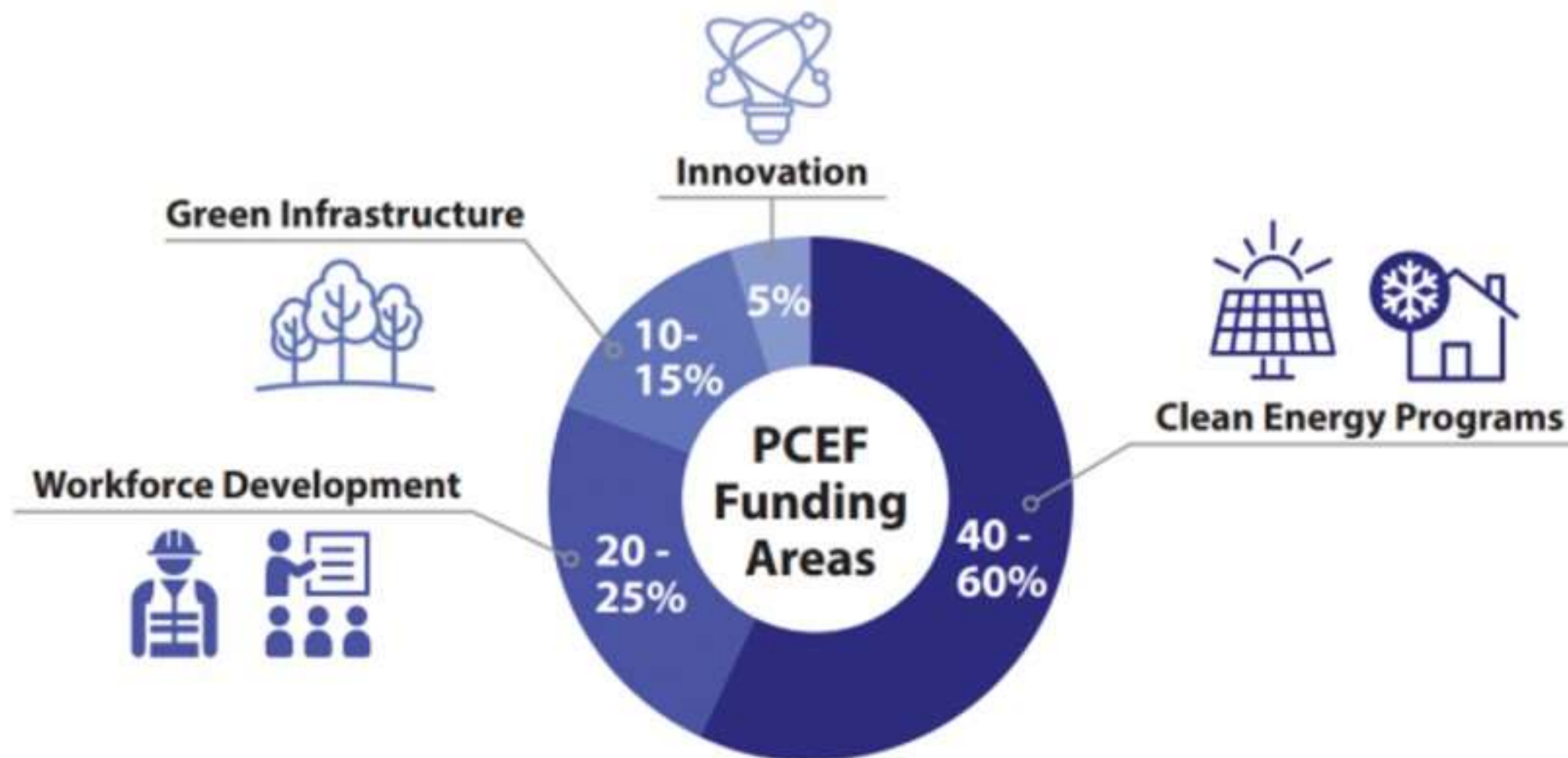


APPENDIX & ADDITIONAL INFORMATION



City of Portland Clean Energy Community Benefits Fund

- Oregon's first-ever environmental initiative **created and led by communities of color**
- Funded sustainably through a 1% surcharge on the retail sales of large retailers within Portland - **\$50-70M annually**
- The Fund will finance programs such as:

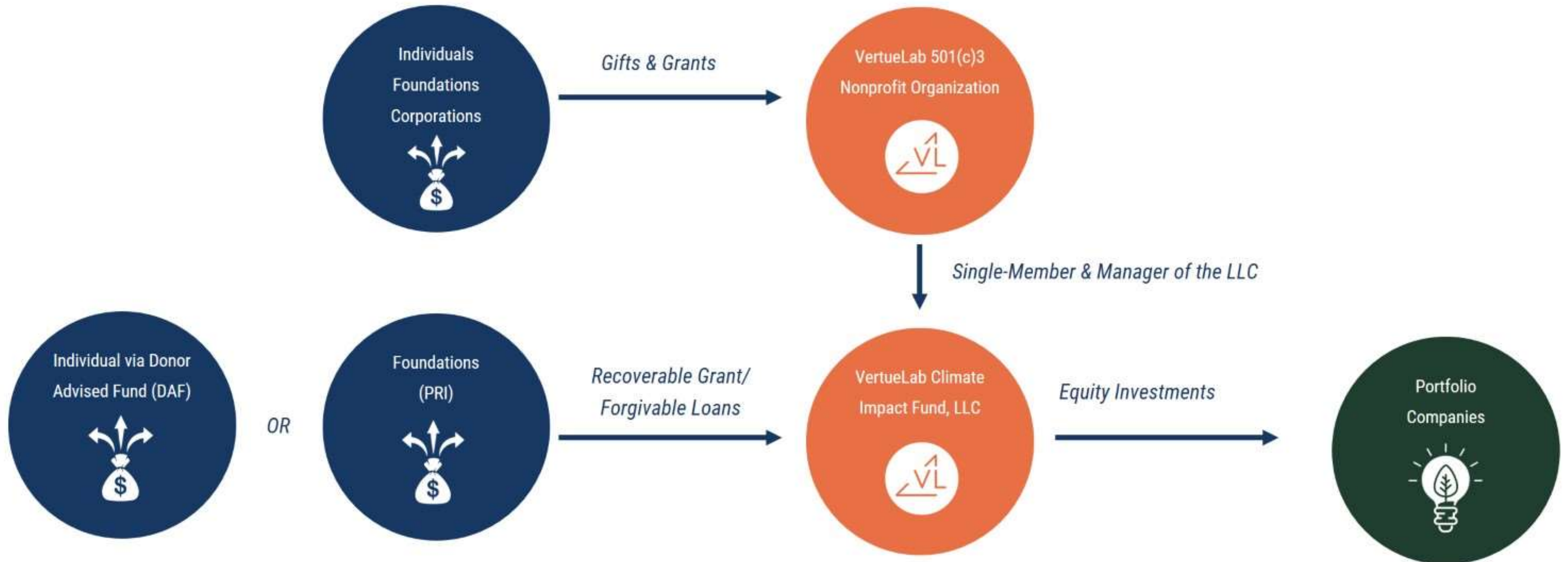


VertueLab Climate Impact Fund I Structure

FUNDERS

INTERMEDIARY

CLIMATE INNOVATORS



Holistic Assessment Tool

When we first meet a company, **VertueLab** assesses companies for their strengths and weaknesses along key indicators of success.

Once **VertueLab** accepts a company into our program, we commit the resources best suited to help them mature along each of the key indicators and become a well-rounded company

