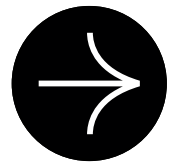


# Building the Future

The people-powered platform for  
regional Tough Tech ecosystem builders.

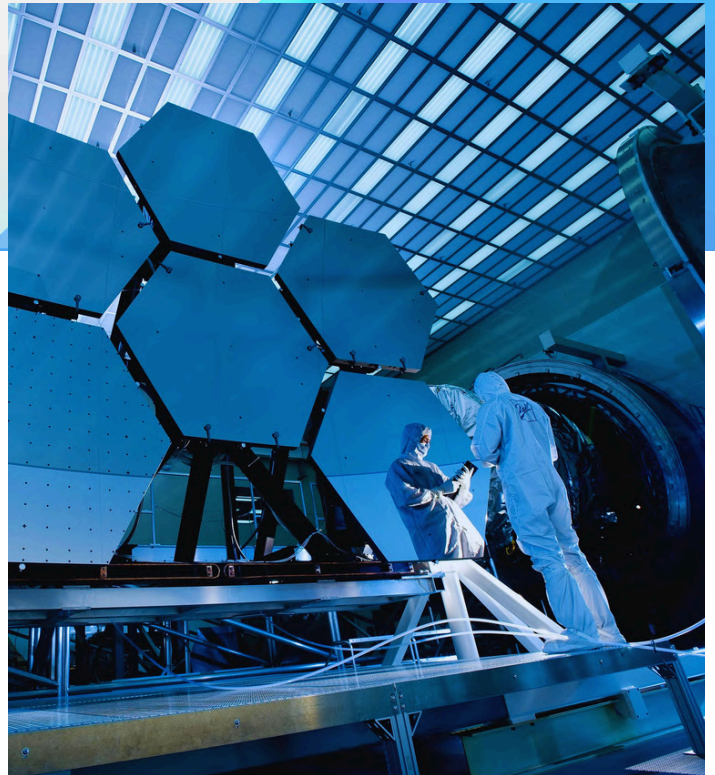


**THE  
BUILDER  
PLATFORM**

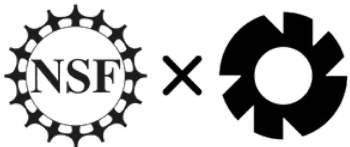


September 2025

# Empowering regions to bridge the gap between groundbreaking ideas and real-world impact.



02	Letter From The Executive Director
03	Our Team
04	Ecosystem Framework
05-14	The NSF Engines
15	Year In Review



# Letter from the Executive Director

Dear Innovators and Builders,

In the pages that follow, you'll discover a year of relentless progress, audacious ideas, and transformative breakthroughs. From energy storage in Upstate New York to regenerative medicine in the Piedmont Triad, we're not just supporting innovation – we're turbocharging it.

This year, The Builder Platform has connected, empowered, and catalyzed a nationwide network of visionaries tackling our most pressing challenges. We're not just building technology; we're building a brighter future for all Americans.

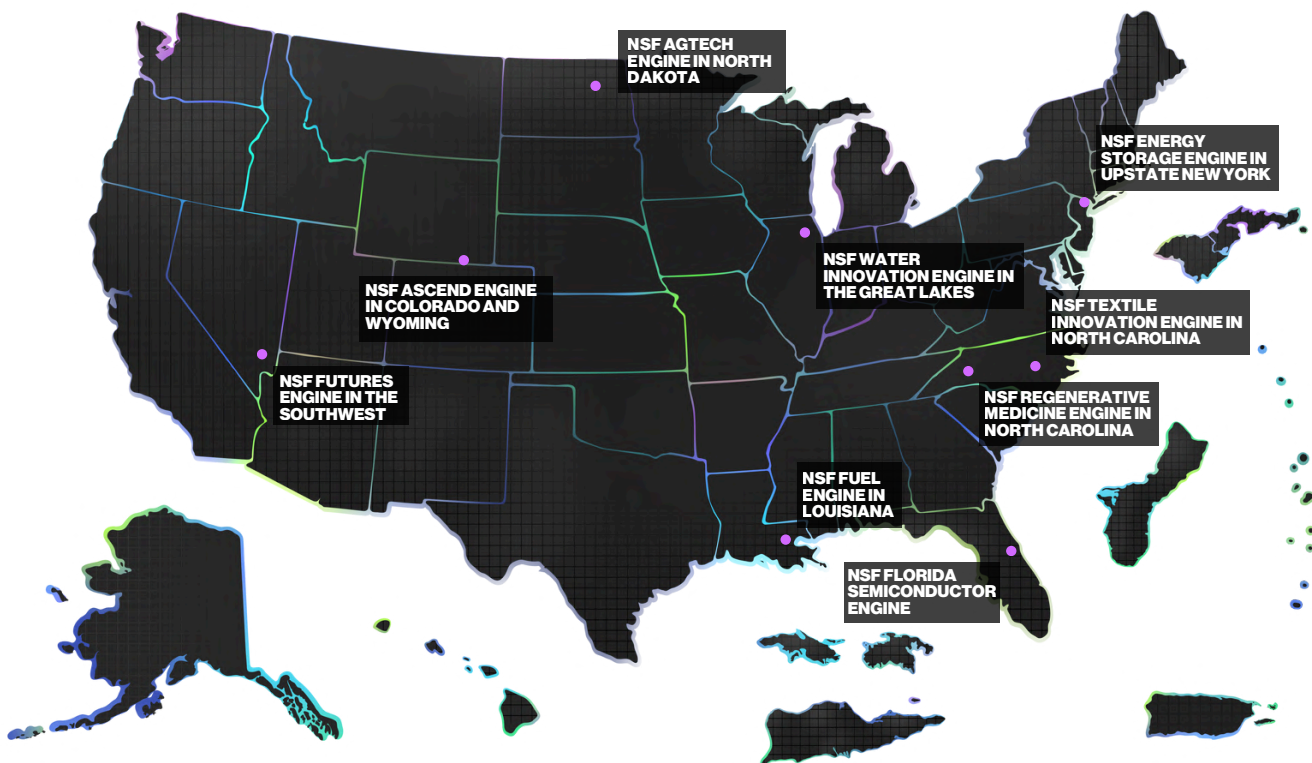
As you explore our annual report, remember: every breakthrough started with a builder like you. Let's keep pushing boundaries, shattering limits, and reimagining what's possible.

The future is ours to build. Let's get to work.



## Pat Grospiron

Executive Director  
The Builder Platform



# Our Team

The People Behind The Platform

## Core Team

### Pat Grospiron

Executive Director

### Emily Knight

CEO, The Engine

### Ben Downing

Chief Growth Officer, The Engine

### Ian Johnston, PhD

VP of Translation & Emerging Ecosystems, The Engine

### Amy Beaird, PhD

Sr. Platform Manager

### Elizabeth Patterson

Platform Manager

### Diana Kamau

Platform Coordinator

## Special thanks to Advisors

### Ryan Donahue

RM Donahue Consulting

### Francie Genz

Institute for Networked Communities

### Anika Horn

Social Venturers

### Heath Naquin

International Innovation Associates

### Arthur Smith

Venn Collaborative

### Eli Vasquez

International Innovation Associates

### Jim Woodell, PhD

Venn Collaborative

### Kirsten Yates

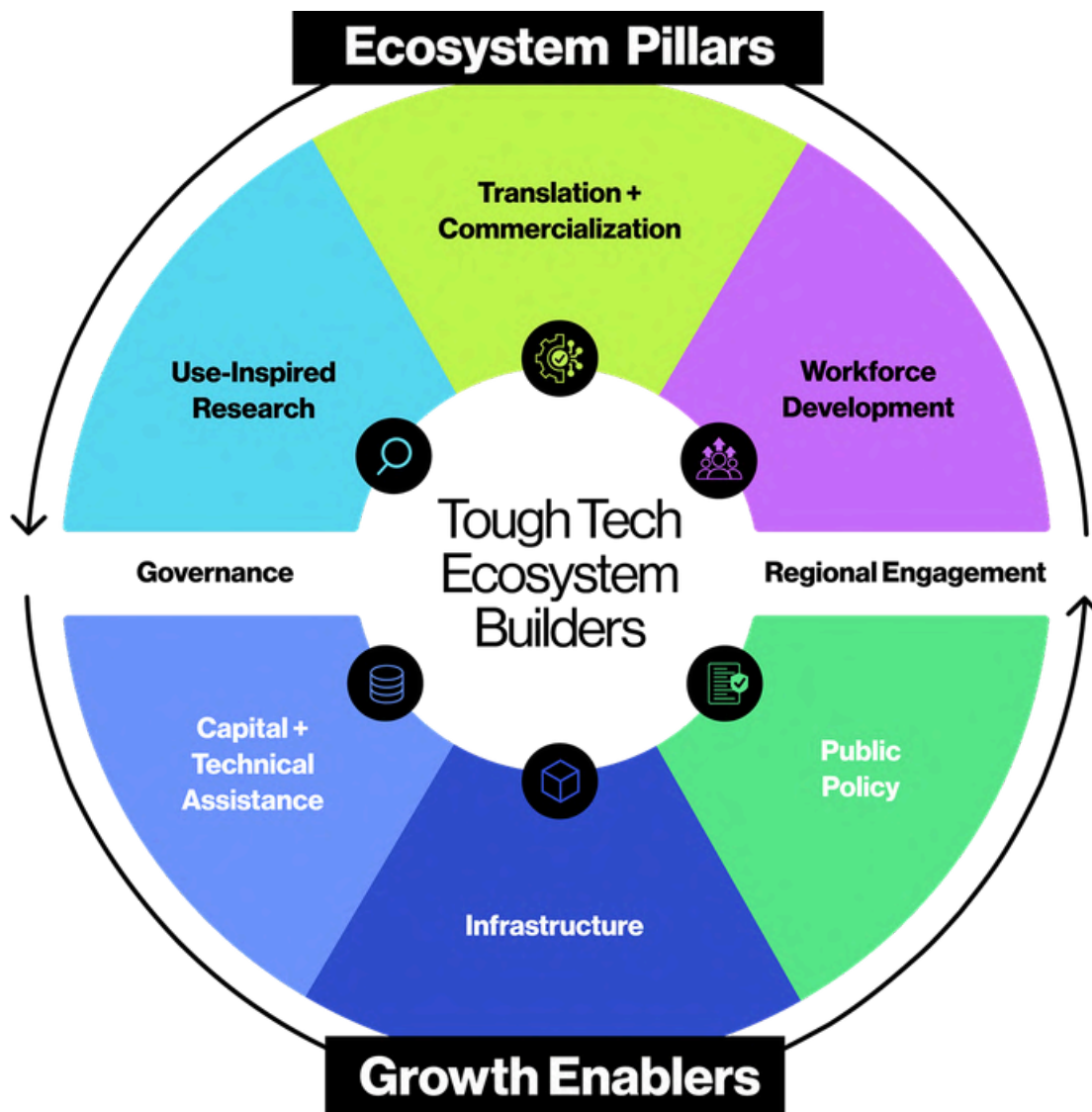
Consultant

# Ecosystem Framework

## THE BUILDING BLOCKS FOR BREAKTHROUGHS AND COLLABORATION

Bringing together the brightest minds in Tough Tech, The Builder Platform connects regional ecosystem builders to the capital, partners, tools and support they need to scale.

Our tailored support is fueling the growth of ecosystems supported by the NSF Regional Innovation Engines program - a flagship initiative that is driving regional innovation across the country.



# Building a Circular Water Economy in the Great Lakes

**“Twenty percent of the world’s fresh surface water is right here in our backyard – what we do with it will shape the future of our economy.”**



**ALAINA HARKNESS**

CEO, GREAT LAKES RENEW



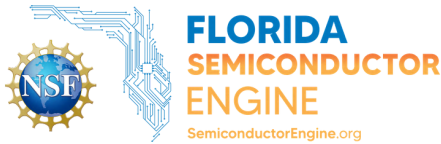
The U.S. economy’s next industrial revolution – powered by AI, data centers, and quantum computing – depends on secure, sustainable water supplies. The Great Lakes hold 20% of the world’s surface freshwater, yet conventional “out of sight, out of mind” water systems waste both water and critical minerals.

**Great Lakes ReNEW’s unique strength is its ability to convene nearly 60 partners across six states – researchers, utilities, industry, and community organizations – into a coordinated coalition driving a transition to a circular water economy.**

This approach builds on decades of regional leadership in water science and innovation, now amplified by national labs and commercialization partners. Early wins include real-time water quality monitoring in the Chicago River, a Lake Erie testbed that has trialed 100+ new technologies, the launch of a national Blue Economy STEM ecosphere projected to reach 1,000 youth in its first two years, and new workforce pipelines for high-quality utility and water innovation jobs.

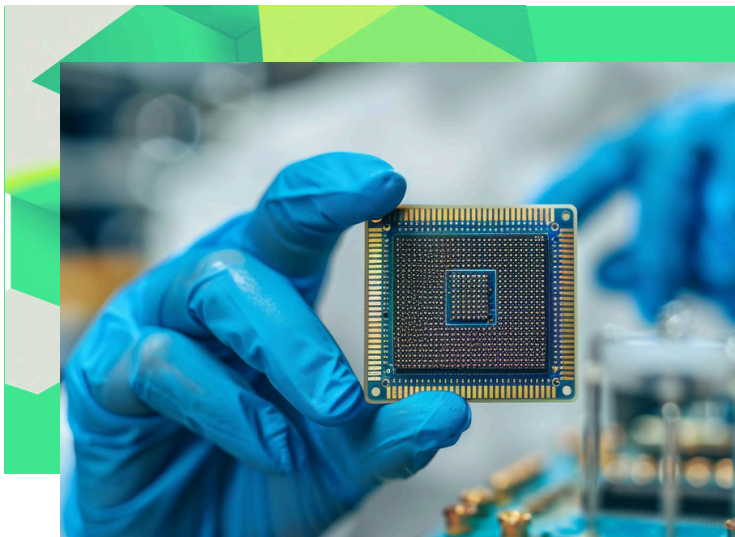


# From Theme Parks to Tech Parks: Florida's Semiconductor Transformation



Semiconductors are the invisible backbone of modern life – powering everything from smartphones to medical devices to national defense systems. Yet today, 98% of advanced semiconductor packaging happens offshore, creating supply chain vulnerabilities and national security risks. The Florida Semiconductor Engine is tackling this challenge by building not just a manufacturing base, but a **full ecosystem that integrates research, education, and workforce development under one roof at NeoCity.**

Their unique approach combines cutting-edge R&D – such as digital twins for semiconductor fabs and cryogenic technologies for supercomputing – with intentional workforce pathways that retrain tourism workers into high-wage tech careers. By aligning universities, global R&D partners like IMEC, local government, and industry in a shared governance model, the engine is creating a replicable blueprint for reshoring advanced packaging. Early wins include attracting a \$470 million investment from South Korean firm Elspis that will create 600 high-wage jobs, launching startups like LocatorX at NeoCity, and retraining hospitality workers through Valencia College to earn two to three times more than before. Together, these efforts are turning Central Florida into a hub for semiconductor innovation and workforce transformation.



**“Ninety-eight percent of advanced semiconductor packaging happens offshore – you can imagine what a national security issue that is for us.”**



**RON PICCOLO**

CEO, FLORIDA  
SEMICONDUCTOR ENGINE

# Resilience in Action: Advancing Sensing Solutions in Colorado and Wyoming



Colorado and Wyoming are already experiencing the realities of a shifting environment – declining snowpack, prolonged droughts, and billion-dollar wildfires driven by changing weather patterns. These shifts threaten agriculture, tourism, water security, and the day-to-day lives of millions. **The ASCEND Engine’s unique approach is leveraging the region’s extraordinary concentration of federal labs, universities, corporations, and community partners to pioneer climate solutions that turn environmental monitoring into actionable decision-making for communities.**

By pairing advanced research in weather prediction, soil carbon capture, and digital twin modeling with workforce initiatives like a new Systems Engineering program, ASCEND is blending science, technology, and social innovation to strengthen climate resilience. Early wins include distributing \$3 million in R&D and startup grants, launching a climate resilience startup support program that has already attracted companies from abroad, securing partnerships with global leaders like Lockheed, Microsoft, and NVIDIA, and projecting the creation of nearly 25,000 new jobs and \$1.5 billion in GDP impact over the next decade.

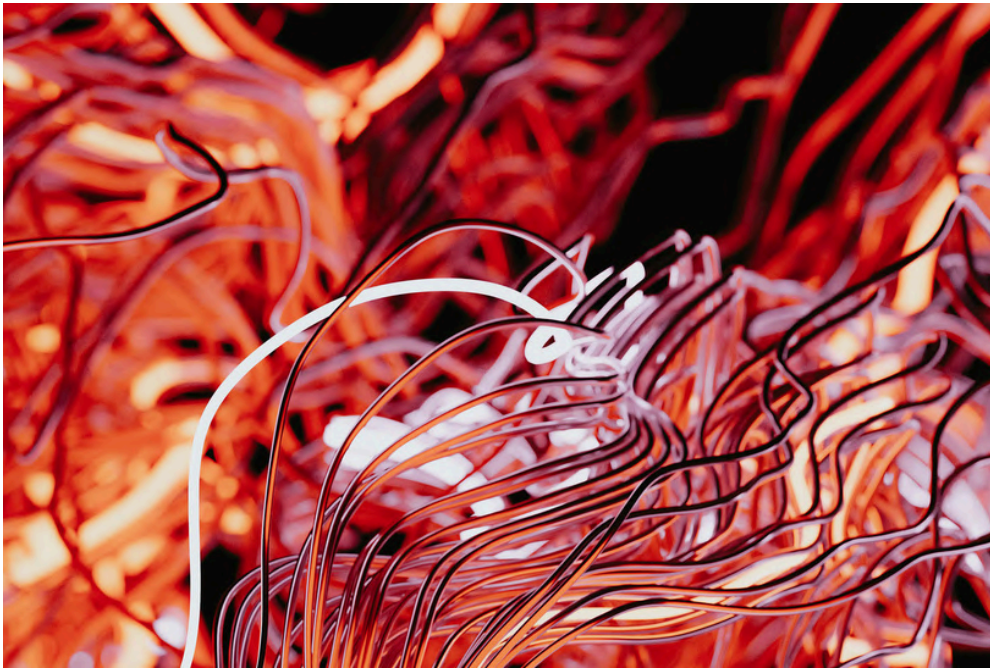
**“Declining snowpack isn’t just about skiing – it’s our drinking water, our agriculture, and the foundation of our economy.”**



**MIKE FREEMAN**

CEO, ASCEND ENGINE

# Scaling Regenerative Medicine for Global Impact from North Carolina's Piedmont Triad



**“This isn’t just about patients getting healthier; it’s about creating jobs, retraining workers, and lifting an entire region through innovation.”**



**TIM BERTRAM**

CEO, REGEN MED ENGINE

Regenerative medicine has the potential to transform healthcare by replacing failing organs, repairing tissue, and even using a patient’s own cells to reverse chronic diseases. But while the science is advancing rapidly, the biggest barrier has been building the supply chains and manufacturing capacity to scale these therapies from lab breakthroughs to everyday clinical practice.

**The Regenerative Medicine Engine’s unique approach is creating an integrated ecosystem where researchers, manufacturers, entrepreneurs, and workforce programs collaborate to industrialize regenerative therapies — turning science fiction into accessible healthcare solutions.**

Leveraging the region’s strong legacy in manufacturing and world-class research institutions like Wake Forest, the engine is already attracting companies from across the U.S. and abroad, fostering CEO roundtables that strengthen local collaboration, and developing specialized training programs to retrain and upskill workers. Early wins include companies like Fettech moving into the ecosystem and bringing life-changing wound-healing therapies to patients, as well as new certification programs to ensure the regenerative medicine workforce can scale alongside the science.





# Food Security is National Security: Reinventing Rural Innovation in North Dakota



**ND AGTECH**  
NSF AgTech Engine in North Dakota

The future of U.S. food security—and by extension, national security—depends on resilient, adaptive, and equitable agricultural systems. Yet farmers and ranchers across North Dakota face mounting pressures: changing weather patterns, aging workforces, volatile markets, and underinvestment in agricultural R&D since the 1970s.

**The North Dakota Agtech Engine’s unique approach is testing an unprecedented rural economic development model—starting with grower needs, embedding tribal sovereignty and traditional knowledge, and linking agtech innovation directly to place-based communities.**

By convening growers, ranchers, scientists, startups, and industry partners, the engine is accelerating advances in genomic sequencing, soil health, and water conservation while ensuring equity stakes for the farmers who adopt them. Early wins include piloting moisture-sensing satellite technology on farms and tribal lands, launching grower-driven innovation projects, and designing workforce programs to attract and retain young people in agriculture. Together, these efforts aim to power ideas that feed the world while strengthening the rural economies that keep America secure.

**“Food security is national security,  
and our goal is to power ideas  
that feed the world.”**



**HOLLIE MACKEY**

CEO, ND AGTECH

# Batteries for America, by America: Building the Nation's Energy Future in Upstate New York

From smartphones and electric vehicles to resilient power grids and defense systems, batteries are the foundation of modern life. Yet today, fewer than 25% of the batteries used in the U.S. are produced domestically, leaving critical industries vulnerable to unstable foreign supply chains.

**The Upstate New York Energy Storage Engine's unique approach is bringing together world-class universities, startups, industry, and community partners to build a secure, self-sufficient U.S. battery industry — anchored in the region's long legacy of technological innovation.**

Led by Binghamton University and Nobel Laureate Stanley Whittingham, inventor of the lithium-ion battery, the engine is scaling use-inspired research, providing startups with unparalleled access to testbeds and pilot manufacturing, and training an inclusive workforce that spans from K-12 to advanced degrees. Early wins include awarding \$2 million in R&D grants to industry–university coalitions, supporting more than 35 regional energy storage startups (such as Ateios Systems), and launching “Battery-NY,” a 30-megawatt-hour pilot manufacturing facility opening in 2026. Together, these efforts are positioning Upstate New York to become America's Battery Capital.



**“Our goal is not just more batteries or better batteries – it's batteries for America, by America.”**



**MEERA SAMPATH**

CEO, UPSTATE NY  
ENGINE



# Safeguarding the Fabric of Our Nation: Circular Textiles from North Carolina's Innovation Engine

Fast fashion and offshore manufacturing have hollowed out U.S. textile production—today, just 3% of textiles Americans purchase are made domestically, while millions of tons of textile waste are shipped abroad or dumped in landfills.

**The North Carolina Textile Innovation Engine's unique approach is weaving a new model for the industry by combining circular textile R&D, waste-to-value innovation, and workforce transformation in the Southeast's historic Textile Belt.**

Anchored in Morganton, the engine unites universities, Goodwill, workforce programs, and manufacturers through a consortium model to scale solutions like regenerative hemp fibers, advanced recycling, and state-of-the-art sorting facilities that can reclaim millions of pounds of discarded textiles. Early wins include the Smartwool Second Cut pilot proving circular yarns can be produced at lower cost, the rollout of new textile curricula to 5,000 students across North Carolina, and pilot projects reclaiming post-consumer waste into recycled yarns. Together, these efforts are revitalizing a legacy industry while positioning the U.S. as a leader in sustainable, secure textile production.

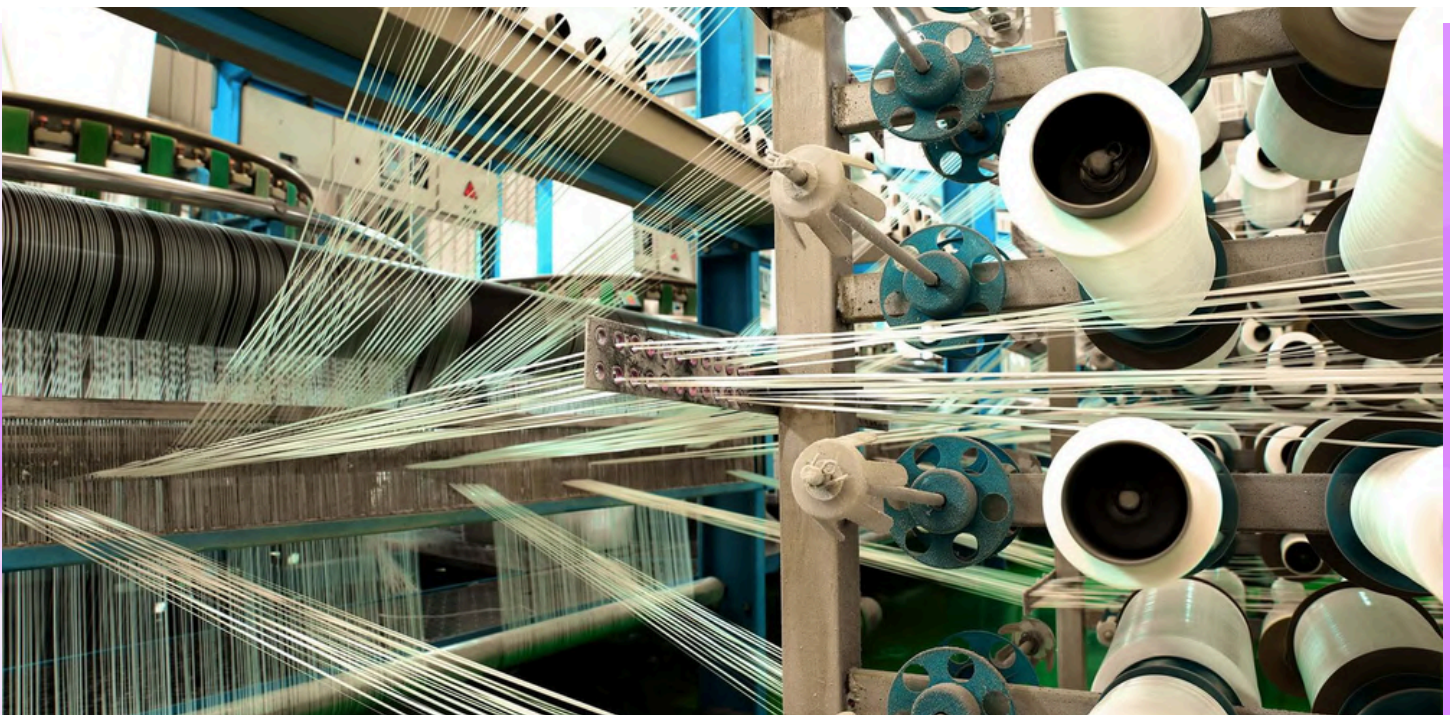


**“The Textile Belt still holds extraordinary knowledge and infrastructure. With innovation, it can once again become the lifeblood of our communities and economy.”**



**ANNE WIPER**

CEO, NC TEXTILES



# Future-Proofing Energy: Louisiana's FUEL Engine on Carbon Innovation



For over a century, Louisiana has been central to America's energy story, home to vast oil, gas, and petrochemical industries. But as global demand for energy rises, so does the need to produce it with dramatically lower carbon emissions.

**The Louisiana FUEL Engine's unique approach is transforming the state's industrial corridor into a national proving ground for carbon capture, utilization, and storage — while also building an entrepreneurial ecosystem that keeps innovators in Louisiana.**

By leveraging the state's ideal geology for carbon storage, deep industrial expertise, and proximity to Houston's global energy hub, FUEL is creating a competitive advantage in low-carbon energy production. Early wins include funding five proof-of-concept startups, such as Encore CO<sub>2</sub> (converting CO<sub>2</sub> directly into ethanol), piloting new commercialization pathways through LSU and partner institutions, and launching plans for a one-of-a-kind incubator at Cornerstone Energy Park to help startups scale in real-world industrial settings. Together, these efforts aim to keep Louisiana at the forefront of global energy innovation while creating new high-paying, innovation-driven jobs across the state.

**“Our goal is to give innovators the tools to build great companies here in Louisiana, instead of taking their ideas elsewhere.”**



**MIKE MAZZOLA**

CEO, FUEL ENGINE

# Regenerative Growth in the Desert: The Southwest Futures Engine



**NSF Futures Engine  
in the Southwest**



The American Southwest is both an economic powerhouse and an environmental pressure point: 40 million people rely on the Colorado River, reservoirs like Lake Mead and Lake Powell are near crisis levels, and booming industries from semiconductors to defense depend on reliable energy, water, and clean air. **The Southwest Futures Engine’s unique approach is pioneering regenerative economic development—aligning market-driven research, startups, and workforce programs to solve environmental constraints while unlocking new economic opportunities.**

**“Abundant clean energy, water, and air – coupled with a high quality of life in an extreme environment – that’s the future we’re building in the Southwest.”**



**BRIAN SHERMAN**

CEO, SW FUTURES  
ENGINE

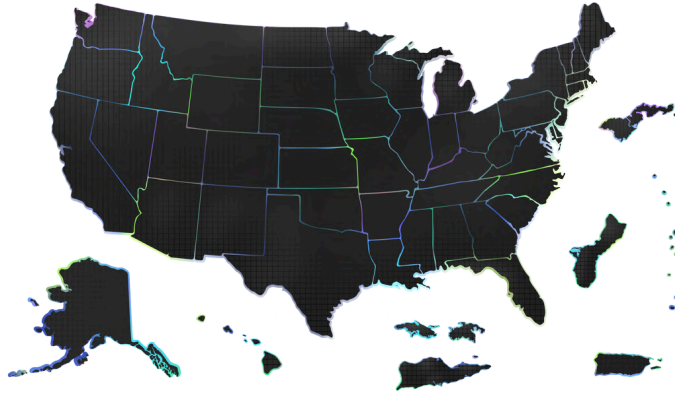
Led by Arizona State University with partners across Nevada and Utah, the engine is advancing water reuse and atmospheric water harvesting, testing brackish groundwater treatment, and exploring ozone science and direct air carbon capture. Early wins include launching innovation and catalyst grant portfolios to commercialize lab breakthroughs, supporting startups like Waivr Technologies (atmospheric water harvesting with 5x greater efficiency), and building cross-state collaborations with 180+ partners, including 58 tribal nations. By combining cutting-edge research with intentional workforce development, the Futures Engine is ensuring that abundant clean energy, water, and air can sustain both thriving communities and globally competitive industries in the Southwest.

# THE BUILDER PLATFORM

Powered by The Engine

Connecting regions solving the world's toughest challenges.

## 9 NSF Engines



# YEAR IN REVIEW

SEP 25, 2024 - SEP 24, 2025

- Use-Inspired Research
- Translation + Commercialization
- Workforce Development
- Governance + Regional Engagement
- Capital + Technical Assistance
- Infrastructure
- Public Policy

## Tailored Guidance + Expertise

**292** One on One Guidance Sessions

**0** of NSF Engines received Needs Assessments *summer activity*

**4** Knowledge Sharing Builder Groups

**36** Builder Group Sessions

**26** CEO Roundtables

**49** Webinars and Office Hours on Key Topics

**10** Active Slack Community Channels

**271** Builder Group Participants

## Knowledge Sharing

## Engaging Convenings

**6** Supported NSF Engine Event

**4** Builder Projects

**11** Connections to startups, venture capitalists and ecosystem

**5** Advisory Council Interactions

## Accelerated Connections

**33** Teams in Blueprint Translation Program

**1** Roadtour Visits *spring activity*

**2** Blueprint + Capital Readiness Sessions

**11** Thought Leadership Pieces *spring activity*

## Customized Programming

**100%** Growth of Newsletter Email List

**41** Social Spotlights on NSF Engines to 20,000 people

**255** Funding Opportunities Shared with NSF Engines

**3** Expanded Guidebook Updates

## Dynamic Resources

**34** Builder Emails to NSF Engines

**226** News articles about NSF Engines

**83** Ecosystem Building Events Shared

**11** Monthly Newsletters

## Timely Communications

[builderplatform.engine.xyz](https://builderplatform.engine.xyz)

