

The South Florida region, inclusive of Miami–Dade, Broward, and Palm Beach counties (the “Miami MSA”) and Monroe County (Florida Keys) is the most exposed geography in the United States to climate-driven extreme heat, rising sea levels, and catastrophic weather events. The potential devastation impacts the United States’ most diverse community with 70% minority population and a \$350B economic engine growing at 3% over the past decade.¹

For decades, South Florida has served as a global leader in the **Sustainable and Resilient Infrastructure (SRI)** field aimed at addressing these threats:

- The “Dade standard” is the global benchmark for resilient building codes.
- South Florida produced 2% of all US patents in climate tech over the past 5 years, and climate-related academic R&D grew at ~10% per year during the same period.²
- Partnerships with NOAA, including the National Hurricane Center housed at **Florida International University (FIU)**, leverage locally-developed machine learning tools to create data sets and models used globally to understand and predict weather patterns.
- South Florida has seen a recent groundswell of investment, including \$137m in climate tech in 2022³. **Miami Dade Innovation Authority (MDIA)** a new public-private investment vehicle supports innovative startups to pilot and scale their technology with an initial challenge focused on sargassum.
- Together with the U.S. Army Corps of Engineers, institutions in South Florida are designing a climate-adapted water management system with the support of Congressional funding.

EDA investment will accelerate the region’s global leadership by establishing the **South Florida Climate Resilience Tech Hub** (the “Tech Hub”) to develop, commercialize, and scale SRI technologies focused on climate adaptation and mitigation. This vision aligns with KTFA #5: natural and anthropogenic disaster prevention or mitigation.

TECHNOLOGY-BASED POTENTIAL OF THE REGION

Our Tech Hub focuses on the commercialization of four categories of SRI technology, leveraging key “only in South Florida” regional resources:

- **Coastal Resilience and Marine Infrastructure:** Solutions for water utility maintenance, stormwater management, and marine infrastructure like the green-gray coastal infrastructure solutions (artificial reefs and seawalls) created with **1Print**’s 3D printing technology and **University of Miami (UM)**’s SEAHIVE™ innovation.
- **Clean Cement:** Carbon-capture and low-carbon cement products like **Carbon Limit's** CaptureCrete, which removes CO₂ from the atmosphere by absorbing as much CO₂ in just one kilometer of road as 447 hectares of trees, and those from **Titan Florida**, one of three global recipients of a top “A” score on climate action from the non-profit organization CDP.
- **Energy Efficient Building Operations:** High-efficiency HVAC systems, such as **Blue Frontier**’s patented systems, which operate on ~90% less electricity, and **Watsco**’s systems, which have averted ~15.8 million metric tons of CO₂ emissions since 2020.
- **Clean Energy Generation, Transmission and Storage:** Solar, battery energy storage, electric vehicle charging infrastructure (EVCI) and smart grid infrastructure are being deployed to cut emissions and protect power supply. **MasTec**, a Fortune 500 company with \$2B in clean energy revenue in 2021, is driving R&D in energy transition solutions and EVCI, while **Florida Power & Light Company (FPL)**, is deploying grid infrastructure in partnership with **FIU and FAU** and renewable energy with a plan to be real zero⁴ by 2045.

South Florida's academic and research institutions play a critical role in fueling this growth. Our Consortium includes nationally recognized research universities specializing in coastal resilience and climate-related fields.

FIU - the nation's most diverse public R1 research university - is home to "only in South Florida" R&D assets like the Wall of Wind, Aquarius Reef Base, Sea Level Solution Center, and Extreme Events Institute. UM, the region's other R1 university is home to the SUSTAIN Lab (a nexus for researching complex air-sea interactions of wind, waves, and shorelines), the Climate Resilience Academy (tying together university-wide and public/private efforts), climate analysis fueled by a Triton supercomputer that ranks in the top 10 of all U.S. academic institutions and research initiatives like X-REEFS and a new NOAA-funded effort to create "national climate service" similar to the National Weather Service.

Up the coast, **Florida Atlantic University** and **Nova Southeastern University**, bring the Harbor Branch Oceanographic Institute, the Guy Harvey Oceanographic Research Center and the Coastal Sustainability Institute. **Northeastern University's** new Miami campus augments climate R&D efforts through a portfolio of initiatives that includes the Global Resilience Institute, the Coastal Sustainability Initiative, and the Climate Justice & Sustainability Hub.

Miami Dade College (MDC) and **Florida Memorial University** (home to the only HBCU-based Climate Resiliency Center) further advance R&D activity and provide strengths in workforce development pathways geared to the needs of the country's most diverse residents.

The SRI market is expected to reach \$1,300B globally in 2032 across the four technology categories described above. With the help of Tech Hub initiatives, South Florida is poised to generate an incremental \$9B in revenue by 2032, representing a 25% annual growth rate.⁵ This opportunity represents 2% of the region's GDP and ~1% of global market share, creating ~23K jobs in the space with a median annual earning potential to grow from \$52K to \$83K by 2032.⁶

Tech Hub funding will be braided with federal dollars secured by the region. The Biden Administration's Climate-Ready Coasts initiative (funded through the BIL and the IRA), earmarked \$78.7 million for 16 new projects on the Florida coast. Funding from the U.S. Department of Energy enabled UM's [Industrial Assessment Center](#) to run free energy, productivity, and waste assessments of small and medium-sized industrial facilities. Below we highlight complementary federal investment in workforce development and national security.

INNOVATIVE "LAB TO MARKET" APPROACHES

The region knows how to translate innovative ideas from lab to market at pace and scale.

UM has accelerated the concept-to-market timeline for climate tech innovations, building on its Coulter Center for Translational Research platform, which converts 2.8x more start-ups per patent than the standard tech transfer process. UM's incubated SEAHIVE project, launched in 2018 with federal funding from the National Cooperative Highway Research Program, has successfully concluded three pilot projects and is now working with Consortium Member 1Print to scale broad commercialization.

FIU and Titan Florida collaborated in creating the Titan Structures and Construction Testing Lab to advance joint R&D and commercialization of hurricane-resistant and durable construction materials.

Our proximity to Latin American and Caribbean markets offers unique opportunities to scale internationally and direct access to raw materials. In 2021, the Miami Customs District completed over \$120B in trade, led by over \$35B in trade with South America, followed by Europe and Asia.⁷

To accelerate the commercialization and scaling of SRI technologies our Tech Hub intends to direct implementation funding as follows:

- Develop a **Climate Tech Sandbox Program**, a set of designated testbeds for public and private players (e.g., startups and universities). Given the vast coastline across the region, the scale of this testing environment will be significant.
- Establish a **Commercialization Task Force** that coordinates with policy-makers to design initiatives that accelerate climate tech innovation and deployment (e.g., provide direction on permitting, support intellectual property protection).
- Incubate an **Applied Climate Tech Lab Space**, equipped with fit-for-purpose tools and assets. Its mission will be to convene public/private collaborators, allocate resources, and test and commercialize climate tech innovation.

ROLE OF THE PRIVATE SECTOR

Our Consortium includes a balance of large corporations (e.g., Titan Florida, MasTec, FPL, Watsco) and startups (e.g., Carbon Limit, 1Print, Blue Frontier), ensuring the needs of the market remain central to the Hub’s strategy. Consortium Members from the philanthropic community, including the **Knight Foundation** and **Citadel founder and CEO Ken Griffin**, have signaled their continued commitment to invest in the region’s talent and technology.

From 2018 to 2022, venture capital (VC) investment in South Florida grew by 48%, leading domestic peer cities.⁸ This influx of investment is complemented by a dynamic network of local incubators, accelerators, and entrepreneur support organizations. Consortium Members and Hub Partners **Beacon Council, eMerge Americas, Greater Fort Lauderdale Alliance, I Squared Capital, Marine Research Hub, Merrimac Ventures, Mission One Capital, and Seaworthy Collective** each foster a fertile ground for business leaders ready to make the most of the region’s unique assets. Longtime collaborators at **Atomic Ventures** are also standing by to support this important work. Importantly, several Hub Partners, including **MDIA** and **Techstars**, are specifically dedicated to ensuring that founders of color have full access to the innovation economy, one of many efforts to drive the Hub’s commitment to equity.

Uniquely, the region has existing, already-zoned capacity for marine and coastal engineering, as well as manufacturing, piloting, and scaling new technology on the Miami River and in quad-county ports. For example, Miami River-based Esbary built the combiwall bulkhead and pier for PortMiami’s new \$160M Virgin Voyages Terminal.

To encourage the expansion of private-sector investment and engagement, our Tech Hub intends to direct implementation funding as follows:

- Establish an **Association of Climate Resilience Champions**, a group of regional investors focused on SRI (currently 2% of all VC investment in South Florida in 2022).
- Create a **Climate Investment and Mentorship Network** to connect researchers and universities with the private sector, VCs, and entrepreneurs; stimulate commercialization of patented technologies; and cultivate new ideas through mentorship opportunities with industry experts.

REGIONAL COORDINATION AND PARTNERSHIPS: OUR CONSORTIUM

Our Tech Hub Consortium consists of 19 initial Members and 20 “Hub Partners” that will engage regularly to inform the Hub’s direction, align their ongoing efforts to Hub strategy where appropriate, and, in some cases, formally join the Consortium as implementation plans solidify.

As noted throughout our application, every Consortium Member and Hub Partner has experience working together on cross-sectoral, cross-county efforts. Consortium Members have already

committed to a series of planning meetings in the fall and we intend to formalize governance responsibilities with MoUs at that time. We will leverage best practices for cross-county coordination established by **Southeast Florida Regional Climate Change Compact** (led by the quad-county region’s Chief Resilience Officers) and **South Florida Regional Planning Council (SFRPC)** which serves as the region’s Economic Development District (EDD) and stewards its Comprehensive Economic Development Strategy (CEDS).

The Innovation and Economic Development Office within **Miami–Dade County** will serve as our lead applicant. As lead, the County brings trusted relationships across sectors and counties; proven capacity to successfully manage complex grants; expertise in economic development, innovation, and climate resilience; and a commitment to diversity, equity, and engagement with regional stakeholders.

Francesca de Quesada Covey, Miami–Dade County’s Chief Economic Development and Innovation Officer, will serve as our Hub’s Regional Innovation Officer (RIO). A native of Miami, de Quesada Covey is a veteran of Meta, TheVenture.City, and the Obama White House.

Our vision has earned public sector support from **Broward, Monroe, and Palm Beach Counties**, the **City of Miami** (which spearheaded an effort to bring venture investment to the region), advocates like **Miami Waterkeeper** (which stewards environmental and economic benefits of the region’s waterways) and the region’s **bipartisan congressional delegation**.

COMPOSITION AND CAPACITY OF THE REGIONAL WORKFORCE

As of 2022, the SRI field employed 6,000 residents in the region, with a median annual salary of \$52K compared to \$48K for all roles. The Tech Hub is expected to create 23,000 jobs (17% CAGR) through 2032 and increase median annual pay to \$83K among tech-hub related roles, which include construction, trades (e.g., electrical, plumbing), software developers, engineers, and scientists. More than 75% of these new jobs do not require four-year degrees. Additionally, through a direct, indirect, and induced job multiplier effect of 2.8, the Tech Hub could support an additional 63,000 more jobs, creating opportunity for all, beyond the Tech Hub.

Of the jobs created, an estimated 10% of workers are expected to be represented by unions. Consortium Member **International Union of Operating Engineers (IUOE) Local 487** represents 1437 Members and is prepared to orient its training and apprenticeship programs toward these new roles and the accompanying required skills.

The Tech Hub will leverage Miami Dade College’s deep expertise⁹ to ensure career pathways match employer demand, with a focus on expanding STEM training through programs like **Code Path** (a nonprofit that helps eliminate inequities in tech education) and filling the pipeline of mid-level “operator” talent with the business acumen critical for growing enterprises. It will also help U.S. and foreign-born residents to access core tech area jobs through programs like the Tech Talent Coalition (led by Consortium Member **Miami Tech Works** and powered by a \$10 million grant from the EDA’s Good Jobs Challenge initiative), which partners directly with employers to open pathways to good jobs.

To support these workforce and talent pipeline development efforts, our Tech Hub intends to direct implementation funding as follows:

- Establish a **Climate Tech Apprenticeship Program** to develop coordinated partnerships with Tech Hub companies that facilitate opportunities for students and workers (including underserved populations) to obtain practical experience and create pathways into good jobs.
- Leverage the existing Tech Talent Coalition to create a **Climate Skills Academy**, a network of SRI-focused workforce upskilling/reskilling programs to equip workers with the necessary skills to fuel climate resilience work.

- Establish a **South Florida Academy for Climate Resilient Technology**, a collaboration across educational institutions to develop relevant coursework, certifications, and cross-enrollment programs for SRI.

IMPACT ON EQUITY AND DIVERSITY

Climate change disproportionately affects our most vulnerable populations¹⁰—the same groups that are most frequently left out of high-paying technology careers.¹¹

The Consortium is composed of organizations that are representative of South Florida’s diverse communities and local leaders of color have been the primary direction-setters for the Tech Hub initiative from the very beginning. Their leadership has shaped the Hub's focus on equitable access for the populations across the region (including communities west of I-95 like Belle Glade, Florida City, and Hialeah), a commitment to using [Justice40](#) principles when soliciting input, setting goals and tracking progress, and the composition of the Consortium itself (56% and of Members and Hub Partners are led by a leader of color, while 33% are represented by a female leader).

Tech Equity Miami, backed by Consortium Members, plans to allocate \$100 million in funding over five years to address the underrepresentation of women, Hispanic, and Black workers at all education levels in careers related to our core technology areas. MasTec’s CEO recently cohosted the National Minority Supplier Development Council’s annual forum and is committed to fueling small business in the region. The region is home to a strong community of foreign-born professionals, and **Endeavor Miami** actively connects these leaders to the tech ecosystem.

South Florida’s leading minority-serving institutions (MSIs) will play a critical role in creating the workforce of tomorrow. These include FMU, MDC, and FIU, as well as **OIC of South Florida** (OIC) and **CareerSource South Florida**, who tailor their workforce development and job training offerings for communities of color.

IMPACT ON ECONOMIC AND NATIONAL SECURITY

President Biden and [Secretary of Defense Austin](#) have repeatedly emphasized that climate change is a critical national security issue and our Tech Hub is designed to address this need.

Domestic development of SRI technologies in South Florida stimulates economic growth by keeping critical IP in the U.S. and creating good jobs, and reduces risks associated with dependence on foreign imports of critical infrastructure materials like cement (totaling \$2.7B or ~18% of global imports in 2022)¹² and HVAC systems (totaling \$11.3B or 19% of global imports in 2021). Licensing agreements (e.g., CarbonLimit, which licenses CaptureCrete) reinforce supply-chain resilience by encouraging production in locations less likely to be disrupted by climate-driven weather events while stimulating economic growth in South Florida.

The Tech Hub will also promote national security via direct engagement with the region’s military community. In a recent Department of Defense Military Installation Resilience Review, the **South Florida Defense Alliance** (a Tech Hub partner) and **SFRPC** outlined strategies to address climate change-related threats to defense assets across the quad-county region, including U.S. Southern Command headquarters in Doral, Naval Air Station Key West, Homestead Air Reserve Base, and the Port Everglades communications facility. These strategies directly align with our Tech Hub vision.

CONCLUSION

If funded, our Tech Hub represents a generational opportunity to advance 3 critical priorities: developing solutions for the global climate crisis, bolstering U.S. national security by ensuring cutting-edge technology scales from the U.S., and amplifying a groundswell of local economic development in a community whose rich diversity reflects the future of the United States.

— Appendix & Endnotes —

	Consortium Members	Hub Partners
Government	Miami-Dade County (lead), City of Miami	Broward County, Monroe County
Higher Education	Florida Atlantic, Florida International, Miami Dade College, Nova Southeastern, Univ of Miami	Florida Memorial, Northeastern (Miami)
Industry	1Print, Blue Frontier, Carbon Limit, MasTec, Titan Florida, Watsco	Florida Power & Light, I Squared, Merrimac Ventures, Mission One Capital
Economic Development	Ken Griffin/Citadel, Knight Foundation, South Florida Regional Planning Council	Beacon Council, eMerge Americas, Greater Fort Lauderdale Alliance, Marine Research Hub, Miami-Dade Innovation Authority, Seaworthy Collective, South Florida Defense Alliance, Techstars
Wkfce/Labor	IUOE 487, Miami Tech Works	CareerSource, CodePath, OIC So Florida
Climate Resilience	Southeast Florida Regional Climate Compact	Miami Waterkeeper

Potential Tech Hub Initiatives <i>(excerpted from narrative for reference)</i>	
<ul style="list-style-type: none"> • Applied Climate Tech Lab Space • Climate Tech Sandbox Program • Climate Tech Commercialization Task Force • Association of Climate Resilience Champions 	<ul style="list-style-type: none"> • Climate Investment & Mentorship Network • Climate Tech Apprenticeship Program • Climate Skills Academy • So Fl Academy for Climate Resilient Tech

¹ U.S. Bureau of Economic Analysis, "CAGDP1 County and MSA GDP summary"

² Source: US Patent and Trademark Office, Higher Education R&D Survey (HERD)

³ Pitchbook

⁴ “Real Zero” represents the outright elimination of carbon emissions vs. “net zero” which involves offsetting carbon emissions with removal of emissions.

⁵ Source: MarketLine, BCC, Arizon Advisory and Intelligence, IHS Markit.

⁶ Wage and occupation data from Moody's Analytics and Lightcast

⁷ Source: [Miami-Dade County](#)

⁸ Source: Pitchbook

⁹ MDC confers more associate degrees than any community college in the country and has built a multitude of relevant career pathways, including the Construction Trade Institute (funded by [\\$1.8M EDA grant](#)), the intensive Tesla Technician Certificate (focused on electric vehicles), and the NSF-funded STEM-MIA project that supports low-income STEM students.

¹⁰ Source: [EPA Report](#)

¹¹ More than 65% of Greater Miami residents identify as Black or Hispanic/Latino, but these groups make up only 12% and 27% of South Florida tech employees respectively.

¹² Source: [Worlds Top Exports](#) (Cement) and [OEC](#) (HVAC)