



# 2024 Georgia Cleantech Innovation Outlook

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*How 5 Trends Will Impact Georgia, Its  
Residents and Companies in the Coming Year*



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# Introduction

2023 saw a flurry of activity in cleantech in Georgia. From the nearly weekly announcements of new cleantech manufacturing capacity build outs in Georgia to the successes in raising and deploying capital by local start-ups, VCs and corporates to expand their cleantech footprint, it has been a year to celebrate without doubt.

It is the time of year to prognosticate on what 2024 will see for cleantech innovation in Georgia. The Georgia Cleantech Innovation Hub is providing its view on five cleantech innovation trends that will impact the state, its companies and residents the most this coming year.



## 1. Collaboration at Scale

Big commitments and targets bring corporates together to find decarbonization solutions that scale



## 2. Emergence of Alternative Funding Mechanisms

Green Banks open up new opportunities for innovators and companies looking to scale



## 3. Through-cycle Capital Raising

The exuberance of 2021-22 and the headwinds of 2023 give way to those playing the long game



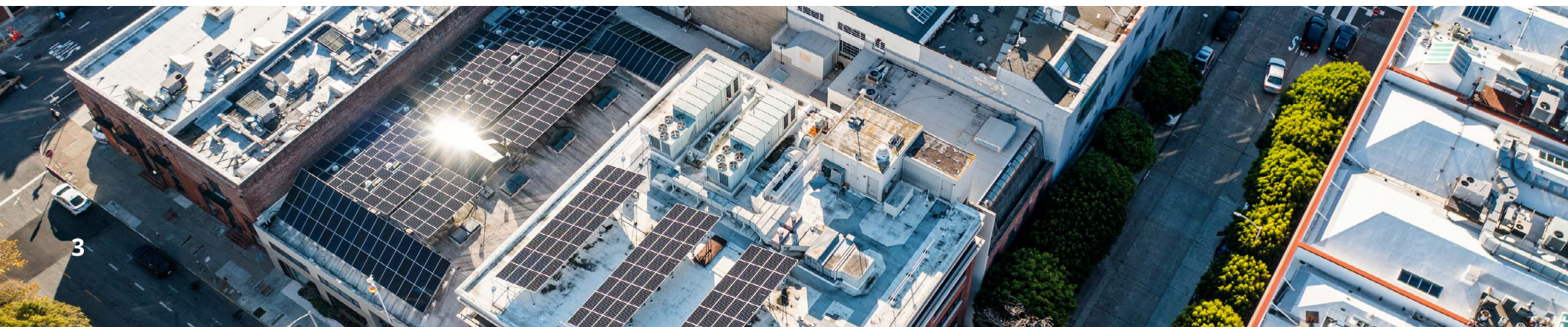
## 4. Planning to Operation

The execution of big projects announced over the past couple of years begins and sets in motion major ecosystem expansion



## 5. Innovating at the Grid Edge

With low carbon energy generation tech moving into the mainstream, the grid edge innovation to manage load and generation accelerates





# 1. Collaboration at Scale

While some argue that the scope and scale of public commitments to decarbonize are insufficient to reach CO<sub>2</sub> reduction targets to maintain <1.5C global temperature rise, the commitments that have been made still require massive and concerted efforts. Because no single entity fully controls every ton of CO<sub>2</sub> that they emit, collaboration is one of the central components of meeting carbon reduction targets.

## **Evidence of the Trend**

In recent years, the scale of collaboration has grown substantially. At a global level, Frontier Climate, a public benefit organization founded by Stripe, Alphabet, Meta, McKinsey and Shopify, seeks to facilitate carbon removal from the atmosphere by creating a >\$1B market commitment for technologies that permanently remove CO<sub>2</sub> from the atmosphere. Locally, the Drawdown Georgia Business Compact (DGBC), which was launched in 2021, has brought together over 60 companies with the goal of making Georgia carbon neutral by 2050 through collaborations that scale projects and innovations aimed at reducing atmospheric CO<sub>2</sub>.

## **How will it impact Georgia?**

From 2017 to 2021, Georgia reduced its carbon emissions by 8%, while increasing its GDP by 10% and its population by 4%. A significant feat, however, more is needed. The latest National Climate Assessment states that a 6% average annual reduction in carbon emissions is needed for the country to reach its mid-century goal of net carbon neutrality. With the collaborative efforts of DGBC companies, the continued decarbonization of Georgia's energy supply, massive funding sources created through recent federal legislation and more holistic plans at the city and state level, it is likely that the pace of emission reductions will accelerate in 2024.



## 2. Emergence of Alternative Funding Mechanisms

There is a sizable gap between the two major forms of cleantech investing: venture capital and project finance. Rob Day, cleantech VC pioneer, sums it up by saying, “Venture capital races to be the first to do something, whereas project finance races to be the 10th”. Fortunately, the Inflation Reduction Act (IRA) has earmarked nearly \$20B in funds for a unique flavor of Community Development Financial Institution, known as Green Banks, that is well-suited for advancing the transition to a lower carbon economy in Georgia by funding projects somewhere in between these bookends.

### Evidence of the Trend

The IRA mandates the Environmental Protection Agency to deploy the funds by the end of 2024 to “mobilize financing and private capital to address the climate crisis, ensure our country’s economic competitiveness, and promote energy independence while delivering lower energy costs and economic revitalization to communities that have historically been left behind.” While Georgia has yet to perform a formal study for establishing a Green Bank, recognition of the efficacy of Green Banks in mobilizing capital in this sector has motivated Georgia’s neighbors to the east (North Carolina and South Carolina) and south (Florida) to undertake studies and launch Green Banks.

### How will it impact Georgia?

Green Banks deploy capital in various ways to effectively de-risk development projects and typically attract around \$3 of private capital for every \$1 from the Green Bank. If Georgia were to receive its per capita share of available funds, which is approximately \$660M, this could mean an additional \$2.7B of investment in projects that push cleantech innovation and technology deployment forward. For context, if that \$2.7B were all used on deploying just DC fast chargers across that state that would be nearly ~13,000 chargers or roughly 1 for every 5 EVs in Georgia.



# 3. Through Cycle Investing

By all accounts, 2023 was characterized by strong headwinds for start-ups seeking funds and venture investors, especially when compared to 2021/22. Cleantech was sheltered by the Bipartisan Infrastructure Law (BIL) and IRA, but there was still suffering in 2023. The election cycle brings some additional uncertainty, especially when it comes to the future of the IRA beyond 2024. Cleantech investors will continue to invest in 2023, albeit with prudence, because the market fundamentals around the technologies leading to deep decarbonization remain strong with or without the IRA. Cost-conscious start-ups with hardened revenue streams in cleantech will remain attractive for new and follow on investments.

## Evidence of the Trend

There are a few reasons to believe that there will be a through-cycle approach to cleantech investing in 2024. First, unlike the boom and bust cycle that characterized the “Cleantech 1.0” period from 2006-2011, demand-side policies like the BIL and IRA and public/private net zero commitments are established and on-going. Moreover, it is estimated that there is ~\$33B in dry powder for early and growth stage cleantech companies, despite nearly ~\$30B in investments globally since the start of 2021. Finally, first time cleantech investors continue to deploy capital, which can signify a broader acceptance of cleantech companies as viable investments. Both new and experienced cleantech investors are aware of the demise of the first cleantech investment boom, and as a result they will proceed with care.

## How will it impact Georgia?

Georgia has cleantech start-ups across the maturity spectrum and a number of them raised capital in late 2022 and 2023, which means at least a portion of their 2024 will be spent on the fundraising trail. On the investor side, Wellstar, Delta and Coca Cola made announcements of corporate venture funds or innovation labs with cleantech or sustainability angles and will be making investments around these themes. And Cox Enterprises, under its Cleantech division, just completed its largest acquisition in this sector (\$250M in DSD Renewables). Will 2024 be the year that a Georgia-based cleantech company joins the state’s growing list of unicorns? While that is highly dependent on the timing of fund raises, it would be hard to bet against that happening in the very near term.



## 4. Innovation at the Edge of the Grid

Even with recent price increases due to inflation (up to 30% over the last two years), utility-scale renewables remain at or below cost parity with centralized fossil fuel electricity generation sources after a decade which saw centralized renewable generation costs drop by 150-300%. The need for innovation has shifted to the edge of the grid where local generation and load management technologies are needed to increase resiliency, flexibility, and efficiency of the grid.

### Evidence of the Trend

While the need for grid edge innovation has been understood for sometime, it has been difficult to unlock. The key sticking points have been the need for policy changes, lack of data transparency and tech standardization to help solutions to access markets, gain funding and scale faster. FERC Order 2222, wider adoption of performance based rates and the Matter interoperability standard are just a few recent milestones that have accelerated progress, however, further innovation is needed. The BIL and IRA have created a range of programs to inject capital and effectively de-risk deployment of grid edge technology. Collectively, these create a fertile ground to prove these technologies at scale.

### How will it impact Georgia?

Georgia stands to benefit in multiple ways. First, the Georgia Environmental Finance Authority (GEFA), along with a coalition of partners, won a \$250M grant from the Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) program, which is aimed at enhancing resiliency and flexibility of the electric grid in rural, underserved communities. The grant, which is matched with \$250M of private investment, focuses on battery storage, local microgrids, grid reliability and energy efficiency. Secondly, between the cleantech manufacturers and Georgia-based grid edge innovators the opportunity to grow their sales domestically increases.



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**This public-private partnership will help build a resilient energy future for Georgia.**

*-GEFA Executive Director Hunter Hill*





## 5. From Announcement to Production

Georgia is one of the runaway leaders in the US at attracting new clean energy manufacturing facilities. As these announcements steadily move from planning to build to production phases, Georgians will start seeing the positive ripple effect as robust hubs are established across the critical sectors such as batteries, EVs, and solar, and economic development expands up and down their broader industry value chains.

### **Evidence of the Trend**

Since the IRA was passed, there has been \$18B in investment announced spread across 19 different battery, EV and solar manufacturing projects. This represents more than a fifth of all new clean energy manufacturing investments across the country. Over the next several years, these will move into full production and expand the full economic impact. For example, by 2024, between the Dalton and Cartersville facilities, QCells anticipates its solar production capacity will reach 8.4 GW a year, or enough to power 1.3 million homes annually with clean energy. In addition, Rivian has recently confirmed that it plans to break ground on its new Georgia factory early in 2024.

### **How will it impact Georgia?**

While a handful of these projects come online in 2024, the majority will be completed in 2025 and 2026. In preparation for those openings, millions are being invested in programs like Quick Start, to train the thousands of workers needed for these plants. Moreover, these initial manufacturing investments may just be the tip of the iceberg. The advanced manufacturing of sustainable technologies bolsters existing businesses and stimulates the growth of new tier 1 and tier 2 suppliers to these factories. Researchers and entrepreneurs are also searching for ways to plug their innovations into the new local capabilities and supply chains. Georgia is increasingly becoming known as a center of clean energy manufacturing and technology with strong support from state-wide partnerships, research, and workforce development efforts.



# Prediction to Reality

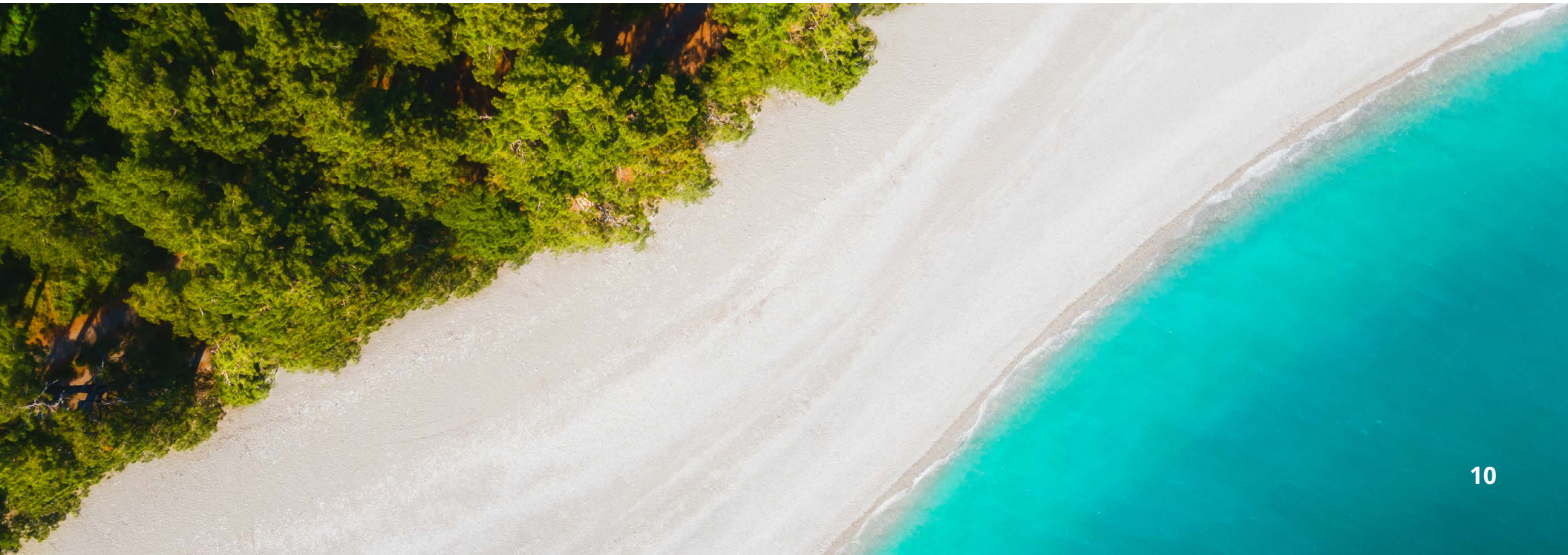
Abraham Lincoln said that, “The best way to predict the future is to create it” and in 2024 that is exactly what The Georgia Cleantech Innovation Hub will be doing. We strive to make it easier for all cleantech innovators to access the rich resources available in Georgia to build products, grow businesses, and create jobs that ultimately reduce or eliminate carbon in the atmosphere. We do that by creating a world-class ecosystem where cleantech innovators in Georgia are never two conversations away from the person that helps to advance their cleantech idea, product or business.

While we can make predictions about 2024, we prefer to make it happen. To that end, the Hub is always looking for and in need of mission-aligned partners to contribute their time, talent and treasure to the cause. For some that may mean volunteering as a mentor to a start-up, or filling a role critical to hub operations. For others that may mean hosting a pilot program or financially sponsoring a project or program.

If you are interested in learning more about how you or your organization can contribute to making Georgia the best place for cleantech innovation, [contact the Hub](#).

# Resources

- [Landmark climate plans in Atlanta and Georgia](#)
- [Explore local solutions for decarbonization](#)
- [Frontier Climate's collaborative market creation approach](#)
- [Georgia's decarbonization collaboration – Drawdown Georgia Business Compact](#)
- [The opportunity for a green bank in Georgia](#)
- [A deep dive on Cleantech 1.0 failure and what needs to be different in 2.0](#)
- [Investment potential in cleantech](#)
- [Georgia's Grid Resilience and Innovation Partnership Project](#)
- [The Matter Standard](#)
- [FERC 2222 and its on-going implementation](#)
- [Search recent clean energy investments in Georgia](#)
- [Georgia Quick Start and cleantech workforce development](#)
- [The IRA and Georgia Investments](#)





## Learn more about the Hub.

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The Georgia Cleantech Innovation Hub is a public, private, academic partnership building a world-class ecosystem that allows innovators to access the rich resources available in Georgia to build products, grow businesses and create jobs that reduce or eliminate carbon emissions.

[www.gacth.org](http://www.gacth.org)