CLIMATE CHANGE BUSINESS JOURNAL®

Climate Change Investment & Finance

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Financing Climate Change Challenges Governments, Corporations, NGOs, Banks and Investors

Adaptation finance shows some momentum in 2025 as energy transition and decarbonization investment shifts to the private sectors.

If the universe is 14 billion years old, planet Earth is 4 billion years old, homo sapiens 300,000 years old and human civilization 5,000 years old, then you could see how the last 100 years can seem to be rather inconsequential in the grand scheme of things.

But to us sentient, conscious and sapient human beings, what can be more consequential than the concerns of today. The issue of climate change poses existential and moral issues. The long term survival of our species and society as we know it yes, but also a responsibility to people around the world that are hardly responsible for climate change – and the people of future generations not yet born. Many would argue that we also shoulder responsibility to the flora, fauna, fungi and other life forms and ecosystems that managed in their own way more sustainably prior to our disruption. And that we should shoulder more responsibility for the planet we inhabit itself. 'Always leave the world a better place than when you found it', is a much used phrase from philosophers to grandmothers to scoutmasters that has been largely ignored in the consumptive society of modern civilization.

Besides the existential and moral issues, relative short term issues of health, economics, resource scarcity, inequality, social stability and global security pose challenges for both sides of the climate change policy debate.

Climate Change Investment & Finance

CCBJ characterizes the state of climate change finance and investment at the end of 2025 as governments, utilities, industry, commercial enterprises and financiers face an uncertain policy environment. Private interests may have taken over some momentum as government policy wanes in certain areas, but global negotiators continue to make incremental progress on adaptation finance.

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Opinions on the Outcome of COP30 from Major Media, Conservative and Liberal Think Tanks And Prominent NGOs

Major media outlets describe COP30 as a fragile, mixed outcome. The result is seen as keeping United Nations climate diplomacy alive but falling well short of what science and vulnerable countries demand. Coverage in places like The Guardian, Reuters, FT and others stresses that Belém delivered some progress on adaptation, finance and institutional reforms, yet ducked the central debate over the future of fossil fuels — with no agreed roadmap to phase them out, despite heavy pressure from more than 80 countries. Instead, journalists emphasize a compromise that modestly boosts support for developing nations while leaving the 1.5°C goal "on life support," and highlight the symbolism of an Amazon-hosted COP that still failed to lock in a deforestation or fossil phase-out plan.

Conservative and right-leaning think tanks generally framed COP30 as either largely inconsequential or an example of what they see as misguided climate multilateralism. At Heritage Foundation, commentary uses COP30 mainly as a backdrop to argue that net-zero targets are a "fallacy," calling for a shift from emissions metrics to human welfare and cheap energy access, and warning that climate anxiety stoked by summits like COP30 undermines 'family formation' and economic growth. The American Enterprise Institute characterized the outcome as "little accomplished," zeroing in on agreement language about progress toward the Paris temperature goal as "Orwellian" and grounded in flawed, outdated emissions scenarios; they portray COP30 as doubling down on a narrative that, in their view, overstates policy success and misuses climate modeling. Overall, conservative think tanks sees Belém as more evidence that elite climate politics are detached from real-world energy security, affordability and development priorities.

Liberal, progressive and centrist climate policy institutes and think tanks (WRI, IISD, CSIS, Kleinman Center, Wuppertal Institute) offered a 'progress but not enough' verdict of COP 30. Analyses highlight achievements: elevating adaptation (including a political signal to triple adaptation finance and agreeing the first indicators under the Global Goal on Adaptation), launching a just-transition mechanism and new implementation initiatives, and pushing forward discussion of trade, finance and biodiversity linkages. They note that the conference left many delegations disappointed: Efforts by over 80 countries to secure a fossil-fuel transition roadmap and stronger finance guarantees stalled; trust gaps between North and South widened; and the pace of emission cuts implied by COP30 decisions still falls far short of a Paris-compatible trajectory. Progressive institutions largely treat Belém as an incremental step that preserves (and slightly upgrades) the global climate regime's architecture, while underscoring an acute ambition and finance gap.

Prominent NGOs and climate justice groups were the most bluntly critical, casting COP30 as a missed opportunity wrapped around a few hard-won but modest gains. Greenpeace faults the summit for failing on the "three Fs"—fossil fuels, finance and forests—arguing there is no clear pathway to phase out fossil fuels, no robust Amazon/deforestation deal, and no meaningful step-up in climate finance. WWF speaks of "small wins" (on adaptation, just transition and some implementation tools) but says the core goals of phasing out fossil fuels and ending deforestation remain out of reach. Oxfam and Climate Action Network describe COP30 as "a spark of hope but far more heartbreak," praising the just-transition mechanism while condemning rich countries for blocking stronger adaptation finance and committing to or setting out a fossil exit plan, and emphasizing that communities on the front lines still lack the resources they need to survive. The overall NGO narrative is that any progress in Belém was won despite, not because of, the most powerful governments and fossil-fuel interests.

Cleantech Group View on the Evolving Cleantech Theme

Cleantech Group offers market intelligence, strategic guidance, and curated connections to help leaders stay ahead, identify opportunities, and act with confidence in the cleantech industry. Insights are built on over 20 years of human intelligence, proprietary data, and direct relationships with the ecosystem leaders in industry, finance, and policy. Through Market Intelligence, Innovation Advisory, Advocacy, and Events, Cleantech Group helps corporations, investors, financial and professional services, governments, non-profits, foundations, and start-ups track breakthrough technologies, make informed decisions, and connect with the right partners to accelerate their impact. Cleantech Group is the human intelligence authority on global cleantech innovation. By combining human intelligence, proprietary data, and a global innovation network, we help industry, finance, and policy leaders stay ahead of disruption and capitalize on transformational opportunities.

Anthony DeOrsey, Research Manager, Cleantech Group: Anthony manages Cleantech Group's research team, delivering critical insights on new cleantech innovation and opportunities for engagement to clients in the industrial, investment, and policy communities. Based in the U.S. Anthony joined Cleantech Group in late 2019 after over 8 years of work in US-China cross-border expansion consulting and start-up venture funding roles, including 5 years living in Shanghai. He holds a Bachelor of Arts in Political Science from University of Rhode Island, a Masters in Sustainability from the Harvard Extension School, and an MBA at the University of Michigan Ross School of Business.

CCBJ: Please give us a brief history of the Cleantech Group and how the business model has evolved since founding.

Anthony DeOrsey: Cleantech Group was founded in 2002 with the mission of delivering insight on innovative technologies that: provide superior performance or lower costs, greatly reduce or eliminate negative ecological impact, or enhance resilience to effects of changing climate, or improve the productive use of regenerative resources or avoid use of polluting resources. Our business model remains one of market intelligence at its core, but today we also operate innovation advisory services, an advocacy network in Europe, and we organize the three leading cleantech innovation conferences (Cleantech Forum North America, Cleantech Forum Europe, and Cleantech Forum Asia).

CCBJ: What are the core principles and how would you segment and prioritize clients and the value you provide them?

DeOrsey: Our differentiator is a focus on human intelligence, taking stances on trends, stances informed by conversations with people working hands-on in the field (start-ups, investors, corporate adopters of technology). In all of the markets that we serve (industry, finance, government) we take a focus on driving decision makers to informed decisions. We believe that with fast-moving innovation, having a "bottom-up" approach of understanding innovators' world view is essential for seeing around the corner.

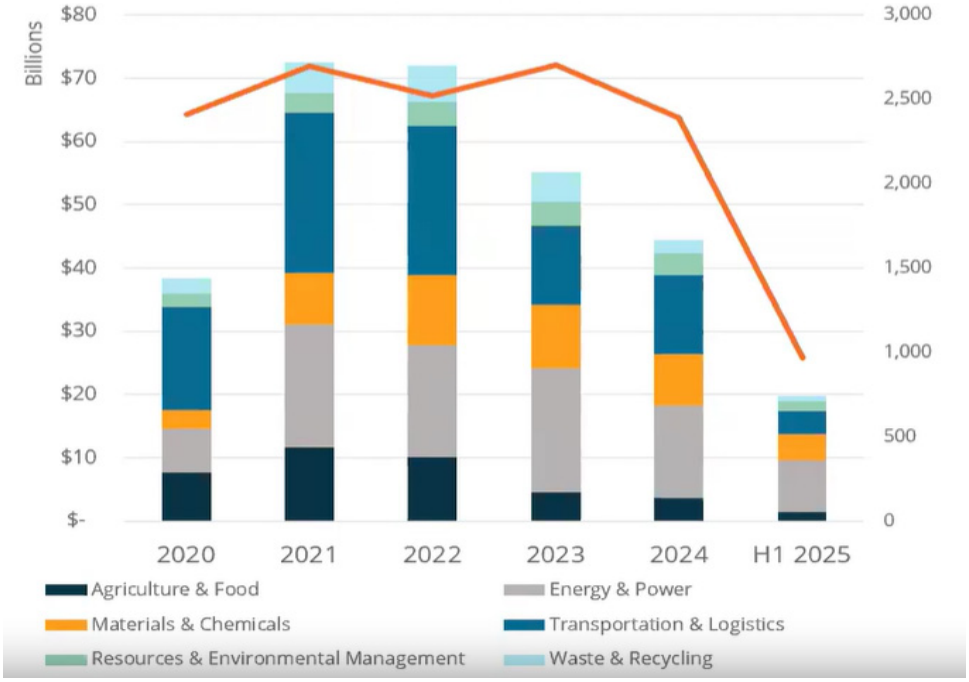
We help clients at all phases of the journey, from landscaping innovation and sources of new technology, to forming strategies to engage new technologies.

CCBJ: There have been waves and ebbs and flows in investment interest in the clean tech or climate change industry over the last decade or more... But is there an easy way to characterize this or do you resist the label of cleantech 1.0 or cleantech 2.0 or climatetech or any other terms? How do you think investment funds are changing their approach or redefining their scope when they are raising money from limited partners today in the current climate?

DeOrsey: Indeed, we resist this labeling, in fact, we view cleantech as a continuous theme that has evolved over time. Importantly, we view cleantech with a very wide aperture: agriculture & food, energy & power, materials & chemicals, resources & environmental management, transportation & logistics, and waste & recycling.

I'd point out two major differences in the way the investment world experiences engagement with the cleantech theme today:

Cleantech Group's 5-Year History of Recent Venture & Growth Investment



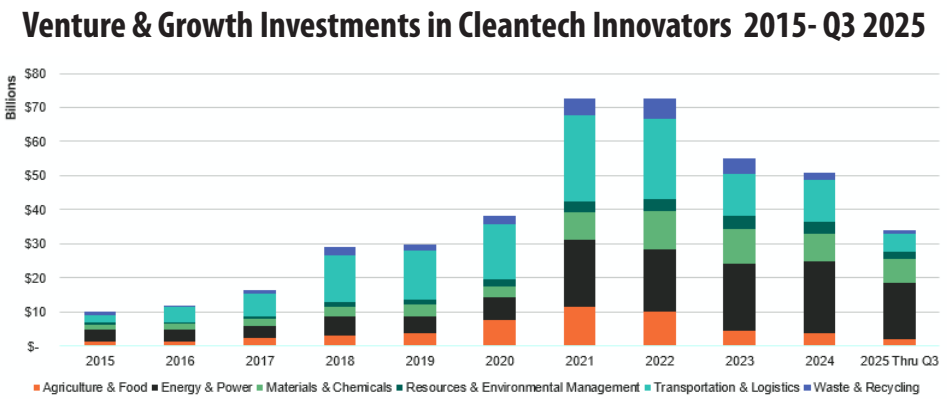
The technologies today are mostly enhancing existing industries or solutions (e.g., new materials for electric vehicle batteries, new types of energy storage, better production of clean fuels) whereas in the first cleantech wave many of the technologies needed to directly displace incumbent solutions (e.g., solar and wind nudging out natural gas, electric vehicles directly competing with internal combustion).

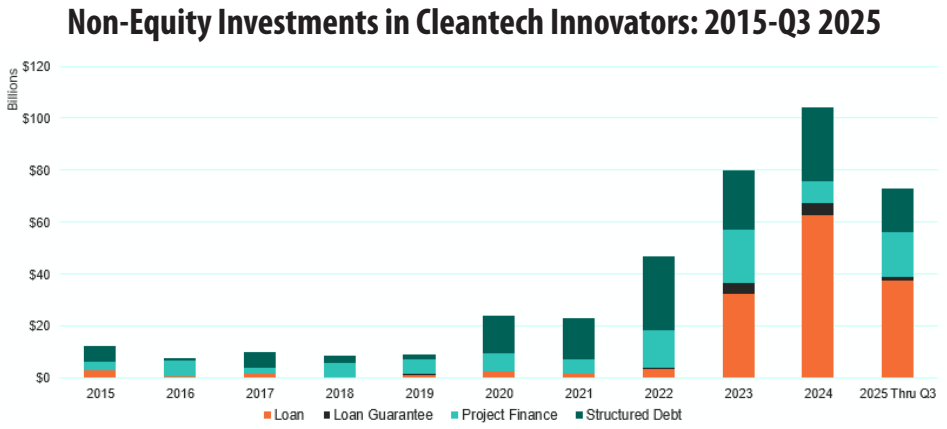
Investors that have stuck it through are much more familiar with the technology areas today than even just a few years ago, and that has led some to zoom in and create specialized funds. A few years ago, there were only so many "climate" VCs, and most were pretty broad in their definition. That narrowed a bit the past few years to specialized deep tech funds (focusing on hardware and chemicals), and now we see the emergence of some highly specialized funds (examples below). This indicates to us that there is more LP confidence in the well-trodden areas of cleantech (think power generation sources, energy storage, carbon management) that fund managers can now offer exposure to very granular themes but still allow LPs to take an index approach:

- Convective Capital – wildfire tech fund
- Burnt Island Ventures – water fund
- Acre and Better Bites – food sustainability funds

CCBJ: Can you characterize any momentum change from the investment side of the equation particularly private equity versus venture capital versus Corporate venture capital or sovereign wealth funds, or investment outside of equity Finance that will continue to advance the clean tech and energy transition and climate change Industries?

DeOrsey: As a starter, recency bias is just human tendency, and people tend to anchor their understanding to recent trends. That's why you'll hear a "drop-off" in cleantech investments often cited. But see below, where even in a challenging year like 2025 we've experienced a full 2015's worth of investments each quarter.





Source: Cleantech Group

Indeed, there has been a shift in financing of cleantech solutions, namely that many cleantech companies have had to "graduate" out of equity and into debt over the past few years. In some quarters the debt ecosystem is ready to bank these technologies, the key underpinning has been more physical projects and agreed customer offtake for cleantech companies' products.

That said, there are macroeconomic headwinds emerging globally with tariff uncertainty, and the recent pull-back of Inflation Reduction Act credits in the United States have blunted risk appetite in the debt ecosystem. Much of the recent money in the chart below is for data center-related projects. We do expect to see a slowdown in debt financing, which raises cost of capital for innovators and ultimately ripples backward through the continuum, slowing growth.

Where is there potential for alternative financing to fill a potential void? More catalytic capital, e.g., project equity (see the Breakthrough Catalyst deal with Infinium) can help to bring more projects into development without being financed by expensive equity. There are new, innovative financing methods coming in such as royalties-based financing that is contingent on future sales and reduces debt burden for companies (see Green Star Royalties).

To your question on corporate participation in deals, it tends to track with the overall flow of venture investments (see two charts below). That said, corporates remain a crucial part of the investment ecosystem – it's a critical endorsement especially in heavy industries. We generally hope to see strong corporate participation in deals alongside finance-first venture capital to indicate a combination of strategic value of the technology but also confidence in the financial return.

CCBJ: How has the segmentation of the insights that you produce evolves over time and what kind of information do you think has been most valuable to your clients or challenging to generate when it comes to industry quantifica-

tion and growth, or market in business trends, investment activity, or profiles on specific industry leaders or innovators?

DeOrsey: The shift in our analysis has been toward more granularity, and nowadays, much more forward-focus. On granularity, we manage a proprietary taxonomy of technologies that organizes cleantech into detailed technology segments – nearly 1,500 tags. This helps clients make true apples-to-apples comparisons of technologies.

In terms of analysis content, we continue to do rigorous state-of-play analysis but have made an intentional effort to be more forward-looking. Both in terms of the segments we analyze, giving a 5, 10, 15-year outlook (see example below on energy-efficient compute), and also at the entity level, assessing the ability of a company, investor, corporate, or entrepreneurial support organization to succeed long-term.

CCBJ: What two or three segments do you believe have emerged in 2025 as having more potential than you may have thought a year ago and what are some of the contributing factors?

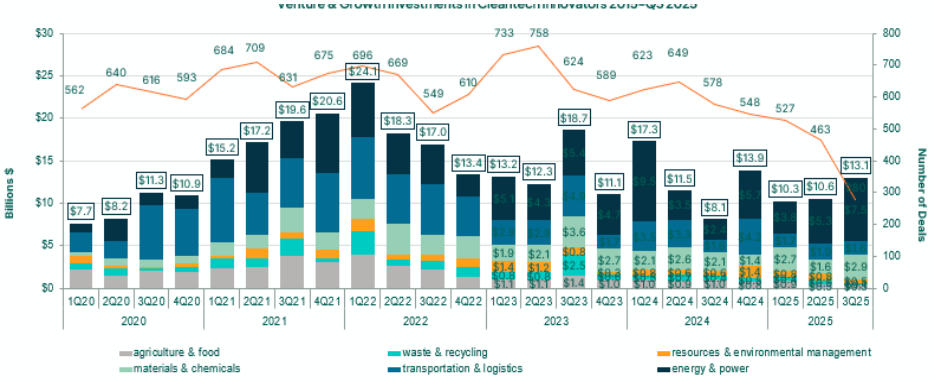
DeOrsey: The most notable segments are everything along the AI infrastructure continuum: new sources of power, energy-efficient chips and semiconductors, energy efficiency in data centers, power management (see examples in the image). Related to the above, grid efficiency & grid hardening. And third, critical minerals: remote identification & AI, extraction and refining.

Also see "Grow, Flow, Slow" predictions chart for 2026.

CCBJ: On a personal level what was your initial motivation to get into the as industry and what's the most compelling evidence of climate change that you may have observed or experienced in your lifetime?

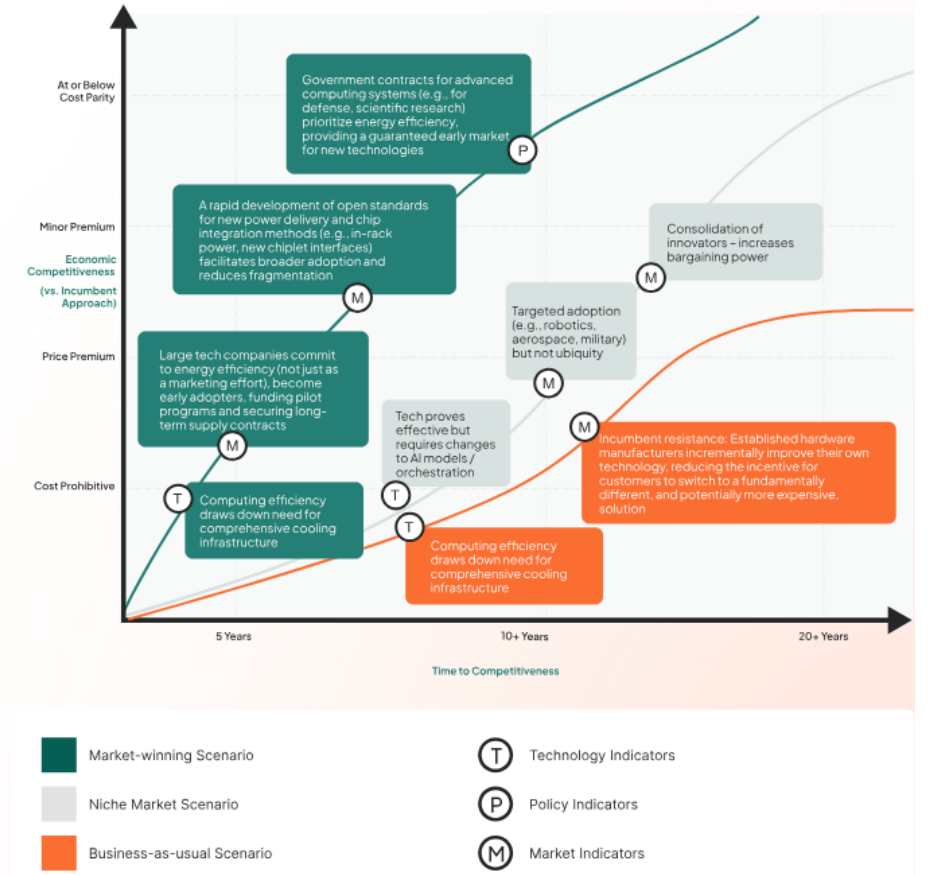
DeOrsey: I'm going to reframe the question a bit and say that I first developed an interest in cleantech not because of climate change at all but because of pollution. I

Cleantech Deals by Quarter: 2020-Q3 2025

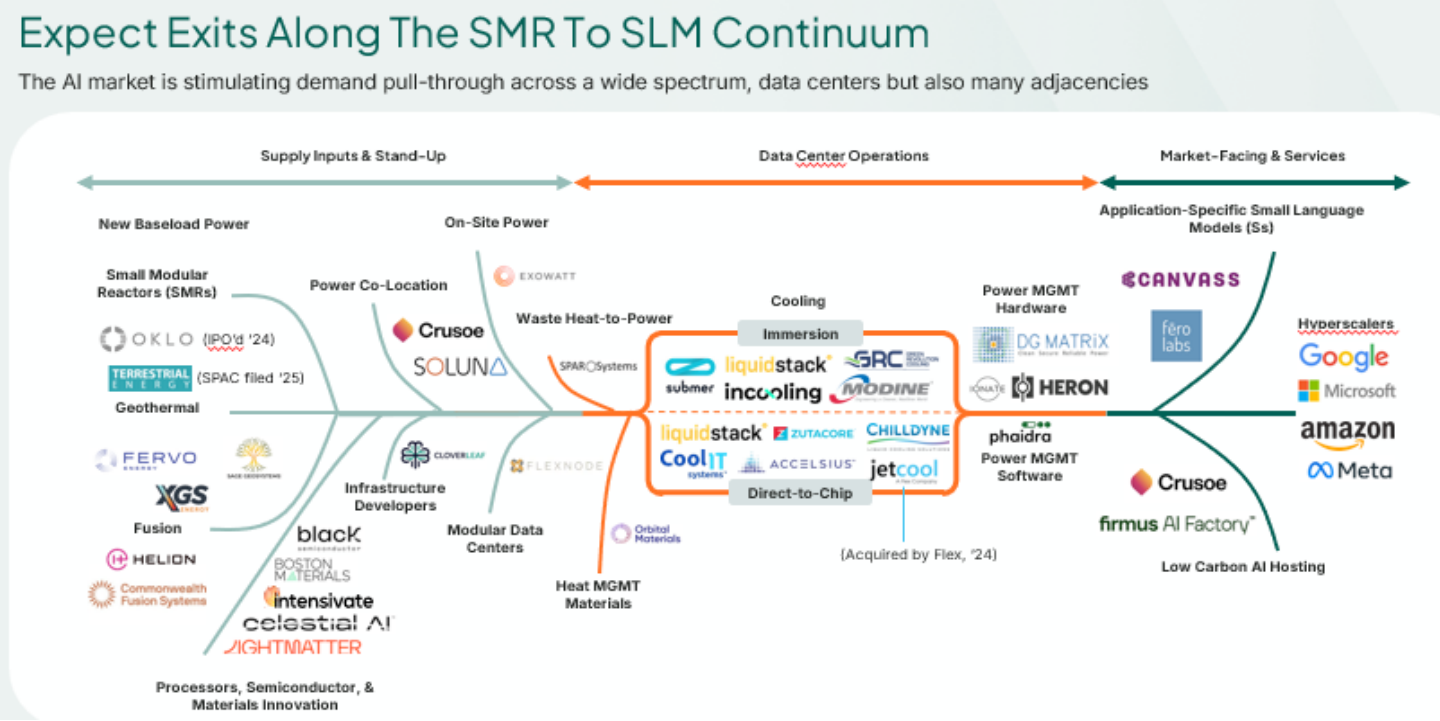


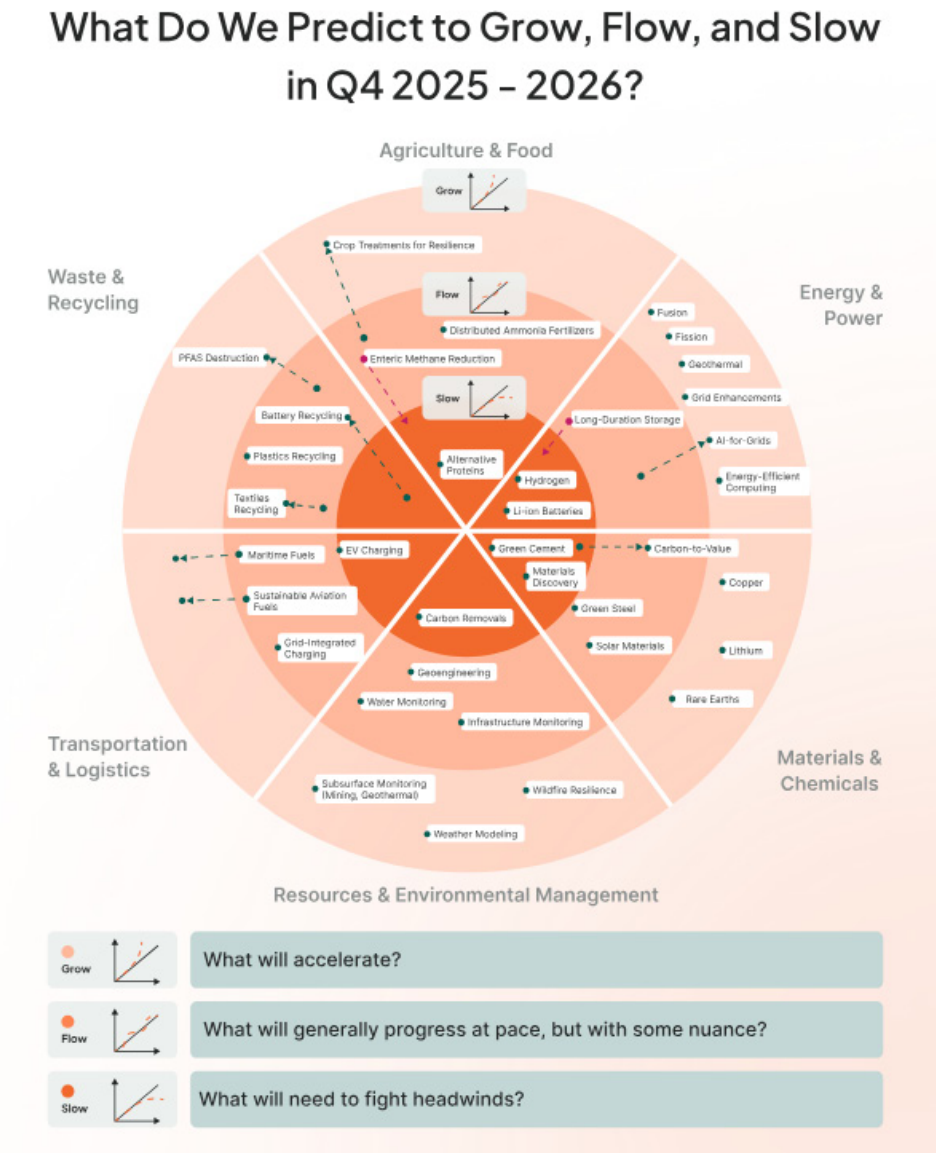
Cleantech Deals with Corporate Participation

Time to Competitiveness



Source: Cleantech Group





lived in China from 2011-2015 and for much of that time experienced the daily air pollution challenge. Even so, witnessing the incredible economic growth taking place there drove home the trade-off of rapid industrialization – and thus, income growth – with public health.

The idea of being able to contribute to solutions that would be able to compound life improvements for people immediately (improving pollution conditions while maintaining improvements in living conditions) was too exciting to ignore.

That's what makes what we do at Cleantech Group so special in my opinion: we're not trying to convince the world to give anything up, but rather to become aware of more efficient and durable paths to economic flourishing. Nowadays, after being immersed in this theme for the better part of a decade, I think much further down the continuum about adaptation to climate change – the effects are here already and the most surefire way to keep people safe is to invest in adaptation now while still pursuing mitigation to flatten the curve of future adaptation needs. ☼