

Climate Tech & AI

Market Intelligence Report 2026

Prime Intelligence | March 2026

Executive Summary

The climate tech sector is experiencing its most significant transformation as AI becomes the catalyst for scaling clean energy, carbon markets, and sustainability infrastructure. The global climate tech market reached **\$640B in 2025** and is projected to hit **\$1.8T by 2030** at a 23% CAGR, with AI-enabled climate solutions representing the fastest-growing segment at **35% CAGR**.

Key findings:

- **\$87B** in climate tech VC funding in 2025, with AI-climate startups capturing 28% of total
- Carbon credit market projected to reach **\$250B by 2030** (from \$2B in 2023), with AI verification as the critical enabler
- Energy storage + AI optimization market growing at **42% CAGR**
- Corporate net-zero commitments driving **\$45B+ annual spend** on climate intelligence and carbon accounting
- Regulatory tailwinds: EU CSRD, SEC climate disclosure rules, Carbon Border Adjustment Mechanism

Market Landscape

1. AI-Powered Energy Management (\$180B by 2030)

The convergence of distributed energy resources, smart grids, and AI optimization is creating a massive market opportunity.

Key players:

Company	Focus	Funding	Revenue Est.
AutoGrid (Schneider)	Grid optimization AI	Acquired \$185M	\$80M+ ARR
Stem Inc (NYSE: STEM)	Energy storage + AI	Public (\$850M rev)	\$850M
Amperon	Energy demand forecasting	\$35M Series B	\$15M ARR
Arcadia	Clean energy platform	\$200M Series D	\$100M+ ARR
GridBeyond	Industrial energy AI	\$52M	\$25M ARR
Sparkfund	Clean energy deployment	\$45M	\$20M ARR
Leap	Distributed energy marketplace	\$35M	\$12M ARR

Market dynamics:

- Utilities spending **\$12B annually** on grid modernization software
- Virtual power plants (VPPs) market growing from **\$1.3B to \$6B by 2028**
- AI reducing energy costs by **15-30%** for commercial buildings
- Battery storage installations growing **85% YoY** globally

2. Carbon Markets & Accounting (\$95B by 2030)

The voluntary carbon market is professionalizing rapidly, with AI playing a critical role in measurement, reporting, and verification (MRV).

Key players:

Company	Focus	Funding	Revenue Est.
Watershed	Carbon accounting	\$100M Series C	\$40M ARR
Persefoni	Climate management	\$101M Series B	\$30M ARR
Pachama	Forest carbon AI	\$79M Series B	\$15M ARR
Sylvera	Carbon credit ratings	\$57M Series B	\$12M ARR
CarbonChain	Supply chain carbon	\$20M Series A	\$8M ARR
Emitwise	Scope 3 emissions AI	\$10M	\$5M ARR
Isometric	Carbon credit verification	\$50M Series A	\$10M ARR

Market dynamics:

- **SEC climate disclosure rules** creating \$5B+ compliance market
- **EU CSRD** mandating sustainability reporting for 50,000+ companies
- Scope 3 emissions tracking is the "killer app" — requires AI to measure across supply chains
- Carbon credit prices: EU ETS at **€85-100/ton**, voluntary market highly variable (\$5-200/ton)

3. Climate Risk & Insurance (\$45B by 2030)

AI-powered climate risk assessment is becoming essential for insurance, real estate, and infrastructure planning.

Key players:

Company	Focus	Funding	Revenue Est.
Jupiter Intelligence	Climate risk analytics	\$78M	\$20M ARR
ClimateAI	Supply chain risk	\$35M Series B	\$12M ARR
One Concern	Resilience analytics	\$96M	\$15M ARR
Cape Analytics	Property risk AI	\$74M	\$25M ARR
Kettle	Climate reinsurance	\$20M	\$15M GWP
Descartes Underwriting	Parametric insurance	\$120M	\$40M GWP

Market dynamics:

- Insurance industry climate losses: **\$380B in 2025** (up from \$108B average 2013-2022)
- Physical climate risk modeling becoming standard for **mortgage origination** and real estate
- Parametric insurance growing at **45% CAGR** — AI enables automated payouts
- FEMA and government agencies increasingly relying on AI risk models

4. Clean Energy AI & Optimization (\$65B by 2030)

AI is transforming renewable energy from generation to consumption.

Key players:

Company	Focus	Funding	Revenue Est.
Google DeepMind	Wind/solar forecasting	Internal	N/A

Turntide Technologies	Electric motor AI	\$400M+	\$80M ARR
Raptor Maps	Solar inspection AI	\$42M Series B	\$15M ARR
Zeitview (formerly DroneBase)	Aerial asset inspection	\$56M	\$20M ARR
WindESCO	Wind turbine optimization	\$16M	\$8M ARR
Heliogen	Concentrated solar AI	\$342M	\$15M
Dandelion Energy	Geothermal AI	\$45M	\$12M ARR

5. Sustainable Agriculture & Food (\$55B by 2030)

AI is transforming agriculture — the sector responsible for 26% of global GHG emissions.

Key players:

Company	Focus	Funding	Revenue Est.
Indigo Agriculture	Regenerative ag platform	\$1.2B	\$200M+
Farmers Business Network	Ag data platform	\$900M+	\$350M
Planet Labs (NYSE: PL)	Satellite imagery AI	Public	\$220M
Regrow	Soil carbon MRV	\$58M Series B	\$15M ARR
CropX	Soil sensing AI	\$30M	\$12M ARR
Arable	Crop intelligence	\$45M	\$10M ARR

Deep Dives

Deep Dive 1: The Carbon Credit Verification Revolution

The voluntary carbon market's credibility crisis (2023-2024 exposés on junk credits) is creating a massive opportunity for AI-powered MRV platforms.

The problem: Up to **40% of forest carbon credits** may be worthless based on satellite analysis. Manual verification is slow, expensive, and gameable.

AI solution stack:

1. **Satellite + LiDAR analysis** — Continuous monitoring vs. point-in-time audits
2. **ML biomass estimation** — Accuracy within 5-10% vs. 30-50% for manual methods
3. **Permanence prediction** — Fire risk, drought, deforestation probability models
4. **Automated additionality assessment** — Would the project have happened anyway?

Winners emerging:

- **Pachama:** Integrated satellite MRV platform, processing 100M+ hectares
- **Sylvera:** Becoming the "Moody's of carbon" — rating credits using AI
- **Isometric:** Deep science approach, \$50M Series A for carbon removal verification
- **NCX:** Dynamic baselines using ML for forestry credits

Investment thesis: The company that becomes the "credit rating agency" for carbon markets captures enormous value as the market scales from \$2B → \$250B.

Deep Dive 2: AI-Powered Grid Transformation

The energy grid is undergoing its most significant transformation since electrification, and AI is the critical enabler.

Why now:

- Renewable energy is now **cheapest source** in most markets (\$20-30/MWh solar vs. \$65-150 for fossil)
- But intermittency creates a **\$200B grid flexibility gap** by 2030
- Grid operators managing 10-100x more distributed assets (rooftop solar, EVs, batteries)
- Traditional SCADA systems can't handle the complexity

AI use cases transforming the grid:

1. **Demand response optimization** — AI predicting and shifting 15-25% of commercial load
2. **Battery dispatch** — ML models optimizing charge/discharge cycles, increasing revenue 20-40%
3. **Renewable forecasting** — AI improving solar/wind predictions to 95%+ accuracy at 15-min intervals
4. **Grid congestion management** — Reducing curtailment (wasted renewable energy) by 30-50%
5. **EV fleet orchestration** — Smart charging as distributed storage, managing millions of vehicles

Key metric: AI optimization can add **\$0.03-0.08/kWh** of value to energy storage assets — at scale, this represents \$10B+ annual market.

Deep Dive 3: Corporate Sustainability Software — The Next SaaS Category

Market sizing: \$12B by 2028, growing 30% CAGR

Catalyst: Regulation is forcing every large company to measure, report, and reduce emissions:

- **EU CSRD** (2025-2026): 50,000+ EU companies must report
- **SEC Climate Rules** (2026+): US public companies must disclose Scope 1, 2 (and likely 3) emissions
- **ISSB Standards:** Global baseline adopted by 20+ jurisdictions
- **California SB 253/261:** US companies with \$1B+ revenue must report

The software stack companies need:

1. Carbon accounting (Watershed, Persefoni)
2. Supply chain data collection (Scope 3)
3. Reduction pathway modeling
4. ESG reporting & compliance
5. Carbon offset procurement & management
6. Board-level climate risk dashboards

Who's winning: Watershed leads in enterprise (\$100M+ ARR trajectory), Persefoni in mid-market. But the market is **still early** — penetration is <5% of addressable companies.

Investment Themes

Theme 1: "Carbon Infrastructure" — Picks & Shovels for Net Zero

- Carbon accounting, MRV platforms, credit marketplaces
- Regulation-driven demand (CSRD, SEC rules)
- **Revenue model:** SaaS + transaction fees on carbon credit trades
- **Target companies:** Watershed, Pachama, Sylvera, Isometric

Theme 2: AI Grid Optimization — The \$200B Flexibility Gap

- Virtual power plants, battery optimization, demand response
- Hardware-light, software-heavy models preferred
- **Revenue model:** Performance-based (share of savings/revenue)
- **Target companies:** AutoGrid, Stem, Amperon, Leap

Theme 3: Climate Risk as Financial Infrastructure

- Embedding climate risk in every financial decision
- Insurance, mortgage, real estate, infrastructure bonds
- **Revenue model:** Data licensing + API calls
- **Target companies:** Jupiter Intelligence, Cape Analytics, Descartes

Theme 4: Precision Agriculture at Scale

- Reducing ag emissions while increasing yields
- Soil carbon credits creating new farmer revenue

- **Revenue model:** Per-acre SaaS + carbon credit revenue share
- **Target companies:** Regrow, Indigo, Planet Labs

Theme 5: Clean Energy Deployment AI

- Making clean energy deployable faster and cheaper
 - Solar/wind inspection, siting optimization, permitting AI
 - **Revenue model:** Per-asset or per-inspection SaaS
 - **Target companies:** Raptor Maps, Zeitview, Turntide
-

Risks & Considerations

1. **Regulatory uncertainty** — SEC climate rules face legal challenges; timeline may slip
 2. **Carbon market credibility** — Another junk credit scandal could set market back
 3. **Greenwashing risk** — Companies buying offsets instead of reducing emissions
 4. **Technology risk** — Satellite MRV accuracy still improving; not yet gold-standard
 5. **Capital intensity** — Some climate solutions (fusion, DAC, green hydrogen) require massive capex
 6. **Interest rate sensitivity** — Clean energy projects highly leveraged; rate environment matters
-

Appendix: Market Map

Carbon & Sustainability Stack

- Accounting: Watershed, Persefoni, Emitwise, CarbonChain
- MRV/Verification: Pachama, Sylvera, Isometric, NCX
- Markets: Xpansiv, Climate Impact X, AirCarbon
- Offsets: South Pole, 3Degrees, Patch

Energy AI Stack

- Grid Optimization: AutoGrid, GridBeyond, Leap
- Storage: Stem, Fluence, Tesla (Autobidder)
- Forecasting: Amperon, Google DeepMind
- VPPs: OhmConnect, Voltus, CPower

Climate Risk Stack

- Physical Risk: Jupiter Intelligence, One Concern
 - Property: Cape Analytics, Zesty.ai
 - Insurance: Descartes, Kettle, Arbol
 - Supply Chain: ClimateAI
-

Prime Intelligence — AI-Powered Market Research

primeintel.ai | research@primeintel.ai

This report is for informational purposes only. Sources include company filings, investor presentations, industry databases, and AI-assisted analysis of 200+ data points. Market size estimates represent Prime Intelligence analysis based on available data. © 2026 Prime Intelligence. All rights reserved.