

**dealroom.co Talis**

# The rise of European climate tech

April 2022



# Foreword

Climate tech companies are transforming the world's largest markets with innovative sustainable alternatives.

Technological innovation in the form of AI, synthetic biology, advanced sensors and more, are transforming the unit economics of climate solutions. And political capital has never been more focussed on policy innovation around climate change. Together these, are creating ideal conditions for climate entrepreneurship.

Through the European Green Deal, Europe is aiming to become the first climate neutral continent by 2030. One fifth of the world's largest corporates have made "net zero before 2050" pledges. Consumers are demanding climate responsibility from brands, and sustainable products are seeing higher growth rates than their non-sustainable alternatives.

In this report, we can also see that startup investment in the climate space is at an all-time high. In 2021, European companies working towards a net-zero future gained more traction than ever.

**Matus Maar**, co-founder & managing partner, Talis Capital

# Key takeaways.



## **Climate tech is the fastest growing vertical in Europe.**

The European climate tech startup ecosystem is now worth over \$100B doubling its value since 2020. Since 2017, climate tech is Europe's fastest-growing sector in Europe, second only to fintech overall.



## **Dedicated climate tech funds are on the rise.**

LPs' interest for climate is growth with dedicated European climate tech funds raised a record \$2.6B in 2021. In addition, established generalist VCs are also actively investing into climate.



## **Climate deep tech companies require more early investment.**

Many of climate tech startups are hardware-driven deep tech companies. These type of companies attract larger seed rounds compared to their peers. Yet, many promising segments (e.g. synthetic biology, carbon removal) are still in an early-stage of growth.

# Table of contents

/	Climate tech investment	page / 7
/	Early stage	page / 12
/	Source of capital	page / 15
/	Climate deep tech	page / 22
/	Sector spotlights	page / 26
/	Talent	page / 33

# What is climate tech?

Climate tech companies are startups working on decarbonizing the global economy and creating new profitable business models while also mitigating climate impacts.

In this report we examined **3,100 European climate tech startups** founded since 2010.

## Mitigation

- Renewables
- Alternative protein
- Clean industry
- Engineered-carbon capture & natural based carbon removal

## Adaptation

- Crop protection
- Water recycling
- Climate insurance
- Nature conservation

# Climate tech investment

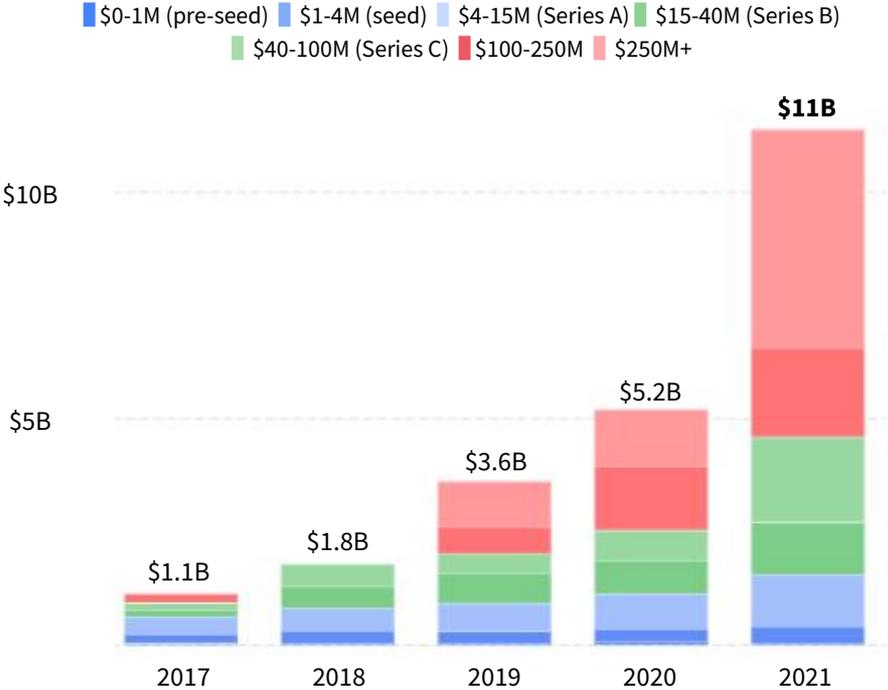
# The European climate tech ecosystem is worth over \$100B: doubling in value since 2020.

European climate tech startups enterprise value by valuation ranges



# European climate tech startups raised a record \$11B in 2021: a 2.2x increase on 2020.

Investment into European climate tech startups

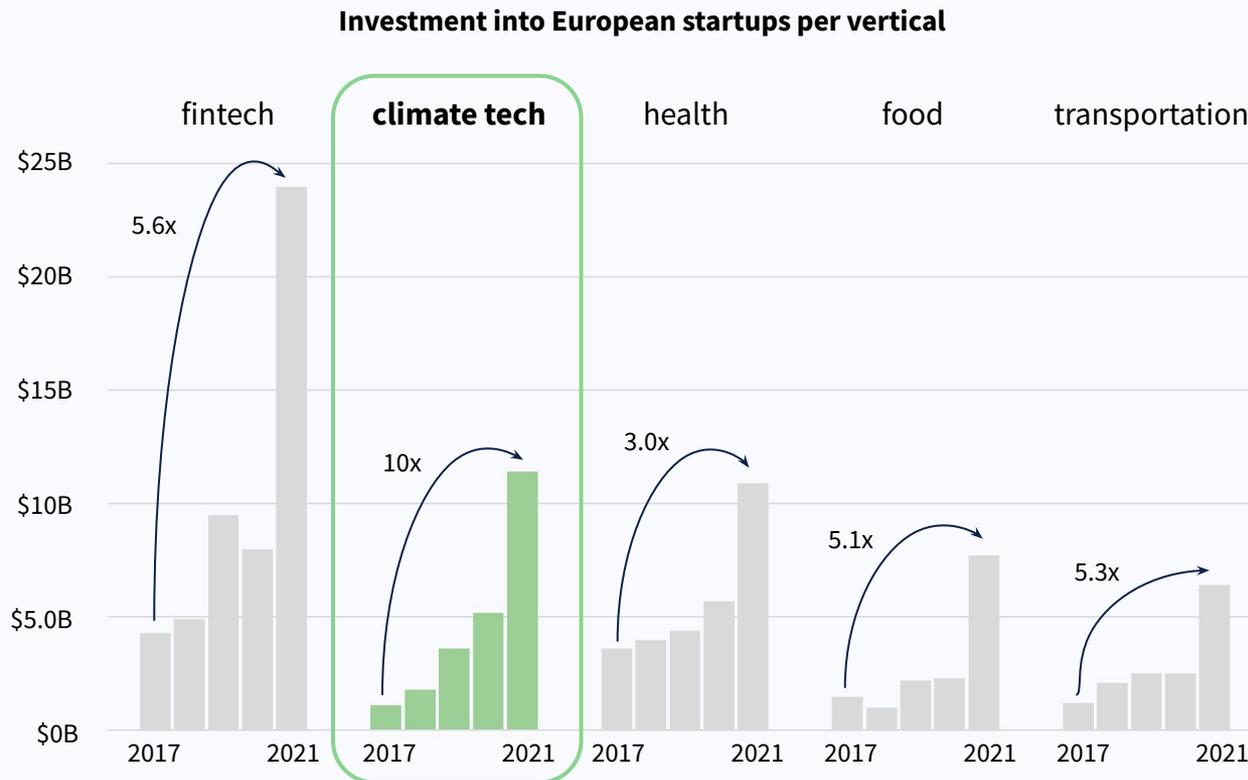


# In 2021, 13% of all European venture funding went to climate tech startups.

Investment into European climate tech startups as a percentage of total venture capital



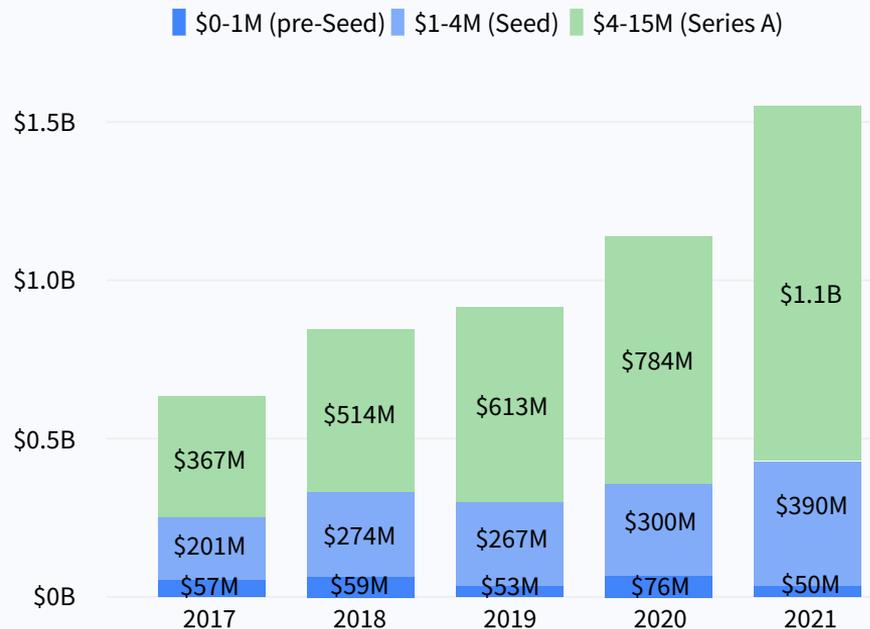
# Since 2017, climate tech is the fastest-growing investment vertical in Europe, second only to fintech overall.



# Early stage

# Climate tech early-stage investment has increased 2.5x since 2017, with Series A rounds increasing the most.

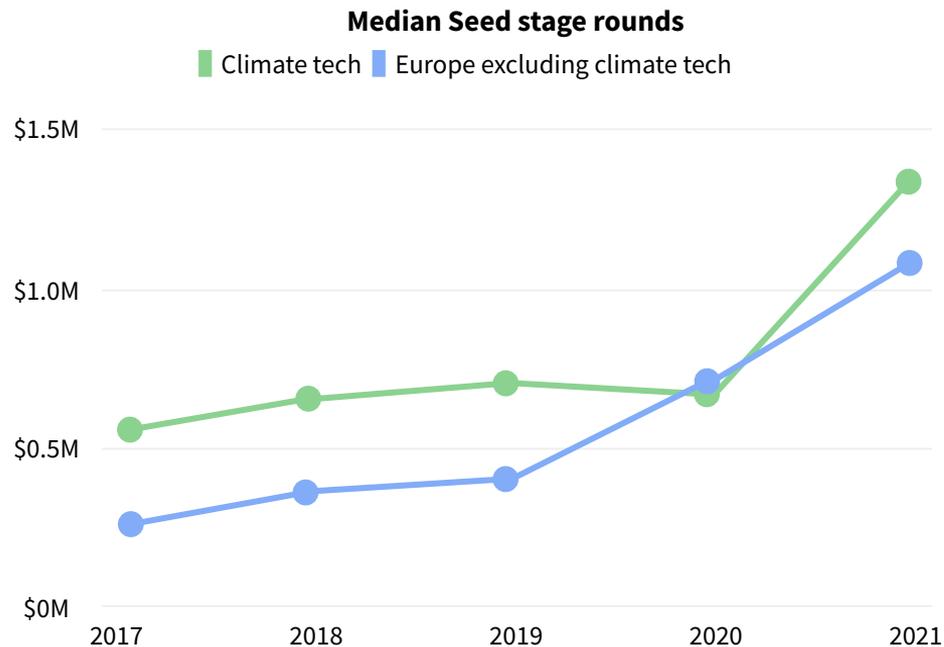
Early stage investment into European climate tech startups



## Climate tech startups raise bigger Seed rounds than their non-climate peers.

Our data suggests that climate tech startups are more hardware based (61%) compared to the European startup benchmark (27%). As a result, climate tech companies will likely require more capital to develop their Minimum Viable Product (MVP), resulting in higher median Seed rounds.

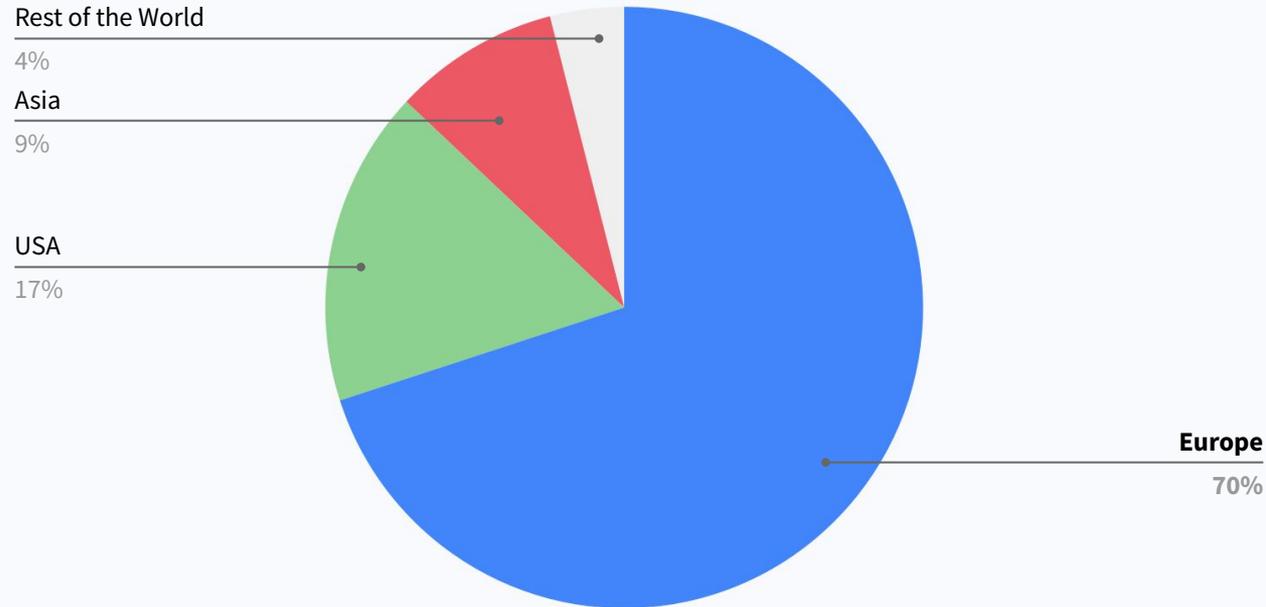
This has largely smoothed out by the time startups reach Series A, where our analysis showed very similar trends in median Series As for Climate tech and non-climate tech startups.



# Source of capital

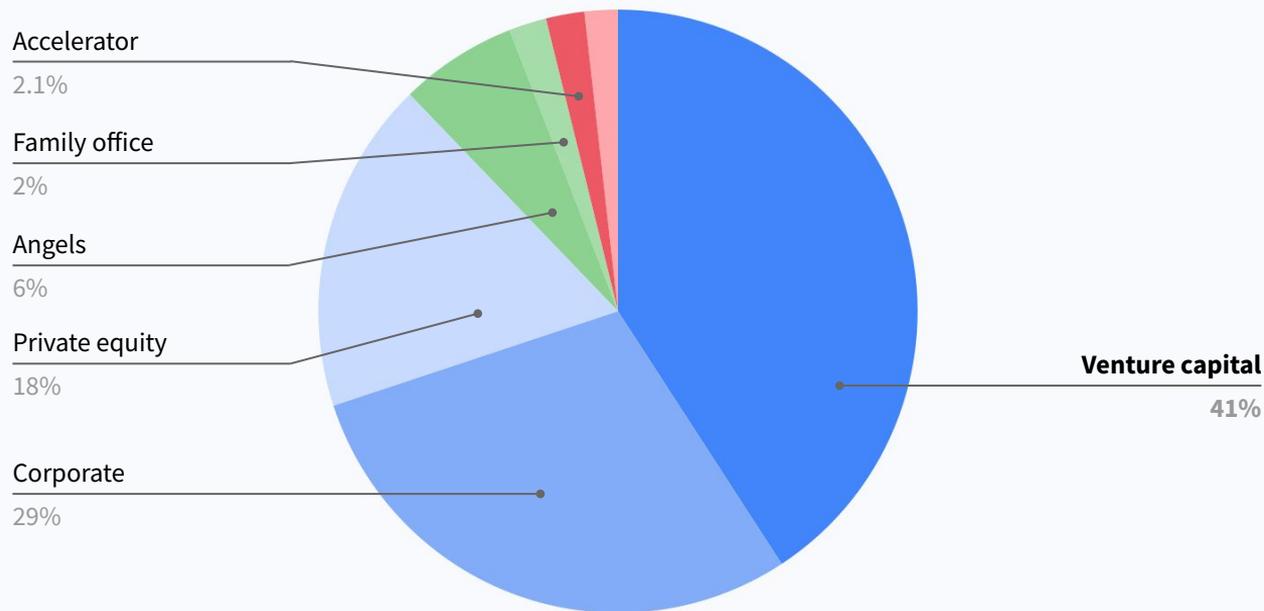
# 70% of European climate tech funding comes from local investors, demonstrating a sizeable opportunity for international investment.

Source of VC investment in European climate tech 2017 to 2021 aggregate by investor's HQ region

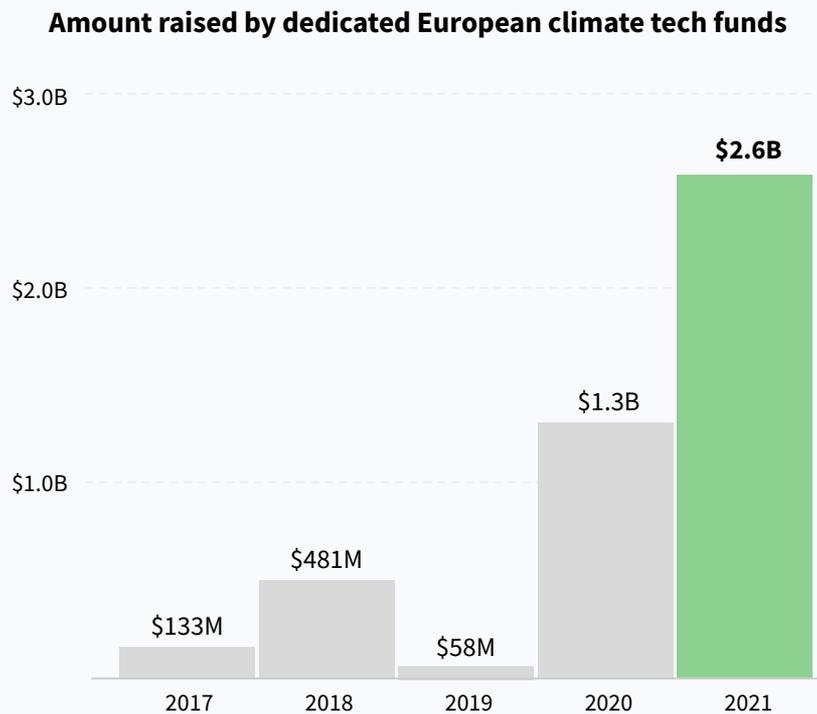


# VC funds provide the most capital for climate tech companies, followed by corporates and private equity.

Source of investment in European climate tech 2017 to 2021



# European dedicated climate tech VC funds raised a record \$2.6B in 2021, 2x more than 2020.



# The 2021 European climate tech funds.

## Dedicated European climate tech funds raised in 2021



## What's your view on the European climate tech ecosystem, versus that in the US?

Europe has been leading the way for a long time especially on the regulatory front, in industry, and industrial R&D. There is just a higher awareness, lots of grant money, a different stakeholder mentality, higher energy prices, and now a lot of early stage capital to mention a few drivers. In the US, awareness has probably been lower historically, but that is changing. Regulation is also a bit more distributed and driven by progressive cities, certain state departments, and now increasingly also at the federal level.

But as always, capital markets are responding fast and at scale in the US. Entrepreneurs are sometimes taking bigger bets and have more of a Silicon Valley moonshot mindset. Therefore we are also very bullish about investing in the US.

[Read the full interview](#)

## Are you doing any impact measurement around your investments?

Measurement has been at the heart of our approach from day one and we have recently doubled-down on that commitment with the appointment of a new Head of Sustainability. A big difference entrepreneurs experience when meeting our team is an early and quite thorough first impact screening. Without a strong framework, there is a high risk of making mistakes and accidentally backing low impact or even greenwashing initiatives. The impact framework we have developed is absolutely essential to our investment process, portfolio management, and investor reporting.

**Jacob Bro**

Partner & Co-founder 2150



# The line between generalist VCs and climate specialists is blurring.

## Climate tech specialist VCs

## Generalist VCs

Balderton  
capital

Infarm, VanMoof, Tibber



Carbo Culture, Solar foods, Sulapac

EQT  
VENTURES

Verkor, Einride, TreeCard

atomico°

Infarm, Liliium, Ontruck

**Talis**

Ynsect, Rubi Laboratories, Andium



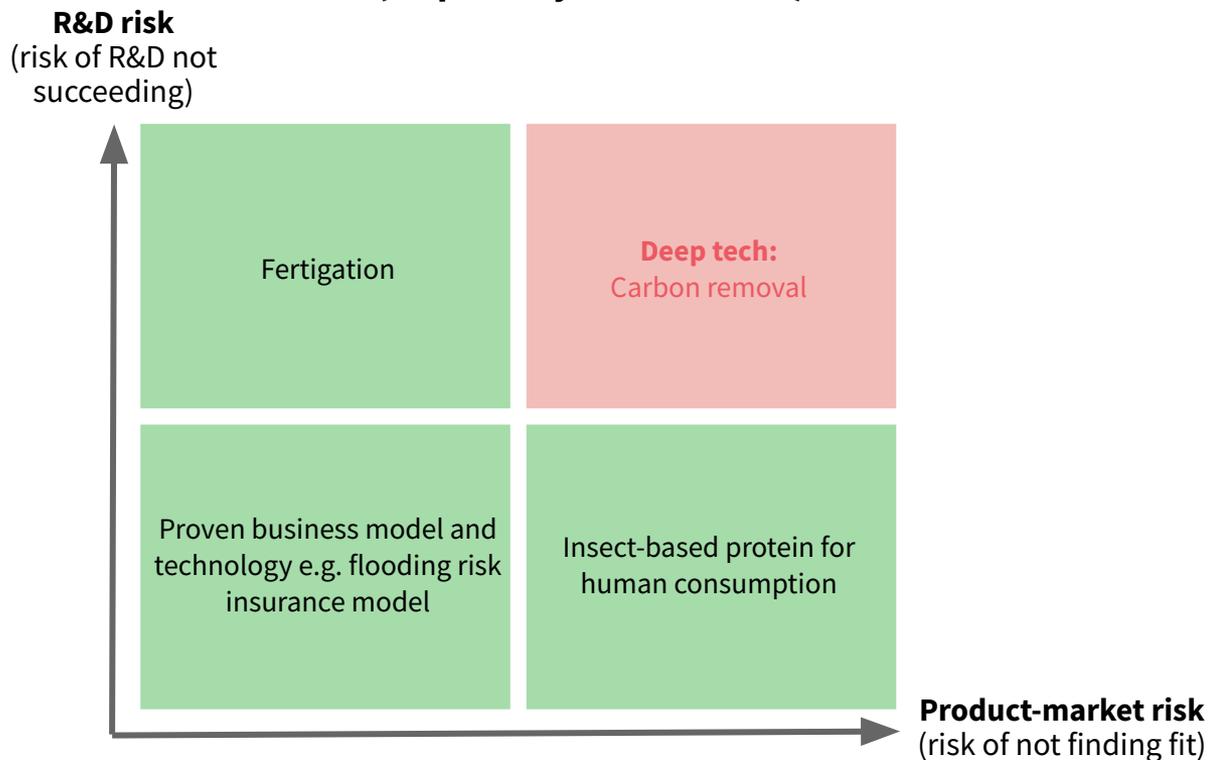
# Climate deep tech

# What is climate deep tech?

Climate deep tech utilizes venture capital investment to scale-up existing tech to reduce emissions. Where most deep tech comes with higher R&D and product-market risk, climate deep tech has proven business models and tech to back up their applications.

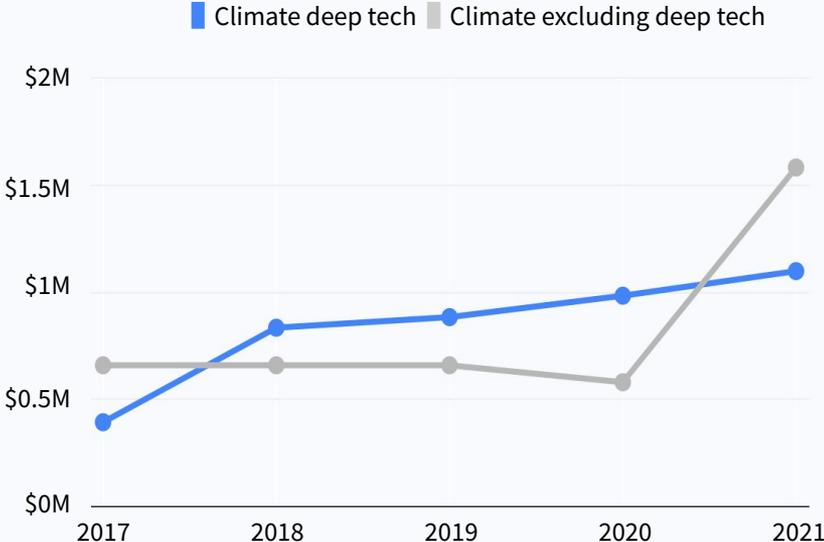
Some of the most promising climate deep tech includes synthetic biology, direct-air-capture, solid-state batteries, and AI, which have great potential for innovation and can achieve sustainable growth.

## Deep tech combines multiple risks at once (inspired by Nicolas Colin)

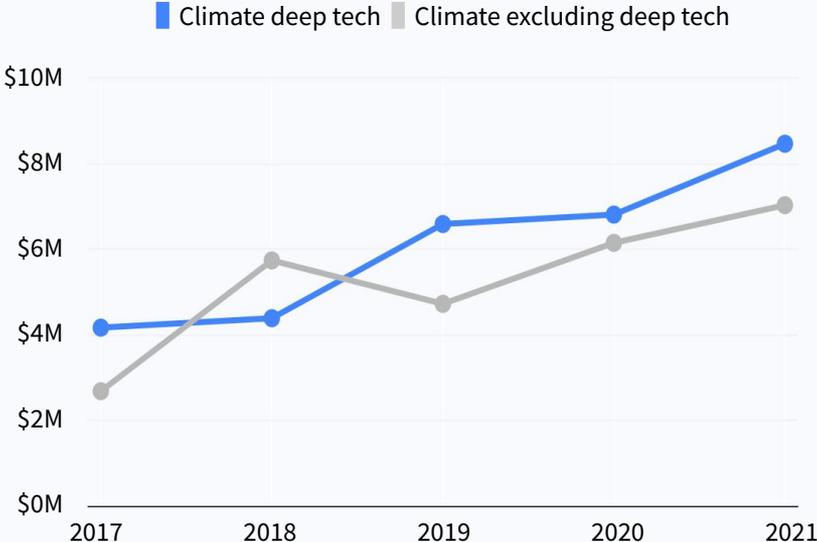


# Climate deep tech companies require more scale-up capital.

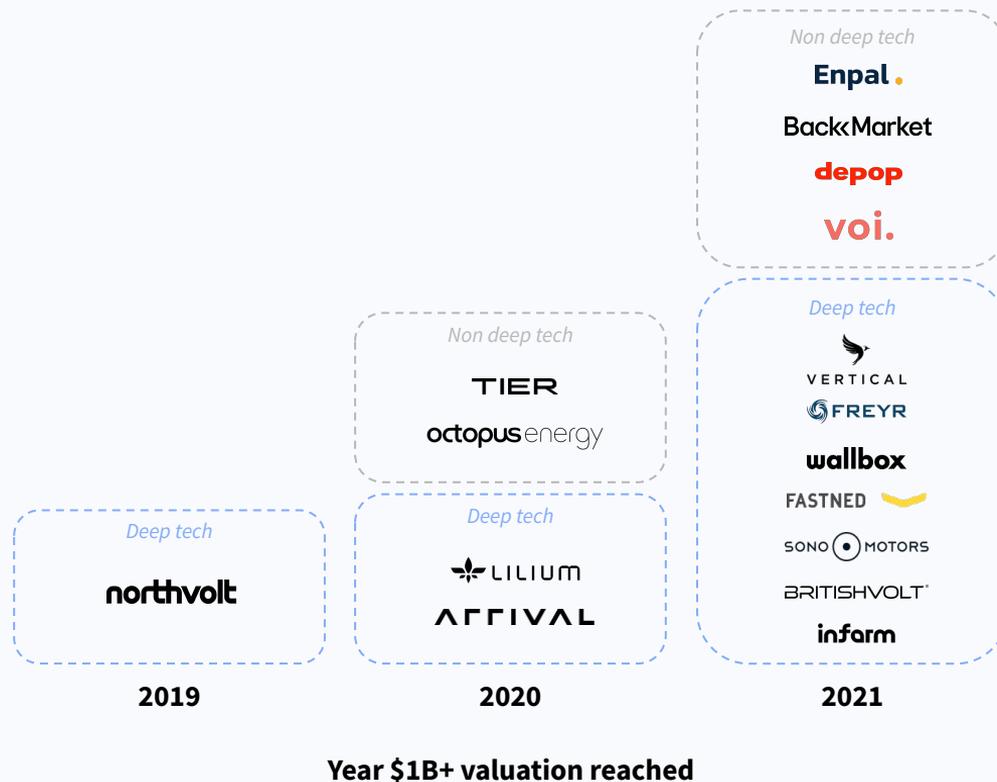
### Median Seed stage rounds



### Median Series A rounds



# There are now 16 European climate tech unicorns, 11 of which were created last year alone.



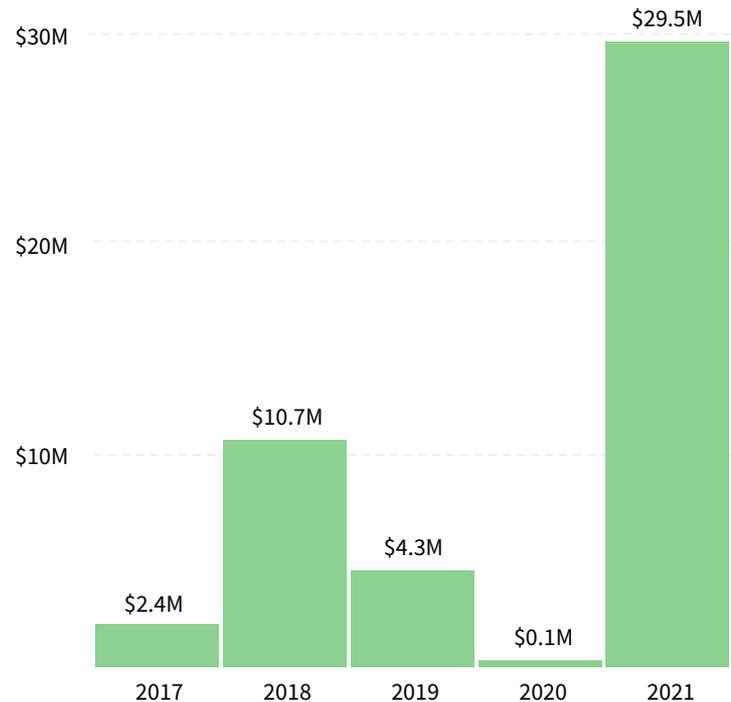
# Sector spotlights

# Carbon removal is a promising yet nascent segment.

Carbon removal startups are companies that are engineering the removal of CO<sub>2</sub> from the atmosphere and waste streams. They include direct air capture (DAC), biochar, mineralisation, enhanced weathering, and more. We've categorized 30 carbon removal startups, most of which utilize the direct air carbon capture and storage technology. This is an emerging sector within the European climate tech scene.

Company	Total funding	HQ location
 Deep Branch®	\$14M	Nottingham, England
 carbo culture	\$6.8M	Helsinki, Finland
 made of air	\$5.5M	Berlin, Germany

VC investment into European carbon removal startups



**How has demand, from investors and customers, for sustainable technologies changed in the last few years?**

We suddenly had people asking for carbon removal through everyone's inbox and every week there was a new seller popping up for a while. That's when we knew that the market had fundamentally shifted and we could fully lean into carbon removal that we were always aiming for. It's no myth to us now that when you hit product-market fit, you feel it.

[Read the full interview](#)

**What have been the key milestones in your journey to commercialise CarboCulture?**

There's a million and more, but perhaps the big growth leaps were in the market shifting to over \$55/t CO<sub>2</sub>, our first \$550k sale, our seed round led by True and Cherry Ventures who we have been so happy working with, and finally the hiring of people that let us leap to the next level in all areas. To a founder, the last one is a big one: you transition from doing everything to hiring people better than you, which feels kind of unbelievable.

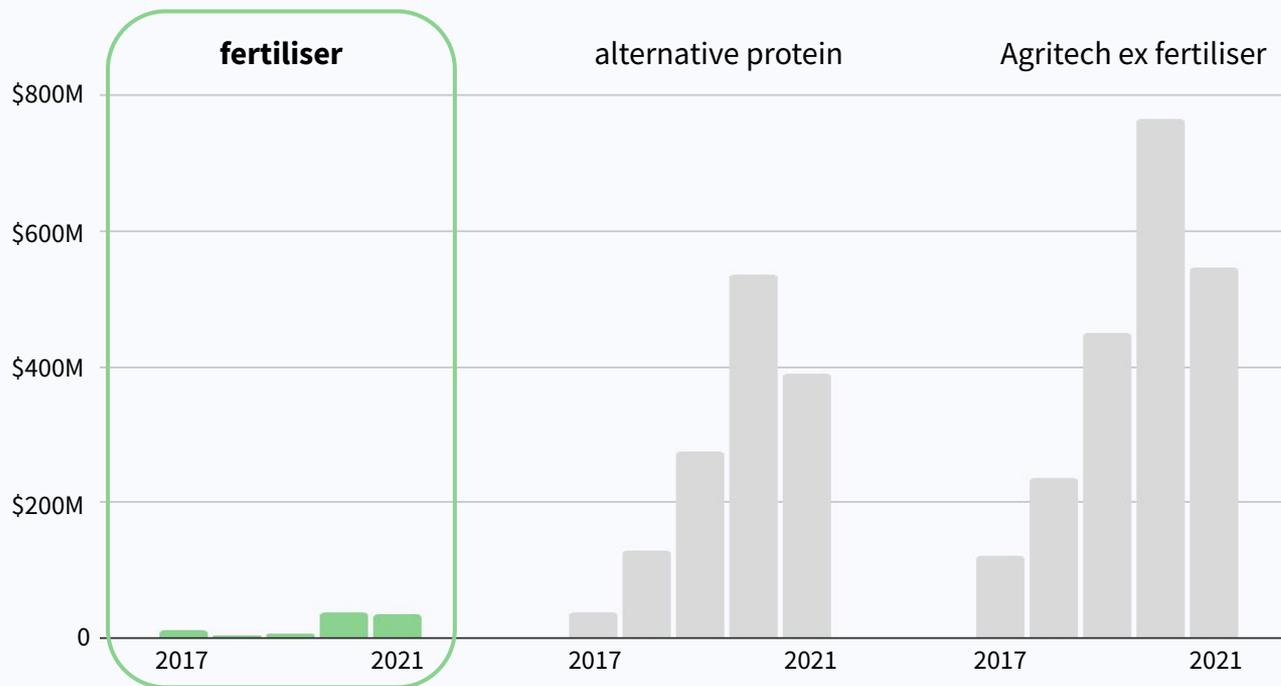
**Pia Henrietta Moon**

Co-founder & CEO at Carbo Culture



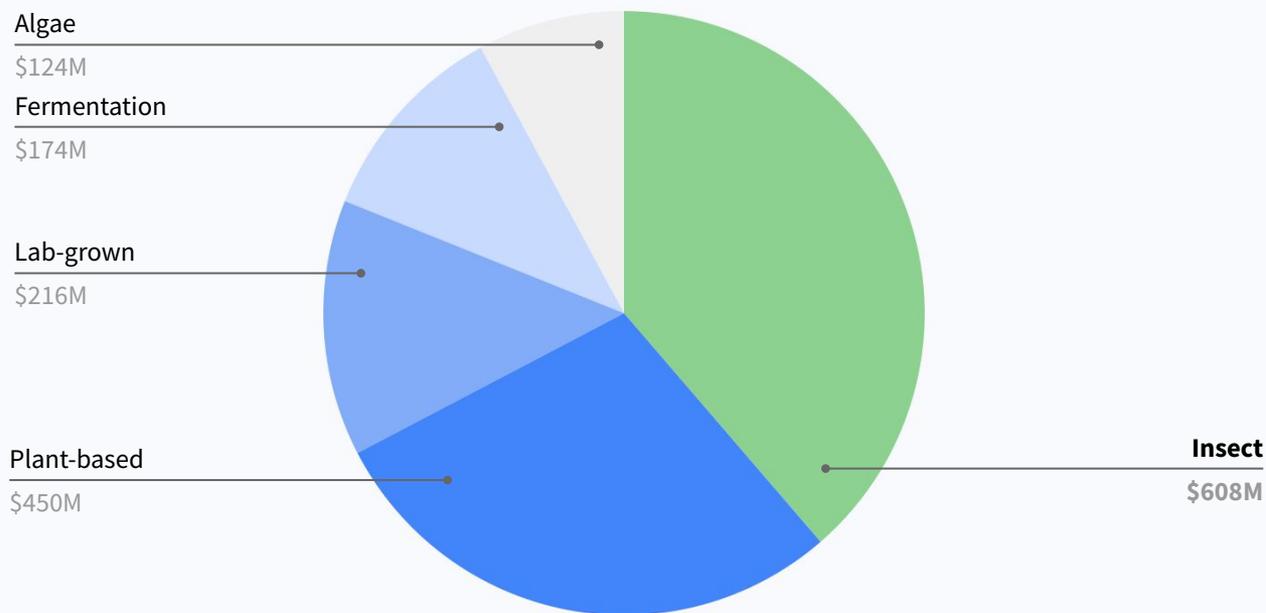
# Sustainable fertiliser startups are significantly underfunded compared to other segments within climate-conscious food startups.

VC investment into European climate aware food tech startups



# Insect-based companies dominate the alternative protein scene.

VC investment into European alternative protein startups from 2017 to 2021 combined



### **What do you believe are the biggest barriers or obstacles climate tech companies face?**

The biggest barrier is creating the technology itself. With 341 patents now in Ynsect's portfolio and leveraging a great deal of automation and AI in our vertical farms, I can say that it hasn't always been easy! You need funding to create this technology, but to get the funding, you need to prove that it will work. It can be quite the catch 22. Hiring the right staff can also be tough; these kinds of experts are few and far between, so you need to start searching early.

[Read the full interview](#)

### **What ways have you seen a change in people's perception of insect protein?**

It is being seen increasingly positive! According to a study by Wageningen University, 73% of people are ready to eat fish, poultry, and pork that have been fed with an insect-based diet. The claims are also hard to argue with; in taste tests conducted on salmon and shrimp, top chefs consider that those that were insect-fed taste better, have an improved texture, and a nicer color. Furthermore, insect-based petfood has more than 50% acceptance among US pet owners. Specifically, the mealworm has the best acceptance among cat and dog owners in the US compared with other insect species (Emerton Market research).

**Antoine Hubert**  
Co-founder & CEO at Ynsect



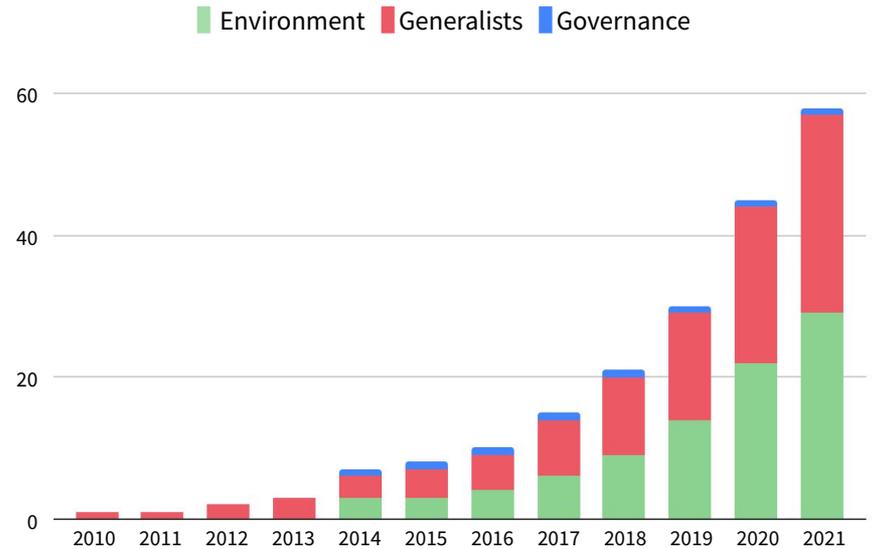
# More European startups are filling the ESG data gap.

Environmental Social Governance (ESG) criteria has grown more popular in the last few years in both public and private markets. For example, global sustainable funds assets hit a record of \$3.9T in 2021<sup>1</sup>. In Europe, a wide array of startups operating in carbon accounting, diversity measurement, real estate sustainability assessment, and more are trying to fill the existing “ESG data gap.”<sup>2</sup>

## Most capitalized European ESG measurement startups

Company	Total funding	HQ location
 SWEEP	\$27M	Montpellier, France
arabesque s-ray	\$19M	London, England
 planA	\$13M	Berlin, Germany

## Cumulative number of European ESG measurement startups



# Talent

# European climate tech startups are creating meaningful employment.

**50,000+**

employees by European climate tech companies

## Largest climate tech startups employers

Company	HQ location	Employees in 2021
<b>AFRIVAL</b>	London, England	1,928
<b>northvolt</b>	Stockholm, Sweden	1,654
<b>depop</b>	London, England	1,498

# Demand for climate tech talent is skyrocketing.

Number of monthly job openings by European climate tech startups in 2021



# Venture capital methodology and definitions.

## Startups, scaleups, grownups and tech

These are companies that are designed to grow fast, most being VC-investable businesses. Sometimes they can become very big (e.g. \$1B+ valuation).

When startups are successful, they develop into scaleups (>50 people) or eventually grownups (>500 people) and result in big companies, like Arrival or Northvolt.

Only companies founded since 2010 are included in this report.

## Venture capital investment

Investment numbers refer to rounds such as Seed, Series A, B, C, ... late stage, and growth equity rounds.

Venture capital investment figures exclude debt or other non-equity funding, lending capital, grants, and ICOs.

Buyouts, M&A, secondary rounds, and IPOs are treated as exits: excluded from funding data.

Investment rounds are sourced from public disclosures including press releases, news, filings, and verified user-submitted information.

## Accelerators and workplaces

Fixed-term, cohort-based programs that include seed investment, connections, sales, mentorship, and educational components that culminate in a public pitch event or demo day to accelerate growth.

We consider an accelerator as an 'investor,' since it takes equity from its startups. Whereas, a 'workplace' does not take equity from its tenants.

In this report, co-working spaces, or shared office space that also offer community support, are considered a part of workplaces.

## Valuation

The combined valuation of the tech ecosystem is based on their market cap or latest transaction value.

Transaction value is realized from exit or implied unrealised valuation from the latest VC round, which is either announced or estimated by Dealroom based on benchmarks.

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