

GREEN LINE

PROJECT STUDY REPORT 18.12.2024



ENTER
ESPOO



Uudenmaan liitto
Nylands förbund

Background

Crazy Town Oy conducted this study commissioned by the City of Espoo as part of the Helsinki-Uusimaa Regional Council-funded “Green Line, Preliminary Study” project.

Aim was to compile initial insights from stakeholders into what the Green Line concept could be and what it could offer to different actors.

The study was conducted between October and December 2024:

- Desk study and benchmarking
- 10 stakeholder interviews
- 2 workshops with approximately 50 participants
- 1 Green Line Forum with approximately 60 participants
- Internal workshops with the City of Espoo and Enter Espoo project teams

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Content

- 1) What is Green Line?
- 2) Why Green Line?
- 3) Services at Green Line
- 4) International benchmarks

1) What is Green Line?



WHAT?

Green Line is a **shared brand and concept** that unites green chemistry, circular economy, and clean technology players in the Espoo and Uusimaa region.

WHY?

The common challenge for stakeholders: How to attract and retain talent, customers, and investments?

Just like a metro line connects people, Green Line **brings different players together.**

- External need: Visibility and accessibility in Finland and globally.
- Internal need: Strengthening cooperation between players and sharing existing resources.

WHAT IT ISN'T?

Green Line is not an ecosystem or a cluster.

It does not replace existing services, operations, brands, or platforms.

→ It is a flexible platform that tells a shared story and aligns activities.

BY WHOM?

Green Line is initially built in flexible manner step by step by partners in cooperation with the City of Espoo and Enter Espoo.

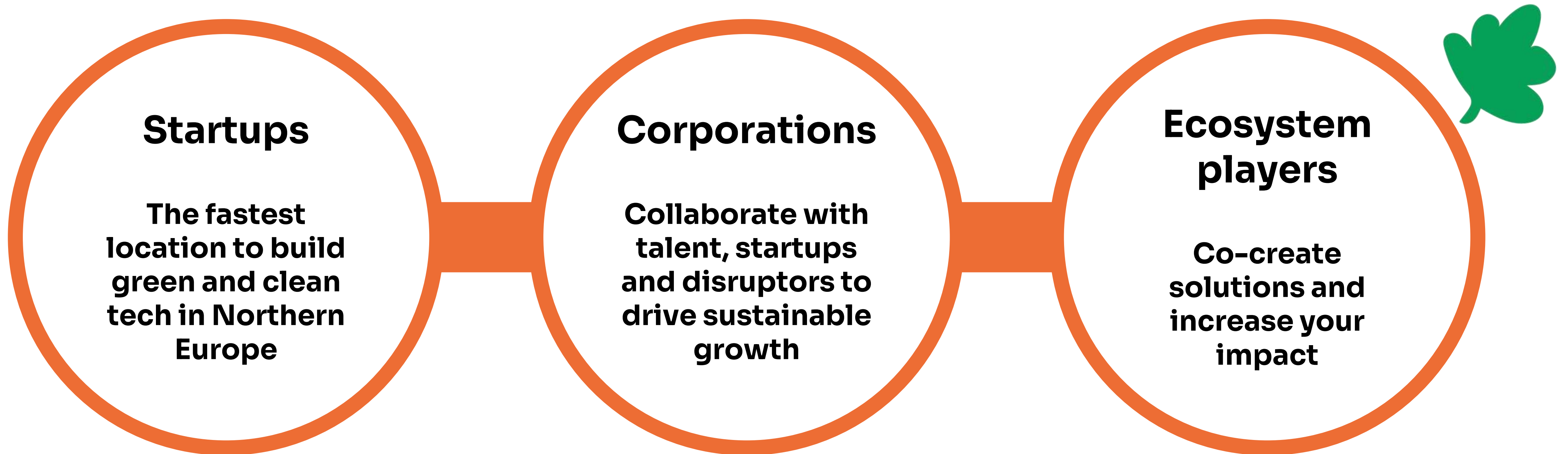


Green Line

- where Finland is solving the
global sustainability crisis

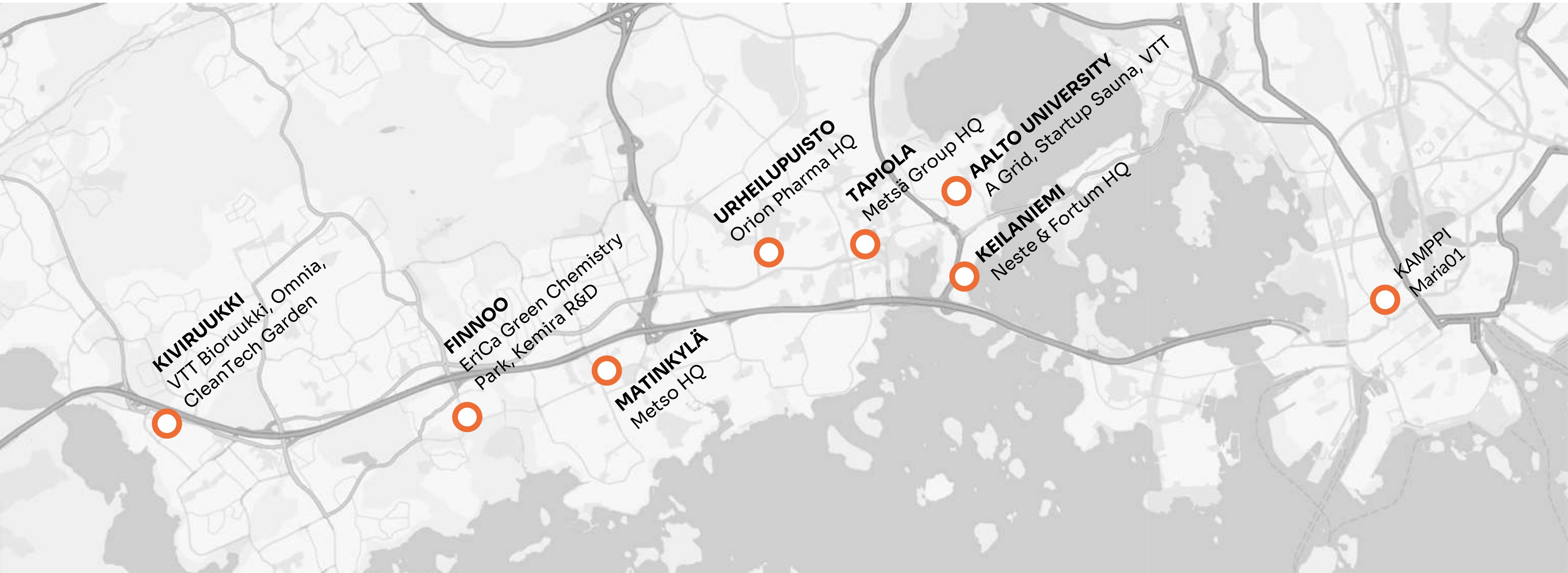
Grow with future talents at Green Line

Access the epicenter of Finnish green chemistry, circular economy, and clean technology innovations



Entire innovation & startup ecosystem along one metro line

Entire green and clean tech innovation ecosystem along one metro line



All key locations within 30-minute reach along the Helsinki-Espoo metro line.
From ideas to labs, from labs to startups and global corporations.

WHO ARE INVOLVED?

- **Startups**
- **Corporations**
- **R&D facilities and hubs**
- **Accelerators**
- **Education & Academia**
- **Investors**
- **Public sector**
- **You - innovators and mavericks, who want to go further together than alone**

SERVICES OFFERED AT GREEN LINE

- **R&D:** Visionary and collaborative research, co-creation of new opportunities
- **Acceleration:** Launchpad for new startups and ventures
- **Homebase:** Infrastructure from lab to market
- **Talent:** Talent-engine for new professionals, upskilling and reskilling
- **Community:** Events and networking for collaboration

**The kind of
innovation
the world
needs**

Different journeys along the Green Line

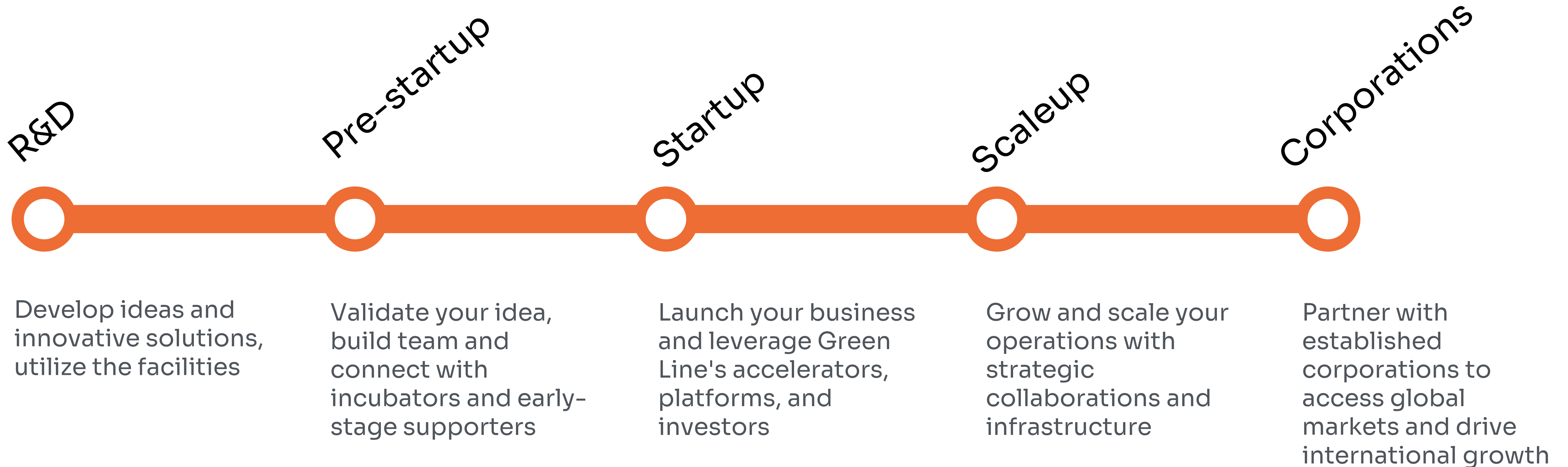
Startups >

Corporations >

Ecosystem players >

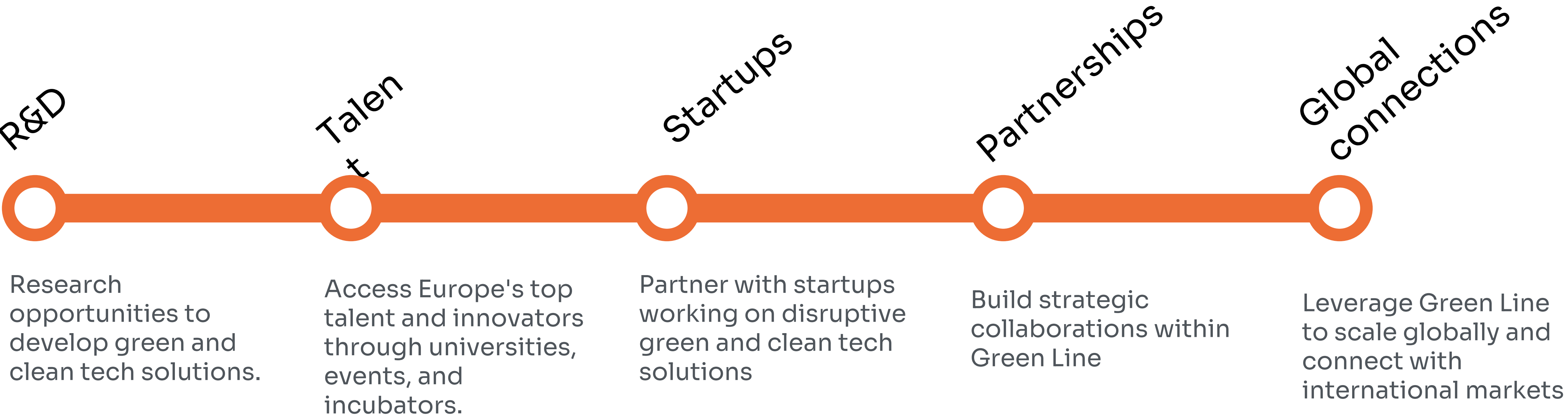
Startup journey

Green Line is the fastest location to build green and clean tech in Northern Europe



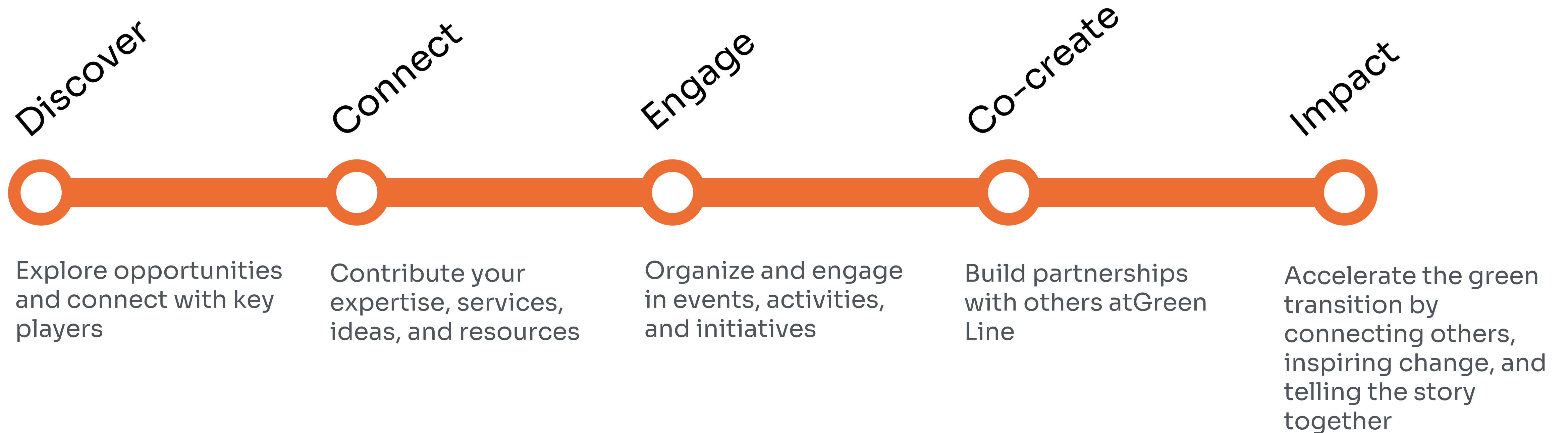
Corporation journey

Collaborate with talent, startups and disruptors to drive sustainable growth



Ecosystem player journey

Co-create solutions and increase your impact



2) Why Green Line?



Sustainable industries and technologies at Green Line

New materials

- Renewable materials
- Synthetic biology
- Nanotechnology
- Raw materials
- Green chemistry

Circular economy

- Digital circular economy & IoT
- Energy & batteries
- Wood
- Synthetic biology

Biotech and food

- Bioprocesses and technologies
- Medical & pharma
- Food

Other key industries and technologies

- Smart City
- ICT
- Industry 4.0
- Quantum technology



Green Line is the fastest location to build green and clean tech in Northern Europe

- **+100 startups born annually**, home to most unicorns in Finland - birthplace of Finland's startup movement
- **Deep tech leader** - 32% of all VC investments go for deep tech startups,
- **Excellent accelerators:** VTT Launchpad and Aalto Startup Center ranked as globally leading accelerators
- Work with global customers: **+1500 technology companies and almost 50 % of the Helsinki Stock Exchange turnover** comes from the companies located in Espoo
- **Access to funding:** Solid deep tech-focused investor base
- **Global startup events** such as Slush, the largest gathering of venture capital in the world - 3 trillion USD in assets under one roof



Northern Europe's leading deep tech hub with sustainability focus

- The **most agile commercialization environment** in Northern Europe
- Home to Finland's two most important sustainable innovation players — **Aalto University** and **VTT Technical Research Centre of Finland**
- Aalto University is **Finland's #1 university** for technology, business, art and design
- VTT is the biggest applied research institution in Nordics and VTT Bioruukki is the largest open access bio and circular economy pilot environment in Europe
- **R&D infrastructure** from research to pilot and commercial scale, as well as workspaces and innovation hubs **by one metro line**
- Several customer-led R&D ecosystems
- All key players **easily reachable** within a short distance away



One of the most sustainable locations in the world with high-talent density

- **High trust** and ease of cooperation
- **High talent density** - all levels from vocational degrees to PhD level represented
- **150** different nationalities
- **6th most patent applications in Europe for any city:** 58% of Finnish patent applications come from Espoo
- Espoo selected as Europe's **most sustainable city** multiple years
- **95%** of startup funding goes to startups addressing UN SDGs
- All institutions **dedicated to solving sustainability crisis**
- **Finland will be carbon neutral by 2035** - forerunner environment with one of the tightest national and EU regulations



3) Services at Green Line



Services at Green Line



Research ecosystems

- Bioinnovation Center
- EIT Raw Materials
- EIT Digital
- FINNCeres
- SynBio PowerHouse
- VTT Cellular Food
- VTT Food and Beyond etc.

Talent, skills and research

- Aalto University
- University of Helsinki
- Laurea UAS
- Metropolia UAS
- Omnia
- etc.

Acceleration

- Aaltoes
- KIUAS
- ASUC
- VTT Launchpad etc.

Industry R&D ecosystems

- Neste - Veturi
- Borealis Polymers - SPIRIT
- Fortum & Metsä - ExpandFibre
- Orion - A Digital Boost for the Pharmaceutical R&D
- Kemira R&D
- Metso R&D
- Metsä Spring etc.

Business services

- Enter Espoo
- Business Espoo
- Helsinki Partners etc.

R&D facilities for green and clean tech

Examples of R&D facilities that can be accessed along Green Line

Research / Education labs	Pilot / Demo / Commercial labs
Aalto Bioeconomy Infrastructure : A multidisciplinary research and testing platform focused on bioeconomy innovations, supporting the development of sustainable products and processes. The facilities enable experiments with bioprocessing, materials, and chemical engineering.	VTT Bioruukki : An integrated enabler to accelerate higher value business in bio and circular economy. Open access pilot facilities for proof-of concept, proof-of-production and proof-of-production stages before scale-up phase. Next stage opens in 2025.
Aalto RAMI – Raw materials research infrastructure : Specialized in advanced materials and raw material research, RAMI provides state-of-the-art facilities for sustainable material processing and recycling. It serves as a hub for innovations in material efficiency and circular economy.	EriCa Green Chemistry Park : Coworking spaces and laboratories as service & plug-in-ready private laboratories for established startups, scaleups and R&D experts working in green chemistry and sustainability. R&D collaboration opportunities with Kemira. Opens in autumn 2025.
Metropolia - Hiilitalli : A center for carbon-neutral innovation, Hiilitalli focuses on collaborative research in sustainable energy and resource efficiency. It brings together academia and industry to co-create climate solutions.	Cleantech Garden : Coworking and laboratory space for bioeconomy and sustainability companies next to VTT Bioruukki. Opens in 2027.
Metropolia - Urban Farm Lab : Dedicated to urban agriculture research, this lab explores innovative methods for sustainable food production, resource optimization, and community engagement in urban settings.	KCL : Open access pilot facilities, proof-of-concept and contract manufacturing for bioeconomy companies. New facilities open in Lohja in autumn 2025.
University of Helsinki - Kumpula Business Labs : Focused on fostering science-based startups and collaborations, Kumpula Business Labs supports commercialization and entrepreneurial activities in fields like chemistry, physics, and data science.	Kilpilahti : Circular economy hub. Industry-scale plots and area in Porvoo.
Aalto and VTT campuses in Otaniemi	City of Espoo as pilot and living lab environment

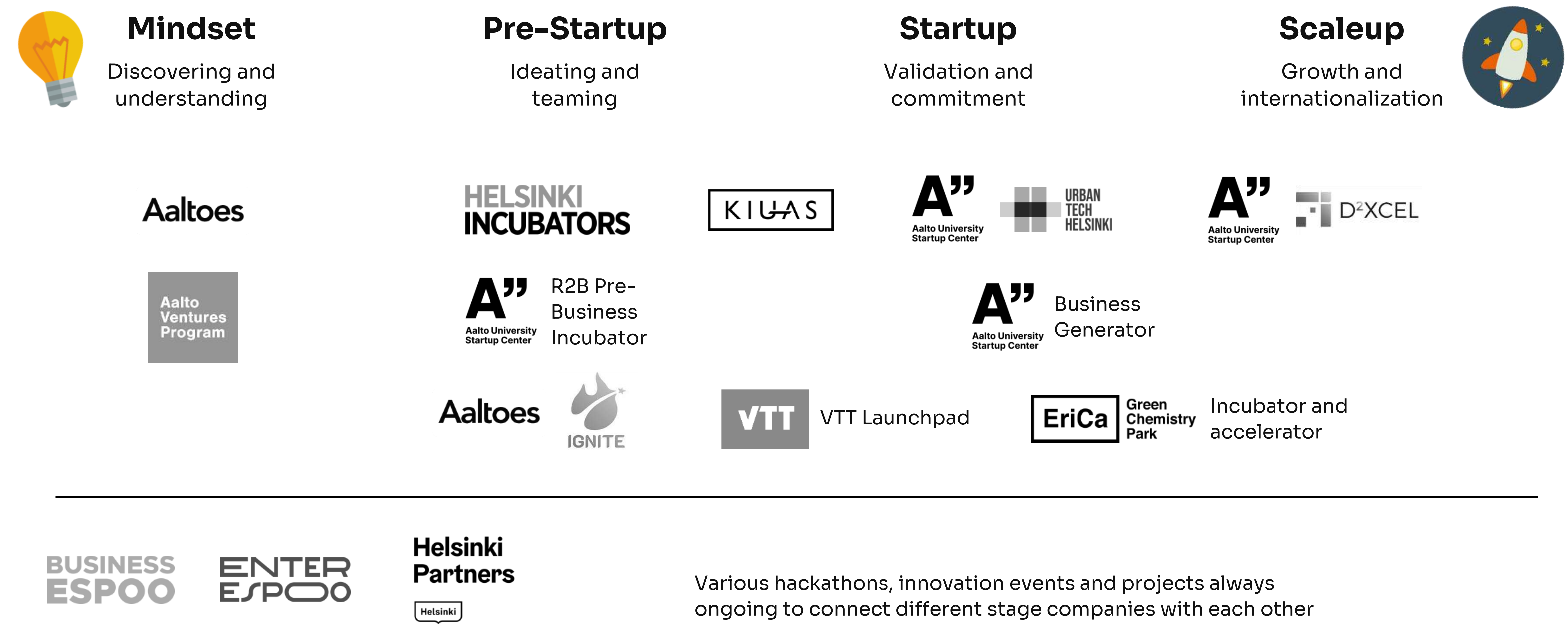
Ecosystems for all stages from lab to market

Finnish innovation ecosystem is characterized by open innovation and co-creation. Here are **examples** of ecosystems alongside Green Line that are looking for collaboration partners.

Research ecosystems and living labs	Startup ecosystems	Industry R&D ecosystems
Aalto / Bioinnovation Center	Aalto University startup ecosystem	Borealis Polymers - SPIRIT
Aalto / Department of Bioproducts and Biosystems	Arctic15 , NORDEEP and Slush startup events	Fortum & Metsä - ExpandFibre
Aalto / Department of Chemical and Metallurgical Engineering	EriCa startup ecosystem	Fortum Innovation
Aalto / Department of Chemistry and Materials Science	Maria01 startup ecosystem	Kemira R&D
EIT Digital		Metso R&D
EIT Raw Materials		Metsä Spring
FINNCeres materials cluster		Neste - Veturi
SynBio PowerHouse		
VTT Bioruukki		
VTT Cellular Food		
VTT Food and Beyond		

Acceleration: Launchpad for startups and ventures

Examples of programs and acceleration providers that can be found along the Green Line



Services for Finnish and international startups & scaleups

Homebases for green tech startups and scaleups

Examples of hubs that can be found along the Green Line and nearby

Location	What?	For whom?	Coworking	Labs	Offices
A Grid	Hub for startups and innovators at Aalto University campus. Multiple sustainability-focused teams and programs hosted.	Startups	▪		▪
Cleantech Garden	Hub for startups, innovators and companies working with sustainability and bio economy. Expected to open in 2027.	Startups, scaleups, established companies, R&D units	▪	▪	▪
EriCa Green Chemistry Park	Hub for startups, innovators and companies working with sustainability and green chemistry. Workspace and laboratory as a service. Opens in 2025.	Startups, scaleups, established companies, R&D units	▪	▪	▪
KCL	Open access piloting environment. Moving to new location in 2025.	Startups, scaleups, established companies, R&D units		▪	
Kumpula Business Labs	Hub for researchers and companies at University of Helsinki.	Startups, R&D units		▪	▪
Maria O1	Hub for startups and investors.	Startups, scaleups	▪		▪
Startup Sauna	Hub for early-stage startups and entrepreneurial individuals at Aalto University campus. Student-led.	Idea-stage startups	▪		
VTT Bioruukki	Europe's largest and leading bioeconomy open access piloting environment in Kiviruukki, Espoo. Extension opens in 2025.	Startups, scaleups, established companies, R&D units.		▪	

Talent: Multidisciplinary education from vocational to PhD level

Green Line offers upskilling and reskilling opportunities for professionals of all ages.

Vocational



Bachelor



Master's



PhD



Community: High-trust connections, who share the same mission

- **Participate in Green Line events throughout the year** – find small and large events at Epic Events Calendar at events.enterespoo.fi
- **Organize and share Green Line –related events with others**
- **Connect and visit the ecosystem** during leading global startup events
 - Arctic15, June 2025
 - NORDEEP, October 2025
 - Slush, November 2025

4) International benchmarks



Green Tech Hub / Lithuania



WHAT IT IS?

A "one-stop shop" for cleantech innovation under the Lithuanian Innovation Agency.

PURPOSE

Accelerate green innovation for a climate-neutral economy.

ACTIVITIES

- **Competence Development:** Business consultancy and guidance on sustainable products, circular economy, and green technologies.
- **Ecosystem Promotion:** Support for international R&D projects and raising awareness of green innovations and regulations.
- **Financing:** Administers €150M for green transition funding. Helps businesses access funding and develop decarbonization projects.
- **Partnerships & networking:** Connects businesses with international partners and stakeholders (public, academia, organizations).
- **Key events:** Organizes Green Tech Academy and hackathons.

OPPORTUNITIES FOR COLLABORATION WITH GREEN LINE?

- Shared funding bids: Partner on EU projects with e.g. Interreg and Horizon Europe
- Using Lithuanian funding to scale Finnish solutions to Lithuania OR using the funding to develop / scale Lithuanian startups via Green Line infrastructure
- Shared infrastructure: Access testbeds and pilot platforms.
- Networking and joint-events: Co-host hackathons, academies, and summits

NOTE: Baltic Sandbox Ventures is a Lithuanian VC fund specialized in deep tech with also presence in Espoo. Opportunity for collaboration? Enter Espoo has opened discussions with Green Tech Hub.

DIFFERENCES BETWEEN GREEN LINE AND GREEN TECH HUB?

- GL: Decentralized, bottom-up brand vs. GTH: Centralized, agency-led "one-stop shop."
- GL: Focus on networking and co-branding vs. GTH: Focus on funding (€150M) and structured support.
- GL: Limited facilitation resources vs. GTH: Actively facilitated with organized key events

TU Delft / The Netherlands TU Delft

WHAT IT IS?

TU Delft: A leading technical university driving deep tech innovations in green tech, circular economy, and sustainability. Netherlands has one of Europe's leading deep tech ecosystems.

PURPOSE

Foster deep tech commercialization to address global challenges like energy transition and circular solutions.

ACTIVITIES

- **R&D commercialization:** Programs like Impact Studio and 4TU TTT Circular Technology help turn research into startups.
- **Incubation & acceleration:** Yes!Delft: Europe's top incubator with validation and acceleration programs. Pole Position: Supports deep tech ventures scaling to Series A funding.
- **Funding support:** €250M Deep Tech Fund (DTF) and tailored regional funds (e.g., UNIIQ, ENERGIIQ).
- **Sustainability focus:** Initiatives like Energy Innovation NL target CO₂ reduction and circular economy projects.

OPPORTUNITIES FOR COLLABORATION WITH GREEN LINE?

The Netherlands and Benelux countries are an interesting location for many Green Line players.

- **Shared R&D Programs:** Partner on circular economy and energy innovations
- **Funding synergies:** Leverage Dutch Deep Tech Fund for joint projects
- **Knowledge exchange:** Share best practices in deep tech commercialization and sustainability ventures
- **Incubation programs:** Collaborate with TU Delft's ecosystem to accelerate startups. For example, in 2025 Crazy Town is co-implementing a deep tech program with TU Delft that be connected to Green Line activities.

Furthermore, TU Delft is part of the 4TU TTT network, which includes Eindhoven University and High Tech Campus Eindhoven. Green Line players have been active there.

Partners in 12/2024



kemira



**ENTER
ESPOO**

**Helsinki
Partners**



You and your organization?

We all share the same challenges:
How to *attract* and *retain* talent,
customers and investment?