Estonian Aviation Cluster

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Member of Board

• eac.ee
Main priorities

• Aerospace industry – post-COVID, Brexit

• Air Cargo hub – South-East Asia growth

• Future aviation – climate neutrality

• Value chain digitalisation – ICT

• Aviation education – reskill/upskill
Estonia as a Future (Aviation) Hydrogen Hub

• European Clean Hydrogen Alliance (ECH2A)
  • ONE and ONLY aviation cluster in EU plus Tallinn Airport, XFLY joined in May 2021
  • 7.4% of total aviation projects came from Estonia

• Preparing For Hydrogen Aviation
  • cooperation with early H2 movers such as ZeroAvia
  • converting an ATR72-600 aircraft to hydrogen

• Investments into H2 infrastructure
  • storing excess energy from the solar park as H2

  collaboration with Port of Tallinn (!!), which aims to become the key H2 port of the Baltic Sea
### Estonian Aviation Hydrogen Roadmap

#### Global Trends
- **2022**: Technology validation and piloting
- **2024**: 10-20 seaters entering market (e.g. ZeroAvia)
- **2026**: 100+ seat regional aircrafts (e.g. Airbus)

#### EU H2 Strategy
- **2022**: 6 GW electrolyzers – 1 M tonnes mass production
- **2024**: 40 GW electrolyzers – 10 M tonnes mass production
- **2028**: BAU for most sectors

#### Airports
- **2022**: 2-3 hubs in Europe, incl Tallinn
- **2024**: 10 hubs in Europe
- **2026**: 50 hubs in Europe

#### H2 Value Chain Development
- **2022**: H2 production and supply facilities
- **2024**: H2 and electric aircrafts TESTING
- **2026**: H2 and electric aircrafts DEPLOYMENT
- **2030**: First H2 plane route

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**Notes:**
- **Estonian Aviation Hydrogen Roadmap**
- 2022-2035 timeline
- Technology and market developments
- Infrastructure and industry growth
- European and global aviation transitions

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**Estonian Aviation Hydrogen Roadmap**

<table>
<thead>
<tr>
<th>Year</th>
<th>Technology Validation and Piloting</th>
<th>Aircrafts Entering Market</th>
<th>Hubs in Europe</th>
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</thead>
<tbody>
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**H2 Value Chain Development**

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- 2030: First H2 plane route
ZeroEST development centre (Tartu)
ZeroEST budget/impact

Budget breakdown:
• U-Space (5MEUR)
• eVTOL infrastructure (9MEUR)
• R&D centre @EST Aviation Academy (8MEUR)
• Green Airport(8MEUR)
• Drone Services Programme (30 MEUR)
• Reskill/upskill needs (20MEUR)

Expected impact:
• Penetrate Bn € drone services markets
• GreenEST airspace in Europe (World?)
Future of regional air mobility

Connecting Estonia: XTI Aircraft

Connecting Switzerland: Lilium Jet
World’s fastest air taxi 2024?

- **High-speed connectivity** - with Copterline (2000-2006) it took only 18 minutes, saved 2+ hours each way

- **Business case validated** - “sub-regional air taxi” is 50% cheaper than alternatives (based on PWC UK study!)

- **Good price** – Lilium has promised high-speed connectivity at the price of a taxi from day 1

- **Risk-sharing model!!** - to connect twin cities Lilium seeks to share the costs of building vertiports
Thank you!