A high-angle, top-down view of a person looking up through a circular opening in a grey, tiled ceiling. The opening reveals a lush, green living wall of plants. A bright orange arc is superimposed over the top and right sides of the circular opening. A white sphere is positioned at the top left of the orange arc. The text 'FREE ELECTRONS PROGRAM OVERVIEW' is centered in the opening in white, bold, sans-serif font.

FREE ELECTRONS PROGRAM OVERVIEW

ABOUT THE PROGRAM



ABOUT FREE ELECTRONS

Heading into its 9th edition, Free Electrons is a globally recognized open innovation program that brings together progressive utilities with pioneering startups/scaleups working in energy and adjacent industries to co-create the future of energy. The program focuses on working to pilot projects, commercially deploy products, facilitate investment opportunities, learning and development.

Over the past seven editions, the program has invested over **\$118M USD** and received applications from more than **91** different countries.



91
Markets
Reached



\$15M
Invested in
Pilots



\$67M
Invested in
Deployments



\$36M
Direct
Investment



\$118M
Generated
Value



ABOUT THE UTILITY PARTNERS

The Free Electrons utility partners are leaders in delivering cutting edge solutions.

The current partners consist of CLP, EDP, E.ON, ESB, Hydro Quebec, Jera and Origin.



82+
Million
Customers



173+
Billion USD
in revenue



218+
MW of owned
and contracted
capacity

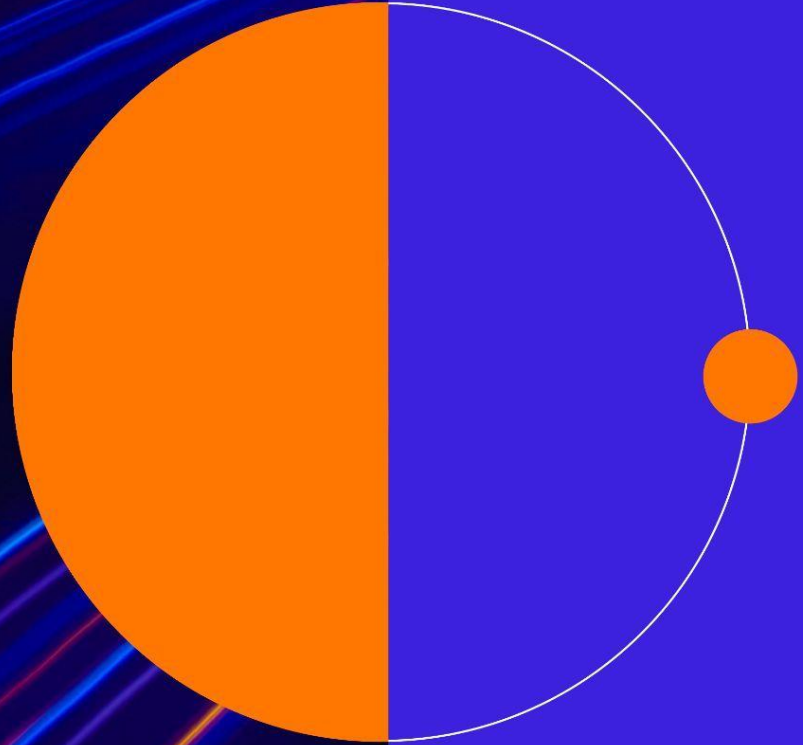


1,915K+
KM
of transmission
& distribution lines

THE UTILITIES



FREE ELECTRONS



TARGET AUDIENCE



- **Cutting-edge startups** from diverse backgrounds, ready to collaborate with industry leaders and revolutionize the energy landscape.
- **World leading utilities** in non-competing geographies eager to work with startups and peer partners to shape the future of energy.



- **Industry experts & mentors** from varied educations willing and able to impart their wisdom and expertise to facilitate more informed business propositions.



VISION



- Source disruptive ideas and technologies that have potential so re-shape the energy industry.
- Facilitate successful collaborations and partnerships between utilities, startups and other relevant stakeholders.
- **Provide effective innovation management and comprehensive Support to startups.**



- Foster a culture of thought leadership, continuous learning, and knowledge sharing.
- Build and maintain vibrant and interconnected communities

VALUE PROPOSITION



- Successfully execute pilot projects and deploy innovative energy solutions within utility businesses, driving practical implementation and impact.
- Drive positive change and contribute to shaping the global energy landscape towards a more sustainable and efficient future.
- **Engage in peer-to-peer learning and collaboration.**



- Heighten startup potential by collaborating with other startups, pooling resources, and fostering knowledge exchange.
- Maintain a fair working environment for startup businesses - startups maintain ownership of their IP.

PROGRAM STRUCTURE

Before March

March - October



APPLICATIONS



PITCH EVENT

60 startup companies showcase their solutions to the Free Electrons expert panel at the international Pitch Event (virtual). This event is a chance for startups to catch the attention of industry leaders and create connections for future collaborations.



BOOTCAMP

30 startup companies attend (in person) an intensive 3 day Bootcamp event, collaborating closely with utility partners and startup companies from around the world. Together, they shape the future of energy and build invaluable partnerships.



MASTER MODULE

The Master Module is a dynamic event where the energy ecosystem comes to life. The top 15 startup companies engage with industry experts & mentors, exchange insights, and explore innovative solutions that can transform the energy landscape and address utility partner challenges.



FINALE

At the Grand Finale, the top 15 startups present their refined solutions, to an extended guest list at the Open Day. It's an opportunity to shine and secure vital support for their venture's growth by further expanding their network.

PROGRAM CATEGORIES

FREE ELECTRONS 2025



1 NEXT GENERATION RENEWABLES

- 1.1. Offshore and onshore wind enabling technologies
- 1.2. Distributed wind solutions
- 1.3. Solar distributed generation
- 1.4. Floating solar; novel solar cell types; modular solar systems
- 1.5. Geothermal technologies
- 1.6. Novel hydro systems



2 ENERGY MANAGEMENT / DATA

- 2.1. Digital trust and cybersecurity
- 2.2. Planning, simulation and forecasting tools
- 2.3. Cloud and edge computing
- 2.4. Datacentre optimisation
- 2.5. Generative AI for business operations and LLMs
- 2.6. Demand response and VPP platforms
- 2.7. Trading tools
- 2.8. Advanced connectivity solutions; the Internet of Energy



3 ASSET OPTIMISATION

- 3.1. Drones, robots and sensors for monitoring and maintenance
- 3.2. Condition monitoring, control or optimisation
- 3.3. Lifetime extension technologies
- 3.4. Digital twins
- 3.5. Image analytics

PROGRAM CATEGORIES

FREE ELECTRONS 2025



4 THERMAL SOLUTIONS

- 4.1. Heat pumps & novel hot water systems
- 4.2. Decentralised geothermal systems
- 4.3. Thermal energy storage
- 4.4. Process heat alternatives
- 4.5. Industry electrification
- 4.6. District heating



5 GRID PLANNING, OPTIMISATION AND STABILITY

- 5.1. Accelerating T&D roll-out including construction improvements
- 5.2. Tools for planning optimisation
- 5.3. Integrating renewables and storage in the grid
- 5.4. Ancillary services enablers/ flexibility services
- 5.5. Low voltage network adequacy and stability
- 5.6. Micro grids including community batteries
- 5.7. Network modelling and field service management
- 5.8. Satellite applications in grid management



6 ENERGY STORAGE

- 6.1. Long duration solutions including pumped hydro
- 6.2. Lithium ion battery alternative chemistries
- 6.3. Supply chain efficiencies & ethical sourcing of materials
- 6.4. Lifetime extension and/or second life options
- 6.5. Residential solutions

PROGRAM CATEGORIES

FREE ELECTRONS 2025



7 CONNECTED & ENGAGED CUSTOMERS (B2B AND B2C)

- 7.1. Customer engagements solutions
- 7.2. Metering and disaggregation technologies
- 7.3. Non-energy home services - water, internet, security, banking
- 7.4. Residential demand response and orchestration
- 7.5. Heating & cooling solutions
- 7.6. Energy efficiency solutions



8 MOBILITY & TRANSPORT ELECTRIFICATION

- 8.1. Novel charging solutions including route and bill optimisation
- 8.2. Integration solutions including vehicle to grid
- 8.3. Fleet management solutions
- 8.4. Advanced mobility technologies



9 OTHER

- 9.1. Carbon capture and storage solutions
- 9.2. Climate engineering and carbon management & accounting
- 9.3. Power to X - includes sustainable fuels, materials & bioenergy
- 9.4. Hydrogen generation and electrolyzers technology
- 9.5. Novel funding models
- 9.6. Soaking excess renewables
- 9.7. Energy access and addressing energy poverty
- 9.8. Solutions to enhance electric work safety

2024 COHORT

ai advanced
infrastructure



ALLYE

axle
energy



Electriq

ENERGY
ROBOTICS



enjoyelec

enliteAI

Fost Sense

GRID WRAP



mixergy

MCSST

NEOCARBON

OverEasy
Solar

PIX.
FORCE

PolyAI

QEA
BuildingEnvelope.AI



reLi

RIVUS
power that flows

SENERGY
REUNIONING THE POWERS OF NATURE

tepeo

tethys
ROBOTICS

Uali

VEIR

STARTUP OF THE YEAR OF PREVIOUS EDITIONS

2017 EDITION



2018 EDITION



2019 EDITION



2020 EDITION



2021 EDITION



2022 EDITION



2023 EDITION





**THANK
YOU**