

# LF Energy

A Linux Foundation Project to accelerate the Energy Transition

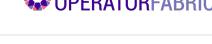
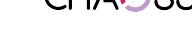




The Linux Foundation's goal is to create the greatest shared technology investment in history by enabling open collaboration across companies, developers and users.

We are the nonprofit organization of choice to build ecosystems that accelerate open source technology development and commercial adoption on a global scale.



<b>Security</b>	       
<b>Networking</b>	       
<b>Cloud</b>	      
<b>Automotive</b>	  
<b>Blockchain</b>	     
<b>Edge/IoT</b>	       
<b>Web</b>	        
<b>AI</b>	        
<b>Film</b>	      
<b>CI/CD</b>	        
<b>Energy</b>	       
<b>Hardware</b>	    
<b>Standards</b>	      

LF beyond Linux

# Mission/Vision

The Linux Foundation's mission is to support the world's most important shared technology collaborations.

LF Energy's mission is to create a technology ecosystem to support rapid decarbonization that benefits the environment, enables economic prosperity, and leads to social well-being for future generations.

Reference: [Climate Tech Review overview of LF Energy for the Climate Tech 100](#)

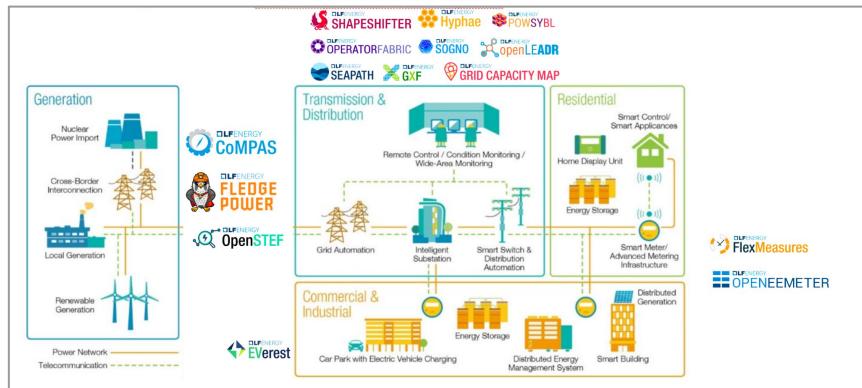


*Linux Foundation Energy is a vendor-neutral, non-profit organization that brings together energy producers, utilities, end users, academia, government and the technology industry to collaboratively develop technology solutions – including software solutions, standards, and specifications – for the energy sector to speed decarbonization and the energy transition generally.*

# Why LF Energy?

Energy Ecosystem is now a software challenge & speed of innovation is key!

- + The energy transition requires collaborative, open, and neutral solutions to achieve decarbonization.
- + Open collaboration accelerates innovation to scale, modernize, and digitally transform the energy sector through software orchestration.
- + LF Energy builds communities to develop open technologies, frameworks, reference architectures, and research to alleviate pain points and identify the most urgent priorities to digitally transform the energy sector. This includes cybersecurity, interoperability, control, automation, virtualization, flexibility, and digital orchestration for balancing of supply and demand, which cannot be solved by legacy, proprietary solutions.

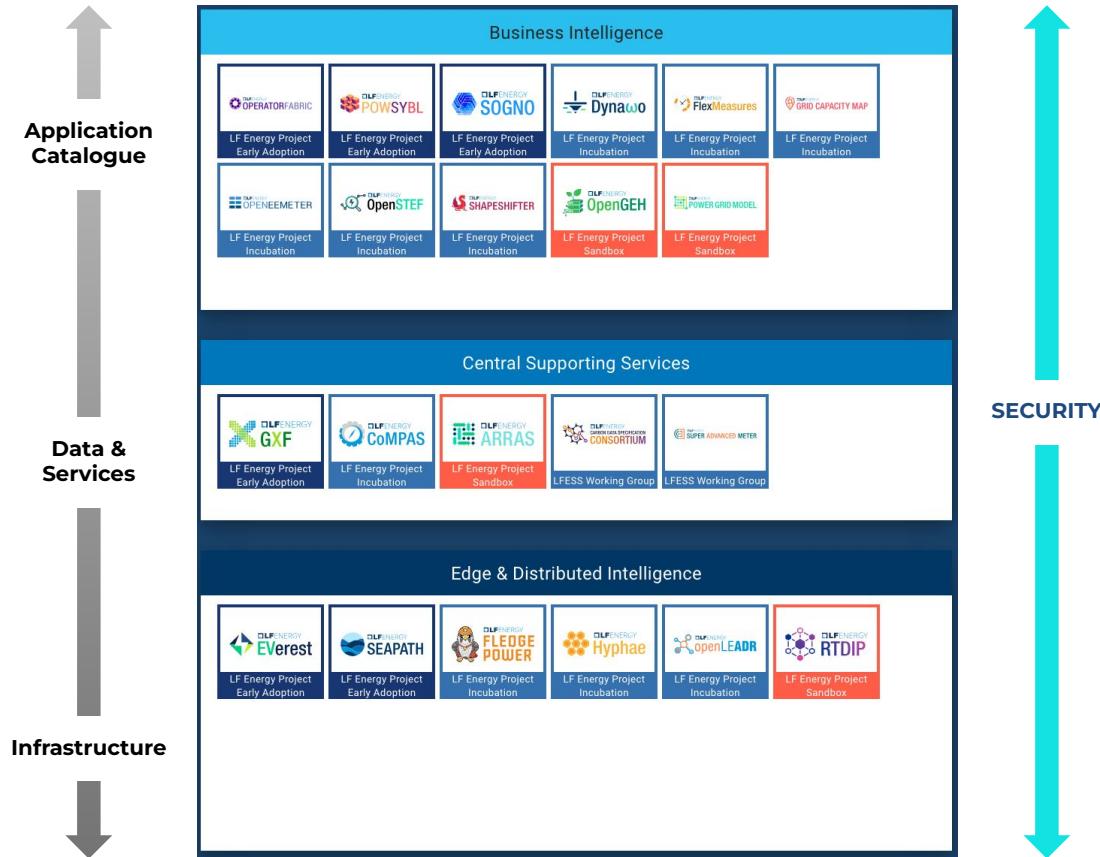


## LF Energy Key Stats:

- Hosting 24 open source projects covering the energy systems tech stack from generation to distribution to end use
- 70+ members, including utilities, research organizations, traditional energy system vendors, and technology vendors
- Annual increases of:
  - Contributors - 29%
  - Lines of code - 60 million
  - Members - 19%

## Where We Add Value:

- Neutral governance providing a home for collaboration across all stakeholders from utilities to researchers, vendors, government, and more
- Project management and hosting infrastructure
- Legal support including licensing, trademarks, etc.
- Communications support including events, thought leadership, etc.
- Community management, to encourage growth, innovation, and determining priorities and direction



# LF Energy Landscape

[lfenergy.org](https://lfenergy.org)

1,343 projects,  
market cap of  
\$7.5T and  
funding of  
\$17B.



LF Energy Landscape  
1.0

See the interactive landscape at [lfenergy.org](https://lfenergy.org)

LF ENERGY Landscape

Renewable Energy

Photovoltaics and Solar Energy Wind Energy Hydro Energy Geothermal Energy Bioenergy

Battery Hydrogen

Energy Storage

Modeling and Optimization Monitoring and Control Distribution and Grids Datasets on Energy Systems

Buildings and Heating Mobility and Transportation Production and Industry Computation and Communication

Consumption of Energy and Resources

Carbon Intensity and Accounting Carbon Capture and Removal Emission Observation and Modeling

Emissions

Industries

Uiosphere

Cryosphere Hydrosphere Atmosphere

Earth Systems

Climate and Earth Science

Earth and Climate Modeling Radiative Transfer Meteorological Observations and Models Climate Data Processing and Access Integrated Assessment

Nature References

Air Quality Water Supply and Quality Soil and Land Agriculture and Nutrition Natural Hazard and Resilience

Sustainable Development Sustainable Investment Knowledge Platforms Data Catalogs and Interfaces Curated Lists

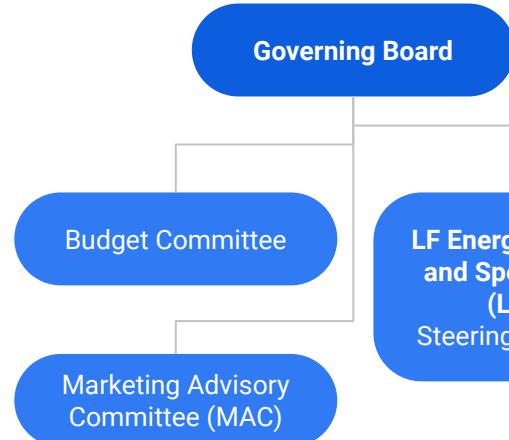
Life Cycle Assessment Circular Economy and Waste

# Governance & Membership

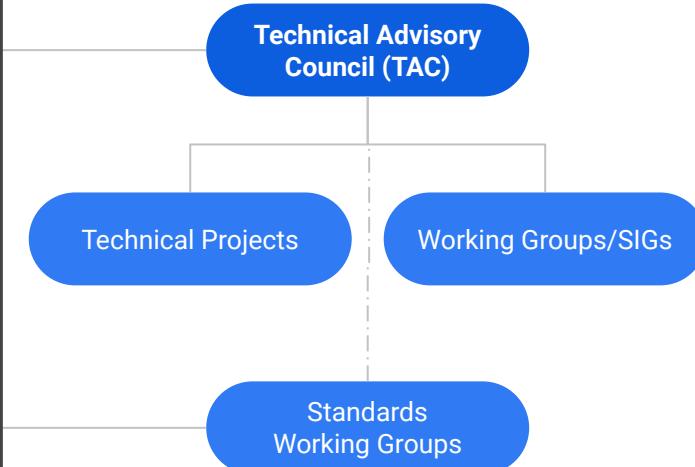
**QLF** ENERGY

# Governance at a Glance

Fiduciary Governance - Membership driven



Technical Governance - Open to all



# Governing Board voting representatives



**Lucian Balea**  
**Chair**

Open Source  
Program Director at  
RTE (Reseau de  
Transport  
d'Electricite)



**Dr. Antonello  
Monti**

Professor at RWTH  
Aachen University



**Arjan Stam**  
**Treasurer**

Value Stream Lead  
at Alliander



**Audrey Lee**

Senior Director,  
Energy Strategy at  
Microsoft  
Corporation



**Bryce Bartmann**  
Chief Digital  
Technology Advisor  
at Shell  
International  
Petroleum Company



**Jordan Hughes**  
Senior Software  
Engineer at Apple  
Inc.



**Dr. Marissa  
Hummon**  
CTO at Utilidata



**Maud Texier**  
Head of Energy  
Development at  
Google LLC



**Dr. McGee Young**  
CEO at WattCarbon

# Technical Advisory Council (TAC) voting representatives



**Antonello Monti**  
Chair  
Professor  
RWTH Aachen  
University



**Anne Tilloy**  
Project manager  
RTE (Reseau de  
Transport  
d'Electricite)



**Art Pope**  
Member of  
Technical Staff at  
Google LLC



**Avi Allison**  
Program Manager,  
Energy,  
Sustainability  
Microsoft  
Corporation



**Boris DOLLEY**  
Director of  
Sustainable IT  
Strategy  
RTE (Reseau de  
Transport  
d'Electricite)



**Bryce Bartmann**  
Chief Digital  
Technology Advisor  
Shell International  
Petroleum Company



**Jonas van den  
Bogaard**  
Open Source Office  
Lead  
Alliander



**Maarten Mulder**  
PO Field Device  
Platforms  
Alliander



**Travis Sikes**  
Senior Data  
Scientist  
Recurve

# LF Energy Members

LF ENERGY

## LF Energy Member - Strategic\_(5) +1



## LF Energy Member - General\_(25) +3



CARBONLACES



ELECTRICITY MAPS

ENERGINET



HITACHI



PIONIX

RECURVE



Statnett



VATTENFALL

WattCarbon

ZEDDEDA

## LF Energy Member - Associate\_(37) +3

Carbon  
Co-op



EPRI

ENACCESS



Fraunhofer  
IIS

FAU

IOWA STATE  
UNIVERSITY



HOCHSCHULE  
LUZERN



openADR  
Alliance

OpenUK



RWTH AACHEN  
UNIVERSITY

Stanford

The Alan Turing  
Institute



TRUSTED  
COMPUTING  
GROUP

UNIVERSITI  
TEKNOLOGI  
MARA

UNIKASSEL  
VERSITÄT



VOLTA  
FOUNDATION

WASHINGTON STATE  
UNIVERSITY



# Membership and Participation Levels

Membership Level	Annual Fee	Plus Linux Foundation Membership: Silver (if not a member)	Board Seat	TAC Seat	Outreach Committee	Suggested Minimum FTE*	Notes
Strategic	Flat fee: \$150k	\$20k	Yes	Yes	Yes	1	Two year minimum commitment
General	Based on number of employees \$50K (5000+) \$30K (1000–4999) \$20K (200–999) \$10K (100–199) \$5,000 (0–99)	Based on number of employees \$20K (5000+) \$15K (499-4999) \$10K (100-499) \$5,000 (0-99)	(Possible) 1 per every 10 General members	Based on Merit	Yes	N/A	A TAC seat may be earned by technical contribution as a project leader
Associate	No fee	No	(Provisional at start-up)	Based on Merit	Yes	N/A	Limited to academic, research and NGO organizations

\* FTE = Full Time Equivalent (e.g. 2 employees each spend 50% of their time on a project). This suggestion is meant to provide a minimum resource investment to ensure members are contributing technically. Most projects see much higher investment of resources than the minimum requirement.

# Membership Benefits



Tier	New to LF	Existing LF member	Benefits
<b>Strategic</b>	\$170,000	\$150,000	<ul style="list-style-type: none"> <li>• Appoint one (1) voting representative to the LF Energy Governing Board.</li> <li>• Appoint one (1) voting representative to the LF Energy Technical Advisory Council (TAC)</li> <li>• Appoint one (1) representative as a voting member in any subcommittees or activities of the Governing Board.</li> <li>• Enjoy most prominent placement in displays of membership including on the website and in marketing materials.</li> <li>• 1 guest LF Energy blog post per quarter</li> <li>• 1 LF Energy hosted webinar per quarter</li> <li>• 1 Linux.com blog post per year</li> <li>• 10 complementary LF Training course/certification tickets</li> <li>• Create an individualized press release to announce membership with LF Energy PR.</li> <li>• Receive greater insight into LF Energy strategy and project roadmaps through increased engagement with the LF Energy Executive Director and staff.</li> <li>• Receive ongoing, monthly 1:1, individual engagement and guidance from LF Energy Executive Director</li> <li>• Increased access to invitation-only Linux Foundation Member Summit.</li> <li>• Receive discounts on LF Energy conferences + event sponsorship.</li> </ul>
<b>General</b>	<p>\$70,000 (USD) 5,000+</p> <p>\$40,000 (USD) 2,000 – 4,999</p> <p>\$25,000 (USD) 500 – 1,999</p> <p>\$15,000 (USD) 100 – 499</p> <p>\$10,000 (USD) Up to 99</p>	<p>\$50,000 (USD) 5,000+</p> <p>\$25,000 (USD) 2,000 – 4,999</p> <p>\$10,000 (USD) 500 – 1,999</p> <p>\$5,000 (USD) 100 – 499</p> <p>\$5,000 (USD) Up to 99</p>	<ul style="list-style-type: none"> <li>• (Possible) Governing Board seat 1 per every 10 General and Academic and Research Institutions members collectively as a class, with a maximum of 3.</li> <li>• 1 guest LF Energy blog post per year</li> <li>• 1 LF Energy hosted webinar per year</li> <li>• 10 complementary LF Training course/certification tickets</li> <li>• Participate in all marketing, community, thought leadership opportunities.</li> <li>• Receive discounts on LF Energy conferences + event sponsorship.</li> <li>• Identify your organization as a member and display your logo on the LF Energy website and in marketing materials.</li> <li>• Access to The Linux Foundation's invitation-only Linux Foundation Member Summit.</li> </ul>
<b>Associate</b>	Free	Free	<ul style="list-style-type: none"> <li>• The Associate category of membership is limited to non-profit/non-governmental organizations. This requires approval by the Governing Board.</li> <li>• Participate in all marketing, community, thought leadership opportunities.</li> <li>• Receive discounts on LF Energy event sponsorship.</li> <li>• Identify your organization as a member and display your logo on the LF Energy website and in marketing materials.</li> </ul>

# LF Energy Projects



## LF Energy Projects - Early Adoption (6)



LF ENERGY  
**Everest**



LF ENERGY  
**GXF**



LF ENERGY  
**OPERATORFABRIC**



LF ENERGY  
**POWSYBL**



LF ENERGY  
**SEAPATH**



LF ENERGY  
**SOGNO**

## LF Energy Projects - Incubation (10)



LF ENERGY  
**CoMPAS**



LF ENERGY  
**DynaWo**



LF ENERGY  
**FLEDGE  
POWER**



LF ENERGY  
**FlexMeasures**



LF ENERGY  
**GRID CAPACITY MAP**



LF ENERGY  
**Hyphae**



LF ENERGY  
**OPENEEMETER**



LF ENERGY  
**openLEADR**



LF ENERGY  
**OpenSTEF**



LF ENERGY  
**SHAPESHIFTER**

## LF Energy Projects - Sandbox (4)



LF ENERGY  
**ARRAS**



LF ENERGY  
**OpenGEH**



LF ENERGY  
**POWER GRID MODEL**



LF ENERGY  
**RTDIP**

# Contribute to our projects - anyone can!

More information at

<https://wiki.lfenergy.org/display/HOME/Technical+Projects>

Contribute to an existing project:

- Submit a PR with a bugfix or new feature
- Pick existing GitHub issue as a sample project
- Integrate with a new app / contribute plugin
- Help improve project documentation
- Submit additional test cases
- Join the TSC discussion: dev mailing list, conf calls

Get involved with the TAC or Working Group:

- DevOps / CI expertise always useful
- Interest / expertise in security especially welcome
- Join the TAC discussions: [mailing list](#), [conf calls](#)

# Contact Us

## LF Energy Foundation

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General Inquiries

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Membership

[membership@lfenergy.org](mailto:membership@lfenergy.org)

