A FOUNDING DECLARATION

Why Humanity Needs NetEdison

Building a Global Ecology for Electricity — Open Source, Open Standards, Open Future

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The world's electricity grid is a 20th-century artifact—centralized, brittle, and increasingly incapable of absorbing the renewable revolution underway. NetEdison™ proposes a fundamental re-architecture: applying the proven logic of TCP/IP and the open Internet to energy distribution, creating a global ecology of interoperable, software-defined Energy Routers on a DC backplane.

Founded on the seminal research of Jonas Birgersson and the EnergyNet protocol, NetEdison™ is a trademark of BWX INC / Open Doors Management, registered at NetEdison.com and NetEdison.ai. This document opens the global conversation.

Principal Architect: Jonas Birgersson, EnergyNet Task Force | Trademark Holder: BWX INC / Open Doors Management | Technical Foundation: arxiv.org/pdf/2509.08152

THE CASE FOR CHANGE

The Grid That Is Holding Humanity Back

For over a century, electricity reached our homes and factories through a deceptively simple premise: large power plants generate, long transmission lines carry, and passive consumers receive. That centralized, radial, one-way architecture—what engineers now call the Plain Old Grid System (POGS)—was a genuine marvel when it was built. It is now an obstacle to human progress.

> "This is not a technology problem; it is an architecture problem. POGS was designed for one-way flows of power from centralized plants to passive consumers. It was never built to support dynamic, bidirectional flows between thousands of producers and consumers at the edge of the network." — Birgersson et al., EnergyNet Explained (2025)[1]

The Three Failures of the Legacy Grid

1. Architectural Fragility. On November 24, 2022, a handful of Russian missile strikes plunged most of Ukraine into darkness—captured in a stark NASA satellite image showing the country's lights extinguished while neighbors remained illuminated.[1] The strikes exploited the single-point-of-failure design inherent in every centralized grid. By contrast, when both the C-Lion1 and BCS East-West submarine Internet cables were simultaneously cut in the Baltic Sea in November 2024, RIPE Labs monitoring found no significant packet loss across the network—because the Internet routes around failure by design.[1] Electricity infrastructure cannot say the same.

2. Renewable Energy Bottleneck. Solar panels, batteries, and EVs are now cheaper than at any point in history—yet renewable projects are being delayed or canceled because the grid cannot absorb bidirectional, distributed generation. In the United States, residential buildings consume approximately 38% of total electricity (over 1.5 trillion kWh annually).[1] That same footprint represents an equally enormous untapped potential for local generation and storage—potential that POGS architecture actively prevents from being realized.

3. Cost and Equity Inequality. The legacy grid demands central CAPEX with long payback horizons, requires monopoly structures for investment recovery, and creates perpetual interconnection queues measured in years. Communities in the Global South—and underserved communities everywhere—wait decades for grid extensions that a software-defined energy network could deliver in weeks.

THE NETEDISON ARCHITECTURE

Electricity, Re-Invented as a Network of Networks

In 1998, Jonas Birgersson led a team in Lund, Sweden that proved broadband Internet could be delivered to every home using commodity Ethernet gear at a fixed monthly fee of 200 SEK—less than US$20. Within a year, that model had forced the national incumbent to match the offer, and the architectural debate between centralized 'Bell-heads' and decentralized 'Net-heads' was settled forever.[1] Birgersson is now applying that same insight to electricity.

NetEdison™ is the commercial and open-source instantiation of EnergyNet—a blueprint for transforming electricity distribution the way TCP/IP transformed telecommunications. The architecture is built on three interlocking layers:

Layer	Internet Analog	NetEdison Equivalent
Local	LAN	ELAN – Energy Local Area Network Single building or neighborhood microgrid
Regional	WAN	EWAN – Energy Wide Area Network District or city-scale coordination
Global	Internet / BGP	EnergyNet – Open Energy Protocol (EP) National/international interoperability

The Energy Router: The Core Innovation

At the heart of NetEdison sits the Energy Router—a power-electronics device that enforces galvanic separation (a digitally controlled electrical firewall) between the local microgrid and the legacy network. Its DC backplane accepts inputs from solar panels, batteries, EVs, and the traditional grid, routing power only when both sides explicitly consent through software negotiation. This is the Energy Protocol (EP)—the BGP of electricity.

Key properties of the Energy Router: variable-voltage ports adaptable to any device; software-defined flows managed by the open-source Energy Router Operating System (EROS); near-real-time operation with local buffering rather than strict real-time synchrony; and pay-as-you-grow economics that do not require monopoly guarantees or decade-long payback horizons.

> EnergyNet turns the present bottleneck into a platform for growth: from scarcity to abundance, with lower and more predictable costs, greater resilience, and a faster path to electrification at scale.[1]

BUILDING THE ECOLOGY

How NetEdison Grows: Open Source, Licensing, and Global Expansion

NetEdison™ is not a product. It is an ecology—a self-reinforcing system of code, curriculum, supply chains, standards, and licensed affiliates that collectively shift the global energy paradigm. BWX INC / Open Doors Management holds the NetEdison™ trademark and the netedison.com and netedison.ai domains as the steward of this ecology, not as a gatekeeper. The model is explicitly inspired by the way IETF, Linux, and the Internet Society govern open infrastructure: open standards, transparent governance, commercial freedom within a common protocol.

Four Pillars of the NetEdison Ecology

1. Open Source Code. The Energy Router Operating System (EROS), the Energy Protocol (EP), and all reference implementations are released under an open license. Any manufacturer, municipality, or developer can build compliant Energy Routers. NetEdison maintains the canonical repository, manages protocol versioning, and certifies conformance. This mirrors how the Linux kernel anchors an entire industry without controlling it.

2. Open Education (NetEdison Curriculum). A structured, freely available curriculum covering Energy Router fundamentals, DC microgrid design, EP configuration, and EROS deployment enables a new generation of energy engineers worldwide. Curriculum licensees may operate as NetEdison Curriculum Centers, localizing content and issuing NetEdison-certified credentials.

3. Distributed Supply Chains. NetEdison publishes open hardware reference designs and component specifications so regional manufacturers in any country can build compliant Energy Routers without dependency on a single vendor. This structural decentralization of supply mirrors the distributed architecture of the network itself.

4. Licensed Affiliates. Organizations that adopt the NetEdison trademark for deployment, research, or education enter a lightweight licensing agreement with BWX INC / Open Doors Management. Anticipated affiliate categories include:

Affiliate Type	Scope	Example
NetEdison Labs	R&D, hardware prototyping, protocol extension	University research centers, national labs
NetEdison [Country]	National deployment, regulatory engagement, market development	NetEdison India, NetEdison Brazil, NetEdison EU
NetEdison Curriculum	Accredited education and workforce development	Technical colleges, vocational institutes

NetEdison Certified	Hardware/software vendor conformance	Energy Router manufacturers, EROS integrators

The licensing framework is intentionally light: affiliates gain the right to use the NetEdison brand, access to the central code repository, and a seat in the governance process. In return, they agree to publish derivative protocol work under compatible open licenses and to respect EP interoperability requirements. No revenue royalties are levied on open-source deployments—NetEdison's sustainability comes from certification, curriculum licensing, and commercial integration services.

THE MOMENT

An Inflection Point as Clear as 1969

In 1969, ARPANET sent its first packet. The engineers in that room could not have predicted the Internet, smartphones, cloud computing, or the global economy that would run on their protocol. They built a simple, open, end-to-end architecture and trusted that the edge would innovate. That trust was rewarded beyond any imaginable forecast.

We are at the same inflection point for energy. The components exist: solar panels at grid parity, lithium batteries dropping below $100/kWh, bidirectional EV chargers in millions of garages, and power electronics cheap enough to embed in every building. What has been missing is the architecture—the open, interoperable protocol layer that lets these components cooperate as a network.

NetEdison provides that architecture. Its open Energy Protocol (EP) is to electricity what TCP/IP is to data: a lingua franca that makes the whole greater than the sum of its parts, that removes the need for any single authority to coordinate every flow, and that allows billions of edge devices to collectively constitute a resilient, abundant, affordable global energy system.

> "Drawing on Europe's deregulation successes and energy community reforms, we argue that, like mobile and broadband before, the next infrastructure wave primarily can be funded by market actors, and does not rely on government subsidies or monopoly charges." — Birgersson et al.[1]

What NetEdison Asks of You

NetEdison is a commons under construction. The immediate needs are not capital or political permission—they are code contributors who write and test EROS; hardware partners who build reference Energy Routers; cities and districts that pilot ELAN deployments; educators who localize the curriculum; and policymakers who open regulatory space for EP-based microgrids.

The global ecology does not require unanimity before it starts. It requires, as every open standard before it required, a critical mass of early adopters who see the inevitability of the architecture and choose to be on the right side of the inflection point. POTS to Internet. POGS to EnergyNet. The pattern is clear.

NetEdison™ invites researchers, developers, municipalities, educators, and energy entrepreneurs worldwide to join the ecology. Register at NetEdison.com and NetEdison.ai. The first packet of the energy Internet is ready to be sent.

Sources

1. Birgersson, J., Weiss, M.A., Chen, J., Kammen, D., Kåberger, T., et al., "EnergyNet Explained: Internetification of Energy Distribution," EnergyNet Task Force / ViaEuropa Sverige AB, Lund, Sweden, 2025. https://arxiv.org/pdf/2509.08152

2. Isenberg, D.S., "Rise of the Stupid Network," Computer Telephony, August 1997. https://isen.com/papers/Dumb.html

3. NetEdison™ Trademark – BWX INC / Open Doors Management. https://netedison.com · https://netedison.ai