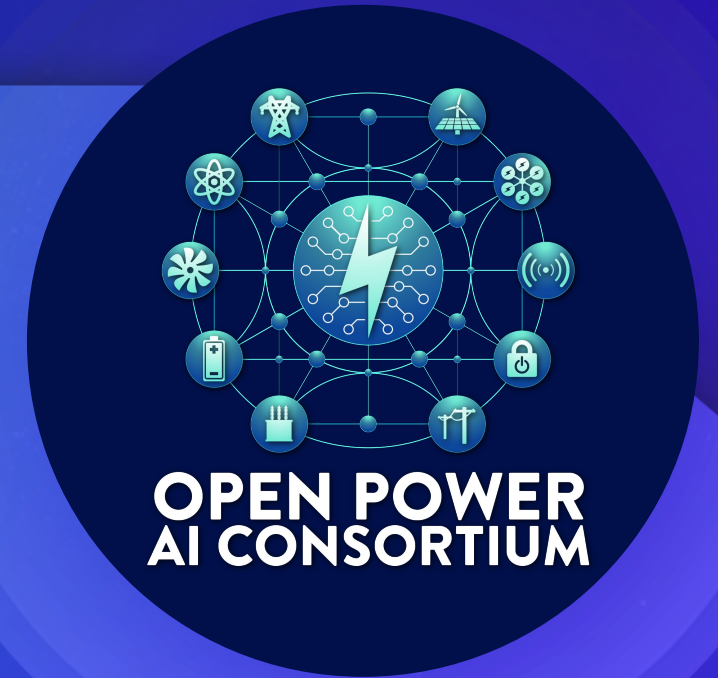


Deployment Working Group

March Working Group Meeting



Jason Hollern
Technical Executive
jhollern@epri.com

March 11, 2026

Agenda

- Deployment WG Updates
 - Safety Message
- Technology Developer Presentation
 - Silurian AI, Jayesh Gupta
- Deployment and Implementation Practices
 - EPRI Short Survey
- Questions and Wrap Up

Open Power AI Consortium – Key Objectives

Collect Data, Develop Libraries & AI Models



Create an AI Sandbox



Implementation and Lessons Learned



Implementation and Lessons Learned

- Collaborate with leading AI developers to deploy AI models.
- Develop a feedback loop from deployments for refinement and optimization.
- Maximize impact via knowledge sharing among consortium members.

Implementation Workstream Goals & Desired Outcomes

1. Connect commercially available AI solutions to end-users
2. Transfer, pilot, and implement new use-case solutions to industry
3. Foster a collaborative environment to improve the AI value proposition
4. Collect lessons learned through applications, demonstrations, and scaled implementation
5. Develop AI implementation guidance to help companies with successful implementation and value realization

Three Main Thrusts to Accomplish Goals

Research Products

- Value: Learning from implementation opportunities



Outreach and Interactive Knowledge Transfer

- Value: Interactive collaboration and awareness
- Value: Presentation opportunities



AI Tool Implementation

- Value: Experience with AI tools and streamlined implementation
- Value: One-on-one and community use-case build out



Upcoming Events

2026 Open Power AI Events

January						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

May						
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10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

September						
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27	28	29	30			

February						
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June						
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21	22	23	24	25	26	27
28	29	30				

October						
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18	19	20	21	22	23	24
25	26	27	28	29	30	31

March						
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29	30	31				

July						
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26	27	28	29	30	31	

November						
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29	30					

April						
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August						
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23	24	25	26	27	28	29
30	31					

December						
S	M	T	W	T	F	S
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Deployment WG Meeting

Use-Case WG Meeting

Domain-specific Model WG Mtg.

Member Representative Committee Mtg.

No Deployment WG Meetings:
January & September

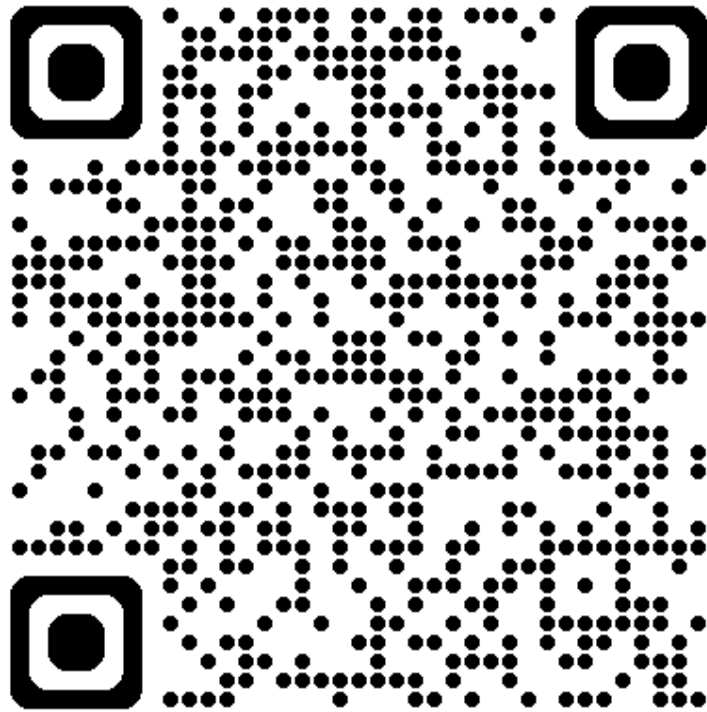
OPAI Use Case Survey Links – Remains Open Indefinitely



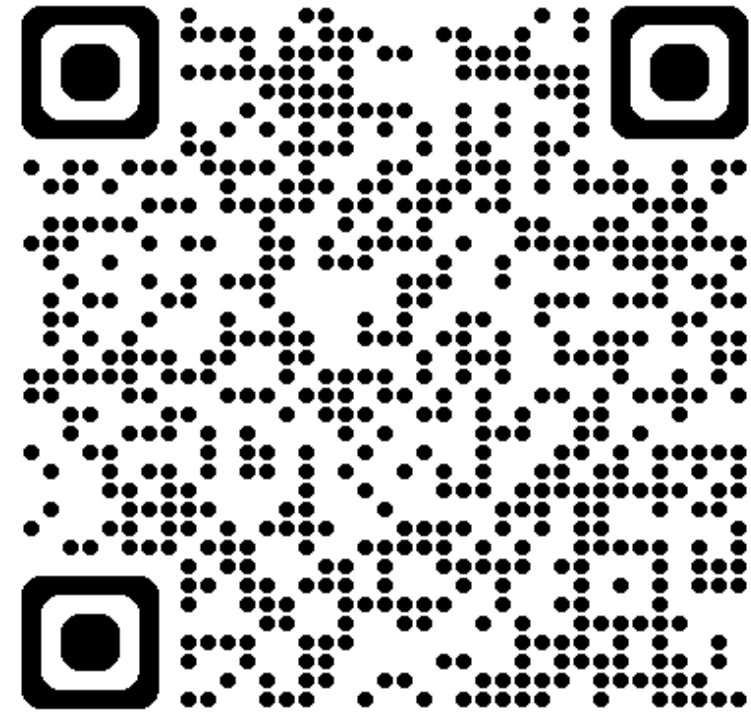
Energy Utility Survey



Technology Provider Survey



Click or Scan



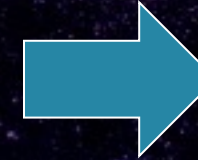
<https://www.surveymonkey.com/r/OPAI-Use-Cases-Utilities>

<https://www.surveymonkey.com/r/OPAI-Use-Cases-Tech-Providers>

Transforming Survey Data to OPAI Member Value

Use Case Assessment Criteria Prioritization

- Top 5-10 Reliability and Resilience
- Easiest to implement
- Least risky...etc
- Company confidential benchmarks relative to industry



Published soon on
<https://openpowerai.org/>



Use Case Co-Development

Utility and Industry Demo Spotlights

- Reference and spotlight utility or technology use case implementations

Use Case Functional Prioritisation

- Top 5 10 Asset Management
- Top 5-10 Operations
- Top 5-10 Markets, Nuclear....etc

Use Case to Technology Matching

- Map high priority use cases to medium to high technology solution maturity

Use Case Co-Development

- OPAI will bring forward the highest priority use cases for co-development
- Potential data availability identified in survey, utilities with highest need may provide



Technology Demonstration

Salurian AI – Jayesh Gupta



Silurian

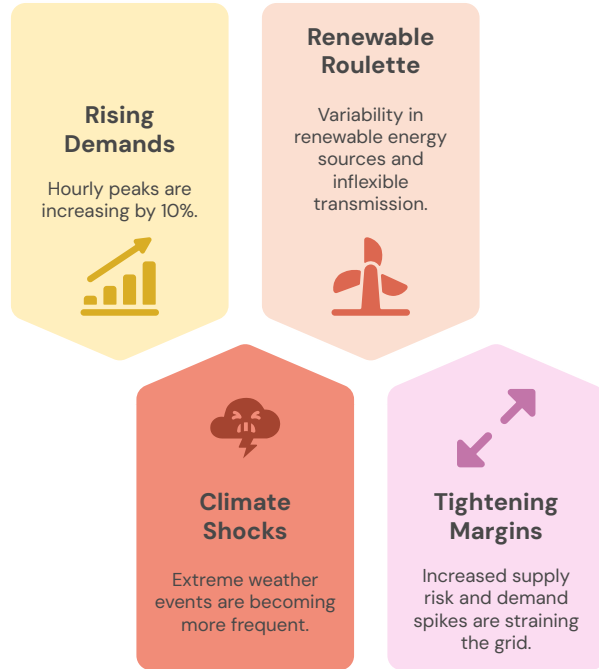
Foundation Models for the Physical World

EPRIOPAI

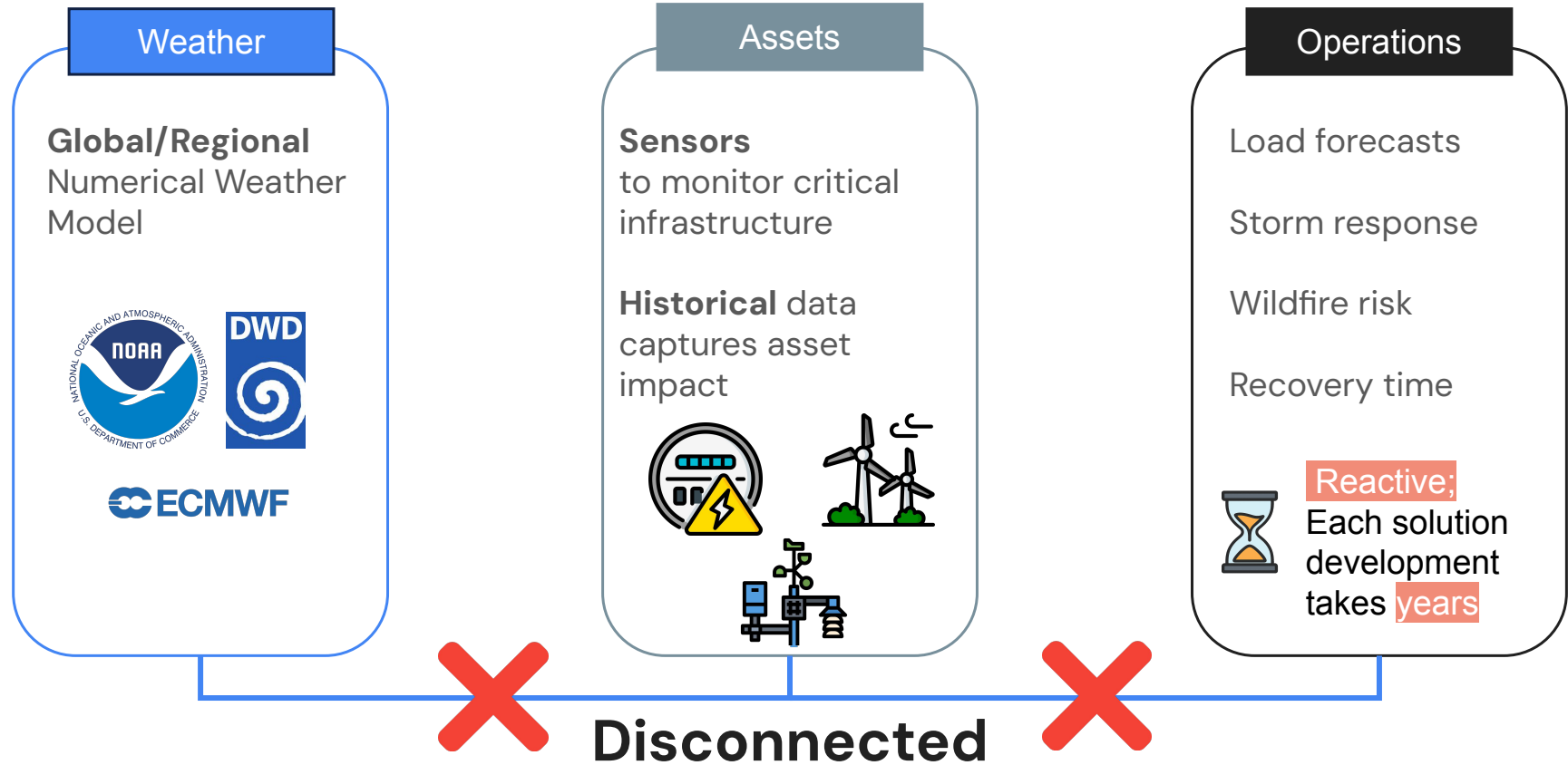
Jayesh Gupta, Co-Founder & CEO
jayesh@silurian.ai

March 11, 2026

Power Infrastructure under Stress

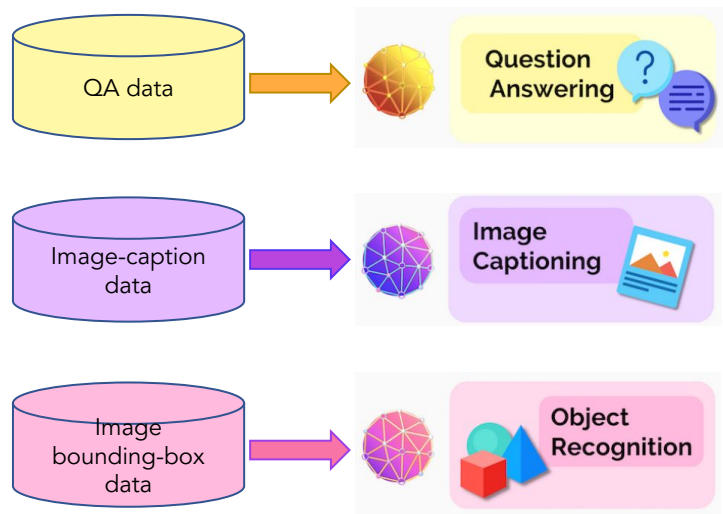


Current World of Grid Weather Solutions



Meanwhile in the AI world...

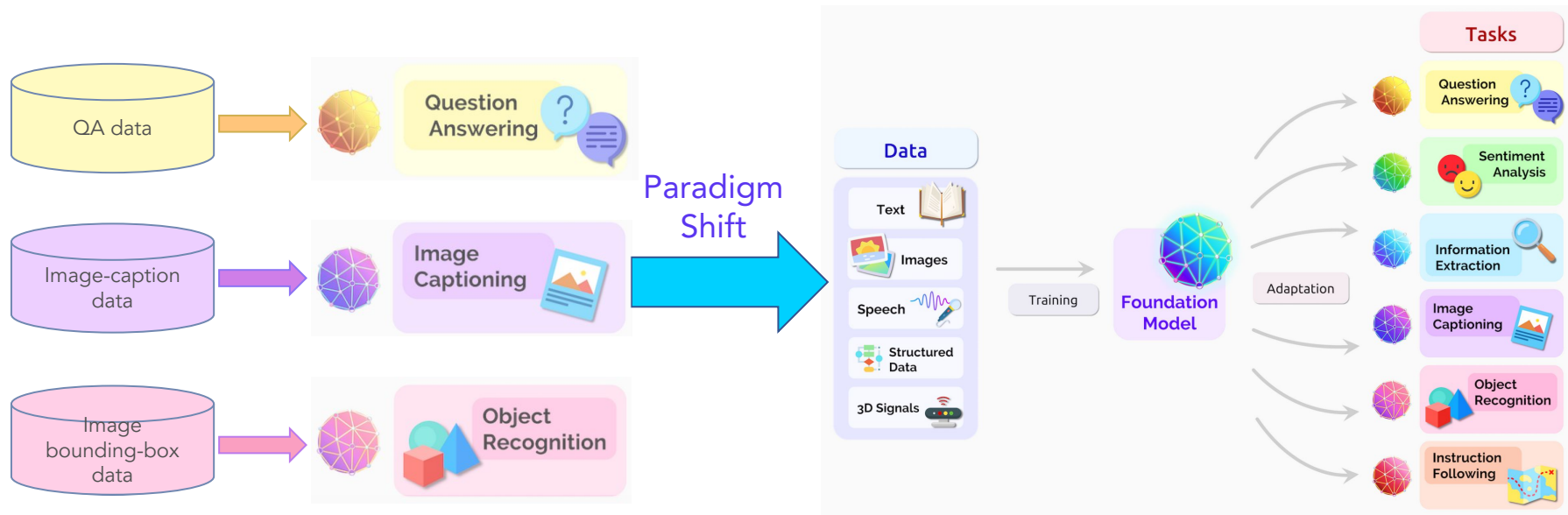
Earlier: One model for *every* question



Bommasani, Rishi, et al. "On the opportunities and risks of foundation models." arXiv preprint arXiv:2108.07258 (2021).

Meanwhile in the AI world...

Now: One Model for *all* the Questions



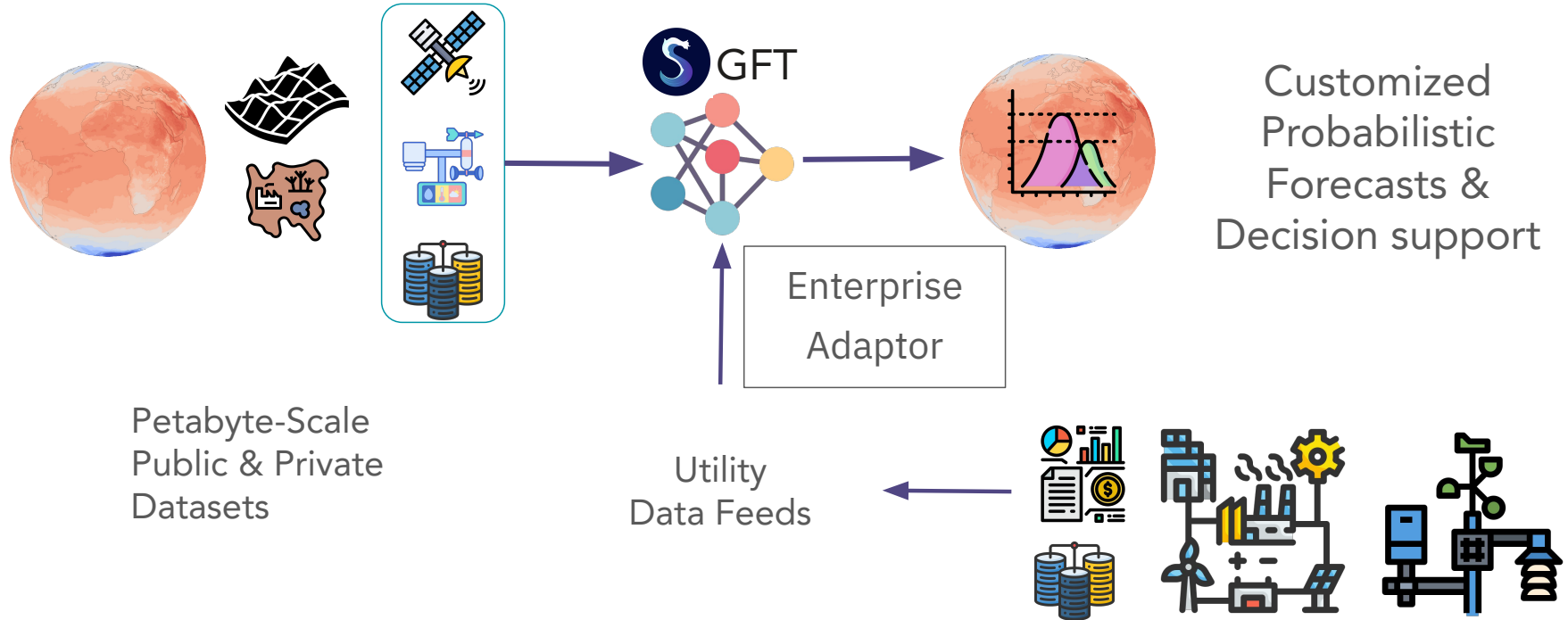
Bommasani, Rishi, et al. "On the opportunities and risks of foundation models." arXiv preprint arXiv:2108.07258 (2021).



Each infrastructure asset is actively sensing weather and its local impact.

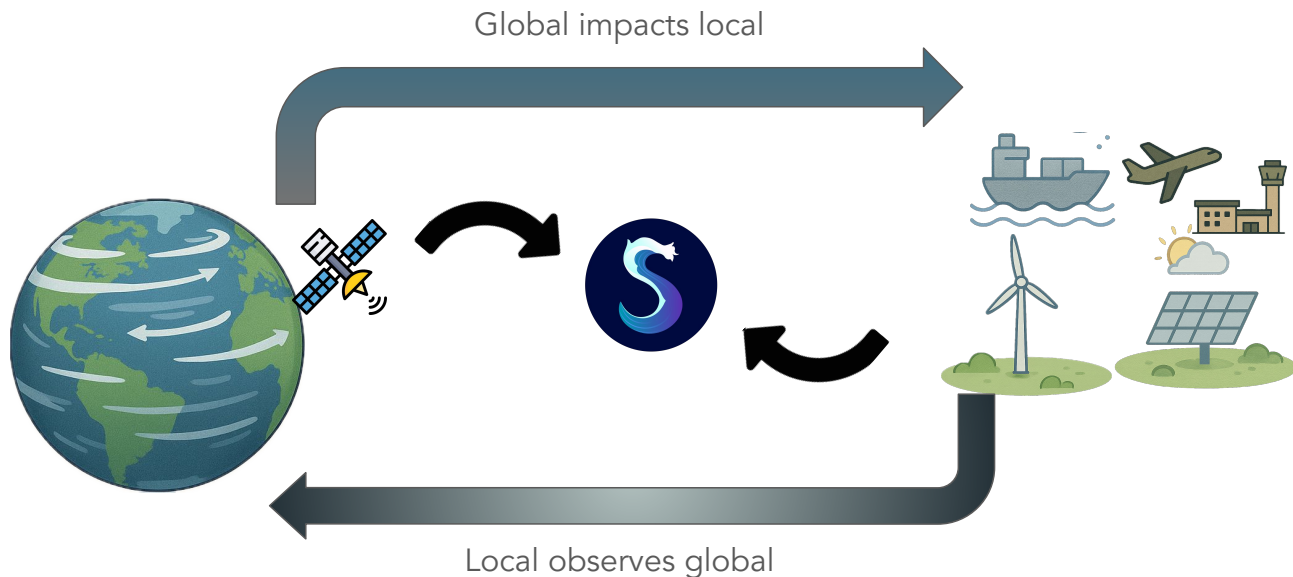
No numerical weather model ingests this data.

The New World of Tailored Grid Intelligence



Weather Foundation Model (WFM)

Connect global and hyper-local with Generative Forecasting Transformer (GFT)



One model for all spatial scales solving operational needs directly



GFT-HQ: A WFM for HQ's Power Grid

<https://arxiv.org/abs/2509.25268>

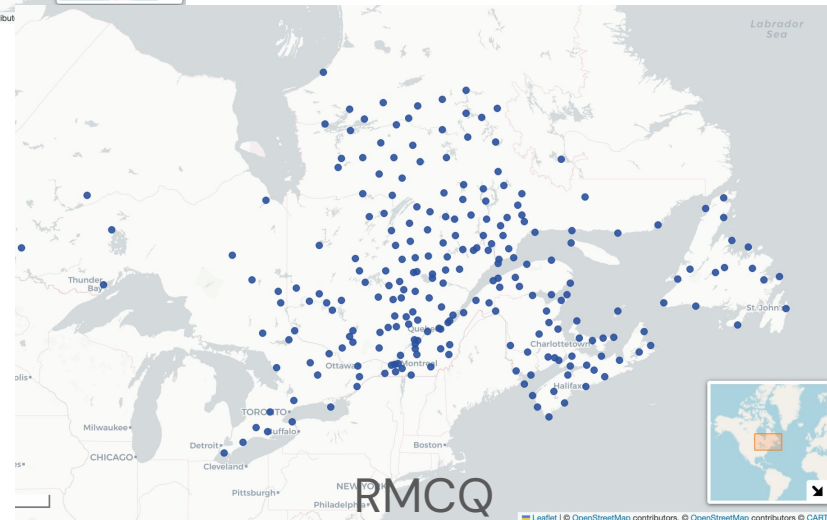
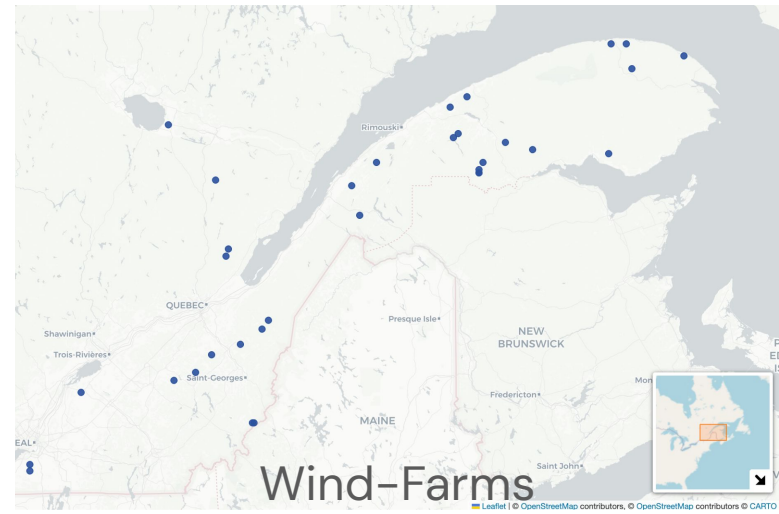
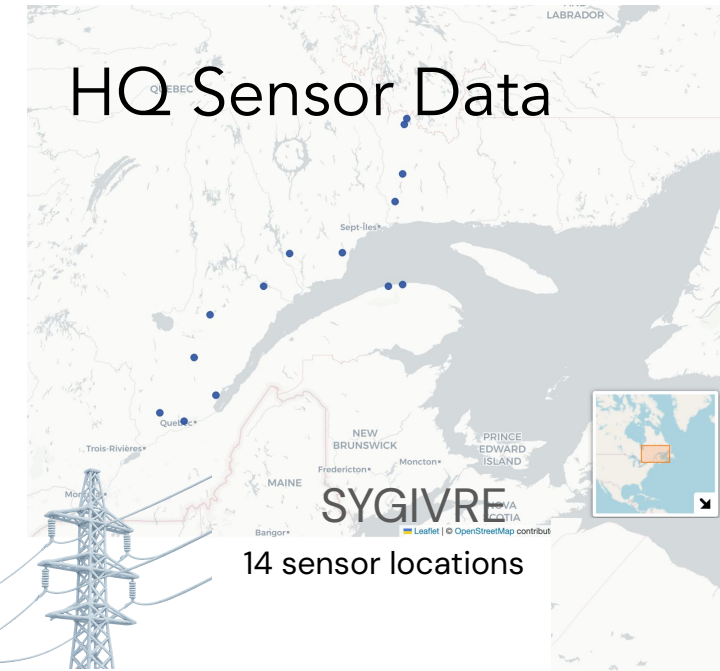
Romaine Transmission Line Corridor



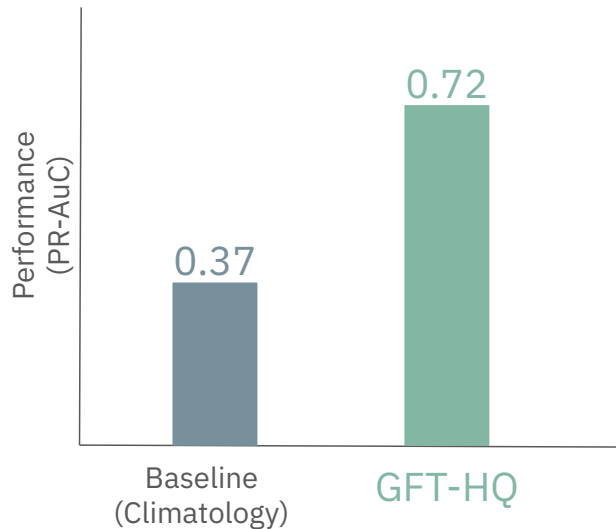
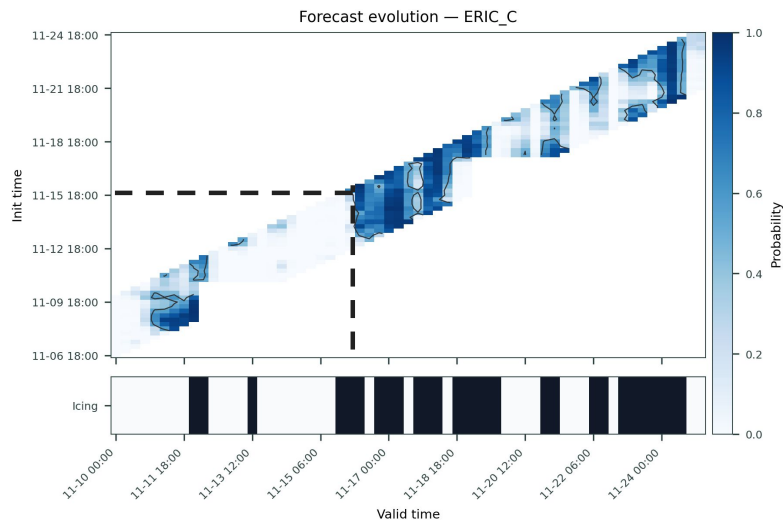
Sources: Le Manic (Dec 10, 2024); Journal de Montréal (Dec 10, 2024); TVA Nouvelles (Mar 7, 2025); Le Nord-Côtier (Jan 8, 2025; Feb 18, 2025).



HQ Sensor Data



What if such events were predictable more accurately?

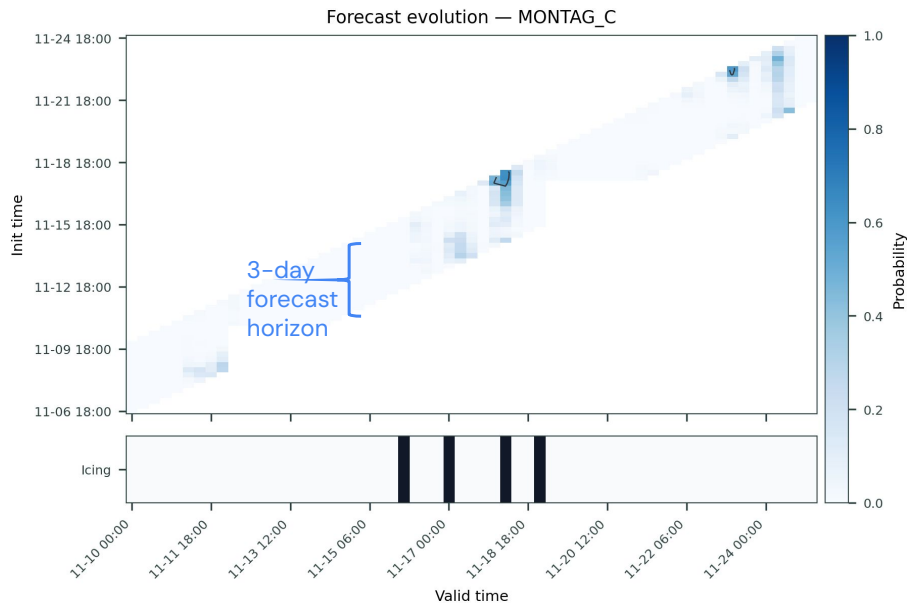
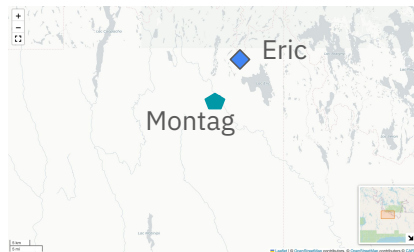


24–72h

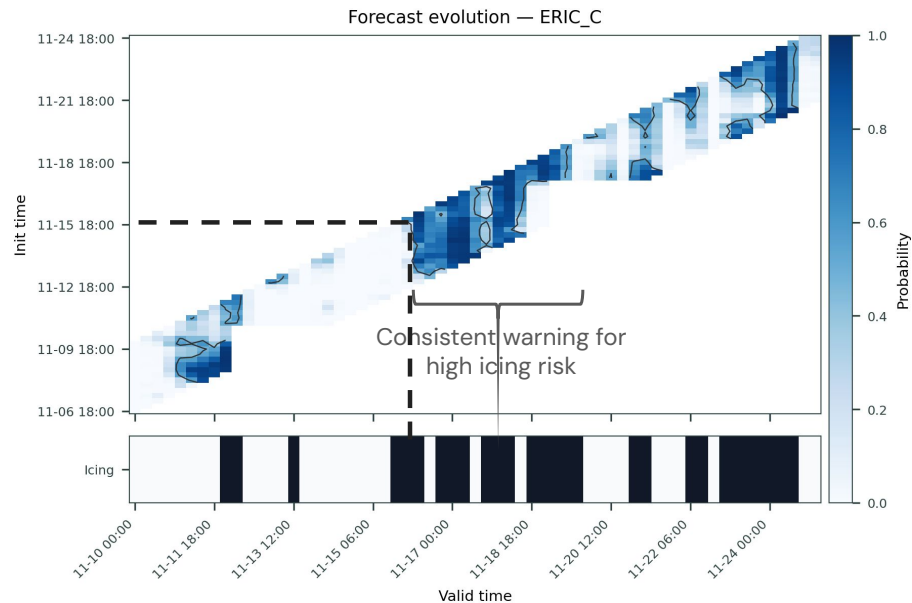
Stable Early-Warning Window

Dramatic leap in day-ahead rime-ice risk forecasting

Capturing local differences



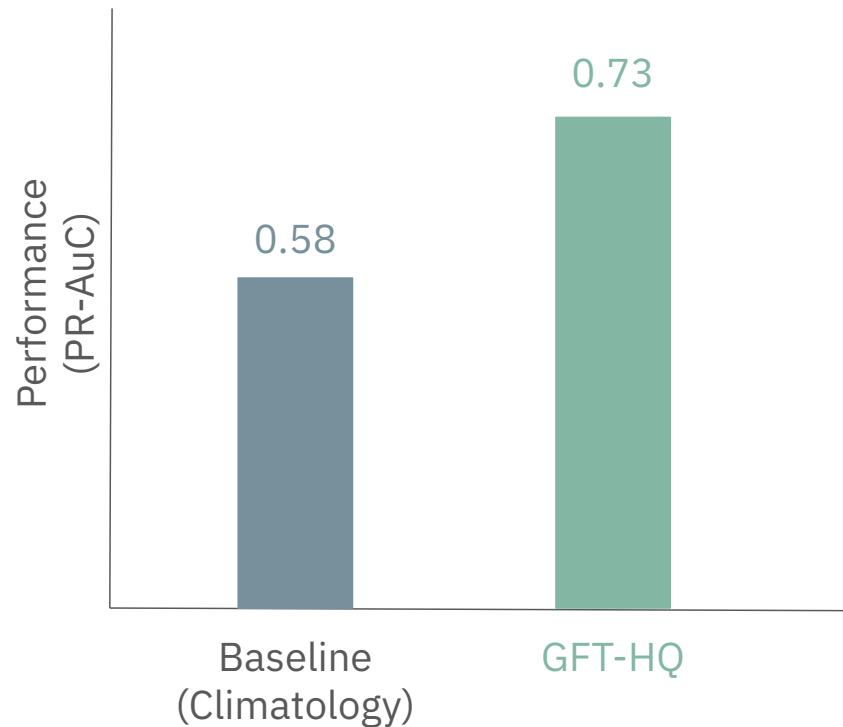
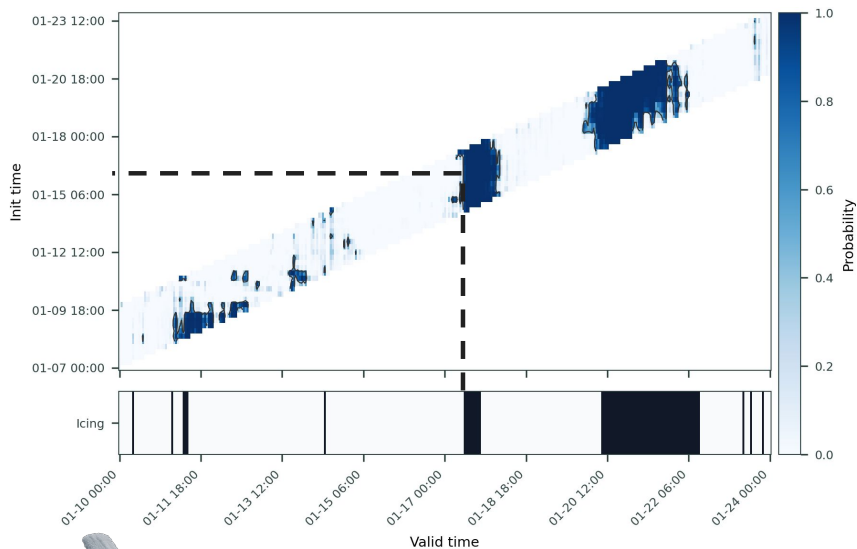
Little icing observed



Heavy icing observed

Correct predictions of differences in icing behavior between stations
10km apart up to 3-day ahead

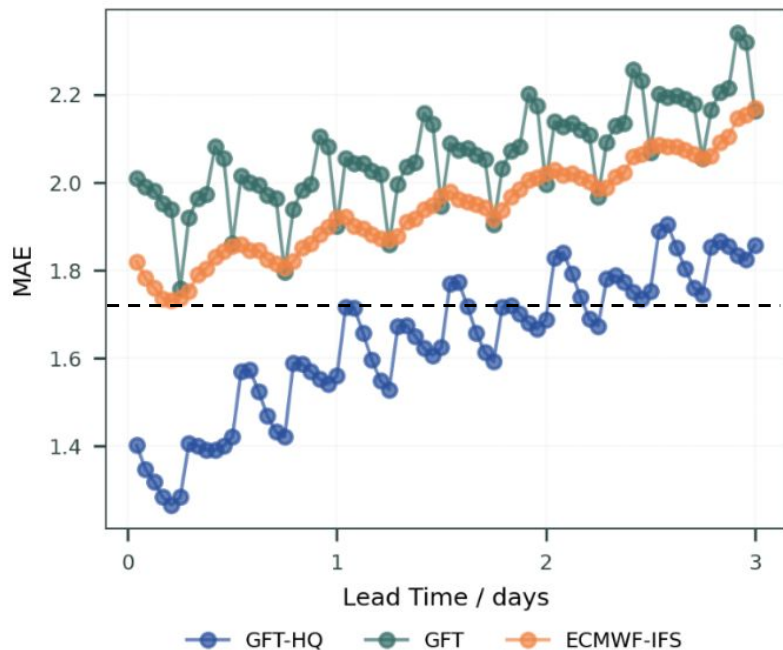
Icing risk forecasting for wind-farms



Dramatic leap in day-ahead wind-farm icing risk forecasting

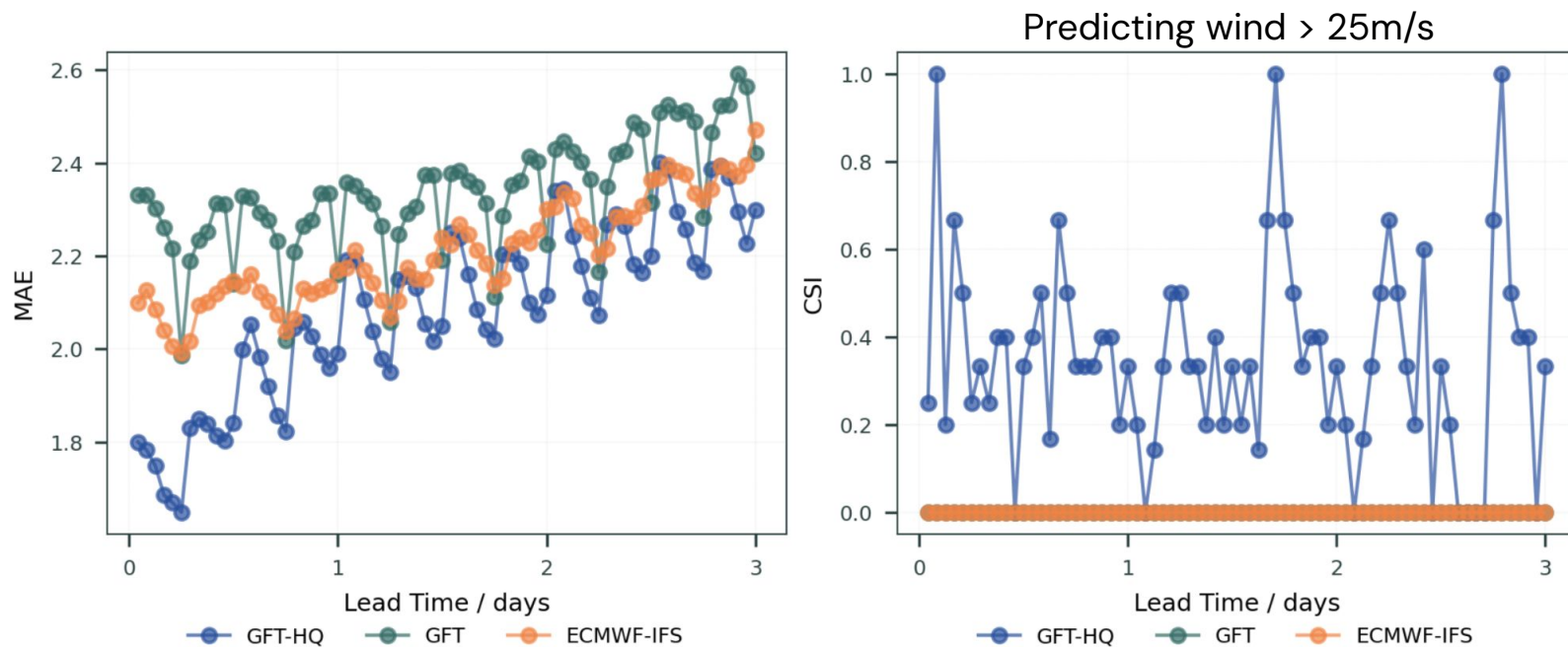


Enhanced wind-farm hub-height wind forecasts



- GFT-HQ consistently outperforms industry standard for the entire 3-day forecast period
- Lower forecast error leads to more accurate wind power generation forecasts, reducing financial and grid reliability

Predicting correlated risk: snow-storms



20% wind-speed forecast error reduction under **high icing** conditions,
only model able to detect cut out wind speeds

Integrating Atmospheric Intelligence into Energy Infrastructure Operations

Data Requirements

 **Public Data**



✓ Available commercially or from government agencies

 **Operational Data**

Asset Locations & Characteristics
GIS coordinates, equipment specifications, installation dates

Historical Outages
Event timestamps, causes, duration, affected customers

Maintenance Records
Work orders, inspection reports, equipment health data

SCADA Measurements
Real-time voltage, current, power flow, equipment status

✓ Typically available in asset management systems

 **Environmental Observations/Simulations**

Utility Weather Stations
Temperature, humidity, wind speed/direction, pressure, met-masts

WRF Runs
High-resolution model outputs

Utility Proprietary Sensors
Icing sensors, DLR

Utility Impact Proxies
Power production

✓ Often already deployed for operations

GFT is designed to be multi-source, multi-modal and integrate diverse information sources required for operational decision making

Maintaining Data Sovereignty



Silurian's Atlas Platform

Ingests PBs of heterogeneous global geospatial data from model analysis to satellites and radars.

GFT encoders transform these into compressed homogenous latent representations



Client Secure Environment



Silurian Secure Runtime

Client Data

Applications

Your data never needs to leave your secure cloud environment.

Deployment Workflow: Five-Stage Implementation

1

Pilot Use Case

Identify a high-value operational challenge with clear success metrics. Focus on a specific problem domain where improved forecasting delivers measurable value.

Transmission icing risk

Wind ramp events

Storm outage prediction

Timeline

2-4 weeks

2

Data Integration

Connect utility operational data systems with global datasets. Establish data pipelines for historical data access and optionally real-time access.

API connections

Data quality validation

Pipeline automation

Timeline

2-4 weeks

3

Model Adaptation

Fine-tune the foundation model using historical utility observations. Train utility-specific adapters to optimize performance for the target use case.

Transfer learning

Adapter training

Hyperparameter tuning

Timeline

4 weeks

4

Operational Validation

Run forecasts in parallel with existing systems to evaluate improvements. Compare model outputs against baseline forecasts and actual observations.

A/B testing

Performance metrics

User feedback

Timeline

3-6 months

5

Scaling

Expand deployment to additional regions, assets, and operational workflows. Replicate successful pilot implementation across the organization.

Timeline

Ongoing

Deployment Strategy: From Pilot to Scale

Start Focused

Begin with a specific, high-value operational challenge in a limited geographic area. Focus enables rapid learning and clear success metrics.

Select Clear Use Case

Choose a problem with measurable outcomes and operational impact

Define Scope for Evaluation

Limit to an asset class for manageable complexity

Establish Success Criteria

Quantifiable metrics for forecast accuracy and operational value

Validate Rigorously

Run parallel testing with existing systems to objectively evaluate improvements. Build operator trust through demonstrated performance.

Parallel Forecasting

Compare model outputs against baseline forecasts in real operations

Statistical Validation

Use established metrics (MAE, RMSE, skill scores) for objective assessment with special focus on hazardous scenarios

Operator Feedback

Gather input from control room staff on forecast utility and usability

Scale Systematically

Expand deployment based on proven value and organizational readiness. Scale geographically, by use case, and across operational workflows.

Expansion

Roll out to additional service territories and climate zones

Use Case Diversification

Add new operational applications as confidence builds

Organizational Rollout

Train additional teams and integrate into standard workflows

Iterative Improvement Cycle



Deploy
Initial pilot



Measure
Performance metrics



Learn
Operational insights



Refine
Model updates

Operational Feedback Loops



Observation Ingestion

Continuously incorporate new observations and asset performance data



Model Retraining

Periodic updates to improve accuracy and adapt to changing climate patterns



User Input

Incorporate operator feedback to improve forecast presentation and utility

Demo

One Model, Limitless Applications

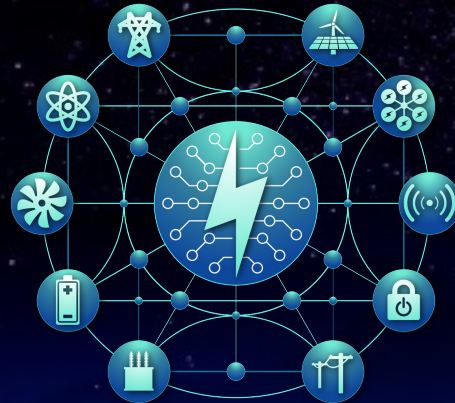
The same foundational model extends seamlessly across the enterprise, protecting CAPEX and accelerating time-to-value.



No new "point solutions" required.

The model's intelligence is universal and adaptable to your own data and requirements.

TOGETHER...SHAPING THE FUTURE OF ENERGY®



OPEN POWER AI CONSORTIUM