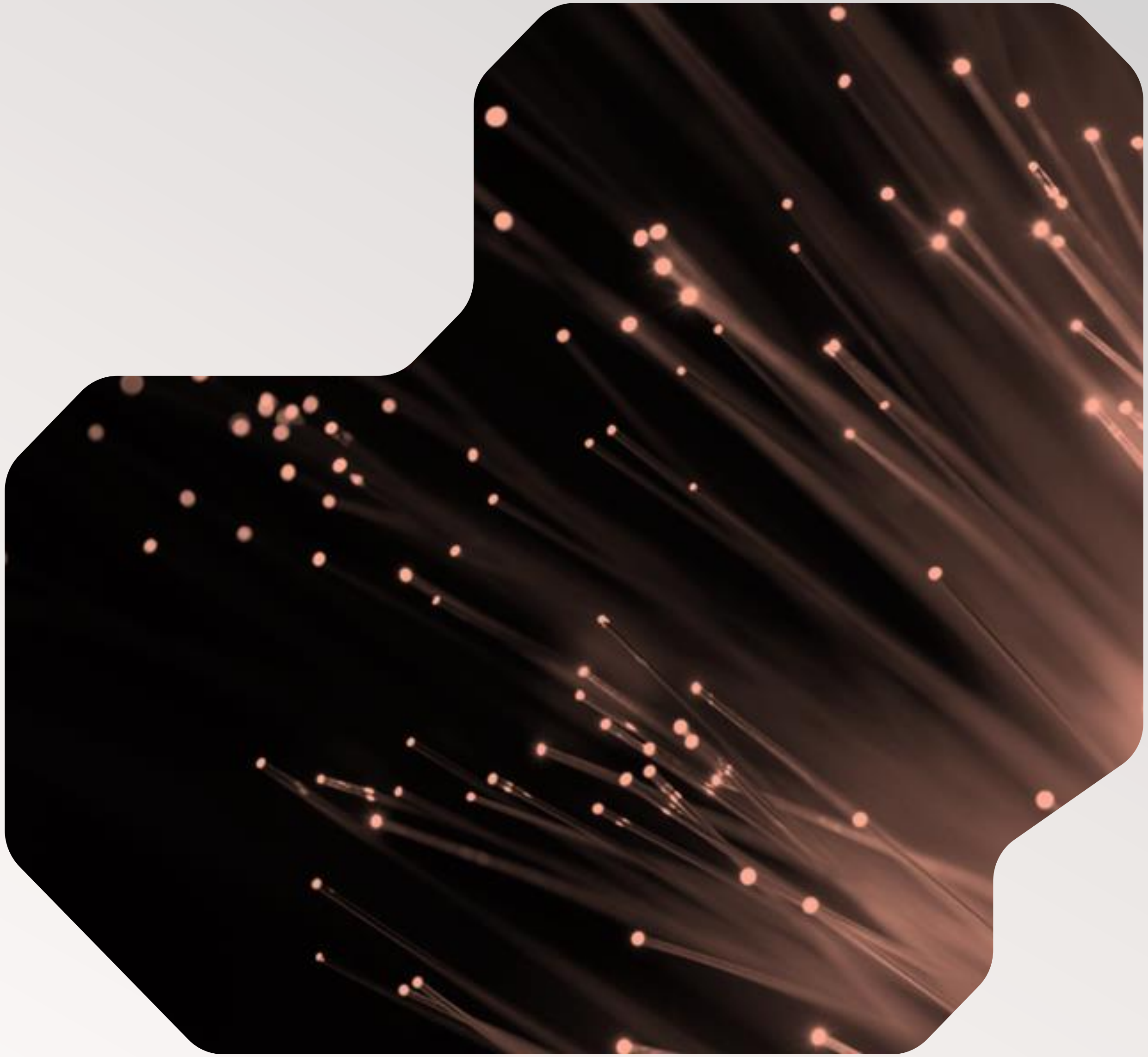
AETHER
TRANSMISSION SYSTEMS

Superconducting Fabrics for the Power Infrastructure

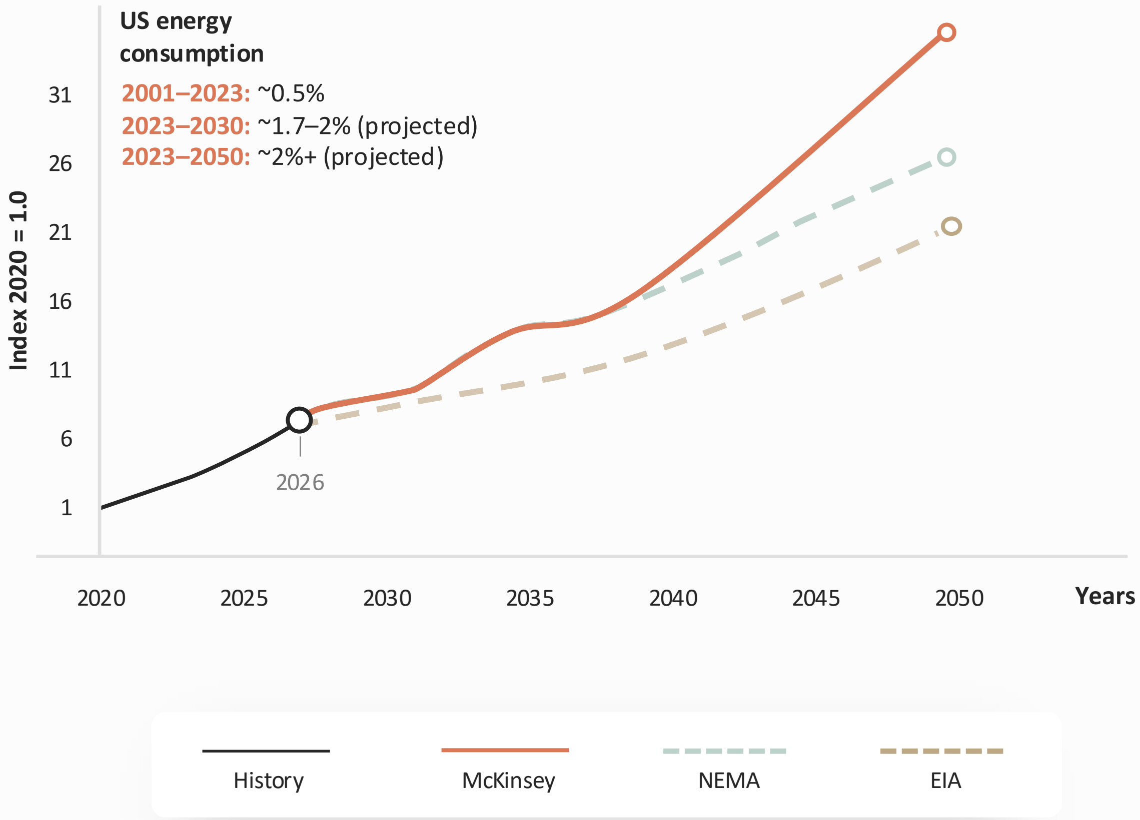
January 2026



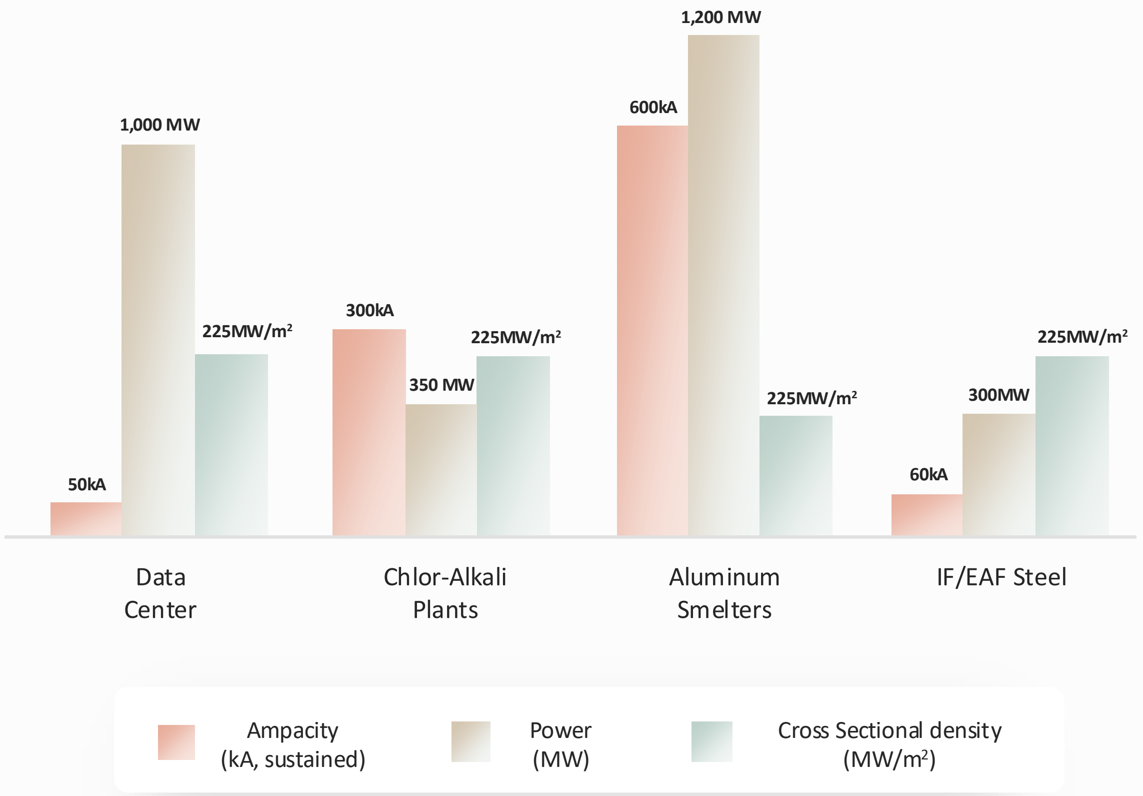
Pitch Deck - Confidential

Emerging loads require current densities that are not achievable with copper at scale

Electrification Trend: 50% total increase by 2050

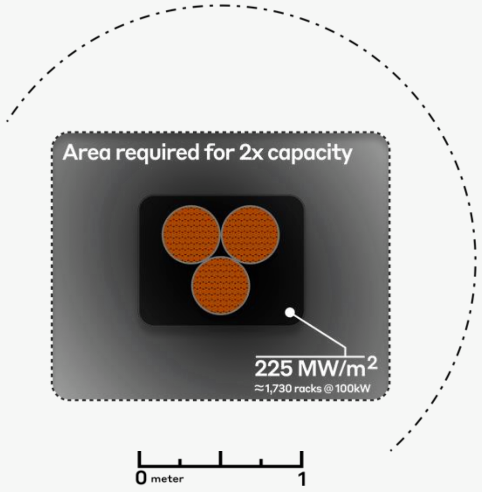


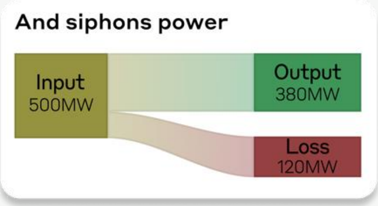
Electrification Frontiers



Shifting the governing physics of power delivery

Copper limits capacity

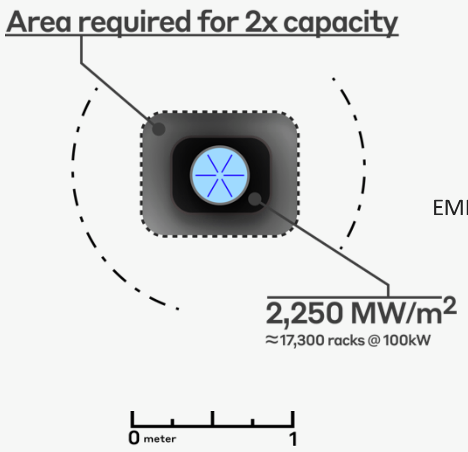


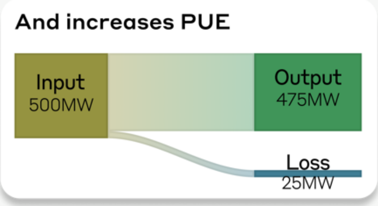


EMI minimum safe distance

X	Power Density
25%	Power Loss
1.3	PUE

Aether creates capacity





EMI minimum safe distance

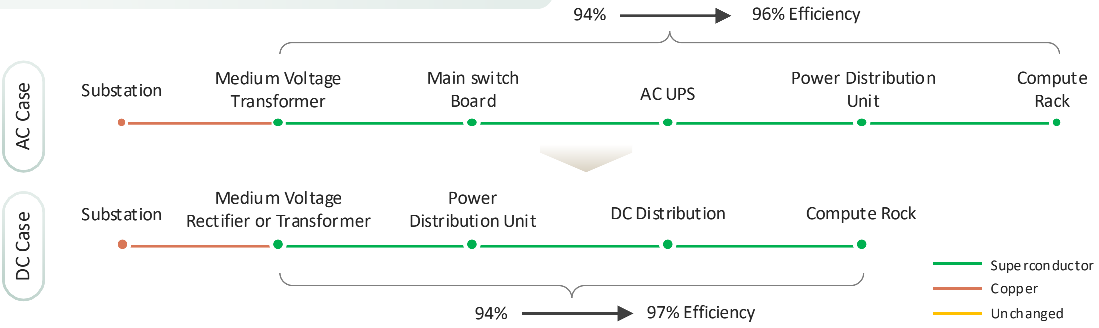
10x↑	Power Density
5%^{5x}	Power Loss
1.05$^{-0.25}$	PUE

Copper		Aether
$I\uparrow \Rightarrow P_{loss}\uparrow\uparrow \Rightarrow A_{Cu}\uparrow\uparrow$	**Scaling Feasibility** Copper scales by bulk, Aether scales by geometry	$I\uparrow \Rightarrow \eta\ tape\uparrow \Rightarrow A_{HTS}\uparrow$ = geometry controlled scale
$I\uparrow \Rightarrow P_{loss}\uparrow\uparrow$	**Efficiency & Loss Ceiling** Copper losses scale quadratically, Aether's efficiency is stable at scale	$R_{HTS} = 0 \Rightarrow P_{system} = P_{cryo}$
$I\uparrow \Rightarrow A_{Cu}\uparrow\uparrow \Rightarrow$ Civil rework↑↑	**Deployability** Copper scaling propagates into infrastructure, Aether scaling terminates at the cable	$I\uparrow \Rightarrow \eta\ tape\uparrow$, $I\uparrow \Rightarrow A_{Termination}\uparrow\uparrow$
$I\uparrow \Rightarrow$ EMI↑ $\Rightarrow$ Clearance↑	**Spatial Flexibility** Aether can route cables closer to critical components	$I\uparrow \Rightarrow$ EMI = 0

Aether Integrates at the power delivery decision point within system design

Data Centres

Quasi-Continuous Process



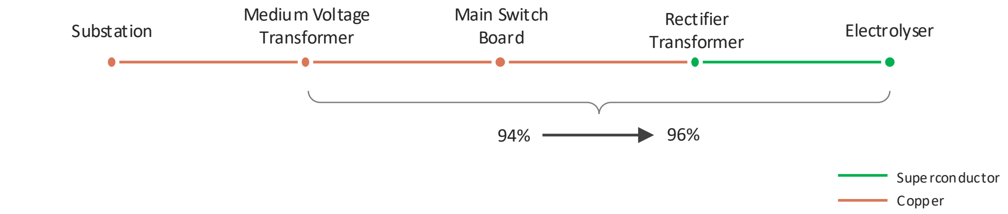
Greenfield: ~T-36 months

Brownfield: Every ~4 Years, ~T-12 months

Time to Deployment: ~12-48 months

Chlor-Alkali Plants

Continuous Process



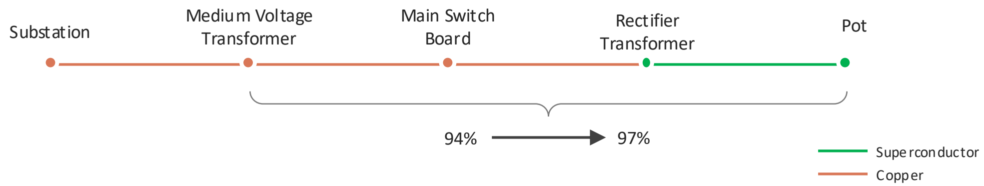
Greenfield: ~T-30 months

Brownfield: Every ~5 Years, T-18 months

Time to Deployment: ~9-18 months

Aluminium Smelters

Continuous Process



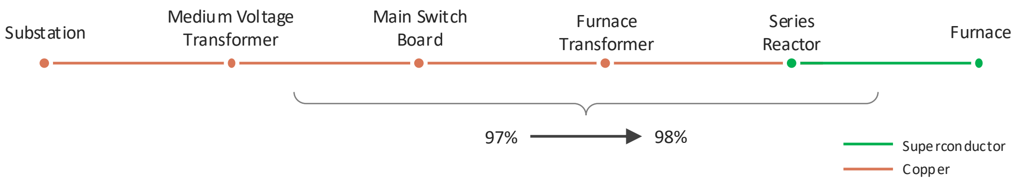
Greenfield: ~T-48 months

Brownfield: Every ~5Years, ~T-24 months

Time to Deployment: ~9-18 months

EAF/IF Steel

Cyclic Process



Greenfield: ~T-36 months

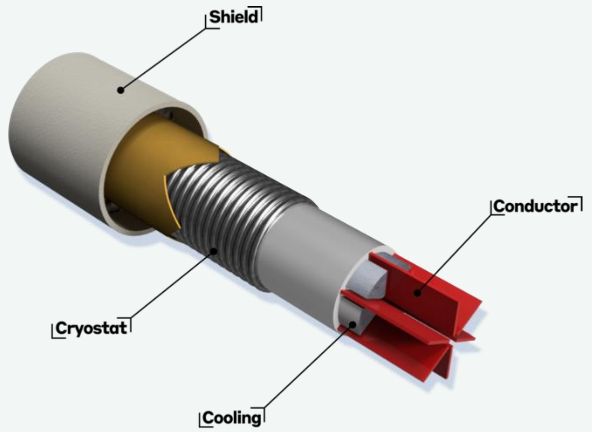
Brownfield: Every ~ 4Years, ~T-24 months

Time to Deployment: ~12-24 months

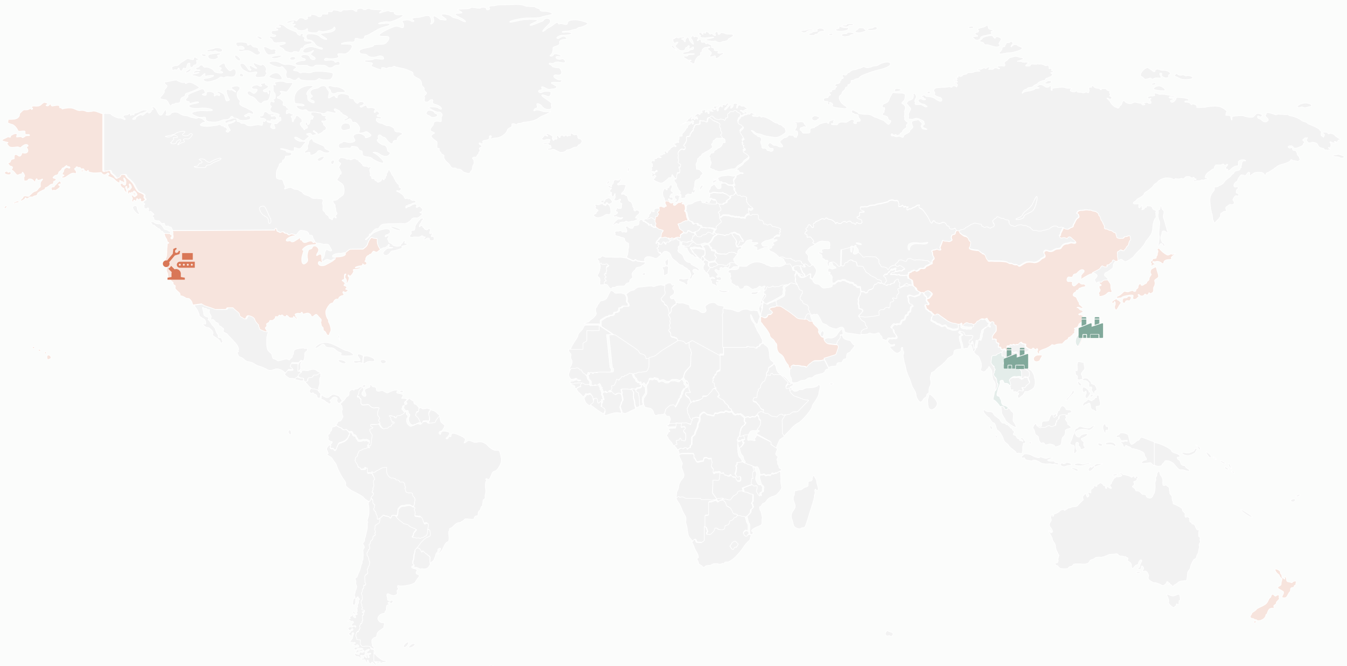
Engagement timing aligns with deterministic power delivery, outage planning, and refresh cycles.

Fully integrated power delivery stack: Hardware, Control, & Software Intelligence

Our Technology



Cryostat	A proprietary cryostat with best-in-class efficiency
Shield	Zero external EMI built into every cable
Conductor	Our patent-pending superconducting geometry
Cooling	Optimized to reduce HVAC and overhead



Manufacturing
Thailand Taiwan

Assembly
California

HTS
Japan
South Korea
Germany
China
USA
New Zealand

End-to-end supply chain validated with scalable, multi-vendor sourcing.

Designed to Integrate within Existing Electrical and Facility Envelopes

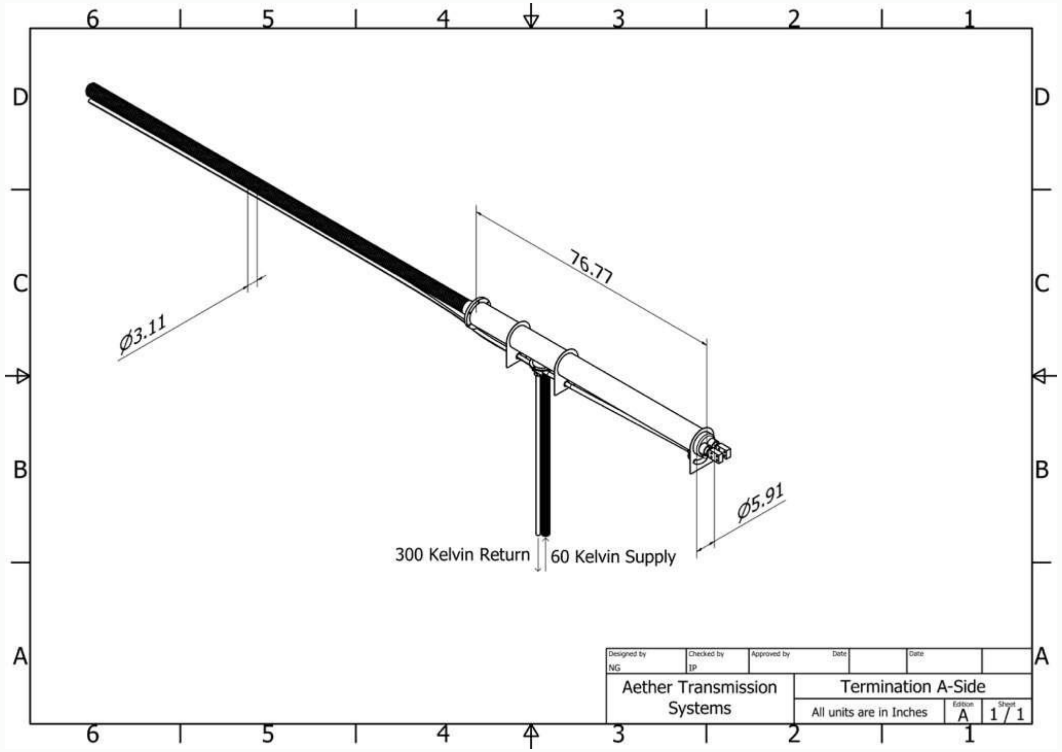


Figure 1: Cryoplant A-Side termination with return and supply lines modeled.

Fits existing trays and connects directly to busbars or switchgear without civil rework.

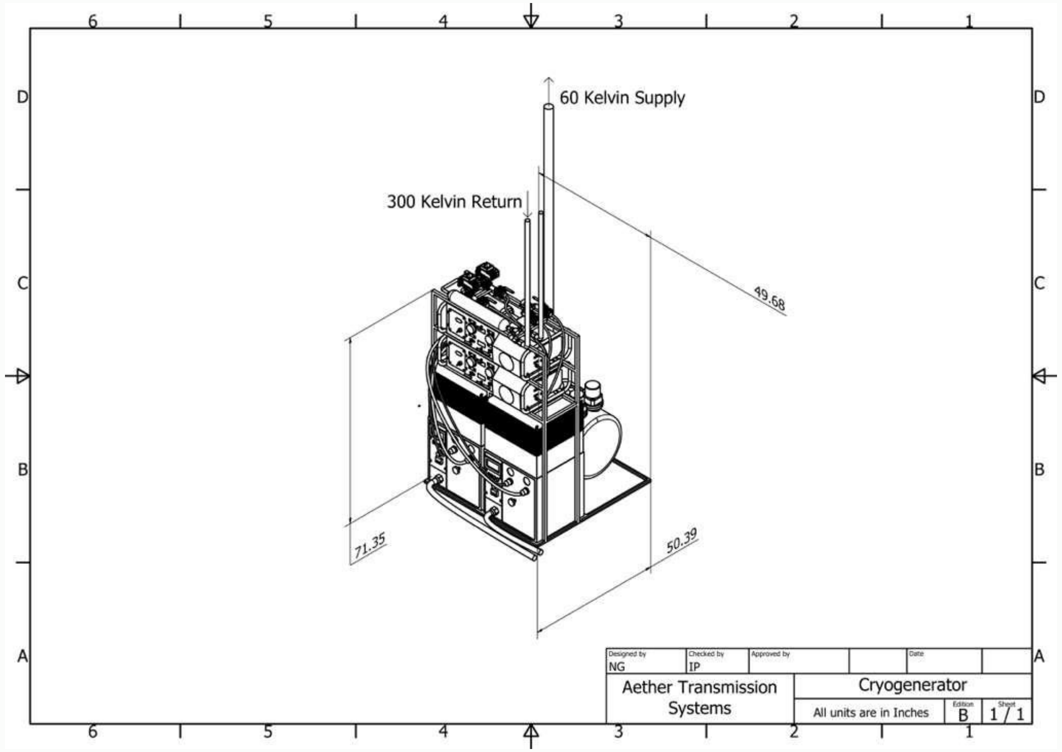


Figure 2: Primary Cryoplant with protective cover removed.

Standalone skid placed in utility space with N+1 redundancy and no impact on electrical routing.

Active Thermal Control Delivers Structurally Superior Power Density and Cost

Dimension	Aether (Closed Loop)	Competitor (Open Loop)
Thermal control philosophy	Actively controlled, closed-loop→ tunable operating temperature	Passive / boil-off-based cooling→ operating temperature set by environment and duty cycle
Capacity per ReBCO tape	Operates further below critical temperature→ larger intrinsic safety margin	Operates just below critical temperature→ smaller safety margin
Temperature & ONW control	Operating temperature and transient management predicted/controlled	Thermal buffering defines an allowable band; limited transient management
Design margin, mass, & cost	Lower operating temperature and larger intrinsic safety margin→ 2x power density→ lower material cost	Higher operating temperature and smaller intrinsic safety margin→ base power density→ base material cost

Customer Engagement Model and Foundations of Strategic Defensibility

Account Access
- CTO
- Head of Infrastructure
- SVP Data Center Engineering
- COO (industrial operators)

Technical Qualification
- Power Systems Engineering
- Electrical Architecture teams
- Grid Interconnection teams
- Data Center Design Engineering

Economic Qualification
- Infrastructure Finance
- CapEx Planning
- Strategic Planning
- Program Management

Commercial Transaction
- Procurement
- Vendor Qualification
- Supply Chain
- Legal

Deployment and Validation
- Site Engineering
- Construction teams
- Commissioning teams
- Infrastructure Operations

Scale Expansion
- Global Infrastructure teams
- Capacity Planning teams
- Procurement leadership
- Engineering Program Management

Infrastructure Design-In Lock-In

Once integrated into electrical architecture, replacement requires redesign, requalification, and operational risk, making vendor displacement highly unlikely.

Long-Duration Contracts and Programmatic Expansion

Infrastructure is deployed through multi-year expansion programs, creating recurring deployments across facilities once initially qualified.

High Vendor Qualification and Switching Barriers

Lengthy engineering validation, safety certification, and procurement approval cycles limit new entrant penetration and discourage vendor switching.

Installed Base Expansion and Customer Entrenchment

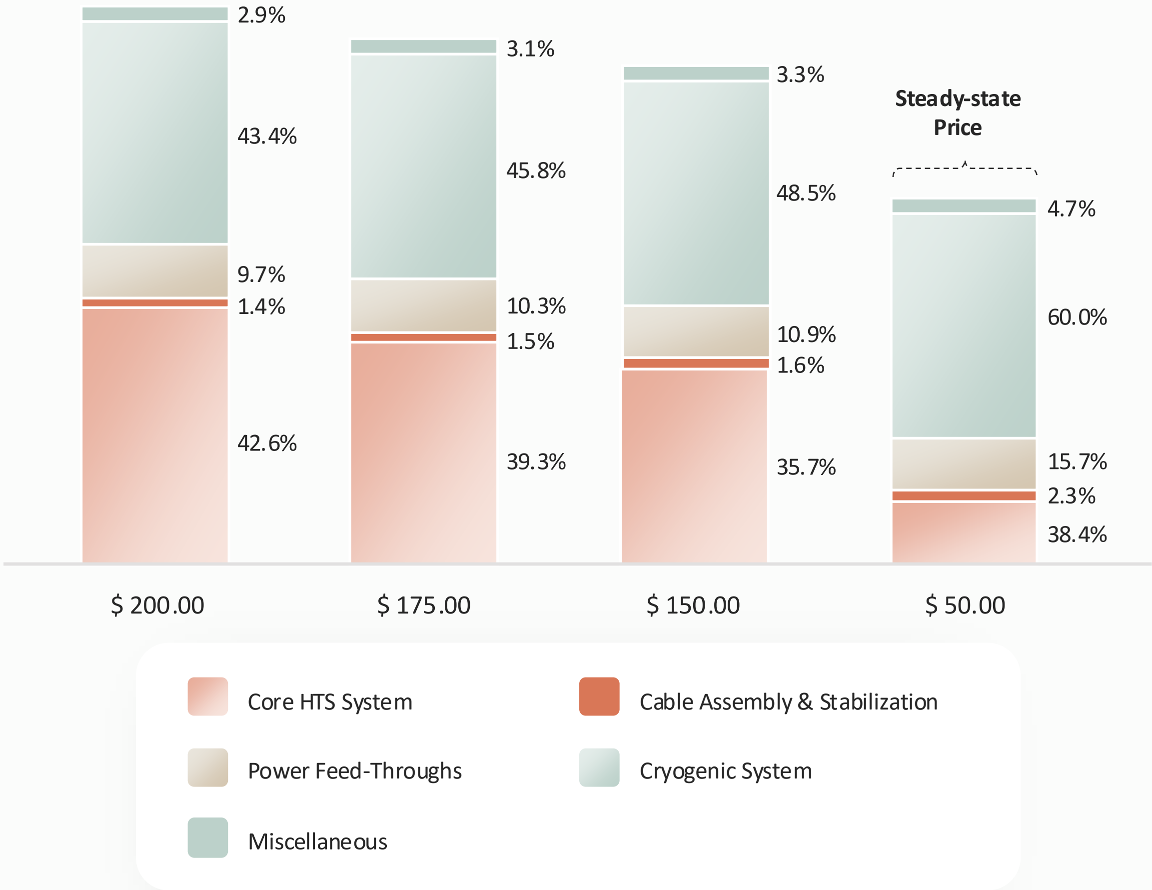
Initial deployments position Aether as the default vendor for future capacity additions, driving repeat procurement and long-term customer dependence.

Limited Competitive Alternatives at Infrastructure Scale

Few credible vendors can deliver superconducting power infrastructure at required reliability, scale, and integration compatibility.

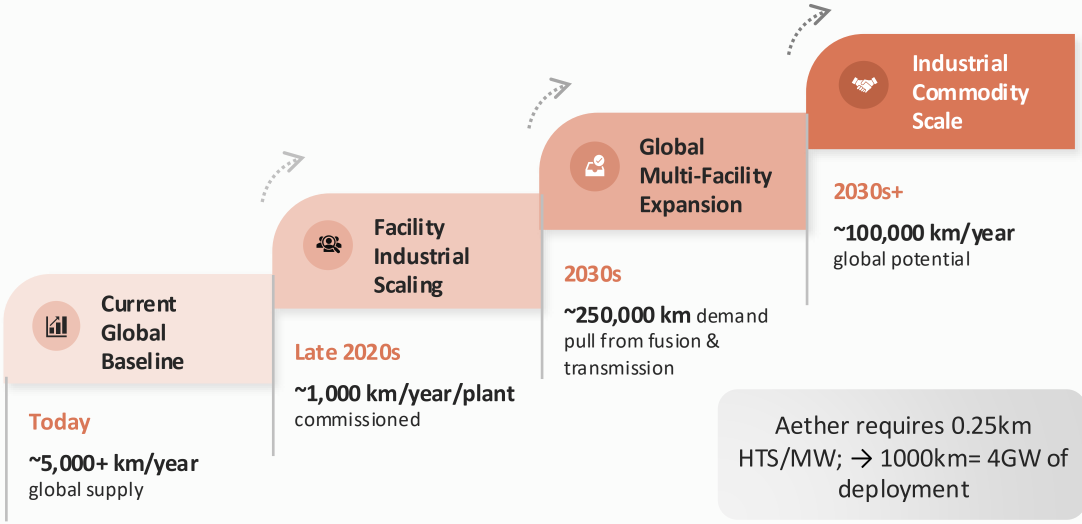
Cable Economics Scale Linearly from Facility to Campus

HTS: \$200/kA-m -> \$50/kA-m
(Industry + ARPA-E / DOE Outlook)



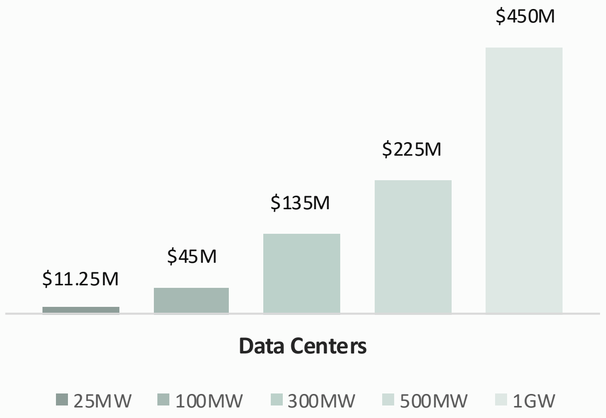
- Cryocoolers are technically mature and dropping in price.
- Current pricing reflects low-volume, lab and specialty deployments.
- Standardization and volume manufacturing are expected to drive cost normalization over time.

Linear: HTS cable length, terminations, installation labor
Sub-linear: Cryogenics, controls, monitoring, commissioning



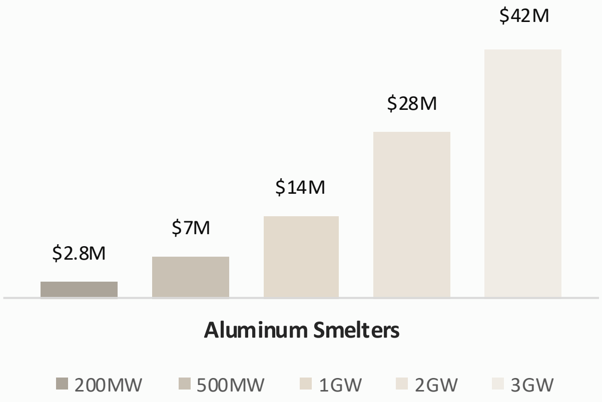
Aether requires 0.25km HTS/MW; → 1000km= 4GW of deployment

Annual Revenue per Deployment ($) Enables Multi-Million Dollar Customer Contracts



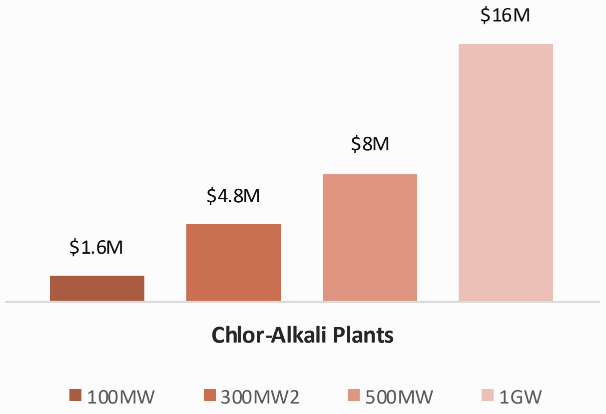
Assumptions

- Total Capex: $9–15M per MW
- Power Infra Share: 5–12% of total capex
- Power Delivery Capex: $450K–1.8M per MW
- Revenue per deployment = Facility MW × ($/MW power-delivery)



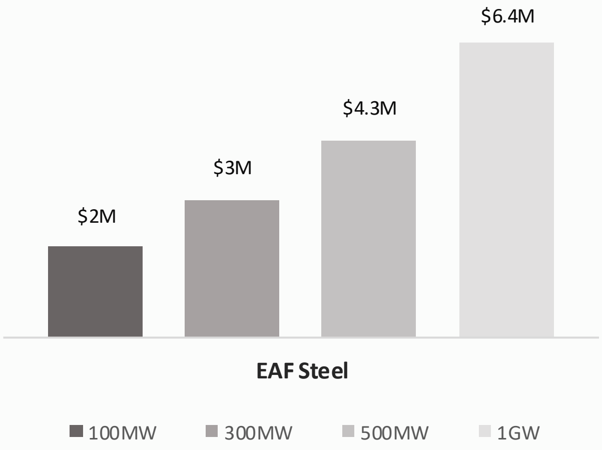
Assumptions

- DC bus voltage: ~1.0–1.2 kV typical
- Facility power relationship: MW = I(kA) × V(kV)
- Representative feeder length per major run: 400–600 m (potline / return bus)
- Revenue per deployment scales with total amp-meter installed: Revenue ∝ Σ [I(kA) × L(m)] across potlines/blocks (assumed near-linear at facility level).



Assumptions

- Typical rectifier block size: 20–60 MW per block
- DC operating conditions: 400–900 V, 20–150 kA per block
- Average feeder length: 50–300 m per rectifier → electrolyzer line (use 300 m as conservative)
- Block count = Facility MW / MW per block
- Revenue per deployment ∝ Σ [I_block(kA) × L(m)] across blocks (near-linear scaling with number of blocks)



Assumptions

- Deployment unit: per furnace / per feeder run, scaled to site total
- Representative cable/bus length per installation: ~7 m (standard); ~15 m (large)
- Revenue per installation (your current anchor): $2–3M at ~7 m, $4.3–6.4M at ~15 m
- Revenue per deployment scales ~linearly with installed length and number of furnaces/feeds

Commercial Engagement & Market Validation Pipeline

Path to First Deployments

Problem Validation — Current

- Initial & repeat discussions with operators facing current-density and loss constraints
- Cross-sector engagement: aluminum, data centers, heavy industry

Technical Scoping — Near-Term

- Site-specific power mapping and constraint analysis
- Preliminary system sizing vs copper infrastructure
- Demo / pilot configuration discussions

Pilot Deployment — Future

- Single-site demonstration system
- Jointly defined technical success criteria
- Commercial contract follows validation

Selected Operators Engaged: Engagements represent preliminary technical and commercial discussions; no commercial commitments to date.

Data Centers
- Adani Group
- Black & Veatch
- Patmos

Aluminum Smelters
- HINDALCO
- Agreed to Pilot: Vedanta Group

Chlor-Alkali Plant
- Agreed to Pilot: Tata Chemicals

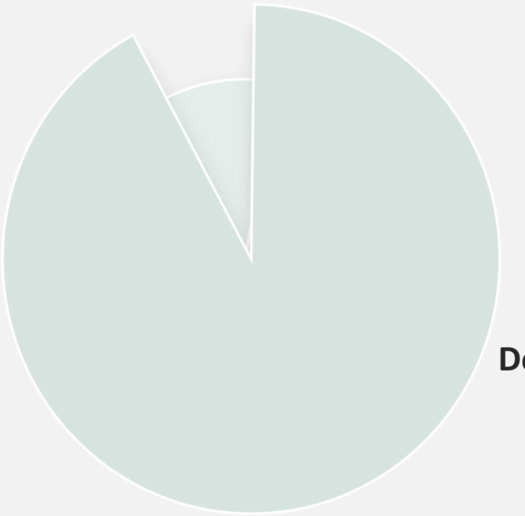
EAF/IF Steel
- Tata Steel - UK
- ArcelorMittal
- Agreed to Pilot: Tenova

Utility/IPP/ Power Electronics
- Tata Power
- Larsen & Toubro

Capital Is Concentrated to Fully De-Risk and Close Pre-Commercial Readiness

PRE-SEED Capital: $2Mn

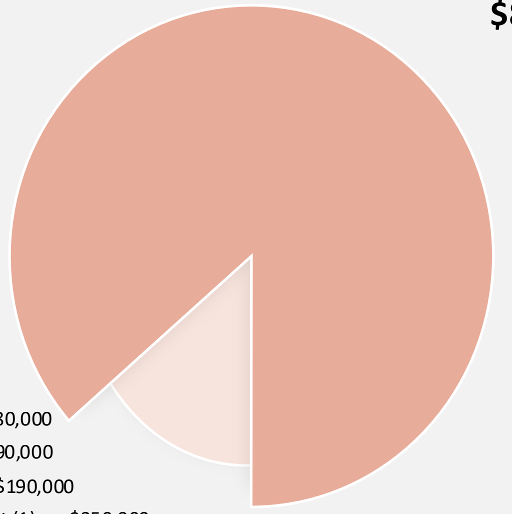
Founding Engineers (2)
$180K



Prototype Development & Testing
$1.82M

SEED Capital : $10M

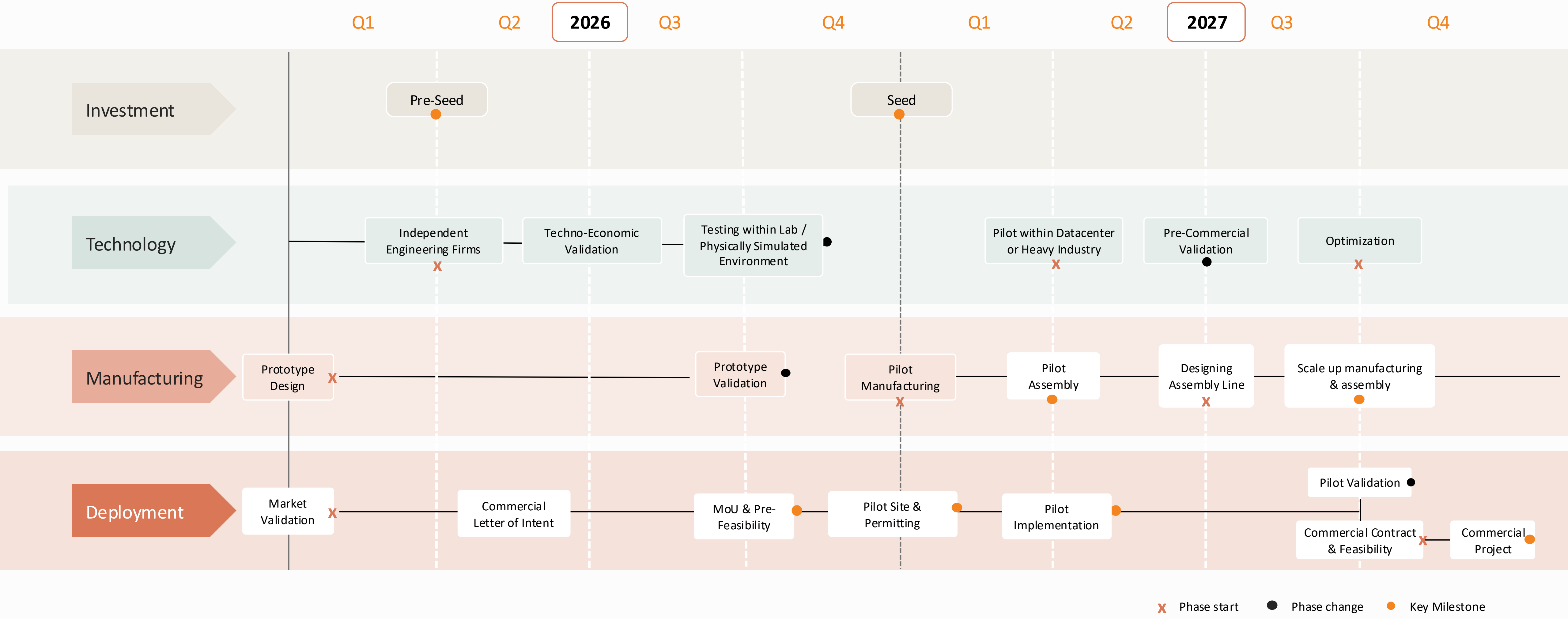
Pilot Deployment
$8.8M



Core Team
$1.2M

- Founders (2) — $200,000
- Software engineering (1) — $180,000
- Electrical engineering (1) — $190,000
- Mechanical engineering (1) — $190,000
- Systems / Program management (1) — $250,000
- Manufacturing engineering (1) — $190,000

Structured execution path to pre-commercialization and first-deployment



The Team

Ishaan Panda

Co-Founder and Chief Executive Officer

Core Expertise: Engineer-operator across power systems, hardware, and finance.

Education:

B.Tech., Mechanical Engineering — VIT University, India.

M.S., Quantitative Finance — Northeastern University, Boston.

Experience:

PE value creation, Strategy & Ops Advisory for Fortune 1000 companies at Ayna (McKinsey-heritage platform).

Renewable power infrastructure investing experience across grid-scale deployment and economics.

Hydraulic engineering experience in the blast furnace and heavy industrial systems at Tata Steel.

Nathan Groth

Co-Founder and Chief Technology Officer

Core Expertise: Specialized expertise in superconducting power systems and high current power delivery.

Education:

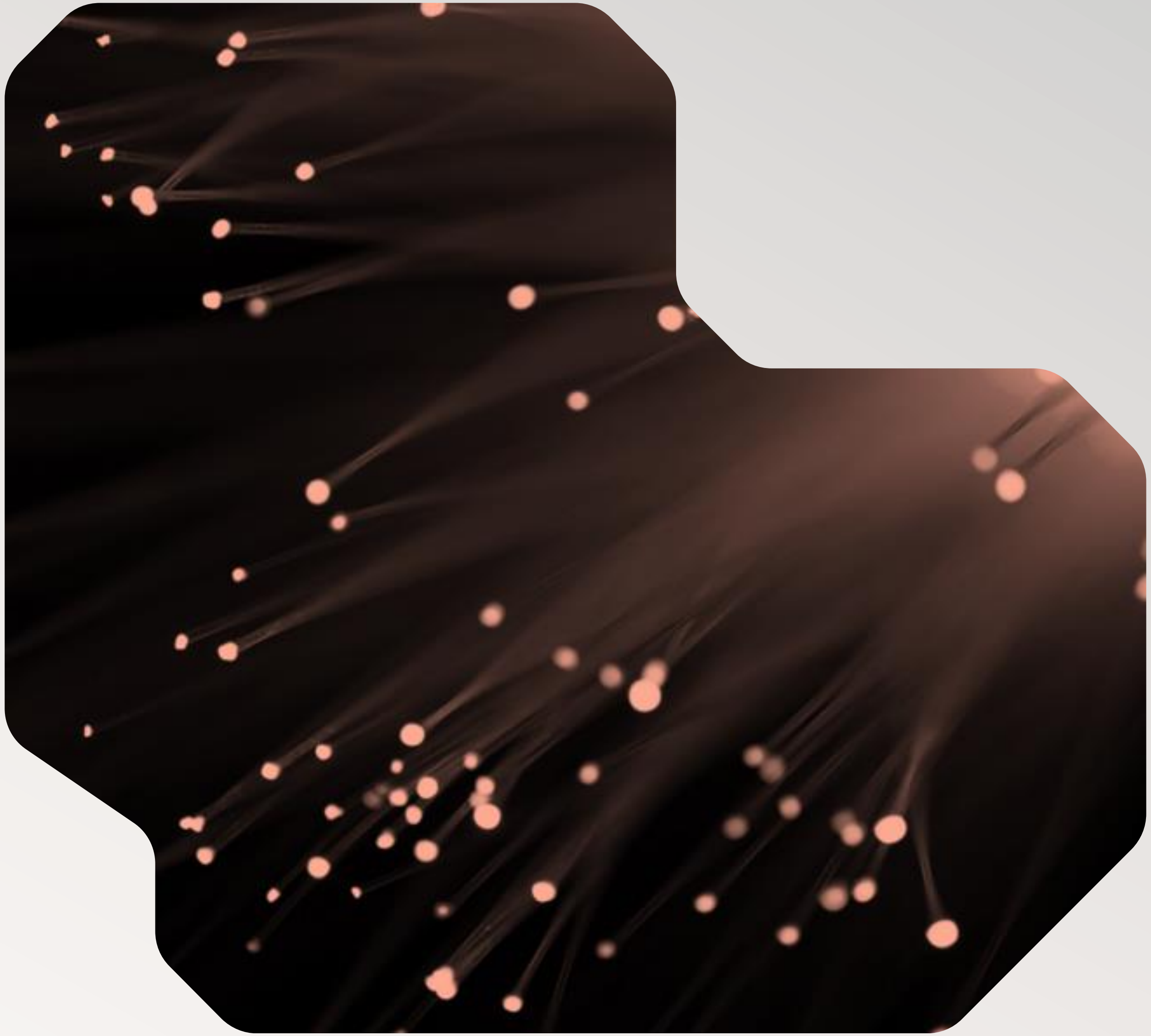
B.S., Electrical Engineering and Computer Science (EECS) — University of California, Berkeley.

Experience:

Worked on protection and reliability systems for superconducting magnets for their SPARC and ARC reactors.

Precision Machinist at Kratos Defense, working with engineers to manufacture and maintain tight-tolerance hardware systems.

Thank You



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