

# Aalo Atomics

Powering AI, with AI

Rob Kessler • Head of AI • May 13, 2026



an  
An  
IT TAKES ~~A~~ VILLAGE



# Sherlock & Watson

## Agentic AI Regulatory Document Review

AI agents review nuclear safety documentation across thousands of pages, then learn from engineer feedback round over round.

120+

Source docs

3,000+

Pages reviewed

20+

AI agents

9

Review rounds

Feb 9-17, 2026

Single-command execution

SharePoint integrated

Versioned audit trail

300-400 findings/round

## What it does

### 1 Expert panel

6 domain specialists check regulations, cross-references, nuclear systems, hazards, edits, and response adequacy.

### 2 Targeted scans

6 custom sweeps catch neutronics cross-refs, TSR traps, SSC classes, stale references, and terminology drift.

### 3 QA support

11 additional agents validate quality, curate acronyms, flag future-tense work, and run Watson second-pass checks.

## Closed-loop review workflow

1

### Engineer feedback

Excel annotations captured from SharePoint

2

### Semantic matching

Resolved findings are suppressed with context

3

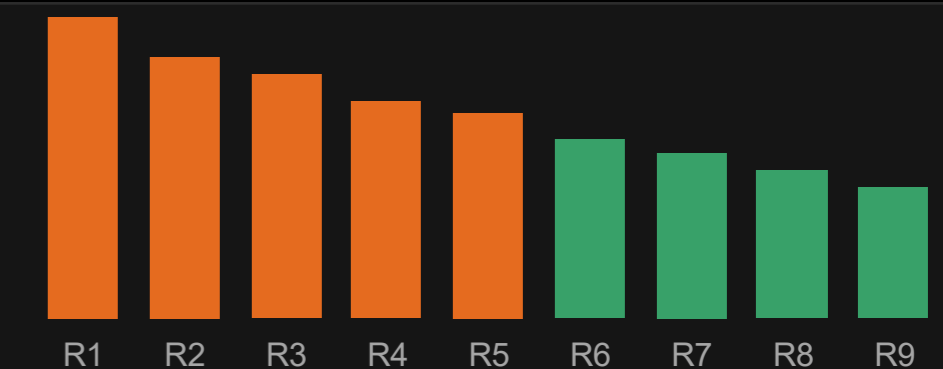
### Round learning

301 feedback entries across 9 review rounds

## Results -1<sup>st</sup> 9 Rounds

33% reduction

in Critical findings from Round 6 to Round 9



Found a 1.3% dimension discrepancy across documents, even when the units differed.

-Aalo Engineer

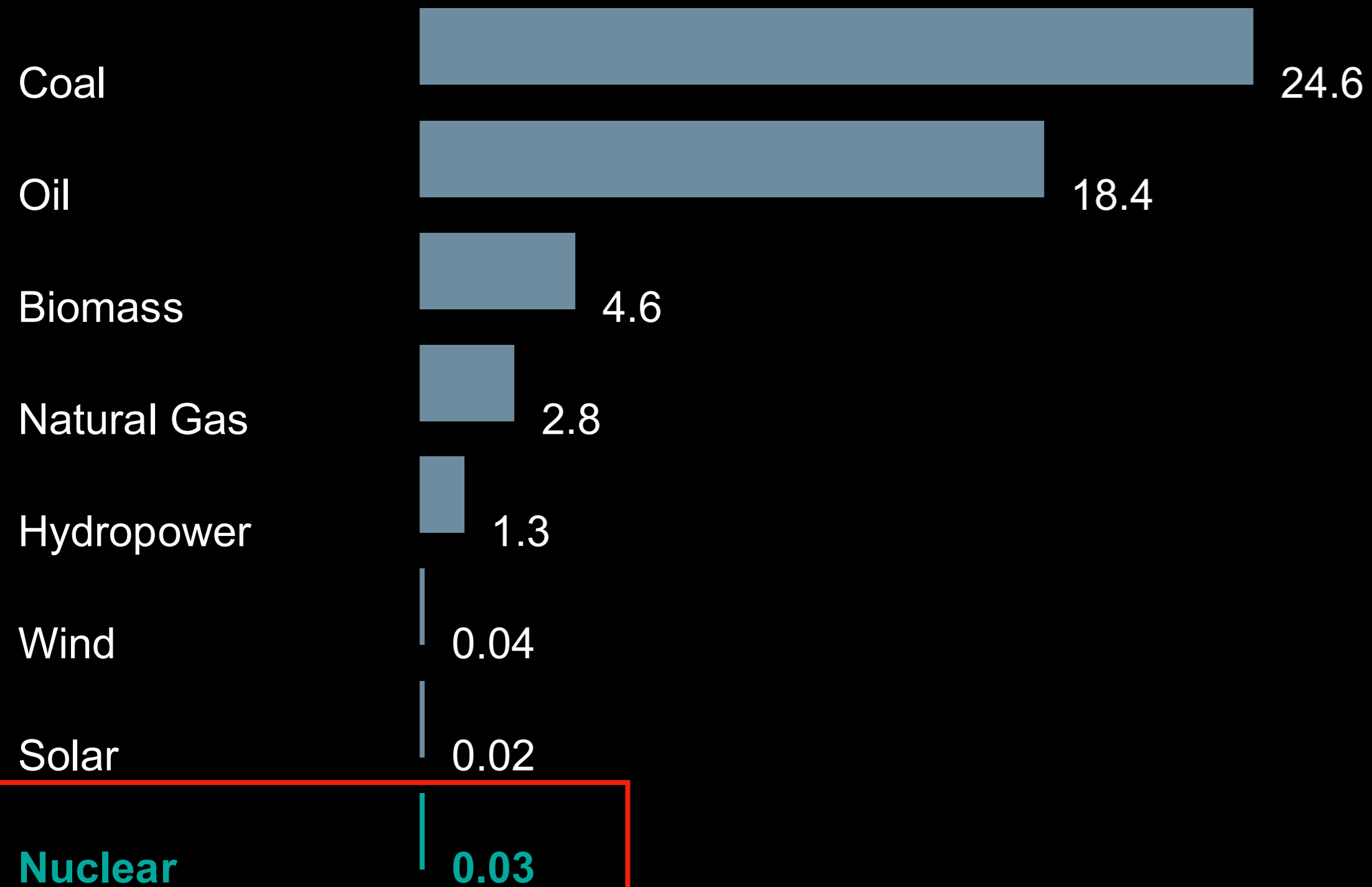
Aalo

POWERING AI

# Health & Environment

## Deaths from accidents & air pollution

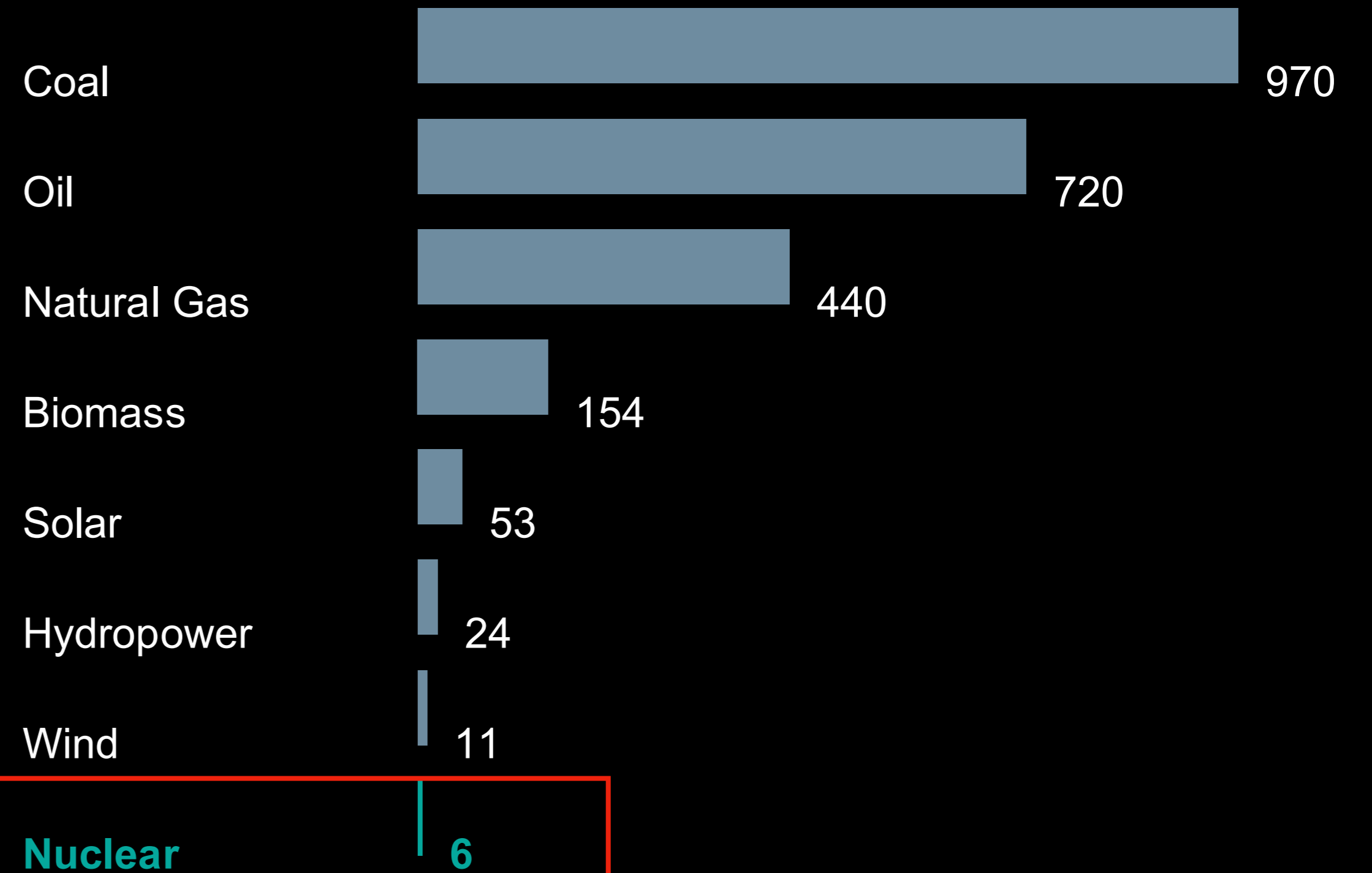
per terawatt-hour of electricity



Safer

## Greenhouse gas emissions

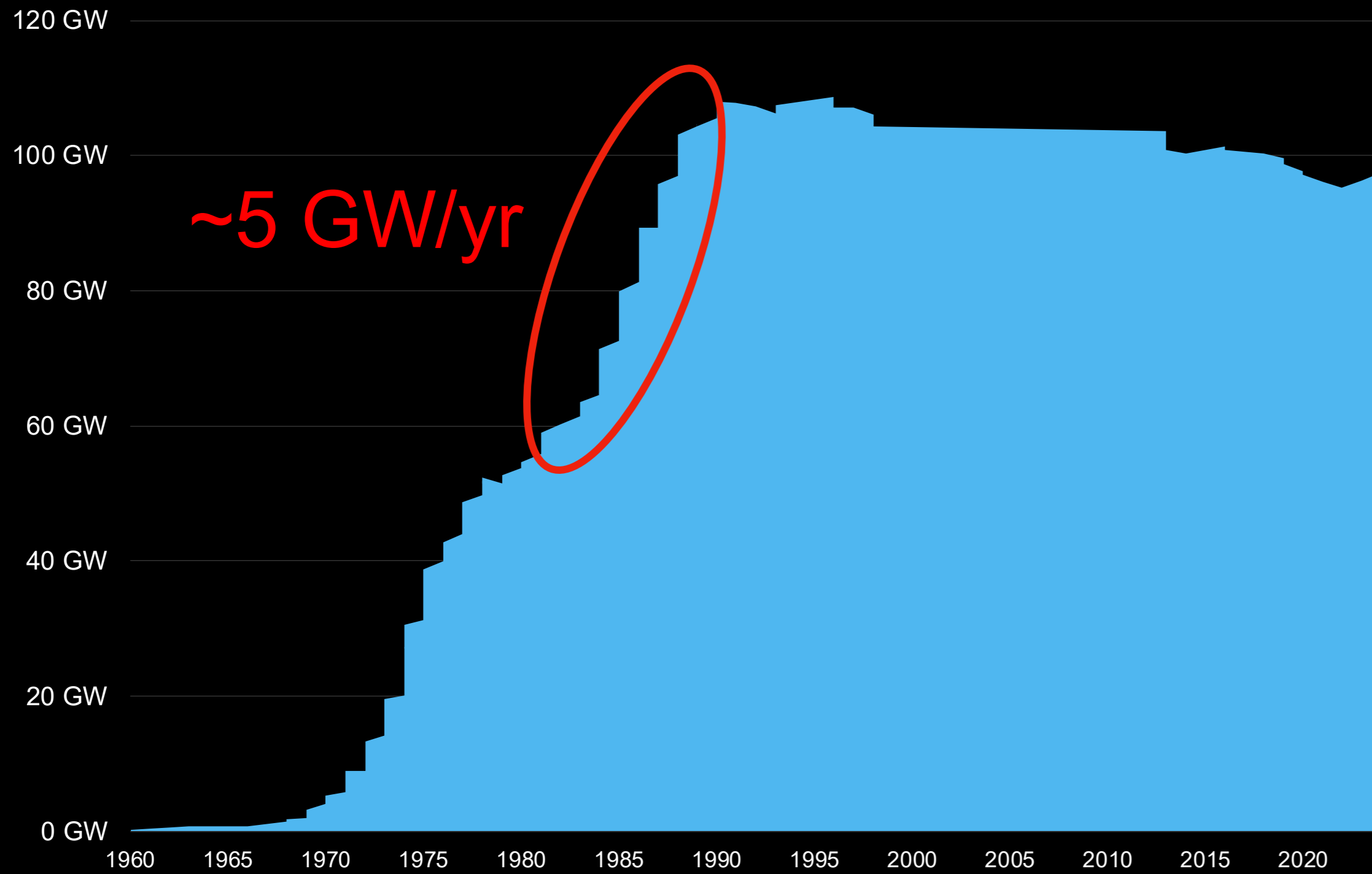
tonnes CO<sub>2</sub>-equivalent per gigawatt-hour



Cleaner

# The Nuclear Build-Out Took 30 Years. AI Wants Its Equivalent in Five.

## FIRST GENERATION NUCLEAR LOOKBACK



## SELECTED U.S. DATACENTER ANNOUNCEMENTS



**~30 years**

**to 100 GW of U.S. nuclear capacity**

From the first commercial reactor (1969) to peak nuclear capacity of 109 GW in 1996. Fleet has been declining since.

**~3 years**

**for 30 GW of AI data center demand**

Announced hyperscale and AI campuses will add ~29 GW of new load by 2028. Total pipeline through 2030: ~61 GW.

**2×**

**the historic peak pace**

The 1980s nuclear boom — the largest infrastructure ramp in U.S. history — peaked at 5.4 GW/year. AI data centers are pacing at ~11 GW/year.

**5×**

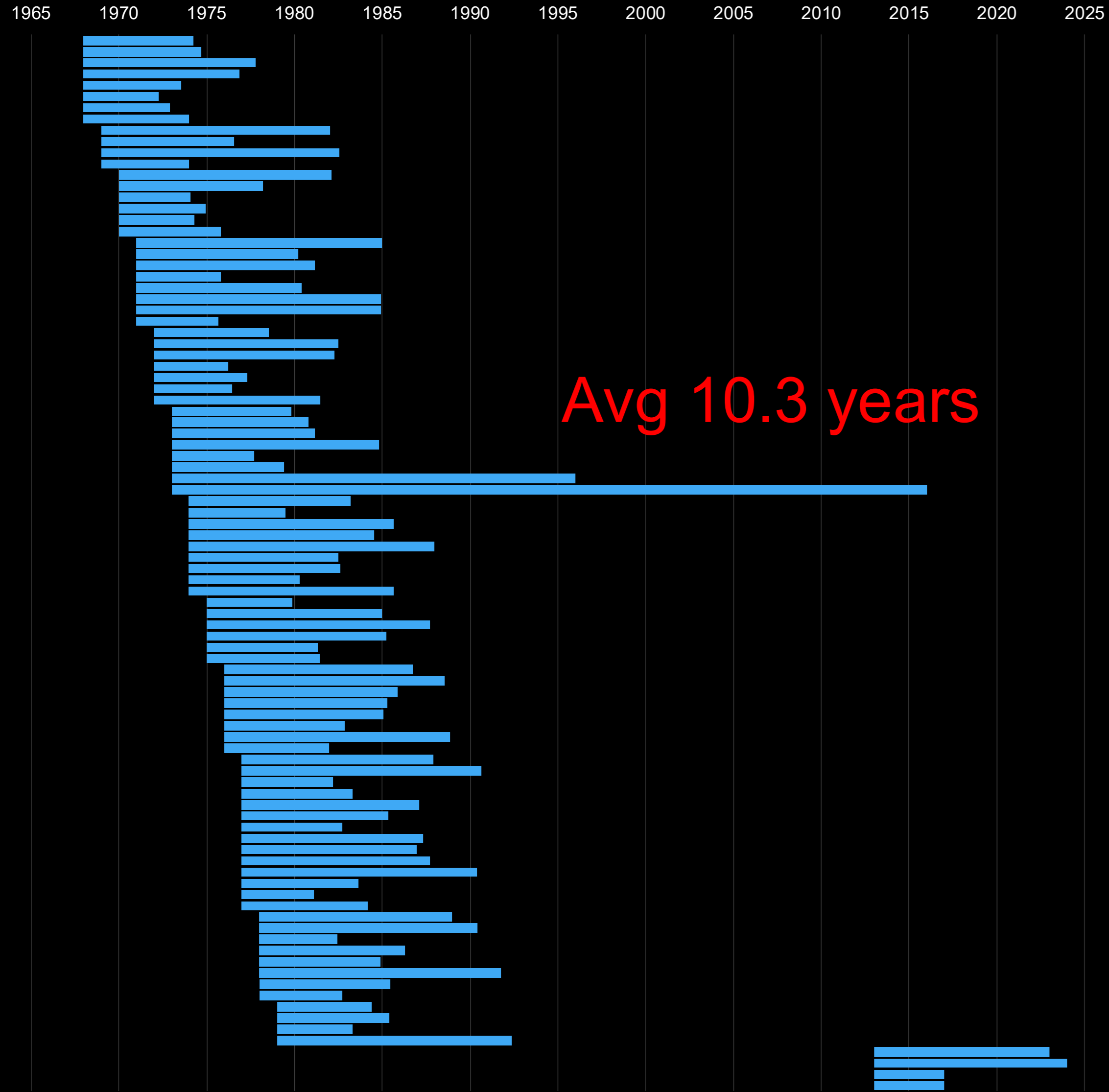
**construction time compressed**

Average reactor: ~10 years to first power. Average hyperscale data center: ~2 years from groundbreak to live.

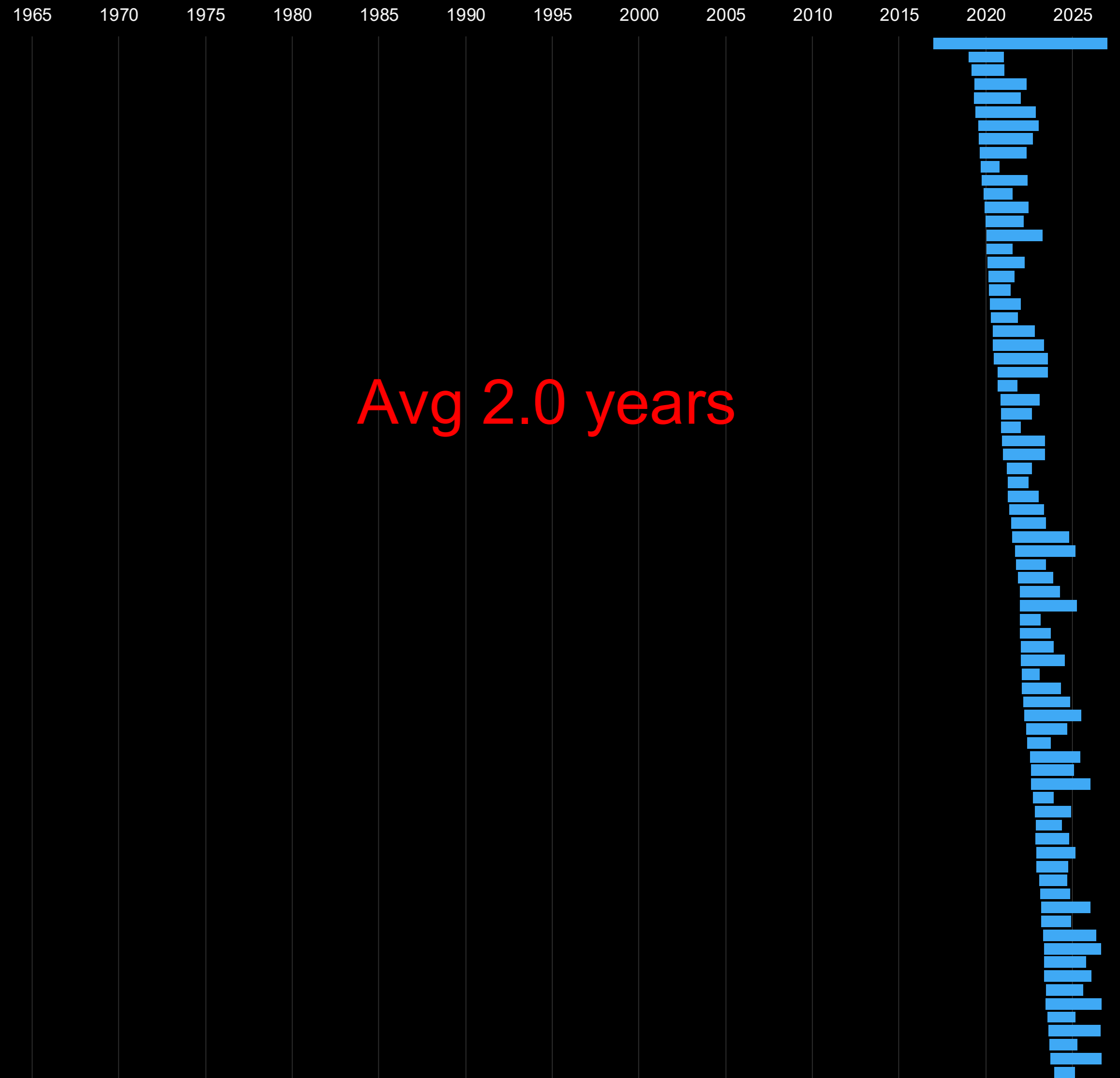


# Traditional Nuclear Plants Took 5x Longer to Build Than Datacenters

## FIRST GENERATION NUCLEAR LOOKBACK



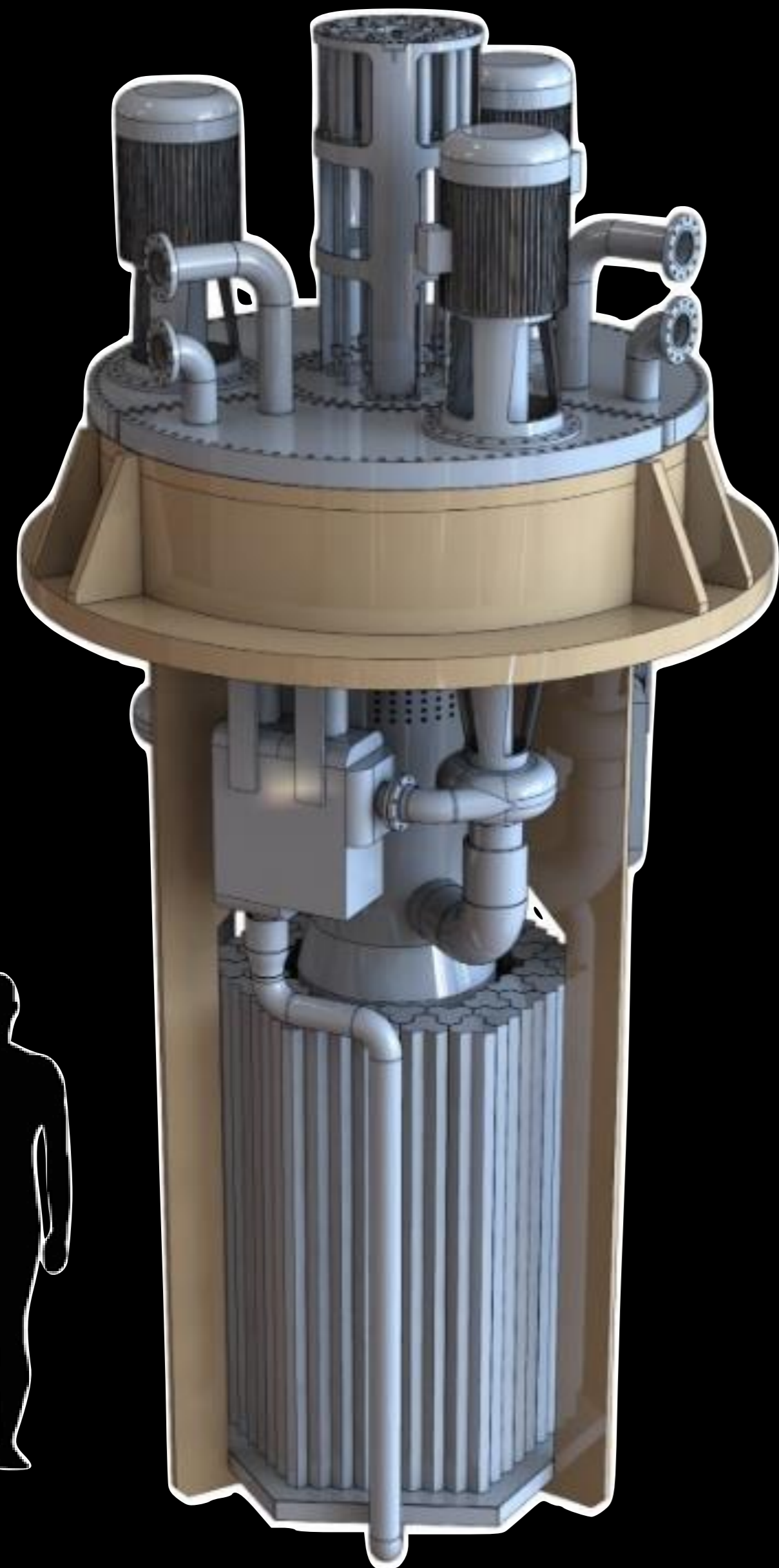
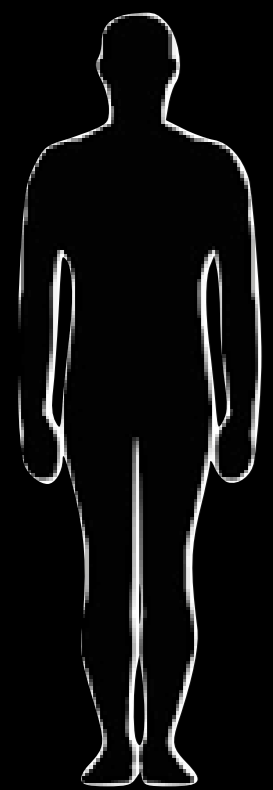
## SELECTED U.S. DATACENTER ANNOUNCEMENTS



# THE AALO STORY

# The Aalo-1 Reactor:

Fits on the back of a truck.  
Powers 10,000 homes, or 1 data center.  
Clean energy, anytime, anywhere.



**10 MWe**

Power Output

30 MW, 500°C process heat

Compact site: 0.5 acres

**Na**

Coolant

40-60 yrs Plant Life

EPZ- 1 meter from building

**UO<sub>2</sub>**

Fuel

Refueling every 5 years

Inherent Safety

# A new class of reactor: The XMR.



## Micro

1-5 MWe

Too small & expensive for data centers.  
Uses TRISO and / or HALEU, meant for remote diesel.



## XMR

10-100 MWe

Fully modular plant, not just the reactor.  
Optimal balance of economy of numbers,  
economy of scale.



## SMR

100-300 MWe

Scaled-down large reactors, not fully modular,  
large civil works, are less economical versions  
of large reactors.

# Modular Packing & Shipping to Site



# Aalo Pod: 50 MW<sub>e</sub>

5 acres

EPZ @ site boundary



# Fleets, purpose-built for large onsite commercial loads.



## 50 MWe

5 reactors  
1 turbine



## 200 MWe

4 pods  
Turbine redundancy



## 1 GWe +

20+ pods  
Pod redundancy

N+1 config = High availability

Grid connect optional

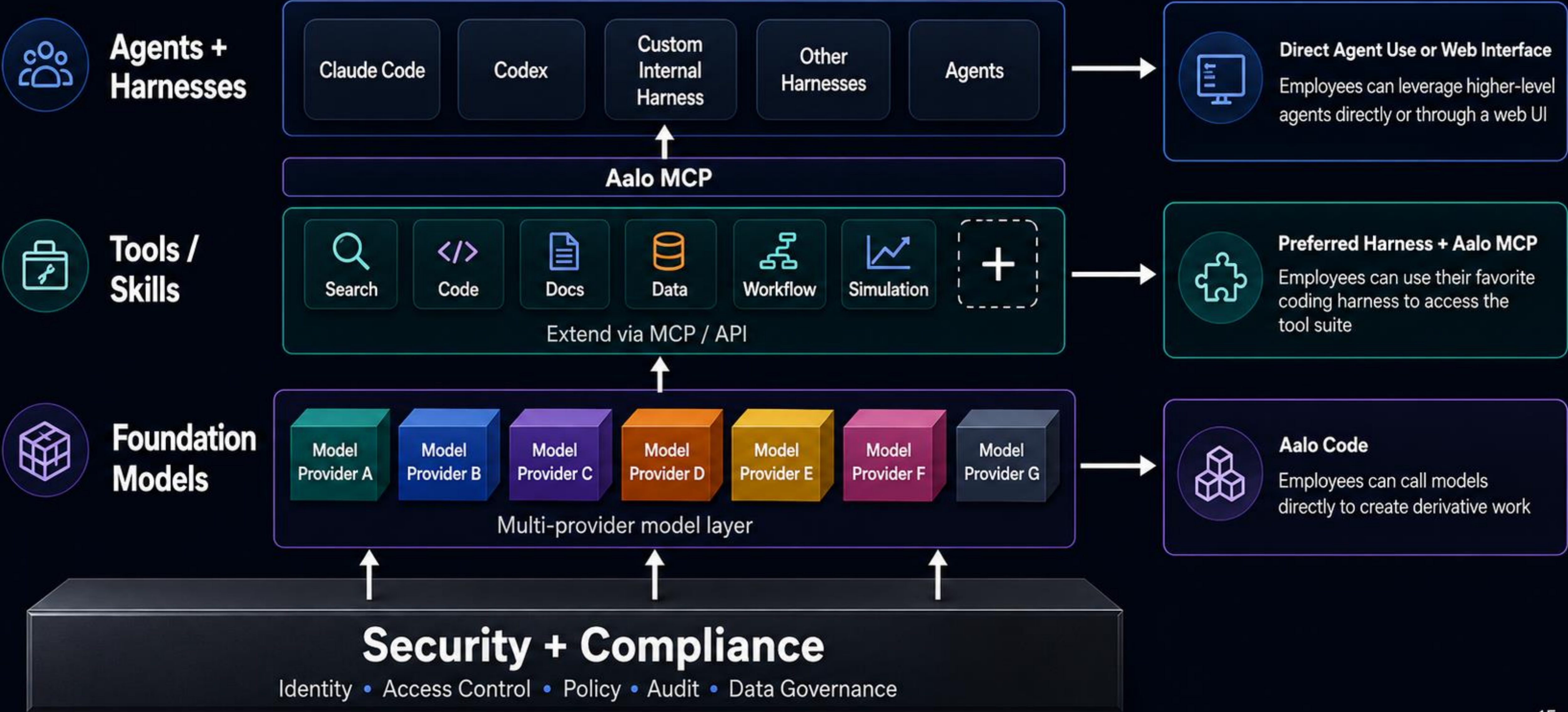
Scale incrementally w/o T&D

Onsite power = valuable

AI @ AALO

# Aalo AI: Modular, Extensible Implementation

Vertical abstraction with lateral extensibility



# Aalo Bot: Compounding Returns

Annualized software cost recapture, today and forecast

## Aalo Bot

53+

Compliant models

30

Deployed system modules · 57 under development

30+

Skills · 100+ under development

**\$6.3 M / yr**

**Annualized software cost recapture**

*Conservative estimate, based on displaced SaaS spend across deployed modules*

## Cumulative annualized cost recapture (\$M / yr)

Historical (Nov '25 – May '26) → Forecast (May '26 – Oct '26)



# DIGITAL TWINS

# TECHNOLOGY MATURATION

**TRL 6**

Q1' 26



**TRL 7**

Q2' 26



**TRL 7+**

Q3' 26



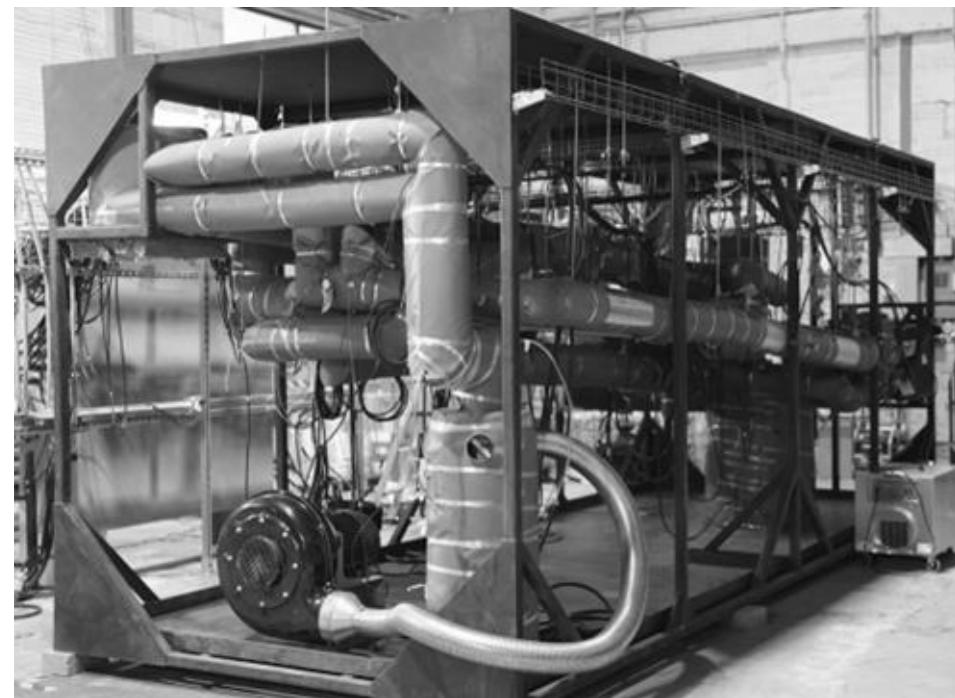
**TRL 8**

Q1' 27



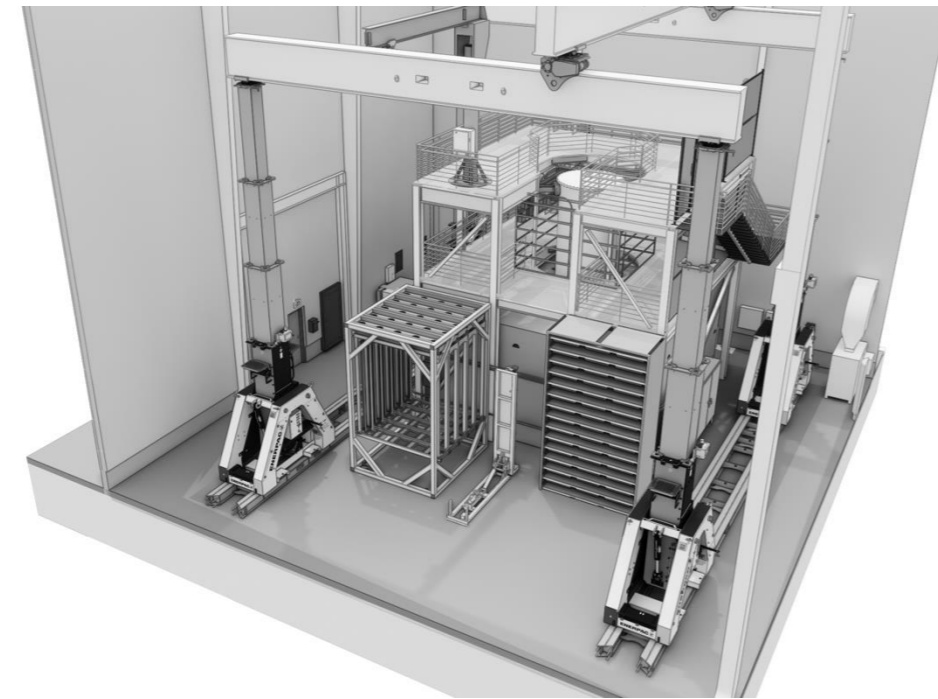
**TRL 9**

2029



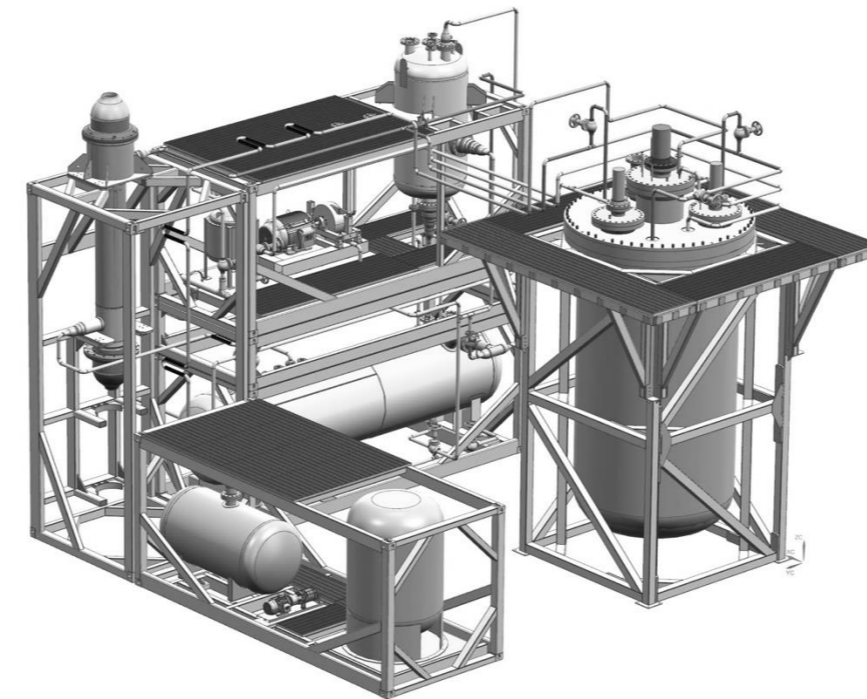
**STL**

Component Testing



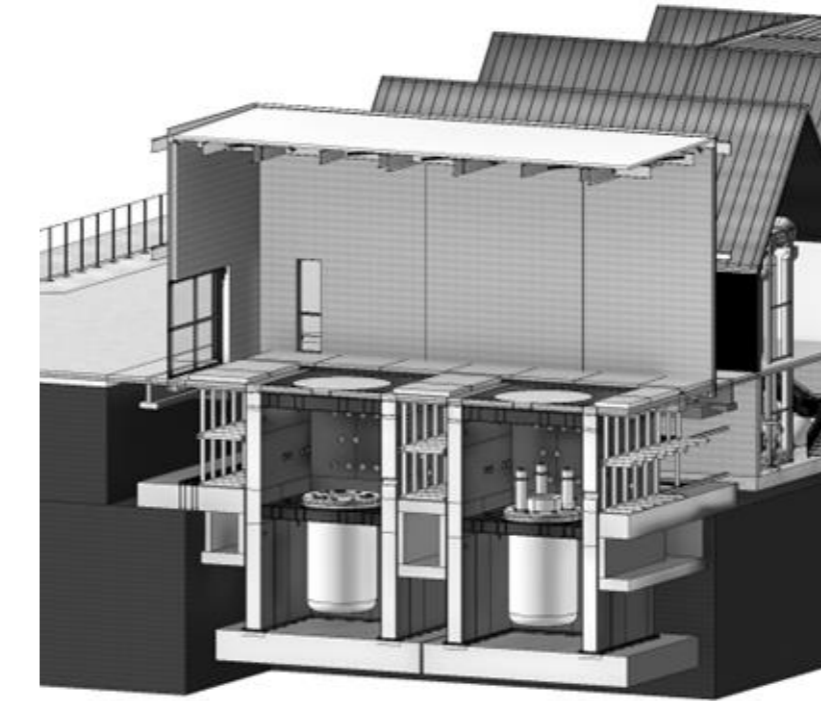
**CTR**

Nuclear Prototype



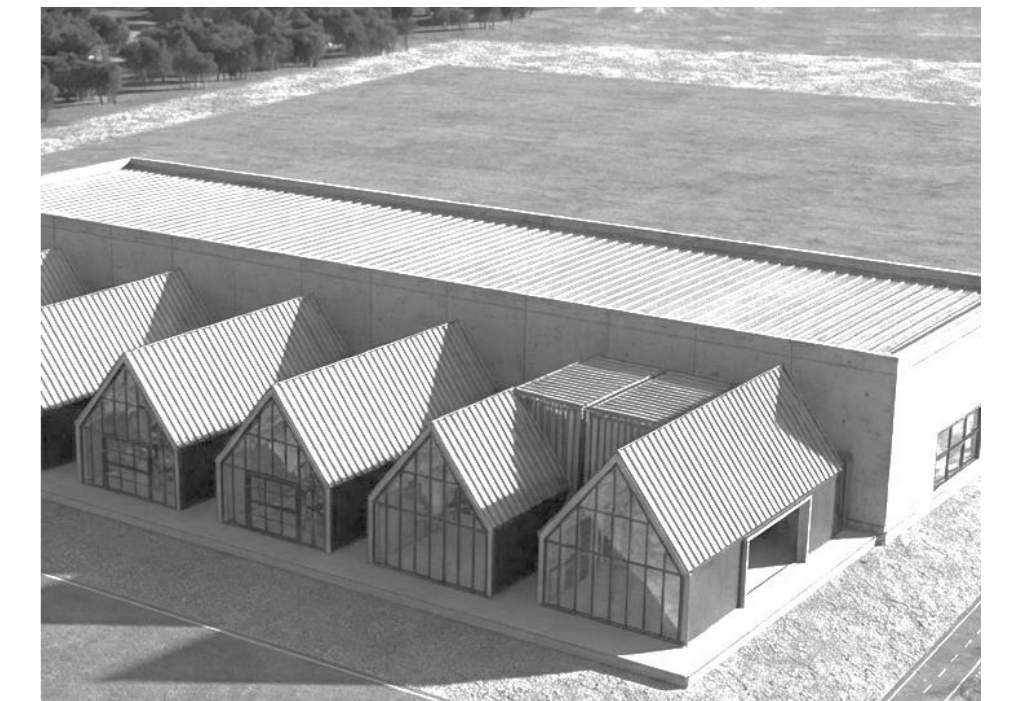
**Aalo-0**

Integrated Systems



**Aalo-X**

Functional Pilot

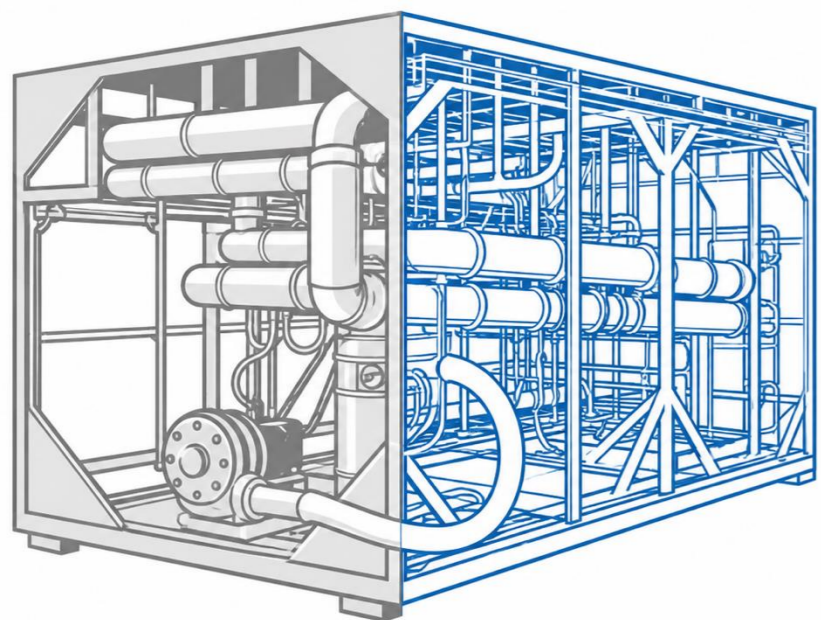


**Pod**

Commerciality

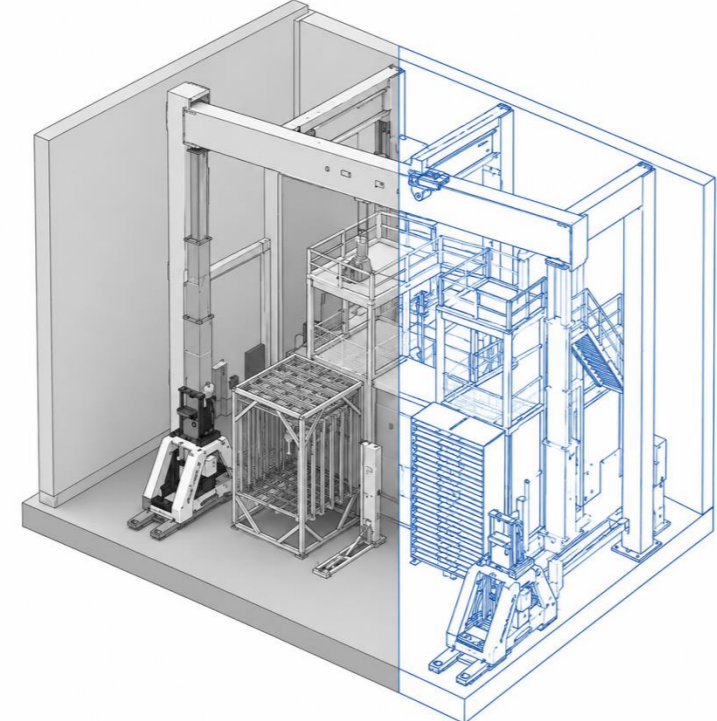


# DIGITAL TWINS



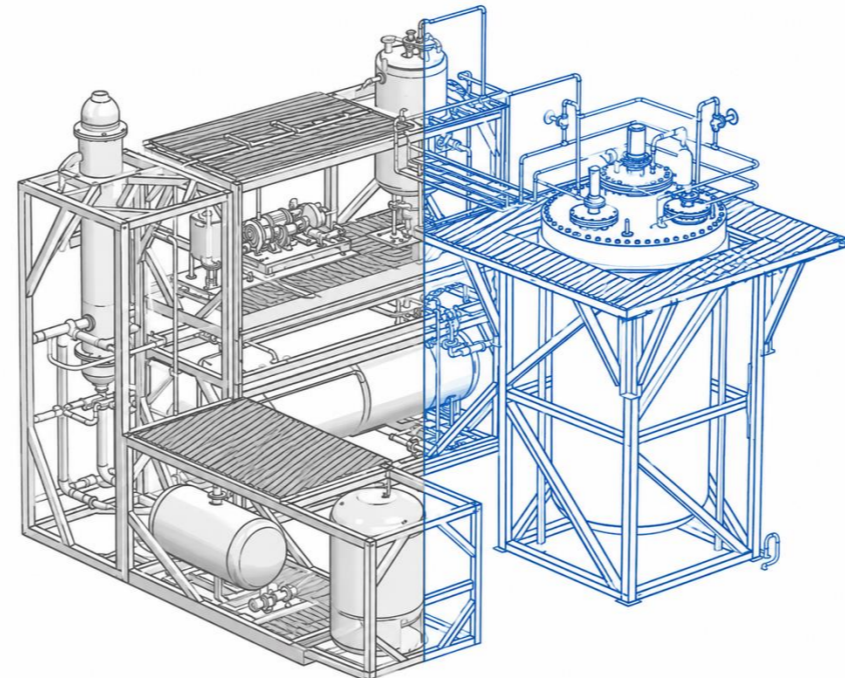
**STL**

Component Testing



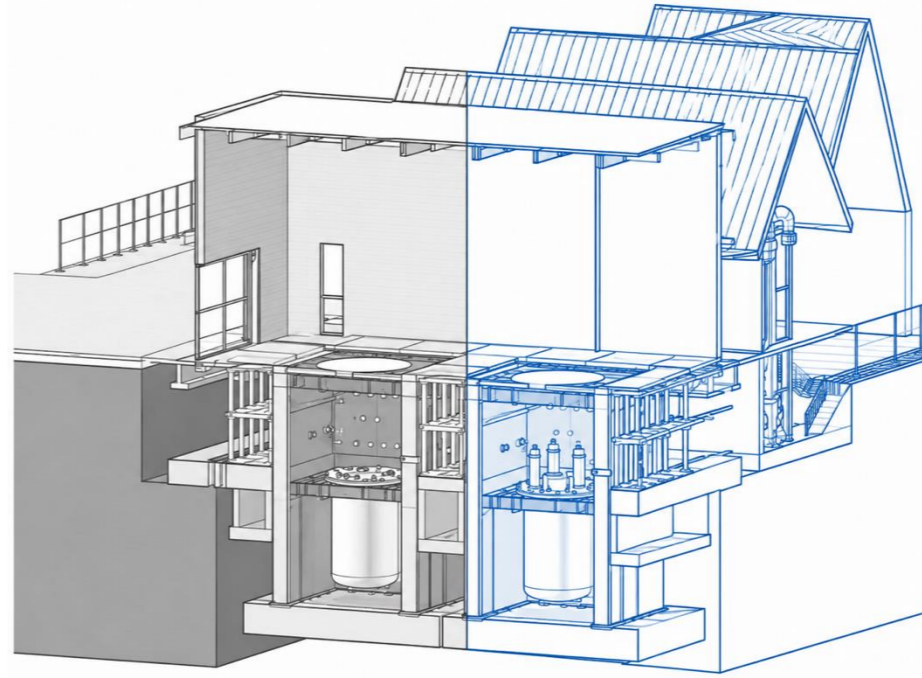
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Nuclear Prototype



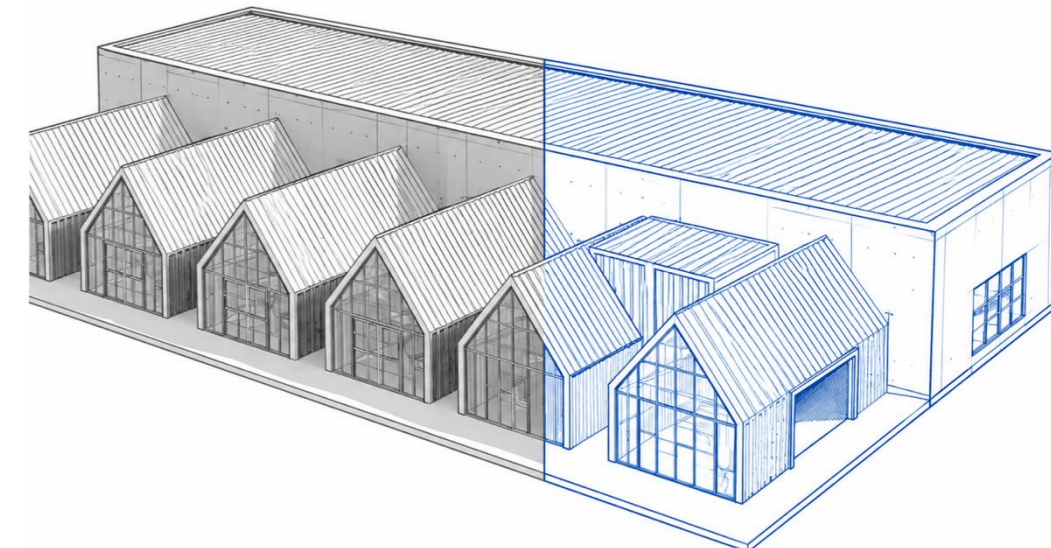
**Aalo-0**

Integrated Systems



**Aalo-X**






Functional Pilot



**Pod**

Commerciality

## USE CASES

				
Training	Operations	Engineering	Simulations	Maintenance



# POC: MET Tower Interpolation

## Pearson Correlation Heatmap

Full-distribution shape correlation between Earth-2 and observations

	ABI	CRP	OKC	PDX
Wind	0.997	0.998	0.999	0.997
Temperature	0.999	0.997	0.999	0.999
Pressure	0.999	0.999	0.999	0.998

TEMPERATURE ACCURACY

<1.8%

Median bias vs observed

PRESSURE ACCURACY

<0.3 hPa

hPa median offset

DISTRIBUTION FIT

0.999

Shape correlation (r)

WEATHER STATES / SITE

5856

From 24 start dates × 4 members

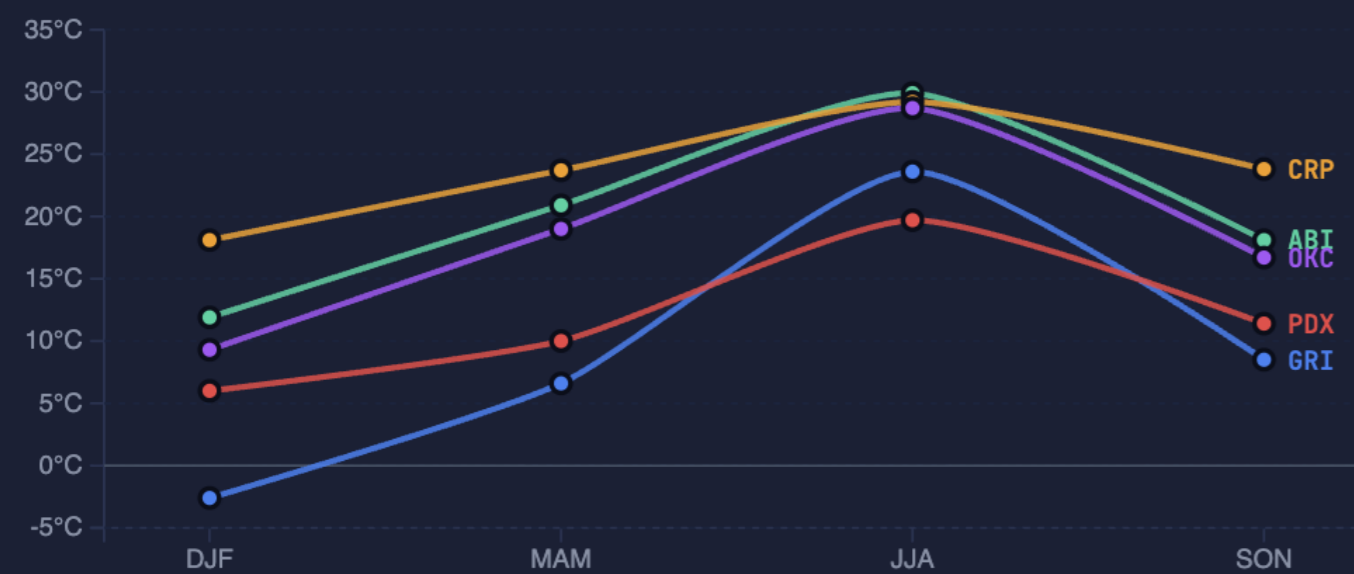
## U.S. Site Portfolio

Click a site to filter all charts below



## Seasonal Temperature Cycle

Earth-2 captures correct seasonal patterns across all sites



OMNISCIENCE

