

The Coming AI – Waste Wave: Can we Manage it Preventatively and Ethically?

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Basel Action Network (BAN)



e-Waste World 2026
Frankfurt, Germany

hyperscaling

—

(n.) — to scale horizontally without limit



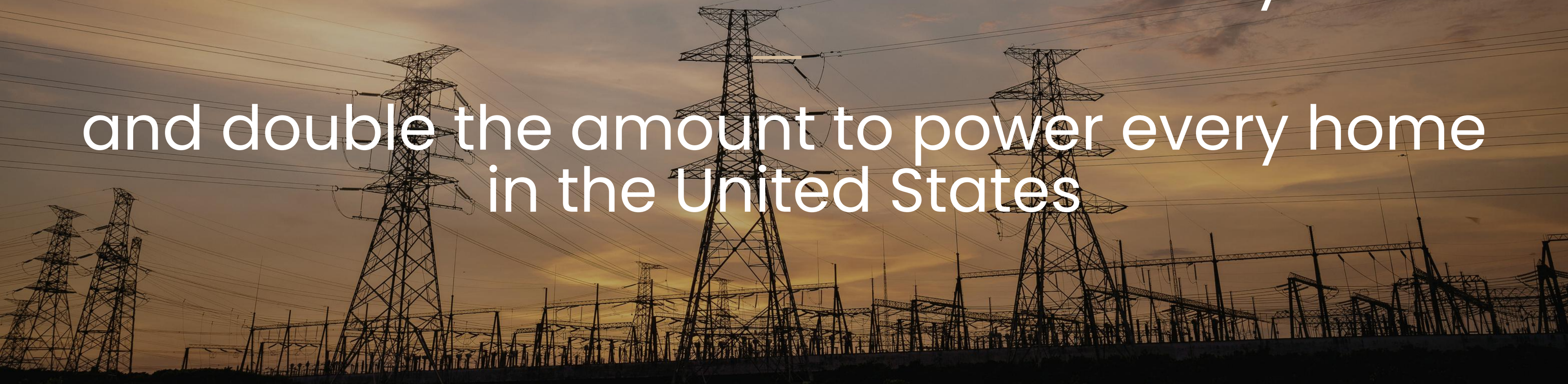
\$7 trillion

enough to end world hunger for the next 175
years

200 gigawatts data center capacity by 2030

that's double what exists today

and double the amount to power every home
in the United States



the hyperscalers

The AWS logo, consisting of the lowercase letters "aws" in a bold, orange, sans-serif font.

Amazon Web Services



meta

Meta



Azure

Microsoft Azure

阿里云

ALIBABA CLOUD

Alibaba Cloud



Google Cloud

ORACLE

CLOUD

Oracle Cloud



62 million tonnes of e-waste in 2022
Only 22.3% is properly “recycled”
82 million tonnes projected by 2030
Growth is 5X faster than growth of
recycling capacity

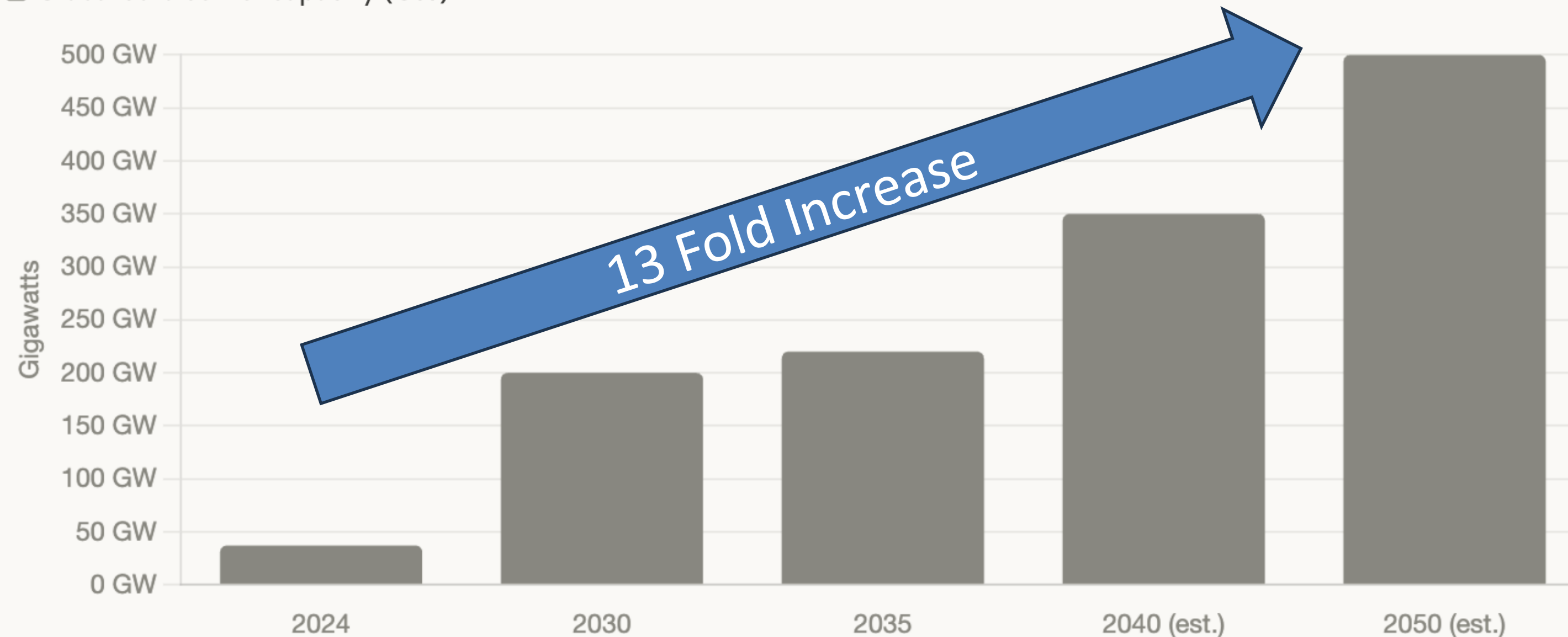
But...the coming AI waste wave is not
included in these figures!

Source: Global e-Waste Monitor, 2024

Chart 1 — Global data center power capacity (gigawatts)

Sources: JLL 2026 Global Outlook; ABI Research 2026. 2040–2050 figures estimated from published CAGR projections.

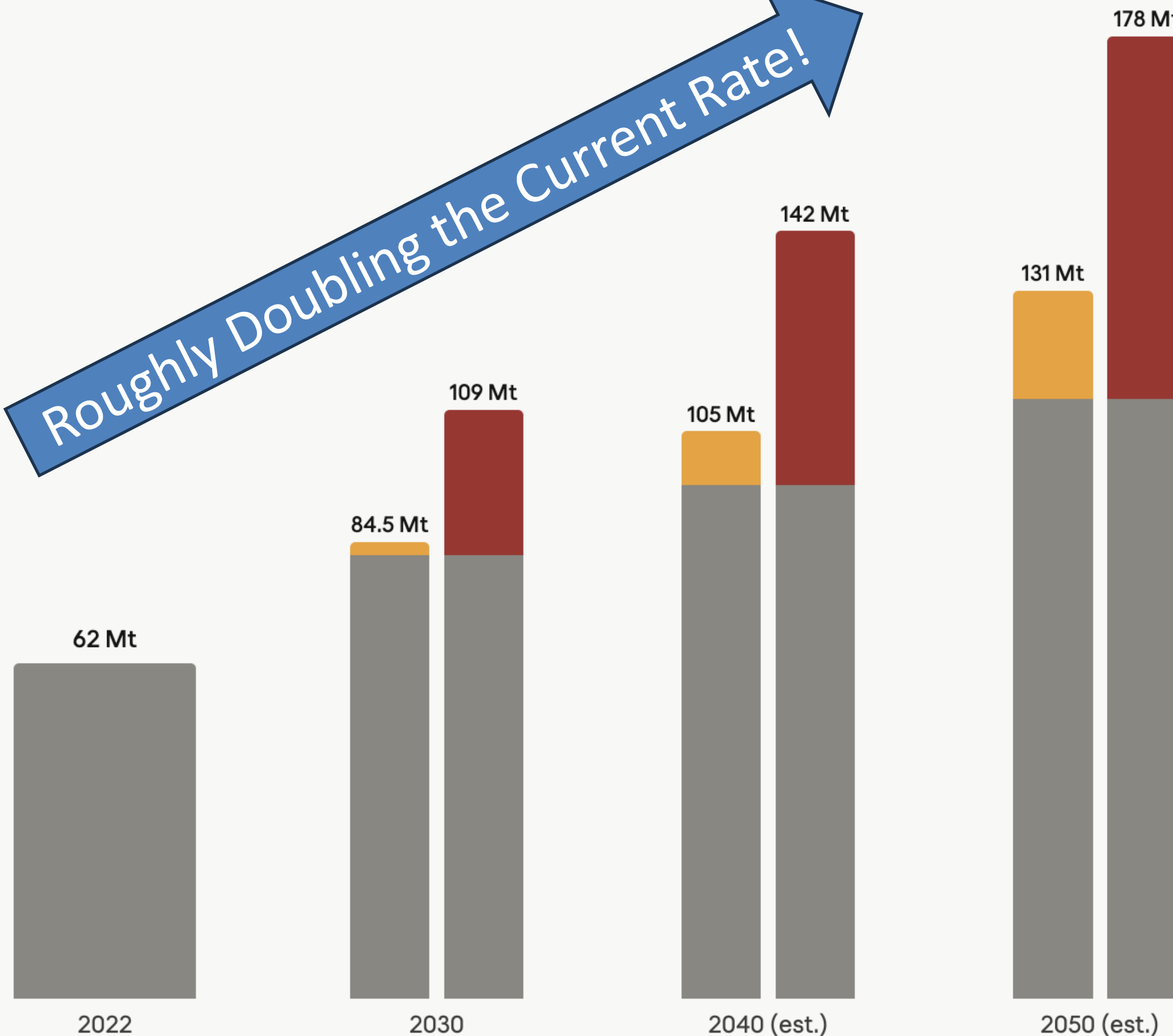
■ Global data center capacity (GW)



From 37 gigawatts today to 500 by 2050.
Gigawatts roughly correlate to hardware use.
Is there capacity to responsibly manage the new hardware?

■ UN Global E-Waste Monitor ■ Wang et al. ■ BAN projection

Roughly Doubling the Current Rate!



Wang Projection:
AI to add 20
Mt/year by 2050

But this ignores
the buildout
projection (X13
Increase) and only
includes-Large
Language
applications)

BAN Projection:
AI will add at least
67 million Mt/year
by 2050

AI Servers: "Spin them
up, spin them down,
replace them"

AI capacity is growing at ~10% per year —
(13X increase by 2050)

~50% replacement rate
(Refresh cycles have compressed from
5-7 years to 18-36 months)



BROKERS OF SHAME

The New Tsunami of
American e-Waste Exports to Asia

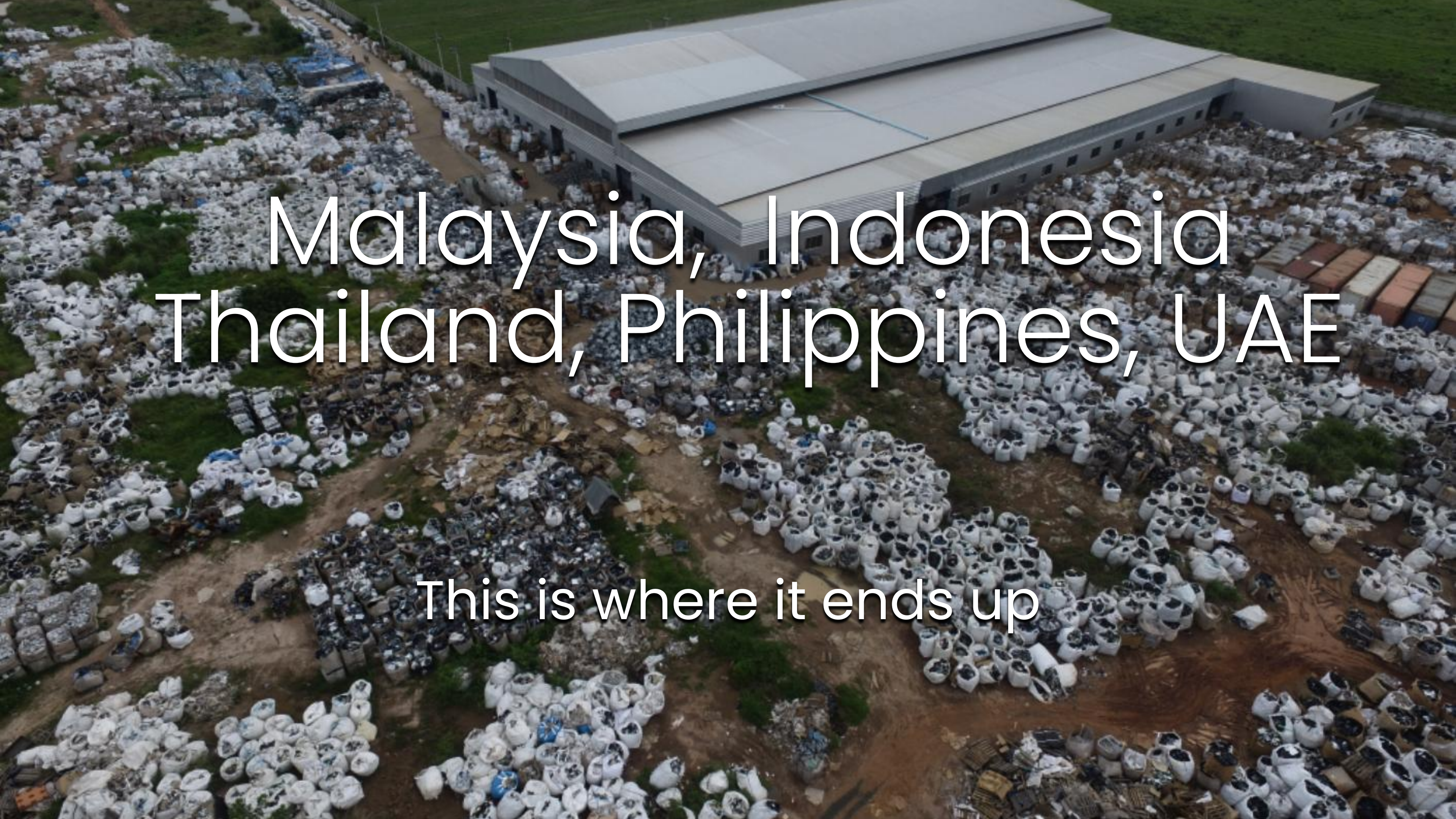
October 22, 2025

We know
where
much of
our e-
waste
goes now



10 US e-waste brokers
26 months
10,026 containers
exported to non-OECD
\$1 billion declared value
8 of 10 brokers R2v3
certified



An aerial photograph showing a vast industrial waste management facility. A large, modern warehouse with a grey roof stands in the upper center. The surrounding area is filled with thousands of white sacks, likely containing plastic waste, arranged in neat rows. To the right, several orange and blue shipping containers are visible. The ground is a mix of dirt and sparse vegetation.

Malaysia, Indonesia
Thailand, Philippines, UAE

This is where it ends up

An aerial photograph showing a vast area covered with thousands of discarded electronic devices and their packaging, primarily white and blue. In the upper center, a large, rectangular, light-colored structure, possibly a container or a temporary storage facility, stands out against the sea of waste. The background shows some greenery and a paved area with more organized stacks of materials.

- **Malaysia**

- swamped with thousands of containers of e-waste
- hundreds of “facilities” raided near Port Klang
- April 1, 2026 – e-waste import ban now official.
- Two DOE Officials Charged with taking bribes
- 844 containers to be repatriated. Most to USA.

- **Indonesia**

- over 900 containers e-waste now sitting at Batam
- major exporter/importer is a Chinese company with facilities in California and Batam.
- Minister of Environment tried in vain to shut it down

- **Thailand**

- March 10, 2026 stopped 18 containers at Laem Chabang /circuit boards mixed into scrap metal.
- May 7, 2026 announcement of seizure of 700 containers thanks to BAN.

- **Philippines**

- As Malaysia, Indonesia and Thailand crack down, Subic Bay junk yards are being flooded.
- Regional Court has prohibited DENR and customs from enforcing Basel in the Free-Trade Zone

- **UAE**

- Likewise as an alternative to Malaysia more is going to facilities around Dubai, with residual material moving onwards to Pakistan and India.



Malaysia



Thailand



Philippines

Europe

Exports of all e-Waste to non-OECD banned

Looking at Trade Data / HS 8549 exports

12 months (Jan 2025–Jan 2026)

18,000 tonnes moving to non-OECD

1,500–1,800 40' containers

The background of the image is the European Union flag, featuring a blue field with twelve yellow five-pointed stars arranged in a circle. The flag is shown with a slight wave, giving it a sense of movement.

EU still dumping on....

Singapore · India · Pakistan · Thailand · Malaysia ·
Indonesia · Philippines · China · Vietnam — Niger ·
Guinea-Bissau · Burkina Faso · Benin · Tanzania ·
Cameroon · Côte d'Ivoire · Guinea · Madagascar

India





Pakistan

What the hyperscalers say about their waste

Microsoft (2024): Zero waste/2030. 90.9% hardware reused/recycled.

Google (2025): Zero waste to landfill — no target date. 84% waste diverted.

Amazon (2024): 99% landfill diversion to reuse/recycling.

Meta (2025): 80%+ operational waste diverted from landfills.

These are all downstream commitments made without qualifying how the recycling was done or where!

Of course, the word “Recycling” sounds
correct, clean, and circular

But too often its dirty, cheap, exploitive and linear.





Design for Reuse, Recycling, Longevity? *Crickets*

None of the hyperscalers have set specific targets to increase hardware longevity *NewClimate Institute; 2025*

Meta

No commitment

Lifecycle thinking referenced in sustainability reports. No design-for-longevity, design-for-reuse, or design-for-disassembly commitments stated. *Meta Sustainability Report 2025*

Amazon

Vague, no targets

Pledges to 'design better' and extend hardware lifetime. No specific design-for-longevity, design-for-reuse, or design-for-disassembly targets stated. *AWS Sustainability, 2024*

Microsoft

End-of-life only

Circular Centers process end-of-life hardware. No upstream design-for-longevity or design-for-disassembly targets stated for server or accelerator hardware. *Microsoft Environmental Sustainability Report 2025*

Google

Furthest along, no targets

Produced an internal circularity report in 2026, 24 pages long. 23 pages on recycling and only 1 on design for reuse / cited as aspirational. No action underway. *Google: Bridging the Gap, March 2026*

Will there be a reuse market?

Now – 6 years

H100 / H200 era

- Some direct reuse
- Perf. cliff approaching
- Volume outpacing reuse

Exists — losing ground

6 – 15 years

B200 / successor era

- Direct reuse gone
- No AI workload fits
- Component stripping only

Structurally absent

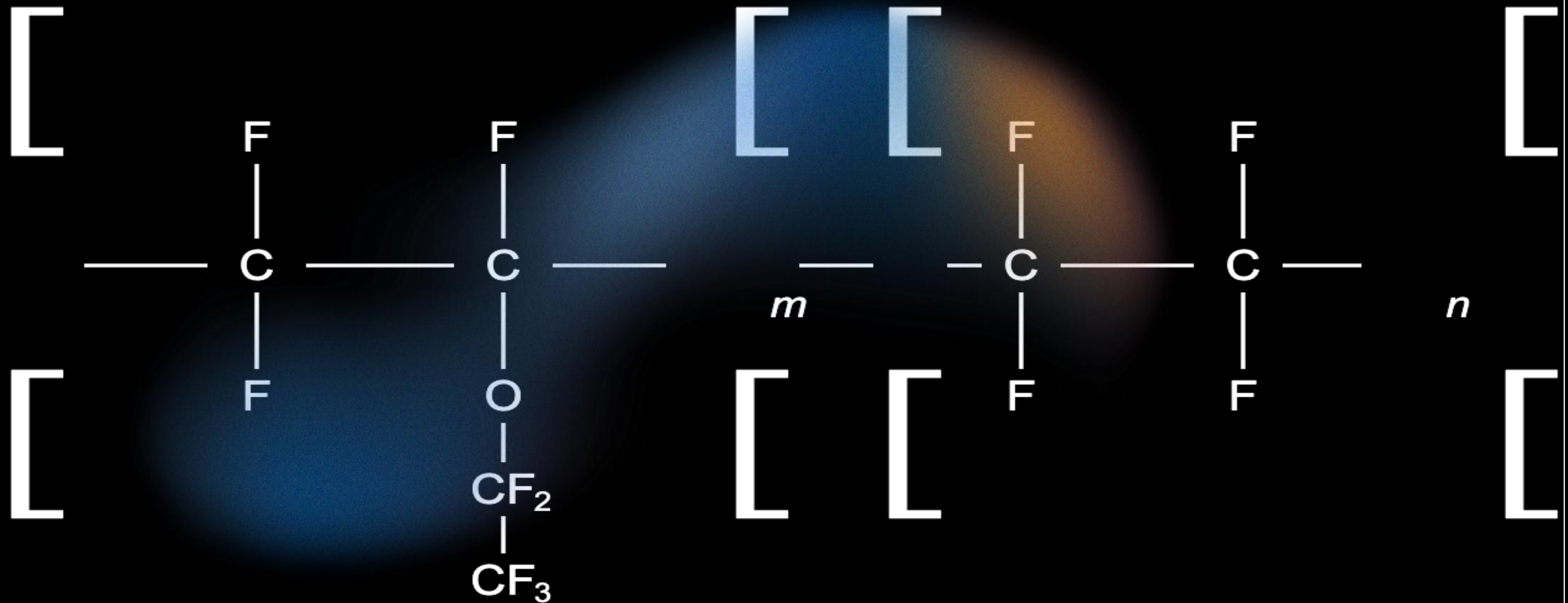
Beyond 15 years

Post-2030 generations

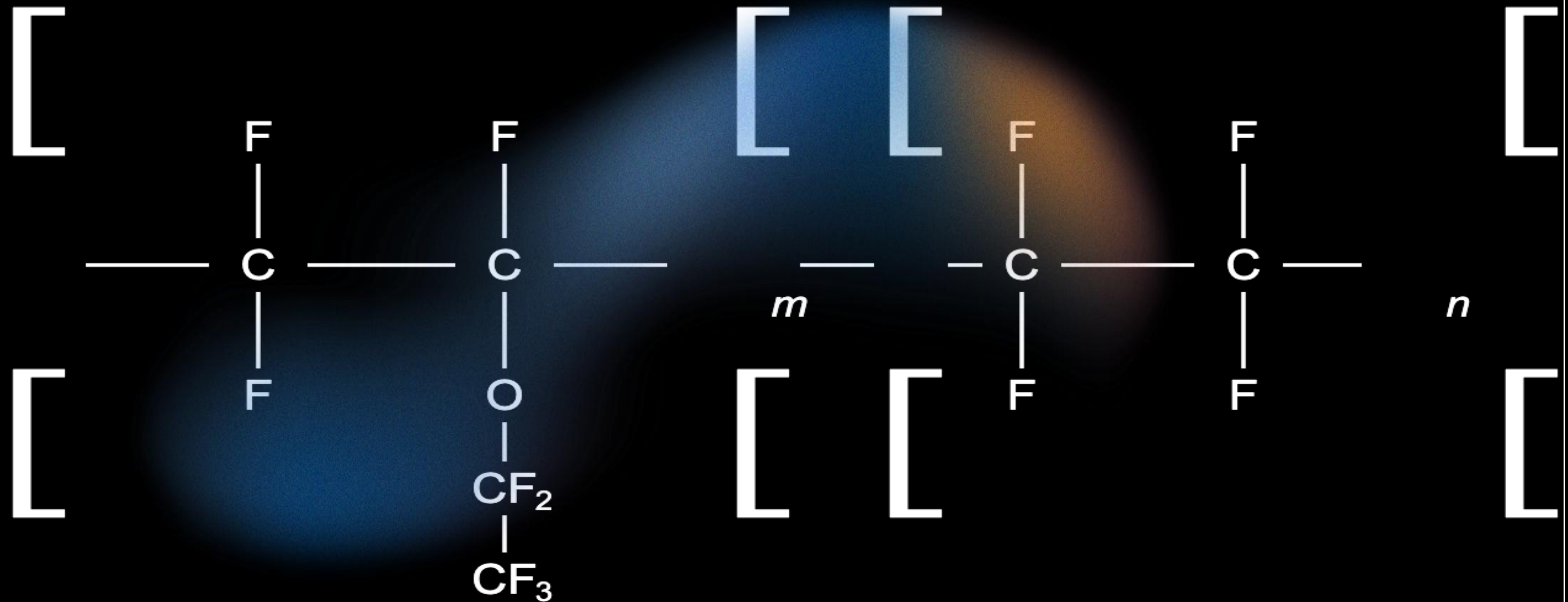
- No reuse market
- ASICs: no second life
- Flows to informal sector

Reuse negligible

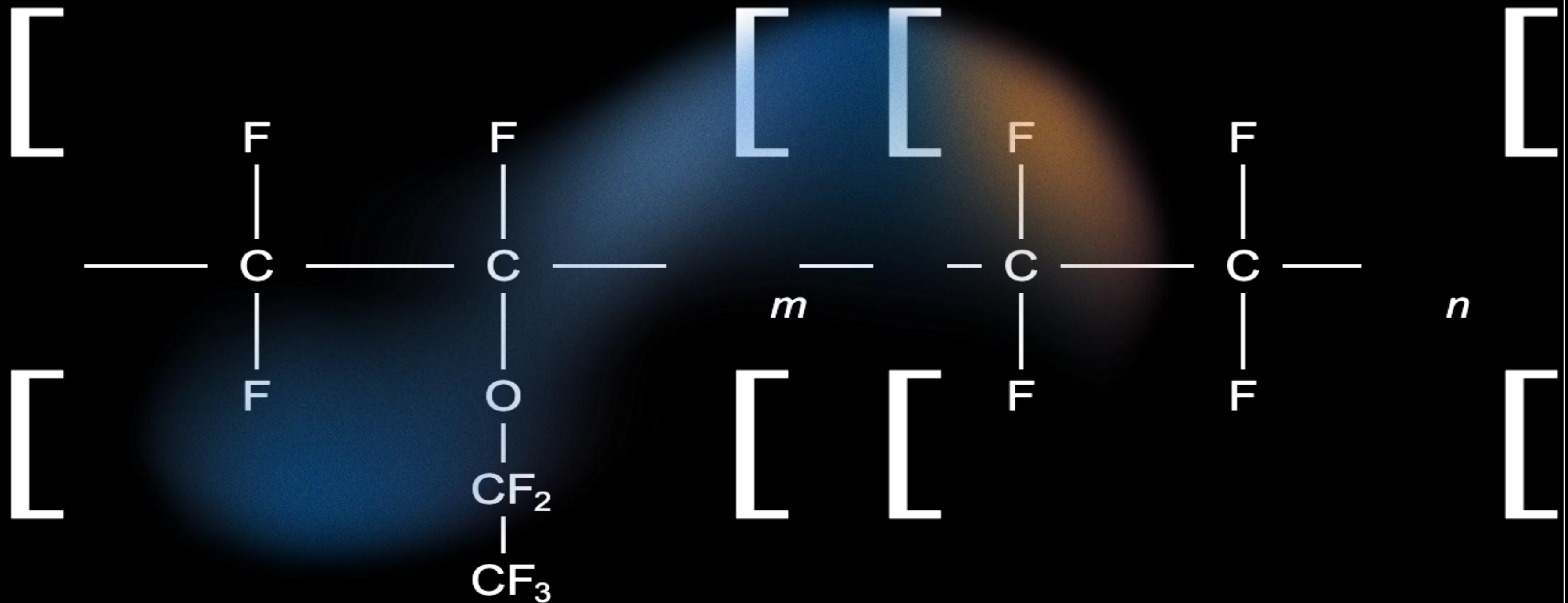
and to make matters far
worse



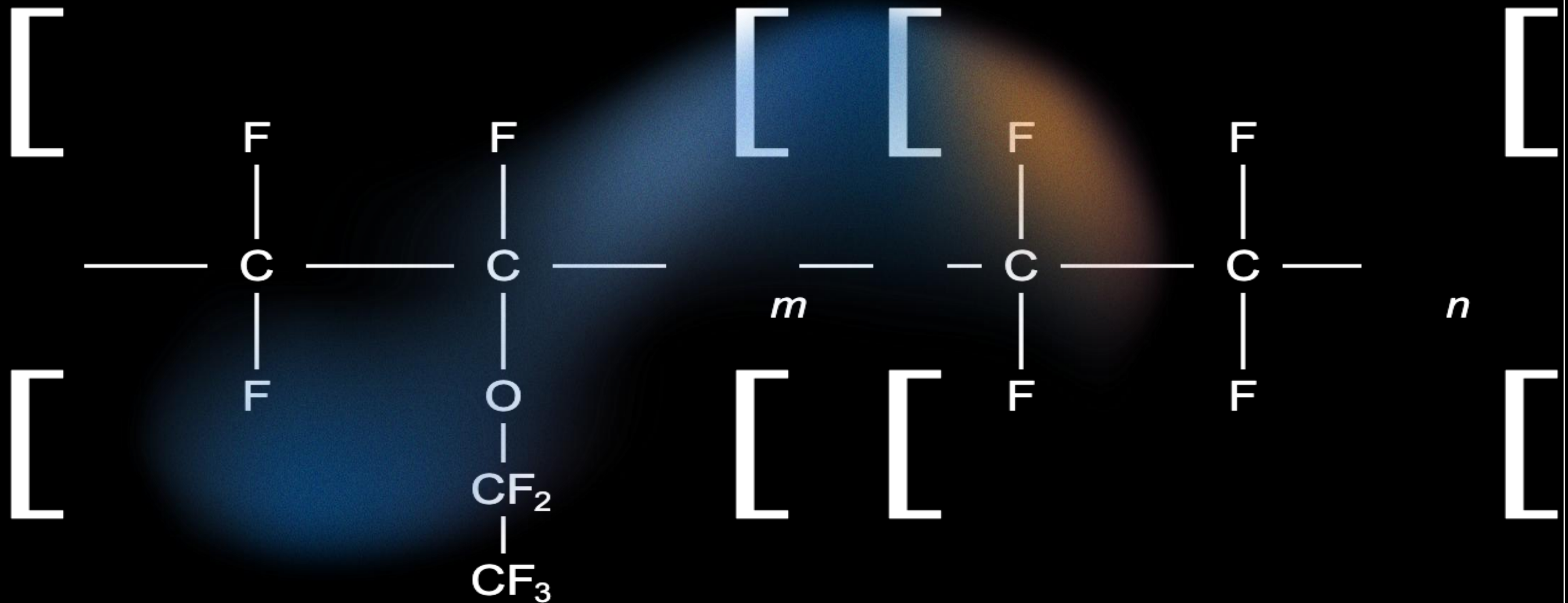
Al Waste will be Saturated with PFAS



Per- and Polyfluoroalkyl Substances



The Forever Chemicals



- Every AI server from the cables to the chips and memory is saturated in PFAS and each generation uses more.
- PFAS laden equipment cannot be recycled safely and reuse as mentioned is not an option.
- The semiconductor industry admits that **no alternatives exist** — *"fluorine-free systems result in patterning failure"*
- Right now, UK e-waste shredder operators are on a 12-month regulatory lifeline — without a continuing landfill exemption, the sector faces collapse
- Once again, recyclers are left holding the toxic bag.

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The Age of Hyperscaled Harm?

Tech companies will hyperscale AI infrastructure.

While hyperscaling circularity rhetoric.

But will they hyperscale downstream accountability?

Upstream design for longevity and reuse?

The effort to find PFAS alternatives?

Or will they be hyperscaling harm like never before?



Hyperscalers and OEMs:

Track your Downstream Diligently!
Drop Companies Using Brokers of Shame!

Prioritize Design for Environment now. This means before the hyperscale buildout. Design for Longevity. Design Toxic-free. Design for Safe, Just and Legal Recycling

Do not create one new data center unless it can be guaranteed that all waste coming from it will be non-toxic and managed responsibly and legally.

The ITAD / Recycling Industry:

Stop the playing the shell game of looking for the Latest Global Dump -- Refuse to use Brokers of Shame.

Realize that cheap and dirty recycling undermines the very essence of what the industry claims to be.

Vow to become the answer for those that will seek ethical management of the AI Waste Wave.

Refuse to recycle PFAS contaminated Waste and make the OEMs/hyperscalers pay now for a toxic-free redesign!

Without serious and immediate reform, the
coming AI-Waste Wave
will be unprecedented

-- a nightmare both in size and in terms of
toxicity.

How quickly it can redesigned and
redirected will be decisive.

We must all do our part.

A person is seen from behind, carrying a large, heavy basket filled with tangled electronic waste (cables, wires, and components) balanced on their head. They are holding a long wooden pole vertically in their right hand. The person is wearing a light-colored, short-sleeved shirt. The background is a desolate, open landscape with dry, brownish ground and patches of green vegetation. In the distance, there are some buildings and trees under a hazy sky. The overall scene suggests a location where electronic waste is being collected or disposed of.

I thank
you