AGGIE GEOPOLITICS CLUB · WORLD BRIEF

The New Economic Arms Race

SECURITY · SUPPLY CHAINS · STRATEGIC TECHNOLOGY

Thursday, October 22, 2026



BEFORE WE START

Disclaimer

Perspective and source discipline

The views and opinions in this presentation are my own and do not reflect those of my employer, university, or the Geopolitics Club.

Facts are attributed to named sources. Forecasts and projected facilities are labeled as plans, not completed outcomes.

ROADMAP

Three stories. Three levels. One strategic race.

What changed this week?

01

DOMESTIC | U.S.

Build capacity

A $375 million rare-earth separation plant in New York is planned to diversify a strategic supply chain.

02

TRANSNATIONAL | FIRMS

Navigate the rules

Samsung and SK Hynix want advanced memory production in China - with Washington controlling key equipment licenses.

03

INTERNATIONAL | CHINA

Protect the know-how

Beijing proposes export controls covering 40 strategic technologies, with public comments open through Nov 15.

Reuters (Oct 20-21); China MOFCOM (Oct 16).

THE BIG IDEA

Economic security now competes with economic efficiency

A policy shift: production, intellectual property and export permissions are instruments of power.

THE CORE CLAIM

States accept higher costs today to avoid strategic dependence tomorrow.

INTERESTS

Security, jobs, market share, bargaining leverage

INTERACTIONS

Subsidies, controls, licensing, corporate workarounds

INSTITUTIONS

BIS export regulations, Chinese catalog, national industrial policy

Working concept: economic statecraft = using trade, finance and industry policy to pursue strategic goals.

IEA Global Critical Minerals Outlook 2026; BIS (Aug 2025); MOFCOM (Oct 2026).

THE MECHANISM

It is not just what you produce - it is what you control

Strategic supply chains have multiple chokepoints, not a single bottleneck.

1

RAW INPUTS

Ore, minerals, feedstock

→

2

SEPARATION

Refined material, oxides

→

3

MANUFACTURING

Chips, magnets, components

→

4

KNOW-HOW

IP, software and equipment

THE LEVERAGE

A country may lack the mine but dominate processing; another may own the design but depend on foreign fabrication.

IEA Global Critical Minerals Outlook 2026; BIS (2025).

01 · DOMESTIC

Rochester gets a $375 million rare-earth project

October 20, 2026 | Phoenix Tailings' Freedom Separation facility

$375M

Planned facility investment

18,000+ t

Annual feedstock capacity at full scale

2028

Target for full production

What is being built?

A separation facility for mixed mined and recycled rare-earth feedstock, producing oxides for domestic metal-making.

4,400+ tonnes

Planned separated oxides per year at full scale

Reuters (Oct 20); Phoenix Tailings (Oct 20).

01 · DOMESTIC

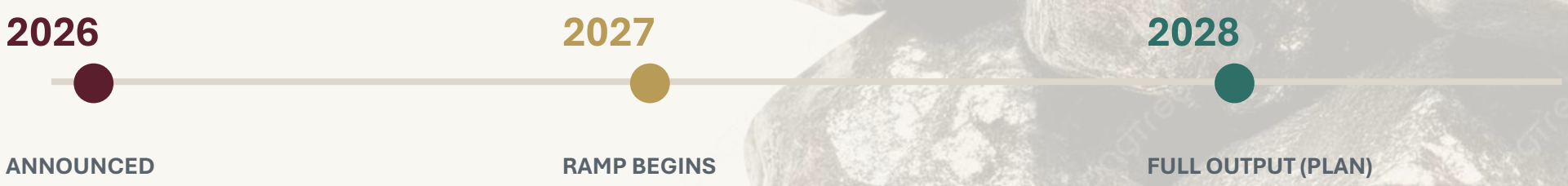
Why a processing plant is geopolitics

The critical link is often midstream refining, rather than owning raw ore.

RARE-EARTH REFINING SHARE | 2025



IEA figures reported by Reuters; broad rare-earth refining category.



Reuters (Sep 14); IEA Outlook 2026; Phoenix Tailings (Oct 20).

01 · DOMESTIC

Domestic interests: resilience has a price

Why public agencies, private investors, and consumers may value the same project differently.

U.S. government

Less dependence on concentrated foreign supply; defense and industrial reliability.

Phoenix Tailings

Win customers, finance capacity, and commercialize separation technology.

Manufacturers

Find predictable materials at competitive prices and quality.

THE TRADE-OFF

IEA estimates refining projects outside the dominant supplier can cost 20% to over 150% more in upfront capital, depending on the project.

Policy instrument: private investment plus state support and federal financing across related projects.

Phoenix Tailings (Oct 20); Reuters (Oct 20); IEA Outlook 2026.

02 · TRANSNATIONAL

Samsung and SK Hynix upgrade fabs in China

October 21, 2026 | South Korean firms operate inside China - using regulated U.S. equipment.

SAMSUNG | XI'AN

286 layers

V9 NAND upgrade target; its Xi'an site accounts for about 40% of Samsung global NAND output.

SK HYNIX | DALIAN

240+ layers

Planned NAND product transition, with U.S. licensing and technology approvals crucial.

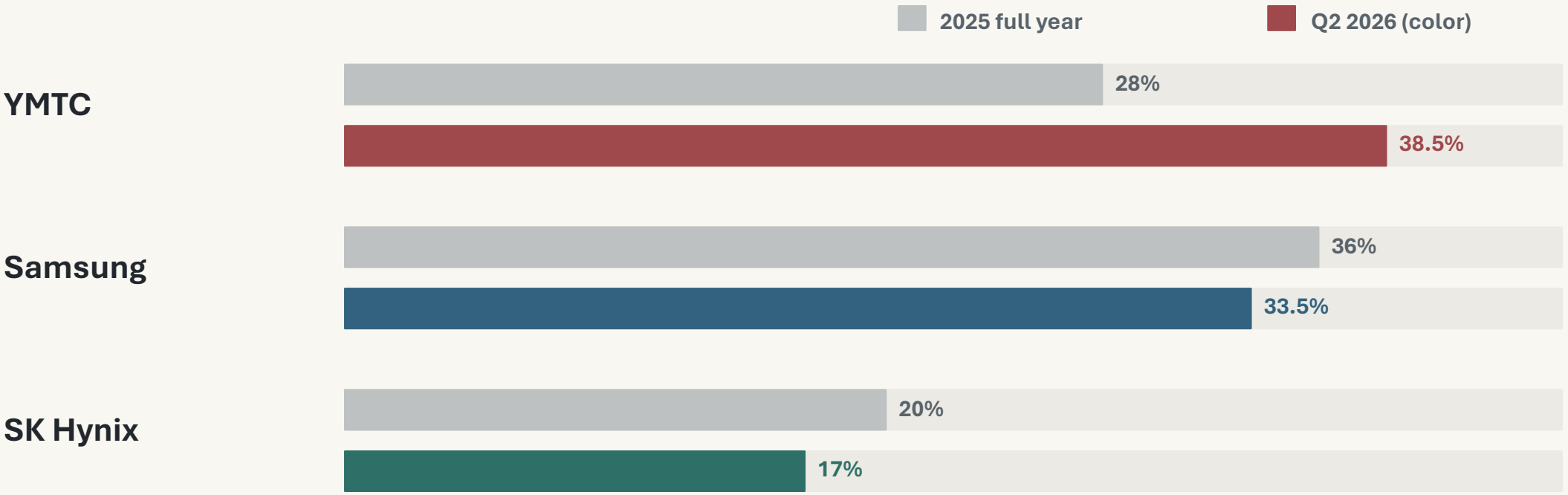
NAND flash = nonvolatile data storage for phones, computers and data centers.

Reuters exclusive (Oct 21).

02 · TRANSNATIONAL

The competition did not wait for the regulators

Share of China NAND market: 2025 annual vs. Q2 2026 (Omdia via Reuters).



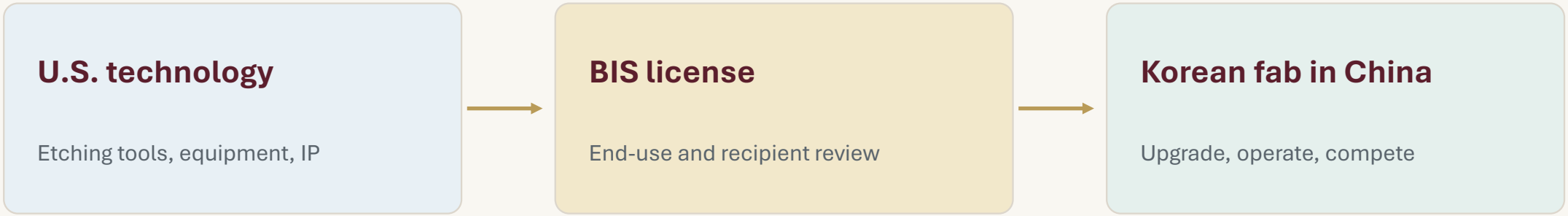
Interpretation: competitive pressure grew while Korean fabs faced equipment-access uncertainty.

Reuters (Oct 21), citing Omdia market-share research.

02 · TRANSNATIONAL

The U.S. license becomes a strategic bottleneck

Washington controls exports of some U.S.- origin fabrication equipment even when the factory is in China.



BIS policy (2025)

Existing operations: licenses expected

Open question (2026)

Upgrade licenses: approval extent unclear

BIS (Aug 29, 2025); Federal Register (Sep 2, 2025); Reuters (Oct 21, 2026).

02 · TRANSNATIONAL

Firms optimize profits; states optimize security

The corporate response reflects three competing objectives, not a simple U.S.-versus-China split.

SOUTH KOREAN FIRMS	Keep China factories competitive, serve global AI-driven demand, comply with U.S. rules.
WASHINGTON	Constrain Chinese access to strategic chipmaking capabilities while maintaining ties with Seoul.
CHINESE COMPETITORS	Grow domestic capacity and take share from Korean producers in China.

INSTITUTION THAT SHAPES THE GAME: U.S. Export Administration Regulations (EAR)

Reuters (Oct 21); BIS (Aug 2025).

03 · INTERNATIONAL

Beijing proposes restrictions on 40 technologies

October 16, 2026 | New draft export catalog and immediate temporary registration requirements.

40

Technologies in proposal

Nov 15

Public-comment deadline, 2026

NOW

Pre-export registration in effect

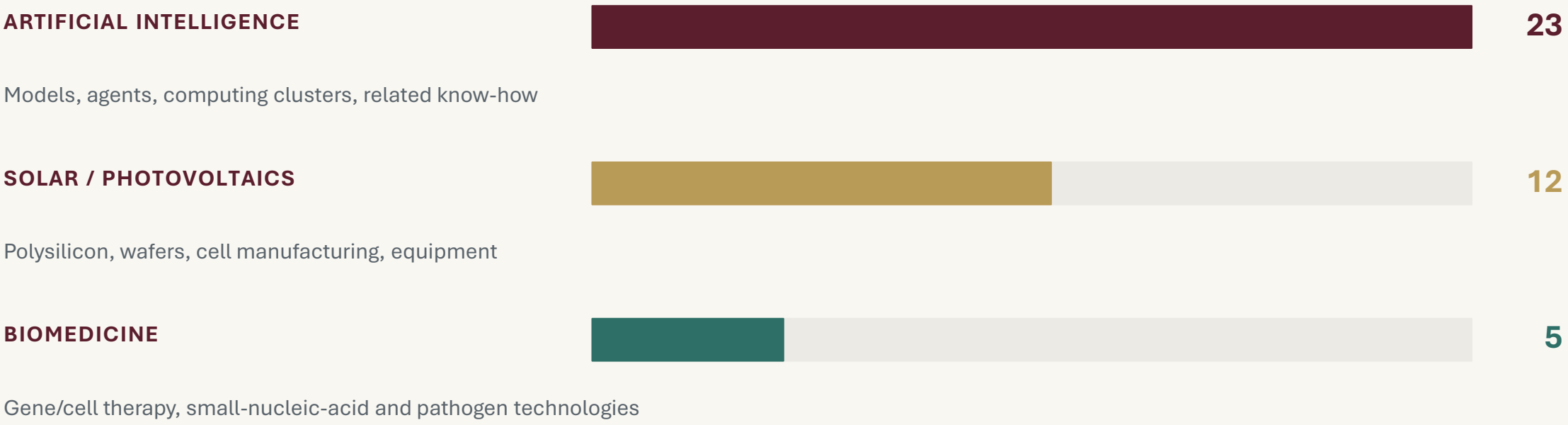
Critical legal distinction

The catalog additions are proposed, not yet finalized. Separate interim registration rules began on October 16 for covered technology transfers.

03 · INTERNATIONAL

Where the proposed controls are concentrated

The 40 areas are about transferring knowledge and capabilities, not simply shipping products.



Open-source and already-public technologies are generally outside the draft controls.

03 · INTERNATIONAL

China is using the same policy language: national security

Different capabilities, comparable strategic instruments.

UNITED STATES

Restricts access to selected U.S.-origin semiconductor tools and technology for China-based fabs.

EXPORT LICENSE

CHINA

Proposes controls over exporting advanced AI, solar and biomedical technological know-how.

EXPORT CATALOG + REGISTRATION

The shared logic is leverage over access - not identical rules or a proven tit-for-tat.

SYNTHESIS

One strategic pattern, three transmission channels

The connection is analytical - not a claim that these three headlines directly caused one another.

DOMESTIC	**Invest in capacity**	U.S. firm + state support → alternative rare-earth refining
TRANSNATIONAL	**Adapt supply chains**	Korean firms → upgrade plans under U.S. equipment rules
INTERNATIONAL	**Defend technology**	China → proposed restrictions on knowledge transfers

FEEDBACK LOOP **More controls → stronger diversification incentives → investment and corporate adaptation.**

Club synthesis based on Reuters, BIS, MOFCOM, IEA, Phoenix Tailings.

IMPLICATIONS

Who wins, and who pays for independence?

Economic resilience can improve national leverage while raising costs for firms and consumers.

GAIN

Potential winners

Domestic processors; suppliers outside China; local skilled labor; buyers seeking alternative sources

COST

Near-term constraints

Capital intensity; higher non-dominant-supplier refining costs; multi-year buildout; compliance burden

RISK

Possible unintended effects

Fragmented standards, duplicated capacity, retaliation concerns, slower diffusion of useful technology

Not autarky: the plausible outcome is selective diversification, not the end of cross-border trade.

IEA Global Critical Minerals Outlook 2026; Reuters (Oct 20-21).

WHAT TO WATCH

Four signposts that could change the story

Focus on observable policy decisions, investments and company disclosures.

NOV 15, 2026	**China draft comments close**	Will controls be narrowed, expanded or finalized?
COMING MONTHS	**U.S. equipment licenses**	What upgrade activity is actually permitted in China?
2027 → 2028	**Rochester ramp and output**	Do planned oxide volumes turn into commercial supply?
NEXT EARNINGS	**Korean chipmaker disclosures**	Do market-share and capital-allocation decisions shift?

DISCUSSION | Is supply-chain resilience worth permanently higher costs?

SOURCES

Primary documents and reporting

Source list; all claims reflect material available through October 21, 2026.

Reuters (Oct 20)
Phoenix Tailings Rochester project

Phoenix Tailings (Oct 20)
Facility plans and capacity

IEA (July 2026)
Global Critical Minerals Outlook

Reuters (Sept 14)
IEA rare-earth refining shares

Reuters (Oct 21)
Samsung / SK Hynix reporting

U.S. BIS (Aug 2025)
Semiconductor fab export licenses

Federal Register (Sept 2025)
Revocation of VEU authorizations

China MOFCOM (Oct 16)
Draft technology export notice

Reuters (Oct 16)
Technology control proposal

USGS (Feb 2026)
U.S. mineral production and trade

Note: Chinese government notice is in Mandarin. Company production targets are projections. Reuters/Omdia market shares have different reference periods.