

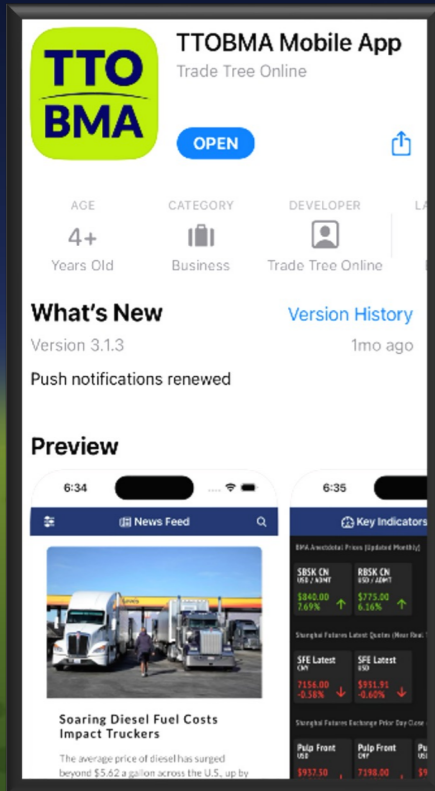
TTO BMA

**Outlook for Pulp Markets
in a Changing Global Climate**

Quebec City, 28 May 2024

Market Intelligence, Analysis, & Consulting

- Monthly reports, videos and infographics
- Pulp price forecasts
- Pulp market update webinars
- Pulp market, economic and FX data via TTO app
- Management consulting



Net-Price Indices

- Open-market net-price indices
- Based on actual transactions
- Available on phone app
- NBSK, BHK, SBSK, UKP, Fluff pulp, BCTMP and DP
- OCC, SOP, and Mixed Paper (North America)
- Tissue & Towel (Parent Rolls in North America)



Market Pulp 2023: 80 mm tonnes, \$60 bn -15% y/y – 2024 ~\$80 bn +33%

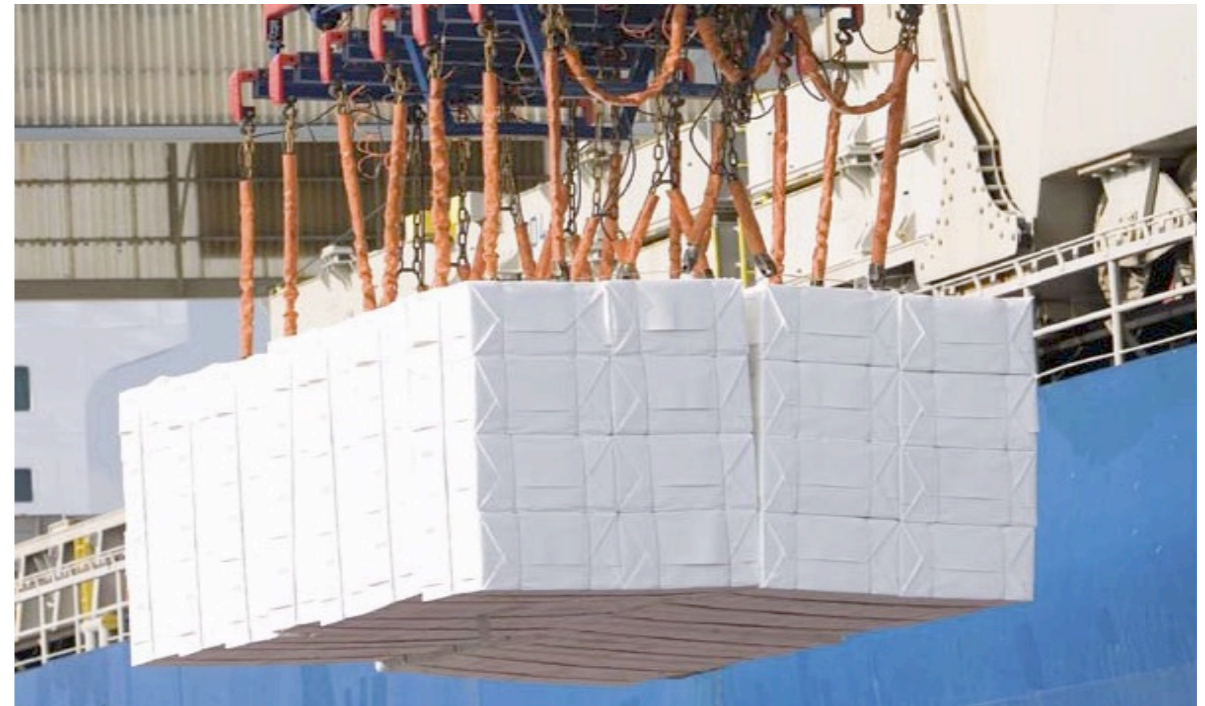
1. Changing global climate – weather, society, political
2. China has driven global pulp demand now what?
3. Recovered paper utilization rate is peaking
4. A less-plastics world
5. Less graphic paper, more tissue, packaging
6. Market Wood Pulp demand 100 mmt by 2030. What about supply?
7. The supply of Northern Bleached Softwood Kraft (NBSK) has peaked
8. Increasingly supply-shock-driven business (fires, floods, droughts & bugs).

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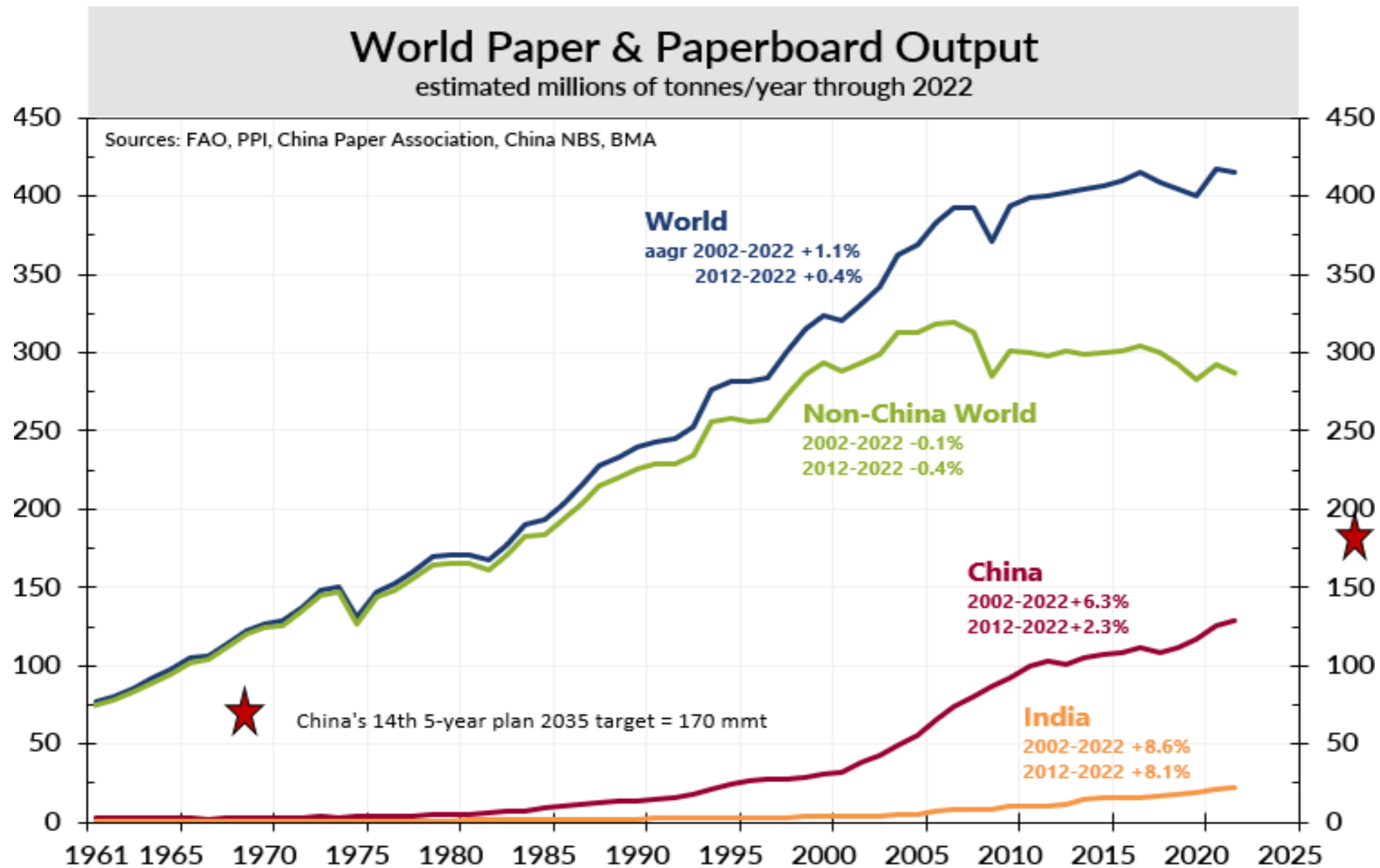


- Intermediate product to make paper (84%), hygienic goods e.g. diapers, pads, wipes (8%), textiles/cellulose specialties (8%)
- Production processes: chemical 94%, mechanical 6%
- Fibre: softwood 45%, hardwood 55%

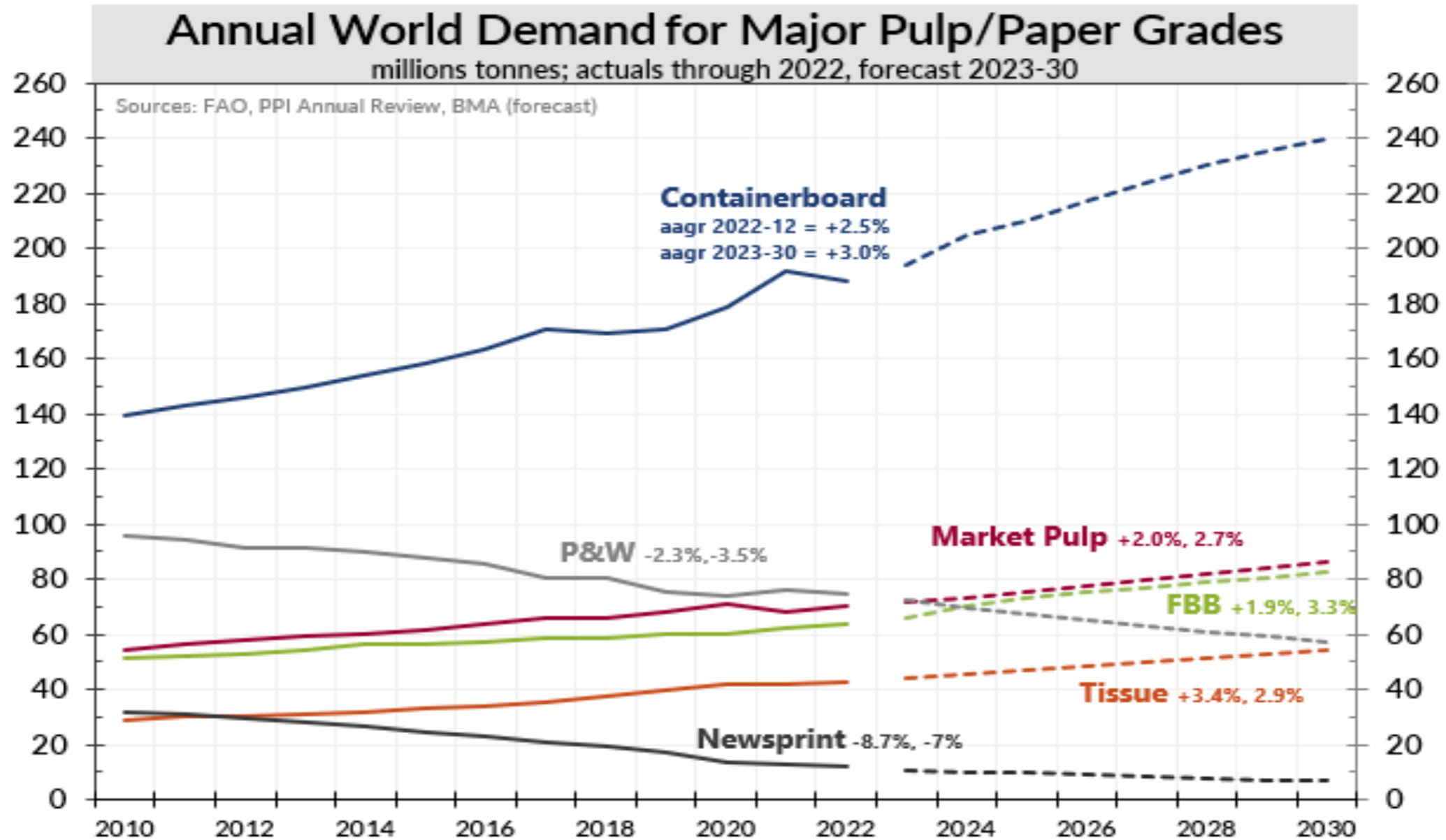
- 90% exported, 60% by sea
- US\$ pricing
- Most freely traded forest product
- Supply-shock driven business



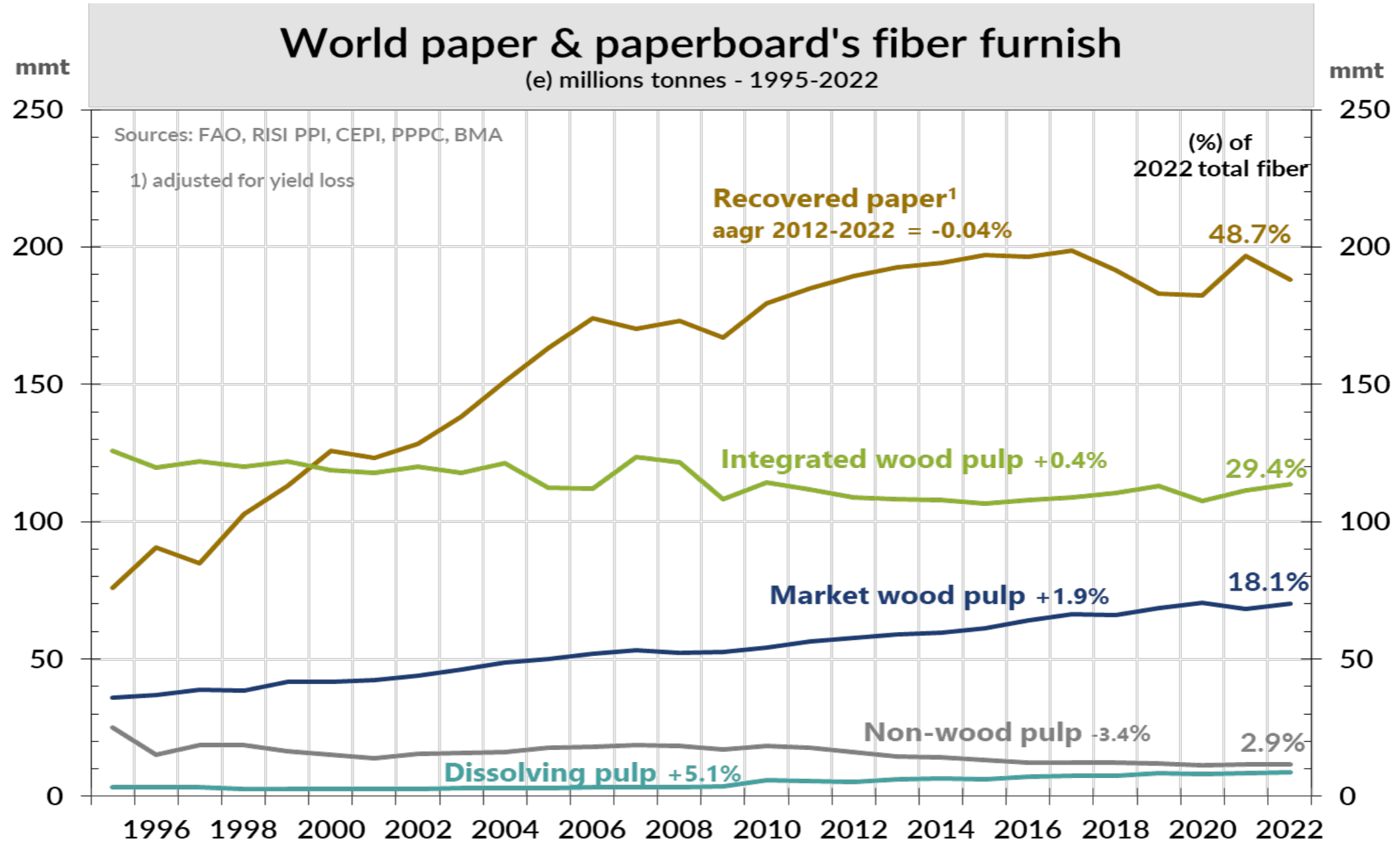
Paper still a growth business but grade mix changing



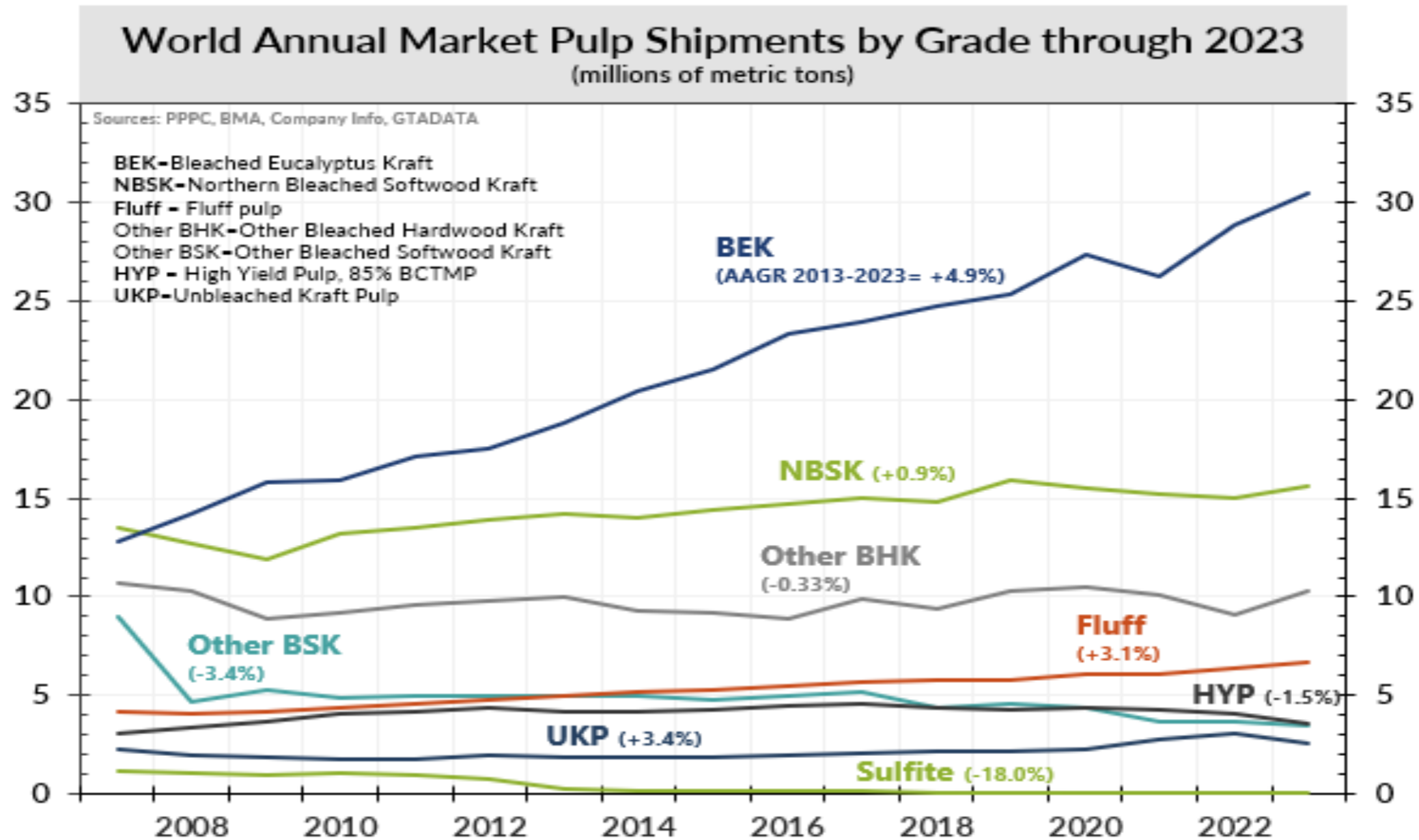
More brown packaging, more tissue, less print



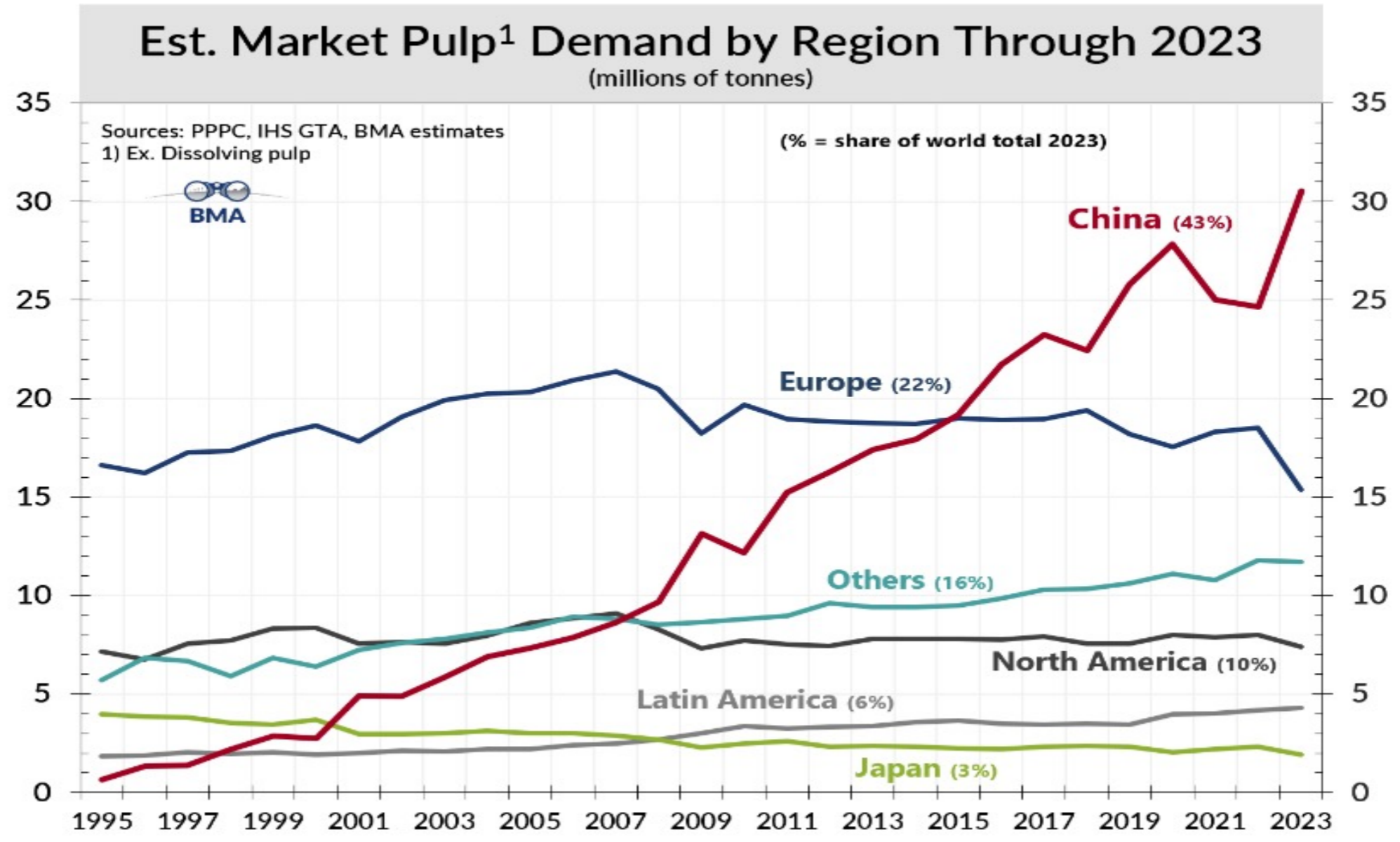
Graphic paper = ~25% of global recovered paper supply



Plantation-based Eucalyptus pulp now the main grade



China is biggest buyer – but riskiest

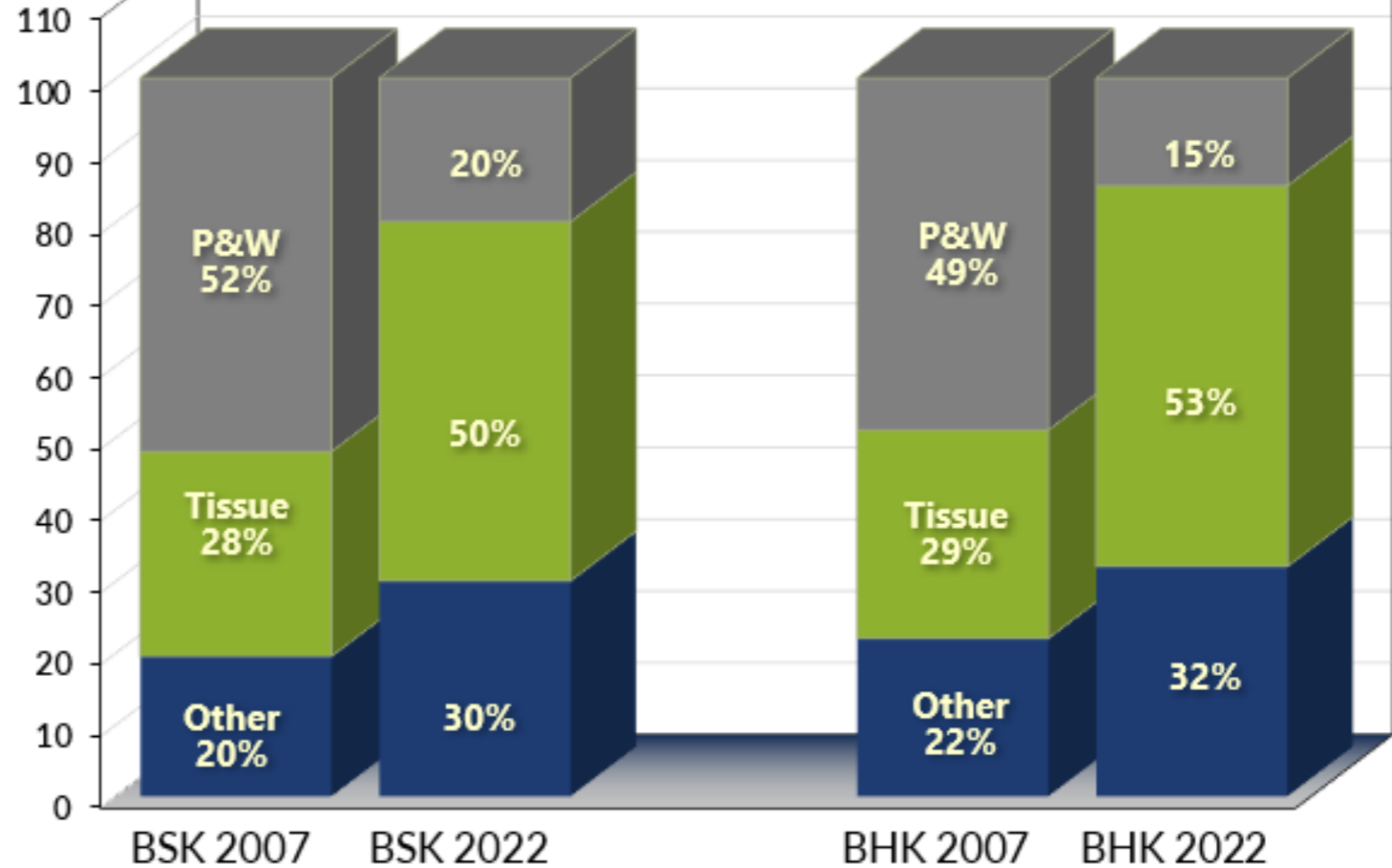


Tissue paper now biggest end-use for market pulp

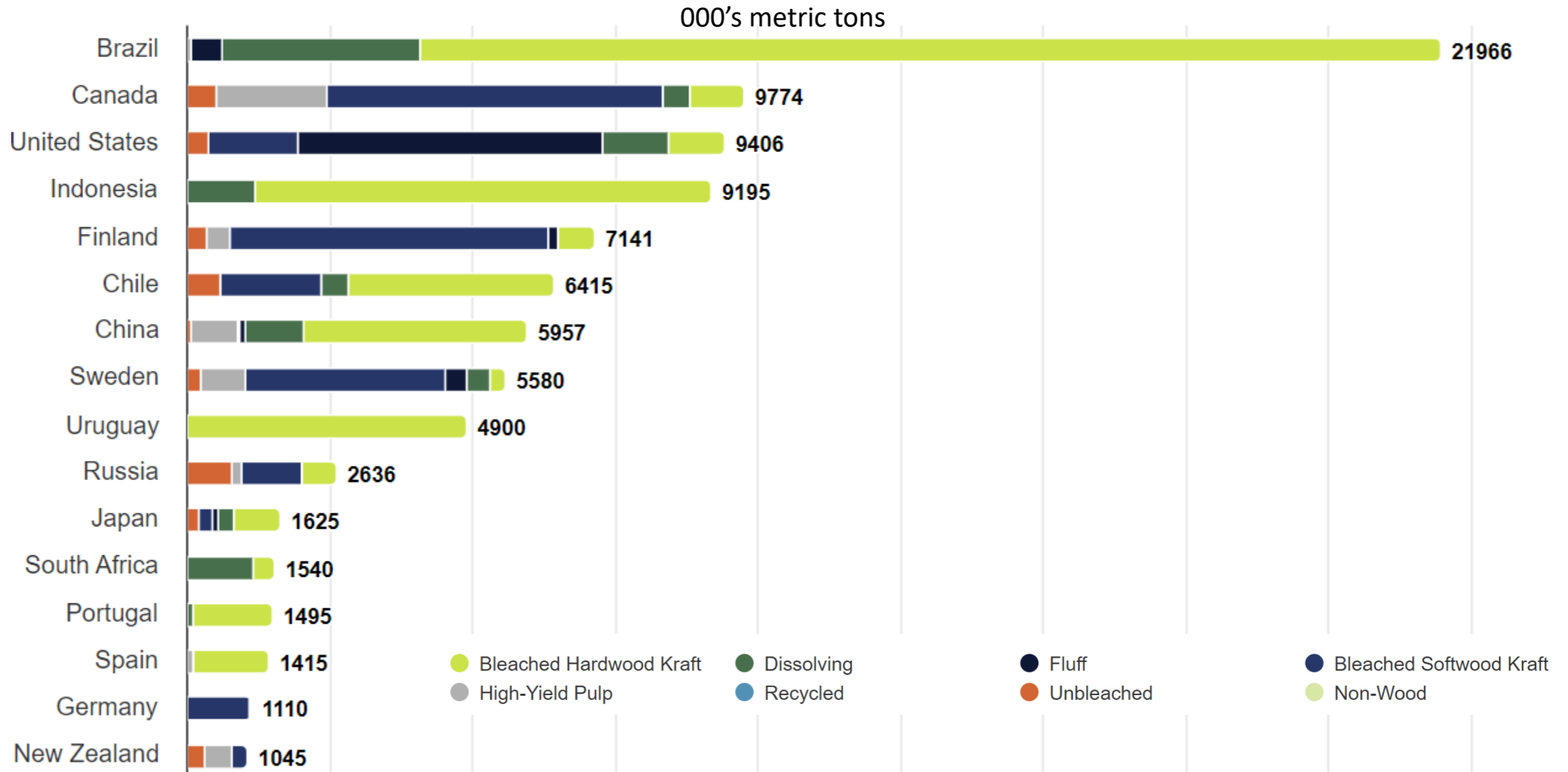


World end-uses for BSK & BHK - 2022 & 2007 (e)

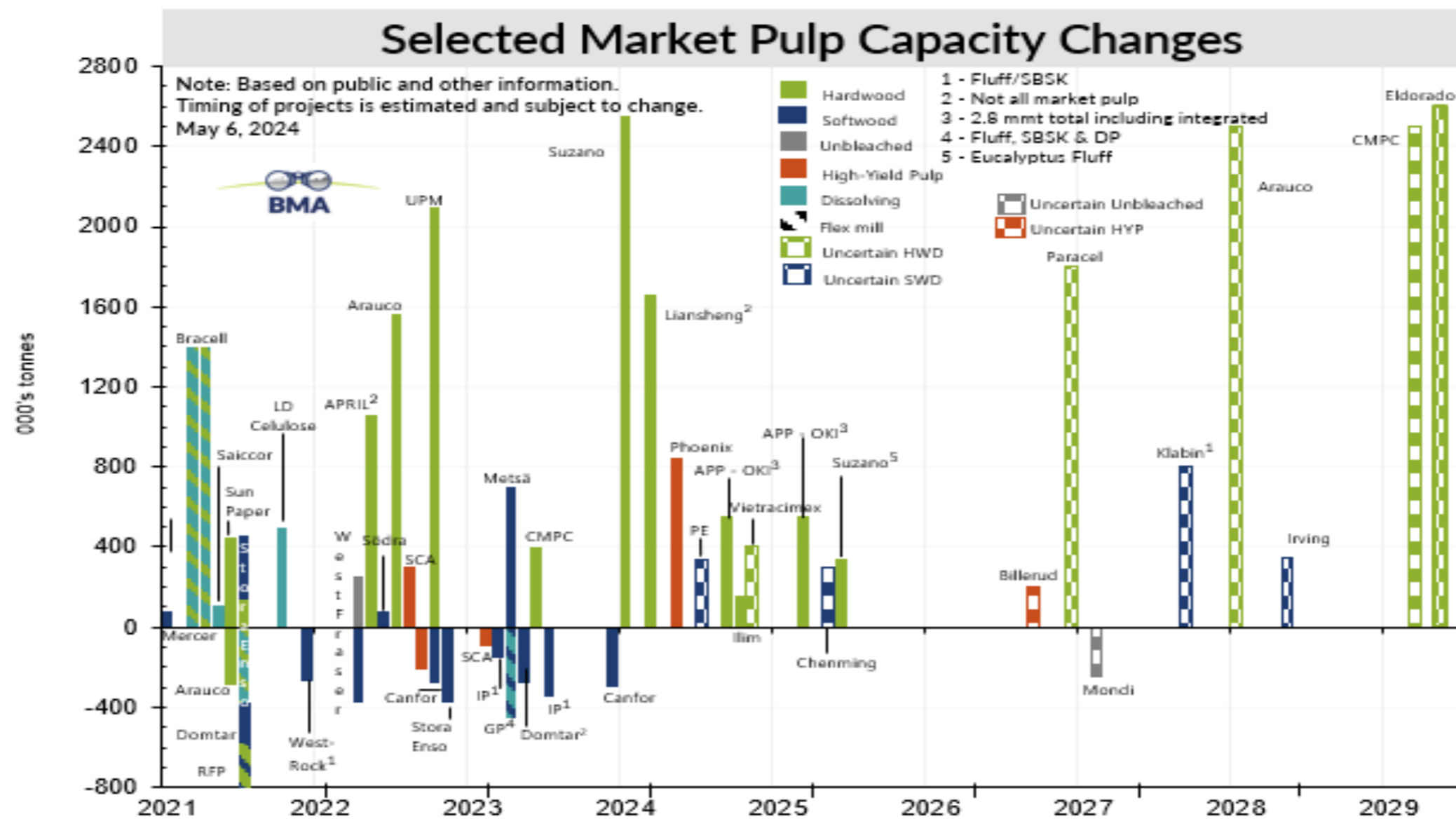
Source: TTOBMA, PPPC



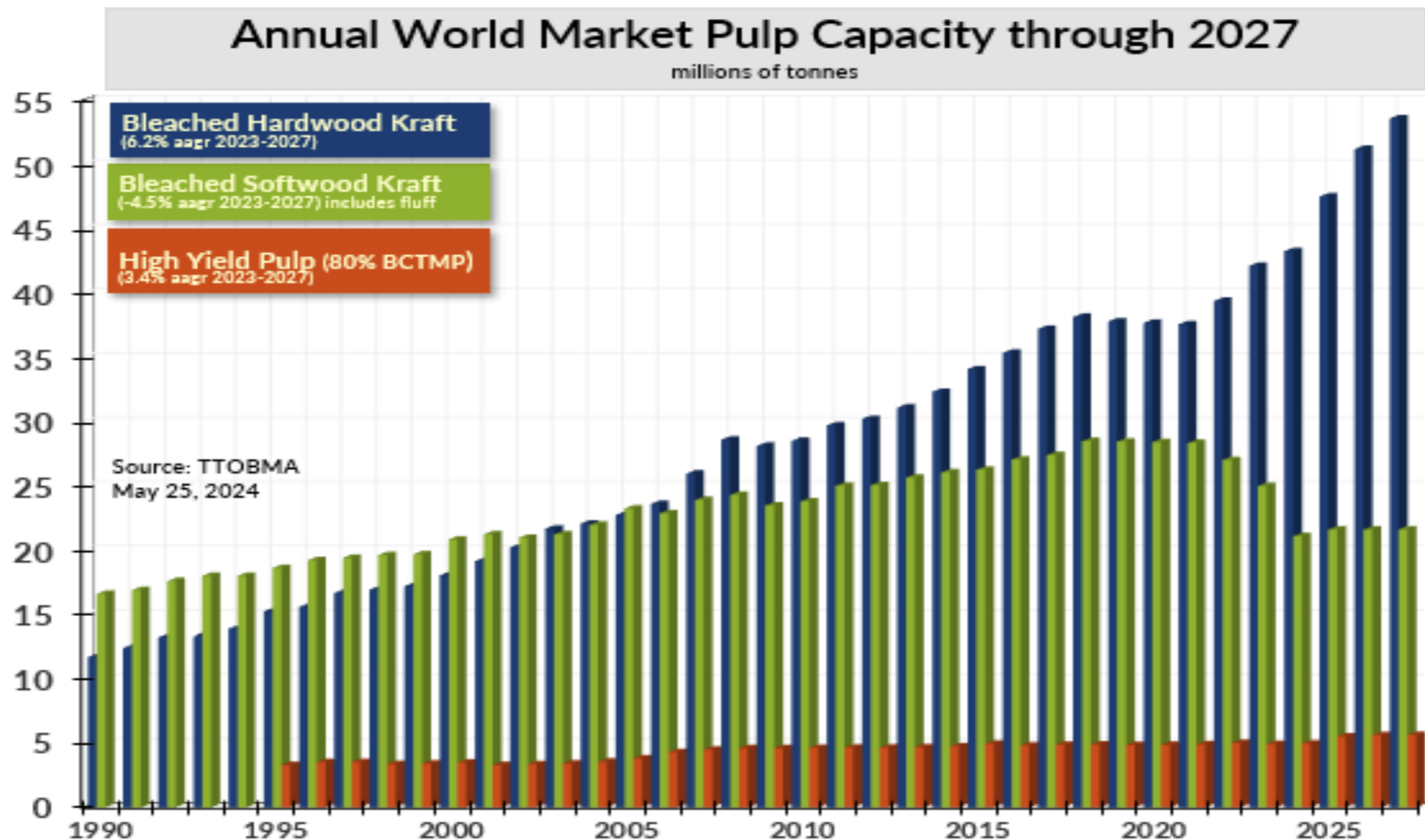
Brazil is biggest market pulp producer



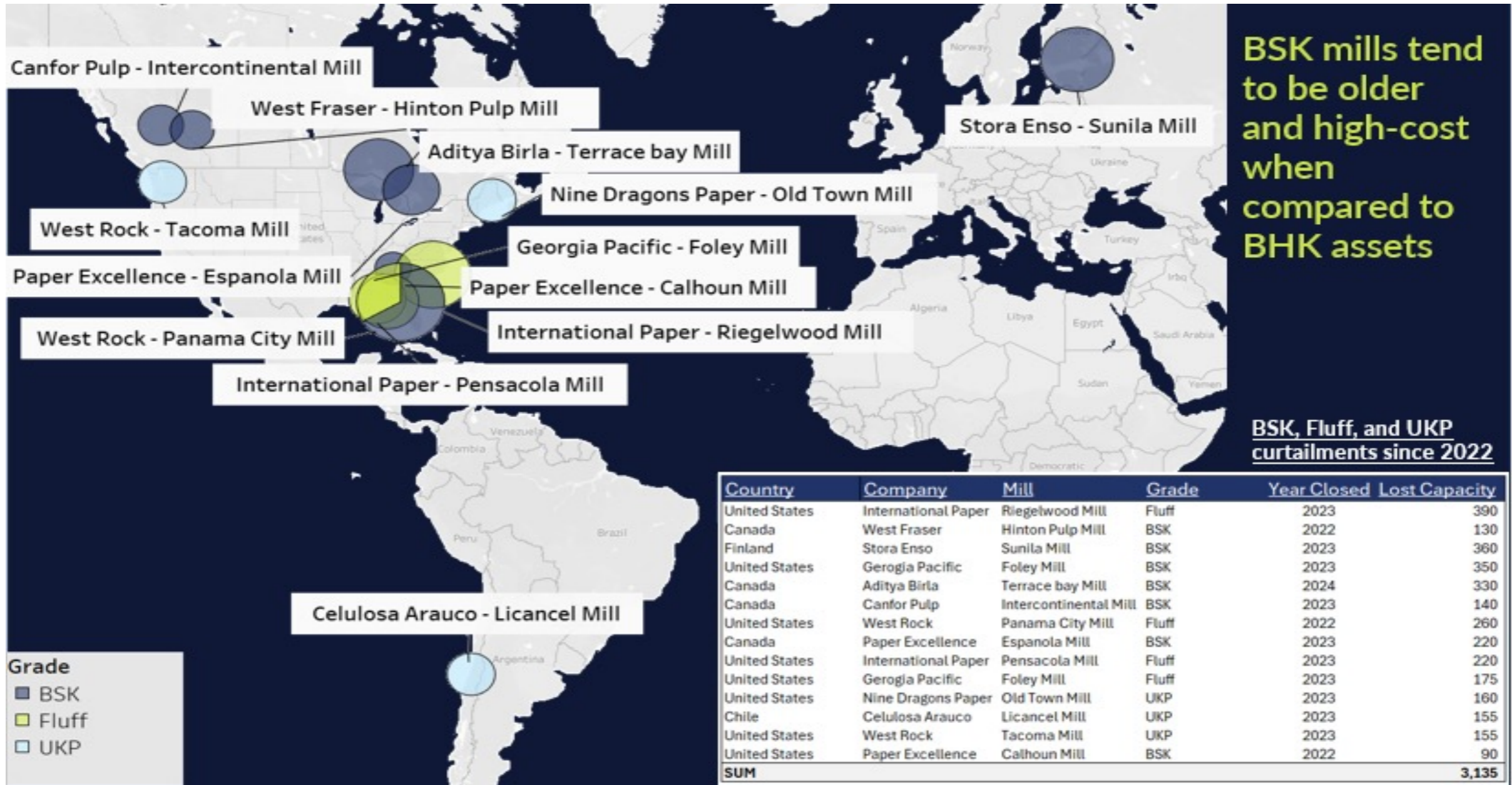
World NBSK capacity has peaked, much more BEK coming



Bleached NBSK capacity has peaked



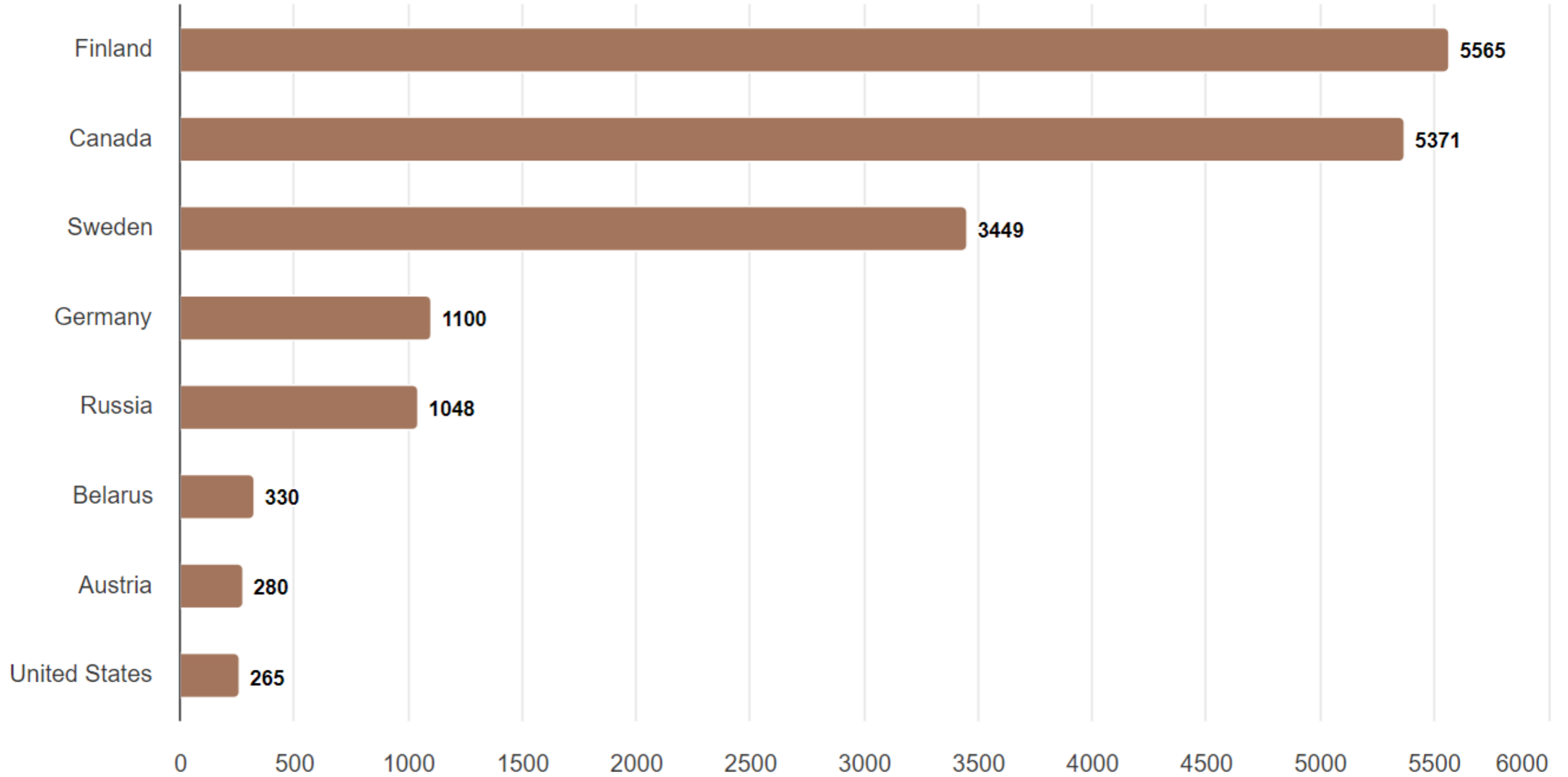
BSK: 3 million tonnes closed last 2 years, more likely



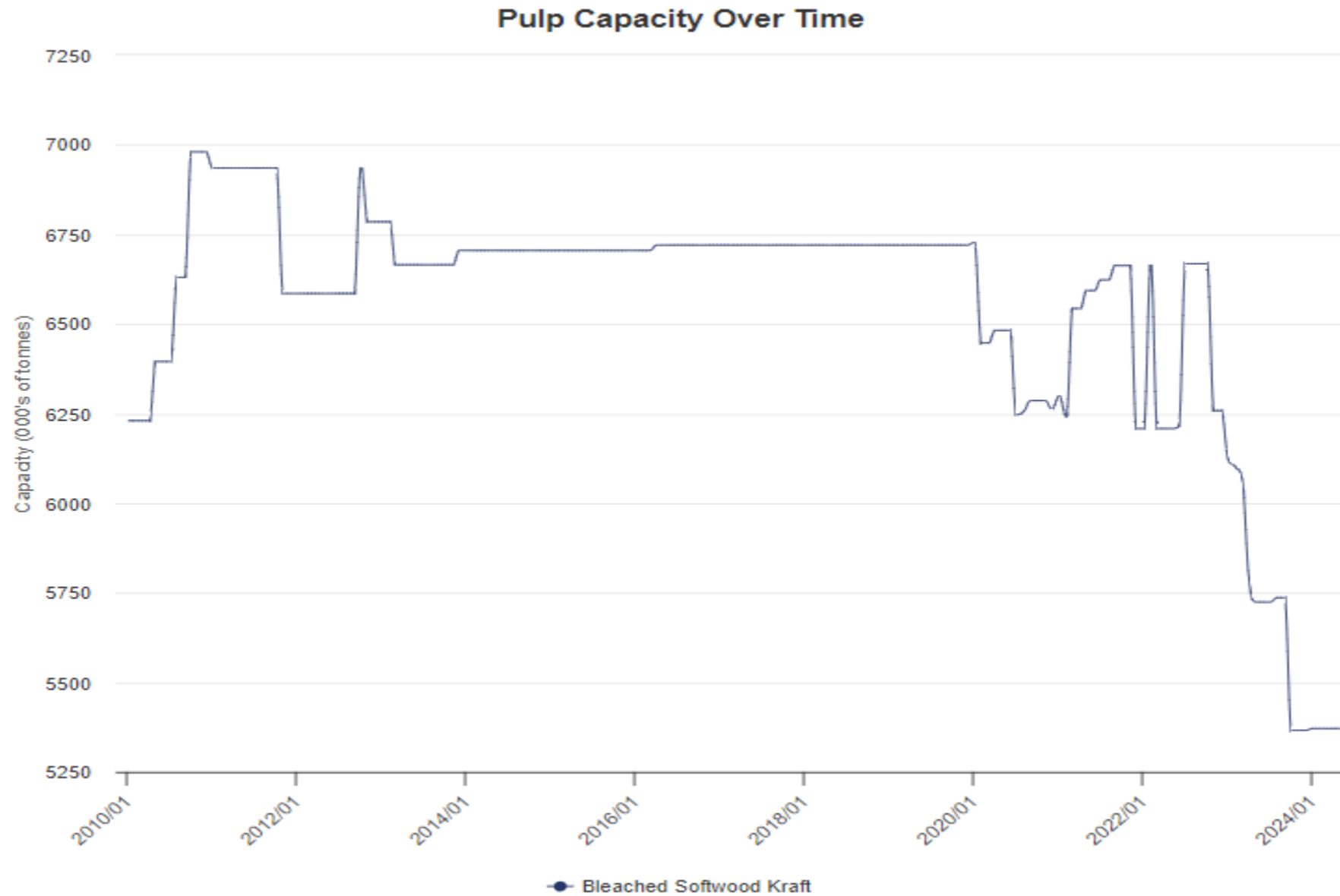
Canada no longer world's biggest NBSK producer



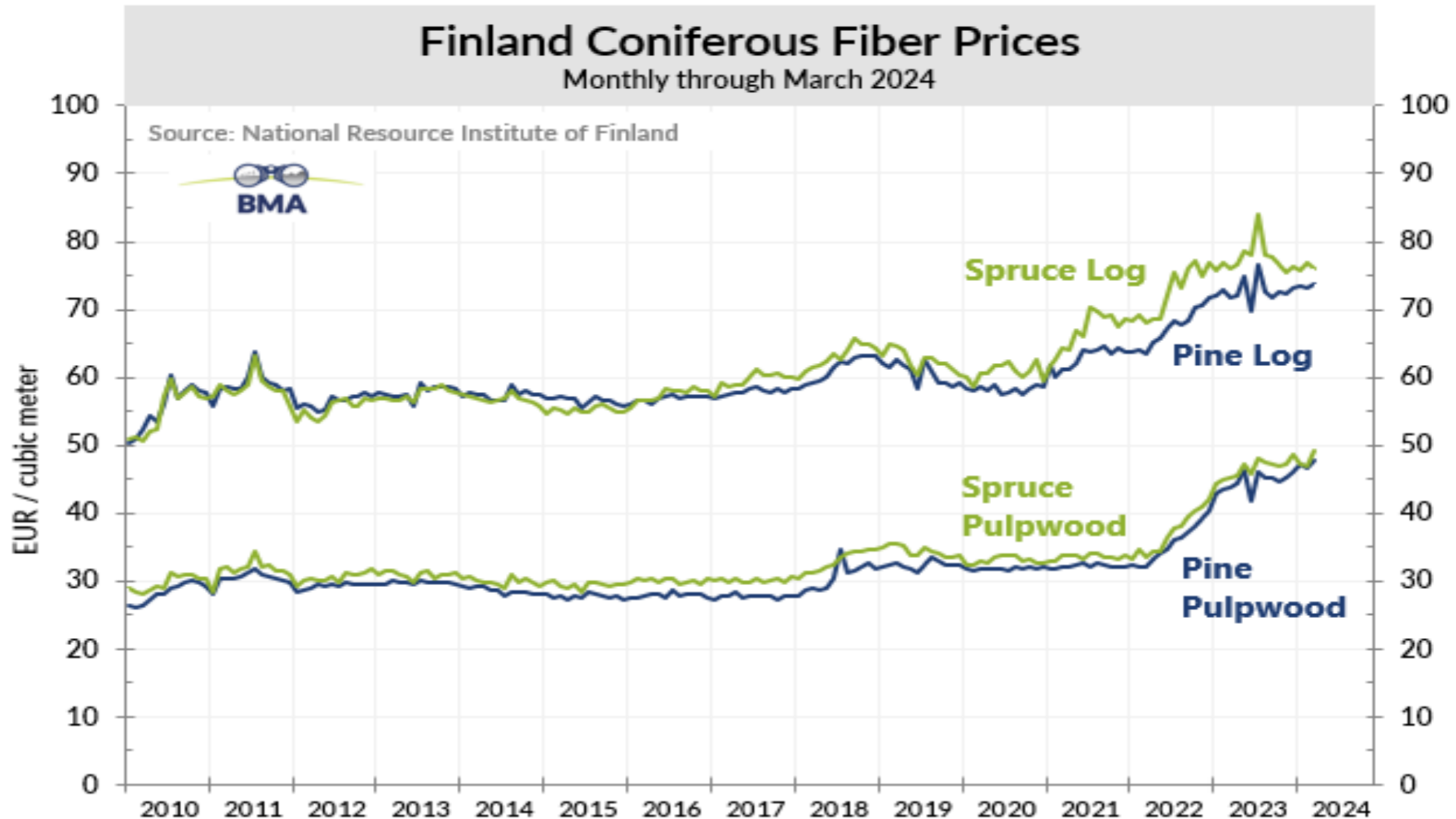
000's metric tons



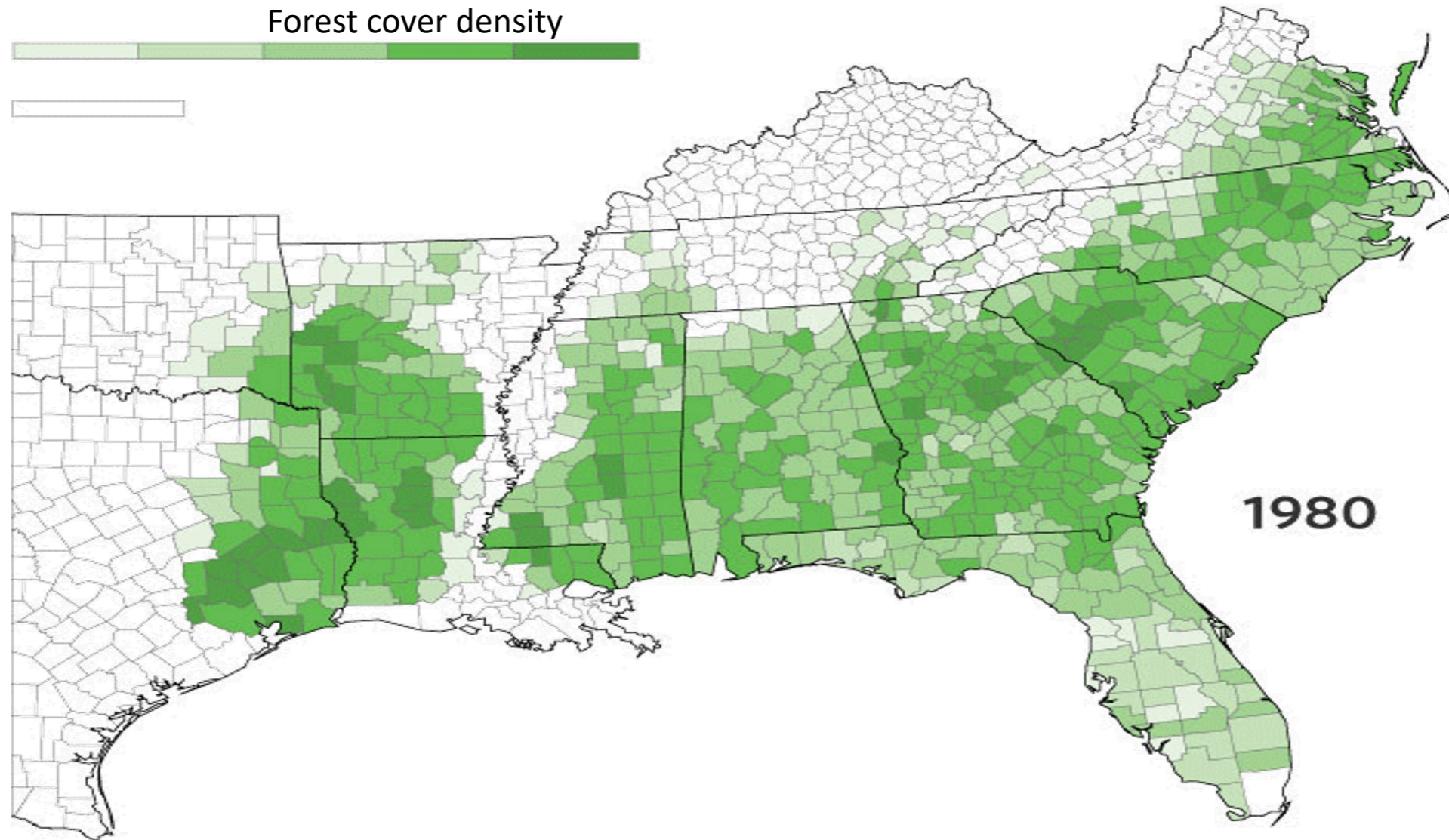
Many Canada NBSK capacity closures/conversions last 2 years



Finland's wood costs up 50+% since Ukraine War



Most recent new BSK pulp mill in US South – 1985



Increasing demand/policies for a less-plastics world

More plastic than fish by weight in the world's oceans by 2050

Ellen MacArthur Foundation.

Microplastics found in human blood for first time

Exclusive: The discovery shows the particles can travel around the body and may lodge in organs

U.S. Recycles 5% of Plastic Waste, Studies Show

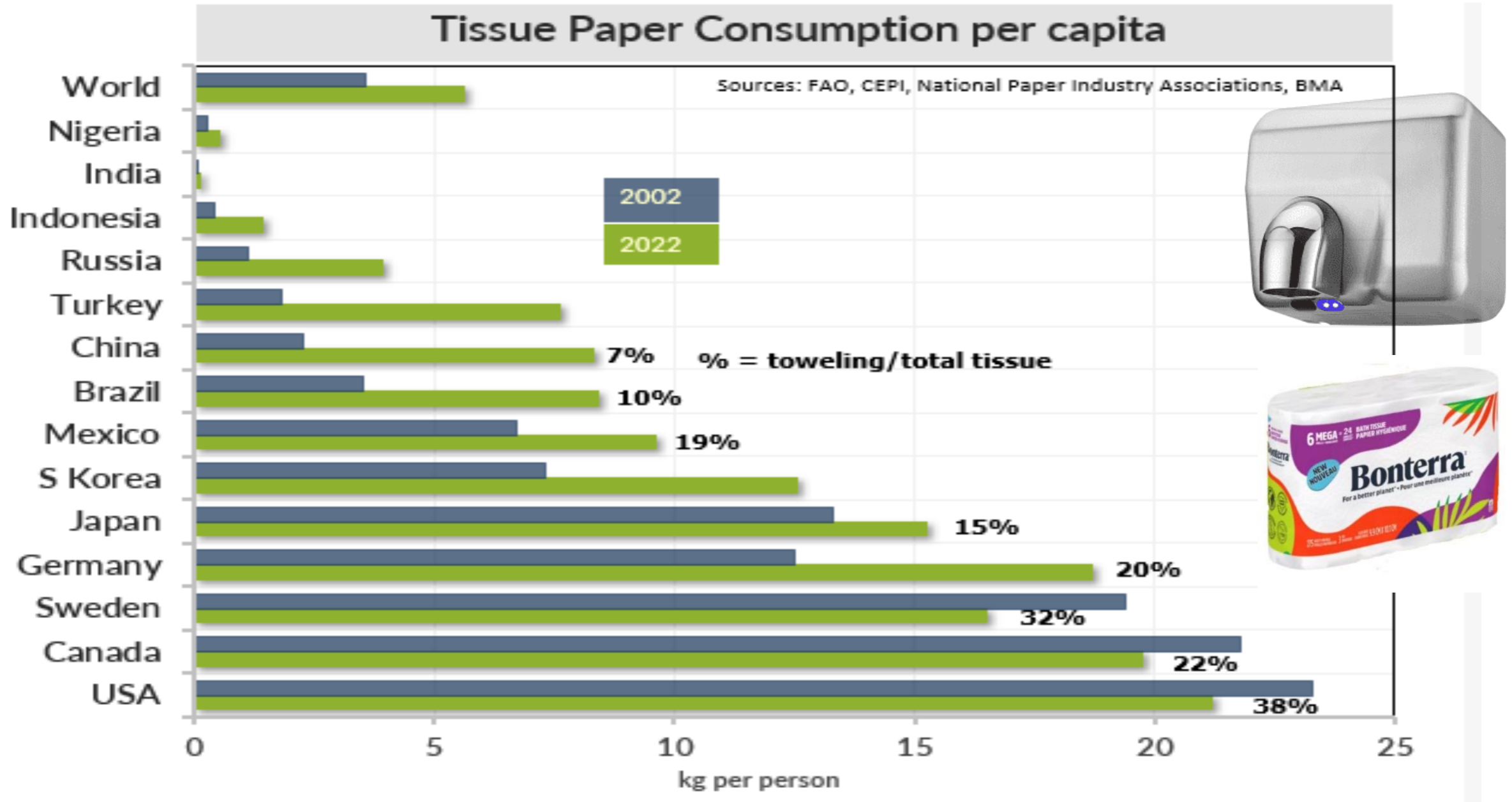
Plastics use has increased, but recycling infrastructure, technology and education haven't kept pace, say environmental and waste-management experts

Exxon Subpoenaed in California's Probe of Plastics Makers

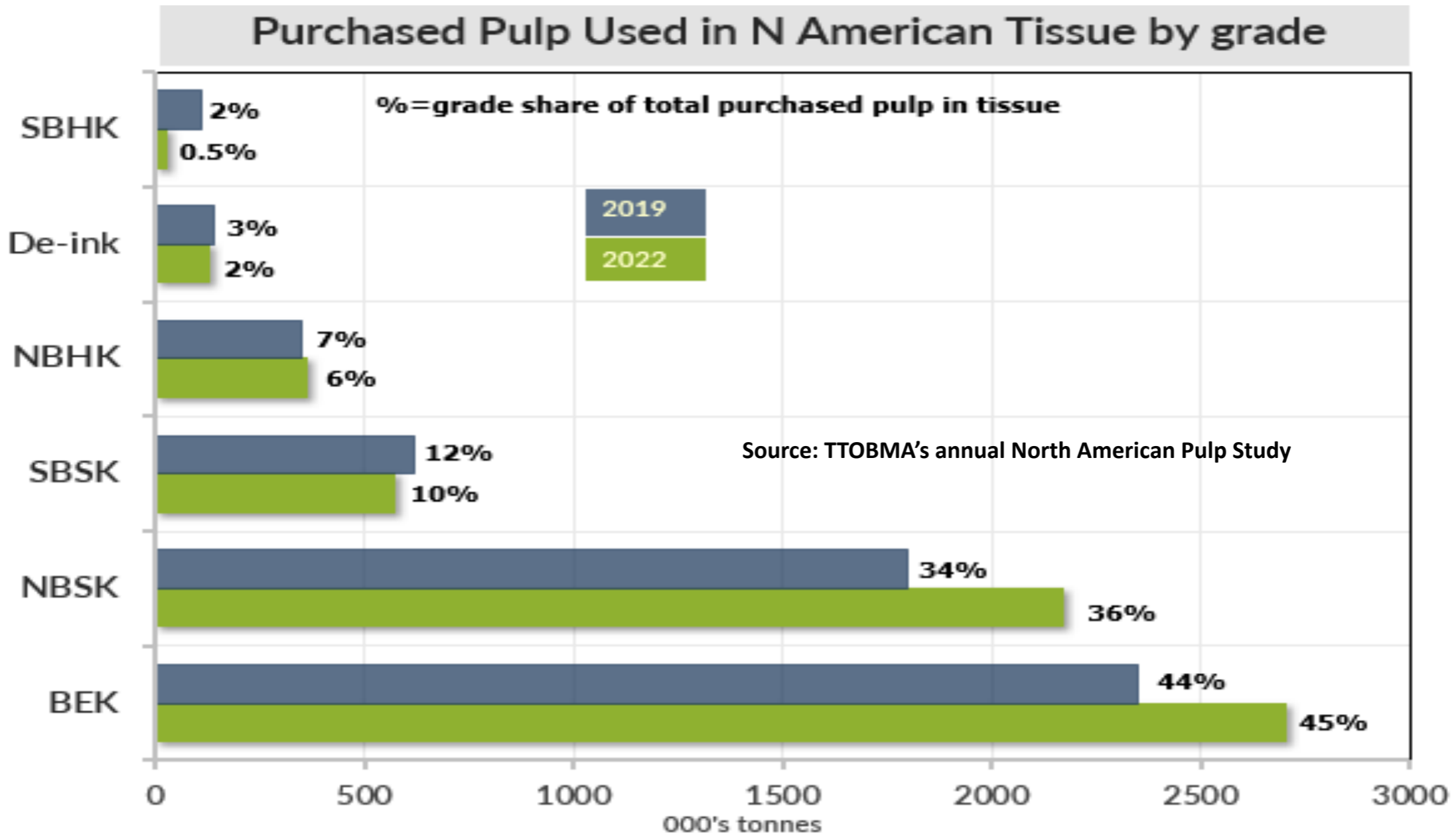
State attorney general is investigating petrochemical companies, accusing them of overstating the role of recycling in reducing plastic pollution

160 United Nations countries negotiating global agreement to reduce plastics pollution by end-2024

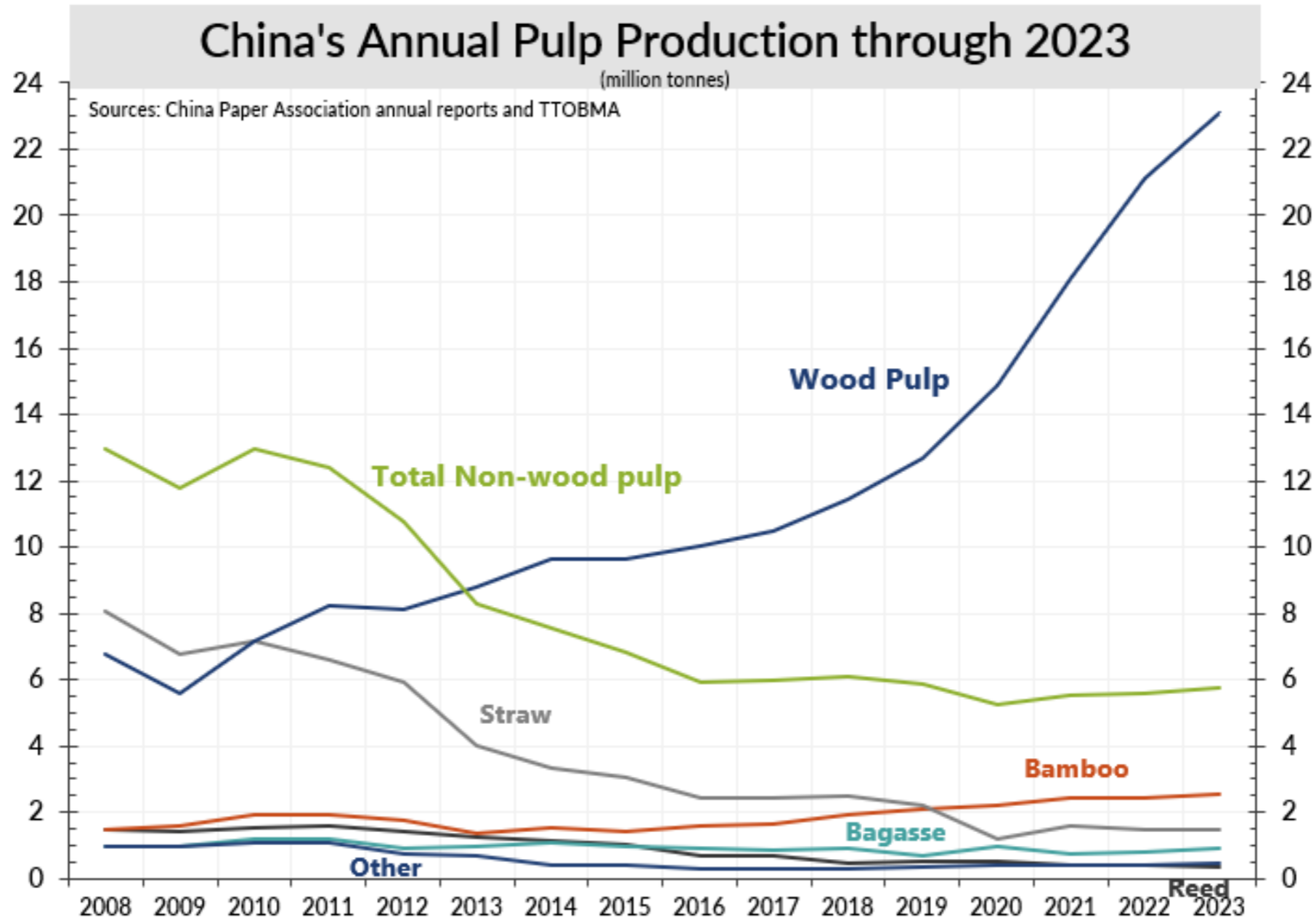
World tissue demand growth 3%/y through 2030



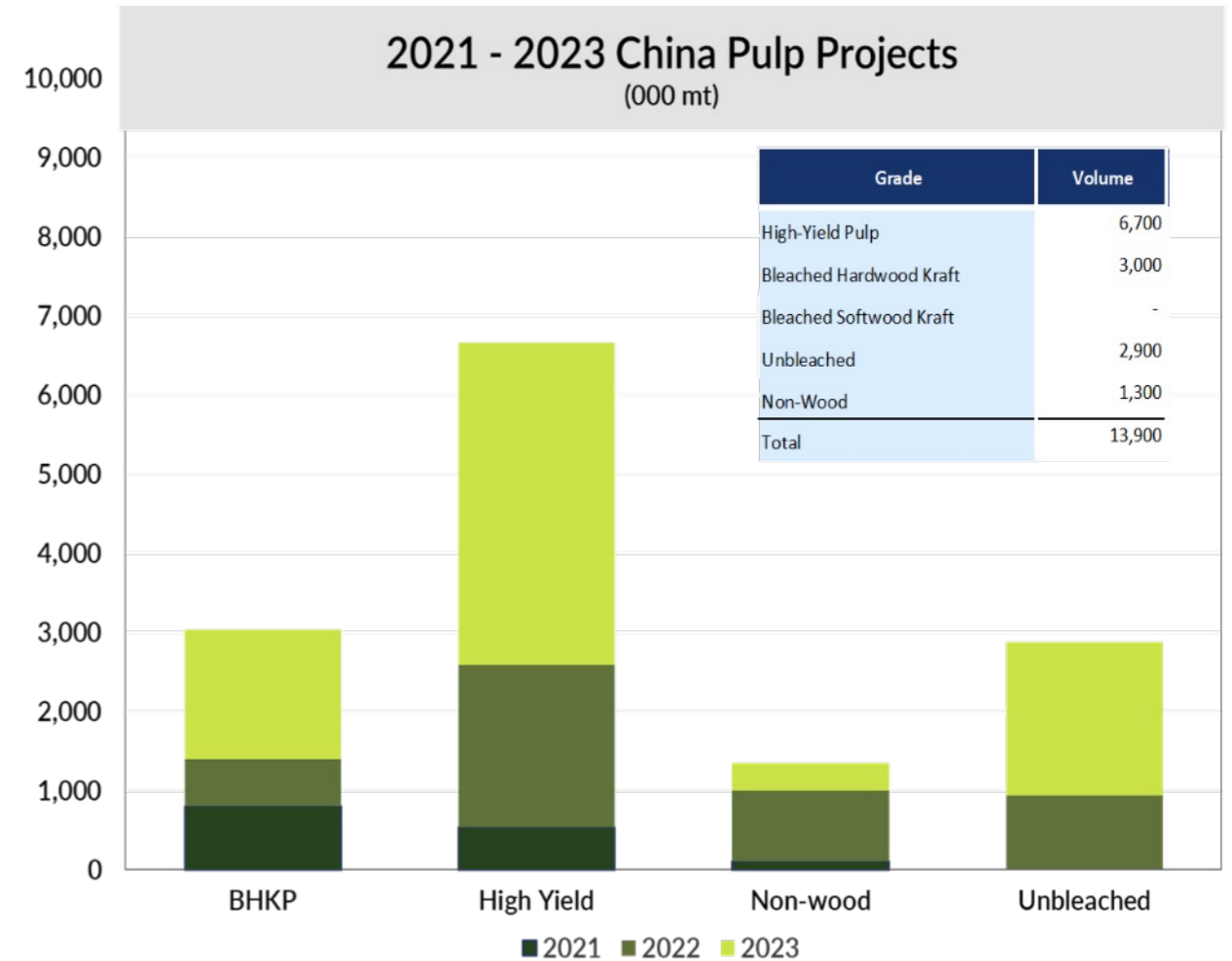
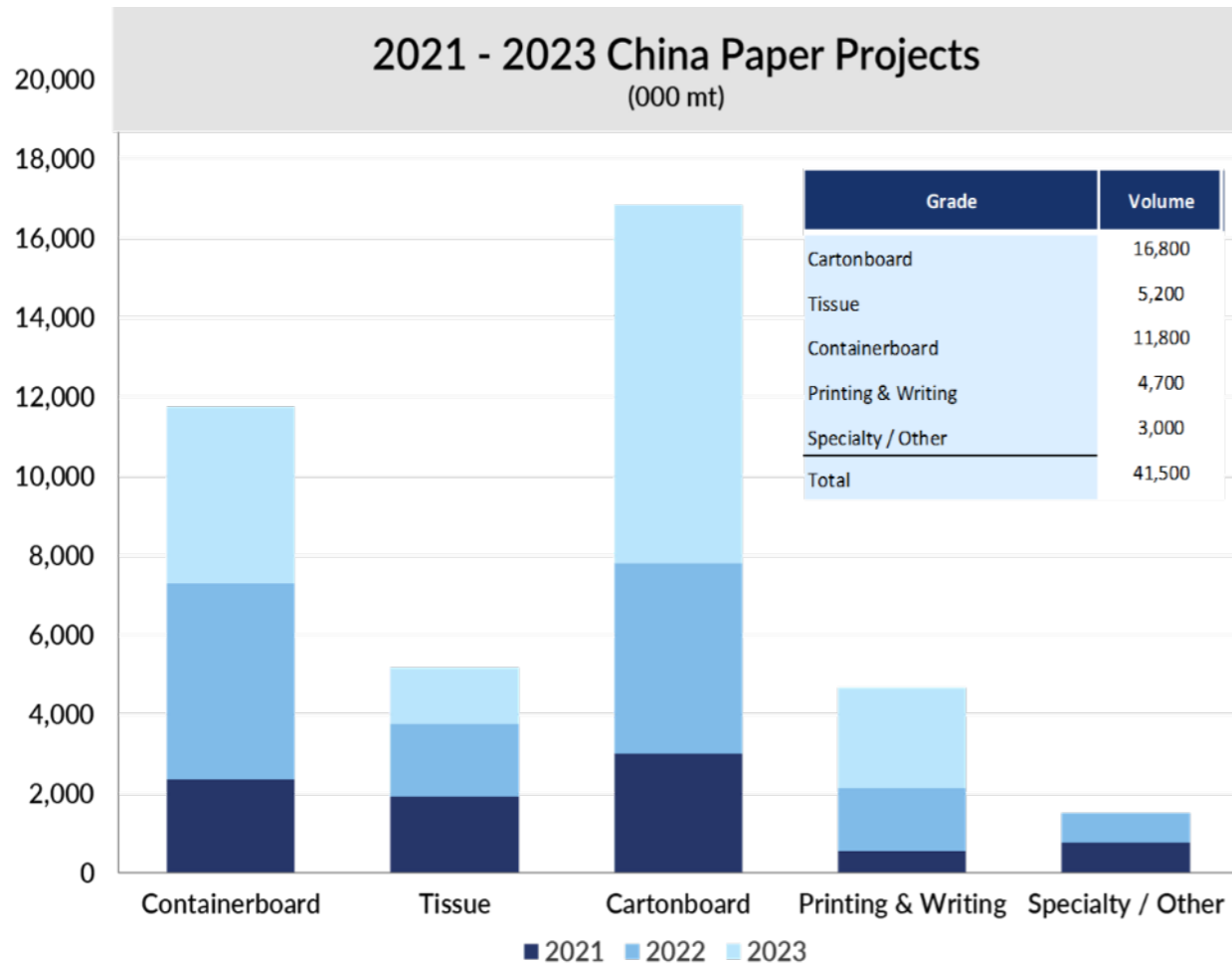
NBSK gaining share of N American tissue furnish



Post-2030 wood pulp supply gap. A Bamboo boom?



Since 2020, China + 40 MM mt paper capacity, +13 MM mt of pulp capacity



China's paper & board exports up almost 100% since 2021

Post-2030 wood pulp supply gap. A Bamboo boom?

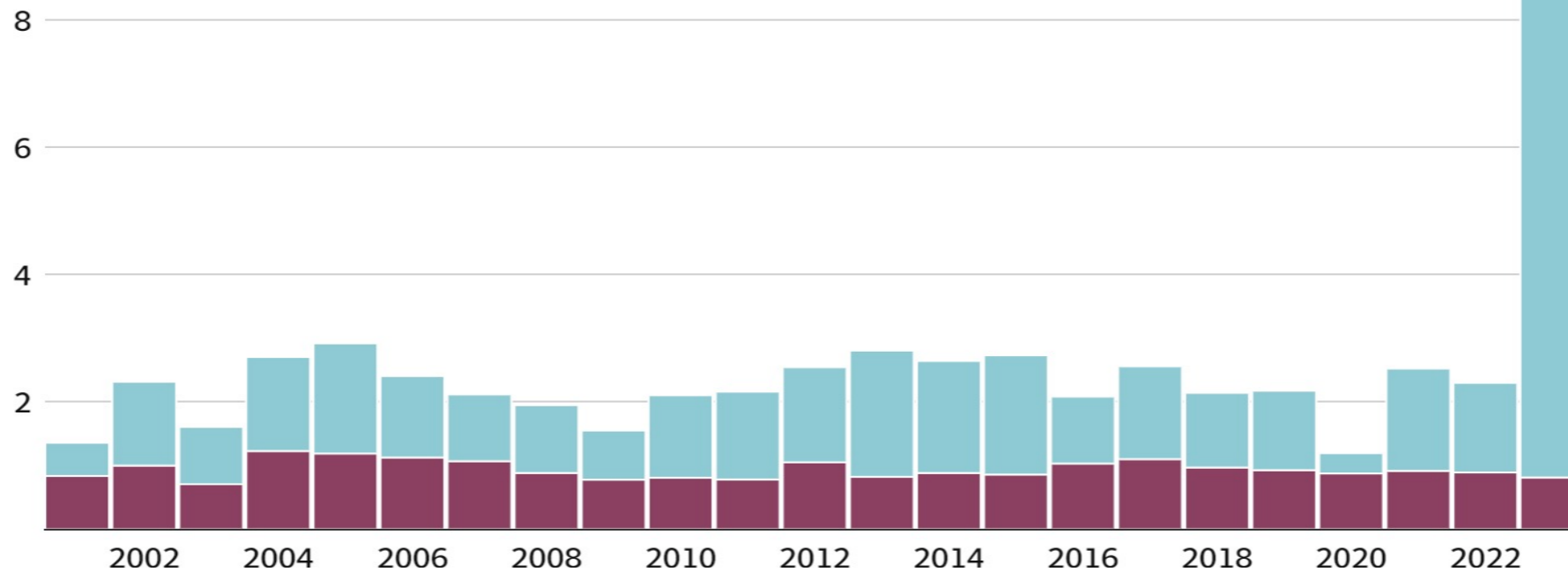
1. Limited locations for new world-scale wood pulp mills.
2. Extended cycles of high pulp prices 2028+
3. = more investment interest in non-wood pulp, especially Bamboo.
4. Bamboo pulp fiber length close to NBSK, 2.5 times longer than BEK
5. Smaller scale, more local supply chains, less ocean logistics risk
6. Still technical challenges - avoids coming deforestation regulations (EUDR)
7. Connects with Green consumers, especially Gen Z (1997-2012) & Gen Alpha (2013+)
8. China government's new Bamboo promotion policy

Canada – forest fires / USA Hurricanes

Tree cover loss in Canada, 2001–2023

In millions of hectares

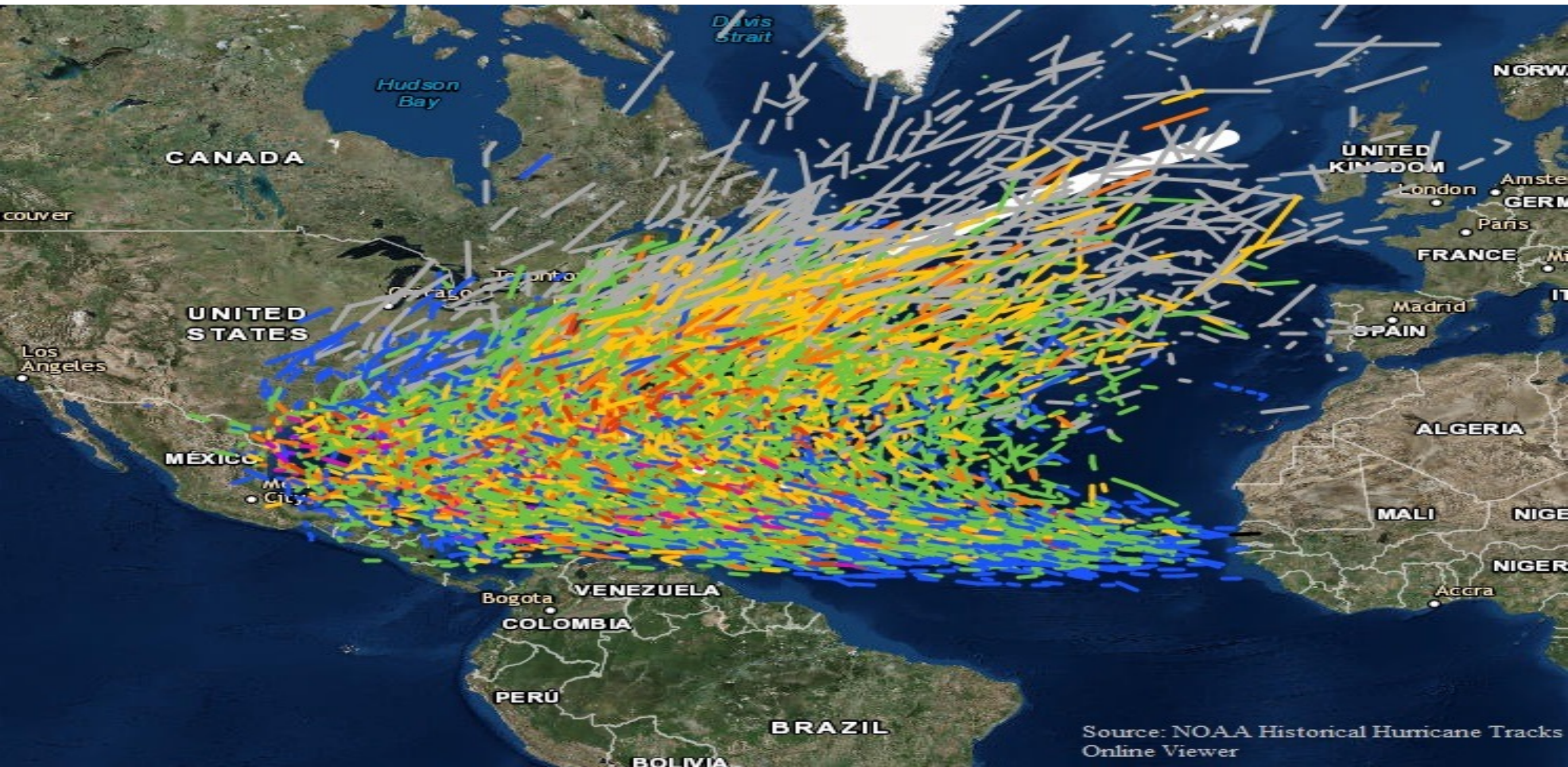
● Non-fire related ● Fire related



2024 Atlantic hurricane forecast shows explosive potential

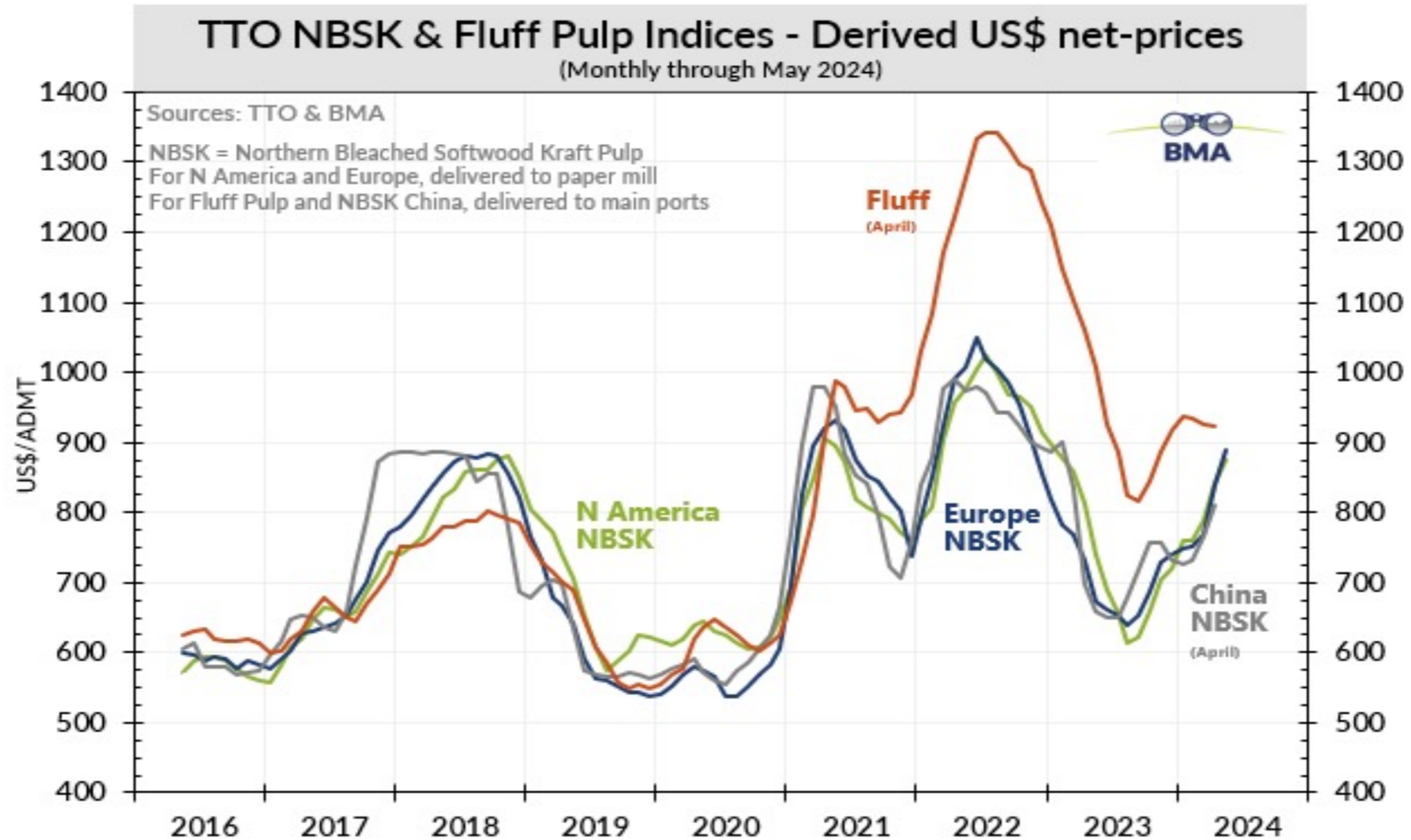
Updated: Apr. 14, 2024, 8:09 p.m. | Published: Apr. 12, 2024, 10:38 p.m.

2024 could be a record Atlantic Hurricane year

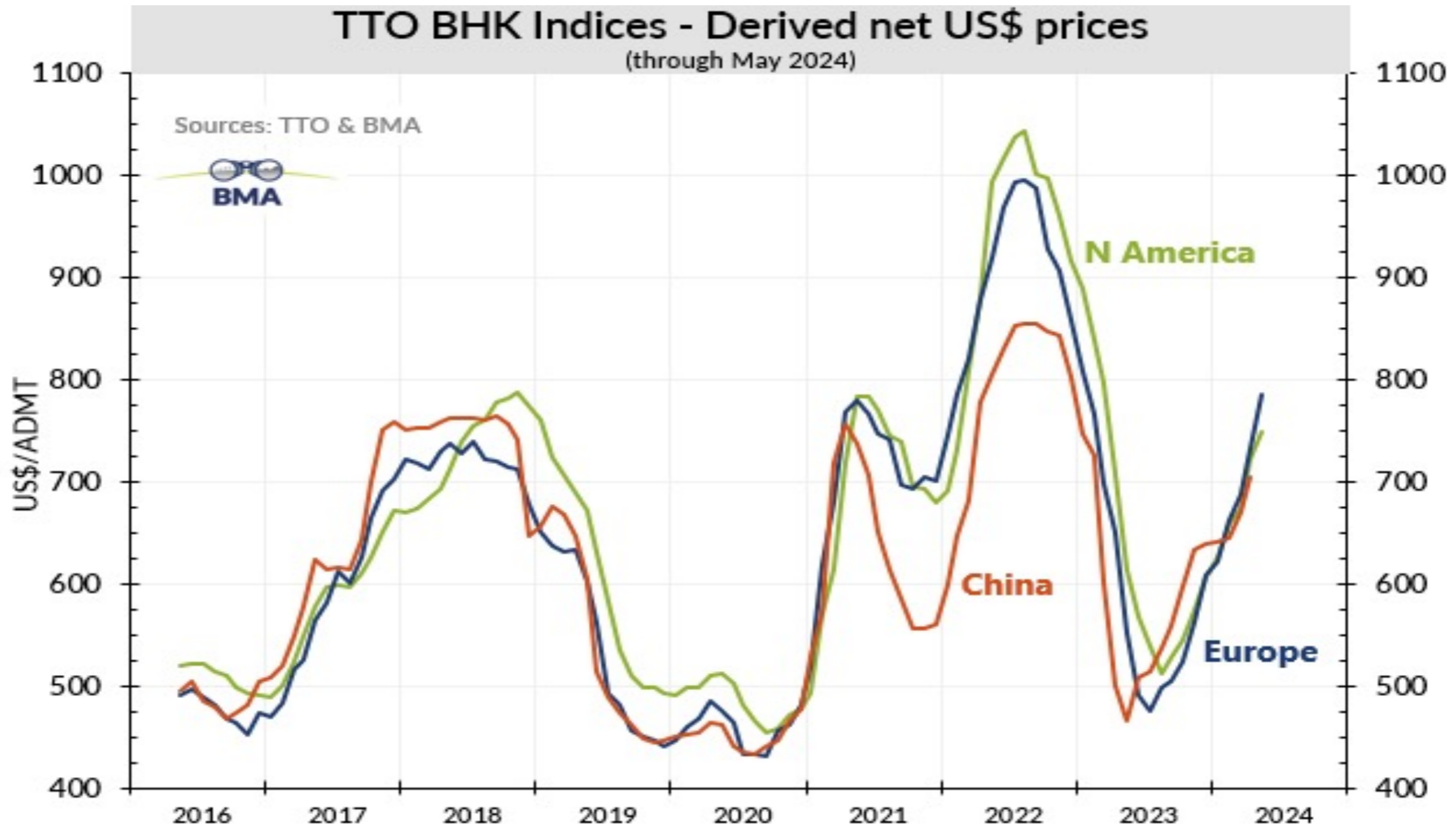


Source: NOAA Historical Hurricane Tracks Online Viewer

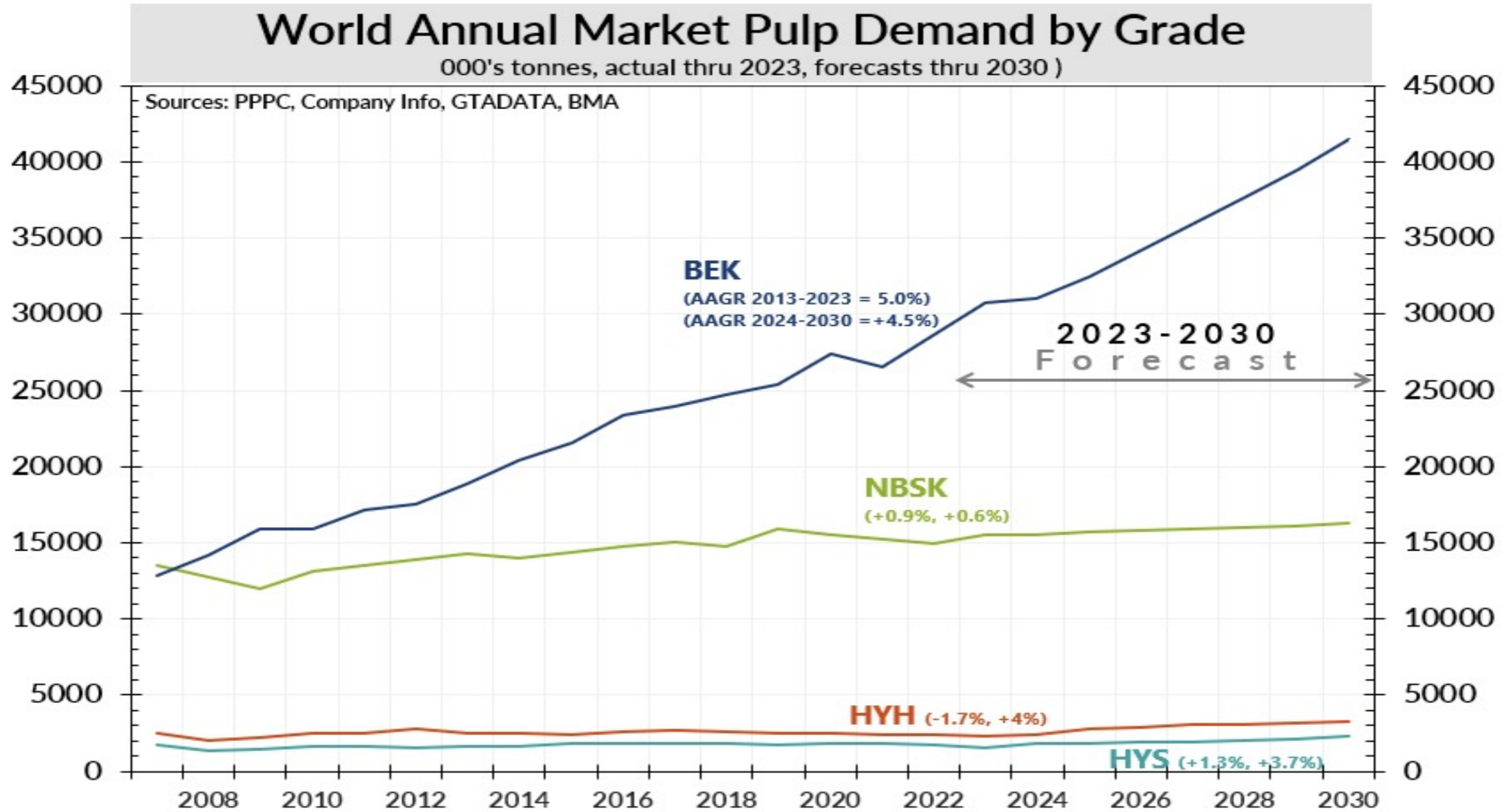
Prices up since mid-2023: strong China buying, less supply



More BHK replacement of BSK, unplanned BHK downtime

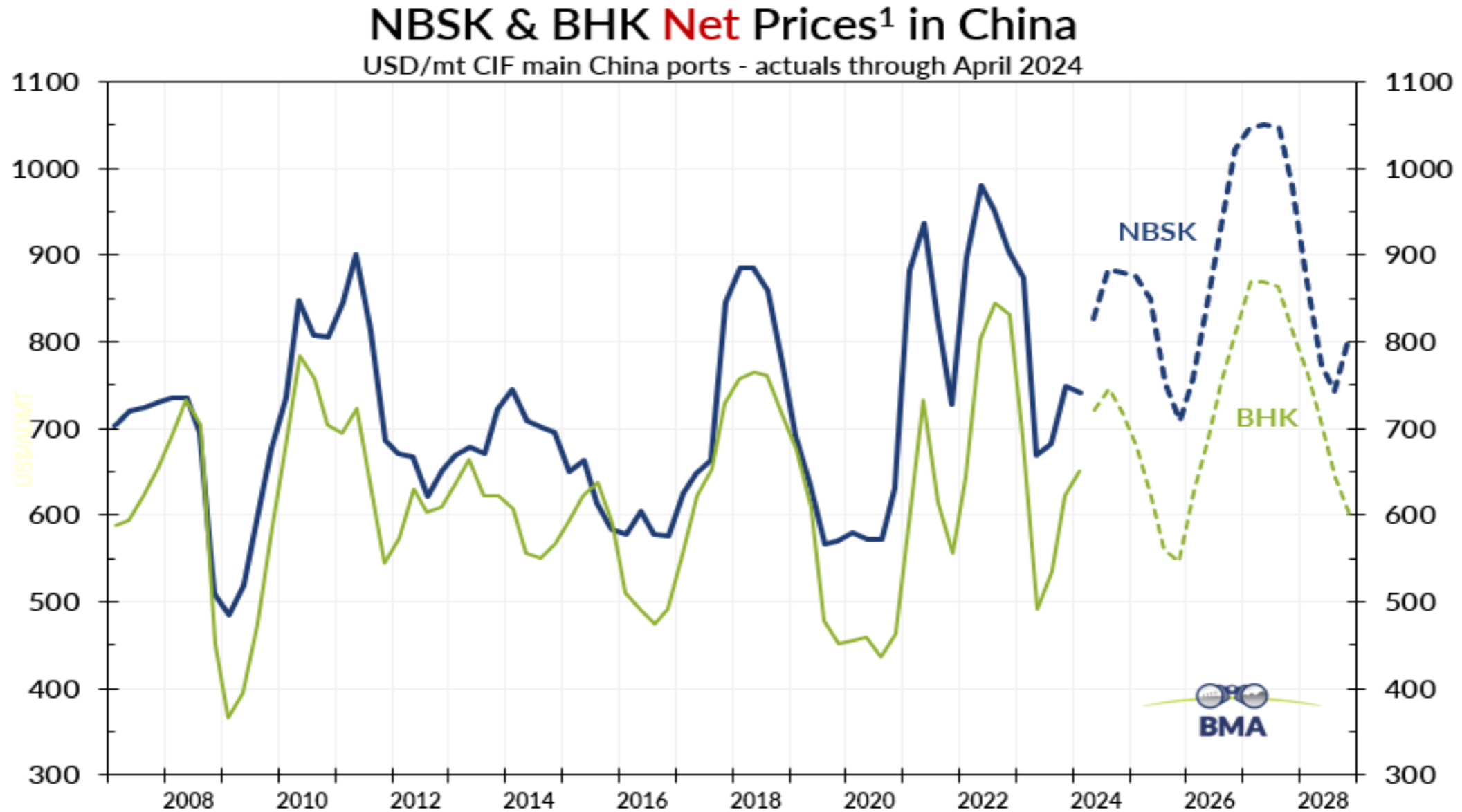


Market pulp demand¹ 100 mmt by 2030; +20 mmt vs. 2023



1) All grades including Dissolving Pulp

Prices up next few months, NBSK premium v. BEK will rise



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Merci!

