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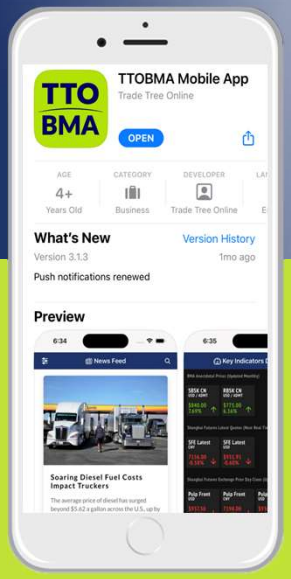
Pulp Market Risks & Opportunities in a Changing Global Climate

Barcelona

14 September 2023

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
- Recovered Paper market coverage



Net-Price Indices

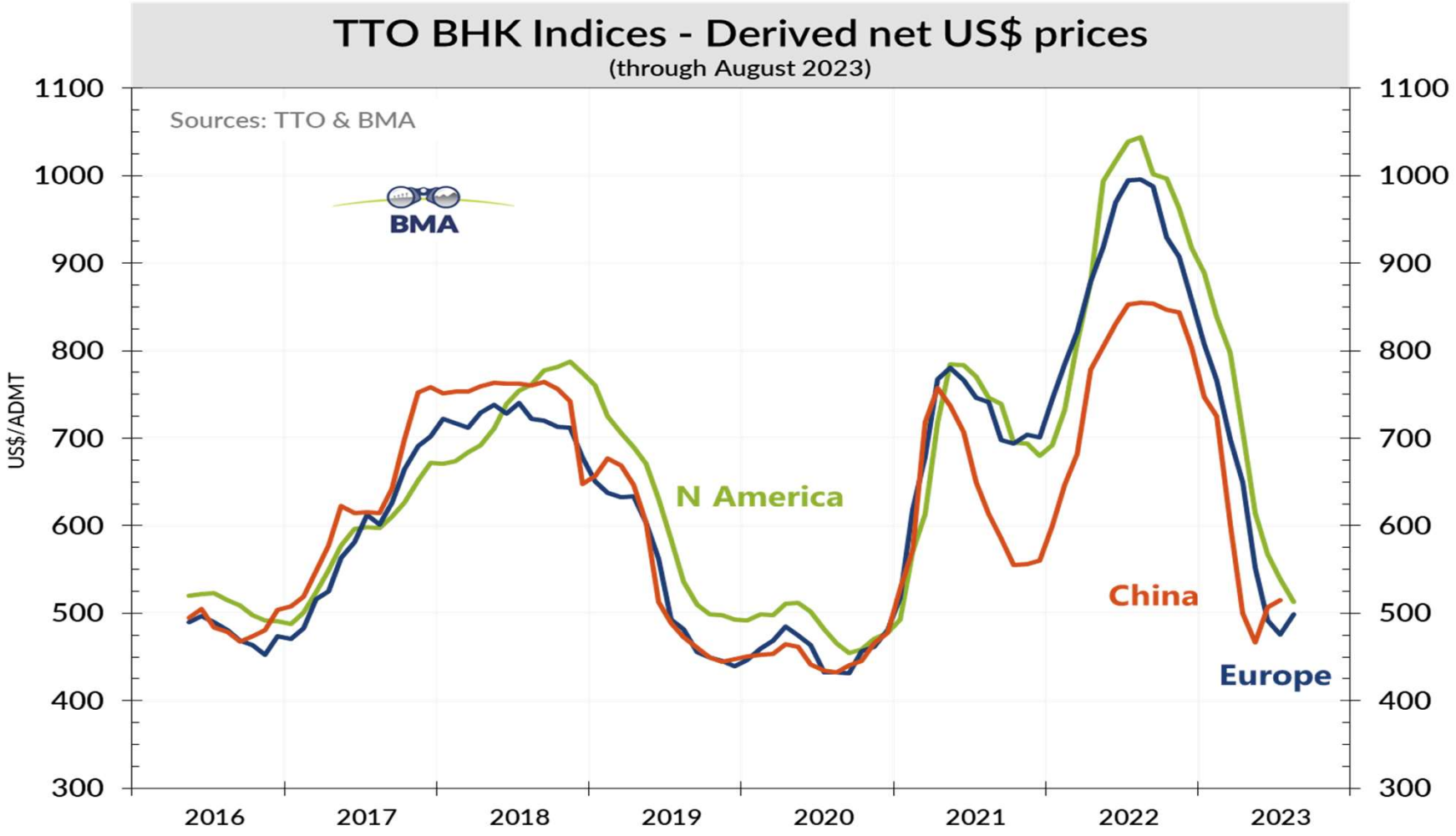
- Open-market net-price indices
- Based on actual transactions
- Available on phone app
- Price indices include: **NBSK, BHK, SBSK, UKP, Fluff pulp, BCTMP and Dissolving pulp in North America, Europe, China and world**
- Recovered Paper Indices**: SOP, OCC, Mixed Paper**

HQ in Fort Mill, SC, USA: *Montreal, Montevideo, Dubai, Shanghai*

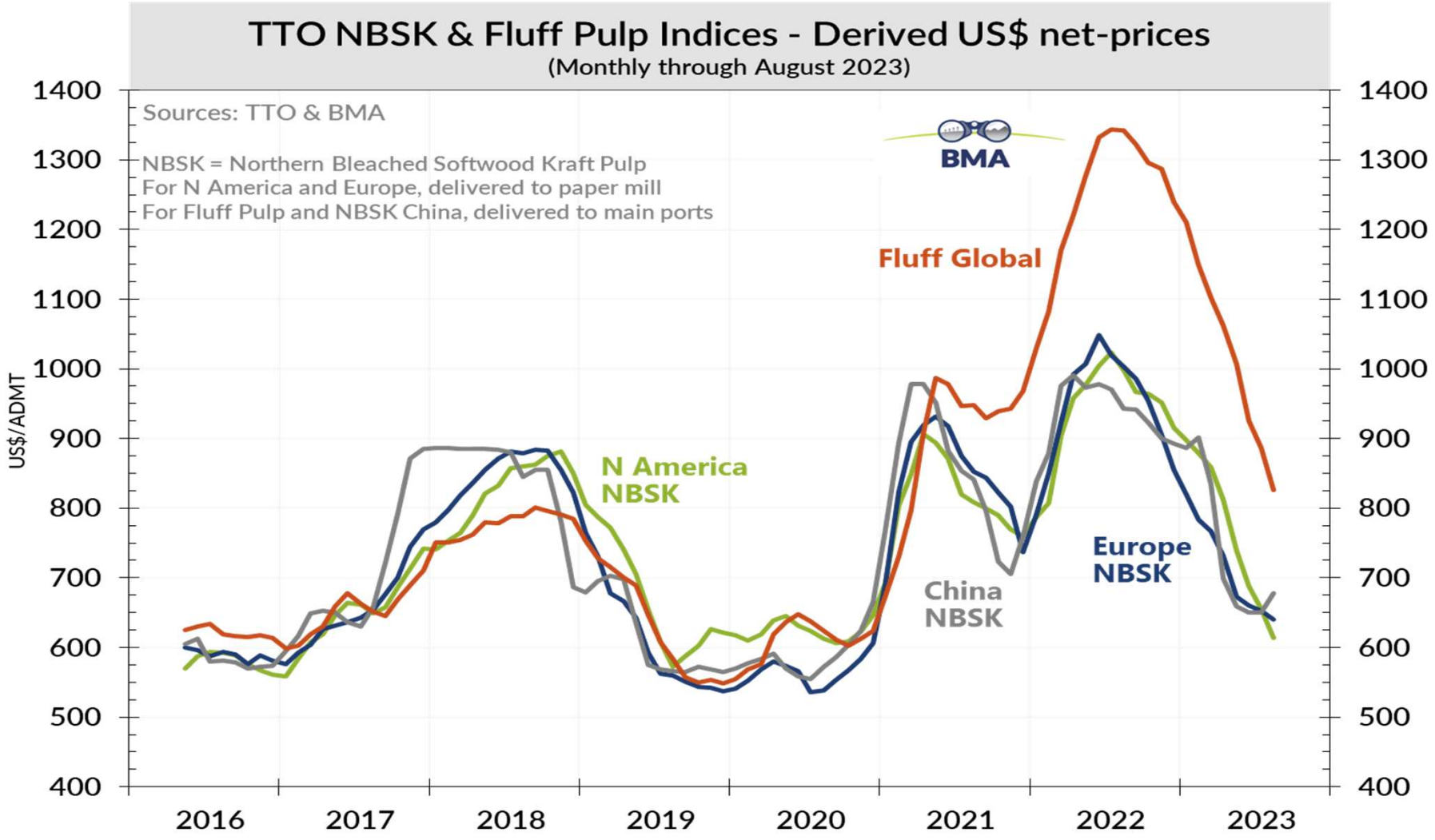
Market Pulp 2022: 78 mm tonnes, $70 bn (+25% y/y)

1. Changing global climate – weather, society, economic, political
2. China has driven demand …… now what?
3. Supply-shock driven business
4. Recovered paper utilization rate is peaking
5. A less-plastic world
6. Less graphic paper, more tissue, hygienic products & packaging
7. Sustainability – much easier said than done
8. Riskier business – need real market price indices

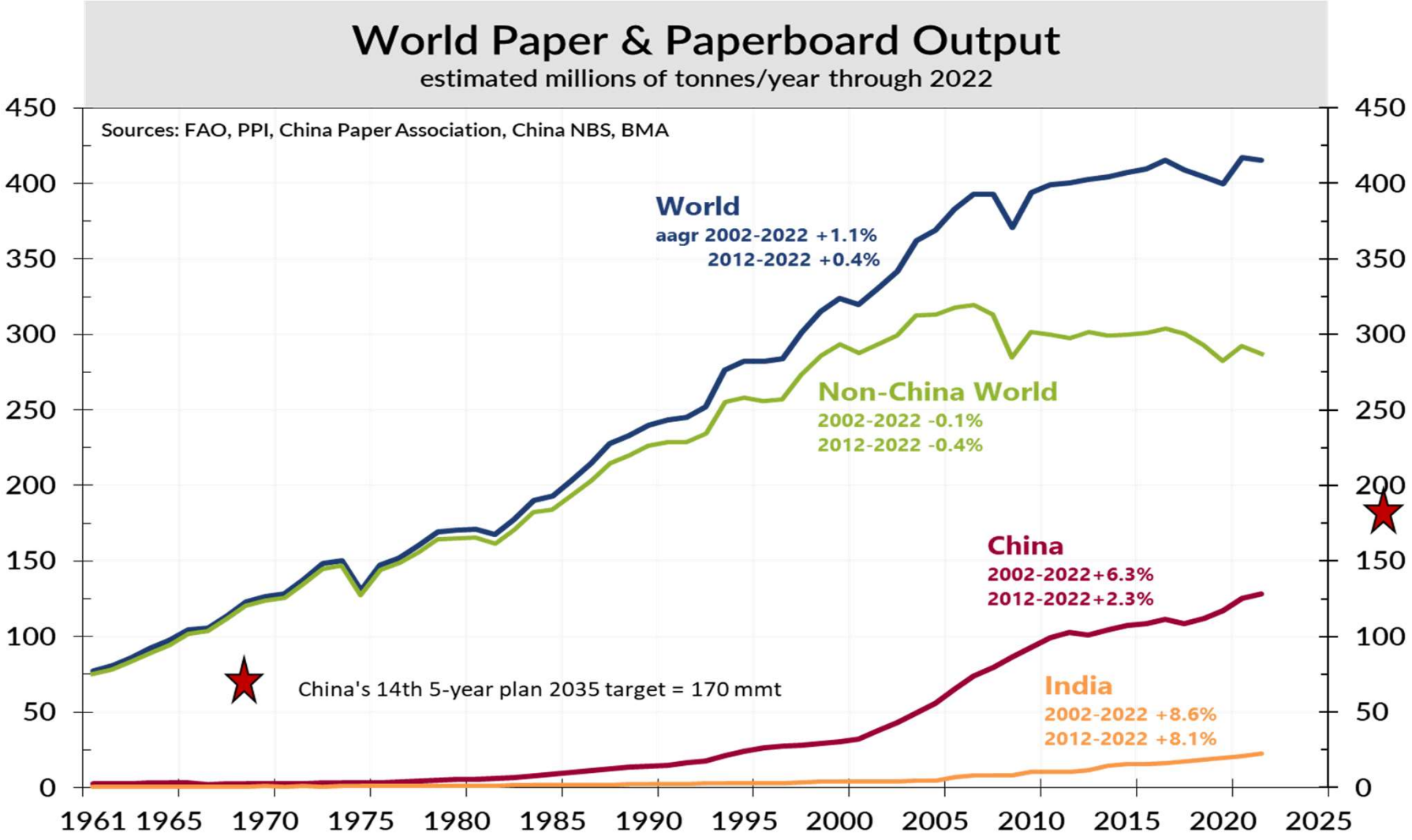
Europe, NA down 50% since Aug 22 peaks – China -40%



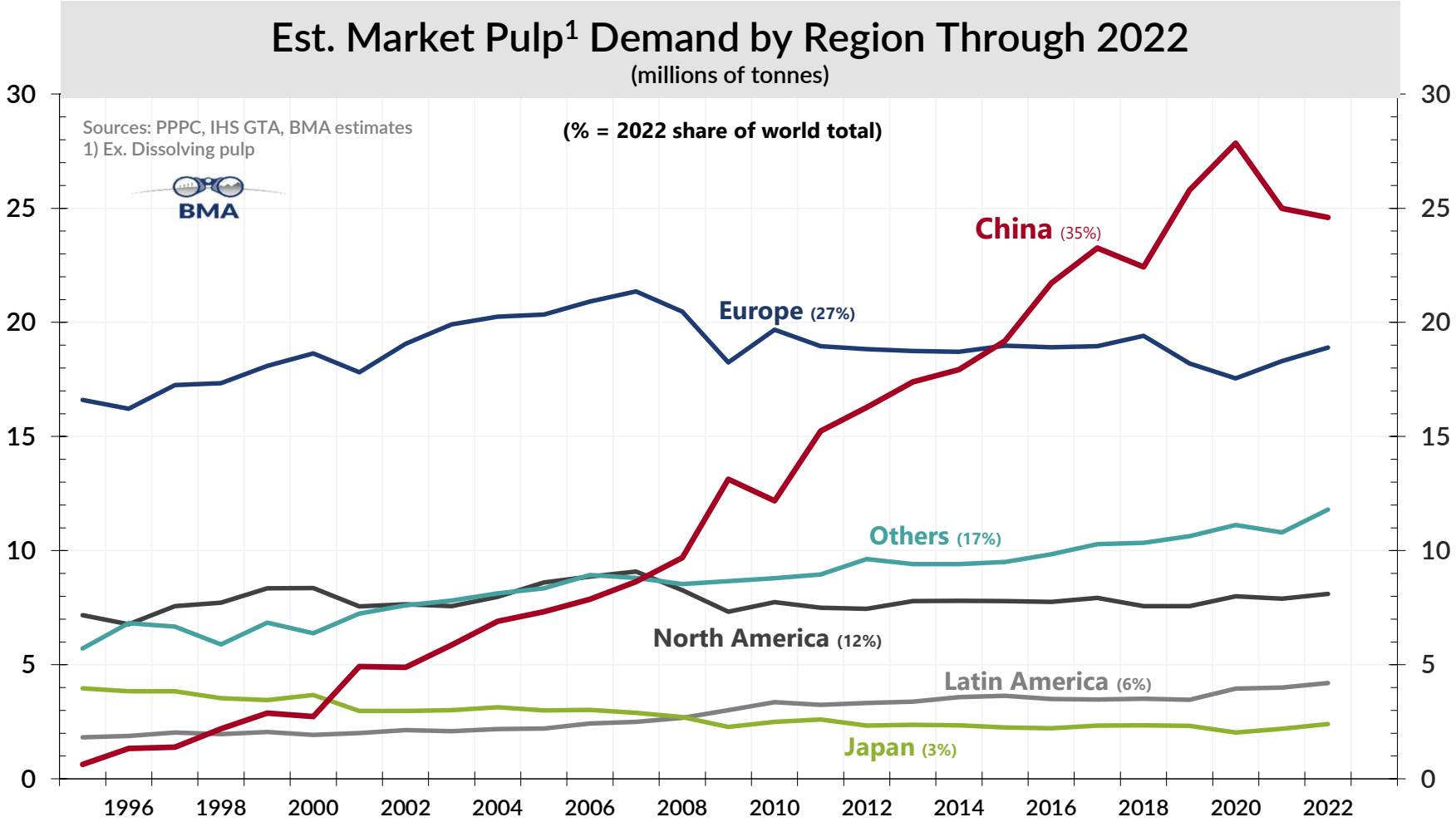
Softwood down 35-40% since mid-22 peaks



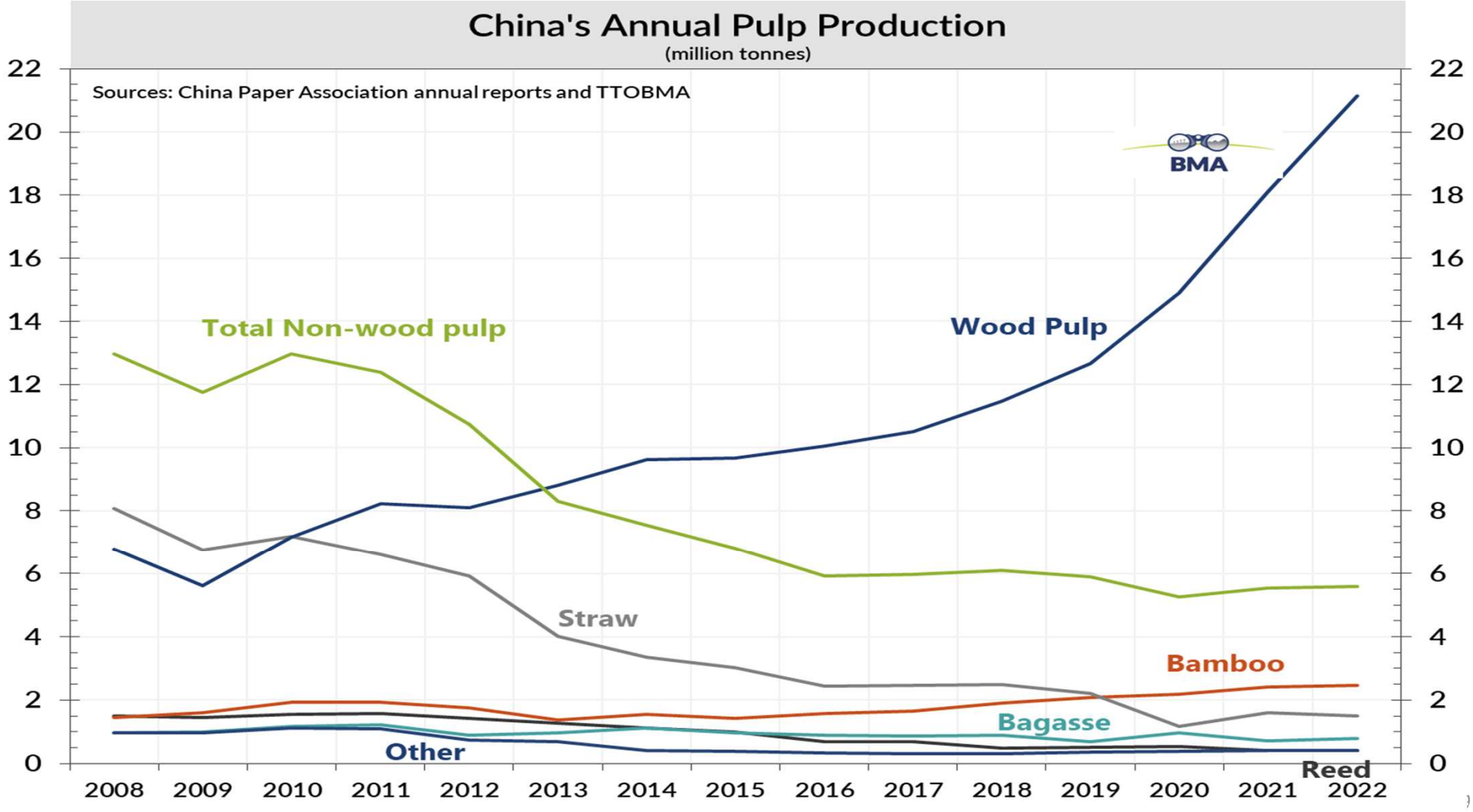
China has driven world paper output growth since 2001



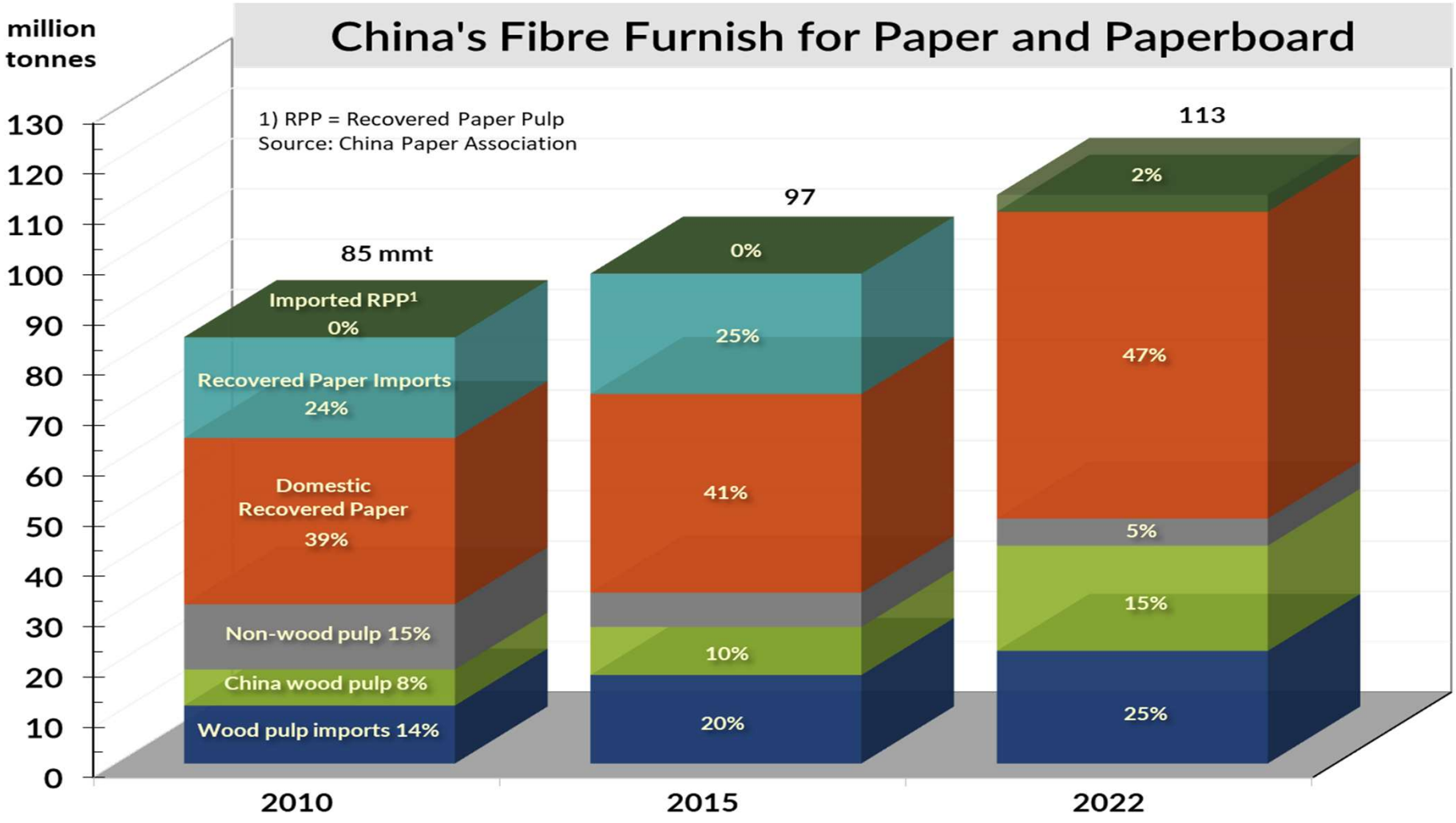
China is biggest pulp buyer – and riskiest



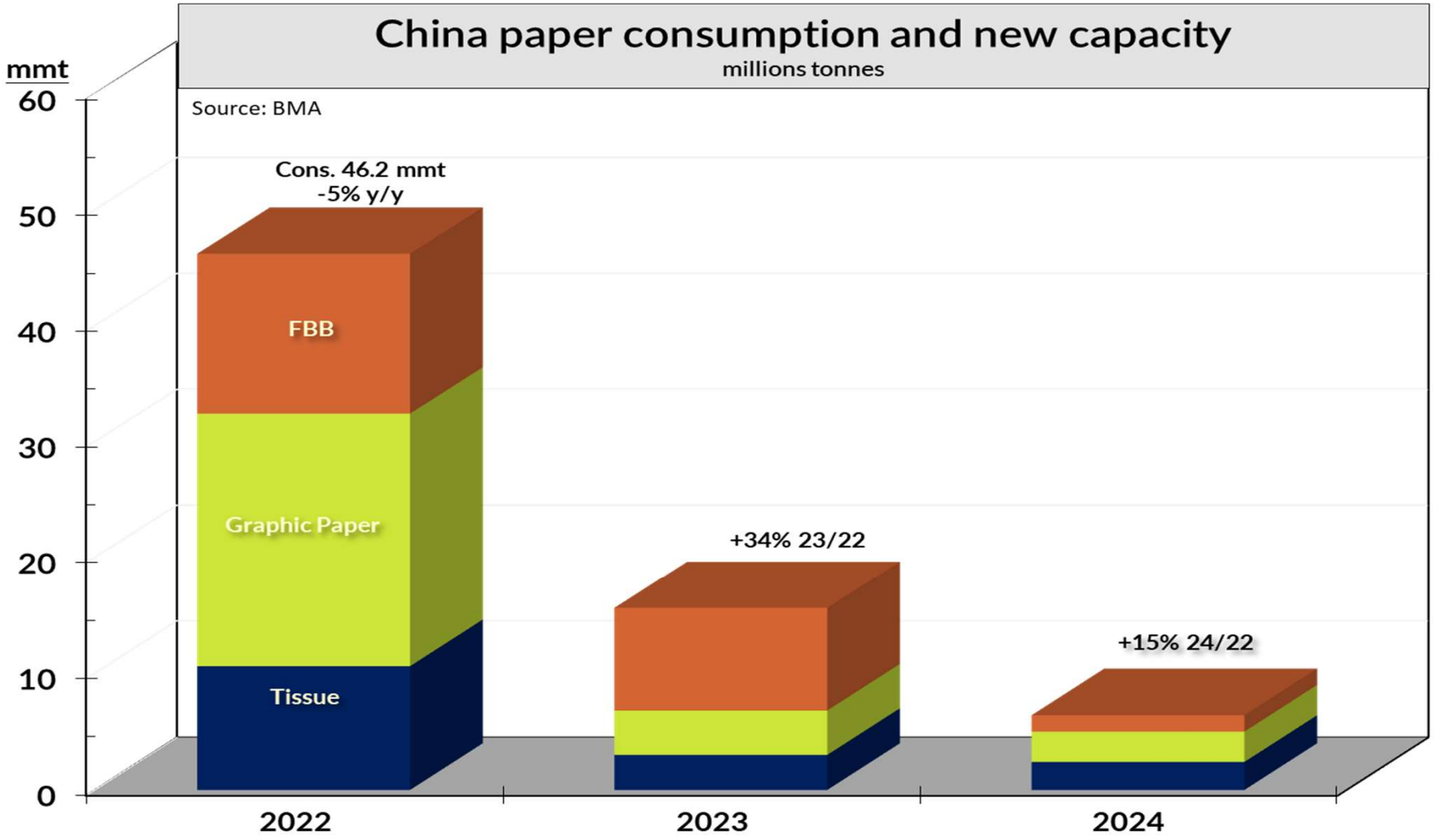
China’s pulp output surging



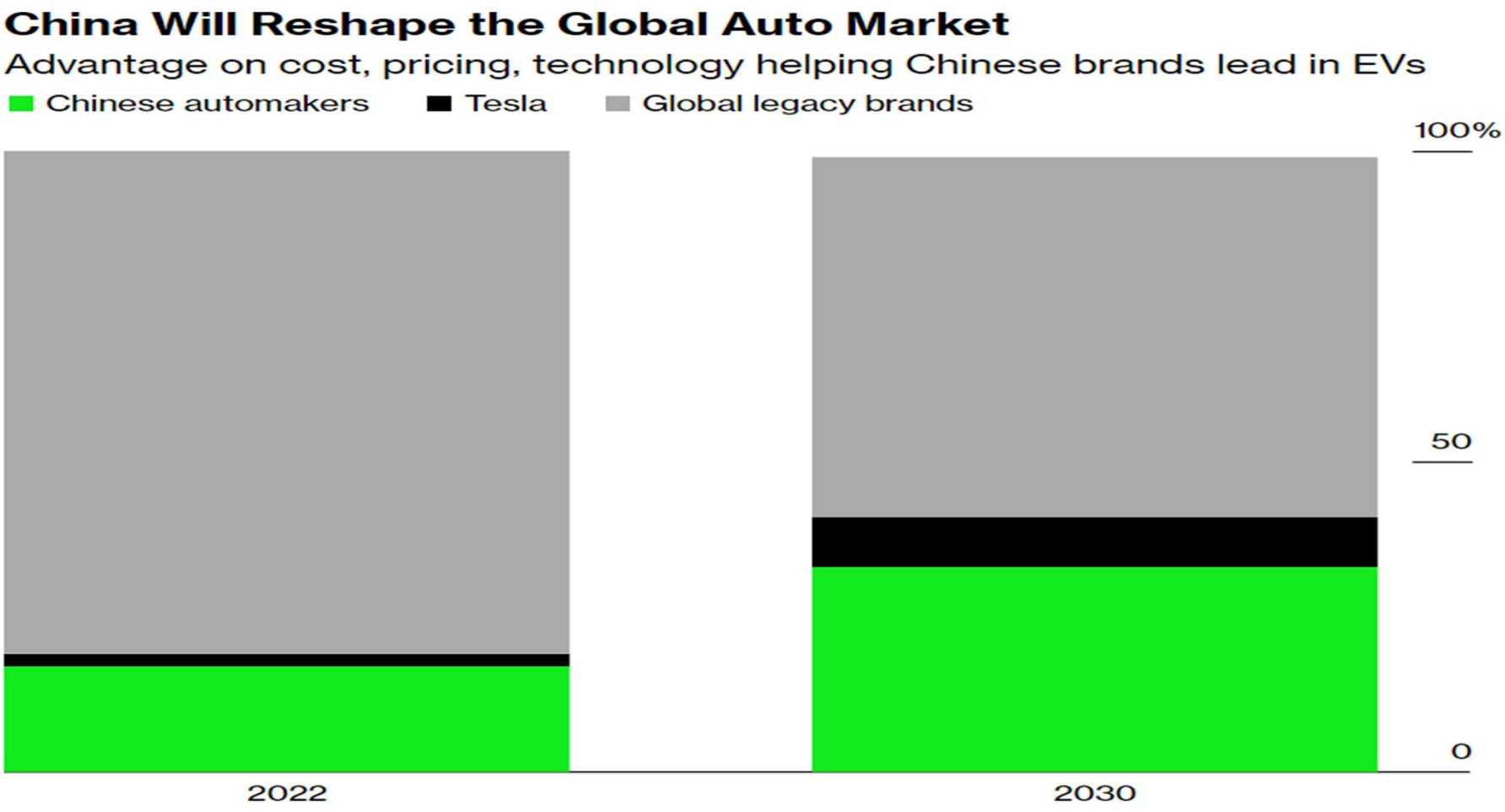
Rising domestic pulp and recovered paper pulp imports



China must export more paper – AD/CVD & carbon border tax issues?



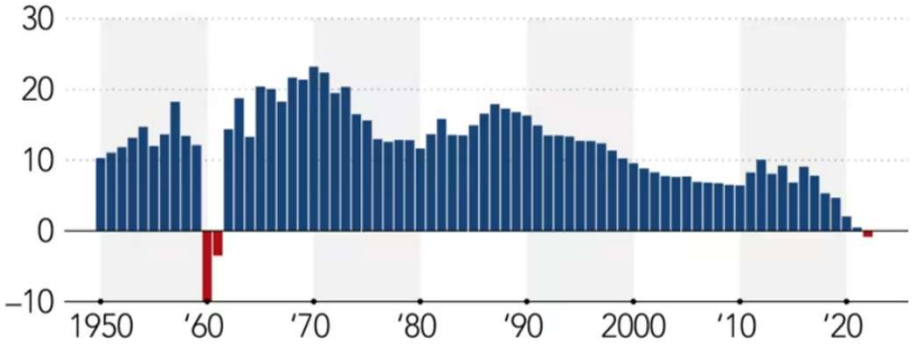
China's paper exports to soar, like EVs - good and cheap



China's population heading significantly lower

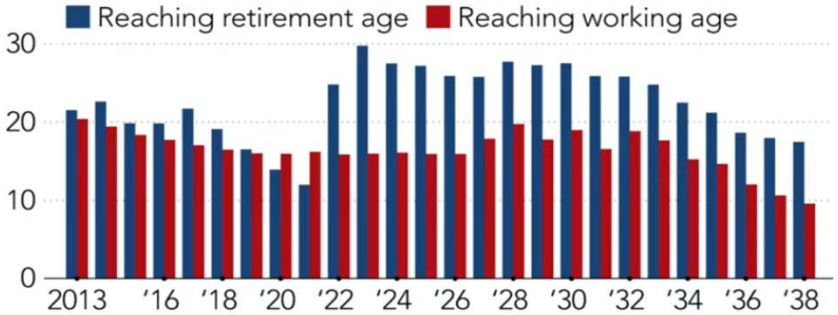
- India surpassed China's population in April 2023 month to 1.425 billion
- Down to 600 million by 2100
- No longer the world's low-cost factory
- Main national pension plan bankrupt by 2035

China's population fell in 2022 for the first time in six decades *(Annual change in population, in millions of people)*



Source: National Bureau of Statistics of China

New retirees in China set to far outnumber new workers for the next 15 years *(Estimated number of people reaching retirement age of 60* and working age of 16, in millions)*



**Men and women retire at different ages in China, but all genders are legally retired by the age of 60*
Source: National Bureau of Statistics of China, Nikkei Asia research

Recent climate news

Cyclone rips through southern Brazil bringing deadly floods

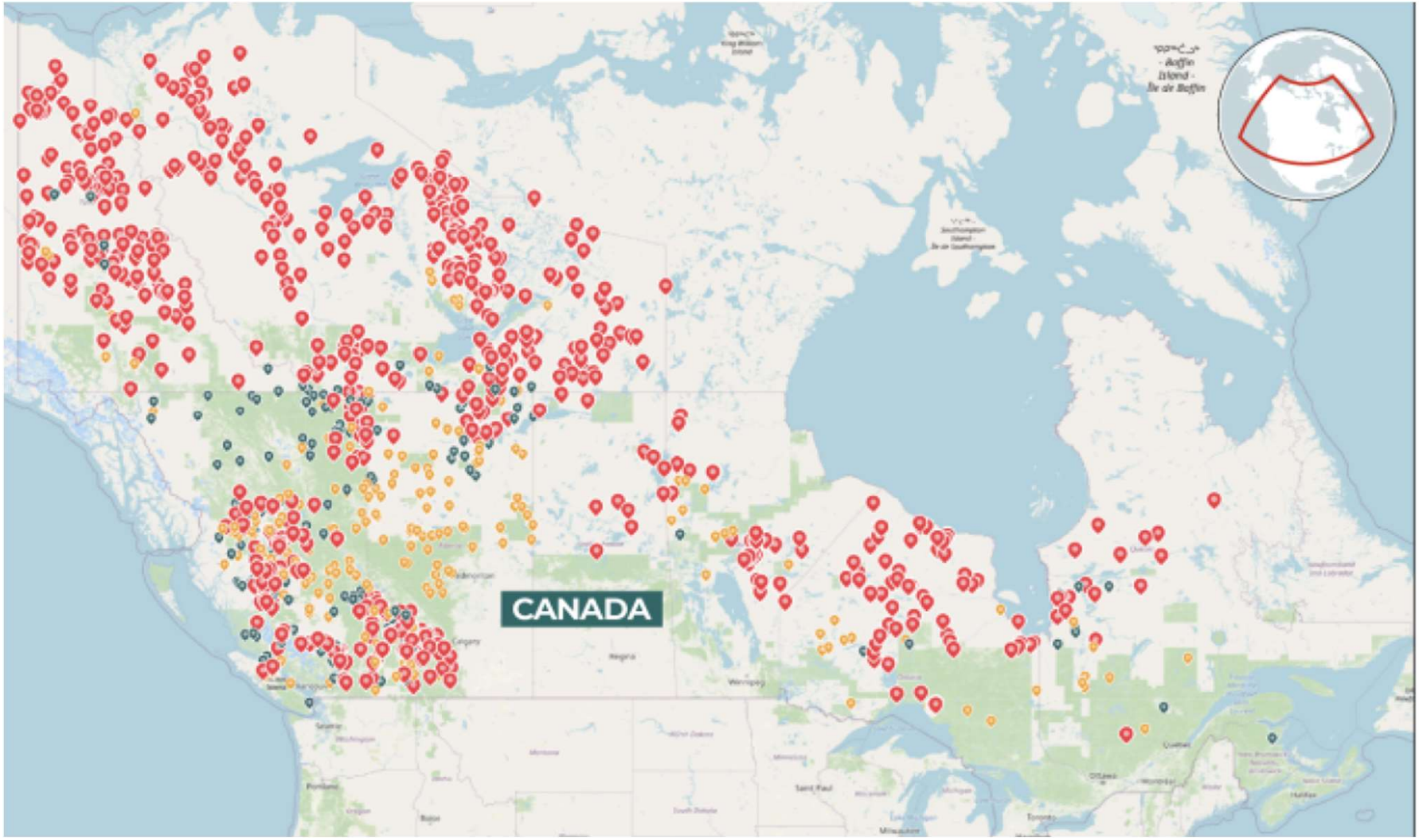
'Sleeping giant' drought threatens more disasters after record Canada wildfires

July was Earth's hottest month on record with 'dire consequences' for people and planet

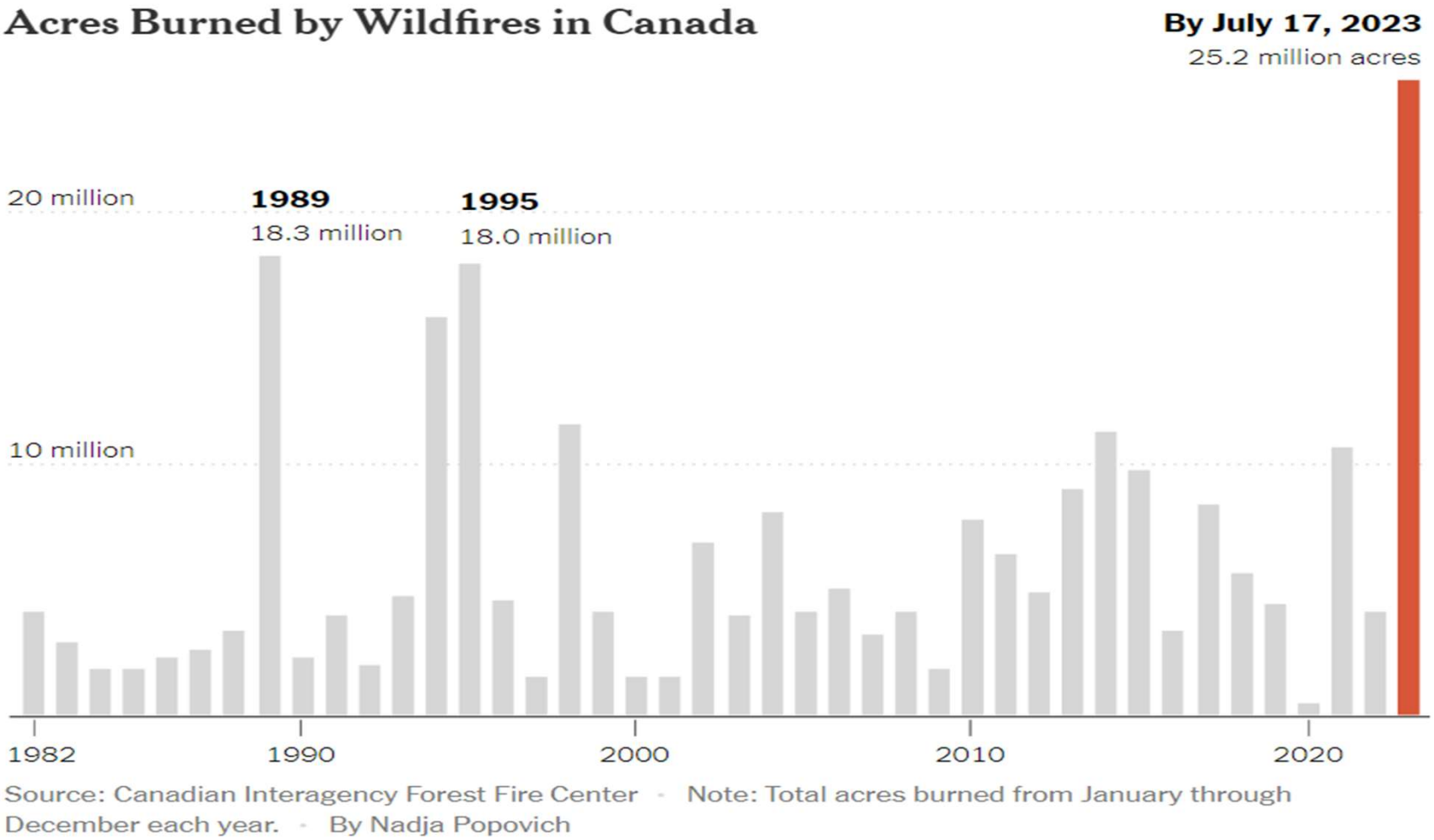
Chile: At least three killed, 31,000 evacuated in 'historic' floods

Record-breaking 52.2°C temperature hit China on Sunday, stoking fears of drought

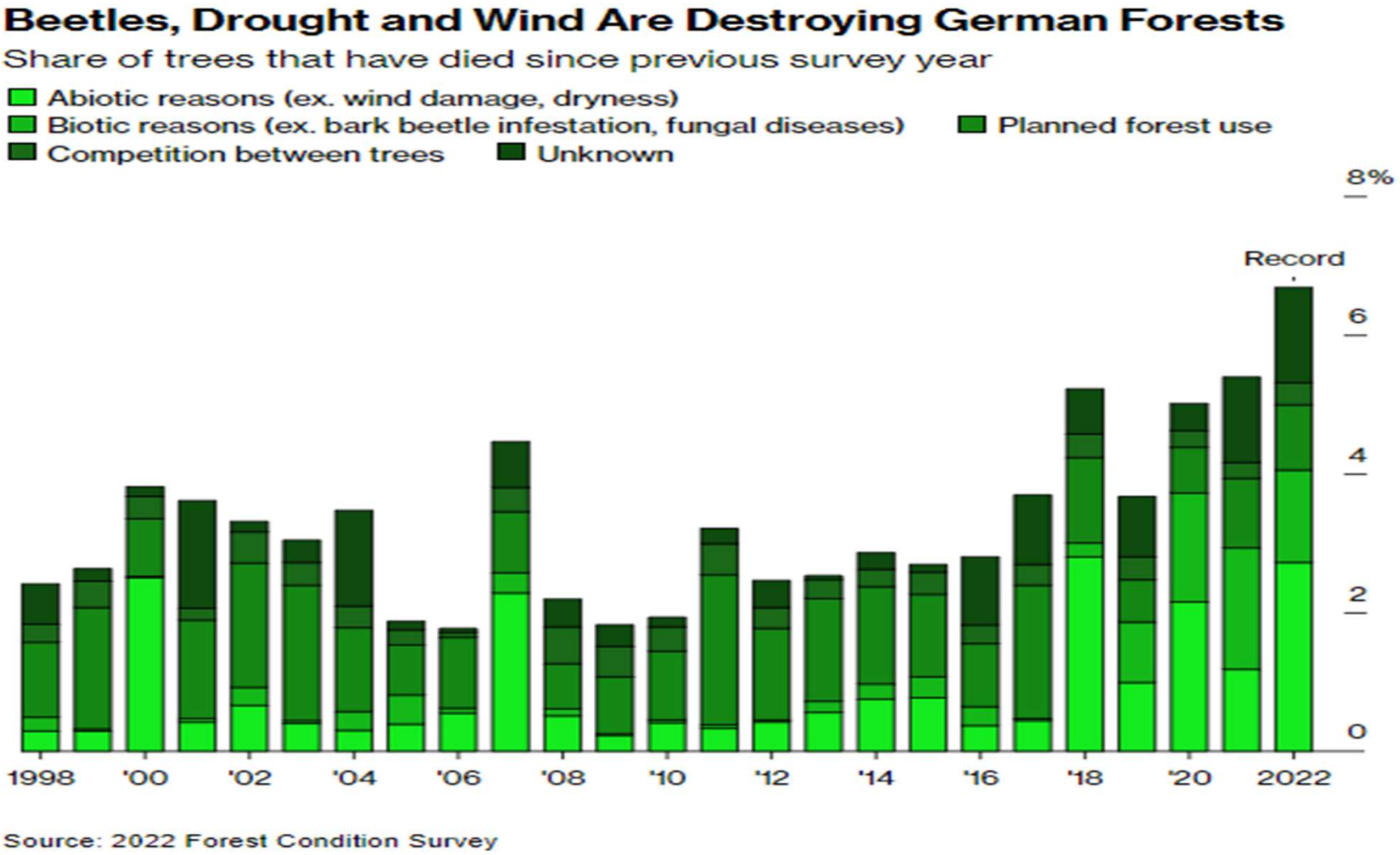
3 weeks ago, still 1000 fires burning in Canada



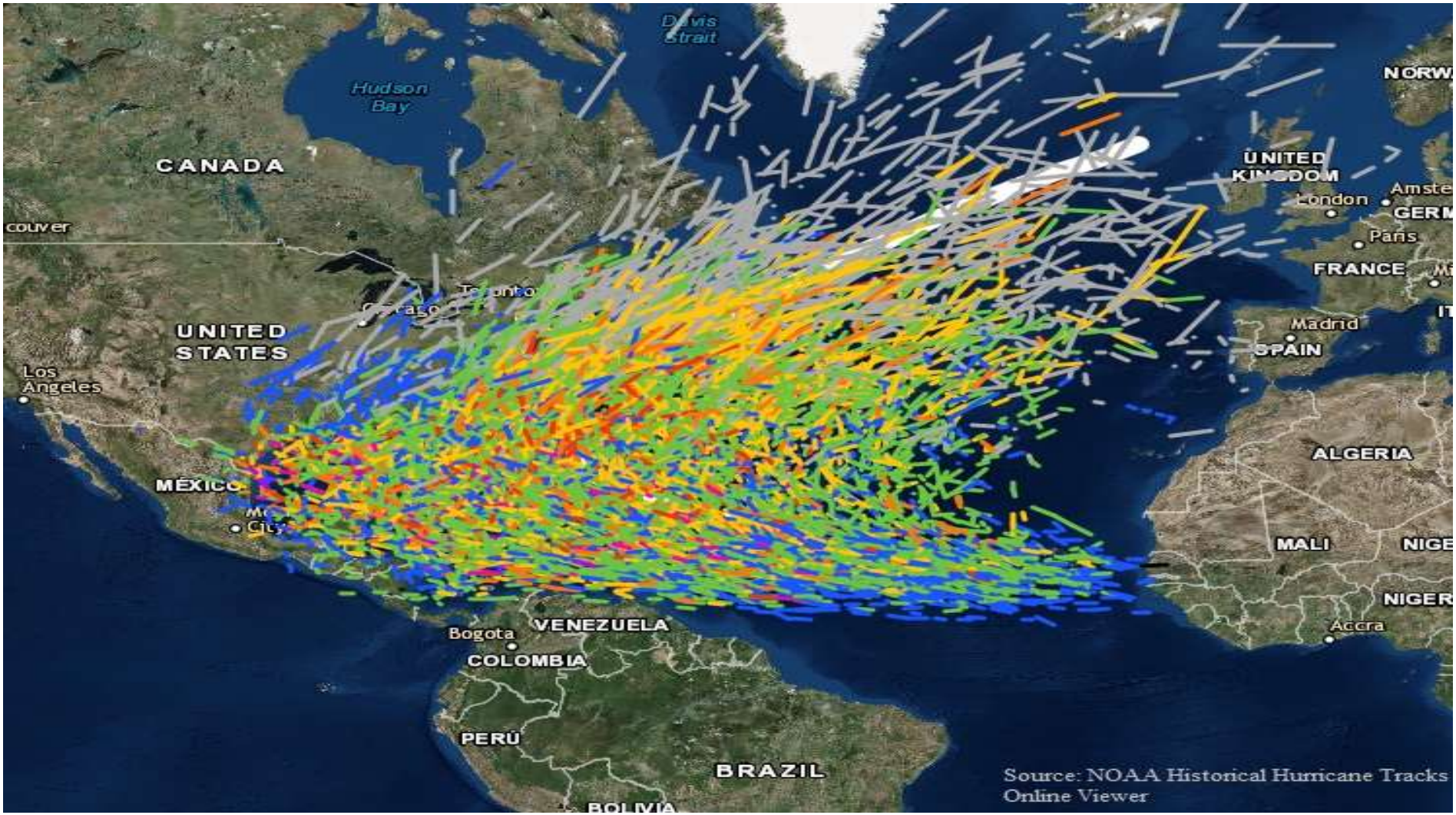
Record-high Canada forest area burnt – 1.5 Portugal's total land area



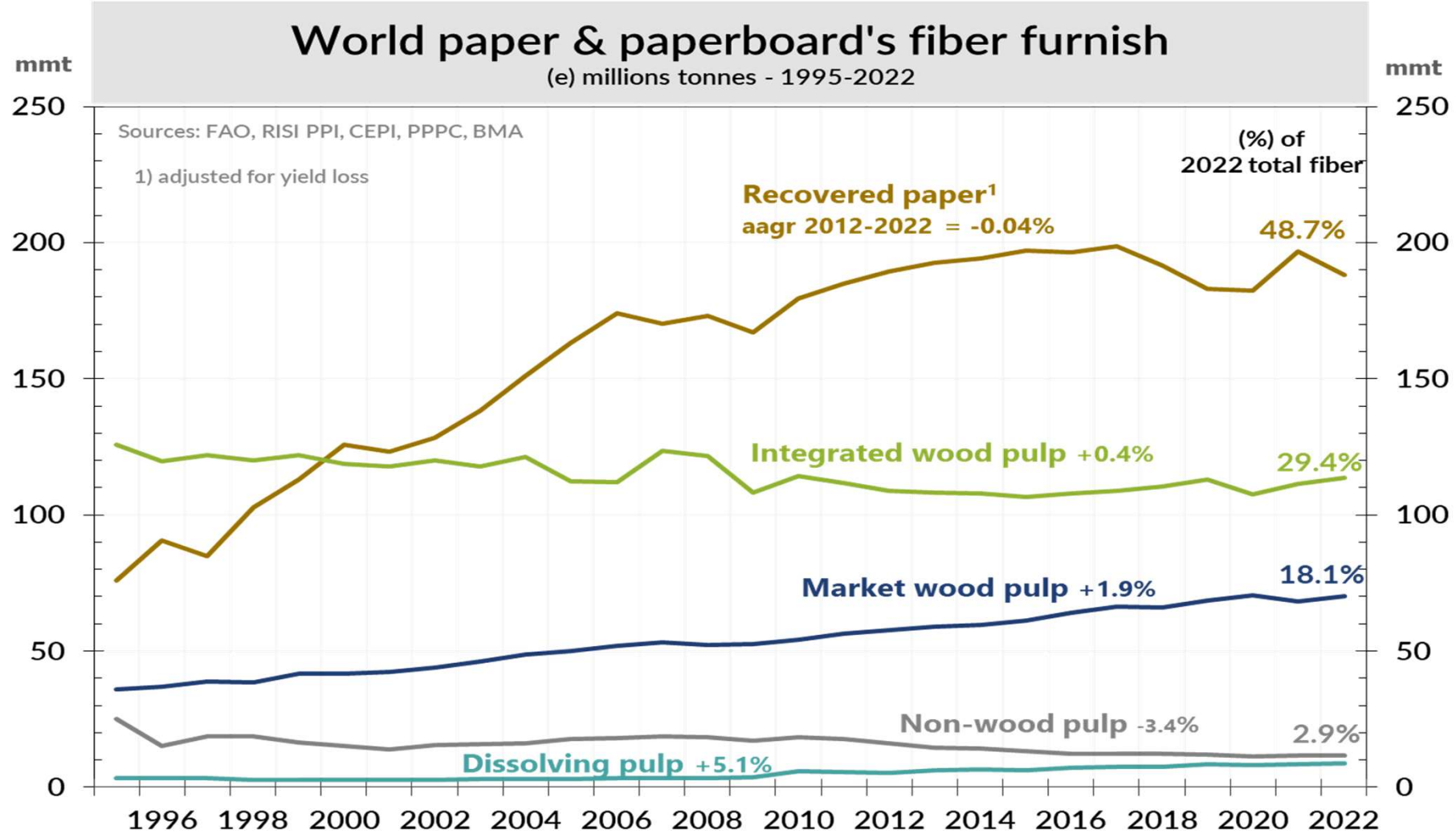
Not just Canada but Chile, Russia, Europe



80+% of world fluff pulp supply in Hurricane ally



Recovered paper utilization rate is peaking



Increasing demand/policies for a less-plastics world

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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

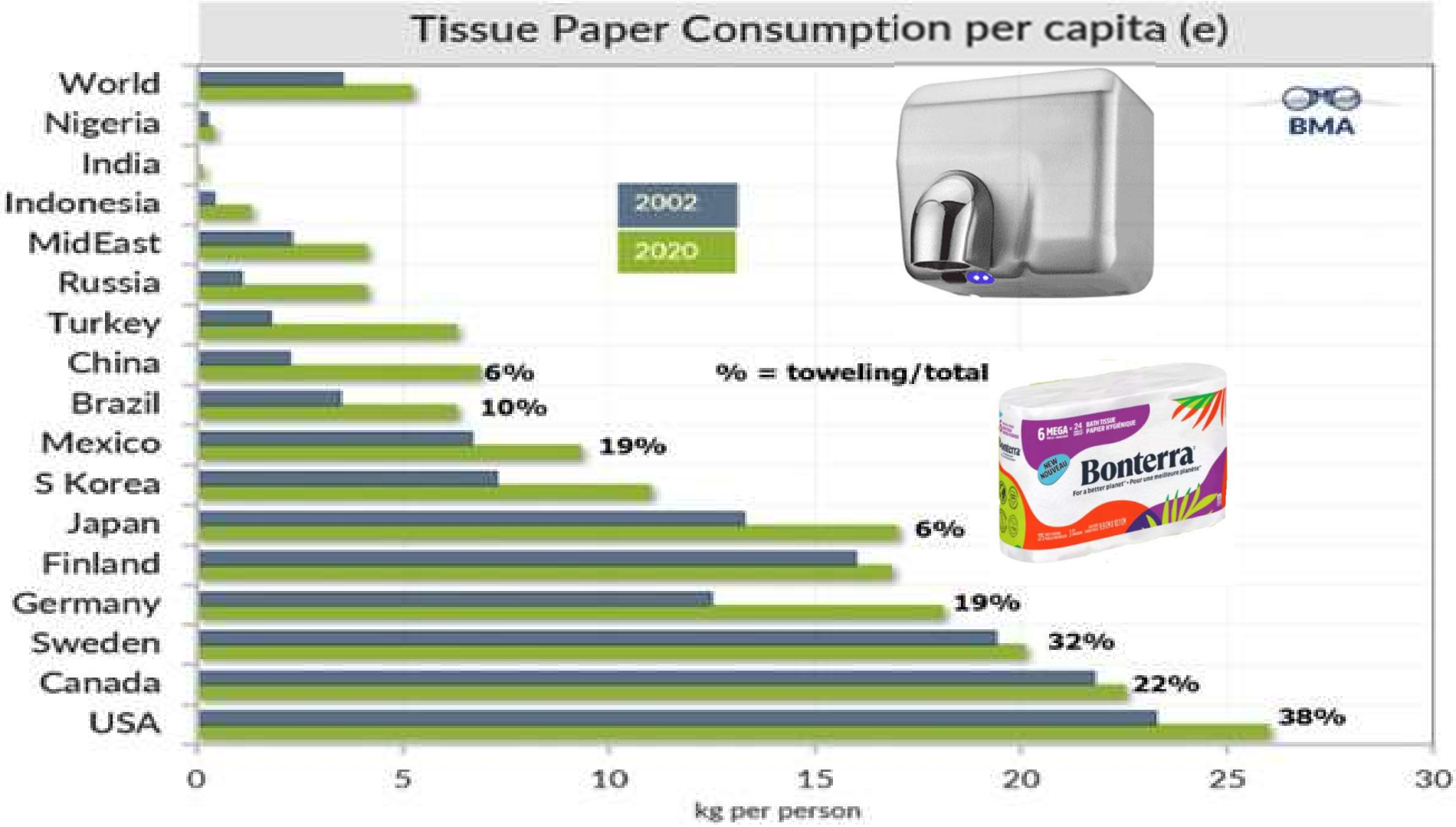
Plastics use has increased, but recycling infrastructure, technology and education haven't kept pace, say environmental and waste-management experts

Exxon Subpoenaed in California's Probe of Plastics Makers

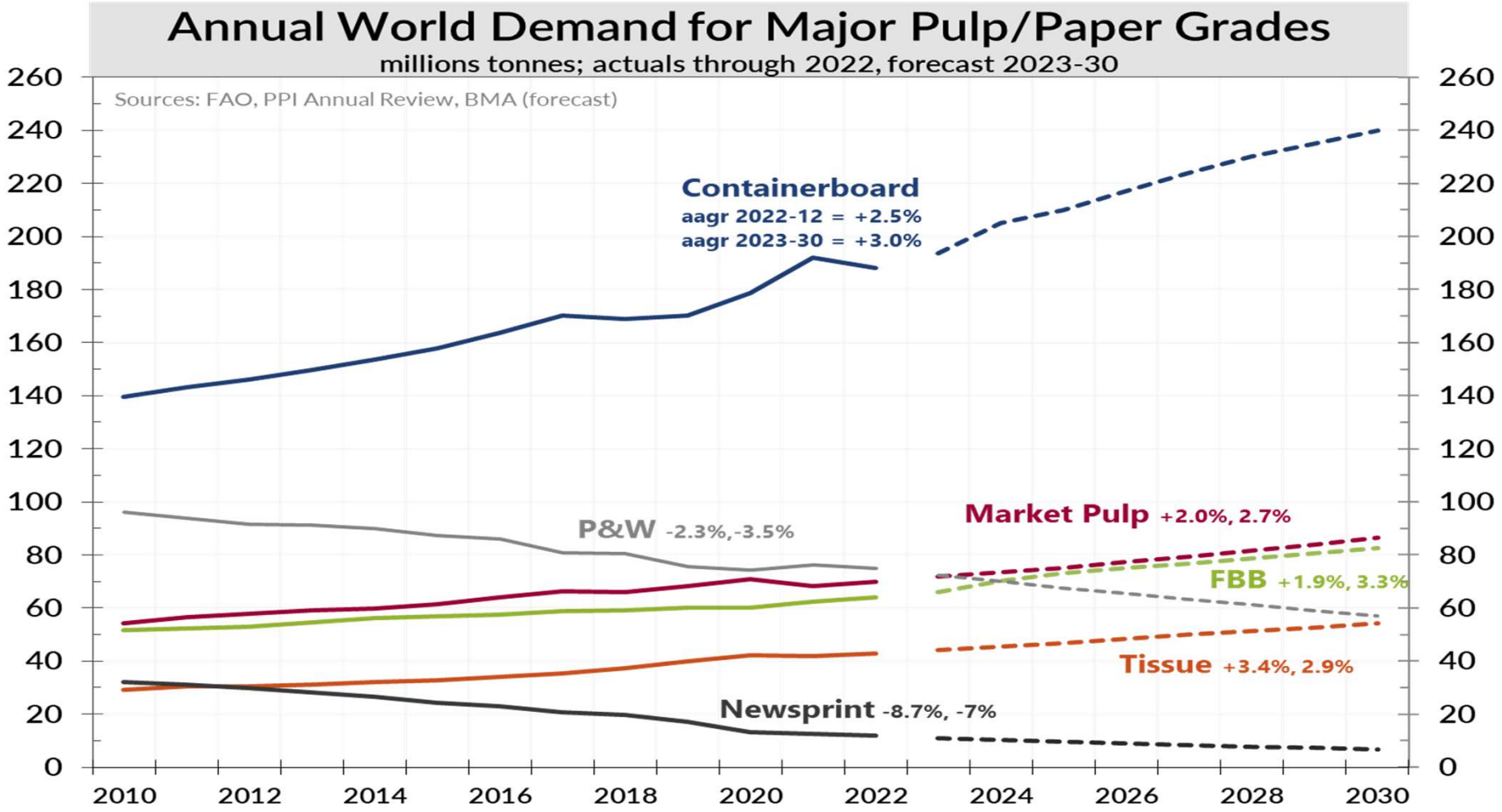
State attorney general is investigating petrochemical companies, accusing them of overstating the role of recycling in reducing plastic pollution

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

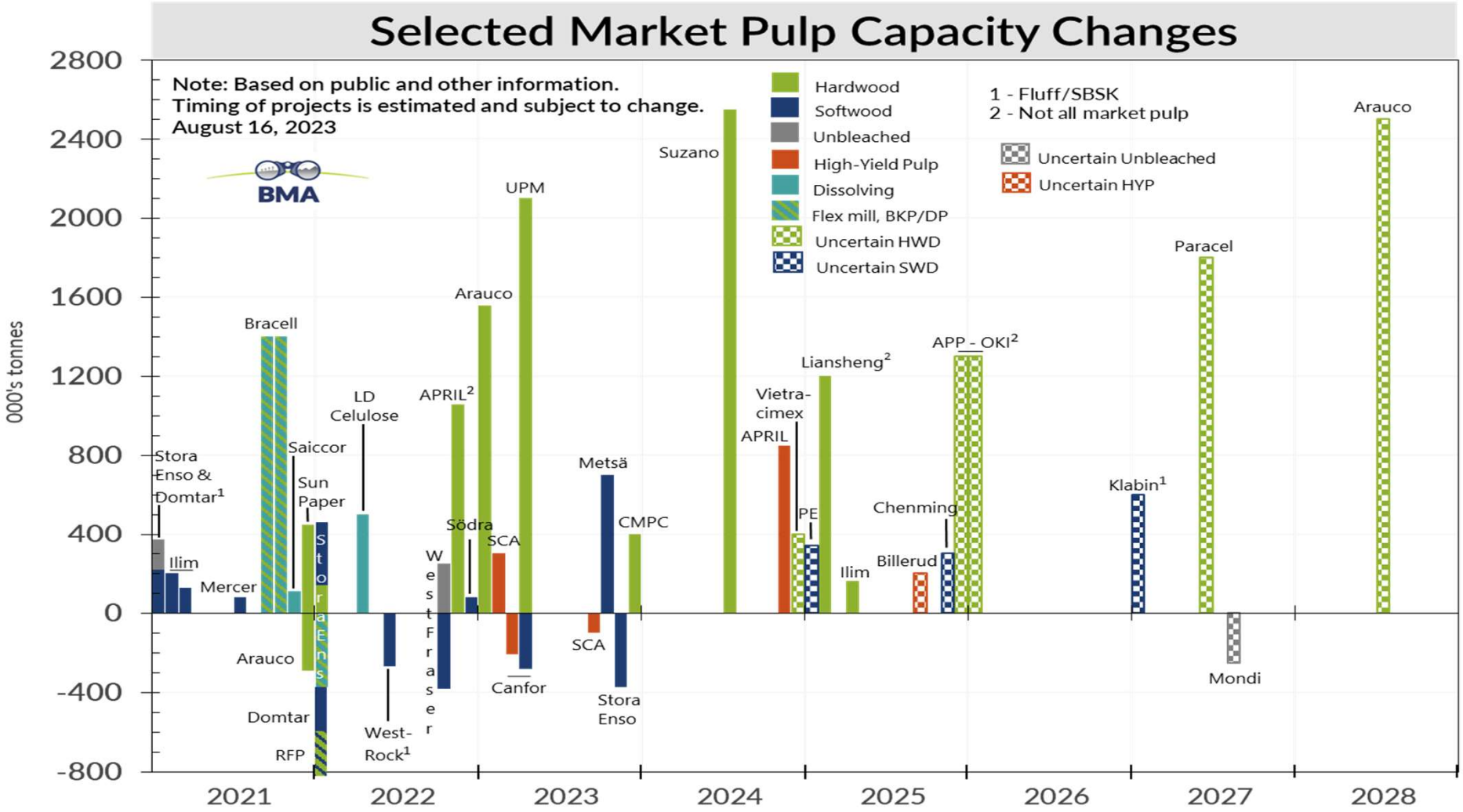
World tissue demand growth 3%+/y through 2030



More brown packaging, more tissue, less print



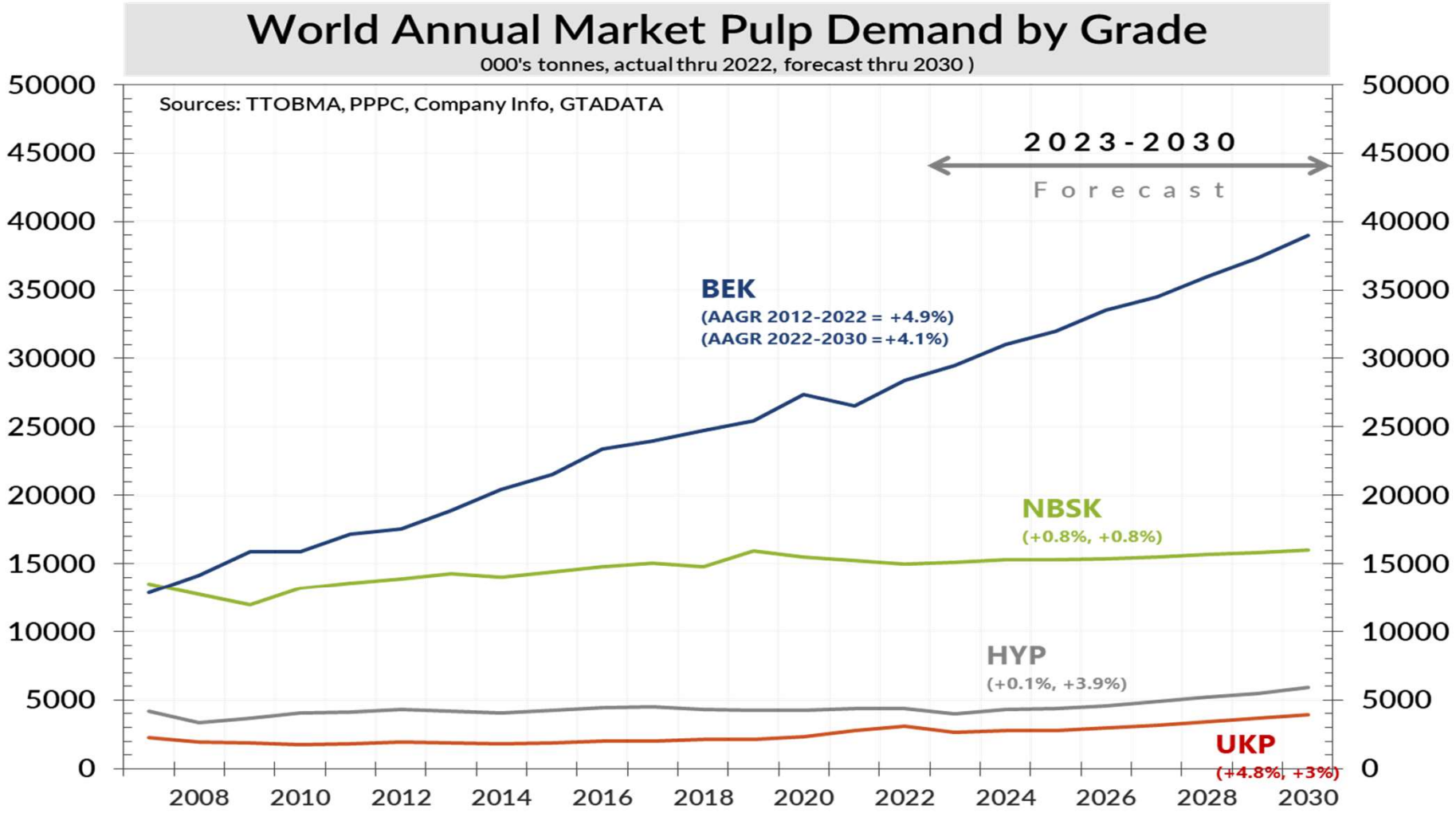
No new NBSK mills after Kemi. More non-wood pulp 2030+?



Convert integrated HYP to market pulp? – 17 mmt potential

- More efficient wood use, lighter environmental footprint
- Some high-quality assets, existing wood supply & labour
- High-bulk, high stiffness, lower-cost pulp to replace recovered paper and plastic

Market pulp demand 100 mmt by 2030



Sustainability requires standardized info disclosure

Environics International "Sherpa Team"
First Network Event; March 20-22, 1998; Vancouver, Canada

Back Row: Rob Macintosh, Doug Russell, John Elkington, Kate Victory, Franz Knecht, Jim Leslie, Carl Frankel, John Polak, Ron Bergin, Nigel Roome, Robert Falls, Brian McClay

Front Row: Graham Armstrong, Ken McCready, Ralph Torrie, Brian Kelly, Doug Miller, Sarah Thorne, Bob Redhead

Absent: Mark Eisen, Tom Gladwin, Stuart Hart, Paul Hawken, Chris Henderson, Riva Krut, Jim MacNeill, Art O'Connor, David Runnalls, Ross Stevens

Sustainability reporting – a 1990s model

Environmental Profile Data Sheet (EPDS)™

Pulp, Paper and Paperboard[1]

To develop a better informed marketplace in the pursuit of sustainable development

Manufacturer

Company: _____

Address: _____

Contact: _____

Corporate Logo

Product

Description: _____

Product unit: one air dry tonne for pulp; 1000 m^2 for paper and paperboard

Production period: _____

Raw Fibre Sources / Sustainability

Sustainable forest management system	
Fibre from land managed by company	
Fibre under certified/registered forest management standard/program	
Wood procurement policies	

Resource Use

Certified fibre in product	(% of total)	
Energy efficiency	(GJ/product unit)	

Have questions or want to know more about us?

info@ttobma.com

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