



AZ GLOBAL

The AZ Green Newsletter, February 21, 2025



Tomago future in question

Reuters has published comments from Rio Tinto boss Jacob Stausholm in which he said that Tomago's future will be clarified by mid-year.

This must have sent shivers down the spines of the 1000s of people working there or in support of the smelter. Previous discussions had been around finding alternate renewable energy supply in time for the current contract expiring in about 4 year's time.

Full disclosure, I worked there for 4 years, and it was a well-run plant, with some great people working there.

The plant started operations in 1983, and went through several upgrades, the latest of which was to take the amperage up to 220KA. In micro-economic terms, this is a plant that one uses as a cash cow - milk it for all it is worth, spending as little as possible on a 42 year-old plant. Although alumina and carbon costs are global, most other costs are in Australian dollars. Revenue is in USD, making for a nice little exchange rate gain.

From ancient knowledge, the electricity contract at Tomago is a highly structured one, with all sorts of clauses for various scenarios, but overall the price paid by the plant is very good compared to say the USA or China. Therein lies the problem - even if they could get a large supplier of green electricity, it was be at a price that is two to three times what they pay now..

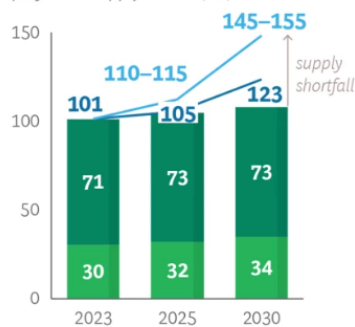
But I have one question - why would Rio float that question mark now? Could it be that there is an election coming up in Australia within the next 3 months? Could Rio be talking to the politicians? The company is scaring its employees, so there better be a good reason for causing so much angst.

BCG shares its outlook

Global Aluminum

~16Mt to 48Mt global deficit projected by 2030

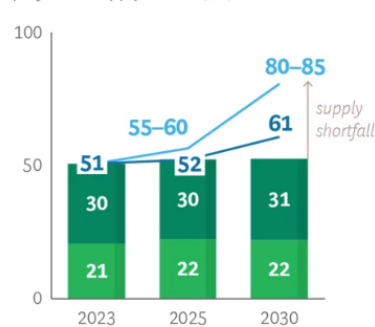
Global demand vs. projected supply deficit (Mt)



Global Aluminum excluding China

~8Mt to 32Mt capacity gap outside of China

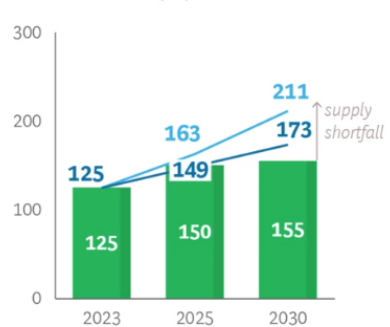
Demand (ex China) vs. projected supply deficit (Mt)



Global Alumina

~18 Mt to 56Mt deficit projected by 2030

Global demand and projected supply deficit of alumina (Mt)



— Demand (Optimistic) — Demand (Base) ■ Primary Supply ■ Secondary Supply

Boston Consulting Group (BCG) has published an outlook for aluminum out to 2030, that I found to be troubling.

Forecasts of future demand depend on all sorts of valid assumptions, but existing numbers should be pretty accurate. The article doesn't show Chinese data explicitly, but they can be extrapolated from the above chart.

Take secondary metal as an example. BCG has China at 10 million tonnes of secondary supply in 2025, but we have China at 11 million tonnes in 2024. This number is hardly going to go backwards - China is ramping up on refurbishing apartments and recycling electric vehicles. BCG has this sector at 12 million tonnes in 2030, but we think it will be well north of that.

Extrapolating, BCG has China primary supply at 43 million tonnes in 2025, which is at least 1 million tonnes lower than our figures. I have written to BCG asking for more information on their numbers.

How low can you go?

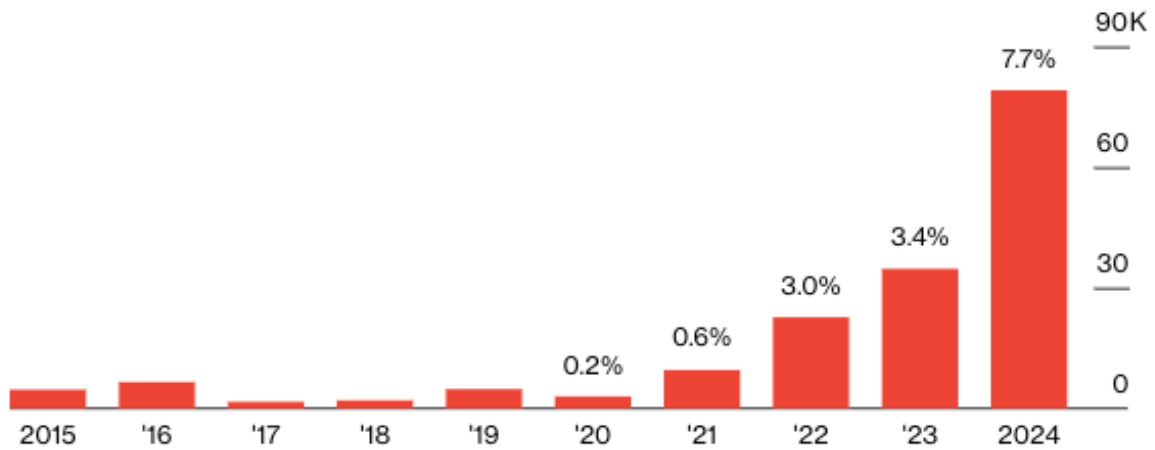
China has announced it has drilled an exploratory well reaching 11,000 metres underground.

The project is part of a program exploring for more oil and gas. It is the deepest well in Asia and the second deepest in the world. The Russians drilled to a depth of 12,000m in the 1970s but their drill got stuck and the project was abandoned.

According to the article, the project took 279 days to go the first 10,000m and another 300 days to do the last kilometre. The article doesn't mention the results of the drill or whether new reserves were identified.

The Relentless Rise of Electric Truck Sales in China

E-truck sales more than doubled in 2024 to almost 8% of the total market



Source: BloombergNEF, China Automotive Technology and Research Center.

Note: Includes battery electric, plug-in hybrid and fuel cell medium- and heavy-duty trucks.

EVs are not only cars

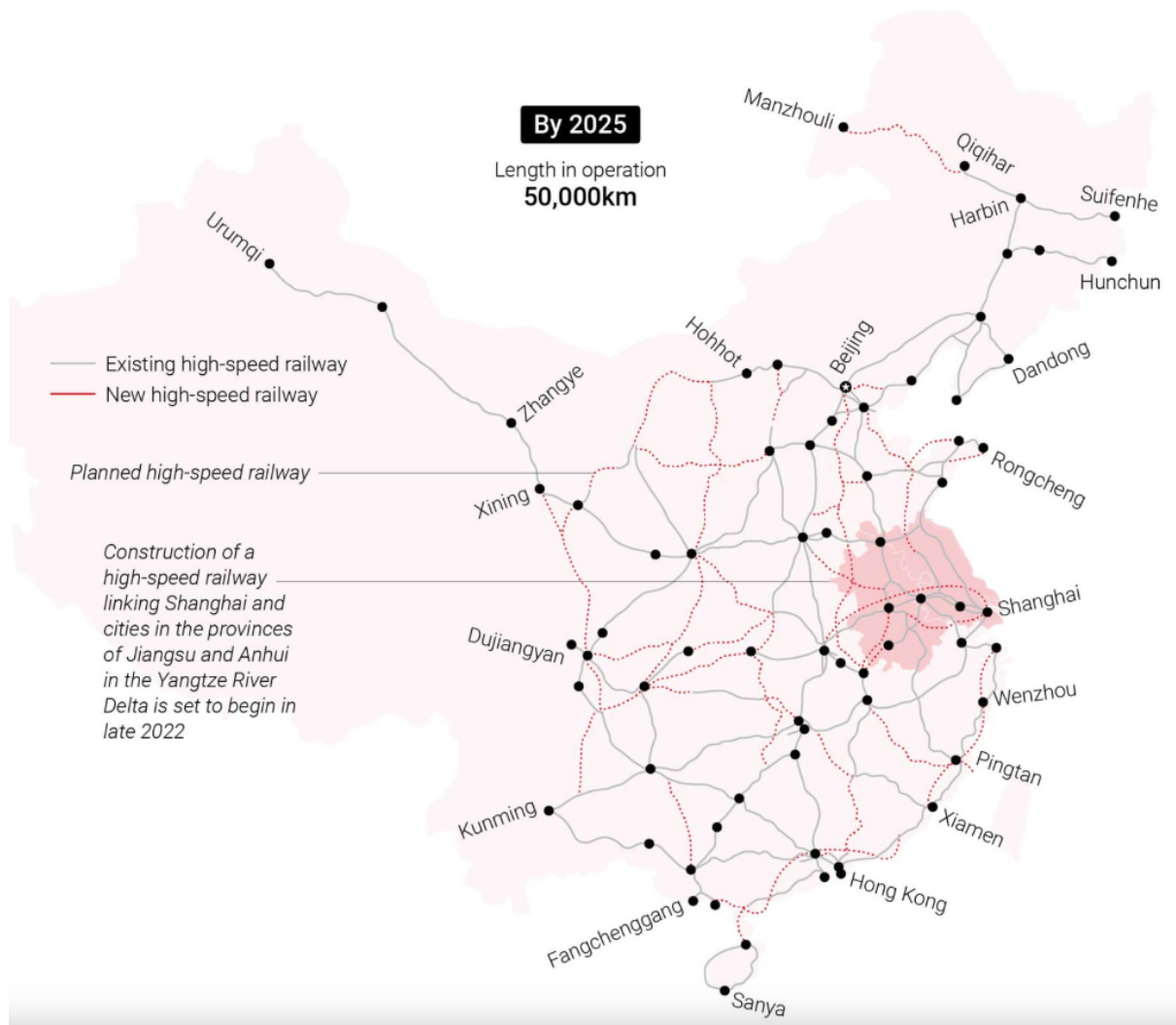
China's adoption of electric and new energy trucks and big rigs is an amazing story.

Sales of electric and hydrogen trucks doubled in 2024.

According to Bloomberg, it's because the power is priced very low. Battery prices for electric commercial vehicles in China were \$90 per kilowatt-hour in 2024, less than half the average for outside China, which was \$190 per kWh. For delivery and other city-bound vehicles, this makes them cheaper to operate than their diesel cousins.

Bloomberg says the market is not all roses. A slowdown in the market led to savage price cutting. Despite the strong sales, some producers have over-produced, leaving thousands of units stranded in holding yards.

While there are tariffs and trade barriers on Chinese electric cars, the low-cost energy units will make e-trucks a valuable export item in the coming months and years.



China's high-speed rail network continues to grow, with more kilometres to be added this year.

By the end of 2025, China will have 50,000km of high-speed rail, making it the largest in the world - combined.

It truly is a marvel, sitting in a nicely-appointed carriage with the overhead display showing the speed exceeding 300kph. The network also enjoys very good timeliness. But it's the soft part that lets the system down. The food options on board are less than appetising.

Citizenship for sale

The tiny pacific island of Nauru is selling citizenships as a means to raise funds to protect itself from rising sea levels. Passports will cost about US\$140,000, and get you visa-free entry to a limited range of countries.

Nauru was a source of superphosphate, and now the centre of the island is a huge tailings landscape. Its population live around the ring of the island, leaving them exposed to rising sea levels. The plan is to redevelop the interior waste land and move people higher up.

You don't have to travel to Nauru to qualify.

How to instil a lack of confidence in your news report

It is hard enough to check the veracity of information presented in press releases and newspaper reports. These days, the first thing I do is look at the name of the media outlet and the reporter (many times the reporter's name is not provided, which is a worry), before examining the strength of the facts presented.

I mention this because of a report in Mining.com on some industrial action at Tomago Aluminum, in Australia. The report was headed by a photo of aluminum in an extrusion press.

I know it was probably the picture editor's fault, not the journalist, but really, how hard is it to grab an image from Tomago's own website? The nearest extrusion press to Tomago is at least 150 kilometres to the south.

Palisades fires and the "once in 100 years" illusion

I never did very well in mathematics at high school, so I never got to learn about the "Poisson Process".

The Poisson process apparently tells us that when fire experts, or hurricane experts, or earthquake or volcano experts, say that the recent event was a "once in 100 years" event, statistically it means the event could occur again within 28 years. It's all to do with the fact that any two events are independent of each other. That's it, that is as far as I can go. If you have a simpler explanation, please share it. My point is that the Palisades fires could happen again well before 100 years is up.

CBAM irritations

The European Aluminum Association has issued a call for the CBAM regime to be tightened and improved.

CBAM - the Carbon Border Adjustment mechanism - is meant to create a level playing field for European aluminum companies. Those companies must make their aluminum products within the confines of European climate and emissions rules. Therefore it's only right that competing products made in other countries should meet the same criteria, or pay a virtual tax to adjust for the increased costs faced by European factories.

CBAM has been a bone of contention since it was first floated a couple of years ago.

The European Aluminum Association has listed 8 recommendations, including standardizing the reporting criteria and streamlining data collection inside Europe.

One point that I picked up from their press release was on the subject of exports. Europe exports between 10% and 15% of its aluminum per year, mainly as semis or finished products, and at least some of that material goes to markets where there are no limits on CO2 emissions. According to the PR, that represents about 2.2 million tonnes per year, which makes the total Europe market much larger than I thought. Since primary aluminum production was cut following the start of the energy crisis, these numbers speak to a large amount of metal being imported, fabricated and then re-exported. It puts Europe at the

mercy of the big producers in the Middle East, so it's no wonder the Association wants action on this front.



You say Brahmaputra, I say Yarlung Tsangpo

China is launching a massive new hydro project, but is upsetting its neighbours along the way.

The new project in Tibet is said to be three times the size of the world's biggest hydro project, namely the Three Gorges Dam. It will be built on a river that the Chinese call the Yarlung Tsangpo. The trouble is, this river doesn't stay confined to Tibet. It wanders through India and Bangladesh, and becomes the Brahmaputra river.

China's neighbours are understandably upset that this important river is going to be subject to this massive project. Fishing, irrigation and even religious ceremonies will be impacted, say those who are protesting the dam's construction. China meanwhile, keeps its deaf ear in play.
