# A Marketing View from the Asia-Pacific Region

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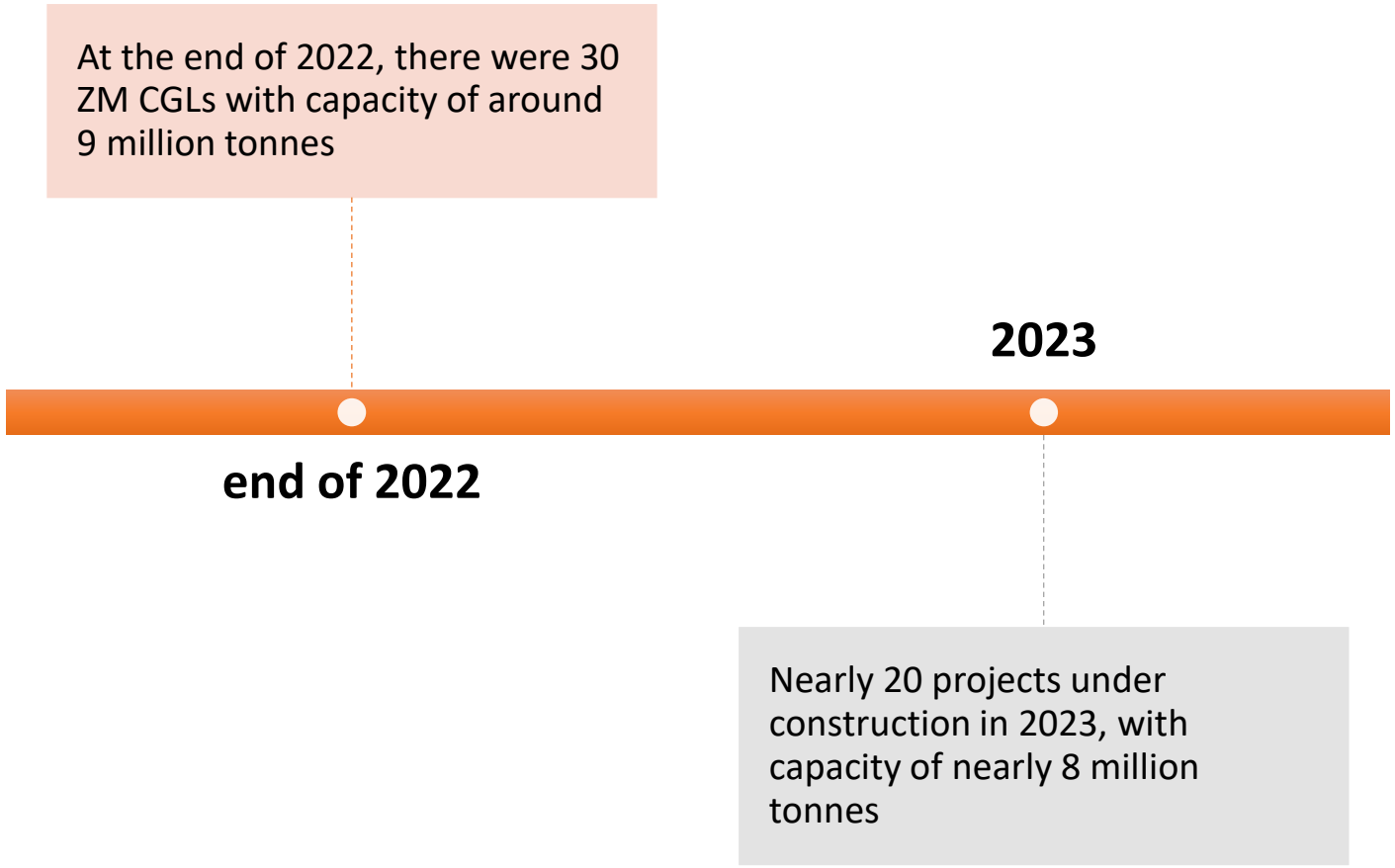
# China

# China: Competition from ZM Coatings



# ZM Coatings

- Zn-Al-Mg coatings have government approval to be used in photovoltaic power station supports
  - ≥C4 zinc 100 microns, ZM 31 microns
  - C3 zinc 80 microns, ZM 25 microns
  - ≤C2 zinc 65 microns, ZM 20 microns
- Similar rules allow use in roadside barriers

# Japan

# ZM Coatings

- Long term corrosion testing and ZM coatings show good performance
- Single and double dip processes used in Japan
  - Double-dip
    - Allows batch HDG to be produced in the same line
    - Requires ceramic lined and electrically heated kettle
    - All ZAM coatings used blasted steel
    - Initial cost of production including investment cost means long term performance benefits hard to justify
    - Management of second bath would be challenging for maintaining the elemental mix
  - Duplex coatings can be achieved

# Australia

# Market and technical activities

- Ongoing exposure testing of HDG, ZM, and duplex products
- Regalvanizing of lighting masts
- How sustainable is zinc when we are about to run out of it?
- Changes to the Australian Building Code
- Changes to AS/NZS 4680 to align with ISO 1461

# Continuous ZM coatings Approximately 2 years of exposure

ZAM @ 27 microns vs Continuous galvanized @ 19 microns

# Magnelis

- Being trialed by Inquick Bridges as special production
- Non-standard coating thickness
- 46 microns each side (as measured)
- 3mm thick steel
- Magnelis is available in 2.5 to 6mm

Magnelis
21 microns each side
5mm steel
ZM250

4 mm steel & HDG @ 100 microns
vs
5 mm steel & Magnelis @ 21 microns

4 mm steel & HDG @ 100 microns
vs
5 mm steel & Magnelis @ 21 microns

# Practical Sustainability

Lighting masts (mostly rod/bar/plate)
HDG about 50 years ago
C5 location
Thick zinc corrosion layer with a range of steel corrosion products

# Stripped and regalvanized

Traditional incandescent bulbs replaced with LED Reinstalled with lower daily energy consumption, reduced maintenance, better quality lighting, 95% carbon emissions saved compared to remake

# Galvanized Steel Sustainable?

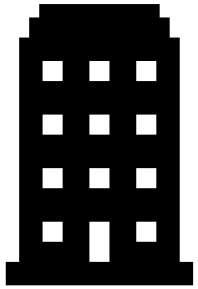
*I guess you will ignore that at current rates of consumption and with known global reserves that iron ore will run out in 43 years, zinc in 19 years, manganese in 74 years and the coal used for steel making in 133 years.*

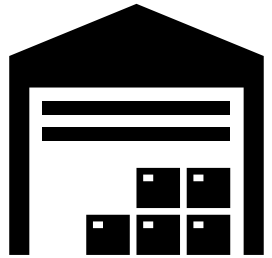
*So how can the use of galvanized steel be sustainable?*

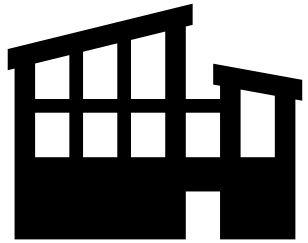
*Perhaps you mean sustainable for 43 years only?*

# We need to be ready for this (and even more ready for the ‘educated’)

- Known reserves of zinc in the world are at around 1.9 – 2.0 billion tonnes
  - Current minable resources are less than 20 years (or around 230 - 250 million tonnes)
  - Most of the 450 million tonnes of zinc that has already been mined is still in use
  - Economic models would not have the resources available and processed before they are needed
- The two zinc refineries in Australia are leading the way in the use of renewable electricity for zinc production
  - Nyrstar in Tasmania has used 97% - 100% hydroelectricity for decades
  - Sun Metals in Townsville was the first major manufacturer in Australia to invest in GW scale solar production and has followed it up with investments in wind power and hydrogen production
- Steel recycling rates in Australia are now well over 90%
- Recycling rates of zinc from structural steel in Australia are at a rate of about 97%
- BlueScope and Liberty Primary Steel are investing in very much reduced carbon emissions projects for steel making
- All this data can be independently verified (but out of any galvanizers control)







# Changes to Australian Building Code

- All structural steel used in **domestic housing must** be protected against corrosion using HDG, duplex or paint
- All structural steel used in **commercial, residential, and industrial buildings must** be designed in accordance with the AS 4100 Steel Structures Code which **mandates** the use of the AS/NZS 5131 Steel Fabrication Standard (based on EN 1090-2). This code **mandates** the use of corrosion protection by HDG or paint


NEW HOLLAND
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# Changes to AS/NZS 4680

- Consistent with ISO 1461
- Probably from mid-2024

# Summary

China is actively pursuing ZM replacements for HDG