



INTERNATIONAL
ALUMINIUM

Opportunities for aluminium in a post-Covid economy

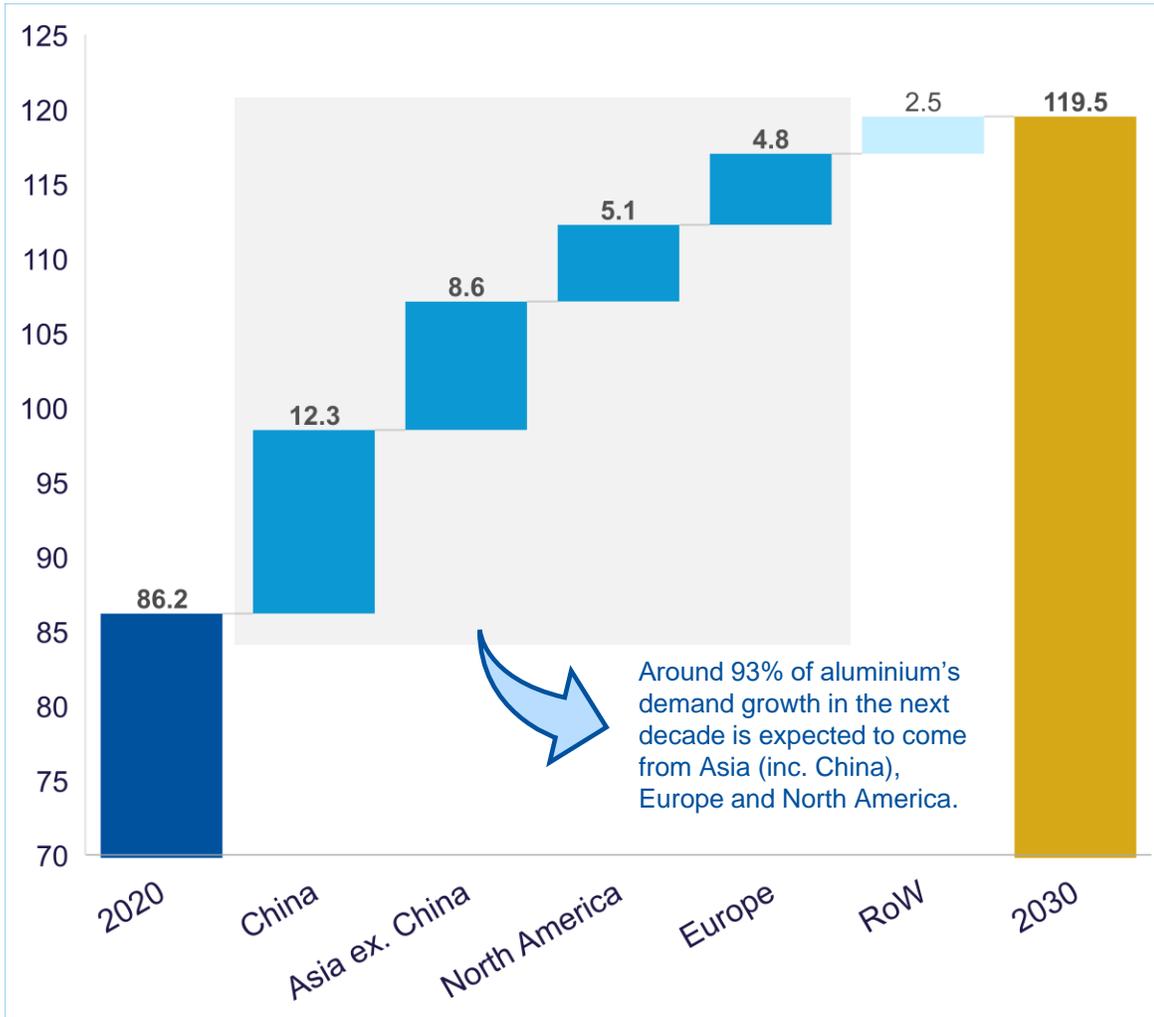
Executive summary



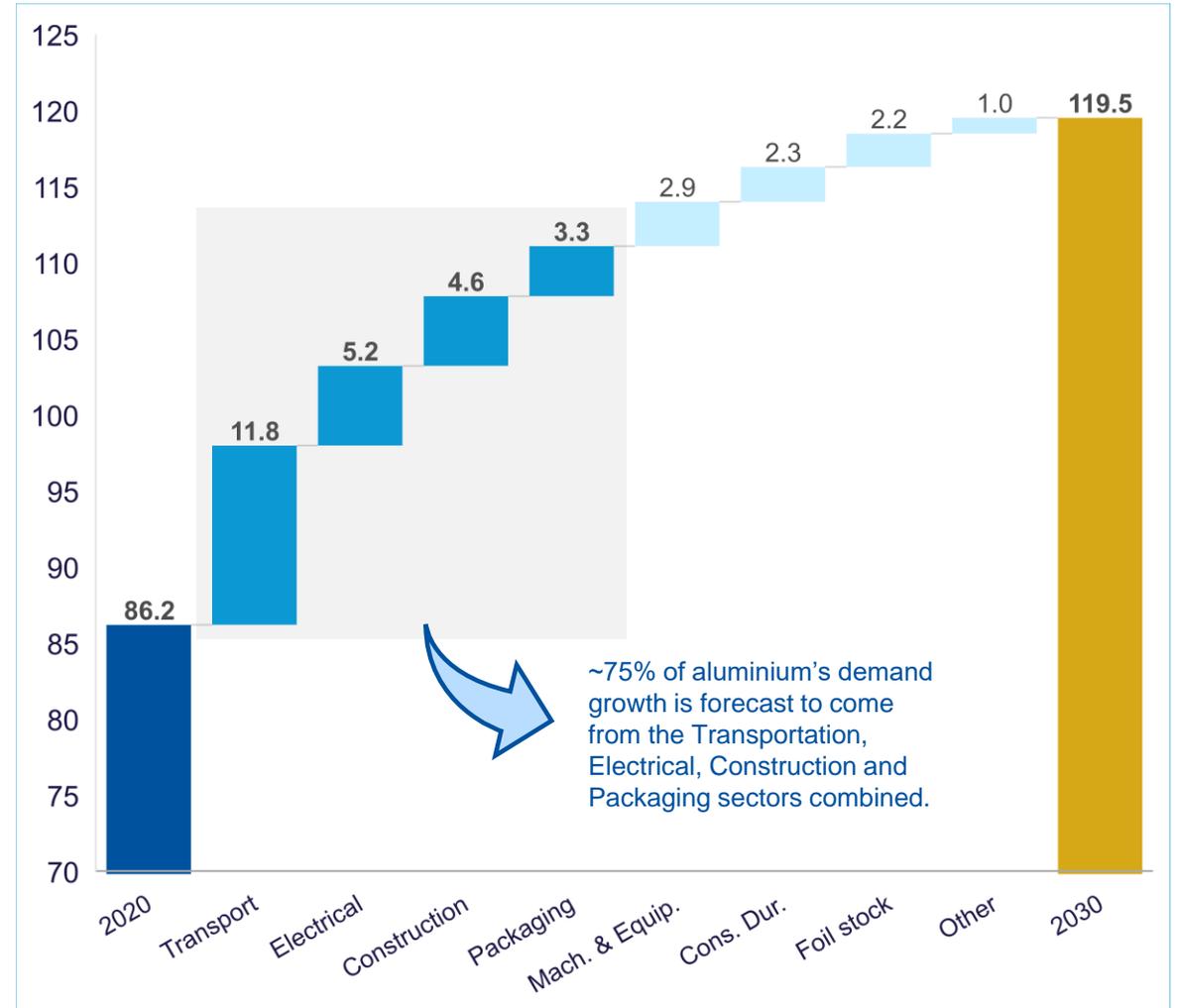
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Aluminium consumption in main regions and sectors

Aluminium demand growth by region 2020 vs 2030, Mt



Aluminium demand growth by sector 2020 vs 2030, Mt



Main drivers of demand growth

Transportation



Decarbonization policies and the shift towards more aluminium intensive electric vehicles will have a positive impact in the metal's consumption coming from the Transportation sector. Although this shift is expected to take place worldwide, China will most likely lead this transformation.

Electrical



The transition from traditional sources of power towards non-conventional renewable energy sources represents one of the most substantial opportunities for the aluminium industry in the coming years. This is linked not only to the fact that solar power is 25 times more aluminium-intensive than coal power plants, but also due to the consequent expansion of the power grid, which will increase the demand for conductor cables.

Packaging



Driven mainly by the rise in popularity of canned drinks in North America, Europe, and China, the Packaging sector is experiencing a surge in demand of aluminium. This is fuelled by the emergence of new products as well as a strong consumer preference for environmentally-friendly packaging options.

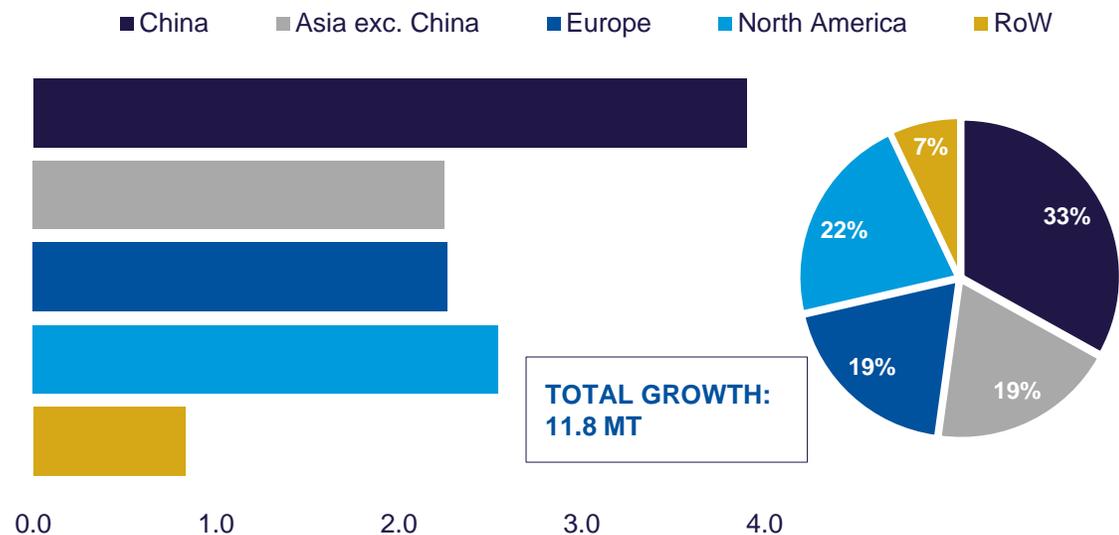
Construction



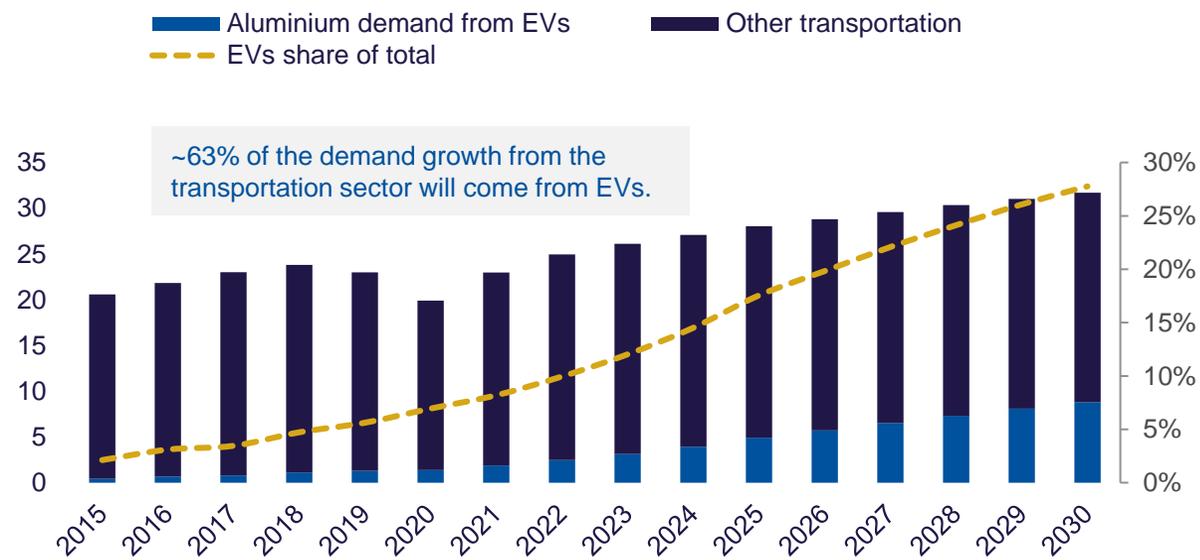
In contrast to other sectors, the Construction sector is not expected to be driven by ESG trends and decarbonization policies. Growth will continue to be driven by economic growth and population increases, coming mainly from developing regions in Asia ex. China.

Transportation sector

Additional aluminium demand from the Transportation sector between 2020 and 20230 by region, Mt & %



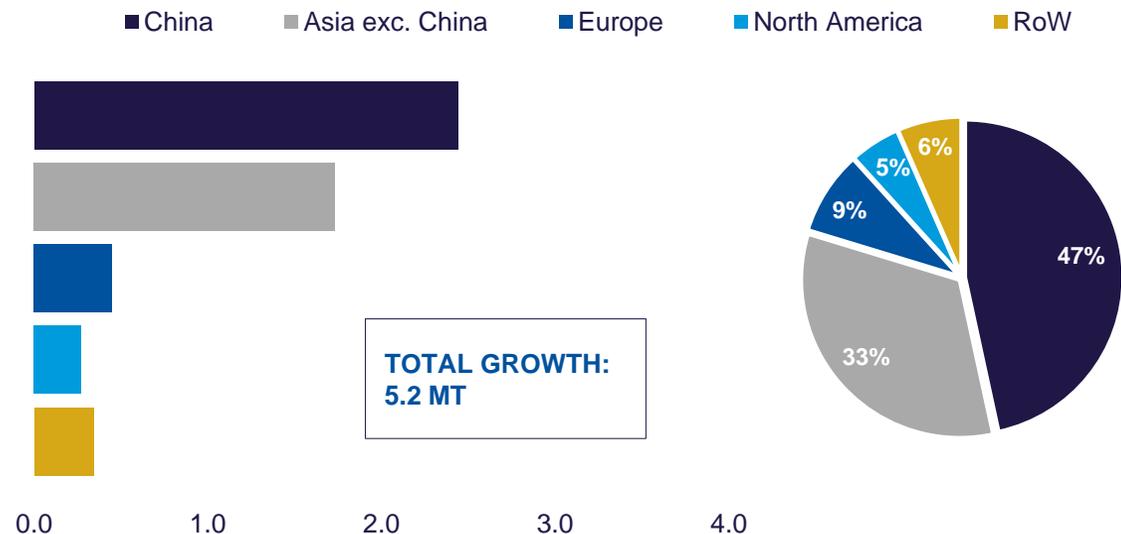
Aluminium demand from EVs by region, Mt



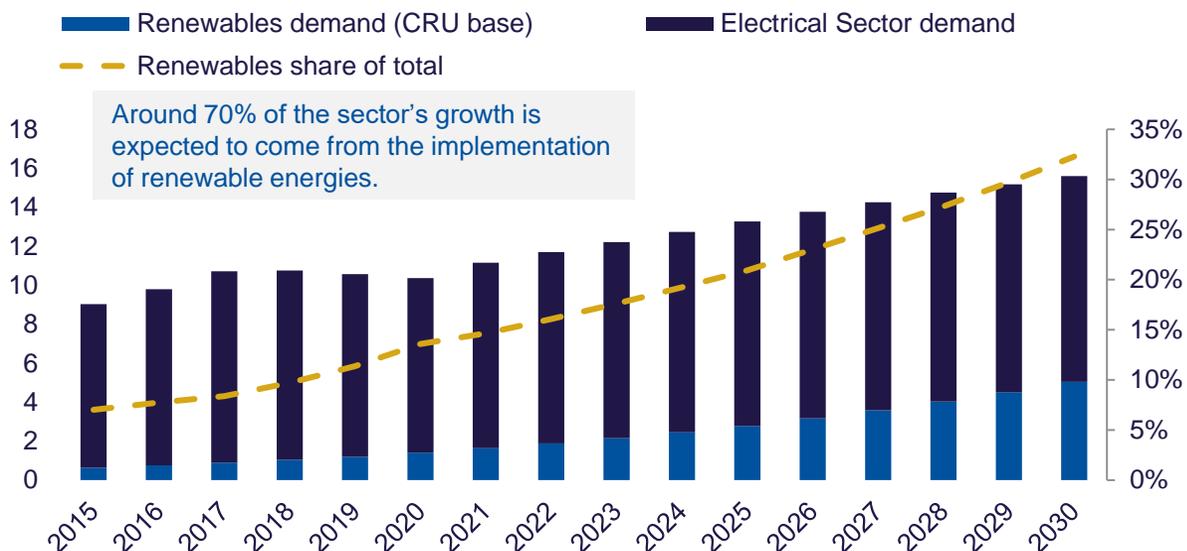
- The transportation sector is expected to **grow by 11.8 Mt between 2020 and 2030**.
 - Around **63% of the growth from this sector is expected to come from the adoption of electric vehicles**, especially in regions like China, Europe and North America. CRU estimates that ~93% of the aluminium demand growth from EVs will come from these three regions combined.
 - Aluminium plays a key role in the EV industry as electric powered vehicles **contain between 60 to 80 kg more aluminium per vehicle than those powered by internal combustion**.
 - Both recyclability and light weight have positioned aluminium as the material of choice for the EV industry, although its **potential to substitute steel** still represents an opportunity for further growth.

Electrical sector

Additional aluminium demand from the Electrical sector between 2020 and 2030 by region, Mt & %



Aluminium demand from renewable energies by scenario, Mt



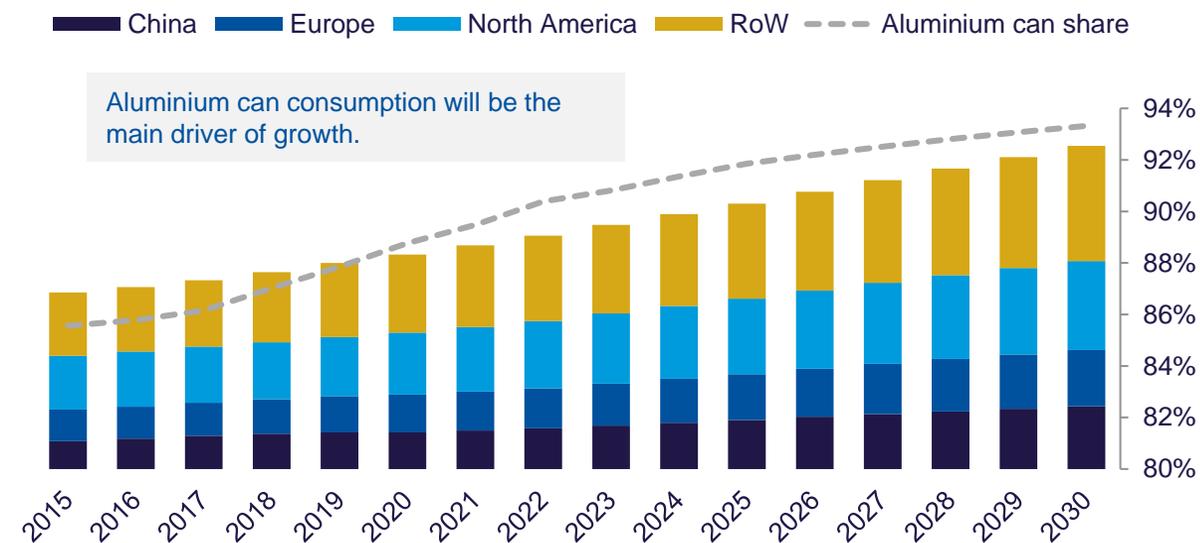
- The electrical sector is expected to **grow by 5.2 Mt between 2020 and 2030**:
 - Around **70%** of the growth from this sector is expected to come **from the implementation of renewable energies**.
 - Additionally, **~90%** of the aluminium demand coming from renewable energies will come **from solar projects**. This due to solar technologies being, on average, 4 times more aluminium intensive than wind technologies. Therefore, further penetration of solar power could substantially boost aluminium demand in the coming decade.
 - Moreover, the potential of aluminium to **substitute copper in electrical applications such as power distribution** represents one of the biggest opportunities for this industry, especially as copper prices remain high.

Packaging sector

Additional aluminium demand from the Packaging sector between 2020 and 2030 by region, Mt & %



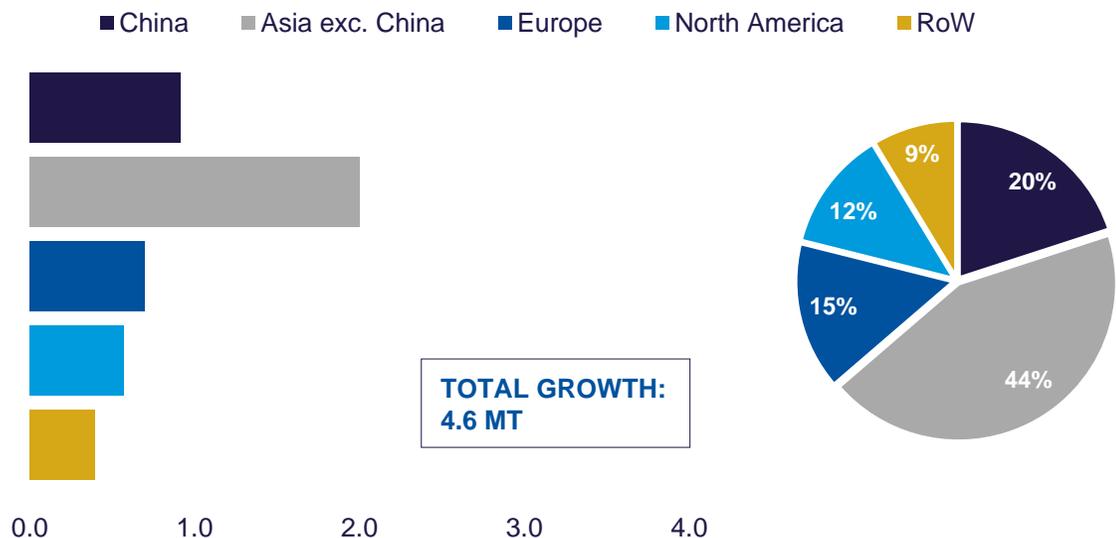
Can production, billion



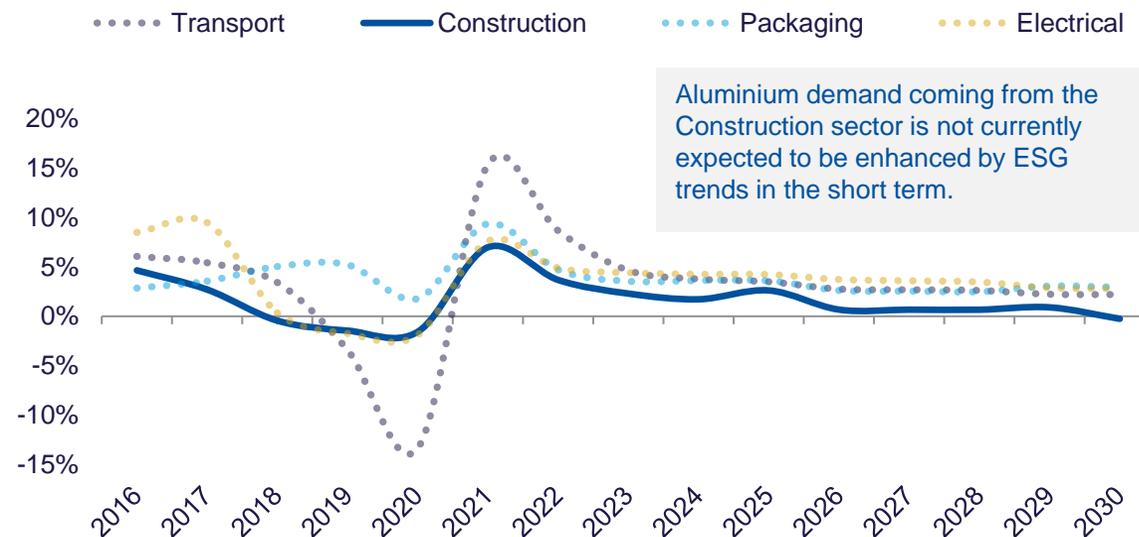
- The packaging sector is expected to **grow by 3.3 Mt between 2020 and 2030**:
 - Unlike the Transportation and Electrical sectors, The packaging sector will see **most of its growth coming from North America** with 26%, followed by China with 23%.
 - The aluminium can industry will be the main driver of this sector's demand grow as **aluminum can consumption is expected to increase by ~60% by the end of this decade**.
 - The implementation of EPR policies constitute an opportunity for aluminium to **substitute both plastic and glass**, due to the metal's potential for waste reduction trough **recyclability and lightweighting**.

Construction sector

Additional aluminium demand from the Construction sector between 2020 and 2030 by region, Mt & %



Aluminium demand year-to-year growth by sector, %



- The construction sector is expected to **grow by 4.6 Mt between 2020 and 2030**:
 - Unlike the other three sectors presented, the **Construction sector is unlikely to be affected by ESG trends**, and most of its growth will come from developing regions, driven by urbanization and population growth.
 - Due to this, **around 44% of the sector's growth will come from Asia ex. China**, followed by China with 20% and Europe and North America with 15% and 12%, respectively.
 - The inclusion of **aluminium as a green construction material in building codes**, as well as the incorporation of sustainable solutions for such as **solar shading technologies and solar power**, still represent an opportunity of growth within this sector.



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