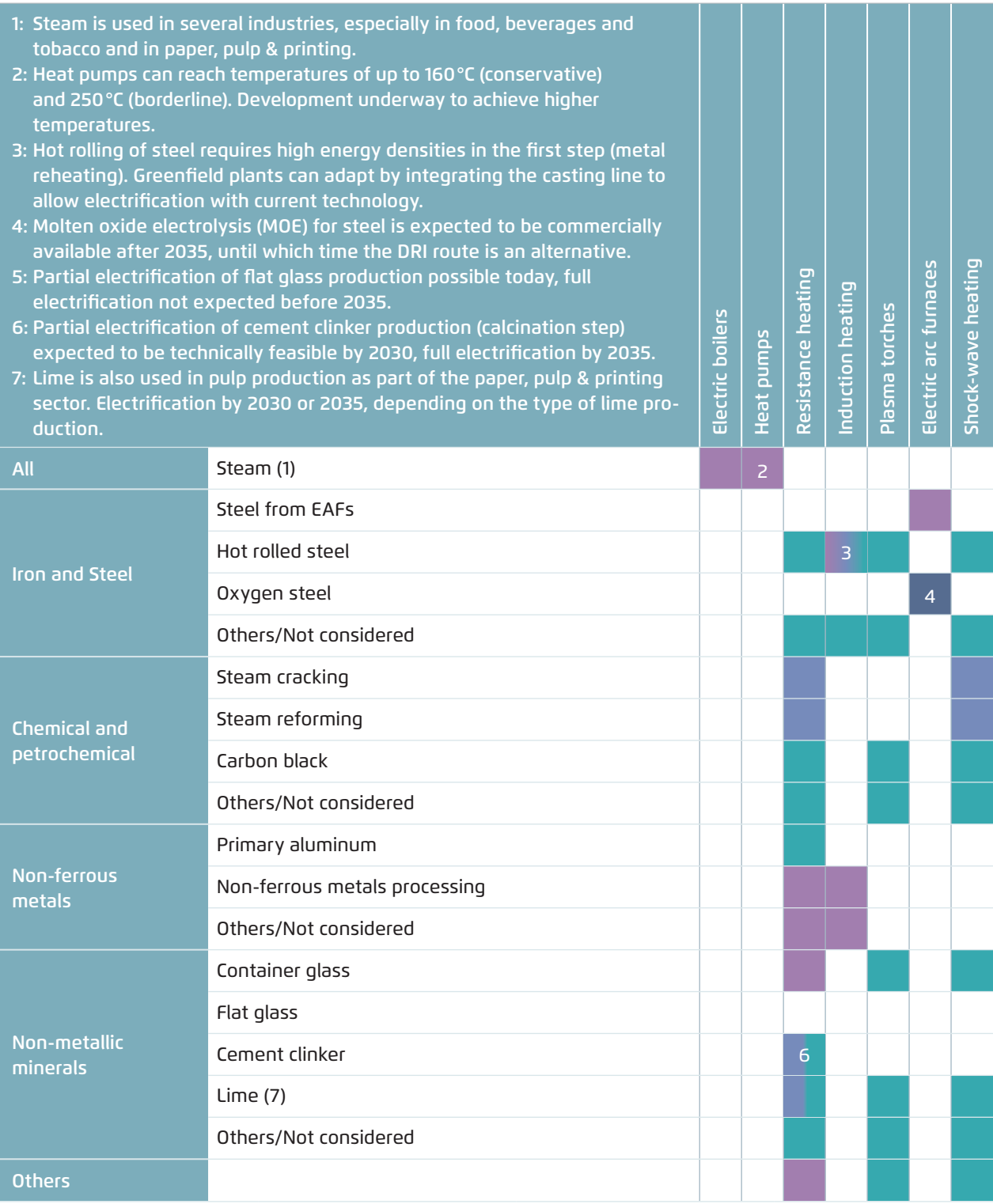
Overview of electrification technologies and matching with industrial applications and potential market readiness based on the results of Sections 3.1 and 4.1 → Fig. 28

1: Steam is used in several industries, especially in food, beverages and tobacco and in paper, pulp & printing.
2: Heat pumps can reach temperatures of up to 160 °C (conservative) and 250 °C (borderline). Development underway to achieve higher temperatures.
3: Hot rolling of steel requires high energy densities in the first step (metal reheating). Greenfield plants can adapt by integrating the casting line to allow electrification with current technology.
4: Molten oxide electrolysis (MOE) for steel is expected to be commercially available after 2035, until which time the DRI route is an alternative.
5: Partial electrification of flat glass production possible today, full electrification not expected before 2035.
6: Partial electrification of cement clinker production (calcination step) expected to be technically feasible by 2030, full electrification by 2035.
7: Lime is also used in pulp production as part of the paper, pulp & printing sector. Electrification by 2030 or 2035, depending on the type of lime production.



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