Compare electrolysers at the hydrogen condition the process needs

Where is the boundary drawn?

Delivered hydrogen at the site boundary

+ purification (de-oxo, dryer) to the required purity
+ compression to the required pressure
+ standby, purge and regeneration losses

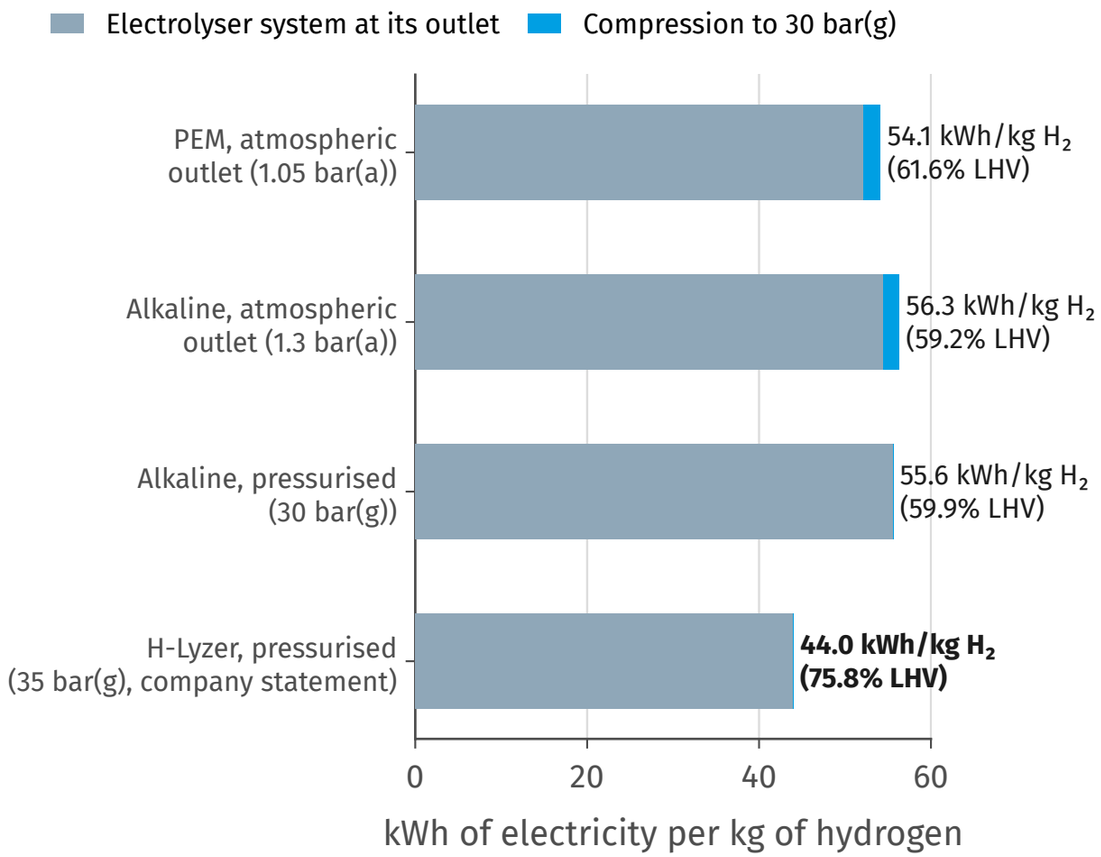
Electrolyser system (AC input, at its own outlet)

+ transformer and rectifier losses
+ pumps, cooling, gas/liquid separation, controls

Stack (DC input)

Lowest kWh/kg, but not usable hydrogen

kWh per kg delivered at 30 bar(g) or more, and at a purity of >99.9%



Electrolyser kWh/kg from vendor datasheets for three commercial systems and a shiptown company statement for the H-Lyzer.

Purity: vendors quote >99.9%, for some systems after their own purification stage (DQ1000: 99.8% before, 99.999% after).

Compression to 30 bar(g): four-stage reciprocating compressor, 75% isentropic and 95% motor efficiency. LHV basis 33.3 kWh/kg.

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