

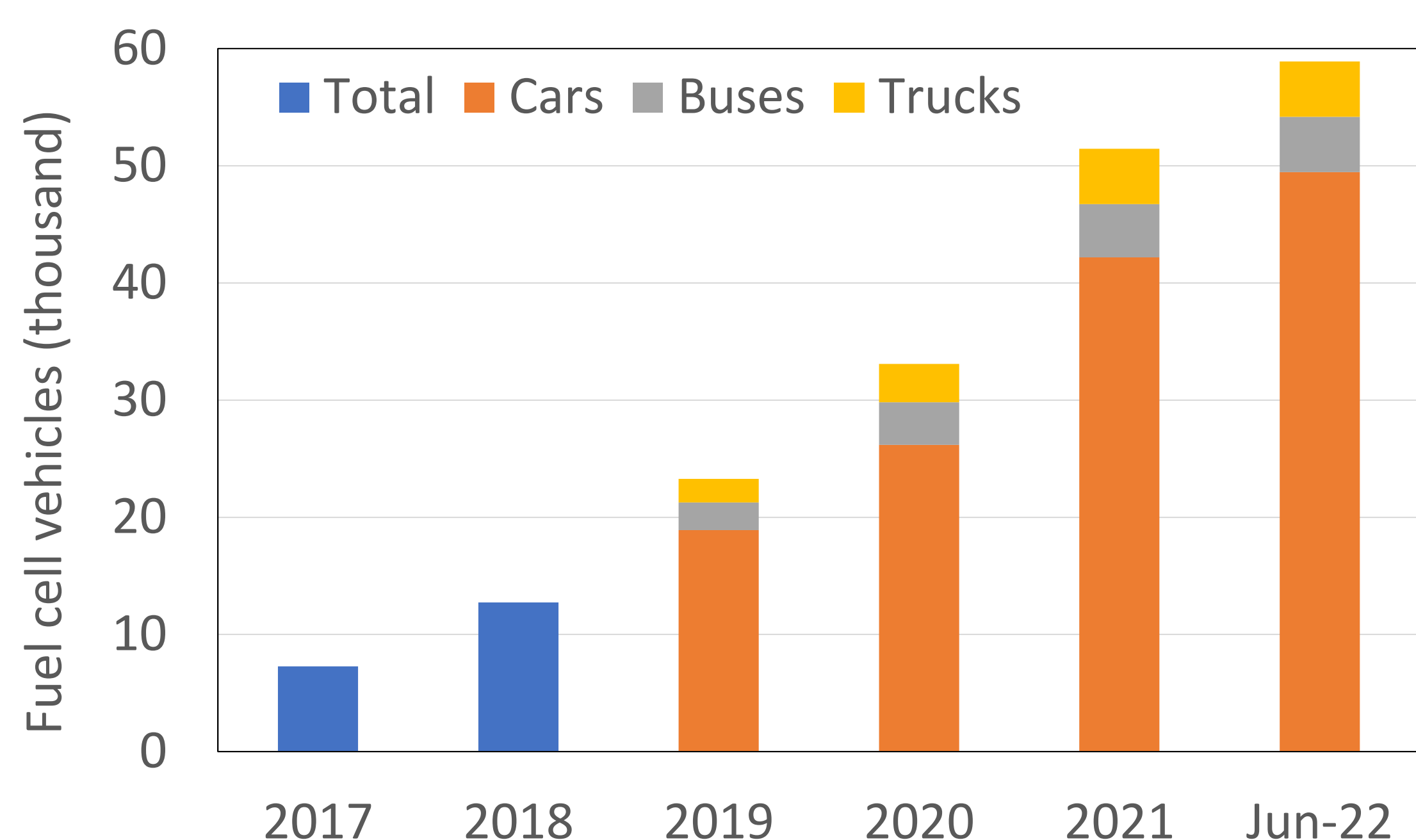
Hydrogen-Fuelled Trucks: a greener future for heavy-duty transport in WA

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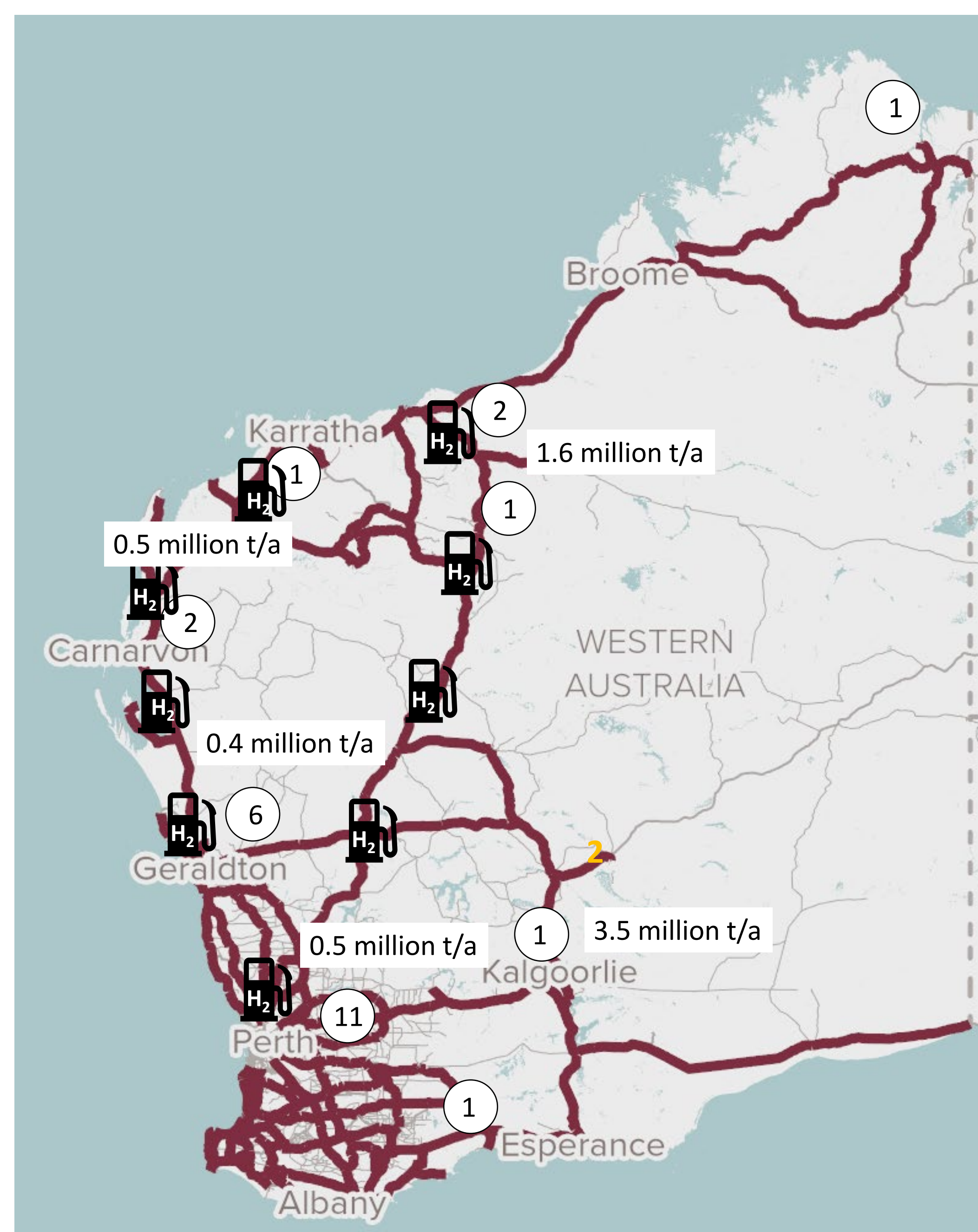
Global number of hydrogen trucks

FCV across the top consuming countries, is predicted to increase from 130,000 to 3.3 million in 2025 and 2030 respectively.



Australia: leading supplier of green hydrogen

By 2030, Australia will be a global leader in green hydrogen production at 2 million tonnes. By 2026, 30 hydrogen hubs will be planned across the nation. There are over 100 Hydrogen projects, of which 10 are operational including 5 in mobility. In WA, over the next decades, the total planned green hydrogen production is over 8.3 million tonnes per year.

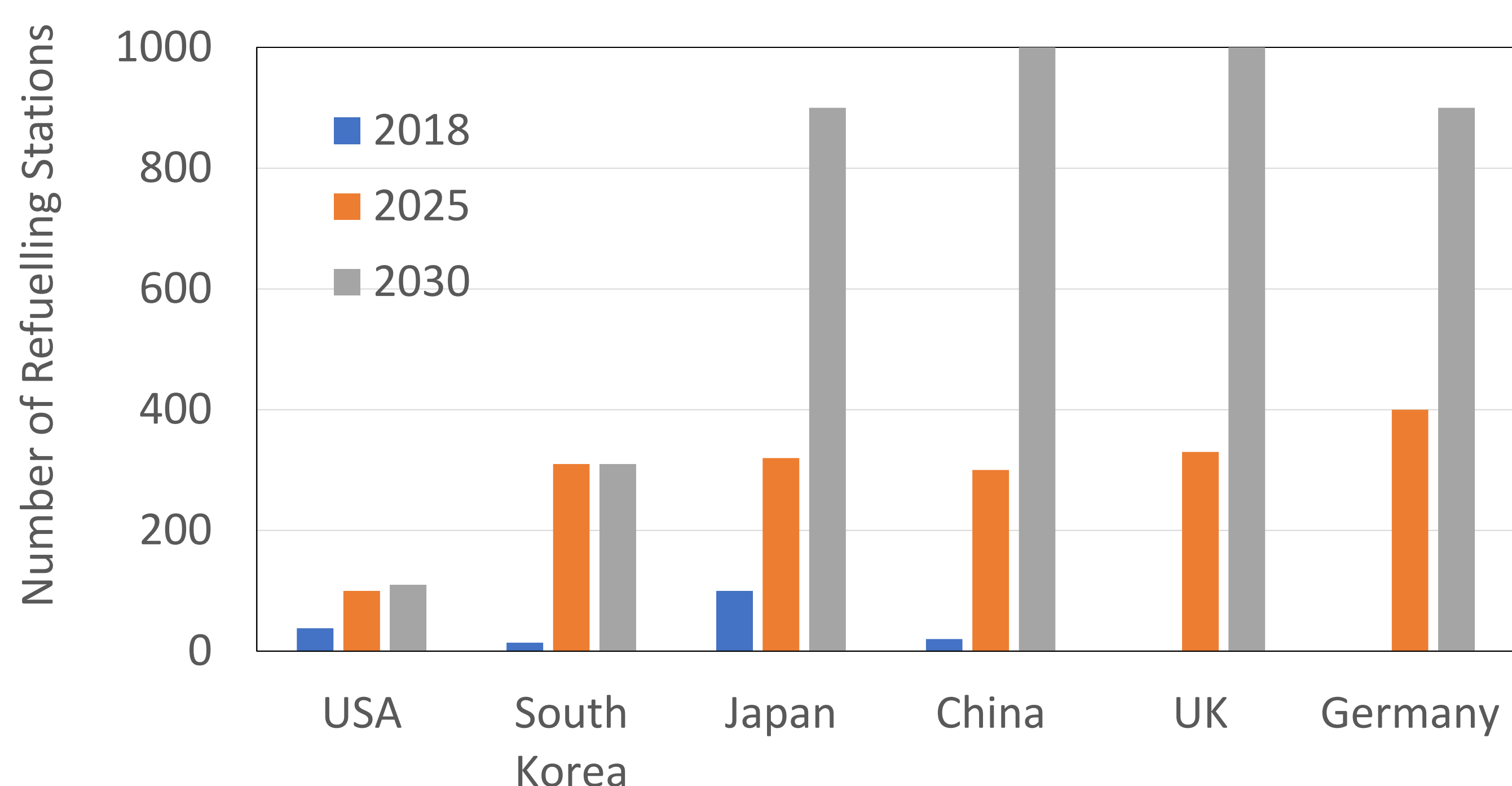


Australian heavy-duty fleet

Heavy-duty vehicle	GVW [ton]	Power [kW]	Number of vehicles	Travel per vehicle [km/yr]	Diesel consumed [ML/yr]	Hydrogen equivalent [tonne/yr]	Emissions [ton _{CO2eq} /yr]
Light commercial vehicle	4.5	100	AU: 3,412,395 WA: 406,009	15,300	AU: 6,658 WA: 773	AU: 1,908,000 WA: 234,000	Total: 18.15 × 10 ⁶ Per vehicle: 5.3
Rigid Trucks (light & heavy)	12.5	170	AU: 521,129 WA: 73,183	21,100	AU: 3,144 WA: 333	AU: 931,000 WA: 131,000	Total: 8.52 × 10 ⁶ Per vehicle: 16.3
Articulated trucks	19.0-53.5	220-550	AU: 104,443 WA: 16,206	78,300	AU: 4,341 WA: 656	AU: 1,285,000 WA: 199,000	Total: 11.80 × 10 ⁶ Per vehicle: 113.0
Buses	20.5	230	AU: 86,269 WA: 14,945	24,600	AU: 591 WA: 78	AU: 169,000 WA: 29,000	Total: 1.61 × 10 ⁶ Per vehicle: 18.7

Leading countries in hydrogen transport

Aligned with the increased number of FCVs there is a rapid growth in the number of hydrogen refuelling stations in these countries, from 1760 in 2025, to 4370 in 2030.



Despite high emission reductions FC trucks face significant challenges:

- 600 kilo tonne of green hydrogen per year required to decarbonize WA's heavy duty fleet (6-7x current WA's solar capacity of 2.3 GW)
- High cost of ownership of FC trucks and cost of HRS infrastructure
- Lack of mass produced vehicles in the market
- Regulatory framework still under development

Next steps of the project:

- Estimation of cost of ownership of FC trucks
- Cost of a hydrogen highway connecting Perth with Pilbara region