



# Exploring options for a hydrogen fuel infrastructure system

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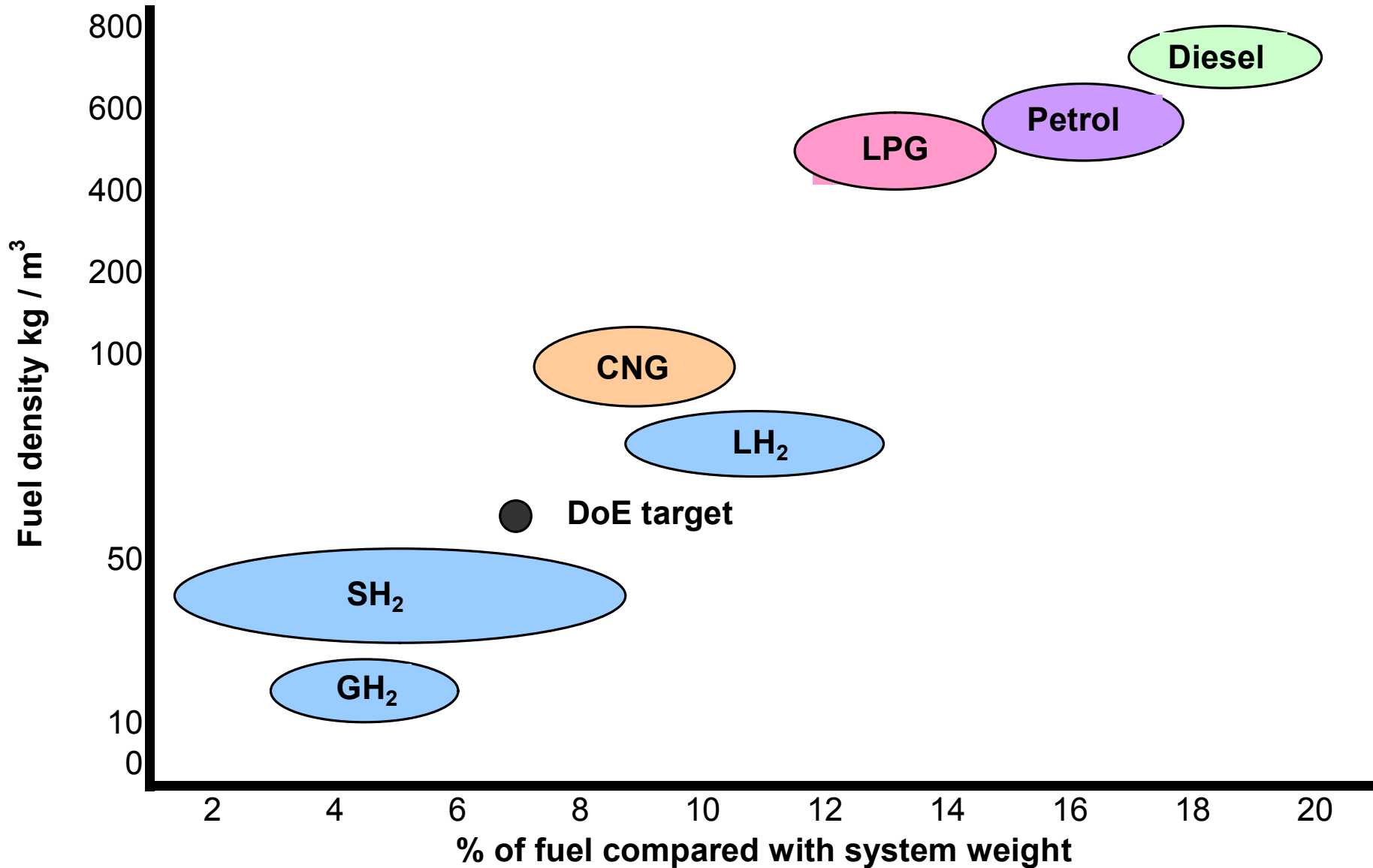


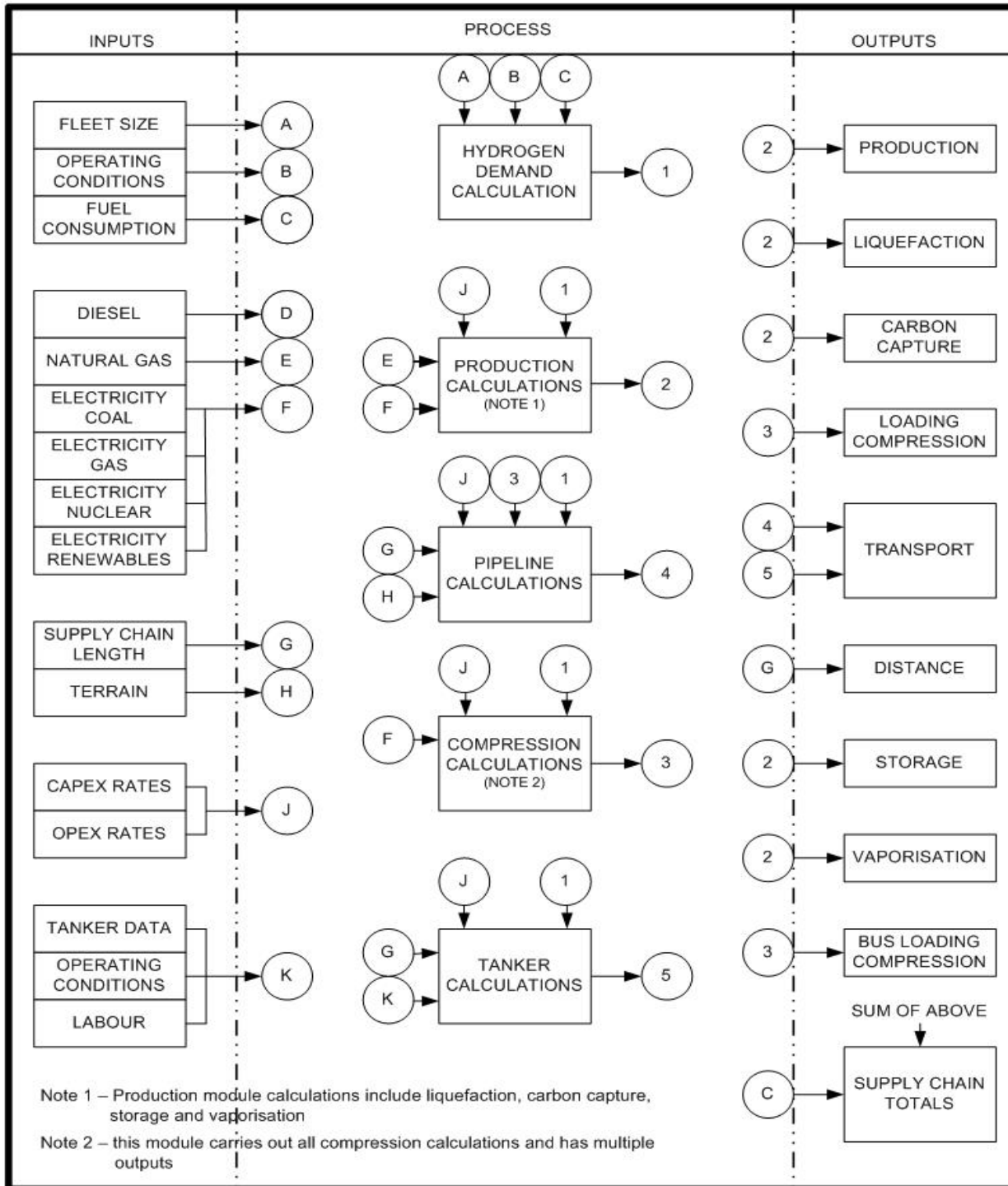
# Reasons for change?



- **Cost.**
- **Energy Efficiency**
- **Environmental concerns**
- **Energy shortage**
- **Energy security**

# Storage densities





## Pathways

Centralised  
Localised

## Production

SMR

Biomass

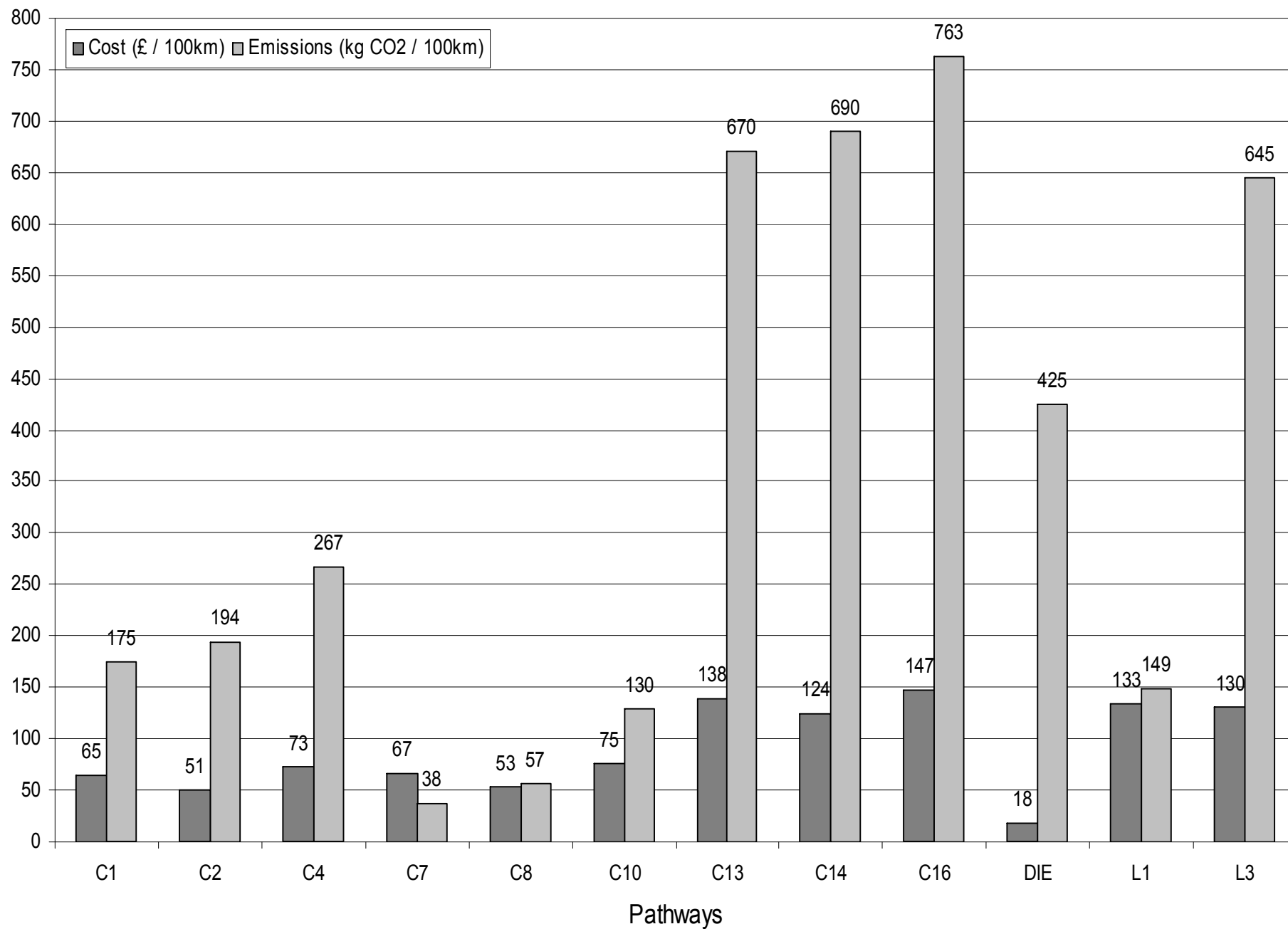
Electrolysis

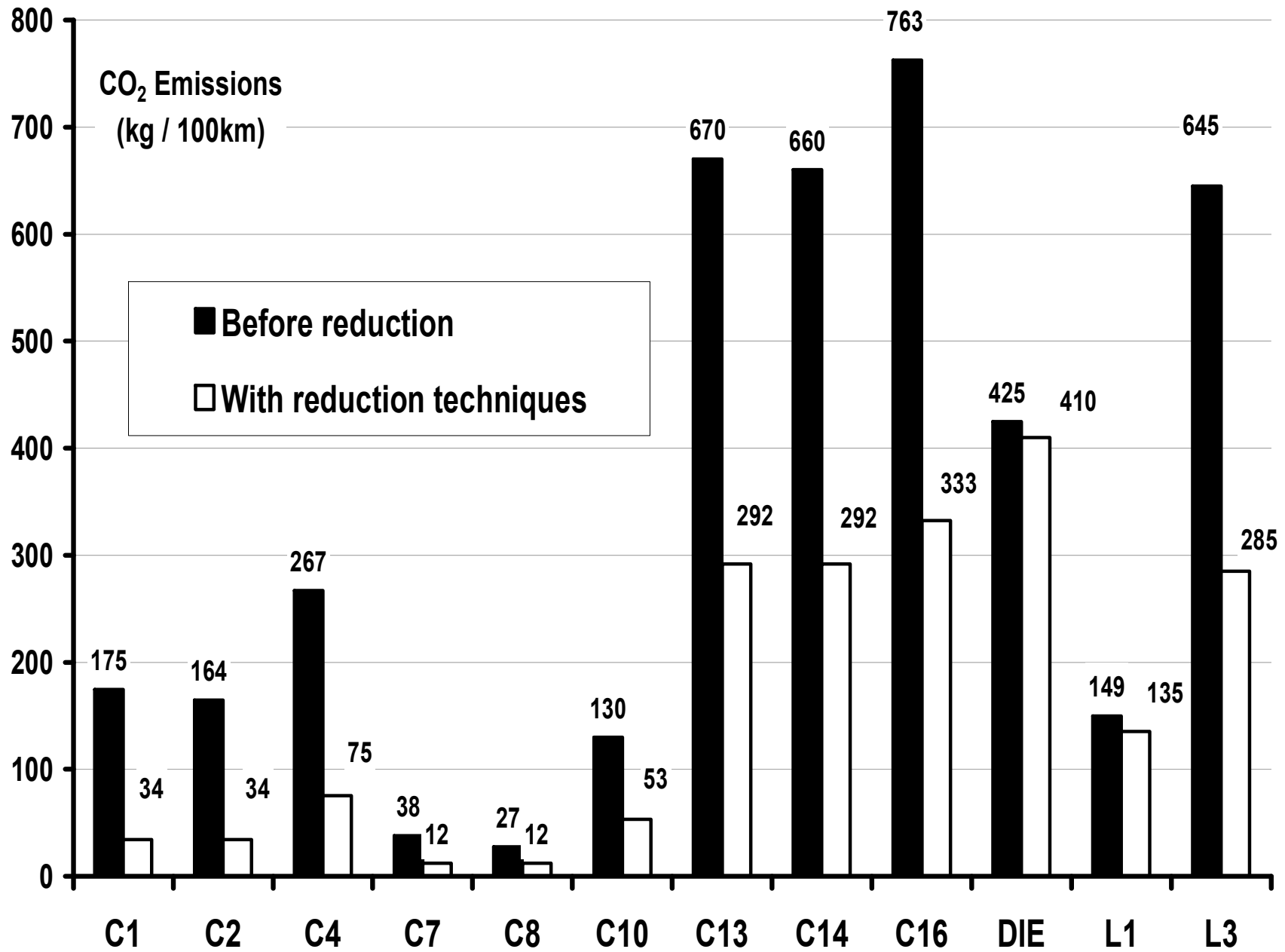
## Transportation

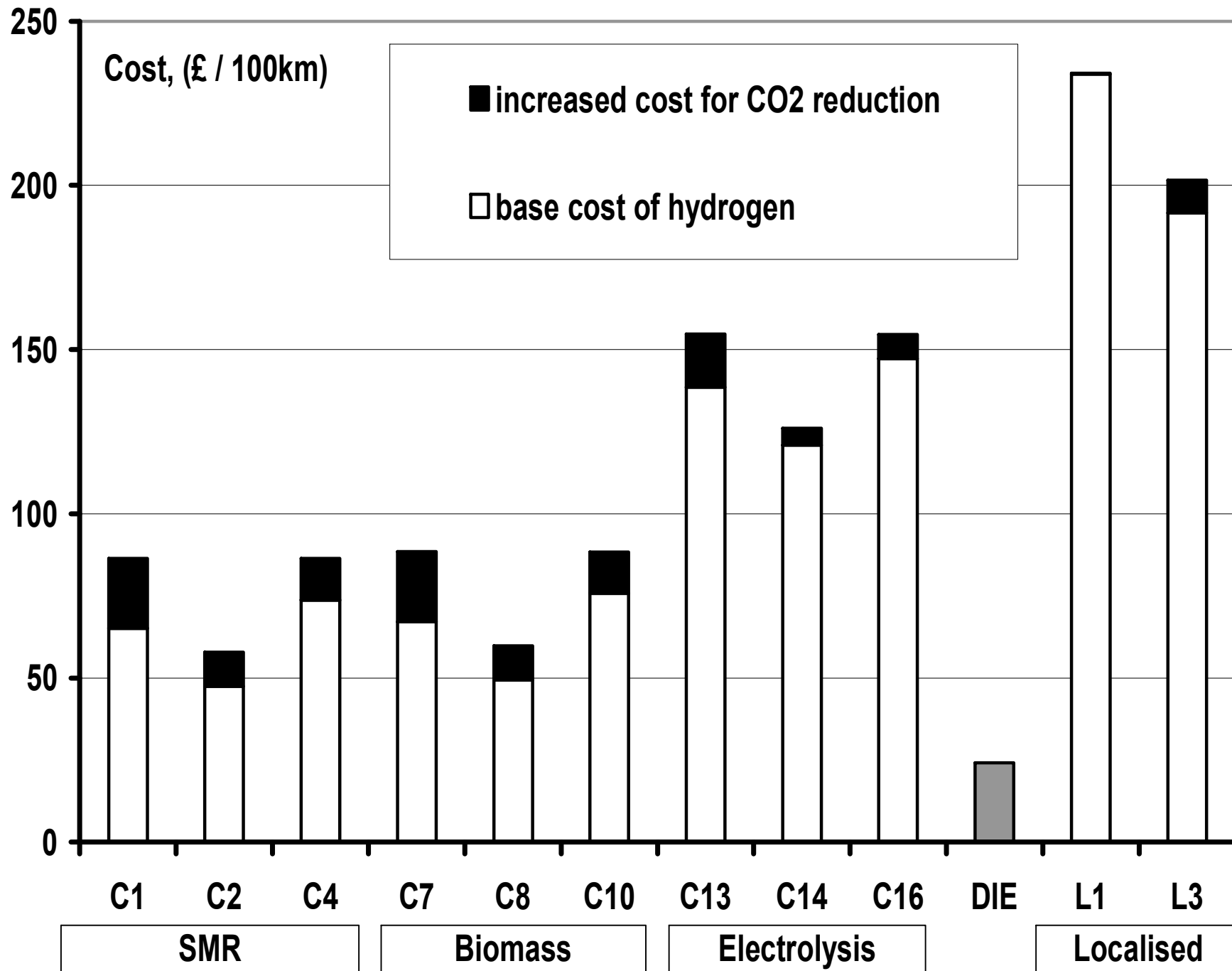
Road – gas

Road - liquid

Pipeline









## Summary

- Hydrogen is not cost competitive until diesel reaches  $>£1.80$  per litre.
- When it does, emissions reduction techniques show good cost benefit (+30p / litre)
- Increase the use of renewable electricity generation to reduce emissions. If not, carbon sequestration is needed
- FCV trucks could mitigate additional tanker journeys.
- Further work is required to reduced local pathway costs

# Thank You



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