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# Energy options for transport – Phase 1

ERP Plenary Meeting  
15<sup>th</sup> April 2015

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- Project objectives
- Outline of UK energy and transport
- Options and limitations for decarbonisation
- Next steps – Phase 2

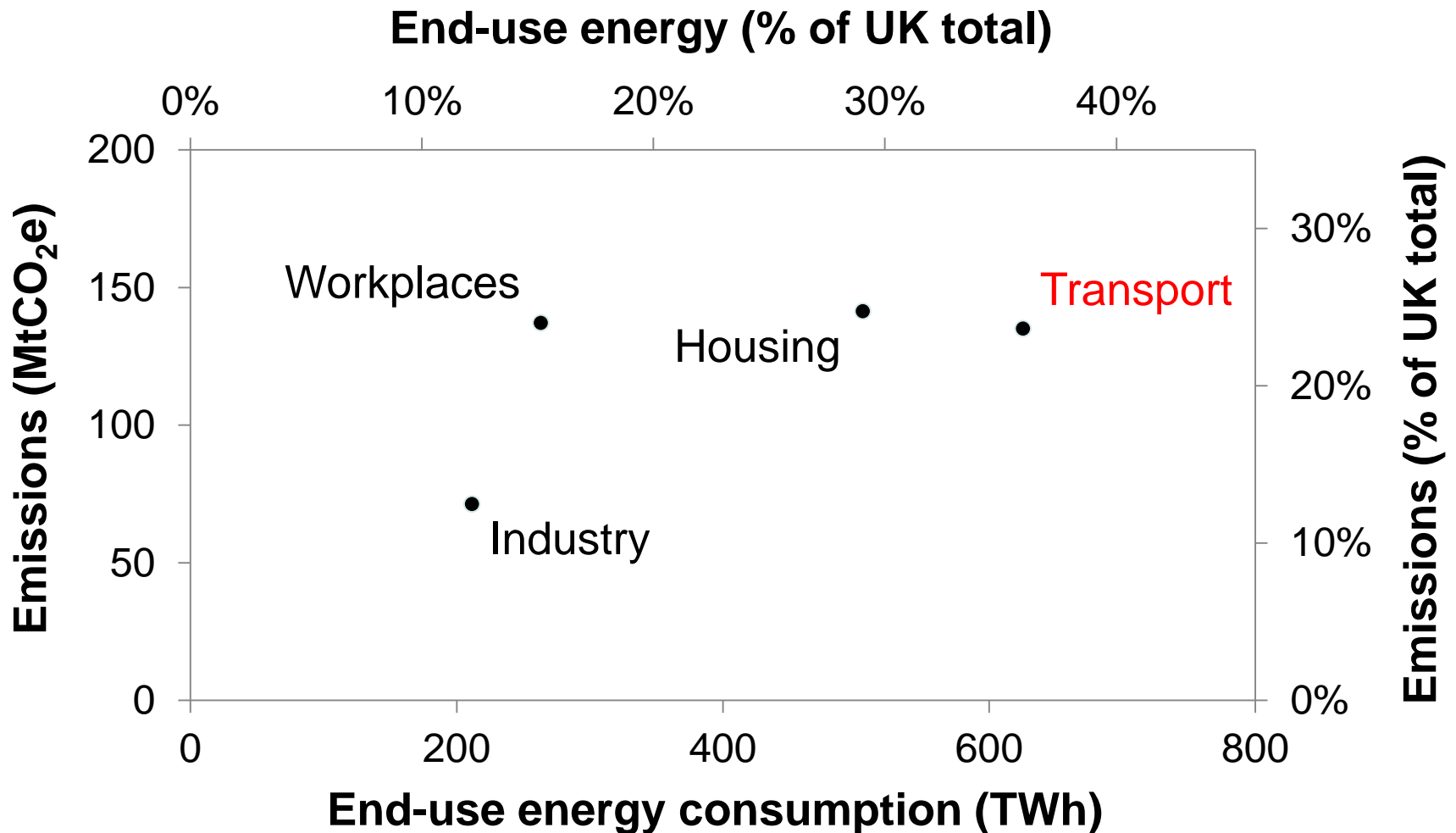
# Objectives

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- To explore:
  - Trade-offs between factors within the transport sector
  - Interactions with the wider energy sector
- Joint ERP and GO-Science project
  - Phase 1 update today
  - Seeking views on Phase 2

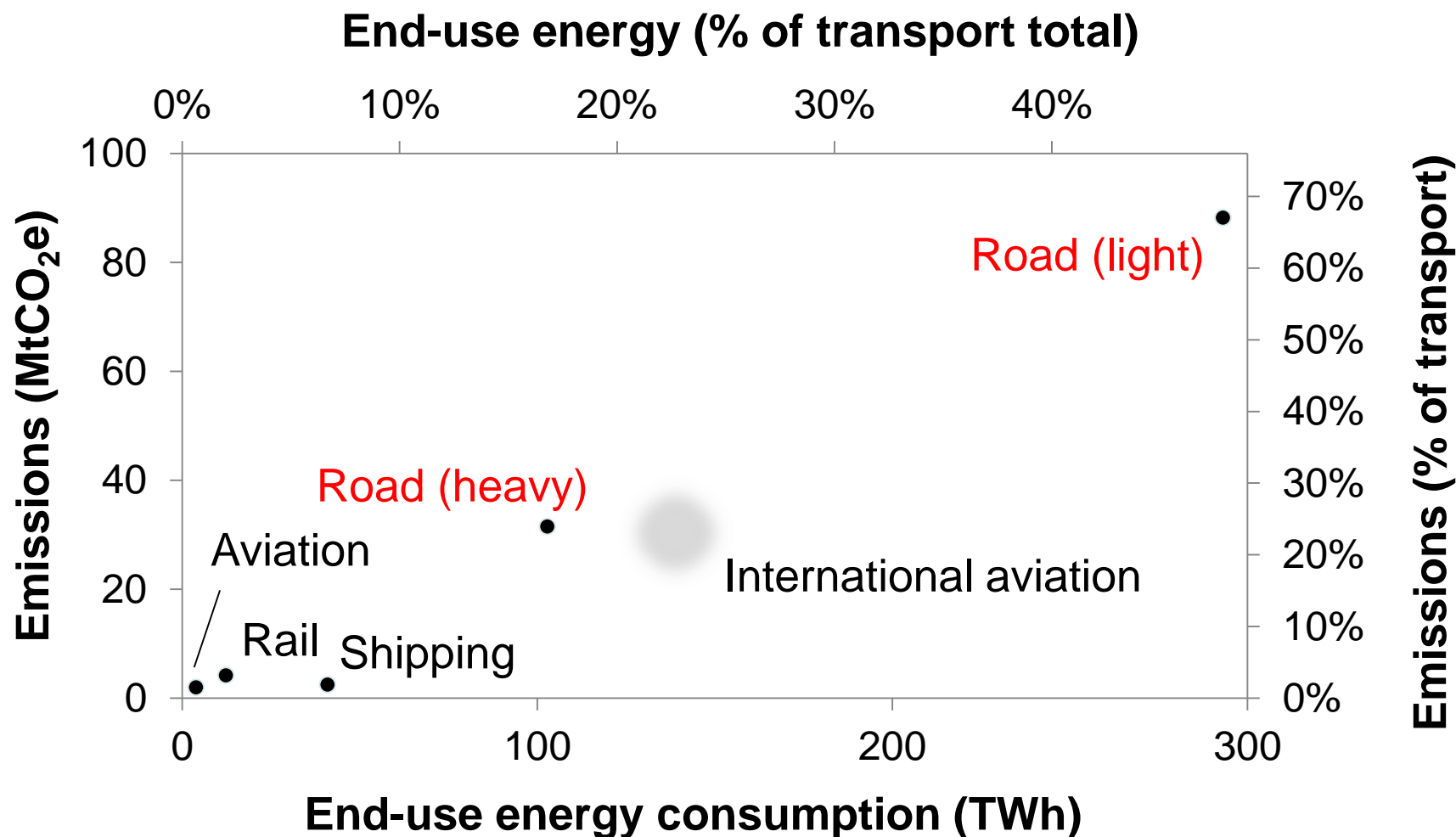
# UK energy and emissions



Energy Consumption in the UK (DECC, 2014)

Meeting Carbon Budgets – 2014 Progress Report to Parliament (CCC, 2014)

# Road vehicles are the largest source of transport emissions



# Mode switching has a place but with limitations



- Double cycling (from cars)      0.7% total
  
- All domestic air to rail      1.4% total
  
- Double rail (from cars)      8.5% total

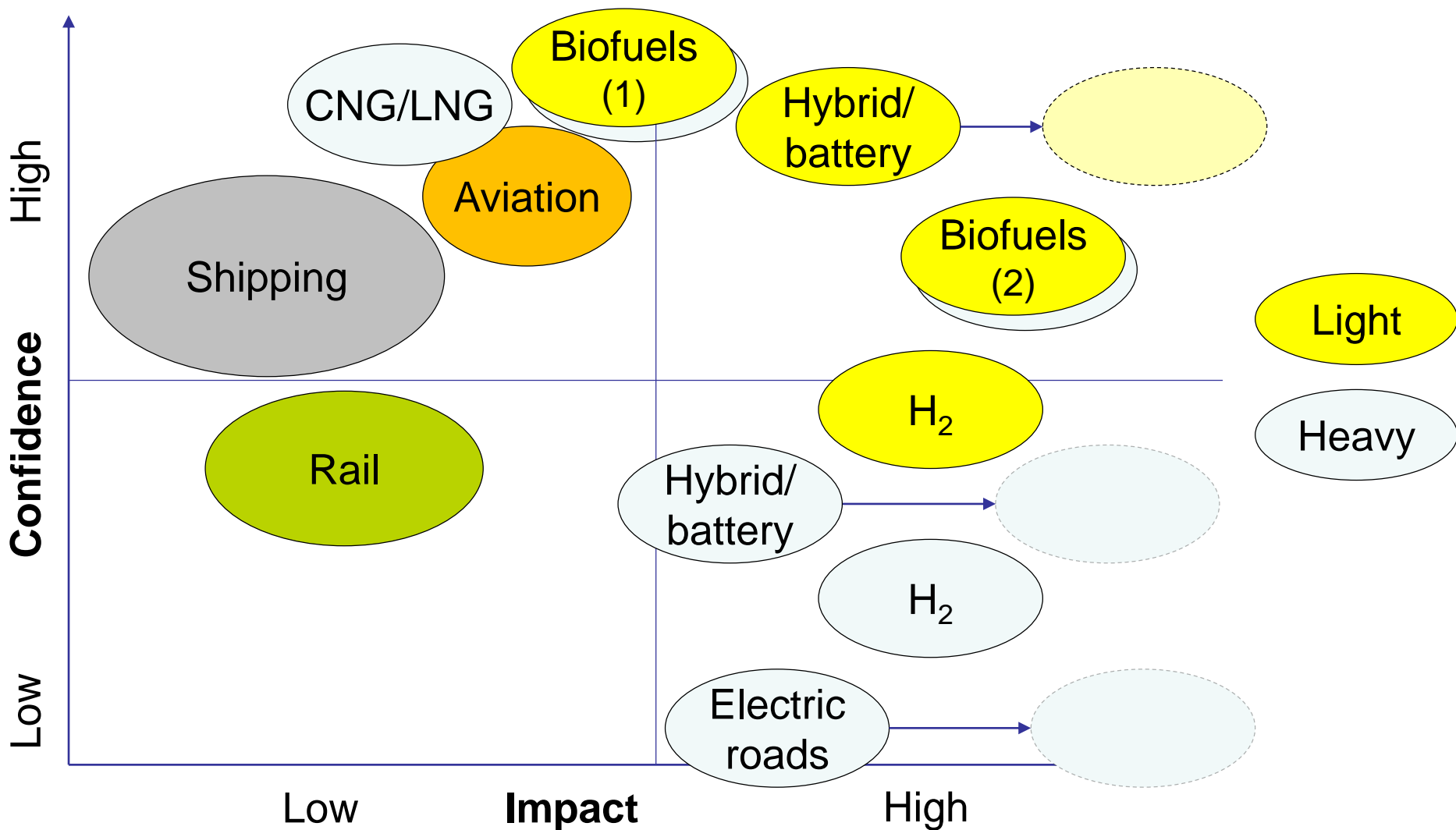
# Savings from non-road fuel switching are relatively small



- 100% LNG in shipping 0.5% total
- 100% biofuels in aviation 1.4% total
- 100% rail electrification 1.8% total

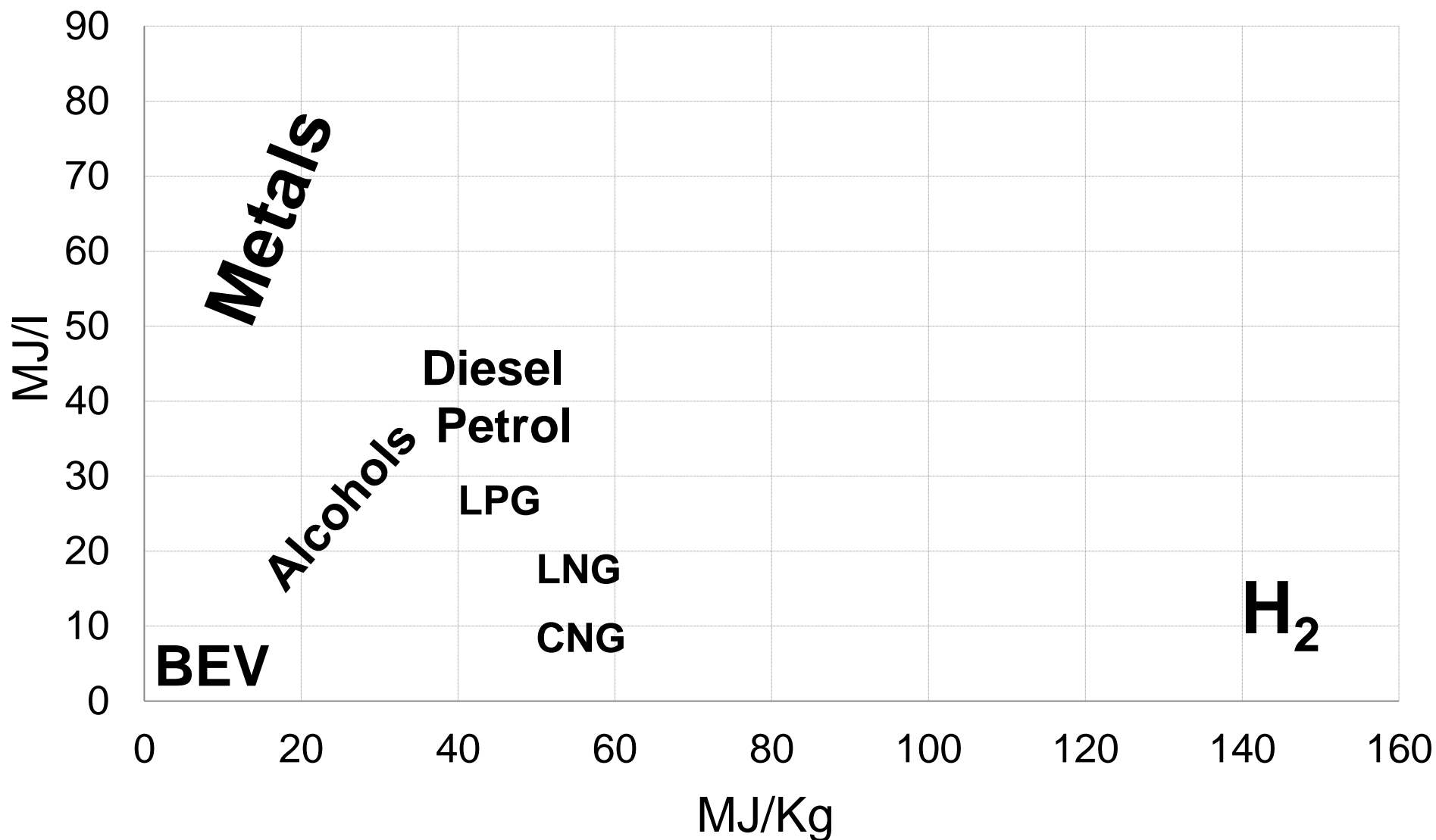


# Large variation in confidence and impact





# Energy density is critical for heavy duty road vehicles



# Other issues are important for light vehicles

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- Air quality
  - Zero tailpipe emissions; unintended consequences
- Vehicle size
  - Safety regulations; consumer preferences
- Flexibility of operation
  - Range; refuelling

# Competition for low carbon fuels may constrain their use

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- Phase 2 to consider ‘best use’ of energy sources
  - Consider constraints and competition
  - Fuel availability and alternatives for each mode
  - Infrastructure capacity implications
- Scenario characteristics
  - Broad scope, covering transport and energy sectors
  - Inputs-based, and not goal-seeking or cost-optimising
- Phase 2 to report at October 2015 plenary

# Discussion – Phase 2

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- We seek members' views on:
  - Scale and extent of interactions between transport and energy sectors
  - Bounding conditions in either sector
  - Probable and/or plausible rates of uptake
  - Level of confidence around future technology development

# Confidence/impact chart

