Exploring Beyond Diesel #4

Diesel Use in NSW Agriculture & Opportunities

to Support Net Zero Emissions

18th August 2021

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MOVEMENT

WHAT WE DID

Assessed literature and consulted industry on diesel use and potential pathways to reducing reliance on it

HOW WE DID IT

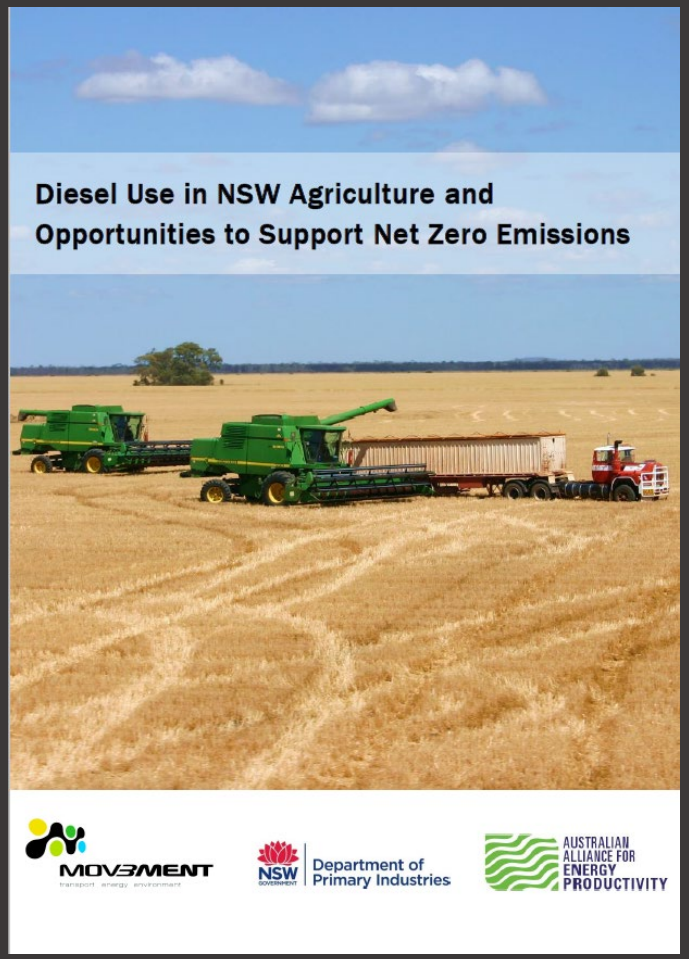
Global research, local market knowledge, end user focus

WHY IT'S IMPORTANT

It's a stubborn issue to address on the path to Net Zero Emissions

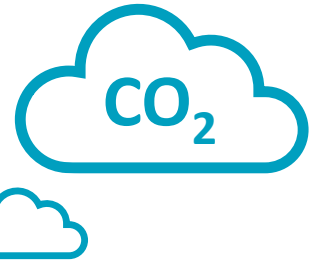
The report that prompted this webinar

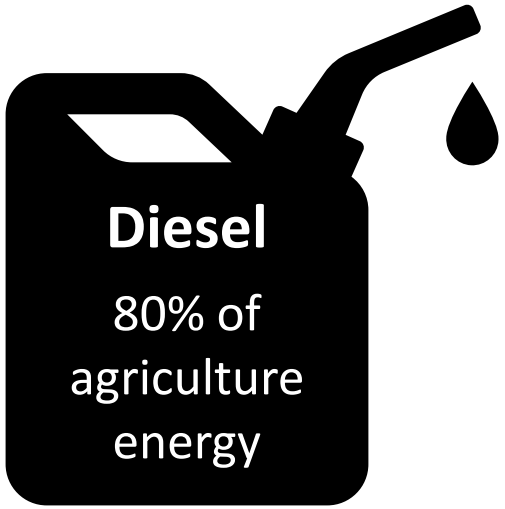
- A review of literature on diesel use in extensive agriculture
- Review of the potential methods to reduce reliance on diesel to 2030
- Consultation with farmers, equipment manufacturers and peak bodies
- Short, medium and long term actions for government, industry and farmers to enable reduced reliance on diesel

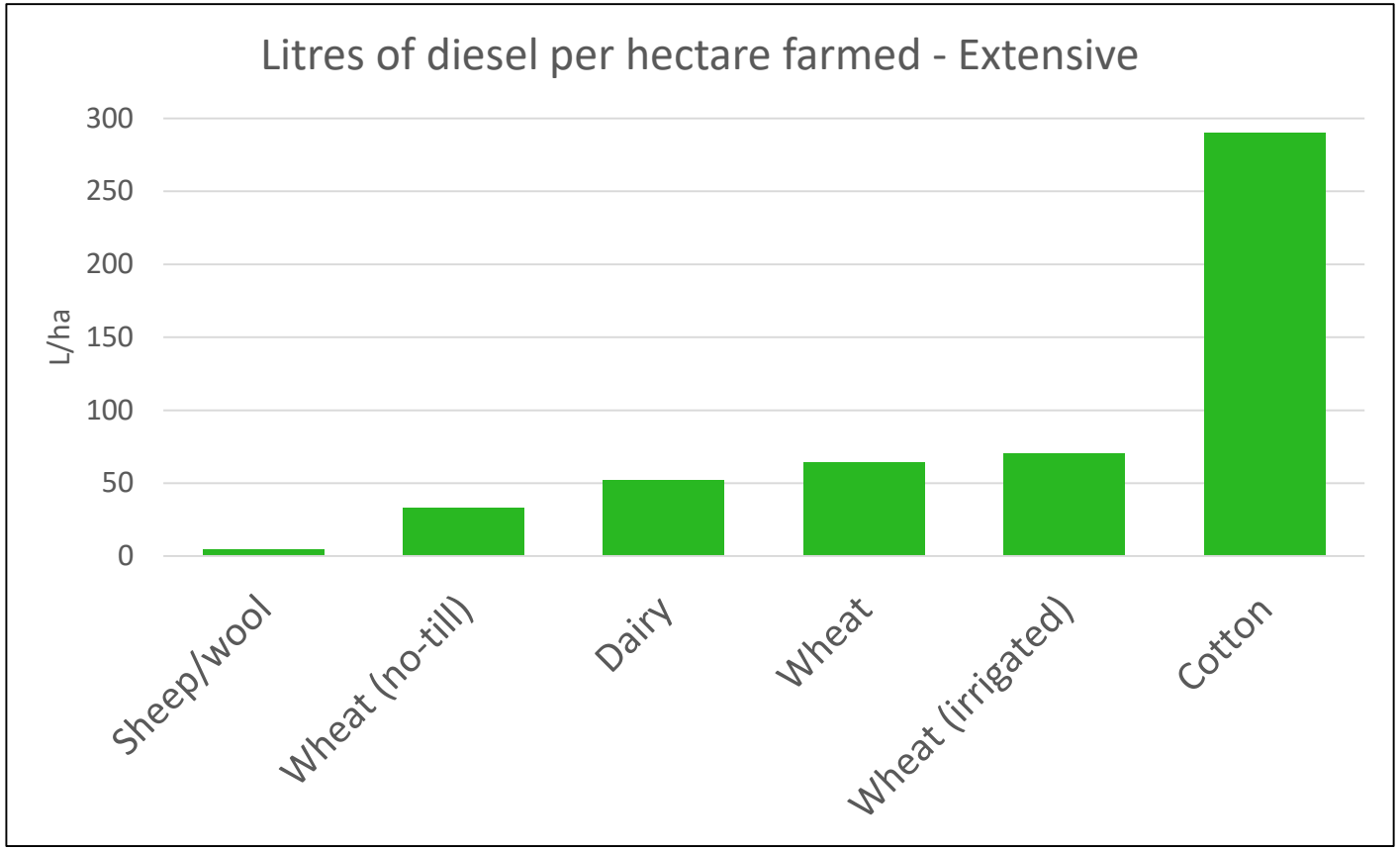


Hooked on Diesel

Contributes 8% of agriculture emissions







Diesel's Virtues

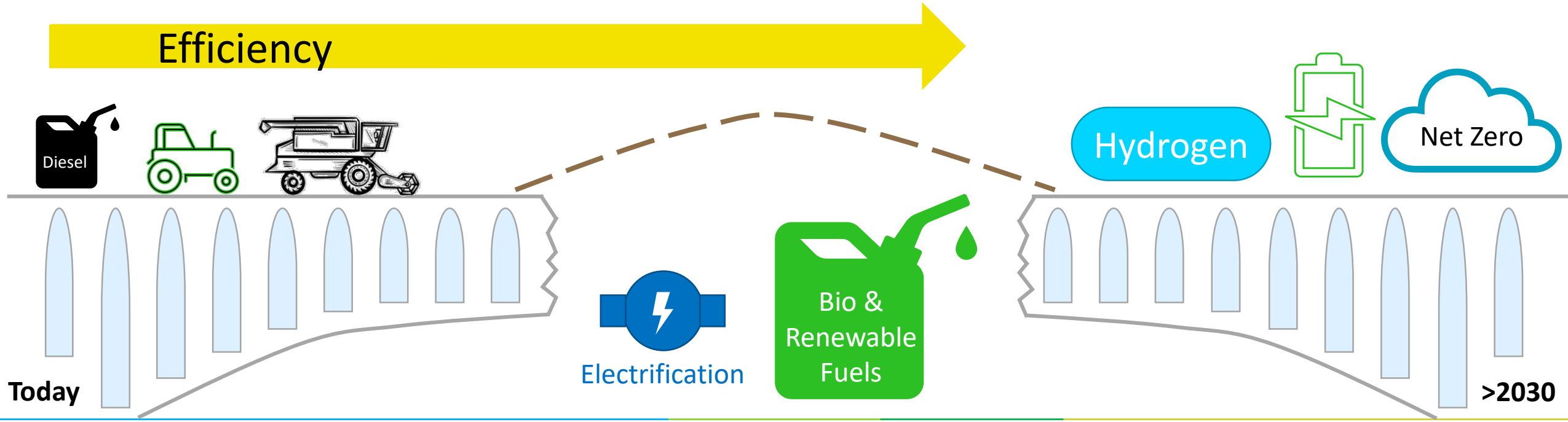
- Readily available
- Easy to store
- Relatively cheap
- Machinery on hand

- Energy security
- Climate impact
- Requires maintenance
- Can be more expensive

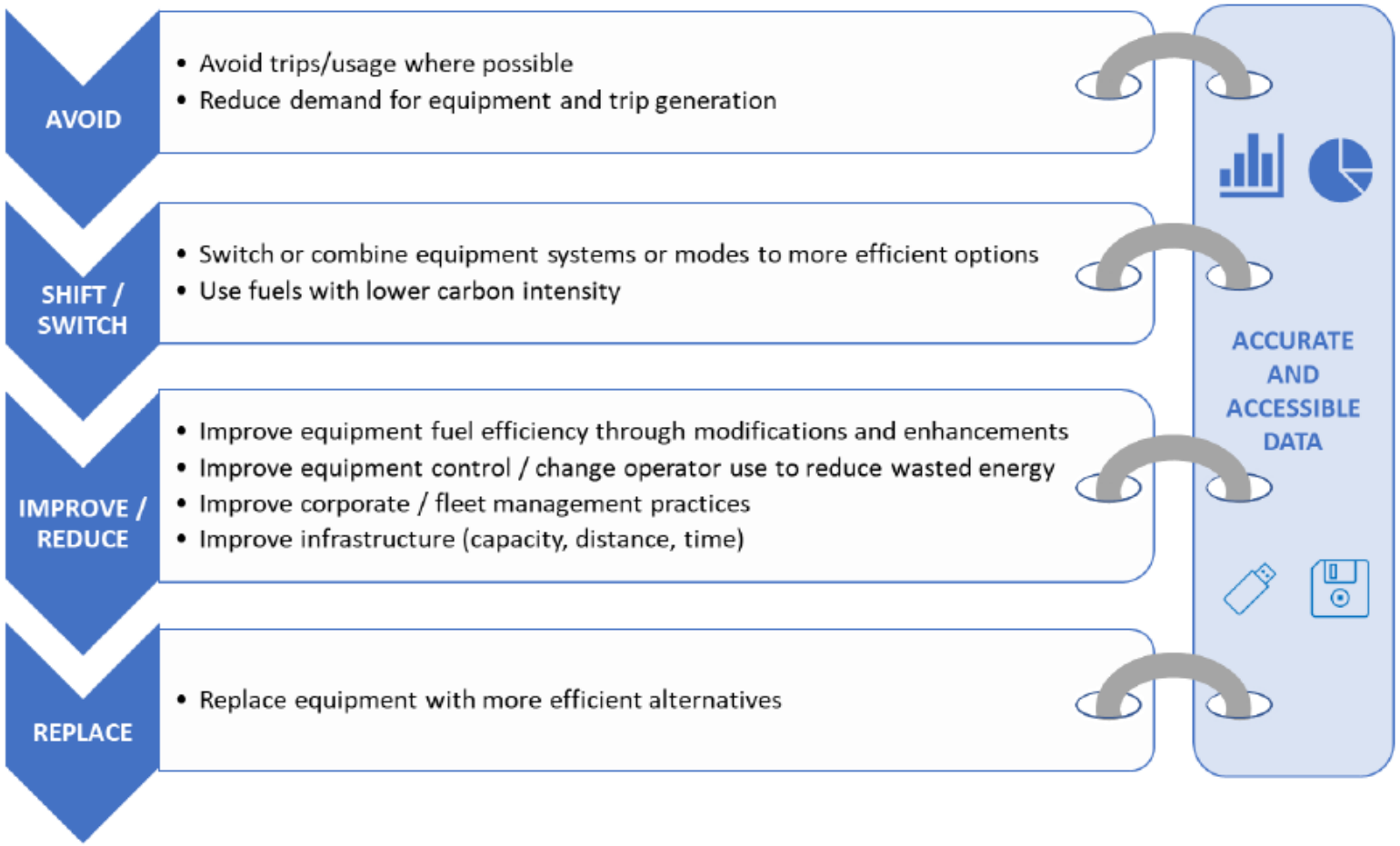
NSW GOVERNMENT

So what are our options?

- Technology has the potential to help us but it’s a long way off in many applications
- Efficiency provides the foundation for change and provides benefits now.
- Drop in biofuels could provide rapid reduction in diesel reliance and emissions



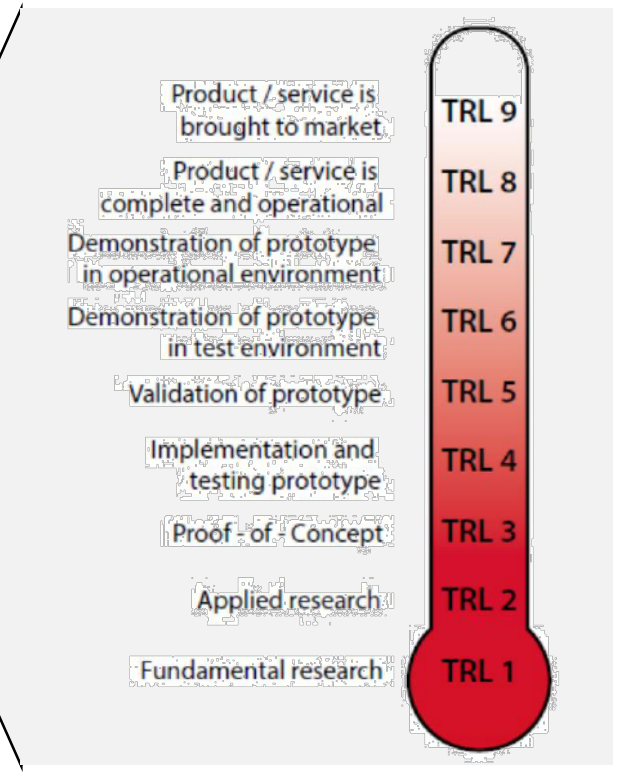
Efficiency - the first alternative fuel



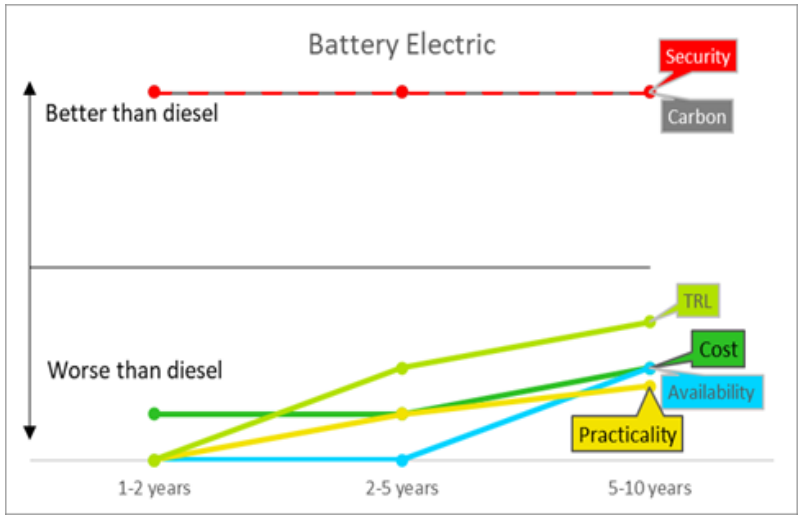
- Sometimes forgotten when a technology focus is taken
- Some great work has been done over the years in improved practices
- Data ties together any savings, potential and actual.
- Replacing the equipment with a new tech is the 4th step

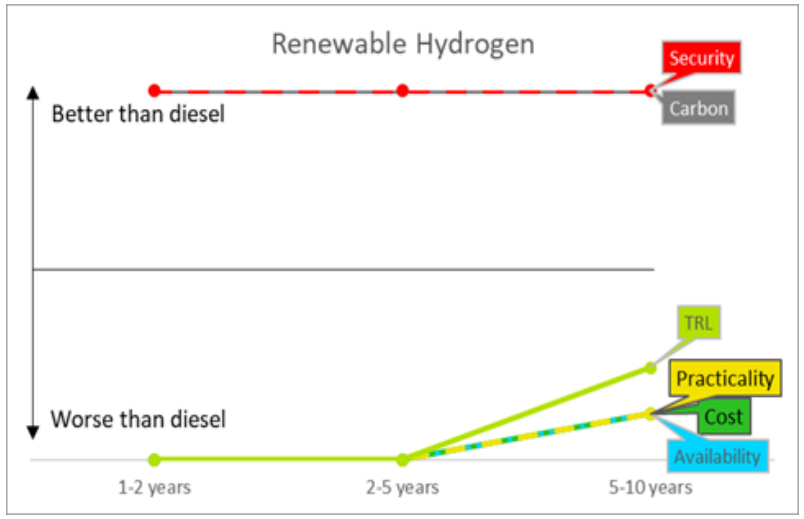
What makes a good alternative fuel?

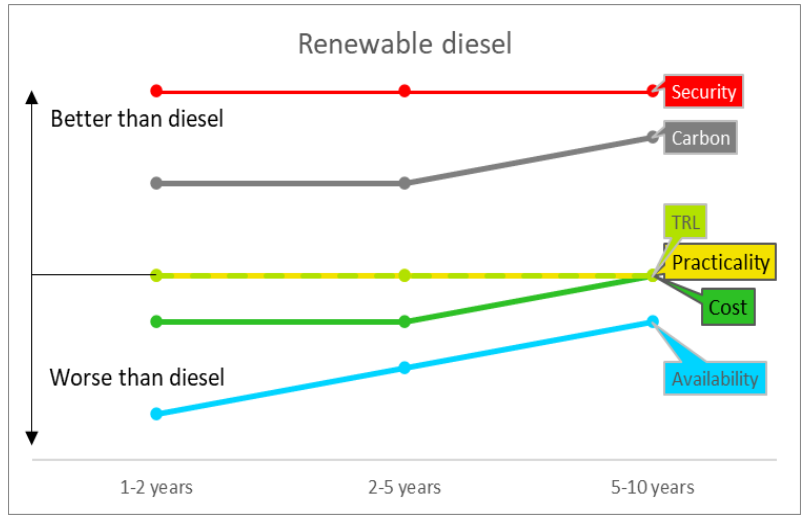
- **Cost** – No shift will occur if costs don't stack up
- **Availability** – You can't buy what you can't get
- **Practicality** – It can't be harder or take longer.
- **Technology Readiness Level (TRL)**
- **Carbon intensity –** of full fuel cycle
- **Energy Security –** on a farm and national level



Examples of the assessment – Mobile Machinery





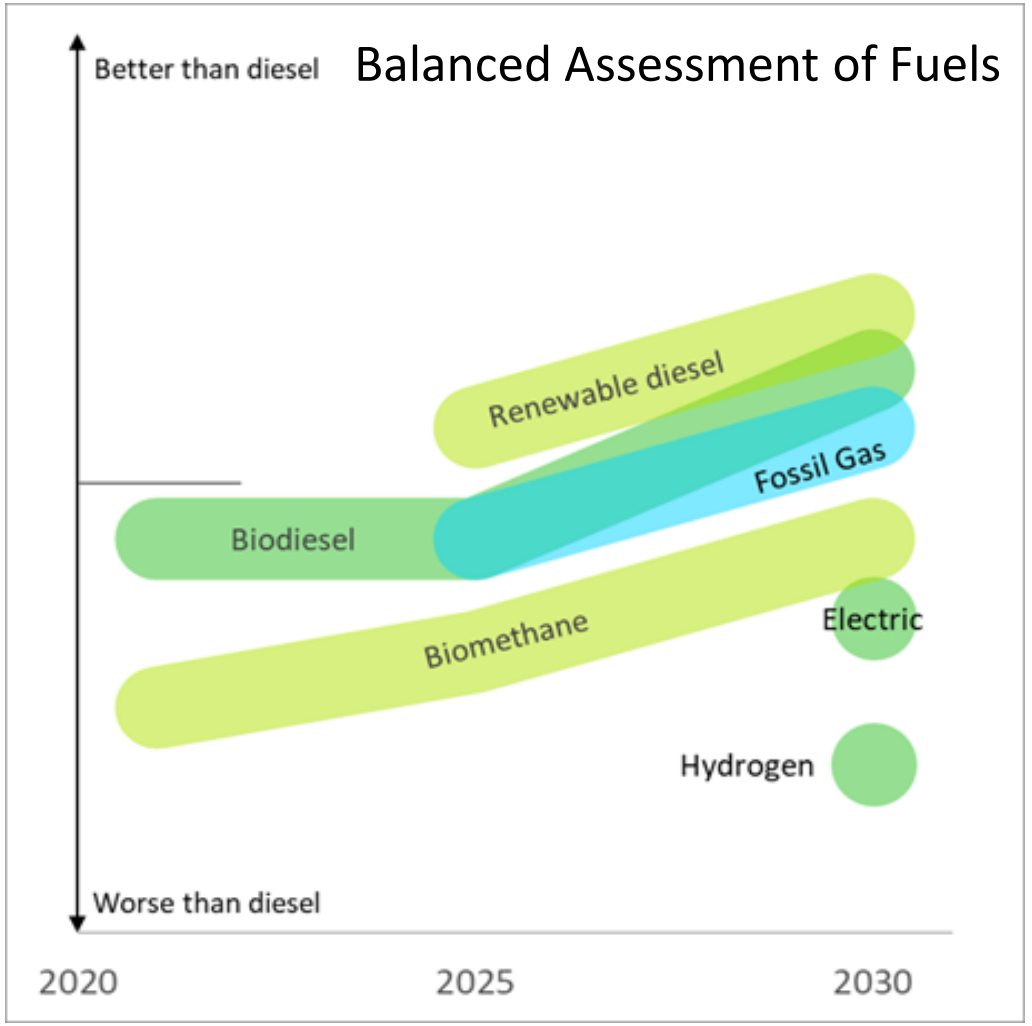


- Considered from the point of large mobile machinery (e.g tractor, header)
- Based on best case assuming including government support
- Assessed relative to diesel at the time
- Availability often the limiting aspect

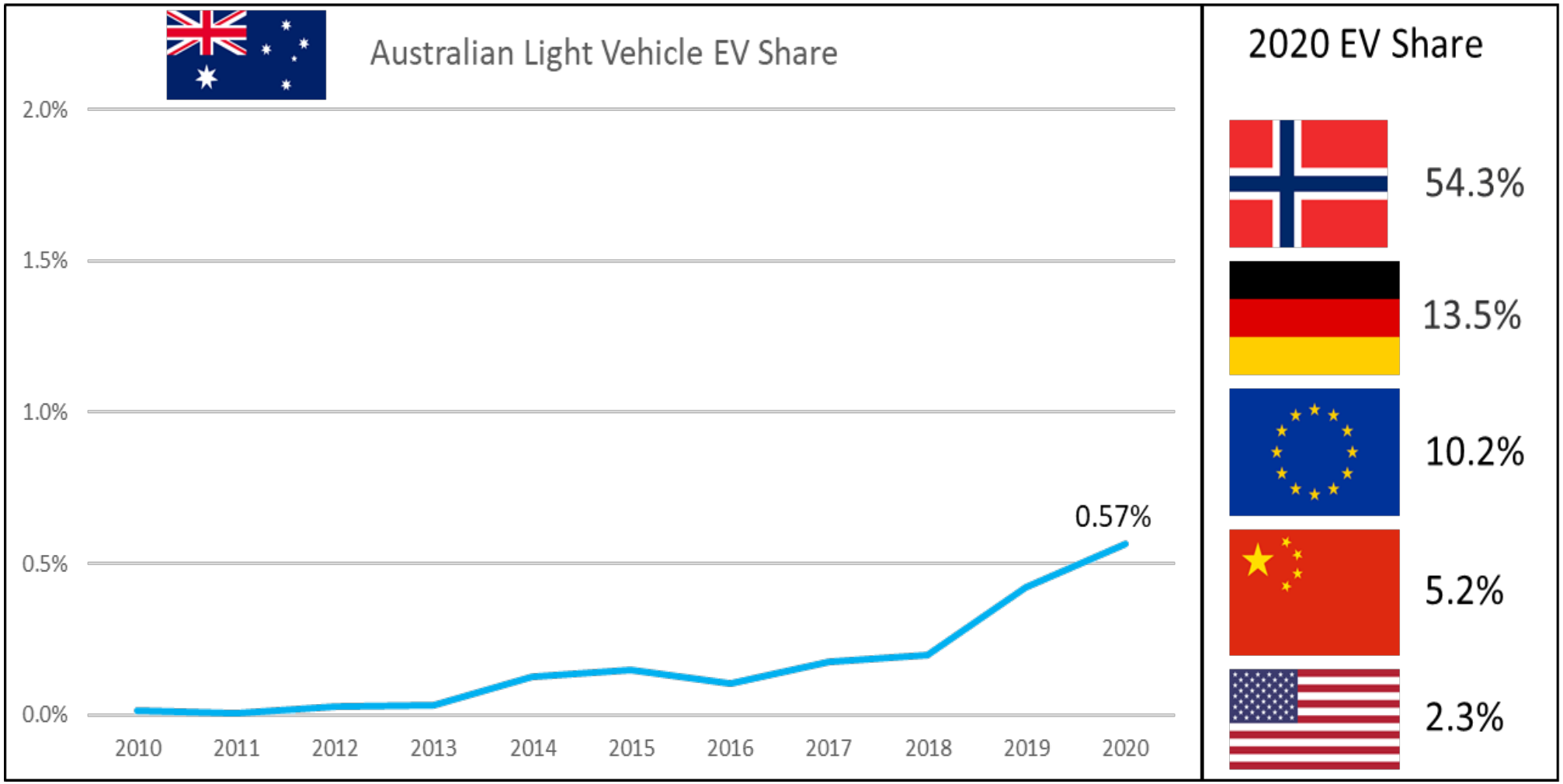
Future fuel on balance

- Each alternative has constraints today
- Many are fundamental and will remain

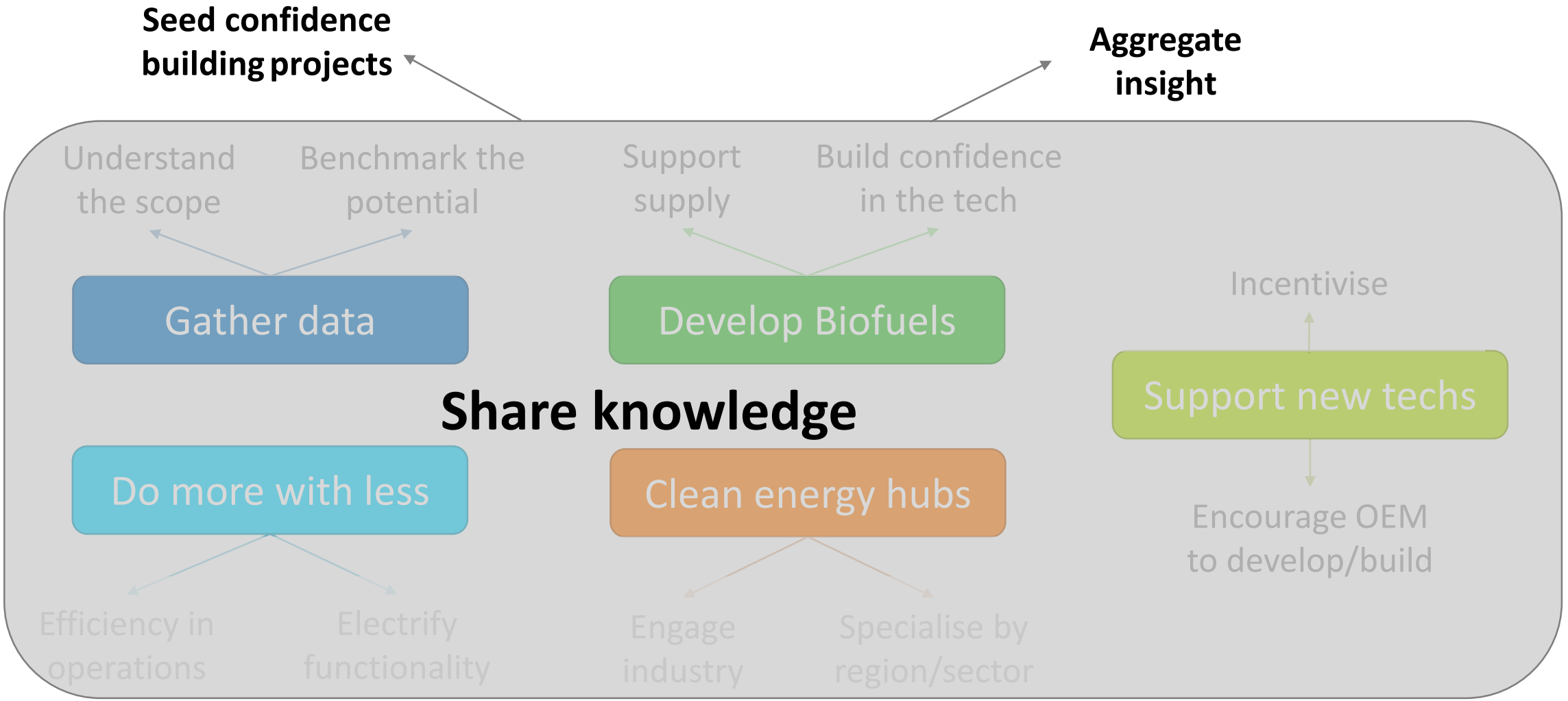
- A shift to any alternative is only likely where:
  - Models are **available**
  - The **economics** are favourable (or made to be)
  - It is **practical**
  - And farmers have **confidence** in it



New fuels need support … or this is what happens



Recommendation for progress



Parting thoughts

- Diesel is hard to displace
- Start with efficiency to reduce demand
- Move to drop-in (bio)fuels for fastest effect
- Technology-dependent fuels take a long time
- Progress policies to:
  - Prepare, Permeate & Populate alternatives
- **Net zero needs more than clean fuels**

Questions?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