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Fact Sheet 5: Renewables Precinct

Microgrid with Ammonia Production

Ammonia (NH_3) can be produced locally with renewable power to be used as an energy vector or high value industrial products. This can include crop fertiliser and fuel for heavy vehicles, with excess heat from production used for grain flaking, stock feed manufacturing, pen scapings pelletizer and as a centralized energy system.

The key industry activities include:

- Green ammonia production for fertilisers such as Anhydrous Ammonia, Ammonium Nitrate and Urea
- Green renewable power generation (solar to hydrogen to ammonia solar for water pumping)
- Green hydrogen production for transport and industry

Why Ammonia?

- Agricultural industry desire to have certainty for future input costs of fertiliser, energy and fuel
- Regional / local production of fertiliser to reduce national security risk to inputs
- Decarbonise industry through inputs (fertiliser, power and fuel)

How is it Produced?

Moving Injection Horizontal Gasification (MIHG) is a technology to improve variability of feedstocks. Process involves:

- Inputs of air, water and renewable power (solar)
- Hydrogen production with electrolyser to separate the H_2O to produce renewable hydrogen H_2
- Ammonia production as an end-product, with uses for:
 - Fertiliser (Anhydrous ammonia or Urea)
 - Transport fuel
 - Industrial uses (batteries, ammonium nitrate)
 - Export for energy fuel



Ammonia Plant Schematic

Plant and Solar array

Regional and Remote Communities Reliability Fund

Microgrids for Balonne Shire

Collaborative project with Balonne Shire Council that received grant funding from the Australian Government



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