

M&DCPH Mollongghip & District
Community Power Hub

Exploring Beyond Diesel

Joe Finneran

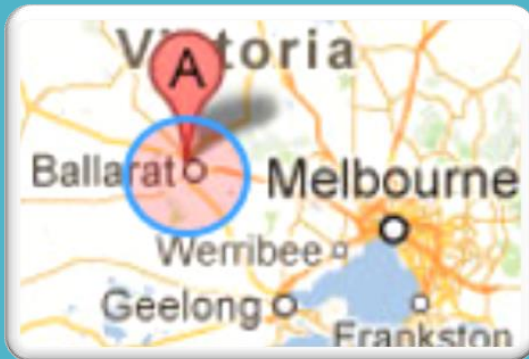


Department of
Primary Industries

MADE ENERGY

Background

- Main cash crop is potatoes – produce 55,000t/pa (20%) of spuds in Victoria
- Fat lambs, cattle and cereals etc
- 110km from Melbourne
- Lucky - high rainfall, rich volcanic soils
- Common challenges.....
 - Farm gate price for spuds
 - Price of diesel – uncertainty
 - Production – yield pressure, environment, diesel, fertiliser, pesticide costs



The adventure so far.....

- 2 years ago.....Sustainability Victoria/BREAZE – launched Community Power Hub program – aim was to help communities save energy with renewables
- Renewable's we looked at - solar/wind /microgrids /pumped hydro / electrification of pumps/engines etc.
- Challenges....Regulatory barriers / suitability for farm systems – location/size, crop rotations
- Agriculture is unique – residential vs. large scale solutions
- We helped 24 of the 40 plus local farmers apply for Agriculture Victoria – Agriculture Energy Investment Program grants.
- Process involved each farmer getting an independent energy assessment (electricity & Diesel). (Pitt & sherry)



Next part of the journey.....

- Diesel was the most surprising bit
- **15 farmers** use about **1,400,000** litres of diesel for irrigation over 4 months
- excludes tractors, trucks etc (+30%)
- Electricity = bulk buy from preferred retailer for the community (large to small users to increase buying power)
- Created **MADE Energy**
 - Community members/ investors/suppliers/users
 - Blend of locals & partners
 - Partners – BREAZE & Frontier Impact Group (renewables/financial model)
 - Co-op/B-Corp structure?



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Research and development journey.....

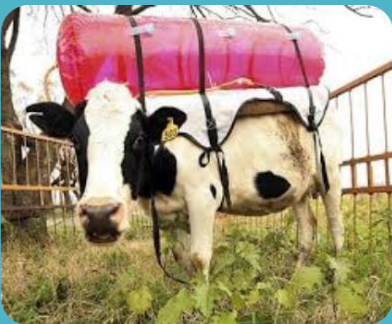
- **Replacement diesel solutions** – ethanol, renewable diesel, biodiesel, mixed fuel solutions including hydrogen plus electrification of the grid to remote diesel pumps
- We also considered what **other problems** can we help fix to make farmers more viable?
- After much research and **financial modelling** this lead us to.....



- **Anaerobic digestion**....methane from co-digestion of agricultural waste

Anaerobic Digestion Hub.....methane

- **Anaerobic digestion** (AD) is a tried and tested technology....
- **Why**.....we found it to be the best 'fit' for our community – Socially, Economically, Environmentally and from a deliverable perspective
- Centralised (AD Plant) **Hub & spoke** (farms) model
- **Fixes other problems**.....reduce input costs.....uses agricultural waste....potatoes, manure, organic wastes etc. from local area
- **Methane/Biogas** can be upgraded/compressed to run bore pumps, transfer pumps, tractors etc.
 - **Convert/replace** some existing fixed diesel irrigation pumps to run on methane as a 'trail'.
 - Opportunities for **new farmer revenue/income streams/use existing assets**



1. COLLECT LOCAL FARM WASTE



WASTE VEGETATION



ENERGY CROPS



ANIMAL MANURE



POTATO WASTE

2. COMMUNITY BIOGAS HUB

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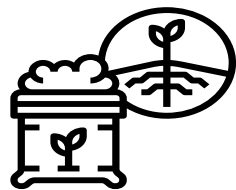
ANAEROBIC DIGESTER



BIOMETHANE RNG



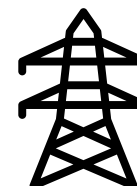
STORAGE / DELIVERY



Fertiliser

3. USE

EXPORT ELECTRICITY



POWER IRRIGATION PUMPS



SOIL & PLANT HEALTH

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- Its an exciting opportunity
- Potential **game changer** for the broader agricultural sector
- Financial modelling suggests we can be competitive..... post COVID **new economy**?
- **GHG** modelling suggests a **30%+** reduction
- This is about **doing something good** for our future community
- It will create **new revenues** for farmers, will **reduce costs**
- Our drivers are about helping farmers test/trial in a **managed risk approach** that positively impact's: yields, cash flow, crop or soil health
- Its still **early days** for us....our interactions so far have all been very positive with different stakeholders in the government, farming and broader communities

Next steps for MADE Energy

- Additional **funding** – secure between \$2 -\$4m from motivated/ aligned investors
- The **farmers** we have spoken to are **really positive** about the project and they are thinking about how they can get more involved
- COVID has been challenging....no community workshops
- **Surety of income** required....to secure debt funding
- We are planning in putting in place a demonstration hub/MVP..... kick the tyres/test our assumptions
- We are looking for **new partners** – investors/engine/storage solutions
- Aim is to provide an Australian designed/built solution
- Our target is to be up and running by Nov 2022....start of irrigation season
- We are **happy to help** you....just ask



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