He Waka Eke Noa and farm greenhouse gas review

LUDF focus day

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He Waka Eke Noa – Process to date

Background

- In response to international and national pressure agriculture was to become part of the ETS
- The industry proposed an alternative called He Waka Eke Noa

Where we have landed

- Proposal of a split gas pricing for emissions to recognise that methane stays in the atmosphere for a lot less time than CO_2 and N_2O.
- The proposal for more sequestration options that are not currently in the ETS.
- And to recognise other mitigations which reduce GHG emissions as the science is developed to support them.

HWEN proposal to Government May 2022 → **Feedback from the Climate Change Comission July 2022** → **Government has until end of 2022 to release its final decision**

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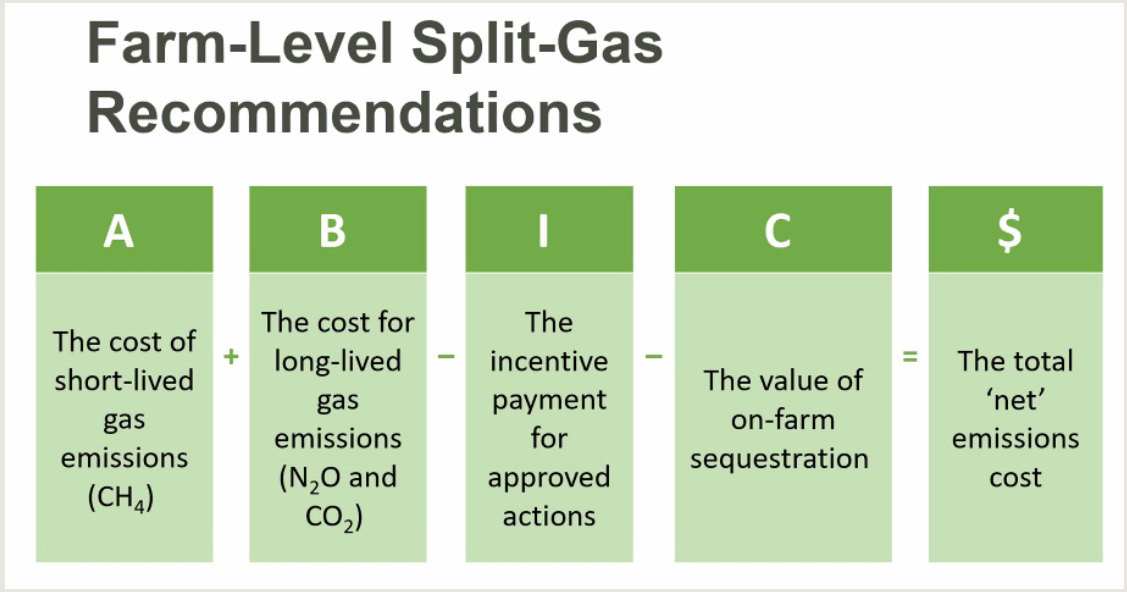
Farm level split gas pricing scheme



Tax – A + B

- The proposed price for CH_4 (A) starts at $0.11/kg (important to note it is in kg not tonnes)
- For CO_2 and N_2O (B) the proposed starting price is $4.25/tonne.

Credit – C

- The proposed value for on-farm sequestration is 75-90% of the NZ ETS price for a tonne of carbon
- Estimated to be $85 in 2025 (likely to be higher than this)
- 75% of this would be $64/tonne.

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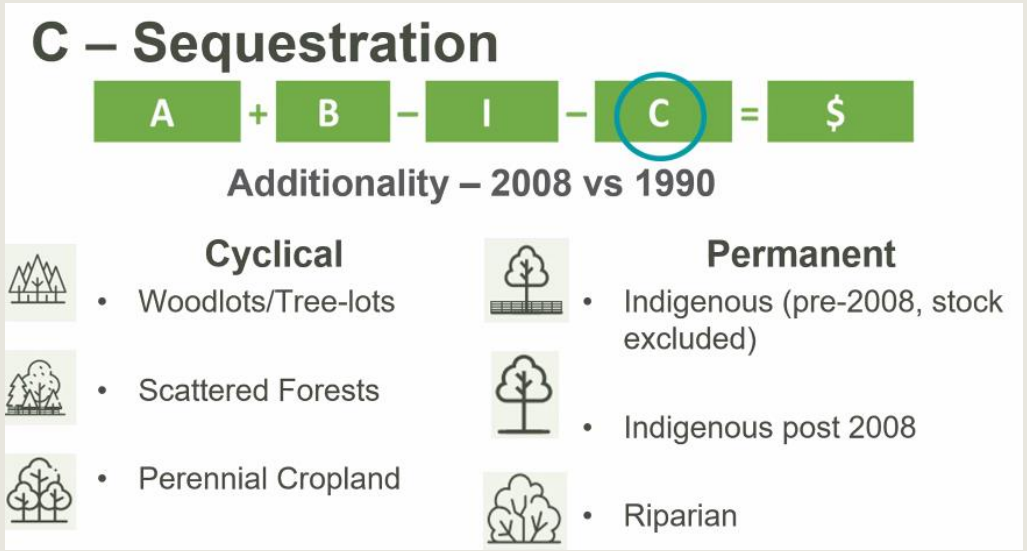
On farm sequestration proposal



Sequestration categories

- Permanent
  - Before 1st Jan 2008 stock must be excluded and regenerating* and/or planted > 0.25 ha
  - After 1st Jan 2008 > 0.25 ha planted and/or regenerating*
  - Riparian after 1st Jan 2008 (min 1 m wide, non woody vegetation ie flax and toetoe included but not predominant species).
  - Woody species include manuka, kanuka, matagouri, mixed broadleaf, five finger, cabbage trees

* Regenerating means must be a native seed source within 100 m of area.

- Cyclical
  - Minimum 0.25 ha and 15 stems/ha
  - Orchard/ vineyards > 0.25 ha
  - Shelterbelts min linear canopy cover of 90%
  - Forests > 0.25 ha but < 1 ha

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Detail on proposal

- The levy placed on all gases, discount on the price of sequestration and value of incentive discounts to be updated every three years
- Price for sequestration be updated annually to align with ETS price
- System Oversight Board directs investment of revenue, recommends pricing to ministers for final decision
- The pricing proposal is for farms which exceed:
  - 550 stock units (incl sheep, cattle, deer, goats)
  - 50 dairy cattle
  - 700 swine
  - 50,000 poultry
  - Or applying over 40 tonnes of synthetic N fert.

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HWEN proposal to government

- Submitted May 2022, inclusion of on farm sequestration and split gas approach key to proposal
- Climate Change Commission response:
  - Agreed with the move from simple to detailed emission calculator,
  - Suggested that synthetic N fertilisers be priced at the importer/manufacturer level
  - Does not support the inclusion of on farm sequestration.
- Feedback on this by HWEN and others stating the importance of on farm sequestration being included
- Now waiting for government response in December 2022

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Calculation of emissions

Move from simple farm emission calculator in 2025 to detailed in 2027.

Simple Calculator - 2025

Four farm inputs:

- Farm area,
- Annualised stock reconciliation,
- Production,
- Synthetic N-fertiliser type and amount,
- Partial recognition for mitigations such as low emission sheep, nitrification inhibitors and reduced bought in feed and N use.

Detailed calculator - 2027

Recognises increased farm detail such as:

- Monthly animal numbers,
- Quarterly body weight,
- Imported feed,
- Effluent application,
- Wider range of mitigations such as forage type, farm specific management and timing of operations.

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Timeframes – what is next

- 2022 (end) all farms (over 80 ha or with a supply # or a feedlot) to know their GHG number
- 2023 (end) pilot project testing on farm accounting and emission reporting
- 2025 (start) all farms have a plan to manage GHG emissions and mandatory emission reporting starts
  - Recommended price of $0.11/kg holding till 2028
- 2026 pricing of emissions based on 2025/26 season using simple calculator
- 2026/27 season detailed calculator released for pricing of emissions
- 2030 modelled increase in prices to be around $0.17-$0.35/kg of CH_4 and around $13.8/ tonne of CO_2 and N_2O.
  - This is based on an expected NZ ETS price for carbon in 2030 of $138/ tonne. Discount on ETS price starts at 95% in 2025 and reduces by 1% per annum reaching 90% by 2030. This is the same outcome as if agriculture was in the ETS.

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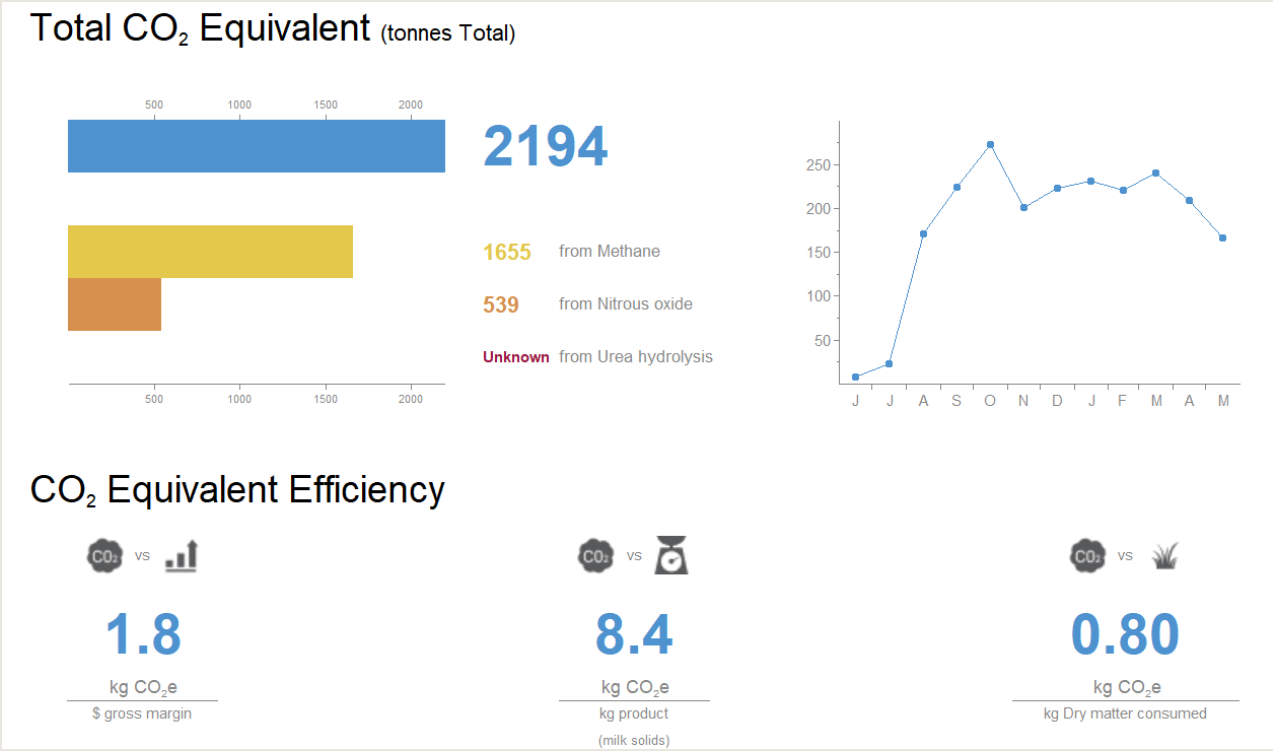
LUDF example

- Total emissions 2194 tonnes CO_{2e}
- Under proposed HWEN pricing for 2025
  - Methane – 1655 tonnes CO_{2e} = 1,655,000 kg CO_{2e}
  - Convert to kg methane divide by 25 = 66,200 kg CH_4
  - Proposed price of CH_4 $0.11/kg = $7,282
  - N_2O – 539 tonnes CO_{2e}
  - Proposed price of N_2O $4.25/tonne = $2,291
  - Total proposed price under HWEN for LUDF in 2026/26 season (based on 2021/22 season results) = $9,573
  - Farmax does not yet include CO_2 emissions from hydrolysis of urea
  - Worked example by HWEN suggests could see 65% of this reduced by action based incentives and 6.5% reduced by on farm sequestration for a Canterbury dairy farm

If using Overseer need to be careful that not all emissions are priced on farm, indirect N_2O excluded and only CO_2 emissions from fertiliser dissolution (such as urea hydrolysis) included.



Under ETS pricing

- Based on predicted NZ ETS price for CO_2 of $84/tonne in 2025 and initial discount of 95% of ETS price
- Total emissions 2194 tonnes CO_{2e} x $84 = $184,296
- Given 95% discount in 2025 = $9,215

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Summary

- HWEN proposed pricing is very similar to ETS pricing to start with
- We want HWEN as it recognises on farm mitigations and sequestration
- Still a lot of uncertainty around the extent to which HWEN proposal will be accepted by government
- But we will have an emission pricing system in place in 2025
- Split gas pricing allows adjustment in future as methane reduction targets are met
- Farms to start thinking now about how they are going to manage emissions using tools around on farm efficiency

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