In-Paddock Delivery of Methane Inhibitors for Pasture-based Dairy:

An Economic Analysis Incorporating Scenario Planning

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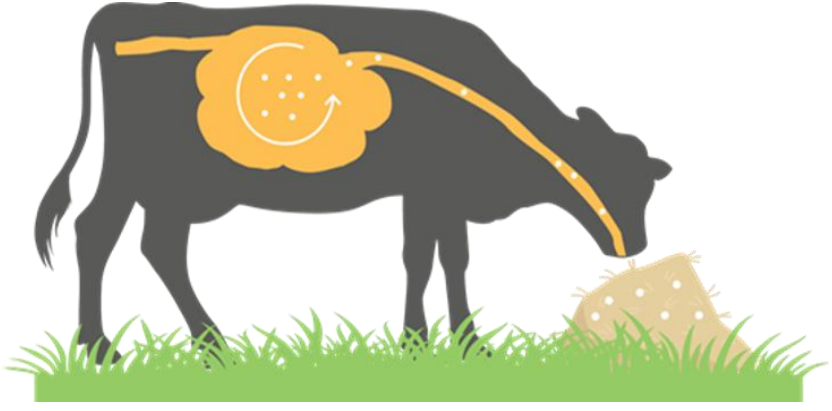
Methane and New Zealand Dairy



Methane Inhibitors

In-Paddock Smart-Feeders

Research Questions

- What is the breakeven methane price of this mitigation approach?
- How does this approach perform in different farm systems?

Implementation Costs

- Additional Labour
- Additional supplement (feed)
- Smart-feeder rental
- Methane inhibitor

Method

- Develop farm financial performance model
- Scale to reflect inhibitor delivery costs
- Determine breakeven methane price

Farm Descriptors

Region	Waikato
Effective hectares	109
Peak cows milked	310
Kg milksolids sold	121,500
Payout Received ($/kg MS)	7.00

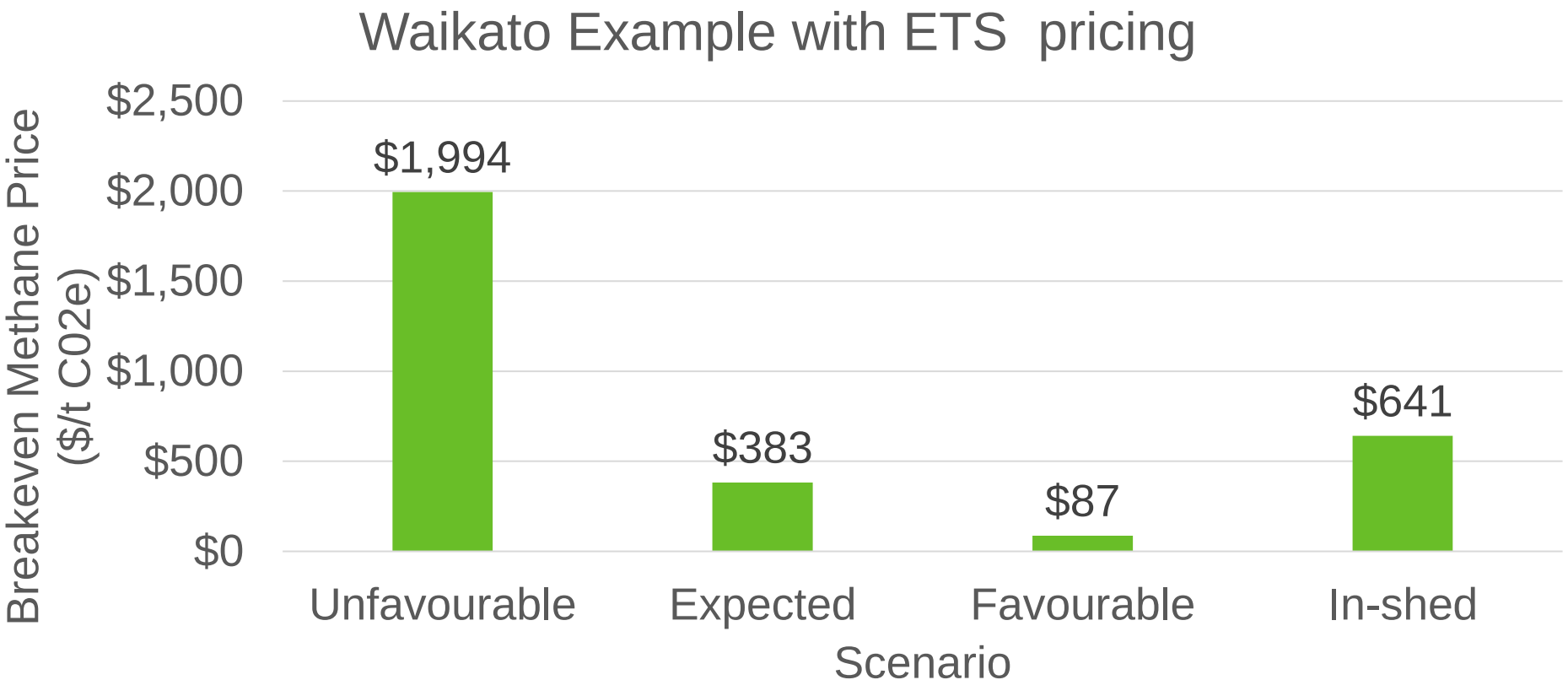
Assumptions

- Mitigation levels equivalent to those of TMR systems can be achieved
- A ‘premium’ pelleted supplement is required for dispensation
- Ability to purchase supplement with inhibitor included in NZ

Scenario Analysis

Scenario	Waikato						
	Description			Costs			
	Inhibitor Effectiveness	Methane Reduction	Delivery Cost	Supplement	Additional FTE	Machine Rental/ month	Forgone Pasture Utilisation
Unfavourable	**Low**	**15%**	Highest	$900/t	$66,000	$1,500	16.3%
Expected	**Medium**	**30%**	Medium	$700/t	$61,000	$1,000	7.5%
Favourable	**High**	**90%**	Low	$500/t	$56,000	$800	1.9%
In-shed only	**Lowest**	**5%**	Lowest	$900/t	-	-	0.0%

Preliminary Results



Challenges

Farm system paradigm shift

Uncertainty (price and availability)

Technological performance

Implications

- Viable in optimistic cases
- Many challenges
- Inhibitor and smart-feeder manufacturers are being fed back these findings
- Not a silver bullet