



Australian Dairy Industry Council Inc.

The Potential Cost Impacts of a Carbon Tax on Dairy Farms¹ Dollars per farm per annum
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A carbon tax will impose direct costs on the dairy supply chain even where direct on-farm emissions from livestock and fertilizer usage are excluded from coverage. The majority of these costs will occur beyond the farm gate at the dairy factory level. However, the trade exposed nature of Australian dairying means that the overwhelming majority of any post farm gate costs arising from a carbon tax must ultimately pass back to farm business returns. The following table sets out estimates of these costs to dairy farmers under different rates of carbon tax

Note	Potential Carbon Tax Rate (\$/tonne Co2e)	\$10	\$20	\$30
Direct farm Cost increases				
1	Electricity	996	1,992	2,988
2	Other inputs (fertiliser, chemicals etc)	158	315	473
Post Farm				
3	- Processor pass back of Electricity, gas coal usage costs	2,013	4,026	6,039
TOTAL		3,167	6,333	9,500
Potential Additional Costs of a Tax				
Direct Farm				
4	On farm fuel usage	275	549	824
	Milk Collection freight costs	593	1,186	1,778
Post Farm (not estimated)				
5	Packaging, chemicals Freight & distribution Impact of RET on electricity prices			

Explanatory Notes:

1 Electricity

Electricity represents a significantly higher share of farm cash costs in dairy than it does for other broad acre industries (3-4 times). So a carbon tax on electricity generation will have a significant direct cost effect on dairy farms

ABARES estimates that on-farm expenditure on electricity has averaged \$12,450 in the last three years (2008/9 to 2010/11). There have consistent estimates of the likely impact of a carbon price on electricity prices in recent years.

- The Green Paper estimated electricity prices would rise 16% at a carbon price of \$20/t.
- ABARES (2009), estimated farm electricity costs would rise 6.9% at a \$10/t carbon price
- Treasury modeling of CPRS options estimated household electricity prices would rise by 20-22% between 2010-2015 for the CPRS -5 and CPRS-15 options.

¹ Excluding costs to dairy family households from the impact of carbon tax on household expenditure

Using the Green paper 16% increase as a base point for estimating the price impact of a carbon tax suggests that the direct effect on dairy farms would be just under \$2,000 per farm per annum at a \$20 /tonne tax rate.

This estimate is supported by separate University of Queensland work commissioned by Dairy Australia. This study showed that the carbon embodied in on-farm dairy usage of purchased electricity in 2008 equaled 700kt of CO₂e p.a. At a \$20/t carbon price this translates to a cost increase for dairy farmers of \$14 M per annum (\$1,760 per farm)

2. Other farm Inputs

A carbon tax would have a price effect on other key farm production inputs such as fertiliser, sprays, purchased farm and dairy materials (including chemicals). ABARES estimates annual dairy farm expenditure on the above inputs averages \$35-40,000 per annum. Allowing for a very small pass-through effect of a carbon tax on the prices of these inputs (say 0.9% for a \$20 tax – which is consistent with original Green Paper estimates of the general price effects of carbon pricing) would see farm costs rise by at least \$315 per farm p.a.²

3. Dairy Manufacturing Costs

While dairy is an integrated food processing sector, dairy manufacturing is treated separately for ABS input: output classification purposes. Dairy manufacturing does not qualify for EITE status under the CPRS provisions and so is assumed to be fully obligated to meet all input cost increases arising from a carbon tax on electricity, coal and gas inputs

Based on industry research Dairy Australia estimates there is around 1.5 Million tonnes of Co₂e e embodied in dairy manufacturers' annual usage of gas, coal and electricity. So a price of \$20/tonne for carbon could add \$30 Million to annual industry input costs

These costs will not be distributed evenly across dairy regions or firms. The costs per kilo of milk solids processed will be significantly higher for firms that produce dried products (powder, casein, whey, protein concentrates etc). As these products are predominantly exported, the ability of local firms to recover these costs from the domestic market place is very limited (particularly with the EU providing free permits for powder manufacturers under their ETS).

If firms cannot pass on their higher energy costs to customers, these costs will have to flow through to farm suppliers in the form of reductions in farm gate milk price. A \$30 Million reduction in farm revenue translates to a farm gate price reduction of 4.4 cents per kg milk solids.

This in turn represents a reduction of just over \$4,000 per annum in farm income for an average farm producing 1.22 Million litres of milk (ABARES) with 7.5 % combined fat and protein content (DA) (i.e. 1,220,000 litres X 0.075 solids X,\$0.044/kg milk solids)

4. Fuel Usage

ABARES estimates average on farm fuel and oil usage in dairy is \$15,300 p.a.

Farmers are also charged around 2.75 cents per litre to cover the freight and fuel costs associated with direct farm pick up of their milk. This cost is netted out of farm revenue /cost figures published by ABARES but represents an additional operating cost for an average farm of around \$33,500 per annum compared to that shown by ABARES.

If a carbon tax is applied to diesel used on farm or in farm milk collection farmers will have to bear this cost. The potential cost increase is in the order of 2.7 cents per litre of diesel for each \$10 of carbon tax applied³.

Assuming a diesel price of \$1.50 per litre a \$20 carbon tax, if applied to fuel, should raise fuel prices by 3.6%

² This estimate assumes no tax effect on direct emissions arising from the use of fertiliser

³ Based on the CO₂ equivalent embodied in diesel fuel of 2,694 grams per litre. ,

Applying this factor to the above farm outlays indicates a further cost increase for farms of around \$550 per annum for on-farm fuel usage and potentially \$1,200 for milk pick up charges with a \$20/t tax rate.

5. Other Post farm Costs

The cost estimates shown here do not include a number of additional impacts that a carbon tax or related policy measure would have on dairy cost structures. Some real risks to the integrated dairy supply chain from the pricing of carbon that are not included here include:

- the impact of a carbon tax on the price of farm feed prices and delivery
- the impact of a carbon tax on processor packaging, machinery and chemical costs
- potential effects on manufacturer post factory freight and distribution costs, and
- the impact of the RET permit scheme on average electricity prices in the period to 2020

These costs may well be significant (e.g. transport charges represent a higher share of dairy factory costs than electricity, gas and fuel). RET will also increase the price paid by electricity users (including direct dairy farm users). As these impacts are difficult to assess precisely with regard to dairy they are excluded from this exercise.

Their omission suggests that the above numbers should be seen as lower range estimates of the potential impact of carbon pricing on Australian dairy businesses.

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