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The missing link in the Garnaut report

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The real climate change culprit is methane gas from cows and sheep.

PROFESSOR Ross Garnaut has managed to write a 548-report on climate change in which he mentions Australia's largest current contribution to climate change precisely once – in the glossary, where we find a definition of "enteric fermentation".

Never heard of it? It's what goes on in the digestive systems of ruminants, like cattle and sheep. It produces methane, Australia's largest but also most under-appreciated contribution to climate change over the next few decades.

The second-largest current contribution is coal. It gets mentioned 272 times in the report – as it should.

Why is methane so under-appreciated? There's a political reason and a technical reason.

The political reason is that if telling Australians that they need to pay more for petrol and electricity is tough, telling them they need to consume less beef, lamb and dairy products is going to be tougher still.

As for the technical reason, maybe the best way to explain it is like this: Suppose I offer you \$1000 if you let me hold a blowtorch to your leg for 10 seconds.

When you decline, I explain that you should not focus on just that 10 seconds when the torch is applied to your leg. I have calculated that the average temperature applied to your leg over the 20-minute period that starts when I apply the blowtorch, will be only 48 degrees, which is hot, but quite bearable.

That, in effect, is the approach Garnaut takes to methane in his draft report.

Just like the crazy guy with the blowtorch, Garnaut underestimates the heating impact of methane by averaging it over 100 years.

Methane is mostly switched off after just a decade, and almost entirely gone after 20 years, so averaging it over a century dramatically reduces its apparent impact.

The problem is that during the decade in which it is doing its damage, it has had a much larger impact than talk about its average impact over a century would lead you to believe.

The source of Garnaut's methane howler becomes clear when he introduces the climate scientist's term "radiative forcing" in his report but soon shows that he does not really understand what it means and why it is so important.

Radiative forcing refers to factors that change the difference between incoming and outgoing energy in a climate system.

Positive forcings warm the system, negative forcings cool it down. There are two ways in which Garnaut misunderstands forcing. The first, as we have already seen, is the use of relative forcing averaged over 100 years.

That would be reasonable if there were no urgency about dealing with climate change, but we don't have 100 years before tipping points are crossed, so we should not be averaging methane's forcing over 100 years. This mistake leads Garnaut to rate methane as 25 times more potent, per tonne, than carbon dioxide in causing global warming, whereas the correct figure, if we average over 20 years, is that it is 72 times more potent. That's a hugely significant difference.

The second misunderstanding is the opposite of looking a century ahead. Garnaut includes in his report a chart of contributions to climate radiative forcing. It's an accurate historical description of what has heated up the planet. It includes the full impact not only of our recent activities, but of those of our parents, grandparents and more distant ancestors all the way back to 1750.

Carbon dioxide dominates this picture. No surprise there. Some of the carbon dioxide currently heating up the planet, and shown in Garnaut's chart, was put into the atmosphere by the pioneers who cleared 1 million square kilometres of the US forests more than a century ago.

More of it came out of the exhaust pipes of all the T-model Fords that came off Henry Ford's assembly lines.

On the other hand, the methane in the chart is all ours. Almost every bit of it was put there in the past 20 years. The historical chart is interesting if you want a historical picture, but it is irrelevant if we are interested in what we are doing now, and how we might get out of this mess. If that is our concern, we need to focus most attention on the impacts of current forcings during the next 20 years.

These are the forcings we are causing now and can do something about. If we were to chart them, methane and carbon dioxide would be almost equal in significance. That is what Garnaut seems to miss.

The practical implication is that his draft report recommends against including methane emissions from cattle and sheep in his proposed emission trading scheme.

To ignore Australia's biggest contribution to climate forcing is just plain silly.

Australia's methane emissions come primarily from 28 million cattle, 88 million sheep and a bunch of leaky coal mines. The livestock emissions, on their own, will cause significantly more warming in the next 20 years than all our coal-fired power stations.

The good news is that methane is easy to deal with.

We don't have to wait for engineers to solve a bunch of really tough infrastructural problems. We can do it now. Just stop breeding so many sheep and cattle in Australia. And because methane is such a huge contributor to climate change, this is not just an "earth hour" stunt. This is the real deal.

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