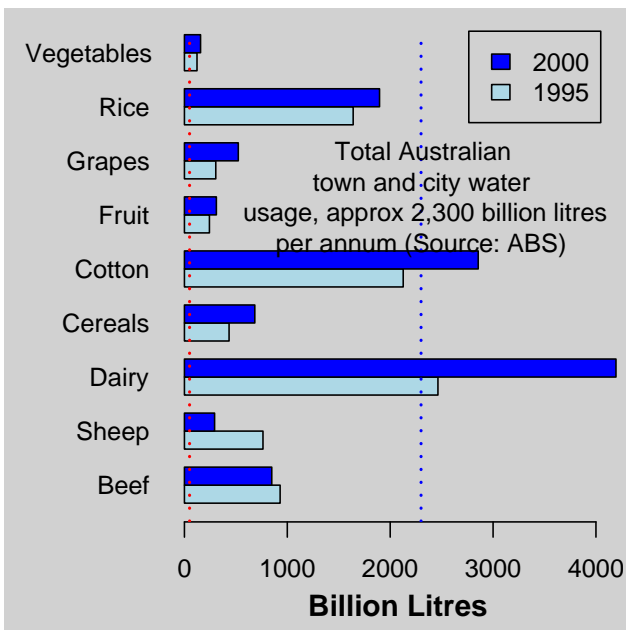


Water use in the Murray Darling Basin[5]



We are all paying 13 billion dollars to rescue the Murray Darling from the dairy industry, and in SA we will be paying over 1 billion dollars to supply a mere 50 billion litres (1/84 of the dairy industry usage in 2000) annually from a desalination plant.

Deforestation and Kyoto

Beef's 51.7 kg of CO₂-eq per kg is comprised of about 20 kg for land clearing and 30 kg of direct emissions. This is because between 1990 and 2004, the cattle industry cleared about 400,000 hectares per annum[6] in one of the most devastating attacks on biodiversity in our country's history — a higher per capita rate of clearing than in the Amazon[7]. Some 75% of all deforestation since white arrival has been for livestock.

Australia is currently on-track to meet its Kyoto target of 108% of 1990 emissions — despite a 43% increase in stationary energy emissions. Why? Sheep numbers crashed from 170 million in 1990 to 88 million now — due to international wool price falls. Second, reduced deforestation and regrowth (what happens when you remove 82 million sheep?). If the cattle industry hadn't expanded during the period 1990-2005 (to swallow some of the sheep emissions

savings), Australia would be below its 1990 emissions.

Conclusion

We need Governments acting without fear or favour on environmentally destructive and unhealthy industries. We don't need a Prime Minister who only thinks he understands climate change. We need a leader with a much deeper understanding who will not recommend the most destructive food on the planet as a delicacy. The meat industry pollutes our planet and gives Australia 40,000 major heart operations annually. It fills factory farms with suffering. The red meat industry (including factory farmed pigs) also gives us, according to the Victorian Cancer Council and the World Cancer Research Foundation about 6,000 new cases of colorectal cancer annually.

Technical Note: The figure of 51.7 kilograms of carbon dioxide equivalents for beef is the Australian Greenhouse Office figure. The *Australasian Science* article referenced below shows that the real figure — one that reflects full warming — is about 111 kg CO₂-eq per kilo of beef carcass.

The IPCC is the *Intergovernmental Panel on Climate Change*, its 2007 detailed report is over a thousand pages pulling together scientific studies from around the world.

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Geoff Russell, June 2008

BEEF AND DAIRY. CHANGING THE CLIMATE, KILLING THE MURRAY.



Commodity	Greenhouse Gas emissions per kg kg CO ₂ -eq per kg
Beef	51.7
Wheat	0.4
Other grains	0.4
Wool	18.1
Sheep meat	14.4
Pig meat	3.6
Steel	3.1
Aluminium	20.0

Source: AGO[1], *End Use Allocation of Emissions*

“Please eat less meat – meat is a very carbon intensive commodity ... this is something that the IPCC was afraid to say earlier, but now we have said it.” IPCC Chair Rajendra Pachauri, Jan 15th 2008

Livestock hotter than coal!

On his recent visit to Japan, Kevin Rudd invited Japanese Prime Minister Yasuo Fukuda to sample BBQ'd Aussie beef. Would he show off some of our brown coal burning powerplants? They are the worst in the world for greenhouse emissions. But our livestock are responsible for even *more warming* than *all* our coal fired power stations[2]. Being mainly grass fed, our sheep and cattle are the top emitters of methane — per kilo of carcass — on the planet. Livestock generates 5 times more warming than all our passenger vehicles. Why is this a source of pride?

The Australian Greenhouse Office (AGO) greenhouse gas emission figure of 51.7kg (more than double that of aluminium production) on the front panel is the emissions per kilogram of *carcass* — and you don't eat the whole carcass. If you eat lean beef, to reduce heart disease, then the emissions per edible kilogram are closer to 80kg.

Methane

This figure of 51.7 kg of CO₂-eq was calculated by the AGO using a factor of 21 to convert tonnes of methane (CH₄) to CO₂-eq. This averages out the impact of methane on warming over a 100 year period, despite the effective atmospheric lifetime of methane being only about 12 years. Averaged over its lifetime, methane has about 72 times the impact of CO₂. NASA climate scientist James Hansen has been recommending a Montreal style agreement to massively reduce methane for at least 7 years. Here is what he says[3]:

“We posit that feasible reversal of the growth of atmospheric CH₄ and other trace gases would provide a vital contribution toward averting dangerous anthropogenic interference with global climate. Such trace gas reductions may allow stabilization of atmospheric CO₂ at an achievable level of anthropogenic CO₂ emissions, even if the added global warming constituting dangerous anthropogenic interference is as small as 1°C. A 1°C limit on global warming, with canonical climate sensitivity, requires peak CO₂ 440 ppm if further non-CO₂ forcing is 0.5 W/m², but peak CO₂ 520 ppm if further non-CO₂ forcing is 0.5 W/m². The practical result is that a decline of non-CO₂ forcings allows climate forcing to be

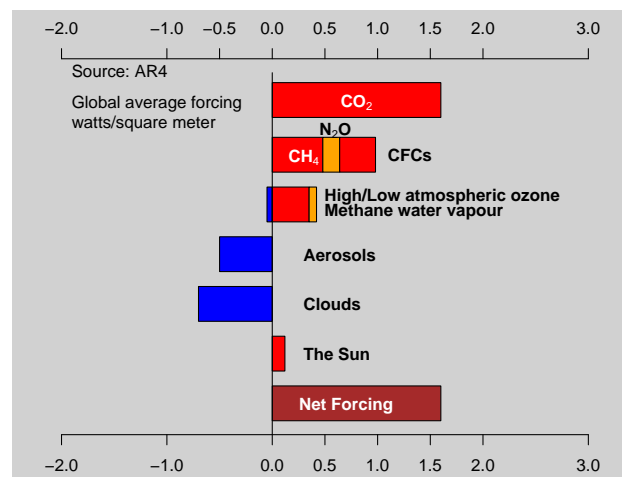
stabilized with a significantly higher transient level of CO₂ emissions.”

The last sentence is crucial, even if we act decisively on CO₂ (which we are not), atmospheric CO₂ will continue to rise due to a thermal lag in the climate system, but steep methane reductions can stabilise temperatures and “buy time” for CO₂ reductions to have an impact.

Hansen recommends reductions in anthropogenic CH₄ of the order of 40-50%. These would buy time, and also reduce tropospheric ozone (a major health problem) and stratospheric water vapour — effectively amplifying the warming reductions from the CH₄. Of course, if we don't act decisively to reduce CO₂ emissions, CH₄ reductions won't stop catastrophic climate change.

Accumulated Forcing

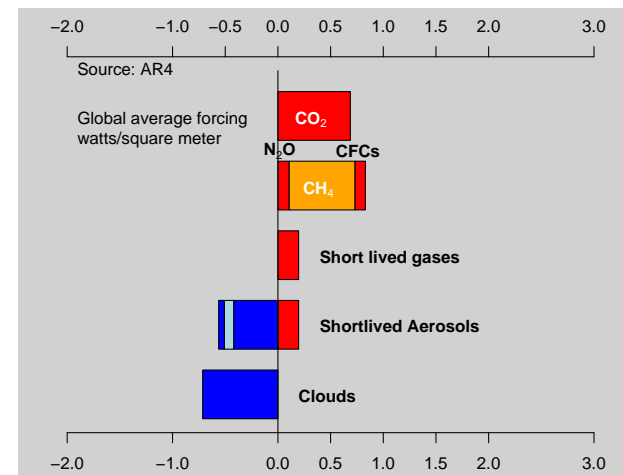
The following image is redrawn from page 206 of the IPCC Fourth Assessment report (The Physical Science Basis)[4].



It is generally used to show that methane has 1/3 to 1/2 the impact of CO₂. Because of the long lifetime of CO₂, the CO₂ in the atmosphere has been accumulating for over 500 years. The methane on the other hand, is no older than 20 years or so — most is even younger.

Current Forcing

This next image is also from page 206 of the Fourth Assessment report and shows the impact on temperature (radiation balance) that our *current* emissions are having.



Methane and CO₂ from our *current* activities are generating similar warming impacts. The biggest source of anthropogenic methane is livestock.

Water

One of the biggest impacts of global warming in Australia has been, and will continue to be, its impact on rainfall patterns with the south of the country getting drier as the north gets wetter. The dairy industry is not only a large methane producer but the Hummer of all water guzzlers.

Between 1990 and 2000 the dairy industry expanded in the Murray Darling Basin (MDB). According to the CSIRO its water use rose from 2,400 billion litres (already more than all the towns and cities in Australia) to 4,200 billion litres[5]. This increase gave the dairy industry in the MDB 9 times more water than the fruit and vegetable industries combined, more than double the rice industry and 1,400 billion litres more water than cotton. This effectively dried out the basin and paved the way for the on going disaster.

These CSIRO water use figures are much higher than those in the Australian Bureau of Statistics *Water Account* because CSIRO used the latest satellite imagery to determine what farmers are actually doing with water, instead of relying on what they say they are doing when they fill in survey forms.