

Briefing note: Contribution of the Land Use, Land-Use Change and Forestry Sector to Australia's GHG Inventory

Prof Brendan Mackey & Dr Heather Keith
 Climate Action Beacon, Griffith University Queensland
 (email) b.mackey@griffith.edu.au
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The purpose of this briefing note is to provide key points and summary statistics that quantitatively explain the significant contribution the Land Use, Land-Use Change and Forestry sector (LULUCF) makes to Australia's national greenhouse gas (GHG) inventory as reported under the UN Framework Convention on Climate Change (UNFCCC) and its Paris Agreement emissions reduction target.

Figure 1 shows Australia's emissions (Mt CO₂e yr⁻¹) by sector as reported for the years 1990-2022: (a) Energy; (b) Industrial processes; (c) Agriculture; (d) Land Use, Land-Use Change and Forestry; (e) Waste; (f) Total UNFCCC emissions from all sectors. (Note: Y axis scales differ for each sector.) Figure 1(g) plots the total annual emissions as well as the emissions from energy and LULUCF.

- There is a downward trend evident in the total emissions from around 2005 (Fig. 1f). Emissions from the energy sector are now similar to that in 2005 despite increases in energy consumption (Figure 1a). The limit in emissions is in part attributable to Australia's efforts in transiting from fossil fuels to clean energy, which is now 40% of the electricity market (up from 15% a decade ago)¹.
- However, it is apparent in Figure 1g that the rate of decrease in total emissions is greater than that from the energy sector and is in fact more closely tracking the net reductions in emissions from the LULUCF sector (Fig. 1d). LULUCF is the only sector where removals from the atmosphere occur (i.e., negative emissions). This is primarily due to the atmospheric carbon that is sequestered by natural ecosystems and in particular native forests.
- The reported LULUCF emissions (Figure 1d) are "net emissions", i.e., the net amount once the emissions to the atmosphere from land use, land use change and forestry are "subtracted" in the accounts from the removals of atmospheric carbon from both regrowth on previously cleared land and the ongoing sequestration and storage by healthy native forests and other ecosystem.
- Ending land clearing alone would deliver around 14.5 million tonnes of carbon dioxide equivalent a year which is about 17% of the 85.2 million tonnes of carbon dioxide equivalent that needs to be reduced annually for Australia to meet its 2030 Paris Agreement target². Ceasing logging of native forests would likely provide a similar magnitude of emissions reductions.
- Removals of carbon dioxide from the atmosphere by healthy growing forests and other ecosystems however, should not be used as offsets for emissions of fossil fuels in accounting and reporting on targets. This is because we need to be doing both: reducing emissions from fossil fuel use and increasing removals in the LULUCF sector.
- Reducing emissions from the LULUCF sector and the ecological restoration of degraded native forest (and other ecosystem) carbon stocks through regrowth, is an essential component of the comprehensive approach needed for Australia to meet its Paris Agreement commitments and contributions.
- Significant investment in "nature repair" is needed to ensure the potential of the LULUCF sector to play this role is realised.

¹ See <https://explore.openelectricity.org.au/energy/nem/>

² Source: <https://greenhouseaccounts.climatechange.gov.au/> Activity Table 1990-2022 - LULUCF (Excel) table 6

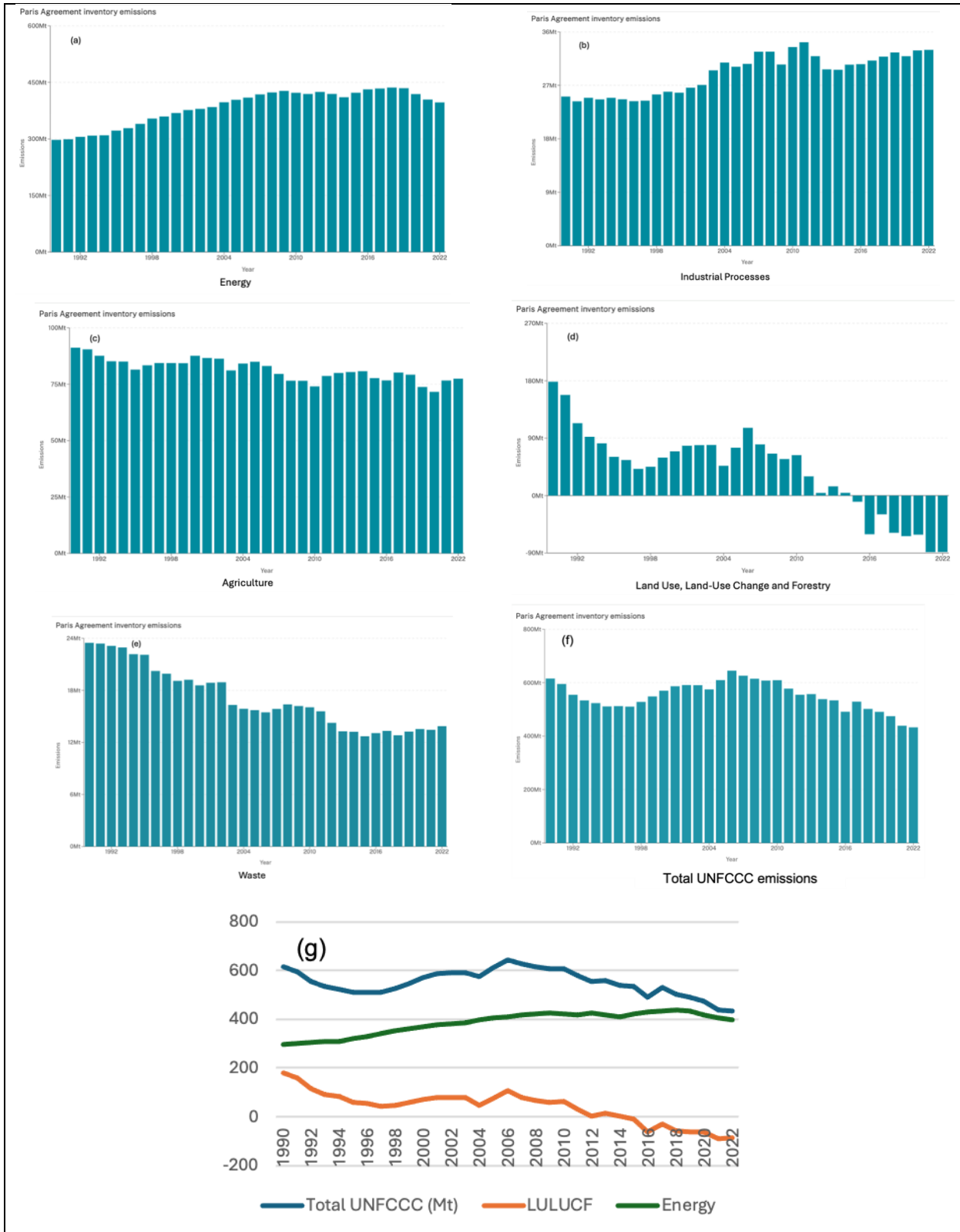


Figure 1. Sector emissions - and for LULUCF net emissions for Australia for the period 1990-2022. Units are Mt CO₂-equivalent. The vertical axes have the same units but are scaled differently. Fig. 1g shows net emissions for LULUCF which are negative (i.e., annual removals are greater than emissions).

Data sourced from <https://greenhouseaccounts.climatechange.gov.au/>