

Reducing emissions through FOGO

COUNCIL NAME

NE Waste: Ballina, Byron, Clarence Valley, Kyogle, Lismore, Richmond Valley and Tweed Councils

WEB ADDRESS

www.newaste.org.au

SIZE

21,000 sq km

POPULATION

Approx. 300,000

Overview

Over the past decade the member Councils of North East Waste (NEW) have been ramping up their efforts to divert food and garden organics (FOGO) from landfill. These efforts have paid off and reduced greenhouse gas emissions, kept vital resources within the local environment and economy; and saved councils significant levy and landfill costs.

Background

Lismore City Council started collecting and processing FOGO in 1999. This was followed by Ballina, Clarence Valley, Byron, Richmond Valley and Tweed Councils. FOGO services vary across the NEW region – initially the focus was on single unit dwellings, with multi-unit dwellings and commercial FOGO available in some councils’ areas. The region is serviced by 3 organics processing plants at Lismore, Grafton and Tweed. Two are in-vessel and one is an open windrow on an aerated floor. The collection service preferred by the councils is weekly FOGO (green) and a fortnightly residual (red) bin. It proved to be an effective strategy to reduce the costs imposed by the landfill levy in 2009 as well as providing real value in landfill space saved.

Implementation

Collecting and processing organics over a long timeframe has provided a good indication of how the NE councils are performing in reducing organics going to landfill. Composition waste audits show changes in household behaviour and waste and resource recovery (WARR) data reporting tracks how well councils are diverting, both at a local and regional level. In collaboration with the NSW Environment Protection Authority (EPA) this information has enabled the calculation of the impact on emissions reduction.

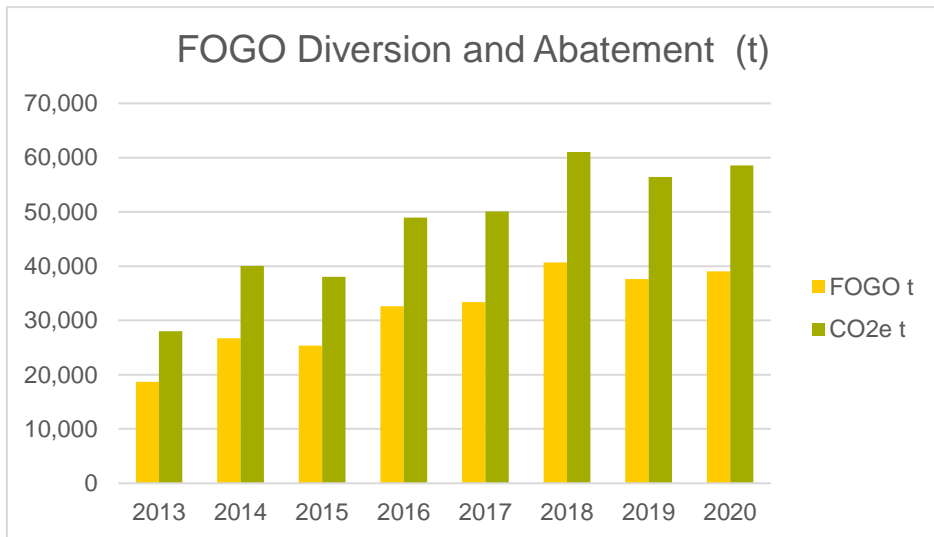


Figure 1. In total 254,060 tonnes of FOGO was diverted from landfill, equating to 381,090 tonnes of CO2e savings

Outcomes

The outcome of the combined efforts above has been felt at a regional and at local level. Regionally diversion from organics in 2020 was almost 50,000 tonnes, which equated to:

- 20,000 cubic metres of landfill space saved;
- 75,269 tonnes of CO₂e abated;
- Approximately \$5.5 million dollars in savings to councils; and
- This translates to the emissions from 34,178 cars per annum taken off the road.

Individual councils have also provided some examples of how they have reduced emissions.

- In 2020, Tweed Shire has collected 11,748 tonnes of FOGO saving 17,642 tonnes of CO₂e. When the end product, a mature compost, is applied to soil, there is an additional saving of 8,830 tonnes p.a. CO₂e. This is the equivalent of a total of 12,012 cars per annum taken off the road, based on the Federal Government Green Vehicle Guide.
- Lismore Council has 12,670 residential FOGO services and on average they produce 10 kg of FOGO per household per week. Over the last 10 years they have diverted 50,186 tonnes of FOGO from landfill by processing at their own facility, via an open windrow on aerated floor. FOGO is turned back into organic certified compost, returned to local people and farms, sequestering carbon in the process. Macadamia and dairy farms have been the primary bulk users of the product. They have saved 25,000 cubic metres in landfill space and nearly \$6.9 million in waste levy.
- Councils are also reducing emissions through gas capture and flaring at landfill sites at Tweed, Grafton, and Byron. On average, these sites flare 22,000 tonnes of CO₂e per year.
- Evaluating and quantifying the impact of the education and engagement campaigns is more challenging, however, one indicator is the results and trends derived from the Compositional Waste Audits. Comparing audit data over the 2016 -2019 timeframe coincides with the most intensive FOGO engagement campaigns, some trends do emerge. These are:
 - Lower weights and percentages of organics in the red bin
 - Higher resource recovery rate for recycling and organics material
 - Higher bin presentation rates for all streams.

There is an overall trend of less organics in the red bin, a higher resource recovery of organics and more people are using their FOGO bin.

Key Learnings

- Food and Garden Organics diversion is a practical and economical way to reduce a councils' greenhouse gas emissions.
- FOGO collections have additional benefits of saving landfill space, keeping resources within a community and reducing the costs imposed by the waste levy.
- There is room for improvement as audits reveal that there is still a significant quantity of organics in the residual bin and the composition of the FOGO bin is heavily weighted to garden organics.

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