

# NURSERY PAPERS

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## How sustainable is your nursery?

### NEW INDUSTRY BENCHMARK DATA REVEALS WHERE EMISSIONS AND COSTS ARE REALLY COMING FROM

Nursery growers deal with pest and disease challenges every day. Sometimes it is a new pest. Sometimes it is an ongoing issue that no longer responds the way it once did.

Energy bills climbing. Packaging costs eating into margins. Customers asking questions you are not quite sure how to answer.

These are the kinds of pressures you are dealing with every day and for the first time there is real industry data showing where your emissions – and also often your costs – are concentrated.

A new industry benchmark, built from operational data collected from nurseries across Australia,

has identified the key drivers of greenhouse gas emissions across nursery production and some of the results are surprising.

**Please note:** a dedicated benchmarking calculator and full report are expected to be publicly available via the Greenlife Industry Australia (GIA) website in late 2026. This paper focuses on what the benchmark has already found.





# What the research found and what surprised us

The findings confirmed some things you might expect but a few results stood out as genuinely surprising.

- **Packaging is a bigger driver than most people realise.** Polypropylene pots and polystyrene plug trays are not just a significant cost. They are one of the largest contributors to overall emissions across the production system. Most growers do not expect packaging to top the list but the data is clear. The pots and trays you order every season, the ones that feel like a basic, unavoidable input, are generating more emissions than most of the other things happening on your property. Small changes in material selection, reuse rates or supplier choices can move this number meaningfully and reduce input costs at the same time.
- **Electricity use adds up quickly across the whole operation.** When irrigation, climate control, lighting and processing systems are looked at together, energy consumption emerges as a major lever. The issue is that these systems are often managed separately, so the full picture is rarely visible. Nurseries that have looked at irrigation and climate control as part of the same energy budget have found scheduling changes alone can reduce consumption without any capital investment. On-site solar can go further and make a measurable difference to your operating costs over the long term.
- **Growing media carries more embedded impact than it appears.** Inputs like potting mix and peat have supply chain footprints that are easy to overlook. The emissions associated with these materials are generated before they arrive on your property, which is part of why they tend to be underestimated. But they count toward your overall footprint and they are worth factoring in when assessing your performance or responding to customer questions.
- **On-farm fuel use is consistently underestimated.** Diesel, LPG, petrol and natural gas used in on-site transport, machinery and heating contribute meaningfully to both costs and emissions. Most nurseries do not have a clear baseline for how much fuel they are using or where it is going. That makes it hard to manage. Nurseries that have started tracking fuel by activity, vehicles, heating, machinery, have typically found at least some areas where consumption can be reduced without affecting productivity. Efficiency improvements in this area can deliver real financial returns, particularly as fuel prices remain volatile.

## WHERE TO FOCUS FIRST

Based on the benchmark data, the area’s most likely to deliver business improvement are:

| Area                | What it means for your business                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Packaging materials | Pots and trays are one of your biggest input costs and one of the largest drivers of overall impact. There is usually more room to reduce material use and increase recycled content than growers expect. |
| Electricity use     | Energy costs across irrigation, climate control and processing add up fast. Understanding where it is going is the first step toward reducing it.                                                         |
| Growing media       | Potting mix and peat carry supply chain costs and risks that are easy to overlook. Knowing your inputs helps you manage them.                                                                             |
| On-farm fuel use    | Fuel is volatile and unlikely to get cheaper. Tracking where it goes gives you a baseline and usually reveals savings.                                                                                    |



## THE BENCHMARK FIGURE AND WHAT IT MEANS FOR YOU

### AUSTRALIAN NURSERY BENCHMARK: 0.42 kg CO<sub>2</sub>-e per litre of container size

The project found that, on average, every litre of nursery production generates 0.42 kg of greenhouse gas emissions before the product leaves the nursery.

In practical terms, a typical 10 L plant has a carbon footprint of around 4.2 kg CO<sub>2</sub>-e by the time it leaves the nursery gate. That is roughly equivalent to the emissions produced by driving a passenger vehicle about 20 km.

This benchmark provides a reference point for understanding where emissions are generated across nursery production and where improvements are most likely to deliver benefit.

If your operation sits above this figure, it may highlight areas worth investigating.

If you are below it, you may be well placed to demonstrate that performance to customers who are beginning to ask.

## WHY YOUR CUSTOMERS ARE STARTING TO ASK AND WHY IT AFFECTS YOUR BOTTOM LINE

Sustainability reporting is no longer something that only happens at the corporate level. It is working its way through supply chains and landing at the nursery gate.

Major retailers, local government procurement teams, infrastructure project managers and large corporate buyers are increasingly required to report their own emissions and they are starting to ask their suppliers for consistent, comparable data to help them do it.

That means you are more likely to receive requests for environmental performance information as a condition of doing business, not just a nice-to-have.

At the same time, the biggest sources of emissions in nursery operations, packaging, electricity and fuel, are also major cost drivers. Reducing them is not just an environmental exercise. It is a business one.

## WHAT THE BENCHMARK IS BASED ON

Nurseries from across Australia contributed real operational data covering energy and fuel use, packaging, growing media, water and other key inputs.

That data was used to build an industry-average benchmark and identify the areas that drive the most emissions (and also cost) across a nursery operation.

The data covers the full production system rather than one stage in isolation, because fixing one problem by shifting cost or waste somewhere else is not actually an improvement. This approach helps you see the full picture.

The result is a practical reference point you can use to see how your operation compares and where the biggest opportunities for improvement sit.

## PRACTICAL STEPS YOU CAN TAKE NOW

You do not need to wait for the calculator to start making progress. Based on what the benchmark has already identified, here is where to start:

- **Review your packaging inputs.** Look at where you can reduce material use, increase recycled content or trial lower-impact alternatives for pots and trays.
- **Audit your energy use.** Understanding where electricity is being consumed across your operation is the first step toward reducing it.
- **Explore renewable electricity options.** On-site solar is increasingly cost-effective for nursery operations and can reduce long-term exposure to energy price rises.
- **Track your fuel consumption.** Knowing your baseline for diesel, LPG and other fuels helps identify where efficiency improvements are possible.
- **Take a whole-of-system view.** Avoid shifting costs or impacts from one part of production to another by looking at the full picture.

A benchmarking calculator will be available via the GIA website in late 2026 to help you quantify these areas against the industry benchmark.



## FROM THE NURSERY FLOOR

Sometimes the most valuable thing is simply stepping back to look at your operation as a whole.

One nursery that contributed data to the project realised it was using more electricity than expected once irrigation and climate control were viewed as part of the same system. A closer look at irrigation scheduling highlighted opportunities to reduce energy use and trim operating costs.

That is exactly the kind of insight this benchmark is designed to uncover. Not necessarily big changes, but practical improvements that save money and make a business run more efficiently.

**Do you have a story about identifying efficiencies or responding to customer sustainability questions? GIA would love to hear from you. Get in touch using the details below.**

## NEXT STEPS

The benchmark findings are the place to start. Focus on the four areas the data has identified, packaging, electricity, growing media and fuel, and work out where your biggest costs and inefficiencies sit right now.

If customers are already asking sustainability questions, understanding your own operation in these areas will put you in a much stronger position to respond.

**The full report and benchmarking calculator will be available via the GIA website in late 2026.**

## FURTHER INFORMATION

To learn more, contact the thinkstep-anz team:

Email: [meet@thinkstep-anz.com](mailto:meet@thinkstep-anz.com)

Phone: +61 2 8007 3330

**Past Nursery Papers are available via the GIA website.**

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