

Victorian all-electric home emissions forecast

All-Electric and Dual Fuel – December 2024

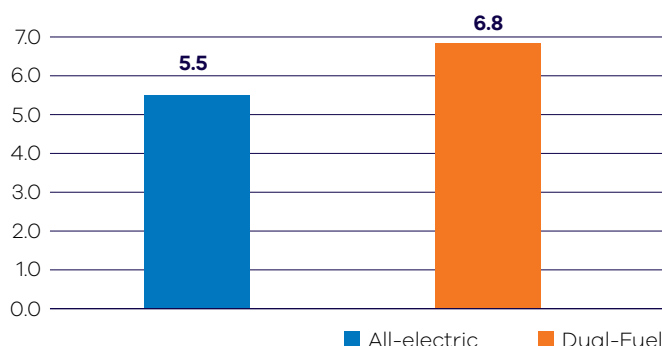


Key Messages – Existing Home

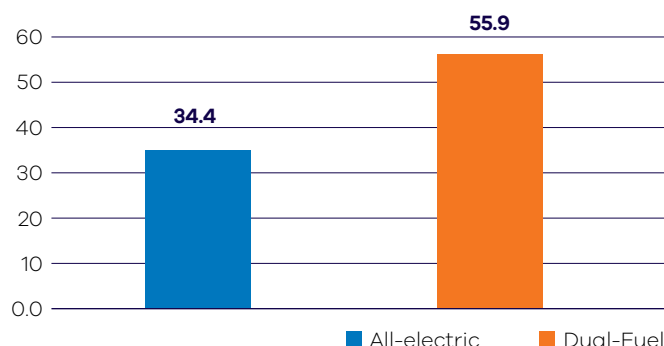
Department of Energy, Environment and Climate Action (DEECA) analysis concludes:

- Converting an existing dual-fuel home to all-electric will result in 19% lower GHG emissions in 2025, saving 1.3 t CO₂ in the first year.
- Over the 10-year period from 2025–2035, an existing all-electric home will have 38% lower GHG emissions than a new dual fuel home, saving 21.5 t CO₂.

Emissions in 2025 – Existing home
Greenhouse gas emissions (tCO₂)



Emissions over 10 years from 2025 – Existing home
Greenhouse gas emissions (tCO₂)



- Electrifying an existing home can deliver greater reductions compared to a new home, as existing homes are typically not as thermally efficient and require higher heating loads. Switching to an efficient electric alternative in an existing home will save more energy and therefore emissions.

Key Inputs – Existing Home

- Thermal performance of a 3-star building shell
- High efficiency, multi-split air conditioning systems used for space heating (high efficiency conversion of around 450%)

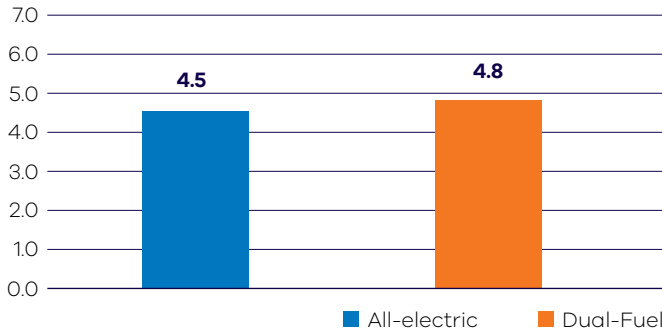
| Input | Existing home | Emissions Factor 2025 |
|-------------------------------|---------------|-----------------------------|
| Dual Fuel – gas input | 65.2 GJ/yr | 0.056 tCO ₂ /GJ |
| Dual Fuel – electricity input | 3.9 MWh | 0.812 tCO ₂ /MWh |
| All-electric home input | 6.7 MWh | 0.812 tCO ₂ /MWh |

Key Messages – New Home

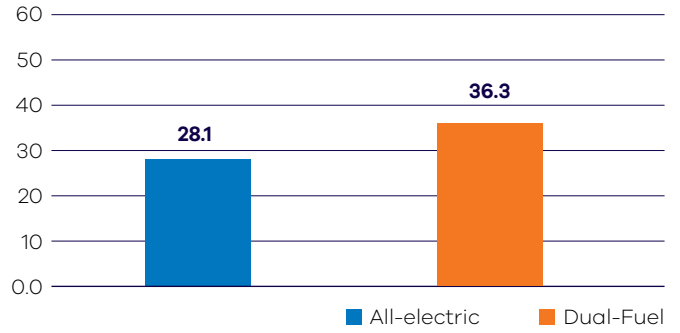
Department of Energy, Environment and Climate Action (DEECA) analysis concludes:

- Built today, a new, all-electric home has 6% lower greenhouse gas (GHG) emissions than a new dual fuel home, saving 0.3 t CO₂¹.
- Over the 10-year period from 2025–2035, a new, all-electric home has 23% lower GHG emissions than a new dual fuel home, saving 8.2 t CO₂.

Emissions in 2025 – New home
Greenhouse gas emissions (tCO₂)



Emissions over 10 years from 2025 – New home
Greenhouse gas emissions (tCO₂)



Key Inputs – New Home

- New home built with 7-star building shell
- High efficiency, multi-split air conditioning systems used for space heating (high efficiency conversion of around 450%)

| Input | New home | Emissions Factor 2025 |
|-------------------------------|------------|-----------------------------|
| Dual Fuel – gas input | 32.4 GJ/yr | 0.056 tCO ₂ /GJ |
| Dual Fuel – electricity input | 3.5 MWh/yr | 0.812 tCO ₂ /MWh |
| All-electric home input | 5.4 MWh/yr | 0.812 tCO ₂ /MWh |

GHG emissions factors

- Scope 2 electricity emissions based on AEMO 2024 Step Change scenario and scope 3 from DCCEEW²
- Scope 1 and 3 gas emissions from DCCEEW³

1 GHG emissions reductions estimates for a new home were revised using updated energy use assumptions and electricity emissions factors.
 2 [Australian National Greenhouse Accounts Factors \(dcceew.gov.au\)](https://www.dcceew.gov.au) Table 1
 3 [Australian National Greenhouse Accounts Factors \(dcceew.gov.au\)](https://www.dcceew.gov.au) Table 4 and Table 5. Table 5 notes the following “Scope 3 emission factors do not include fugitive emission leakage but do include the combustion associated with low pressure natural gas distribution pipeline networks.”

We acknowledge Victorian Traditional Owners and their Elders past and present as the original custodians of Victoria’s land and waters and commit to genuinely partnering with them and Victoria’s Aboriginal community to progress their aspirations.



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ISBN 978-1-76176-034-1 (pdf/online)
 ISBN 978-1-76176-035-8 (print)

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