The electrification of everything

The financial case for fast, efficient and flexible electrification

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The financial case for fast electrification
Cost of delaying electrification

$1.2b per annum

Source: Unpublished IEEFA analysis, based on Managing the transition to all-electric homes (VIC)
Opportunity to fill the upcoming gas supply gap

Source: IEEFA, Reducing demand: A better way to bridge the gas supply gap
Avoiding new gas developments is critical

IEA: Locked in oil and gas investment vs gas demand

• STEPS (2.4°C): Sufficient
• APS (1.7°C): Significantly higher than needed
• NZE (1.5°C): Double what is needed

Source: IEA, World Energy Outlook 2023
We need efficient, flexible electrification
Cost of delaying efficiency upgrades

$2.2b per annum

Source: unpublished IEEFA analysis
Energy efficiency can offset electrification

Estimated national residential electricity use change from…

**Electrification:**  
+13%

**Energy efficiency:**  
-20%

Source: IEEFA, *Reducing demand: A better way to bridge the gas supply gap*, unpublished IEEFA analysis
Electric water heating is a large storage opportunity

Flexible demand

22 GW / 45 GWh per day by 2040

Consumer savings

$6.7 billion Annually by 2040

Source: UTS, Domestic hot water and flexibility. Rapid electrification scenario
DER & electrification can lower costs for everyone
DER can deliver large economic benefits

$11bn\textsuperscript{1}$ in avoided networks costs

$8bn\textsuperscript{2}$ in reduced generation and storage costs

$10bn\textsuperscript{2}$ in reduced generator super profits

Net present value to 2040

\textsuperscript{1}Baringa Partners. Potential network benefits from more efficient DER integration. 18 June 2021.

\textsuperscript{2}NERA Economic Consulting. Valuing Load Flexibility in the NEM. 1 February 2022.

Source: IEEFA, DER could provide $19 billion economic boost by 2040
Electrifying & DER could increase networks utilisation

**Figure 3-6 Distribution network consumption and costs in Well-coordinated**

**Average NEM electricity bill**

- 2023: $1,210
- 2030: $890
- 2050: $600

Source: CSIRO, *Consumer impacts of the energy transition: modelling report*
EVs are likely to drive a big part of those benefits

By 2050,

\[ \text{EV fleet battery capacity} = 4 \times \text{NEM storage needs} \]

Source: EnX for ARENA, V2X.au Summary Report: Opportunities and Challenges for Bidirectional Charger in Australia
More action is needed to capture this potential

- DER, flexibility & energy efficiency standards
- Mandating all-electric homes & appliances
- Hot water & EVs integration strategy
- Ensuring a smooth transition: supply chains & skills, hard-to-electrify homes and financing solutions

Source: IEEFA, Reducing demand: A better way to bridge the gas supply gap, Managing the transition to all-electric homes, Growing the sharing energy economy.
Contact

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