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An Integrated Grid could save customers billions

2017-27

Unlocking the benefits of new energy technology could lead to a 30% reduction in the network component of electricity bills by 2050 and a fairer, more efficient energy system.

Ground-breaking analysis released at *All-Energy Australia* in Melbourne today indicates economic benefits of \$16.7 billion would be achieved through the smart use of network incentives to customers.

Energy Networks Association (ENA) CEO, John Bradley said the analysis was commissioned by the ENA and CSIRO as part of the *Electricity Network Transformation Roadmap* program.

“Customers, not utilities, will make more than \$224 billion - or more than a quarter - of all energy system investment decisions between now and 2050,” Mr Bradley said.

“Energy networks can unlock the full value of these distributed resources, like solar, storage and demand management, with smart incentives for grid-support services.”

The modelling shows, if networks buy energy services from customers who have distributed energy resources, like solar panels and battery storage systems, it could:

- replace \$16.2 billion of network investment;
- avoid \$18.6 billion in cross subsidies between energy customers; and
- provide \$16.7 billion in economic benefit to the community.

Mr Bradley said smart incentives would reward participating customers for the ‘orchestration’ of their distributed resources in key locations at key times during the year, in return for financial benefits.

“These benefits rely on distributed resources providing the grid support needed in the right place at the right time.

“Some networks are already introducing new partnerships, such as rewarding customers for allowing the energy network to use their battery storage during times of peak demand.”

Mr Bradley said the analysis indicates the first step is to introduce demand-based network tariffs which are fairer and more efficient, with the choice for customers to voluntarily opt out.

“To create a platform for a smarter, more integrated grid, Australia will need a faster implementation of demand based tariffs and the timely use of smart meters,” Mr Bradley said.

He said the Energeia modelling found that the early transition to demand-based tariffs could save customers over 10% per year on network charges and avoid \$1.4 billion in network investment by 2026.

“Smart incentives are also vital to avoid major cross-subsidies and inequity between customers. This could save \$600 per year for a medium family without distributed resources.

“Network tariff reform is designed to make prices fairer and more efficient, support customer energy choices and reward efficient use.”

-Ends-









About the Energeia modelling

The Energeia modelling is the largest scale, network cost-price forecast model undertaken in Australia. It was used to evaluate different tariff structures and tariff assignment mechanisms, customer uptake and operation of new technology, and outcomes for customer bills, equity and efficiency.

Key Findings

1. An earlier transition to demand based tariffs could save customers over 10% per year on average network bills by 2026 and achieve economic benefits of \$1.8 billion.
2. Consistent with international studies, waiting for customers to “Opt In” to new network tariffs fails to achieve timely take up of fair and efficient tariffs, with 70% of customers remaining on legacy tariffs in 2026.
3. By contrast, customers can be assigned to demand tariffs, with a choice to “Opt Out” while achieving effective reform – less than 10% choose to return to legacy tariffs.
4. Smart meters are essential to enabling demand based tariffs and will require close monitoring by policy makers to ensure market-led deployments are effective.
5. Without actively assigning customers to demand-tariffs, 60% of forecast smart meters will remain unused for cost-reflective tariffs in 2050, resulting in \$2.4 billion in under-utilised investment.
6. As technologies like batteries become smarter and cheaper, demand based network tariff structures will need to be refined further to be resilient and deliver greater benefits.
7. If Networks buy grid services from DER customers, this ‘orchestration’ could replace the need for \$16.2 billion in network investment, avoid cross subsidies, and lower average network bills by around 30% compared to today.
8. New pricing frameworks should allow customers with standalone power systems to remain grid connected in a way that benefits all customers

Realised benefits of reform





2026	2050
 <p>Average network bills over 10% lower than what they were in 2016</p>	 <p>Average network bills around 30% lower than what they were in 2016</p>
 <p>\$1.4 billion of cross subsidies avoided</p>	 <p>\$18.6 billion of cross subsidies avoided</p>
 <p>\$1.4 billion of network investment avoided</p>	 <p>\$16.2 billion of network investment avoided</p>
 <p>\$1.8 billion of net economic benefit</p>	 <p>\$16.7 billion of net economic benefit</p>

Outcomes for different customer types

In modelling for the *Electricity Network Transformation Roadmap*, CSIRO selected sample customer profiles representing four household groups. Energeia modelled the outcomes of the same sample customer profiles using two different assumptions.

Firstly, Energeia assumed the customer was active in seeking distributed energy resources, including solar and batteries to reduce energy bills. Secondly, Energeia assumed the customer was passive and did not, or could not, invest in distributed energy resources to reduce energy bills.

The outcomes for the four sample customer types in 2050 are outlined below:

	Base Case			Preferred Scenario		
	Active \$	Passive \$	The Gap \$	Active \$	Passive \$	The Gap \$
Working Couple 	1,387	1,900	513	1,303	1,552	248
Medium Family 	1,584	2,761	1,177	1,577	2,119	542
Large Family 	2,722	4,339	1,617	2,655	3,206	552
Single, Retired 	1,059	1,792	733	1,076	1,445	370

Further detail and information on the Energeia modelling and Unlocking Value for Energy Customers can be accessed [here](#).

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Australia's national science agency CSIRO and the peak national body representing gas distribution and electricity transmission and distribution businesses in Australia, the Energy Networks Association (ENA) have partnered to develop an Electricity Network Transformation Roadmap (the Roadmap). The Roadmap is a two stage process running over approximately 18 months. For more information go to www.ena.asn.au/roadmap