



Innovation is not an island: Australia and Pacific Islands Countries overlapping energy innovation needs.

Sustainable Electricity Access in Pacific
Island Countries

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Australia's National Science Agency





TL;DR

The innovation required to meet Australia's energy affordability and reliability challenges

matches

the innovation required to meet Pacific Island Countries' energy access and climate goals.

- Lowering energy costs requires integrating large amounts of renewables and lowering network costs.
- Moving select customers off-grid reduces network costs.
- Customer-sited solar and storage is the best way to improve reliability.
- Australia and Pacific Island Countries share important energy ambitions.



Networks and generation are the largest components of customer bills

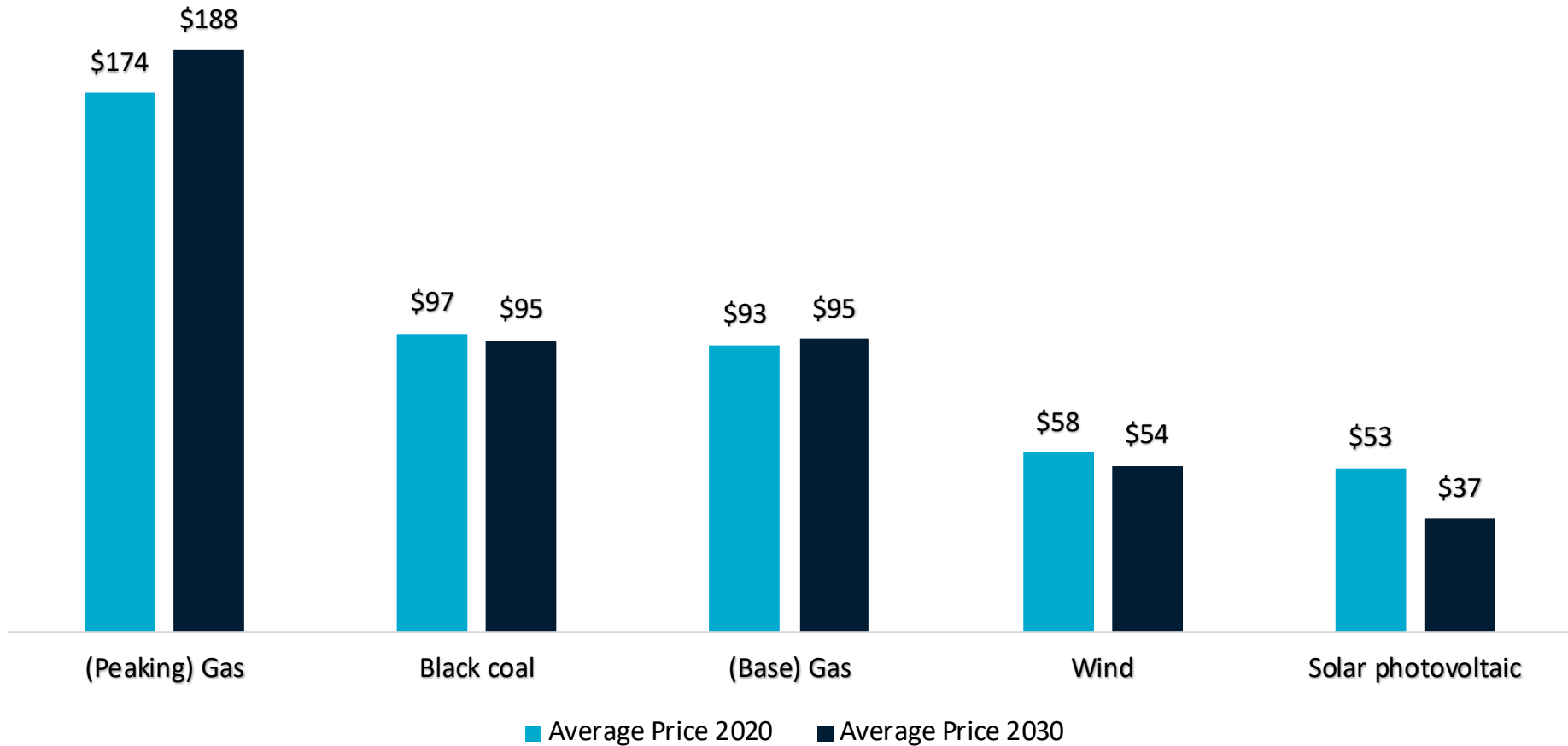
	c/kWh	\$/year	% of total bill
Environmental policies	2.08	\$95	7%
Networks	13.33	\$610	45%
Wholesale	11.72	\$537	39%
“Residual”	2.72	\$125	9%
TOTAL	29.85	\$1,367	100%

National Residential Electricity Prices and Supply Chain Components (2018-19)

Source: AEMC, 2018 Residential Electricity Price Trends, 21 December 2018



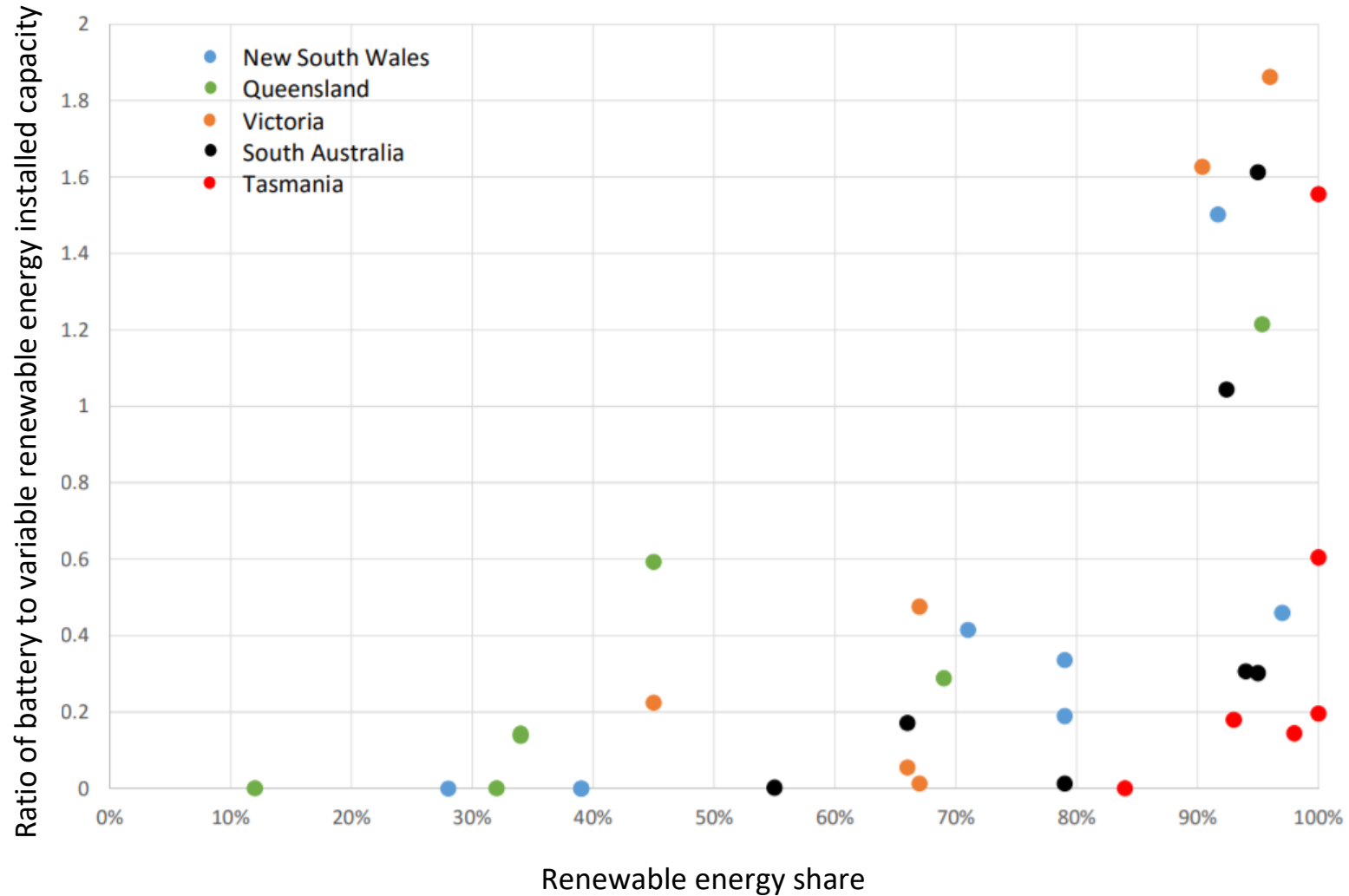
Solar and wind are the cheapest ways to generate electricity in Australia.



Levelized Cost of Energy for Fossil and Clean Generation Technology (\$/MWh)

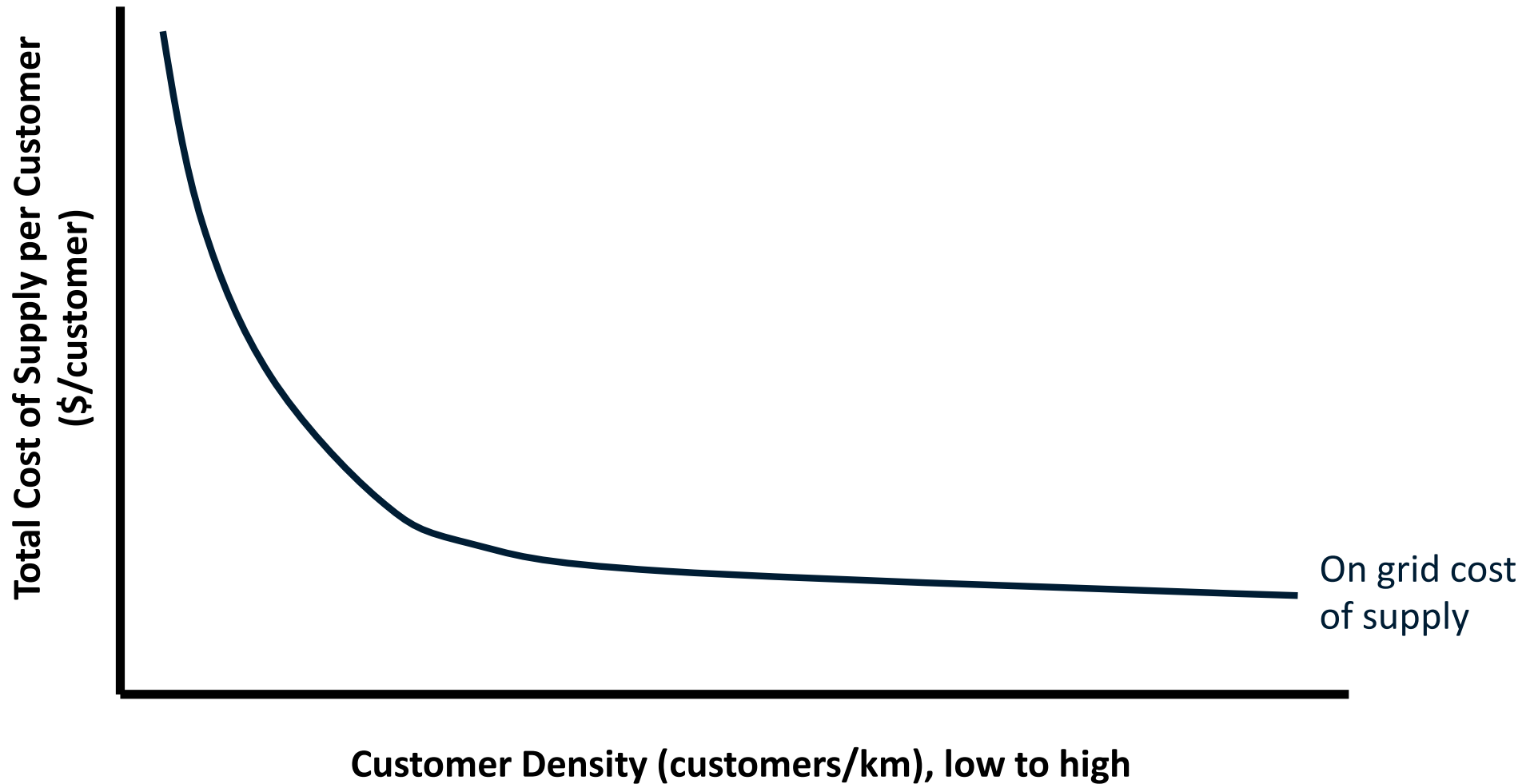


Penetrations of wind and solar above 65% require significant storage or other integration technology.



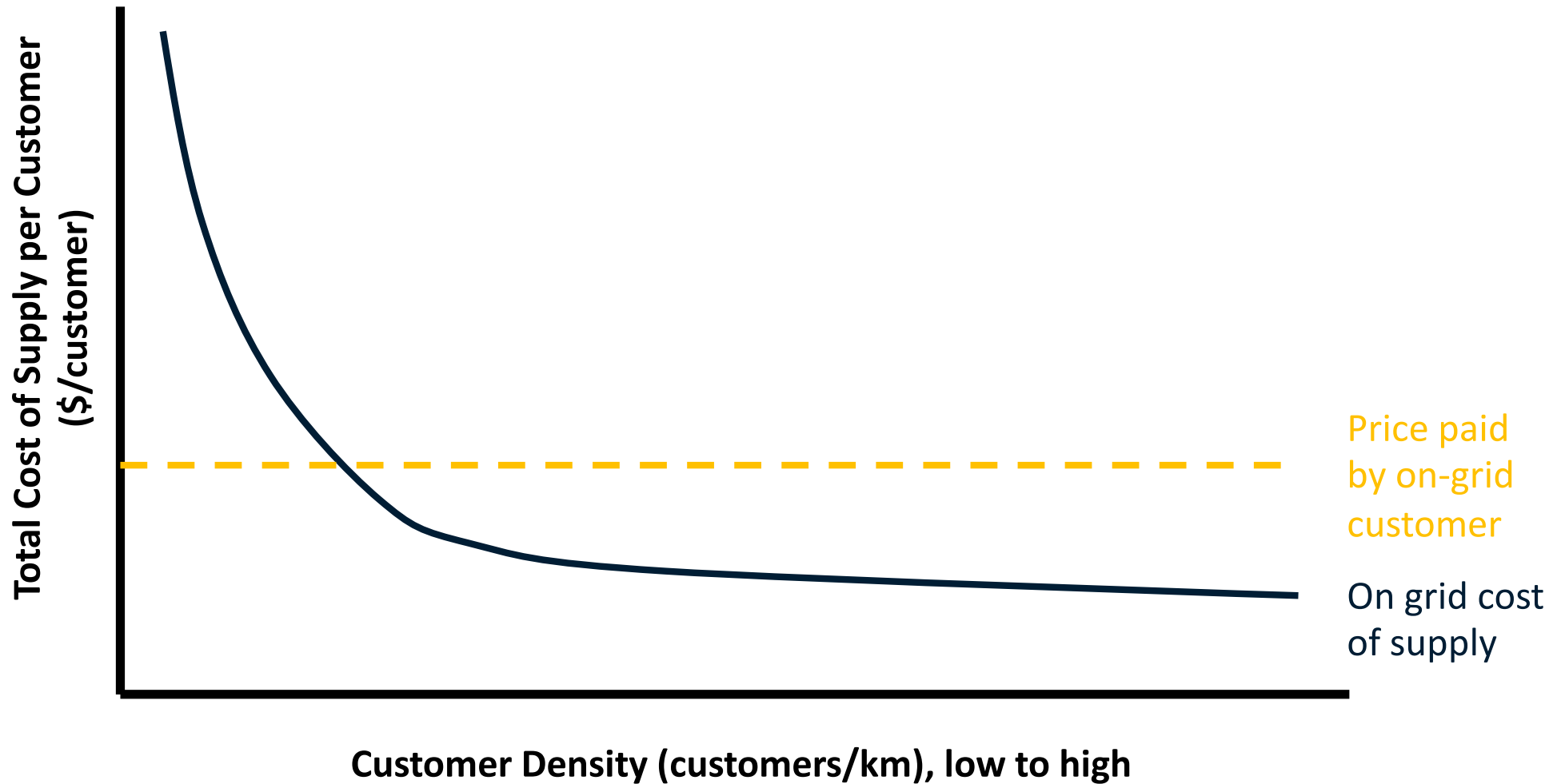


Reduce network costs by reducing networks



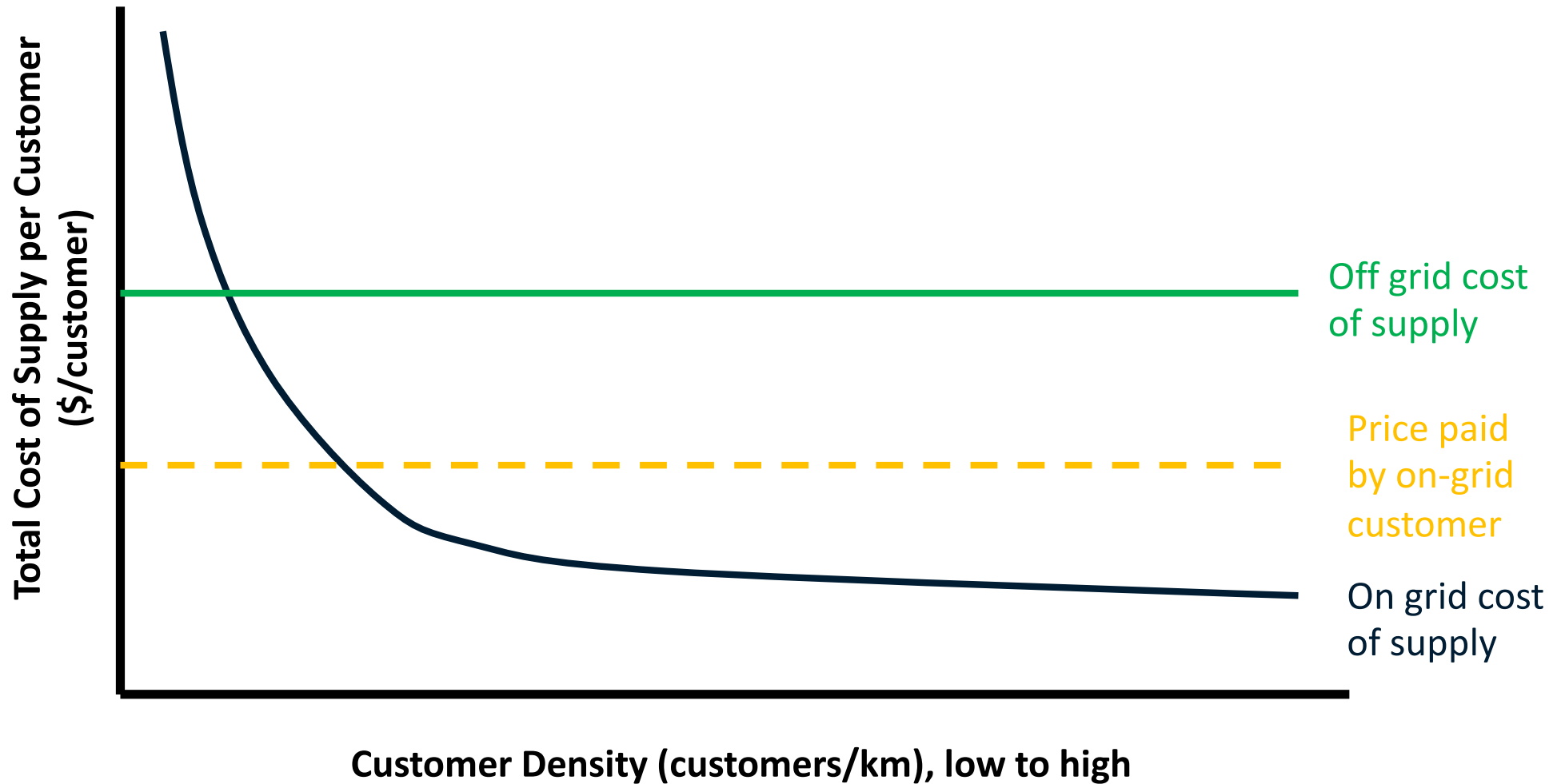


Reduce network costs by reducing networks



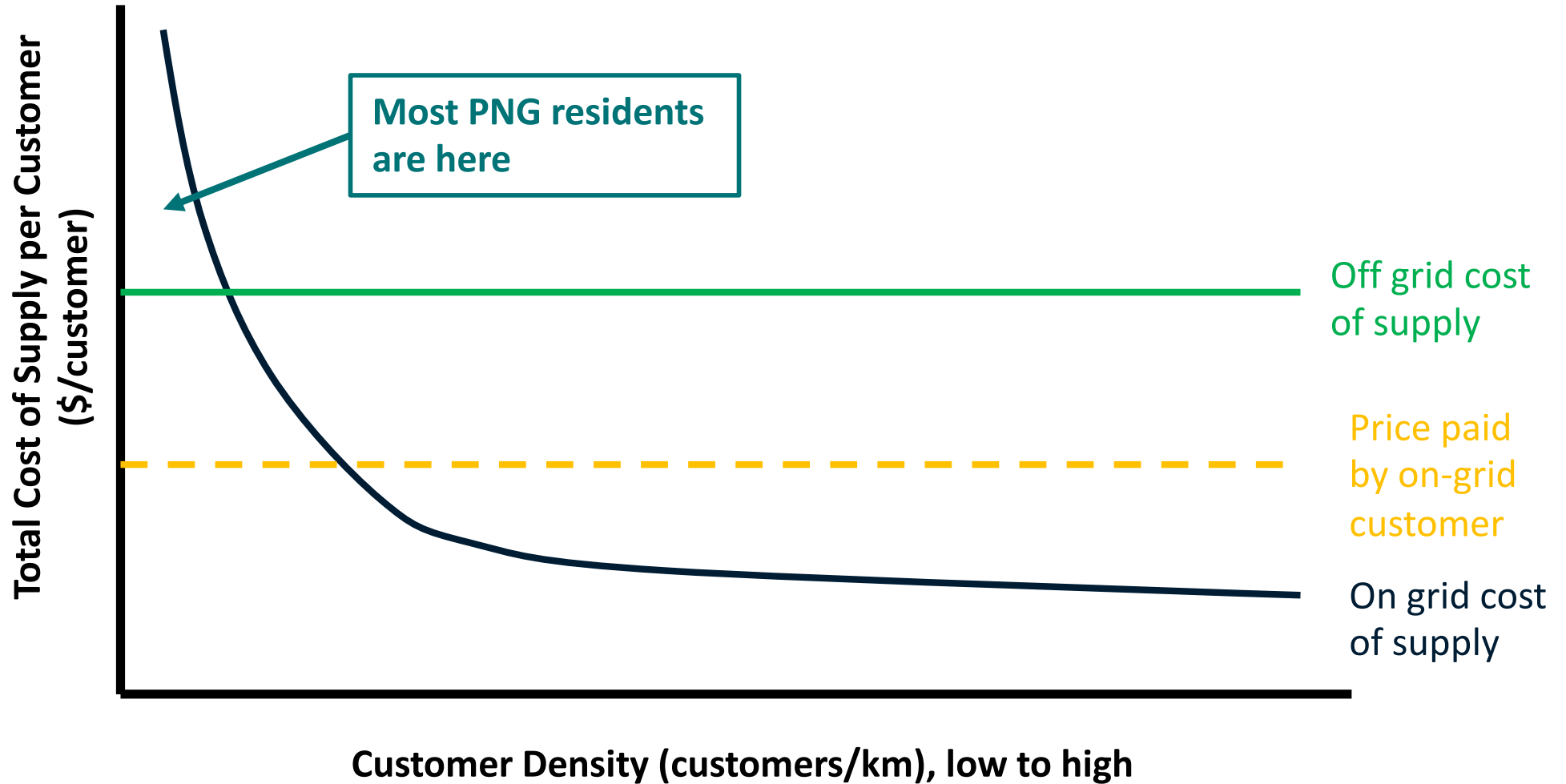


Reduce network costs by reducing networks



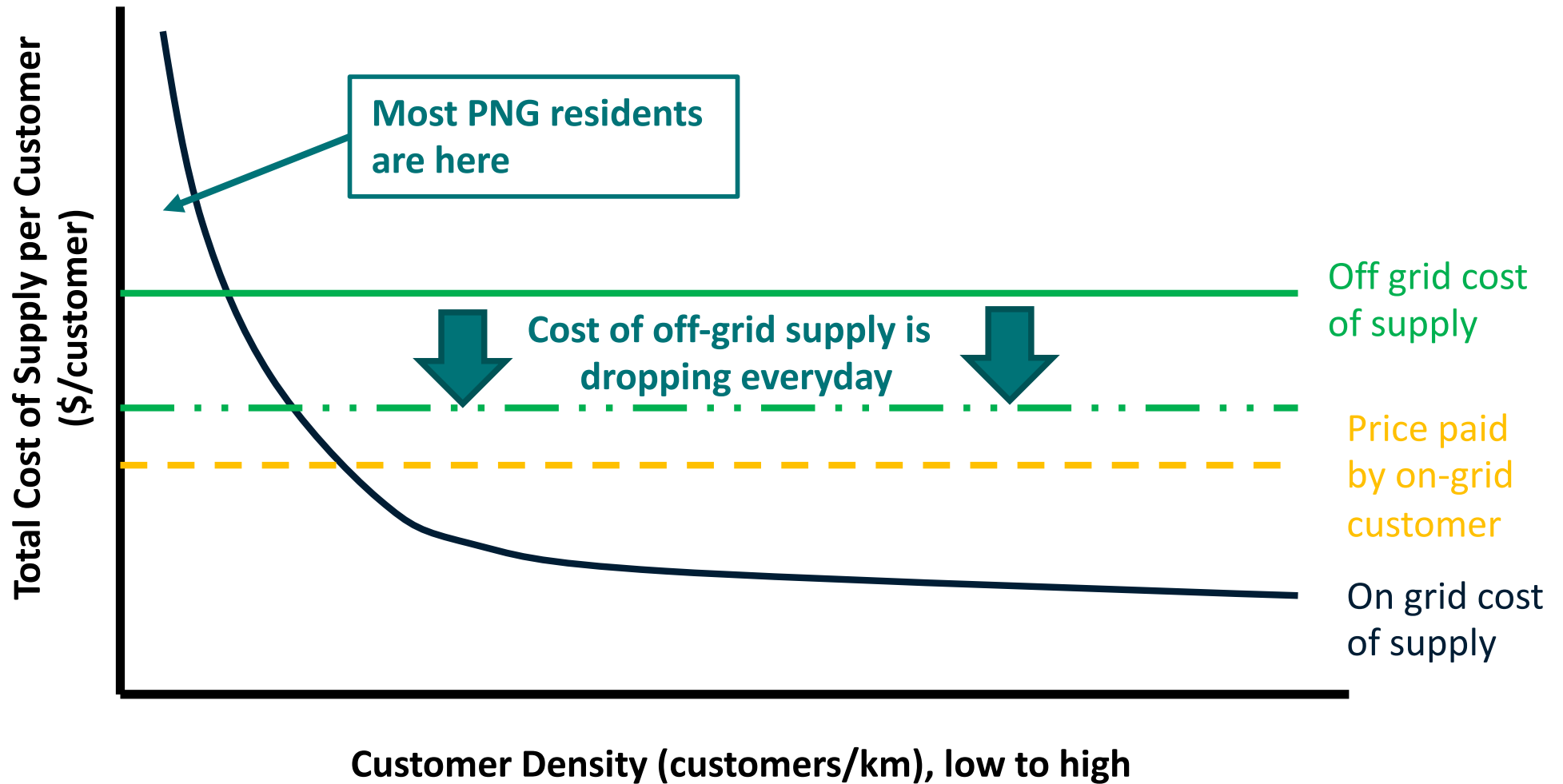


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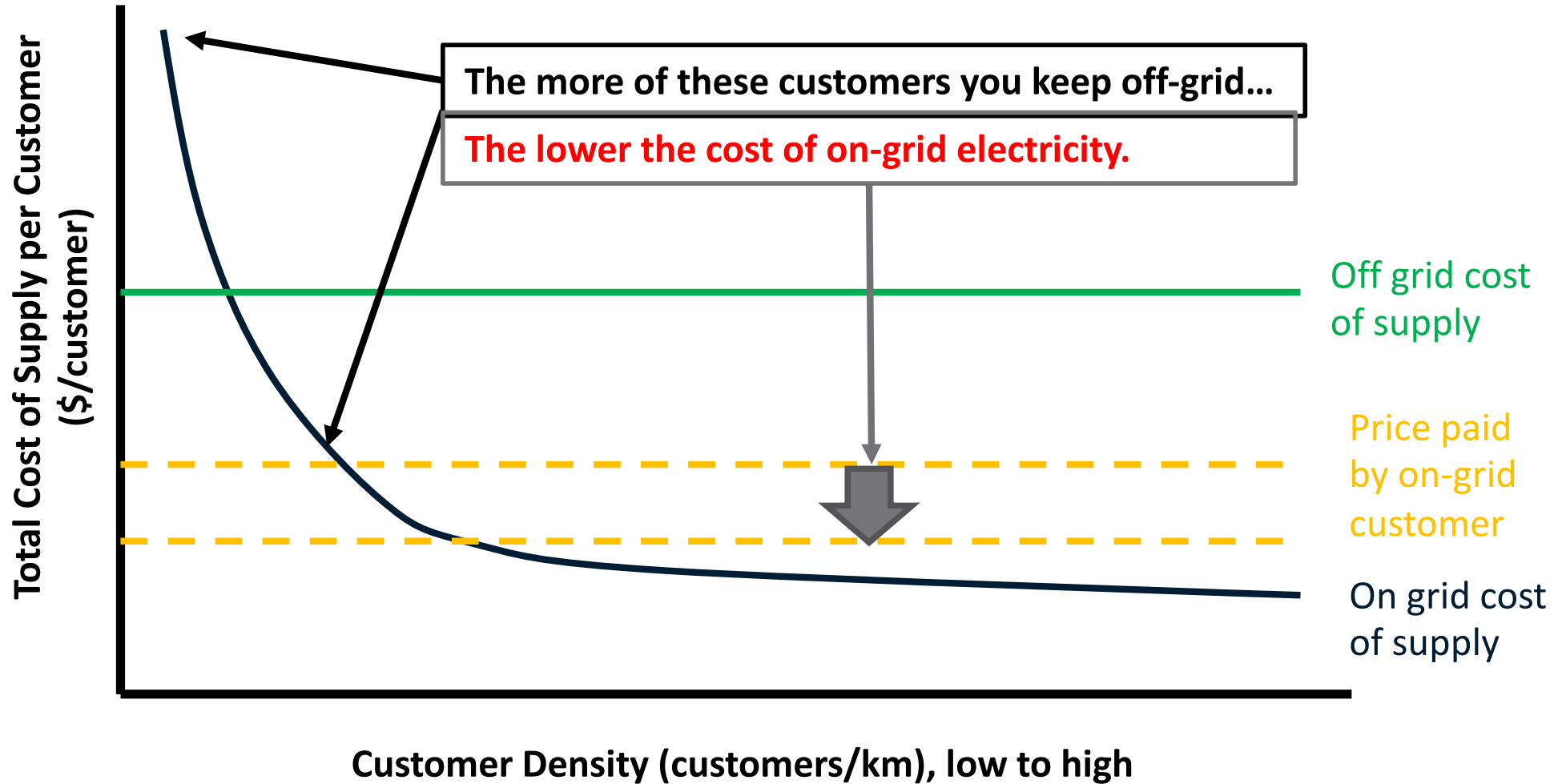


Reduce network costs by reducing networks



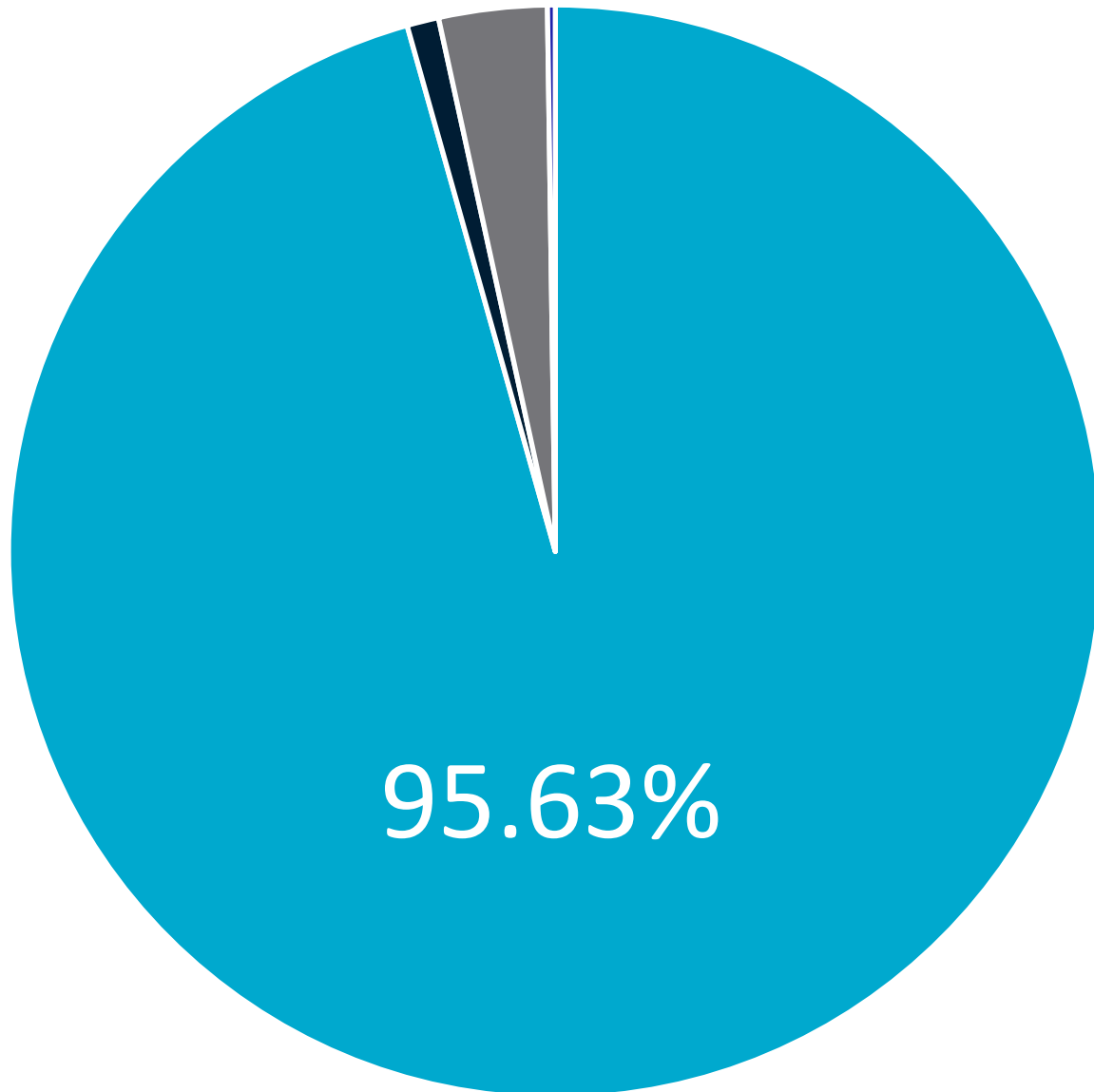


Reduce network costs by reducing networks





Reliability is a distribution system problem.



Sources of supply interruptions in the NEM:
2007-08 to 2016-17

- Distribution Interruptions
- Transmission Interruptions
- Security Interruptions
- Reliability Interruptions



Off-grid systems can improve cost, reliability and clean energy metrics.

Results of a stand-alone power system trial in Western Australia

	Customers disconnected and provided stand-alone power systems	Their neighbours on the fringe of the grid
Reliability	5 hours without power	70 hours without power
Cost	50% the previous cost to serve	Western Power's most expensive customers
Clean	90% solar	90% fossil



Our ambitions are closer than one might think...

	Renewable Target (2030 or before)
Cook Islands	100%
Papua New Guinea	100%
Samoa	100%
Tuvalu	100%
Fiji	99%
Solomon Islands*	75%
Tonga*	70%
Vanuatu	65%
Fed. States of Micronesia*	50%
Kiribati*	50%
Nauru	50%
Timor-Leste	50%
Palau*	40%
Marshall Islands	20%

	Renewable Target (2030 or before)
South Australia	100%
Tasmania	100%
Northern Territory	50%
Victoria	50%
Queensland	50%
NSW*	46%



Our ambitions are closer than one might think...



PNGAus Partnership

ABOUT THE PROGRAM

Pawarim Komuniti – is a new Off-Grid Electrification Program funded by the PNG-Australia Partnership to support access to electricity in Papua New Guinea (PNG). The program is part of the PNG-Australia Partnership to help PNG meet its energy needs.



The Hon Angus Taylor MP

Minister for Energy and Emissions Reduction



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Call for community microgrid feasibility studies

MEDIA RELEASE

11 October 2019

Regional communities will benefit from more secure, affordable and reliable power under the Australian Government's \$50 million program to support feasibility studies into microgrids.

The first round of the Regional and Remote Communities Reliability Fund is now open to applications from across Australia. Up to \$20 million of grants will be awarded through this first round.

Our domestic and international policies will have to work together to maximise our national power and international influence. Policies to strengthen the resilience and competitiveness of our economy and enable communities and businesses to harness innovation, science and technology to drive growth will be essential.

–2017 Foreign Policy White Paper, Australian Government

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Cost projections for integrated small scale solar and batteries (\$/solar kW)

