



Efficiency of tariffs for new and emerging technologies in the NEM

Findings and results

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Insight in Economics™

- Our analysis is based on four case studies:
 1. Air conditioners in Victoria
 2. Solar PV in South Australia
 3. Battery Storage in Queensland
 4. Electric Vehicles in New South Wales

Case Study 1:

Air conditioners and SP AusNet

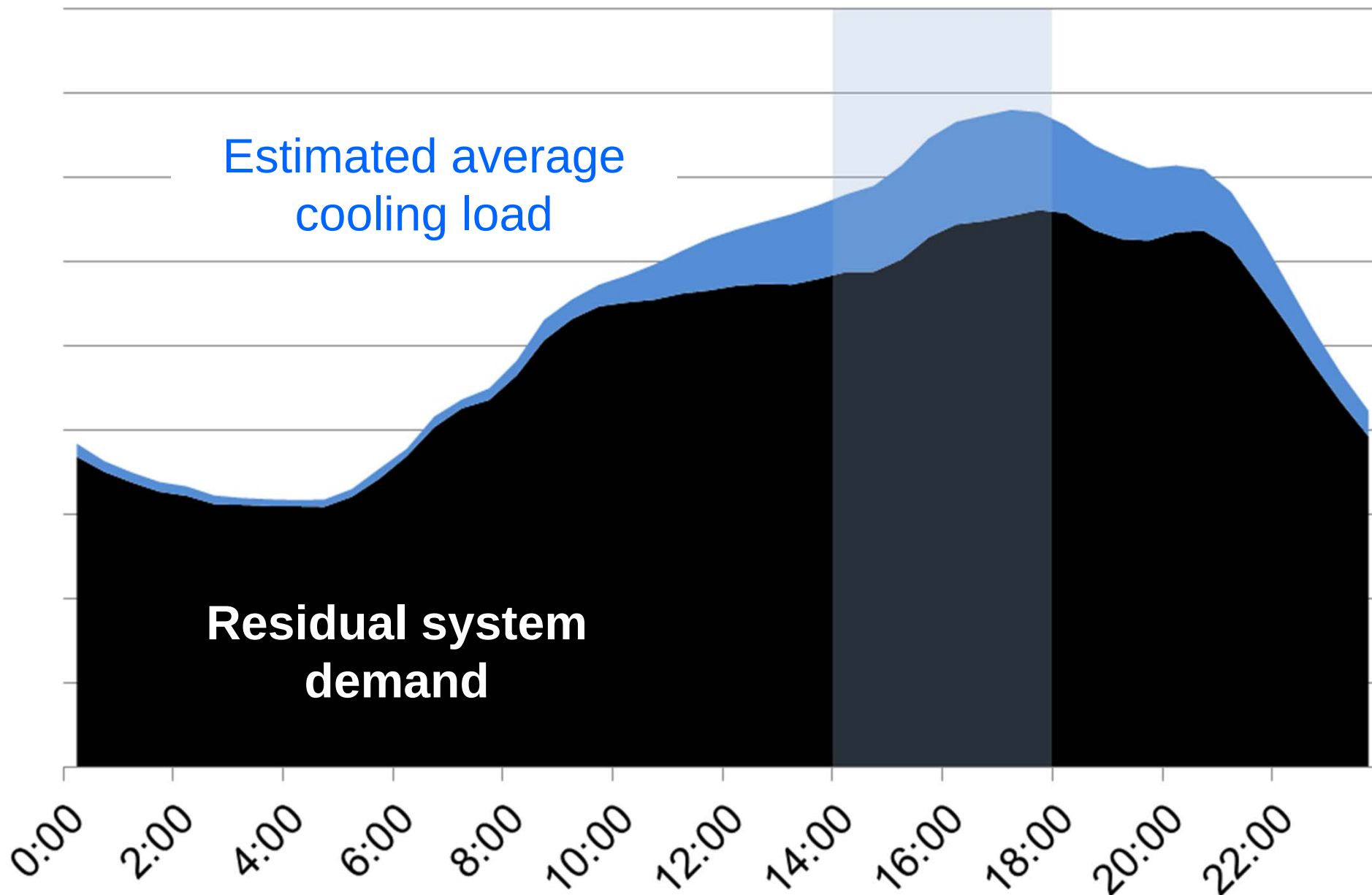


- We developed the shape of the load profile as a function of temperature
- Network tariff
 - Residential flat tariffs (NEE11– DUOS)
 - Residential ToU tariff (NSP11– DUOS) ¹
- Retail tariffs
 - Residential flat tariff (standing offer) ²
 - Residential ToU tariff (standing offer) ²

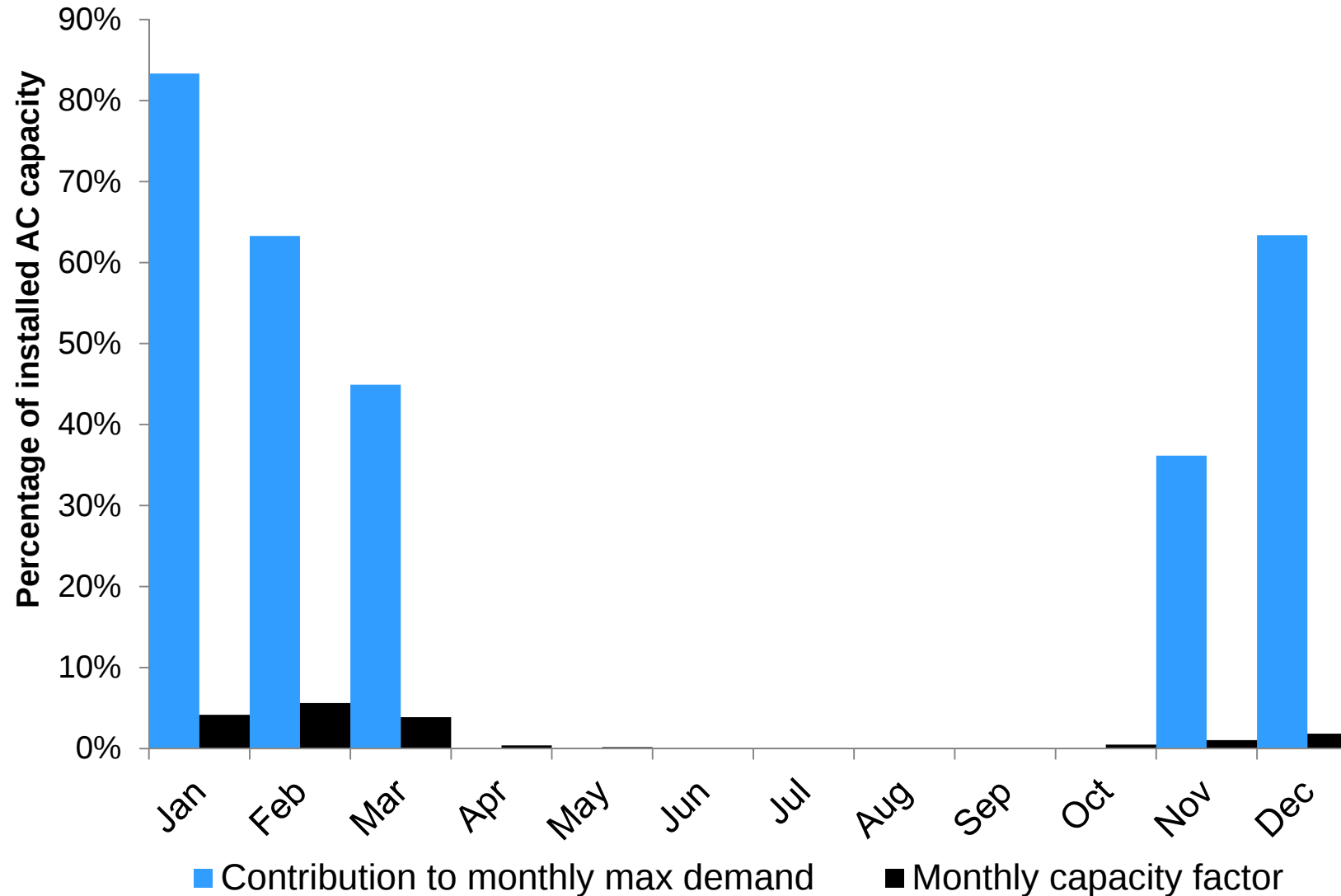
Air-conditioner contribution to system demand – 2013



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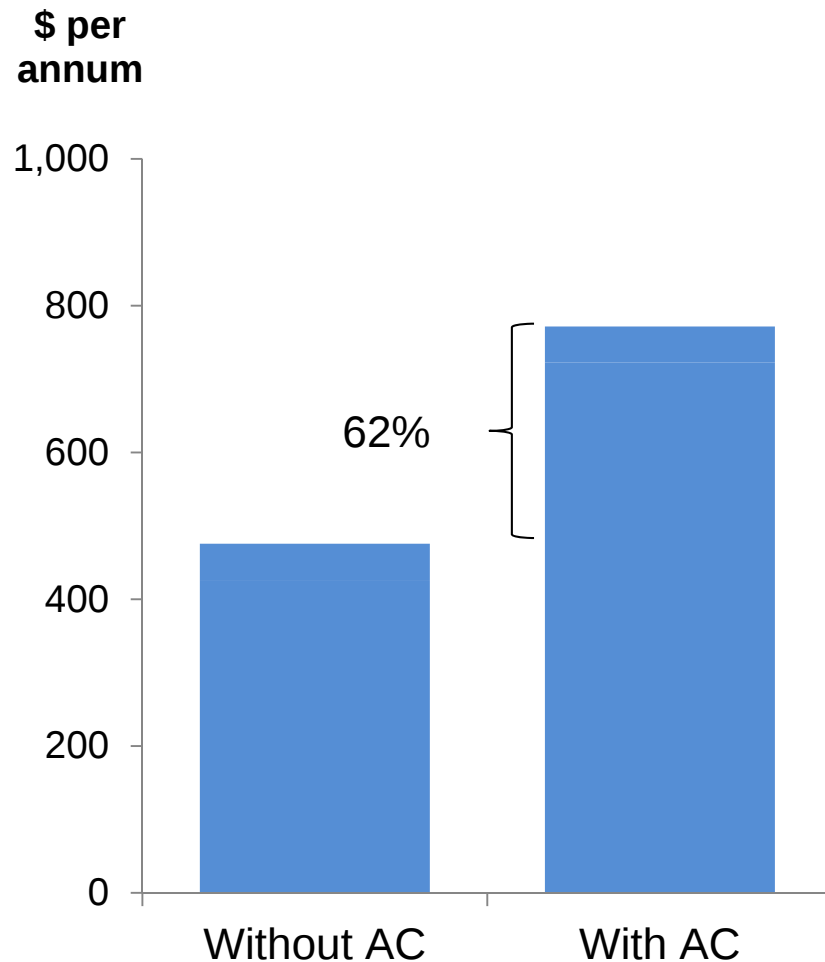


Air-conditioners have low capacity factors, but still contribute to MD

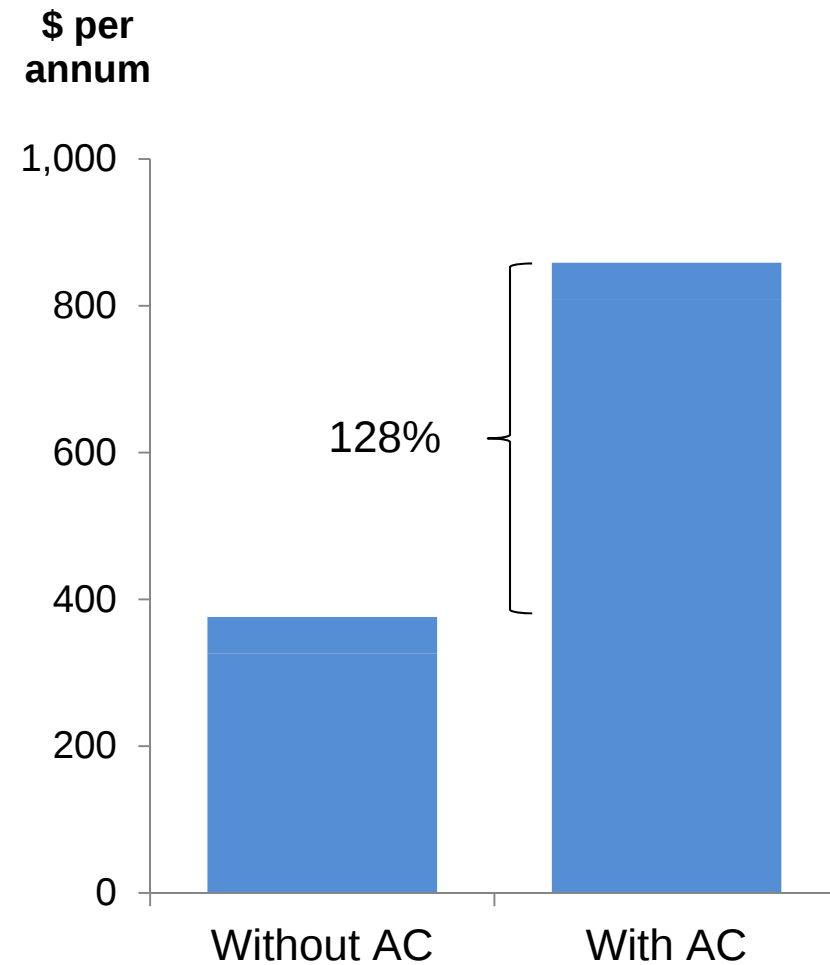


Using an air conditioner increases a customer's network bill

Inclining block tariff



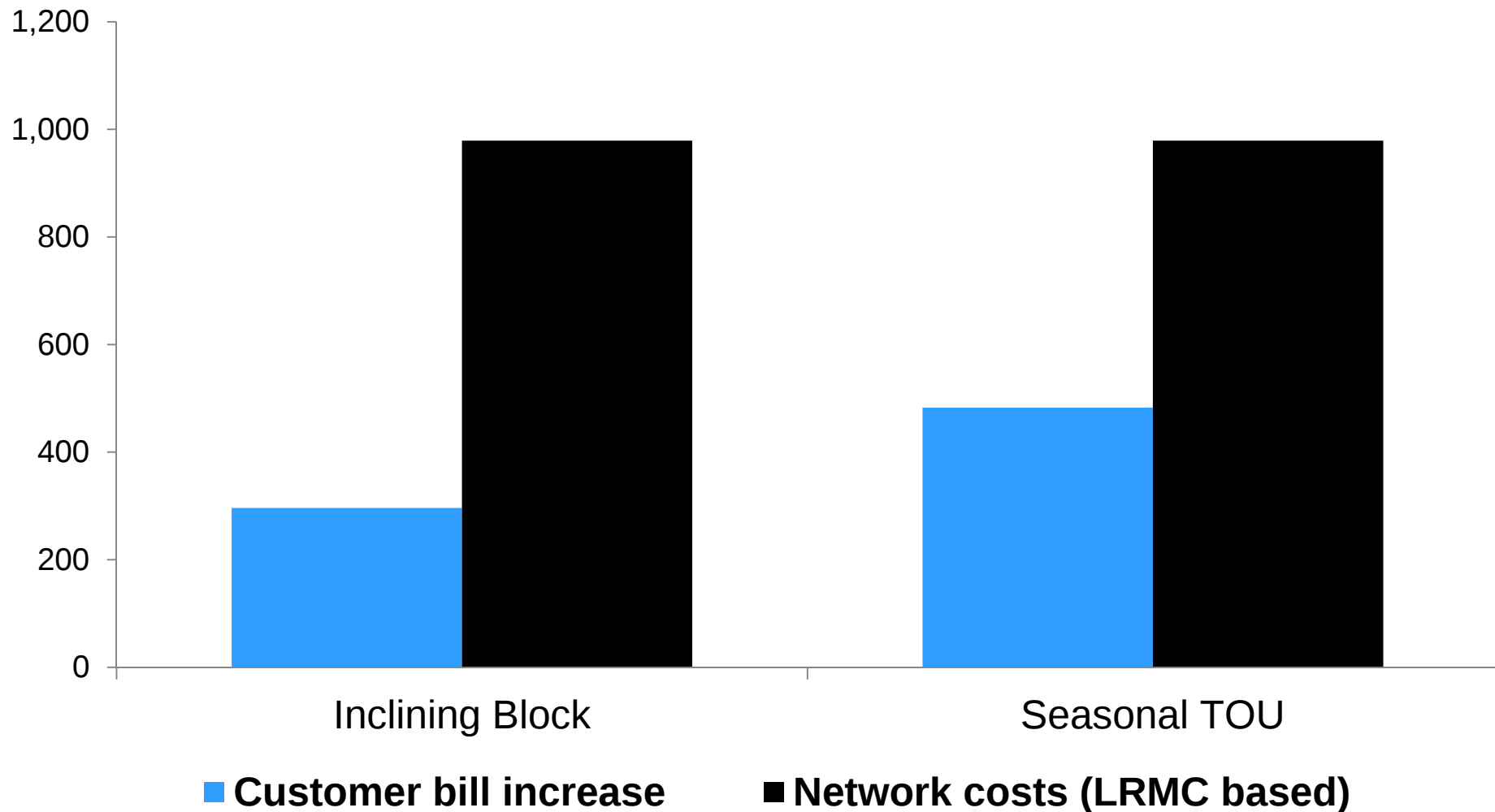
Seasonal TOU tariff



Air-conditioners impose costs on the network that exceed costs to the consumer



\$ per annum

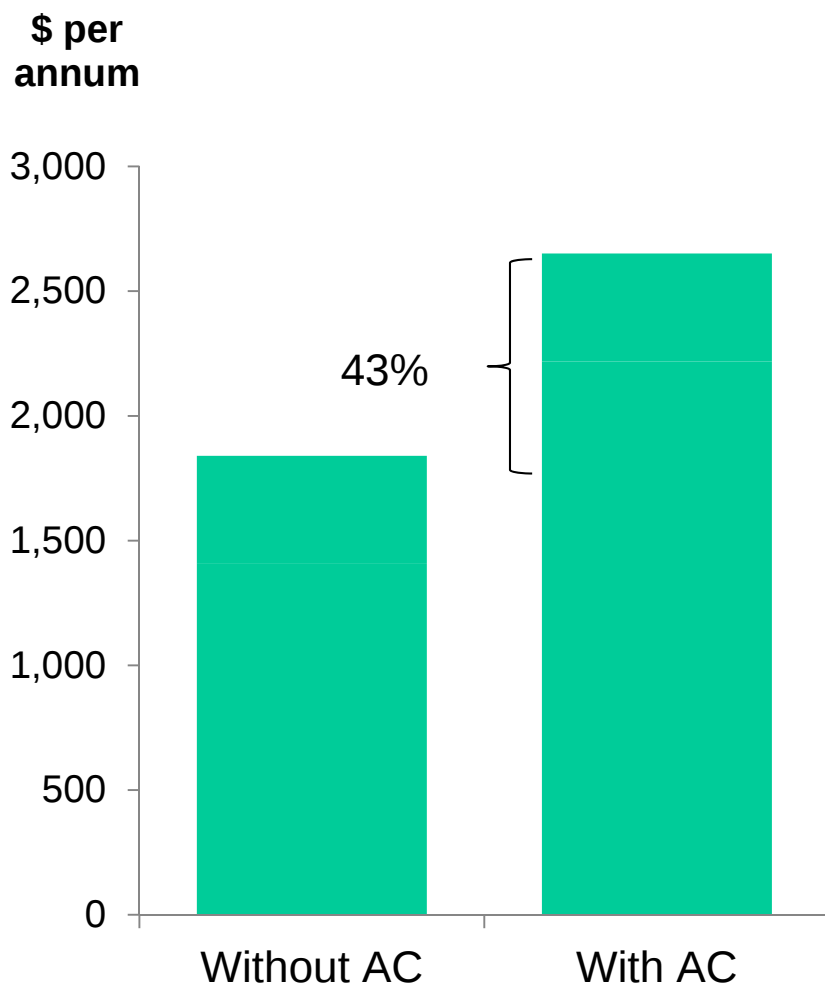


Using an air conditioner increases a customer's retail bill considerably

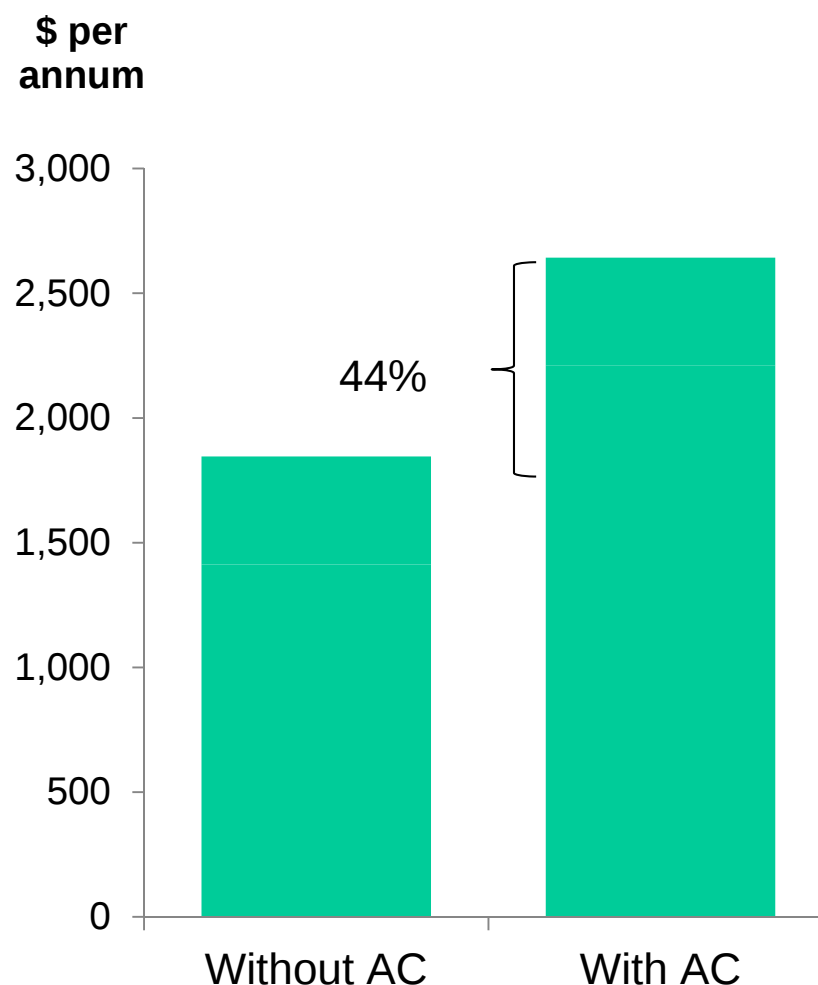


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Inclining block tariff



TOU tariff



Case Study 2: Solar PV and SA Power Networks

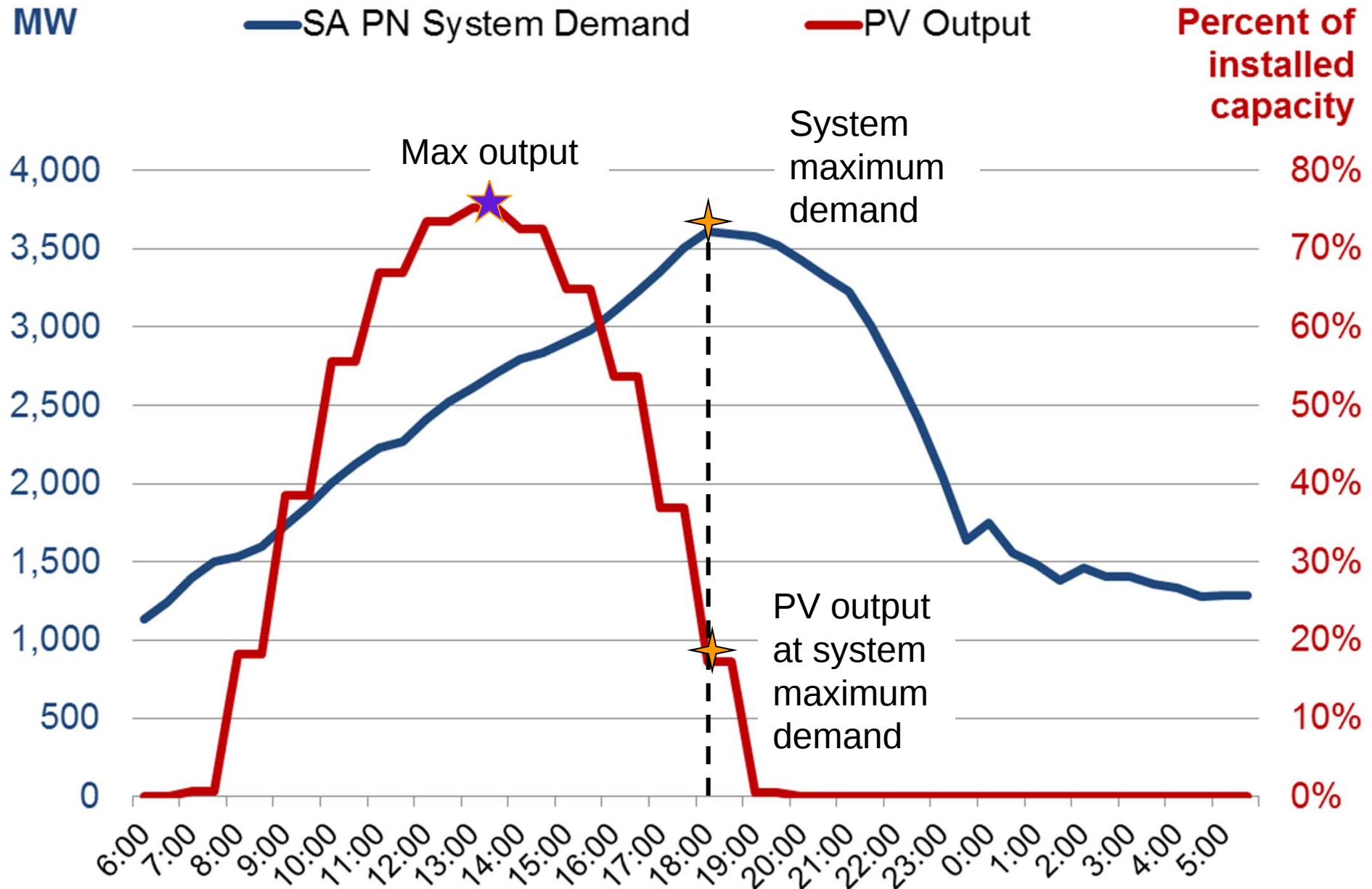


- Assumed PV installation size:
 - 3 kW installation with 5 MWh annual consumption
- Network tariffs
 - Inclining block residential tariff (MRSR)¹
- Retail tariffs
 - Seasonal inclining block residential tariff (Standing offer of AGL and Origin Energy)

North-oriented PV output is low during the system max demand



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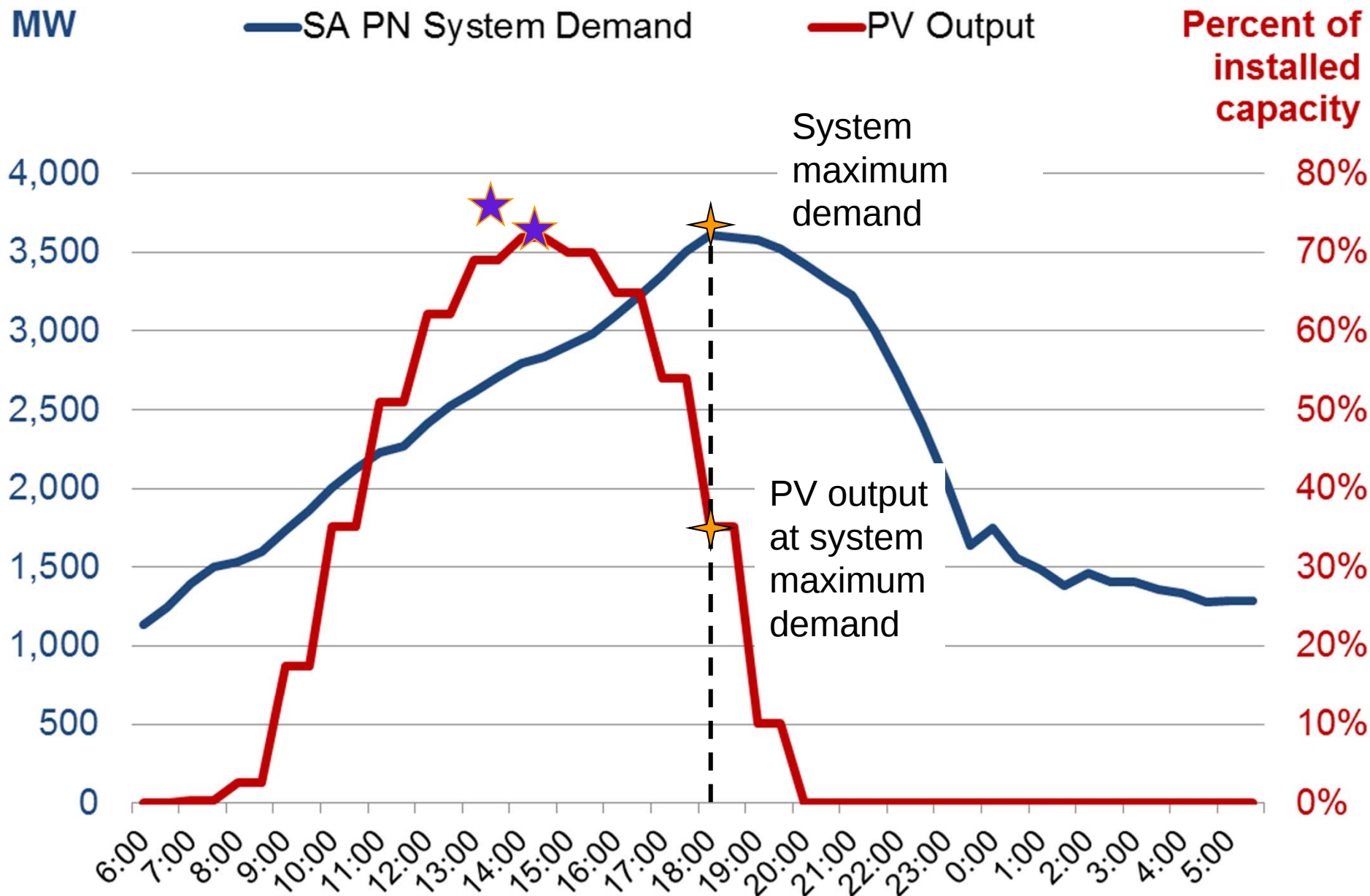


Note: The system maximum demand represented here is for SA Power Networks for 2011. The solar PV output is derived by NERA using the System Advisory Model and information on installed capacity published by the Clean Energy Regulator

West-oriented PV output is higher during system max demand



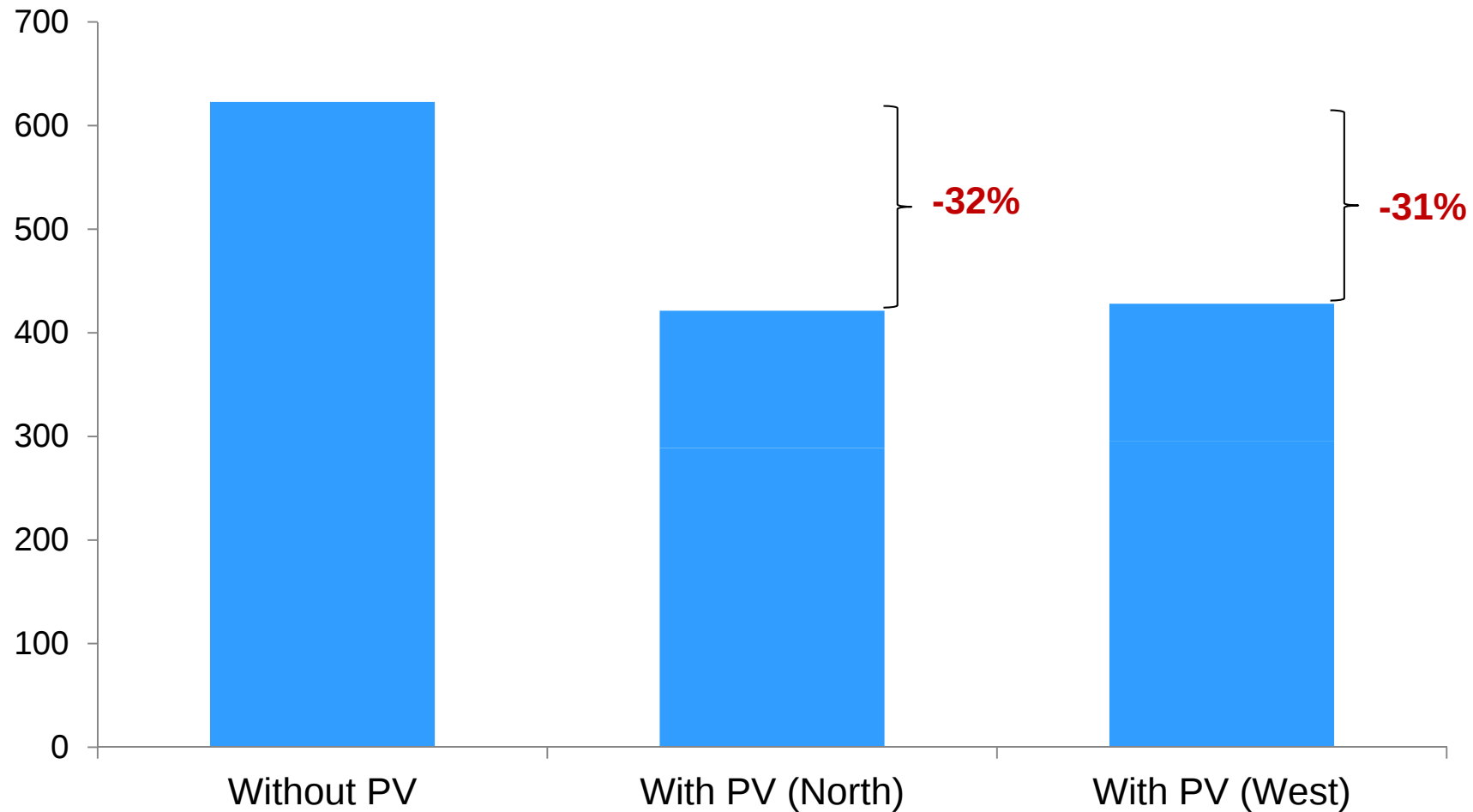
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Under standard tariffs, PV systems reduce a customer's DUOS bill

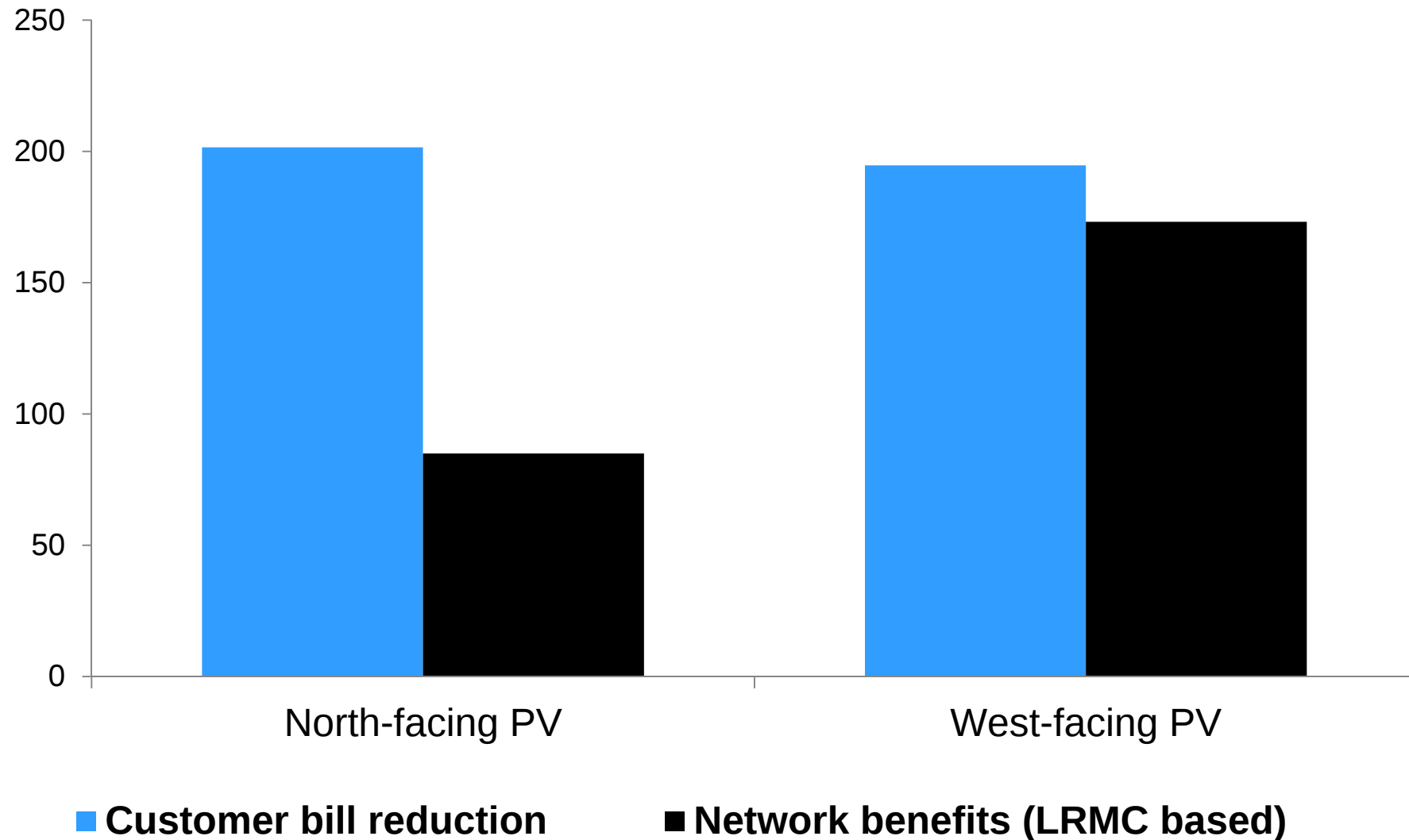


\$ per annum

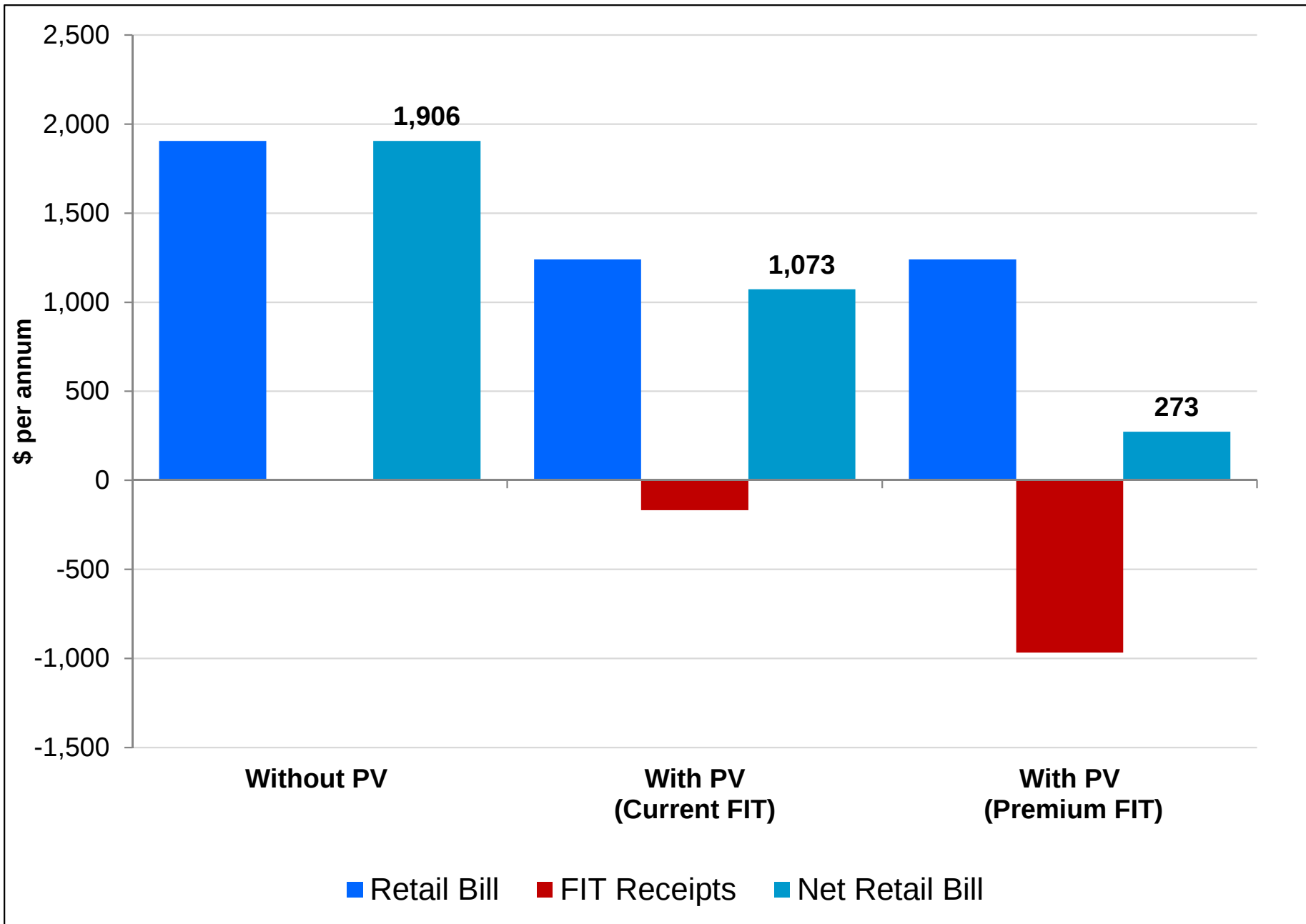


Customer bill reductions from PVs exceed the network benefits

\$ per annum



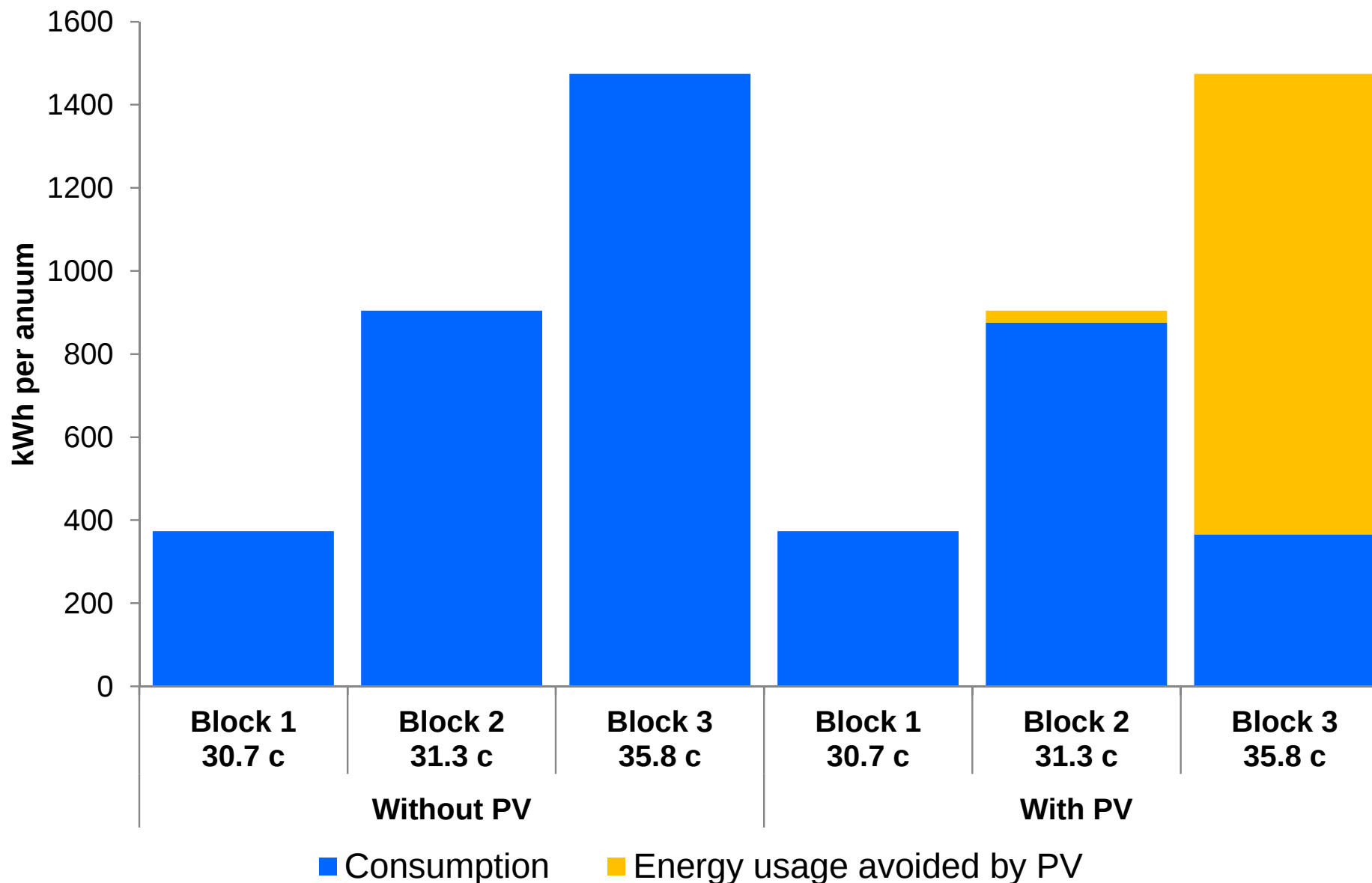
PV systems result in considerable retail bill reductions



PV systems take advantage of inclining block tariff structure



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Case Study 3: Batteries + PV and Energex



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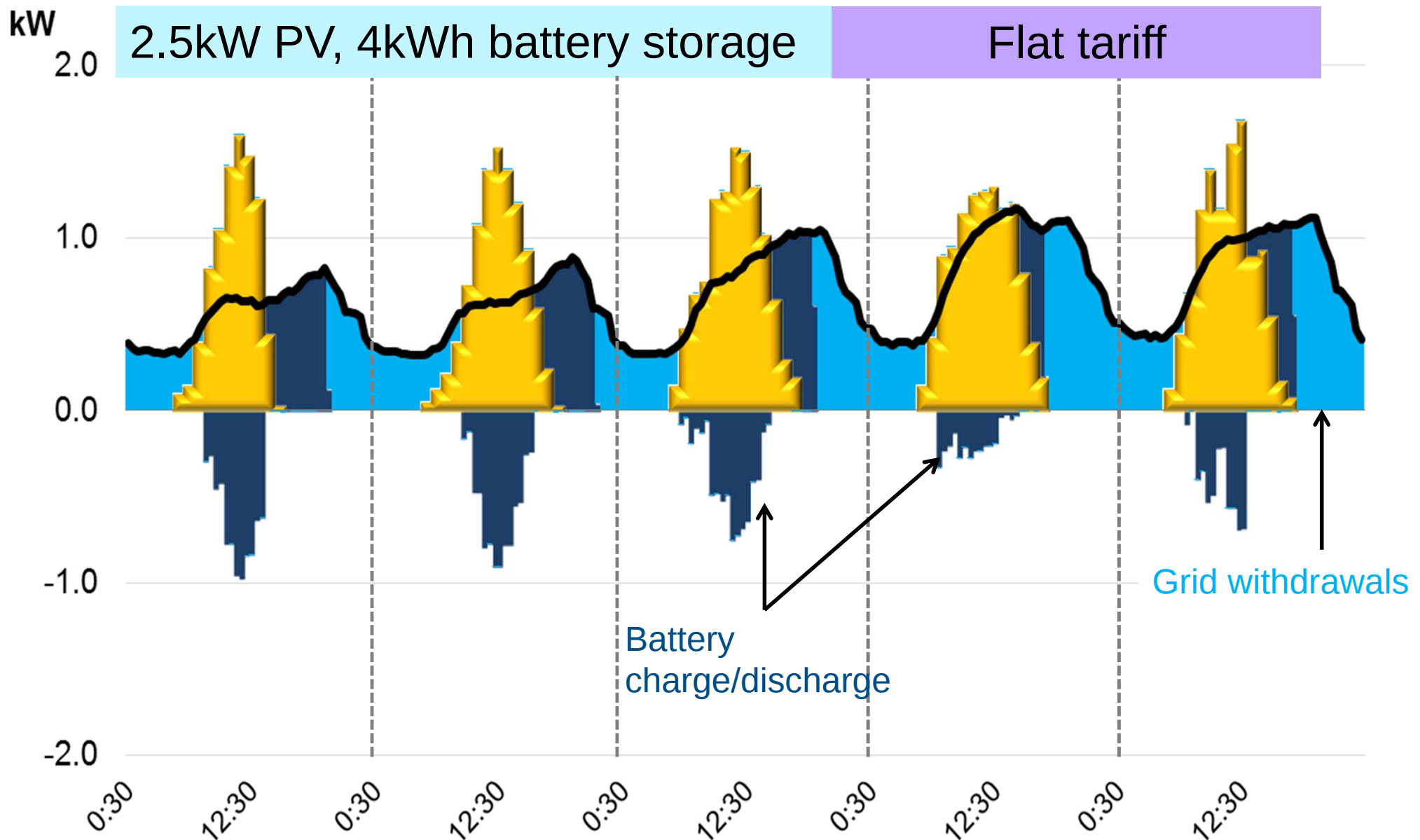
ecolectric

派能科技
PYLON TECHNOLOGIES



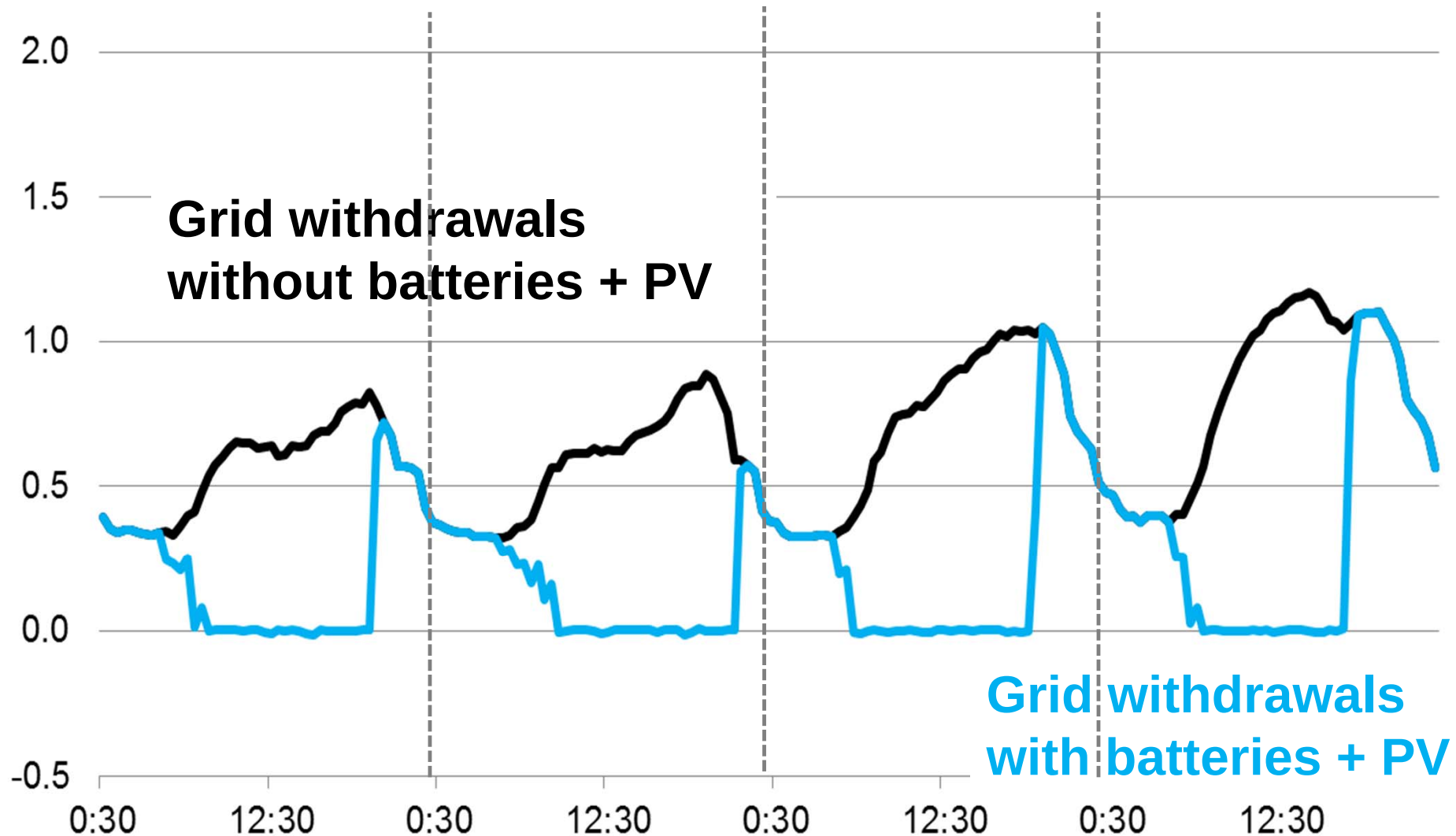
- Assuming a small and large system:
 - 5kW PV system with 8kWh of battery storage
 - 2.5kW PV system with 4kWh of battery storage
- Network tariff
 - Residential flat tariffs (8400 – DUOS)
 - Residential ToU tariff (8900 – DUOS)
- Retail tariffs
 - Residential flat tariff (regulated)¹
 - Residential ToU tariff (regulated)²

Excess energy can then be extracted from storage during peak periods



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Flat tariff



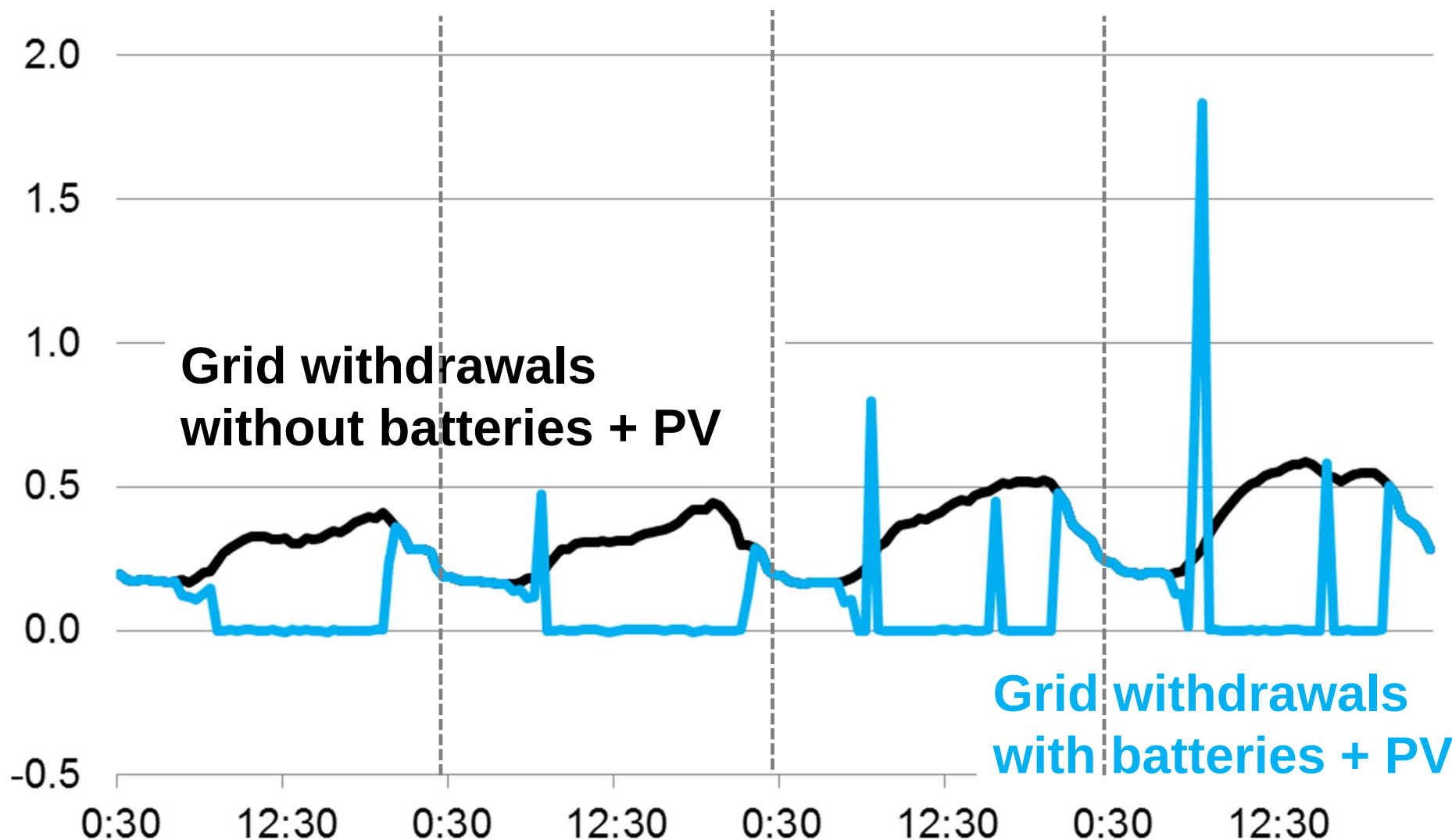
Batteries have the potential to make withdrawals more volatile



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kW 2.5kW PV, 4kWh battery storage

ToU tariff





Contact Us

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