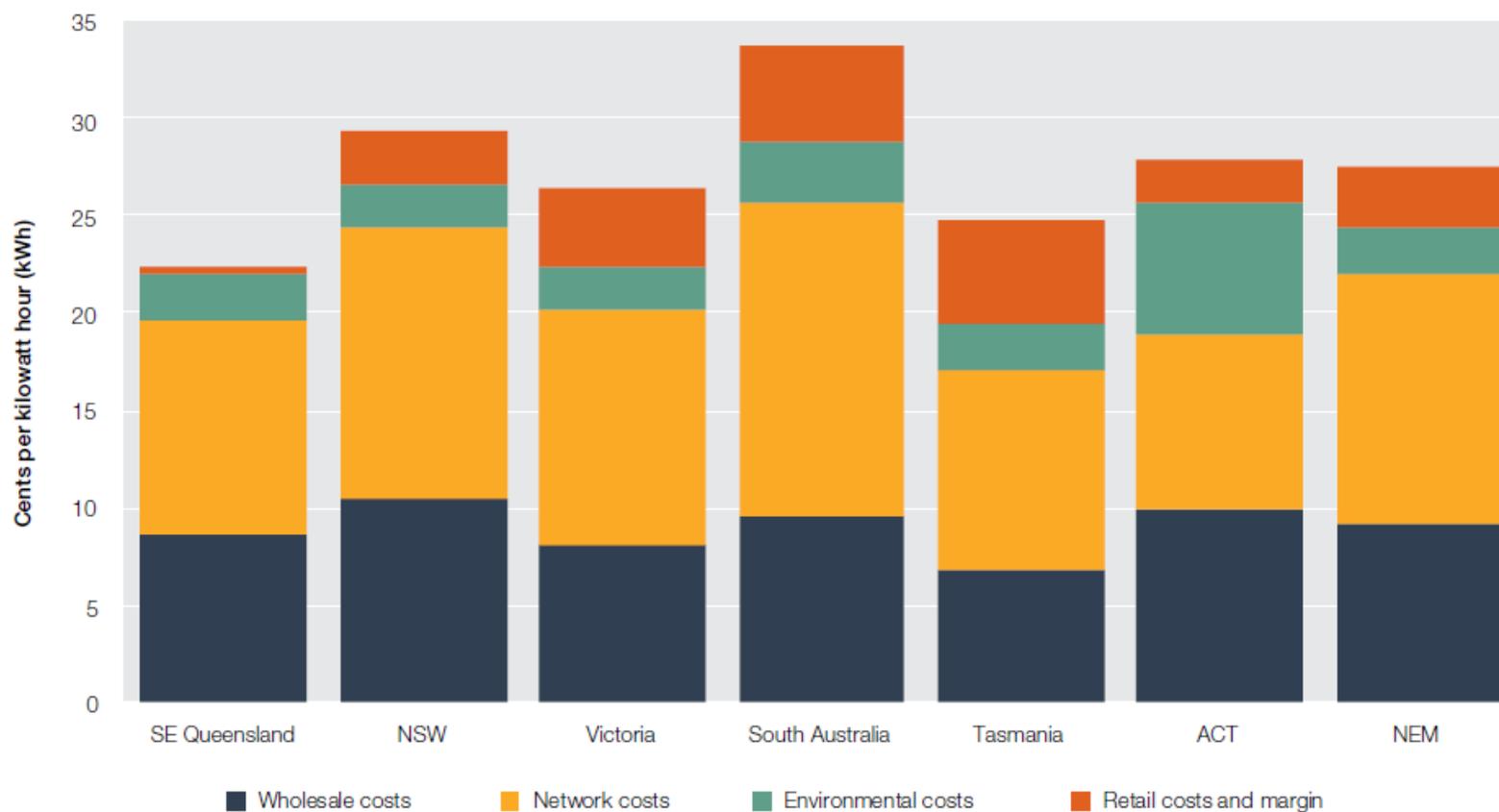
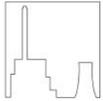


1. Retail electricity bills reflect the cost of the entire electricity delivery system. Which component is reduced by large-scale wind and solar?

Figure 6.2 Composition of a residential bill – electricity

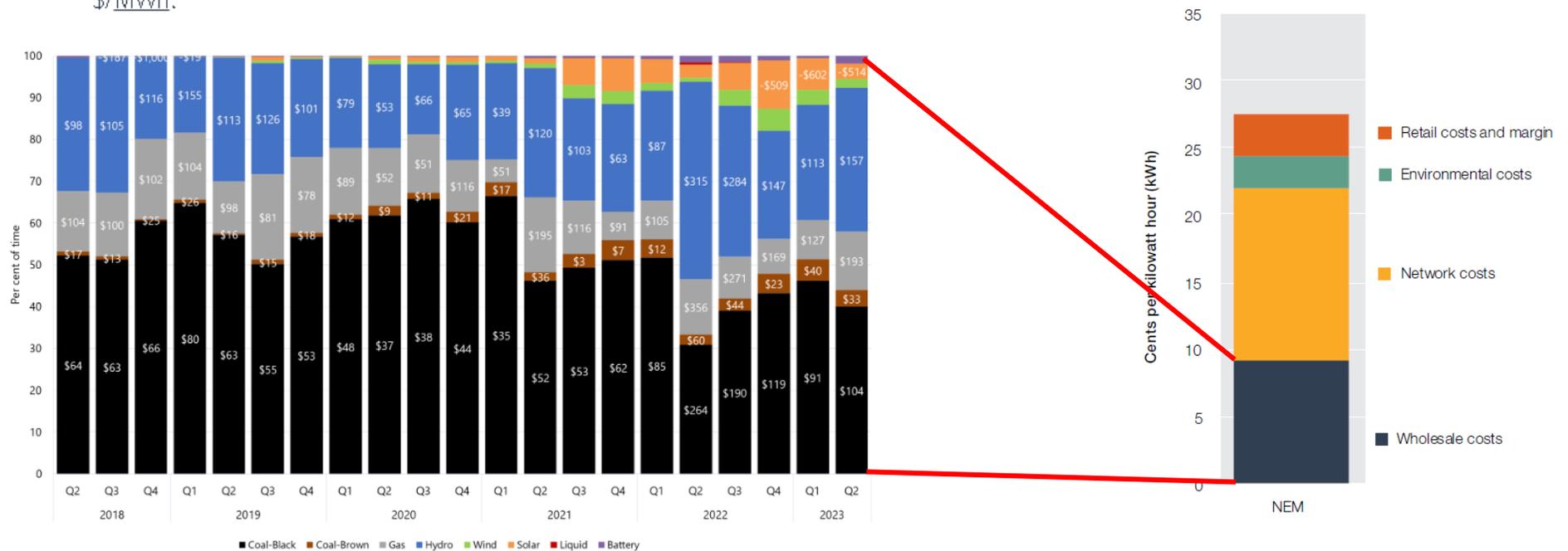


Source: State of the Energy Market Report, 2022, AER



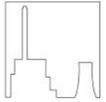
2. Wind and solar almost never set the wholesale price, and when they do it is for a very short duration, with almost no effect on the average price.

This figure shows the percentage of time generators of each fuel type set price in New South Wales in a given quarter, for the past five years. The data labels show the quarterly average price set by generators of major fuel-types, in \$/MWh.



Source: AER Wholesale Statistics

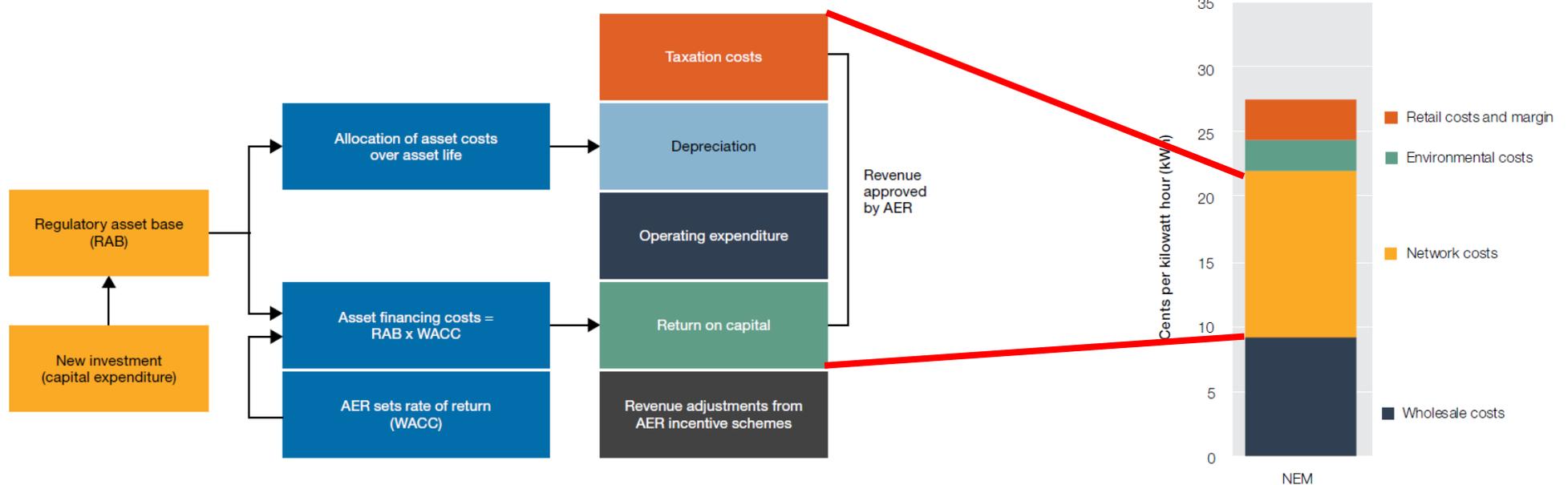
	Effect on retail bill components	
Bill component	Large-scale wind and solar	Small-scale solar and DER
Network – transmission	↔	↔



3. Wind and solar increase the cost of transmission and distribution networks, whose cost recovery is determined by the value of the asset – the Regulatory Asset Base (RAB). Increasing the RAB increases the total costs that must be recovered through the retail electricity bill.

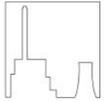
The regulatory asset base (RAB) includes the total remaining economic value of assets in a network, to be recovered through depreciation over time. All things being equal, a higher RAB would increase both the return on capital and depreciation (return of capital) components of the maximum allowed revenue calculation.

Figure 4.4 Forecasting electricity network revenues



Source: State of the Energy Market Report, 2023, AER

Bill component	Effect on retail bill components	
	Large-scale wind and solar	Small-scale solar and DER
Network – transmission	↑	↔



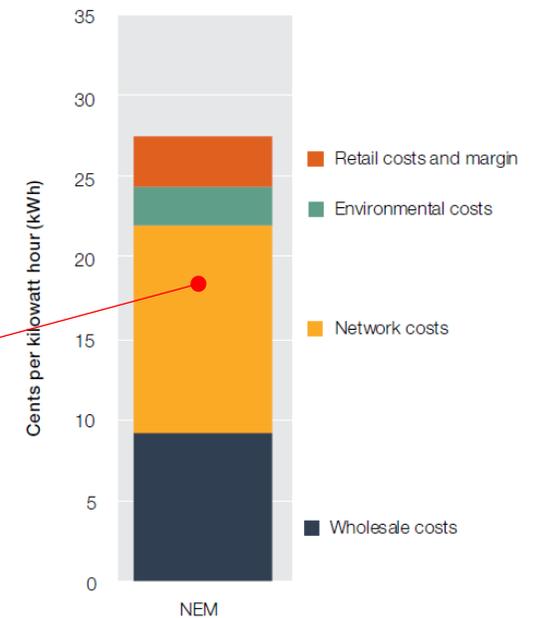
4. Current government policies intend to massively expand the transmission RAB by at least 10,000 km. States are adding more, and federal policy Rewiring the Nation accelerates some ISP projects by 20yrs.

5.1 Network investments in the ODP

The following network investments are identified as part of the ODP in Figure 27 and described through Sections 5.3 to 5.5. Further details on each project are set out in Appendix 5.

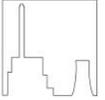
- **Committed and anticipated projects** – Eyre Peninsula Link, Queensland – New South Wales Interconnector (QNI) Minor, Victoria – New South Wales Interconnector (VNI) Minor, Central West Orana REZ Transmission Link, Northern QREZ Stage 1, Project EnergyConnect (PEC), and Western Renewables Link.
- **Actionable projects:**
 - ISP Framework: HumeLink, Marinus Link (cable 1 and 2) and VNI West (via Kerang).
 - NSW Framework⁶¹: Sydney Ring and New England REZ Transmission Link.
- **Future ISP projects** – QNI Connect, Central to Southern Queensland, Gladstone Grid Reinforcement, New England REZ Extension, Darling Downs REZ Expansion, Far North Queensland REZ Expansion, Facilitating Power to Central Queensland, South East South Australia REZ Expansions, Mid North South Australia REZ Expansion, and South West Victoria REZ Expansion.

Together, these projects comprise approximately 10,000 km of new network investment for the efficient connection and operation of the resources that comprise the ODP.



Source: 2022 ISP, AEMO

Bill component	Effect on retail bill components	
	Large-scale wind and solar	Small-scale solar and DER
Network – transmission	↑	↔



5. Costs of upgrading the distribution network to integrate small-scale solar, batteries and EVs are unknown. These costs are also subject to RAB increases that must be recovered from consumers. Large-scale wind and solar cannot reduce the costs of the distribution network.

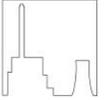
7 Implementing the ODP

The pace of change and scale of investment in the coming years is unprecedented in Australia's energy sector, at a time of accelerated investment in other forms of national infrastructure as well as regional responses to the physical threats of climate change. All of the NEM's stakeholders will therefore need to collaborate on a number of fronts to ensure the timely implementation of the ODP. The needed actions include:

- 7.1 Immediate action to progress actionable ISP projects
- 7.2 Preparatory activities and potentially REZ Design Reports for future ISP projects.
- 7.3 Substantially expanded community engagement to build and maintain the social licence for generation and transmission investments
- 7.4 Investment coordination to alleviate supply chain constraints, project costs and timelines
- 7.5 Continued market reforms and **distribution network upgrades** to unlock the potential of DER, and
- 7.6 Power system engineering to address technical challenges as renewable energy replaces traditional generation.

Source: 2022 ISP, AEMO

Bill component	Effect on retail bill components	
	Large-scale wind and solar	Small-scale solar and DER
Network – distribution		



6. There are no reductions in environmental and retail costs associated with large-scale wind and solar. Retail costs are expected to increase, and environmental cost reductions are only due to reduced subsidies to rooftop solar.

Retail costs

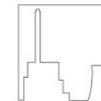
The retail component of costs may also face upward pressure due to inflation and **increased costs** in managing debt for small customers, particularly small business customers. Costs associated with meeting the AEMC's recommendation to accelerate deployment of smart meters to 100% of small customers by 2030³¹ could also put **upward pressure on retail costs.**

Environmental costs

Environmental costs are expected to decrease across all regions. While large-scale RET **costs are likely to increase,** this is more than offset by a projected decline in the cost of the small-scale renewable energy scheme from 2022–23 to 2023–24. Despite expectations that the rate of small-scale installations in 2023 and 2024 will remain similar to 2022, overall costs are expected to **decrease due to the shortening of the deeming period.** Differences in jurisdictional energy efficiency schemes mostly account for variations to total environmental costs by region.³²

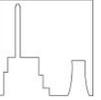
Source: State of the Energy Market Report, 2023, AER

Bill component	Effect on retail bill components	
	Large-scale wind and solar	Small-scale solar and DER
Retail overhead		
Environmental		

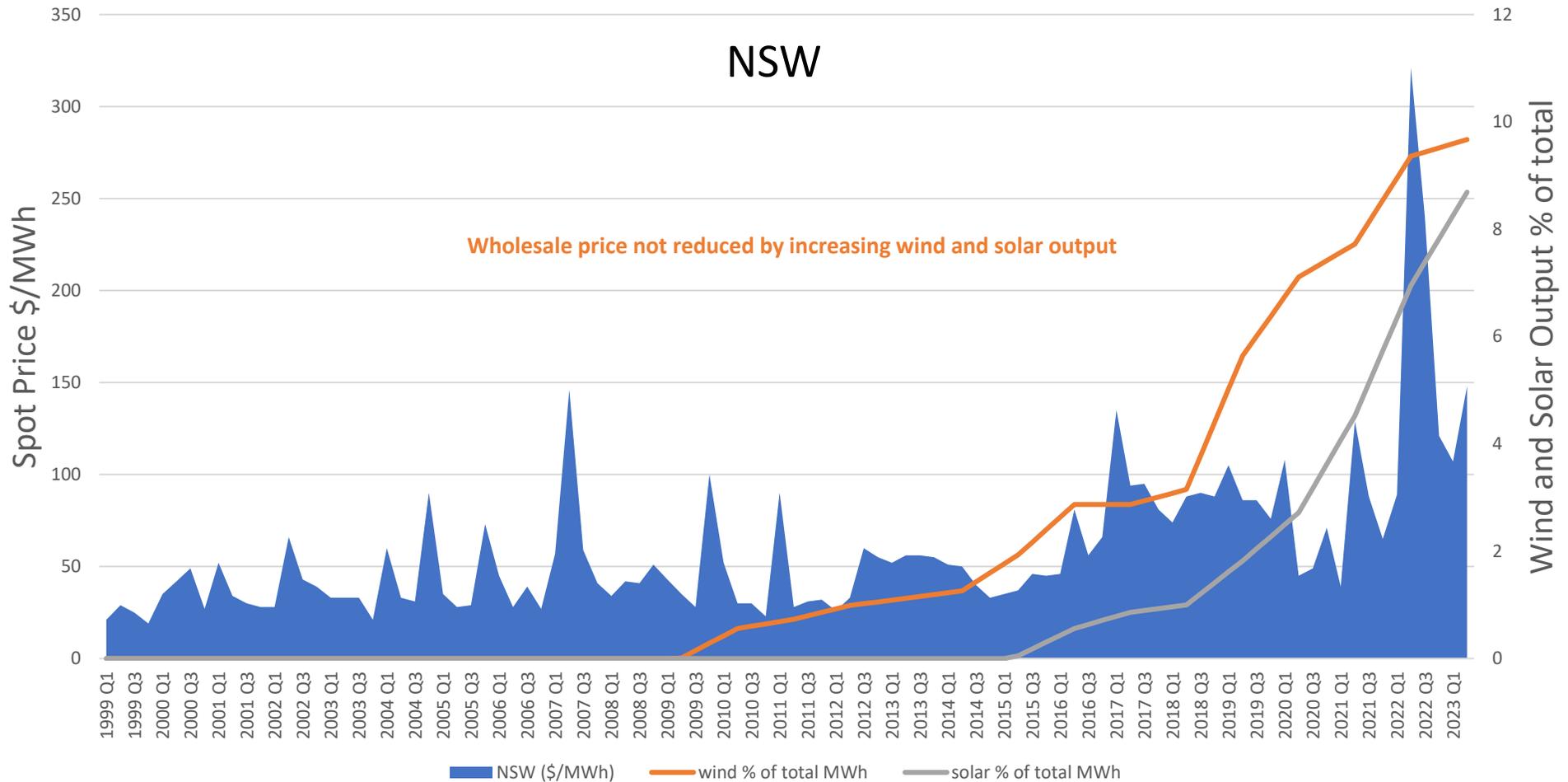


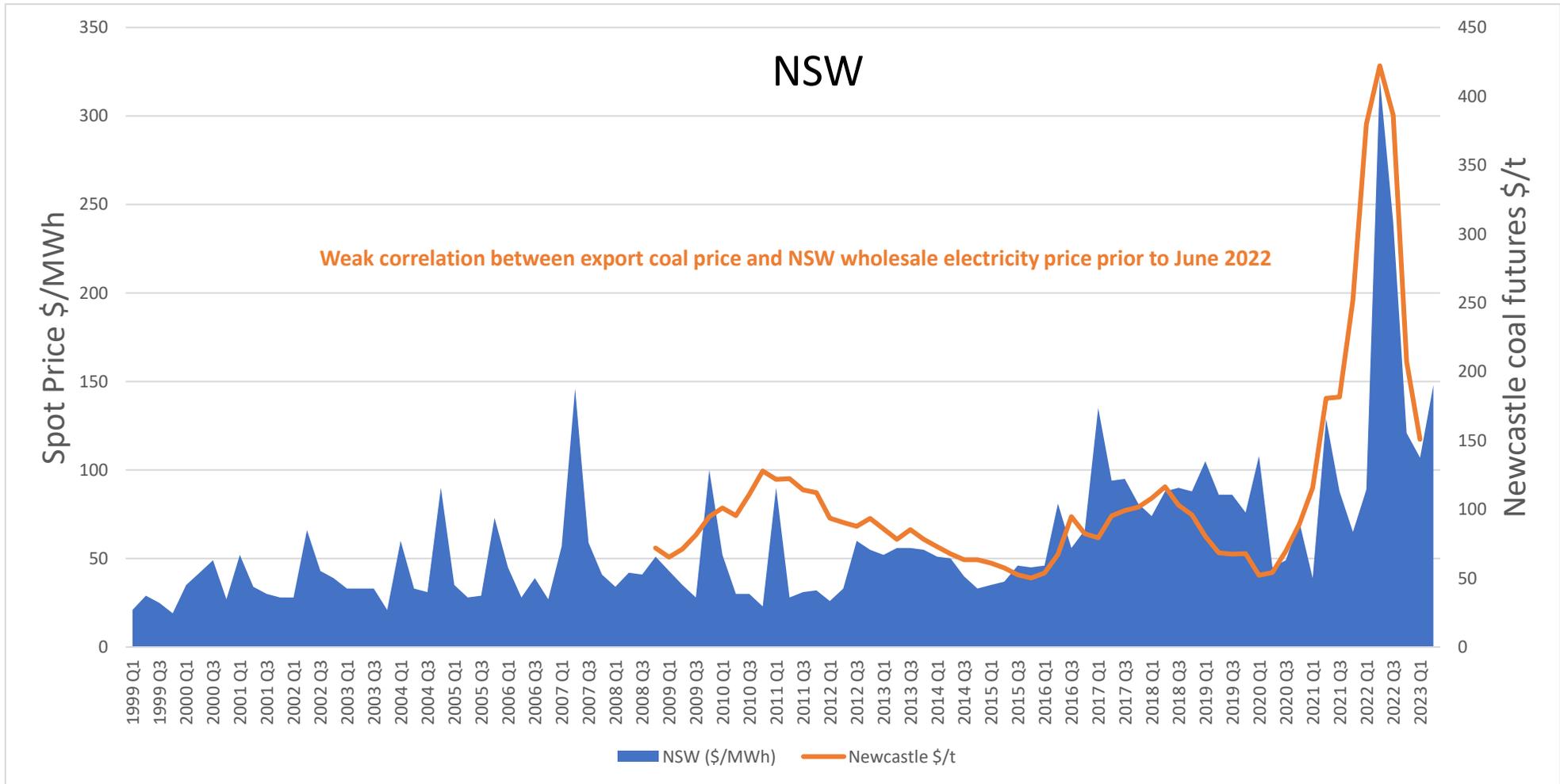
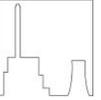
7. Summary

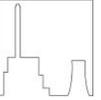
Bill component	Effect on retail bill components	
	Large-scale wind and solar	Small-scale solar and DER
Retail overhead		
Environmental		
Network – distribution		
Network – transmission		
Wholesale		



NSW







NSW

