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Glenellen Solar Farm SSD-9550

To whom it may concern

Please find attached my submission opposing the development of the Glenellen Solar Farm SSD-9550. My submission provides evidence that large-scale solar cannot lower retail electricity bills, directly contradicting the claims made by the project proponents.

I suggest that all projects claiming to have a beneficial effect on consumer electricity bills be asked to provide the evidence of that effect, and that those charged with reviewing these projects perform due diligence on this claim.

Yours faithfully

Ben Beattie

Why large-scale wind and solar cannot lower retail electricity bills

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December 2023

1. Retail electricity bills reflect the cost of the entire electricity delivery system.

Figure 6.2 Composition of a residential bill – electricity

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

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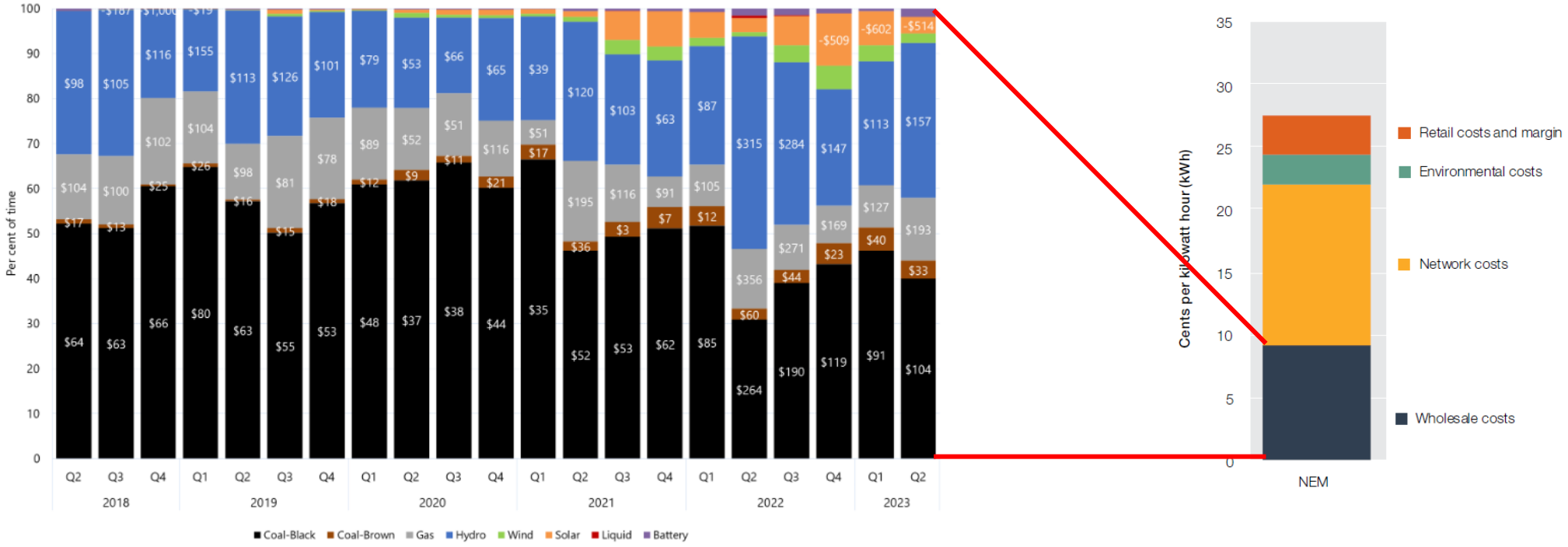
2. Wind and solar can only reduce the wholesale component of the bill, and only when they set the wholesale price. Wind and solar almost never set the wholesale price, and when they do it is for a very short duration, with almost no effect on the average price.

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.



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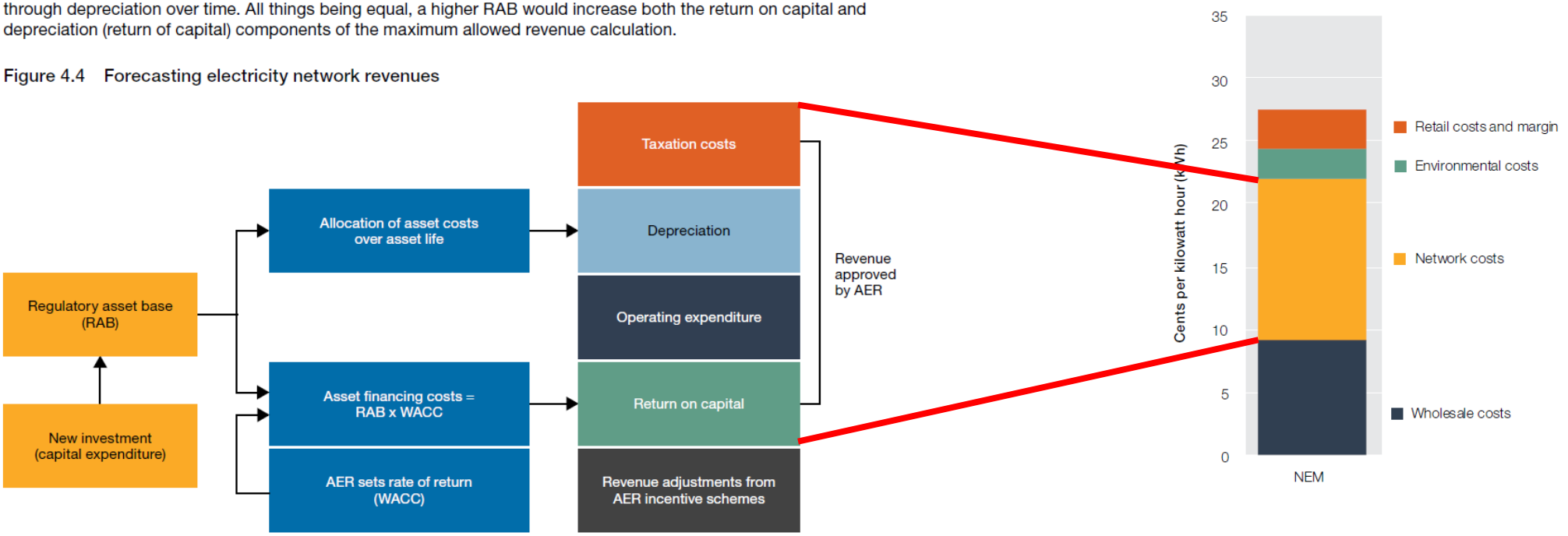
Source: AER Wholesale Statistics

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 recovered. There is no link between costs and network utilisation.

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

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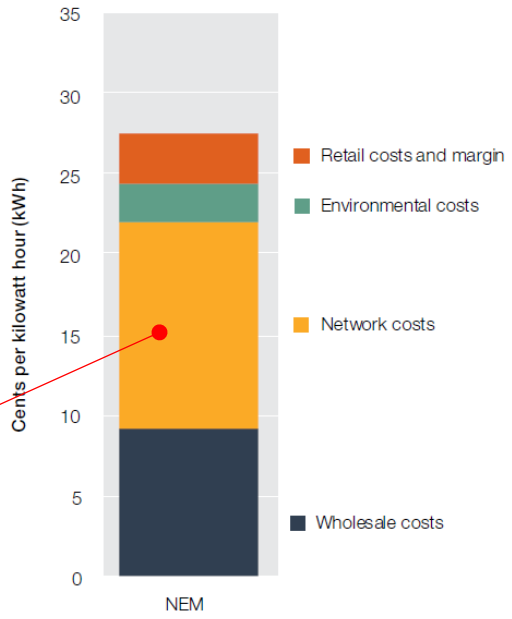
4. Current government policies intend to massively expand the transmission network by at least 10,000 km.

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 Framework[51]: 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

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5. Large-scale wind and solar cannot reduce the costs of the distribution network. Cost 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.

7.5 Unlocking the potential of DER

Significant investments by both small and large consumers are driving a forecast five-fold increase in the amount of Australia's DER in *Step Change*: see Section 3.1. The ISP analysis confirms that the transmission projects in the ODP are not sensitive to changes in DER uptake or to distribution network constraints on that uptake: see Section 6.5. Nonetheless, significant innovation will be needed in the NEM's market arrangements and distribution networks to optimise the benefits of DER investment.

Source: 2022 ISP, AEMO

4.9.2 Trends in network revenue

Revenues for network service providers increased by around 7% per year from 2006 to 2015, when network charges accounted for around 43% of retail electricity bills. The increases were more pronounced in Queensland and NSW than elsewhere. The drivers of these increases are set out in more detail in past State of the energy market reports. Key factors included:

- rapid growth in regulatory asset bases (RABs) caused in part by stricter reliability standards imposed by state governments, which required new investment and operating expenditure to meet the new standards
- high costs of capital prevailing during the global financial crisis
- increasing operating expenditure costs.

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

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6. Do large-scale wind and solar reduce environmental costs and retailer overheads? Not from large-scale wind and solar. Any environmental cost reductions are predicted to stem from 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 2030[31] 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

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7. Summary

- Retail bills reflect total system costs, including
  - Retail overheads
  - Environmental costs
  - Network costs
  - Wholesale costs

- Large-scale wind and solar can only increase system costs
  - No reduction in retail of environmental costs due to large-scale wind and solar
  - No reduction in wholesale costs
  - Increase in network costs