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Session 4: Climate Hazards and Risk forecasts

Title: Heat and Electricity: An analysis of vulnerability and exposure

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Heatwaves are an enduring feature of Australia's climate and have significant social, health (physical and mental), and economic impacts on the Australian community. The Australian Climate Service (ACS) is examining complex interacting risks of heat on health and the electricity sector.

We present an initial national analysis of electricity network vulnerability and exposure to extreme heat to initiate a risk assessment, and to highlight opportunities for future work and areas of concern.

The risk posed to an electricity network by extreme heat increases as an increasing proportion of the network's assets and infrastructure are exposed to heat, and this can be compounded by curtailed supply (e.g., lower thermal or solar efficiency) and elevated demand (e. g., due to increased use of air conditioning, reduced appliance efficiency).

Risks to the electricity sector interact with other complex risks. For example, elements of the electricity sector are at higher risk of failure on high-heat days, during which heightened heat health risks caused higher reliance on the electricity sector. In consequence, heightened risks to the electricity sector – which underpin essential services – amplify heat health risks.