

Victorian Government Department assessing climate risks impacting assets and services

Department of Energy, Environment and Climate Action is building the climate resilience of public assets and services.

Prepared by DEECA. Please contact climate.action@deeca.vic.gov.au for more information.

The project

DEECA is responsible for a total of \$13.4 billion (DEECA Annual Report 2024–25) in public assets and delivers essential services across its energy, environment, water, agriculture, forestry, resources, climate action and emergency management functions.

DEECA engaged a consultancy to undertake a climate risk assessment of its physical assets and key operational areas. The assessment had two key objectives:

- **Comprehensive risk identification** – identifying risks to DEECA's assets and other key values, evaluating exposures, vulnerabilities, and potential impacts.
- **Future-proofing risk management** – analysing existing controls, identifying gaps and prioritising risks to inform risk management strategies and guide decision-making.

Over three months, DEECA's climate risks were assessed in a four-step process aligned with the Commonwealth's [Climate Risk and Opportunity Management Program](#) (CROMP). The CROMP is designed to improve how the public sector manages climate risk.

How climate science was used

Climate exposure varies across Victoria's regions, resulting in differing impacts to DEECA's assets, operations, and service delivery. To better understand this variability, scenario analysis was used to provide insight into the overall climate hazard trends affecting DEECA's assets and values.

- **Scenario analysis and exposure ratings** – Climate data was analysed for key hazards across DEECA's regions, focusing on two future timeframes, 2050 and 2090, and under medium and high emissions scenarios. Exposure ratings for each region were developed based on relative projected change compared to the rest of Victoria.
- **Mapping DEECA's assets** – Exposure ratings were overlaid with geospatial data of DEECA's physical assets (e.g. roads, facilities, equipment) to identify where assets are most exposed to future climate hazards.
- Data and insights were drawn from the best available Victorian climate science, including from [Victoria's Climate Science Report](#) and the interactive [Victoria's Future Climate Tool](#) (VFCT).

Key points & themes



Department-wide risk assessment



User needs



Scenario and time horizon selection



Public assets and services

Climate hazards included and climate data sources used

Hazard	Data source	Rationale for selection of data source
Extreme temperature and heatwave Drought Extreme rainfall and flooding	<u>VFCT (CMIP5)</u>	DEECA's CMIP5 dataset includes the most recent, available medium emissions scenario (RCP4.5) for Victoria. <i>Note: The most recent CMIP6 dataset for Victoria contains a low emissions scenario (SSP1-2.6) and high emissions scenario (SSP3-7.0). This CMIP6 dataset does not include a medium emissions scenario for which there was preference for in the climate risk assessment.</i> Some emissions trajectories indicate that the low emissions scenario may be breached in the 2030s. As Victoria's emissions could be higher than the low emissions scenario in the coming decade, the low emissions scenario was not used for the long-term physical risk assessments.
Bushfire	Internal	Daily Forest Fire Danger Index (FFDI) projections for Victoria's nine fire regions. The FDDI provides the most up to date and comprehensive fire danger datasets available and has been in operation since 1950.
Sea level rise (SLR) and storm surge (Average Recurrence Interval (ARI))	<u>CSIRO Canute 3.0</u>	CSIRO Canute 3.0 is the most comprehensive and up-to-date data source for analysing SLR and ARI, available at the time of developing the climate risk assessment. It is well equipped to distinguish between moderate and high emissions scenarios and can provide data for specific coastal locations for 2050 and 2090.

The result

As a starting point, Victoria's Climate Science Report 2024 provided background on observed changes to Victoria's climate and how these changes are projected to continue.

As the future is uncertain, using different climate scenarios and time horizons allowed DEECA to consider a range of possible longer-term climate changes and their evolution over time.

The availability of this climate data at a local-level also enabled DEECA to better understand climate variability across Victoria's regions and any potential differing impacts to its assets, operations, and service delivery.

The scenario analysis strengthened DEECA's ability to better understand the potential scope and context for climate risks, which enables better identification, analysis and prioritisation of risks to DEECA's assets and values.

The risk assessment identified physical risks across key areas such as emergency preparedness and response capacity, agricultural regulation and support services, staff safety and wellbeing, biodiversity, and public land management.

Risks were assessed using DEECA's risk management framework. DEECA considered how assets and values could be impacted (positively or negatively) by climate change over time, and the consequences of those impacts.

DEECA prioritised risks with the greatest potential for long-term consequences for detailed analysis and action.



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