

# CLIMATE ADAPTATION TOOLKIT

## SECTOR CASE STUDY: INDUSTRIAL MANUFACTURING

While it is not possible to differentiate the size and scale of the various forms of manufacturing in the region, there are over 3,300 total manufacturing operations (including food) throughout the councils participating in the South East Councils Climate Change Alliance (SECCCA). The total sector was valued at more than \$7.5 billion to the SECCCA region in 2021–22.

Industrial manufacturing businesses are often located in light industrial sites, where the land is flat and there is easy access to transport corridors. These sites are often cheaper than residential zones. Production and warehousing are often in the same location.



Businesses in this sector often have a governance structure that enables them to add climate adaptation planning to their organisational strategic planning or risk management approaches. This enables climate change adaptation planning to be reviewed via management dashboards.

## ADAPTATION PLANNING

Adaptation planning for the medium-sized industrial manufacturing sector involves making two core business needs climate resilient:

- the production and warehousing sites
- the transport routes for supply chains (in and out).

The small business climate resilience process can guide adaptation (see Figure 1).

Based on interviews with businesses across different sectors in the SECCA region, the industrial manufacturing sector's climate adaptation goal is to minimise production downtime and maintain resilient supply chains.

### Options for adapting include:

- raising important machinery off the floor (to avoid flood impacts)
- increasing insulation in the plant to continue operation on very hot days (noting that some equipment does not operate well, or at all, above 35 °C)
- reviewing the climate resilience of supply lines (especially by learning from the challenges that occurred during COVID-19)
- assigning a clear calculation of risk reduction or residual risk after implementing a climate adaptation plan.

For more information, please see the [Small business climate adaptation toolkit](#).



**Figure 1:** The small business climate resilience process.

## RELEVANT CLIMATE VULNERABILITIES

Climate projections for Greater Melbourne show:

- average temperatures will continue to increase
- there will be more frequent and longer heatwaves
- bushfire severity and duration will increase
- air pollution will become worse
- there will be fewer frosts
- rainfall will decline
- sea levels will continue rising, resulting in an increased risk of coastal erosion and flooding
- there will be more extreme weather events, including bushfires, severe storms, storm surges and heavy rainfall.

Some of these impacts (see Figure 2) will occur by 2030 to 2040. The impacts will get stronger over the proceeding decades.

For more information on climate impacts in your area, please visit the [Greater Melbourne Regional Climate Projections](#). Or there are [five other regional climate projections for Victoria](#).



Continuing rising daily temperatures



More frequent and longer heatwaves



Rising sea levels with increased risk of coastal erosion and inundation



Extreme rainfall events expected to become more intense



Rainfall expected to continue to decline in winter and spring



The fire season is longer and number of very high fire danger days in spring is increasing

**Figure 2:** Summary of climate impacts for Melbourne

## THE RELATIVE COSTS

Given the industrial manufacturing sector's small margins, businesses focus on reducing risk over the next 1 to 2 years, rather than by 2040. If they use a strategic planning approach (often with a PESTEL, which considers Political, Economic, Social, Technological, Legal and Environmental factors), they simply incorporate their adaptation actions into the annual planning process and then implement accordingly. Some businesses requested a compliance-style framework for adaptation planning so that the investment could be clearly costed into business activity.

As manufacturing equipment often is a large investment, it was possible to spend more than 10 to 20 per cent of the initial cost to make it climate resilient. As the cost of unscheduled equipment downtime is high, spending on climate resilience is especially likely to enable business continuity during or after extreme weather events.

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