

**FAR NORTH QUEENSLAND COUNCILS - TAKING ACTION ON CLIMATE CHANGE**

The Rivers to Reef Climate Resilient Alliance is a group of councils working together to manage risks and develop opportunities for a climate resilient future.

**CAIRNS**



3MW of solar installed, saving est.  
 \$600,000 p/a  
 49% reduction of corporate emissions on  
 07/08 levels  
 Climate Change Strategy 2030  
 Coastal Hazards Adaptation Strategy  
 Smart Green Economy feasibility study

*Ground mount solar at a Wastewater Treatment plant, photo courtesy of CRC*

**MAREEBA**



683KW solar on 9 facilities, saving est.  
 \$125,000 p/a  
 Climate Resilience Policy and risk  
 assessment  
 Sustainability and Environmental  
 Protection Policy

*Ground mount solar at a Wastewater Treatment plant, photo courtesy of MSC*

**TABLELANDS**



Climate Risk Management  
 Framework pilot  
 Natural Assets Framework draft  
 Vegetation management and  
 active restoration

*Restoration underway in Topaz, photo courtesy of TRC*

**YARRABAH**



Micro-grid feasibility study  
 E-mobility strategy in development  
 Solar street lighting  
 Off road pathways for active travel and  
 e-mobility

*Yarrabah E-mobility Day, photo courtesy of Energy Connect*

**EMERGING OPPORTUNITIES AS AN ALLIANCE**

**MITIGATION**

*Reducing corporate and community greenhouse gas emissions to minimise our impacts on the climate.*

- Energy and emissions management
- Support strategic renewable energy, transition of public lighting and fleet
- Procurement and design standards
- Supporting community, industry, and business emissions reduction

**ADAPTATION**

*Managing physical risks to strengthen our community, economy, and environment.*

- Coordinated monitoring and mapping
- Regional climate risk strategy
- Supporting disaster management
- Community preparedness for heat events, cooling town centres and suburbs
- Connecting habitat for climate refuges

**TRANSITION**

*Managing systemic risks and unlocking opportunities in the global shift to a low carbon economy.*

- Regional branding and business attraction
- Regional planning for technology changes
- Enabling emerging industries in carbon offsets and ecosystem services

**COMMUNITY OF PRACTICE**

*Working together for efficient and effective local governments into the future.*

- Peer to peer education and capacity building to manage climate risks and improve governance
- Foster leadership and develop advocacy priorities

## REDUCING CORPORATE GREENHOUSE GAS EMISSIONS

Through strategic energy and emissions management, councils can:

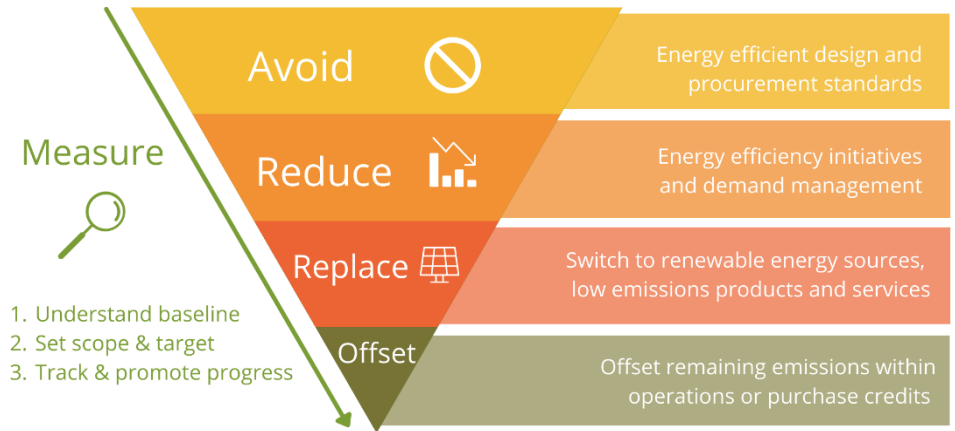
- demonstrate commitment to climate action
- achieve cost savings and manage exposure to future price uncertainties
- prepare for the transition to a carbon constrained economy, including any regulatory changes and
- potentially leverage external funding and innovation for clean energy.



### Emissions activity examples

- **Scope 1:** fleet and equipment fuels, landfill methane, refrigerants, boilers, cement manufacturing, wastewater fugitive emissions
- **Scope 2:** purchased electricity (typically largest component of LG GhG emissions)
- **Scope 3:** streetlights, goods and services, capital works, kerbside collection, and waste processing, leased facilities, investments.

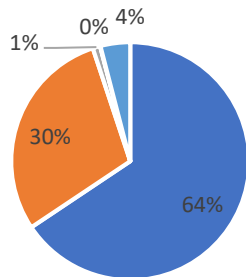
## Emissions Reduction Hierarchy



## LGA COMMUNITY-WIDE EMISSIONS SNAPSHOT 2018/19

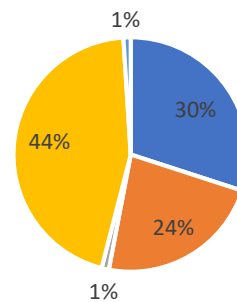
### CAIRNS

2,509,000 tco2e



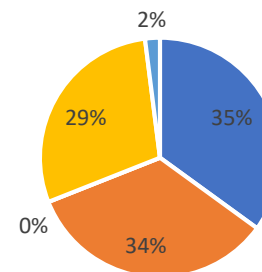
### MAREEBA

768,000 tco2e



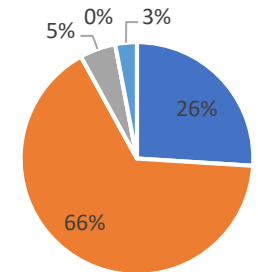
### TABLELANDS

637,000 tco2e



### YARRABAH

38,000 tco2e



■ Electricity ■ Transport ■ Gas ■ Agriculture ■ Waste

## REDUCING COMMUNITY GREENHOUSE GAS EMISSIONS






Councils can support efforts by community, government, business and industry through:

- **Advocacy** e.g. for energy efficient housing, low carbon transport
- **Regulation** e.g. planning scheme requirements
- **Provision** e.g. grant funding, upgrading assets, tree planting, methane management
- **Facilitation** e.g. economic development and community networks, attracting investment
- **Partnering** e.g. research, pilot projects, collaboration
- **Education** e.g. targeted outreach and events, communicating council success





- **Australia's emissions reduction target:** 26-28% below 2005 levels by 2030
- **Queensland's emissions reduction target:** 30% below 2005 levels by 2030,
- **Queensland electricity generation:** 20% renewable sources in Nov 21 (50% renewable energy by 2030 target).
- **Local small scale solar PV installations:** equivalent to 27-33% dwellings in Alliance councils.
- **Electric vehicles:** 23 charge stations across Alliance councils.

PROFILE OF INDICATIVE FNQ CLIMATE RISK THEMES – PHYSICAL AND TRANSITION

PHYSICAL HAZARDS - RISK EXAMPLES

	Community	Natural Environment	Economy	Council
 <b>Higher temperatures, frequency of hot days and nights, heatwaves</b>	<ul style="list-style-type: none"> <li>- Increased demand for cooling &amp; associated costs</li> <li>- Heat illness and mental health risks: babies and young people, elderly, those in poorly designed homes and renters, outdoor workers, pedestrians, sports and events, reduced air quality</li> </ul>	<ul style="list-style-type: none"> <li>- Mortality events, potential extinction of vulnerable species</li> <li>- Changes in biological processes (e.g., reproduction)</li> <li>- Reduced habitat ranges</li> <li>- Increased fuel loads and bushfire risk</li> <li>- Favourable conditions for pests and diseases</li> </ul>	<ul style="list-style-type: none"> <li>- Reduced visitor appeal for districts with minimal cooling and shading due to urban heat island effect</li> <li>- Thermal stress for livestock</li> <li>- Increased need for irrigation due to evaporation</li> <li>- Potential electricity and logistical interruptions (buckling of rail lines, equipment failure)</li> </ul>	<ul style="list-style-type: none"> <li>- Faster deterioration of concrete structures, bitumen, landscaping, requiring increased maintenance or early asset retirement/ upgrade</li> <li>- WHS implications for outdoor staff</li> <li>- Increased use of aquatic facilities, cooling</li> </ul>
 <b>Increased bushfire potential (length and severity)</b>	<ul style="list-style-type: none"> <li>- Safety and air quality risks to people and domestic animals</li> <li>- Damage and loss of homes and property</li> </ul>	<ul style="list-style-type: none"> <li>- Ecological change</li> <li>- Challenges to minimise environmental harm in planned burns</li> </ul>	<ul style="list-style-type: none"> <li>- Increased biosecurity risk</li> <li>- Disruption to business and supply chains</li> <li>- Loss of products, crops and livestock</li> </ul>	<ul style="list-style-type: none"> <li>- Pressures on disaster management resources</li> <li>- Damage to assets, land reserves</li> <li>- Reduced windows for planned burns and new areas to manage</li> </ul>
 <b>Rainfall variability and more intense downpours</b>	<ul style="list-style-type: none"> <li>- Localised - large flooding events</li> <li>- Damage to private property, building vulnerability exposed over time (e.g., mould, foundations)</li> <li>- Disruption to water services</li> </ul>	<ul style="list-style-type: none"> <li>- Large volumes of flow carry impacts of poor catchment practices through GBR catchment, cause erosion and spread pests</li> </ul>	<ul style="list-style-type: none"> <li>- Disruption to operations, construction, supply chains, logistics and potential lost revenue</li> <li>- Damage to crops and livestock</li> </ul>	<ul style="list-style-type: none"> <li>- Pressure on stormwater infrastructure, potential exposure to liability claims where damage is due to failure</li> <li>- Pressures on disaster management resources and disruption to services</li> <li>- Costs of upgrading or relocating assets outside of hazard areas, updating mapping</li> </ul>
 <b>Fewer but more intense cyclones</b>	<ul style="list-style-type: none"> <li>- Damage to private property, public safety, disruption to services</li> </ul>	<ul style="list-style-type: none"> <li>- Direct impact on natural assets</li> <li>- Biosecurity risks</li> <li>- Damage to sand dunes and mangroves</li> </ul>	<ul style="list-style-type: none"> <li>- Disruption to business and supply chains</li> <li>- Loss of products, crops and livestock</li> </ul>	<ul style="list-style-type: none"> <li>- Pressures on disaster management resources</li> <li>- Disruption to services, damage to assets</li> </ul>
 <b>Rising sea level, more frequent extremes, warmer and more acidic seas</b>	<ul style="list-style-type: none"> <li>- Coastal hazards affect boat ramps, beach access, cultural sites and housing in affected areas</li> </ul>	<ul style="list-style-type: none"> <li>- Marine heatwaves and coral bleaching</li> <li>- Calcification</li> <li>- Saltwater intrusion eroding barriers between oceans and freshwater habitats (favouring mangroves)</li> </ul>	<ul style="list-style-type: none"> <li>- Changed productivity in affected locations (fisheries, aquaculture, agriculture e.g., sugarcane)</li> </ul>	<ul style="list-style-type: none"> <li>- Increased frequency and depth of inundation for coastal infrastructure</li> <li>- Costs of upgrading or relocating assets outside of hazard zones, updating mapping in planning scheme</li> </ul>

**TRANSITION - RISK AND OPPORTUNITY EXAMPLES**

THEME	Community	Natural Environment	Economy	Council
 <b>Policy and legal</b>	<ul style="list-style-type: none"> <li>- Council rates contribute to avoidable legal fees, rather than community services.</li> </ul>	<ul style="list-style-type: none"> <li>- Reduced greenhouse gas emissions</li> <li>- Improved monitoring of environmental outcomes</li> </ul>	<ul style="list-style-type: none"> <li>- Potential carbon pricing and reporting obligations</li> <li>- Policy uncertainty and associated investment hesitancy</li> <li>- Emerging border adjustment tariffs placed on exports, reducing competitiveness of trade exposed sectors</li> </ul>	<ul style="list-style-type: none"> <li>- Litigation exposure if risks are inadequately or incorrectly disclosed when exercising a range of statutory responsibilities</li> <li>- Potential carbon pricing and reporting obligations with change of government or policy</li> </ul>
 <b>Reputation</b>	<ul style="list-style-type: none"> <li>- Lifestyle changes and growing concerns for future generations.</li> <li>- Increasing expectations of governments in step with national and global progress.</li> <li>- Active community groups.</li> </ul>	<ul style="list-style-type: none"> <li>- Growing interest and coverage in condition of ecosystem health, and environmental management – especially of World Heritage Areas, including UNESCO status listings.</li> <li>- Loss of amenity</li> </ul>	<ul style="list-style-type: none"> <li>- Shift in customer attitudes</li> <li>- Uncertain market signals</li> <li>- Impacts on natural environment and tourist experiences may reduce appeal of destinations</li> <li>- Regional branding opportunities (e.g., Smart Green Economy), aligned skills base and enviable location to attract business investment.</li> </ul>	<ul style="list-style-type: none"> <li>- Shift in residents, visitor, and industry expectations, e.g., to keep pace in reducing emissions, demonstrate leadership and prepare for change.</li> <li>- Unbudgeted financial impacts from physical hazards.</li> </ul>
 <b>Market Changes</b>	<ul style="list-style-type: none"> <li>- Changes to insurance affordability due to increasing claims, leading to underinsurance. May also be unavailable in high-risk areas, impacting ability to service home loans.</li> <li>- Core benefits from First Nations-led carbon farming - social, economic, cultural and self-determination</li> </ul>	<ul style="list-style-type: none"> <li>- New credit markets to store carbon, improve biodiversity and ecosystem function (e.g., wetlands and savannah burning, habitat connectivity)</li> <li>- Standardised valuing of ecosystem services</li> </ul>	<ul style="list-style-type: none"> <li>- Changes to insurance in areas with greater risks, narrow range of agricultural businesses covered by insurance products.</li> <li>- Potential increased cost of raw materials, with impacts to supply chains, reduced supply</li> <li>- Meet growing demand for high integrity carbon credits (providing diversification for foresters, farmers, First Nations businesses) and low carbon products and services (e.g., tourism experiences)</li> </ul>	<ul style="list-style-type: none"> <li>- Support or stimulate local economy and emerging industry through procurement, facilitator or partnership.</li> <li>- Potential increased costs of raw materials and products.</li> </ul>
 <b>Technology Disruption</b>	<ul style="list-style-type: none"> <li>- Alternative energy distribution models available to communities and remote areas.</li> <li>- Desire for emerging technology</li> </ul>	<ul style="list-style-type: none"> <li>- Nature-based solutions and innovations harnessed in disaster risk reduction.</li> </ul>	<ul style="list-style-type: none"> <li>- Improved efficiencies, innovations and competitiveness to realise cost saving opportunities (e.g., renewable energy).</li> <li>- Demand for critical minerals (e.g., lithium, rare earths, cobalt, manganese, tantalum, tungsten, and zirconium).</li> </ul>	<ul style="list-style-type: none"> <li>- Ill prepared development for electric vehicle charging.</li> <li>- Emerging waste recovery processes and growing volumes for solar panels, batteries.</li> </ul>

## KEY CLIMATE CHANGE MESSAGES - IPCC's AR6 Assessment Report (2021)

From Professor Lesley Hughes - Climate Councillor & former Lead Author in the IPCC's 4th and 5th Assessment Report

- The last 7 years were hottest on record globally and 2019 was Australia's hottest and driest year yet.
- Worsening impacts are 'baked in' to the climate system for at least the next two decades.
- Catastrophic events (tipping points) cannot be ruled out.
- Goal of Paris Agreement is to keep warming well below 2°C increase from pre-industrial levels.
- Temperatures are likely to exceed 1.5°C in the early 2030s.
- **The window for effective action is closing rapidly but the climate future is still in our hands.**
- **To stay within 2°C of warming by 2050, emissions must be at least halved by 2030, and we must be at net zero by 2040 at the latest. 2050 is too late.**



The Climate Council facilitates the [Cities Power Partnership](#), Australia's largest (free to join) network of local councils (165+) making various pledges to reduce emissions and manage climate risks.



## Queensland Climate Resilient Councils program

The [Queensland Climate Resilient Councils](#) (Q CRC) program works with Queensland local governments to strengthen councils' skills and capacity to plan for and respond to the challenges and opportunities arising from climate change.

A cornerstone of the program is to assist councils to understand their climate risk governance arrangements and how they can be improved, following a 2016 statewide assessment which found an urgent need to strengthen practices.

- Your council has received an Governance Assessment, with recommendations. A self assessment tool will be released June 2022.
- Climate Resilient Alliance pilot funding for this pilot project and one other in SEQ.
- [Climate Risk Management Framework for Queensland Local Governments](#) - testing period until May 2022.
- Training, briefings and professional development



## Government responses

The [Queensland Climate Action](#) website outlines initiatives which drive the State's future economy and support climate adaptation.

Australia's climate change strategies to reduce impacts on climate can be found on the [Department of Industry, Science, Energy and Resources](#) website, with adaptation and climate science on the [Department of Agriculture, Water and the Environment](#) website.

## Project funding

This pilot project is made possible thanks to funding from the Queensland Government through the QCRC program, facilitated by LGAQ.

It is co-designed by participating councils and coordinated by Far North Queensland Regional Organisation of Councils.

[Climate Resilient Alliance \(fnqroc.qld.gov.au\)](http://fnqroc.qld.gov.au)