2023 GREEN BOND ANNUAL REPORT

Supporting Queensland's pathway to a climate resilient and an environmentally sustainable economy

AUDAX AT FIDELIS
QUEENSLAND TREASURY CORPORATION

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About this report

This report provides information about the allocation of proceeds from Queensland Treasury Corporation's (QTC) green bond issuance as at 31 May 2023. All proceeds have been allocated against eligible projects and assets that support Queensland's pathway to a climate resilient and an environmentally sustainable economy.

We welcome your feedback

As sustainable finance markets continue to evolve, so too will our approach as we respond to changing investor and market expectations. We strive for continuous improvement and welcome your feedback.

You can contact us at:
investorrelations@qtc.com.au

Front cover image courtesy of the City of Gold Coast.

MESSAGE FROM THE QUEENSLAND TREASURER

The Honourable Cameron Dick MP

The Palaszczuk Government is committed to protecting our State's precious natural environment and shaping a low carbon, sustainable economy for the people of Queensland and for our global community. We are taking action on climate change and have a plan to achieve our targets for reducing emissions.

Queensland continues to offer investment opportunities that includes Queensland Treasury Corporation's (QTC) green bonds. Established in 2017, QTC's green bond program has made a significant contribution to the growth of the Australian green bond market. Today, QTC has five green bonds with a total of AUD10.545 billion on issue (as at 31 May 2023). Proceeds from the bonds are allocated against qualifying projects and assets that support Queensland's pathway to climate resilience and an environmentally sustainable economy.

QTC's fifth and most recent green bond of AUD3.0 billion was issued in March 2023 and received strong domestic and offshore investor participation. The bond issue was more than 1.4 times oversubscribed, demonstrating the continued confidence of investors in our State's green bond offering.

Highlights of Queensland's key climate action initiatives

The QTC green bond program builds on the following Government initiatives:

- The Queensland Climate Action Plan 2030 outlines the State's investments and actions to reach its emissions and renewables targets and provides a central framework to combine actions across departments and areas of ministerial responsibility.
- The Queensland Energy and Jobs Plan (QEJP), released in September 2022, outlines a transformational pathway to clean, reliable and affordable energy to provide power for generations. The plan sets new commitments of 70 per cent renewable energy by 2032 and 80 per cent by 2035.
- More than AUD10.0 billion has been invested in Queensland renewables since 2015, including around 8,000 construction jobs, over 5,700 megawatts of clean energy and more than 13.8 million tonnes of avoided emissions each year (as at 30 November 2022).
- AUD4.5 billion Queensland Renewable Energy and Hydrogen Jobs Fund allows government owned corporations to increase ownership of commercial renewable energy and hydrogen projects, and supports infrastructure, including partnering with the private sector.
- The Government's Zero Emission Vehicle Strategy 2022-2032 and the first Zero Emission Vehicle Action Plan 2022-2024 were released in March 2022 and include an AUD55.0 million funding package.

CONTINUED...

- The annual Queensland Sustainability Report, published in December 2022, explains how environmental, social and governance (ESG) risk factors and sustainability issues are considered in decision-making. The report provides information on major sustainability policies and commitments, including governance structures underpinning oversight and implementation. The report also describes how the Government measures, monitors and manages its sustainability risks and opportunities.

Moving forward, we will continue to take action to deliver positive ESG outcomes for future generations. We will also continue to explore opportunities to further enable climate focused investment opportunities and collaborate with investors to help support the transition to a global sustainable economy.

The Honourable Cameron Dick MP

QUEENSLAND TREASURER AND MINISTER FOR TRADE AND INVESTMENT

Find out more about Queensland Government initiatives and actions to support the State's Climate Change Response:
www.des.qld.gov.au/climateaction

Or scan here to view the report:

The Queensland Sustainability Report 2022 outlines the State's commitment to positive environmental, social and governance outcomes:
www.treasury.qld.gov.au/programs-and-policies/esg

Or scan here to view the report:

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER AND THE HEAD OF FUNDING AND LIQUIDITY

Leon Allen

As the State's central financing authority, QTC continues to support sustainability and transparency in public finance, including the development of Australia's green bond market. We were pleased to have issued our fifth green bond line earlier this year—equal in size to QTC's largest green bond transaction at AUD3.0 billion.

QTC's green bond program supports government projects and assets that align with environmental benefits for the State. Throughout the year, we have continued to see growth in the green bond market and investors considering environmental, social and governance (ESG) factors in their investment approach. As a result, we've been able to broaden our investor base through our green bonds.

Significant work is being undertaken by the Queensland Government, businesses and industry sectors in transitioning to a low carbon economy. QTC supported the Queensland Government in the development of the Queensland Sustainability Report 2022, which includes information on the State's ESG governance frameworks, strategies, risk management approach and metrics.

Jose Fajardo

Expanding QTC's green bond offering

In March 2023, we extended our green bond curve and issued AUD3.0 billion of a new 2033 green bond line. The new issuance highlighted the continuation of both onshore and offshore demand in QTC's green bond program from a diverse investor base.

Establishing and developing our green bond curve is of strategic importance for QTC, and we are thrilled to have AUD10.545 billion total outstandings across five green bond lines on issue, with maturities of 2024, 2029, 2031, 2032 and 2033.

QTC's scope for green bond issuance

QTC's eligible green bond project and asset pool is currently AUD16.833 billion, of which AUD10.554 billion of green bond proceeds have been allocated. We are working closely with the Queensland Government to grow our asset pool and increase the scope and ability for future green bond issuance to support the State's aim to secure a sustainable future.

Green bonds support diversification of our investor base and funding mix and complement QTC's benchmark bond lines. Continued interest from domestic and offshore investors fosters our commitment to our green bond program—and in turn we'd like to acknowledge our investor base and clients for their ongoing support.

QTC looks forward to continuing its support of the Queensland Government in its pathway to climate resilience and an environmentally sustainable economy.

Leon Allen
CHIEF EXECUTIVE OFFICER

Jose Fajardo
HEAD OF FUNDING AND LIQUIDITY

QTC GREEN BONDS

QTC green bonds enable investors to support Queensland's pathway to a climate resilient and an environmentally sustainable economy.

QTC has achieved programmatic certification from Climate Bonds Initiative (CBI), providing a streamlined certification process. This allows QTC to easily tap its existing CBI Certified Green Bonds—providing greater flexibility to meet investor demand.

QTC green bonds:

- are guaranteed by the Queensland Government
- carry the same credit rating as QTC and the Queensland Government of AA+/Stable/A-1+ by S&P Global; Aa1/Stable/P-1 by Moody's and AA+/Stable/F1+ by Fitch, and
- are exempt from Australian interest withholding tax.

QTC green bond outstandings as at 31 May 2023

Maturity[1]	Coupon	ISIN	Credit rating[2]	Outstandings AUD million
22 March 2024	3.00%	AU000XQLQAD1	AA+/Aa1/AA+	750
6 March 2029	2.50%	AU3SG0001928	AA+/Aa1/AA+	1,730
10 March 2031	1.25%	AU3SG0002371	AA+/Aa1/AA+	1,500
2 March 2032	1.50%	AU3SG0002561	AA+/Aa1/AA+	3,065
9 March 2033	4.50%	AU3CB0297547	AA+/Aa1/AA+	3,500

QTC green bonds are allocated against qualifying projects and assets that support Queensland's pathway to a climate resilient and an environmentally sustainable economy.

At the time of this report, all QTC green bonds on issue are certified by the Climate Bonds Standard Board on behalf of the CBI.

QTC's eligible project and asset pool, as verified by DNV totals AUD16.833 billion as at 31 Dec 2022 (for more information about DNV refer to page 20).

How the proceeds can be used

QTC may issue two different types of green bonds, which must be issued in accordance with QTC's Green Bond Framework (Framework), and either:

- Climate Bonds Standard (CBI Certified Green Bonds), or
- ICMA Green Bond Principles (ICMA Green Bonds).

This flexible approach can potentially capture a broad range of eligible projects and assets that contribute to mitigation of, and adaptation to, climate change. At the time of this report QTC has only CBI Certified Green Bonds on issue.

[1] Rule 144A Capability.

[2] Ratings by S&P Global, Moody's Investors Service and Fitch respectively. Credit ratings should not be taken as recommendations by a rating agency to buy, sell or hold securities (including QTC green bonds). They may be revised, suspended or withdrawn at any time by the rating agency.

Images courtesy of the Department of Transport and Main Roads.

The eligible project and asset guidelines are set out in the Framework, which is available to qualified investors on QTC's website.

The link between QTC's funding pools and eligible projects and assets are managed through an internal register and an earmarking process that accounts for funding allocated against eligible projects and assets.

Governance

QTC's Green Bond Committee is accountable for evaluating potential eligible projects and assets, maintaining a register of approved eligible projects and assets, approving the allocation of proceeds, and for ensuring ongoing compliance with all aspects of the Framework.

Independent assurance and reporting

QTC is committed to a high standard of transparency. Our Framework is intended to provide transparency in QTC's green bond issuance, use of proceeds and reporting.

Our well-established processes and reporting guidelines include independent third-party assurance of our Framework, eligible project and asset pool, and bonds on issue.

In addition to the Green Bond Annual Report, QTC discloses the following to qualified investors on QTC's website:

- Annual verification statement from an external verifier.
- Assurance Opinion in relation to QTC's Green Bond Framework from an external verifier.
- CBI certification for CBI Certified Green Bonds.

We have maintained a consistent reporting framework since our first green bond issuance and remain adaptive to investor feedback as we continue to monitor market developments in reporting.

TIMELINE

2017

- QTC issues inaugural AUD750 million 22 March 2024 green bond
  - Largest AUD green bond on issue at the time of issuance
  - Finance Asia Deal Achievement Award in Australia and New Zealand for Best Green Bond Deal of 2017
- New eligible low carbon transport and renewable energy projects and assets added to the pool
  - Gold Coast Light Rail: Stages 1 and 2
  - Sunshine Coast Solar Farm
  - Various cycleways
  - New Generation rolling stock
  - Redcliffe Peninsula Line
  - Citytrain network
  - Citytrain rolling stock
  - Tilt Trains rolling stock

2018

- Expanded QTC's Green Bond Framework to facilitate issuance of both CBI Certified Green Bonds and green bonds that accord with ICMA Green Bond Principles

2019

- QTC issues AUD1.25 billion of a new 6 March 2029 green bond
  - Second largest green bond issued in the Australian market
  - Placed QTC as joint leader for the largest AUD green bond issuer by volume
- QTC achieves programmatic certification from CBI
- First Australian semi-government issuer to tap an existing green bond line
- New eligible projects and assets added to the pool
  - Gold Coast Desalination Plant

2020

- Climate Bonds Initiative Green Bond Pioneer Awards: Largest Subnational Green Bond Deal of 2019
- QTC issues AUD1.5 billion of a new 10 March 2031 green bond
- Largest semi-government AUD CBI Certified Green Bond issuer by volume, with AUD3.98 billion outstanding
- New eligible projects and assets added to the pool
  - Warwick Solar Farm

2021

- QTC issues AUD3.0 billion of a new 2 March 2032 green bond
  - Largest AUD green bond on issue at the time of issuance
  - FinanceAsia Deal Achievement Award in Australia and New Zealand for Best Local Bond Deal and Best Sustainable Finance Deal for a Financial Institution
- New eligible projects and assets added to the pool
  - Seqwater Drought Resilient Network
- QTC's Green Bond Framework updated

2023

- QTC issues AUD3.0 billion of a new 9 March 2033 green bond
  - Equalled QTC's largest green bond transaction of AUD3.0 billion

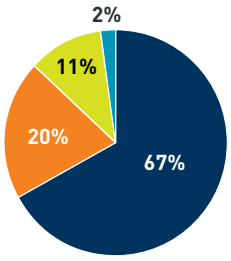
DEAL SPOTLIGHT: 2033 GREEN BOND

In March 2023, QTC issued AUD3.0 billion of a new 4.50% 9 March 2033 CBI Certified Green Bond through a syndication process. This was the fifth and longest maturity green bond for QTC, further diversifying funding alternatives and continuing to build QTC's green bond curve.

The final order book was approximately AUD4.27 billion (including AUD700 million in Joint Lead Manager interest). The transaction was well supported across both geography and investor type, particularly by asset managers and balance sheets with 85 per cent of the issue placed to those investors. There was strong participation from offshore investors, with approximately one third of the transaction allocated.

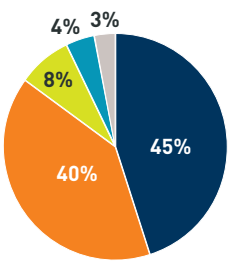
Table 1: Green bond terms

Issuer rating*	■ AA+ (stable) by S&P Global ■ Aa1 (stable) by Moody's Investors Service ■ AA+ (stable) by Fitch Ratings
Guarantor	Guaranteed by the Treasurer on behalf of the Government of Queensland under the terms of the *Queensland Treasury Corporation Act 1988* (the QTC Act)
Coupon	4.50% per annum
Issue amount	AUD3.0 billion
Currency	AUD
Maturity date	9 March 2033
Certification	Climate Bonds Standard Board on behalf of the Climate Bonds Initiative



Geographic breakdown

- Australia
- EMEA (Europe, Middle East, Africa)
- Asia
- Americas



Investor type

- Bank Balance Sheets
- Asset Managers and Insurance Companies
- Official Institutions
- Hedge Funds
- Trading Desks

Figures are rounded

* Credit ratings should not be taken as recommendations by a rating agency to buy, sell or hold securities (including QTC green bonds). They may be revised, suspended or withdrawn at any time by the rating agency.

ALLOCATION OF PROCEEDS

All proceeds from QTC's green bonds issued as at 31 May 2023 have been fully allocated against a selection of eligible projects and assets as detailed below.

Categories of eligible projects/assets[3]	Sub category	Project/asset name	Allocation of Green Bond proceeds (AUD M)[4]
Water infrastructure 	Water – drought defence, storage, treatment, desalination, and flood defence	Gold Coast Desalination Plant	684.00
		Water Treatment Plants	1,250.00
		Pipelines and Other	2,091.35
		Dams and Weirs	2,317.66
		Western Corridor Recycled Water Scheme[5]	0.00
Renewable energy 	Solar	Sunshine Coast Solar Farm	30.00
		Warwick Solar Farm[6]	55.00
Low carbon transport 	Light rail – electrified trams and supporting infrastructure	Gold Coast Light Rail Stage 1	363.71
		Gold Coast Light Rail Stage 2	153.20
	Electrified rail, supporting infrastructure and rolling stock	Citytrain network	2,162.45
		■ Redcliffe Peninsula Line	217.30
		■ Citytrain rolling stock	375.00
		■ New generation rolling stock (electric)	697.81
		Tilt Trains rolling stock	20.00
	Cycleways – multiple	Cycleways	137.00
Total			**AUD 10,554.48**

[3] The icons depict alignment with the United Nations Sustainability Development Goals.

[4] Figures have been rounded.

[5] Any future allocation of green bond proceeds to the Scheme may be deferred until it is recommissioned to a 'ready to use' state.

[6] AUD18.0 million of proceeds previously allocated against Warwick Solar Farm have been reallocated to Dams and Weirs.

WATER INFRASTRUCTURE

TABLE 1: WATER INFRASTRUCTURE IMPACT REPORTING (1 JAN–31 DEC 2022)[7]

Year	Subcategory	Project/asset name	Installed capacity	Absolute gross water savings (M3/a) (potential)	Absolute gross water savings (M3/a) (realised)[8]
2022	Water- Drought Defence, Storage, Treatment, Desalination, and Flood Defence	Gold Coast Desalination Plant	133ML/day[9]	45,632,300	12,714,000
		Water Treatment Plants	1490ML/day		
		Pipelines and Other	600km		
		Dams and Weirs	2,195,849ML[10]		
		Western Corridor Recycled Water Scheme	180ML/day	65,700,000	3,284,000

3.6M Number of people with access to clean drinking water through infrastructure supporting sustainable and efficient water use

35,200 km² Area covered by sustainable land and water resources management practices (km²)

3.6M Number of people and/or enterprises (eg, companies or farms) benefitting from measures to mitigate the consequences of floods and drought

100% Annual catchment of water (m3/a) that complies with quantity (m3/a) and quality (eg, turbidity) requirements by utilities

The Seqwater Drought Resilient Network

The Seqwater Drought Resilient Network (the Network) is a unique water supply asset in Australia valued at approximately AUD10.9 billion, and provides many options to make drinking water available around the region to manage drought and the growing population.

The Network enables Seqwater to move treated drinking water around the region and to supplement local water supplies. As part of normal operations, Seqwater manages the region's water supply by changing the water flow direction in the pipelines to move water in an efficient and cost-effective way.

The Network's bulk water supply pipelines connect the region's major water treatment plants and water sources—providing sustainable water security for South East Queensland (SEQ). It was created in response to the water supply crisis due to the SEQ Millennium Drought (2001–09), and was the largest urban drought response in Australia at the time. Before the Network's integration, various bulk water assets (water treatment plants, dams, reservoirs, pumping stations and pipes) were owned by multiple local councils and were not interconnected, significantly impacting the water supply to the region. The Network also includes drought resilient assets to improve the diversity and security of water supply – the Desalination Plant and the Western Corridor Recycled Water Scheme (the Scheme).

The Network is a bulk water supply network of:

- 36 conventional water treatment plants
- 12 key dams that make up nearly 90 per cent of SEQ's total water storage volume
- 28 bulk water reservoirs
- 22 pump stations
- 600 km+ of pipelines
- a desalination plant, and
- purified recycled water treatment plants.

[7] Sourced directly from Seqwater.
[8] M3/a – meters cubic per annum.
[9] ML/day – million litres per day.
[10] ML – million litres.

Following the accelerated construction of a network of bulk water pipelines, the State Government assumed ownership and operational responsibility for the integrated Network from 1 July 2008 through a number of bulk water authorities.

After further consolidation of the sector in 2013, the Network is now owned by SEQ's single bulk water supplier, Seqwater.

The Network:

- in 2022, supplied 304,619 million litres of drinking water to more than 3.6 million people living in SEQ
- enables a coordinated drought response to minimise its impact and maintain supplies during weather events that impact local sources, and
- supplies bulk treated drinking water to five retailers; Unitywater, Urban Utilities, and the water businesses of the Logan, Redland and Gold Coast Councils.

The Scheme and the Desalination Plant are critical parts of the Network and form part of the long-term water sources for the region. They help take pressure off dam supplies and will be increasingly used to meet growing demand in SEQ as the population increases. They also help delay or even avoid the introduction of water restrictions and the need to construct additional drought contingency infrastructure, at a cost to water users, should the region experience long-term drought.

Seqwater's Water Security Program guides the delivery of enhancements to the Network to balance the needs of one of the fastest-growing population areas in Australia with a water supply that will become more impacted by climate change over time.

Further information can be found on the Seqwater website.

Western Corridor Recycled Water Scheme

The Western Corridor Recycled Water Scheme (the Scheme) includes advanced water treatment plants at three locations, which convert wastewater into quality drinking water that can be pumped into the Wivenhoe Dam.

More than 200 kilometres of pipelines connect the advanced water treatment plants to the treated wastewater and Wivenhoe Dam. This asset is valued at approximately AUD1.9 billion and was put into care and maintenance mode in 2013. In response to recent drought conditions, one of the Scheme's treatment plants has been partially recommissioned and can currently supply up to 46 million litres per day to industrial customers.

When fully operational, the Scheme can produce around 180 million litres per day, or around 15 to 20 per cent of the region's daily urban water demand. As part of the SEQ Drought Response Plan, Seqwater will commence planning for recommissioning the entire Scheme to enable operation of the Scheme when Water Grid levels fall to 40 per cent. Any future allocation of green bond proceeds to the Scheme may be deferred until it is substantially recommissioned to a 'ready to use' state.

LUGGAGE POINT. Image courtesy of Seqwater.

Gold Coast Desalination Plant

The Gold Coast Desalination Plant (the Desalination Plant) turns sea water into drinking water. Unlike the majority of drinking water produced in SEQ, desalination does not rely on rainfall and is a critical, climate-resilient water source.

The Desalination Plant regularly supplies drinking water to the Network and use increases in times of flood or drought, or when conventional water treatment plants are offline.

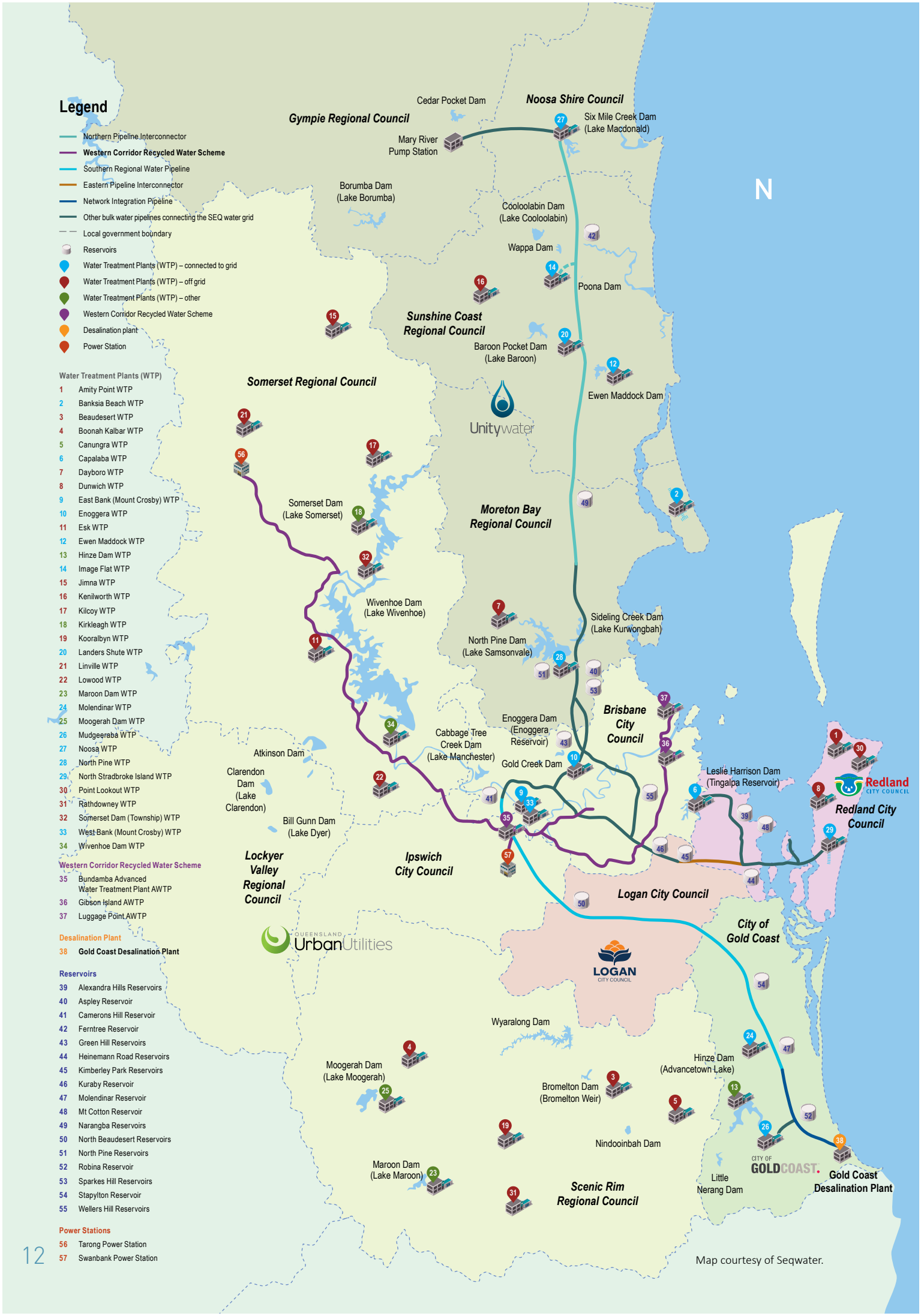
Located in Tugun on the southern part of the Gold Coast, the Desalination Plant uses an advanced technology called reverse osmosis to remove the salt and produce drinking water for the Gold Coast, Logan and southern Brisbane regions.

The plant first supplied water into the Network in 2009 and is capable of producing up to 133 million litres of pure drinking water a day—equivalent to about 15 per cent of the region's daily water use or 50 Olympic-sized swimming pools. It is designed to operate in standby mode, and if required, can reach 100 per cent capacity in 72 hours to supply up to 600,000 people with drinking water. In 2022, the Desalination Plant produced about 12,714 million litres for the Network, slightly less than the previous year's 19,500 million litres due to a significant rain event in February 2022. The plant uses energy recovery devices to improve the energy efficiency of producing drinking water. Energy recovery is achieved by reusing the high- pressured salty water, or brine, produced in the first pass of the reverse osmosis process, to continue to force water through the reverse osmosis membranes. This process recovers about 97 per cent of energy that would otherwise be lost.

The Desalination Plant's intake and outlet structures are located out to sea and have become artificial reefs, which are home to a variety of small plants and sea animals.

Further information can be found on the Seqwater website.

GOLD COAST DESALINATION PLANT Image courtesy of Seqwater.



Map courtesy of Seqwater.

RENEWABLE ENERGY

TABLE 2: RENEWABLE ENERGY IMPACT REPORTING (1 JAN–31 DEC 2022)

Year	Subcategory	Project/asset name	Renewable electricity generation (MWh/a)[11]	GHG emissions avoided (kt/a)[12]
2022	Solar	Sunshine Coast Solar Farm	24,348[13]	19.478[13]
		Warwick Solar Farm	82,073[14]	59.913[14]

Sunshine Coast Solar Farm

The Sunshine Coast Regional Council is Australia's first local government to offset its entire electricity consumption across all its facilities and operations from renewable energy generated at the 15 megawatt (MW) Sunshine Coast Solar Farm.

Since the Sunshine Coast Solar Farm began generating power in July 2017, it has offset more than 108 per cent of the Council's electricity use. From July 2017 to 31 December 2022, the Sunshine Coast Solar Farm has generated 153,251 megawatt hours (MWh) of electricity, more than offsetting the 141,899 MWh of energy used by Council. By taking a proactive approach, Council has reduced the impact of rising electricity costs on its cost of operations. The solar farm has avoided 122,600 tonnes of carbon dioxide (CO_2) emissions since operating.

Further information can be found on the Sunshine Coast Council website.

Image courtesy of the Sunshine Coast Council.

[11] MWh/a – megawatt hours per annum.
[12] "GHG emissions avoided" refers to a baseline/alternative reference scenario. Amounts are expressed as thousands of tons per annum (kt).
[13] Sourced directly from Sunshine Coast Regional Council website.
[14] Sourced directly from the University of Queensland. Figures during the Solar Farm's commissioning phase.

Image courtesy of the University of Queensland.

Warwick Solar Farm

Warwick Solar Farm is a 64 megawatt of alternating current (MWac) and 78 megawatt of direct current (MWdc) renewable energy facility in the Southern Downs Region of Queensland, which is approximately 160 kilometres west of Brisbane. The project was acquired by the University of Queensland (UQ) in 2018 at a ready-to-build status and was successfully constructed in the first quarter of 2020. Warwick Solar Farm was registered into the National Energy Market (NEM) in the third quarter of 2020, allowing commissioning and power export activities to begin in the fourth quarter of 2020. Due to technical delays, the regulator limited export activities to 50 per cent operating capacity. From April 2023, the asset commenced operating at 100 per cent capacity.

Warwick Solar Farm uses low impact solar photovoltaic technology and is expected to generate approximately 160,000 MWh of clean energy every year, reducing emissions in the electricity sector by approximately 117,000 tonnes of carbon dioxide equivalent (CO_2e) annually[15]. This will enable UQ to become the first major university in the world to offset 100 per cent of their electricity use with renewable power produced from their own assets, in addition the project will be used as a research and teaching facility.

Further information can be found on the University of Queensland website.

[15] Actuals for 1 Jan–31 Dec 2022 82,073 MWh energy generated, and 59.913 annual GHG emissions avoided (in tonnes of CO_2 equivalent).

LOW CARBON TRANSPORT

TABLE 3: LOW CARBON TRANSPORT IMPACT REPORTING (1 JAN–31 DEC 2022)

Year	Subcategory	Project/asset name	Patronage (passenger trips)	Passenger distance travelled (km)
2022	Rail	Gold Coast Light Rail (Stage 1 and 2)	8,581,279[16]	44,913,263[16]
		Citytrain network ■ Redcliffe Peninsula Line ■ Citytrain rolling stock ■ New Generation Rollingstock (electric)	33,098,924[16]	689,600,203[16]
		Tilt Trains rolling stock	186,799[17]	68,240,369[17]
	Cycle	Cycleways[18]	N/A	N/A

Gold Coast Light Rail

The Gold Coast Light Rail (branded G:link) eases traffic congestion and reduces emissions by taking cars off the road. The project improves accessibility between Helensvale train station and Broadbeach South, while providing a low carbon public transport alternative on the Gold Coast, where population growth is expected to increase.

The completed stages are a major step forward in supporting the Gold Coast and its continued growth with 20.3 kilometres of rail lines, 19 tram stations, and 18 electric trams. In addition, 1,400 'Park and Ride' spaces have been provided.

Further information on the Gold Coast Light Rail can be found on the Translink website.

8,581,279

1 Jan—31 Dec 2022

PATRONAGE (PASSENGER TRIPS)

44,913,263 KM

PASSENGER DISTANCE TRAVELLED

Image courtesy of the City of Gold Coast.

[16] Sourced directly from Translink.
[17] Sourced directly from Queensland Rail.
[18] For further information please refer to the latest Queensland Government "Queensland State of Cycling Report".

Citytrain network

Queensland Rail's Citytrain network is an integrated passenger rail service connecting South East Queensland's (SEQ) population centres. It provides a sustainable transport option in the SEQ region, which is home to around 70 per cent of the State's population.

The Citytrain network—which includes the Redcliffe Penninsula line—incorporates 152 stations, 880 kilometres of track, extensive signalling systems and other infrastructure crucial to support its safe and reliable operation. The network supports the operation of three-car Citytrain units and six-car New Generation Rollingstock (NGR) units. Almost 400,000 Citytrain services ran on the Citytrain network during 2022.

The Citytrain fleet is entirely electric powered, operating on a high voltage traction network. The purchase of electricity to support the operation of Citytrain rollingstock on Queensland Rail's SEQ traction network, generated 197,944 tonnes of CO_2 equivalent emissions during 2022, associated with the delivery of 689.6 million passenger kilometres.

New Generation Rollingstock

NGR units, which are fitted with technologies designed to improve operational efficiency, are utilised by Queensland Rail, with all seventy-five units having entered service since 2020. In 2022, NGR units accounted for 39 per cent of the total Citytrain kilometres travelled. These modern and more powerful trains will be necessary to navigate the Cross River Rail Tunnel upon completion, which is an investment that will transform the Citytrain network and increase capacity to cater for SEQ's growing population.

Electric Tilt trains Rollingstock

Queensland Rail operates and owns two electric powered tilt trains for long distance travel between Brisbane, Bundaberg and Rockhampton. The trains consist of six cars each and cover approximately 330,000 kilometres annually. They operate on the electrified portion of the North Coast Rail Line, servicing both tourists and commuters, with services run most days of the week.

The Bundaberg and Rockhampton electric tilt-trains delivered 68.2 million passenger kilometres during 2022 with electricity consumed by these services resulting in 6,189 tonnes of CO_2 equivalent emissions.

Performance summary

Below is a summary of Queensland Rail's annual performance across several impact metrics – provision of sustainable transport capacity and emissions – over the past two years.

Image courtesy of the State of Queensland.

TABLE 4: Provision of sustainable transport capacity

		2021	2022
Citytrain network	Total services	408,276	396,898
	Total passenger kilometres	665.6 M	689.6 M
	Total train kilometres	16.9 M	16.4 M
	Total seat kilometres provided	6,769 M	6,462 M
	Total capacity (seat + standing) kilometres	14,011.3 M	13,585.0 M
Electric Tilt Train	Total services	1,186	1,136
	Total passenger kilometres	49.9 M	68.2 M
	Total train kilometres	0.6 M	0.6 M
	Total seat kilometres provided	190 M	183 M

M = million

TABLE 6: Emissions (CO_2e) - SEQ Traction Network (from electricity purchased)

		2021	2022
Citytrain network	Emissions (tCO_2e)	223,947	197,944
	Emissions ($kgCO_2e$) per passenger kilometre	0.336	0.287
	Emissions ($kgCO_2e$) per seat kilometre	0.033	0.031
	Emissions ($kgCO_2e$) per capacity kilometre	0.016	0.015

TABLE 7: Emissions (CO_2e) - Electric Tilt Trains (from electricity purchased)

		2021	2022
Electric Tilt Train	Emissions (tCO_2e) from the Traction Network	6,437	6,189
	Emissions ($kgCO_2e$) per passenger kilometre	0.129	0.091
	Emissions ($kgCO_2e$) per seat kilometre	0.034	0.034

Images courtesy of the State of Queensland.

Data Sources

- Electricity usage data is collated from traction substation billing. The carbon equivalent emissions are calculated as per the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*.
- Train and seat kilometre data have been obtained from Queensland Rail's internal monthly capacity reporting, with data drawn from electronic train scheduling and monitoring systems.
- Passenger/journey data is supplied to Queensland Rail by Translink.
- Electricity consumption for the electric tilt trains while travelling on third party managed and SEQ Citytrain networks (amongst Citytrain services) is estimated based on train modelling outputs.

Image courtesy of the Department of Transport and Main Roads.

Various cycleways

The Queensland Government invests in the highest priority connections on principal cycle networks across Queensland through the Active Transport Investment Program (ATIP) and the Cycling Infrastructure Policy. The ATIP delivers infrastructure that supports a safe, direct and connected cycling network. These projects support the Queensland Government's vision for more cycling, more often as set out in the Queensland Cycling Strategy 2017–2027. These initiatives enable people to choose cycling as a convenient, healthy and carbon neutral mode of transport and socialisation.

In continuing to invest in cycling infrastructure, the Queensland Government aims to:

- provide the State with a more sustainable transport system
- reduce traffic congestion; and
- maintain a healthy environment by encouraging active lifestyles.

Examples of projects developed and associated benefits include:

TABLE 5. PROJECTS DELIVERED ON THE PRINCIPAL CYCLE NETWORK

Name	Description	Benefits
Veloway 1[19]	A dedicated 17km high-quality cycle facility, running adjacent to the Pacific Motorway, that provides an option for bike riders between Brisbane City and Underwood.	Encouraged healthy lifestyles, improved network efficiency, safety and ride quality, and reduced user travel time.
North Brisbane Bikeway[20]	The project includes raised priority pedestrian and cycle crossings. These operate similarly to pedestrian 'zebra' crossings, providing priority to walkers and cyclists over vehicles when crossing the side roads.	Encouraged healthy lifestyles, improved network efficiency, safety, and ride quality. Innovative design.
New England Highway Cycleway[21]	The 3m wide bikeway provides a safe and accessible active transport option. Stage 1 is complete with Stages 2 and 3 in design.	Improved safety, while contributing to regional economic growth and better active transport.

The Queensland State of Cycling Report is updated and published approximately every two years. Further information can be found on the Department of Transport and Main Roads website.

NORTH BRISBANE BIKEWAY
Images courtesy of the Department of Transport and Main Roads.

NEW ENGLAND HIGHWAY CYCLEWAY

[19] Veloway 1 Pacific Motorway | Department of Transport and Main Roads (tmr.qld.gov.au).
[20] North Brisbane Bikeway | Department of Transport and Main Roads (tmr.qld.gov.au).
[21] New England Highway Cycleway, Highfields to Toowoomba CBD (Stages 1,2 & 3) – locally known as the Highfields Bikeway | Department of Transport and Main Roads (tmr.qld.gov.au).

INDEPENDENT THIRD-PARTY ASSURANCE

QTC is committed to complying with its Green Bond Framework and ensuring the use of proceeds are appropriately allocated. Accordingly, QTC has appointed DNV as an independent and accredited assurance provider. DNV is an accredited verifier with the Climate Bonds Standard.

DNV contributes to the development of best practice across green bond issues. Their assessment examines at least three aspects of a green bond, including that there is a robust and clearly documented procedure for selecting projects and assets, that the funds are allocated against activities which demonstrate enhanced sustainability performance, and that once the green bond is issued, there are safeguards in place to ensure that the funds raised will be allocated against the selected projects and assets.

DNV provides:

- Annual verification that QTC CBI Certified Green Bonds meet the CBI Standard and associated sector criteria.
- Verification that QTC's Green Bond Framework is in accordance with the ICMA Green Bond Principles and is consistent with the Climate Bonds Standard.
- A methodology for the selection and measurement of eligible projects and assets.
- An independent assessment of the accuracy and integrity of green bond information and data that are used for strategic decision making by investors.

ABOUT QTC

QTC is committed to protecting and advancing the financial interests of Queensland.

QTC is the central financing authority for the Queensland Government and provides financial resources and services for the State.

With a statutory role to advance the financial interests and development of the State, QTC works in partnership with Queensland Treasury and its clients to:

- deliver sustainable and cost-effective borrowings for its clients – managing the State's funding program in global capital markets,
- advance the financial interest and development of Queensland – partnering to solve complex commercial, policy and economic issues, and
- protect Queensland's financial interests and deliver better financial outcomes – helping identify opportunities for clients to minimise costs and risks, working closely with them on their balance sheet management and centralising the management of borrowings, cash investments and foreign exchange.

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