

NSW Climate Change Fund

Annual Report 2019—2020





*Rosemeadow Public School,
Five Million Trees program*

The NSW Climate Change Fund invests in initiatives to reduce carbon emissions, generate clean energy, lower energy bills and make NSW communities more resilient to the impacts of climate change

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Executive summary

Saving energy and money while reducing emissions

In 2019–20 the NSW Climate Change Fund (the CCF) invested \$229.03 million to deliver programs that support households, businesses and communities to reduce energy consumption, carbon emissions and become more resilient to a changing climate.

2019–20 highlights



Provided energy efficiency upgrades for nearly **21,000 homes** saving an estimated **17,500 megawatt-hours (MWh) in energy and nearly 13,000 tonnes of carbon emissions (tCO₂-e) per year**. This included replacing 3300 televisions and 13,710 fridges.



Supported nearly 950 resource efficiency projects for small, medium and large businesses.



Completed 70 solar and battery installations through the Empowering Homes pilot program **adding 436 kilowatt-hours (kWh) of installed battery capacity and 237 kilowatts (kW) of solar to the NSW network**.



Installed 179 solar systems through the Solar for Low Income Households trial **adding 537 kW of solar capacity** to the NSW network.



The Regional Community Energy program has awarded grants to **unlock 17.2 MW in electricity generation and leverage \$36 million in private investments** to support energy affordability and reliability in regional NSW communities.



The Sustainability Advantage program was a **finalist in the 2019 Banksia Sustainability Awards New South Wales**, with judges commending the program for being a unique example of government-led multi-sector leadership on the United Nations Sustainable Development Goals.



The Manufacturing Efficiency Funding program has helped businesses save an estimated **9600 MWh of electricity, 75,000 gigajoules of gas and over 11,000 tCO₂-e**. This program is also expected to achieve \$2.6 million in bill savings.



Tenants from the Tweed/Byron Home Energy Action solar program



Identified over \$2 million of recurrent annual savings for councils participating in the Sustainable Councils and Communities program.



The Sustainable Government program **supported over 140 projects with a combined potential resource savings of 27 gigawatt-hours (GWh)** across the NSW Government portfolio.



Secured \$12 million for government agencies to install solar which, when complete, will **save 9700 MWh in electricity and 7850 tCO₂-e annually**.



Conducted **over 100 solar feasibility assessments** at NSW Government sites.



Over 45,000 streetlights replaced by the More Efficient Street Lighting program saving participating councils an estimated **11,898 MWh in energy and providing \$2.3 million in bill savings per year**.



1599 hazard reduction activities supported by \$16.7 million for the Enhanced Bushfire Management program. The program is integral to National Parks and Wildlife Service's rapid fire response and hazard reduction activities to minimise the damage of bushfire.



The Hunter Valley and Hawkesbury-Nepean **flood mitigation strategies** have invested in infrastructure **to reduce the risk of flood** while also providing information and resources to help build resilient and prepared communities.



The Coastal Risk Management and Coastal Flood and Estuaries program partnered with local councils and communities to **complete 63 council programs and approved an additional 106 programs** that help coastal communities mitigate current and future risks.



The Five Million Trees program has partnered with local councils and communities to **encourage tree-planting and increase the state's urban tree canopy**.



The Primary Industries Climate Change Research Strategy has worked to **support primary producers to utilise outcomes of research and identify innovative and cost-effective ways to reduce emissions**.



The Biodiversity Conservation Trust **protected an additional 18,389 hectares of NSW land** in new conservation agreements.



The WaterFix® program exceeded the 2019–20 target by 23% completing 14,765 appointments despite being unable to complete any house visits from the end of March until the end of June 2020 due to the COVID-19 pandemic.

Households

Moving towards net zero emissions by 2050

The CCF supports a range of programs that promote clean energy and incentivise energy efficiency measures. In 2019–20 the CCF provided \$21.42 million in funding towards clean energy programs and \$36.51 million in funding towards energy efficiency programs. These programs will help NSW reach the goal of net zero emissions by 2050.



Tenant from Tweed/Byron Home Energy Action solar program

Home Energy Action

The Home Energy Action program is a partnership between the NSW Government, community housing providers, the community service sector and the energy retail industry to provide vulnerable households with subsidies to replace old televisions and fridges with more energy efficient models. The program also gives social housing residents access to solar panels, ceiling insulation, draught proofing, LED (light emitting diode) lighting, heat-pump hot water systems and split system air-conditioning installed in their homes.

To date, the program has made more than 46,800 NSW homes more energy efficient, helping low income households save more than \$9.5 million dollars on bills per year at 2017 prices.

Key achievements in 2019–20



Partnered with Energy Australia and AGL Energy for two NSW Solar Housing projects resulting in around **\$260,000 in bill savings** for energy hardship customers living in Land and Housing Corporation (LAHC) homes.



Nearly 2000 social housing properties have been upgraded, saving more than 1700 MWh of electricity. That would be **enough energy to run an average house for 45 years.**



Installation of a NSW-first solar-sharing technology which has allowed for solar electricity generated to be shared between multiple units in an apartment. Preliminary results show a nearly **40% reduction in electricity bills** for the first three months following installation.



Extensive uptake of the Appliance Replacement Offer with over 3300 televisions and 13,710 fridges being replaced. With estimated **bills savings of \$3.6 million per year** this offer is helping reduce the cost of living across NSW.



17,048

appliances
replaced



\$4,973,747

CCF
investment



12,148 MWh/yr

est. energy
savings



9002 tCO₂-e/yr

est. greenhouse
gas (GHG)
emissions savings



3,639,220 \$/yr

est. energy
cost saving



35.06 \$/MWh

potential cost
effectiveness*

*Potential cost-effectiveness is calculated by dividing the funding allocated or expended for the period by the lifetime of energy savings (MWh), which varies by technology (e.g. 10 years for a television, 12 years for a refrigerator).



Convenience store owner in store

Household and Small Business Upgrades program

The Household and Small Business Upgrades Program helps households and small businesses save money and energy while reducing emissions, by providing incentives for upgrades to energy efficient appliances.

Key achievements in 2019–20

- > Over 3000 households and nearly 600 small businesses participated in the program.
- > An estimated \$2.1 million saved in bills for households and small businesses per year.
- > 6800 MWh energy and over 5000 tCO₂-e saved through upgrades per year.
- > The launch of the commercial fridges incentive, saving small businesses an estimated \$350 in bills each year.



3627
projects
funded



\$4,157,080
incentives
paid



6796 MWh/yr
est. energy
savings



5036 tCO₂-e/yr
est. GHG
emissions savings



2,110,871 \$/yr
est. energy
cost saving



51.9 \$/MWh
potential cost
effectiveness

Empowering Homes

Through the Empowering Homes program, eligible home owner occupiers can access an interest free loan to purchase a home battery or a solar and battery system. By supporting the distributed energy resources (DER) sector in NSW, the program will put downward pressure on customers' energy prices whilst improving energy security and reliability.

At the completion of the 10-year program, up to 3000 MWh of energy storage will have been added to the distribution network, and up to 300,000 NSW households will have been provided access to the benefits of solar-battery solutions. This is expected to unlock up to \$3.2 billion of private investment in DER. The program will also create new clean energy jobs and stimulate the economy through industry investment and growth.

Key achievements in 2019–20

- > 228 system quotes delivered to households.
- > 116 no-interest loans approved.
- > 70 installations completed resulting in:
 - 436 kWh of installed battery capacity
 - 237 kW of new solar installed, and
 - \$949,280 of private investment in solar and battery solutions.

The program launched in February 2020 as a 12-month pilot in the Hunter region and will be rolled out to the rest of the state in 2021.



Jon Ulbricht at his Lake Macquarie home

Case study: Installing solar and battery through the Empowering Homes program helps Jon save on electricity bills

When Jon Ulbricht of Lake Macquarie heard about the Empowering Homes program, he jumped at the chance to participate. Empowering Homes allowed him to access a no interest loan to install a 5 kWh Sonnen battery and a 7 kW solar system.

'Purchasing the system using a no interest loan and being a state supported program, it really was a no brainer,' Jon said about the program.

Jon will save approximately \$650 a year on electricity bills while repaying the loan over an eight-year term. After the loan is repaid, he will save an estimated \$2400 each year and up to 10,000kWh.

In June 2020, NSW Minister for Energy and Environment, the Hon Matt Kean MP visited Jon's house to see how the Empowering Homes program has helped NSW households.

'This is about unlocking the savings and sustainability benefits offered by solar-battery systems,' Minister Kean said. 'This is a great opportunity for NSW households - not because it is good for the environment but only because it helps them save money on their bills - it makes economic sense.'

Purchasing the system using a no interest loan and being a state supported program, it really was a no brainer

Jon Ulbricht



Appliance Standards

The Appliance Standards program helps households and small businesses make informed decisions about which appliances are most energy efficient. Through the development of new energy efficiency standards and energy labelling for products, the Appliance Standards program ensures producers are regulated to provide better products and labels so consumers can choose the products that will help them save on bills while reducing emissions.

Key achievements in 2019–20

- > Commenced data collecting activity to understand hot water usage patterns in different households. The information gathered about hot water draw-off patterns will be used to assist consumers to make more informed choices about the best type of hot water system for their particular situation. This will ultimately lead to reduced energy consumption for heating water.
- > Collaborated with the Commonwealth government to gather information to improve energy labelling on space heaters to allow for easy comparison between products. Space heating accounts for about 35% of household energy use in Australia so more informed consumer choices in this area could lead to significant emissions reductions.

Solar for Low Income Households

The Solar for Low Income Households trial supports vulnerable households by implementing measures designed to reduce electricity bills, improve energy affordability, and increase solar system installations and renewable energy generation in NSW. At the conclusion of the program, 9 MW of additional solar capacity will have been installed.

Key achievements in 2019–20

- > 179 solar installations completed in selected NSW regions. These installations resulted in an additional 537 kW of solar capacity and an estimated 410 tCO₂-e reduction in emissions per year.
- > Establishment of a range of customer-centric initiatives including:
 - an online portal making it easy for customers to apply and access the program
 - arranging a contactless solar installation process to respond to the COVID-19 pandemic.

The program is installing a 3 kW solar panel on participants' homes that is estimated to generate:

- 15 kWh of solar energy per day
- 5300 kWh of solar energy each year

The average bill savings per participant from the solar system is estimated to be \$340 per year.*

*Bill savings estimates are based on the energy generated by a 3 kW solar panel operating at 80% efficiency and assume the same tariff for all participants.

More Efficient Homes for Low Income Tenants

This program gives incentives to owners who rent to low income tenants to invest in energy efficiency upgrades such as solar PV and new hot water systems. This helps reduce tenants' energy costs and the likelihood of them getting high energy bills.

Key achievements in 2019–20

- > The launch of the solar PV systems pilot in the Parramatta City Council area.
- > Partnering with Housing Plus, a community housing provider, to schedule installation of 13 reverse cycle air-conditioners on privately-owned properties they manage in Central West NSW.

Sustainable Homes

The Sustainable Homes (previously called Collaborative Sustainable Housing) initiative builds strong partnerships between the NSW Government, research organisations, state and federal Government agencies and the construction industry to increase the demand and supply of sustainable homes. By working with state and national partners, the program encourages householders across NSW to be more sustainable and reduce emissions when renovating or building.

Key achievements in 2019–20

- > Delivered the Growing the Market for Sustainable Homes: Housing Industry Roadmap, rolling out a mass media communication strategy including two pilot television shows 'Renovate or Rebuild' and 'Home Run'.
- > Trialled training for volume builders' sales staff to communicate the benefits of sustainable features in homes to their customers.
- > Established a project with the Commonwealth and Victorian governments to deliver the Nationwide House Energy Ratings Scheme for existing homes.

Case study: Building a more sustainable and energy efficient future



New homes are a major contributor to global warming. While builders in NSW are designing energy efficient homes to address this problem, it is important home buyers are aware of the benefits of energy efficient housing.

The NSW Government and Meld Studios worked with homebuyers and builders to co-design solutions to increase sales of energy efficient homes, including:

- forums where builders can come together to understand homebuyer psychology, sales and marketing techniques, and new technologies
- training time-poor salespeople to quickly articulate the benefits of energy efficient homes, during their normal conversations with homebuyers, to increase their sales.

Together, the services and tools designed will reduce the life-time environmental footprint of tens of thousands of new homes across NSW and ensure that more people benefit from living in an energy efficient home.

For more information see the [video](#) 'Building towards a more sustainable and energy efficient future'.

The services and tools designed will reduce the lifetime environmental footprint of tens of thousands of new homes

Business

Knowledge creates pathways to a net zero economy

Energy Savings for Energy Intensive Manufacturers

The Manufacturing Efficiency Funding (MEF) program provides funding to help up to 250 manufacturing businesses save energy and money by upgrading their technology. It also offers businesses personalised advice to improve energy efficiency.

Key achievements in 2019–20

- > First round of funding in July 2019 awarded 89 businesses with 106 funding contracts worth \$4.1 million.
- > Compressed air and steam services offers were launched in November 2019 with 76 contracts awarded worth over \$590,000. The offers closed on 3 July 2020 and further contracts will continue to be awarded in the next financial year.

The successful projects to date are expected to result in savings of:

- 9600 MWh of electricity
- 75,000 GJ of gas
- over 11,000 tCO₂-e
- \$2.6 million in energy bills each year.



11,000 tonnes
of carbon is estimated as equivalent to the amount emitted on 28,500 flights between Sydney and Christchurch



9600 MWh
is equivalent to the energy consumption of Sydney Olympic Park



119
projects
funded



\$4,086,585
committed
funding



106
contracts



75,273 GJ/yr
est. gas savings



9644 MWh/yr
est. electricity
saving



11,061 tCO₂-e/yr
est. GHG
emissions
savings



\$2,614,121 \$/yr
est. bill saving



Case study: Tridon Australia achieves massive energy savings thanks to the Manufacturing Efficiency Funding program



Operations Manager, Luke Rhodes

Thanks to the MEF program, manufacturers across NSW have upgraded their boilers and refrigeration systems, installed new meters and investigated improving their processes.

Tridon is one of around 90 sites across NSW — nearly half of them in the regions — that have accessed government funding. Their massive drop in energy use, however, was largely attributed to upgrading the compressed air system, that was co-funded through the CCF.

For Tridon Australia, their old compressed air system was the problem. Operations Manager, Luke Rhodes says it was consuming up to 55–60 kW while the rest of the facility was using around 18–20 kW.

Luke said getting the government funding was easy as it happened just as they were assessing their compressed air system. The NSW Government contributed \$10,000 towards the project and Tridon Australia contributed \$32,000. With the money they will save from their electricity bill dropping, Rhodes says they will break even in two years.

‘I back the program 100% just for the sheer volume of money and energy you can save. I didn’t anticipate that we’d get this much energy savings, it’s been fantastic.’

**I back the program
100% just for the sheer
volume of money and
energy you can save**

Luke Rhodes

The Sustainability Advantage program has an established, successful track record of catalysing and facilitating excellence in corporate sustainability

Sustainability Advantage

Over the past 15 years, Sustainability Advantage has given practical support to over 800 medium and large partner organisations aspiring to be industry leaders in sustainability.

Sustainability Advantage's mission is to demonstrate that a thriving, prosperous business can also be environmentally conscious, socially just and economically inclusive. The program gives practical assistance, builds capacity and shares tools with businesses. This knowledge empowers business to help build the pathway to the Sustainable Development Goals and to a net zero economy.

Key achievements in 2019—20

- > Delivered over 200 projects focused on sustainable development, net zero emissions, circular economy and climate change adaptation.
- > Named as a finalist in the 2019 Banksia Sustainability Awards for the work undertaken to achieve the United Nations Sustainable Development Goals.

The benefits of the Sustainability Advantage program from 2010 to 30 June 2020



229,259 MWh/yr

est. electricity saving



351,107 GJ/yr

est. gas savings



102,994 ML/yr

est. water savings



1,238,801 tonnes/yr

waste savings



120,476,256 \$/yr

est. cost saving



359,917 tCO₂-e/yr

est. GHG emissions savings

Case study: Sustainability Advantage



Partners acknowledged at the 2019 Sustainability Advantage Recognition event

Sustainability Advantage responded quickly to Australia's ratification of the UN Sustainable Development Goals at the end of 2015. Since 2016 it has helped over 180 organisations in NSW implement projects that will achieve these goals.

The program has engaged local councils, not-for-profit aged care providers and leading organisations such as Best&Less, Blackmores, Compass Housing Services, David Jones, De Bortoli Wines, Emirates One&Only Wolgan Valley, HealthShare NSW, Sydney Adventist Hospital, Sydney Opera House and Taronga Conservation Society.

The program was recognised as a finalist in the 2019 Banksia Awards for the work focusing on catalysing implementation of UN Sustainable Development Goals in member organisations by:

- promoting public procurement practices that are sustainable
- ensuring that people have the relevant information and awareness for sustainable development and lifestyles.

The judging panel at the 2019 Banksia Sustainability Awards were impressed by the program and commented that:

'Even at such an early stage of implementation it is clear that the Department of Planning, Industry and Environment (DPIE) is leading all other government agencies in leadership towards the Sustainable Development Goals.'

'The Sustainability Advantage program has an established, successful track record of catalysing and facilitating excellence in corporate sustainability, and within Australia has become a unique example of Government led multi-sector leadership on the Sustainable Development Goals... This is truly fantastic work.'

Training for Businesses to Save Energy and Money

The Energy Management Services program helps NSW businesses by upskilling businesses and providing tools that empower savings in energy bills and carbon emissions.

Key achievements in 2019–20

- > Over 750 businesses participated in online training courses, webinars and one on one coaching.
- > Implemented a new online learning system to ensure a strong customer experience given the global pandemic.
- > Offered businesses personalised and direct access to energy experts who were able to advise them on how to increase energy productivity and lower operating costs.



Over 750

businesses benefitted from training provided by the Energy Management Services program

Communities

Helping local communities deliver energy and resource efficiency projects



Identified over
\$2 million

of recurring annual savings for participating councils

The Plan identifies nearly **\$960,000** of total potential savings across a range of projects

Sustainable Councils and Communities

This program helps resource constrained regional councils identify and deliver energy and resource efficiency projects, save money and reduce emissions. The program takes a place-based, customer centric approach that has delivered significant savings to participating councils and their communities.

Key achievements in 2019–20

- > Identified over \$2 million of recurring annual savings for participating councils.
- > Exceeded the target number of councils supported from 18 to 25.
- > Helped seven councils develop and formally adopt an energy plan or strategy with a further four under development. These plans outline site-specific, cost-effective projects and pathways for councils to reduce energy consumption, costs and emissions.
- > Developed an Energy Masterplan with the Upper Lachlan Shire Council that, if implemented, will reduce the council's energy by 167 MWh per year (around 10% of their annual consumption).
- > Entered into a partnership with the Riverina and Murray Joint Organisation to achieve energy and carbon savings at a regional scale.



Case study: Lachlan Shire Council

Over the past 18 months, the Sustainable Councils and Communities program has helped Lachlan Shire Council transition to become an energy leader, by working with it to develop an Energy Sustainability Plan. The plan outlines a pathway that will guide the council towards a resilient and carbon neutral future. It outlines key areas for the region to reduce its energy consumption and operational costs whilst continuing to meet the needs of the community and local industry.

The plan saw Lachlan Shire adopt targets to lead to improved social, economic and environmental outcomes for the local government area.

These targets include;

- 25% of the council's electricity demand is met through on-site solar energy generation by 2025.
- 50% of the council's electricity demand is sourced from renewables by 2025.
- 100% of the council's electricity demand is sourced from renewables by 2030.

The Plan identifies nearly \$960,000 of total potential savings across a range of projects such as negotiating a new energy contract and tariff change, and solar projects by 2022.

Lachlan Shire's Environment and Waste Officer Rowan Bentick, praised the work of the program team:

'Without the commitment from all parties this would have been difficult to proceed, as council lacks the expertise and resources to start from nothing. The expertise from [the program team and their ability] to translate knowledge to Council staff has been key to where we are now.'



Invested
\$12 million

on government
rooftop solar
installations



Saved a total of
1500 MWh

by supporting six
councils install
rooftop solar

Sustainable Government

The Sustainable Government program has a mandate to drive sustainability and clean energy opportunities across government assets and operations. It does this through the Government Resource Efficiency Policy (GREP), which sets potential resource savings targets and minimum standards to ensure the NSW Government is leading by example when it comes to energy efficiency.

Key achievements in 2019–20

- > Supported over 140 projects with a combined potential resource savings of 27 GWh across the NSW Government portfolio.
- > Brokered the largest rooftop solar power purchase agreement with Blacktown City Council sites totalling 707 kW of energy saving \$170,000 in energy costs, 900 MWh in energy, and 729 tCO₂-e annually.
- > Achieved 100% mandatory reporting compliance from NSW agencies for the 2019–20 GREP reporting period.
- > Approved a \$16.3 million package of major government energy efficiency and renewable energy projects. This amount is the largest to date for NSW Government energy savings projects. Energy costs are expected to be cut by \$3 million and around 13,000 MWh in energy will be saved per year at the completion of the project.

Solar Rollout for NSW Government Agencies

This program gives NSW Government agencies access to a pre-qualified solar services supplier panel and low-interest government finance or solar power purchase agreements to ensure government buildings are leading the way with renewable energy.

Key achievements in 2019–20

- > Supported six councils to reduce their energy consumption by a combined 1500 MWh through rooftop solar installations.
- > Secured \$12 million for government agencies to install solar which, when complete, will save 9700 MWh in electricity and 7850 tCO₂-e annually.
- > Installations of solar systems has been organised for 29 ambulance stations from Albury to Lismore. The systems are expected to save around 922 MWh of energy and 747 tCO₂-e per annum.
- > Solar power feasibility assessments conducted for over 100 NSW Government sites. Once installed, these systems are projected to cut energy use by 22,600 MWh and carbon emissions by 18,000 tCO₂-e per year.

Case study: Blacktown City Council solar power purchase agreement



Blacktown City Council in Western Sydney is working towards achieving its target of 100 per cent renewable electricity by 2025. This year it will install 706 kW of solar power across 16 sites, saving \$170,000 in energy costs, 900 MWh of energy and 729 tCO₂-e annually.

DPIE is helping councils reap the financial and environmental benefits of clean energy now by facilitating solar power purchase agreements (PPAs).

Under a PPA, the supplier installs and operates the solar system with no upfront cost to the council, while guaranteeing fixed electricity tariffs for the life of the contract. When the contract expires the solar system becomes the council's property.

The Department is facilitating PPAs by advising local councils on design, delivery and procurement of solar power installations and providing pre-qualified suppliers.

'It is a complex undertaking that couldn't have been accomplished without the Department's help', said Helen Burnie, Senior Coordinator Environmental Services at Blacktown City Council.

'They had in place the concept and a panel of suppliers that we could go to for procurement so we didn't have to run our own tender, which would have been costly and time consuming. They also had technical expertise that we did not have, so, when it came to review the quotes, their work really informed our decision on which was the best offer.'

The installation of 706 kW of solar power across 16 sites will save \$170,000 in energy costs, 900 MWh of energy and 729 tCO₂-e annually

Smart Batteries for Key Government Buildings

The Smart Batteries for Key Government Buildings initiative was established to support the installation of battery storage at schools, hospitals and other government buildings with rooftop solar systems.

It is currently funding several pilot projects in key government facilities, in partnership with Property NSW, the NSW Department of Health and the Department of Education.

Key achievements in 2019–20

- > Funding has been approved for 22 pilot projects including:
 - A 1.6 MWh battery to be installed at Port Macquarie Hospital in partnership with NSW Health.
 - Solar battery systems to be installed in seven schools in partnership with the Department of Education's Cooler Classrooms initiative.
 - 14 solar battery systems approved for installation at Property NSW sites.



Emerging Energy

The Emerging Energy program supports the commercialisation of dispatchable, large-scale electricity projects across the state. To help support projects at various stages of development it is delivered across two streams; a pre-investment study stream and a capital projects stream. The pre-investment study stream provides financial support for preliminary development activities and the capital projects stream provides financial support to assist with the construction of dispatchable electricity projects. Successful projects support the energy sector to reduce greenhouse gas emissions (GHG) whilst helping NSW to meet its target of achieving net zero emissions by 2050.

Key achievements in 2019—20

- > Executed contracts and awarded \$5.9 million in grants to eight successful projects under the pre-investment studies stream. These have the potential to deliver 2,100 MW of on-demand electricity in NSW and attract almost \$2 billion in private investment.
- > Delivered the full application round for the capital projects stream including opening applications, assessment and competitive negotiation process.
- > Awarded projects under the capital projects stream supporting technologies that will drive competition and lower energy prices for consumers and an additional pre-investment study project.
- > All supported projects will attract private investment and help to provide reliable, low emissions energy supply to NSW.

Regional Community Energy

The Regional Community Energy program funds community energy projects in regional NSW to increase renewable energy generation, improve energy reliability and help communities save money on electricity bills. This includes grants for projects that create innovative and/or dispatchable renewable energy

Key achievements in 2019—20

- > \$15.4 million in grants was awarded to seven successful projects that will unlock nearly 17.2 MW in electricity generation and 17.9 MW of energy storage.
- > The successful projects will attract approximately \$36 million in private investment.
- > Built energy literacy in regional NSW communities.
- > Empowering regional communities to benefit from the economic opportunities presented by renewable energy and deliver bill savings to local communities.

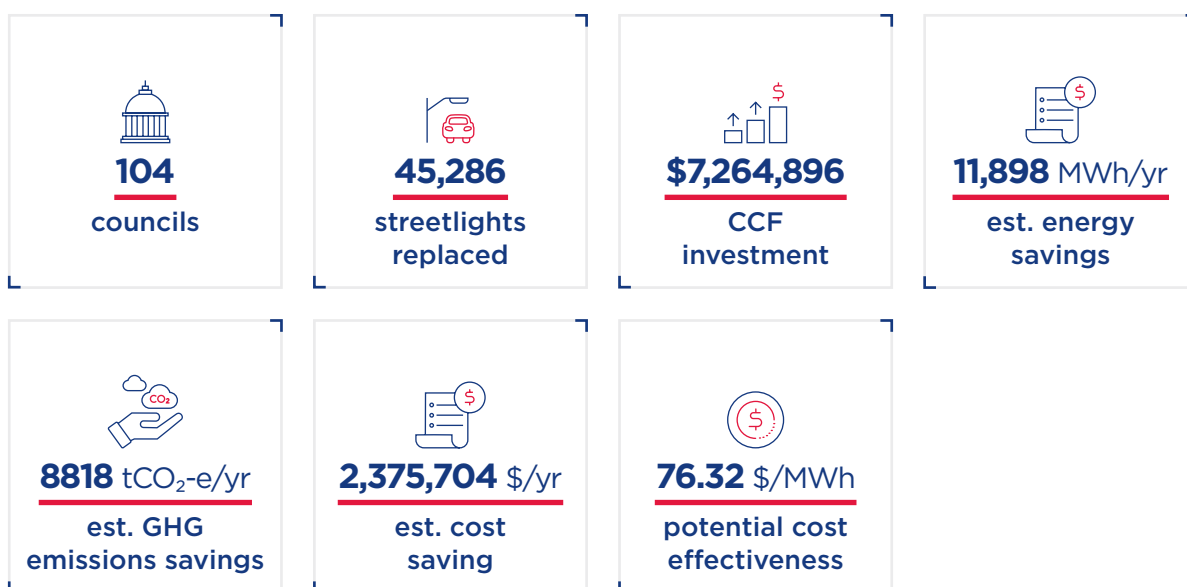
\$15.4 million in grants awarded to seven successful projects to unlock additional energy generation and storage

More Efficient Street Lighting

The more efficient street lighting program uses targeted grants to help local authorities and councils replace energy inefficient public lighting with more efficient LED lighting. The program has been very successful, exceeding projected targets and with high uptake from regional NSW.

Key achievements in 2019–20

- > 45,286 streetlights replaced with more energy efficient and cost-effective LEDs saving nearly 11,900 MWh of energy and 8818 tCO₂-e in carbon emissions per year.
- > Councils have saved \$2.3 million in energy costs per year.
- > 60% of uptake was from regional NSW.



Green Globe Awards

The Green Globe Awards are the NSW Government's premier sustainability and environmental awards, showcasing excellence, leadership and innovation. The awards encourage and support sustainability leaders and inspire others to take action for the environment. They also position the government at the forefront of environmental excellence.

The Green Globe Awards celebrated their 20th birthday in 2019 with a record 180 nominations. The anniversary provided an opportunity to recognise and celebrate the sustainability leaders of NSW.

The Green Globe Awards program hosted a Young Sustainability Champion workshop for the first time. The event was an opportunity to engage and support future sustainability leaders. 2019 Young Sustainability Champion Shalise Leesfield, of Shalise's Ocean Support said: 'It was so wonderful getting to chat and listen to the other participants and I found it so inspiring and informative. The new ideas that were suggested were fantastic and I will certainly take them on board moving forward with my campaign.'



Shalise Leesfield: 2019 Young Sustainability Champion

Climate resilience

Finding innovative ways to respond to climate change



43,000 days

invested by 1294 staff
in fighting 519 bushfires
across NSW in 2019–20

NPWS hazard reduction burn in a Strategic Fire Advantage Zone in Garby Nature Reserve behind properties in the coastal community of Mullaway on the NSW North Coast.

Reducing the impacts of climate change

The best defence against climate change is a resilient landscape and resilient communities. The CCF supports a wide range of programs to increase the preparedness of NSW in managing a changing climate as well as initiatives to slow down, respond and adapt to its effects. Funding is used for research, education and community support to help NSW fight bushfires, manage flood risk, improve our waterways, protect our wildlife and find innovative ways of responding to climate change.

Bushfires and protecting our national parks

Over the past 50 years, risks associated with managing bushfires on national parks and reserves in NSW have been steadily rising due to a range of factors including climate change. Research shows the climate is becoming warmer and drier with large and intense bushfires becoming more frequent. Climate change is expected to increase bushfire risk through more adverse fire weather including a projected increase in the number of days of severe fire danger, and a potential lengthening of the fire season, over much of NSW.

The NSW National Parks and Wildlife Service played a critical role in fighting the largest bushfires in NSW history in the summer of 2019–20. 1294 staff, including 1067 frontline firefighters – the largest professional bushfire fighting team in NSW – invested 43,000 staff days in fighting 519 bushfires.

The CCF supports the NSW response to bushfire risk and incidence by funding programs that reduce hazards, respond to bushfires and make our national parks more resilient to climate change.

Enhanced Bushfire Management Program (and the Bushfire Management Program)

The Enhanced Bushfire Management Program is an adaptive management program to mitigate the increasing risk of bushfire in NSW. The program supports work to improve rapid bushfire response capability, implement more hazard reduction in strategic areas to increase the likelihood of fire agencies controlling bushfires before they impact on communities and develop research to reduce the risk of bushfire across the state. This state-wide program is a key part of the government's approach to address predicted worsening fire weather conditions to ensure NSW is ready to deal with major fire emergencies. The two bushfire response programs funded by the CCF are underpinned by two key components:

- **hazard reduction** with an aim of reducing fuel loads in strategic locations so that the ignition, spread and severity of bushfires is moderated, and fire agencies are better able to control fires
- **rapid response** to reduce the size and severity and loss from bushfires of life, property and the community.

Key achievements in 2019–20



1599 hazard reduction activities completed
- almost double the program's target



90 per cent of fires responded to within 30 minutes of detection



29,400ha of hazard reduction undertaken



9570 ha

of land protected at Mallee Cliffs



\$10.5 million

invested to improve access in national parks

Protected Area Management

The Protected Area Management Program works alongside the Climate Change Adaptation Strategy to proactively identify ways of helping important areas of our national parks to stay resilient to climate change. Projects include asset management, heritage conservation and feral animal and weed control.

Key achievements in 2019–20

- > Fort Denison remediation works were completed to repair damage from tidal impacts and conserve this iconic State Heritage Register listed site.
- > \$10.5 million invested to improve access and safety of road and fire trails in national parks.
- > 10,000 feral cats removed to protect 9,570 hectares of land at Mallee Cliffs.

Reducing Emissions on the Land

The Reducing Emissions on the Land project supports 18 tree planting projects, with plans for further projects to be introduced in mid-2021. At its completion the program is expected to sequester over 200,000 tCO₂-e from the atmosphere.

Key achievements in 2019–20

- > Secured an additional \$3 million in funding to support an additional eight to ten tree planting projects.

Case study: Fort Denison seawall remediation



CCF supported work to save the heritage listed site of Fort Denison



Fort Denison seawall remediation

Fort Denison, in Sydney Harbour, is listed on the State Heritage Register. Fort Denison is of national and international significance as an exceptionally fine and intact example of an 1850s defence fortification that is unique within Australia.

During the 2018 summer, Sydney Harbour experienced exceptionally high tides, up to 2.25 metres, with seawater coming through and over the top of the sandstone seawalls fronting the western terrace Fort Denison and the former slipyard, in the south west of the island. The wave action drove seawater in and out of the voids in the stone walls forming multiple sinkholes in the pavement behind the walls. The 1850s seawalls were designed with open perpendes so that seawater could flow in and drain out of from behind the walls to temper any water pressure against the face of the seawall. Erosion behind Fort Denison's seawalls has been increasing, exacerbated by sea level rise, the increasing number of significant storm events driving higher tides, increasing ferry movements and strong waves against the walls. The loss of the fill from behind the seawalls lessens their resistance to the pressure of the harbour's waters which could, over time, bring on a partial or full collapse.

Between March and June 2020, the CCF supported work to counteract the slumping pavement and strengthen the seawalls' resilience against future erosion. The eroding fill behind each wall was excavated and replaced with a graded rock ballast wrapped in a geotextile layer. The new ballast allows seawater to flow in and out but is too large to be washed through the open perpendes in the sandstone blocks. The geotextile layer prevents the fines from the existing fill washing out through the graded rock and open perpendes.

The remediation work has stopped the erosion of the fill behind the seawalls which will improve Fort Denison and its seawalls' resistance against future sea level rises and storm tides.



28 sites

made safe by removing infrastructure hazards and revegetating 53 sites in the Upper Hunter

Maitland levee

Hunter Valley Flood Mitigation Scheme

This program mitigates flood risk in Hunter Valley communities. The program implements activities to lessen the impact of flooding on people's health and wellbeing and improve the resilience of ecosystems and ecological communities to these environmental impacts.

Key achievements in 2019–20

- > Completed a strategic contaminated land assessment to inform environmental risk assessments in managing the Scheme.
- > Made 28 sites safe by removing infrastructure hazards and revegetated 53 sites in the Upper Hunter.
- > Completed climate change flood risk investigations for five local government areas.
- > Completed major structural and design assessments at four major flood risk sites.
- > Completed the annual Lower Hunter maintenance program for the Scheme including:
 - preventative maintenance on 258 floodgates, 189,492 metres of levee and 336,670 metres of drainage channels
 - repaired 14 major flood pipes and a further 566 minor repairs.
- > Contributed to the NSW Saving our Species program through detailed assessments of threatened bats in the Lower Hunter, identifying 41 new sites and breeding colonies.

Case study: Hunter Valley Flood Mitigation Scheme

The Hunter Valley Flood Mitigation Scheme is an integrated system of levees, floodgates and drains (assets) on the Hunter, Paterson and Williams rivers. There are more than 2000 individual scheme assets maintained along the rivers and floodplains with the scheme valued at around \$862 million.

The Scheme minimises the impact of flooding to the community by protecting buildings, road and rail assets, minimising economic disruption and reducing the impacts on community health and well being.

The CCF has recently co-funded a review of the scheme to identify successes and investigate options for improvement.

As part of the review an extensive cost-benefit assessment (CBA) has been completed with a special asset database developed to take into consideration all relevant social, economic and environmental assets across five local government areas. The CBA has shown that for every dollar of investment the scheme has returned \$1.90 in benefits.

The CBA also has included a comparison of the current 'business-as-usual' approach with two alternative strategic future management directions. The review of the scheme will provide an evidence base for activities to help the Hunter Valley communities prepare well for flood risk into the future.



Workshops attended by over 145 people from key Hawkesbury-Nepean language groups helped build flood resilience in culturally and linguistically diverse communities.

Hawkesbury-Nepean Valley Flood Risk Management Strategy

Floods in the Hawkesbury-Nepean Valley pose a significant risk to people's lives, livelihoods and homes.

Resilient Valley, Resilient Communities, the Hawkesbury-Nepean Valley Flood Risk Management Strategy is a comprehensive long-term plan for the NSW Government, local councils, businesses and the community working together to manage the risk posed by regional flooding. Infrastructure NSW is overseeing the delivery of Phase One of this strategy that commenced in 2016 and ends in 2021. It comprises nine integrated outcomes across the prevent-prepare-respond-recover disaster resilience spectrum which are currently being implemented (www.insw.com/flood-strategy) for further details.

Key achievements in 2019–20

- > Region-wide flood study released in July 2019 using up-to-date science data and mapping.
- > Significantly progressed the Community Resilience Program to build an aware, prepared and responsive community including:
 - delivered the NSW State Emergency Service (SES) 'Floods. The Risk is Real' public safety campaign
 - school emergency planning program for 41 priority schools in the floodplain
 - the ongoing Communities of Concern Program targeting those groups most vulnerable to flooding (see Case study) which received a 2020 EMPA Australia Highly Commended Award for Excellence in Emergency Communication.
- > Tested and provided training for relevant agencies in new 'ensemble' weather and flood prediction tools developed for the Hawkesbury-Nepean Valley by the Bureau of Meteorology in partnership with Infrastructure NSW.

Case study: Helping vulnerable communities prepare for flood

More than 130,000 people live and work in the Hawkesbury-Nepean floodplain – a region with the highest single flood exposure in NSW. With the impacts of climate change, flood risk in the valley will increase over coming decades.

The NSW Government's Hawkesbury-Nepean Valley Flood Risk Management Strategy aims to reduce the flood risk to life, property and communities, now and in the future.

Despite its history of devastating floods, it has been 30 years since a significant flood in the Valley. Social research revealed much work was needed to build community resilience to floods.

The flood strategy's Community Resilience Program aims to increase and sustain the community's awareness, preparedness, and ability to respond to and recover from floods.

Those most vulnerable to floods are the priority audience for the program. The experience of major natural disasters shows that these communities are more likely to have challenges with evacuation and to struggle with recovery due to geographic location, existing vulnerability, or both.

'Communities of Concern' were identified and projects were developed and delivered in partnership with emergency services, government agencies, local councils, non-government organisations, tertiary institutions, and service users. The stream has delivered nine projects targeted to:

- disability, chronic illness and aged care service providers who support people in their own homes
- childcare services
- residential aged care services
- landholders with large animals and stock
- social housing tenants
- culturally and linguistically diverse communities
- family support services and neighbourhood centres
- caravan park managers and users.

The Community Resilience Program is underpinned by the latest flood mapping and demographic research developed by Flood Strategy technical experts who also support project design and delivery. For more information visit the strategy's webpage: www.insw.com/flood-strategy.

Coastal Risk Management (Floodplain Risk Management)

The Coastal Risk Management program provides grants to local councils to help manage flood risk and build community resilience.

The Floodplain Management Grant Program provides technical and financial support to councils and eligible public land managers to:

- make informed decisions about managing flood risk by preparing management plans (and associated background studies) under the floodplain risk management process.
- implement management plans to reduce flood risk to the community and to existing and future development, and reduce losses through a range of property, flood and response modification measures.
- provide essential information to the SES so it can prepare and implement local flood plans effectively, to deal with flood emergency response.
- the Floodplain Management Grant Program generally offers financial assistance of \$2 for every \$1 provided by councils for approved projects.

Key achievements in 2019–20 include:

- > 45 council programs were completed.
- > Approved \$8.9 million in funding to support 57 local government projects.



Approved

\$8.9 million

in funding to support 57 local
government projects

Coastal and Estuary Grant program

The Coastal and Estuary Grant program provides grant funding, as well as scientific and technical advice to help councils plan and deliver coastal management programs. These local projects balance economic, social and environmental outcomes, mitigate current and future risks, enhance community understanding and adaptation to the potential impacts of climate change, and help improve the resilience of coastal communities and assets. The CCF also supports the NSW Coastal Council, which advises the Minister administering the *Coastal Management Act 2016* on coastal management matters.

Key achievements in 2019–20

- > 18 projects completed and acquitted helping councils manage risk from coastal hazards and restore degraded coastal habitats.
- > Approved grants to support 49 local government projects which will lead to resilient communities.
- > \$5 million in grant funding awarded to councils whose waterways were impacted by bushfire.



Case study: Grant funding helps bushfire affected communities recover

The South Coast was heavily impacted by bushfires in the 2019–20 summer. Aside from the damage to bushland and communities, 52 of the estuary catchments between Nowra and the Victorian border were at risk of suffering poor water quality. Bushfires have the potential to degrade coastal waterways by impacting water quality and sensitive estuary ecosystems, in turn affecting local industries such as tourism and aquaculture.

The Coastal, Flood and Estuary grant program responded by awarding \$5 million to six councils in the region to support them in managing the effects of the bushfires on sensitive estuary ecosystems. Bega, Shoalhaven and Eurobodalla Councils were awarded \$3.7 million in funding to deliver post-fire environmental remedial actions over the next three years.

Funding will be used to implement strategies to stem the impacts from the bushfires and will allow coastal councils to move quickly to mitigate these impacts.

Manly Hydraulics Laboratory

The Manly Hydraulics Laboratory (MHL) maintains and operates DPIE's extensive data collection network as part of its coastal, estuary and floodplain management programs. The network includes 171 flood and 48 estuary automatic water level recorders, 19 ocean tides sites, 72 rainfall recording stations and 7 offshore Waverider buoys along the coast. The data allows changes in the coastal environment to be monitored and assessed and provides an improved understanding and awareness of current and future risks of flooding and coastal hazards, including climate change.

Key achievements in 2019–20

- > Essential data provided for water quality investigations at Terrigal Beach and Tuggerah Lakes.
- > All key performance indicators met or exceeded in 2019–20.

Funding will be used to implement strategies to stem the impacts from the bushfires



*Students at Rosemeadow Public School,
Five Million Trees Program*

Case study: Five Million Trees

As part of the Five Million Trees for Greater Sydney Program, DPIE has partnered with Greening Australia to deliver the Cooling the Schools project. The initiative will deliver 72,000 trees and other plants to create shade and native gardens within schools and through community events.

The project aims to lower ambient temperatures and mitigate the urban heat island effect in schools across the Greater Sydney region. It will provide opportunities for children to connect to nature safely and enjoy the benefits that trees provide. It will also create pockets of habitat for plants and animals, contributing to a biodiverse Sydney.

These goals will be achieved through detailed project planning and site selection that considers current canopy and shade cover of eligible schools, as well as other relevant factors such as heat vulnerability. Greening Australia will work with principals and land managers to establish a 'Sydney Schools Urban Forest Network'. Cooling the Schools will also support and encourage community greening in streetscapes and backyards by giving school communities the experience of the benefits of green infrastructure.

The Cooling the Schools project will contribute significantly to the Premier's Priority target of planting one million trees in Greater Sydney by 2022, providing important shade and canopy in schools across Sydney. Cooling the Schools will also contribute to other program objectives through community engagement and education activities.

Five Million Trees

The Five Million Trees for Greater Sydney program works with individuals, schools, councils and communities to encourage a collaborative approach to increasing urban tree canopy and green cover in Greater Sydney. The program increases capacity at a local community level to adapt to climate change by building resilient communities. Increased tree canopy will help to reduce temperatures and mitigate urban heat island effects, particularly in Western Sydney. The program underpins the Premier's Priority of Greening our City.

Key achievements in 2019–20

- > Partnered with Landcare NSW and Greening Australia to plant 172,000 trees across Greater Sydney by 2022 (plantings to occur in 2020-21 and 2021-22).
- > Partnered with Western Sydney Parklands to plant 60,000 new trees in 2020 (8754 planted in 2019–20).
- > Launched the \$12.5 million Greening our City Grant Program to support councils and their partners to plant trees and overcome barriers to increasing urban canopy and green cover.
- > Delivered an enhanced program website to keep the community well informed.
- > Undertook a randomised control trial to test messaging around tree planting in private homes which resulted in a 2000% increase in uptake of our free tree vouchers program over three consecutive months.

Community Insights

The Community Insights program has been established to collect data about social values, needs and community aspirations. This social research approach provides communities with data to inform strategic planning and prioritisation, communication activities and monitoring. Through this, the program will ensure best available evidence is being reflected in policy development, program development and evaluation.

Key achievements in 2019–20

- > Reviewed and updated the long-term delivery framework used to capture and communicate relevant social indicators.
- > Developed a 'pulse' community survey to be delivered three times per year starting from 2020-21.
- > Conducted social research to support cost-benefit analyses for new policy proposals.

NSW Koala Strategy

The NSW Koala Strategy supports on-ground initiatives delivered by wildlife rehabilitators, community groups, local councils and government agencies to protect koalas in NSW. The program funds targeted research programs to address knowledge gaps, including understanding the impacts of climate change and extreme weather events on koalas.

Key achievements in 2019–20

- > Delivered targeted research programs to improve our understanding of the impacts of climate change and extreme weather events on koalas.



Making Communities More Resilient to Climate Change

The suite of programs offered through the Making Communities More Resilient to Climate Change funding package offers grants, training, research and information that work together to build communities that are more aware, prepared and resilient to the effects of climate change.

Key achievements in 2019–20

- > Launched the Climate Risk Ready NSW program in partnership with NSW Treasury, including a pilot of a climate risk management training course with staff from ten government agencies to help agencies manage climate risk for over \$380 billion of government physical assets.
- > The Enabling Regional Adaptation program established a governance group in the North Coast region to oversee ongoing implementation of regional adaptation priorities.
- > Made data and information more accessible and understandable for councils and state government agencies to help decision-making.
- > Cross-jurisdictional collaboration and engagement with lead research and science partners to ensure a national approach to climate modelling and high-quality data sources to make evidence-based decisions.
- > 13 council projects funded through the Increasing Resilience to Climate Change grants, taking the total number of projects to 23 (involving more than 30 councils).
- > 23 community group projects funded through the Increasing Resilience to Climate Change grants to support practical projects focused on reducing the impacts of climate change and to foster partnerships between community groups and regional stakeholders.
- > Adapt NSW forum in November 2019 was opened by the Minister for Energy and Environment and attended by 250 people from across the state who came together to share the actions they are taking to build resilience to climate change in NSW.
- > 191,297 visits to the AdaptNSW website in 2019–20, exceeding the growth target of 106,000 visits.
- > Completion of the award-winning XDI (Cross-Dependency Initiative) Sydney pilot project to work with selected asset owners and operators in the Sydney region to identify climate risks and adaptation solutions for critical infrastructure.
- > Completed a climate change risk assessment pilot with the Sydney Opera House under the Climate Risk Ready NSW program.
- > Completed the 10-year Enabling Regional Adaptation program which engaged over 1700 regional decision-makers and stakeholders to assess climate change vulnerability across all NSW regions and develop plans to adapt.
- > Successfully piloted a training course in climate risk assessment and management with staff from 10 government agencies, with Western Sydney University, for full roll-out in 2020-21.



23 community groups

funded to support projects focused on reducing the impacts of climate change



The program operates
more than
90 stations
the most extensive
air quality monitoring
network in Australia

Air Quality Monitoring and Forecasting

This enhanced air quality information program provides people in NSW with access to local air quality information in close to real time and air pollution forecasts for the upcoming days. This information helps people and agencies to better plan to minimise exposure to harmful air pollution.

The program operates the most extensive air quality monitoring network in Australia, with more than 90 stations across urban, regional and rural NSW providing communities with up to date air quality information on an hourly basis.

Key achievements in 2019—20

- > Deployed nine bushfire emergency air quality monitoring stations to provide near real-time air quality information to communities near fire fields.
- > Serviced up to 500,000 visits per week to the website during the 2019-20 bushfires.
- > Launched additional online data service tools that support customised delivery of current and historical data to response agencies, businesses and the public.



Findings from the Primary Industries Climate Change Research Strategy will help producers better respond to a changing climate.

Primary Industries Climate Change Research Strategy

The Primary Industries Climate Change Research Strategy provides support to primary producers by providing them with information about investment in renewable energy, feasible options for emissions reductions, knowledge about the risks of climate change and technological and innovative ways of adapting to climate change. The strategy aims to build knowledge for primary industries in three main categories: energy, carbon opportunities and climate resilience.

Research, pilots and trials are providing information on: investment opportunities in renewable or carbon neutral energy and efficiency; the feasibility of different carbon farming opportunities; how climate change will impact different farm products and how digital technology can drive adaptation and improve management.

Key achievements in 2019–20

- > Supported the feasibility assessment and on-ground design of a range of energy solutions to be delivered as on-ground pilots in 2021. Projects included:
 - electrification of on-farm equipment such as grain mills and water pumps
 - installing battery storage on farms to reduce costs and peak loads
 - construction of anaerobic digesters for a range of animal manures for energy generation.
- > The Energy Efficiency Solutions project delivered eight farm energy forums across the state and contributed to the successful Renewables in Agriculture Conference in September 2019. Over 300 primary producers participated in the 2019–20 financial year.
- > The Accessing Carbon Markets Project held a National Symposium on carbon farming and valuing environmental co-benefits. This work contributed to the assessment of the carbon abatement opportunities of the agricultural sector in NSW.
- > Biomass plantings completed in Yanco, Orange, Glen Innes and Tamworth with over 16,000 crop trees planted.
- > The Vulnerability Assessment Project has engaged industry and government experts in fisheries, cropping, livestock, horticulture, forestry, biosecurity and drought to build a comprehensive picture of the climatic conditions that impact productivity to determine the vulnerability of these commodities to a changing climate.
- > Four digital pilot projects are underway exploring the opportunities that real-time data can provide for adaptation and improved management on farm.



Sensors installed at the Stoneleigh orchard

Case study: Digital orchards – the way of the future

Stoneleigh is an apple and cherry orchard near Orange that has been working with the Climate Smart Pilots team to look at how digital technology can help them remain profitable in the changing climate.

The pilot orchard now uses a combination of digital sensors such as:

- an automatic weather station
- a light sensor that measures the proportion of light intercepted by the tree canopy
- four temperature and humidity sensors within the canopy
- soil moisture probes to help with irrigation management
- water level sensors for dams and tanks.

These sensors together with a LoRaWAN network help the orchard manager and his staff access near real-time data from the cloud through DPIE's FarmDecisionTECH website.

The network has quickly yielded results for the orchardist with the soil moisture probes providing evidence that a dripping technique was a more effective means of irrigation than a spraying technique. The orchard stopped irrigation on the less efficient spray irrigation block resulting in water conservation during a drought period.

The initial part of this pilot has been very successful and the Climate Smart team are now looking for options to continue improved water conservation and efficiency measures at the orchard.

Biodiversity Conservation Trust (BCT)

The BCT manages public and private resources to support private land conservation and deliver a healthy, productive and resilient environment across NSW.

CCF funding is used to deliver programs that:

- encourage landowners to enter agreements to conserve biodiversity and support productive landscapes.
- promote public knowledge, appreciation and understanding of the value of biodiversity conservation.

Key achievements in 2019–20

- > 50 funded conservation agreements and 41 unfunded conservation agreements.
- > Protected an additional 18,389 hectares of land in new conservation agreements.
- > Sold one revolving fund property, securing 114 hectares conservation agreement under the Conservation Partnership Program; and held six properties for sale, with a total of 2904 hectares proposed for conservation.
- > Delivered 23 information sessions for landholders across the state.
- > Paid \$809,000 in grants to holders of partnership conservation agreements, across 48,200 hectares of conservation areas.
- > Conducted 927 site visits and 5197 interactions with our landholders.

BCT manages public and private resources to support private land conservation and deliver a healthy, productive and resilient environment across NSW

Case study: Rummery conservation agreement



Minister Kean visits the Rummery's property at Walgett

Greg and Lyn Rummery are riverside landholders near Walgett, who were successful in a conservation tender to create a conservation area on their property.

The BCT identified this as a significant conservation project, because the old growth coolibah woodland on the floodplain and river red gum forests along the river on the property, provide an extremely important refuge for native animals. This refuge is also vital due to the current lack of water in the landscape. In times of severe drought, patches of native vegetation along riverbanks act as arteries in the landscape, connecting separated areas of native vegetation, providing occasional watering points and cooling the landscape.

Greg and Lyn were happy to work with the BCT and signed their conservation agreement in July 2019. The project has resulted in important conservation outcomes and was marked with a visit from Minister Kean who was pleased with the collaborative work to protect the property's beautiful natural environment.

WaterFix®

The WaterFix® Residential Program offers subsidised plumbing services to help households save water and reduce bills by fixing leaks and installing water efficient devices. The WaterFix® Residential Program, in conjunction with Sydney Water's other water conservation programs, community awareness and education campaigns and water restrictions, has helped reduce the average residential daily water usage from about 210 litres (L) per person in 2017 to about 180L per person in 2020.

Due to the COVID-19 pandemic, the WaterFix® program was placed on hold to ensure the health and safety of plumbers and the community. Despite the service interruption, the program still exceeded their 2019–20 target.

Key achievements in 2019–20

- > Direct marketing campaign launched to high water users.
- > 14,478 customer appointments completed by the end of March 2020.
- > 3500 customers were put on a waiting list to be contacted once the program resumed in July 2020.
- > An estimated saving of 18,000 - 24,000L of water per year for every property serviced.



14,478

appointments completed



403,814 L

est. water savings

In 2019–20, the WaterFix® team completed **14,478 appointments** in just nine months

Case study: WaterFix®



Waterfix® plumber fixes leak at customer's home

Sydney Water has offered a WaterFix® Residential Program for about 20 years. Over that time, the program has continued to evolve based on changing customer need.

In 2018-19, only 600 customers took advantage of the WaterFix® service under a cost recovery model. In 2019–20, the WaterFix® team completed 14,478 appointments in just nine months. This huge increase is largely attributed to the CCF subsidy as customers were able to have their homes checked for leaks and have most minor leaks fixed for free.

Customers have generally been very happy with the service provided and new appointments throughout the year were mostly attributed to word-of-mouth endorsements from satisfied customers. This kept marketing spend to a minimum while ensuring plumbers had a steady flow of work.

The WaterFix® service aims at providing a high standard of service and the team regularly receives compliments from customers about their professional approach and high standards of service.



“

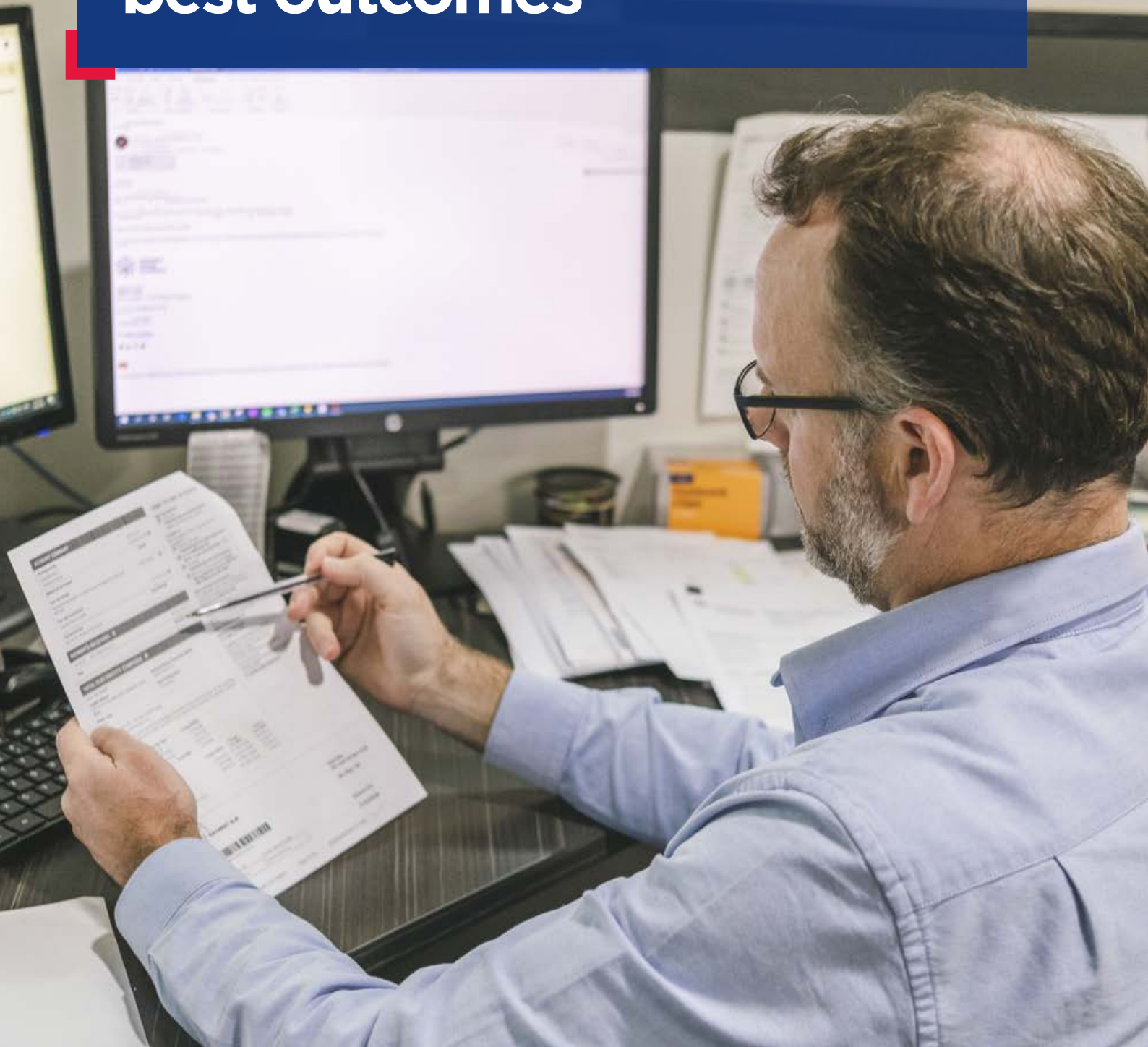
Customer feedback:

I am writing to you today with regards to Martin and Cody who came out to fix some plumbing issues at our property out in Merrylands. Both plumbers were professional, knowledgeable and very friendly. Given my family are not from an English as a first language background, they were both very patient and understanding. They treated us with respect and explained to us the best they could what they were doing. Additionally, one of our sinks had severely damaged plumbing. Martin explained to me that this would require a second trip. Without a fuss he arranged for this to happen and exceeded my expectation on how quickly this work was completed. My family and I are very appreciative of the work Martin and Cody have done. They both made this an extremely seamless experience and I really hope they get the recognition they deserve.

”

Administration, evaluation and budget

Strategic oversight and rigorous evaluation ensure our programs deliver the best outcomes



CCF Administration

The CCF is established under the *Energy and Utilities Administration Act 1987* (the Act). The Minister for Energy and Environment has statutory responsibility and must approve all funding for programs. DPIE administers the CCF and provides strategic oversight for programs.

The CCF Administration Committee meets every month to monitor how the fund and its programs are tracking financially and to monitor and mitigate any risks.

Another key function of the Administration Committee is to ensure rigorous program evaluation.

Evaluation

Section 34H(4) of the Act requires the Minister to report on the effectiveness of each completed CCF program. To guide the required program evaluation, DPIE has developed the CCF Evaluation Framework (the evaluation framework).

The evaluation framework explains how to meet the NSW Treasury requirements and is informed by research undertaken by the CCF Research and Evaluation Initiative. The evaluation framework ensures that all programs are evaluated rigorously and consistently.

There are two types of evaluation under the evaluation framework: program evaluations and overarching thematic evaluations. Program evaluations include economic evaluations, outcome evaluations, impact evaluations or process evaluations. The overarching thematic evaluations assess the effectiveness of the CCF's performance and outcomes in delivering social, economic and environmental benefits to NSW.

As at 30 June 2020, 23 CCF programs have prepared evaluation plans and peer-reviewed these as needed. An additional seven programs are progressing evaluation plans. Two CCF programs have completed their mid-term reviews, and at least 15 programs are scheduled to undertake mid-term reviews or end of program evaluations in the coming year.

In 2020-21, CCF programs will move from planning to undertaking evaluation. Mid-term reviews of programs bring together process evaluation and some outcome evaluation. They inform DPIE of opportunities available by adapting programs and provide assurance. For selected programs, mid-term reviews and the response by management will be published on the Department's webpage. Programs that are concluding will prepare for end-of-program evaluations for delivery through to June 2022.

CCF budget

The CCF is funded by annual contributions from electricity and water distributors. Electricity distributors are requested to recover no more than 25% of costs from household customers with the remainder to come from commercial, business and industrial customers.

Water distributors may also contribute to cover the costs of water related programs, for example, the WaterFix® program.

The total revenue of the CCF in the 2019–20 financial year was \$279.0 million.

CCF Revenue 2019–20

Source	Amount (\$)
Ausgrid	\$133,812,268
Endeavour Energy	\$85,727,733
Essential Energy	\$56,040,620
Sydney Water	\$740,000
Return of grant	\$771,625
Interest	\$1,895,557
Miscellaneous revenue	\$45,022
Total	\$279,032,825

In 2019–20 the CCF's total expenditure was \$229.0 million.

The difference between revenue and expenditure is a result of different program implementation schedules in the 2019–20 financial year. Expenditure was also impacted by the summer bushfires and the COVID-19 pandemic resulting in the suspension of some program activities.

CCF Expenditure 2019–20

Program	Actual (\$M)
Energy efficiency programs	
Energy saving upgrades for social housing clients and discounts to replace inefficient fridges and TVs for concession card holders	12.68
Discounts on high efficiency fixed household appliances	0.92
Discounts for small businesses to upgrade to energy saving equipment	2.08
Training for small businesses to save energy and money	0.67
Energy affordability program support and evaluation	6.52
More efficient homes for low income tenants	0.90
Energy savings for energy intensive manufacturers	3.66
More efficient street lighting	7.47
New energy efficiency standards for appliances, buildings and infrastructure.	1.61
Subtotal	36.51

Program	Actual (\$M)
Delivering reliable, clean and affordable energy	
Empowering Homes program	2.35
Smart energy storage for key government buildings	1.22
Emerging energy generation fund	2.04
Regional community energy projects	0.89
Rooftop solar systems for eligible low income households	1.24
Delivering clean energy program support	0.56
National energy regulation contribution	11.43
Demand response trial in partnership with the Australian Renewable Energy Agency	1.71
Subtotal	21.42
Increasing resilience to a changing climate	
Koala Strategy	0.48
Five Million Trees initiative	2.70
Grant funding to help households, businesses and councils reduce their exposure to natural hazards and climate risks	5.54
Private land conservation through the Biodiversity Conservation Trust	50.00
Enhanced bushfire management program and research	15.96
Bushfire management	11.88
Coastal risk management	6.99
Coastal, Flood, Estuary Flood Grant Programs	12.37
Hawkesbury-Nepean Flood Risk Management Strategy	8.06
Hunter Valley Flood Mitigation Scheme	5.20
Primary Industries Climate Change Research Strategy	—*
Air quality monitoring and forecasting	5.70
Manly Hydraulics Laboratory	3.93
Sustainability use of our energy and resources	3.56
Protected Area Management	25.89
Climate & Resource Efficiency	2.93
Community Engagement	0.12
Other ongoing adaptation and sustainability	1.33
Subtotal	162.64
Other	
WaterFix®	4.42
Climate Change Fund program administration	1.19
Other government priorities on energy efficiency	2.85
Subtotal	8.46
Grand Total	229.03

* Department of Primary Industries spent \$6.4 million on program activities in the 2019–20 financial year, however due to machinery of government changes this expenditure was not from the CCF so cannot be reported as CCF expenditure

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