



**Senate Environment and Communications Legislation Committee
Climate Change Bill 2022
Climate Change (Consequential Amendments) Bill 2022**

Google welcomes the opportunity to provide a submission on the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022.

Google supports the Government's policy to accelerate Australia's decarbonisation and we encourage the Government to support clean energy

We support the Australian Government's proposed legislation to reduce emissions to net zero by 2050 with an interim target of at least 43% by 2030. We know that urgent decarbonisation is needed to avoid the most dangerous impacts of climate change. As one of the world's largest corporate purchasers of renewable energy, we believe this legislation takes important steps to help Australia and the world decarbonise and ensure a sustainable future for all. Our optimism is informed by areas where we've already seen significant positive impact through technology, and we look forward to working with the Government to bring the benefits of our technologies to Australia, and to partnering to develop and build new approaches locally. We note the Government's strong commitment to sovereign capability, and look forward to continuing to support local industry and research organisations to deliver this.

Google leads on decarbonisation in the private sector, including certifications

The process of addressing climate change calls for rapid decarbonisation of the world's electricity supply, including in Australia. Electricity enables Google to serve our billions of users' needs, around the world and around the clock. We were the first major company globally to become carbon neutral in 2007. In 2017, we became the first company of our size to match 100% of our annual electricity use with renewable energy. In 2020 we [announced](#) a goal to operate all our data centers and campuses on carbon-free energy 24 hours a day, 7 days a week by 2030. In April 2022 we published a [roadmap](#) to reach that objective. To achieve carbon free energy 24/7, we will need to adopt new clean energy certifications, such as [Time-based Energy Attribute Certificates](#) (T-EACs), to replace current approaches such as Renewable Energy Certificates (RECs). T-EACs will bring transparency to the world's electric grids and in the process, enable a wave of software solutions that help organisations understand and optimise their energy use.

Google provides tools to inform evidence-based policy in Australia and beyond

We are proud to support efforts to drive evidence-based climate and energy policy. Google's [Environmental Insights Explorer](#) is helping more than 500 cities and local governments globally, including in Australia, to reduce an aggregate of 1 gigaton of carbon emissions per year by 2030 and beyond. The Environmental Insights Explorer helps cities reduce their CO2 emissions by providing accurate estimates of CO2 emissions sources, insights about the most efficient policies and investments to reduce CO2 emissions, solutions to help cities and the private sector accelerate action on prioritised investment areas, and by monitoring and measuring progress with unique data and tools.

The [Google Trends](#) platform is providing real-time forecasting, also known as “nowcasting”, to government, civil society, and the media as to how Australians are thinking about climate change in order to help inform the policy debate. Our [guide](#) on how to use Google Trends for economic policy making has become a popular resource and Google’s Chief Economist Hal Varian recently visited Australia to brief Government agencies on the tool’s use for public policy decision-making.

Google is helping Australian consumers make sustainable choices

In addition to helping inform the policy debate, Google is committed to helping all Australians make sustainable choices every day. On [Google Flights](#) users now see emissions estimates for nearly every flight in the search results, to allow them to factor in carbon emissions to their decisions. When searching for hotels, you now see information about their sustainability efforts. On [Google Maps](#) (which was invented in Australia), we are working to bring [eco-routing](#) to Australia.. Eco-routing will provide users with information about the most fuel-efficient option for a given journey, significantly reducing carbon emissions and fuel costs for consumers. We look forward to bringing more eco-friendly Maps features to Australians in the future.

Google is partnering to develop solutions to climate related problems in Australia

We are collaborating with renowned Australian organisations, like the CSIRO, to help solve pressing economic, environmental and societal issues - and use technology to build a more sustainable future for all Australians. This includes [work to protect the Great Barrier Reef](#), using artificial intelligence to detect Crown-of-Thorns Starfish (COTS). This technology is helping to analyse imagery and detect COTS more accurately and efficiently via a live camera feed. During times of crisis such as bushfires, floods and earthquakes we surface information in Google Search, Maps and Android phones to help keep people safe. We are currently working with state

and territory emergency service agencies to continue improving data sharing and collaborate on new ways to ensure Australians are informed with the best available information during such emergencies.

Google is also supporting crisis recovery and crisis management product development in Australia. After the 2019-2020 summer bushfires, we [partnered](#) with the World Wildlife Fund for Nature (WWF) in Australia on a project which uses artificial intelligence (AI) and the cloud-powered [Wildlife Insights](#) platform to dramatically speed up the recognition of animal species. The system can now identify over 700 species of wildlife in seconds and quickly discard empty images, taking the redundancy out of the process and helping scientists and ecologists make better and more informed data assessments. We have also funded a [project at the University of Queensland](#) through Google.org to develop a world-first real-time bushfire hazard detection and warning system using AI. We look forward to supporting further climate and environment related projects, including through our recently announced \$1 billion Digital Future Initiative, and through the new [Google Research Hub](#) that will be launched in Sydney as part of that Initiative.

In June 2022, Google launched the [APAC Sustainability Seed Fund](#), to support environmental nonprofits in the Asia-Pacific region, including Australia, to address critical sustainability challenges, from air quality to water preservation to biodiversity protection to decarbonisation efforts. Low lying and small island countries are especially vulnerable to disastrous impacts of climate change such as extreme precipitation events, heat waves, rising sea levels, and loss of biodiversity. The Fund will scale up the most innovative nonprofit sustainability initiatives and solutions that help vulnerable and underserved communities in eleven countries - Australia, India, South Korea, Japan, New Zealand, Singapore, Taiwan, Indonesia, Thailand, Vietnam, Hong Kong - to adapt and mitigate the detrimental effects of climate change. In particular, grants will support scaling up innovations which are seeking to increase access to renewable energy efforts, adapt to climate change, protect biodiversity, preserve water, promote the circular economy, improve air quality, and advance waste management.

Google is combating climate misinformation

In 2021, Google announced a new [policy](#) for Google advertisers, publishers and YouTube creators that prohibits ads for, and monetisation of, content that contradicts well-established scientific consensus around the existence and causes of climate change. This includes content referring to climate change as a hoax or a scam, claims denying that long-term trends show the global climate is warming, and claims denying that greenhouse gas emissions or human activity contribute to

climate change. Violations of the policy are dealt with in accordance with our longstanding [Community Guidelines](#), up to and including channel termination.

Google Cloud is helping Australian businesses and the public sector to reduce emissions

[Google Cloud](#) is helping Australian businesses and the public sector to reduce their carbon footprints through the provision of the cleanest cloud computing available. With Australian businesses increasingly digitising their operations, energy efficient computing processing will be critical to helping Australia meet its climate goals. A recent Deloitte [report](#) found that cloud computing is on average five times more energy efficient than on-premises data centres of companies and public sector organisations. It also found that businesses with a climate strategy and that use the cloud are the most likely to be realising emissions reductions. We also provide tools such as [Carbon Footprint](#) to help customers estimate their cloud carbon emissions, providing critical visibility and actionable insights to customers to achieve their climate goals.

Google's sister company X is working on clean technology solutions to benefit Australia

Google's sister company [X](#), a subsidiary under Alphabet, runs a number of 'moonshot' projects seeking to solve the world's hardest problems. Several X projects are showing promise in their potential to unlock radical efficiencies and increase transparency in energy markets and the environment from which Australia will greatly benefit.

- (a) Grid virtualisation project, [Tapestry](#), is creating a single virtualised view of the electricity system. Tapestry aims to unlock access to clean, reliable, and affordable electricity worldwide by providing greater insight into our increasingly dynamic and complex electricity system. Currently, no one has the tools they need to see, manage or plan our complex grid, including in the Australian market. Information is siloed between dozens of different organisations and no one has a complete picture of how electricity is made, moved and used. With industries like transportation and heating switching from fossil fuels to electricity, the demands on our grid are only increasing and becoming even more challenging to orchestrate. As such, the the team is developing computational tools that can predict and simulate what might happen on the grid from nanoseconds to decades into the future. Australia's successful transition to net zero will rely on having access to instantaneous, high quality data provided by such tools. We look forward to continuing our

discussions in Australia about how we might contribute to this outcome through the use of this technology.

- (b) [Mineral](#) is developing new technologies to help build a more sustainable, resilient, and productive food system. By combining data collected from the field, like plant height, leaf area and fruit size, with environmental factors like soil health and the weather, Mineral's software tools can help breeders understand and predict how different varieties of plants respond to their environments. By mapping and imaging plants in the field, growers can troubleshoot and treat individual plants instead of entire fields, reducing both their costs and environmental impact. Tracking how the plants are growing over time can help growers predict the size and yield of their crop, enabling them to make better yield projections. Today, Mineral is working with and learning from innovative breeders and growers across the world. We will continue to expand our collaborations with organisations around the world spanning the private, nonprofit, academic and government sectors and would welcome interest from the Parliament to explore potential applications of the technology in Australia.

- (c) [Tidal](#) is developing new technologies to power the next wave of ocean understanding. The team has been working in partnership with salmon farmers in Norway to test its underwater camera system and perception tools to advance sustainable ocean farming. The team are now exploring new ways to deploy their technologies, particularly in the monitoring, reporting and verification of ocean-based carbon removal. With fish production [set](#) to rise 10% in Australia 2022, we see opportunity for Tidal's application here.

Separately, the autonomous drone delivery service [Wing](#) has operated in Australia since 2017, and is increasing efficient access to goods, reducing traffic congestion in cities, and helping ease the CO2 emissions attributable to the transportation of goods. Every week in Australia, Wing replaces thousands of trips in which cars or trucks would typically be used to deliver small packages, with lightweight drones that generate no emissions. By 2030, delivery drones have the potential to replace 2.3 billion vehicle kilometers annually in Australia.

Google Australia looks forward to supporting the Government's objectives for addressing climate change through the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022, and more broadly to bringing our innovations and technology to bear in serving the needs of Australians for a sustainable digital future.