SINGAPORE'S SECOND NATIONALLY DETERMINED CONTRIBUTION (NDC) AND ACCOMPANYING INFORMATION

Singapore intends to reduce emissions to between 45 to 50 million tonnes of carbon dioxide equivalent ($MtCO_2e$) in 2035[1]

ACCOMPANYING INFORMATION[2] ON SINGAPORE'S 2ND NDC	
1. Quantifiable information on the reference point (including, as appropriate, a base year):	
(a) Reference year(s), base year(s), reference period(s) or other starting point(s);	Emissions level (in terms of CO_2e) in 2035: 45 to 50 million tonnes (Mt) CO_2e
(b) Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year;	Singapore's 2035 emissions will be reported under its Biennial Transparency Report and National Inventory Report in 2038 in accordance with modalities, procedures and guidelines of the UNFCCC Enhanced Transparency Framework.

[1] This is contingent on technological maturity and effective international cooperation. Singapore's ability to fulfil its NDC, like all Parties, will depend on the continued international commitment by Parties to the Paris Agreement and their climate pledges.

[2] The accompanying information to clarify Singapore's NDC is provided taking reference from the guidance on "Information to facilitate clarity, transparency and understanding of nationally determined contributions, referred to in decision 1/CP.21, paragraph 28" as contained in Annex 1 of decision 4/CMA.1 adopted in December 2018.

(c) For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or polices and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information;	Not applicable. Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target.
(d) Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction;	See 1(a) above.
(e) Information on sources of data used in quantifying the reference point;	Not applicable. Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target.
(f) Information on the circumstances under which the Party may update the values of the reference indicators.	Not applicable. Singapore's 2nd NDC target, which aims to reduce emissions to an absolute emissions level, does not take reference from any baseline.

2. Time frames and/or periods for implementation:	
(a) Time frame and/or period for implementation, including start and end date, consistent with any further relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA);	1 January 2031 to 31 December 2035.
(b) Whether it is a single-year or multi-year target, as applicable.	Single-year target.
3. Scope and Coverage:	
(a) General description of the target;	Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target to reduce its GHG emissions to between 45 to 50 $MtCO_2e$ in 2035.
(b) Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with	Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target. Key sectors covered: Energy, Industrial Processes and Product Use, Agriculture, Land Use, Land-Use Change and Forestry (LULUCF) and Waste.

Intergovernmental Panel on Climate Change (IPCC) guidelines;	Greenhouse gases covered: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).
(c) How the Party has taken into consideration paragraphs 31 (c) and (d) of decision 1/CP.21;	All categories of anthropogenic emissions or removals are included and will continue to be included.
(d) Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including description of specific projects, measures and initiatives of Parties' adaptation actions and/or economic diversification plans.	Not applicable. Singapore will account for any mitigation co-benefits from adaptation actions and/or economic diversification as mitigation actions in accordance with the assumptions and methodological approaches indicated in Section 5 of this document.

4. Planning Processes:		
(a) Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate:	(i) Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner;	The Inter-Ministerial Committee on Climate Change (IMCCC), chaired by a Senior Minister and comprising Ministers from relevant Ministries, drives Singapore's whole-of-government efforts to develop and implement coherent and coordinated climate change mitigation and adaptation measures. This includes the preparation and implementation of Singapore's NDC. The National Climate Change Secretariat (NCCS) is a dedicated unit in the Prime Minister's Office (PMO) Strategy Group that serves as the secretariat to the IMCCC. Singapore's 2nd NDC was prepared taking into account Singapore's national circumstances, challenges and opportunities for mitigation. Studies and technology roadmaps, developed in collaboration and consultation with industry stakeholders, academic experts and technical consultants, served as additional input on the mitigation potential of key technologies. The Singapore Government also carried out stakeholder consultations, including with members of the public, to obtain feedback on Singapore's ambition and possible measures to reduce carbon emissions.

	(ii) Contextual matters, including, inter alia, as appropriate:	a. National circumstances, such as geography, climate, economy, sustainable development and poverty eradication;	Singapore's national circumstances include, among others, a small low-lying land area, high population density, physical constraints in deploying low-carbon energy, an export-oriented economy that is highly dependent on international trade, and climate vulnerabilities. Please refer to Section 6 for more details.
		b. Best practices and experience related to the preparation of the nationally determined contribution;	First, in Singapore's experience, it is important to put in place effective and pragmatic institutional arrangements to coordinate domestic climate efforts. In particular, the IMCCC's role in closely coordinating Singapore's climate change policies from a whole-of-government perspective enables us to optimise Singapore's climate efforts, including making trade-offs and harnessing synergies across sectors and mitigation measures. Second, as called for under the UAE Consensus at COP28, the preparation of Singapore's 2nd NDC was informed by both the outcomes of the first Global

			Stocktake (GST) (see Section 3(c) for more details), as well as Singapore's longer-term plans and needs, including our long-term low emissions development strategy (LT-LEDS). Even as Singapore pursues the medium-term targets set out in our 1st and 2nd NDCs, Singapore is working towards its long-term goal of achieving net-zero emissions by 2050. We continue to invest in, and foster international cooperation on, the development and deployment of potential key decarbonisation pathways, such as low-carbon hydrogen and carbon capture utilisation and storage (CCUS). We also regularly review our policy and regulatory levers, such as carbon tax and energy efficiency standards, to ensure they are aligned with our long-term ambition. Last but not least, Singapore prepares its NDC based on mitigation pathways that are practicable, consider the needs of stakeholders, and take into account our national circumstances as well as international developments. To this end,

			Singapore engages and consults a wide range of stakeholders, including industry, citizens, technical experts, academia, and civil society, on Singapore's climate plans and possible decarbonisation measures. The Singapore Government also encourages the co-creation and co-delivery of solutions, to amplify awareness and encourage a whole-of-nation effort to address climate change.
		c. Other contextual aspirations and priorities acknowledged when joining the Paris Agreement;	Singapore recognises the need for sustainable development in the economic, social and environmental dimensions, and is a strong supporter of the 2030 Agenda for Sustainable Development, and the Rio Conventions on Biodiversity, Climate Change, and Desertification.

(b) Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement;	Not applicable. Singapore is not part of any joint fulfilment agreement under Article 4, paragraph 2 of the Paris Agreement.

(c) How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stocktake, in accordance with Article 4, paragraph 9, of the Paris Agreement;	The preparation of Singapore's 2nd NDC was informed by the outcomes of the 1st GST, which took place at COP28 in 2023. This ensures that our domestic mitigation plans and policies are aligned with the 1st GST. Furthermore, Singapore recognises that global and regional solidarity are key to tackling climate change, and is pursuing efforts that support the decarbonisation of our region and beyond. Singapore is contributing to the 1st GST's call to triple global renewable energy capacity and double the global average annual rate of energy efficiency improvements by 2030. We are also supporting efforts to transition away from fossil fuels in energy systems and phase out inefficient fossil fuel subsidies. • **Singapore was an early mover in switching its energy system from fuel oil to natural gas, the cleanest form of fossil fuel for power generation.** Natural gas made up around 95% of our fuel generation mix in 2023, compared to around 18% in 2000. o We do not subsidise the use of fossil fuels and instead tax the use of fossil fuels (e.g., through petrol duties) to reflect their negative externalities. o To future-proof our energy system, the Energy Market Authority (EMA)'s latest emissions standards require new fossil fuel generation units to be at least 30% hydrogen-ready by volume, with the ability to be retrofitted to become 100% hydrogen-ready in future. This will enable Singapore to further reduce our power sector emissions when hydrogen becomes more commercially viable. • **Domestically, Singapore is pushing ahead with maximising solar deployment despite our dense urban environment and small land area.** Since 2020, we have more than tripled our solar power deployment from 0.43 gigawatt-peak (GWp) to

	around 1.35 GWp[3]. We are on track to achieve at least 2 GWp by 2030, which would meet around 3% of Singapore's total projected electricity needs then. • **Given Singapore's supply-side constraints for low-carbon energy, improving energy efficiency is also one of our key mitigation strategies**. According to the International Energy Agency (IEA)[4], in 2022, our energy intensity was almost half the global average, and in the best quartile globally. We continue to push for higher energy efficiency for our businesses, and households through incentives and regulations, such as the Resource Efficiency Grant for Emissions and Energy Conservation Act. • **We are also embarking on cross-border electricity trading with our neighbouring countries to import low-carbon electricity to Singapore, with much of the supply from newly commissioned renewable energy projects.** In 2024, Singapore raised our target for clean electricity imports from 4 GW to around 6 GW by 2035. This is expected to meet one-third of Singapore's electricity needs. To date, we have awarded Conditional Approvals to 5 projects from Australia, Cambodia, Indonesia, and Vietnam, and progressed another 5 projects from Indonesia to Conditional Licences. If realised, these projects will also form the building blocks of an inter-connected ASEAN Power Grid. These projects bring win-win outcomes by matching countries with demand for renewable energy with those who have significant renewable energy potential. Channelling investment into countries with renewable energy potential can facilitate domestic and regional decarbonisation, enhance energy resilience and grid stability for all parties involved, and support economic growth and job creation in source countries.

[3] As at end 2Q 2024.
[4] Source: Singapore – Countries & Regions – IEA.

	At COP29, Singapore signed the Green Energy Zones and Corridors Pledge and the Global Energy Storage and Grids Pledge, reaffirming Singapore's support for regional energy connectivity and increasing energy storage capacity. Singapore is also accelerating efforts towards the phase-down of unabated coal power. • **As a member of the Powering Past Coal Alliance, Singapore is committed to phasing out unabated coal in our electricity mix by 2040**[5]**.** We are also helping to accelerate the early phase-out of coal in our region. In 2023, the Monetary Authority of Singapore convened the Transition Credits Coalition to explore the use of high integrity transition credits to finance the early retirement of coal-fired power plants. Singapore continues to study the feasibility of zero- and low-emission technologies, including renewables, low-carbon hydrogen production, and abatement and removal technologies such carbon capture and storage (CCS), particularly in hard-to-abate sectors. • **Singapore is exploring CCS and its potential to decarbonise hard-to-abate sectors.** As part of our Sustainable Jurong Island plan, we have set a target of achieving approximately 2 million tonnes per annum (mtpa) of CO_2 abatement for the industry sector through CCS by 2030. Singapore recently appointed a lead consortium (S Hub, comprising Shell and ExxonMobil) to study the feasibility of developing an end-to-end CCS project from Singapore. We are also progressively exploring the viability of CCS for the waste and power sectors. • **We continue to invest in R&D to improve the technoeconomic viability of hydrogen and CCUS technologies through initiatives like the Low-Carbon Energy**

[5] Coal currently accounts for less than 1% of our fuel mix for electricity generation

	Research programme. We launched our National Hydrogen Strategy in 2022 to chart a pathway towards potential adoption of low-carbon hydrogen as an energy source and feedstock by 2050. The Campus for Research Excellence and Technological Enterprise under the National Research Foundation of Singapore recently launched a new Decarbonisation Programme to grow Singapore's capabilities in areas such as hydrogen utilisation, carbon conversion and utilisation to produce biofuel and low carbon speciality chemicals, and ammonia-ready fuel cells for power generation. The National University of Singapore also officially launched its Centre for Hydrogen Innovations (CHI) in July 2024, with the inauguration of an advanced research facility as CHI's flagship innovation hub, to help translate hydrogen technologies to real-world applications. CHI's research activities span green hydrogen production, hydrogen storage, hydrogen carrier systems, and hydrogen utilisation. In 2024, Singapore also backed the COP29 Hydrogen Declaration, reaffirming our commitment to working with other countries on low-carbon hydrogen. o **We have ongoing efforts to study and where feasible pilot other emerging low-carbon solutions, such as ammonia and advanced geothermal systems for power generation.** o Singapore has not made a decision on whether to deploy nuclear energy. Nevertheless, Singapore is building our capabilities in nuclear science and technology to better understand the implications and benefits of advanced nuclear energy technologies for Singapore. This includes leveraging the expertise of global leaders in this field. For instance, Singapore signed the 123-Agreement with the United States in July 2024 to deepen civil nuclear cooperation. EMA also signed memoranda of understanding (MOUs) with the Emirates Nuclear Energy Corporation from the United Arab Emirates, and the

	Ministry of Climate and Enterprise of Sweden, in October 2024 and November 2024 respectively. These MOUs aim to facilitate capability building in nuclear technology and safety. • Clean energy investments may involve high upfront costs and significant commercial, technological, and geopolitical risks, which could delay such investments. **To help mitigate such risks, we established the Future Energy Fund (FEF) in 2024, with an initial injection of $5 billion to provide catalytic funding** to improve the commercial viability of infrastructure investments that help to accelerate the energy transition. For instance, if Singapore decides to build its first-ever hydrogen terminal, the FEF may be used to mitigate the associated commercial risks. The FEF focuses on supporting capital expenditure, and will not be used to subsidise fuel costs and recurrent expenditures. Our land transport plans are aligned with the 1st GST's call to accelerate the reduction of emissions from road transport on a range of pathways, including through development of active mobility and public transport infrastructure and rapid deployment of zero-and low-emission vehicles. • Singapore continues to invest in making "Walk-Cycle-Ride" (WCR) — comprising active mobility, and public and shared transport modes – the preferred mode of travel. To encourage the use of public transport, we are expanding our rail network from about 270 km today to 360 km in the early 2030s, putting 8 in 10 households within a 10-minute walk from a train station. We are also accelerating the building of active mobility infrastructure to make cycling and walking more convenient and attractive. Our cycling path network will be extended from over 600 km today to around 1,300 km by 2030. Our aim is for all journeys to the nearest neighbourhood centre using

	WCR modes of transport to take no more than 20 minutes, and 9 in 10 peak period WCR journeys to be completed in less than 45 minutes, by 2040. • We remain committed to phasing out pure internal combustion engine vehicles by 2040 and enabling the adoption of cleaner energy vehicles such as electric vehicles. Since 2020, all new public buses purchased have been cleaner energy buses, including electric and diesel-hybrid buses. <u>Last but not least, Singapore is also doing our part to accelerate and substantially reduce non-carbon-dioxide emissions[6], including methane emissions.</u> • Singapore ratified the Kigali Amendment in 2022, and will phase down the consumption of hydrofluorocarbons (HFCs) through the regulation of HFC imports. To curb HFC emissions from the refrigeration and air-conditioning (RAC) sector, we ban appliances using refrigerants which have high Global Warming Potential, and mandate the recovery and proper treatment of recovered spent refrigerants to prevent their emission. We also require training and certification of technicians to curb emissions during RAC servicing works. • Singapore is not a major emitter of methane. Nevertheless, we have taken steps to reduce our methane emissions from landfills by incinerating our waste and wastewater sludge. At COP26, Singapore signed the Global Methane Pledge, signalling our support for collective efforts to reduce global methane emissions.

[6] Non-carbon-dioxide emissions from the agriculture, forestry and other land use sector are negligible in comparison with other economic sectors and the size of carbon stocks.

(d) Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:	(i) How the economic and social consequences of response measures have been considered in developing the nationally determined contribution;	Not applicable. As mentioned in Section 3(d) above, Singapore will account for any mitigation co-benefits from adaptation actions and/or economic diversification as mitigation actions in accordance with the assumptions and methodological approaches indicated in Section 5 of this document.
	(ii) Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and	Not applicable. Please refer to Section 3(d) above as well as to Singapore's first Adaptation Communications, which was submitted as a component of its 5th National Communication, Chapter 4 on "Vulnerability and Adaptation Measures". Singapore will account for any mitigation co-benefits from adaptation actions and/or economic diversification as mitigation actions in accordance with the assumptions and methodological approaches indicated in Section 5 of this document.

	economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture and fisheries.	

5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals:	
(a) Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA;	Singapore will account for its anthropogenic GHG emissions and removals using the *2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories*, *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (collectively, the "2006 IPCC Guidelines"), by way of the Sectoral approach.
(b) Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution;	See 5(a) above. Singapore will also apply specific assumptions and methodologies, where relevant, when accounting for progress of various policies and measures in its Biennial Transparency Report.

(c) If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate;	See 5(a) above.
(d) IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals;	Singapore's emissions for CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3 will be calculated using the 2006 IPCC Guidelines, via the Sectoral approach. The Tier 1 methodology will be used for most emissions estimates. Higher tier methodology will be used, where relevant and depending on availability of data. The aggregation of GHG emissions and removals will be reported using the 100-year time-horizon Global Warming Potential values from the *IPCC Fifth Assessment Report*[7].

[7] This methodological update was included as part of the first update to Singapore's first NDC in 2020. Previously, Singapore's first NDC applied the GWPs from the IPCC Second Assessment Report.

(e) Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable:	Singapore will account for reporting of GHG emissions and removals from the LULUCF sector in accordance with the *2006 IPCC Guidelines*, up to Tier 3 level where available and covering all prescribed land-use categories and all carbon pools. The *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* will also be incorporated. Singapore will continue to enhance and streamline its methodologies as well as incorporate new technology where relevant and applicable.	
	(i) Approach to addressing emissions and subsequent removals from natural disturbances on managed lands;	GHG emissions and removals from natural disturbances, if any, will be accounted for in accordance with the prescribed *2006 IPCC Guidelines*, coupled with field inventory measurements where applicable.
	(ii) Approach used to account for emissions and removals from harvested wood products;	Not applicable. There is no timber industry in Singapore. Hence, Singapore at present has no GHG emissions and removals from harvested wood products.

	(iii) Approach used to address the effects of age-class structure in forests;	Singapore will estimate GHG emissions and removals in the LULUCF sector with up to Tier 3 approaches where feasible, and apply very high-resolution satellite images, coupled with collection of country-specific data resulting from field inventory measurements undertaken at regular intervals and estimated by modelling approaches. The field measurements will take into consideration tree growth information across the range of tree species and diameter classes.
(f) Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:	(i) How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity-specific reference levels, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used;	To develop Singapore's 2nd NDC, extensive technical studies were undertaken, including an assessment of Singapore's economy-wide mitigation potential. These studies take into account Singapore's national circumstances and challenges (as outlined in Section 6 below). Studies and technology roadmaps developed in collaboration with industry stakeholders, academic experts and technical consultants, served as additional input on the potential of future technologies for long-term mitigation in Singapore. Stakeholder consultations were also carried out to obtain feedback on possible measures to reduce carbon emissions.

	(ii) For Parties with nationally determined contributions that contain non-greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components, as applicable;	Not applicable. The scope and coverage of Singapore's NDC, as indicated in Section 3(b) above, do not contain non-GHG components.
	(iii) For climate forcers included in nationally determined contributions not covered by IPCC guidelines, information on how the climate forcers are estimated;	Not applicable. The scope and coverage of Singapore's NDC, as indicated in Section 3(b) above, do not include climate forcers not covered by IPCC guidelines.
	(iv) Further technical information, as necessary;	Nil.

(g) The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable.	Singapore intends to use internationally transferred mitigation outcomes (ITMOs) under Article 6 of the Paris Agreement towards Singapore's 2nd NDC. We expect these ITMOs to make up the residual emissions reductions required to meet our target, after accounting for the abatement from all other policies and plans implemented successfully within the timeframe.
6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances:	
(a) How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances;	**Singapore's national circumstances make it particularly challenging for us to decarbonise.** We are a small, low-lying island state with a total land area of about 735.6 km^2. Our population density is over 8,000 people per km^2, one of the highest in the world. This land-scarce, highly urbanised environment makes it difficult to roll out solar power on a large scale. Wind, marine, hydroelectricity and conventional geothermal power are similarly unviable, due to the low wind speeds, narrow tidal range, and a lack of fast-flowing river systems and near-surface geothermal resources. Large conventional nuclear fission technologies are also unsuitable for deployment due to the sizeable emergency planning zones they require. That said, Singapore is closely monitoring the latest advances in nuclear technology. In short, Singapore is alternative energy-disadvantaged. **Our lack of natural resources and small domestic market mean that Singapore's economy is highly dependent on international trade.** In 2023, in nominal terms, Singapore's external merchandise trade amounted to S$1,206 billion, twice our GDP (S$508 billion). Given that we also depend on global supply chains for most of our food and energy, we are highly sensitive to disruptions and volatility wrought by geopolitical tensions and the escalating impact of climate change.

	Despite our scarcity of land and resources – or indeed because of it – Singapore has always prioritised sustainable development, and balancing economic growth with environmental stewardship. • **We made bold and early choices that enabled us to reduce emissions and protect the environment.** In the 2000s, we switched from fuel oil to natural gas – the cleanest form of fossil fuel – for power generation. In 2023, natural gas accounted for about 95% of our fuel mix, compared to 18% in 2000. We price energy at market cost, without any subsidy, and impose fuel duties and road taxes to price the negative externality of vehicle usage. Singapore was also the first country to impose a vehicle quota system to cap vehicle growth, and in 2018 became the only country to set a zero-growth rate for cars and motorcycles. • **As the urgency of tackling the climate crisis grew clear, we took even stronger action to reduce emissions.** In 2019, we became the first country in Southeast Asia to implement a carbon pricing scheme. Our carbon tax puts an economy-wide price on the negative externality of carbon whilst helping to support decarbonisation measures, thus incentivising the transition to a low-carbon economy. In 2024, we raised the carbon tax from S$5 per tCO_2e to S$25 per tCO_2e. It will be further raised to S$45 per tCO_2e in 2026, with a view to reach S$50 to S$80 per tCO_2e by 2030, making our carbon tax level one of the highest in Asia. Today, around 80% of our total emissions are covered by carbon tax and fuel excise duties on our transport fuels. 70% of our emissions is covered by the carbon tax and this coverage is one of the most comprehensive globally.

	In addition to the carbon tax, individual sectors have set out concrete and ambitious plans in a whole-of-nation push to decarbonise. For example: • **We have acted decisively to overcome our dearth of alternative energy and decarbonise our power sector.** One important measure we are pushing ahead with is the import of low-carbon electricity, which if successful can help us reduce emissions whilst simultaneously catalysing investment in renewable energy in the region. In 2024, we raised our ambition for imported electricity from 4 GW to 6 GW — around one-third of our energy supply — by 2035. Domestically, we are also maximising the deployment of solar energy despite the challenges of high urban density and lack of land. To overcome these constraints, we are exploring innovative deployment sites, such as reservoirs, solar canopies over open areas like walkways and carparks, and vertical solar installations on building facades. See Section 3(c) for more details of our power sector measures. **We continue to monitor, study and pilot nascent technologies that could help us achieve our long-term goal of net-zero emissions by 2050.** As part of our National Hydrogen Strategy, Singapore is embarking on a pathfinder project for ammonia power generation and marine bunkering. If successful, the project will position us as one of the first in the world to test and deploy a direct ammonia combustion power plant. The lead developer will be appointed in 2025. We are also in the process of a nation-wide, non-invasive geophysical study to assess our deep geothermal resource potential, although its technoeconomic feasibility is uncertain. **In the absence of conditions suitable for deploying conventional renewable energy technologies, Singapore continues to consider, and invest in, a range of alternative and innovative solutions for grid decarbonisation.**

	• Besides the power sector, industry accounts for a significant proportion of our national emissions. **One notable solution we are exploring to reduce industry emissions is CCS. Singapore, through a private-public partnership model, is actively exploring the viability of a cross-border CCS project.** As Singapore lacks suitable sites for large-scale CO_2 sequestration, the success of our CCS efforts will be highly dependent on bilateral cooperation. • **Demand-side measures to reduce energy and resultant emissions form the other key thrust of our decarbonisation strategy.** We adopt a combination of financial incentives, policies and regulations to encourage steady improvements in energy efficiency across our industry, buildings and household sectors. Our policies and plans are regularly reviewed and enhanced to ensure continued progress. For example, recognising the need to manage energy consumption from data centres, the Infocomm Media Development Authority published the Green Data Centre Roadmap in 2024. This Roadmap charts a sustainable pathway for the continued growth of data centres in Singapore by pushing boundaries on energy efficiency at the hardware and software levels. For the Buildings sector, we have progressively raised the mandatory environmental sustainability standards outlined in the Code for Environmental Sustainability of Buildings, whilst enhancing our Green Mark Scheme to drive industry best practices. In addition, the Mandatory Energy Improvement Regime, which will come into effect in 2025, will require the owners of existing energy-intensive buildings to conduct energy audits and implement energy efficiency measures. Singapore's efforts have borne fruit — according to the IEA[4], in 2022, our energy intensity was almost half the global average, and in the best quartile globally.

	Even as Singapore pursues domestic decarbonisation on all fronts, our small and open economy, coupled with our alternative energy-disadvantaged circumstances, mean that we cannot succeed without international partnerships. Many of our most ambitious measures, such as electricity imports and cross-border CCS, are contingent on international cooperation for success. To this end, Singapore participates actively in global efforts to advance climate action, and is a strong advocate for regional, bilateral and multilateral cooperation on decarbonisation. See Section 6(b) below for more details of our contribution to international efforts. Catalysing investment into low-carbon solutions beyond our borders is one way in which Singapore can deliver an outsized impact on global emissions reductions. Our national emissions otherwise account for approximately 0.1% of global emissions. **Although our contribution to global emissions is small, we are disproportionately affected by climate change as a low-lying island-state.** Singapore's climate vulnerabilities will require us to pursue comprehensive adaptation efforts to protect our coasts, low-lying areas and communities (for details of Singapore's adaptation vulnerabilities and strategies, see Singapore's first Adaptation Communications, which was submitted as a component of its 5th National Communication, Chapter 4 on "Vulnerability and Adaptation Measures"). These adaptation actions will impose significant fiscal costs on the Singapore Government and people of Singapore.
(b) Fairness considerations, including reflecting on equity;	Given Singapore's national circumstances, our domestic abatement potential is limited and our needle-moving decarbonisation pathways are contingent on international cooperation to succeed. Thus, in addition to pursuing the extent of domestic action we can in areas such as land transport and energy efficiency, Singapore seeks to leverage its strengths as an effective convenor and interlocutor, catalysing global decarbonisation through international efforts and fora. We are committed to working with partners to accelerate decarbonisation and green growth opportunities in Asia, where much of this progress will take place.

	Singapore has played an active role to support the multilateral framework of cooperation on climate change under the UNFCCC process, including co-facilitating Ministerial Consultations on Article 6 at COP26, COP27, and COP29. Outside of the UNFCCC process, we have also led initiatives to strengthen trust and confidence in carbon markets, to mobilise greater flows of private investment to unlock additional mitigation outcomes globally. This includes the establishment of the Climate Action Data Trust (CAD Trust), in partnership with the World Bank and the International Emissions Trading Association. CAD Trust syncs up data across carbon crediting registries, and publishes this data at no cost on its online platform as a public good that enhances transparency in markets. Singapore is also working with Gold Standard and Verra to develop an Article 6 Crediting Protocol, to help other Parties under the Paris Agreement more easily participate in Article 6 cooperative approaches. Singapore also collaborates actively with international partners, such as the UNFCCC, the UN Development Programme (UNDP), the UN Environment Programme (UNEP), ASEAN and city-networks such as the C40, on sharing of best practices and experiences on climate change and green growth issues. **Second, Singapore has been providing capacity-building support for fellow developing countries through the Singapore Cooperation Programme (SCP).** Since the SCP's inception in 1992, more than 150,000 officials from over 180 countries, territories, and intergovernmental organisations have participated in SCP courses. We work with more than 50 local and international partners to organise more than 250 programmes annually under the SCP. In conjunction with the 30th anniversary of the SCP in 2022, we launched the Sustainability Action Package (SAP), which aims to support the sustainability and climate change efforts of fellow developing countries. Under the SAP, we conducted more than 50 courses for more than 1,400 government officials on four key sustainability themes: (a) adaptation and resilience-building strategies; (b) green project management and financing; (c) low carbon development; and (d) carbon markets. We have also sponsored medium- to

	longer-term consultancy projects to enhance regional capabilities in sustainability. In May 2024, Singapore launched the "SIDS of Change" technical assistance package, which aims to better equip Small Island Developing States (SIDS) to achieve a more resilient and prosperous future and includes customised courses on blue carbon and digitalisation. Singapore also continues to work actively to foster effective international cooperation on climate action with international partners, such as the UNFCCC, UNDP, the UNEP, and ASEAN. **Last but not least, Singapore is voluntarily contributing to efforts to mobilise finance to support other developing countries.** At COP28, Singapore announced the Financing Asia's Transition Partnership (FAST-P), a blended finance initiative. At COP29, Singapore announced that it would pledge up to US$500 million as concession capital under FAST-P, to match dollar-for-dollar, concessional capital from partners including other governments, multilateral development financial institutions, and philanthropies. This combined pool of concessional capital will be used to crowd in commercial capital and other sources of finance to raise up to US$5 billion to support Asia's green and transition financing needs.
(c) How the Party has addressed Article 4, paragraph 3, of the Paris Agreement;	Singapore's 2nd NDC is a progression beyond our 1st NDC. It targets a further reduction in emissions from around 60 $MtCO_2e$ in 2030 to between 45 to 50 $MtCO_2e$ in 2035. Achieving this will be a challenge, given Singapore's resource scarcity and limited options for alternative energy. It will require more stringent regulations, pricing and market policies to incentivise and enable all sectors of the economy to decarbonise. It will also require us to invest even more in low-carbon technologies, such as hydrogen and CCS.
(d) How the Party has addressed Article 4, paragraph 4, of the Paris Agreement;	Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target, which reflects its effort as a developing country Party to address Article 4, paragraph 4, of the Paris Agreement.

(e) How the Party has addressed Article 4, paragraph 6, of the Paris Agreement.	Singapore's 2nd NDC is an economy-wide absolute GHG emissions reduction target.
7. How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2:	
(a) How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2;	Singapore's 2nd NDC demonstrates Singapore's commitment to decreasing its emissions from 2030 levels after peaking earlier. Taken in conjunction with our target to achieve net zero emissions by 2050 set out in the LT-LEDS, this downward emissions trajectory contributes towards achieving the long-term temperature goal set out in Article 2 of the Paris Agreement. Given our unique national circumstances and particular set of challenges, Singapore's 2nd NDC is ambitious, and aims to support the collective effort to reach global peaking of GHG emissions as soon as possible, as set out in Article 4, paragraph 1, of the Paris Agreement.
(b) How the nationally determined contribution contributes towards Article 2, paragraph 2(a), and Article 4, paragraph 1, of the Paris Agreement.	

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ANNEX

ACCOMPANYING INFORMATION ON SINGAPORE'S ADAPTATION EFFORTS

To ensure that current and future generations continue to thrive in a low-carbon and resource-constrained future, Singapore has taken decisive steps to strengthen its climate, resource, and economic resilience. Given the complexity and challenges in adaptation planning, Singapore has integrated long-term adaptation planning into national policies. This will result in measures that will entail significant costs for the Singapore Government and people but will support global climate action.

For comprehensive information on Singapore's adaptation efforts, please refer to Singapore's first Adaptation Communication, which was submitted as a component of its 5th National Communication, Chapter 4 on "Vulnerability and Adaptation Measures", pursuant to the Paris Agreement, and prepared taking into account Decision 9/CMA.1.

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