

REACH Public Consultation on Singapore's Climate Ambition

5 - 26 September 2022

Respondent Name: Ho Xiang Tian

1 Singapore has stated that we intend to achieve net zero emissions by or around mid-century. Reaching net zero emissions by 2050 is:

- (a) Just right
- (b) Too ambitious
- (c) Not sufficiently ambitious

Answer: (c) Not sufficiently ambitious

1.1 [If answered (b) or (c) above] What is a suitable year to reach net zero?

- (a) Not Sure
- (b) 2030-2039
- (c) 2040-2049
- (d) 2050-2059
- (e) 2060-2069
- (f) Beyond 2070

Answer: -

1.2 Please feel free to provide your thoughts on what makes a suitable net zero year.

2045, if Singapore would like to be seen as a global leader that is serious about playing its part in mitigating the climate emergency. Fellow developed countries Germany and Sweden have set 2045 as their target year to meet net zero (Net Zero Tracker by country).

Currently, there is only a 66% probability of the world keeping our global temperature rise to below 1.5 degrees Celsius in 2050 compared to pre-industrial levels, if the global carbon budget of 420 GtCO₂ is not exceeded (IPCC SR15). Moreover, this probability was published by the IPCC, which is known for making more conservative estimates in favour of the best case scenario for humanity. There is a chance of feedback loops exacerbating the impact of the excess greenhouse gases in the Earth's atmosphere, worsening the effects of the climate emergency.

Given our status as a more developed country with greater capacity to decarbonise, we would like Singapore to set an example for other countries and decarbonise as fast as possible, to increase the probability of us keeping our global temperature rise to below 1.5°C in 2050 compared to pre-industrial levels.

We note that if Singapore pledges to achieve net zero by 2050, it would be a "floor" rather than a "ceiling", so Singapore could still reach net zero before 2050

As global temperature rise is determined by cumulative emissions, every year that emissions reduction is delayed reduces the remaining time available to keep global temperature rise to 1.5 °C by two years (Leach et al., 2018). Hence, the path to net-zero should involve "front-loading", whereby immediate action is taken to reduce emissions in the early phase of decarbonization. A more nuanced climate ambition would therefore be to reach net zero by 2045, through front-loaded carbon emissions reduction.

2 Should we enhance Singapore's 2030 NDC which currently pledges to peak emissions at 65 MtCO₂e around 2030?

- (a) Yes
- (b) No
- (c) Neutral/ Maybe/ Not sure

Answer: Yes

3 What should our 2030 NDC ambition be and why? (Refer to Paras 3 - 4 of Consultation Document)

In line with the IPCC's recommendations, Singapore should update our 2030 NDC ambition to peak our carbon emissions as soon as possible before 2025, and halve our current carbon emissions from 2022 by 2030 (IPCC AR6 WGIII Press Release, 4 April 2022). This needs to be accompanied with a viable and robust carbon reduction roadmap that engages all stakeholders in Singapore, including companies of all sizes and industries, educational institutions and other entities. In doing so, this will also allow Singapore to have a higher chance at achieving its net-zero target at a moderate decline, as compared to a steep drop from 65 MtCO₂e in 2030 to 0 in 2050, or 2045.

In addition, having a more ambitious pledge early on in the journey to net zero could spur other countries to be more ambitious, as well as position Singapore as a global leader in the fight against climate change.

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4 What can the Government do to support Singapore's transition to a low carbon future?

The Government needs to roll out coherent and harmonised legislation and regulations to support both private and public sector in accelerating national climate policies and energy transitions, with the relevant support in terms of training, funding and other resources to develop, execute and regularly review organisational and industry-wide carbon reduction roadmaps.

Advancing GreenGov.SG

In this phase of the Public Sector Taking the Lead in Environmental Sustainability (PSTLES) initiative spanning from FY2021 to FY2030, we are heartened to note that the public sector is working to peak carbon emissions around 2025, and also designating "Towards a Net Zero Future" as the theme of the Climate Action Week in September 2022. This puts decarbonisation at the forefront of the public sector's sustainability strategy. Referring to the GreenGov.SG sustainability targets, we applaud efforts to improve the Energy Utilisation Index, Water Efficiency Index and Waste Disposal Index of existing and new premises. We hope that the Government can share actionable steps that are being taken to achieve these targets. Furthermore, changes made to organisational activities other than green procurement can be described. By sharing these best practices with industries, the Government can simultaneously nudge and support companies towards viable decarbonisation strategies and initiatives. Singapore can also consider net zero legislation to make it legally binding for the state to achieve net zero by 2050 or earlier. Climate litigation can be utilised to enforce climate commitments. Such cases have occurred in neighbouring countries like Cambodia, Thailand and Indonesia.

Regulating Industries

We would also like to see the Government mandate that all companies in various sectors with at least \$10million in annual turnover work towards halving their carbon emissions by 2030 and/or achieving a net zero carbon target by 2045, with no exemptions given for any industry or company. The current lack of sectoral targets may not be the best way to manage emissions. As mentioned in the recommendations we submitted for Budget 2022, the Government should specify sectoral targets for carbon emissions. Large emitters covered by the carbon tax could then be asked to submit plans on when and how they intend to peak their emissions, on top of the existing requirements of the Emissions Report and Monitoring Plan. These reports should be publicly released on the Government's dedicated website to ensure accountability. Sectors that fail to meet the targets may be penalised.

Supporting Industries

We would like to see the Government fully funding training, strategization and other consulting services regarding carbon decarbonisation for all trade associations and chambers (TACs). The development of clear and actionable decarbonisation roadmaps for industries and their translation into actionable roadmaps for individual companies is crucial for Singapore to meet our climate ambition. These roadmaps can be further optimised if the Government can assist TACs to connect with networks that promote carbon neutrality -- like the Carbon Neutral Cities Alliance (CNCA), C40 Cities and Local Governments for Sustainability -- ICLEI. Through strengthened international networks of organisations working towards carbon neutrality, best practices can be shared and opportunities for research, development and other collaborations for carbon neutrality can be explored.

Zooming In: Petrochemicals Sector (Transforming Jurong Island)

Given that the petrochemical industry is one of the largest contributors to Singapore's carbon emissions, we appreciate that the Sustainable Jurong Island Roadmap published by EDB in November 2021 has explored ways to ameliorate its impacts. This involves increasing the output of 'sustainable' products, becoming a global leader in the energy efficiency of our fossil fuel refineries and crackers, and increasing our absolute tonnage of carbon capture.

However, we would like to see targets to reduce Singapore's absolute fossil fuel and petrochemical outputs as there is no target for gross production of carbon emissions, making it hard to know if this is enough to put the petrochemicals industry on track to hit net zero before 2050. Furthermore, the roadmap report missed an important opportunity to acknowledge Singapore's role as a global petrochemical hub, and our corresponding responsibility to help cut global carbon emissions in the sector even if they are beyond our national carbon accounting boundaries. After all, the impacts of excess greenhouse gases in the atmosphere is trans boundary and will eventually impact all countries.

Zooming In: Transport Sector

Towards the decarbonisation of Singapore's transport sector, we would like to see the Government bring forward our national goal to transition all new vehicles to cleaner energy vehicles (EVs, hybrid or hydrogen fuel cell cars) by 2025 instead of 2030. Singapore can be more ambitious in phasing out Internal Combustion Engine (ICE) vehicles to reduce land transport emissions by 2050. A ban on ICE vehicle sales could occur before 2030 as it is not unrealistic to expect that non-ICE vehicles can reach a price parity with ICE vehicles by the mid-2020s. Battery electric vehicles could attain price parity with ICE vehicles in numerous European countries by 2025 even before factoring subsidies for EVs. This is attributed to two key factors, namely the decline in battery prices, and the shift towards dedicated battery electric vehicle manufacturing processes that allow producers to reap economies of scale. This must be coupled with faster introduction of EV charging points, such that there is an adequate distribution of charging points when ICE sales cease. While phasing out light-duty ICE vehicles is currently feasible, we acknowledge more considerations are involved for phasing out heavy-duty ICE vehicles. There are challenges in electrifying heavy duty vehicles, and as such it is unclear whether they will be more energy-efficient than their ICE counterparts. The government should look into whether phasing out heavy duty ICE vehicles will be feasible in Singapore by 2030. Lastly and most importantly, the Government should continue to roll out campaigns and infrastructure that can influence people to transition from private transport to public transport as the default. The current plans to build more MRT lines and make public transport more accessible to all is an important step in shifting people away from private transport. Higher COE prices and making the public transport experience more comfortable and attractive for all can help counter the relatively longer time needed to be spent on public transport journeys. To make public transport journeys more pleasant, more greenery, creative artwork and literature, fans and other amenities can be added at bus stops and train stations.

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4 What can the Government do to support Singapore's transition to a low carbon future?

Zooming In: Guarding Against Greenwashing

Improved corporate regulations, continual updates to the green and sustainable finance taxonomy, more stringent evaluation of ESG ratings and the rolling out of complementary programmes by the Government to raise awareness about corporate greenwashing is needed. Such greenwashing initiatives may appear to help reduce Singapore's emissions, but may actually be undertaken to improve corporate reputation more than to make an actual positive environmental impact. Grab's trial & SIA's initiative to introduce an option to purchase carbon offsets can be seen as examples of greenwashing. This is because the respective companies have yet to show that these consumer-driven carbon offset initiatives are accompanied by viable corporate business plans to transition towards more carbon-lite business models – which should not be significantly dependent on carbon offsets to truly minimise environmental degradation.

Sharing research on alternative economic models. Participants would also appreciate it if the government could publicly share their research on the viability of alternative economic models that de-prioritise limitless economic growth, like that of New Zealand and doughnut economics, in Singapore's context. These alternative economic models may enable Singapore to be a regional and/or global leader in building a more holistically sustainable economy.

Advancing National Renewable Energy Adoption:

To advance the decarbonisation of our national energy grid, the Government can set national renewable energy demand targets. Currently, Singapore's only renewable energy goal is to achieve a solar energy capacity of 2 GWp. However, solar energy capacity does not equate to actual usage of solar energy in our energy mix. Additionally, the Government can step up on exploring and piloting alternative renewable energy supply chain systems, such as from ASEAN's shared power grid, beyond funding research into this area. If the Government has already been working on this, we would like to see the relevant information be made more accessible to the public.

The Singapore Green Plan 2030 has identified green finance as an area of growth under sustainable development. With this, the Tuas Nexus Integrated Waste Management Facility was the first infrastructure project by a statutory board financed through green bonds.

Renewable energy and energy efficiency projects are still perceived as high-risk investments. This would mean that most local commercial banks are reluctant to provide finance for such projects. To lead by example in terms of creating demand, the government will need to step up and increase its investments in renewable energy supply to show commitment in transitioning into alternative energy sources.

Creating an enabling investment environment will be essential for attracting the required public and private investments for scaling up climate action. This includes levelling the playing field for renewable energy through eliminating subsidies for fossil fuels, carbon taxes, and investing the revenues into clean, affordable and renewable energy generation.

Policy recommendations, as suggested by the United Nations of the The Economic and Social Commission for Asia and the Pacific (UNESCAP, 2020) can even take form in:

- Establishing processes for the phasing out coal and halting any new projects using coal.
- Encouraging household renewable energy generation through enabling the ease of connection and by providing tax incentives, rebates and feed-in tariffs.
- Having national climate change funds can also blend international, domestic and private capital for addressing climate purposes, including for energy.

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5 What can businesses and industries do to support Singapore's transition to a low carbon future?

Whilst the Government prepares the sharing of best practices, funding and resources, businesses and industries need to actively educate themselves about the significance of Singapore's transition to a low carbon future, both to their business and the Earth we collectively share. Currently, based on feedback from our personal networks who are in the corporate sustainability space, most businesses tend to take a passive approach towards environmental initiatives and generally do not see the value of prioritising the environmental, social and governance sustainability of our business if they do not have a strong correlation with cost savings or economic profits.

Businesses and industries need to more actively seek to understand the substantial business risks of climate change to their supply chains and how they can ameliorate them before it is too late. Corporates can also sign up for the Science-Based Targets Initiative.

This would include committing to achieving net zero by 2050 at least and aligning with IPCC's recommendation to limit global warming to 1.5 degrees..

Some actions that they can take include signing up for Enterprise Singapore's Enterprise Sustainability Programme workshops, approaching their respective trade associations, councils and business chambers for support in terms of capacity-building for sustainability, recruiting new corporate sustainability talents, training existing staff for sustainability job scopes and/or investing in consulting services -- to raise their organisation's level of climate preparedness and ability to develop more holistically sustainable business models. Companies should also look across the value chain for decarbonization opportunities. This includes engaging with upstream suppliers to reduce their carbon footprint. After all, businesses cannot hope to survive in the medium to long run if their business models fail to adapt to the climate emergency and its impacts.

Importantly, the targets set needs to be science-based and any net-zero claims should be independently verified to prevent greenwashing claims, in order to accurately represent their progress and commitments.

Businesses who do not align themselves to Singapore's commitment and actively discourage any climate policy being formed due to conflict with business interests will need to be regulated. The petrochemicals and fossil fuels industry which has a track record of lobbying for looser regulations or voluntary agreements should be watched in particular, and there should be more transparency on their lobbying.

More avenues to stop corporate interests from delaying action for public goods should be explored.

6 What can individuals and communities do to support Singapore's transition to a low carbon future?

Individuals and communities can support the Government, corporations and industries in keeping themselves accountable for their decarbonisation targets, by regularly accessing, evaluating and providing constructive decarbonisation recommendations regarding sectoral and individual company data for carbon emissions. Individuals and communities should continue to build their relevant expertise in decarbonisation to provide better inputs that are evidence-based and cognizant of different stakeholders' (governmental entities / industries / companies) unique interests, prioritises and circumstances. Individuals and communities can be more efficient with capability building by harnessing the power of collectivity, such as through sharing of learning resources. We need all hands on deck for Singapore to effectively and efficiently progress towards a net zero carbon nation by 2050.

7 While there may be trade-offs or inconveniences, I am willing to contribute / play my part in helping Singapore realise its net zero ambition.

- (a) Strongly Agree
- (b) Neutral
- (c) Agree
- (d) Strongly Disagree
- (e) Disagree

Answer: Strongly Agree

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8 Do you have any other thoughts on Singapore's climate ambition that you wish to share?

We thank the Government for organising this public consultation and for raising Singapore's climate ambition. In the process of ensuring that Singapore's carbon emissions progress towards net zero, we should ensure that Singapore is generating lower absolute carbon emissions rather than relying on outsourcing our carbon emission reduction efforts to other countries through carbon offsetting projects.

In the context of carbon emissions from our energy consumption, Singapore should work towards reducing our absolute energy consumption rather than rely on importing a higher proportion of renewable energy from overseas to reduce our carbon emissions in the energy sector. Imported electricity should be held to Singapore standards and regulations, with environmental costs internalised. If Singaporean entities were to build, own, and operate electrical plants in other countries, the whole process should be held to Singapore standards and regulations, and any environmental costs should be internalised. Projects that Singapore would import electricity from, should also be subject to the same scrutiny.

Regulation of funding of environmentally destructive activities overseas

Singapore should ensure that proper Environmental Impact Assessments are done to avoid contributing to negative environmental impacts in other countries, and to consider smaller scale and lower impact projects like micro- or smaller hydropower plants to import electricity from instead. Funding of projects linked to adverse environmental impacts should be regulated, instead of being left to the private sector to self-regulate. While it would be ideal if the private sector could self-regulate, they have not shown to be very proactive in restricting funding to environmentally destructive projects. For example, banks globally have started pledging to stop funding coal since 2013, but Singaporean banks only jumped on the bandwagon in 2019. Moreover, a Singapore-based company funded a new coal-fired power plant in Laos in 2020. Businesses should take the lead to stop these activities – not wait till the impacts of environmental destruction affect their businesses. If businesses do not take the lead, the government should step in to regulate. The government can lead by example in making more sustainable investments and stop their investment in environmentally destructive industries and projects. To ameliorate Singapore's negative environmental impact on other countries, participants felt that the government should lead by example for corporations and review how it makes its investment decisions – particularly whether the SOP involves accounting for ESG risks.

This would involve relooking at the government's and/or Singapore-based corporations' past decisions to (1) support deforestation to make way for palm oil plantations in Malaysia and Indonesia, (2) fund a coal power plant in Laos and potentially Bangladesh, the latter of which was stopped by the Bangladeshi government due to backlash from environmentalists and funding issues, and (3) allow our universities to continue investing in fossil fuel projects and thereby give fossil fuel projects the social licence to operate.

International Bunkers

According to Singapore's Fourth Biennial Update Report, in 2018, Singapore's aviation and marine international bunkers contributed to 15,524.46 Gg CO₂-eq and 156,418.03 Gg CO₂-eq of carbon emissions respectively, which amounts to slightly more than three times our national emissions. We acknowledge that Singapore is influencing the IMO and ICAO to reduce emissions from shipping and aviation, but it still accounts for a significant amount of carbon emitted compared to our national emissions.

Food consumption

According to a 2019 study of the Environmental Impact of Key Food Items in Singapore, there are GHG emissions of 954 kg CO₂-eq per capita for food consumed in Singapore which translates to 5.4 million tonnes of CO₂-eq. This is about 10% of Singapore's national emissions, but most of it is imported and not counted under our national emissions. Meat, eggs, and seafood account for 72% of the GHG emissions from food, which means that reducing non-plant based food consumption can lead to an outsized decrease in GHG emissions from food. Singapore can consider ways to shift diets away from non-plant based foods. Roughly 35% of food available in Singapore is thrown away every year, based on SFA food import and export statistics, and NEA food waste statistics. As the breakdown of food waste in terms of types of food is unknown, more research should be done to quantify how much of each type of food is thrown away every year. We acknowledge that the government has recently responded to our queries on the amount of food waste coming from households by saying that ¾ of food waste comes from the domestic sector, but further breakdowns on the amount of food waste generated by households and various trade premises should be published so more targeted approaches to reducing food waste in those areas can be done.