

Dear NCCS,

We are writing from PublicAction, an initiative by LepakinSG (informal environmental group) that aims to raise awareness and inculcate a culture of active citizenry for environmental policies in Singapore. We recently organised an event that discussed Singapore's Biennial Update Report and this response consolidates both views from 34 anonymous participants of the event (whose discussions were related to many of the questions posed in the Public Consultation document) and that of LepakinSG.

We thank you for opening up this consultation period and we hope that feedback on the ground will be taken into account! We also look forward to your kind response to the questions that our participants have posed, and your thoughts on any feedback or suggestion.

*Italics* = Questions posed by the NCCS Public Consultation on Developing Singapore's Long-Term Low Emissions Strategy

### **A) Improving Energy Efficiency across all Sectors**

*What are the main barriers that are stopping households from adopting more energy saving practices?*

#### Feedback

1. Participants felt that Singapore's energy consumption per capita is too high at [17th in the world](#) as of 2019. They also feel that there are clear discrepancies between individual lifestyles and per capita energy consumption. For instance, [43.3% of electricity consumed in Singapore is attributed to industrial-related usage, as compared to 14.7% that is attributed to household usage](#). Moreover, [88.9% of natural gas consumed in Singapore is attributed to industrial-related usage as compared to 4.3% that is attributed to households](#). This has led participants to feel that individual actions like using less electricity and purchasing energy efficient appliances were negligible in terms of reducing energy usage per capita.

*How can households and businesses in Singapore be encouraged to purchase and use more energy efficient appliances?*

#### Suggestions

1. Participants suggested that Singapore declares climate defence as a 6th pillar of total defence.
2. Participants suggested that the government facilitate more discussions with the public regarding environmental issues, in collaboration with Climate Conversations.
3. With regards to air conditioning, one participant said incentives can be put in place such as putting higher usage prices at certain times of the day, or cutting off the air conditioning. For example, they suggested implementing legislation to limit the use of air conditioning.

*How might businesses be further encouraged to adopt EE practices?*

#### Suggestions

1. Participants would like to suggest that the government send utility bills to individual corporates, with data regarding whether the corporate is above or below the average of corporations with similar profiles.
  - a. As shown from household utility bills, more effective communication of these data can drive significant behavioural change.

#### Questions

1. Participants brought up the Poseidon Foundation, a company that uses AI to calculate the carbon footprint of a product and purchases 'carbon credits' to offset the carbon footprint. How feasible is it to utilize similar technology to help better monitor and reduce energy usage in Singapore on a national scale?

*Please share any other feedback you might have on improving EE across all sectors in Singapore.*

#### Feedback

1. According to Climate Action Tracker, [Singapore started implementing a carbon tax in 2019, but its main focus for climate mitigation is on energy efficiency programmes.](#) Participants strongly feel that there is a need for SG to implement taxes, policies and targets to reduce absolute carbon emissions from the get-go, rather than simply focussing on energy efficiency programmes.

### **B) Encouraging Responsible Climate Action through Carbon Pricing**

*Would you be willing to pay more for products or services from a business that is taking responsible climate action by reducing emissions and/or purchasing carbon credits to offset its carbon emissions?*

#### Feedback

1. Participants were more than willing to encourage businesses to take more responsible climate action, and they thought it was important that the carbon tax would facilitate this process.
2. Participants thought it was good that all large emitters would be subject to the carbon tax, and appreciated that there are no exceptions to the tax. However, they were of the view that a carbon tax of \$5 was too low, even if it will be doubled or tripled to \$10 or \$15 after 2023. This is because it had been announced that the initial carbon tax would be between \$10-\$20, and the global average is about \$30USD per tonne. [According to the World Bank, the recommended carbon tax should be USD \\$40-80/tonne in order to drive emissions down.](#) Though the carbon tax may hurt businesses and individuals in the short term, the investment in a more sustainable future is necessary.
3. Apart from the carbon tax, participants mentioned that they purchase carbon offsets and commended initiatives that enabled consumers to buy carbon offsets for carbon-intensive activities such as aviation. They encouraged more businesses to take on such initiatives.
4. Participants also concluded that the reality of air travel's preponderance is not going to change very much, but as consumers, we should still try our best to offset emissions.
5. Participants mentioned that some airlines do offer the option to offset carbon emissions, but more should be done to encourage other airlines to adopt similar options.
6. Participants would like to commend Singapore's regulation in the aviation industry, which state that any further increase in carbon emissions for the industry after 2019 levels would need to be offset
  - a. The costs of carbon offset will trickle down to consumers, which will encourage consumers to fly less and emit less carbon emissions
  - b. Stringency and regulations of the guidelines could be made clearer and more transparent to further the efforts made on this front

#### Suggestions

1. Participants suggested taxing all imports based on carbon miles.
2. Participants suggested that the carbon tax should cover 100% of Singapore's emissions, not just the 80% that is covered in the current scope.

3. Participants suggested levying a carbon tax on the marine and aviation industries, both of which contribute heavily to carbon emissions but are not accounted for under our national emissions.
4. Participants suggested taxing entities instead of facilities, since a polluting corporation could circumvent the tax by simply constructing two facilities that emit less than 25,000 tCO<sub>2</sub>e.
5. Participants suggested that the government could commission a report that details the impacts of the carbon tax on total emissions when the data is available.
6. One participant suggested printing total carbon emissions for the flight on boarding passes.
7. Participants suggested that Singapore should take responsibility of at least half of the emissions in international aviation bunkers.
8. Participants agreed that NUS ELSA (Environmental Law Students' Association)'s commentary with 14 specific recommendations for the carbon tax should be seriously considered to improve the carbon tax. Their specific recommendations are quoted here:

#### Recommendation 1 – Carbon price escalator

ELSA proposes that the carbon price should be gradually tapered upwards (by increasing the carbon price by SGD 5/tonne annually) to at least USD 50/tonne by 2030.

#### Recommendation 2 – Entity as the basic unit of account, not facility

ELSA proposes that the basic unit of account should be the business entity that owns the facilities concerned, and that the carbon thresholds for taxation be reckoned on the entity level.

#### Recommendation 3 – A simpler taxation scheme

ELSA proposes that carbon price should be administered through a simple taxation scheme, where the carbon price is charged based on verified emission values, should be used, to reduce the costs of transaction and administration.

#### Recommendation 4 – Reliefs and remissions to be publicly justified and granted by the Agency

ELSA proposes that Section 23 reliefs and remissions should be justified with proper reasons, and that these reasons be made public, on the NEA website. Further, the grant of such reliefs and remissions should only be granted by the Agency (NEA).

#### Recommendation 5 – Race to the top 11

ELSA proposes that the amount of GHG emitted by each entity, as well as the carbon intensity of the entity should be posted on the EMA website to inform consumers, and to facilitate consumer choice. ELSA proposes that the GHG emissions of all other registered facilities and taxed entities to be made publicly accessible on the NEA website.

#### Recommendation 6 – Governance Advisory Panel

ELSA proposes that the adoption, amendment, and repeal of all definitions in the Main Act, regulations, guidelines, and codes should be made in consultation with a standing Governance Advisory Panel (GAP) made of leading experts of relevant fields to advise the Minister on the latest developments and the good governance of the CPB system. Records of the proceedings of the GAP should also be made public through the NEA website.

**Recommendation 7 – Free access to relevant Codes of Practice and Singapore Standards**  
ELSA recommends that all adopted COPs, including SSs, should be made freely available on NEA's website.

**Recommendation 8 – Safeguards to protect I3P independence and professionalism**

ELSA recommends that formal professional standards for independent third party verifiers should be established. Further, a regulatory body for the profession should also be considered. Finally, a rotation scheme should be established and enforced to prevent capture.

**Recommendation 9 — A Carbon Pricing Appeals Board with professional experts from relevant fields**

There should be a standing Carbon Pricing Appeals Board, formed of professional experts from relevant fields. All appeals would be heard by this Board, which would be appointed by, but functionally independent of the Minister, and bring professional expertise to every appeal.

**Recommendation 10 — A Public Register for Appeal Board decisions**

The Ministry of Environment and Water Resources (MEWR) and the National Environment Agency (NEA) should create a public register hosted on either or both their respective websites to provide information on appeals filed and Appeal Board decisions, as this will develop the case law relating to carbon pricing.

**Recommendation 11 — No statutory restriction of appeals to the High Court**

The High Court should determine whether it should accept any appeal from the Appeals Panel by promulgating an Order in the Rules of Court. There should be no statutory restriction in the CPB itself.

**Recommendation 12 — High Court and Court of Appeal hearings to be public by default**  
Hearings in the High Court and Court of Appeal should be heard in public, especially where they concern questions of law.

**Recommendation 13 — A whole-of-Government Footprint Fund to shrink our CO2 footprint**  
ELSA proposes that the revenue from carbon tax should form a special Footprint Fund, and be combined with other existing funds, such as National Environment Agency's (NEA) Energy Efficiency Fund and the Economic Development Board's (EDB) Productivity Grant, to provide funding for schemes tackling carbon emissions in a direct or indirect manner.

**Recommendation 14 — Singapore as an identifiable green hub in the region**  
Singapore, as part of its Paris contributions, should engage in capacity building and knowledge transfer of its domestically developed technologies regionally and globally through its research centres.

## **C) Reducing Emissions from Power Generation**

*What are other alternative energy sources or technologies that Singapore can consider?*

### Suggestions

1. Participants suggested implementing a virtual power plant system, which would also leverage energy from prosumers in securing Singapore's overall energy security. The government could build out these resources itself as well as support academia and businesses in this area via research funding, business incentives, etc. For examples, kindly refer to:
  - Info on virtual power plants: <https://www.next-kraftwerke.com/vpp/virtual-power-plant> and <https://explained.statkraft.com/articles/2018/virtual-power-plant-europes-biggest-power-plant-is-100-renewable/>
  - A virtual power plant would be best complemented by robust energy storage systems, for example: <https://www.statkraft.com/media/news/2019/statkraft-and-redt-announce-partnership/>
2. Participants also wondered if Singapore could be part of an ASEAN power grid and tap on renewable energy sources in other countries by financing them. Given that a) ASEAN Energy Union connects different renewable energy source producers to

countries, b) [Malaysia and Thailand are already importing hydropower from Laos](#) since their energy deal in 2017 & c) the [EU has also set electricity interconnection targets](#), could Singapore leverage on these developments and develop a plan to incorporate similar renewable energy sources into our national energy mix?

## **D) Deploying Emerging Low-Carbon Technologies**

*Household - What would encourage you to purchase an EV?*

### Suggestions

1. Participants suggested implementing a more substantial electric vehicle subsidy to encourage more Singaporeans to switch to electric vehicles and promoting charging infrastructure deployment e.g. by mandating that electric vehicle charging stations exist at all petrol kiosks to power quick-charge electric vehicles.

## **E) Encouraging Collective Climate Action**

*Are you prepared to bear some additional costs/inconvenience to contribute to a low carbon Singapore? For example, higher utility bills from switching to greener fuels or methods of generation, paying more for waste disposal, paying more for products that have been produced in a carbon neutral way etc.?*

### Feedback

1. Participants are prepared to bear some additional costs/inconvenience to contribute to a low carbon Singapore. They believe that NCCS should continue to collect such data using more accessible platforms such as online polls, so that a larger sample size can be collected.
2. Participants also expressed that they are willing to go further than bearing additional costs/inconvenience, by divesting from projects that finance climate change (whether in relation to their personal investment decisions or otherwise).
3. Participants also look forward to seeing the government subsidize low carbon practices and make them more accessible and convenient whilst making carbon-intensive practices less accessible and convenient. More importantly, participants look forward to seeing the government cease funding carbon-intensive sectors, in particular the aviation, bunkers and the petrochemical industry.

## **F) Tapping on Green Growth Opportunities**

*How can Singapore be a global leader in green growth?*

### Feedback

1. Participants agreed that a whole of government approach would be necessary in order for Singapore to be a global leader in green growth.
2. Participants expressed that it was clear that a whole-of-government approach is required to reduce carbon emissions to take the lead in green growth, which the government has many opportunities to work on. While NEA, MEWR and NCCS are advocating for people to reduce their carbon emissions through using less electricity and taking public transport, MTI, EDB and JTC are actively adding to emissions. Exxon Mobil's recent multi billion dollar expansion will produce 58 000 barrels of fuel per day, which translates into at least 30 000 more tonnes of carbon when combusted. This undermines the efforts of the other government agencies to combat climate breakdown.
3. Participants voiced that they were not supportive of ExxonMobil's multibillion-dollar expansion project, as it inherently undermines Singapore's pursuit of green growth.

4. Participants pointed out that there are conflicting messages from government agencies that support green growth while expressing unwavering support for the petrochemical industry.
5. Participants expressed that it is important for the government to highlight and promote a greener economy, with a focus on conscious and reduced consumption.
  - a. This can be done in a way that maintains Singapore's economy and standard of living – a greener economy can involve encouraging consumers to purchase goods that may have a higher price, though they last longer and/or provide a more enjoyable experience for the user.

#### Specific Recommendations

1. Participants suggested that all Ministries and government agencies be aligned to shifting Singapore towards a low-carbon economy, and actively avoid any activities that will increase carbon emitted, in Singapore or elsewhere.
2. Participants would like Singapore to reinvest in the industries of the future, including renewable energy technologies, plant-based foods and more.
3. Participants suggested that the government sponsor a working group to find out more about:
  - a. A forecast of what will happen if Singapore's economic directions remains status quo, and/or what will happen to citizens in other countries who may be more negatively impacted by the climate crisis
4. Participants were very concerned about how they can reduce their average carbon footprint when a bulk of it comes from operations on Jurong Island (especially the petrochemical industry). Participants suggested scaling back Jurong Island in accordance with the guidelines of the IPCC. Though Singapore's oil industry contributes to 15% of our GDP and provides employment, we need to transition to cleaner fuel now, so as to pave the way towards a more sustainable energy supply and economy.

#### Questions

The concept of green growth seems to be based primarily on maintaining/increasing GDP growth as an outcome, with green outcomes being ancillary.

1. Participants would also like to enquire about the mechanics which the government uses to determine and weigh the trade-offs between pursuing economic growth and reducing carbon emissions, given the global climate crisis and the tight deadline to reduce carbon emissions before irreversible damage.
2. We would like to enquire if GDP growth, including green growth, should be the most important national goal for Singaporeans. Participants would like to enquire how much GDP growth we would need in our future, given that our future is very uncertain in the face of the climate crisis.