

Conversations on Sustainable Singapore

Energy and Climate Change



Conversations on Sustainable Singapore: Energy and Climate Change is co-organised by:

Nature Society (Singapore), <http://nss.org.sg>

SMU verts, <http://www.facebook.com/SMUverts>

Green Future Solutions, <http://www.greenfuture.sg>

on 26 Apr 2014 at the Singapore Management University.

We would like to thank everyone who helped us in this conversation, especially:

Facilitators – Amy Choong, Michelle Kung, Melissa Low, Nor Lastrina Hamid, and Cheng Zhi Wei

Scribes – Vivien Chia, Tan Hang Chong, Ezra Ho, Hannah Leong, and Lynda Hong

Moderator – NMP Faizah Jamal

Speakers – Allan Loi, Energy Studies Institute, and Darrell Zhang, Intraix Pte Ltd

Published in May 2014. This publication is free for download. Feel free to share this.

CONTENTS

1	Introduction	3
	1.1 Background	3
	1.2 Objectives and Format	3
	1.3 Report Submission	4
2	Thoughts and Concerns	6
	2.1 Climate Change	6
	2.2 Energy Supply	6
	2.3 Industry	7
	2.4 Transport	9
	2.5 Buildings	10
	2.6 Individuals and Education	11
3	Suggestions	14
	3.1 Industry and Organisations	14
	3.2 Transport	15
	3.3 Buildings	16
	3.4 Individuals and Education	17
4	Conclusion	21
5	Participant List	22



1 INTRODUCTION

1.1 Background

The first “Our SG Conversation for the Green Community” was held in Jan 2013, and was initiated by Faizah Jamal, Nominated Member of Parliament (Environment and Heritage) People and Civic Sector, and Eugene Tay, Director, Green Future Solutions. The diverse views of the green community, which included environmental NGOs and groups; individual environment, animal and wildlife activists; and environmental businesses, associations and research academics, added an important voice to the overall national “Our SG Conversation”.

After the conversation, there was feedback that the conversation format was useful in seeking and discussing views and issues, and that there should be more conversations focusing on specific environmental issues and to open them to the public. Subsequently, the second “Our Singapore Conversation on Green Spaces” was organised by Nature Society (Singapore) and Young NTUC in Nov 2013 to focus on green spaces and their importance and conservation.

We hope to have more such conversations on specific environmental topics for the public, as a follow-up to the first and second green conversations. So when we heard news that the review of the Sustainable Singapore Blueprint (published in 2009) is being conducted this year by the Ministry of Environment and Water Resources (MEWR), we thought this was a good opportunity to carry on with the conversations and have the inputs submitted for the review.

1.2 Objectives and Format

To complement other dialogues organised by MEWR, we organised three Conversations on Sustainable Singapore with the objectives to understand people’s thoughts and stories, and to generate constructive and specific suggestions for the Sustainable Singapore Blueprint review.

The Conversations on Sustainable Singapore are held over three sessions and focus on the following topics:

- Energy and Climate Change (energy efficiency, clean energy, and climate change) – 26 Apr 2014
- Waste and the 3Rs (waste management, reduce, reuse, and recycle) – 4 May 2014
- Food Security (food supply and food waste) – 24 May 2014

For each session, 50 seats were opened up to the public, and divided into 5 small groups of 10 people each, with a facilitator and scribe for each group. Participants were also given a 2-page reading material on the topic so that they can read up and come prepared for the session.

For the Energy and Climate Change session, the small group discussions first focus on the concerns:

- What are your personal thoughts and stories on this topic?
- What are the positive or negative things that you see on this topic?

Next, there were 2 experts from the public and private sectors sharing more about the topic.

After a break, the second small group discussions focus on the suggestions and solutions:

- How can Singapore do better on this topic? Give SMART (Specific, Measurable, Achievable, Relevant and Time-bound) suggestions on policies, programmes, initiatives or campaigns.
- How can the public, private and people sectors work together to plan and implement these suggestions?

Next, the small groups came together to form a big group, and each small group representative shared their top five suggestions. This is followed by a big group discussion on what has been said and what can be done.

1.3 Report Submission

The discussions and suggestions for the first session of the Conversations on Sustainable Singapore: Energy and Climate Change are compiled in this report, for submission to MEWR as potential inputs for the Sustainable Singapore Blueprint review.

This report will also be sent to the National Environment Agency (NEA) and the National Climate Change Secretariat (NCCS) for their reference and consideration for action.



2 THOUGHTS AND CONCERNS

The first small group discussions focus on what are the thoughts and concerns of the participants on the topic of Energy and Climate Change. The questions include:

- What are your personal thoughts and stories on this topic?
- What are the positive or negative things that you see on this topic?

The discussions are summarised and divided into the following categories:

2.1 Climate Change

“Climate change is seen as a perfect problem because it covers all faculty and interest, from economic, geographical to geological. But because climate change covers all aspects, it also makes it difficult to deal with. It is not a single problem and needs all aspects of involvement.”

“Had an experience in Switzerland where a bridge is now required because of snow cap mountain melting, which shows global warming. But in Singapore, it is hard to see the effects of global warming. How much is the cost of emissions? Singapore society is taking the cost of emissions for granted.”

“Some people still think that climate change will happen in the future but it is happening now. Seeing it happening now through storms, droughts, changing shorelines and extremes in temperature. This is not in the distant future. Climate change is something to be addressed now.”

“The fact that it is on the table is a big positive from the past. While there will be no solution for a long time, the situation is better as opposed to 20-30 years ago when we think oil is going to be cheap and no one recognised climate change as a problem.”

“There are two main causes of climate change. For natural causes, we cannot do anything about it. There are also human/anthropogenic causes. That is the one that we need to tackle.”

2.2 Energy Supply

“We are still fossil fuel driven, and the petrochemical industries are one of our biggest industries. Our petrochemical industry is the third largest in the world, so I agree that a lot of our GDP is dependent upon fossil fuel growth.”

“We moved away from fossil fuel to cleaner natural gas. So as a small country, we only contribute 0.2% of global emissions. The international community is not asking Singapore in a strong way. If China doesn't do it, whatever we do will not save the earth. However, Singapore is a leader in Southeast Asia, so we actually have a big impact. Whatever we do, Indonesia and Malaysia will follow, so we actually play a leadership role.”

“Do we need the extra capacity for power generation? Singapore's generating capacity is in fact 50% more than we need.”

“Good that there are no subsidies for fuel and electricity consumption.”



“Globally, there are 1.3 billion people who do not have access to electricity. India for example has 60% without electricity.”

“Energy is very sensitive especially in developing countries. I have been to Cambodia and Vietnam and energy is not very accessible, they often have blackouts. When we return back to Singapore, we treasure electricity. The issue with my generation is that we take energy for granted, we have always been living in peace, we need to appreciate what we have, no matter whether we have electricity for another 20-50 years, we need to treasure electricity.”

“There is a need for better energy grid and energy storage systems.”

“The thing about energy is that people treat it as a commodity. People use energy without being aware that they are using it, you switch on the lights, you pay the bill, it’s not ingrained in your consciousness. I think it will take a lot of effort, both top down and bottom up, to change that.”

“What about nuclear energy? Singapore is starting a committee right now, hiring and training engineers for the possibility of a nuclear plant in Singapore.”

“Singapore did a pre-feasibility study on nuclear power and that study was trying to figure out whether there is enough capacity (institutional as well as safety) for having nuclear power. I think it tried to avoid saying that we might consider it because everything in Singapore is your backyard. The real concern that Singapore has is if our neighbours start to go nuclear, we are at risk of nuclear pollution or fall-out from an accident.”

2.3 Industry

“The good thing is that everyone including business owners is aware of the climate change problem. Now, everyone should be responsible.”

“More companies are addressing sustainability.”

“Individuals in businesses and NGOs know that it is important to adopt clean and sustainable energy. But these individuals feel more responsible to the organisations they represent. How can individuals maintain sustainability and the interests of their organisation? How can individuals engage their organisation in a respectful and productive way?”

“Accountability of impact: everyone should feel it. Individuals should feel that they can do something through actionable tasks. When individuals become a part of corporations, they should look into the impact of their actions and take ownership. This is corporate social responsibility.”

“70% of the emissions come from the industry and they contribute 7 times more than individuals when it comes to emissions. What can be done on a different scale?”

“Need to consider tiered pricing for electricity, and carbon capture and storage solutions in addressing climate change.”

“I think there needs to be a push for players to take action, it could be top down, it could be bottom up too. So I would advise that government policies provide the push. You can talk to the big players, but they will not do anything if there is no direct push.”

“There should be national standards or benchmarks for companies to operate in a more responsible manner. The government can push for this.”

“Industry plays a bigger role. They should be persuaded to take a bigger cut in carbon emissions. People are now more aware and questions are asked.”

“There is a lack of data transparency, especially in the industry sector.”

“There is a lack of triple bottom line reporting, and a lack of funding for Life Cycle Analysis of products and services.”

“The four Es in sustainability: energy, ethics, economy, and environment. Current practice of sourcing for energy is unsustainable.”

“There is a need for businesses to use renewable energy.”

“Businesses are aware of the benefits of renewable energy. But most businesses still prefer to invest small as they need to know that they are able to enjoy long term savings.”

“Renewable energy is the way to go. Armstrong Asset Management for South East Asia raised \$164m to invest in clean energy in Southeast Asia. Its report showed that renewable energy is economically viable and industries and business can get a positive return. Businesses should be aware that renewable resources can yield viable returns.”

“For my customers, their main concern is cost, or the price of going green. For energy and transport in Singapore, there's a lot of room for improvement and it is the easiest and savings are very attractive as well. But it is difficult to change the existing players. So my concern is how do you balance the needs and wants of the existing players, and convince them to change to be more energy efficient.”

“I feel that industry has received too much flak. Usually people say that industry generates the majority of our emissions. If our petrochemical industry moves to Johor for instance, would they still be subjected to similarly stringent environmental regulations as Singapore?”

“For government schemes and incentives, sometimes the inflexibility of the rules means that companies will not take it up. There are lots of incentives to increase SME capabilities. As the owner or boss, you must take the due diligence to research and utilise the grant that is suitable for you.”

“A lot of human resource is needed. A lot of work is to be done and there are not enough engineers. The government can introduce progressive certification, and allow mid-career switch to environmental careers to meet the needs as we don't have enough professionals in the environmental monitoring sector.”

“There is not enough support. There are few companies in Singapore collecting food waste and some had shut down as there is no legislation to support them. We need more ideas and more legislative support.”

“The impact of carbon emissions arose years ago in the marine industry which burnt oil. Besides carbon emissions, there is also black smoke emitted, which is a perennial problem. In the marine industry, the big positive is that LNG has now replaced black oil as a fuel source. This prevents the slowdown in climate change.”



“In the shipping industry, many green practices are being adopted.”

“Oil and gas industry finds it hard to change because of investment already committed.”

“There is always haze caused by the burning of plantations. Is that the cheapest and fastest way to burn? Is it possible for countries that have money to help them before irreversible damage is done?”

“What I'm really concerned about is Singapore's policies towards ASEAN. Issues like the haze actually lead back to Singapore and the businesses here. Singapore's role in the region is not just as a leader but how we impact and negotiate with other countries. A lot of the businesses in Indonesia that are causing the haze are from here or have a lot of money here. Companies have their headquarters here and do all the bad environmental things in the region.”

2.4 Transport

“For Singapore's transport, the government wants 70% ridership on public transport and 30% on private transport. I feel that the government is doing a lot. There are a lot of policies to make public transport a viable option. I think the main problem is getting the public to buy into the green aspect, the awareness of being green, and how to move towards being environmentally conscious. If they do not buy-in, then no matter what the government does, whatever policy, it wouldn't be taken up.”

“Good public transport network but much of it can be more environmentally friendly.”

“Everyone wants to drive a car. This causes jams, which waste time and energy. Could the government do something to increase the number of trains during peak periods to decrease jams on the roads?”

“When people have no alternatives, they will drive. But when they have good alternatives for public transportation, then they will not drive.”

“I think research has shown that 80% of the cars only have 1 person or 1.1 persons inside the car during peak hours. So if you can just increase that to 1.5 or even 2, imagine the number of cars reduced.”

“Our ERP is meant to control cars, for environmental reasons, but Singaporeans view it as a money-making tool. They don't see it from the point of view where it helps reduce congestions and carbon emissions.”

“We are using a lot of resources to power our transport system and our city is created for cars to move around, and I realise that's not the most sustainable way to move forward.”

“It is not wise for the government to just focus on the MRT. We should have more variety. For example, allowing different companies to operate buses. It is a wrong move to privatise public transport. Their bottom-line is profits and they want to increase their profit margin year after year.”

“Canada has high-rise housing with no parking lots. Singapore can learn from the concept and establish parking standards or limits in the city to promote ridership on public transportation.”

“Bike lanes may not really work as people may be afraid of the dangers of riding on the roads. There is also a need for bathrooms for change of clothes.”

2.5 Buildings

“Air-conditioning is a big energy consuming segment and I feel that the temperature in Singapore's buildings is just too cold. I think we need to have regulation or government guidelines, where we cannot have it less than 25 degrees.”

“The recommended temperature of 22.5 degrees for air-conditioning temperature in buildings is too low.”

“The air-conditioning in most public and commercial facilities is too cold. More emphasis should be placed on reducing the need for air-conditioning and setting specific targets to reduce the need for air-conditioning.”

“Condominium developers should build greener buildings such that windows can be opened and air flow freely without the need to turn on the air-conditioning.”

“The lights in my estate are always on but there's nobody there. Energy is wasted during the night, the whole building and the corridor lights are turned on.”

“There are buildings with sensors that turn on the lights when there are people. There might be guidelines on how bright the corridors need to be, perhaps it is regulated or they cannot switch off because of security reasons.”

“Architects who design condominiums should look at eco-friendly and energy saving methods. For example, solar system on the rooftop to collect energy. Construction is a good place to start.”

“Get our basics right. There are sloppy engineering practices in the construction industry.”

2.6 Individuals and Education

“There is not enough environmental education.”

“We need to turn our attention towards our affluent lifestyles and normalised patterns of consumption. As much as people are encouraged to buy more energy efficient or green products, the call is never to tell people to reduce what they buy. Would the government consider a campaign admonishing people to reduce their consumption? Then again, even though the government is pushing for energy efficiency, it is also engaging in energy intensive activities such as promoting the Integrated Resorts, hosting F1 races where we are paying people to burn fuel by driving in circles.”

“Energy has becoming a commodity, we use it without thinking. We can think of ways to make people feel the pinch, how much money you are using, change it to different units so you can feel the pinch.”

“We should take action now and there should be plans to empower the people. Actionable tasks should be given to the public to let them feel that they can make a difference. They will have a sense of ownership. Currently, people don't know what to do.”

“I feel that in Singapore we have a lot of money being pumped into R&D and technology, however, I don't think enough energy is being put into 'software' and getting more people to change.”

“There is not enough communication and transparency in reporting of government pilot tests for hybrid bus and LED lighting.”



“Most people are affected by the price of things here. So the government can give incentives for sustainable solutions to be cheaper and to encourage businesses to make sustainable products, then most people will just go for the cheaper thing.”

“Why is it in Singapore that we think: let's make it financially affordable. Either the carrot or the stick. I want you to do something, I reward you. I don't want you to litter, I fine you. How can we differentiate between compliance and commitment? I'm doing it because I don't do it.”

“What will happen when you take away the fines? Would Singaporeans stop littering or start recycling more when you take away financial penalties? That I think is something the government doesn't have the answer to.”

“Data is confusing and there are no standard reference points. How do we compare the best performing country? Some countries set lower standards and it is easier to achieve. There should also be more transparency.”

“There is the lack of transparency and data is not readily available. We usually have to use IEA energy balance tables but it is not always verifiable.”

“Singapore is lagging behind green practices. Education on green practices is really a problem.”

“Students are taught to switch off lights to save energy, but are unaware of the climate change situation. It was only after being taught physical geography that they become aware of the climate change problem.”

“In the media, environmental issues have always been put at the back of editors' minds. Parliament is also not paying attention to environmental issues.”

“Media's role in sustainability behavioural change is vital.”



3 SUGGESTIONS

The second small group discussions focus on the specific suggestions from the participants on the topic of Energy and Climate Change. The questions include:

- How can Singapore do better on this topic? Give SMART (Specific, Measurable, Achievable, Relevant and Time-bound) suggestions on policies, programmes, initiatives or campaigns.
- How can the public, private and people sectors work together to plan and implement these suggestions?

The suggestions are summarised and divided into the following categories:

3.1 Industry and Organisations

Encourage companies to be more transparent and disclose their energy consumption and emissions.

- Encourage the public to ask for information from the major companies, which is an indirect way to create public pressure on the companies to take action.
- Encourage companies to be transparent and include the information in their sustainability reporting.
- Introduce green reporting for listed companies, which could be based on guidelines such as the Global Reporting Initiative and Carbon Disclosure Project, with a baseline and improvement within 5 years.
- Build up professional training and capability for providing better data and analysing the data.

Introduce carbon pricing for the top 10-20% of energy consumers.

- Introduce the regulations, benchmarks and carbon tax market for carbon pricing.

Establish progressive training courses by 2015.

- Have progressive training courses leading to professional certification for mid-career workers who want to switch to the environmental sector, with the possibility of upgrading continuously with part-time or online courses.
- Have internships with industry, specially tailored for older workers, and a progressive career ladder from technician to professional levels.

Tackle the haze problem to decrease the PSI and number of hotspots within a year.

- Encourage more data and transparency from companies that own plantation land in Indonesia.
- Organise a meeting involving NGOs, civil society, academia and ASEAN to voice out their stand and what they know through a conference setting or a series of meeting. This could kickstart a ground-up initiative for regional collaboration, expanding dialogue and transparency, leading to more varied perspectives and solutions.
- Encourage investors and institutions not to invest in companies that conduct burning.
- Help the farmers to till instead of burn.

Introduce food waste recycling.

- Convert food waste into biogas for energy or into compost.
- Provide government funding to food waste recycling companies or entrepreneurs.
- Introduce food waste collection for households with a collector coming to the housing estates regularly. Signs should be placed to remind people of the collection. Maids can be educated to set aside food waste for the collector.
- Have more education to introduce the culture of sorting food waste in Singapore.

Introduce carbon labelling for food by 2016.

- Encourage large companies to calculate the carbon emissions associated with their entire food product life cycle including transport. This carbon label for food would help consumers in their decision-making.



3.2 Transport

Provide diversity of transport options and improve public transport.

- Bring forward the public-private modal share target in the Sustainable Singapore Blueprint by 10 years from 2030 to 2020.
- Have more car sharing and rental schemes, with increased connectivity and links for schemes to MRT stations.
- Introduce electric cars islandwide and increase number of charging ports.
- Look into the length of train platforms and increase frequency of trains.
- Increase number of maintenance checks on trains.
- Build longer MRT stations and trains to accommodate the high ridership. If ridership is low, the number of train carriages can be lessened to reduce energy to power it, thus saving energy. When ridership is high, there is a limit to how frequent trains can run.
- Explore more options for mini buses and shorter routes to increase frequencies, using the HDB housing expansion as well as EZlink ridership data to track patterns so transport options can be catered accordingly.
- Have more flexible timing for allowing foldable bicycles on the MRT besides the current non-peak hours.
- Convert taxis into electric vehicles and provide the infrastructure, which would then make it easier for the public to start switching to electric vehicles.
- Introduce hybrid and electric buses by year 2020.
- Conduct Life Cycle Analysis on the local use of hybrid vehicles.

Reduce car congestion on roads.

- Have flexible working hours for employees and decentralise work locations to satellite towns.
- Have more data on how people move. The data on 24-hour trends should be recorded and analysed to implement strategies and construct a better infrastructure. There should also be better utilisation of data of transport networks and jams. LTA and HDB can work hand in hand.
- Make improvements to the road system, e.g. turning direction. A lot of congestion occurs at the entry or exit to expressways.
- Continue the park and ride scheme where people park their cars in car parks and take public transport, which is an effective scheme.

3.3 Buildings

Encourage and implement better building design.

- Have more natural lighting for buildings or use fans for natural ventilation.
- Consider the use of thicker windows so that heat is not transferred, thus reducing the need for air-conditioning.
- Retrofit old buildings instead of knocking them down to build new buildings.
- Have vertical solar panels on the wall and placed on all roofs.
- Have energy labelling for housing flats.
- URA should initiate research on heat island distribution and effects within building clusters.

Introduce a policy to set the air-conditioning temperature in buildings to 26 degrees by 2015.

- Air-conditioning temperature should be set to 26 degrees from the current 22 degrees.
- Have incremental increase from the current to the set temperature by 2015.
- Allow occupants to adjust the thermostat.

Have all energy data of government buildings made available to the public by 2015.

- Make available the energy data of government buildings, including energy consumption and audits, so that the public can understand and ensure that there is no energy wastage.
- Set energy efficiency goals for government agencies.

Introduce green lease for building owners and tenants.

- Resolve the split incentives problem between the building owner and tenants. The building owner does not have the incentive to invest in energy efficiency because the tenants enjoy the cost savings while paying the same rent.
- Consider a green lease, where part of the tenants' cost savings from energy efficiency measures implemented by the building owner, are distributed back to the owner.

Scale up solar installations on buildings in the industry and household sectors.

- Introduce market incentives as well as regulations to scale up solar energy.
- Have rooftop leasing where households can lease their rooftop space to the market.
- Have solar leasing for people to rent solar panels so that they do not have to come up with the capital to produce solar energy.
- Implement a feed-in tariff scheme to allow owners to sell electricity from solar panels to the grid.
- Consider flexible solar panels for buildings, offshore farms, and floating solar panels.
- Introduce solar energy for MRT and bus stations to power lighting and escalators.

Adopt a decentralised approach for renewable energy based on the town level.

- Track energy consumption at the town level, and assess the type of decentralised renewable energy suitable for each town.
- Set different targets and benchmarks for different town districts.

3.4 Individuals and Education

Increase outreach and media coverage.

- Have regular columns in the newspapers or regular television programmes to include specific information on energy usage and reduction.
- Display positive environmental news on an ongoing basis at MRT stations and bus stops to constantly remind people of environmental issues. Information should not only be about economic information and or just placed on websites.
- Have sustainability ambassadors visit schools and companies.
- Be more creative on how to language the concerns about climate change.
- Consider using public figures and stars to educate the public because they are the people the public look up to, e.g. a Korean variety show gets famous comedians to engage in a week-long environmental awareness and conservation of water and energy.



Introduce environmental issues in formal and informal education.

- Incorporate environmental education into existing classes. Within the next syllabus review, MOE should consider incorporating environmental studies into all subjects. Geography should not be seen as the only subject that takes on energy and climate change and other environmental issues head on.
- Train or re-train teachers through workshops or seminars on environmental issues.
- Have more clubs and programmes in schools to address energy.
- Introduce outdoor green programme for schools to expose students to a wide range of activities beyond the classroom, and reinforce the environmental message. Field trips and outdoor activities can form a part of informal education.
- Cultivate good habits from the home. Parents also need to be informed through adult-focused seminars.
- Look at what other countries are doing, especially best practices of other universities, high schools, and secondary school to the pre-school levels.
- Encourage the movement of citizen science, open labs and DIY workshops, where people learn about the science on climate change and energy, and build things.
- Fund interdisciplinary studies for energy security and climate change.

Encourage more participation, transparency and use of behavioural science.

- Show energy consumption with comparison to neighbours on utility bills.
- Display energy consumption by public buildings on websites for everyone to see.
- Have neighbourhood level energy teams to reach out to residents through programmes, games, tours, and in the process communicate the message.
- Hold neighbourhood or town competitions on reduction of energy, where residents can save money and be told how much they have saved. The most improved neighbourhood or town in terms of electricity consumption can be published in the newspapers. Take advantage of the competitive nature of Singaporeans through this competition.
- Have something to constantly remind residents about their energy usage benchmarked against other neighbourhoods or towns.
- Allocate resources to help households implement the infrastructure to save energy and reduce emissions, when they do not respond to price signals.
- Improve the public consultation process to give citizens all possible information, and accurate framing of government decisions.
- Allow citizen participation to give inputs into debate. Encourage the public to not only voice their opinions but to initiate things.

Organise a national campaign by 2015 to create awareness of climate change and measures required.

- Make the campaign appear “cool” to be green, thereby appealing to young people. To bring it to a personal level, hands-on practical applications such as calculation of individual carbon footprint and usage of energy efficiency monitoring equipment should be promoted in educational institutions.
- Adopt a holistic approach involving various government ministries as climate change issues cut across different sectors.

Introduce Environmental Quotient for schools, companies and government agencies.

- Apply an Environmental Quotient survey or test on knowledge of the environment in schools, companies and government agencies, which looks at energy, climate change, waste management and food security.
- Schools and companies should have it as a gradable component in their curriculum or training, and can implement it as a year-long programme.

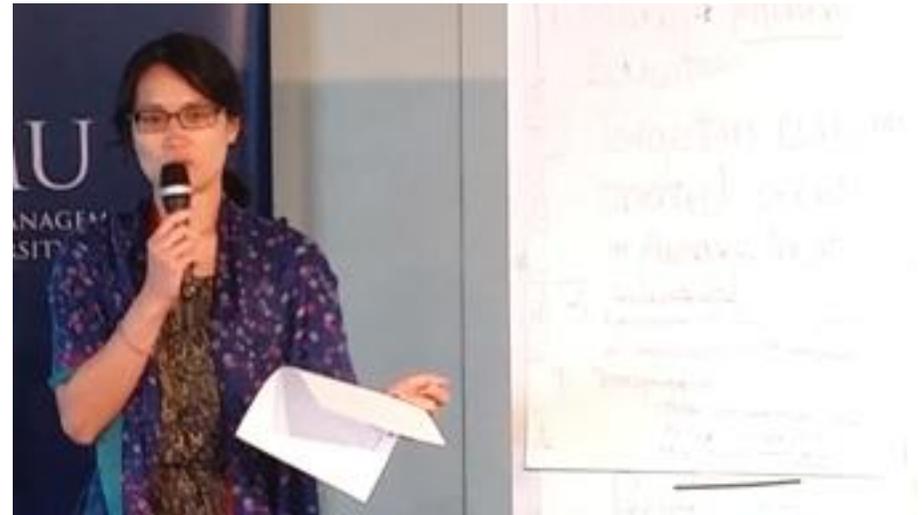


4 CONCLUSION

For the Conversations on Climate Change: Energy and Climate Change session, we had a total of 34 participants (out of the 50 participants who registered). There was a mix of people from companies, organisations and students. Despite their different perspectives on energy and climate change, we feel that they are all concerned about the issue of climate change and the need for urgent action.

This report reflects their thoughts and concerns, and shares their suggestions for a more sustainable Singapore. We hope that their views would be considered for the review of the Sustainable Singapore Blueprint.

Through these conversations, we also hope to increase public awareness, engagement and ownership of sustainability issues in Singapore, and to discuss constructive and specific solutions to address the issues. More importantly, we are planting the seeds that it is possible to nudge or effect environmental change from the bottom-up.



5 PARTICIPANT LIST

No.	Name
1	Adeline Seah
2	Ann Tay
3	Bess Yifung Ng
4	Bryan Paulding
5	Cai Li
6	Cheng Chin Hsien
7	Chow Tak Wei
8	Constant Van Aerschot
9	Darren Lum
10	Dominic Chan
11	Gillian Ong
12	Hannah Han
13	Heather Chi
14	Ho Bee Ian
15	Ho Sew Fun
16	Hoi Wen Au Yong
17	Hosea Han

No.	Name
18	How Xing Quan
19	Jang Leong Chia
20	Joanna Chung
21	Jovin Hurry
22	Ken Hickson
23	Konstantinos Athanasopoulos
24	Lau Ying Shan
25	Lekha Patmanathan
26	Mallika Naguran
27	Nadia Cristina Baldinho Martins
28	Quah Cheng-Guan Michael
29	Richard Andrew
30	Tan Zexeong
31	Victoria Goh
32	Yang Yang
33	Yap Yien Li
34	Yves Yeo