

CCIL Jockey Club SolarCare Programme: RE Webinar

Accelerating a Just Energy Transition in Asia: Voices from Civil Society and Business | Session 3 - Just Energy Transition: Ways forward

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Hwang: Ms Hwang Shute (Chair, Green Advocates, Energy Co-operative)

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CCIL: CarbonCare InnoLab

CCIL:

Hello, welcome back to our webinar. In the final season of the webinar, we will be looking into how we are going to achieve Just Energy Transition and we have another 4 speakers who will look into the lessons learned and give us some ideas on how to develop a favourable environment.

First speaker we have is Dr Furuya Shota, a researcher from *Institute for Sustainable Energy Policies* based in Tokyo. His main research field is social acceptance of renewable energy. He has been the Co-chair of the *International Renewable Energy Agency (IRENA) Coalition for Action Community Energy Working Group* since 2018.

The second speaker we have today is Ms Hwang Shute. She is the Chairman of *Green Advocates, Energy Co-operative* and the Supervisor of *Homemakers Union Consumers Co-operative* which she joined 29 years ago until her engagement in NGOs. She gained knowledge about organic farming, air trade and also energy resources.

The third speaker is Dr Laurence L Delina, an Assistant Professor of *Division of Environment & Sustainability* at the *Hong Kong University of Science and Technology (HKUST)*. Dr Delina's research interest in sustainable development with a focus on rapid mitigation of climate change. He recently co-edited a volume on climate change governance in Southeast Asia and consulted for *the United Nations* and *Oxfarm* on energy issues.

Last but not least, we also have Ms Anjali Viswamohanan, the Senior Policy Manager of *Asian Investor Group on Climate Change (AIGCC)*. Anjali has over 7 years of experience working on the energy related climate act in Asia. Previously, she also worked with 2 leading climate think tanks. She is also a lawyer by training and has worked with some top law firms in India on facilitating the investments on the energy sectors.

So first, we will have Dr Furuya to tell us about the situation in Japan.

Furuya:

Thank you for having me. I'm Furuya Shota from *Institute for Sustainable Energy Policies* aka ISEP based in Tokyo. They all talk about community-based renewable energy as a way towards just energy transition in Japan. Actually, Mika is my former boss and Auska san is one of the members of ISEP. The world is very small in Japan... Anyway, first, I would like to share the definition of **Community Power**, which was developed by the *World Wind Energy Association* in 2011 with researchers and practitioners around the world working on community-based renewable energy.

If we would like to promote more inclusive and community-based energy, we apply this definition, which has 3 criteria. Firstly, for the ownership - the local stakeholders own the majority or all of a project. That is the first point. Secondly, for the decision-making - to see if the voting control rests with the community-based organisation or not. This is very crucial. Thirdly, it's a distribution of the benefit - whether the majority of the social and economic benefits are distributed locally or not. These are the criteria. If at least 2 of these are fulfilled, we recognise that the project is a community power, and we promote [it] as a good solution for the society.

In Japan, before the Fukushima nuclear disaster, we had a few pioneer cases and ISEP supported those cases. Yet, after the Fukushima nuclear disaster, many people started to think about the energy issue and learning about energy [especially] renewable energy. Among them, some leaders began to engage [themselves] with the real businesses asking neighbours to join the learning process and started to plan where to install [it], what technology [in need], what cost [would be involved], where to borrow money [for it], and how to invest it.

ISEP supports those kinds of activities and studies, and has worked with those leaders. Thus, about 10 years after Fukushima, we now have more than 200 business entities working on community power in Japan. I think it's a great achievement, and my PhD thesis is all about it.

I think Japan's experience can bring some lessons to other countries. Of course, Japan has also learned from many experiences in Denmark, Germany, Canada, and Australia. I'm now co-chairing the *IRENA's Coalition for Action Community Energy Working Group*. We have developed 3 white papers so far, and the third one is the latest paper published last year. It's called **Community Energy Toolkit: Best Practices for Broadening the Ownership of Renewables**. We took many case studies around the world on community power and drew some lessons for new players of community power. I'll tell you about the case in this paper from Japan called Hotoku Energy and Shonan Power in the Odawara area.

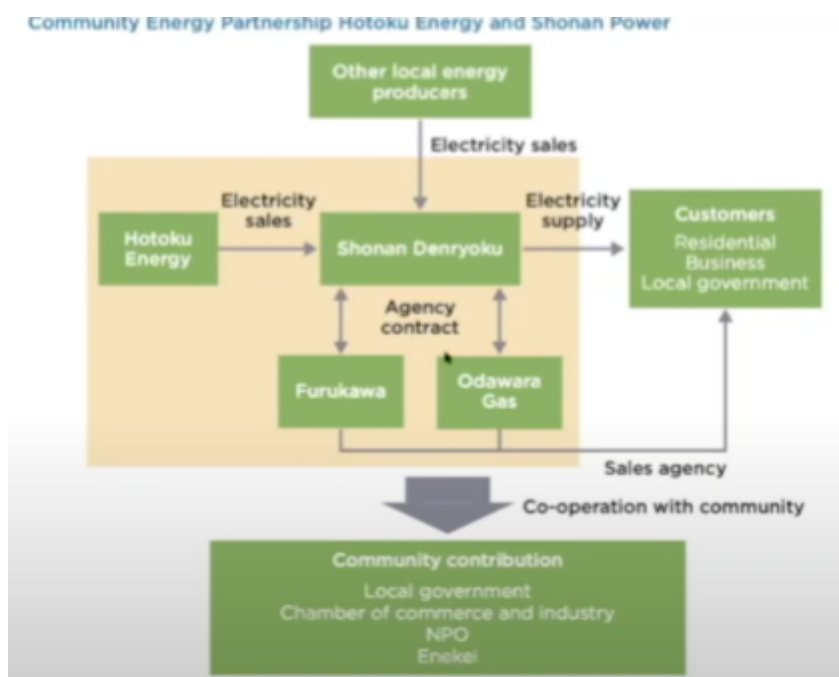
Right after the Fukushima nuclear disaster, many people felt really shocked. One of the biggest impacts was a cooling blackout because of the electricity shortage around the coastal area and the city. Architects in the western part of Canada were also affected by the blackout, and economic activities stagnated. People worried about the energy issue. Since then, players of the initiatives and the mayor have started to do something for the local

energy development. The city administration has also started to explore how to support communities for that. As I said, ISEP has worked to support those activities across the city and started helping out many peoples with making space for discussion. I managed to conduct a series of study meetings in the city hall, and many people were really interested in those activities.

Here we choose 2 really engaged coordinators. They have really worked so hard, and have invited many local business-owners, from Small- and Medium-sized Enterprises (SME), to join the activities. Finally, the leaders called for the equity investment to form the local energy company **Hotoku Energy** which was funded with JPY 34 million by 24 local companies. People named the company Hotoku which means a kind of local indigenous philosophy developed by Sontoku Ninomiya. The philosophy consists of 4 pillars, i.e., 至誠, 勤勞, 分度, 推讓. It's really a good reconnection of a local cultural heritage to the modern renewable energy activities.

Integrated with those various activities, Hotoku Energy was established. They installed ground-mounted mega-solar and rooftop solar on public facilities like schools. Besides, a local financial institution has invested in the project. We developed a citizen fund so ordinary people can invest in the project. I, myself, am one of the investors as well. Every year, I receive a very modest benefit from this project, and I'm so happy.

(Fig. 1)



Hotoku Energy and Shonan Power, Odawara

This project was clearly successful, and it really is a community power. They even start to explore new business opportunities. It's a developing solar project. In 2016, the electricity

retail market was liberalised and some new electricity retailers were coming into the market. Some retailers focus on the local production of renewables and sell to the local consumers, we would call it Shonau Denryoku in Japanese, that was possible after 2016.

The local community power leaders explore opportunities and, in Odawara, they have even developed a very collaborative consortium business model Energy Consortium of Hakone Odawara (ECHO). Hotoku Energy produces and sells solar electricity and Shonan Power buys it. Combining with other sorts of electricity, Shonan Power sells electricity to local residents, business and the local government. Customers then pay insufficient fees to Shonan Power and Hotoku Energy. In addition, local gas companies Furukawa and Odawara Gas have made a contract with the agency and conducted sales activities within the area.

The most interesting point is that 1% of the electricity fee is allocated to the local community development activities like festivals, national events, disaster prevention activities, soccer and other sport activities, health promotion, Kondomo Shokudo, etc.. It's even used to provide meals for kids or living-lab or other supporting activities to the disable people. Thus, it is really contributing to the local community development alongside the locally produced renewable energy. It is an extremely well designed business model. I also heard that people feel so happy about the project. That's great.

They are now working on the electric car sharing model, and there are many more new businesses to come. It's really impressive. Once the solid business model is established, the activities are all in timeline.

I realise that time is running out so I just briefly mention some implications of these kinds of Japanese community power activities for a just energy transition. The community power business model enables a fair distribution of profit among local stakeholders. It is also recommended to explore potential local stakeholders as early as possible to foster participation, commitment and collaboration. Because renewables are so new to local people, they need to understand it step by step. It's very important to get people involved in the early stage.

Ownership and decision making are interconnected, therefore trustful relationships among stakeholders matter. That's important too. As I saw some cases failed in other areas because of the human relationship, so it's really really important. As I said, once a solid business model is established, very often the local leaders and the stakeholders creatively develop business models. I have been supporting these activities for more than decades, I'm still excited about new developments. It's very nice.

List: Further stories of community power in Japan

- FURUYA Shota and Søren Hermansen (2020) "It takes a village: the rise of the community-based energy transition", The Beam #10
- FURUYA Shota (2018) "Solar sharing for the future generation in Fukushima", The Beam #5
- FURUYA Shota (2017) "Japan's 'Do it Ourselves' model for community power", The Beam #4

- FURUYA Shota (2017) “In Japan, community power movement is on the rise in Japan”, The Beam #3
- FURUYA Shota (2015) “Towards Local Autonomy - Th Challenge of AiPOWER in Fukushima”, Energy Democracy.
- FURUYA Shota (2014) “The Pioneer of Community Wind in Japan” Energy Democracy.

Finally, I have written about some [more] cases and stories for a web, all in English. I list out some here with their links so you can access them on the website. Maybe this representation will be circulated later, so you can have a look if you're interested in the stories. That's all for me. Thank you very much.

CCIL:

Thank you so much Dr Furuya for your sharing. Next we will have Ms Hwang to share with us her experiences in Taiwan. Next one, please... Ms Hwang, you have muted your microphone... You can try to speak now, I think you are unmute.

Hwang:

Okay. Thank you for having me. I do learn a lot from all of these speakers. Today, I'm sharing Taiwan's experience. Not just a listener, also not an outsider, we are just participating as an individual citizen organisation and a cooperative. So, here is the situation. To get to know about Taiwan [situation] in East Asia, I will just give you a brief summary like this. We have only 2% of our energy self-sufficient rate. That means that...

CCIL:

Sorry, just a second, Ms Hwang. I think you haven't shared your screen, so we cannot see your powerpoint yet.

Hwang:

Okay. Let me see... (CCIL: yeah, we can see it now, thank you very much. Sorry to interrupt.) No, thank you. I'm getting to the story of how we're currently 98% of import dependencies of energy. I think East Asia countries will have a very similar situation in that we import most of our energy source whether it's coal, natural gas or even nuclear power and fossil fuel. The carbon dioxide emission per capita in Taiwan is very high. I think it's the highest in East Asia - 12 tons per person or per capita. The utility expense including electricity, water and natural gas is so low. We pay about 1/3 of the electricity bill compared to what the Japanese are paying. In 2020, our renewable energy in terms power generation is 5.4% compared to nuclear power generation, which is 11.2%

In 2020, we still have 82% of electricity generated from fossil fuels. Although our government is trying to [interrupt] natural gas to gradually replace part of the coal generating power plant, we still use the most of the electricity in the summer time to come back or to sustain the heat from the Sun. We make solar power, in terms of renewable energy development, crucial in Taiwan.

Now I'm going to talk about the Citizen Energy Projects or what we have called the **Community Energy** in Taiwan. The Feed-in Tariff (FIT) was introduced in the year of 2009 in the **Renewable Energy Development Act** and it was amended in 2019, which will pave the way for offshore wind farms and a large upscale of solar farms. For most of the citizen energy projects, we are still using mostly rooftop but not land-based solar PV projects because, as you can tell, the land-based project usually takes a lot of money and the sophisticated financing scheme. Thus, NGOs would have a smaller project. There are also social enterprises which have been crowdfunding a very successful project and company. It also attracts copycats which is not guaranteed in a way of doing business.

Here we are presenting the Co-op model. We're still facing a lot of legal restrictions. I'll come to them later. Bank loans weren't easy for small cooperatives and here we are not eligible for bidding the government or public building projects. Besides, the local government and municipalities are not as well-established as the previous Japanese local government have provided in terms of opportunity.

The **Green Advocate, Energy Co-operative** is the first co-operative in Taiwan. We have a very strong link with the **Homemakers United Foundation** (HUF) and **Homemakers Union Consumer Cooperative** (HUCC), which is a split-up project from Homemakers United Foundation. From day one, we are an anti-nuclear power group among all the environmental groups in Taiwan. Since we have launched a consumer's co-op which is now, after 20 years, a membership of about 83,000 households. Therefore, when it comes to the year of 2014 or even after the Fukushima [nuclear] disaster, energy becomes something that we are not just fighting against nuclear power plants but also what we can do to have a positive change.

Cooperative is a social tool that we would like to bring the solidarity of citizens to our energy transition for community participation and even empowerment. The Cooperative is a business entity which is not profit-driven but a community scene. We have been encouraged and inspired by the European risk group whether they're large or small cooperative to raise funds among the members. We took the covert principle of an international cooperative alliance that has been fostered one member one vote, and we do have a shared value and working toward common needs and aspirations among our members.

We were found in 2016. At that time, we had 76 founding members and 80% of them were women. We were approaching the authorities and said we wanted to go with SDGs to achieve [a low carbon society] in terms of climate action. Here's a photo of the general assembly in March that we currently have a membership of 273. Women still constitute about 2/3.

We are using a prosumer concept of Consumers as Investors or Energy Co-producers. Throughout the past 5 years, we have been building partnerships with different NGOs, churches, food plants, small clinics and local stakeholders to bring out the project of rooftop

type of PV installation. For example, the *Credit Union League* is a federation of more than 300 credit unions in Taiwan. Here are some of the projects that we have worked with.

Last year, we had a total installation of 600 kWp. The power generation is about 730,000 kWh. For that, we have to communicate with our members and the general public all the time. Communication is not just about a dollar cent but the kilowatt per hour as well as what kinds or how many carbon dioxide emissions we can offset. Here are some of the examples. Two years ago, we launched another campaign, the one we called ‘一人6萬元, 平衡自己居家用電碳排放’ in Taiwan. That means we have encouraged our members to invest more in terms of offsetting their personal carbon footprint. This is the way we have [promoted] RE100 that it is not only for the corporate but also for the citizens, who can take on the responsibility or make an investment as an exchange for the future.

(Fig. 2)

5 Energy Cooperatives in Taiwan, 2021

- > Green Advocates Energy Co-op
- > Peoples Power Co-op, NTC, 2019.3
- > Smart Energy Co-op, NTC, 2019.5
- > Chiayi Dalin Energy Co-op, 2019.12
- > Kinmen Renewable Energy Co-op, 2020.2

Here’s a map showing the location of the Co-operative. In Taipei, there are 3 co-operatives so far, mostly in New Taipei City, and the fourth one is in Chiayi, a more rural area. The other one is in Kinmen, which is a 30 minute by ferry [ride] from Xiamen in China. Thus, there are currently 5 of *Energy Co-operative* in Taiwan. Most of them were established in 2019 and 2020 (Fig. 2). For the 2 Co-ops in New Taipei City, they are quite similar, and are all connected with their local community colleges. They have been having different classes on energy for more than 5 years, especially on participatory budgeting, [so as] to mobilise the local citizens or new immigrants on what they can do to conserve electricity. They have been running [for a while] and recently decided to establish, install and make applications for an energy co-op. Everything is all done by their members.

For the *Smart Energy Co-op*, they are the most aggressive one so far. Its capacity is built as the EPC in terms of professional operation. In their [energy-] farming area, they have a step up with [the local] farm houses, private hospital or private university, which we would call the latter one as the USR project aka the *University’s Social Responsibility* project - make partnership with them to install a large solar PV in the school dorm. Besides, we are trying to see if we can collaborate together as a cooperation among cooperatives, and the rest could serve as a role model that we want to visit [to each other] like every 3 to 4 times a month. However, we have to move some of the exchanges online because of the COVID-19.

Last but not the least, we, as a grassroots group, want to bring everybody a chance of working together and [show them that] the small solar project can make it possible. These 2 [programmes] are from Chiayi. You can see they are more of an ageing rural society but still there’s a way of generating people’s common needs and to bring out the reality to say ‘yes,

we can do it together'. It's not just for our generation but for the generations to come. Thank you for all of your attention.

CCIL:

Thank you very much, Ms Hwang for telling us some experience about a bottom-up approach in promoting renewable energy. Just a quick reminder for the audience, you can type your question in the Q&A box and we will go through the questions in the Q&A session later. Next we will have Dr Dalina to share with us on South East Asia.

Delina:

Thank you very much. I would like to ask Ms Hwang to...

(Disconnected)

CCIL:

Maybe he has some kind of connection problem... Anjali, are you able to share with us first? Then later we can go back to Dr Delina maybe.

Anjali:

Sure. Can I share my screen? Is that okay? (CCIL: yes, you can try to share with me now.) Just one second...can you see it? (CCIL: yes, yes, thank you.) Okay...hi, everyone. Thank you so much for joining us today and for staying on. It's been a really long 3 hours. I'm sure that there's a lot of 'Zoom Fatigue' already. So I'll try to keep this quite quick and efficient considering that we have hardly any time left. Thank you for inviting me to speak about the investor perspective on the just energy transition in Asia. My name is Anjali Viswamohanam. I work as a senior policy manager with the *Asian Investor Group on Climate Change*. Just before I get started, I want to spend maybe a minute talking about AIGCC's work that might give you a better context about the presentation that I'm sort of doing today.

So, the *Asian Investor Group on Climate Change* is basically an initiative that works with investors, which includes asset owners and financial institutions on raising awareness and building capacity on the risks and opportunities associated with climate change and low carbon investing. As on date we have over 60+ investor members that work across 11 major Asian markets. They control over USD 35 trillion in assets as of the first quarter of 2022.

The way that we sort of work with them in building capacity and building their practices to basically convene roundtable sessions, and to organise specific working group discussions on topics that are emerging for investors in this area. We also provide specific projects such as climate change training and engage with developing research and resources that are

required for investors trying to make this transition to a world that is more adaptive to climate change and making that transition.

(Fig. 3)

Investment Strategy in response to Climate Change

> Integrating Climate Change into Investment Strategy: A Guid for Investors

1. Strategic position: an organisation's strategy position with respect to climate change > exposure, duty, values and goals
2. Strategic response: an organisation's strategy response to addressing climate-related impacts > people, policies, processes and public reporting

When we come to investors and just transition, this is basically like where we look at how investors had initially changed their investment strategy or were looking at changing their investment strategy in response to climate change and key pillars that they are looking at in order to consider what their position could be in terms of changing their investment strategy at this stage (Fig. 3). They were considering 4 key factors or they should be considering 4 key factors which is basically to the extent to which their portfolio is exposed to the risks associated with climate change.

The fiduciary duty that these investors sort of owe the investees in terms of building onto value of the investment amount that these investors are sort of taking care of by investing in various portfolios and obviously looking at things like values and goals of the organisation itself in its performance. I mean these would be sort of factors that the organisation would consider in adjusting its position to factors in climate change. When you bring in those factors of just transition, it adds like one more layer that investors should take into account when devising their strategy in respect to climate change. [It is] because when you look at it as a whole, you can't really address the issue of a transition if you don't consider the social perspective. Because that is again an added risk or an added lens that investors and all other stakeholders should be considering at this point.

It's quite pertinent to note that just transition, as a concept, now is kind of widely accepted when we have these global discussions on climate change and energy transition. You can see it like every sort of global dialogue at this stage. Yet, [what] we're trying to understand through this presentation is to really see where investors stand in response to the issue of just transition. Thus, it's quite encouraging to note that, over the past few years, there were some key initiatives that have been started by investors or that investors were contributing to where just transition figures prominently.

When you look at some of the initiatives in the past few years, there's UN Principles for Responsible Investment (PRI). They had put out a ***Statement of Investor Commitment to Support a Just Transition on Climate Change*** a few years back. This statement was supported by 161 institutional investors with over USD 10.2 trillion in assets. They sort of look at working on just transition through the mechanisms of capital allocation, investment strategies and policy advocacy position. I can touch upon this point [very soon] in the next slide. Last year, there was the ***Global Investor Statement to Government on the Climate Crisis*** that was signed by 457 investors that represent over USD 41 trillion in assets that

asked the government to factor in just transition in their plans for responding to climate change or developing their transition plan. I think these are really encouraging steps to note that investors are really trying to play a part in this whole discussion on just transition as well.

I think this would be like the part of the presentation that looks at what we could expect or what could help further investor action on just transition. This is a matrix that was developed by a partner organisation that works quite closely with *AIGCC* which is the investor group on climate change. This is a report that came out early last year and I feel like most of the investors that are discussing it are also taking action towards a just transition.

Looking at it from this lens of 5 key actions, I'll sort of club them in a way to make it easier to understand. When you look at what investors could primarily do, it's essentially you would think that it was primarily investment strategy and capital allocation as we discussed in the previous slide as well. Investors basically have money to invest. When you bring in these additional factors of climate change and just transition, these additional factors or lenses that investors will use to identify risks, opportunities, investment and the allocated capital accordingly. To make these investments more effective, investors should try [to] engage more with the community or extend stakeholders that form a part of the projects that they are investing in to understand these risks better.

In parallel to that investors need to engage closely with the government [in terms of] policy as well because, as you look at policy development in Asia, it's still in a very nascent stage where - several organisations that have presented today - are talking about the issue of just transition. Yet, there is still a lot to be done in terms of actual policy. Investors, as a key player in how climate change, would sort of affect a lot of our communities and how investors could work towards that. There is a need for investors to bridge that gap on policy. There is a key role that investors can play in advocacy.

Thus, if you look at some of the developments that have been taking place in the Asian region, for example, introduction of things like transition bonds where we look at what the necessity for companies that are looking to do the energy transition but to factor in all of the pertinent aspects associated with that transition. It's important to have that mechanism where investors can contribute money to help that transition. That's where the whole concept of transition finance and transition bonds comes in through some forms of investor advocacy. Basically, this whole concept of investment strategy and advocacy sort of go hand in hand and they could help each other grow.

When you look at 3 other factors of corporate engagement, impact measurement and evaluation, and disclosure, this is primarily how investors could engage more closely with the companies that they have invested in. This is kind of the biggest role I feel that investors can play in the whole aspect of just transition. Realising that investors have a stewardship role when they engage with the corporates they invested in asking them to develop a long-term transition plan, social factors like just transition needs to figure quite prominently to ensure that corporates are able to engage broadly with the stakeholders where their operations are quite essential.

Investors have a key role in encouraging corporations to do that. Once you encourage amount of corporates have set themselves [with] like a target of how they could possibly engage with the key stakeholder that would include workers and community, it is important for investors to either develop frameworks themselves or to use frameworks that are available in the public domain on how these companies that they engage with could report through data on how/what their progress has been in terms of factoring in things like just transition in the way that they are changing their strategies in response to an issue like climate change.

Lastly on disclosure, as you may know, it is [something on] climate-related issues that has been picking up of late in the Asian region as well, where governments are mandating companies and all entities to disclose to what extent their businesses would be impacted by an issue like climate change. This is one way of raising awareness and encouraging companies to sort of react to this risk assessment.

Right now I think the most popular standard that's being used for disclosure is the task force on climate-related financial disclosures. Investors could probably encourage companies to also factor in social- and climate-related metrics while making these disclosures publicly; therefore, they can hold themselves accountable to these and factor in these asking when to make that strategy for themselves.

Finally, I think this is one slide I wanted to touch upon just to show to what extent we're seeing progress on the aspect that I discussed in the last slide. Benchmarking companies is something like the trend that's picked up recently. It is basically a method where you sort of evaluate companies performance on different parameters to encourage investors or to give investors a signal as to how companies are performing on these parameters in relation to each other so investors are able to make a better decision as to where the money should be going.

The ***Climate Action 100+ Net Zero Company Benchmark*** is an initiative that ***AIGCC*** works closely with in the Asian region. It had developed a net zero company benchmark in 2021 and it has sort of realised what company's performance has been based on these 3 main aspects which are emission reduction, governance and disclosure. Interestingly, a beta indicator on just transition was added in the report that was released this year which means that the factors of that indicator were sort of disclosed but companies this year haven't been assessed on this parameter yet.

It is interesting to understand what constitutes this indicator. I mean that, in terms of metrics, the company would be evaluated against. It's basically to look at whether companies have acknowledged that there is an issue of just transition. Thus, the first sub-indicator would be acknowledgement. The second one would be to commit to incorporating the just transition principles in the way [of how] the company to function. The third one would be to engage so the companies commit to engage with its stakeholders on just transition issues then finally to take action which would be to commit to a decarbonisation strategy in line with just transition principles. You can see how things are processing on the scale to factor in the whole aspect of just transition in the whole dialogue between investors and companies. These are some sort of metrics that are being developed.

I think I would like to stop here. I hope this presentation was informative to understand where the discussion on just transition has been in the investor community. I hope I've covered most of it with this presentation. If you have any questions, I'd be happy to answer them or you could email me. Please feel free to reach out through our website. Thank you.

CCIL:

Thank you very much Anjali for sharing with us the perspectives of investors. Just a few words to the audience, we will extend the webinar a bit like 15 minutes I guess. I'm glad to see Dr Dalina back to us and I'll pass the floor to you.

Dalina:

Thank you so much, Ingrid. My name is Laurence. I'm a professor at *HKUST, Division of Environment & Sustainability*. From the earlier talk on Taiwan and what's happening in Japan, I'll bring you a regional perspective just out of Hong Kong in the South East Asian region. How could the region actually move towards a JUST energy transition? I'm highlighting the word 'Just' there because we're talking about the just and fair energy transition.

Just to give you a little bit of a background, energy consumption in the region has been increasing during the last 20 years. The majority of this is coming from fossil fuels such as oil, coal and gas that are still the king in the region. Yet, we see a little bit of contributions from renewable energy. Despite the fact that Southeast Asia is very blessed with solar potential as well as wind energy potential, solar potential is almost possible throughout the 10 countries that make up the region. For the wind resource potential, it is high in the coast of Vietnam and the Northern part of the Philippines.

A vision for 100% wind, water, and solar energy for all purposes, 2050, in %

	Residential rooftop solar	Commercial and government rooftop solar	Solar plants	Concentrating solar	Onshore wind	Offshore wind	Hydro	Geothermal	Wave	Tidal
Brunei	21.8	19	25.4	4.9	2.3	25.4			1	0.1
Cambodia	11.1	24.6	12.9	4.6	25.6	12.9	8.3			
Indonesia	13.1	29.1	15.3	4.7	15.8	15.3	1.3	4.4	0.9	
Malaysia	21.7	16.3	25.4	4.8	2.7	25.2	3.6		0.2	
Myanmar	8.3	18.4	9.7	4.4	37.7	9.7	10.7		0.9	0.3
Philippines	13	28.8	15.1	4.2	7.7	15.1	4	11.2	0.6	0.3
Singapore	1.1	0.3	0.9			92.7		4.9		
Thailand	22.3	15.6	33.2	4.9	3.7	18.8	1.3	0.1		
Vietnam	21.6	14.1	25.2	4.6	0.7	25.2	8.1		0.6	

Source: Compiled from The Solutions Project (2021)

(Table 4)

There is also already a model saying that a vision for 100% wind, water, and solar energy for all energy purposes not only for electricity but also for transport, heating and cooling, and [most of the] industries [that] is possible for different countries in Southeast Asia by 2050. Thus, this slide here shows an output from the Solutions Project [in 2021](Table 4). It was modelled by the standard of the Stanford group where the Southeast Asian countries can move towards a 100% renewable energy system.

(Table 5)

Barrier: Less ambitious renewable energy targets

Brunei	Achieve 10% of electricity generation from renewables by 2035
Cambodia	Achieve 55% hydro and 10% other renewable energy in generation mix by 2030
Indonesia	Increase the share of renewable energy in the primary energy supply to reach 23% by 2050 and 31% by 2050
Laos	Achieve 30% share of renewables in primary energy supply by 2050
Malaysia	Achieve 31% of renewable energy installed capacity by 2025
Philippines	Renewable energy in installed capacity to reach 15.3GW in 2030 and 20GW in 2040
Singapore	Increase solar PV capacity to 1.5GWp in 2050 and 2GWp in 2030
Thailand	Increase the share of renewables to 30.18% in total final energy consumption in 2037
Vietnam	Achieve 15-20% of renewable energy share in total primary energy supply by 2030, 25-30% by 2050

(Fig. 6)

Vietnam: holds most of these RE additions at 379 MW peak of solar capacity installation (2019), 9.3 GW pack of rooftop solar power to grid from over 101,000 residential, commercial, and industrial rooftop solar PV systems (2020)

However, there has been less ambition in terms of renewable energy targets in the region. This slide here shows how minimal actually the renewable energy targets among major countries or all countries in South East Asia despite the fact that it is abundant in especially solar resources (Table 5).

Coal-fired power plants, as I mentioned earlier, remained the energy generation system of use during the last decade. Yet, 3 years ago, solar and wind capacity additions have become more prominent in number versus new coal-fired power plants. Vietnam which currently holds most of these RE additions which is a fascinating case (Fig. 6). At the beginning of the pandemic in 2020, Vietnam has put up a Feed-in Tariff [of USD 0.084/kWh over 20 years] that was very competitive and made solar capacity and simulations reaching its highest in the country. [Apart from] Vietnam, we also saw a number of strides in terms of solar deployment in Myanmar and Malaysia.

Wind energy is also fast becoming an energy system of choice especially in Vietnam. As a slide I've shown you earlier that Vietnam is actually very rich in wind resources. This is one of the major countries in Southeast Asia where we can see a lot of wind energy potential and that potential has already started to be [at the top].

Professor Daphne Mah has mentioned electricity market structures earlier as a key barrier for just energy. In the region of Southeast Asia, we have at least 4 different types of market structures. [They are the] vertically integrated regulated utilities in Brunei, and the single buyer model with Independent Power Producers (IPPS) in the continual Southeast Asia, i.e., Cambodia, Indonesia, Laos, Malaysia, Myanmar, Thailand, and Vietnam. We also have the wholesale market in Philippines, Singapore, and Vietnam, and the retail competition in Philippines and Singapore. As you can see, only the Philippines, Singapore and Vietnam are actually open for participation from the private sector.

Opportunities for accelerating energy transition in the region is not only the technical [strategies] which are addressing the variability of solar and wind. Thus, we have improvements in energy efficiency to fill up DSM, supply-side management and the development of storage to basically complement solar and wind generation. In addition, non-technical strategies are also very important to accelerate energy transition in the region. We need to have national transition plans. In the case of the SA regional cooperation, there [is] a mechanism for that. It's available for like 15-20 years. It's also imperative to change energy business models so as to open up markets as much as possible. As I mentioned earlier, only the Philippines, Singapore and Vietnam have [such] open markets.

As Anjali talked about earlier, funding strategy is important as well. Green finance transition bonds are very important because the transition needs a lot of capitalisation. In the context of just energy transition, participation strategy is also crucial for opening the energy

sector to citizen participation [...] Energy transition is inevitable. When it happens, we will definitely move out of the fossil fuel system towards more renewable energy but it can perpetuate pre-existing sets of winners and losers. Winners in the transition are those who will benefit from these renewable energy systems, reduced emission, and employment and innovation opportunities that accompany the transition. From the talks about Japan and Taiwan earlier, it already shows who the winners are. Yet, there are also important parties that may bear the burden or lack access to the opportunities presented by the renewable energy transition. They can be the losers of the transition.

We have to ask ourselves when we are doing this energy transition, and what the potential adverse consequences of the transition are, particularly to the specific communities and social-economic groups. I think these are the questions raised by other speakers at an earlier time so far. Absent efforts to ensure that transition is equitable which means that not everyone will benefit equally. As Professor Daphne Mah has mentioned about the distribution alternative of JUST energy transition, we really need to incorporate that consideration when we talk about energy transition.

When we talk about disparities, it's about who benefits, who are the poor and the burdened ones, and who are the winners and losers. Besides, it's also about opportunities for engagement and leadership. There is one case that has shown as an example on how it can be done and Professor Daphne Mah has also mentioned it earlier that we're here in Hong Kong and we lacked the opportunity to engage with citizens in the transition. The effects on low-income communities can also lead to some disparities in the energy transition, particularly those who have been a victim of air, land and water pollution for a long time due to the fossil fuel systems.

Energy justice is centered on the notion that everyone should have access to energy. In view of that, energy poverty is another important dimension of a JUST energy transition making sure that this energy is affordable, safe, sustainable and able to sustain a decade-long lifestyle. These are the components of a just energy transition [in addition to] the participation in and leading the energy decision-making process with the authority to make change. Change is very very important. Not to mention about the opportunity to [make] that change.

Government and other stakeholders such as non-profits and private industry must work to redistribute welfare to address the undue burden to provide energy access to all as well as the adequate safety net for all populations, especially those [who are the] most marginalised and burdened in the case of a rising cost of electricity due to energy transition.

Therefore, how can we pursue that? Energy transition is basically to acknowledge and understand its adverse effects to citizens, to households and to communities. Disproportionate burden is about the negative externalities of different infrastructures and [other locally] unwanted land-uses also disproportionately affect communities. There has been a question about land and space requirements for the energy transition. Most of the time, lower-income populations experience more of these burdens so if we have to deal with this situation we have to really look at how we can address this disproportionate burden.

Lack of access to energy transition opportunities is to make sure that the losers would not remain as the losers. Thus, we have to provide new employment opportunities for people who might lose their jobs from carbon emitting sectors. Women also have [been facing this problem so] that we [should consider more about women when it comes to energy jobs]. We do not need more male engineers but women renewable energy engineers. I think this is very important and this was already highlighted by Professor Mah - involvement in decision-making processes which is related to another tenet of energy procedural justice. For access to advanced, low-carbon and efficient technologies, we have to make sure that this access is universal because, at the moment, it is exclusively seized by those who have higher income. Although our e-cost has already dropped in many places, there are still high upfront costs of technologies in many Southeast Asian countries.

As a conclusion, we really have to think about these 3 questions when we are looking at or thinking about just energy transition. Who suffers and to what degree of their suffering; where are they located - place-based energy justice considerations, and what are the potential solutions and what could be the impact of these solutions. Thus, it's not only about the provision of that solution but also something more ahead - how could that potential solution even aggravate the existing marginalisation of people's communities. Thank you so much. If you have questions, please feel free to send me an email: lld[at]just.hk. Thank you so much.

CCIL:

Thank you very much Dr Dalina. Now we'll have a very short Q&A session. I see there's a question for Anjali...are you typing the answers or do you want to answer verbally?

Anjali:

I'm typing the answer but I can give a sort of a quick verbal response if that's okay...(CCIL: Sure.) I mean I can just quickly answer both of the questions. The question is to what extent are investors weighting financial risks and factors required...I think that, increasingly, investors become more aware of the impact of...let's say the physical risks of climate change on their projects, the more they need to invest in aspects such as things related to the transition to help one protect the assets that they've invested in. And in that process, they would protect the capital that they've invested in these projects. In that context, things like transition finance really comes into the picture because investors are increasingly realising how their projects, their supply chains and everything associated with the projects that they've invested in which would include things like external stakeholders and employees are going to be affected by climate change.

Thus, the region that we live in is going to be...I mean if you look at the working group report that came out last week, it shows you to what extent the region itself will be impacted by climate change. With increasing awareness on that front, investors are also willing to look at other aspects apart from profit. That's quite a positive move that we see when we are engaging with investors.

For the second question on transparency, I would say that if investors are openly investing in climate finance which would include things like green bonds and transition bonds, it would be in their interest in being transparent about it. Because it once sort of puts you in a good light showing that you're invested in the global transition on climate, it's basically in an investor's best interest to be as transparent as possible in the way that they're engaging with these transition issues. Thank you.

CCIL:

Thank you. There's one more question on what's the role of carbon pricing and just energy transition, and what is the optimum carbon price to phase out coal power plants. Do you have any ideas on this issue? I guess maybe speakers from the previous session are better to answer this question. I'll leave it to the rest of the speakers. See if anyone can answer in text. One more thing I would like to ask, probably for Dr Furuya and Ms Hwang, as you both mentioned about some bottom-up approaches in promoting renewable energy, so I wonder what social or political environment we need to encourage such bottom-up approaches from different sectors.

Furuya:

It's very crucial to start up a new committee power project with the political initiative, especially the mayor, who is a key person to encourage people to start working on it. Actually, this is a point that is often overlooked but the city government or the local government bureaucracy is a really big barrier because they would cut [duties] into slides. It's different to work with other sections as well as the financial secretaries that are not so willing to try new things. Yet, by creating a kind of a thunderbolt and trying out the small experiments with various stakeholders locally, I think it will be an important step to start new things with such a bottom-up approach.

CCIL:

Thank you, Dr Furuya. Miss Hwang, do you have anything to add ? Or other speakers, do you have anything to add?

Hwang:

I think you have to have a bond with people in the local community first. For example, in Taiwan, at least 3 of the co-ops that I know of, they either have a very vital community association which have a local bonding with people and usually have a project that has already been run for a while. They may have a community college so there are courses and activities that are going on in a thematic way year by year. For one of the community development associations, they have run a lot of day care centres for senior citizens. Some of them have run in an agricultural region. Thus, they are...in Japanese they're called Matsuri, they have local and seasonal activities. That would be crucial when you want to

engage with people. That means you have to have a common bond already. That's what I've observed. Although the roles of the municipalities or the local governments tend to be very conservative, we are trying to navigate or break through the barrier in between and create a new dialogue with them.

CCIL:

Thank you, Ms Hwang. I see that Dr Dalina just unmuted your microphone. Do you have something to add?

Dalina:

When we talk about energy transition... although it's not the focus of the discussion at the community level, it's really important to have structural changes at a large-scale level. It's not only about renewable energy capacity, we have to replace the existing coal-fired power plants or oil-fired power plants as well as the natural gas pipeline with renewable energy from wind, water and sunlight, and we have to do that within the context of energy justice; otherwise, we will go nowhere. Thus, communities are very important, renewable energy is very very important... It's something that we have to accelerate but at the same time we really have to push for more structural changes at a large-scale level.

CCIL:

Thank you, Dr Dalina. Since we are running out of time. I think that's pretty much for this session. Thank you very much Dr Furuya, Dr Daline, Ms Hwanga and Anjali for today's discussion. Before we end, I would like to invite our CEO, Mr Chong Chan Yao, to say a few words again to us. Mr Chong, please.

Chong:

Thank you very much. It remains for me to thank everybody, the 12 speakers, and Ingrid, the excellent moderator, as well as the audience for staying for 3 hours. I have several takeaways that are very personal and very selective from this seminar. First of all, we have an urgencies. IPCC reminds us we must speak in 3 years of time but not in 30 [years], not the end of the century. That means we have to constantly enhance our ambitions. Government, community, and business investors are all together. We cannot afford to stick to the blueprint published last year or 5 years ago. We have to now revise the goals, indicators, and impacts that we published last year. This is accelerating - not just spending up but accelerating.

Number 2, this is justice. This is about justice. While we need to replace coal and the fossil fuels, we have to think about the 3 millions co-workers in China alone and many others in Indonesia as well as those from other places. We have to think about how to share the benefits of renewable energies to many citizens and not just those who own a rooftop. We

have to think about how to distribute the impact of renewable energy to everybody. I still want to quote a science person who said to me that one day sunlight is enough for the whole world if we can harness it. So, let's do it.

The future is for everybody - not just for the young but also for the participation of the elderly, women, men, and people from different backgrounds of ethnic minorities. We all have the whole world with and to care for. So, let's work hard together. **CarbonCare InnoLab** is very happy to be a partner to all and hope we will see you soon in our journey for a sustainable world. Thank you very much.

CCIL:

Thank you, Mr Chong. I guess we all have gained a lot of insights today in accelerating a just energy transition. Once again, I would like to thank all the 12 speakers today. You all shared a lot with very invaluable insights. For the audience as well, thank you very much for the questions and your participation. Before you go, please fill in the survey form for us and give us some comments. The link is in a chat box sent by the **CarbonCare InnoLab**'s colleagues. I'm very sure that **CarbonCare InnoLab** will have some other events going on very soon, so please stay tuned for our latest news and I hope to see you all again soon. Thank you all today.

All: Thank you. Bye-bye.