OPENING ADDRESS BY MS GRACE FU
MINISTER FOR SUSTAINABILITY AND THE ENVIRONMENT
AT *SYMPOSIUM ON SINGAPORE'S THIRD NATIONAL CLIMATE CHANGE STUDY* ON 5 JANUARY 2024 AT
MARINA BAY SANDS EXPO AND CONVENTION CENTRE

Distinguished guests
Ladies and gentlemen

1. Good morning, and a Happy New Year to you all.

Introduction

2. As we start the new year, I thought we would share some reflections from the recent COP28 in Dubai last month, to give us a sense of where we have come and where we are heading.

3. COP28 marked the first-ever Global Stocktake of the world's progress towards meeting the goals of the 2015 Paris Agreement. For the first time, a decision has been reached to transition away from fossil fuels in our energy systems. And more than ever, there is a realisation that we may have the means to make the necessary course corrections to get to net zero by scaling up renewable energy deployment, energy efficiency improvement and removing the stock of carbon in the atmosphere.

4. However, the Global Stocktake was also a stark reminder that current efforts are not sufficient to limit the global temperature rise to 1.5^{o}C.

And this was at the heart of most of the discussion stretching deep into the night during COP28, that we cannot afford to sit idly by, because the effects are already here and affecting our lives. According to the World Meteorological Organisation, 2023 is the warmest year on record. Across the globe, communities experienced extreme weather events, from deadly wildfires in Canada and Greece, to torrential rains and floods in India, Pakistan and China, and a sweltering heatwave in Southeast Asia. In Singapore, we matched our historical high temperature of 37^{o}C in May 2023. The heat, coupled with high humidity in our environment, brings serious health risks. Such extreme weather occurrences are projected to increase in frequency and intensity, and undoubtedly many of us are concerned how much worse they may become, and how we are preparing.

Third National Climate Change Study

5. Climate change is an existential challenge for Singapore, and the Government treats it with utmost seriousness. We are investing significantly to better understand it, and starting our planning and preparatory works. Since 2007, we have undertaken three National Climate Change Studies to better understand the impact of climate change on Singapore.

6. The Third National Climate Change Study, or V3, is the latest. Led by the Centre for Climate Research Singapore (CCRS), V3 provides the world's highest resolution climate projections for Singapore and the Southeast Asia region until the end of the century.

Working off the 6th Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), V3 shows climate projections based on three global emission scenarios – low, medium and high, with the effects of climate change more pronounced under the high emissions scenario.

7. V3 is the result of years of careful investments, in not only climate science but also supercomputing. CCRS partnered the National Supercomputing Centre (NSCC) to work on coarse global climate models to obtain finer climate projections for Singapore and our region. This is akin to zooming in from a big world map to a map of Singapore that displays our streets and landmarks. To achieve this, the teams had to make sense of billions of climate data points spanning multiple decades.

8. I congratulate CCRS and NSCC on the successful completion of V3. This achievement advances scientific understanding of our tropical climate and sets a benchmark for future climate projections. More importantly, V3 provides a common scientific basis for all interested parties – government agencies, businesses, academia and community groups – to prepare for a climate-resilient future.

9. V3 shows that we will have to contend with more extreme climate conditions – higher temperatures, heavier rainfalls and longer and more frequent dry spells. These climate conditions may also lead to other indirect climate challenges, including disruptions to water and food. Armed with these projections, we will strive to safeguard a sustainable, resilient and liveable Singapore for our future generations, just as our forefathers had done for us.

Climate Action in Singapore

Climate Mitigation

10. To achieve the goals of the Paris Agreement in limiting global warming, a global solution is required. We will do our part. We have committed to achieve net-zero emissions by 2050 and have been taking active steps to mitigate climate change and transit to a low-carbon future.

11. From 1 Jan, we have raised our carbon tax to $25 per tonne. We will progressively raise the carbon tax level further, to $50 to $80 by 2030.

12. As a small, alternative energy disadvantaged island nation, we have looked towards innovation and collaboration to transform our energy supply. We are making innovative use of our limited land by deploying solar panels on rooftops and reservoirs, and are collaborating on cross-border green energy trade.

13. Decarbonisation of the international maritime and aviation sectors is also high on our agenda. We are preparing our maritime hub for a multi-fuel transition. We are piloting projects for biofuels, methanol and ammonia. We have also been collaborating with other international ports and partners to promote Green and Digital Shipping Corridors. On the aviation front, we are home to the largest production facility for sustainable aviation fuel.

We are exploring ways to promote the offtake of SAF to regional and international airlines at Changi Airport, moving the needle on low-carbon air travel.

Climate Adaptation

14. The Government will co-create solutions on adaptation with the community by setting aside resources, and strengthen our climate adaption plans.

15. With the release of V3, we will review our existing plans and ensure their relevance. We will also look out for new climate risks that may require our attention. I will highlight two aspects of climate impacts.

16. First, on tackling rising sea levels. This presents an opportunity to reimagine the design of our coastlines, to create new benefits such as additional recreational spaces for the community, and conserving nature and biodiversity. Last November, we announced plans to start technical studies for the 'Long Island', which could involve reclaiming around 800 hectares of land and protect the low-lying East Coast of Singapore from rising sea levels. This will integrate coastal protection with future land use needs, create a new freshwater reservoir to enhance long-term water resilience and create new possibilities for parks and recreational activities. We will take into consideration stakeholders' views and suggestions from Our Coastal Conversations led by PUB, and we will seek feedback from stakeholders on the plans for the 'Long Island' and other segments of the coast.

To enhance our engineering capability, we launched the Coastal Protection and Flood Resilience Institute (or CFI) Singapore, hosted at NUS. This brings together the strengths of local institutes and the industry to take on this decades-long challenge.

17. The second part is about coping with rising temperatures. We have utilised passive design strategies to remain cool in our warm climate. These include intensifying greenery in our urban areas and orienting buildings along the North-South direction to reduce heat gain. More recently, we have used measurements, modelling and simulation to improve our city design and enhance our knowledge of urban heat and its impact on human health. We are also actively strengthening our community's resilience to cope with heat. Last year, we launched the Heat Stress Advisory to empower residents to make more informed decisions when engaging in outdoor activities. Specific sectors such as employers of outdoor workers, schools and operators of residential homes have also put in place enhanced measures to protect vulnerable segments from heat stress.

18. As a broader point, we will need to continue to deepen our understanding of these climate risks, to inform our long term plans. CCRS launched a first grant call last year under the Climate Impact Science Research Programme. I am pleased to announce that eight projects have been awarded under the first grant call to a diverse group of researchers across our Institutes of Higher Learning.

Armed with the V3 results, these projects will investigate the impact of climate change on vector-borne and chronic diseases, changes in our tropical forest landscape, and our food security, to name a few.

19. Today, CCRS will launch the second grant call for proposals to better understand climate change impacts on Singapore's water resources, maritime and port infrastructure, the incursion and spread of vector-borne and zoonotic diseases, and our abilities to adapt to heat. I encourage our scientists and industry partners in the audience today to participate in the grant call.

International Collaborations in Climate Science & Adaptation

20. Just as with decarbonisation efforts, countries have to work with and support one another to accelerate climate adaptation. Singapore will contribute expertise and resources for international capacity building, such as in the IPCC process. Professor Winston Chow, who is here today, is the Co-Chair of the IPCC's Working Group II. He will lead the next cycle of work in the 7th Assessment Report (AR7) to assess climate change impacts, adaptation and vulnerabilities across diverse communities and ecosystems. These findings will serve as a globally recognised basis for international negotiations at future UN Climate Change Conferences. We will also share our V3 data with our regional partners through the ASEAN Specialised Meteorological Centre to support scientific understanding of climate change and associated impacts.

And we will provide V3 data to inform the climate impacts assessments tools of the Food and Agriculture Organisation of the United Nations, to enable users in our region to conduct more detailed assessments of their agriculture sectors and equip themselves better to respond to our changing climate.

Closing

21. Everyone has a part to play in tackling climate change. CCRS will make the findings publicly available via the Data Visualisation Portal, to encourage greater access. With this information, researchers can co-create climate-resilient solutions and communicate important scientific knowledge. Businesses can lead the way by adopting more sustainable practices, tracking your carbon footprint and setting a net zero target year. Community groups can raise awareness about climate change and mobilise action, such as nature conservation.

22. I hope today's Symposium will give you a renewed sense of purpose and energy in climate action. I wish you all a fruitful session ahead. Thank you.

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