EVENT BRIEF
KLIMATHON: OUR RACE TOWARDS A NET-ZERO REALITY

Background

Klimathon (klima+hackathon) is an innovation lab focused on new and workable solutions that can help address current issues and challenges relating to the climate crisis. The initiative intends to amplify the youth's voice and highlight their capability to develop and implement meaningful climate actions.

Participating teams of Filipino students and young professionals will each present a project concept paper based on one of three focus pillars, namely, (1) plastic waste management, (2) energy efficiency and renewable energy, and (3) food security. Ten finalists will undergo a mentorship program with industry and field experts to refine and further develop their project design. Cash prizes and recognition await the winning teams.

The climate hackathon will be launched on October 20, 2021 and will run until January of next year.

Klimathon is a joint project of the Climate Change Commission (CCC), the agency spearheading the government's climate change initiatives, and Nestlé Philippines, with its pioneering programs tackling climate change and commitment to achieve net-zero emissions by 2050.

Nestlé Philippines, one of the largest Nestlé markets worldwide, is deeply committed to pursuing its environmental goals as a *Kasambuhay* for the Environment with two major long-term programs tackling climate change and plastic waste, respectively. Its climate change program supports the attainment of the country's Nationally Determined Contribution targeting the reduction of GHG emissions by 75% by 2030, under the Paris Agreement.

Locally, Nestlé Philippines has committed to reduce virgin plastics consumption by a third, and cut 30% of GHG emissions in its operations by 2025, versus 2018 levels. With climate change as a key priority, Nestlé Philippines has in place a whole-of-business approach to source responsibly, transform its operations, and shape a waste-free future. As a company with 110 years of presence in the country, it seeks to leave a legacy of effectively caring for the planet.

Competition Mechanics

Who can join?

- Filipino senior high school and college students and young innovators
- Participants must be between 16-24 years old, as of the date of submission.

How do I join?

- Form a team of 2 to 5 members
- Download and accomplish the project concept paper document: https://bit.ly/2021KlimathonSubmissions
- Send your accomplished project concept paper to klimathon2021@gmail.com on or before November 10, 2021, together with the following:

    - Photocopy of IDs (school or government-issued ID) of each participating member in the group
    - Proof of enrollment (if still in school)
    - Signed consent/waiver forms (for intellectual property and underage members)
        a. Participant Release and Waiver Form
        b. Parental Consent Form

How will our proposals be judged?

Judging criteria:

- **Relevance as Climate Action (40%)** – The innovation is designed to address climate change causes and impacts, particularly on the identified pillars.
- **Innovativeness (20%)** – The innovation presents fresh, creative, and disruptive approaches to tackle climate change.
- **Community Impact (20%)** – The innovation is adapted and tailored to the local context, which may not only result in climate resilience but also community development.
- **Sustainability (20%)** – The innovation has high potential to be sustained and replicated and could attract private and public sector investment.

How will I know if our proposal is shortlisted?

We will be announcing the top 10 finalists via the Facebook pages of Climate Change Commission and Nestlé Philippines on November 25. We will be contacting the finalists.

What's in it for me?

Finalists will undergo a mentorship program with industry and field experts. The top 3 winning teams will be selected and awarded cash prizes, which can be used as seed money to further develop or implement their project:

- 1st place: P50,000
- 2nd place: P30,000
- 3rd place: P20,000

Winning teams also earn the recognition of being the first batch of Klimathon champions.

The Climate Challenges

The impacts of climate change are worsening at an alarming rate and scale, and there is no more time to waste. Governments, corporations, and organizations across the globe are strengthening their efforts to help slow down the increase of global warming, while also ensuring vulnerable populations are safe and able to cope with the changing climate. But as many challenges remain, new and innovative climate solutions, especially from our youth, are needed now more than ever.

Solutions that promote energy efficiency and provide access to renewable energy; ensure food security with minimal environmental impact; and address plastic waste and pollution shall be the focus areas of this Klimathon. These can be innovations on the individual or household level or on a large or industrial scale.

Below is a summary of points to provide additional context for each focus pillar.

Plastic Waste Management

- Single-use plastics, often referred to as “disposable plastics,” include items intended to be used only once before they are thrown away or collected for recycling, such as grocery bags, straws, stirrers, cups and cutlery, bottles, or food packaging. Single-use plastics embody the throwaway culture in modern society that has been proven harmful to the environment and human health for causing pollution of water bodies and death or injury to marine organisms, blockages in our drainage and waterways, and release of toxic gases when burned.

- Plastic products have exceedingly long lifetimes (ordinary beverage plastic bottles have an average lifetime of 450 years). Other forms of plastic disintegrate into tiny particles called microplastics, which are eaten by fish.

- Researchers estimate that more than 8.3 billion tons of plastic have been produced since the early 1950s and about 60% of that plastic has ended up in either a landfill or the natural environment. Further, only 9% of all plastic waste ever produced has been recycled. About 12% has been incinerated, while the rest — 79% — has accumulated in landfills, dumps, or the natural environment.

- The Philippines was named in 2015 by the Ocean Conservancy as one of the top sources of plastic trash dumped into the seas, with an estimated 2.7 million metric

tons of plastic waste and half a million metric tons of plastic-waste leakage per year.

- A comprehensive scientific assessment and material flow analysis of plastic packaging waste in the Philippines commissioned by the World Wide Fund for Nature (WWF) Philippines in 2019 showed that out of 2,150,000 tons of plastic wastes that are available for local consumption, 760,000 tons or 35% are leaked into the open environment, while 706,000 tons or 33% are disposed of in landfills and dumpsites.

- The majority of Filipinos are still dependent on the "sachet economy." The affordability, convenience, and strong market presence of sachets make them an easy choice for low-income households. In 2019, 164 million pieces of sachets were used and discarded in the Philippines.

- A study by The Ocean Cleanup has identified the Pasig River and 18 other Philippine rivers as among the top 50 most polluting rivers in the world. It also identified the Philippines as the largest plastic-polluting country, dumping more than 356,371 metric tons of plastic waste annually from 466 out of 1,656 of the world's rivers, into the ocean.

Energy Efficiency and Renewable Energy

- The energy sector accounts for a significant percentage of the country's greenhouse gas (GHG) emissions, and therefore offers the highest mitigation opportunity for the Nationally Determined Contribution (NDC). Based on the Department of Energy's (DOE) 2020 power statistics, the share of renewables in the installed generating capacity of the Philippine energy grid is only at 29.1%, compared to fossil fuels (coal, oil, and natural gas) having a 70.8% share.

- Fossil fuels are extracted from the ground and burned for energy. In this process, large amounts of GHGs are released into the atmosphere, trapping heat from the sun and causing global warming.

Food Security

- By the years 2051 to 2060, the Intergovernmental Panel on Climate Change (IPCC) predicts that the maximum fish catch potential of Philippine seas will decrease by as much as 50% compared to 2001-2010 levels. A World Bank study similarly estimates that fish catch in Southeast Asia will drop by 50%.

- In 2019, nearly Php 8 billion was lost due to droughts and dry spells induced by El Niño and aggravated by climate change. A total of 247,000 Filipino farmers were affected, prompting 51 local governments to declare a state of calamity.

- A study conducted by the World Resources Institute reported that the Philippines will experience a “high” degree of water shortage by the year 2040, with the agriculture sector bearing the brunt of this water shortage.

Guide Questions for Concept Paper Development

Pillar One: Plastic Waste and Pollution

- How can we encourage companies and individuals to monitor their plastic footprint and recommend ways they could avoid plastic waste and pollution?
- How can we reduce and avoid plastic consumption from online shopping and deliveries, especially from e-commerce platforms?
- How can we support major companies in adopting and implementing refilling systems, plastic waste pick-up or drop-off stations, and other alternative means that could prevent generation of new plastic waste and pollution?
- How can we help barangays and households to segregate and prevent waste from leaking into the open environment?

Pillar Two: Energy Efficiency and Renewable Energy

- How can we promote more efficient ways to consume energy or use appliances and gadgets at home, schools, and workplaces?
- How can we encourage more people to bike, walk, or be mobile by other means of transport that are not reliant on using fuel and diesel?
- How can we help provide access to renewable energy technologies for schools and communities, especially those that have little or no access to electricity?
- How can we convince industries and communities to recycle more and use more locally-sourced renewable energy?

Pillar Three: Food Security

- How can we encourage communities, workplaces, schools, and households to venture into and sustain food gardens (for fruits, vegetables, spices, and herbs)?
- How can we support the food and beverage industry in reducing or avoiding food waste in restaurants, events, and the like?
- How can we better connect our farmers and fisherfolk to households and markets and minimize waste and emissions in the delivery or transport of food items?

Additional Resources

Unequivocal human influence on climate change

- According to the Intergovernmental Panel on Climate Change (IPCC), human activities have caused 1.07 degrees Celsius of global warming from pre-industrial levels, with "the scale of recent changes across the climate system… unprecedented over many centuries to many thousands of years."

- Limiting global warming to 1.5°C by 2100—as prescribed by the Paris Agreement and considered to be humanity's threshold for survival—is still possible, but will require rapid and far-reaching transitions, especially in land, energy, industry, buildings, transport, and cities. To contain global warming at this level, man-made global net carbon dioxide (CO2) emissions would need to fall by about 45% by 2030 from 2010 levels and reach "net zero" by mid-century.

- To achieve this goal, countries have put forth their respective Nationally Determined Contributions (NDCs), which are targets that they set in reducing their greenhouse gas (GHG) emissions. According to the United Nations (UN), these NDCs would still lead to a global warming level of 2.7°C. Countries must therefore increase their commitments to support the 1.5°C goal.

Climate change more widespread, rapid, and intense

- The IPCC's latest report states that scientists are observing changes in the Earth's climate in every region and across the whole climate system. Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the changes already set in motion—such as continued sea level rise—are irreversible over hundreds to thousands of years.

- However, strong and sustained reductions in emissions of carbon dioxide (CO_2) and other greenhouse gases would limit global warming. While benefits for air quality would come quickly, it could take 20-30 years to see global temperatures stabilize, according to the IPCC Working Group I report, *Climate Change 2021: the Physical Science Basis*, approved on August 6 by 195 member-governments of the IPCC. The Working Group I report is the first installment of the IPCC's Sixth Assessment Report (AR6), which will be completed in 2022.

- "This report reflects extraordinary efforts under exceptional circumstances," said Hoesung Lee, Chair of the IPCC. "The innovations in this report, and advances in climate science that it reflects, provide an invaluable input into climate negotiations and decision-making."

Faster warming

- The report provides new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finds that unless there are immediate, rapid

and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach.

- The report shows that emissions of greenhouse gases from human activities are responsible for approximately 1.1°C of warming since 1850-1900, and finds that averaged over the next 20 years, global temperature is expected to reach or exceed 1.5°C of warming. This assessment is based on improved observational datasets to assess historical warming, as well progress in scientific understanding of the response of the climate system to human-caused greenhouse gas emissions.

- "This report is a reality check," said IPCC Working Group I Co-Chair Valérie Masson-Delmotte. "We now have a much clearer picture of the past, present and future climate, which is essential for understanding where we are headed, what can be done, and how we can prepare."

Every region facing increasing changes

- Many characteristics of climate change directly depend on the level of global warming, but what people experience is often very different from the global average. For example, warming over land is larger than the global average, and it is more than twice as high in the Arctic.

- "Climate change is already affecting every region on Earth, in multiple ways. The changes we experience will increase with additional warming," said IPCC Working Group I Co-Chair Panmao Zhai.

- The report projects that in the coming decades climate changes will increase in all regions. For 1.5°C of global warming, there will be increasing heat waves, longer warm seasons and shorter cold seasons. At 2°C of global warming, heat extremes willmore often reach critical tolerance thresholds for agriculture and health, the report shows.

- But it is not just about temperature. Climate change is bringing multiple different changes in different regions – which will all increase with further warming. These include changes to wetness and dryness, to winds, snow and ice, coastal areas and oceans. For example:

    - Climate change is intensifying the water cycle. This brings more intense rainfall and associated flooding, as well as more intense drought in many regions.

    - Climate change is affecting rainfall patterns. In high latitudes, precipitation is likely to increase, while it is projected to decrease over large parts of the subtropics. Changes to monsoon precipitation are expected, which will vary by region.

- Coastal areas will see continued sea level rise throughout the 21st century, contributing to more frequent and severe coastal flooding in low-lying areas and coastal erosion. Extreme sea level events that previously occurred once in 100 years could happen every year by the end of this century.

- Changes in the oceans, including warming, more frequent marine heatwaves, ocean acidification, and reduced oxygen levels have been clearly linked to human influence. These changes affect both ocean ecosystems and the people that rely on them, and they will continue throughout at least the rest of this century.

- For cities, some aspects of climate change may be amplified, including heat (since urban areas are usually warmer than their surroundings), flooding from heavy precipitation events, and sea level rise in coastal cities.

The Philippines' Climate Vulnerability

- In the latest Global Climate Risk Index report, the Philippines ranks fourth among the top countries most affected by climate change over a two-decade period from 2000 to 2019, noting how we are "recurrently affected by catastrophes."

- Based on a study of the Asian Development Bank on the economics of climate change, the country stands to lose 6% of its GDP annually by 2100; however, investing 0.5% of the country's GDP by 2020 in climate change adaptation will avert losses by as much as 4%.

- Being an archipelago with most of its communities located in coastal areas, the Philippines is prone to rising sea levels, which were nearly double the global average rate during 1993-2015, and therefore, are at higher risk of coastal flooding, sea salt contamination of groundwater, beach erosion, and storm surges, among other impacts of climate change.