

ICEF2024 Statement from the Steering Committee

October 10, 2024

After a decade on its journey of advocating innovation to fight climate change and advance clean, green, smart and just transition, the Innovation for Cool Earth Forum (ICEF) held its 11th annual meeting in a hybrid format on October 9th and 10th, 2024 as an initiative of “Tokyo GX Week”, convening leading global and Japanese innovation champions to tackle a wide range of energy and environmental issues. Themed on “How to Live within the Planetary Boundaries through Green Innovation”, ICEF 2024 examined hurdles to remove and opportunities to seize and create through innovation in the backdrop of geopolitical and social complexity. More than 1,700 people from governments, international organizations, industry, and academia participated in this event, representing 93 countries and regions. At the conclusion of ICEF2024, the Steering Committee is releasing the following statement based on a series of discussions.

1. Where our planet stands now

- The world faces deepening and complex planetary crises. The concept of planetary boundaries identifies nine critical boundaries for maintaining the stability and resilience of the Earth system as whole, and argues that out of the nine, the world has already overstepped six, including climate change.
- A UN report in May concludes that the world is not on track to achieve most of the SDGs by 2030. Multiple crises have caused significant setbacks to developing countries’ efforts to eradicate poverty and end hunger. According to the 2024 Global Report on Climate and SDG Synergy, 80% of the SDG targets are directly linked to climate. Synergies between climate action and sustainable development need to be maximized. The 2025 round of Nationally Determined Contributions or NDCs under the Paris Agreement offers a major opportunity for countries to do so. ICEF hopes that COP29 this November in Baku will make a step forward towards stronger NDCs.
- The Future Summit, concluded last September, put transforming global governance at top priority in order to deliver SDGs. Innovative forms of global governance need to be considered, in particular against the backdrop of increasing geopolitical and geoeconomic complications, exponentially impactful technologies and rivalry. To break deadlocks demands redesign of governance structures and processes to fit for purpose to enable green innovation.
- The major issue at COP29 this year is finance. New initiatives and mechanisms, such as a new collective quantified goal or NCQG, will be proposed for adoption. In addition, the COP29 presidency proposed in July a new climate action fund, seeking

inter alia for voluntary contributions from fossil fuels producing countries and companies. Innovative finance is a prerequisite to mobilize ambitious climate action, particularly, of developing countries.

- Opportunities will lie ahead of us if we further advance technological and social innovation tethered to emergent political, economic and social reality. This has been exemplified by massive deployment and cost reduction of renewables.

2. Next steps needed

- Against the above backdrop, ICEF2024 had in-depth discussions on stability and resilience of the Earth system and socially-just energy transition. We evaluated the current conditions for safe and just future on our planet, identified challenges, and deliberated on necessary policies and green innovations to construct our sustainable future for all, collectively.
- Recognizing the daunting debt stresses of developing countries, ICEF2024 also discussed innovative finance, which is to deploy financing solutions to stimulate private sector investment beyond public financing, and enhance public-private partnerships, while reforming international financial architecture, especially the multilateral development banks. To address the identified investment needs of \$2 ~5.7 trillion per annum, we explored methods for mobilizing finance to emerging markets, green innovation, decarbonization and sound biodiversity security, which is assured by transparency and accountability in the process.
- Green innovation effort is essential. Leading experts dealt with the following five specific issues:
 - ✓ First, carbon dioxide removal (CDR) and other climate stabilization options, which are indispensable to achieve carbon neutrality, encompassing a wide range of technology-based and nature-based solutions. CDR technology perspectives, possible solutions for deployment, and international frameworks were debated.
 - ✓ Second, hydrogen readiness. Experts discussed the definition of “hydrogen ready”, which is increasingly being used as a condition for subsidizing infrastructure including new gas power plants. They also shed light on how to transition existing infrastructure to low-carbon hydrogen.
 - ✓ Third, food and agriculture system, which is adversely affected by climate change. Opportunities and challenges were discussed for food and agriculture system, and forestry and fishery sectors, which can be emission sources and/or removals in their supply chains. Further innovation is required to ensure

food security. The food and agriculture system can, indeed, be totally transformed from being a major contributor to emissions to being a major contributor to Carbon Capture and Storage (CCS). Furthermore, by reducing the existing significant wastage, it can better contribute to reducing poverty and hunger in the world.

- ✓ Fourth, future of nuclear energy. With focus on advanced reactors, experts examined the approaches taken by businesses toward their commercialization and various applications, as well as regulatory challenges.
- ✓ And fifth, sustainable marine transport, which is one of the hard-to-abate sectors. Technologies and designs of vessels, sustainable fuels, and energy efficient operation for berthing were discussed. An adverse impact of banning heavy fuel oil was also debated.
- Building upon the previous year's roadmap which attracted enormous attention globally, ICEF2024 released Artificial Intelligence for Climate Change Mitigation (Second Edition). The 2024 Roadmap comprehensively updates all chapters in the previous roadmap, adds six new chapters, and includes 5 – 10 specific, achievable recommendations in each chapter.

3. In closing

- Diversity and inclusiveness remain ICEF's strong creed. We always embrace and celebrate the participation of speakers who represent and embody diversity, including leading youth and women innovators, especially from rural and indigenous communities. We at ICEF continue to be firmly committed to engaging diverse, cross-generational, cross-geographic stakeholders and thereby creating stronger momentum for technological and social innovation for our carbon neutral and sustainable future.
- Young innovators who are leading changes in the frontline of challenges, including in rural and indigenous communities, highlighted at ICEF2024 that "innovation comes from people" and we must continue to invest in next generations and drive positive changes. "We recognize the crucial role of innovation in shaping the future. And happy to contribute for this best and the worst time of human history, for passing on the cool earth to one and more next generations."
- Prof. Harari, the author of Sapiens, identifies nuclear war, ecological challenge, and tech-destruction by AI as the three major global challenges to human beings of the 21st century. ICEF should seriously address those issues in the next decade.
- The political and geopolitical landscapes are shifting in major economies this year.

While challenges remain overwhelming, we foresee tremendous opportunities to be created and captured through joint innovation and partnership in the coming decade when foundation to deliver carbon neutrality by mid-century will be established. And planetary boundaries, while adding sense of crisis, offer a stronger argument for demanding strengthened innovation and cooperation. Opportunities are emerging. They include, as examples: 1) AI for enhanced climate resilience, 2) energy system reconfiguration, 3) industrial value chain transformation, 4) landscape-based food and agriculture system, 5) innovating global governance including financial architecture, and 6) the rise of younger generational aspiration and inspiration to lead innovative solutions, are among some of the most exciting levers for green innovation.

