Asia Sustainable Finance Forum 2022

Next Steps for Climate Innovation

March 24 (Thursday), 2022 | 09:30-17:00(GMT+9) Seoul
Online Livestreaming @ Park Ballroom (5F) Conrad Hotel, Seoul, Korea
Asia Sustainable Finance Forum 2022

Next Steps for Climate Innovation

The Asia Sustainable Finance Forum 2022 is the inaugural event hosted by the Financial Services Commission (FSC) of the Republic of Korea and co-organized by the consortium of Stanford University, Korea Advanced Institute of Science and Technology (KAIST), and Korea Development Bank Group (KDB). The event, and its subsequent events, aim to convene academic scholars, industry practitioners, and policymakers in Asia and call for integrated actions toward the global net-zero transition.

There is significant and growing interest in the topics of sustainable finance and investment. Asia, in specific, confronts severe issues with the transitioning carbon-reliant economies while not compromising the trajectory of rapid economic growth. Despite a global agreement on the 1.5°C target and increasing net-zero pledges globally, there is a lack of consensus-building and implementation plans in Asia. At this juncture, academic research should play a significant role in filling this gap through close collaboration with major stakeholders.

The consortium presents a novel form of global academia-industry initiative that focuses on a new paradigm integrating technology, finance, and policy innovation in accelerating the net-zero transition in Asia. This transition will require intelligent market design, sophisticated sustainability assessment tools, and new investment and business models. Systems that successfully navigate these untapped frontiers will generate outsized returns by positioning themselves to be more efficient, flexible, resilient, and environmentally sustainable. High-quality, rigorous academic research explored and developed by the consortium can demonstrate opportunities under each and across technology, finance, and policy sectors that will profoundly contribute to this new paradigm shift.

The collaborative works will help align the financial system with global sustainability, meeting the Paris Climate Change Agreement and the Sustainable Development Goals, and create net-zero pathways appropriate to Asian contexts.

Overview
Title: Asia Sustainable Finance Forum 2022 (ASFF 2022)
Theme: Next Steps for Climate Innovation
Date: March 24 (Thursday), 2022 | 09:30-17:00(GMT+9) Seoul
Venue: Park Ballroom (5F) Conrad Hotel, Seoul & Online
Host: Financial Services Commission (FSC), Republic of Korea
Co-Organizer: Stanford Center at the Incheon Global Campus (SCIGC), KAIST Center for Sustainable Development (CSD)
Sponsors: Korea Development Bank (KDB), KDB Capital, KDB Infrastructure Investments Asset Management, KDB Investment

*Format: Hybrid Event with YouTube Livestreaming (Korean/English Channels)
*Language: Korean-English simultaneous interpretation will be provided.
# Program

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### Session 1. Net Zero Landscape
- **Moderator**: Alicia Seiger, Managing Director of Stanford Sustainable Finance Initiative (SFI) and the Steyer–Taylor Center for Energy Policy and Finance at Stanford

### Panelists
- JUNG In-sub, CEO of Hanwha Energy Corporation
- YOO Yeon-chul, Former Ambassador for Climate Change at the Ministry of Foreign Affairs, Republic of Korea
- Michael Kurtyka, Former Minister of Climate and Environment in Poland & UNFCCC COP24 President
- Ali Izadi, Head of APAC Research at BloombergNEF
- John Weyant, Professor of Management Science and Engineering & Senior Fellow at the Precourt Institute for Energy, Stanford University

### Session 2. Sustainability at Leading Edge of Technology
- **Moderator**: Michael Lepech, Professor of Civil and Environmental Engineering, Faculty Director of Stanford Center at the Incheon Global Campus (SCIGC)

### Panelists
- Yi Cui, Director, Precourt Institute for Energy & Professor of Materials Science and Engineering at Stanford University
- YIM Man-sung, Professor of the Department of Nuclear and Quantum Engineering, Associate Vice President of the International Office, KAIST
- GIM Seong-gon, Chairman of CS Wind Corporation
- Zach Jones, CEO of C-Zero
- KIM Nok Young, Head of Carbon Neutral Center, Korea Chamber of Commerce and Industry (KCCI)
- JUNG Hee-tae, Chair Professor in Chemical and Biomolecular Engineering, KAIST & Director of KAIST Institute for Nanotechnology

### Session 3. New Asset Class
- **Moderator**: IN Soh Young, Financial Innovation Lead of the Sustainable Finance Initiative (SFI) and Research Director of Stanford Research Center at the Incheon Global Campus (SCIGC)

### Panelists
- Ashby Monk, Executive Director, Stanford Research Initiative on Long Term Investing (LTI)
- Michael Shen, Senior Advisor, Bank of England (BOE) & Co-Chair of the G20 Sustainable Finance Study Group
- LEE Hoon, Head of Investment Strategy & Innovation Division, Korea Investment Corporation (KIC)
- Henry Gonzalez, Deputy Executive Director a.i., Green Climate Fund (GCF)
- AHN Wook-sang, General Manager of ESG-New Deal Planning Department, Korea Development Bank (KDB)
- Stella Saris Chow, Head of Sustainable Finance, International, ANZ

### Session 4. Financial Stability and Climate Risk Management
- **Moderator**: EOM Jyong, Director of KAIST Center for Sustainable Development (CSD) & Associate Professor of the School of Business & Technology Management at KAIST

### Panelists
- David Nelson, Senior Director, Climate and Resilience Hub at Willis Towers Watson (WTW)
- KIM Jeayoon, Economist in the Financial Stability Department, Bank of Korea (BOK)
- Ben Caldecott, Founding Director, UK Centre for Greening Finance and Investment (CGFI) & Professor of the Oxford Sustainable Finance Programme, University of Oxford
- Jacob Gyltenberg, Director of Economic and Risk Analysis Department, European Banking Authority (EBA)
- HWANG Jae-hak, Senior Manager, Sustainable Finance Team, Financial Supervisory Service (FSS), Republic of Korea

### Session 5. Successful Practices and Strategies for Institutional Transformation in the Asia–Pacific
- **Moderator**: PARK Kwangwoo, Professor of Finance & Head of the Graduate School of Finance, KAIST

### Panelists
- Helena McLeod, Deputy Director–General and Head of the Green Growth Planning & Implementation (GGP&I) Division, Global Green Growth Institute (GGGI)
- Bruno Carrasco, Director General & Chief Compliance Officer, Sustainable Development and Climate Change Department, Asian Development Bank (ADB)
- HYUN Suk, Associate Professor, Graduate School of Environmental Finance, Yonsei University
- Yuhua AN, Professor of Finance, Graduate School of China, SungKyunkwan University
- Michael Lepech, Professor of Civil and Environmental Engineering, Faculty Director of Stanford Center at the Incheon Global Campus (SCIGC)
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<td>09:35-09:40</td>
<td>축사</td>
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<td>09:40-09:50</td>
<td>환영사</td>
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<td>기조연설</td>
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세션 1. 글로벌 탄소중립 전망

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<th>알리시아 세이거 스탠포드 스턴보와다고 국제법학 명예교수, 스탠포드 지속가능금융이니셔티브(SFI) 대표</th>
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<tbody>
<tr>
<td>패널</td>
<td>장인섭 현대에너지 대표이사</td>
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<tr>
<td></td>
<td>유연철 전 코레일 대표이사</td>
</tr>
<tr>
<td></td>
<td>미하우 쿠르티카 전 볼라드 기후환경장관 및 UNFCCC COP24 의장</td>
</tr>
<tr>
<td></td>
<td>김 음다 볼바이, 신에너지파이낸싱(NEF) APAC리서치 대표</td>
</tr>
<tr>
<td></td>
<td>존 캐이먼 스탠포드대학교 경영과학과 교수 &amp; 프리코트 에너지연구소 선임연구위원</td>
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세션 2. 기후기술과 탄소중립

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<tr>
<th>좌장</th>
<th>마이클 레펙 스탠포드대학교 도시환경공학과 교수, 스탠포드 한국센터장</th>
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</thead>
<tbody>
<tr>
<td>발제1</td>
<td>이 추이 스탠포드대학교 바이오환경공학부 교수</td>
</tr>
<tr>
<td>발제2</td>
<td>임만성 KAIST 원자핵 및 양자공학과 교수</td>
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11:10-12:25

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<th>김성권 코모토드 회장</th>
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<td>패널</td>
<td>자크 존스 콜레로(C-Zero) 대표이사</td>
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<tr>
<td></td>
<td>김호영 대한상회화재보험 회장</td>
</tr>
<tr>
<td></td>
<td>정희태 KAIST 생명과학대학 생명공학과 교수</td>
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12:25-13:25 오찬

세션 3. 탄소중립을 위한 새로운 투자

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<th>좌장</th>
<th>안소영 스탠포드 지속가능금융이니셔티브(SFI) 책임연구원</th>
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<tr>
<td>발제1</td>
<td>마크 카니 UN 기후행동 및 금융특사 &amp; 전 영란은행(BOE) 총재</td>
</tr>
<tr>
<td>발제2</td>
<td>마이클 레펙 스탠포드대학교 도시환경공학과 교수</td>
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13:25-14:50

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<th>패널</th>
<th>이동걸 KDB산업은행 회장</th>
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<td>원호 콜로재녹색기후기금(GFC) 부사장</td>
</tr>
<tr>
<td></td>
<td>안유화 성균관대학교 국제발전학부 교수</td>
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세션 4. 기후금융을 위한 리스크 관리

| 좌장 | 엄지용 KAIST 경영대학원원장 | 경영공학부 교수 |
|------|------------------|
| 발제1 | 데비드 넬슨 WTW 선임디렉터 |
| 발제2 | 김재윤 한국은행 금융안정국 과장 |

15:00-16:05

<table>
<thead>
<tr>
<th>패널</th>
<th>벤 강인호 영국 녹색금융투자센터 청원 이사 &amp; 녹색소프트웨어 기술가</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>재지임밀 베타바이오 유럽환경기금대표</td>
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세션 5. 아시아 태평양지역의 모범사례

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<th>좌장</th>
<th>박광우 KAIST 경영대학 금융포괄학과 교수</th>
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<tbody>
<tr>
<td>발제1</td>
<td>헬레나 맥מכ로 글로벌녹색성장연구소(GGGI) 사무차장</td>
</tr>
<tr>
<td>발제2</td>
<td>브루노 카라스코 아시아 개발은행 녹색기술개발팀 책임자</td>
</tr>
<tr>
<td></td>
<td>현석 경제학부 교수</td>
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16:15-17:00

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<th>패널</th>
<th>마이클 레펙 스탠포드대학교 도시환경공학과 교수</th>
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<td></td>
<td>성균관대학교 국제발전학부 교수</td>
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17:00 폐회사

마이클 레펙 스탠포드대학교 도시환경공학과 교수, 스탠포드 한국센터장
OPENING SESSION

Opening Remarks
LEE Dong Gull
Chairman, Korea Development Bank, Republic of Korea

Congratulatory Remarks
YUN Jaeok
Chairman of the National Policy Committee, Republic of Korea
YUN Sun-jin
Co–Chairperson of 2050 Carbon Neutrality Commission, Republic of Korea & Graduate School of Environmental Studies of Seoul National University

Welcome Remarks
KOH Seungbeom
Chairman, Financial Services Commission, Republic of Korea
LEE Kwang-hyung
President, KAIST
Karen Kearney
Treasurer, Stanford University
안녕하십니까.
한국산업은행 회장 이동걸입니다.
먼저 바쁜 일정에도 불구하고 귀한 말씀해주실 윤재옥 정무위원장님, 고승범 금융위원장님, 윤순진 2050 탄소중립위원장님과 오늘 이 포럼을 기획해주신 스탠포드대학교 카렌 커니(Karen Kearny) 재무처장님, 그리고 KAIST 이광형 총장님께 깊은 감사의 말씀 드립니다.

내외빈 여러분,

지난 2월 정부간 기후변화 협의체인 IPCC(Intergovernmental Panel on Climate Change)가 발표한 보고서에 따르면, 기후변화로 인한 인식과 물 부족 등으로 급세기 후반 최대 26억명의 세계 인구가 전염병에 노출될 것이라고 경고하였습니다. 우리나라를 비롯한 전 세계 국가들은 탄소중립 비전과 온실가스 감축 계획을 앞다투어 선언하고 있지만, 이러한 계획이 성공으로 이어지기 위해서는 정부와 민간차원의 세부적인 액션플랜(Action Plan)이 다각적이고 구체적으로 수립되어야 합니다.

학술계, 산업계, 금융계, 정부기관이 모두 머리를 맞대고 함께 힘을 모아야 기후위기를 극복해 나갈 수 있습니다. TRANZ 위기의 인류 최대의 프로젝트는 어느 한 기관만의 노력으로는 성공할 수 없기 때문입니다. 그린경제의 구체적인 구체적이고 구체적으로 수립되어야 합니다.

물류인프라, 산업, 금융, 정부기관이 모두 머리를 맞대고 함께 힘을 모아야 기후위기를 극복해 나갈 수 있습니다. TRANZ 위기의 인류 최대의 프로젝트는 어느 한 기관만의 노력으로는 성공할 수 없기 때문입니다. 그린경제의 구체적인 구체적이고 구체적으로 수립되어야 합니다.

지난 3월 18일에 개최한 기후기술 보유 수중 센터트립 발굴을 위해 투자설명회는 그 일환 중 하나입니다.

이렇게 발굴한 기업들의 기후기술이 세상을 널리 이롭게 할 수 있도록 산업은행은 'KDB 탄소 냉매체 (Net-Zero)' 프로그램을 통해 해상풍력, 수소, CCUS(Carbon Capture, Utilization and Storage)를 그린기술의 사업화를 지원하고 있습니다.

둘째, 산업의 혁신입니다.
전세계 연간 온실가스 배출량의 약 14%가 칠강·화학·시멘트 산업에서 발생한다고 합니다. 온실가스 배출량이 줄어들기 위해서는 칠강·화학·시멘트 산업의 경제성을 높이는 것이 필요하다. 저희 산업은행은 대표 그린상품인 'KDB 탄소배출'을 통해 칠강산업의 프로세스 혁신을 유도하여 탄소배출을 줄이려는 시도가 있습니다. "산업·금융협력프로젝트"를 통해 자체적으로 기술력을 갖춘 기업들의 미래유효·저탄소 분야로의 사업재편을 성공적으로 지원하고 있습니다.

이처럼 산업은행은 구체적인 액션플랜을 통해 제로를 향한 녹색산업혁명을 이끌어나갈 준비가 되어 있습니다. 오늘 이 자리에 참석하신 정부 관계자, 금융, 산업, 학계 관계자 여러분께서 함께 힘을 모아주셨으면 합니다. 이 자리에 계신 여러분 모두가 향후 녹색산업혁명을 이끌기 위한 선각자로서 기여하기를 희망합니다.

오늘 참석하신 여러분께 다시 한번 깊은 감사의 말씀드리며, 여러분 모두의 건강과 행복을 기원합니다.

감사합니다.

2022년 3월 24일
한국산업은행
회장 이동걸
Chairman Yun Jaeok is a member of the 21st National Assembly of the Republic of Korea. Since first elected in 2012, Chairman Yun has served three consecutive terms of the 19th, 20th, and 21st National Assembly. Most recently, as a member of the People Power Party, he joined the presidential election campaign committee as the General Manager of Political Affairs Planning, and contributed to the President-elect Yoon Suk-yeol’s victory. Since 2021, Chairman Yun has served the National Policy Committee as the Chairman. During 2017–2018, he had served his party as the Chief Vice Inter-Parliamentary Party Leader. Before joining the politics, he was appointed as the Chief of Guro Police Station in Seoul (2002), and Goryeong Police Station in Gyeongbuk Province (1998), proactively responsible for law enforcement with police services. Chairman Yun holds a M.A. in Police Administration from Yonsei University. He studied laws and obtained a B.A. at the Korean National Policy University (KNPU).

In May 2021, Prof. YUN Sun–jin was appointed as the Co-Chairperson of 2050 Carbon Neutrality Commission of Republic of Korea. 2050 Carbon Neutrality Commission of Republic of Korea was established in May 2021, as Republic of Korea announced 2050 Carbon Neutrality goal in late 2020, to propose Korea’s ‘2050 Carbon Neutrality Scenario’ and ‘2030 Nationally Determined Contributions (NDC)’, and to collect opinions from diverse parties of interest (e.g. – industries, civil societies, labor, etc.) by providing forum for discussions periodically. Prof. Yun earned her Ph.D. at University of Delaware, major in Environmental and Energy Policy, and has dedicated most of her career to promoting sustainable development and addressing environmental issues through vigorous research, lecturing, social activities. Before assuming the role of Co-Chairperson of 2050 Carbon Neutrality Commission, Prof. Yun previously served in various positions at Government’s Committees, including Ex-Chairperson of Sustainable Development Committee, Ex-Chairperson of Korea Energy Information Culture Agency, etc.
Chairman Koh Seungbeom took office as Chairman of the Financial Services Commission (FSC) on August 31, 2021. Prior to his appointment at the FSC, Chairman Koh served as a member of the Monetary Policy Board of the Bank of Korea for five years between 2016 and 2021. He was the first member of the Monetary Policy Board to be reappointed to the post for a second four-year term. Chairman Koh has been in public service for more than three decades as he began his career at the Ministry of Finance and Economy in 1986. He has built extensive expertise and experience in the field of macroeconomics and financial policies. In 2001, Chairman Koh joined the Financial Supervisory Commission, the precursor to the current Financial Services Commission, and served in key positions as he successfully managed crisis situations.

In particular, Chairman Koh has been credited for taking charge of the restructuring of credit card companies during the so-called credit card crisis of 2003. While serving as Director General of the Banking and Insurance Bureau from 2010 to 2011, Chairman Koh supervised the resolution of bad debts when savings banks’ bad project financing (PF) loans triggered a crisis. Chairman Koh also led policy efforts to manage household debt while serving as Director General of the Financial Policy Bureau in 2012. He then went on to assume the role of Secretary General in 2013 and Standing Commissioner in 2015. Chairman Koh also has experiences in multilateral development banks. He worked as an economist at the Asian Development Bank (ADB) between September 1998 and October 2001 and at the International Bank for Reconstruction and Development (IBRD) from April 2008 to April 2010.

Chairman Koh has a Ph.D. in Economics from American University. He graduated from Seoul National University with a B.A. in Economics and an M.A. in Public Administration.

President Kwang Hyung Lee is a futurologist who pioneered multidisciplinary studies and research at KAIST. He advocated that the convergence of information, biology, and nano-technologies would be critical for future industries, playing a crucial role in establishing the Department of Bio and Brain Engineering in 2001 and the Moon Soul Graduate School of Future Strategy in 2013. He then served as the inaugural head of both faculties. President Lee has extensive administrative experience at KAIST, serving as Associate Vice President of the International Office, and Associate Vice President of Academic Affairs since early 2001. He is also serving as a member of the Korea Presidential Education Committee.

An ardent champion of entrepreneurship and startups, he has advised the first generations of KAIST startup entrepreneurs such as Nexon, Idis, Neowiz, and Olaworks. President Lee, drawn to creative thinking and flipped learning, is famous for watching TV upside down. Such pioneering ideas and his unusual thinking style were modeled in the ‘eccentric professor’ role featured on the TV hit drama of “KAIST” from 1999 to 2000.

An alumnus who earned his MS in industrial engineering at KAIST in 1980 after completing his undergraduate studies at Seoul National University, President-elect Lee joined the KAIST faculty in 1985 upon receiving his PhD in computer science from INSA de Lyon in France.

A computer scientist as well as fuzzy theorist whose research area extends to AI, bioinformatics, fuzzy intelligent systems, and foresight methods, President Lee has published more than 70 papers in international journals and textbooks on system programming, fuzzy set theory and its applications, and three-dimensional creativity. He also invented a fuzzy elevator, subway operation controller, and AI transportation controller.

A fellow at the Korea Academy of Science and Technology and the National Academy of Engineering of Korea, he was decorated by the Korean government and the French government in recognition of the innovative education and research initiatives he has pursued.
Welcome Remarks

Karen Kearney currently serves as Treasurer, Stanford University where she is responsible for the university’s capital markets strategy, debt portfolio, working capital management and merchant services, as well as business operations and compliance for the university’s global subsidiaries. She has spent almost 25 years at Stanford in various financial roles, with experience in financial reporting, systems, tax, audit and compliance, and global operations. She serves as a director and officer on Stanford’s subsidiary Boards, including in China, India, South Korea, South Africa, Chile.

In Spring 2021, Ms. Kearney led the issuance of the first ever externally dual-verified ESG bond in higher education, leveraging Stanford University’s long-standing commitment to environmental and social sustainability. The bond was verified for both CBI’s Climate Bond certification (climate-focused and aligned with objectives of the Paris Accord) and ICMA Sustainability certified.

In Fall 2021, she was appointed to the board of trustees of the Climate Bond Initiative (CBI), a UK charity. CBI works to support the mobilization of capital flows in the financial markets to provision investment in the projects and assets necessary for a rapid transition to a low carbon and climate-resilient economy. She also volunteers as an Executive Committee member of the Treasurer’s Roundtable, a global NGO-focused Treasury affinity group.

Keynote Speech

- **Mark Carney**  
  UN Special Envoy on Climate Action and Finance, Former governor of the Bank of England

- **Manuela V. Ferro**  
  Vice President, East Asia and Pacific (EAP), World Bank

- **Thomas Heller**  
  Professor, Stanford University Law School, Faculty Director, Stanford Sustainable Finance Initiative
Mark Carney is currently the UN Special Envoy for Climate Action and Finance and Chair for the Glasgow Finance Alliance for Net Zero, a practitioner–led coalition working to increase the financial sector’s ambition on climate change and accelerate the transition to a net-zero economy.

Mark is a member of the Arnhold Distinguished Fellowship Program Board within Conservation International. Mark was previously Governor of the Bank of England (from 2013 to 2020), and Governor of the Bank of Canada (from 2008 to 2013). Internationally, Mark was Chair of the Financial Stability Board (from 2011 to 2018), He chaired the Global Economy Meeting and Economic Consultative Committee of the Bank for International Settlements (from 2018–2020) and was First Vice–Chair of the European Systemic Risk Board (from 2013–2020). Mark is also an external member of Stripe’s Board, a global technology company building economic infrastructure for the internet. He is Vice Chair of Brookfield Asset Management and a member of the Global Advisory Board of PIMCO, the Group of Thirty, the Peterson Institute for International Economics, the Global Advisory Board of PIMCO, the Group of Thirty, the World Economic Forum, as well as the boards of Bloomberg Philanthropies, the Peterson Institute for International Economics and the Hoffman Institute for Global Business and Society at INSEAD.

Mark was born in Fort Smith, Northwest Territories, Canada in 1965. After growing up in Edmonton, Alberta, he obtained a bachelor degree in Economics from Harvard and masters and doctorate degrees in Economics from Oxford. After a thirteen-year career with Goldman Sachs, Mark was appointed Deputy Governor of the Bank of Canada in 2003. In 2004, he became Senior Associate Deputy Minister of Finance. He held this position until his appointment as Governor of the Bank of Canada in February 2008.

Manuela V. Ferro was appointed World Bank Regional Vice President for East Asia and Pacific (EAP) in September 2021. Prior to this appointment, she was World Bank Vice President of Operations Policy and Country Services (OPCS), where she oversaw the World Bank’s corporate policies on financing and analytical services.

A Portuguese national, Ms. Ferro has over 25 years of hands–on and leadership experience in Africa, Europe, Latin America and the Caribbean, the Middle East and North Africa, and South Asia. Throughout her professional career, she has shaped creative development solutions for countries as diverse as post–conflict, low–income all the way to upper middle–income countries. She brings to her current position a track record of modernization of operations policies, a history of forging productive partnerships with client countries and development partners, and a focus on client services.

An economist and an engineer by training, Ms. Ferro worked in technical and corporate positions at the World Bank. She previously served as the Director for Poverty Reduction and Economic Management in the Middle East and North Africa, where she oversaw the team of economists and governance specialists. She also served as the World Bank’s Director for Strategy and Operations for Latin America and the Caribbean, overseeing the operational and analytical work in this region.

Ms. Ferro was also the Manager of the Country Economics unit in OPCS, overseeing country strategies, development policy financing, and guarantees. Prior to joining the World Bank, Ms. Ferro was an Assistant Professor at The Technical University of Lisbon, from which she holds an MSc./Engineering Degree. Ms. Ferro holds a Ph.D. and an M.A. in Applied Economics from Stanford University in California. She also worked for the Government of Portugal on EU accession matters. Her professional interests include macroeconomics, game theory, international trade, and labor economics.
Thomas Heller is the Charles and Nadine Shelton Professor of International Legal Studies (Emeritus) at Stanford University Law School. He also currently directs the Precourt Energy Institute’s Sustainable Finance Initiative and the Steyer–Taylor Center at Stanford. In 2009 Heller founded the Climate Policy Initiative, where he was Executive Director until 2018, and remains Senior Advisor and Board Chair. As of January 2021, he became Senior Director (Risk) at Willis Towers Watson. His research has focused on risk analytics, global energy use, international climate regimes, public finance and taxation, international technology investment, and the rule of law—with particular attention to legal and economic structures in the developing world. Professor Heller has worked with the Intergovernmental Panel on Climate Change (1995–2003), and has served as Jean Monnet Visiting Professor at the European University Institute, Deputy Director and Senior Fellow of the Freeman Spogli Institute for International Studies at Stanford University, and Senior Fellow (by courtesy) at the Woods Institute for the Environment.
As drivers of climate action enter the fourth decade of what has become a multi-stage race, Net Zero has emerged as the dominant organizing principle. Hundreds of corporations and investors worldwide, together responsible for assets in the tens of trillions of dollars, are lining up for the UN Race to Zero. The first session of this forum will explore both the state of play and a set of directions to help form judgments about whether Net Zero will carry climate action far enough. The panelists from academia to business will discuss technological advancement and needed policy and financial interventions.
Alicia Seiger is a lecturer at Stanford Law School and leads climate and energy finance initiatives at Stanford Law, Graduate School of Business, and the Precourt Institute for Energy. Alicia has served as an advisor to the Governors of California and New York, the New York State Comptroller, and numerous pension fund, endowment, and family office CIOs on the topics of climate risk, opportunity, and resiliency. A student of sustainability since the early 1990s, Alicia has designed and executed climate and energy strategies for businesses, foundations, investors, and NGOs for two decades. She has served on the management teams of multiple startups, including at TerraPass, a pioneer of the US carbon offset market, and Flycast Communications, one of the world’s first web advertising networks. She serves on the boards of Ceres and PRIME Coalition, the G7 Impact Taskforce Advisory Panel, PG&E’s Sustainability Advisory Council, and co-founded Stanford Professionals in Energy (SPIE).

Her first book, “Settling Climate Accounts: Navigating the Road to Net Zero” considers the rise of carbon accounting in the context of the last three decades of global climate action, examines the rough edges of Net Zero in practice, and makes recommendations for the road ahead.

Mr. JUNG In-Sub is the Chief Executive Officer of Hanwha Energy Corporation (HEC) (2019–Current). Prior to joining HEC, Mr. JUNG was an adviser to Hanwha Q Cells (2016–2019) and the Head of Overseas Business at Hanwha Life (2013–2016). Before joining Hanwha Group in 2013, Mr. JUNG served as a Senior Executive Officer at the Office of Civil Affairs of the Blue House (2010–2012) and also worked at the Chairman Office of Byuksan Group (2005–2008) and Daewoo Group (1995–1997). Mr. JUNG worked as a Consultant at KPMG Consulting (2000–2002) and received a master’s degree in business administration from the Boston University (1999) and a bachelor’s degree in business administration from the Seoul National University (1995).
Former Ambassador Yoo Yeon-chul has served the Ministry of Foreign Affairs for more than 30 years. Prior to his appointment as Ambassador for Climate Change, he served as Ambassador of the Republic of Korea to the State of Kuwait and as Ambassador and Deputy Permanent Representative at the Korean Permanent Mission in Geneva, Switzerland.

Ambassador Yoo was consistently involved in environmental issues since 1991, when he participated in his first climate change negotiation. In the Ministry of Foreign Affairs, he served as Director of Environment Cooperation (2003) and Deputy Director-General of the Energy and Climate Change (2009), and he was the Director-General for International Cooperation in the Ministry of Environment (2011).

When seconded to the Presidential Committee for Green Growth from 2009 to 2011, he made significant contributions in the process of establishing the Global Green Growth Institute (2010), which later became an international organization in 2012. Furthermore, he was also involved in hosting the Green Climate Fund in Korea (2012). He became Ambassador for Climate Change in 2018 and is also serving as the Vice Chair of UNFCCC’s Subsidiary Body for Implementation (SBI) since 2019.

He received his Bachelor’s Degree in Political Science & Diplomacy at Yonsei University, has completed the Foreign Service Programme at the University of Oxford, and received his Master’s Degree in International Relations at the University of Reading, in the UK.

Mr. Michał Kurtyka is a graduate of the prestigious Parisian Ecole Polytechnique and a scholarship holder in the field of quantum optics of the National Institute of Standards and Technologies, located near Washington, D.C., where he worked under the leadership of Nobel laureate in physics William D. Phillips. During the course of his studies, he also specialised in economics, with particular focus on industrial and market organisation, studying under Professor Jean Tirole, the 2014 Nobel laureate in economics. In the field of international economics, he studied at the University in Louvain-la-Neuve and he acquired his master’s degree at the SGH Warsaw School of Economics. He defended his doctoral dissertation at the University of Warsaw. He was a lecturer in the field of change management, economics, market organization and industrial strategy at the University of Warsaw, the Collegium Civitas and the Oxford Programme On Modern Poland. He is a co-author of the concept of implementation of effective changes in an enterprise, described in the book Change Management. From Strategy to Action, as well as the author of the book From Restructuring to Modernisation. Delayed Transformation of the Polish Power Sector in 1990 - 2009.

On 27 April 2018, he was appointed as Government Plenipotentiary for the Presidency of COP24 – the United Nations Climate Summit in Poland. On 2 December 2018, he became the COP24 President, which ended with a great success enabling the effective implementation of the Paris Agreement. At the 24th UN climate summit, the international community agreed on the Katowice Rulebook, but also three important political declarations received major support – on the Solidarity and Just Transition, Electromobility and Forest Protection. From July 2018, he held the position of the Secretary of State in the Ministry of Environment. On 15 November 2019, he was appointed as the first Polish Minister of the newly established Ministry of Climate. On 6 October 2020 his portfolio was enlarged, so it became the Ministry of Climate and Environment.
Based in Seoul, Ali manages BloombergNEF’s (New Energy Finance)’s research teams across Asia Pacific, focusing on the transition of the region’s economies to a cleaner more competitive future. The teams’ reports and tools help clients identify opportunities and risks associated with the energy transition. Prior to his current role, Ali managed BloombergNEF’s Intelligent Mobility as well as Japan and Korea research teams. Prior to joining BloombergNEF in 2010, Ali had worked at Japan’s National Institute of Advanced Industrial Science and Technology, as well as fuel cell manufacturer, Ballard Power Systems. Ali has an undergraduate degree in Engineering Physics and a Master’s in Electrical Engineering from the University of British Columbia, and a Doctorate in Materials Science from Meijo University.

John P. Weyant is Professor of Management Science and Engineering and Director of the Energy Modeling Forum (EMF) at Stanford University. He is also a Senior Fellow at Stanford’s Precourt Institute for Energy, and an affiliated faculty member in Stanford School of Earth, Environment and Energy Sciences. For the past eleven years, Weyant has also served (with Professor Karen A. Fisher–Vanden of Pennsylvania State University) as Lead PI and co-Director of the DOE Office of Science 2010–2016 Integrated Assessment Research Programs sponsored Program on Integrated Assessment Model Development, Diagnostics and Inter–Model Comparisons (PIAMDDI), Lead PI and Co-Director of the 2017–2021 Program on Frameworks for Coupled Human Earth Systems (PCHES-FRAME), and co-Lead PI (under Fisher–Vanden) and co-Director of PCHES-ADAPT (2022–2026) on multi-sector risk assessment and adaptation. Prof. Weyant earned B.S./M.S. degrees in Aeronautical Engineering and Astronautics, and M.S. degrees in Engineering Management and in Operations Research and Statistics all from Rensselaer Polytechnic Institute, and a Ph.D. in Management Science with minors in Economics, Operations Research, and Organization Theory from University of California at Berkeley. He also was also a National Science Foundation Post-Doctoral Fellow at Harvard’s Kennedy School of Government. His current research focuses on deep decarbonization & high electrification scenarios, multi-stressor, multi-sector, multi-region dynamics in integrated energy, water and land systems, macro energy systems modeling, integrated assessment modeling, energy efficiency analysis, energy technology assessment, and models for strategic planning. He currently serves on the American Statistical Association’s Advisory Board to the Energy Information Administration and the Biological and Environmental Research Advisory Committee (BERAC) to the U.S. Department of Energy (2014–2021).
Sustainability at Leading Edge of Technology

Countering global population growth and rising affluence and consumption levels, technology is an important component of strategies to reach net zero emissions. More sustainable technologies, which can meet increasing demands for goods and services while emitting fewer carbon emissions, are being created every day by innovators, academics, entrepreneurs, and others around the globe. In this session, we will be exploring a host of new technologies that are capable of addressing net zero challenges at large scale, and on a timeline that responds urgently to the growing climate emergency. Speakers will be introducing new technologies, summarizing their opportunity, and discussing them within the larger context of building a net zero economy in Asia and other parts of the world.
Michael Lepech is a Professor of Civil and Environmental Engineering and Senior Fellow at the Woods Institute for the Environment at Stanford University. Michael’s research develops fundamental engineering design concepts, models, and tools that are tightly integrated with quantitative sustainability assessment and service life modeling across length scales, from material scales to system scales, and throughout the early design, project engineering, construction, and operation life cycle phases of constructed facilities. His research introduced the Sustainable Integrated Materials, Structures, Systems (SIMSS) framework, a tool to guide the multi-scale design of sustainable built environments, including multi-physics modeling informed by infrastructure sensing data and computational learning and feedback algorithms to support advanced digital-twinning of engineered systems.

Along with colleagues, Michael’s research formed the foundation of the Stanford Center at the Incheon Global Campus (SCIGC), a university-wide research center examining the potential for smart city technologies to enhance the sustainability of urban areas. Located in the smart city of Songdo, Incheon, South Korea, SCIGC is a unique global platform to (i) advance research on the multi-scale design, construction, and operation of sustainable built environments, (ii) demonstrate to cities worldwide the scalable opportunities for new urban technologies (e.g., dense urban sensing networks, dynamic traffic management, autonomous vehicles), and (iii) improve the sustainability and innovative capacity of increasingly smarter cities globally.

Michael graduated with a BSE, MSE, and PhD in Civil and Environmental Engineering from the University of Michigan, Ann Arbor. He received his MBA, with a focus in strategy and finance, from the Ross School of Business at the University of Michigan, Ann Arbor.

Yi Cui became Director of the Precourt Institute for Energy in January 2021. Cui, one of the world’s most cited scientists, is professor in Stanford’s Department of Materials Science & Engineering and professor of photon science at the SLAC National Accelerator Laboratory. Among other responsibilities, Cui is co-director with Prof. William Chueh of the Precourt Institute’s StorageX Initiative, senior fellow at the Precourt Institute, a director of the U.S. Dept. of Energy’s Battery500 Consortium, an editor of the American Chemical Society’s peer-reviewed journal Nano Letters, and the founder of four companies to commercialize the energy and environment technologies from his lab.
Man-Sung Yim is Professor of the Department of Nuclear and Quantum Engineering, Associate Vice President of the International Office, Head of Office of Global Initiatives, and Director of Nuclear Nonproliferation Education and Research Center (NEREC) at Korea Advanced Institute of Science and Technology (KAIST). Formerly, he worked at Korea Atomic Energy Research Institute, and taught at North Carolina State University (NCSU) and MIT. He was also a joint faculty between Oak Ridge National Lab (Global Nuclear Security Technology Division) and NCSU, Sam Nunn International Security Fellow at Georgia Tech, a member of North Carolina Science Advisory Board on Air Toxics Emissions, and a member of Nuclear Nonproliferation External Steering Committee of Idaho National Laboratory. Upon return to South Korea in 2011, Prof. Yim founded NEREC (Nuclear Nonproliferation Education and Research Center) to raise the level of national capacity in nuclear nonproliferation and started NEREC International Summer Fellows program to train future leaders of nuclear nonproliferation. He is currently a member of Korean National Academy of Engineering, the Scientific Program Committee of Comprehensive Test Ban Treaty Organization (CTBTO), and serves as Associate Editor (Asia) of Nuclear Technology for American Nuclear Society, an editor of Journal for Peace and Nuclear Disarmament, and a member of Editorial Advisory Board of Progress in Nuclear Energy and International Journal of Nuclear Security. Dr. Yim’s work aims at safe and responsible use of nuclear energy conducting research in nuclear fuel cycle, nuclear waste management, nuclear safety, nuclear nonproliferation, and nuclear energy policy. He has written a textbook on nuclear waste management with Springer Nature. Dr. Yim studied at Seoul National University (BS/MS), University of Cincinnati (PhD), and Harvard University (SM/ScD).

Seong-Gon Gim is Chairman of CS Wind Corporation, which is the world-class wind tower solution provider. He has been leading CS Wind as a pioneer in the field of wind tower in Korea. He started his career in engineering and construction industry after getting a bachelor degree in commerce. Distinctively, he has an experience in building Saudi Arabia’s social infrastructure during the 1980s. Mr. Gim is currently striving for the Green New Deal project in Korea to make a better world.
Mr. Jones is the co-founder and CEO of C-Zero, a California-based company that has developed a process for producing low-cost, zero-emission “turquoise” hydrogen from natural gas. The company’s technology can be used to decarbonize a wide array of industries including electrical generation, process heating, and the production of commodity hydrogen for fuel cell vehicles, ammonia synthesis and refining processes. C-Zero’s publicly announced investors and partners include SK Gas, Breakthrough Energy Ventures, Mitsubishi Heavy Industries, Eni S.p.A., AP Ventures, SoCalGas and Pacific Gas & Electric. Prior to his current role, Mr. Jones worked for a private equity firm where he led investments in the renewable energy, maritime transportation and commercial real estate sectors. He holds a BSE in Biomedical Engineering from Duke University and an MBA from the Stanford Graduate School of Business.

Kim, Nok Young, head of Carbon Neutral Center in the Korea Chamber of Commerce and Industry (KCCI), has supported the industry’s implementation of carbon neutrality and has represented the industry’s positions from a reasonable point of view in the process of the government’s environmental and energy policy decisions. He is currently a member of the Ministry of Environment’s Central Environmental Policy Committee, the Emission Trading System Allocation Review Committee, the Ministry of Trade, Industry and Energy’s Renewable Energy Use Review Committee, and the 2050 Carbon Neutrality Commission’s Technical Regulation Committee. He won the Prime Minister Award in 2006 and the Presidential Award in 2014 for his contribution to regulatory reform. He received a BS degree in Economics, a MS degree and a PhD degree in Law from Korea University.
Hee-Tae Jung is currently KAIST Chair Professor in Chemical and Biomolecular Engineering, Director of KAIST Institute for Nanocentury, Director of KAIST Polymer Program, leading the KAIST-UCB-VNU Global Climate Change Research Center and Vice–President of Korean Environmental Science Society. After he was awarded a Ph.D. in Macromolecular Science & Engineering from Case Western Reserve University in the United States in 1998, Hee-Tae completed a postdoctoral fellowship at the University of California, Santa Barbara. His research interests include advanced materials for climate change, and advanced materials for high performance opto-electronic devices. He is currently associate editor of ACS Sensors.
“KDB has remained focused on sustainable and long-term policy finance, which inspires confidence in the market for private sector investors, and can motivate them to invest voluntarily.”

“Green washing could be seen as an ‘accounting fraud’. Korea is therefore preparing to facilitate the public disclosure on standards such as K-Taxonomy and KSSB to prevent and crack down on green washing practices.”

“Running a sustainable business is no longer an option. When we consider this to be a necessary condition for our collective survival, I believe it is the path that we must all take in any case.”

“Ultimately, as I said at the outset and you know, that Net Zero Transition works best when it’s fully integrated finance, business and government.”

“It is developing a sustainability standard to further consistent comparable and reliable climate reporting to allow information to be revealed and assessed and acted on and to ensure that there is not Green-Wash in that.”

“We always need to keep in mind the ultimate horizon for any source of energy given its carbon footprint.”
SESSION 03. New Asset Class

New Asset Class
Innovative technologies should overcome the valley of death, continued incentives to fossil fuel-reliant industries, and widening funding gaps, which require cooperation from finance and policy. Yet, the current system frequently fails to mobilize funding from multiple capital sources to sustainable companies and projects because their incentives are misaligned. The outstanding challenge is finding out how to recognize sustainability as a financial value in desired conditions (e.g., form of return, rate of return, time horizon). The session on “New Asset Class” discusses topics on: What is the risk and return relationship of sustainability integration? What strategy can companies and investors align their mainstream models with their net-zero pathways? What are the new financial products and services that enable recognition of sustainability values in financial terms?

Moderator
IN Soh Young
Financial Innovation Lead of the Sustainable Finance Initiative (SFI) and Research Director of Stanford research center at the Incheon Global Campus (SCIGC)

Presenters
Ashby Monk
Executive Director, Stanford Research Initiative on Long-Term Investing (LTI)
Michael Sheren
Senior Advisor, Bank of England (BOE) & Co-Chair of the G20 Sustainable Finance Study Group

Panelists
LEE Hoon
Head of Investment Strategy & Innovation Division, Korea Investment Corporation (KIC)
Henry Gonzalez
Deputy Executive Director a.i., Green Climate Fund (GCF)
AHN Wook-sang
General Manager of ESG-New Deal Planning Department, Korea Development Bank (KDB)
Stella Saris Chow
Head of Sustainable Finance, International, ANZ
Dr. Soh Young In leads research on Financial Innovation at the Sustainable Finance Initiative (SFI) of the Precourt Institute for Energy at Stanford University. She is also a Research Director of Sustainable Finance at the Stanford Center at the Incheon Global Campus (SCIGC). Her interdisciplinary research integrates technology, finance, and policy innovation to accelerate the global net-zero transition. Dr. In’s research project has supported investors, entrepreneurs, and policymakers to drive positive social and environmental impact alongside financial results. Dr. In won research awards from the United Nations Environment Programme Finance Initiative (UNEP FI) and the US Clean Energy Education and Empowerment (C3E) Award by the US Department of Energy (US DOE). She completed her PhD in Civil and Environmental Engineering at Stanford University, MA in International Policy Studies at Stanford, concentrating in Energy, Environment and Natural Resources, and BA in Economics and Statistics from Columbia University. She has worked for Green Climate Fund (GCF), Boston Consulting Group (BCG), United Nations Development Programme (UNDP), Korea Development Bank (KDB), and Earth Institute at Columbia University.

Dr. Ashby Monk is currently a Senior Research Engineer, School of Engineering at Stanford University and holds the position of Executive Director of the Stanford Research Initiative on Long-Term Investing. Ashby has more than 20 years of experience studying and advising investment organizations. He has authored multiple books and published 100s of research papers on institutional investing. His latest book, The Technologized Investor, won the 2021 Silver Medal from the Axiom Business Book Awards in the Business Technology category. Outside of academia, Ashby is the Head of Research at Addepar and serves on the firm’s leadership team. He has co-founded several companies that help investors make better investment decisions, including Real Capital Innovation (acquired by Addepar), FutureProof, NetPurpose, D.A.T.A., ThirdAct, SheltonAI and Long Game Savings. He is also a member of the CFA Institute’s Future of Finance Advisory Council and was named by CIO Magazine as one of the most influential academics in the institutional investing world. He received his Doctorate in Economic Geography at the University of Oxford, holds a Master’s in International Economics from the Université de Paris I – Pantheon Sorbonne, and has a Bachelor’s in Economics from Princeton University.
Mr. Michael Sheren is a Senior Advisor within the Bank of England. In his role, he provides counsel and independent challenge to senior PRA Management on matters concerning, governance, banking supervision and policy as well as research relating to the financial markets. On behalf of the BoE and the UK government, Mr. Sheren Co-Chaired the G20 Sustainable Finance Study Group with China. Correspondingly he is actively involved in domestic and international green finance activities including within the G20 Infrastructure Working Group and the NGFS. Mr. Sheren is also actively involved in the Banks fintech and digital finance work in the UK, Europe and Asia. Prior to joining the Bank, Mr. Sheren spent over twenty five years in the debt capital markets where he specialized in the structuring, distribution and trading debt for major global financial institutions in New York and London. Mr Sheren holds Master’s degrees from Harvard, The London School of Economics and New York University where he studied finance, economics, philosophy and public policy. He also holds a BA from the George Washington University.

Hoon LEE is the Head of Investment Strategy & Innovation Division and his responsibilities include establishment and enforcement of KIC’s investment strategy, and execution of asset allocation targeting optimal Strategic Asset Allocation in line with KIC’s investment objective.

Before joining KIC in 2014, he was a portfolio manager at Macquarie-IMM Asset Management and worked as a research analyst at Samsung Securities, Korea Investment Securities, and Woori Investment Securities. He was selected as “Best Analyst” covering the Holding Companies sector 2010–2013 by MK Economy and Hankyung Business. Also, he was named as winner for the Gold Prize of 2013 Maekyung Business Newspaper Securities Awards in the category of companies analysis. He earned BA in Economics from Sogang University and MBA from University of California at Berkeley. And he is a CFA charter holder.
Henry is the GCF’s Deputy Executive Director a.i.. He has over 25 years of professional experience across sustainable and impact investing, emerging markets, and political and economic development. Prior to joining GCF he was an Associate Fellow at Oxford University’s Said Business School. He also served as member of Senior Management and Global Head of Research & Advisory at responsibility Investments AG, where he led thought leadership, technical assistance, and ESG/impact integration strategies across the sectors of finance, climate and agriculture. He also spent time at Morgan Stanley, serving as a Vice President for Emerging Markets Debt investing and held other positions at the World Bank, the United Nations Development Program, and the Government of Costa Rica. Henry holds an MBA from Oxford University (Skoll Scholar), an MPA from Harvard University (Fulbright Scholar) and a BA in Political Science from the University of Costa Rica.

Mr. Wook-sang Ahn is leading the ESG·New Deal Planning Department, newly established in 2021 in accordance with the Korean Government’s Green New Deal Policy. He has been driving the way towards green transformation of the bank and relevant industries by embedding the ESG and sustainable management values bank-wide, deploying green finance, and aligning finance with the Paris Agreement. He previously served as Head of KDB Climate Finance Team (2020–2021) and Power PF Team (2015–2019), equipped with recognized expertise in global renewable project finance transactions including solar and wind farms and climate finance deployment across the developing world with the Green Climate Fund (GCF). Prior to joining the bank, he had worked at the Korea Trade Insurance Corporation (K-Sure) for 16 years, and at the Korea Finance Corporation (KoFC) for 3 years mostly in global project financing for energy deals. He holds a Master’s degree in Economics from Yonsei University, and a bachelor’s degree in German Languages from Hankook University of Foreign Studies in Korea.
Stella Saris Chow is a Singapore based Sustainable Finance professional. She has a strong Energy and Infrastructure finance background having worked in Asia for over 10 years in corporate finance and industry coverage. Prior to Singapore, Stella was based in London and Melbourne. She is the Head of Sustainable Finance, International for ANZ focused on originating and structuring sustainable finance for key clients.
The transition to a low-carbon economy would reduce the demand and price for assets burning fossil fuels. The infrastructure supporting carbon-intensive activities would have to be replaced and retired prematurely. Lower prices and demand could hit firms, investors, and workers relying on the assets and infrastructures. Firms’ financial soundness can deteriorate, increasing their credit and market risks. This, in turn, can lead to losses of financial institutions that own the firms’ assets—loan, bond, and equity—which can aggravate the soundness of those financial institutions. Unless financial institutions reduce their holdings of vulnerable assets in line with the pace of the transition, the risk may amplify into a systemic financial stability risk. This calls for an improved, country-specific understanding of how and to what extent the transition risk materializes and propagates to the financial sector, impacting financial stability as a whole. This session on “financial stability and climate risk management” explores risk and uncertainty surrounding the financial impacts of a low-carbon transition and recent methodological advances in identifying and evaluating financial risks of a low-carbon transition at the sectoral and national levels.
Jiyong Eom is an associate professor at KAIST School of Business & Technology Management (BTM) and the director of KAIST Center for Sustainable Development (CSD), and the head of KAIST ESG Executive Program (KEEP). His research interests include energy & environmental economics and management, integrated assessment modeling for climate and technology policy analysis, climate financial risk management, demand-side energy management, and environmental operations management. His research appeared in many refereed journals including Nature Energy, Global Environmental Change, Energy Economics, Energy Policy, and Climatic Change. He served as a contributing author for Chapters 6 and 9 of the IPCC Fifth Assessment Report of Working Group III (Mitigation of Climate Change) and is a Highly Cited Researcher in the social science area both in 2019 and 2020.

He received a BS degree in Chemical Engineering from Yonsei University, a MS degree in Chemical & Biomolecular Engineering from KAIST, and a PhD degree in Management Science & Engineering with the concentration on Policy & Strategy from Stanford University.

David Nelson is Senior Director of Climate Transition Analytics (CTA) in the Climate and Resilience Hub (CRH) at Willis Towers Watson. David leads the CTA team which transferred to WTW from Climate Policy Initiative (CPI), an international climate think tank, in January 2021. The CTA/CRH team works with national and state governments, public and private firms, investors, and asset managers across the world to measure and manage climate transition risk, building on a set of analytical tools developed at CPI that assess the financial impact that different transition scenarios would have on asset, business, and investment valuation, and on the financial risk and impact that a transition would have on share prices, credit risk, and investment portfolios. CTA/CRH uses these tools to help companies, governments, and investors to develop strategies to manage climate transition risk, including portfolio evaluation, business strategy, and hedging instruments.

Prior to joining WTW, David had been at CPI since it was founded in 2010, serving as the global director of research and helping establish offices in the US, UK, and India. In 2014, David led the creation of the Energy Finance practice at CPI that has now transferred its transition risk management programme to WTW. Before joining CPI, David worked for more than 20 years as an investor and strategic advisor to energy and utility companies and their regulators in Europe, Asia, North America, South America and Australia. David was senior vice president and global sector leader for Energy, Utilities, and Commodities at AllianceBernstein, where he managed the research team for the Bernstein Value portfolio and the commodity hedge fund. Prior to working at Bernstein, David was a Principal at the Boston Consulting Group, and before that a Director at Arthur D. Little. David has degrees in engineering from the University of California, Berkeley and an MBA from Wharton.
Jeayoon Kim is an economist in the Financial Stability Department in the Bank of Korea (BOK). His current areas of research include climate risk analysis and green finance. He has recently presented a study that analyzes the impact of transition risk on financial stability as a BOK’s Quarterly Bulletin paper. He has also contributed to the BOK’s strategy for climate change response announced in 2021. He is serving as a member of the NGFS (Network for Greening the Financial System), a climate risk research group of central banks and supervisors around the world. He received a PhD degree in Management Engineering and a BS degree in Mathematical Sciences from KAIST. He has published articles on green finance in the Energy Economics.

Dr. Ben Caldecott is the founding Director of the Oxford Sustainable Finance Group at the University of Oxford Smith School of Enterprise and the Environment. At the University of Oxford, he is the inaugural Lombard Odier Associate Professor and Senior Research Fellow of Sustainable Finance, the first ever endowed professorship of sustainable finance, and a Supernumerary Fellow at Oriel College, Oxford. Ben is also the founding Director and Principal Investigator of the UK Centre for Greening Finance & Investment (CGFI), established by UK Research and Innovation in 2021 as the national centre to accelerate the adoption and use of climate and environmental data and analytics by financial institutions internationally.

He has conceived and initiated a number of initiatives related to sustainable finance. Ben founded and is Co-Chair of the Global Research Alliance for Sustainable Finance and Investment (GRASFI), an alliance of global research universities promoting rigorous and impactful academic research on sustainable finance. He established and leads the Sustainable Finance Theme at The Alan Turing Institute and initiated the Spatial Finance Initiative, which aims to mainstream geospatial capabilities enabled by space technology and data science into financial decision-making globally. He co-founded and serves on the board of the Commonwealth Climate and Law Initiative (CCLI), which is examining the legal basis for directors and trustees to consider, manage, and report on climate-related risk, and the circumstances in which they may be liable for failing to do so. He established and is the Faculty Chair of the Public and Third Sector Academy for Sustainable Finance at the University of Oxford, a global centre of learning on sustainable finance for the public and third sectors. Ben is a Co-Investigator for the Leverhulme Centre for Nature Recovery where he co-leads its work on finance.
Panelist

Jacob Gyntelberg is the Director of the Economic and Risk Analysis (ERA) Department at the European Banking Authority (EBA). The Department is responsible for the EU-wide stress test function at the EBA and the analysis of risks and vulnerabilities in the EU banking sector, impact assessments of regulatory and supervisory measures and the coordination of ESG related activities across the EBA. Jacob is currently the Chair of the EBA stress test task force and the task force on macroprudential matters. Prior to joining the EBA, Jacob worked for nearly 10 years in the private sector – most recently as Deputy Chief Risk officer for the Nordea Group. He has also worked more than 13 years at the Bank for International Settlements (BIS) latest as a Principal Economist. Jacob has published several articles in international journals and BIS publications focused on financial markets, economic and regulatory developments. His most recent research is on the cost of capital for banks. Jacob holds a Ph.D. in Economics from the University of Copenhagen.

Panelist

Jaehak Hwang is senior manager in Sustainable Finance Team, Financial Supervisory Service (FSS), Republic of Korea. He developed climate risk supervision policies in Korea, conducted climate stress testing on Korean financial industry for the first time in Korea and researched on various climate-related financial risks. His research interest is Climate-related financial risk, financial stress testing, Financial network, ESG management, energy market analysis, and Financial regulation. He has served as a financial regulator in FSS since 2006, and has diverse expertise in financial industry including FX market, financial investment, financial conduct and insurance actuary. He has actively participated in BCBS-TFCR (Basel Committee on Banking Supervision–Task Force on Climate-related financial risk) as a member. He received a BS degree and a MBA degree in finance from Sogang university a PhD degree in economics from University of Bath.
Successful Practices and Strategies for Institutional Transformation in the Asia-Pacific

Climate change and associated policy responses, if not properly managed, present large economic, financial, and social risks around the world, and Asia may be more vulnerable than other regions. A significant portion of businesses, assets, and infrastructures that propelled Asian economic development and prosperity may become “stranded” and will become effectively worthless by 2050 as the world pursues weaning itself off fossil fuels. The question is how to plan for an orderly, efficient, and just transition to sustainable Asian economies. In this panel, representatives of international organizations and universities share their opinion on successful sustainable finance practices and strategies in the Asia-Pacific that have been implemented and challenges that must be overcome in order to move their broad-based institutional transformation forward and achieve a climate-resilient future for Asia.

SESSION 05.
Successful Practices and Strategies for Institutional Transformation in the Asia-Pacific

— Moderator
PARK Kwangwoo
Professor of Finance & Head of the Graduate School of Finance, KAIST

— Panelists
Helena McLeod
Deputy Director-General and Head of the Green Growth Planning & Implementation (GGP&I) Division, Global Green Growth Institute (GGGI)

Bruno Carrasco
Director General & Chief Compliance Officer, Sustainable Development and Climate Change Department, Asian Development Bank (ADB)

HYUN Suk
Associate Professor, Graduate School of Environmental Finance, Yonsei University

Yuhua AN
Professor of Finance, Graduate School of China, SungKyunKwan University
Kwangwoo Park is Professor of Finance and Head of the Graduate School of Finance at KAIST (Korea Advanced Institute of Science and Technology) in Seoul, Korea. He received his PhD in finance from the University of Illinois at Urbana-Champaign and has Bachelor’s degree in Business from Yonsei University in Seoul. Prior to joining KAIST, Dr. Park has taught at Chung-Ang University in Seoul. Dr. Park also taught at the University of Missouri–Columbia where he got a PhD in economics. His current areas of research interest include banking, corporate finance, and sustainability. He has been publishing a number of articles in top finance journals including the Journal of Finance, the Review of Financial Studies and major journals such as the Journal of Banking and Finance among others. Dr. Park served as the Editor of the Asia Pacific Journal of Financial Studies which is the first journal listed in the Social Science Citation Index (SSCI) in the region. He is also a board member of the Journal of Financial Stability (SSCI). Dr. Park has been a research fellow and advisor for many leading institutions including the Federal Reserve Bank of Chicago, the Bank of Korea (the central bank), and Korea Corporate Governance Service, and has been serving as a member of the advisory committees for the Korea Fair Trade Commission, Financial Service Commission, Ministry of Economy and Finance, and the Office of the Prime Minister in Korea.

Helena McLeod is Deputy Director–General and Head of the Green Growth Planning & Implementation (GGP&I) Division at the Global Green Growth Institute. In this role she leads the 30+ country offices, spread throughout Latin America, Africa, Asia, the Middle East and the Pacific, and their implementation work, to achieve economic growth that is environmentally sustainable, socially inclusive and climate compatible. Helena, a British national, has over 25 years of experience designing and leading innovative development programmes and multi-disciplinary teams in the areas of green cities, renewable energy, sustainable transport, climate smart agriculture, forest preservation, climate resilience, trade and regional economic integration. Prior to taking up her position at GGGI, Helena was employed by Cardno International Development as Head of CIG Uganda, a UK AID initiative, targeting mobilization of GBP1billion of finance for climate smart flagship infrastructure projects, solid waste management and innovative urban plans.

Before her appointment at Cardno, Helena was Director for the Resilience, Renewable Energy and Climate Change Sector at the KPMG IDAS Africa Practice, head quartered in Kenya. In this position, she scaled and managed a grant portfolio of USD 400 million, across Africa and Asia. With specialty in management of philanthropic, government and private sector grant funds focused on climate outcomes, her key responsibilities included designing innovative grant and blended finance funds, rapid mobilization of global programs, funds and teams, winning and executing new business and setting the strategic direction of the practice.

She holds an MSc degree in Environmental and Natural Resource Economics (with distinction) from the University College London and a BSc degree in Economics from the London School of Economics.
Bruno Carrasco leads ADB-wide knowledge, innovation, policies and strategies in all thematic and sector operation areas and ensures compliance with environment and social safeguards policies. He oversees the administration of trust funds and global funding initiatives and provides advice to Management on strategic and policy matters, work plans, and major operational matters. He joined ADB 25 years ago and has served in countries across all its regional departments. He holds a doctorate degree in economics from the University of Essex.

Suk Hyun is an associate professor at Graduate School of Environmental Finance in Yonsei University. Prior to joining EIC in 2018, he was a visiting scholar in the Department of Economics, University of Southern California and a research fellow at Korea Capital Market Institute (KCMI). He worked as an economist at Bank of Korea for 2009–2010 and spent three years for 2006–2009 in Japan as a bond market specialist in charge of Asian Bond Markets Initiative (ABMI) Task Force at Japan Bank for International Cooperation (JBIC). His expertise lies in international finance, bond market, and Japanese economy with the recent research covering infrastructure bond, green bond and capital market development and financial integration in Asia. He has a bachelor’s degree in economics from Yonsei University and earned both his Master’s and PhD degrees in economics from Keio University.
Dr. Yuhua An is a finance professor of SungKyungKwan University in Korea. She is also a member of Specialized Committee of President’s Intellectual Property, a member of Economy of Committee of the South Korean Foreign Ministry. An Yuhua is a senior advisor and a Chinese specialist who received her Ph.D in Business from Korea University.

Professor Yuhua An has been a Research Fellow at the International Finance division of Korea Capital Market Institute (KCMI), focusing on China’s financial markets, China’s economy, and corporate financing (IPO, M&A, and PEF). She is also a chief editor of Chinese Financial Market Focus, one of KCMI’s quarterly publications, and a vice chairman at the Chinese Capital Market Workshop organized by the Korea Financial Investment Association. She was teaching finance and China’s financial markets at several universities, including Korea University and Chung–Ang University. Before KCMI, she worked as a Project Risk Analyst for Samjung KPMG, and Division Head for Asia Institute of Corporate Governance at Korea University for three years. Throughout her experience, she has carried out policy–related projects commissioned by many government organizations, banks, and securities firms. Currently, she is a Project Manager leading two research projects: Building the Renminbi Hub in Korea (commissioned by the Ministry of Strategy and Finance), and Establishing the Renminbi Bond Market (commissioned by Korea Securities Depository). Also, she is playing a key role in four TF teams formed to push forward the renminbi–related projects for the Korean government.

An Yuhua was a senior advisor in YULCHON Law firm. She is a specialist on financial services market in China and advises on a variety of business activities related to China. She is an advisor at Korean Intellectual Property Committee, a guest researcher for Korea Securities Depository, and an advisor for China at Foreign Ministry of Economic Affairs.
Michael Lepech is a Professor of Civil and Environmental Engineering and Senior Fellow at the Woods Institute for the Environment at Stanford University. Michael’s research develops fundamental engineering design concepts, models, and tools that are tightly integrated with quantitative sustainability assessment and service life modeling across length scales, from material scales to system scales, and throughout the early design, project engineering, construction, and operation life cycle phases of constructed facilities. His research introduced the Sustainable Integrated Materials, Structures, Systems (SiMSS) framework, a tool to guide the multi-scale design of sustainable built environments, including multi-physics modeling informed by infrastructure sensing data and computational learning and feedback algorithms to support advanced digital-twinning of engineered systems.

Along with colleagues, Michael’s research formed the foundation of the Stanford Center at the Incheon Global Campus (SCIGC), a university-wide research center examining the potential for smart city technologies to enhance the sustainability of urban areas. Located in the smart city of Songdo, Incheon, South Korea, SCIGC is a unique global platform to (i) advance research on the multi-scale design, construction, and operation of sustainable built environments, (ii) demonstrate to cities worldwide the scalable opportunities for new urban technologies (e.g., dense urban sensing networks, dynamic traffic management, autonomous vehicles), and (iii) improve the sustainability and innovative capacity of increasingly smarter cities globally.

Michael graduated with a BSE, MSE, and PhD in Civil and Environmental Engineering from the University of Michigan, Ann Arbor. He received his MBA, with a focus in strategy and finance, from the Ross School of Business at the University of Michigan, Ann Arbor.
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Next Steps for Climate Innovation

- KDB Bank
- KDB Capital
- KDB KIAMCO
- KDB Investment