

De-Risking the Terawatt Transition **Decarbonisation strategies when renewables are not enough**

November 3, 2021

During a full-day summit on 3 November organized by TerraPraxis, key stakeholders representing several trillion dollars in potential market demand, will reveal new near-term climate-scale strategies to compete on price and performance with fossil fuels that will break through the world's largest and most difficult carbon emissions challenges: coal and liquid fuels. Customers, investors, and political leaders will announce strategies to accelerate the affordable repowering of 2 Terawatts of coal and delivery of 100 million barrels per day of carbon neutral liquid fuels. These large-scale solutions repurpose trillions of dollars of existing infrastructure to continue supplying reliable energy, but without emissions, and can advance groundbreaking progress toward Net Zero by 2050. The programme will quantify the risks of a failure to decarbonize through the humanitarian lens of climate justice and equal access to energy.

7:30 – 9:00 am **Welcome Breakfast**

9:00 - 10:00 am **Framing the Decarbonisation Challenge: Impact, Speed & Scale**

The sequencing and time-sensitivity of the Net Zero challenge, which involves a massive, simultaneous infrastructure build-out in every country over the next 28 years, presents an unprecedented logistical challenge. The challenge is not only to build enough clean electricity generation to power the world, but to do so quickly while building the infrastructure required to decarbonise end-use sectors such as heat, industry and transport.

Guests will be invited to launch the day with a dynamic discussion of the human impact of the carbon problem, and opportunities to complement renewables, like solar and wind, while meeting global demand for energy without emissions. These solutions include repowering coal and gas plants with clean heat sources, and enabling low-cost refinery-scale hydrogen and synthetic fuels production. Participants will explore how wider adoption of these transformative solutions can advance an essential shift in the discourse about the feasibility, cost and risk of achieving Net Zero in time.

Mr Jerome Foster II, *Climate Advisor*, White House Environmental Justice Advisory Council

Ms Bertha Dlamini, *President*, African Women in Energy and Power (*remotely*)

Mr Nobuo Tanaka, *Chair, the Steering Committee*, Innovation for Cool Earth Forum (ICEF) and *Former Executive Director*, the International Energy Agency (IEA) 2007-2011 (*remotely*)

Mr Armond Cohen, *Executive Director*, Clean Air Task Force

Mr Eric Ingersoll, *Co-Founder*, TerraPraxis

Moderated by Kirsty Gogan, *Co-Founder*, TerraPraxis

10:00 – 10:30 am **Coffee and Tea Break**

10:30 – 12:00 pm

Repowering 2 Terawatts of Coal Infrastructure by 2050

More than 2,000 gigawatts of coal-fired capacity is used in the world today, adding roughly 15 billion tons of CO₂ emissions per year, almost half of all carbon emissions. Since many coal fired power stations are young assets, less than 14 years old, retirement of this infrastructure is an unattractive and unrealistic prospect for many owners and investors. Existing coal-fired power plants have enormous value in established markets for their power, grid connections and experienced personnel. While coal plants are currently among the most significant carbon emitters, they can also act as flexible generators, supporting integration of renewables into electricity grids. Replacing coal boilers with small modular reactors (SMRs) and clean heat sources allows use of existing infrastructure for clean electricity generation and a fast, low-risk path to decarbonising global power generation. Unlike other proposed solutions, repowering coal plants offers robust political viability because it preserves jobs, local economies and existing, high-value infrastructure investments. Conversations will focus on defining customer and investor cost and performance requirements to repower the vast majority of the world's coal fleet, eliminating two terawatts of coal emissions with clean energy by 2050.

Mr Jigar Shah, *Director*, Loan Programs Office, United States Department of Energy (*remotely*)

Ms Rumina Velshi, *President and Chief Executive Officer*, Canadian Nuclear Safety Commission

Mr Conor Kelly, *Sustainability Technology Lead*, Microsoft

Ms Maria Korsnick, *President and Chief Executive Officer*, Nuclear Energy Institute

Ms Amy Roma, *Partner*, Hogan Lovells

Mr Martin Wood, *Co-Founder and Board Director*, Bryden Wood

Mr Jerome Foster II, *Climate Advisor*, White House Environmental Justice Advisory Council

Moderated by Mr. Eric Ingersoll, Co-Founder, TerraPraxis

12:00 – 2:00 pm

Networking Lunch & Walk of the Grounds

2:00pm - 3:30 pm

No Choice But to Change: Replacing 100 Million Barrels of Oil Per Day with Clean Liquid Fuels

Much of the carbon gap is due to “difficult-to-decarbonise” sectors such as shipping, aviation and heavy transport. Global hydrogen-based synthetic fuel production can be accomplished with shipyard-manufactured, sea-going production platforms akin to the large offshore production vessels currently used by the oil industry, as well as in refinery-scale hydrogen and synfuels gigafactories. This massive, rapid decarbonisation effort can be achieved with a relatively small physical and environmental footprint, allowing large areas of land to be spared for rewilding and the restoration of natural ecosystems. Investors,

customers and political leaders will announce strategies to accelerate delivery of 100 million barrels per day of carbon-neutral synthetic liquid fuels to replace fossil fuels. During this discussion, high-level stakeholders in aviation, shipping, oil and gas, and industrial-scale manufacture will explore how scalable, cost-effective hydrogen-based fuels can be produced in the near term.

H.E. Mohamed Al Hammadi, *Managing Director and Chief Executive Officer*, Emirates Nuclear Energy Corporation

Eng. Andrew N. Kamau, *Principal Secretary*, State Department of Petroleum, Kenya

H. E. Aminath Shauna, *Cabinet Minister of Environment and Climate Change*, Maldives Government

Dr Dirk Smit, *Chief Scientist*, Shell (*remotely*)

Dr Sama Bilbao y León, *Director General*, World Nuclear Association

Mr. Jens ÞÓRDARSON, *Chief Operating Officer*, Icelandair (*remotely*)

Moderated by Ms. Kirsty Gogan, Co-Founder, TerraPraxis

3:30 – 4:00 pm

Coffee and Tea Break

4:00 – 4:30 pm

Voices from the Future: H.E. Mohamed Nasheed and Jerome Foster II

H.E. Mohamed Nasheed, *Speaker of Parliament*, The Republic of Maldives

Mr Jerome Foster II, *Climate Advisor*, White House Environmental Justice Advisory Council

Moderated by Kirsty Gogan, Co-Founder, TerraPraxis

5:00 – 6:00 pm

Atlantic Council Live: Missing Link to a Livable Climate

New advanced heat source technologies are being commercialised today and offer a range of “climate scale,” low-cost, fast and repeatable applications in the power sector, including repowering coal-fired power plants and production of hydrogen fuels. Participants in CASC Live offer new perspectives on hard-to-abate decarbonisation challenges, including large-scale, low-cost hydrogen clean synthetic fuel production to complement renewables and viable solutions for repowering existing coal plant sites and transmission on a mass scale.

5:00 - 5:10 pm

US Department of State Announcement of Nuclear Futures

Ambassador Bonnie Jenkins, *Under Secretary for Arms Control and International Security*, Bureau of International Security and Nonproliferation, United States Department of State (*remotely*)

5:10 - 5:20 pm

Discussion of Nuclear Futures

James Kulikowski, *Coordinator of US Assistance to Europe and Eurasia, Bureau of European and Asian Affairs*, United States Department of State

Justin Friedman, *Senior Advisor for Commercial Competitiveness in Nuclear Energy*, Bureau of International Security and Nonproliferation, United States Department of State

5:20 - 5:30 pm

Global Response to Nuclear Futures

H. E. Dr. Virgil-Daniel Popescu, *Minister of Energy*, Romania

German Galushchenko, *Minister of Energy*, Ukraine (*invited*)

Eng. Andrew N. Kamau, *Principal Secretary*, State Department of Petroleum, Kenya

5:30 - 5:45 pm

Ensuring Energy Access in the Energy Transition

H.E. Mohamed Nasheed, *Speaker of Parliament*, Republic of Maldives

Mr. Jerome Foster II, *Climate Advisor*, White House Environmental Justice Advisory Council

Moderated by Ms. Kirsty Gogan, Co-Founder, TerraPraxis

5:45 - 6:00 pm

Decarbonisation Through New Nuclear

H.E. Mohamed Al Hammadi, *Managing Director and Chief Executive Officer*, Emirates Nuclear Energy Corporation

6:00 - 6:15 pm

Scaling Up our Response to Climate Change

Dr. James Hansen, *Climate Science, Awareness and Solutions Program*, Columbia University Earth Institute (*remotely*)

6:30 – 8:00 pm

Cocktails

8:00 – 9:30 pm

Private Dinner: How to Decarbonise Hard-to-Abate Sectors

The dinner conversation will address the role of nuclear in decarbonisation beyond the power sector, and will pick up on the main themes of the daytime conversations: how nuclear reactors can repower coal plants and produce synthetic fuels.

8:00 – 8:05 pm

Welcome Remarks

Mr. Frederick Kempe, *Chief Executive Officer*, Atlantic Council

8:05 – 9:30 pm

Dinner Conversation

Moderated by Mr. Randolph Bell, Senior Director and Richard Morningstar Chair for Global Energy Security, Atlantic Council

Remarks in order of appearance, followed by one-table discussion:

Ambassador Rafael M. Grossi, *Director General*, International Atomic Energy Agency

Dr Andrew Light, *Assistant Secretary for International Affairs*, United States Department of Energy

H.E. Hage Geingob, *President* of Namibia

H.E. Mohamed Nasheed, *Speaker of Parliament*, Republic of Maldives

Kirsty Gogan, *Co-Founder*, TerraPraxis

Honoured guests include: **Rosamund Kissi-Debrah**, *Co-Founder and World Health Organization advocate for health & air quality*, Ella Roberta Family Foundation; **H.E. Mohamed Al Hammadi**, *Managing Director and Chief Executive Officer*, Emirates Nuclear Energy Corporation; **Aminath Shauna**, *Cabinet Minister of Environment and Climate Change*, Maldives Government; **Jerome Foster II**, *Climate Advisor*, White House Environmental Justice Advisory Council; **Alice Aedy**, *Founder*, Earthrise Foundation; **Rumina Velshi**, *President and Chief Executive Officer*, Canadian Nuclear Safety Commission.

9:30 – 10:30 pm

Night Owl Session: Cocktails and Conversation

Mr. Kim Stanley Robinson, *Award Winning Science Fiction Author*