



[World Engineering Day for Sustainable Development—March 4, 2021](#)

Engineers United: Declaration of Climate Emergency and the Importance of Climate Resilient and Sustainable Infrastructure

On this important day, designated by UNESCO and celebrated around the world - World Engineering Day for Sustainable Development, the Stimson Center's Alliance for a Climate Resilient Earth (ACRE) join engineering partners and allies in 177 countries to recognize the indispensable role that engineers play in designing, building, and maintaining the infrastructure that is essential to economic progress and the achievement of the UN Sustainable Development Goals.

Climate resilient, sustainable infrastructure is an imperative for civilization's future. Politicians can enable it; institutional investors can fund it; but only engineers can build it.

The World Federation of Engineering Organizations (WFEO), representing 30 million engineers, is led by its [President Gong Ke](#), who believes that it is "imperative that engineers be engaged in this massive and worldwide effort to ensure that the infrastructure that supports our quality of life and economic progress is resilient. Given the universal importance and need to address climate change as a specific goal and an integral strategy within many UN Sustainable Development Goals, a focus on climate change adaptation is a necessary complementary strategy to the mitigation of climate change through GHG reduction, for achieving a carbon neutral world."

[Brian Finlay](#), President of the Stimson Center, underscores the stakes: "The climate crisis is a matter of national security. Working with our strategic partner, the American Society of Civil Engineers (ASCE), we have recommended that infrastructure and climate policy be integrated, no separated. Engineers have a critical role to play across the implementation spectrum, writing sustainable infrastructure standards, guidelines, and upgraded codes to incorporate into laws, regulations, and procurement practices. Infrastructure can play a central role in the effort to meet the UN Sustainable Development Goals."

"The changing climate places engineers at a critical juncture," said [Jean-Louis Briaud](#), Ph.D., P.E., president of the American Society of Civil Engineers (ASCE). "With significant investment expected for infrastructure systems all over the globe over the next 20 years and beyond, it is imperative that engineers are equipped with the tools and standards to make those investments such that engineered infrastructure can withstand an ever-changing climate. We must place a very high priority on sustainability and resilience when designing infrastructure, both for the safety of the global population, and to ensure our investments don't go to waste."

"It's time to put infrastructure at the top of the world's climate agenda. We cannot win the Race to Zero and the Race to Resilience without a powerful dedication to building and retrofitting global infrastructure that can withstand climate disasters and be relied upon to function sustainably

during its entire life cycle. When President Biden meets with world leaders at his conference on April 22 and when the world leaders gather for COP 26, it is urgent that he highlight the link between climate and infrastructure, including its social and environmental impacts," said [Jan Hartke](#), who Chairs the Board of Counselors at the Stimson Center's Alliance for a Climate Resilient Earth (ACRE).

"This is a challenge of global significance," says [K.N. Gunalan](#) (Guna), the past President of the ASCE and WFEO's Chair of the UN Relations Committee. . "By 2050, UN Climate Envoy Bloomberg points out, we will have built 4 times as much infrastructure globally as it exists today. Between now and 2040, the G20 estimates that the world will need \$94 trillion to meet infrastructure needs of 9 billion people. The cities of the future are estimated to spend 40% of their budgets on infrastructure. With a planetary challenge so immense, we cannot afford to get it wrong. We have the foresight and talent to build better now before disaster strikes rather than spend more to retrofit to a higher standard after the event occurs."

The Canadian Society for Civil Engineering - CSCE, founded in 1887 was created to develop and maintain high standards of civil engineering practice in Canada and to enhance the public image of the civil engineering profession. [Catherine Mulligan CSCE President](#) states that "there is now a broad scientific consensus that the global climate is changing in ways that are likely to have profound impacts on the hydrologic cycle and the human society. Innovation through different applications of an existing approach or technology and breaking the thinking in silos are required by engineers. "

"At the heart of the challenge is how we deliver infrastructure that aligns with net zero carbon goals, including both new programmes and, more importantly, the evolution of existing economic and social infrastructure. This is the bigger challenge: delivering carbon neutral transport systems, bringing clean air to our cities, enabling our children and their children to live in a world with thriving ecosystems. "In the short-term we, all, need to take ownership of the problem - accountability for carbon and other greenhouse gas emissions is key. As infrastructure specialists, we have an immediate opportunity, and a responsibility, to make a transformational contribution towards the creation of a sustainable future" says [President, Rachel Skinner](#).

[Dr. Jorge Vanegas](#), President of the Pan American Academy of Engineering, which represents engineers from Canada to Argentina, emphasizes that " Our priority as engineers is to provide leadership in the establishment of a collaborative partnership among academia, industry, and government to advance global solutions to meet the need for livable communities for everyone anywhere, through resilient, and sustainable civil infrastructure systems and industrial, commercial, institutional, and residential facilities."

[Dr. Marlene Kanga](#), is the immediate past president of the World Federation of Engineering Organisations (WFEO). During her term as WFEO President, Marlene led the initiative for UNESCO to declare 4th March, as World Engineering Day for Sustainable Development (WED2021). With a background in chemical engineering, she is now a keen advocate for the promotion of diverse and inclusive groups within engineering around the world, and here expands on a topic that is very close to her heart. She says "World Engineering Day is dedicated to communicating the impact of engineering and spreading the message that if you want to change the world, become an engineer. Engineers have the skills to make change. It's also essential for more women to

make a contribution to engineering to achieve the goals of sustainable development. The World Federation of Engineering Organizations [Declaration for Climate Emergency](#) and [Code of Practice for Sustainable Infrastructure and Environmental Stewardship](#) provides essential guidance for engineers for resilient infrastructure.”

[Anthony Kane](#), the President of the Institute for Sustainable Infrastructure, with over 6,000 credentialed professionals, manages Envision, a framework that encourages systemic changes in planning, design, and delivery of sustainable and resilient infrastructure through education, training, and third-party verification. “Our mission at ISI is to encourage the adoption of sustainable and resilient infrastructure that is demanded by political leaders, planned and designed by engineers and will be financed”, remarks President Kane.

[Christine Williams](#), the Chair of the International Coalition for Sustainable Infrastructure, works at ASCE and is a founding member of the board with representatives from the Global Covenant of Mayors for Climate and Energy, Resilience Shift, WSP, and ICE-UK. “We recognize,” she points out, “that engineering-inclusive organizations alone cannot solve the systemic problems that exist at the intersection of climate change, aging infrastructure, and underinvestment. A multidisciplinary, multi-sector, global coalition is needed to break down the silos that have contributed to our collective challenges to adapt and mitigate.”

The Pan American Federation of Engineers represents over 2 million engineers through its federation of 26 national engineering organizations. “Our mission is to lead the development of Pan-American engineering in accordance with criteria of environmental sustainability, social development, economic growth, and technology transfer based on the best practices of science,” says the Federation’s [President, Salvador Landeros](#) 2021-2023. “We are committed to being a part of the climate solution, a key contributor to the UN SDGs, and a firm adherent to the highest concepts of ethics, transparency, gender equality, and professional rigor.”

The Asian Civil Engineering Coordinating Council (ACECC), consisting of representative civil engineering societies from 14 countries, promotes collaborative work towards sustainable development of infrastructure within the Asian region. “Climate change presents a formidable challenge to civil engineers and society in maintaining and improving the quality of life through sustainable infrastructure and development,” says [Udai P. Singh](#), Secretary General of ACECC. “The global engineering community must work collaboratively towards climate resilient sustainable infrastructure, and partner with political and government leaders to make it happen.”

“Infrastructure is a prime mover and catalyst for each of the UN Sustainable Development Goals. Its power to move the Paris Agreement forward has profound implications for the global economy, disadvantaged populations, endangered cities, and threatened ecosystems. The ASCE is advancing sustainable infrastructure standard that is performance based, not prescriptive. It will be a substantial and measurable contribution to the UN SDGs as we inaugurate this new standard to plan, design, build, and maintain climate resilient, sustainable infrastructure. We are pleased to join in the WFEO Declaration of Climate Emergency and begin the promotion of the Code of Practice on Principles Climate Adaptation for Engineers. We are also pleased to see the launch of the UNESCO Engineering Report” says [Michael Sanio](#), Executive Advisor on Sustainability at ASCE.