WFEO Young Engineers / Future Leaders Committee (YEFL)

Name of STC/PIC/WG: Young Engineers / Future

Leaders Committee (YEFL)

Chair: Eng. Firas Bou Diab

Federation of Lebanese Engineers (FLE)

Date: October 2022

The WFEO committee on Young Engineers / Future Leaders (YEFL) is a motivated team of young engineers that work voluntarily to make (YEFL) acknowledged and celebrated as the global leader for the young voices of the Engineering profession. The work of the (YEFL) is aimed at enabling a sustainable ecosystem that provides support, resources and a platform for young engineers in the WFEO community, highlighting the role of young engineers worldwide in achieving the UN Sustainable Development Goals.



Firas N Bou Diab Chair, YEFL Committee

MAIN THEMES COVERED IN THE PAST THREE YEARS:

World Engineering Day - 4th March each Year



YEFL in the World Engineering Day 2022 Hackathon

Aligned with a 2022 Theme: Build Back Wiser – Engineering the Future, the World Engineering Day Hackathon encouraged engineering students to work in teams towards a global real-world problem.

The competition was a fast-paced simulation of a real-world project. Teams worked collaboratively on a problem to provide a set of deliverables within a short timeframe. Partners include the International Engineering Alliance, the International Federation of Engineering Education Societies, the Global Engineering Deans Council and Engineers Without Borders-International. YEFL Chair and committee members lead and participated in the Hackathon working group and attended a number of preparatory meetings. The committee members contributed in the Preliminary Judging and YEFL Chair was one of the Finalist Judges for this Hackathon.













WFEO World Engineering Day 2022 Global Hackathon Winners: Team WONDERPETS, Reaner Jacqueline Bool, Ghia Luwalhati and Nicole Elizabeth Tan Batangas State University, the Philippines. Photo Source: Team members

WED2022 Hackathon Announcement

YEFL and Partners celebrated World Engineering Day 2022



Aligned with 2022 Theme: Build Back Wiser - Engineering the Future and as part of the World Engineering Dav Celebrations, the young engineers' panel was held on 15 Feb 2022 titled: An Inspiring and Collective Young **Engineering Vision**

Panelists were from different geographical regions of the world and are outstanding leaders,

being nominated by WFEO, Federation of International Consulting Associations (FIDIC) Young Leaders Council, European Young Engineers (EYE), The Student Platform for Engineering Education Development (SPEED). The objective of the panel was to present perspectives and give an inspiring and shared vision of the role of young engineers in Engineering a Sustainable Future.



Screen Shot of Speakers

World Engineering Day 2021 - YEFL Video Campaign: Young Engineers Leading the Way

YEFL invited young engineers from around the World to submit a video to showcase contributions that young engineers are making towards a more sustainable, resilient, and inclusive world. More than 40 young engineers from more than 20 countries, showcased their videos that highlighted the important role that young engineers play towards accelerating action towards sustainable development. All videos answered one of the following three questions:









- 1. What is the importance of engineering in working towards a more sustainable world?
- 2. What advice do you have for young engineers interested in making a positive impact in their community?
- 3. Share an example of how young engineers are already contributing to sustainable development.

Winner is Roshan TEELUCK, from The Institution of Engineers Mauritius (IEM): https://fb.watch/44LLZOfVB2/ Runner up, Ludvig Vraadal, from Association of Nordic Engineers (ANE): https://fb.watch/44LNZLQWJP/

World Engineering Day 2021 – Engineering for A Healthy Planet: Celebrating the UNESCO **Engineering Report – Young Engineers Panel Discussion at the Main Event**



Under the High Patronage of Mr Emmanuel MACRON President of the French Republic





AGENDA - WED 2021 Engineering for a Healthy Planet -Celebrating the UNESCO Engineering Report

4 March 2021

1:00-2:30pm CET (Paris time, online)

Registration: http://on.unesco.org/Eng04-03

Master of Ceremonies: Shamila Nair-Bedouelle, ADG/SC

13:00-13:40

High-level Opening and Launch of Report

- Audrey Azoulay, Director-General of UNESCO
- Li Xiaohong, President of Chinese Academy of Engineering (representing Tsinghua University and ICEE)
- Genna Rajam Bangaroo, Civil Engineering Student, University of Mauritius, Mauritius Joint launch of the report by DG UNESCO and President CAE

13:40 - 14:00

Introduction to the Report on Engineering for Sustainable

Development: Delivering on the Sustainable Development Goals

- Wu Qidi, Director of ICEE and Co-chair of Engineering Report Steering committee -Introduction of the Report
- Marlene Kanga, Immediate Past President, WFEO Engineering to advance the UN Sustainable Development Goals
- Gong Ke, President, WFEO Engineering Innovations responding to pressing Challenges
- José Vieira, President Elect, WFEO Engineering education and capacity-building

14:00 - 14:25 Round-table on the Engineering Report

Moderator: Donovan Guttieres, former Chair UN Major Group Children and Youth, MIT, engineer (USA)

- Firas Bou Diab, Chair, WFEO Young Engineers/Future Leaders (Lebanon) Adam Bialachowski, Chair, International Federation of Consulting Engineers (FIDIC) Young Leaders Council (Poland)
- Loreto Valenzuela Roediger, International Federation of Engineering Education Societies (IFEES), Associate Professor, Catholic University Chile, (Chile)
- o Philippa Ngaju Makobore, IEEE, Head, Instrumentation Division, Uganda Industrial Research Institute (Uganda)
- o Bolormaa Gendensuren, International Network for Women Engineers and Scientists (INWES), School of Chemical Engineering, University of Ulsan (South Korea)

Closing Remarks 14:25 - 14:30

Shamila Nair-Bedouelle, ADG/SC

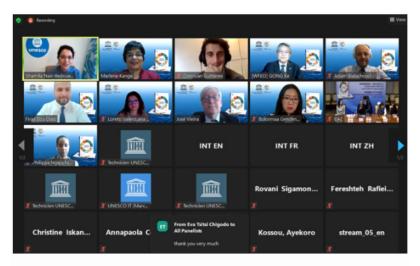
Young engineers were featured at the celebrations of World Engineering Day by WFEO and UNESCO at a high level event on 4th March 2021. A Round-table featuring young engineers from every region of the world and representatives of international engineering partners of WFEO.

The young engineering leaders commented on their work in their specialized fields, each advancing the goals of sustainable development and the specific actions that is required in each of their regions to leave no one behind.

Full article

World Engineering Day 2021 main event "Engineering for Sustainable Development: Delivering on the Sustainable Development Goals" Full Report





Screenshot of speakers at the UNESCO-WFEO launch of the Second **UNESCO Engineering Report**

World Engineering Day 2021 - Launch of Engineering the Future of Mauritius and the World - Engineering and the UN Sustainable Development Goals in a Small Island Developing State



The Journal of the Institution of Engineers Mauritius (IEM), March 2021 Edition, "Engineering the Future of Mauritius and the World", was released at a gala event on World Engineering Day, 4th March 2021. This publication showcases the strategies and work of engineers to address sustainable development in the context of the Small Island Developing States (SIDS). Mauritius is a small and beautiful island state

that is facing many of the issues of SIDS around the world. The Chair of the WFEO Young Engineers/Future Leaders Committee, Eng. Firas Bou Diab has also valued the Journal with the article entitled "The Next-generation Mauritius: Smart, Resilient and Sustainable ".

Read here: Journal of The Institution of Engineers Mauritius



World Engineering Day 2021 - Young Engineer Podcasts



Young Engineer Podcasts, World Engineering Day 2021

World Engineering Day 2020 – YEFL Celebrating the Achievements of Young Engineers Around the World

The goal of the competition was to highlight the work of young engineers and their engineering achievements in advancing the UN SDGs. More than 400 young engineers from more than 70 countries, including some from the leading engineering universities of the world, showcased their projects to advance sustainable development through engineering as part of this competition aligned with UNESCO World Engineering Day.



Winner: **Aida Rafat, Imperial College London UK**. Reducing textile waste and reducing pollution from textile dyeing technologies – SDG12.

World Engineering Day 2020: Engineering Heroes Mini-Series

YEFL Chair Firas Bou Diab speaking on SDG 8 – "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".

Engineering Leaders Podcasts



YEFL Webinar Series "Engineering the Future"

Engineering plays an indispensable role in designing resilient and sustainable societies. The COVID-19 pandemic has exposed inequalities and vulnerabilities across social, economic, and environmental spheres. Ensuring a rapid recovery, while laying down the foundation for more resilient systems is a precondition to achieving the 2030 Agenda, including the SDGs. The webinar series seek to highlight the role of engineering design and systems-based approaches in risks identification, mitigation, and reduction, as well as recovery. It will highlight the key challenges to address and opportunities for better engineering systems across multiple sectors.

The sessions will also discuss how different levers - technology, finance, governance, collective action - can promote a shift towards more sustainable social, economic, and environmental systems.

Oct 24, 2022



Sep 1, 2022



Nov 19, 2021



Mar 17, 2021



Dec 08, 2020



Oct 12, 2020



July 22, 2020



China Beijing International High-Tech Expo & WFEO webinar "A Sustainable Future: Young Engineers and 4IR"

The WFEO Engineering for Innovative **Technologies** Committee and the Young Engineers / Future Leaders Committee organized the webinar "A Sustainable Future: Young Engineers and the Fourth Industrial Revolution (4IR)" on Sep 18, 2020, during the 23rd China Beijing International High-Tech Expo (CHITEC). Young Engineers have ambition and desire for changing the world and are always contributing proposing innovative technological solutions, driving the emerging 4IR. They are



mobilizing to advance the Sustainable Development Goals to improve the lives of people and the health of the planet.

Collaboration with European Young Engineers (EYE)

Water Reuse for a Sustainable Industry - Challenges and Opportunities in a Circular Economy.

The webinar held on Jan 26, 2021 defined the barriers existing between politics, industry, and academia in regards to the promotion of water reuse in industry, to create a sound cohesion between the technical and natural world. The webinar promoted SDG 6 and Young Engineers.



Collaboration with FIDIC Future Leaders

FIDIC Future Leaders is the group of young professionals of the International Federation of Consulting Engineers (FIDIC). Participation in the Future Leaders Management Certificate (FLMC) programme to strengthen the business expertise of young engineers and other professionals working in the field of consulting engineering.





7th Annual Multi-stakeholder Forum on Science Technology and Innovation for the Sustainable Development Goals - Virtual Side Event



YEFL presented the side event on "Preparing the Future Engineering Workforce to Achieve the SDGs Through Multi-Stakeholder Engagement" at the UN STI Forum on May 6, 2022.

The event was split into two sections. The first section allowed organizations

such as International Telecommunication Union (ITU), World Federation of Engineering Organizations

(WFEO) Young Engineers/Future leaders Committee, Engineering for Change (E4C), and academic and industry partners, to share outcomes of programs that prepare rising engineers to apply their skills for sustainable development. The second half is an interactive discussion of best practices, opportunities for growth, and barriers that prevent young engineers from aligning their work with the SDGs. Pulkit Kanotra and Michaela Chan, discussed the YEFL Working Group's role in Climate Action and how it pertains to SDG 13. Pulkit Kanotra, showcased the YEFL effort with creating a global





network for young engineers to discuss and knowledge share ideas and strategies to mitigate effects from climate change. Pulkit, also presented the YEFL Working Group's efforts at COP26 and the positive response it received. Michaela presented on the future plans for the Working Group. Outcomes of this side event will include the identification of opportunities for greater collaboration between stakeholders and a written brief of lessons learned and areas for future growth.

WFEO and UN Relations - YEFL HLPF 2021 Side Event: Deploying Global Youth Capacity in UN Policy and Engineering for SDG 13



WFEO and its Committee on Young Engineers / Future Leaders organized the HLPF 2021 side event "Deploying Global Youth Capacity in UN Policy and Engineering for SDG 13" on July 9, 2021, as a side event of the 2021 edition of the High-level Political Forum. The crises of climate breakdown are the most serious issues of our time. Our major infrastructure systems of transport, energy, water, waste, telecommunications and flood defenses play a major part, accounting for a vast portion of energy-related carbon dioxide (CO2) emissions whilst also having a significant impact on our natural habitats. WFEO continues to raise awareness of the climate emergency and the urgent need for action amongst WFEO National Member Engineering Organizations and WFEO Partners, all stakeholders within the National Members and with Governments. The event aimed for an engineering community where a diverse and inclusive membership can work collaboratively towards innovative climate mitigation strategies, engaging women and young engineers in particular to combat climate change.



Read here: Joint Statement by Side-event Organizers

COP 27 - YEFL Climate Action Working Group

The YEFL Working Group on Climate Action strategic plan for 2022 comprises four thematic areas including Climate and Business Policy Recommendations, Youth and Young Professionals' Capacity Building and Strategic Engagements. These thematic areas were the premise for the development of our climate policy advocacy aims and focus areas which includes:

- 1. Climate Finance
- 2. Clean Energy
- 3. Capacity Building and
- 4. Loss and Damage

Climate Finance

The YEFL working group is jointly organizing a <u>COP27 Blue Zone Youth Side Event titled "Utilizing expertise of the youth to bridge the science-policy divide and improve access to finance"</u>, taking place on 10 November at 18:30-20:00 (EET) in room Osiris. The event is co-organized by the following organizations:

- World Federation of Engineering Organizations (WFEO) Young Engineers Future Leaders Committee
- International Federation of Consulting Engineers (FIDIC);
- Commonwealth Parliamentary Association (CPA);
- Association of Commonwealth Universities (ACU);
- Moravian University;
- International Water Association (IWA).

One of the goals of the event is to serve as a start of the conversation on a best-practice and widely applicable framework for youth engagement. The working group will be launching a qualitative consultation with the key stakeholders (youth organizations and government structures and individual policymakers/ intergovernmental organizations), which has been prepared with the help of stakeholder engagement specialists, young leaders and people working closely with senior policymakers, and translated into the official UN languages.

Clean Energy

The YEFL working group is working in partnership with the Commonwealth Sustainable Energy Transition Youth Action Group, SEforAll, the International Renewable Energy Systems Inc., and Breeze, to empower youths to support, contribute to, and advocate for sustainable energy transition and help to achieve the four SDG7 measures and targets including electricity access, clean cooking access, renewable energy, and energy efficiency by 2030."

A project is currently being championed by the working group in partnership with the Commonwealth called '**Leapfrog'** which will centralize human, material, Information, and financial resources under the lens of energy projects to facilitate the delivery of solid value propositions aligning scope, schedule, risk management and experiences.

Some capacity building events have been organized by the working group and CSET at the UNFCCC Paris Committee on Capacity Building (PCCB) Capacity Building Hub and the Children and Youth Pavilion at the COP27. These events titled "Innovation and Capacity Building for Economically Viable Transitioning of Traditional Carbon-Intensive Hubs and Markets" spotlight young professionals who volunteer in and facilitate the transition of carbon intensive markets and hubs to cleaner energy.

Capacity Building

The YEFL working group co-hosted a number of capacity building events with partners such as Duke University, Massachusetts Institute of Technology (MIT) Management Sustainability Initiative, Climate Interactive, Global Water Partnership, the Prince's Foundation, Engineering New Zealand, COP27 Presidency (Youth Envoy) amongst others.

The webinars held include:

- Aotearoa's engineering response to climate change
- COP27 Simulation: What to expect at COP27 and how to maximize your impact.
- Asia Water Forum 2022- Establishing Young Water Professionals (YWPs) Networks
- EnROADS Simulation: Understanding the impact of climate policies on global warming





Sep 8, 2022



August 8, 2022 **Asia Water Forum 2022** Side Event **Establishing Young Water Professional (YWPs) Networks** 8 August | 1:30-3:00 pm Dr Isabela Mr. Afolayan Ms. Claudia Ms. Emily Ryan Juwon Samuel Global Chapters Facilitator World Youth Parliam Espindola Neuschulz Ms. Michelle Ms. Cholpon Mr. Zihan Xuan Ms. Maria Regional Youth Focal Point (Eastern & SouthEastern Asia) United Nations International Federation of Youth for Water and Meaclem Civil Engineer World Federati Aitakhunova Mercedes Kuri Engineering Organisations Federation of Youth ADB

Pre-event session on Establishing Young Water Professionals (YWPs) Networks with speakers from the International Water Association, Water Youth Network, World Youth Parliament for Water, UN1FY, #CAY4W and WFEO - World Federation of Engineering Organizations YEFL WG on SDG13. Discussions on accelerating youth engagement in the water sector by creating a community of YWPs to share knowledge and experiences, learn important skills and have a space to brainstorm solutions. More information is available here: ASIA WATER FORUM

June 9, 2022



and MIT Sloan.

In the workshop, participants propose climate solutions such as energy efficiency, carbon pricing, fossil fuel taxes, reducing deforestation, and carbon dioxide removal. The facilitator then tests these approaches using En-ROADS so that participants can see the impact on global temperature and other factors.

Join us to experience what it's like to create your own climate future using grounded conversations; the resulting experience is hopeful, science-based, action-oriented, and eye-opening.

- 9th June at 17:00 BST Online (Zoom):
- bit ly/en-roads-workshor



woods.kilian@gmail.com wfeoyefl.climateaction@gmail.com

Hosted by Kilian Woods





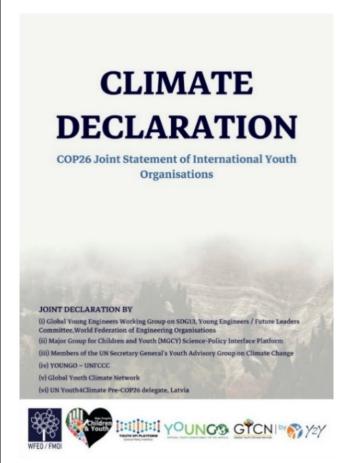


YEFL Journey to COP26

The YEFL working group initiated a joint statement with policy recommendations for policymakers on behalf of young people. Through the journey of writing these recommendations, advice was sought from subject matter experts. This included working with co-signatories the UNFCCC Youth Constituency (Global Youth Climate Network, UN Major Group for Children and Youth (Science and Policy Interface), and members of the UN Secretary General's Youth Advisory Group on Climate Change, as well as former Minister of State for Business, Energy and Clean Growth of the United Kingdom Rt.Hon.Charles Hendry (to understand the Landscape of climate negotiations) and COP26 &Beyond (to understand how to present policies in a manner familiar to policy makers).

Read here: COP 26 Joint Statement of International Youth Organizations

The working group initiated a joint statement to make 12 policy recommendations for COP26. This declaration was an unprecedented collaboration between key international youth organizations that was shared widely with government delegations, media, non-governmental organizations, and the 2021 UNFCCC climate champions. The table below shows the outcomes for the 12 policy recommendations at COP26.

























First published: 28 October 20

д	Delian December de Gree	Outrous from CODOS
Ħ	Policy Recommendation	Outcome from COP26
1	Update and implement NDCs consistent with limiting the overall global warming to 1.5°C.	Reaffirmed long-term global goal (Intergovernmental Panel on Climate Change Sixth Assessment Report).
2	Stop/prohibit exploration and development of new fossil fuel projects on a timescale compatible with the 1.5°C pathway.	Recognized (Intergovernmental Panel on Climate Changle Sixth Assessment Report). Invited Parties to consider further action - phase down (not phase out) unabated coal power.
3	Develop GHG/methane emissions mitigation strategies and commit to reducing human-caused methane emissions by a minimum of 30% of 2020 levels by 2030.	~80 Countries signed the Global Methane Pledge.
4	Ensure reasonably practicable protection of public health and livelihoods from the adverse effects of climate change, with a particular focus on groups and communities most vulnerable.	Welcomed recent pledges to increase climate finance by some developed country parties. Raised concern on provision of climate finance for adaptation - insufficient and unpredictable (Parties missed 2020 target, so urged parties to meet by 2025).
5	Deploy the necessary education capabilities to train more scientists and engineers, to implement the appropriate technologies for mitigation and adaptation.	Acknowledged progress made on capacity building - enhancing coherence and coordination of capacity building activities towards implementation of the Convention and the Paris Agreement. Recognized the need to continue supporting developing country parties.
6	Introduce built environment regulations that are compatible with the 1.5°C climate targets.	(Not discussed).
7	Ensure meaningful and inclusive participation of local communities in the creation of National Adaptation Plans on addressing climate risks and building resilience.	Welcomed the national adaptation plans submitted to date, which enhance the understanding and implementation of adaptation actions and priorities - to be presented in COP27.
8	Develop supple Adaptation Plans putting Integrated Water Resources Management (IWRM) at the centre of their strategy.	Recognized. (No Action).
9	Transparency of climate negotiations and greater meaningful involvement of young professionals at the national and international levels.	Recognised. Expressed appreciation for the outcome of the sixteenth conference of Youth organized by YOUNGO and the Youth4Climate2021: Driving Ambition event hosted by Italy in September 2021.
10	Clarity on the division of responsibilities in climate mitigation and adaptation action between national and local government, business and civil society and incorporate youth networks into the UNFCCC Climate Action Pathways.	Welcomed the action taken to unlock the potential sectoral action to contribute to fulfilling and implementing national targets. Recognized the important role of non-Party Stakeholders. Noted discussions on the governance of the Warsaw International Mechanism on Loss and Damage associated with Climate Change impacts did not produce an outcome.
11	Support science, technology, innovation (STI) that include engineering as critical components to informing, advising, implementing, and monitoring impact.	Recognized.
12	Support the creation of new green jobs and development of skills for youth by advancing their participation in global green jobs initiatives.	Recognized, Green Climate Fund.

WORKING GROUP JOURNEY TO COP26



The working group with COP26 President Alok Sharma



The working group with United States Special Presidential Envoy for Climate



The working group with a French COP26 delegate



The working group with the European Commission Vice President



The working group with the New Zealand lead negotiator



The working group with the UN Secretary General



The working group with Johan Rostrom



The working group participating in virtual event at Resilience Hub



The working group with the Nigerian COP26 Head of Delegation



The working group with the WFEO COP26 delegation



The working group with the Saudi Arabian delegation at COP26