



World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs



Young Engineers / Future Leaders Committee

Strategic Plan Supporting Document 2020-2023

YE/FL Committee
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1. Background of YE/FL

The World Federation of Engineering Organizations (WFEO) Executive Board Meeting in Paris, France, (March 16-17, 2009), culminated in the acceptance of the Committee for Capacity Building (CCB) proposal to establish a Young Engineers/ Future Leaders (YE/FL) Task Group. The YE/FL was to be constituted by Young Engineers of the WFEO member countries and its council members are to be official delegates by national engineering associations of WFEO countries. CCB's goal is the involvement of young engineers in the world's leading activities to gain and share knowledge and experience, and to get the YE/FL abreast of global policies, which prepares them to take on future leadership roles. At the World Engineers Congress (WEC) in Kuwait, 2009 ("Alternative Energy Application Option or necessity?"), the CCB encouraged the WFEO member countries to organise their young engineers for participation at the first YEFL council meeting at the WEC 2010 held in Buenos Aires, Argentina. Aligning with the CCB YEFL vision, the Executive Committees of the engineering organizations of respective national member countries nominated and sponsored young engineers to the first YE/FL task group and council meetings in Argentina, September 2010. Young Engineers / Future Leaders (YE/FL) is now a policy implementation committee of the WFEO, gathering young engineers from the different engineering associations of WFEO members.

2. Vision

To be acknowledged and celebrated as the global leader for the young voices of the engineering profession.

YEFL represents engineers at the beginning of their careers. The role is to support the vision of the WFEO with a focus on the meaningful inclusion and voices of this demographic of engineers around the world.

A key component of this is the UN Sustainable Development Goals (SDGs), part of the larger 2030 Agenda for Sustainable Development. These goals integrate social, economic and environmental commitments—from reducing hunger and poverty, and improving health and work, to protecting the planet—in an inclusive and transformative way. This common framework seeks to 'leave no one behind' in an effort to ensure the well-being of people and planet, while promoting peace, prosperity, and partnership.

Young engineers are important to this process, both as active stakeholders in achieving the SDGs, and as future leaders to carry them forward. This vision is aligned with and enables the realization of the WFEO Strategic Objective to 'Be at the forefront of international efforts in making the Engineering profession contribute to scientifically and technologically achievable goals and innovation'.

3. Mission + Outcomes

To be a sustainable ecosystem that provides support, resources and a platform for young engineers in the WFEO community.

In line with its members and other WFEO committees, the WFEO - YE/FL will execute a thematic, results-oriented program for 2020-2023 which includes the following objectives:

- Create an ecosystem that nurtures and enables support and youth innovation for young engineers in the WFEO.
- Establish regular conversation between the WFEO and the young engineers.
- Provide mentorship programs between young engineers and WFEO and partner communities.
- Increase understanding of international, national, and regional awareness on the impact of globalization on young engineers.
- Address the issue of sustainability for the wellbeing of the engineering profession.
- Support the WFEO's President's Task Force engaging with the United Nations High Level Political Forum (the primary body tasked with assessing progress on sustainable development, in particular the SDGs and other sustainable dev. frameworks) to provide the engineering perspective on the current issues.
- Provide a space for mutual learning, networking, knowledge sharing, and growth among young engineers, founded on the basis of equity and inclusion.

4. Strategic Plan

Please note; in line with the WFEO Strategic Plan (2019 General Assembly to 2023 General Assembly), The Young Engineers / Future Leaders Committee Strategic Plan is a living document and will be updated to reflect the evolving conditions and situations. From time to time the strategic plan may be amended as the work of the various themes progresses and future opportunities arise. It will be reviewed annually, and any adjustments will be reported in a timely manner to the WFEO Executive Board and Council. The Plan, and any subsequent versions, will be used by the committee to track progress and report to the WFEO Executive Board, Council and General Assembly.

The COVID-19 pandemic has exposed inequalities and vulnerabilities across social, economic, and environmental spheres. Engineers have a crucial role to play in pandemic response, recovery, and building back better through more resilient systems. They are needed now more than ever. WFEO YE/FL will stand beside young engineers and encourage any initiative of solidarity between it and WFEO members.

YE/FL committee is looking forward to continue working with different WFEO committees and working groups and other international organizations to promote Young Engineers forward. Across geographies, educational levels and areas of expertise, engineering graduates worldwide are facing numerous challenges and growing adversities while transitioning to the job market, as well as securing decent jobs. Various

factors contribute to the growing challenges and highlight the need for proactive approaches and immediate intervention to support young engineers and facilitate their career development, as well as providing them with the skills to contribute to a more sustainable society. The YE / FL will be working on promoting the establishment of Young Engineers Forum (YEF) at several National Engineering Organizations which constitute the WEFO. The Young Engineers Forum will act as a subsidiary body in the National Engineering Organization and will serve as a catalyst that facilitate the integration of young engineers in the National Engineering Organizations and enhance their position and opportunities in the workplace. This will be accomplished through conferences and congresses prepared and implemented by our committee members. Our critical mission remains to provide input from a young engineer's perspective and to create a global network and voice for Young Engineers.

YE/FL is the voice of Young Engineers at an international level and is promoting the important role of engineers in key issues that the world is now facing, for example: sustainable development, the growth of our cities, climate change and strategies for clean energy production to meet the needs of the growing population around the world. YE/FL is encouraging all of its members to contribute to global efforts to establish a sustainable, equitable and peaceful world by providing an international perspective and enabling mechanisms.

It is evident that engineering graduates confront critical issues during the transition process including taking responsibilities, performing under pressure, dealing with superiors, and communicating with people from different backgrounds. The fact that accentuates the role of soft skills in general and communication skills in specific as key ingredients of success for engineers along with the technical knowledge acquired through colleges and academic institutions. The all-agreed technical skills will no longer be sufficient to maintain an engineering future. We should focus on technical skills and general knowledge (entrepreneurial, innovation, and leadership skills) that are a necessity to compete in a global engineering profession. It is worth mentioning that engineering is also facing various additional challenges such as attracting and retaining broader cross-sections of our youth, particularly women; strengthening the educational enterprise; forging more effective interdisciplinary alliances with the natural and social sciences and the arts; enhancing our focus on innovation, entrepreneurship and job creation, and; promoting increased public awareness and support for the engineering enterprise.

Despite the limited number of studies available on the challenges faced by young engineers in their transition to the labor market, the intensity of these challenges and the hardships experienced by fresh graduates and young engineers brings to surface the pressing need for immediate actions and for innovative approaches from both public and private sectors to support youth and facilitate their integration in the job market and promoting sustainable livelihoods.

Through YE/FL, three key Sustainable Development Goals will be addressed:

- **Goal 9: Industry, Innovation and Infrastructure;** as we encourage collaboration and knowledge sharing between countries to support sustainable development
- **Goal 13: Climate Action;** as we establish a working group to collaboration internationally
- **Goal 17: Partnerships for Goals;** as we build strong ties between young engineers and engineering groups from different countries together to share knowledge and support each other.

The Young Engineers / Future Leaders Committee Strategic Plan addresses each of the WFEO objectives as follows:

WFEO Objective 1

Be recognized as the respected and reliable source of advice and guidance on engineering and technology related issues and engage with government, industry, universities and professional engineering institutions on the role of engineering for sustainable development.

YE/FL Actions:

YE/FL 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 Sustainable Development Goals. These webinars seek to highlight the role of engineering design and systems-based approaches in risks identification, mitigation, and reduction, as well as recovery and will discuss the role of resilience and sustainability design across various sectors.

Webinars will also highlight the key challenges to address and opportunities for better engineering systems across multiple sectors and will also discuss how different levers - technology, finance, governance, collective action - can promote a shift towards more sustainable social, economic, and environmental systems. In times of uncertainty, but with a clear compass towards social and environmental targets outlined in the SDGs, the systems that surround us need to better absorb future shocks and chart a transformative path to achieve a sustainable, inclusive future.

Two webinars have been organized in July and September 2020 as shown below:



Upcoming webinars are under preparation, as follows:

Young Engineers Volunteering for the Future (December 2020)

Synopsis

Engineers have a unique skill-set which can be valuable in a range of different areas. This session will share the experiences of young engineers who are committed to volunteering in their local communities and around the world to inspire the next generation and share their engineering expertise to make a difference.

Young Engineers = board members? (January 2021)

Synopsis

One of the challenges facing young engineers is having a “seat at the table” and understanding how organisations and companies operate. This discussion will provide young engineers insights and a starting point to understanding company structure, in particular the role of the board and how young engineers can get involved.

Expected Results:

- Establishing connections assisting committee members to build credibility with various stakeholders including governments, universities, industry and professional engineering institutions.
- WFEO will become the worldwide reference body on Engineering and Technological matters
- Members will participate in working groups to develop best practices and guidelines in engineering.

WFEO Objective 2

Be at the forefront of international efforts, especially at the United Nations and its agencies, in making the engineering profession contribute that is scientifically and technologically achievable.

YE/FL Actions:

Collaboration with UN Major Group for Children and Youth (UNMGCY)

More specifically, ***UN MGCY’s Youth Science–Policy Interface Platform is a global network of young people at the intersection of science (including engineering), technology, policy, & diplomacy. The UN MGCY was established in 1992 as an outcome of Agenda 21 at the Rio Conference, now serving as a primary engagement mechanism for young people in the implementation, monitoring, follow-up and review of the SDGs, among other sustainable development frameworks.***

YE/FL collaboration with UNMGCY as following:

- Jointly organize capacity building activities for young engineers interested in sustainable development, in particular in the context of the implementation, follow-up, and review of the SDGs during the *Decade of Action (2020-2030)*
- Collaborate on the development of knowledge products, for example contributing to policy briefs and soliciting papers for the annual UN MGCY Science-Policy Interface Publication, to inform discussions at various UN meetings
- Highlight contributions from young engineers on the UN MGCY Youth Action Platform, specifically on COVID response/recovery efforts and SDGs implementation at global, regional, and (sub)-national levels
- Co-create thematic webinars in-line with meetings to be hosted in 2021 (e.g., World Food Systems Summit, High Level Dialogue on Energy, among others)
- Co-design side events at various UN fora (e.g., Multi-Stakeholder Forum on Science, Technology & Innovation for SDGs, High Level Political Forum)
- Share relevant WFEO (YE/FL) activities, events, and news on UN MGCY social media
- Youth actions leveraging SETI to support sustainable development efforts, in particular the Sustainable Development Goals, including through open science
 - COVID-19 Youth Action Platform (examples of 250+ youth-led initiatives)
 - SDG 7 (sustainable energy) Action Hub – portal of youth-led innovations

Collaboration with European Young Engineers (EYE)

- EYE represent the voice of 350,000 young engineers
- Initiated discussions on Memorandum of Understanding or Collaboration

Expected Results:

- Extend WFEO and YE/FL visibility through EYE Network and in the role of UN SDGs.
- Enhance the role of WFEO in the UN 2030 Agenda
- Share knowledge
- Collaborate on projects and events for prompting SDGs
- Contribute to Public Policy working groups within EYE

WFEO Objective 3

Ensure that WFEO committees and working groups increase members' awareness to apply engineering and technology to advance the UN Sustainable Development Goals, to address climate change adaptation, disaster risk mitigation, food security, clean water, energy, public health, and poverty alleviation.

YE/FL Actions:

Regular reporting to members

- YE/FL to provide regular reports to members and stakeholders on activities along with regional updates (*Refer to Regional Updates from different members posted on WFEO website*) through publications on the website, LinkedIn and as presentations during committee meetings which members will share with their respective countries.

Provide knowledge resources to members

- YE/FL to transfer knowledge through the YE/FL Webinar Series “Engineering the Future” and mobilize WFEO members to embrace the SDGs and promote implementation.

Set up a Working Group focusing on SDG13 to:

- Establish the strategy, defining how Young Engineers can contribute to SDG 13 and WFEO Declaration on Climate Emergency 2019 (in particular section 3):
- Collect and record best practices and challenges faced by Young engineers from Africa, Americas, ME, Asia / Pacific, Europe in climate action.
- Investigate the gaps and define the climate action strategy for young engineers.
- Assist with the analysis of the technical, economic and environmental feasibility of sustainable development proposals, and the implementation of Best Practices to achieve SDG 13
- Involvement with *WFEO Committee on Engineering and the Environment (CEE)* – Talk and meetings were initiated with agreement on collaboration; further steps to be taken in a joint upcoming meeting by early November 2020.

Expected Results:

- The role of WFEO Young Engineers in SDG 13 is defined and deployed. WFEO YE/FL Committee engage with young engineers’ representatives of all WFEO members and collaborate with external organizations,
- Linkage with international bodies such as YOUNGO (UNFCCC) with agreement and joint projects
- Increasing the profile of WFEO

WFEO Objective 4

Implement the Engineering 2030 Plan for professional engineering education and professional development and facilitate mobility of engineering professionals globally.

YE/FL Actions:

Collaboration with WEEF/GEDC

- Involvement with the International Federation of Engineering Education Societies in the World Engineering Education Forum and the Global Engineering Deans Council (WEEF/GEDC)
- **Topic: Disruptive Engineering Education - November 2020**

International Strategic Forum Workshop-Stakeholder Collaboration for Global Integration of Youth in Industry

- Open discussion between industry, government, universities, and Young Engineers
- Hearing directly from Young Engineers on the workforce development
- Facilitate communication among all stakeholders involved in the young engineer's development

Expected Results:

- Opportunity for WFEO YE/FL members to share experiences, vision, strategy, and also network with engineering /education leaders from across the world.
- Young Engineers / Students Interface
- Transformation and impact of learning technologies
- Youth Mobilization to Action SDGs
- *Workforce Readiness*: digital literacy, resume writing, self-presentation, time management, professionalism, social norms.
- *Soft Skills*: communication, creative thinking, collaboration, adaptability, initiative, leadership, social emotional learning, teamwork, self-confidence, empathy, growth mindset, cultural awareness.
- *Technical Skills*: computer programming, coding, project management, financial management, mechanical functions, scientific tasks, technology-based skills,
- *Entrepreneurship*: setting up a business, starting freelance work or developing as a self-starter within a work environment

WFEO Objective 5

Establish and maintain a global code of ethics for the professional practice of engineering,

YE/FL Actions:

Review WFEO Code of Ethics

- Review and provide feedback as to how this could be communicated to young engineers

Collaboration with FIDIC Future Leaders

- FIDIC Future Leaders is the group of young professionals of the International Federation of Consulting Engineers (FIDIC). As a leadership committee, the Future Leaders Committee (FLC) was formed to develop communication and networking opportunities for all FLs involved in the FIDIC community.

Expected Results

- WFEO will be seen as a driving force for ethical performance of the engineering profession, and will provide opportunity for young engineers to obtain the Future Leaders Management Certificate (FLMC). The focus of this FIDIC programme is to strengthen the business expertise of young engineers and other professionals working in the field of consulting engineering. It also offers networking opportunities and an insight into FIDIC global activities

WFEO Objective 6

Promote diversity and inclusion in the engineering profession.

YE/FL Actions:

Summarise programs by member countries to promote and support

- Prepare regional updates on the work of the different WFEO members and promote organisations which support and encourage people in minorities to become engineers; post on the WFEO website and other platforms.

Ensure diversity in all webinars

- Continuous follow up done by the YE/FL delegates in their organizations to increase the number of women and young engineers that participate in WFEO activities

Bi-annual reports on Regional updates including diversity

- Prepared from all delegates and published through WFEO website and various WFEO channels

Expected Results

- WFEO will include more Younger Engineers
- WFEO will include more Women Engineers.
- Increase interest of Young peers and women in the practice of engineering

WFEO Objective 7

Promote World Engineering Day for Sustainable Development, 4th March annually, the founding day of WFEO

YE/FL Actions:

2020 Young Engineers Competition on SDGs

- Young Engineers/Future leaders Committee collaborated with IChemE (UK), FIDIC, Young Engineers Europe and students from Nankai University, to run a competition for early-career engineers from around the world. The goal of the competition was to highlight the work of young engineers and their engineering achievements in advancing the UN Sustainable Development Goals. 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. Winner of Young Engineers Competition: Ms. Aida Rafata, Imperial College London UK SDG 12: Reducing textile waste and reducing pollution from textile dyeing technologies. There are 16 Highly Commended Entries focused on different SDGs from around the world.

WED 2020 Mini-Series

- Engineering Heroes, with the support of WFEO, launched 17 mini-episodes of Podcasts. Each episode was aimed at helping the audience understand how engineers are perfectly placed, and already working, within each of the United

Nations Sustainable Development Goals. More than 4,000 audiences from more than 70 countries listened to Podcast Episodes, each rated in the top 20% to top 50% of podcasts worldwide. One episode featured YEFL Chair: Firas Bou Diab on SGD8.

2021 WED YE/FL Activity

- Under Discussions; to be decided by *Novemeber 2020*
 - Suggestion from President Gong Ke : a showcase work of Young Engineers from around the World
 - Young Engineers Competition 2021
 - Promote WED by conducting

Expected Results

- Highlight the work of young engineers and their engineering achievements in advancing the UN Sustainable Development Goals
- Create awareness of World Engineering Day as an important international day for achieving sustainable development by governments, civil society, industry, and the public

WFEO Objective 8

Improve the financial condition, visibility, presence, and stature of WFEO.

YE/FL Actions:

Organise events that advance the UN Sustainable Development Goals

- By WFEO members lead by the YE/FL delegates.

Expected Results

- Increase interest of Young peers and women in WFEO
- More visibility for WFEO

WFEO Objective 9

Develop an engaged and expanded membership and the support of and to our members.

YE/FL Actions:

Increase engagement of members

- Reengage/activate current/former members, recruit new members
- Improve communications within members
- Cooperation between YE/FL and other STC/PICs

Increase social media presence

- Promote WFEO website
- Promote WFEO social media pages and LinkedIn

Expected Results

- Increased interest to join WFEO
- Engage more young engineers to WFEO activities