

# WFEO Women in Engineering committee Strategy 2021-2024

## Executive Summary

### Background

- The Nigerian Society of Engineers (NSE) is a national member of the World Federation of Engineering Organizations (WFEO) and has been an active participant in all activities of the WFEO. NSE members have served in various Standing Technical Committees of the organization and have made significant contributions towards the successes of the committees' activities, as well the achievements of the WFEO.
- The Nigerian Society of Engineers, has since the inception of formation of the Women in Engineering (WIE) SC in 2007, after the colloquium held in Tunis, been very active in the committee. NSE is committed to the development of Women in Engineering and has, as one of its most visible divisions in the past 34years, the Association of Professional Women Engineers of Nigeria, APWEN.
- The Women in Engineering (WiE) Committee is a Policy Implementation Committee of the World Federation of Engineering Organisations (WFEO). The secretariat is being hosted by the Nigerian Society of Engineers (NSE) at the National Engineering Headquarters, Abuja, Nigeria.
- Diversity and Inclusion in the engineering and aligned sectors is crucial to addressing many of the challenges that exist in the world today.
- The Committee aims to inform debate and use the power of engineering and technology to promote equality of opportunity for all, especially the female gender.
- Ensuring the rights of women and girls across all the goals will create sustainable economies that work for all because it is proven that empowering women and girls helps economic growth and development.

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## Vision

To promote equality, diversity and inclusivity in the engineering workforce (with focus on women).



## Mission

To seek ways to harness the collective power of our group, using technological skills, to achieve an engineering profession which attracts, retains, promotes, and welcomes the inputs of women and other under-represented groups, in order to achieve a sustainable world, that leaves no one behind.

## External Objectives

- To create awareness of the importance of the Sustainable Development Goals, especially SDG 5 and how SDG 5 is pivotal to the success of the other goals
- To support outreach activities, capacity building, training, and empowerment of women to attain leadership positions in engineering
- To promote and measure gender disaggregated engineering metrics, the results of which can be used to advise policies on equality, diversity and inclusivity in the profession and measure progress
- To collaboratively empower, inspire, encourage, and share the achievements of women in engineering and technology around the world
- To collaboratively celebrate World Engineering Day and other events throughout the year (such as International Women's Day and International Women in Engineering Day) through our own activities and those of our members

## Internal Objectives

- To encourage women to join in other committees of WFEO and aspire to leadership positions
- To communicate the work of WFEO and WIE to their own professional engineering organisations
- To collaborate with other Standing Technical Committees and Policy Implementation Committees to conduct webinars, events and progress the other goals and objectives of WFEO
- To encourage greater diversity and inclusivity in WFEO
- To report progress on an annual basis

The Women in Engineering Committee has four overarching themes:

- **Theme 1:** Engineering Workforce Capacity building- to increase diversity and inclusivity in the future skills pipeline
- **Theme 2:** Engineering Workforce Capacity building- to encourage female engineering retention and leadership
- **Theme 3:** Collection of Engineering Strategic Indicators
- **Theme 4:** Working in Partnership to address the Sustainable Development Goals, with a particular emphasis on Goal 5-Gender Equality, and its relationship to the other Goals in particular SDG13 and 17

These themes will be addressed in partnership with our National Member Organisations, other WFEO standing committees, as well as through our collaboration with WFEO partners and other associated organisations including INWES (International Network of Women Engineers and Scientists) United Nations Women, United Nations Educational Scientific and Cultural Organization (UNESCO), International Energy Association, International Science Council etc.

## Theme 1: Engineering Workforce Capacity building- to increase diversity and inclusivity



Many reports worldwide indicate that the engineering sector is currently experiencing a huge skills gap, which continues to widen yearly. The rapid emergence of digitization and automation has further underscored the new requirements needed in the workplace, and the lack of available talent to fill those gaps. The WiE is committed to capacity building programs which will: Attract a diverse future generation; Champion the reduction of the gender digital divide; Work with partners, provide guidance on creating and maintaining inclusive cultures; Create opportunities for employers to drive strategy; Extend the focus of our diversity and inclusion activity beyond gender to other underrepresented groups and recognize the impact of intersectionality; Engage engineering PEIs in using the case studies to build a culture of inclusion across the engineering profession; Use our membership to identify innovative policies, programs, measures and conditions needed to attain gender balance, eliminate violence and promote inclusive representation in engineering.

WiE believes that there is a global problem with equitable or fair representation of people of different genders in engineering and that the only by the realization of a truly inclusive and diverse engineering sector, can the world enjoy the creativity and innovation that comes from different lenses and perspectives, and subsequently achieve sustainable economies that work for all and leave no-one behind.

To achieve this, WIE will:

- i. Support, reinforce and participate in existing National or International programs to promote workforce diversity and amplification of the aim of capacity building
- ii. Use social media presence to support and promote global conversations around gender diversity in engineering, using the **#WFEOWomen#** hashtag
- iii. Aim for visible presence globally of the work of WIE at International Conferences
- iv. Develop resources to showcase the work of WIE, such as banners, flyers, PowerPoint presentations to be used by our members
- v. Work with WFEO to ensure that members understand the actions that are expected of them to promote gender diversity and inclusion in engineering, and create a truly inclusive WEO without discrimination
- vi. Promote and celebrate national awareness days including **World Engineering Day, International Women's Day, International Women in Engineering Day, and International Day of the Girl** and amplify the profiles of our members and national members in celebrating these days
- vii. Use metrics and member feedback to identify countries where capacity building and outreach activities are most required, and those which are making good progress

## Theme 2: Engineering Workforce Capacity building- to encourage female engineering retention and leadership

In engineering, and in many other traditionally male dominated sectors, there is a dearth of women in leadership positions. This not only discourages the career aspirations of other women, it also suppresses the voices of women and denies their opinions and limits their ability to contribute to important decisions concerning the world they share with men. The WIE committee will encourage women to aspire and to succeed in leadership positions, both within the WFEO, and in the engineering sector, more widely. Female engineers will be encouraged to break the 'power glass ceiling.'

WIE will work with its National Members to deliver capacity building and growth activities for young women in countries where our input has been identified as being impactful and where these initiatives are currently missing, and it will work with other WFEO Standing committees including Capacity Building and Education to seek opportunities to address this challenge.



To achieve this WIE will:

- i. Promote and support our members and their activities to enable them to reach leadership positions, through visibility of their work and their global activity
- ii. Encourage and celebrate leading and rising female engineers, all over the world
- iii. Create rich resource of global women in engineering contacts to be used for partnership opportunities for engineering activities
- iv. Encourage and collaborate with female TECHpreneurs and female led start-ups
- v. Work with UNESCO to deliver the recommendations of the 2021 UNESCO Engineering Report
- vi. Encourage building inclusive cultures in the existing workplace and in the PEIs
- vii. Engage in, encourage and promote activities that retain and mentors the next generation of female engineers and leaders

### Theme 3: Engineering Strategic Indicators

There is a lack of reliable data on the number of women qualifying as engineers, working in the engineering sector and gaining professional status as registered engineers, on a global level. This limits the ability to clearly assess the needs and gender disparity in the profession, as well as the type and impact of actions needed. This lack of evidence is used all too often to justify a failure to act. The use of disaggregated data will help to understand trends and provide a stronger basis for comparative analysis across countries and regions. It will also help to promulgate better understanding of the “Leaky Pipeline”

National data is available in some countries, but this has not been collected against any **standards**, and so is often difficult to compare from country to country. There is therefore a significant need and opportunity for leadership to collect reliable and accessible gender disaggregated global data on aspects of engineering, according to definitions and methodologies, which will be available for comparison and benchmarking.

According to the UNESCO Report ‘Cracking the Code’ - “Internationally comparable data are also needed on a larger scale to ensure evidence-informed planning and policymaking, as well as further documentation of the effectiveness and impact of interventions.”

To achieve this, WIE will:

- i. Work in partnership with WFEO individual and national members, WFEO partners, and other collaborators such as engineering regulators to identify standard metrics, and collect and publish this disaggregated data annually
- ii. Analyze data as collected above to establish prima facie evidence on the regional gender gaps in engineering
- iii. Create a Gender Scorecard for WFEO and partners
- iv. Stimulate the integration of Gender Mainstreaming policies across WFEO and PEIs

## Theme 4: Working in Partnership to address the Sustainable Development Goals, with a particular emphasis on Goal 5 and its relationship with the other Goals



The WIE committee will embed and illustrate the relevant gender perspectives, alongside the other **Sustainable Development Goals**, in order to ensure that no-one gets left behind and highlight the use of engineering and technology in addressing these challenges. It will specifically gather evidence of cases where women are disproportionately disadvantaged globally, and consider ways of ensuring that engineering and technology can address this.

We recognize too that the members of the Women in Engineering committee can have a joint and multiplying role at WFEO in simultaneously serving on other standing committees, so all members of WIE are encouraged to join a second standing committee, in order to facilitate partnerships and increase our effectiveness in addressing the SDGs and other issues relevant to our visibility and success.

To achieve this WIE will:

- v. Work in partnership, identify ways that engineering, technology and innovation can address gender inequality
- vi. Deliver against the WFEO **Climate Change (SDG 13)** Declaration established in Melbourne in 2019, in particular **'Use our global influence and connections to gather evidence to illuminate the effect of climate change on women and disadvantaged groups worldwide, and seek to use this information to ensure that no one is left behind.'**
- vii. Map the work of the WIE membership to the relevant SDGs on which they work, and other WFEO committees they serve on, and use this expertise as and when required forward achievement of particular goals
- viii. Foster partnerships with others to find ways of delivering our objectives through joint action. Use preexisting opportunities such as WFEO, UNESCO, COP and ICWES and other conferences to further our impact

## Operating Principles

Based on the thematic areas identified above, the Women in Engineering Committee will work through its individual members and the national organisations that they represent and also partner with the other WFEO standing committees, as well other identified organisations to deliver specific outcomes matching particular themes. WIE will also contribute to and build on the wider efforts of like-minded organisations around the world to multiply its messages and aims.

Each committee member /member country representative is expected to contribute to this programme of work. There is a working project plan for the objectives, which are to be achieved annually - some of which will be executable by individual members in their own country, while others will be the responsibility of the committee as a whole. Members will report annually on progress made against each of their objectives. A reporting format has been uploaded.

Members who serve simultaneously on other WFEO committees will be encouraged to report back on the progress made in those committees, identifying and harmonising any joint initiatives or successes achieved.

A quarterly newsletter will be compiled and published by the WIE secretariat to disseminate information and share resources.

Regional meetings of committee members will be encouraged in order to facilitate progress on the stated themes, where appropriate, adopting sub-themes and activities that are relevant to that region.

## Administration

**Chair** -Yetunde Holloway (Nigeria)

**Deputy Chair** - Dawn Bonfield (UK) - will double as a secretary at meetings, when Tessy is unavailable

**Administrative Staff** - Tessy Gbayan (based in Nigeria) who will coordinate activities of the Committee

Each theme is jointly led by two members of WIE. The members are expected to work together to achieve the objectives of the theme in particular and of the committee, in general:

- ix. Theme 1: Engineering Workforce Capacity building- to increase diversity and inclusivity  
**Theme 1 Leads – Wai Yie Leong (Malaysia) and TBC**
- x. Theme 2: Engineering Workforce Capacity building- to encourage female engineering leadership  
**Theme 2 Leads: Enyonam Kpekpena (Ghana); Alice Cunha da Silva (Brazil)**
- xi. Theme 3: Engineering Strategic Indicators  
**Theme 3 Leads: Jeanette Southwood (Canada) (tbc) and Micheline Wehbe (Lebanon) and Ania Lopez (Italy)**
- xii. Theme 4: Working in Partnership to address the Sustainable Development Goals, with a particular emphasis on Goal 5-Gender Equality, and its relationship to the other Goals  
**Theme 4 Leads: Dawn Bonfield (UK) and Eveline de Kokx (Netherlands)**

## Membership

The WIE Committee is made up of representatives from the National Member and International Member Organizations of WFEO, according to the constitution of WFEO. Members must be officially nominated by their organization/country through authenticated documentation. However, non-voting or observer members are also welcome at meetings and form part of our wider network.

We aim to have participation in the Committee by at least 3 persons from each of the WFEO global regions with additional consideration for inclusion of men and young engineers.

We will endeavour to ensure that activities, programmes, projects and outcomes will be spread amongst all regions of the world in order to have impact globally.

The WFEO Regions are made up of:

- i. The Arab Region represented by FAE
- ii. European Region represented by FEANI
- iii. North, Latin America and Caribbean represented by UPADI
- iv. Asia and Pacific Represented by FEIAP
- v. Africa represented by FAEO

Members, partner organisations, and other friends of the committee will receive a quarterly newsletter. To receive this newsletter, interested parties are encouraged to contact the WIE secretariat.

## Other Stakeholders

WIE will work with partners and stakeholders where appropriate, and as activities arise, including:

- INWES
- International Science Council
- UNESCO

- UN Women
- UN Habitats
- IFEEES (International Federation of Engineering Education Societies)
- GEDC (Global Engineering Deans Council)
- IEA (International Engineering Alliance)
- ISC (International Science Council)
- TWAS (The World Academy of Sciences)



## Contact Details

Should you have questions about this strategic plan, kindly forward your questions to the Chair of the Committee through the address below.

***“Only by the realization of a truly inclusive and diverse engineering sector, can the world enjoy the creativity and innovation that comes from different lenses and perspectives, and subsequently achieve sustainable economies that work for all and leave no-one behind”***

Yetunde Holloway, [wfeo-wie@wfeo.net](mailto:wfeo-wie@wfeo.net)



# Activity Plan



Theme Ref.	Activity	Timeline	Performance Indicator	Baseline (As Jan 2020)	Cum. Target (Dec 2023)	Target Year 1 (2020)	Target Year 2 (2021)	Target Year 3 (2022)	Target Year 4 (2023)	Responsibility
WIE1.1	Support, reinforce and participation in existing national or International programs to promote workforce diversity and amplification of this aim		Number of activities that WIE members have been part of which promote capacity building in engineering with respect to gender		Database of global activities and timeline that show how WIE members have been involved in capacity building activities	2 activities per year per WFEO region identified	2 activities per year per WFEO region identified	2 activities per year per WFEO region identified	2 activities per year per WFEO region identified	Chair
WIE1.2	Social media presence to support and promote global conversations around gender diversity in engineering, using the #WFEOWomen hashtag		WIE members with social media presence identified. Measurable number of tweets which use the #WFEOWomen hashtag.		Ongoing social media presence of over 100 tweets per year relating to #WFEOWomen activity	100 tweets per year	100 tweets per year	100 tweets per year	100 tweets per year	WIE secretariat and WIE members
WIE1.3	A more visible presence globally of the work of WIE at International Conferences		WIE Presence at global conferences, such as ICWES, CSW, COP and other international conferences.		8 conference attended with WIE presence and presentations	2 conference identified per year to attend,	2 conference identified per year to attend	2 conference identified per year to attend	2 conference identified per year to attend	Chair
WIE1.4	Resources developed to showcase the work of WIE, such as banners, flyer, and power point presentations.		Suite of resources to be used at global events by WIE members.		Suite of resources to be used when representing WIE globally	Banner, flyer developed	Introduction to WIE PowerPoint finalised	PowerPoint of WIE members produced	Additional resources developed as required	Chair

Theme Ref.	Activity	Timeline	Performance Indicator	Baseline (As Jan 2020)	Cum. Target (Dec 2023)	Target Year 1 (2020)	Target Year 2 (2021)	Target Year 3 (2022)	Target Year 4 (2023)	Responsibility
WIE1.5	Activity to promote and celebrate World Engineering Day, International Women in Engineering Day, and International Day of the Girl		Activities organised to coincide with relevant global day of celebration-Webinars, Podcasts		12 activities organised by WIE	3 per year	3 per year	3 per year	3 per year	Theme 1 lead
WIE1.6	Use of metrics and member feedback to identify countries where capacity building and outreach activities are most required.		Resource developed to link WFEO members to areas of greatest need in capacity building for women engineers		Delivery of capacity building campaign in most needy country / countries	Initial identification of member needs wrt to capacity building	Fuller understanding of WFEO members and their capacity building needs wrt women in engineering and identification of particular campaign to target most needy areas	Campaign development and delivery	Continued delivery of campaign for capacity building	Theme 1 Lead & WIE secretariat
WIE2.1	Promote and support our members and their activities to enable them to reach leadership positions and celebrate them , through visibility of their work and their global activity.		Ongoing communication - through newsletter, WhatsApp, and other means, to promote and amplify work and voice of WIE members		16 newsletter and member activity log	4 newsletter per year Log of member activity	4 newsletter per year Log of member activity	4 newsletter per year Log of member activity	4 newsletter per year Log of member activity	Theme Lead 1 & WIE secretariat

WIE2.2	Create rich resource of global women in engineering contacts to be used for partnership opportunities for engineering activities		Database of members and other contacts		Database produced of contacts for partnership opportunities	Addition to database	Addition to database	Addition to database	Addition to database	WIE secretariat
Theme Ref.	Activity	Timeline	Performance Indicator	Baseline (As Jan 2020)	Cum. Target (Dec 2023)	Target Year 1 (2020)	Target Year 2 (2021)	Target Year 3 (2022)	Target Year 4 (2023)	Responsibility
WIE2.3	Encourage innovative deliberations on start-ups and entrepreneurship		Database and outputs that identify women technology entrepreneurs globally and signposting of any entrepreneurship programmes available to members or other stakeholders		Database of female entrepreneurs, start ups and technologies which address the SDGs	Addition to database	Addition to database	Addition to database	Addition to database	Chair
WIE2.4	Work with WFEO to ensure that members understand the actions that are expected of them to promote gender diversity and inclusion in engineering, and create a truly inclusive WEO without discrimination		A diverse and inclusive WFEO organisation		A more diverse and inclusive WFEO	Identification of improvements to support inclusion	Find mechanism for disseminating improvement suggestions	Disseminate suggestions		Chair
WIE2.5	Work with UNESCO to deliver the recommendations of the 2021 UNESCO Engineering Report		UNESCO Engineering Report launched		Recommendations that WIE support and stakeholder	Report Launched with recommendations	Identify stakeholders to progress	Report annually on progress made against recommendations	Report annually on progress made against recommendations	

					engagement to deliver them		particular recommendations			
WIE2.6	Encourage building inclusive cultures in the existing workplace and in the PEIs		Compilation of global reports and successful initiatives which build inclusive corporate cultures		Report of best practice initiatives to build inclusive cultures	Continued identification of best practice in building inclusive cultures	Continued identification of best practice in building inclusive cultures	Continued identification of best practice in building inclusive cultures	Continued identification of best practice in building inclusive cultures	
WIE2.7	Engage in, encourage and promote activities that retain and mentor the next generation of female engineers and leaders		<i>Compilation of global reports on mentoring activities and initiatives that retain female engineers and leaders</i>		Report of best practice mentoring activities and initiatives that retain female engineers and leaders	Continued identification of best practice mentoring activities and initiatives that retain female engineers and leaders	Continued identification of best practice mentoring activities and initiatives that retain female engineers and leaders	Continued identification of best practice mentoring activities and initiatives that retain female engineers and leaders	Continued identification of best practice mentoring activities and initiatives that retain female engineers and leaders	
Theme Ref.	Activity	Timeline	Performance Indicator	Baseline (As Jan 2020)	Cum. Target (Dec 2023)	Target Year 1 (2020)	Target Year 2 (2021)	Target Year 3 (2022)	Target Year 4 (2023)	Responsibility
WIE3.1	Work in partnership with WFEO members, other national and International engineering organisations to create a methodology for standardizing and measuring gender disaggregated data on women in engineering and collect and publish this data annually.		Creation of a set of global strategic indicators around gender diversity in engineering. Results collected.		The basis of a set of data and metrics and a benchline which can be added to in future years on women in engineering	Measures and partners identified	WFEO members supply gender disaggregated membership data	Partner organisations aligned for future measurement of gender disaggregated data	finished	Theme 3 Lead

3.2	Analyze data as collected above to establish prima facie evidence on the regional and global gender gaps in engineering		Produce documents on Gender gaps in engineering		The basis of a set of data and metrics and a benchline which can be added to in future years on women in engineering	Measures and partners identified	WFEO members supply gender disaggregated membership data	Partner organisations aligned for future measurement of gender disaggregated data	finished	Theme 3 Lead
3.3	Create a globally standardized Gender Equality Scorecard for WFEO and partners		Create Engineering Gender Equality Score card for WFEO and partners		Gender Equality Score card for WFEO					Theme 3 Lead
3.4	Stimulate the integration of Gender Mainstreaming policies across WFEO and PEIs		Webinars to address the Gender mainstreaming and gaps.		Reduce	Webinars	Webinars	Webinars		Theme 3 Lead
WIE4.1	Working in partnership, identify ways that engineering and technology could contribute to addressing the targets identified under Goal 5, Gender Equality.		Produce document which map goal 5 target with potential technological solutions, and identify any missing technologies		Document which explains how engineering and technology is addressing the targets of Goal 5, and possible project identified to address one of the identified gaps	Mapping exercise of eng/tech as it relates to SDG5 targets	Identification of gaps in use of technology to address Goal 5 and work with UN Women on the Action coalition on technology and innovation for gender equality	Continuation of work		Theme 4 lead

Theme Ref.	Activity	Timeline	Performance Indicator	Baseline (As Jan 2020)	Cum. Target (Dec 2023)	Target Year 1 (2020)	Target Year 2 (2021)	Target Year 3 (2022)	Target Year 4 (2023)	Responsibility
WIE4.2	Examine the gender perspective and relate it to engineering globally, looking at ways that engineering can address disproportionate disadvantage faced by women		Creation of full suite of 17 pop up banners explaining this issue, for use in outreach activities.	7 banners	Full suite of 17 banners showing the gender perspective in engineering	5 more banners produced	5 more banners produced	Review and finalise any unfinished banners to create full suite of 17	finished	Theme 4 lead
WIE4.3	In partnership, deliver against the <b>WFEO Climate Change Declaration established in Melbourne in 2019</b> , in particular 'Use our global influence and connections to gather evidence to illuminate the effect of climate change on women and disadvantaged groups worldwide, and seek to use this information to ensure that no one is left behind.'		In addition to the pop up banner on SDG13, create a body of knowledge around women and climate change, and represent this perspective at WFEO and other meetings where appropriate.		A database of stories and case studies showing how women are disproportionately disadvantaged by climate change, and possible solutions to address this	Stories and case studies identified	Stories and case studies identified	Stories and case studies identified, looking to identify appropriate intervention	Appropriate intervention possible	Theme 4 lead
WIE4.4	Map the work of the WIE membership to the relevant SDGs on which they work, and which other WFEO committees they serve on, and use this expertise as and when required to make progress against particular goals		Create growing database of members and other experts and how their work relates to particular SDGs		Fully completed database of WIE membership and how their work relates to SDGs, and which other WFEO committees they serve on	Addition of data to database	Addition of data to database	Addition of data to database	Addition of data to database	WIE secretariat

WIE4.5	Foster partnerships with others to find ways of delivering our objectives through joint action. Use preexisting opportunities such as WFEO, UNESCO, COP and ICWES conferences to further our impact.		Development of a wider network of partners who are communicated with regularly through direct contact, newsletter, and joint events.		Database of other partners and contacts of women engineers working on the SDGs	Addition of partner contact details to the quarterly newsletter	Review partner list, and obtain feedback from partner organisations on level of communication	Review partner list, and obtain feedback from partner organisations on level of communication	Continue and grow partnership activity	WIE secretariat
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