



WFEO ENGINEERING CAPACITY BUILDING COMMITTEE STRATEGY (2016 – 2019)

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EXECUTIVE SUMMARY

In today's global economy every country has to acknowledge the need to create sustainability at all levels of engineering services, products and amenities in order to provide for the needs of communities in a world of diminishing resources, environmental challenges and a strong need to reduce the consumption of limited resources. This can be achieved partially by ensuring appropriate and suitable engineering educational programs of an accredited quality. A competent engineering workforce base can then provide several paths to sustainable development as well as to ensure that all role-players and stakeholders including investors focus on sustainability and equitable solutions for engineering services, amenities and products. In the case of developing countries the utilization of foreign aid and investment funds should be managed by professionally competent people and groups.

Capacity building as envisaged by the CECB focuses on strengthening economies, governments, institutions and individuals through education, training, mentoring, orientation and the mobilization of resources. It aims at developing secure, stable, appropriate, affordable and sustainable structures, systems and organizations, with a particular emphasis on improving the quality of life.

In the global economy of the 21st Century, engineering professionals play a key role in the overall economic development activities of countries and regions but only when the role of the engineering professional is well understood and utilized. This holds true for both developed as well as developing countries.

In the developed world the challenges are mostly to maintain the ageing engineering infrastructure. However, in much of the developing world the available pool of engineering skills is typically below critical mass and economic development and even important basic human needs that rely on engineering, such as potable water supply and sanitation issues, lack technical expertise to address these issues.



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On the other hand, indigenous science, engineering and technological capacity is needed to ensure that international aid funds are appropriate, and utilized effectively and efficiently, through initial project implementation and long-term operation and maintenance to ensure the transfer of skills and the development of capacity to operate, maintain the entities that were created and even implement future projects. A sufficient pool of engineering professional can therefore enable a developing country to address the UN's Millennium Development Goals effectively, including poverty reduction, safe drinkable water, sanitation and so forth.

In order to create or develop and maintain a sustainable engineering related work force in all countries, education and training as well as informed decision makers in Governments at all levels and in the private sector, there is a substantial need to mobilize expertise to ensure that this goal is achieved. The World Federation of Engineering Organizations, through its Committee on Engineering Capacity Building (CECB), is dedicating its efforts to assisting countries to engage at all the various levels of capacity building to effectively create sustainability and for developing countries to have an equitable place in the global marketplace, by means of suitable and appropriate capacity building initiatives.

Committee on Engineering Capacity Building is also critical to disaster risk management – strong engineering capability is vital to reduce risk, improve preparedness, respond appropriately and then implement recovery plans.



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1. Introduction and Overview

This document presents the plan of how the Engineering Capacity Building Committee vision, mission and strategic business objectives will be realized. In particular, this document articulates the high-level Operating Model and defines the key strategies to support each of the Operating Model components

In the pursuit of a secure, stable and sustainable world, countries need to sustain and or enhance their human, institutional and infrastructure capacity. To achieve this goal, countries need a sufficient pool of appropriately educated and trained engineering professionals and practitioners to effectively sustain and where indicated, improve the quality of life for their communities and citizens. In the case of developing countries the presence of such a group of professionals could facilitate the infusion of foreign capital through attraction of multinational companies to invest in that particular country, assist in making sure that foreign aid funds are appropriate as well as that these funds are applied consistently and wisely in order to transfer skills and as such build indigenous capacity to deal with engineering infrastructure, services and products. This pool of experts can also provide a basis for business development by local entrepreneurs. In developed countries the challenges that face the engineering professions are different and much focus needs to be set on maintaining and replacing aged infrastructure and to promote attention to these issues to the decision-making authorities. In addition there is a diminishing engineering workforce due to a lack of interest from young citizens and in many cases these developed countries have contributed substantially to the brain drain of engineering professionals from developing countries and therefore need to embark on capacity building ventures to rekindle a new interest in engineering from their own communities.

In turn, the establishment and maintenance of indigenous engineering capacity is imperative to ultimately ensure that developing countries can become equal partners in world trade and commerce in order to provide sustainable economies that are not relying on continuous handouts from developed countries. The removal of trade barriers by some developed countries



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goes hand in hand with facilitating the rise of sustainable economies in previously disadvantaged or excluded countries, which are mostly in under developed regions of the world.

In a coordinated approach, **UNESCO and WFEO** are joining and mobilizing forces to harmonize, align and integrate efforts in terms of capacity building in the engineering.

2. WFEO Vision and Mission

It is important to align the standing committees of WFEO to the WFEO strategy. For this purpose it is necessary to re-iterate the Vision and Mission of WFEO, as illustrated below:

1.1. WFEO Vision

To be the acknowledged global leader of the engineering profession

1.2. WFEO Mission

To be the unified voice of the engineering profession in providing strategic engineering guidance to global society

3. Engineering Capacity Building Committee Vision

ENGINEERING CAPACITY BUILDING COMMITTEE VISION

To be the world leader in promoting, supporting and providing guidance on engineering capacity building to sustain and enhance human, institutional and infrastructure capacity to ensure a sufficient pool of world class educated and trained engineering professionals and practitioners to improve the quality of life for their communities and citizens.



4. Strategic Business Objectives

The Engineering Capacity Building committee has based its strategic objectives on the WFEO objects in accordance with its mandate. The strategic objectives for the period 2015 – 2019 are listed as follows:

The Strategic Objectives:

Strategic Objective	Missions / Actions
1) Be recognized as the respected and reliable source of advice and guidance on engineering capacity building.	<ul style="list-style-type: none">• Develop liaisons to assist members to build credibility with governments, intergovernmental organisations and international NGOs and engage the society- at-large,• Offer engineering advice and review on issues of concern to Engineering capacity building,• Provide a centralized repository of engineering capacity building
2) Be at the forefront of international engineering capacity building efforts	<ul style="list-style-type: none">• Engage the private sector, the public sector, and other stakeholders to provide up-to-date knowledge on engineering professionals and infrastructure• Continue to build, organise, consolidate and support international Capacity Building Engineering events such as Africa Engineering Week



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Strategic Objective	Missions / Actions
	<ul style="list-style-type: none"> Set up an effective interactive process to enable formulating positions on engineering capacity building issues,
3) Facilitate mobility of engineering professionals globally	<ul style="list-style-type: none"> Promote Capacity building of infrastructure, tertiary institutions, and regulatory organisations, to ensure mobility and acceptance of engineers across borders Create a repository of world class standards that can be shared, and utilized
4) Promote and mentor younger engineers and foster the work-life-balance and leadership potential of women engineers	<ul style="list-style-type: none"> Create capacity development platforms for the promotion of Young Professionals and Women Engineers Promote mentorship and coaching amongst professionals
5) Improve the financial condition, visibility, presence, and stature of WFEO, and attain support of National and International engineering Organizations	<ul style="list-style-type: none"> Develop and maintain collaborations and joint initiatives with National and International Organisations eg Africa Engineering Week Market WFEO at Capacity building events Ensure sustainability of Projects initiated through continued buy-in and sponsorships that illustrate win-win



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Strategic Objective	Missions / Actions
	<p>partnerships</p> <ul style="list-style-type: none">• Develop network of partners
<p>6) Continuously improve the work and quality of the STCs outputs</p>	<ul style="list-style-type: none">• Transfer knowledge through workshops, seminars, and conferences• Include the discussion of regional issues including situations in non - member countries in STCs' activities• Develop the compedium, and improve this to include codes, guidelines, best practices, and professional opinions.• Ensure continuos evaluation and improvement of operations through also increasing active membership• Ensure deliverables are met in accordance with the plan and timelines, and reporting are meeting the expectations as desired by WFEO



5. Mandate

Engineering capacity is a prerequisite for the sustainability of countries, their communities and ultimately the world in general. This applies whether or not a country is developed or not.

In the quest to ensure and facilitate sustainable engineering, the mandate of the CECB is to identify needs for capacity building within the engineering professions and for areas associated with engineering as well as to provide guidelines and ideas for capacity building activities, events, projects and programs.

The CECB acts as a mechanism to harmonize and align as well as integrate capacity building initiatives within the membership of the WFEO and where possible beyond the membership of the WFEO.

The CECB furthermore has a mandate to communicate the outcomes of the tasks assigned to the member countries of the WFEO as well as to the public at large as represented by Governments and other civil, commercial and industry structures and stakeholders.

To identify, advise, as well as develop and facilitate ways and means to address shortcomings and gaps in engineering and decision making capacity at all levels of society and in the engineering professions.

6. Operating Principles

The committee is constituted by means of a voluntary assembly of participants from WFEO member countries or any other interested parties. In general these individuals are knowledgeable and interested in the ways and means to build engineering capacity as well



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as to facilitate informed decision-making for those who might not necessarily be engineering practitioners.

The committee is assigned to a member country to act as chair and to provide a secretariat for a four year term, renewable for one additional term after the expiry of the first four years.

The CECB is mandated to arrange events associated with the Capacity Building initiative and arrange for activities including workshops and or presentations at WFEO events.

7. Plan 2015 / Targets

The Operational plan for 2016 has been adapted from the Strategic Objectives. The expected measurable actions plans for 2016 are listed as follows under the Strategic Objectives:

Be recognized as the respected and reliable source of advice and guidance on engineering capacity building :

- 1) Provide a centralized repository of engineering capacity building through further development of the compendium into mobile platforms
- 2) Ensure participation on the compendium from at least 20 countries

Be at the forefront of international engineering capacity building efforts

- 1) Continue to support Africa Engineering week
- 2) Participate in at least two international Capacity Building events
- 3) Set up an effective interactive process to enable formulating one position paper on engineering capacity building issues,



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Promote and mentor younger engineers and foster the work-life- balance and leadership potential of women engineers

- 1) Support the WFEO Women in Engineering and Young Engineers Future Leaders committees to create a capacity development platforms for the promotion of Young Professionals and Women Engineers in Africa

Improve the visibility/ presence, and stature of WFEO, and attain support of National and International engineering Organizations

- 1) Ensure sustainability of Projects initiated UNESCO
- 2) Develop at least one additional International partnership for sponsorship of projects

Continuously improve the work and quality of the STCs outputs

- 1) Ensure continuity and handover processes are developed and identify potential country/countries that are willing to Chair the committee during the next term.
- 2) Ensure support of Strategy by all members
- 3) Develop new Governance structure
- 4) Increase active participation of members by 15% by 2016



8. Organisation and Membership

The WFEO – Engineering Capacity Building Committee is hosted by the Engineering Council of South Africa and chaired by Yashin Brijmohan, Pr.Eng., who has served in several senior portfolios in South Africa. He has taken over the position of Chair in 2014, from Past President of the Engineering Council of South Africa, Christopher Campbell. Mr. Brijmohan will serve will serve during the second term awarded to South Africa. South Africa will provide the secretariat during this new term, as well as the expected budget for the operations of the committee.

There are two categories of membership, Member and Corresponding Member. A Member is an active participant on one or more projects or initiatives of the committee. If the Member is nominated and sanctioned by the WFEO Member Organization for their country, then this member has voting privileges. If the Member is not the official representative of the WFEO Member Country, they may participate in all activities and meetings of the Engineering Capacity Building committee, without voting rights. The committee will focus during the new term to increase active membership. The Secretariat will maintain a current list of members and their contact information. Periodically CAC members will be polled to ensure their contact information and membership is accurate.

The committee has launched a new operational governance which is expected to be endorsed and implemented in the new term.



9. Meetings

The committee has one meeting each year, normally towards the latter part of the calendar year, during the timing of the WFEO bi-yearly meetings. The Chair and Secretariat prepare the agenda and meeting materials for distribution to CAC members. The Engineering Capacity Building Committee hosts operational meeting within the host country monthly, to ensure management of operational goals.

10. Website Arrangements and Communication Plans

The WFEO website will be used as the main source of communication in the public domain with the secretariat being responsible for the update of the website. Email is used as the common communication mechanism, and provides the platform for interaction. The committee envisages to also introduce newsletters in addition to the commonly used communication system to active members.

The projects of the Capacity Building committee, supports the WFEO objects, and have project based communication and marketing plans. These plans include interaction with media, and stakeholders.

11. Work Plan for the Secretariat

The work plan for the secretariat includes but is not limited to, ensuring communication amongst members of the committee, management of the website, arrangement of meetings, facilitation of projects, and producing financial reports. The details will be illustrated in the operational plan.



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12. Annual Budget

Description of the Item	Amounts
1. Travel cost to WFEO meetings	R 270 000.00
2. Accommodation and subsistence	R 90 000.00
3. Secretariat Support	R 99 000.00
4. Refreshments, food and incidentals for ECB Committee meetings in SA.	R 11 000.00
5. Honorarium	R 45 000.00
6. Printing of documents, brochures, meeting documentation	R 44 000.00
7. Teleconferencing	R 20 000.00
8. Project commitment	R 200 000.00
Total Budget Provision	R 779 000.00 ~ \$ 58 853.55

The annual budget will be escalated annually by 5% during the period hosted by South Africa.



13. Contact Information

Questions or inquiries about this strategic plan or the work of the committee may be directed to the Chair or the Secretariat. The following is the list of contacts:

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