

# WORLD FEDERATION OF ENGINEERING ORGANIZATIONS BIENNIAL REPORT



2007 - 2009

# The World Federation of Engineering Organizations

## WFEO's Vision

Founded in 1968 by a group of regional engineering organizations, under the auspices of the United Nations Educational, Scientific and Cultural Organizations (UNESCO) in Paris, the World Federation of Engineering Organizations (WFEO) is a non governmental international organization that brings together national engineering organizations from over 90 nations and represents some 15 millions engineers from around the world.

### VISION

WFEO is the internationally recognized and chosen leader of the engineering profession and cooperates with national and other international professional institutions in being the lead profession in developing and applying engineering to constructively resolve international and national issues for the benefit of humanity.

### MISSION

- To represent the engineering profession internationally, providing the collective wisdom and leadership of the profession to assist national agencies choose appropriate policy options that address the most critical issues affecting countries of the world.
- To enhance the practice of engineering.
- To make information on engineering available to the countries of the world and to facilitate communication between its member nations of worlds best practice in key engineering activities.
- To foster socio-economic security and sustainable development and poverty alleviation among all countries of the world, through the proper application of technology.
- To serve society and to be recognised by national and international organisations and the public, as a respected and valuable source of advice and guidance on the policies, interests and concerns that relate engineering and technology to the human and natural environment.



# OFFICERS AND EXECUTIVE COUNCIL MEMBERS (2007/2009)



President  
B. Gear (Australia)



President Elect  
M. Prieto (Spain)



Past President  
K. Ayadi (Tunisia)

## Vice Presidents



M. Abdelhamid  
(Palestine)



J.C. Badoux  
(Switzerland)



H. Shihabi  
(Bahrain)  
Deceased  
September 2008



B.J. Vasoya  
(India)



D. Clinton  
(USA)



D. Danyluk  
(Canada)



R.P. Gupta  
(India)



W. Miszalski  
(Poland)



J. Spitalnik  
(Brazil)



M.H. Therre  
(France)



Y.X. Zhong  
(China)

- Tahani Youssef  
Executive Director
- Stefanos Ioakimidis  
Treasurer
- Pierre de Boigne  
Deputy Treasurer

## National Members

S. Aoun  
C. Ballester  
H. Bedelian  
A. Gava  
P. Greenwood  
Y. Ishii  
L. Lerner  
X. Liu  
M. Mihaita  
C. Remec  
W. Salmon

(Lebanon)  
(Argentina)  
(UK)  
(Italy)  
(Australia)  
(Japan)  
(Brazil)  
(China)  
(Rumania)  
(Slovenia)  
(USA)

## International Members

Tan Seng Chuan  
T. Ridley / T. Foulkes  
A. Hadithi  
O. AWOYINFA / F. Atume  
W. Fuchs / L. Bytoft  
Tan Yean Chin  
S. Devkota / SM Nazrul Islam  
C.A. Dall'Acqua / I. Campos  
V. Sitsev  
J. Medem

(AFEO)  
(CEC)  
(FAE)  
(FAOE)  
(FEANI)  
(FEIAP)  
(FEISCA)  
(UPADI)  
(USEA)  
(WCCE)

WFEO is a Network based  
on collaborative work



## President's Report by Barry Grear

# WFEO from India to Kuwait 2007 to 2009

2008 and 2009 have been years of great change for the Engineering community. Increasing impacts of changing climate, the world economy and much discussion about drought across many countries of the world.

Year 2008 was declared by the United Nations as the **“International Year of Planet Earth”**.

Our earth scientists had the aim to ensure greater and more effective use by society of the knowledge accumulated by scientists, however, I promoted the belief that their aims of building safer, healthier and wealthier communities around the globe would only be achievable by the activities of engineers.

The UN saw the Year as a contribution to their sustainable development targets as it promotes wise use of the earth’s materials and encourages better planning and management to reduce risk for the world’s inhabitants. WFEO encourages that outcome.

### UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT

I led a delegation to the United Nations Commission on Sustainable Development in May 2008 (CSD-16) and again in May 2009 (CSD-17). I was supported by the VPs for Committees on Energy, Capacity Building and Engineering and the Environment who will be reporting in their own sections of this report.

Some of the key outcomes and statements reported by the attendees that are related to engineering are as follows:

1. To achieve sustainable development in these key areas there will need to be an enabling environment, good governance, and institutional structure that encourage and assist, as well as capacity building. There is a strong need for strengthening science research and education focused on solutions. There must be mechanisms for facilitating dialogue between engineers, scientists and technologists, decision makers and farmers. WFEO will work through the collective “Farming First” to improve extension services so that information and solutions get into the hands of farmers, particularly small-scale farmers. An example of the problem is that half of the food





grown is wasted before it can get to the consumer through poor harvesting techniques and incorrect storage allowing vermin to attack, and product rotting to occur.

2. Productivity and competitiveness in most sectors is low, inhibiting the potential of Africa to move into higher value-added activities beyond bulk commodities. Low levels of private sector investment, weak domestic financial markets, lack of technological capacities and limited transfer of technologies are among the obstacles to economic diversification and industrial upgrading.

3. Efficient water resources development and management as well as reusing safe wastewater can be a key factor in increasing resilience to climate changes and ensuring food security. Also, improved irrigation efficiencies and on-farm management practices could contribute towards overcoming water shortages and enhancing food security.

4. Increased interaction among engineers, scientists, policy makers and local communities can accelerate the dissemination and adaptation of new and emerging technologies and corresponding knowledge from laboratories to field application in developing countries, with assistance from development partners.

5. Capacity building, transfer of technologies, technical cooperation and partnerships are needed.

6. The absence of water treatment facilities in certain areas poses an obstacle for environmental management and for providing safe drinking water. This obstacle could be overcome by developing and implementing sustainable water and sanitation plans which takes into account wastewater management. In this regard, it is important to use technologies that are suitable to local conditions.

7. Response to the current food crisis requires an increase in agricultural productivity, while ensuring that natural resources are managed in a suitable manner, and ecosystems are preserved.

The response to the food crisis should look at both causes and symptoms, but disaggregated statistics of natural, human, social and physical capital are often missing.

The WFEO influence has grown over the years from the early input of Jim Poirot (USA) and Dato Lee (Past President) and many others.

In 2009 the Declaration had many references to engineering and it will be important for WFEO to continue to play a very public role in future CSD's.

### NEW STANDING COMMITTEES

In my discussions around the world the issue of corruption is huge; anti-corruption is a challenge for all engineers. Sometimes it is engineers trying to understand the issues and at other times it is given prominence at conferences. It has certainly attracted worldwide attention. I am pleased that WFEO will continue activities to help reduce corruption and the Standing Committee on Anti-Corruption is key to our future involvement. I suggest that all people who read this report have a look once again at the WFEO Code of Ethics to remind themselves of the important tenets of the code, and for some readers to encourage their National Engineering Associations to adopt the WFEO Code of Ethics as a base for their own code. Past President Ayadi has successfully developed the Anti Corruption Standing Committee and held a Train the Trainer workshop in Tunis.

There are many who support this program being held in other parts of the world. I support this initiative.

The Women in Engineering Standing committee formed after the earlier Tunis Conference was formally launched in Lille, France in July and I had the privilege of attending. The Standing Committee supported by our French National Member (CNISF) and with Vice President Eng. Marie-Hélène Therre has developed well.



It has a good strategic program and has a large group of engineers, both women and men, on the Committee.

## MEMORANDA OF UNDERSTANDING

WFEO now has MOU's with CAETS, FIDIC and INWES. I have been involved with the preparation of these documents but now we must further develop the opportunities to share in activities together. Putting words into actions is important.

## LINKS WITH THE INTERNATIONAL COMMUNITY

The WFEO VISION that has been promoted for many years is "to be the internationally recognized and chosen leader of the engineering profession and to cooperate with national and other international professional institutions in being the lead profession in developing and applying engineering to constructively resolve international and national issues for the benefit of humanity".

To fulfill this initiative WFEO has continued to build on its international relationships with the World Bank and other Development Banks, Transparency International, The United Nations and many of its functional organizations and through the Standing Committees there is membership and activity sharing with these bodies. I have undertaken an audit of these links and will be able to report the outcome at the General Assembly.

The significant body that we relate to is UNESCO, which encouraged the formation of WFEO 40 years ago in 1968. This year I am pleased to advise that following many meetings with Senior Executives and particularly with the encouragement of UNESCO Deputy Director General Mr. Barbosa and UNESCO Assistant Director General Dr Walter Erdelen, Tony Marjoram and the efforts of Past Presidents, I signed a Framework Agreement between UNESCO and WFEO.

The purpose of this agreement is to establish, for the period corresponding to UNESCO's Medium-Term Strategy 2008-2013, a general framework in which WFEO will undertake on behalf of UNESCO the execution of certain tasks of the UNESCO's program and/or will undertake initiatives that complement those of UNESCO.

As part of this agreement we have assisted in the preparation of the UNESCO Report: Engineering Issues and Challenges for Development. I thank the many members who have authored parts of the report.

I trust the report will be the first of a series that will let the world know of the vital role played by engineers in the community and the high standards set for the engineering community as it provides advice and expertise to international policy makers and our member organisations.

## WEC2008

The major event during my Presidency was the World Engineers Convention with the Theme: "Engineering: Innovation with Social Responsibility" which was held in Brasilia in December 2008.

Disappointingly the economic situation took its toll, however the organisation by CONFEA and FEBRAE was highlighted by the closing ceremony when Brazil's President Lula, in the presence of around 4,000 people, said that "Engineering is crucial to the productive sector and therefore to the development of a country. This International Crisis obliges everyone to use resources better and to propose solutions". I agree, and assured him that WFEO members were ready to make their significant contribution across the world.

Professor Luiz Carlos Scavarda deserves special thanks for the outstanding technical program.

## CONDOLENCES

It is with profound sadness that I once again acknowledge the death of Professor Ravi Nayagar of South Africa and Vice President Hisham Shihabi of Bahrain who tirelessly supported WFEO over many years.



## ACCOUNTABILITY

In Delhi I put forward the initiatives that I wished to accomplish during my Presidency.

- The involvement of WFEO with International Bodies has increased.
- I have seen that the communication with most national members has increased and the number of members on the Standing Committees has grown. It is still disappointing, however, that some National Members do not respond to attempts to be in communication with them.
- In 2008 the membership fees were paid early, however, with the economic situation the receipt of fees in 2009 has been slow.
- Executive Council members have been invited to contribute to many discussions and decisions. The email ec@wfeo.org organized by the Tunis Office has been a great help.
- I have had a wide range of people contribute to the changes to the Strategic Plan and am pleased that our President Elect has invited a wide range of people to help as she also makes changes for WFEO to meet future challenges as we look at the economic, environmental, political and social changes of our world.
- The complementarity between Standing Committees has increased as more information is available about their activities and I thank the VP's for their efforts.
- There is still a lot of work to be undertaken to reduce the cost of attendance at the GA and Conferences, particularly in a tight economic situation we all now share.
- I have regularly given information for the web page.
- Currently the need for an MOU with other bodies is not deemed necessary, however, I have been active in discussions with RedR and Engineers Without Borders.
- I have continued my interest in encouraging the Standing Committees to be alert to support of changing climate information and response.
- I have encouraged Japan to lead in disaster mitigation and response to make communities safer.
- I have actively supported the committees on considering energy efficiency.

- I have encouraged the WiE and the increasing involvement with Young Engineers.
- **While we can always do better, I have spent my Presidency as an encourager and made every attempt to have engineers and their associations work together.**

## CONCLUSION

I have not detailed my visits but have been able to visit 15 Countries, some more than once, and have participated in conferences workshops and discussions.

I have appreciated the contact and friendship of many people and I recognize the significant support of our Executive Director Tahani Youssef, members of the Executive Council, my colleagues at Engineers Australia and my wife Barbara who has been a great encourager and sometimes travelling companion.

I wish incoming President Maria Prieto successful years of Presidency of our great World Federation of Engineering Organisations.



"President Barry and Wife Barbara"

## President Elect's Message

By Maria Prieto Laffargue



New Delhi, November 2007. I felt overwhelmed when the World Federation of Engineering Organizations (WFEO) endorsed my candidature as President-Elect.

Right away that feeling changed.

Convinced of the great importance of Engineering Profession, I identified an opportunity in the extent and severity of the financial, economic, social and values upheaval that was beginning to shake all the Countries on this Earth - Countries, Regions in which our Organization has presence through our National and International Members.

2007-2009 – decisive years, without a doubt. A deep turning point that will lead to a different world, a new phase in the dynamics of globalization.

The inability of the Institutions and Governments to orient and regulate the exchanges in agriculture, industry and services toward the common good has become clear.

The Countries who have had nothing to do with the excesses and blunders that originated the crisis will suffer the most.

Engineering, our Profession, the profession that our Organization represents, is not unaffected by these upheavals.

Engineering is action, it is practical, it involves applying knowledge to find solutions for the benefit of Mankind.

The need for an in-depth review of the principles and productive business models that have been used during the second half of the 20th century demand a proactive attitude on the Engineering side.

Food supplies, the future of energy sources, the optimal use of water resources, in short, sustainable development is the Matter that should be dealt with today, along with ethics in conduct and risk control.

Ethics, production efficiency, know-how and sustainability.

Ethics, production efficiency, know-how and sustainability are the requirements for a new world order.

Aren't these the engineering values?

The commitment and obligation of our Organization to Society becomes clear. Let's get to work.



My work agenda as President-Elect, under the guidance of President Barry Gear, has been oriented toward reinforcing his Presidency and following the lines of action stressed in the Program for my candidature put forward in New Delhi.

- Visibility with the Multilateral Institutions.
- Dialogue with our members and associates for the purpose of increasing the value received from the Organization.

Along these lines and always delegated by the President, I would like to summarize some of the activities that have been carried out.

Signing of the Agreement with the International Federation of Consulting Engineers (FIDIC), meeting with UNESCO Top Executives, in Paris, meeting with the Ministers of some of our Member Countries, exploring-meetings in Washington with the executives of the World Bank.

The leading path with Government and Institutions has, and will be, to make our Organization relevant as the World Representative of a profession, Engineering, that is key to social progress, unavoidable if they want to achieve their objectives of increasing the quality of life of their citizens.

The National and International Members of our Organization have, likewise, been a priority over the past months.

I have held highly constructive meetings with the Arab Federation of Engineers (Tunisia), the European Federation of Engineering Associations (Romania), the Pan American Union of ENGINEERS (UPADI) in Brasilia.

The importance of being present with our National Members to complement their objectives and bring them to a good term, led me to meet in Washington with our US National Member (AAES) through the American Society of Mechanical Engineers at their annual convention and to foster and encourage a new Work Program (or Agenda...) with our Nigerian Engineering Society National Member...

Likewise, I have participated, upon the request of the National Member in Brazil, as a speaker at the Congress of the World Engineering Convention WEC2008 held in Brasilia.

Debates with our National Members from Mexico, China and Japan, as well as the Asian Federation of Engineers, are awaiting me with already established preliminary dates.

The same goes for meetings at the United Nations (New York) and the OCDE (Paris).

A strong representation of the Profession, visibility, usefulness for the Members and capitalization of the Organization have driven my efforts. Always to serve our Members and the Society in which we are living.

I am conscious of the pride of the profession that we represent, but also of the humility and generosity with which we have the obligation to give back to the common good the talents that we have received from society.

The Social and Economic Balance of these two years, achieved through the excellent work made by our President, and the Executive Board is positive, but it remains much work to do.

I therefore inherit a responsibility, carried out with the highest honor from 1968 by our Founding Presidents and Ex-presidents.

I will not let you down.



## Treasurer's Report By Stefanos I. Ioakeimidis

Presenting my last Report as the Treasurer of WFEO, I have to thank all of You, all the representatives of our National Members, for their stable and continuous support to our financial effort. I have served the WFEO, for more than 25 years ( the first years, in the Executive Council as representative of the National Member Greece later as Vice President of WFEO and the last 8 years as Treasurer and Member of the Executive Board of WFEO).

My long experience to WFEO, taught me three lessons :

1. The importance to collaborate very closely with the Organization of the United Nations and with UNESCO, to participate to their programs and actions and to have the headquarters of WFEO in UNESCO-Paris.

2. The importance to choose as field and sphere of action of WFEO and its Standing Committees (STCs), the central themes concerning humanity and the engineers such as the protection of the environment, energy, food for poor peoples, education, health etc.

3. The importance to choose themes of action, concerning the engineering community worldwide, for instance the education and the engineering mobility.

These three lessons are included, in the WFEO Mission, which is :

- To provide information and leadership to the engineering profession on issues of concern to the public or the profession (for instance concerning the engineering mobility).

- To serve society and to be recognized by national and international organizations and the public as a respected and valuable source of advice and guidance on the policies, interesting concerns that relate engineering and technology to the human and natural environment (for instance, the protection of natural disasters or to the efforts against poverty, hunger, disease, illiteracy).

- To make information on engineering available to the countries of the world and to facilitate communication between its member nations (for instance the efforts to fill the technological or the information divide between nations).

- To foster peace, socioeconomic security and sustainable development among all countries of the world through the proper application of technology.

- To facilitate relationships between governments, business and people by bringing an engineering dimension to discussion of policies and investment .

Concerning the financial policy of our WFEO, I have to repeat again and again, in our General Assemblies, (especially now in a world of economic crisis) that the financial policy of WFEO, must be conservative. In any case (even if this means reducing or stopping some activities); we must have at any moment the possibility and the monetary reserves, to finance the administrative cost of WFEO, for at least one year ahead .

**The financial situation of WFEO is today good. ( Figures of 30 April 2009 )**

However we have to continue to encourage our members to settle their subscriptions on time which are and must continue to be our main revenues.

The financial situation is as follows :

Reserves at end of year- period

<b>According to the 2009 Budget</b>	<b>349.261 €</b>
<b>According to the year-end forecast</b>	<b>424.346 €</b>
<b>2010 Reserves at end of year/period. Budget</b>	<b>364.009 €</b>
<b>2011 Reserves at end of year/period. Budget</b>	<b>364.899 €</b>

I hope that the new Treasurer of WFEO will have an easier work and better results.

I wish to the new President of WFEO, the new Vice- Presidents, the new Officers, the Executive Director, the new Members of the Executive Board and the new Members of the Executive Council, good Luck.



## Report of the Executive Director By Tahani Youssef

### Staff

Thanks to the improvement of the WFEO financial situation, an assistant to the Executive Director has been recruited at headquarters in Paris.

This will make work much easier especially at moments of preparation of the General Assembly and Executive Council meetings or special events such as the World Engineers' Conventions and others. It will also allow the Secretariat to better react to the many queries and information sent by the Federation's members, the Executive Council and the Standing Committees as well as from organizations or people outside the Federation.

The Communication Secretariat established in Tunis continues to organize and update the WFEO website and to publish a very dynamic WFEO e-newsletter that is received by thousands of people.

### Financial Situation

All members continue to pay their subscriptions in Euro and the very strict control of expenses made it possible to further increase the reserves of the Federation in 2008. Despite the world financial crisis, I remain confident that we shall be able to attain our 2009 budgeted income before the end of the year. I also have pleasure to announce that Australia and the UK increased their subscriptions to WFEO with the UK going back to their initial number of 32 shares.

We still expect from members who have decreased their subscription for internal reasons to do their utmost to recover their initial level of subscription soon. We also hope that our most affluent members will follow the example of Australia and the UK.

### Contact with members

I followed-up the numerous efforts of President Barry Gear that led to the consolidation of relations between WFEO and its members. I attended four WEC 2008 preparatory meetings in Brazil and organized telephone calls for this purpose.

I attended together with the President the 14th International Conference on Women Engineers and Scientists in July 2008 in Lille, France and was able to establish cooperative relations with the International Institute for Women in Engineering (IIWE). I visited Kuwait twice to prepare the WFEO 2009 General Assembly and the Engineering Congress on Alternative Energy Applications that will take place on this occasion in November 2009.

I would like to have more opportunities to participate in the meetings of the WFEO international members to have the chance of meeting and discussing with our members.

### Cooperation with UNESCO

As mentioned before, UNESCO is more and more heading towards intersectoral activities and at the same time WFEO Standing Committees work in the fields of action of several UNESCO sectors. This is why the establishment of a network of contacts in the different sectors of UNESCO becomes essential. The Executive Director has established contacts over the years but the involvement of Vice Presidents and Standing Committee chairs is required.

UNESCO agreed on putting an end to ICET, the umbrella organization that included WFEO and UATI and WFEO has now direct official associate relations with UNESCO and will sign before the end of 2009 a UNESCO/WFEO Framework Agreement covering the period 2008-2013.

WFEO and UNESCO are preparing the Engineering Report that will be published in September 2009.

In collaboration with WFEO, UNESCO was a sponsor and member of the international advisory board of the third World Engineers Convention, held in Brasilia in December 2008, organized by the WFEO National Member, the Brazilian Federation of Engineering Associations. UNESCO also supported the participation of engineers from developing countries in this event and will continue to be involved in the WEC2011 that will take place in Switzerland.

WFEO was involved in the UNESCO/Daimler Mondialogo Engineering Award (MEA) project and received financial support for the promotional activities undertaken. President Barry Gear will represent WFEO on the MEA Jury in Stuttgart. It is hoped that this award will go into a fourth phase.

### Appreciation

I am particularly grateful to the President as well as the members of the Executive Council whose support and assistance made me able to carry out the tasks of the secretariat efficiently.



## WFEO MAIN ACTIVITIES "WEC 2008"

World Engineers' Convention 2008 (WEC), Brasília / Brazil, 2 - 6 December 2008



12/08V10

## The Brasilia Declaration:

**Engineering and Innovation for Development with Social Responsibility**

**World Engineers' Convention, Brasilia, 5 December 2008**

### PREAMBLE

The 2008 World Engineers' Convention was held in Brasilia on 3-5 December 2008, and brought together five thousand two hundred engineers from 39 countries. WEC2008 was supported by President Luís Inácio Lula da Silva, organized and sponsored by the Brazilian Federal Council of Engineering, Architecture and Agronomy (CONFEA), the Brazilian Federation of Engineers' Associations (FEBRAE) and World Federation of Engineering Organisations (WFEO), and co-sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The main theme of WEC2008 was "Engineering: Innovation with Social Responsibility". Sub-themes focused on engineering beyond boundaries, ethics and social responsibility, innovation without degradation, ICT for inclusion and advanced technologies with strategic vision. There were also a "Women's Forum" and "Young Engineers' Forum", and six panel discussions on engineering education and capacity building, biodiversity and the environment, disaster risk management, engineering for development, energy for sustainable development and great challenges for engineering. More than 100 papers were presented on these topics, and related issues were discussed. WEC 2008 was accompanied by ExpoWEC2008 on the theme "Energy for the Future". This was the third WEC, follows WEC2004 in Shanghai and WEC2000 in Hanover, and precedes the fourth WEC, to be held in Geneva in 2011.

The purpose of this Declaration is to present these discussions to the engineering and related communities, governments and national authorities, national, regional and international organizations, outlining these issues and calling for action on the challenges facing engineering. There is an important need for the development of national, regional and international engineering initiatives and programmes. This is also reflected in the production of the UNESCO Report, "Engineering: Issues and Challenges for Development" – the first ever international report on engineering, launched at this Convention.

### DECLARATION

We, the participants at WEC2008, emphasise engineering as the driver of technological innovation and of vital importance in sustainable human, social and economic development. In the current economic crisis we believe that engineering and innovation with social responsibility will be essential for our survival and progress. It is in this context that we make this declaration.

### Issues and Challenges

At the global level, issues facing the world focus on the need to reduce poverty, promote sustainable social and economic development and address the other UN Millennium Development Goals, provide solutions for climate change mitigation and adaptation and facilitate the move into a low-carbon future. These issues also include challenges and opportunities presented by globalisation, the digital and broader technological and knowledge divides.

At the local level, many countries are concerned that young people are turning away from science, engineering and technical education, and the effect a declining interest and enrolment in engineering will have on capacity and development around the world, which is compounded for poorer countries by the brain-drain of engineers.



These issues and challenges are being further compounded by the recent financial and economic crisis, at a time when we need increased investment in engineering capacity building, R&D and infrastructure. The engineering and scientific communities need to work more closely together on these issues. It is also important to note that the issues and challenges facing engineering change over space and time, due particularly to new needs and new knowledge, and engineering needs to change to face these changing issues and challenges.

The main challenges for engineering are to promote capacity building and access to technology to address these issues through:

promoting awareness of engineering to the public and young people,

the development of technologies, including advanced technologies,

the application and innovation of technologies,

promoting inclusion, especially of women and young engineers of the future,

global cooperation to reduce knowledge divisions.

These issues need to be addressed in the context of strategic vision, ethical and social responsibility.

### **Calls for Action**

Engineering is the essential building block and driver of technological innovation, sustainable social and economic development, and engineers need to emphasise this to policy makers and the wider public. An emphasis on innovation and applications also helps attract young people to engineering. Engineering education needs to emphasise the relevance of engineering to the global issues and problems we face - the problem-solving profession needs to revitalise itself through such approaches as problem-based learning.

To address these issues, we make the following calls for action to the engineering and related communities, governments and national authorities, regional and international organizations.

The engineering and related communities

We call upon the engineering and related communities, at national and international levels, through WFEO, its members and related organisations, to: emphasise the importance of engineering as the main driver of innovation, sustainable social and economic development,

develop a better understanding of the public perception of engineering, and the promotion of engineering studies and policy,

promote curricula and teaching methods in engineering education that emphasise relevance, applications and the problem-solving approach of engineering,

strengthen linkages between elementary school and engineering by enhancing partnerships between engineers, schools, government and the private sector,

develop, apply and innovate of technologies, including advanced technologies, to global issues and challenges, to engineer a better world, promote inclusion and reduce divisions, with strategic vision, ethical and social responsibility

### **National, regional and international organizations**

We call upon WFEO, WFEO members, UNESCO and other national, regional and international organisations (such as the OAS in the Americas), to facilitate and promote the above activities through international networking, cooperation and the sharing of good practice. In particular, we call upon WFEO members and UNESCO to develop an International Engineering Programme to promote engineering education, capacity building and applications for poverty eradication, sustainable human, social and economic development, and to continue the UNESCO engineering report into a second edition to be launched at the World Engineers' Convention in 2011.

### **Governments and national authorities**

We call upon governments and national authorities to create enabling environments and support the above activities in engineering education, research and development, capacity building and application of engineering to the Millennium Development Goals and related international development objectives.



## Standing Committee Report

### Women in Engineering

Chairwoman :  
Marie-Hélène Therre



WFEO, the voice of the engineering community, decided to install a space for women engineers by creating a new standing committee "Women in Engineering" (WiE) after the success of the international colloquium held in Tunis on "Empowering Women in Engineering and Technology".

As a result of the WFEO Executive Board decision in March 2008 in Paris, the Council of Engineers and Scientists, the National Member of WFEO, decided to host WiE.

Women represent more than 50% of the population worldwide. Since many years women have had the opportunity to access education but they are not involved enough in the new worldwide challenges of the Society which are: to participate to the growing needs of innovation and be part of the technology development of the changing world; to enhance the number of engineers and scientists and to empower women engineers in their professional career with the objectives of giving them access to decision making positions.

The vision and mission of WiE are aligned with the WFEO ones.

The vision of the WFEO-WiE is: "Women and men engineers, in total equal opportunity, to work to constructively resolve international and national issues thanks to their diversity and their differences for the benefit of the humanity".

The WFEO WiE's mission is :

- To develop and confirm the WFEO's position on the new social challenges of participation and leadership of professional women in a sustainable way,
  - To offer support to increase a concrete comprehension of the activities for the institutions to integrate the gender dimension in their bodies and in the engineering profession,
  - To help in improving the representativity of women engineers within WFEO organisations and bodies,
  - To help organisations in attracting young females interested in becoming engineering professionals worldwide.
- Since its inception in 2008, the main activities have been the recruitment of male and female members with a call for application, then to define our strategic plan for the next years. The announcement and launch of WFEO-WiE standing committee by Barry Gear happened during the International Conference of ICWES, in Lille, France, in July 08 where 500 engineers, mainly females, met and put the light on their professionals works.

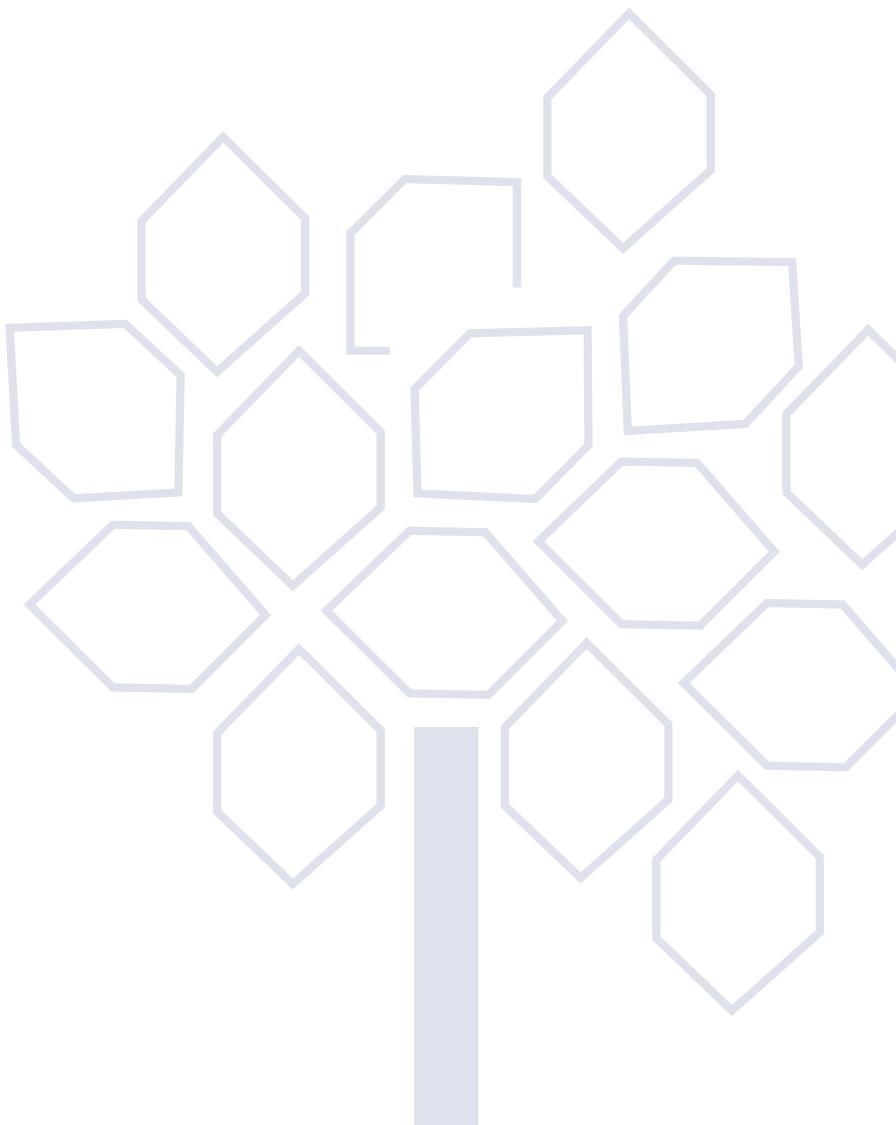
A Memorandum of Understanding was signed between WFEO and the International Network of Women Engineers and Scientists in order to cooperate smoothly.



During the WFEO World Engineers Convention 2008, in December 2008 in Brazilia, most of the 24 WiE members from 14 countries met and finalized the WiE logo and decided on the priorities of their next outputs.

Because the issue of women is rather new in our engineering community, our first objective is to promote more women engineers with their expertises and to provide the figures of the male-female population of engineers worldwide.

During the next WFEO events and congresses, (Kuwait, Argentina and Switzerland) WiE is planning several sessions to share those elements and to raise awareness of the problems that hinder a gender promotion of engineers in a sustainable world.



## Standing Committee Report

### Engineering and the Environment

Chairman :  
P.Eng. Darrel Danyluk

#### Introduction

This report covers the two-year period from the last WFEO General Assembly when Engineers Canada assumed the Chair of the standing committee for the next four years. The standing committee is supported by a part-time secretariat provided by Engineers Canada.

#### Membership

In November 2007, Mr. Darrel Danyluk, P.Eng., a Past President of Engineers Canada as well as Past-President of the Association of Professional Engineers, Geologists and Geophysicists in Alberta, assumed the Chair. In this capacity he is also a Vice-President and a member of the Executive Council of WFEO. The CEE has an Executive Committee consisting of the Chair, two Vice-Chairs and the Past Chair:

Chair: D. (Darrel) Danyluk, P.Eng. (Canada)  
Vice-Chair: Engr. S. (Spyros) Papagriginou (Greece)  
Vice-Chair: Eng. S. (Salim) Aoun (Lebanon)  
Past-Chair: Eng. B.J. Vasoya (India)

In addition, there are six theme leaders who are leading task groups formed to work in the theme areas that are defined in the committee's four-year strategic plan.

The committee has 29 full members and two corresponding members from over 20 WFEO member countries. Efforts continue to extend the membership to other WFEO member countries.

#### Vision, Mission and Strategic Plan

In the first year of the four-year mandate, the committee was re-constituted with continuing members and new members. In December 2008, the committee approved a four-year Strategic Plan, tailored to fully support the vision and mission of the WFEO. The vision for the WFEO – CEE reads as follows:

"The Committee on Engineering and the Environment enables the WFEO and the global engineering profession to address the UN Millennium Development Goals through the development, application and enhanced understanding of environmentally sustainable engineering practices, the adaption of infrastructures to the impacts of a changing climate and mitigating risks of natural disasters".

The Strategic Plan includes a series of mission statements to support the vision, and provide the framework for a focused program of activities. These statements are closely aligned with the WFEO mission statements on environment and sustainability:





## Mission

"The WFEO-CEE shall develop and facilitate a thematic, results-oriented program over the next four years that:

- Increases the understanding of the global engineering profession and society of the global, regional, engineering and policy issues and solutions for the environmentally sustainable development of physical infrastructure and vital services;
- Gathers and disseminates information and provides recommendations on the adaptation of physical infrastructure to climate change and natural disaster risks;
- Develops and promulgates appropriate environmental and sustainable engineering practices in developing and developed countries;
- Increases the profile and participation of the WFEO in the UN Framework Convention for Climate Change (UNFCCC) related to climate change adaptation and infrastructure vulnerability to climate change impacts;
- Achieves recognition of the role and contributions of WFEO and the worldwide engineering profession towards the environment and sustainability elements of the UN Millennium Development Goals;
- Supports and raises WFEO's profile and participation in the work of UNESCO as it relates to engineering and the environment;
- Enables national members to pursue projects and programs in these areas."

The Strategic Plan is organized into six theme areas, which are supported by task groups; each one led by a CEE member. There is also work related to the United Nations which is reported after the theme reports.

## Meetings

The committee held its first in person meeting in conjunction with the December 2008 WFEO annual meetings and WEC 2008 in Brasilia, Brazil. The next one is planned for November 1, 2009 prior to the WFEO General Assembly in Kuwait City, Kuwait. The committee held its first teleconference on June 19, 2008 and a second teleconference/webinar is scheduled for June 29, 2009.

## Activities by Theme Area

The lead countries and theme leaders assume the responsibility to develop and deliver a work program. Progress in each theme area is summarized below.

### Theme 1 - Environmental Impacts of Major Engineering Projects for Summer and Winter Olympics - Engr. S. (Spyros) Papagrighiou (Greece)

The objective is to document the environmental impact and sustainability issues around recent large scale Olympic sporting events and communicate these to future Olympic organizing committees. The process involves international workshops and webinars among the Task Force members to exchange information and experiences which are documented.

The knowledge, once assembled, will be communicated through WFEO member country linkages to prospective Olympic countries and the International Olympic Commission to create awareness of environment and sustainability issues as well as opportunities for long term infrastructure legacies that are intrinsic to large scale Olympic sporting events.

### Theme 2 - Engineering and Climate Change Adaptation - D. (Darrel) Danyluk, P.Eng. (Canada)

The principle objective is to assess the engineering vulnerability and risks of climate change impacts on infrastructure in developed and developing countries.



This information will be used to propose strategies and engineering practices that will improve the resilience of existing and planned infrastructures to climate change. Engineers Canada has a multi-year project underway in Canada to do a national assessment of engineering vulnerability.

An engineering protocol that evaluates the vulnerabilities and risks of projected climate changes on individual infrastructures was developed for the Canadian project. It has been applied to assessments of individual buildings, roads and bridges, water supply, treatment and management as well as stormwater and wastewater systems. This work is being expanded internationally by applying the engineering protocol to infrastructures in other WFEO countries on a cooperative basis. A pilot project has been defined with Costa Rica Colegio to assess one of the country's sewage treatment systems. This will be the first international application of the Canadian protocol. Funding is being pursued with the World Bank as well as the Canadian and Costa Rican governments.

This information will be presented by WFEO to influence policy development on climate change adaptation strategies and processes related to the design, operation and maintenance of infrastructure. The database of knowledge which will be communicated to WFEO member countries through international conferences, webinars, as well as local presentations and workshops. The first international webinar presenting results from the Canadian work was successfully delivered twice to CEE members in different time zones on October 23, 2008.

### **Theme 3 - Disaster Risk Management (DRM) - Dr. Y. (Yumio) Ishii (Japan)**

In early 2008 the Task Group on Disaster Risk Management was formed with experts from several WFEO countries organized into two subgroups: 1) Water-related Disaster Risk Management, and 2) Earthquake Disaster Risk Management. The group is supported by a part-time secretariat.

The 2008-09 workplan has focused on the development of international guidelines for engineers involved in disaster risk management. The first draft of the water-related DRM guideline was presented at the December 2008 WFEO-CEE meeting and at WEC 2008. It was subsequently distributed to CEE members for review. A second draft will be presented at the CEE meeting in November 2009.

The task group organized a very successful Joint International Symposium on Disaster Risk Management on September 11, 2008 in Sendia, Japan. There were over 50 participants including the WFEO President. A very successful panel session on Disaster Risk Management was organized at WEC 2008 on December 3, 2008. The Task Group Chair is organizing the 3rd International Symposium on Disaster Risk Management for September 3, 2009 in Fukuoka, Japan.

### **Theme 4 - Sustainable Development - Dr. P. (Paul) Jowitt (United Kingdom)**

The initiative will be lead by the Institute of Civil Engineers – United Kingdom (ICE-UK). A proposed framework to evaluate the sustainability of engineering projects was tabled for discussion at the CEE December 2008 meeting.

### **Theme 5 - Environmental and Sustainable Engineering Practices for Engineers - R. (Ross) Rettie, P.Eng. Canada**

The primary objective is to develop an international guideline on the Environment and Sustainability for engineers that would be adopted by WFEO and its member countries by 2011. It is focused on professional and ethical principles, not technical details, engineering practices or specific laws and regulations.

A Task Group chaired by a member of the national Environment and Sustainability Committee of Engineers Canada and several CEE members has been formed to work on the guideline. The first draft will be presented at the WFEO-CEE meeting in November 2009.



## Theme 6 - Infrastructure in Developing Countries - Cdr A. (Arvind) Poothia (India)

This initiative is implementing selected recommendations from the international conference held with the 2007 WFEO General Assembly in New Delhi. A theme paper was completed in December 2008 that identified broad areas to help ensure proper infrastructural development in developing countries, with a plan to pursue technical activities in the 2009-2011 period.

### Technical activities completed in 2008 were within India and included:

1. Seminar on Recent Trends in High Rise Buildings, 8-10 May 2008, New Delhi India. The report from this seminar lists 11 recommendations concerning the design and operation of high rise buildings in developing countries.
2. Seminar on 'Construction and Quality Management in Highway Sector', 19-20 July 2008, Lucknow, India.
3. Seminar on 'Advancement in Civil and Structural Engineering – High Rise Buildings', 4-5 October 2008, Jaipur, India.
4. National Conference on 'Infrastructure Development – Key to National Growth', 25-26 October 2008, Bhubaneswar, India.
5. National Conference on 'Recent Trends in High Rise Buildings and Environmental Sustainability', 14-15 November 2008, Pune, India.

Seminars, workshops and webinars are being planned (subject to available funding) with local partners in planning and policy-making, providing urban amenities in rural areas, transportation in urban areas, technology intervention and knowledge network, and development of a financial network.

### United Nations Framework Convention on Climate Change (UNFCCC)

In the summer of 2008, WFEO was granted observer status for all UNFCCC meetings, with the Chair of WFEO-CEE as the Designated Contact Person.

This status enables WFEO to observe all meetings of the UNFCCC and its subsidiary bodies. It also includes the opportunity to hold "side events", which are WFEO-organized workshops to communicate the engineering perspective and influence policy-makers and decision-makers on the issues involved with adaptation to climate change. D. Danyluk represented WFEO at several meetings of the UNFCCC including:

- Expert Working Group on Nairobi Work Program (NWP), Mexico City – March 4-7, 2008.

This was the first input from WFEO and the worldwide engineering community to this group, where the sessions which centered on meteorological modeling and the levels of accuracy of data. The input from engineering was considered valuable input to help focus the future work of NWP towards feasible, multi-disciplinary collaborative policies and actions.

- Subsidiary Body for Scientific and Technological Advice – Meeting 28, Bonn, Germany – June 4-13, 2008.

WFEO was granted a side event under the aegis of the Engineering Institute of Canada who had observer status with UNFCCC at the time of the event prior to when WFEO obtained observer status. D. Danyluk and P. Jowitt delivered the side event entitled: "Adaptation of Infrastructure to the Effects of a Changing Climate" on June 3, 2008 to an audience of over 60 people.

- Subsidiary Body for Scientific and Technological Advice – Meeting 30, Bonn Climate Change Talks, Bonn Germany – June 1-12, 2009.

D. Danyluk delivered a workshop entitled: "Climate Change: Adaptation of Civil Infrastructure" as an official side event on June 6, 2009 and attended numerous side events and meetings in preparation for COP-15 in December 2009.



## United Nations Commission on Sustainable Development (UN-CSD)

- UN-CSD 16 main Meeting, New York – May 4-16, 2008.

The UN-CSD 16 meeting was jointly attended with the Chair of the WFEO Committee on Energy, and a jointly authored report on this meeting is available on the main WFEO website as of the summer of 2008. The principal themes of this session included agriculture, rural development, improved management of land resources and combating drought and desertification. The CEE Chair and the Energy Chair each made presentations at a side event on behalf of WFEO as an invited body. The CEE Chair was invited to the Ministerial breakfast and was invited to make an intervention.

- United Nations Economic and Social Council Session, Innovation Fair, New York - June 30-July 3, 2008.

D. Danyluk chaired a Side Event with presentations from The Urban Alliance, ASCE and ASME. Participation included an exhibitor's booth on the work of WFEO, and attendance and dialogue at a Ministerial breakfast.

- UN-CSD 17 Preparatory Meetings - New York February 23-27, 2009.

The CEE Chair represented the WFEO at the preparatory meetings and contributed to the discussions and preparation of the Chair's working draft of a negotiation document that will be finalized at the UN-CSD meeting in May 2009.

- UN-CSD 17 Main Meeting - New York May 4-14, 2009.

The Chair was one of a four-person WFEO delegation including the WFEO President, WFEO Energy Chair and the WFEO Capacity Building

Chair, participating as engineering representatives in the Scientific and Technical Major Group within the United Nations. A side event entitled "Capacity Building: Words into Action: Physical, Social & Economic Infrastructure" was organized with the WFEO Committee on Capacity-Building and other partners, and engaged 71 delegates and members of major groups from more than 20 countries in defining their specific issues and to hear their perspectives on effective capacity building actions.

## Communications

In April 2009 the committee published its first newsletter since Canada assumed the chair. The next issue is scheduled for late September 2009. It will be published at least twice yearly until the completion of Canada's term as committee chair. The WFEO-CEE portion of the website was updated with the Strategic Plan as well as other documents and outputs from the committee's work.



The Standing Committee on Information and Communication, CIC, was re-formed by WFEO Executive Council in May, 2008, inviting Chinese Association for Science and Technology, CAST, as host, naming Prof. Y. X. Zhong as Chairman and setting its secretariat in Beijing.

Following up the Millennium Development Goal and the resolutions from the World Summits on Information Society, WSIS'03 and WSIS'05, and the Vision and Missions of WFEO, the newly formed CIC promptly took a series of actions in 2008 and 2009:

### 1. Re-Activating the Committee

Thanks to the assistance from Executive Director, CIC has been quickly re-activated. By the time of this writing, CIC has received 31 members from 18 countries.

### 2. Activities contributing to the UN Resolutions and WFEO Vision and Mission

2-01 Establishment of Stable Link between CIC/WFEO and UN-GAID

2-02 Delivery of an oral presentation to Asia-Pacific Countries in ICT for e-Governance

2-03 Delivery of an oral presentation to the South-South Cooperation in STI

2-04 Organizing Workshops for UN Forum on Internet Governance (IGF)

2-05 Contributions to WEC'08 by giving a plenary speech on ICT for Development

2-06 Contributions to the UNESCO's Engineering Report by providing a report on ICT

2-07 Participation in Third Asia ICT Week by giving a lecture on ICT

2-08 Delivery of a presentation to the Global Innovation Forum on Education & Development

2-09 Efforts made in Africa in promotion the applications of ICT

2-10 MOU on cooperation for WEC2011 between CIC and Professor J. Badoux

### 3. World Congress on ICT for Development, an Initiative for 2009 and Beyond

A standard ICT consists of six units, (1) Sensing, (2) Communication, (3) Computing, (4) Cognition, (5) Decision-Making, and (6) Control, as is seen in Fig.1. The units (4) and (5) in Fig. 1 as an entirety are called Artificial Intelligence, or AI in brief.

## Standing Committee Report

## Information and Communication

Chairman :  
**Prof. Y. X. ZHONG**



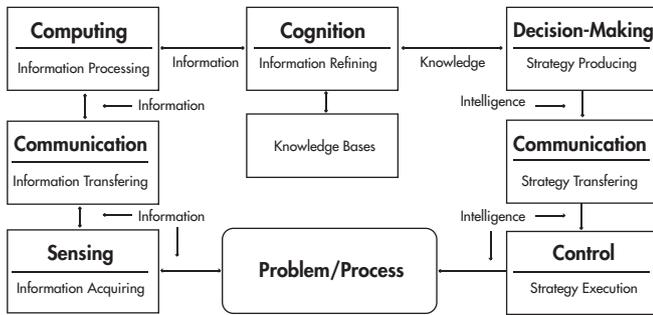


Fig.1 Model of Standard ICT

It is clear from Fig.1 above that the standard ICT should be able to perform the following functions that are necessary and significant for humans:

- (1) acquire information about the problem in real world, like human sensors,
- (2) transfer information in space, like human nerve system,
- (3) manipulate information for better use, like the ancient and old parts of human brain,
- (4) produce knowledge for better understanding the problem, like human new brain,
- (5) create strategy for solving the problem based on knowledge, like human new brain,
- (6) solve the problem concerned by executing the strategy, like the human actuators.

In other words, the standard ICT is intended to act as human beings. As a matter of fact, the units (1), (2), (3) and (6) are able to perform better functions than that performed by humans in terms of speediness, preciseness, strength, while the units (4) and (5) are inferior to humans. AI can do job very intelligently but, generally speaking, without creativity.

Due to the high complexity in AI, the standard ICT is nowadays still in laboratory. What we have had today is the Primary ICT which consists only of units (2) and (3).

The Internet and Telecommunication Net as well as CATV are typical examples of Primary ICT.

The major function that Primary ICT can provide to the public is speedy and convenient Information Sharing worldwide which makes the globe as a small village such that when information occurred at

the place on one side of the earth can immediately be obtained by people living on the other side of the earth.

Summarily, standard ICT is intelligent tool, which is much more powerful and can be available tomorrow whereas primary ICT is a tool for information sharing, which is more fundamental and can already be used today. Both are very useful for economic and social development and for the implementation of **MDG and information society**.

Based on our understandings on ICT, MDG set by UN, an initiative was proposed to WFEO on the program of **World Congress on ICT for Development, WCID** for short, which is a global platform for sharing progress in, exchanging experiences in, and exploring better approach to, the practice of ICT for development among all participants, particularly among those from developing countries.

The first WCID is the WCID'09 to be held Sept. 10-12, 2009 in Beijing which has received the support from UN-GAID (Global Alliance for ICT and Development), ITU (International Telecommunication Union), UNESCO (United Nation's Education, Science and Cultural Organization) and IEEE (The Institute of Electrical and Electronic Engineers). WFEO has approved its sponsorship for WCID'09 while CIC plays the role of organizer. The preparation for WCID'09 has been very well. As planned, WCID'11 and WCID'15 will be in cooperation with WEC'11 and WEC15 while WCID'13 will be arranged in conjunction with WFEO-GA'13.

In the meantime, CIC will work actively with other Committees in WFEO for promoting ICT for Education, ICT for Capacity Building, ICT for Anti-Corruption, ICT for Environment Protection, ICT for Climate Monitoring, ICT for Energy Saving, ICT for Disaster Management, ICT for Gender Equity, ICT for Poverty Eradication, ICT for Public Health, and ICT for Technological Cooperation, etc.

## Standing Committee Report

### Education and Training

Chairman :  
**Prof. Dr. Włodzimierz Miszalski**

Implementing the approved Plans of Action (for 2006-2007 and 2008-2009) and fulfilling the components of WFEO Mission as well as particular objectives of the Committee (website <http://www.not.org.pl/WFEO/>), the WFEO-CET worked as a body of 25 members representing 22 countries. During the reported period the Committee welcomed 5 new members. The Committee lost one of its most active and dedicated members - the suddenly passed Eng. Hisham Shihaby, Vice President of WFEO-CET. In all the WFEO-CET reports one can find actions and projects undertaken and implemented by Hisham Shihaby with great commitment and passion, from the very beginning of his career in WFEO-CET. Prof. Abdel Menhem Alameddine has been designated new Vice President of CET.

During all the past four year term duties of Secretary of WFEO-CET have been excellently fulfilled by Mrs. Teresa Domanska.

The main themes of the Committee works could be briefly determined as: Education for Innovation, Education for Mobility, Education for Development, Education and Training Scenario for Engineers 2020. The special subject of the Committee activities was working out the foundations of WFEO Policy on Mobility. WFEO-CET created Working Group on Mobility of Engineering Professionals under the chairmanship of Dr. Peter Greenwood and commissioned a position paper and a draft policy on the arrangements available for mobility of engineers. The two documents were completed late in 2008 and were unanimously approved by the CET at its meeting in Brasilia, on November 30 2008. The position paper was also published in IDEAS No.15. Both documents were submitted to the Executive Council at its meeting on December 2, 2008. The position paper was for information and background to the draft Policy. The policy was endorsed as a draft (it was voted and unanimously approved) and CET was encouraged to seek wider comment in order to bring a final document to the Executive Council and General Assembly for approval in November 2009.

Since November 2007 till the present moment current activities of CET concentrated on the following issues:

- Organisation of the 37th and 38th CET meetings (Warsaw, March 2008; Brasilia, November 2009);
- Publishing of IDEAS No. 14 devoted to Education for Innovation and IDEAS No. 15 devoted to Education for Development. Both issues have been put on WFEO-CET website;
- Preparations for the 8th World Congress on Engineering Education (8WCCE) – meetings and discussions with the IEM (Eng. Hisham Shihaby, Vice President of WFEO-CET). The general theme of the Congress is “Engineering Education for Sustainable Development”;





- Maintaining further working contacts with IFEEES and Cartagena Network of Engineering;
- Establishing contacts with FEANI and FEANI Committee on Continuing Professional Development (CPDC), among others with an offer of cooperation between both committees;
- Discussions on the WFEO Policy on Mobility;
- Discussions on Education and Training Scenario for Engineers in 2020 and developing its shape; putting the Scenario on the WFEO-CET website;
- Working out a contribution to section 4 of a UNESCO Report "Engineering: Issues and Challenges for Development" prepared in conjunction with WFEO and CAETS. The title of the said contribution: "Engineers in Education" (Prof. Włodzimierz Miszański);
- Advice, guidance and consultations given by WFEO-CET President for China Association for Science and Technology (CAST) on accreditation solutions for engineering and technology in European countries (meeting with a Chinese delegation on 16-20 April 2008);
- The works have been undertaken on the issues resulting from the "Brasilia Declaration" in the field of Engineering Education, namely: working out the ways and methods of "emphasizing in EE the relevance of engineering to the global issues and problems we face" (World University of Technology), "promotion of engineering studies", "promoting curricula and teaching methods in engineering education that emphasize relevance, applications and the problem-solving", "strengthening linkages between elementary school and engineering by enhancing partnerships between engineers, schools, government", and the private sector";
- Preparatory works on the next edition of the Committee publication - IDEAS No.16, planned for the fourth quarter of 2009;
- Works on drafting the Plan of Action for 2010-2011 which will be submitted for approval by the CET members at the 39th Committee meeting in Kuwait in November 2009;
- Maintaining further working contacts with IFEEES and Cartagena Network of Engineering, as well as,

establishing closer contacts with FEANI and the FEANI Committee on Continuing Professional Development (CPDC);

- Further development and upgrading of WFEO-CET website, among others in consultations with the WFEO-CET members.

- (<http://www.not.org.pl/WFEO>)

(electronic version of IDEAS, link for WFEO-CET members enabling them access to documents (minutes, agendas, reports, etc).

### The closest future activities :

- The Committee plans closer cooperation with 2 other WFEO Standing Committees – CCB (Capacity Building Committee) and CIC (Committee on Information and Communication) and FEANI in the sphere of mobility and in preparing the 8th WCEE. The first phase of closer contacts with the CCB has been already implemented;
- In cooperation with Prof. Janos Ginsztler, Past President of WFEO-CET, CET will organize a Round Table Discussion with International Participation "Challenges and expectations towards engineers in the next 2 decades-until 2030; the role of Continuing Engineering Education". Date and venue: 17-18 September 2009, Budapest. The event is organized on occasion of the 70th Anniversary of the Institute of Continuing Engineering Education;
- The 39th WFEO-CET meeting will be held on November 2, 2009 in Kuwait City in coincidence with the General Assembly of WFEO;
- The 40th WFEO-CET meeting will be held in coincidence with the 8th WCEE in October 2010 in Buenos Aires.

The Committee will concentrate its main efforts on preparation of the 8th World Congress on Engineering Education (18-20 October 2010, Buenos Aires), which will be the sequential milestone in the global –scale international cooperation in Engineering Education.

# Standing Committee Report

## Technology

Chairman :  
R. P. Gupta

### INTRODUCTION

This report states the activities of the WFEO Standing Committee on Technology (WFEO-ComTech) for the period since the WFEO General Assembly held in New Delhi in November 2007.

### STRUCTURE

The Committee consists of a Chairman and six regional Vice-Chairmen representing Americas, Far-East, Europe, Africa and Asia. Currently, the members of the Committee are :

#### Chairman

- R P Gupta (India)

#### Vice Chairs

- Americas – Mr Tony Dawe, Canada
- Far-East – Mr Peter Greenwood, Australia
- Europe – Mr Haro M Bedelian, UK
- Africa – Prof Abubakar Sani Sambo, Nigeria
- Asia – Mr. Pradeep Chaturvedi, India

#### Members

The members of the Committee have been drawn from amongst experts in different countries, namely, Australia, Brazil, Canada, China, Hong Kong, India, Korea, Kuwait, Malaysia, Nigeria, South Africa, Sri Lanka, UK and USA.

### MEETINGS

The Committee has met in conjunction with meeting of the WFEO Executive Council. During this period, the Committee held its first meeting in Brasilia, Brazil on 30 November 2008.

### ACTIVITIES

The Committee has been actively engaged in the organization of a number of activities during the period under report. The following are some of the activities with national level participation:

#### Globalization : Engineering and Technological Challenges

13-16 December 2007, Udaipur, India

The experts deliberated on the present trends in the field of technological developments in the context of globalization of economy as well as the challenges ahead before the engineering community. The Indian government has planned an intended growth rate of 9-10 per cent by adopting newer technologies towards ensuring a sustainable growth in engineering products and services. Delegations from countries like Korea, Sri Lanka, Bangladesh, Nepal and Hong Kong also participated in the event.





### Smart Materials for Frontier Technologies

10-11 January 2008, Bangalore, India

The experts had in-depth discussions on smart materials like piezoelectric materials, shape memory alloys, rheological fluids and MEMS, also elaborating the use of smart materials in engineering applications. The deliberations stressed upon exhaustive, application-oriented research towards promoting the use of smart materials in the field of healthcare and in safety, security and environment sensors as well.

### Non-conventional / Renewable and Nuclear Energy Resources – Issues and Challenges

17-18 May 2008, Jabalpur, India

The experts expressed concern over the challenges in the energy sector in view of rapidly growing energy demand coupled with depleting resources and environmental degradation. New technology options have to be incorporated in the present-generation technologies in the power sector in order to bridge the gap between the demand and supply of power. The solar power and nuclear power options are being looked upon to play a greater role in the medium- and long-term perspective.

### Emerging Trends in Information and Communication Technology

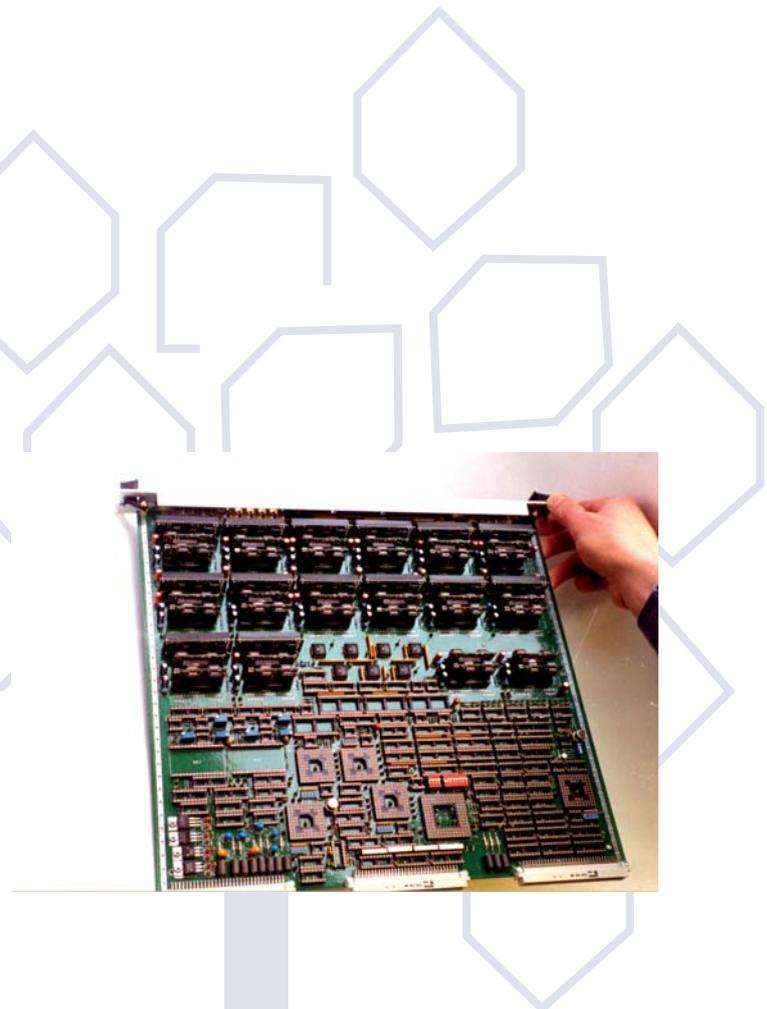
29-30 August 2008, Cochin, India

The deliberations concluded that advanced centres be set up for informatics and innovative learning to support community education and empowerment programmes in ICT applications. Concrete steps be taken to modernize the education system in tune with the knowledge society levels, fully utilizing the infrastructure already available in bandwidth and internet connectivity. The complete e-governance be achieved within a time-frame, simultaneously ensuring that all the States in the country have a uniform IT policy.

### Convergence of Technologies

15-16 May 2009, Trichur, India

The experts mentioned that the technology convergence had advanced in multi-directional and multi-disciplinary areas of manufacturing such as biometrics, biosensors, superior textiles, targeted treatment procedures, digital image processing, intelligent machines, etc. The system simulation is an efficient method where complex processes with many interacting elements exist. The principles of simulation coupled with the advanced converging technologies in the process can improve designs. In this context, the modern techniques of lean manufacturing, cellular manufacturing, micro-machining, mechatronics, reverse engineering, etc may be utilized.



The WFEO Committee on Capacity Building (CCB) has been very active since the General Assembly in Delhi, India in November 2007.

A delegation of WFEO participated in the UNESCO Commission on Sustainable Development (CSD-16) Session in New York City the first two weeks in May. Barry Grear, President; Dan Clinton, CCB; Darrel Danyluk, CEE; Jorge Spitalnik, CE and Mike Sanio, ASCE represented WFEO, along with ICSU in the Science and Technology Major Group. The theme of CSD-16 was "Sustainability in Agriculture with sub-themes on Sustainable Agriculture Systems: Rural Development, and Land, Drought and Desertification; Africa; and Water and Hygiene. WFEO was able to provide engineering input to the discussions at the various sessions of CSD-16. This participation laid the groundwork for future WFEO contributions to UNESCO and the Commission on Sustainable Development.

The CCB supported the UPADI, WFEO, and WEC Meeting in Brasilia November –December 2008. At the UPADI Opening Plenary and Technical Council meetings, ASCE President Wayne Klotz, ASME President Tom Barlow, NSPE President Sam Grossman and US National Academy of Engineering Foreign Secretary, George Bugliarello, participated on key panels.

Presentations arranged by CCB during the UPADI Plenary included:

- Physical Integration: Vision and Concepts – Wayne Klotz, ASCE President
- Megacities – Dr. George Bugliarello, Foreign Secretary US National Academy
- The Future of Urban and Regional Mobility – Miriam Heller, ASCE SD Committee
- Continuing and Distance Education – Tom Barlow, ASME President
- Engineering Without Borders – Sam Grossman, NSPE President
- Energy: Integration and Cooperation Models – Kris Nielsen, Pegasus Global
- Free Trade Agreements; NAFTA and MERCOSUL – Reginald Vachon, Chair, Joint NSPE/ASME/ASCE Taskforce.

The WFEO-CCB co-organized and actively participated in several jointly sponsored technical meetings.

With ASCE International Activities Committee support under the leadership of Cliff Schexnayder and ASME member Bill Wepfer, Department Head of Mechanical Engineering at Georgia Tech, and Chair UPADI Education Committee,

## Standing Committee Report

### Capacity Building

Chairman :  
**DANIEL D. CLINTON,  
JR., P.E.**





a powerful one-day Capacity Building/Continuing Education/Professional Development program was delivered at WEC 2008 on December 4, 2008: **Opportunities in Engineering Capacity Building through Professional Societies: Engineering Education, Continuing Education, and Licensing.**

The Session was opened by the US Chair of the WFEO Capacity Building Committee Dan Clinton with presentations by Andrew Cleland, IPENZ, New Zealand, and Dawie Botha, SAICE, South Africa, describing the "Capacity Development Guide Book;" Meg Van Sciver, Engineers Without Borders; Victor Miranda, Belize; and Lina Sergie, Syria.

The panel was followed by a session – Continuing Education and Professional Development moderated by: Reginald Vachon, Chair Joint NSPE/ASME/ASCE UPADI Taskforce with presentations by Wayne Klotz, ASCE President, Tom Barlow, ASME President, and Sanjeev Kumar, Chair, Committee on Continuing Education of ASCE.

The third session, moderated by Dan Clinton, included Daniel Marcek, Engineering for the Americas; Marcelo De la Rosa, Vice President Louis Berger Group; and Dr. Peter Greenwood, Engineers Australia, on global accreditation and "Licensure: a Benefit or Challenge for Developing Countries."

The final panel – Bridging the Gap between Industry and Academia, moderated by Reginald Vachon, had presentations by Sam Grossman, NSPE President, and Dr. Janaka Ruwanpura, Civil Engineering Department, University of Calgary, Canada.

The day long session was well attended (approximately 100 attendees) with good Question and Answer participation following each of the presentations. We received numerous compliments on the caliber of the program, the speakers, and the overall content.

The Capacity Building Committee met and developed a skeletal Strategic Plan for the next three years. The Strategic Plan included:

1. Develop and promote the Capacity Building Guidebook.
  - a. Define best practices to build capacity.
  - b. Identify needs of regions and special situations.
  - c. Define available funding for capacity building.
2. Create consistent language to define capacity building within funding structures and with decision makers.
3. Build strategic partnerships.
4. Provide a home to existing programs.
5. Communicate to others within WFEO what CCB is doing.

The Capacity Building Guide Book workshop, under the leadership of Dawie Botha and Andrew Cleland was able to develop a skeleton of the Guide Book. The draft skeleton has the following chapters.

1. Introduction
2. Principles of Capacity Building
3. Defining Needs and Desires in Participating Communities
4. Influencing/Defining Public Policy
5. Developing Educational Programs
6. Achieving Significant Participation in Education
7. Building Networks and Support Systems
8. Technical and Business Standards
9. Project Execution through Lifecycle
10. Gaining and Using External Funding
11. Special Issues

A rough draft was completed after Christmas and has been distributed with chapters assigned for fleshing out in the next several months. We plan to have an edited version of the first draft ready by the end of April for circulation to other participants and contributors. From there we plan to edit and have a final version ready for roll out and promotion in Kuwait.



A WFEO delegation will again participate in the United Nations Commission on Sustainability-Session 17 in New York City the first two weeks in May. Dan Clinton, CCB, along with Barry Gear, President; Darrel Danyluk, CEE; Jorge Spitalnik, CE; Mike Sanio, ASCE; and Mike Michaud, ASME will be attending. The theme of CSD-17 is "Sustainability in Agriculture: Words into Action." The WFEO delegation is hosting a 2-hour side event on Capacity Building – Words Into Actions (what it means, opportunities, barriers, solutions). We will also be developing a strategy for active participation at CSD-18 May 2010, the theme is: **Chemicals, Mining, the Ten Year Framework of Programs on Sustainable Consumption and Production Patterns, Transport and Waste Management.**

The Capacity Building Committee has agreed to support a new Task Group "Capacity Building – Younger Engineers" under the leadership of Annette Joseph, Eng. Zainab S. Lari Computer Kuwait Society Of Engineers; Engineers Australia; Tim Monkedeick, Association of German Engineers (VDI); and Jennifer DeBoer, Student Platform for Engineering Education Development (SPEED). At the Kuwait General Assembly in November 2009, they will be formalizing the organization, and developing their goals and strategies for future programs.



# Standing Committee Report

## Energy

Chairman :  
Jorge Spitalnik



### 1. INTRODUCTION

This Report states the activities performed at the Energy Committee for the two-year period since the WFEO General Assembly held in New Delhi in Nov. 2007.

### 2. STRUCTURE

The Committee consists of a Chairman and six regional Vice-Chairmen representing: North America, Asia/Pacific, Latin America, Europe/Russia, Mid-East/S. Central Asia, and Africa. Currently, Committee Officers appointed by their respective National Member organizations are:

#### a) Chairman

- Jorge Spitalnik (Brazil)

#### b) Vice-Chairs

- Africa – Prof. Abubakar S Sambo, Nigeria
- Asia/Pacific – Dr. Peter Greenwood, Australia
- Europe/Russia – Dr. Daniel Favrat, Switzerland
- Latin America – Mr. Mario Wiegers, Argentina
- MidEast/S. Central Asia – Mr. Pradeep Chaturvedi, India
- North America – Mr. Kenneth Kok, USA.

#### c) Advisory Council

Energy experts from different countries acting as an advisory body on reports issued by Task Groups constitute the Advisory Council. The Advisory Council members provide consultancy on priority activities in their respective areas of interest, for inclusion in the Committee working programs. Currently, the composition of this Council is made up by Konstantinos Alexopoulos, Greece; Remy Carle, France; Jose Gasca Neri, Mexico; Yogi Goswami, USA; Ivan Nicolau, Puerto Rico; H. Holger Rogner, Germany; Michael Sanio, USA; Reginald Vachon, USA, and Altino Ventura Filho, Brazil.

#### d) Members

The following individuals were appointed by their National Organizations to be Committee Members: Salah M. F. Almudh'hi, Kuwait; Yuzuru Ashida, Japan; Olu Awoyinka, Nigeria; Gerard Baron, France; Michael Green, Australia; Essel Ben Hagan, Ghana; Oum Keltoum Bouhelal, Morocco; Samir Doumit, Lebanon; Antoine Favaz, Lebanon; Carlos E. Giacomani Mercado, Bolivia; David Hirst, UK; Ibrahim K. Inuwa, Nigeria; Emad Fahmi Khader, Palestine; Saifullah Khan Parach, Pakistan; Ruomei Li, China; Martin Manuhwa, Zimbabwe; Mihai Mihaita, Romania; Zhichun Mu, China; F.C. Ogolo, Nigeria; Donald F. Schutz, USA; Mario Telichevsky, Argentina, and Hüseyin Yeşil, Turkey.

Including Task Groups and the International Advisory Panel, the total number of members involved in the Energy Committee activities is now 65 from 29 different countries.



### 3. ENERGY COMMITTEE MISSION AND VISION

The following Mission and Vision statements represent the Energy Committee purpose and objectives:

**Mission:** To provide the engineer with updated, unbiased and reliable information on the feasibility of the different energy technologies based on scientific principles, engineering criteria and demonstrated technological development.

**Vision:** To become the engineering reference for assessing the feasibility of current and cutting edge energy technologies for sustainable development.

### 4. MEETINGS

The Committee has met in conjunction with WFEO annual meetings. During this period, the Committee held its fifth and sixth meetings in New Delhi India, and Brasilia, Brazil, respectively on 12th November 2007 and 1st December 2008.

### 5. ACTIVITIES

In this period, the following activities were performed by the Committee.

#### a) Feasibility Reports

Several Task Groups were engaged in the preparation of Reports on the feasibility conditions of different energy technologies currently being considered for implementation around the world. A summary of their activities follows.

- **Nuclear Power:** Mr. Bertrand Barré from France was the chair this Task Group. Prof. Jose Maria Aragonés (Spain), Mr. Barrie F. Hill (Australia), Dr. Andrew Kadak (USA) Dr. Donald Schutz (USA), and Jorge Spitalnik (Brazil) were the Task Group members. At end of 2007, the Group produced its Report on Nuclear Power Feasibility that was published in April 2008 as the second report of the Series on Feasibility of Energy Sources. The Report was selected by the Latin American Section of the American Nuclear Society to receive the 2008 Award for "Publication of the Year". It has been translated into Arabic and Chinese languages.
- **Solar Energy:** Stephen Kaneff, Australia, is the Chair of the Group. Carsten Ahrens (Germany), AbuBakr S. Bahaj (UK), Alberto Calafiore

(Argentina), Yogi Goswami (USA), Emad Fahmi Khader (Palestine), Kosuke Kurokawa (Japan), Martin Manuhwa (Zimbabwe), H.R.P. Yadav (India) and Zhao Zhengming (China) are members of this Group. A first draft of the Report is expected to be ready in the year 2009.

- **Bio-energy:** The current composition of the Group has Prof. Dermot Roddy, UK, as Chair. Group members are: Essel Ben Hagan (Ghana), Vicente Correa Neto (Brazil), Prof. Luiz Augusto Horta Nogueira (Brazil), Li Zifu (China) and Yibin Zhang, (China). This Group is now starting its activities.

#### b) Review Reports

- **Sustainable Energy Engineering :** Pradeep Chaturvedi, India, is the Group Chair. Members are: Michael Green (Australia), David Hirst (UK), Kenneth Kok (USA), Ruomei Li (China) and Mario A. Wieggers (Argentina). A first draft has already been produced and the Report is expected to be issued during 2009.

#### c) Reproduction of Committee Reports

The Kuwait Society of Engineers asked for authorization to reproduce the reports of the Series on Feasibility of Energy Sources being done by the Energy Committee, by translating them into Arabic and to distribute the translations to libraries and schools in their region. This process started with the Report on Wind-Power Feasibility. Based on this request, a proposal on "Rules for Reproduction of WFEO Technical Documents" was approved by the WFEO Executive Board.

#### d) United Nations Commission on Sustainable Development (UNCSD)

The Committee represented WFEO at the 16th and 17th Sessions of the UNCSD (CSD-16 & 17) that were held in New York respectively from 5 to 16 May 2008 and from 4 to 15 May 2009.

These meetings focused on issues related to Agriculture, Rural development, Land, Drought, Desertification, and Africa. The Energy Committee interfaced with the UN Division for Sustainable Development



(UNSD) to coordinate the WFEO participation. Regarding CSD-16, the Energy Committee arranged the participation of WFEO local members at two preparatory meetings: the Asia and Pacific Regional Implementation Meeting (ESCAP RIM), Jakarta, 26-27 Nov. 2007, and the Europe Regional Implementation Meeting (ECE RIM), Geneva, 28-29 Jan. 2008. The Committee also facilitated WFEO participation at the UNDS Workshop on Major Groups Organizing Partners Coordination Meeting, Geneva, Jan. 30th 2008. The Energy Committee contributed to the preparation of the Discussion Paper on the different thematic issues discussed at CSD-16. This paper stated the positions of the Scientific and Technological Community, made up by WFEO and ICSU.

Additionally, the Committee was active in assuring the participation of the WFEO delegation to the IPM (Intergovernmental Preparatory Meeting), New York, February 2009, and the CSD-17 Meeting, New York, May 2009. As in the past, the core of the delegation was made up of the WFEO President and the Chairs of the Energy, the Engineering and Environment, and the Capacity Building Committees. Concerning CSD-17, the Committee contributed to the joint WFEO-ICSU document on Priorities for Action submitted by the Scientific and Technological Community. The Committee co-sponsored, together with the Engineering and Environment and the Capacity Building Committees, the side event on "Capacity Building: Words Into Action" to discuss issues on physical, social & economic infrastructure related to Agriculture, Rural development and Land. This event engaged 71 delegates and members of major groups from more than 20 countries who considered perspectives on effective capacity building actions to deal with such issues.

#### **e) WEC 2008 and Panel Meeting on Energy for Sustainable Development**

The Committee was actively engaged in the organization activities of the 3rd World Engineers' Congress that took place in Brasilia in December 2008.

Energy Committee members took part of the International Advisory Board, the Supervisory Board and the Program Committee.

In particular, the WEC Panel Meeting on Energy for Sustainable Development on December 5th was organized by the Energy Committee. Some 150 participants from Argentina, Australia, Brazil, Canada, China, Costa Rica, Cuba, Germany, India, Kuwait, Mexico, Nigeria, Switzerland, USA and Venezuela, and from International Organizations (UNESCO and UPADI) attended this meeting.

Regarding the current world recession and the consequent drop in energy demand around the world, it was acknowledged that some revision of the emphasis on sustainability may occur.

Notwithstanding, energy demand, mainly in the developing world, will continue to expand and the need for clean energies will require adherence to the principles of sustainability. Climate change and energy systems will remain the driving forces towards sustainability. Investments will be focused on a more rational use of energy, particularly in the transportation sector.

#### **f) ECOSOC Events**

The Energy Committee was responsible for organizing the WFEO participation at the Innovation Fair held during the Ministerial ECOSOC Session, from 30 June to 3 July 2008, at United Nations Headquarters in New York. This was done with the collaboration of the Committee on Engineering and Environment. The WFEO Exhibit displayed projects sponsored respectively by Engineers Canada and FEBRAE (Brazil). Also, on July 1st 2008, WFEO, Engineers Canada, FEBRAE and CONFEA, with the support of AIChE, ASCE and ASME, held, as a side event, a Panel on "The Role of Engineers in Advancing Sustainable Development: Working Towards Achieving the Millennium Goals".

The Energy Committee was also engaged in implementing the WFEO participation at the 2009 ECOSOC Innovation Fair to global public health. The Fair was held at the Palais des Nations, Geneva, from 6 to 9 July 2009.



### **g) UNESCO Publication**

In 2008, the Energy Committee contributed to the UNESCO Publication on "Engineering: Issues and Challenges for Development" by covering the chapters related to Engineering for Energy, and Engineering for achieving the Millennium Development Goals.

### **h) Meetings on Engineering for Sustainable Energy**

One of the main activities of the Committee is to implement WFEO programs dealing with the Millennium Development Goals (MDGs), particularly with those linked to the global debate on sustainable energy.

The Committee has set up a series of International Conferences on Engineering for Sustainable Energy. The first of its kind was held in Rio de Janeiro in August 2007. The Committee has been engaged in organizing a 2nd Conference sometime in 2009 or 2010.

To ensure coherence and continuity among WFEO programs and events related to energy issues carried out by member organizations, the Energy Committee has been playing an active role on the planning and management of three major events, by taking part in the:

- Technical Working Group of the Congress on "Alternative Energy Applications: Option or Necessity?" that the Kuwait Society of Engineers has been organizing to take place in Kuwait from 1st to 6th November, 2009;
- International Advisory Committee of WEW – World Engineering Week to be held from 18th to 20th October 2010 in Buenos Aires, Argentine, within which a Congress on "Energy and Climate Change" will take place, and
- International Advisory Committee of WEC 2011, the 4th Engineers' Convention on "Engineers Power the World: Facing the Global Energy Challenge", to be held in Geneva, Switzerland, from 5th to 7th September 2011.



# Standing Committee Report

## Anti-corruption

Chairman :  
Kamel Ayadi

### I: Background

Why A standing Committee to address corruption?

The GA that was held in New Delhi in November 2007 identified the Anti-Corruption as a major issue that needs to be addressed in priority. The following arguments helped persuade members of the federation on the relevance of Corruption to the engineering profession and the necessity to devote further efforts to combat it:

#### First: The scale of the phenomenon:

Construction is one of the most corrupt industries worldwide. A huge amount of money is being lost in bribery, fraud and corruption which is, according to Transparency International , estimated to 10% of the total expenditure on construction. 500 US billion Dollars are diverted annually from projects that are designed to built hospitals, roads, supply safe drinking water, etc.

#### Second: WFEO commitment to the MDGs:

Corruption affects developing and developed countries alike. However it has a major effects in least developed countries where corruption is prevalent and where every financial is very much needed to address the shortage on basic infrastructure. Since Poverty doesn't result only from lack of natural resources, but mainly from Good Governance Our efforts in fighting against corruption globally and in LDC particularly are part of WFEO longstanding commitment to addressing the UN MDGs, in particular:

- \* Goal1: Eradicate extreme poverty and hunger
- \* Goal8: Develop a Global Partnership for Development.

There are significant disparities between developed and developing countries in terms of capabilities and mechanisms to address corruption. In most developed countries civil society is sufficiently empowered to fight against corruption.

This issue is on the agenda of many NGOs. There also exist in these countries legal framework, mechanisms and institutions to track corrupted people and deter corruption practices. However in many developing countries there is no such mechanisms to prevent corruption and even talking about it could be sometimes dangerous. These countries have poor record in terms of rule of law? Impunity is common. Reporting and denunciation of corruption is absent.

Third-WFEO commitment to addressing issues related to the "soft" dimensions of engineering:

WFEO has been working over the past years to increase the commitment of engineers towards the so called "soft" dimensions of engineering, such as its social, ethical and environmental dimensions, social responsibility, global issues, such us poverty mitigation, sustainability, etc.





WFEO encourages Engineers to work proactively as global citizens to increase their influence in the global decision-making process by joining the movement of CS in spreading the values of solidarity, equity and justice.

## II: Vision and Plan of Action for the Future

### II-1 : Objectives of the ACC

The main objectives assigned to the committee are:

- Empower National members of the federation in addressing corruption
- Share best practices by using WFEO as a platform to exchange views and experiences
- Harness the engagement of engineers individuals towards, not only banking corrupt behaviour, but also and essentially combating corruption in their own societies
- Promote individual integrity of engineers and raise awareness about the danger that corruption represents
- Disseminate targeted education on ethics and integrity amongst professional engineers and undergraduates
- Develop partnerships and alliances with international NGOs and institutions active on Anti-Corruption
- Encourage and assist engineering societies in setting up code of ethics with enforcement measures

### II-2 : How and when corruption occurs?

Corruption occurs when two or some individuals decide to use illicit means to make profit or maximise a corporate profit, in a context that doesn't prevent and dissuade the occurrence of such corrupt practices.

Therefore the two major catalysts of corruption are:

- Attitudes and unethical behaviour of individuals
- Absence of circumstances to prevent corruption: legal framework, reporting, denunciation, punishment, project anti-corruption systems, and mechanisms to detect corruption.

-There is a third factor proper to the construction industry. The nature of infrastructure projects facilitates corruption and makes it difficult to detect and prevent corrupt practices:

\* The size of Infrastructure projects is usually large scale and therefore complex.

\* The implementation of infrastructure projects is divided into several components that involves many suppliers, constructors, consulting firms, services providers etc.

- From each component derives contracts with contactors, sub-contractors, sub-sub-contractors, suppliers, sub-suppliers, sub-sub-suppliers, etc

- Infrastructure projects involve a variety of skills, professionals and disciplines: civil engineers, architects, mechanical engineers, electrical engineers, accountant, lawyer etc.

Our vision is to address these two major factors and encourage the adoption of effective mechanisms to make infrastructure projects more transparent and minimise the risk of corruption .Consequently, our strategy is oriented in three directions:

### II-3 : WFEO Strategy orientations

#### First : The individual Engineers

Empower individual engineers and help them better understand how and why corruption occurs and assist them in addressing this issue through:

- Coordination of specific actions with national engineering societies to increase awareness among engineers of corruption and its consequences, through educational programmes, seminars, articles, etc. Help them better understand how and why corruptions occurs and how to prevent it.

Encourage national and international engineering societies to set up an effective code of conduct, with provisions dedicated to anti-corruption .A particular attention should be given to enforcement measures. Codes should provide mechanisms of punishment against proven breaches.

- Assist national engineering societies in addressing anti-corruption and to put this issue on their respective agendas.



- Provide national engineering societies with best practices in Anti-Corruption and help them learn from successful experiences in other countries: Training materials, brochures, articles, etc

**Second : Context Enabling Environment to fight against corruption**

Preventing corruption, by among others creating appropriate circumstances to allow the detection and punishment of corrupt practices is first and foremost the responsibility of governments. Usually prevalence of corruption is due to lack of government leaders willingness to prosecute corrupt people .Corruption occurs everywhere, but it is predominant in countries which lack of good governance and transparency. In these countries the most corrupt people are among senior government officials, who are out of prosecution.

Therefore, countries should have an independent Anti-Corruption agency charged with investigating and prosecuting corruption. This agency should have total independency and autonomy to prosecute perpetrators of corruption, even senior officials. No one should have immunity.

**Third : Role of Civil Society NGOs :**

They should create alliances and work together to influence global decision making process to hold governments accountable.

- WFEO as an international NGO, with observatory status within the UN Social and Economic Council seeks to partner with other NGOs to promote a culture of anti-corruption across countries.

- WFEO works towards empowering national engineering societies and individuals engineers to publicly speak out against corruption and to work in conjunction with other NGOs, and business associations to develop local initiatives and engage in on the ground actions to fight against corruption. In many countries this issue is considered as a taboo. Therefore coordinated actions at local level with international support from NGOs are the unique way.

**III : Actions to overcome corruption in Infrastructure**

Addressing corruption in Infrastructure Industry requires a multidimensional strategy that involves various actions to the different stakeholders associated with infrastructure development:

-Governments, Business sector, construction firms, Banks and funders, consulting firms, individuals etc  
 \*Governments remain the main players in the fight against corruption, particularly since major large scale infrastructure projects are owned by governments .Projects owned by private sectors are subject to approval by governments.

**III -1 : Achieved Activities**

As part of its mission to combat corruption, the Committee has conducted a number of activities over the past two years:

**A- Train-The-Trainer workshop**

The committee hosted a four-day train-the-trainers workshop in Tunis in April 2009, entitled Ethics and Business Integrity Management in Infrastructure and Procurement.

The workshop was sponsored by the World Justice Project/The American Association Bar and supported by the following organisations.

- Global ACET (Anti-Corruption Education & Training) Project
- Global Infrastructure Anti-corruption Centre (GIACC)
- The Fédération Internationale des Ingénieurs Conseil (FIDIC)

The purpose of the workshop is to provide detailed training in how to identify and prevent corruption on construction projects, and promote individual integrity with a view to the person trained being able to provide equivalent training to others in the future in his/her home country. Materials was provided to the participants to assist them in providing the training. Other materials will be provided for later distribution. Engineering societies which have appointed participants committed themselves to organize in their own countries a number



of workshops moderated by the trained trainers to support the distribution of these materials and disseminate the training content.

The number of trainees who participated in the training was 27 representing 9 countries. The training workshop was a real success, particularly since most of the trained trainers hold leading positions in their engineering societies.

The following countries were represented in the training by the president of the engineering society: Nigeria, Zimbabwe, Zambia, Mauritius and Pakistan. South Africa was represented by two participants one of them is the vice president. Kuwait was represented by three members of the Board of the Kuwait Society of Engineers. This is a very important factor for the continuity of the project, since participants are the decision makers in their own countries. The participants were very carefully selected according to their capability to become trainers and their commitment to pursue the training in their respective countries. They represent engineering societies, business entities, government, academia etc. The training was provided by three outstanding trainers, namely: Jimmy Smith, Director of the ACET Project, Neill Stansbury Co-founder and Director of the Global Infrastructure Anti- Corruption Centre (GIACC) and John Boyd President of FIDIC.



Train-the-trainers work shop  
Tunis, April 2009

### **B: WEB Plat form**

The committee is in process of creating a web resource Platform to facilitate communication, sharing of best practices, and training materials among engineers. The platform will provide links to other sites and allow engineers to access to online training and report their activities. This activity is being sponsored by the World Justice Project/The American Association Bar.

### **C: Annual International Workshops**

The ACC holds every year a workshop in conjunction with WFEO regular meetings. The first one was organised in New Delhi in November 2007 and a second one was hosted by Brasilia on the occasion of the WEC 2008. The committee plans to organise a workshop in Kuwait, November 2009 as well as in Buenos Aires: 2010 and Geneva 2011.

### **D: Endorsement of the Plan of Action**

The members of the committee discussed an action plan in New Delhi presented by Neill Stansbury, a committee member. The plan was developed by the UK AF. It will be endorsed by the next GA of the WFEO which is the highest authority.

The Plan focuses on preventive actions and requires a collaborative approach that involves actions by

- Governments
- Project owners
- Companies
- Business associations and professional institutions

The Plan suggests some specific anti-corruption actions such as:

- Project anti-corruption systems
- Corporate anti-corruption systems
- Debarment



## E: Partnerships and alliances with International Organizations

The committee was able to develop relationships with partners, such as the World Justice Project, the Global ACET Project, the ASCE etc.

- The committee chair, Kamel Ayadi is involved in the World Justice Project .

He attended the WJP forum that was held in Vienna in July 2008 and gave a presentation at the forum. After the forum the chair of the committee engaged discussion with the WJP leading to the conclusion of a joint agreement according to which the WJP/ABA agreed to provide a grant to the committee to fund the above mentioned Train-The-Trained workshop and the creation of a web platform.

- The Chairman of the committee has also been invited to serve as a permanent member of the ASCE Global Principles for Professional Conducts meetings. As such he attended the GPPC regular meetings in Austin, Pittsburgh, Washington and San Francisco.

- The chairman of the committee has also been involved in the Global ACET Project

- The Committee has also established a strategic alliance with the GIACC. WFEO Executive meeting held in Brasilia endorsed the initiative to develop alliance with the Global Infrastructure Anti-Corruption Centre. The chair of the committee has been invited to serve as a member of the GIACC ADVISORY COUNCIL.

- A number of discussions were conducted with the African Development Bank, head quarter in Tunis and the world Bank in order to seek partnership with both banks.



# National and Affiliated Members / Membres Nationaux et Affiliés

## WFEO Members

<b>Algeria</b>	Union Nationale des Agronomes
<b>Argentina</b>	Union Argentina de Asociaciones de Ingenieros (U.A.D.I.)
<b>Australia</b>	Engineers Australia (Australia)
<b>Azerbaijan</b>	Azerbaijan Union of Scientific and Engineering Associations
<b>Bahrain</b>	The Bahrain Society of Engineers
<b>Bangladesh</b>	The Institution of Engineers, Bangladesh
<b>Bolivia</b>	Sociedad de Ingenieros de Bolivia
<b>Brazil</b>	Federacao Brasileira de Associacoes de Engenheiros (FEBRAE)
<b>Bulgaria</b>	Fédération des Unions Scientifiques et Techniques de Bulgarie (FNTS)
<b>Cameroon</b>	Association des Ingénieurs Diplômés de l'Ecole Polytechnique de Yaoundé (AIDEPY)
<b>Canada</b>	Engineers Canada
<b>Chile</b>	Instituto de Ingenieros de Chile
<b>China</b>	China Association for Science and Technology (CAST)
<b>Colombia</b>	Sociedad Colombiana de Ingenieros
<b>Costa Rica</b>	Colegio Federado de Ingenieros y de Arquitectos de Costa Rica
<b>Côte d'Ivoire</b>	Fédération Nationale des Organisations d'Ingénieurs, Architectes Géomètres et Urbanistes de Côte d'Ivoire (FIACI)
<b>Cuba</b>	Union Nacional de Arquitectos y Ingenieros de la Construccion de Cuba (UNAICC)
<b>Cyprus</b>	Cyprus Professional Engineers' Association
<b>Czechia</b>	Cesky Svaz Vedeckototechnických Spolecnosti (CSVTS)
<b>Dominican Republic</b>	Colegio Dominicano de Ingenieros, arquitectos y agrimensores (CODIA)
<b>Ecuador</b>	Sociedad de Ingenieros del Ecuador
<b>Egypt</b>	Egyptian Engineering Association
<b>El Salvador</b>	Asociacion Salvadorena de Ingenieros y Arquitectos
<b>France</b>	Conseil National des Ingénieurs et Scientifiques de France (CNISF)





<b>Georgia</b>	Association of Engineers in Georgia	<b>Puerto Rico</b>	Colegio de Ingenieros y Agrimensores de Puerto Rico
<b>Germany</b>	The DVT German Federation of Technical and Scientific Associations	<b>Romania</b>	The General Association of Engineers in Romania (AGIR)
<b>Ghana</b>	Ghana Institution of Engineers	<b>Russia</b>	Union of Scientific and Engineering Associations, Russia (USEA)
<b>Greece</b>	Chambre Technique de Grèce	<b>Saudi Arabia</b>	Saudi Council of Engineers
<b>Hong Kong (China)</b>	The Hong Kong Institution of Engineers	<b>Senegal</b>	Union Nationale des Ingénieurs du Sénégal (UNISEN)
<b>Hungary</b>	Fédération des Sociétés Scientifiques et Techniques (MTESZ)	<b>Serbia</b>	Union of Engineers and Technicians of Yugoslavia
<b>India</b>	The Institution of Engineers, India	<b>Singapore</b>	The Institution of Engineers, Singapore
<b>Iraq</b>	The Iraqi Engineers' Union	<b>Slovakia</b>	Association of Slovak Scientific & Technological Societies (ZSVTS)
<b>Italy</b>	Consiglio Nazionale degli Ingegneri	<b>Slovenia</b>	Slovenian Chamber of Engineers
<b>Japan</b>	Science Council of Japan	<b>South Africa</b>	Engineering Council of South Africa
<b>Jordan</b>	Jordan Engineers' Association	<b>Spain</b>	Instituto de la Ingenieria de Espana
<b>Kenya</b>	Institution of Engineers	<b>Sri Lanka</b>	The Institution of Engineers, Sri Lanka
<b>Korea</b>	The Korean Federation of Science and Technology Societies (KOFST)	<b>Sudan</b>	Federation of Sudanese Engineers
<b>Kuwait</b>	Society of Engineers	<b>Switzerland</b>	Comité National Suisse de la FMOI
<b>Lebanon</b>	Ordre des Ingénieurs et Architectes du Liban	<b>Syria</b>	Order of Syrian Engineers and Architects
<b>Libya</b>	Libyan Syndicate of Engineers	<b>Taiwan, China</b>	The Chinese Institute of Engineers
<b>Malaysia</b>	The Institution of Engineers, Malaysia	<b>Tanzania</b>	The Institution of Engineers, Tanzania
<b>Mauritius</b>	The Institution of Engineers, Mauritius	<b>Tunisia</b>	Ordre des Ingénieurs Tunisiens
<b>Mexico</b>	Union Mexicana de Asociaciones de Ingenieros A.G.(UMAI)	<b>Turkey</b>	Union of Chambers of Turkish Engineers and Architects (UCTEA)
<b>Moldavia</b>	Engineering Association of Moldavia	<b>Uganda</b>	Uganda Institution of Professional Engineers
<b>Morocco</b>	Union Nationale des Ingénieurs Marocains	<b>Ukraine</b>	Union of Scientific and Engineering Associations of Ukraine
<b>Nepal</b>	Nepal Engineers' Association	<b>UAE</b>	Society of Engineers
<b>New Zealand</b>	The Institution of Professional Engineers	<b>UK</b>	The Institution of Civil Engineers
<b>Nigeria</b>	The Nigerian Society of Engineers	<b>USA</b>	American Association of Engineering Societies (AAES)
<b>Pakistan</b>	Institution of Engineers, Pakistan	<b>Uruguay</b>	Asociacion de Ingenieros del Uruguay
<b>Palestine</b>	General Union of Palestinian Engineers (GUPE)	<b>Venezuela</b>	Colegio de Ingenieros
<b>Peru</b>	Sociedad de Ingenieros del Peru	<b>Yemen</b>	Syndicate of Yemeni Engineers
<b>Philippines</b>	Philippine Technological Council	<b>Zambia</b>	The Engineering Institution of Zambia
<b>Poland</b>	Naczelna Organizacja Techniczna	<b>Zimbabwe</b>	The Zimbabwe Institution of Engineers



## **International Members / Membres Internationaux**

ASEAN Federation of Engineering Organisations (AFEO)  
Commonwealth Engineers' Council (CEC)  
European Federation of National Engineering Associations (FEANI)  
Federation of African Organizations of Engineers (FAOE)  
Federation of Arab Engineers (FAE)  
Federation of Engineering Institutions in the Asia Pacific (FEIAP)  
Federation of Engineering Institutions of South and Central Asia (FEISCA)  
Pan American Federation of Engineers Societies (UPADI)  
Union of Scientific and Engineering Associations (USEA)  
World Council of Civil Engineers (WCCE)

## **Associates / Associés**

### **Distinguished Associate / Associé d'honneur :**

Consolidated Contractors Group (CCC)  
Fondation Osmane Mounif Aïdi (FOMA)

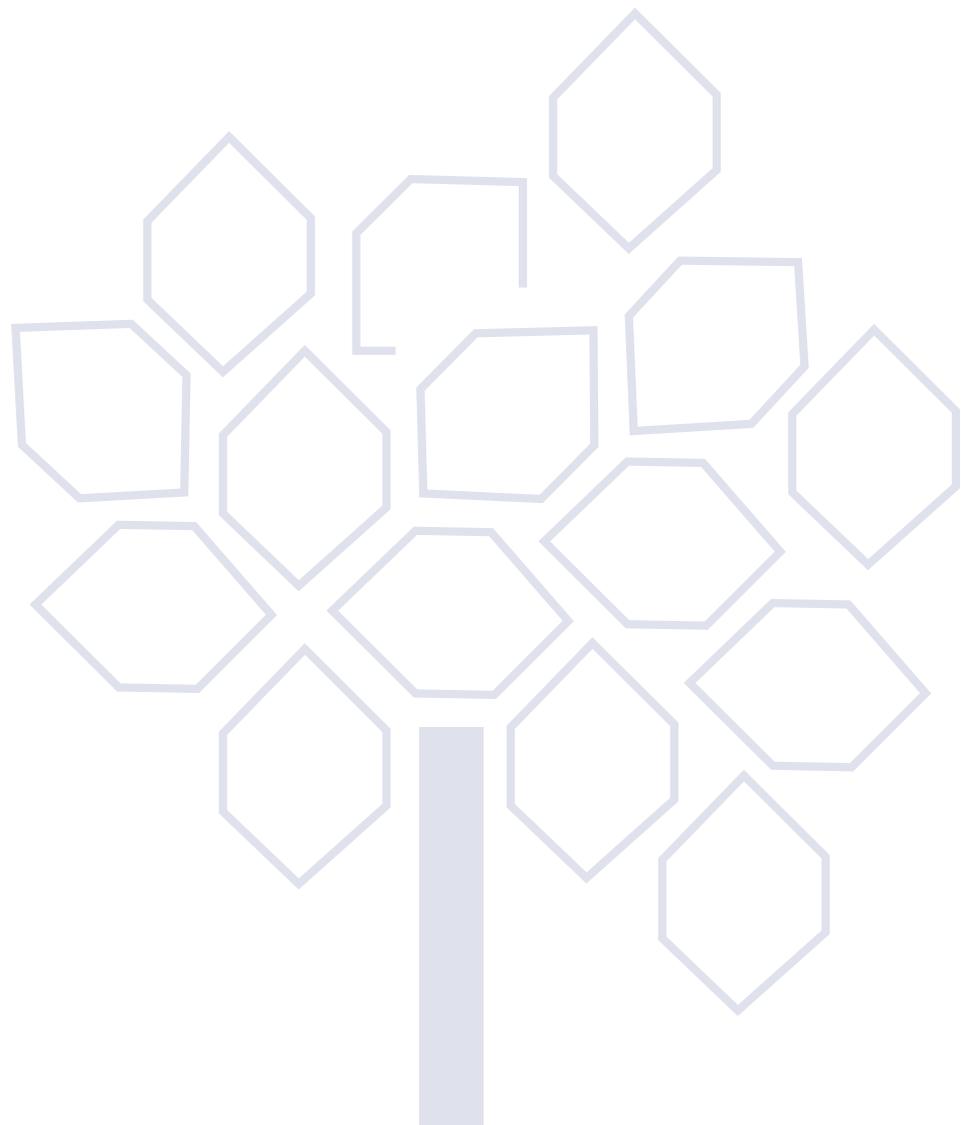
## **Associates / Associés :**

### **Non-profit Making Associates / Associés à but non lucratif :**

European Council of Civil Engineers (ECCE)  
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Vlaamse Ingenieurkamer (VIK)  
Africa Engineers Forum (AEF)

## **Individual Associates / Associé individuel :**

Dipl. Eng. Hermann Sturm (Germany)  
Prof. B.SH. Chowdhry (India)





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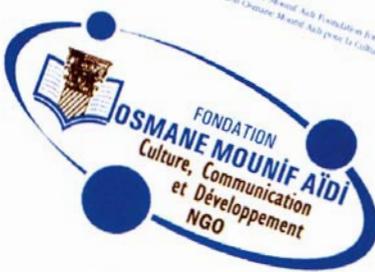
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**WFEO/FMOI**  
Maison de l'UNESCO - 1 rue Mollat  
75015 Paris (France)  
Tel : +33(0)1 45 68 48 46  
Fax : +33(0)1 45 68 48 65  
E-mail : [wfmo@unesco.org](mailto:wfmo@unesco.org)  
Web : [www.wfeo.org](http://www.wfeo.org)

**CONSOLIDATED CO**  
P.O. BOX 61092  
Amanoussian 15510  
Tel : +30 2 61 99  
Fax : +30 2 61 99  
Email : [arichards@cc](mailto:arichards@cc)  
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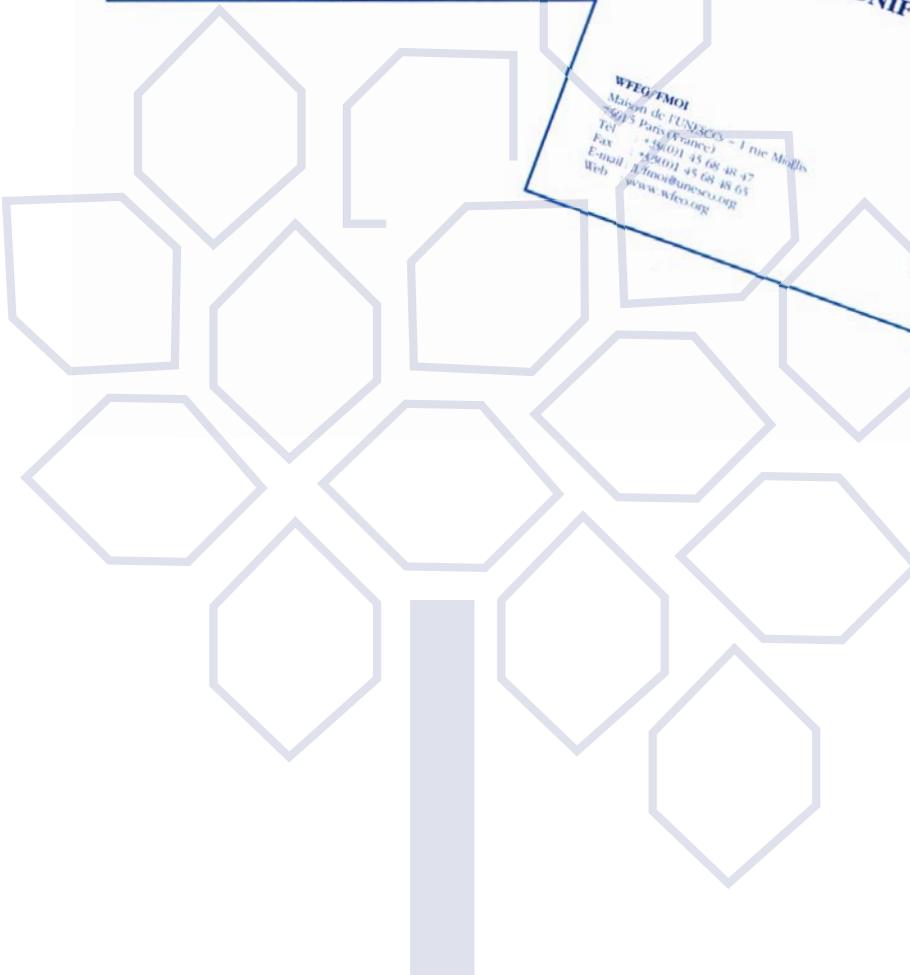
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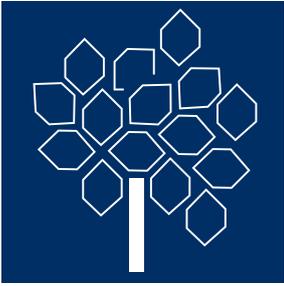
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**WFEO/FMOI**  
Maison de l'UNESCO - 1 rue Mollat  
75015 Paris (France)  
Tel : +33(0)1 45 68 48 47  
Fax : +33(0)1 45 68 48 65  
E-mail : [wfmo@unesco.org](mailto:wfmo@unesco.org)  
Web : [www.wfeo.org](http://www.wfeo.org)

**FONDATION OSMANE MOUNIF AÏDI**  
24, avenue Hoche  
75008 Paris  
Tel : +33(0)1 42 99 98 00  
Fax : +33(0)1 40 74 05 04  
Email : [osmane.aidi@wanadoo.fr](mailto:osmane.aidi@wanadoo.fr)





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**WORLD  
FEDERATION  
OF ENGINEERING  
ORGANIZATIONS**



**Secreteriat WFEO/FMOI : Maison de l'UNESCO**

1, Rue Miollis 75015 Paris

Tél.: +33 (0) 1 45 68 48 46 - Fax : +33 (0) 1 45 68 48 65

Web Site : [www.wfeo.org](http://www.wfeo.org) - E-mail : [executivedirector@wfeo.org](mailto:executivedirector@wfeo.org)

**WFEO Communication Office in Tunis**

BP,88 Monplaisir 1073 Tunis/Tunisia - Tel/Fax +216 71 849890

Email : [wfeo@planet.tn](mailto:wfeo@planet.tn)