PROGREEN

Tempus

Minutes of PRO-GREEN Advisory Board Meeting

DATE	Tuesday August 20, 2013
TIME AND PLACE	6:00-8:00 pm, College Hall, B1
NOTE TAKER	Ms. Amy Walburn, Ms. Lara Al Sous
ATTENDEES	Dr. Bilal Hamad, Dr. Amr El Badawy (via Skype), Ms. Rima Karam, Mr. Pierre Khoury, Mr. Ziad Shammas, Dr. Samir Traboulsi, Mr. Wissam Tawil, Mr. Paul Hage, Mr. Said Hamadeh, Dr. Abbas Safieddine, Mr. Maher Saccal, Ms. Jihan Seoud, Dr. Makram Suidan, Dr. Nesreen Ghaddar, Dr. Fadl Moukalled, Dr. Kamel Ghali, Dr. Sami Karaki, Dr. Darine Salam, Dr. Issam Srour, Dr. Ghassan Chehab, Dr. Jean Chatila, Dr. Michel Khoury, Dr. Wassim Habchi, Dr. Ihab Ali, Dr. Charbel Mansour, Dr. Mahmoud Wazni Not in Attendance: Dr. Abdul Menhem Alameddine, Mr. Mohammad Tassi, Mr. George Berbari, Mr. Bahzad Choubassi, Dr. Nader Ghazal, Mr. Michel Sayyah, Mr. Nabil Gemayel, Mr. Jad Laham. Ahmad El-hajj (EMTECH Electro Mechanical Technology), Khatib and Alami, and Holcim.

Agenda Topics and Discussion Points

1. ***Welcome and Introduction***
   Dean Makram Suidan welcomed the audience and all advisory board members introduced themselves.

2. ***Power Point Presentation – Pro-Green Project Overview***
   Dr. Nesreen Ghaddar inaugurated the advisory board meeting by welcoming the members and thanking them for joining. She commenced the presentation by stating the project has been funded with support from the European Commission and that the EU Tempus program supports mainly through university cooperation projects. The management of the project is composed of the ***American University of Beirut*** (AUB) (grant holders of the project) in addition to the ***Faculty of Engineering and Architecture*** (FEA) and the ***Munib and Angela Masri Institute of Energy and Natural Resources.*** Dr. Ghaddar moved on to introduce the local and international partners of this project: ***Lebanese American University, Helwan University, American University of Cairo, Suez Canal University, Lund University, Mediterranean Universities Union, Politecnico Di Torino, University College Dublin, and University of Alicante.*** Dr. Ghaddar presented the need for such a project. Dr. Ghaddar elaborated on the objectives of the project, its target beneficiaries and the admission criteria for engineers to commence. The diploma structure was explained and Dr. Ghaddar carried out explanation on Joint/Dual Degrees and the possibility of offering with University College of Dublin online courses and award a joint diploma. Dr. Ghaddar also explained the flexibility of the schedule in addition to the pricing and the timeline of the project. Finally Dr. Ghaddar opened the floor for discussion and asked the advisory members to share their insight and give their feedback on the areas that need to be tailored.

3. ***Advisory Board – Floor Discussion***

- ***Mr. Maher Saccal from (Saccal Group)*** initiated the advisory board discussion that it is very interesting to have engineers attain such a diploma and laws that govern it. Mr. Saccal proceeded to *ask the kind of courses that'll be delivered*. In order to for him to send an engineer from his company to attain this diploma, he asked about *the added value* and in what terms it'll benefit Saccal Group and industry in general.
  Mayor Dr. Bilal Hamad (Beirut Municipality) replied that if engineers are trained to sell the product then these engineers will be able to sell to the client. He added that the Gulf is asking for Green Technology and the MEP area is in high demand due to creating sustainability. Hence training engineers will provide companies a competitive advantage can be used as a differentiation marketing tactic. While it is not yet required in Lebanon, it soon will be. He added that the future belongs to sustainability.
- ***Dean Makram Suidan*** asked from the board members to look at the current buildings built today and how they are constructed with zero sustainability. He added that the new engineering building at AUB is the first goal certified green building
- ***Mr. Saccal*** proceeded to add these technologies are very expensive
  Dr. Issam Srour replied that the program contains courses that teach low tech in energy saving. An engineer can develop a simple properly structured model that can also reduce costs.
  Dr. Ghaddar told that this diploma will provide up to date methods to reduce cost and for it to be affordable (example from civil engineering like smart grids)
  Dr. Suidan declared that they cannot judge everything by today's dollars. Training engineers will be a plus
  Dr. Amr El Badawy via skype (US Environmental Protection Agency) said that clean, lean, and green is a must right now and that they shouldn't wait for the future.
  Dr. Ihab Ali explained the importance of the added value. There is lack of green education in Lebanon. If green technology is not cost effective and it it doesn't add value then they'll teach their students how to add value. He added that they teach engineers how to build a house; however, a graduate with the Pro-Green diploma will be taught how to take that house and tailor it in very efficient and economic effective courses. Hence the purpose is to have engineers include green sustainable component in a cost effective manner. For example China is now producing photovoltaic panels at 20% efficiency and production of power has come down to less than $4/kWh and very shortly it will reach less that $1/kWh.
  Mr. Pierre Khoury from the (Lebanese Energy Conservation Center) talked about the various green projects are financially supported by Central Bank. The support to investors at zero interest reached 87 Million USD for 75 green projects last year and will be up $150 Million USD for next year. The maximum per project is $22 Million. There is huge demand from investors for residential, commercial, schools, hotels, and hospitals to introduce renewables in their enterprises to save energy. The limitation has been finding qualified engineers to perform these tasks.
- ***Dean Suidan*** dwelled on the importance of educating people how to do the assessment, and that the misuse of technology and sustainability is causing harmful health effects including hospital radioactive material disposal in water streams in Bekaa and in Litani river.
- ***Dr. Samir Traboulsi from the (Lebanese Green Building Council)*** wanted to look for the competitors who may want to adopt such a program. He gave an example about the ***Order of Engineers*** and how they have conducted courses in which some are listed in the Pro-Green program. *He questioned whether these courses are going to be kept within*

this program and if they're ready to offer courses not initiated.
Dr. Ghaddar answered that the certificate per course can be given. The consortium has not yet checked what other organizations are offering, hence the advisory board meeting is a starting point of knowing about parallel activities in other organizations in Lebanon. She also brought into attention the added value the project component and the adaptation to the Lebanese market (when dealing with competition from other online models). The course delivery modes have not been decided on as to which will be online, blended, and in class but mainly management courses will be provided online. She assured that they are in no way competing with other organizations in Lebanon.
Dr. Chehab also informed the members that lab courses will be provided as well and such resources are only available at universities.

- ***Dr. Suidan*** pointed out that forthcoming renewable and environmentally sustainable projects will be installed at AUB farm AREC in Bekaa to demonstrate green application in Agriculture. The unit will be used in training.
- ***Dr. Hamad*** insisted that this is an important program. Students must learn proper construction techniques that are sustainable and durable. He illustrated, durability equals sustainability and both are green. He emphasized the need to teach students how to restore old buildings and make them sustainable because such expertise is not currently available in Lebanon.
- ***Dr. Ghaddar*** mentioned that the 2-credit project requirement is designed to have projects initiated by the engineers taking the diploma or projects related to the industry from which the engineer is enrolled. The project maybe suggested by the industry where the engineer will collaborate with a professor to work on it and this would present a win-win situation.
  Dr. Hamad suggested having a 0-credit seminar courses offered by international experts and this could be provided as a webinar, online and interactive similar to our current programs. This would give added value to the program and could be used a marketing for the diploma.
- ***Mr. Wissam Tawil*** was not certain whether engineers should do Masters or attain the diploma and are the courses taken for the diploma transferrable towards a Master's degree.
  Dr. Suidan replied that the Master is concerned more with fundamental material while the diploma is concerned with applied technologies and technology transfer.
  Ms. Amy Walburn (Project Manager) added that they are looking at Master students who want to get this diploma as a specialization and after years of graduation from university. We are not looking for fresh graduate, but rather practitioners.
  Dr. Srour also added that students want to be more practical than theoretical, and there's a great deal of learning done just by students coming from different backgrounds.
  Dr. Chehab mentioned that courses are of one credit hour or two credit hours and they're targeting a different population. They offer flexibility to accommodate working professionals.
- ***Mr. Tawil*** pointed the importance of co-generation being an important topic and hopes students to be able to understand how a co-generation plant operates or can be designed, built, and operated. Tri-generation is concerned with production of power, water, and cooling at the same time in the most efficient way possible. He also pointed out the importance of integration of solar energy into boilers and condensing units, the introduction of optimized control strategies.
- ***Mr. Shammas*** mentioned that some offering should address lighting and electrical installation issues and how to address voltage drop in cable sizing. Another issue he

brought was the rain water harvesting.
Dr. Fadl Moukalled insisted that Pro-Green will be targeting professional engineers, not fresh graduates. It will train local engineers and architects to energy efficient measures. He provided examples about wasted A/C condensation and use of soil temperature to reduce ventilation air introduced into buildings, (earth tubes).
Dr. Chehab pointed out that presentation materials and syllabi are available> the instructors can be practitioners from the field who would share their expertise in green technologies with the students and teach the course.

- ***Mr. Said Hamadeh from LIRA*** explained that the world's direction forces us to direct ourselves towards Green Technology; he provided an example about the (Carbon foot print restrictions imposed on exported products to other developed countries that may affect cost of production and competitiveness of Lebanese industrial sector). He furthermore added that from the short term, perhaps Lebanon may export product material however it may be unacceptable. Industrialists with their expertise have the ability to adapt. He also provided an example about the (LIRA Program). He urged the members to move forward and emphasized the point to commence.
- ***Dr. Traboulsi*** referred to the Executive Summary, first page, last paragraph and asked for a clarification of why faculty are considered stakeholders in this project.
  Dr. Ghaddar replied that they're talking about the context of the project and not the diploma. She emphasized that interaction of professionals with faculty is a two-way learning path in which faculty will gain insight for solving practical problems faced by industry.
  Dr. Sami Karaki agreed with Dr. Traboulsi to edit the statement and make it clearer
  Dr. Traboulsi also pointed out the missing of the indoor environment quality in addition to not witnessing any reference about International standards such as ASHRAE and ISO
  Dr. Srour replied that the course on Green Building Systems is based on ASHRAE 92.1 and that the program will be tailored to mention it
  Dr. Karaki also indicated that standards are relevant and they should be tackled by instructors and recommendation is made to the fact that all courses should include training on standards to the extent possible.
- ***Dr. Abbas Safieddine from Plastimed sarl*** shared that it's hard to find experts nowadays. Engineers with Green Technology specialization can help in cost saving and containment in plants and such skilled engineers are not available in the Lebanese market. He reflected on his own experience when starting his company and had to bring engineers from the US and Europe to do the implementation of the plant properly. He mentioned that there should be more emphasis on the syllabus regarding cost versus efficiency.
- ***Mr. Ziad Shammas*** pointed out that he missed solid waste, liquid waste, and air pollution and that due to the lack of green education, he would like to see one course in regards to a specialist helping the government apply rules and laws (cooperation with the government)
  Dr. Ghaddar asked from ***Dr. Darine Salam*** to share her insight about Solid Waste
  Dr. Salam replied that they have specified three main sections in regard to Solid Waste
- ***Dr. Suidan*** reminded the members that there will be building on the program for development and stated that it will evolve according to demand
- ***Mr. Tawil*** pointed out that there are no courses on lighting and lighting efficiency and equipment.
- ***There was a proposal on the floor to add courses related to handling of liquid waste.***

- ***Dr. Ghaddar*** took into consideration all the suggested points and actions, and stated that they are in the process of documenting another meeting where the changes will be implemented and tailored. Also she brought it to the attention of the members that the Pro-Green website will be interactive for the future. A tentative date is set for early November where advisory board members will be invited to network with all Pro-Green Consortium members at the annual meeting

4. **Survey Overview**
   - ***Ms. Walburn*** presented a survey designed for potential students. She asked board members to send it to some of their engineers and architects in their database for feedback allocation.
     Mr. Saccal showed his interest in sharing the survey in Saccal Group and will send feedback.
     Mr. Paul Hage suggested having this survey on the Order of Engineers as well
     Dr. Suidan asked ***Mr. Hage*** whether the Order of Engineers is planning on having this diploma as a Continuous Education
     Mr. Hage was highly supportive of the above suggestion
     Dr. Ali suggested for promotion purposes to conduct two or three seminars all over the nation and try and lure the industries and show the like example and the how
     Dr. Srour added that with the help from the Order of Engineers, the program will develop a solid base
     Dr. El Badawy emphasized filling the survey and add nano-materials
   - ***Dr. Ghaddar*** expressed how this has been an intellectual stimulating discussion and it revealed how the members are convinced and value the program. Dr. Ghaddar adjourned the meeting by thanking the members for attending and that she will be getting back to the members with tailored changes.

Meeting Adjourned at 8:00 pm

Comments

Comments below received via email by Ms. Jihan Seoud:

- The option of taking single courses over short periods of time within the Pro-Green programme is very attractive for working professionals, particularly for donor-funded and government run programmes. I would highly recommend to market this programme to UN agencies (such as UNDP which has a large environment and energy programme), the EU and international NGOs working in the field. I believe it would also be interesting at the regional level given that few universities or institutions in the Arab World offer such options. Again, marketing it to regional development initiatives would be very useful given that to date, government representatives and project staff are usually sent to Europe for trainings and workshops on these specific topics (which is definitely more costly and not as convenient). UNDP in Lebanon would definitely be interested in sending its staff to attend individual courses (although full diplomas would be less attractive given donor funding is usually very limited).

- Although I'm not sure of the exact content of all the courses, I would just like to flag that within for example the Core Courses, it would be useful to pay special attention to issues related to national legislation. This may include laws that are currently being discussed (not necessarily issued yet) because it would assist industries and entrepreneurs to make use of upcoming laws or requirements. For example, the Ministry of Environment is currently working on a new solid waste management law that would include waste-to-energy and mandatory recycling in rural areas. This may for example encourage certain individuals to explore new work opportunities in the field. An energy efficiency law is currently under discussion for example which would make energy audits mandatory for certain industries. This would provide your students with an edge in the field of energy audits for example. There has also been many studies funded by international agencies on the status of renewable energy, climate change and environmental reports issued by different Ministries which could provide practical examples and case studies for students.

- I would also recommend to include topics such as international climate mechanisms (National Appropriate Mitigation Actions – NAMAs and others) given that these require special expertise to develop and persons with that knowledge are not found in Lebanon. Furthermore, international financing schemes can be developed and used by the private sector themselves so it would be useful for engineers within industries for example to be aware of them. This could then also link up to national financing mechanisms that are locally available such as the NEEREA programme of the Central Bank which Pierre Khoury mentioned in his intervention.

- One area which I feel we still lag behind in here in Lebanon is waste management specifically related to renewable energy technologies. Although the national market has just picked up in terms of using renewable energy systems such as solar water heaters, PV systems and EE lights, there will come a time in the near future when we will start suffering from wastes that are specific to this sector. I would recommend that within the Energy Specialisation Courses, topics such as recycling of CFLs, reuse/recycling of battery systems for PVs, waste management of PV panels for example be covered. This in itself is a new labour market that would also contribute to further promote a Green Economy.

- While working with UNDP in this field, I have come to realise that unfortunately, we do not have many practicing experts in the Sustainable Water Management field such as for the design of water collection reservoirs, rehabilitation of traditional water collection units, modelling of flood events and consequent design of flood management structures, groundwater recharge and low-cost water treatment technologies. I believe practical training in these areas would be very useful and would provide job opportunities for your graduates.