Wednesday, 26 September 2018

15.30 – 17.00
Session 2B: Transition towards a Sustainable Land Transport
Moderated by: Dr. Toni Issa, President, IPT Energy Center, Lebanon

Introduction

The land transport sector in Lebanon is witnessing a fast growth and is evolving considerably, causing a heavy environmental and economic burden on the government and the population. According to a study published by the Ministry of Environment, the UNDP and IPTEC in 2016, the transport sector counted more than 1.58 million privately-owned vehicles registered in 2012, and was responsible for over 4,350 Gg CO2 emissions in 2011, 1.5 million tons of consumed fuel, and a chronic traffic congestion, which remain on the rise due to the increase in population, the inappropriate infrastructure for non-motorized vehicles (i.e. bicycle lanes), the absence of a proper public transportation system, and several gaps in the institutional and legal framework that governs the sector, among many others (old fleet, inadequate driving patterns and habits, etc…).

As a result, the transport sector in Lebanon has serious environmental and health impacts that threaten our future. While some initiatives have tackled this major issue in the country, Lebanon still lack a clear vision to solve the problems of the road transport sector.

Since its inception in 2012, IPT Energy Center (IPTEC) has put so much efforts to raise awareness on sustainable solutions that can reduce energy consumption and fight the detrimental effects of air pollution on our health and environment resulting particularly from the land transport sector in Lebanon. Many initiatives were taken in this regard under the umbrella of the "National Campaign for Air Pollution Reduction in Lebanon through Efficient Energy Use in Land Transportation" supported by the MoE, ESCWA, and UNDP, which resulted in several recommendations that the center is implementing in collaboration with related stakeholders.

In a complementary step to the above and given the need to change the current transportation trend in Lebanon and move towards sustainable transportation solutions, IPTEC is participating for the fourth year in a row in IBEF 2018 and is organizing this session on sustainable transportation solutions ***in the presence of experts in the field from different sectors -private, public, and NGOs on the local and international levels-*** *to discuss ambitious sustainable transportation solutions to balance current and future energy needs through reducing the reliance on non-renewable energy sources,*

contributing therefore to an improved air quality in urban areas, reduced health risks, and reduced traffic congestion.

First address by **Mr. Michel-Ange Medlej**	**Mr. Medlej** is the Advisor to the Minister at the Ministry of Energy and Water in Lebanon since 2010, working on the progression of the Oil & Gas sector and the Energy Sector's transition towards the use of cleaner resources, In 2013 Michel-Ange was selected as Future Energy Leader for Lebanon at the World Energy Council and in 2017 he was appointed Co-Secretary of the Lebanon Committee at the World Energy Council. Michel-Ange Medlej holds a double master's degree in Materials Engineering and Engineering Management from the Ecole Supérieure d'ingénieurs en électrotechnique et électronique Paris and the Politecnico di Milano. In his note, Mr. Medlej will tackle the strategy of the MoEW with regards to sustainable transport, what has been done so far, what is to be done in the future…
Second address by Mr. **Edgard Chehab**	With a Master Degree in Chemical Engineering and a Master Degree in Environmental Engineering and with over 25 years' experience in environmental engineering and management, **Edgard Chehab** the Assistant Resident Representative of UNDP-Lebanon is considered a key national resource in the field of environment, and will give us an overview on the efforts of the UNDP put forth in the field of sustainable transportation and related areas of interest in Lebanon.
The second part of this session will tackle the results of the reports published recently in 2018 and 2017 respectively by the MoEW and the UNDP on	

<table>
<tr><td colspan="2">(1) Cost Benefit Assessment for the Use of Natural Gas and Electricity in Mass Transit Systems in Lebanon, and
(2) Cost Benefit Analysis for the Use of Natural Gas and Other Low Carbon Fuels in the Transport Sector in Lebanon
presented for the first time to the public.
Hard copies are available at the entrance.</td></tr>
<tr><td>“Innovative Bus Technologies Needed for Sustainable Mobility in Greater Beirut Area”

Presented By Dr. Charbel Mansour</td><td>Dr. Mansour is an automotive powertrain engineer with a PhD in Energy Systems from the Center for Energy and Processes at Mines ParisTech.

He holds a Master’s in Mechanical Engineering from the Lebanese University, and a Master’s in Energy from Université de Technologie Belfort-Montbéliard. Dr. Mansour has 10 years of experience as R&D engineer on powertrain development projects with PSA Peugeot-Citroen and Renault.

He joined the Lebanese American University in 2012, and serves currently as Professor of Powertrain Engineering in the Mechanical Engineering program.
He also manages projects and research with the UNDP and other local governmental and non-governmental entities serving to inform on mitigation and mobility transition strategies and policies for Lebanon.</td></tr>
<tr><td colspan="2">Based on what has been presented, the last part of the session will tackle 2 case studies related to IPT’s actual achievements in the field of sustainability and efficient energy use, with a special focus on (1) the production and use of Biodiesel in diesel engines, and (2) the installation of Electric Vehicle chargers on its gas stations</td></tr>
<tr><td colspan="2">We start this part with a short animation about “IPT Model for a Sustainable and Eco-friendly Gas Station” to provide a comprehensive overview about IPT’s vision towards reducing its environmental footprint through incorporating sustainability into its products and services, as well as its operations.</td></tr>
</table>

First case study about "Biodiesel Production from Waste Cooking Oil: A Renewable Blend for Diesel Engines" Presented By **Dr. Nancy Zgheib**	**Dr. Zgheib** is the head of Chemical and Petroleum Engineering Department at Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon. She received her PhD degree in Polymerization processes from Claude Bernard University Lyon 1, Lyon, France in 2011. She holds M.Sc. degree in Chemical Engineering from ITECH, Lyon, France. In addition, she holds B.Sc. degree in General Chemistry from Lebanese University, Fanar, Lebanon and M.Sc. degree in Innovative Materials from Claude Bernard University Lyon 1, Lyon, France. Her research interests are in the fields of synthesis and characterization of hybrid organic/inorganic colloids using heterophase polymerization techniques (dispersion, emulsion and miniemulsion polymerizations), extraction of natural products from microalgae, recycling of plastic wastes, and **production of biodiesel from waste cooking oil** which will be tackled in her presentation along with the use of biofuel as an alternative fuel source in light of the depletion of petroleum-derived fuel and the related environmental concern, With a special focus on IPTEC and USEK initiative to launch a complete venture to recycle household waste cooking oil (WCO) for sustainable biodiesel production with the support of the UNDP. This project is aligned with the Lebanese strategic vision of increasing the share of the renewable energy sources and reducing pollution.
Second case study about "Battery Electric Vehicles Charging – Case of IPT"	**Eng. Mansour** is the Director of Operations at Power & Automation Control (PAC) - Harb Electric Group- since 2004

Presented By **Eng. Wissam Mansour**	He is also an instructor at the Lebanese University, Faculty of Sciences - Master Degree Program in Electro Mechanical Engineering Mr. Mansour will tackle in his presentation the market development of Battery Electric Vehicles, and forecast, in Lebanon and worldwide. He will elaborate on the most prominent types of EV charging, best locations for installation while listing all technical requirements and specs with a special focus on gas stations taking IPT as a role model.