Constructing an Urban Future: The sustainability and resilience of cities – infrastructures, communities, buildings and housing.

• Paper / Proposal Title:
Adopting PPP Model for Retrofitting Abu Dhabi Road Lighting

• Format(s):
In-person presentation / written paper

• Author(s) Name:
Dr. Jamal EL ZARIF
Engr. Eiman AL AMERI

• University or Company Affiliation:
Municipality of Abu Dhabi City

• Abstract (300 words):
The Abu Dhabi City Municipality (ADM) is about to carry out a breakthrough initiative in UAE and the MENA Region aiming at retrofitting existing conventional power-consuming road lighting in Abu Dhabi city with a new sustainable and smart lighting system through a public-private partnership PPP delivery model. This project is one of the progressive Public Lighting Strategy components, which the Abu Dhabi Emirate adopted and started implementation since 2012 to endorse sustainability principals by stimulating economic efficiency, promoting environmental responsibility, strengthening smart application in operating city infrastructure, enhancing public welfare, and ultimately contributing to Abu Dhabi city image as a World Class City.

Under the PPP model, the private sector will invest in replacing more than 42,000 High Pressure Sodium (HPS) and Metal Halide (MH) luminaires with the latest power-efficient
LED technology. Also a new smart lighting central control system and a city-wide wireless communication network will be introduced towards more intelligent operation practices such as interactive control at light pole level, timely data collection of lighting assets condition and performance, and adaptive lighting control (i.e. dimming) during late night period. The service provider will be in charge of maintaining and operating the systems for 10 years following staged installation. He will be reimbursed by sharing the savings accrued in power consumptions costs. The performance of the services in terms of the new system efficiency and level of responsiveness will be measured through mutually agreed Key Performance Indicators (KPIs), which will be reflected in payments made periodically by the Municipality.

Preparatory works accomplished by ADM included the development of economic and financial models, risk management plan, initial key performance indicators, new contractual and legal documentations as well as the terms of reference, standards and specifications and detailed GIS-based BOQ of lighting assets to be retrofitted.

- **Author(s) Biography (200 words each):**

  - **Dr. Jamal El Zarif** is the Technical Advisor to the Municipal Infrastructure and Assets Sector at Abu Dhabi Municipality. He has more than 30 years of extensive work experience in the Transportation Engineering and Infrastructure field. He worked on various transportation projects located in Middle Eastern countries such as the UAE, Saudi Arabia, Lebanon, Qatar, Oman, Yemen, Syria and Morocco and in the US. He was also a Lecturer for three years at Beirut Arab University, teaching Transportation Planning and Project Management. Dr. El Zarif worked as a consultant and managed large-scale projects funded by international organizations such as the WB, UN, EU, and the Arab Funds. Dr. El Zarif has Bachelor Civil Engineering degree and Higher Studies Diploma in Structural Engineering from Beirut Arab University, MBA from the American University of Beirut, and Ph.D. degree in Transportation Engineering from Virginia Tech. He published in several magazines and conferences such as TRB, ITE Journal, ASCE Transportation Journal, ITS Journal, ERTICO and IRF meetings.

  - **Engr. Eiman Alameri** has been working in Abu Dhabi City Municipality (ADM) since 2013 in the Municipal Infrastructure and Assets Sector. She studied Architectural Engineering in UAE University. She has been involved in the different disciplines of infrastructure projects designs including storm water, road geometry, traffic, road safety, lighting and others. She worked in launching the electronic Infrastructure Designs Approvals System IDAS at the Municipality. Being part of the Standards and Specifications Section in ADM, she worked also on unifying Abu Dhabi Infrastructure manuals with all government stakeholders. Currently; she is working on launching the first Public Private Partnership PPP project in ADM, which is (Noor Project) to retrofit Street Lighting in Abu Dhabi. Also Engr. Eiman is pursuing her MBA degree at ADU.