

# WORKSHOP ON INTRODUCTION TO ECONOMIC & FINANCIAL EVALUATION OF ENGINEERING PROJECTS SATURDAY THE 12<sup>TH</sup> OCTOBER, 2019

at IEP Convention Center, 5<sup>th</sup> Floor, IEP Building, Shahrah-e-Faisal, Opp: Hotel Regent Plaza, Karachi

*Jointly organized by*



## Speakers Profile



**Dr. David Lupton**, Transport Economist/Planner: Dr David Lupton is a Transport Planner and Economist. He has a PhD in Economics, a BSc degree in mathematics and 40+ years of professional experience in the transport sector. His professional experience is across over 20 countries of Australasia, Asia, and the Pacific and encompass subjects including but not limited to transport sector assessment, institutional review, training, feasibility, economic analysis and economic assessment, policy formulation, financial assessment.



**Mr. Robert Butler, Civil Engineer:** Mr Robert Butler has over 40 years of civil and municipal engineering experience of which over 40 years have been spent in developing/transitional countries where he has specialized in modernising the management and operations functions of highway agencies; restructuring the concerned institutions to fulfil the role of client/service manager; reorganisation programmes with an emphasis on local social inclusiveness and capacity building. He has extensive experience in advising governments /agencies in institutional restructuring and 'start up' programmes for emerging construction industries;



**Mr. Gianfilippo Cameli, Financial Analyst:** Gianfilippo Cameli is a Financial and Economic Specialist, Risk Analyst, and Project Manager and during over 19 years in the field has conducted financial, economic studies, and due diligence of major public works and infrastructure development projects throughout the world including ports, airports, highways, railways, power, wastewater, and stormwater plants, and detention facilities. Additionally, he also developed studies pertaining PPP financing, capacity building, and prioritization. More recently, he helped develop a financial restructuring of the National Highway Authority of Pakistan as part of their Business Plan and a Master Plan for the Sindh Road Network

**For Registration fill the attached form**

For Further Information Please Contact:

Engr. M . Farooq Arbi, FIE, PE  
Secretary, IEP, Karachi Centre  
Tel: 32780233, 32781492  
E-mail: iepkc1948@gmail.com  
main@iepkarachi.org.pk

Engr. Farooq Fazal, Honorary Secretary, ACEP  
Tel: 32802626  
E-mail: info@acep.org.pk,  
acep.secretariat@yahoo.com

## Programme

**Registration/Networking:** - 3:45 to 4:10 pm  
**Guest to be seated:** - 4:10 pm  
**Workshop proceeding starts at:** - 4:15 pm

### Overview on Economic and Financial Analysis

Look at a project or activity and compare the benefits with the costs.

#### Point of view

Financial analysis is from the point of view of the organization. Economic analysis is from the point of view of society

In a financial analysis the benefit is usually increased revenue. In an economic analysis the benefit is increased utility

Some examples

Economic vs Financial analysis of a new hydro scheme

Economic vs financial analysis of a new toll road

Company buys a new building for its office

#### Measuring Benefit

Value of time - behavioral vs societal  
Valuing access to electricity, schools, hospitals, deaths, environment

Multi-criteria analysis - explicit vs implicit valuation

#### Cost Benefit Measures

Net benefit, Benefit/cost, EIRR, NPV per bulldozer

#### The effect of timing

Discount rates /WACC

#### Other concepts

Shadow pricing, taxes, treatment of revenue

#### Economics for Engineers

PC-1 and Feasibility Studies

Planning applications

Town planning decisions

### Proposed Program

Why do a Financial and Economic Analysis of an Infrastructure Project is required?

Type of Analyses and Modeling Techniques

Software (Excel, HDM-4, @Risk, etc.)

Define Cost of a Project/Investment

What will the project do?

Life-cycle Costs, Feasibility

Data Collection

Financial Statements, Previous Studies

Traffic data (if available)

Interviews, Similar Case Studies

Perform and/or Analyse Traffic Demand

#### Building a Financial Model

User-Friendly, Define Methodology and Components

Define Assumptions,

Projecting Income- Positive Cash Flows Projecting Expenses- Negative Cash Flows

Results define size of returns/losses (NPV, IRR)

Building an Economic Model

Performing Sensitivity Analyses, Delays in Costs and Benefits

Changes in Capital Costs Changes in Traffic Changes in Prices

Risk Analysis

Montecarlo Simulations

Case Study <<A Multi-Disciplinary Engineering Project>>

Examples of Financial Models, Examples of Economic Model

Methods of Valuing Project, Assignment - Workshop - Hands-on



**Pakistan Engineering Council will award 0.5 credit points to participating engineers as per their defined criteria**