

UITP & NJ Training Program: Electric Buses: Fleet & Infrastructure Planning, Operations and Maintenance

27-29 September, New Jersey, NYC, USA

UITP Academy is launching the training program on **Electric Buses: Fleet & Infrastructure Planning, Operations and Maintenance** between 27-29 September 2023 with Regional Training Center, New Jersey Transit.

With more and more metropolitan areas targeting zero-emission environments, an increasing number of cities, transport authorities and operators are considering a fully electric solution for their urban bus network. In this context, the UITP Academy designed this online training program on Electric Buses offering a comprehensive overview of the electric solution for urban bus networks: from the setting of a long-term city strategy in terms of energy transition to the definition of a charging strategy and the choice of technology and all the way to the procurement and the implementation and operation of the system.

Here's what you will learn:

- Introduce the electric solution, the different types of technologies and compare their benefits and drawbacks
- Understand the products on offer and the mainstream technology options available, competition and maturity level of the suppliers
- Understand how to develop an operational and charging strategy
- Learn from experience on how to plan, implement and run electric bus lines successfully
- Understand the implications for operations and infrastructure
- Learn from successful major electric bus project implementations including electric bus system procurement
- Understand how technology and data management can help optimising your operations and charging

A top-level methodology

- Get inspired by our trainers, understand the **main concepts** and learn from successful **best practice**
- Participate in **interactive plenary sessions** with introductions by course leaders, presentations by trainers and open discussions with participants
- Challenge **your practical knowledge** on electric bus operation and maintenance
- Address the topic from **an international perspective**, enriched by different cultural approaches and points of views
- Benefit from a unique exchange of knowledge and experience between professionals

UITP Training Programs and all related processes are certified for ISO29990:2010 – the standard for learning services for non-formal education and training.

Who is it for?

- Project managers, engineers and other professionals eager to learn more about the technology, the implementation and the running of electric buses
- Staff from public transport operators or authorities planning to extend a fully-electric solution to the core part of the urban bus network
- Staff from the bus industry worldwide involved in the market uptake of electric buses
- Professionals interested in obtaining a wider and international perspective on electric buses and eager to learn more from international best practice

Inspiring trainers & guest speakers

All UITP trainers are top level transport and mobility professionals with extensive experience in public transport and operations from different regions of the world. In addition, UITP invites guest speakers to illustrate specific solutions, practices and case studies.

All sessions will take place at 09:00 AM New Jersey Time

Day 1, Wednesday, 27th September 2023

09:00 Welcome & Introduction to the course

Expectation Analysis

Jaspal Singh, Head of NAM, UITP

New Jersey Transport

09:30 Session 1 - Introduction: A zero emission solution for urban bus networks

What is an electric bus and how can electric buses contribute to making public transport network competitive and our cities sustainable? What are the drivers and barriers when it comes to the choice of technology? How can it affect the institutional organisation and governance in a city?

11:00 Break

11:30 Session 2 - E-bus technology and charging infrastructure & state of the electric bus market

This session will look into infrastructure and technologies used to run electric busses, whether it be the installation and running of charging infrastructure, the impact on information technology systems, driver assistance and standardisation of the connection.

13:00 *Lunch*

14:00 Session 3 - Getting the procurement process right

To successfully implement and run fully electric line, it is essential to make the tendering process evolve from a simple vehicle purchase to the tendering of a comprehensive electric system, taking into account life cycle costs, charging infrastructure, batteries, economic models, leasing and renting, etc.

15:30 *Break*

16:00 Session 4: Case Study - Developing an electric bus operation and procuring electric buses

17:30 *End of Day 1*

Day 2, Thursday, 28th September 2023

09:00 Session 5 – Electric Bus Depot Design and Locations

Design of electric bus depot highly different than conventional ICE bus depot. Due to charging infrastructure and difference in maintenance philosophy e-bus depot needs to be re-designed or these points must be considered for designing new e-bus depot. Another important aspect is the locations of the depot. Appropriate depot selection reduces infrastructure investments and operational challenges and costs. Grid capacity is a barrier to implementation of e-bus and must be well evaluated during the design and choosing locations.

10:30 *Break*

11.00 Session 6 - Charging and Energy Infrastructure Planning

Before starting e-bus implementation projects it is crucial to understand energy and power needs, decide on charging strategy, how to maintenance and other auxiliary structures. These are the basic criteria to be considered to plan charging infrastructure, capacity needs from the grid and availability. Maintenance and workshop equipment specific to e-bus should be treated carefully.

12:30 *Lunch*

13:30 Session 7 - Safety Basics for Electric Buses

Safety is crucial and one of the important topics for e-bus operations. What are the critical aspects for the first responders, staff, drivers, safety charts and labels according to ECR100 and how to evacuate from the bus will be explained?

- Main risks and mitigations
- Evacuations from e-bus
- Role of BMS

15:00 *Break*

15:30 Session 8 - Manpower Planning and Capacity Building for Maintenance

The maintenance of an e-bus is completely different from that of a conventional bus. One of the big issues is to build new capacity from the existing maintenance team. A new systematic approach must be allowed to do the right maintenance at the right time with highly skilled staff. How to maintain an e-bus and how to train existing staff or employ new staff will be explained in this session.

- Maintenance managements
- Type of maintenance-Corrective, Planned, Preventive, Pro-active
- Trainings for existing or required staff for maintenance

17:00 *End of day 2*

Day 3, Friday, 29th September 2023**09:00 Session 9- Large scale bus electrification: new challenges for IT systems**

With the introduction of electric vehicles, public transport operators must establish electric energy management. To do this, existing business processes must be reviewed and modified, and – in some cases – new processes need to be defined. Energy management for electric vehicles imposes on strategic and operational planning, depot management, and operations control. It discusses the effects on the IT systems for timetable, block, and duty planning for vehicle and personnel dispatch, depot management, operations control (ITCS), and "charging management" in the depot as well as during line operation.

In this session implementation and benefits of intelligent electric supply management systems for electric bus, the operation will be covered.

OPTIONAL ***Workshop & discussions on the lessons learnt from electric bus deployment and operations***

10:00 Break

10:30 **Host city presentations**

11:30 **Wrap-Up, Evaluation, Certificates**

12:00 *Lunch Break*

13:00 **Departure for the technical visit**

17:00 *End of Training Program*

**UITP reserves the right to make amendments to the program or any related activity at its discretion*