

Virtual Classroom on Electromobility in Public Transport 公共交通电动出行线上课程

4-5 and 9-10-11 May 2023, 2 weeks span | 2023 年 5 月 4、5、9、10、11 日，跨两周时间

UITP Academy is launching an online course on Electromobility, starting on 4 May and ending 11 May 2023 with our Regional Training Center, Shenzhen Bus Group which has achieved full electrification. This course features 9 interactive online sessions.

UITP 学院与已经实现全面电动化的深圳巴士集团区域培训中心联手推出公共交通电动出行线上课程，将于 2023 年 5 月 4 日开始，5 月 11 日结束，共有 9 次在线互动课堂。

Shenzhen Bus Group is the largest and oldest public transportation operator in Shenzhen, China. After achieving full electrification (operating 6,053 e buses) in 2018, SZBG has become the largest new energy public transportation operator in the world.

深圳巴士集团是中国深圳规模最大、历史最悠久的公共交通运营商。继 2018 年实现全面电动化（运营 6053 辆电动大巴）后，深圳巴士已成为全球最大的新能源公共交通运营商。

The training and all training materials will be provided in English, and **Simultaneous Interpretation (SI) from English to Chinese** will be provided during this online training. A good level of English is a compulsory requirement to attend the training except Chinese participants.

本次在线培训及所有培训材料采用英语，并提供**中英同声传译（SI）**。除中国参与者外，其他参与者必须具备良好的英语水平方可参加培训。

Reach your objectives | 实现您的目标：

- Introduce the electric solution, the different types of technologies and compare their benefits and drawbacks
介绍电动化方案及不同技术类型，比较各自的优缺点
- Understand how to get value from electric buses, Electric Cars or other modes looking at their economic, environmental and societal feasibility
从经济、环境和社会可行性的角度理解如何挖掘电动大巴、电动汽车或其他交通方式的价值
- Plan for Electrification which is widely considered as a viable strategy for reducing oil dependency and the environmental impact of transportation
电动化的规划（电动化被广泛地视为减少交通对石油的依赖和对环境的影响的一项可行策略）
- Learn from experience on how to implement and run electric solution in the city
学习在城市实施运营电动方案的经验
- Understand the implications for operations and infrastructure
了解电动化对运营与基础设施的影响
- Learn about the implementation and running of electric modes
了解电动模式的实施与运行
- Learn about the infrastructure for Electromobility
了解电动出行的基础设施
- Discuss the performance of an electric solution with a practical application during our dedicated workshop
在我们的专门研讨会上讨论已实际应用的电动方案的执行情况
- Listen the best practices from **around the world**
听取**全世界**的最佳实践

Why choose an online course | 为什么要选择在线课程?

- Interact with public transport professionals from across the world
能够和全球公共交通专业人士进行互动
- Be time efficient, with 9 sessions over a 2-week timespan
在两周时间内高效地完成 9 节课
- Flexibility to join the sessions from any location in the world, at work or at home
可在办公室或家里灵活参加课程

A top-level methodology | 顶级的方法

- Participate in interactive online sessions which includes an introduction by course leaders and open discussions with participants
参加互动式在线课程，包括课程负责人的介绍和与参与者的公开讨论
- Exchange your current practices and experience with your peers
与同行交流当前的实践与经验
- Each theme will be approached as followed:
各主题将采用以下方法：
 - o Basic principles and conceptual approach | 基本原理和概念性方法
 - o State of the art development and innovations | 最新的发展与创新
 - o Good practices examples | 良好实践示例
 - o Interactive exchange between participants and experts | 参与者与专家的互动交流

Who is it for | 课程对象是谁?

- Project managers, engineers and other professionals eager to learn more about the technology, the implementation and the running of electric buses
渴望更多地了解电动大巴的技术、实施和运行的项目经理、工程师和其他专业人士
- Staff from public transport or authorities planning to extend a fully electric solution to the core part of the urban network
计划将全面电动解决方案扩展到城市网络核心部分的公共交通或有关当局人员
- Staff from the industry worldwide involved in the market uptake of different electric modes
全球公交行业中参与电动模式市场应用的人员
- Professionals interested in obtaining a wider and international perspective on electrification and eager to learn more from international best practice
希望在电动化方面培养更广泛和国际化的视野并渴望更多地汲取国际最佳实践的专业人士

Inspiring trainers | 激励人心的讲师

Our skilful trainers are composed of international experts and professionals with extensive experience and knowledge in the strategic, operational and technological areas of electric buses, taxis and new mobilities.

我们的高素质讲师包括国际专家和专业人士，他们在电动大巴、出租车和新型出行方式的战略、运营和技术领域拥有丰富的经验和知识。

All sessions will take place at 08:00 am CEST time (UTC+2) equivalent to 2:00 pm China time (UTC+8).
所有课程将在中欧夏令时间 (UTC+2) 早上 8 点开始, 即中国时间 (UTC+8) 下午 2 点。

Day 1, Thursday, 4th May 2023 | 第 1 天, 2023 年 5 月 4 日, 星期四

- 08:00 CET Welcome & Introduction to the course | 开场欢迎与课程介绍
14:00 CN Expectation Analysis | 预期分析
- 08:45 CET Session 1: Introduction: Urban Growth, Global Climate Change and Possible Directions
14:45 CN for the future (90)
第 1 节: 简介: 城市发展、全球气候变化以及未来可能的发展方向 (90 分钟)
Alok JAIN, Managing Director, Trans-Consult Ltd, Hong Kong
香港 Trans-Consult Ltd 总经理 程艾乐
- Challenges facing the world | 全球面临的挑战
 - Driver of transport demand | 交通需求的驱动因素
 - Population growth and effect on urbanization | 人口增长与对城市化的影响
 - Increased mobility and congestion | 日益增长的出行与加剧的拥堵
 - Mega trends for tomorrow's world | 未来世界的大趋势
- 10:15 CET Break (tea-break) | 休息 (茶歇)
16:15 CN
- 10:45 CET Session 2: Green City Concept & Smart City (60)
16:45 CN 第 2 节: 绿色城市概念与智慧城市 (60 分钟)
- Circular Economy | 循环经济
 - Strategies to meet 1.5ds goals | 实现 1.5ds 目标的策略
 - Sources of emission savings | 减排来源
 - Sustainable transport strategies | 可持续交通策略
- 11:45 CET End of Day 1 | 第 1 天结束
17:45 CN

Day 2, Friday, 5th May 2023 | 第 2 天, 2023 年 5 月 5 日, 星期五

- 08:00 CET Session 3: E-Buses: The market, suppliers, broad technologies (60)
14:00 CN 第 3 节: 电动大巴: 市场、供应商和广泛的技术 (60 分钟)
Alok JAIN, Managing Director, Trans-Consult Ltd, Hong Kong
香港 Trans-Consult Ltd 总经理 程艾乐
- Session 3.1 – Market and Suppliers | 第 1 节 – 市场与供应商
 - Key considerations | 主要考虑因素
 - Session 3.2 – Broad technologies and cases (Hybrid, LFP/LTO/NCM, Fuel Cell, Hydrogen or Supercapacitors) | 第 2 节 – 广泛的技术与案例 (混合动力、LFP/LTO/NCM 电池、燃料电池、氢能或超级电容器)

- Introduction | 简介
- New energy technologies | 新能源技术
- Battery technologies | 电池技术
- Refuelling technologies | 加油技术

09:00 CET Break (tea-break) | 休息 (茶歇)
15:00 CN

**09:30 CET Session 4A: Deploying e-fleets: Building solid fundamentals for e-operations:
15:30 CN Preparation & implementation & technology (90)**

第 4A 节: 部署电子车队: 为电子运营建立坚实的基础: 准备、实施和技术 (90 分钟)

Ursa HRIBERNIK, Head of mobility, Ridango AS, Estonia

爱沙尼亚 Ridango AS 出行主管 Ursa HRIBERNIK

Iztok ŠTRUKELJ, Business Development Director, Arriva, Slovenia

斯洛文尼亚 Arriva 业务发展总监 Izток ŠTRUKELJ

- Bus operator's "to do" list before deploying e-buses | 公交运营商在部署电子公交车前的“工作清单”
- Challenges and solutions | 挑战和解决方案
- Experience on e-fleet deployments | 电子车队部署的经验
- AVL and other technologies for e-buses | 电动公交车的 AVL 和其他技术

11:00 CET Session 4B: E-Buses: Future Trends on Energy Value Chain (30)

17:00 CN 第 4B 节: 电动大巴: 能源价值链的未来趋势 (30 分钟)

Alok JAIN, Managing Director, Trans-Consult Ltd, Hong Kong

香港 Trans-Consult Ltd 总经理 程艾乐

- Hydrogen economy | 氢能经济
- Vehicle efficiency | 车辆效率
- Distribution & supplier infrastructures | 配电与供应商基础设施
- Key barriers and break throughs | 主要障碍与突破

11:30 CET End of Day 2 | 第 2 天结束
17:30 CN

Day 3, Tuesday, 9th May 2023 | 第 3 天, 2023 年 5 月 9 日, 星期二

08:00 CET Session 5: Battery Technologies, Charging technologies and charging infrastructure (90)

14:00 CN 第 5 节: 电池技术、充电技术与充电基础设施 (90 分钟)

09:30 CET Break (tea-break) | 休息 (茶歇)
15:30 CN

10:00 CET Session 6: E-Taxi: The market, Advantages and challenges (60)

16:00 CN 第 6 节: 电动出租车: 市场、优势与挑战 (60 分钟)

Asher MOSES, CEO, Sherbet London, United Kingdom

英国 Sherbet London 首席执行官 Asher MOSES

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- Green transportation | 绿色交通
- Global EV operation | 全球电动汽车运营
- Synergy of EVs & Employed Drivers | 电动汽车与雇佣司机的协同
- Advantages & Challenges of Electric Vehicles & Taxi | 电动汽车与出租车的优势与挑战

11:00 CET **Panel Discussion – Transitioning to electromobility - Role of the Government, fleet operators and the markets (45)**

17:00 CN

小组讨论 – 电动出行转型 - 政府、车队运营商与市场的角色（45 分钟）

Moderator: [Alok JAIN, Managing Director, Trans-Consult Ltd, Hong Kong](#)

主持人: 香港 [Trans-Consult Ltd](#) 总经理 程艾乐

Panelist | 小组成员:

[Chris LIANG – Shenzhen Bus Group, China](#) | 深圳巴士集团 [Chris LIANG](#)

[Darek KOPER – Auckland Transport, New Zealand](#) | 新西兰奥克兰交通局 [Darek KOPER](#)

[Kristian JENSEN – WSP, New Zealand](#) | 新西兰 [WSP Kristian JENSEN](#)

[Shaun TAN – UITP Asia-Pacific](#) | [UITP](#) 亚太区执行总监 [董宝才](#)

11:45 CET End of Day 3 | 第 3 天结束

17:45 CN

Day 4, Wednesday, 10th May 2023 | 第 4 天, 2023 年 5 月 10 日, 星期三

08:00 CET **Session 7: Electrification - The impact on bus operations (90)**

14:00 CN **第 7 节: 电动化——对公交运营的影响（90 分钟）**

[Shenzhen Bus Group](#)

深圳巴士集团

- Operators' wish list | 运营商的愿望清单
- Key considerations | 主要考虑因素
 - Capital cost | 资本成本
 - Fuel/energy cost | 燃油/能源成本
 - Operating flexibility | 运营弹性
 - Driving range | 驾驶里程
 - Maintainability | 可维护性
 - Availability | 可用性
 - Drivability | 驾驶性能
 - Passenger safety | 乘客安全
 - Pricing and revenue | 定价与收入
 - Bus capacity | 大巴载客量
 - Customer / stakeholder feedback | 顾客 / 利益相关者的反馈
- Developing an e-bus operation | 发展电动大巴运营
- Transition to operations | 运营转型
- Shenzhen experience and success factors | 深圳经验与成功因素

09:30 CET *Break (tea-break) | 休息（茶歇）*

15:30 CN

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Poornima SINGH, Manager for Research and Membership Services, poornima.singh@uitp.org

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10:00 CET **Session 8A: Regulation of the Electrification of Public Transport (60)**

16:00 CN 第 8A 节：公共交通电动化的监管（60 分钟）

Shenzhen Bus Group

深圳巴士集团

- Approach to regulation of electrification | 电动化监管方法
- Efficiency and emission standards | 效率与排放标准
- Regulation of charging infrastructure | 充电技术设施的监管
- Regulation for EV charging tariffs | 电动汽车充电收费的监管
- Distribution grid regulation | 配电网的监管

11:00 CET **Session 8B: Life Cycle Cost of Electrification (45)**

17:00 CN 第 8B 节：电动化的生命周期成本（45 分钟）

Alok JAIN, Managing Director, Trans-Consult Ltd, Hong Kong

香港 Trans-Consult Ltd. 总经理 程艾乐

- Running costs | 运营成本
- Capital costs | 资本成本
- Alternative cost models | 替代成本模式

11:45 CET End of Day 4 | 第 4 天结束

17:45 CN

Day 5, Thursday, 11th May 2023 | 第 5 天, 2023 年 5 月 11 日, 星期四

08:00 CET **Session 9A: Is data driving electrification revolution (75)**

14:00 CN 第 9A 节：数据是否正在驱动电动化变革（75 分钟）

Jost GEWEKE, Business Development Manager, PSI Transcom GmbH, Germany

德国 PSI Transcom GmbH 业务开发经理 Jost GEWEKE

- Electric bus transport services planning | 电动大巴交通服务规划
- Implications for operations | 对运营的影响
- Implications for maintenance | 对维护的影响
- Implications for management | 对管理的影响
- Best practice for monitoring systems | 监控系统的最佳实践

09:15 CET Break (tea-break) | 休息（茶歇）

15:15 CN

09:45 CET **Session 9B: Electric bus in the era of autonomous vehicles (45)**

15:45 CN 第 9B 节：自动驾驶汽车时代的电动大巴（45 分钟）

Stéphanie PRIOU, Managing Director, Ubiquity Consulting, Spain

西班牙 Ubiquity Consulting 总经理 Stéphanie PRIOU

- Urban Mobility Challenge | 城市出行的挑战
- Vehicles & technology | 车辆与技术
- Environment | 环境
- Upcoming developments | 即将迎来的发展

10:30 CET	Session 9C: E-BRT (30)
16:30 CN	第 9C 节：电动快速公交系统（30 分钟） Eglantina DANI, Consultant, Factual Consulting, Spain 西班牙 Factual Consulting 顾问 Eglantina DANI
11:00 CET	Session 9D: Trolleybuses becoming infinite range e-Buses by IMC (In Motion Charging) (45)
17:00 CN	第 9D 节：动态充电 IMC 使无轨电车成为无限里程的电动大巴 Yussup KHASSIEV, Senior Manager – Knowledge and Innovation, UITP, Belgium 比利时 UITP 知识与创新高级经理 Yussup KHASSIEV <ul style="list-style-type: none">• The renaissance of trolleybuses in many worldwide cities due to “In Motion Charging” (IMC) “动态充电”（IMC）引发的全球多个城市无轨电车的复兴• Discover that surprisingly effective concept, when introducing new systems 引入新系统时发现的超级有效的概念• Synergies with rail applications and e-buses with onboard-chargers, which you should know 您应当了解的与轨道应用以及带有车载充电器的电动大巴的协同
11:45 CET	Wrap up & Closing 课程总结
17:45 CN	
12:15 CET	End of Online Course Programme 线上课程结束
18:15 CN	

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

**UITP 有权自行决定修改课程或任何相关活动*