

Integrated E-mobility & Smart services provided by the innovative B.O.M.T.S. – ICT platform

2014

 University
Luiss Guido Carli
Country
Italy

Location 
Rome
Size 

Mobility Organizational Structure 

 Summary

 Aims

 Stakeholders

This project falls within the scope of the following topics:

- VI – promotion of a more efficient car use
- VII – intermodal mobility

It aims at contributing to the effective implementation of Sustainable development goals adopted by all United Nations Member States in 2015 and related to Environment and Resource efficiency. LUISS Green mobility actions and means involve specifically:

- The awareness raising by promoting sustainable road transport mobility.
- The awareness raising of students and future generations about responsible resources consumption related to cleaner driving and the use of electric vehicles.
- The demonstration of the use of innovative logistic platform to manage a Smart Mobility service.
- The demonstration of how a project could be bankable and sustainable.
- The replicability and transferability of the best practice to other contexts.

 Background

LUISS Green mobility contributes to a Green Campus strategy of educating for sustainability by implementation of high tech ICT solutions & services. Research, educational, operational and outreach activities are meant to synergise and engage students. This is expected to bear significant benefits to sustainability issues and a positive learning experience for students.

The project foresees extended Helpdesk services in order to support students in use of new employed technology favouring Greentech dissemination.

Description

LUISS Green mobility is a cross sector pilot projects offering a multi modal electric mobility service supported by an innovative ICT platform. The project's aim is to meet universities mobility needs more sustainably. To this purpose, Electric Drive Italia has been selected as the technology partner by LUISS to develop an innovative smart e-mobility vehicle sharing service which include, car, scooter and bike sharing.

Furthermore, a benefit of the project is the public recharge service which provides a dedicated service to enhance the opportunity to recharge own property vehicles of authorized customers. By adoption of this service, University intends to offer a public alternative model to promote sustainable lifestyles.

This service is supported by an innovative ICT platform, providing Front-end & Back-end solutions, called B.O.M.T.S. (Banking, Operations, Maintenance, Security).

This platform manages any operational and logistic e-mobility services issue including

payments procedures, surveillance and car number plate identification to assure the security and availability of the sharing service. Moreover, services updates and availability are dynamic to get customer constantly aware of disservices or troubles in real time by consulting the LUISS application.

The ICT services also could deliver several additional Smart services as environmental monitoring to assess impacts and benefits achieved by e-mobility.

The adopted technical model 100% fits to OCA European Guidelines. Following 2018 finalized system integration inside University ICT system LUISS is acting as E-Mobility Service provider (Em-SP).

Indicators

B.O.M.T.S. platform provides project parameters monitoring 24h/24h.

Operation and maintenance department has strict control over infrastructure operation and services' delivery.

Control panel provides a dedicated reporting section monitoring:

- No of users.
- Payments.
- Issued invoices.
- No. of vehicle sharing transactions, destination of vehicles, kWh supplied, vehicles in operation or not
- Any issues related on recharging infrastructure at level of single plug (throughout local communication servers connected to BOMTS).
- Tot no. of km, CO2 saving, remote controlled setting of public recharge infrastructure, as cost of recharging kWh and cost of parking, etc.

Keyfigures (analysis provided by B.O.M.T.S. Control panel):

- No. 4 locations.
- No. 25 recharging stations (Public recharging & Car sharing use).
- 9.000 users (students, administration personnel).
- Year 2017: 2.800 car sharing transactions.
- Year 2018: 3.350 car sharing transactions in 2018 (Mar. 18 – Dec. 18):
 - 34.000 km & 4,46 ton CO2 saving.
- BOMTS Platform error rate: 0.1 %.

Further No. 4 locations under construction.

 Results Expense & Financing

Project has been 100% financed by LUISS; further partners Intesa San Paolo & Mercedes Benz-Smart.

 Conclusions and Lessons learnt

To this date, the project has reached many goals related to the full satisfaction and participation of the students who are requesting a project enlargement with new infrastructures & vehicles.

An added value of this project is the aim of achieve sustainable and competitive goals through massive use of ICT technology.

The disjunction of system uses from energy provider bring many benefits:

1. The establishment of a dedicated Helpdesk service and no. 2 weekly on-site tutorial days contributed to rapid transfer of project philosophy to students.
2. More than 3.350 car sharing transaction in 2018 underline project success.
3. Environmental benefits (4,46 ton CO2 saving) on reducing emissions and reliability of the logistic management.
4. The "bankable" characteristic of the project has attracted enormous interest nationwide; a clear business plan can be elaborated as in fact final services' pricing to students is fixed by University (or any infrastructure owner) after having evaluated all costs for project execution (provision of energy, provision of O&S, etc.)
5. Therefore, this pilot project has been conceived and developed to be easily applied on a larger scale in Italy and Europe
6. Following full system integration inside LUISS ICT system, the university has assumed the role of E-mobility service provider (as defined in Open Charge Alliance guidelines) underlining her primacy on environmental & technical field.
7. The project is attracting Italy's main stakeholders as utilities, automotive and transportation companies who are contributing in further development.

This means that promoting a sustainable behaviour in a bankable and scalable scenario is possible!