



BRASOV Metropolitan Public Transport System

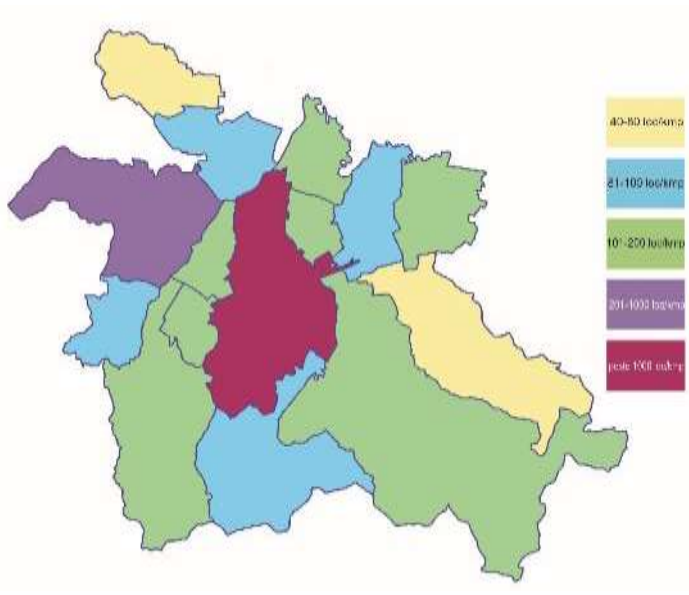
Experiences on bus fleet decarbonisation

Configuration of the BRASOV metropolitan public transport system

Decarbonisation –
stages and future
plans.

Conclusions &
recommendations





Aprox. 475.000 inhabitants



314.60 inhabitants/sqkm



Area surrounded by mountains

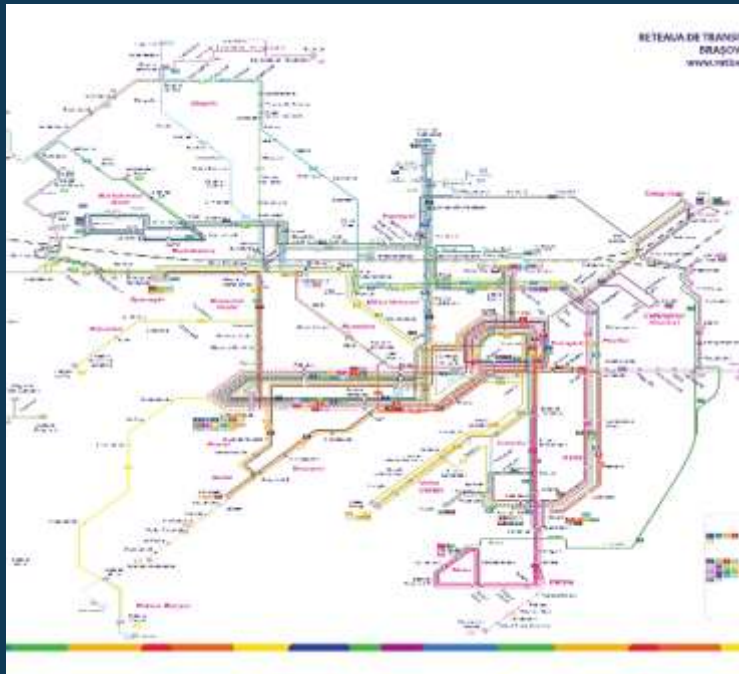




Public transport system

42 city routes operated with buses (33) and trolleybuses (9)

20 metropolitan routes operated by solo and articulated buses



Brasov Metropolitan area SUMP developed between 2015 and 2017. Focuses on Public Transport as the 1st level of mobility behaviour change

PT fleet is the essential area of intervention for transforming the public transport system

Additional support projects implemented within the SUMP framework include dedicated lanes for public transport, new bus terminal in the vicinity of the railway network, new parking and maintenance infrastructure for PT vehicles, park&ride infrastructure, etc.



26 Midi Busses
BMC Probus 215 SCB
EURO3 (2006)
+
6 Busses
BMC Neocity
EURO6 (2017)



10 pcs EURO2 (1999-2001)
7 pcs EURO2 (2001-2002)
15 pcs EURO3 (2004)
11pcs EURO3 (2004-2005)
28pcs EURO 3 (2005)
48 pcs EURO3 (2006)
15 pcs EURO5(2012)



9 pcs EURO2 (1986-1991)
24 pcs EURO3 (2006)



4 pcs (1982-1989)



18pcs (1984-1989)



2022



10 pcs EURO2 (1999-2000)
32 pcs EURO 3 (2004-2006)
15 pcs EURO5 (2011)



10 pcs Electric 8 m
(2021)



23 pcs Electric 12 m(2020)
27 pcs Electric 12 m
(2021)



51 pcs (2021)



34 pcs EURO6 18m (2019)
41 pcs EURO6 12 m (2019)
30 pcs EURO6 10m (2019)



10 pcs EURO6 Hybrid – 12m
(2021)



On the spotlight



ROP project
(National level)- 8
electric busses (12
m)

ROP project
(National level)- 12
electric busses (18
m) – to be
delivered

ROP project
(National level)- 26
trolleybuses(18
m)

RRP – 13 busses in
the city of Brasov +
9 in the
metropolitan
communities
Electric vs
Hydrogen

ROP 2021 - 2027 –
30-40 busses?
Electric vs
Hydrogen

DIVERSIFICATION
OF PT SERVICES

DECARBONISAT
ION OF BUS
FLEET

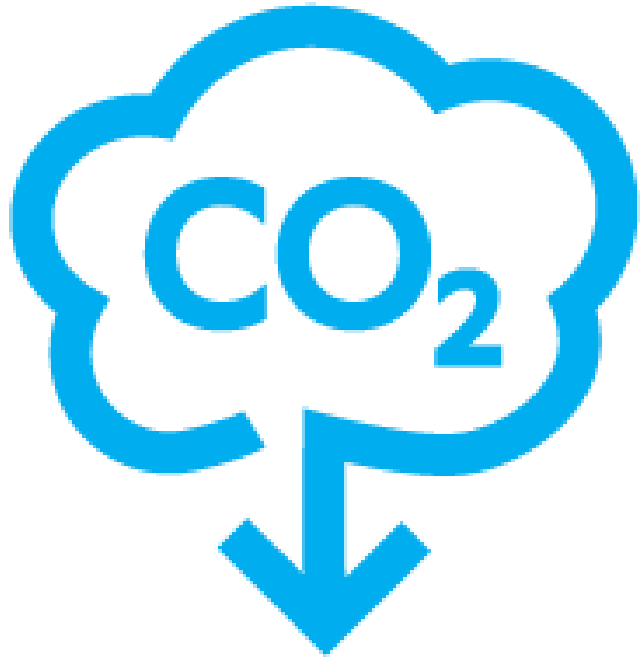
ROP Project
25 trolleybuses
(18 m) + 10 hybrids
EURO6

52 electric busses –
National
Environmental
Fund
Administration -
"never say never!"

ROP 2014-2020
ROP 2021-2027
ROP 2028-2035
Railway transport
system – electric vs
Hydrogen

EBRD loan
105 Diesel Buses
(euro VI) – 2018-
2020

FUNDING OPPORTUNITIES



- SUMP to be updated in 2022. Focus shift towards consolidating electrical PT fleet operation (with extension in the metropolitan territory) and metropolitan railway PT system. At urban level, major cycling projects to be developed under SUMP framework

OPERATIONAL ASPECTS



- There is a "conversion" process for the drivers, mechanics, etc. when switching from diesel to electric ... Perception is that electric busses are easier to drive.... Charging is a different issue.....
- Charging stations are a challenge... Connecting to the network and having sufficient supply / lack of a standard in the industry
- Maintenance infrastructure has to be completely rehauled / maintenance personnel has to be retrained and the relation with the producer is key (even though even the manufacturer faces difficulties)
- Location of the batteries is an issue
- There are issues related to the upper placement of batteries
- Planning the charging periods on the existing station network
- Weather / geographical location needs to be taken into account

Conclusions & recommendations

New fleet = new challenges = new problems >> the chance to develop new solutions

- Charging infrastructure
- Battery life cycle
- Batteries to Hydrogen conversions kits??
- Green hydrogen vs blue/grey hydrogen
- Early adopters (of technologies) vs late adopters

New technologies >> new methods & instruments for decision making

Data streams need to be incorporated into operational flows

Available data is just the tip of the iceberg.

Below “sea level” there is a need for data centered formal training, processing infrastructure and algorithms, data centered event procedures and most of all a data-oriented mindset for the people and the organization



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More Information

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