E-BRT in the city of México
The experience of MIVSA

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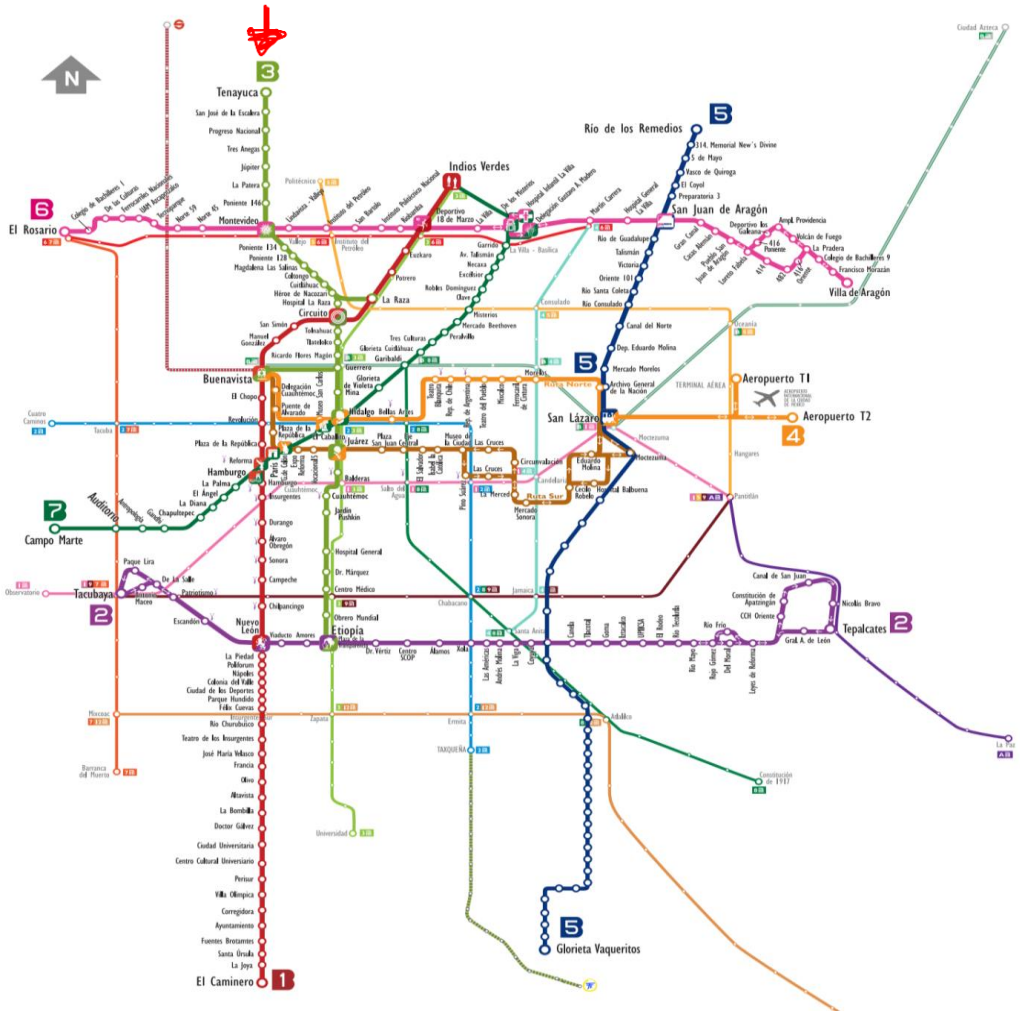
Metrobús – BRT System in City of Mexico

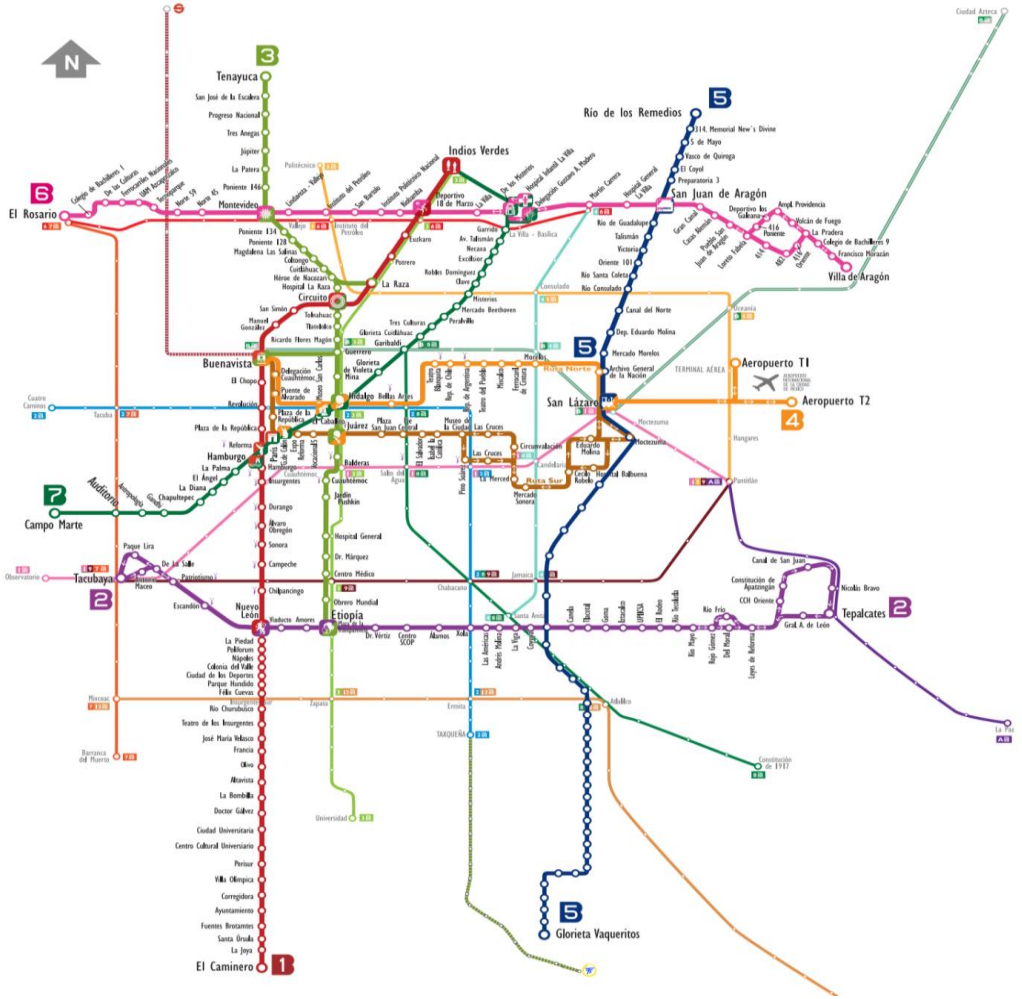
Planning, Managing and Contorl of the Public Transport Corridor System in the CDMX

- Beginning: 19 of June 2005
- 7 lines
- Total distance 161.3 km
- 282 Bus stations/stops
- 10 Depots
- +800 Buses
- 1.8 Million pax/day



MIVSA (Line 3 Metrobus) – MOBILITY ADO

- Operation start: 8 of February of 2011
- 38 Stations
- Lenght of BRT infrastructure: 20km
- 100% Segregated lanes
- Without traffic light priority
- 72 Articulated buses high floor in corridor
  - 60 electric buses – YUTONG
  - 12 diesel buses – MERCEDES BENZ (2 years)
- 200,000 daily passengers
- 17,000 daily veh-kms



It serves the departments of Benito Juárez, Cuauhtémoc, Azcapotzalco y Gustavo A. Madero.

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E-BRT

1 Start of the Project

2 Testing Bus

3 Testing Fleet

4 Deployment

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Final Operation Business model

Energy infrastructure specialist

Renting of infrastructure

Trust Fund

Infrastructure in Bailment

Operator

Infrastructure

E-bus purchase

Batteries

Maintenance

Energy costs

Operation

Depot and workshop

ENERGY INFRASTRUCTURE SPECIALIST

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AUTHORITY

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Líne 3 Metrobús CDMX| Deployment

Start of operation:	March 2023
Total number of buses:	60 +12 (to be renewed into e-buses)
Expected bus lifetime :	15 años
Chargers :	12 x 150KW 20 x 180KW
Energy supply backup:	Backup circuit with energy supplier
Batteries:	Replacement year 7-9
Charging capacity:	5.4 kw/h
Average daily consumption: (60 buses)	16,300 -16,700 kW/h
Average Regeneration:	40%
SOC (average at the end of the day):	41%
Maximum mileage (average)):	276kms
Average Consumption Kwh:	0.97

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Operating Costs

Electric bus vs Diesel Bus

Savings of **75%** in energy comsuption costs

Savings of **30%** in maintenance costs

E-BRT in Line 3 CDMX – Main conclusions

- It has been key the political will
- Analysis and initial definitions for infrastructure, buses and operation are critical
- It is paramount to design an appropriate business model scheme that allows each party to perform with a proper risk distribution
- Several challenges to be fulfilled: bus selection, expected life cycle, charging strategy, training, financing and subsidies
- Chinese vs European Technologies
- Scarce overall experience about TCO: OPEX during contract life, life cycle of batteries, aadditional costs linked to battery replacement
- The operator should participate in all phases of the project
- The results in the case of Line 3 are quite successful with reductions in OPEX and good bus performance

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Thank you

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