

Trolleybuses

... a key element
of the STM's
electrification
plan



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759 metro cars (100 % electric since 1966) (64 % of daily passenger-kilometers)



1705 busses (209 lines - 1 600 km)



84 paratransit minibuses

= 11.2 M passenger-kilometers / day

(*2011 statistics)



STM's surface transportation electrification plan?

Objective

Provide a surface public transportation service:

Without GHG and pollutant emissions

Quiet and comfortable

Reliable



Why trolleybuses?

The trolleybus:

Operated in over 350 cities in the world; 10 000 trolleybuses in Europe

Passenger capacity from 85 to 155 passengers (12m - 18m - 24m)

Quiet, «0» emissions, powerful hill climbing, comfortable – no vibrations...

Proven technology capable of electrifying part of our surface network until wireless systems are proven reliable and made commercially available at reasonable cost... 202X?

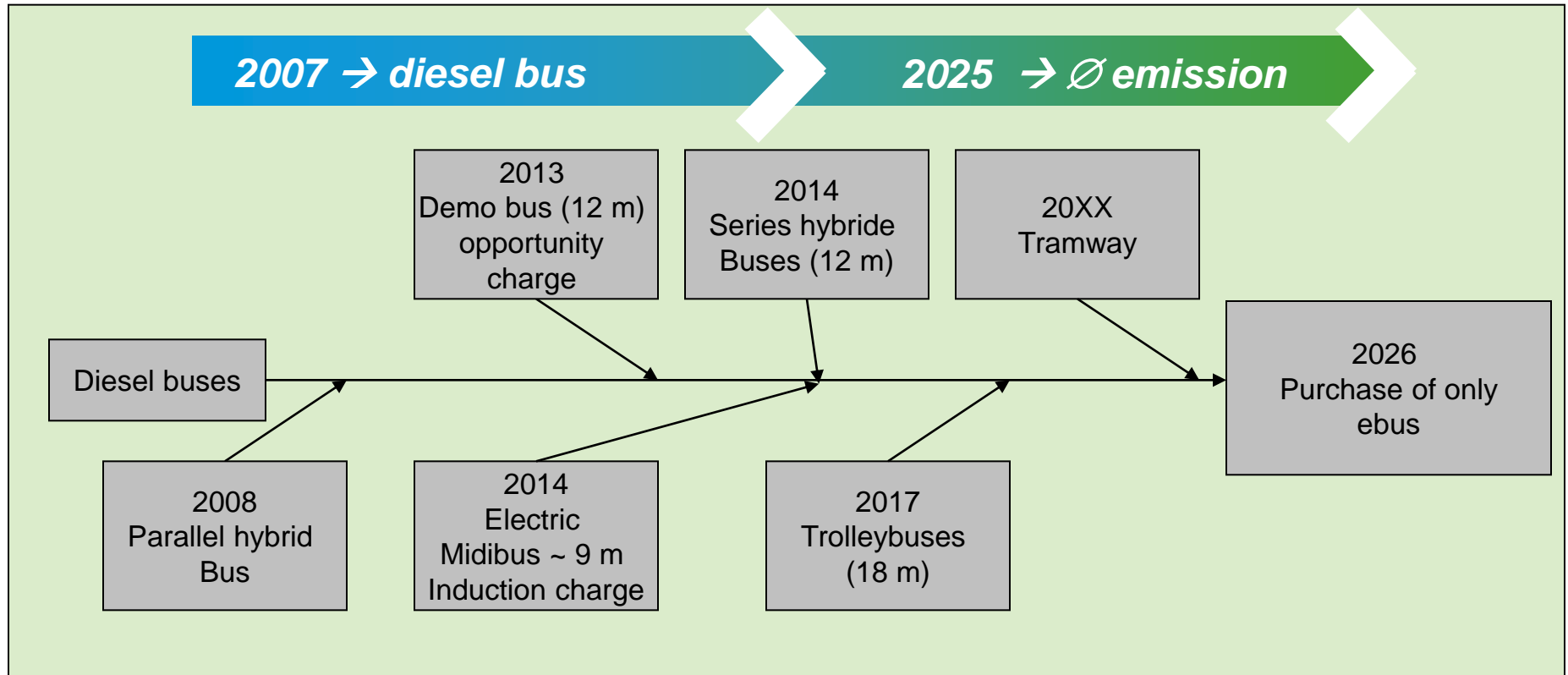
Predisposition for eventual electrical infrastructure conversion to opportunity charge system infrastructures



Production of electricity in Quebec



The approach



Why not batteries buses?

Technologies currently under development

Current battery capacities are limited

Relatively low energy density = increased weight

Relatively long battery recharge times

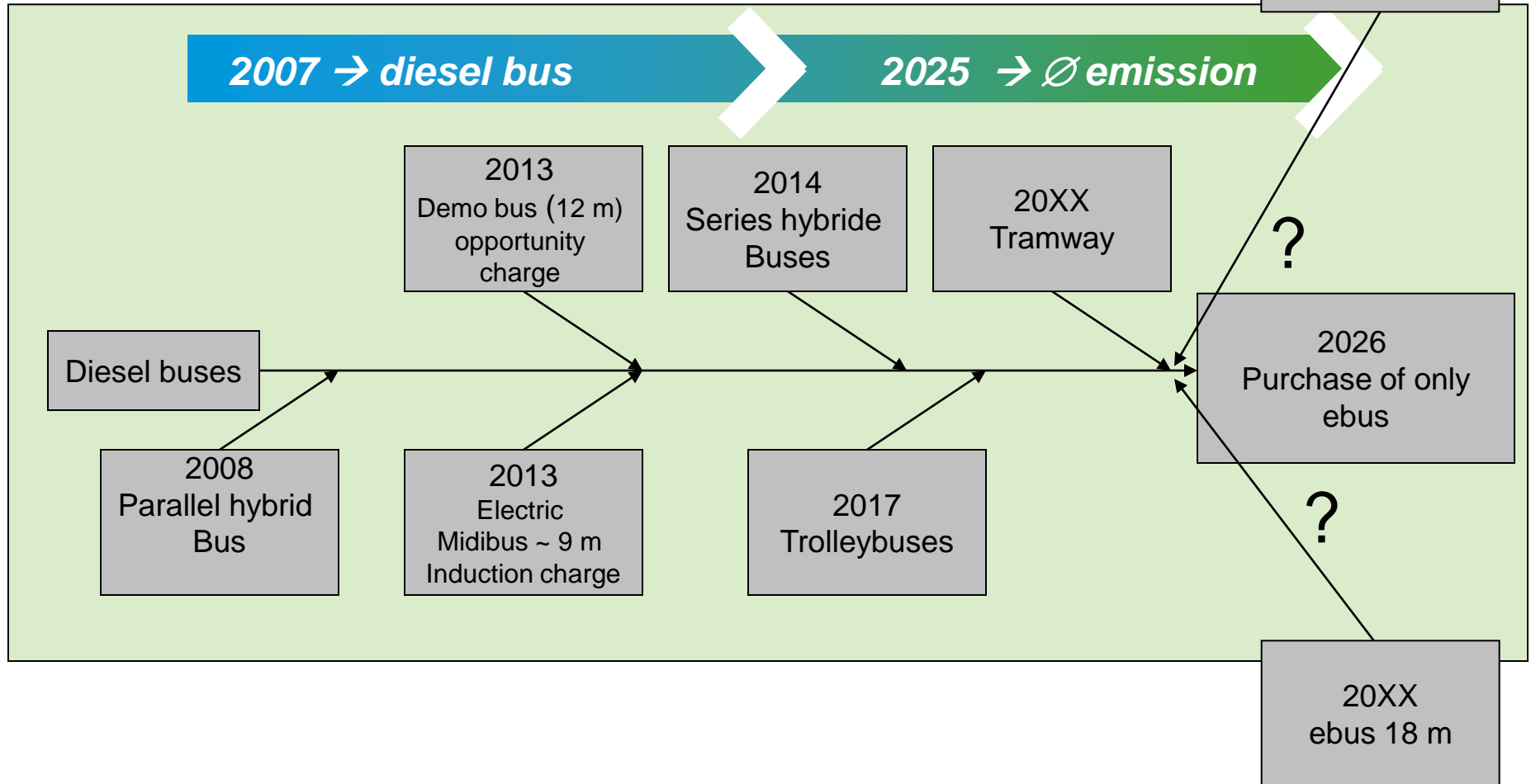
Opportunity charges = delays at bus stops = increased travel time = more buses and drivers

Current operational requirements: 500 km – 26 hours in customer service

Relatively high acquisition and operations costs negatively impact the return on investment



The approach



The scope of the study

Prepare a positioning paper on the technological migration of part of our diesel bus fleet to an all electric mode - trolleybus

Assess the viability of implementing, starting in 2017, a network of ~ 100 trolleybuses



Two major issues

Preconceived ideas and notions:

solution: demystification

Project cost appraisal:

solution: clarification of the scope of the project,
objectivity and rigor



Preconceived ideas...



of what the network
will look like...





**Rather than what it
could look like...**



Where is ~~Charlie~~ the post ?...
Somewhere in Parma...



Other preconceived ideas...

Trolleybus technology is out-dated... off wire operation is not recommended...

Availability of full battery electric buses for regular customer service just around the corner!



Project costs

Project must be clearly scoped. For example, includes / does not include

urban revitalisation

public transit network layout improvements



