



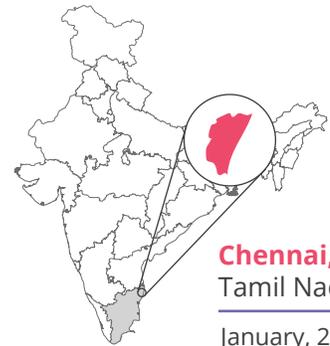
SWITCHING TO SUSTAINABLE AUTO-RICKSHAW SYSTEM-CASE STUDY OF ELECTRIC AUTO FEEDER FOR CHENNAI METRO RAIL LIMITED

Project Highlights

- First of its kind electric auto-based feeder system for City Metro Rail Limited
- First set of Electric Autos to be registered in the city of Chennai
- Research on estimating carbon emissions from existing auto-rickshaw fleet completed
- Roundtables organized to carve possible sustainable IPT solutions including detailed research identifying behavioral patterns of metro-users related to last-mile connectivity
- Collaborative Initiative- Auto-drivers, Metro Rail, Local Transport Departments

Background

Auto rickshaws play an indispensable role in the mobility needs of most Indian cities. They act as an intermediate public transport mode and provide first and last-mile connectivity. However, they are still an inefficient sector that neither answers appropriately to the changing dynamics of urban mobility in India nor embeds a sustainable pattern of transportation. A multitude of challenges plagues the auto-rickshaw ecosystem some of which includes lack of technological up-gradation contributing to poor air quality, inefficiencies in operations as auto-drivers are less organized and competition from other modes of transport such as Cab Aggregators. On the other hand, cities, despite having good public transport, are falling short of reliable last-mile connectivity. It is therefore pertinent that the Auto-rickshaw sector needs to move towards Sustainable Businesses, where less polluting technologies are promoted among service providers, auto-rickshaws act as reliable and viable options for last-mile connectivity to public transport, at the same time, customers are educated and aware of the need to shift to sustainable modes of transport. Chennai is a standard example of a growing city that is attempting to meet the mobility needs of its citizens. With over 75,000 registered autos, a considerable portion of its mobility needs is catered by auto-rickshaws. In view of this, the city undertook this project of transforming the existing fleet of auto-rickshaws in the city.



Chennai,
Tamil Nadu

January, 2019-
February, 2020
(Not to scale)

Project Objectives

- I. Scaling up of a replicable and integrated model of sustainable auto-rickshaw transport, based on clean technologies
- II. To create a synthesis document based on the pilot, that can inform the up-scale /replication potential of the pilot project
- III. Increase demand for electric autos as a feeder system (first and last-mile connectivity) to metros
- IV. Support the use of sustainable autos as a feeder system to metro stations in Chennai, to effectively integrate auto-rickshaws in the multi-modal urban transport system

Key Stakeholders

Consortium consisting of Fondazione ACRA (Italy), Stichting ENVIU (Netherland), Women Health and Development (India) and The Energy and Resources Institute (India).

Approach

The following steps were undertaken under the project:

- Setting up of the pilot operations of electric auto-rickshaw as a feeder network to Chennai Metro Rail Limited in two heavy footfall stations
- Awareness generation and behavioral change intervention for promoting the use of this service among metro rail users
- Analysis of the regulatory framework for promoting electric mobility in the auto-rickshaw sector through stakeholder discussion and develop a paper on the same
- Contribution towards developing an ecosystem for promoting electric auto-rickshaw system (Loans, information about technology, training for drivers etc.)

Achievements



Benefits and Co-Benefits

- First set of Electric Auto-rickshaws to be registered in the city of Chennai
- For the first time, electric autos were used as a feeder to the city metro rail with nominal service rates to the passengers
- Drivers who are trained under the project and adhering to the code of conduct were chosen to be the face of the service
- Extensive support by the City Metro Rail for implementation of the feeder service on the ground by providing charging and parking facility
- Appreciated by European Union ambassador, during his latest visit to Chennai
- Total of 8910 riders used the service till date from Aulander Station
- Reduction in carbon footprint of the city, and thus environmental benefits



Long Term Impacts

- The project has a long-term impact at the given levels:
- This project will reduce passenger carbon footprint and thereby the air quality in the city. As per TERI's analysis, the average annual carbon dioxide emission from an LPG auto is 3.72 tonne
- Switching to electric autos, in the long run, helps the driver who will benefit from low operational cost (reduced by approximately 40%) leading to an increase in income
- The learnings from the pilot can be used to build sustainable models of last-mile connectivity in cities where Metro Rail Networks are active

Limitations

One of the major barriers in the implementation of this pilot in the initial months was the absence of Electric Vehicle Policy in Chennai which posed the following challenges:

- No permit available specifically for electric auto
- New Electric autos were not allowed to register in the city

Future Prospects

- The pilot is currently limited to one metro station with three electric autos on a pre-fixed route plan. It is ready to start operations in the second station soon
- Tamil Nadu derives a significant source of its electricity requirement from renewable sources. By going electric, the carbon footprint from transport can be drastically reduced by up scaling such pilots appropriately
- Pilots give significant visibility, awareness and information to different stakeholders about this new category of the electric auto. This will contribute to the adoption of this technology in the city

Source: As received from The Energy and Resources Institute (TERI), Fondazione ACRA (ACRA), Stichting ENVIU Nederlands, Women Health and Development (WHAD)

For more Information

<https://thecityfix.com/blog/auto-rickshaw-fare-reform-chennai-sustainable-transport-regulation-competition-drivers-roshan-toshniwal/>

https://www.switch-asia.eu/fileadmin/user_upload/Publications/2017/Sustainable_Auto-Rickshaw/NammaAuto_brochure_Final.pdf

<https://wricitiesindia.org/Chennai-Autos>

<http://bwsmartcities.businessworld.in/article/Rethinking-Urban-Mobility-With-Alternative-Experiments/07-01-2019-165882/>