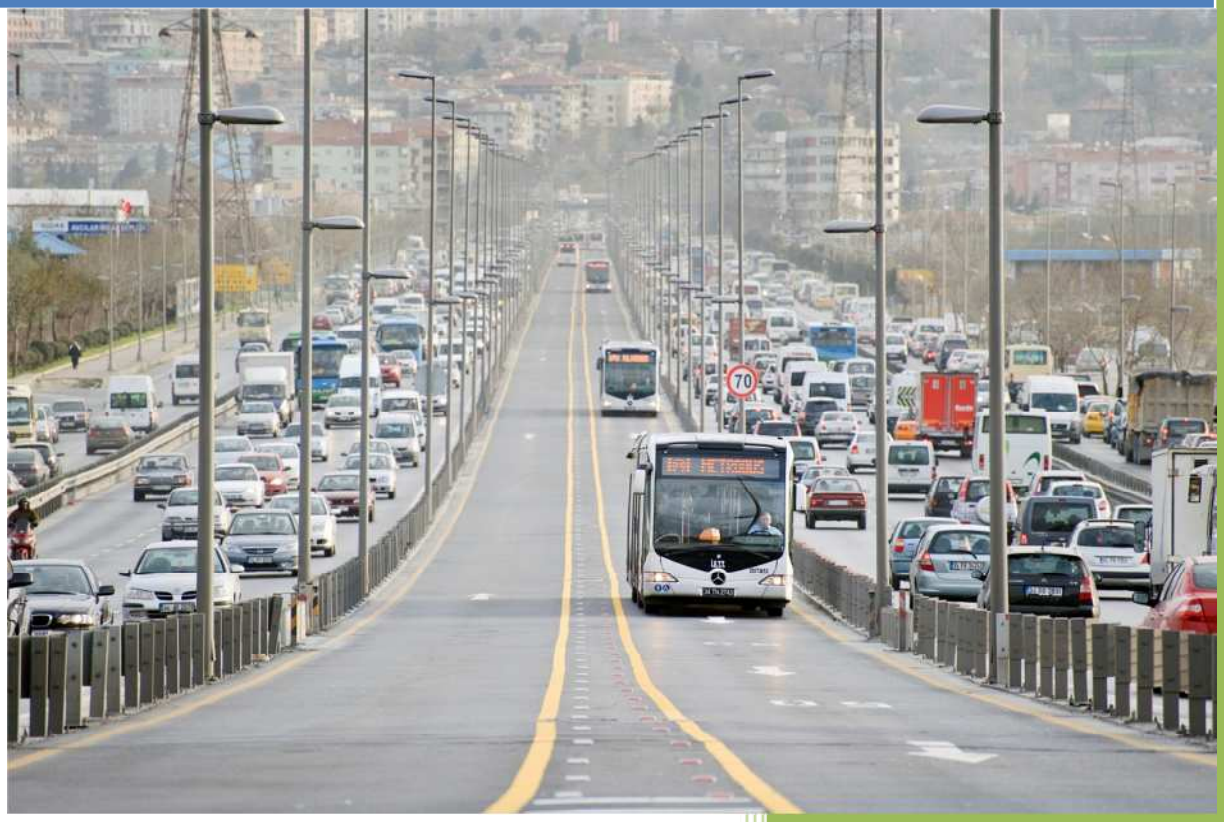
IRU Bus Excellence Award 2015



İETT-BRT

or

METROBUS

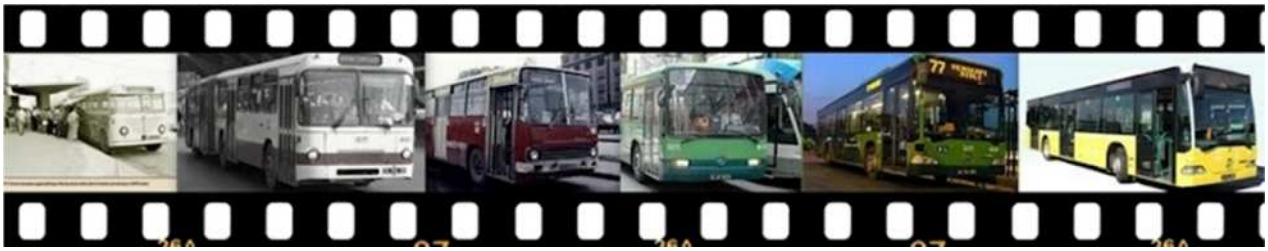
Contents

1. Company Introduction

Istanbul is the largest city in Turkey, constituting the country's economic, cultural, and historical heart. With a population of 14.1 million, the city forms one of the largest urban agglomerations in Europe, second largest in the Middle East and the third-largest city in the world by population within city limits. Istanbul's vast area of 5,343 square kilometers is coterminous with Istanbul Province, of which the city is the administrative capital. Istanbul is a transcontinental city, straddling the Bosphorus – one of the world's busiest waterways – in northwestern Turkey, between the Sea of Marmara and the Black Sea. Its commercial and historical center lies in Europe, while a third of its population lives in Asia.

Elektrikli tramvay, Beşiktaş-Ortaköy hattında hizmete veriliyor, (1914)

Istanbul Electricity, Tramway and Tunnel General Management (İETT) is the first institution that comes to mind when transportation is mentioned. The journey which started with horsecars in 1871 continues with revolutionary projects, investments, services and innovative implementations.



With the transportation systems developed from the very first horsecars to trolley buses, from the electricity tramways to metrobuses it has always led the way and guided the industry by establishing the undisclosed needs.

It provides uninterrupted services everyday to millions of people with its fleet of 3059 buses and continues this uninterrupted service for 141 years.

İETT interconnected the two continents with the metrobus system which has attracted the world's attention in the recent years. With the akyolbil system, it controls the means of transport and contributes to the development of smart city.

İETT, having renewed the vehicles in its fleet with new vehicle purchase pattern, become the architecture of latest advances in the industry as always.

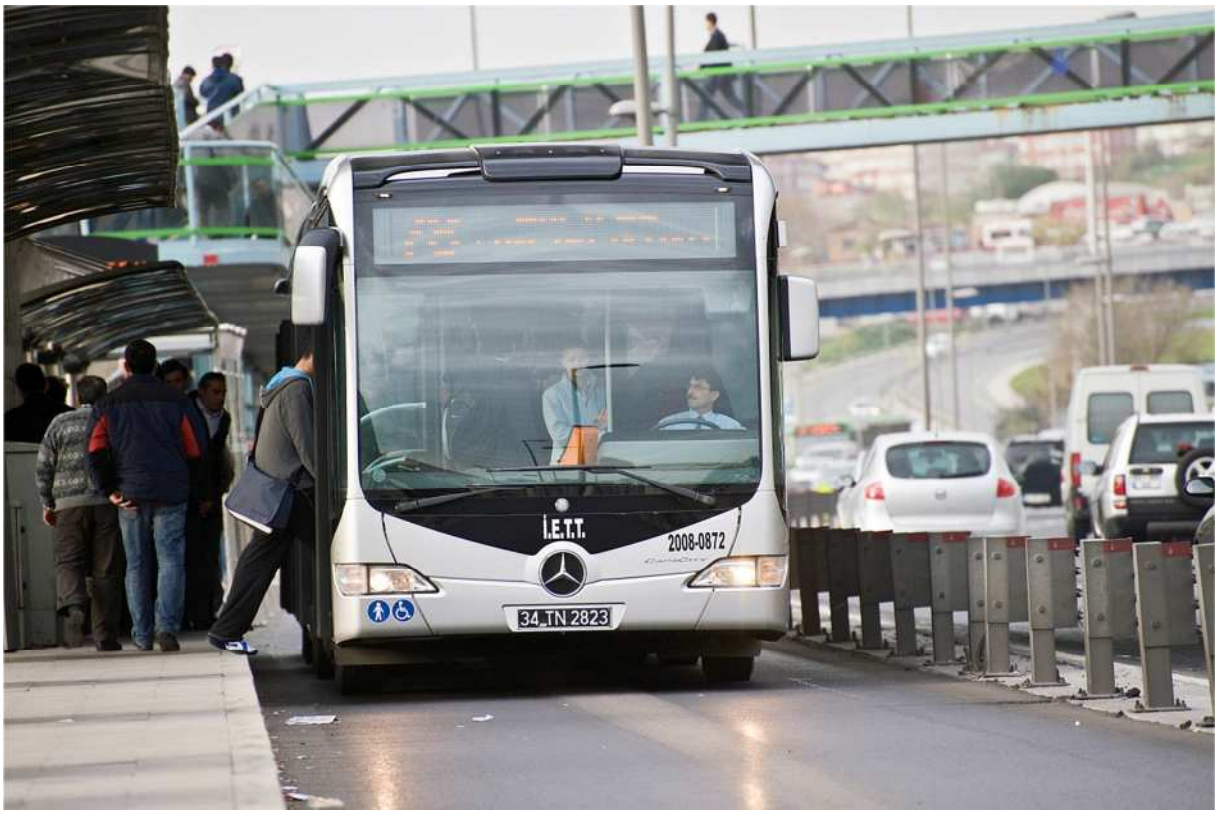
In 2007, Istanbul added the Metrobüs bus rapid transit (BRT) system to its multimodal transport network. Initially stretching 18.2 km between the city's Avcılar and Topkapı districts with its totally dedicated route the BRT corridor has since tripled in length to 52 km and today carries more than 800,000 passengers every day according to public transport operator IETT.

2. General Information About Metrobus

Project start date is 2007. 4th phase was completed in 2012 (52 km BRT in total) 1.2 billion TL / 600 million USD is the budget of this project. Project resulted in 52 km long dedicated BRT route, 45 stations, 515 operating vehicles, 4117 trips per day, 800.000 daily passengers, travel time is reduced 52 min., reduction of 623 tons of CO2/year, 242 tons of fuel savings/day

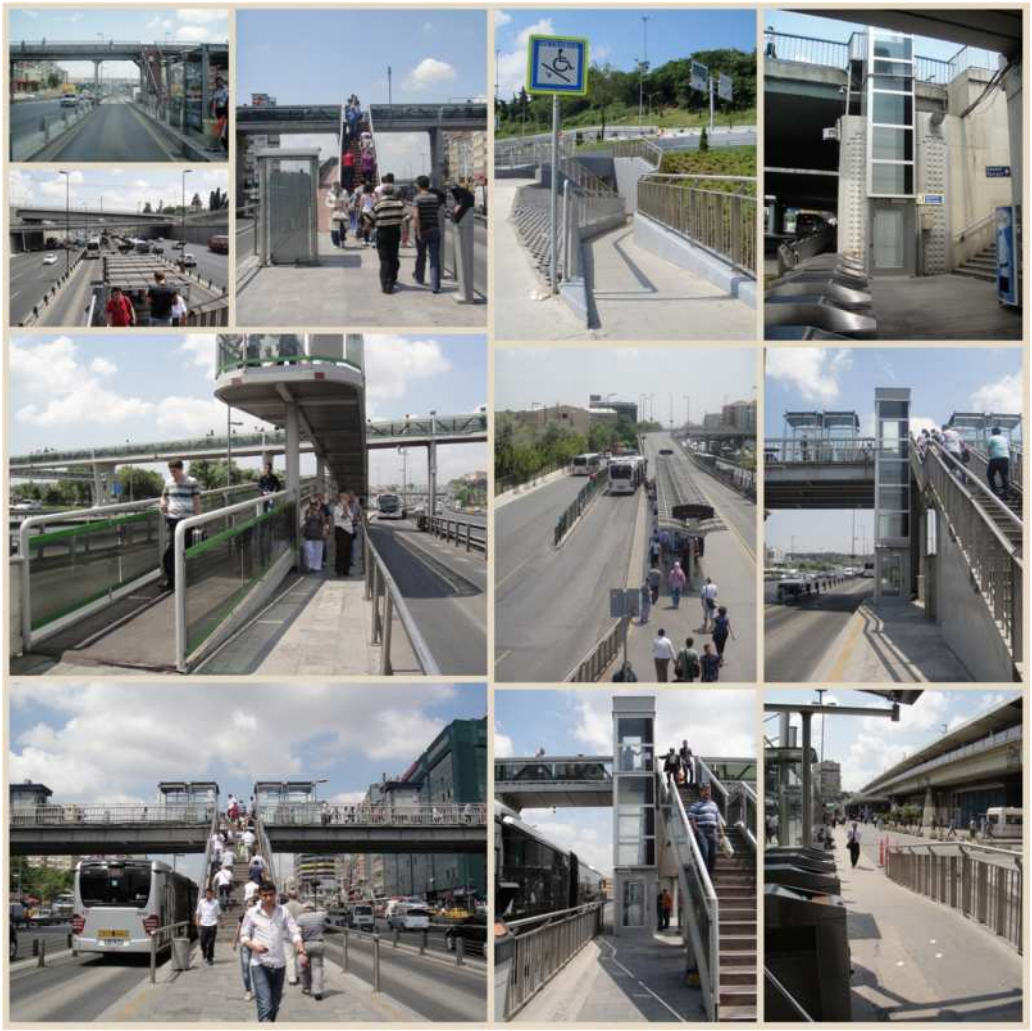
3. Why This Project?

Istanbul is a mega city with 14 million of population and public transport needs radical solutions here. There is an existing 143 km long railway line in total (metro and trams combined) and it is growing; however a BRT route was a quicker solution to meet the needs and we think our model proved to be successful. Before Metrobüs it took three hours for the passengers to cover the road on which the project is implemented. Traffic congestion was the primary reason in the decline of life quality. Metrobus project was completed in 5 years with 4 phases (however, here may be additional km in the future). First phase consists of 18,2 km and it was completed in 2007 within 8 months. Second phase was 11,8 km and it was completed in 2008 within 77 days. 3rd phase was completed in 2008 within 5 months and it had 11,5 km. The last phase was completed in 2012 and it was 9,7 km long. All of the investment cost was provided by the Istanbul Metropolitan Municipality.



4. Project Goals

Our objective was to provide a public transport alternative which is faster and better quality when compared to other modes of transport and when we consider the traffic congestion. During peak hours the average speed of rubber wheel vehicles dropped to as much as 8-10 km/h before this system. Another objective was to decrease the use of automobiles by providing a faster and more logical alternative. With this project we aimed to increase the efficiency of management and energy. Decreasing the emission of greenhouse gases at local level was also a goal.



Before Metrobus system was applied the main objective was to attract more passengers and Metrobus succeeded in that; actually it attracted more passengers than expected and the system is now pushing its limits (it carries around 800,000 passengers in a day and the limit is 870,000). Another aim was to reduce the use of automobiles in order to decrease the traffic congestion and according to the studies carried out some 80,000 vehicles (automobiles, buses and minibuses combined) have been withdrawn from the traffic thanks to Metrobus. We also met with our objectives towards environment and efficiency to a great extent. Daily fuel savings amount to 242. In this regard, we are able to say that the project delivered more than expected at some areas within the scope of its goals and as for the remaining goals we can say that the outcome is near the expectations.

METROBUS

SAVES 3 YEARS FROM YOUR LIFE!

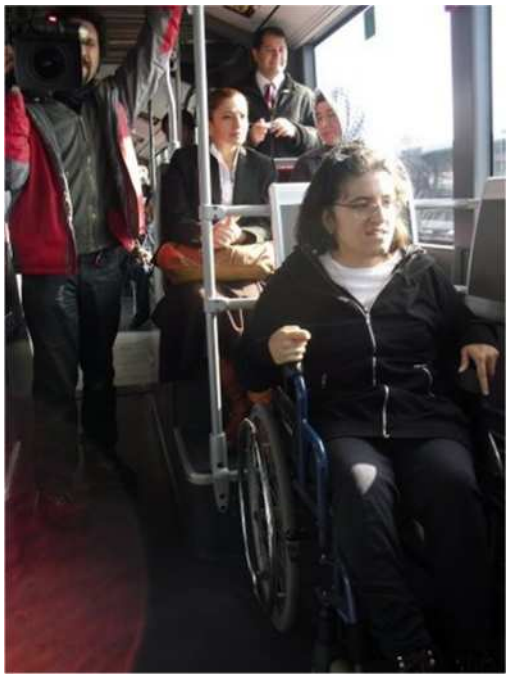
Metrobus users, from 2012 on, have saved 97 minutes on a Daily basis. Instead of 3 hours from one end to the other end, it now takes 83 minutes.

5. Project Impact

5.1. Social Impact

There is an improvement in the life quality of passengers because of the savings in time. Integration between modes results in an additional time saving. Before the Metrobus it took 3 hours to travel between Avcılar and Sogutlucesme, now it is 83 minutes and as the buses operate with a high frequency average waiting time at the bus stops is reduced. There is also an increase in the safety of passengers as Metrobus system has its own dedicated line and there are cameras at each bus, station and on the route. These monitoring activities also support emergency action plans and the Metrobus route can be used as an emergency line in the event of a natural disaster. During peak hours average headway between 2 metrobuses is 15 seconds and during non-peak hours it is 45-60 seconds.

We can also mention one of our passengers words here: “Before Metrobus those who were in automobiles looked at people inside the buses and thought they are 2nd class, now we overtake them swiftly in a congested traffic”. Furthermore, according to a 2010 IETT survey, 70.8 percent of BRT riders in Istanbul choose Metrobüs because it is fast and unaffected by traffic congestion.



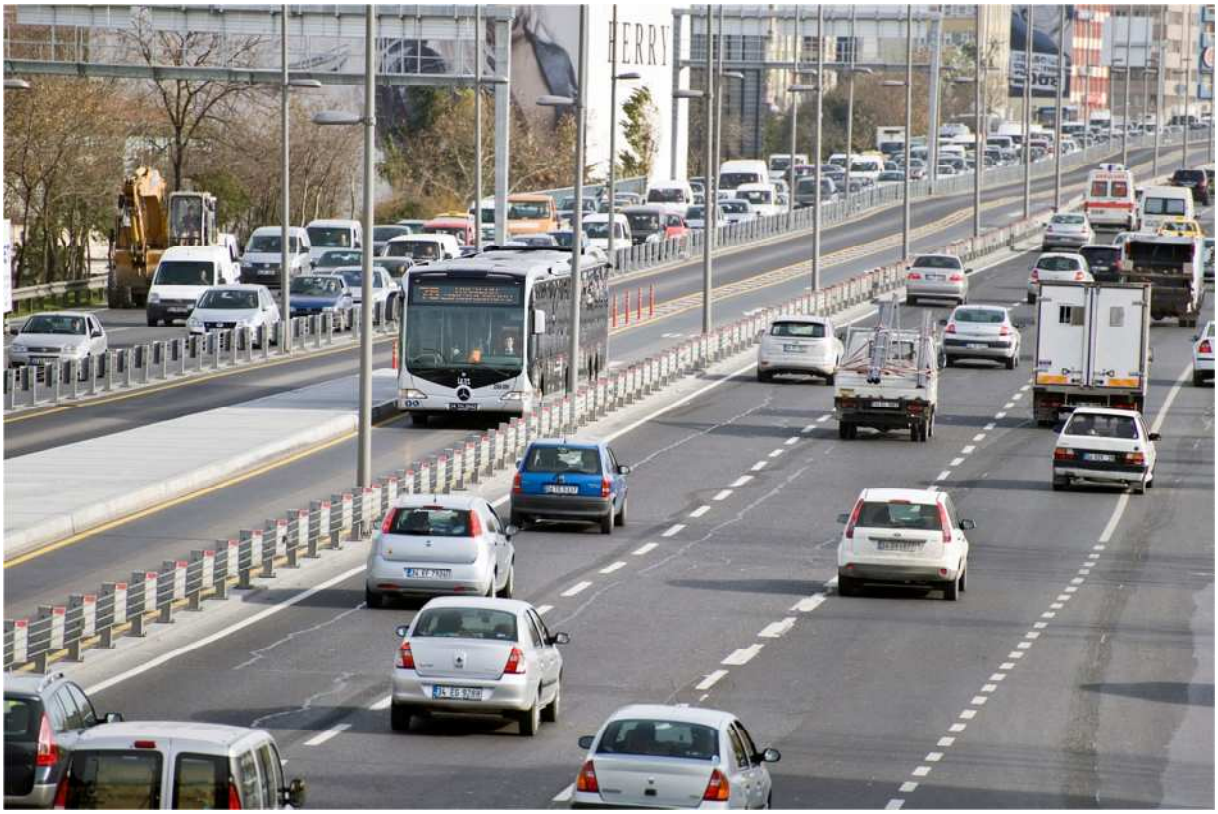

max. 350 kg


METROBÜS

5.2. Cultural Impact

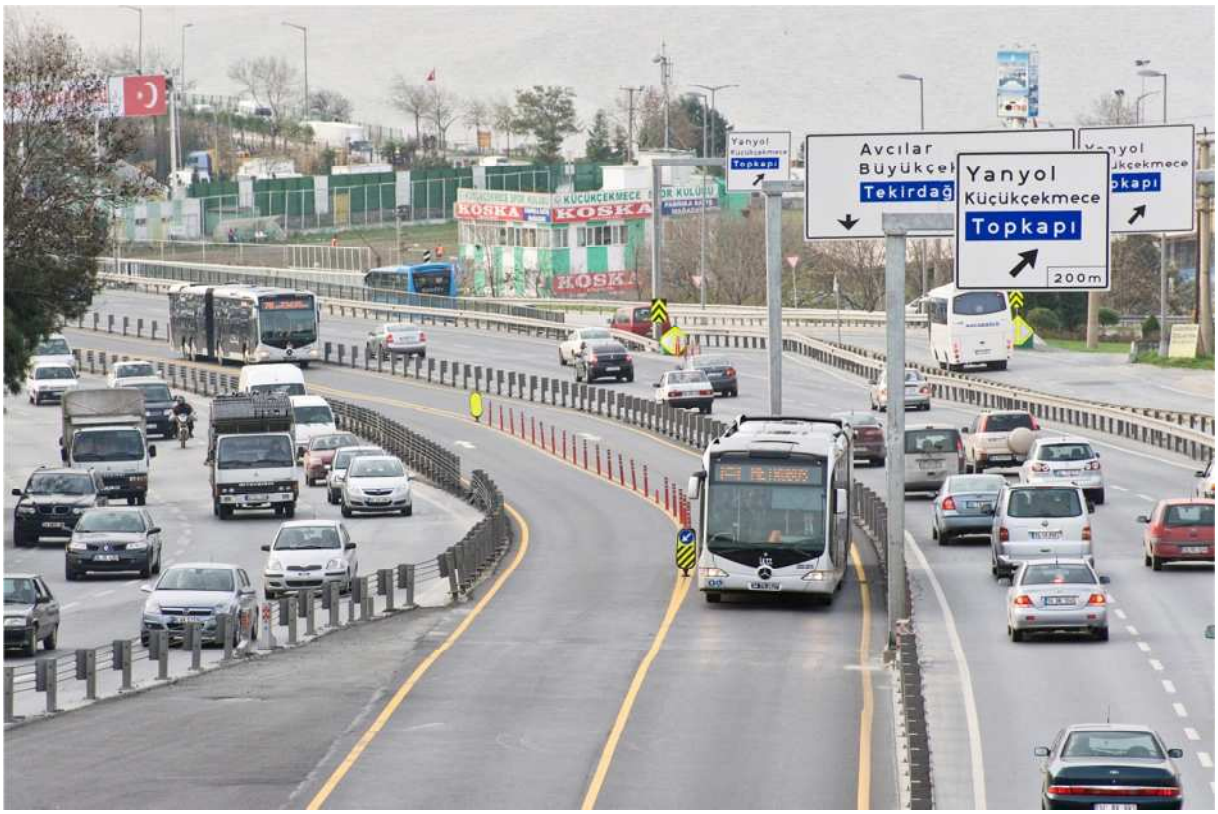
Increase in the mobility of the people:

- Metrobus provides service 24 hours a day and now people belonging to different levels in society can also go out at night.
- There is also an increase in the number of people who go to the Asian side from the European side for casual activities.
- Thanks to Metrobus Istanbulites who live in suburban areas have the opportunity to reach more touristic parts of the city such as Taksim.
- Distributed public transport smartcards for the disabled people are used more at Metrobus, the figure is 10% for Metrobus and around 6% for regular bus routes.
- As Metrobus has become a popular phenomenon in Istanbul one can often come across news about Metrobus while watching national broadcasts. There are also some common Metrobus jokes made among Metrobus passengers.



5.3. Economic Impact

Metrobus has increased the efficiency in public transport. As the buses on the dedicated route provide a much faster service and have a bigger capacity, there is a considerable increase in efficiency. This increase in efficiency means a decrease in costs on IETT's behalf and it enhances the institutional sustainability. Generally, the assumption among the public transport authorities is public transport's not being a profitable business; however Metrobus system is different within this scope. Half of IETT's fare revenues come from the Metrobus system and this revenue also help us compensate for the costs originating from the regular bus routes. Metrobus system operates with 1500 employees, most them being drivers, cleaning, security and maintenance personel. So, we can say that Metrobus system provided an employment opportunity for that many people.



5.4. Environmental Impact

209

BUSES

1296

MINIBUSES

80.000

AUTOMOBILES

DO NOT POLLUTE THE AIR ANY MORE

!!!

It takes 83 minutes to travel the entire Metrobüs route which is 52 km. Between the two terminal stations (Beylikdüzü and Söğütlüçeşme) there are 45 stations and 800.000 daily trips on average. Even before it was extended, Metrobus route helped decrease motor vehicles on Söğütlüçeşme – Topkapı line (209 buses, 1296 minibuses and 80,000 automobiles), thus contributing to the efforts to decrease greenhouse gas emissions. Thanks to the first phase of the project, emission of 623,000 tonnes of CO2, 78,500 tonnes of CO, 282.700 tonnes of NO, 7300 tonnes of fine particles and 25.000 tonnes of HC gases was prevented.

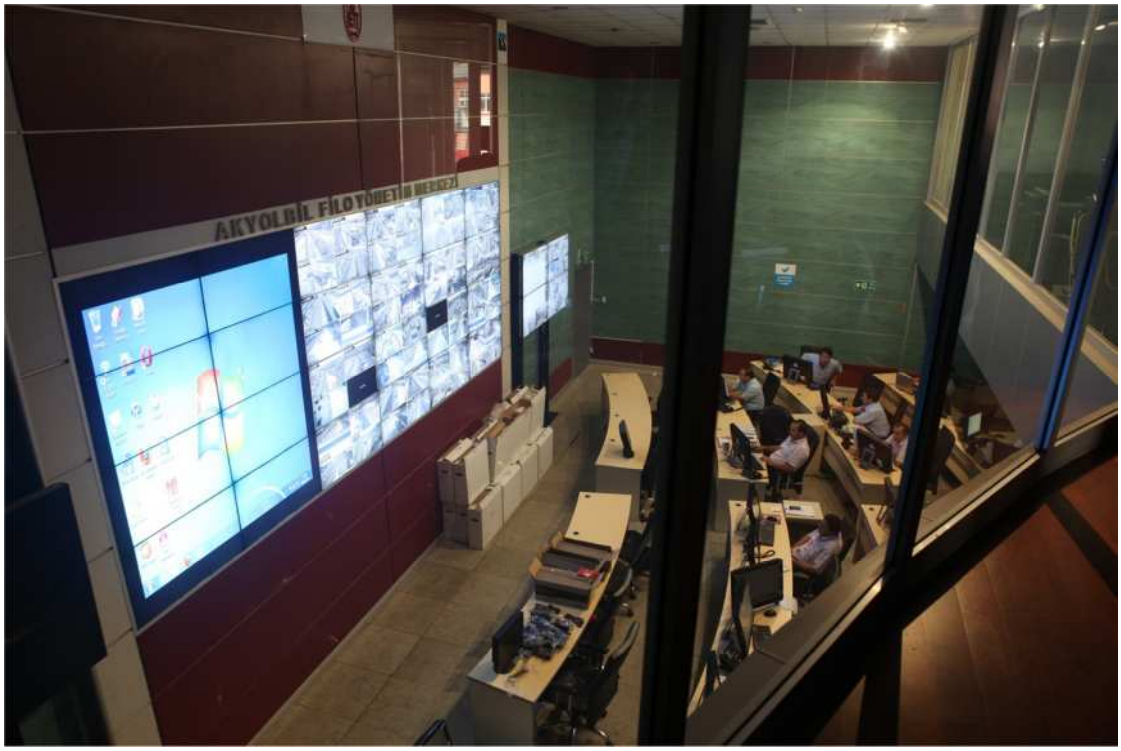
5.5. Urban Impact

As the Metrobus system covers as much as 52 km, it goes from one end of the city to the other end. On the route there are business districts, touristic areas and also suburban areas. In the planning phase suburban areas and development opportunities for those spaces were also taken into consideration.

Now, provinces such as Avcılar and Beylikdüzü are in a fast progress within the scope of housing. One can see many new and huge housing projects there and people with low income generally choose apartments to purchase or rent at those areas. Metrobus is their link between the business districts and their home. It is also a safe choice as it is punctual and secure. As we mentioned before all of the buses and bus stops on the system are monitored 24 hours a day from one center. There are emergency action vehicles allocated for this route which take action as soon as an incident occurs inside the buses or at the bus stops. Also there is a security officer at each bus during the journeys that take place at night.

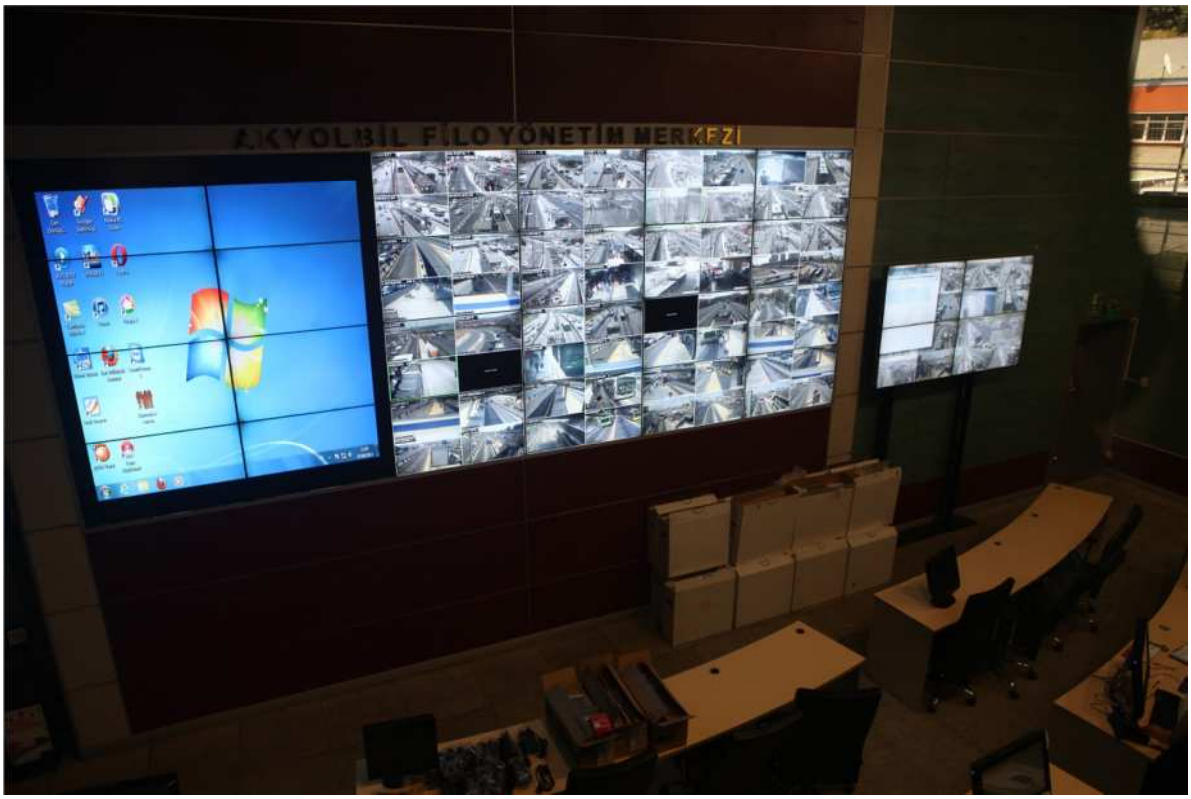
5.6. Technological Impact

As IETT, information technologies have always been an important subject for us and we have also developed our own technologies which are now taken as a model by other authorities and operators. For example we developed a monitoring and passenger information project called AKYOLBIL (Smart and Dynamic Passenger Information System).



All of our buses on the BRT – Metrobus route (also buses at regular routes) have a computer inside for the driver. This computer has a LCD screen, GPS and GPRS systems. With the GPS system our personnel at the control center track buses on map in real time and with the GPRS system they can gather data or send data to the driver. For example if the driver is going faster than the speed limit our personnel at the control center can send a warning to the driver. Also there are cameras in the bus and at the bus stops. Cameras at the bus stops have the zooming and rotating features and they can be controlled by the personnel

at the control center. This enables them to act quickly in case of an emergency. Tracking buses also enable our planning personnel to optimize the schedules.

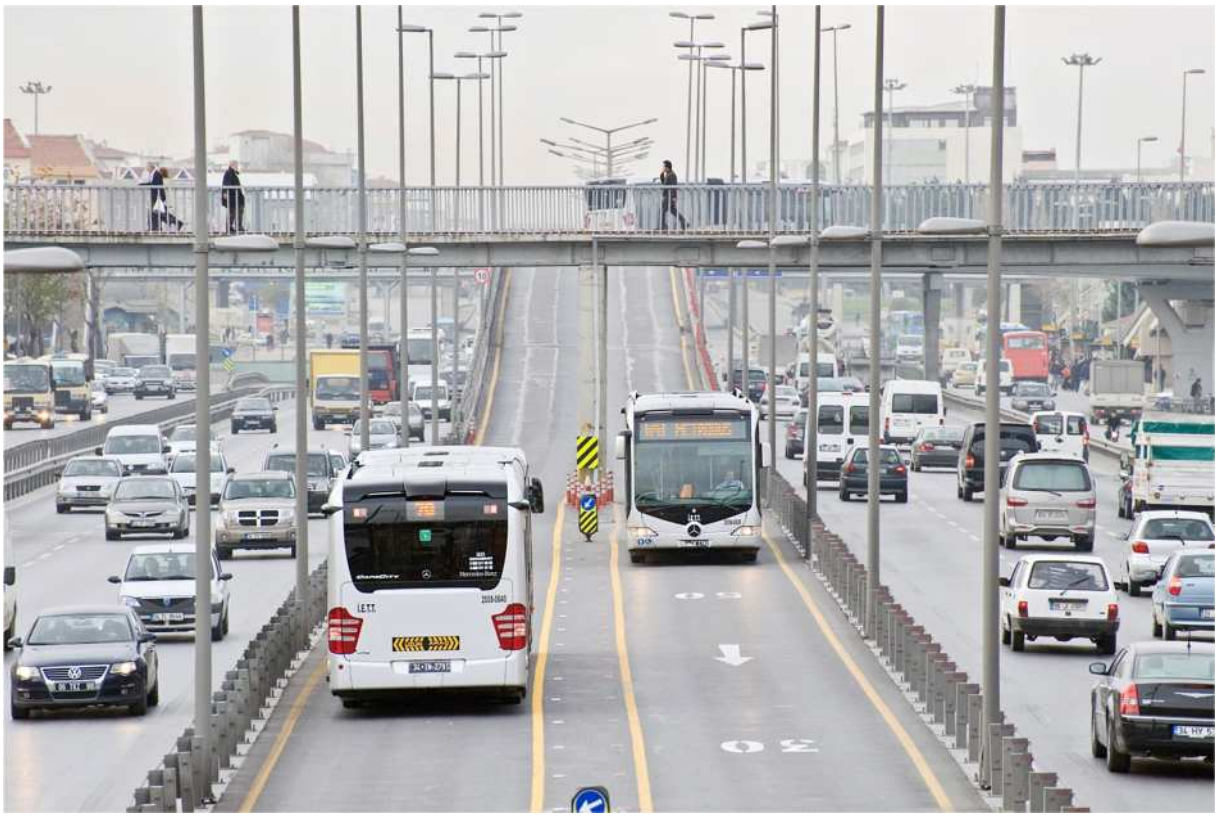


6. Cooperating Partners

For the Metrobus project different partners from different backgrounds worked together. From the central government Ministry of Transportation, Maritime Affairs and Communications and General Directorate of Highways were involved. Istanbul Metropolitan Municipality, Transport Coordination Board, Department of Transport and General Directorate of IETT were partners from the local government. There were partners from the private sector such as construction firms and bus producers. In addition, as a non-governmental organization, EMBARQ was present.

7. The Differences Between İstanbul BRT And Other BRT Systems

Metrobus – BRT system is not an exclusive project carried out only in Turkey. There are other BRT systems all around the world. However, Istanbul BRT has some prominent features when compared to other systems. For example, it has the highest commercial speed among the BRT systems. It has a dedicated route which does not interlace with the general traffic and it is also an advantage. Its IT infrastructure is also remarkable and all of these features draw attention from all over the world. We had many visitors who wanted to see the system and many of them took some aspects of the Istanbul – BRT as a model for their own projects in their countries. IETT provided consultancy and know-how to Lahore Transport Company – Pakistan in the construction and operation of Lahore Metrobus system and they took Istanbul BRT as a model. The system which was applied in Lahore is quite similar to Istanbul – BRT. Currently, Metrobüs is the most used BRT system in Europe and one of the fastest, with an operating speed of 35 km/h.



8. Results

Public transport became a faster solution with its own dedicated line and no traffic lights. Passengers using this route now save approximately 97 minutes a day and according to the studies carried out around 28.000 people chose our system to get to work, school or home by leaving their cars. Before Metrobus some 1316 minibuses and 443 buses carried 309,533 passengers on a daily basis. Now, Metrobus system itself carries around 800,000 passengers in a day. Aside from automobiles there is also a reduction in public transport vehicles and the total number is approximately 80,000. Daily fuel savings amount to 780,000 TL / 400,000 USD in a day and for the passengers there is also a saving in fares as a result of the integration between modes and the transfers made.

At the request of IETT, EMBARQ partnered with the Institute for Transportation and Development Policy (ITDP) to evaluate the city's BRT system using the BRT Standard—a standardized range of metrics for assessing BRT corridors worldwide. The reviewers recognized Metrobüs as a Silver-standard BRT corridor—the second highest possible rating. In its evaluation under the BRT standard, the Metrobüs corridor received a final score of 70 points out of 100. This score indicates that the system includes most elements of international best practice and reflects the quality of the bus lane design, the number and length of routes, the information services offered, and the integration with other modes of transport like metro, light rail, conventional buses, and minibuses. One unique characteristic of Metrobüs is its long station design, which allows for five individual buses to dock simultaneously. This design feature makes Metrobüs the highest-capacity single-lane BRT in the world, serving 30,000 passengers per hour in each direction.

9. Future Plans

As the project proved to be successful on our side and also from the point of passengers there are some plans for additional BRT – Metrobus lines in Istanbul. The route which is operating today is crossing over the Bosphorus Bridge to connect the two sides of Istanbul. There are studies for an additional line which crosses over the second bridge. Furthermore, we are also carrying out studies and examining different types of vehicles in order to increase our system's capacity because as mentioned before it is pushing its limits. We are now planning to implement EN 13816 Service Quality Standard for public transport for metrobus services next year.