



# CAIRO

## RENEWING THE TAXI FLEET TO FIGHT AIR POLLUTION



### Key words.

Planning; Environmental policy; Owner–driver transport systems

Located by the river Nile, the metropolitan area of Cairo, more commonly called Greater Cairo, has a population of more than 16 million inhabitants and a total area of 1,492 sq. km. The Egyptian capital is the fourth most densely populated city in the developing countries. Pollution levels due to traffic are particularly high. A programme to renew the taxi fleet has begun.

Egypt	Cairo
<b>Population:</b> 81,121,000 inhab.	<b>Population:</b> 11,001,000 inhab.
<b>Area:</b> 1,002,000 sq. km	<b>Area:</b> 290 sq. km
<b>Density:</b> 81 inhab. / sq. km	<b>Density:</b> 37,934 inhab. / sq. km
<b>Urbanisation rate:</b> 42.80%	<b>Forecast population of metropolitan area in 2025:</b> 13,531,000 inhab.
<b>Annual rate of urban-population growth (2005-2010):</b> 1.99%	<b>Length of lines: (2012)</b> Metro: 70 km
<b>GDP / inhabitant:</b> \$2,698.4	
<b>HDI:</b> 0.644 / 1	
<b>Car ownership:</b> 33 vehicles per 1,000 inhab.	
<b>Vehicles per km of road:</b> 37	
<b>Accident rate:</b> 1.63 fatal accidents per 10,000 inhab.	

Sources: World Bank – UNDP – Sylvain Houpin: *Les cahiers du plan bleu 9* – UrbanRail.net

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Based on the presentation by **Kawthar Hefny** – General Manager, Egyptian Environmental Affairs Agency (EEAA), (Damascus conference, 2010).

Cairo is the biggest conurbation in Africa. And with nearly 39,000 inhabitants/sq. km, it is one of the world's most densely populated cities.

From the 1980s onwards, the Greater Cairo area wanted to restrict demographic pressure in the centre of the metropolitan area by developing business zones in the peripheral governorates and by building new towns. These towns, which were intended to create new urban poles, had limited success. Cairo has remained one of the world's most densely populated cities, with a rate 10 times higher than the Paris region. However, this spatial reorganisation increased the number and distance of commuter journeys.

Cairo generates nearly 20 million motorised journeys a day; two-thirds are on public transport.

**PUBLIC TRANSPORT SERVICE STRUGGLING TO MEET NEEDS**

Cairo was the first city in Africa to have a metro: a regional line opened in 1987. When the second urban line entered service in 2000, the metro was carrying more than 1.5 million passengers daily on 80 km of lines. Cairo’s metro is one of its most efficient transport modes.



Figure 1: Map of Cairo.

The metro lines are operated by the Egyptian Company for Metro (ECM), overseen by the Transport Ministry. But the city’s tramway and bus networks are run by the Cairo Transport Authority (CTA), a public company with more than 40,000 employees.

The tramway is a legacy of the colonial era, with only a small modal share. The bus network, meanwhile, has seen use of its scheduled lines fall significantly over the past 10 years, from a 40% share to 20% today.

**OWNER-DRIVER TRANSPORT**

In Cairo, this mode covers taxis, collective taxis and minibuses. Minibuses’ share has been trending downward since the early ‘70s. Conversely, the share of taxis and collective taxis has risen strongly, from 6% in 1987 to 37% in 2011.



Figure 2: Taxis operating in Cairo.

The falling popularity of buses is due partly to the metro’s success, but the main reason is their deteriorating service. Traffic conditions are reducing the network’s appeal, and the conurbation’s expansion has not been matched by a redeployment of bus service to its peripheral areas.

Taxis have capitalised on the deficiencies of over-ground public transport in order to grow their modal share. Their adaptability makes them faster than buses and allows them to serve peripheral areas.

However, taxis are largely responsible for traffic congestion, and are a big factor in the deterioration of air quality.

## **CHRONIC CONGESTION AND AIR POLLUTION**

The number of motorised vehicles in Greater Cairo has been growing constantly since the '70s. More than 1.5 million vehicles are currently driven in the Egyptian capital. Although car ownership is still low, at 84 vehicles/1,000 inhabitants, traffic conditions are considered the world's worst owing to an absence of traffic management. The average traffic speed is 11 km/h. Walking remains the dominant mode of travel, but is suffering from this situation. It is increasingly dangerous to walk in the city.

The pollution caused by Cairo's dense traffic is problematic. Motorised vehicles produce 90% of particulate emissions, 90% of carbon-monoxide emissions and 50% of nitrogen oxide. The health and environmental risks have prompted the national authorities to monitor air quality more closely, and to adopt policies to cut pollutant emissions by meeting the following objectives:

- Renew the fleet of old taxis in Greater Cairo.
- Cut emissions from motorcycles.
- Ban two-stroke engines.
- Run public transport buses on natural gas.

## **NATIONAL CAMPAIGN TO LIMIT THE ENVIRONMENTAL IMPACT OF BUSES AND OWNER-DRIVER TRANSPORT**

In 2008 a traffic law stipulated a ban, starting in July 2011, on operating any public transport vehicle or taxi more than 20 years old. A National Taxi Replacement Scheme (NTRS) was immediately started to help taxi drivers comply. In 2011, the authorities conducted a census and recorded 85,000 taxis and 30,000 minibuses, half of which were more than 25 years old.

To promote the purchase of a new natural gas vehicle (NGV), economic incentives were introduced:<sup>1</sup>

- Exemption from sales tax on vehicle purchases.
- Payment of a subsidy if the owner handed over the old vehicle to a recycling centre.
- Exemption from taxi-licence fees for several years.
- Free public transport pass for one or two years.
- 25% of the vehicle price is paid by the owner, who receives a six-year loan with an annual interest rate of 7.5%.

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<sup>1</sup> Natural gas fuel for cars. Containing 97% methane, it produces 25% less CO<sub>2</sub> emissions than petrol and practically no particulate emissions.

The Cairo authorities thus planned to replace 13,500 taxis and 4,500 minibuses a year for three years. This was expected to cut annual emissions by 4,926 tons of nitrogen oxide, 30,359 tons of carbon monoxide, and 244 tons of particulate. Although the total cost of the programme is estimated at E£1.2 billion, the expected benefits are valued at E£638 million.

## **ONGOING RESULTS**

In the first eight months of 2012, 14,000 taxis out of 37,000 were replaced. The new, white taxis are relatively recent models and manufactured locally. They have a meter and air conditioning. These results are satisfactory, especially as the context is particularly difficult. However, these good results do not apply to minibuses.