

Alstom and Carbone 4 measured the carbon footprint of the tramway versus Bus Rapid Transit systems

4 November 2016 – Alstom and Carbone 4, a leading consulting company specialized in climate-resilient and low-carbon strategy presented today the results of a study demonstrating that tramways have a smaller footprint than Bus Rapid Transit (BRT) systems. This occurred in the lead up to COP22 that will be held in Marrakech, Morocco, in which Alstom participates.

With global urban transport emissions expected to double to nearly 1 billion tonnes of CO₂ equivalent per year by 2025, favoring transport modes with the lowest carbon footprints is crucial. Rail can be a key contributor in the fight to reduce greenhouse gases (GHGs) and reach the target set at COP21 in 2015 to keep global warming below 2°C.

The tram, for example, has been identified as one of the greenest urban transportation modes¹ due to its low environmental impact when in operation. The study conducted by Alstom and Carbone 4 compares the carbon footprint of tramways and BRT systems, enabling a better understanding of their comparative performance over the entire lifecycle including construction, operation and maintenance of the two systems. An analysis conducted on a typical 10 km line operated in Belgium demonstrated that for equivalent transportation capacity, over a 30-year lifetime, a tramway system emits about half as much CO₂ as a BRT system operated with diesel buses, and about 30% less CO₂ than a BRT system operated with hybrid buses.

Julien Blanc, associate director of Carbone 4, declared « *Reducing greenhouse gas emissions from transportation is both a key issue and an exciting challenge. It should be achieved through relevant urban planning, energy efficiency, clean energy and of course modal shift. Tramways are of course part of the solution and these infrastructures will benefit from all the improvements in « cleaning » the electricity mix.* »

Cécile Texier, Sustainable Development Director at Alstom, said: “*At Alstom, we are constantly working to promote sustainable mobility, striving to reduce the operational cost from energy for the benefit of our customers and committed to reducing the carbon footprint of transportation. The survey conducted with Carbone 4 illustrates that rail systems have a lower carbon footprint than other motorized modes. It also shows that optimized system like Attractis, an innovative integrated tramway system that is simpler to*

¹ Excluding bicycles

operate and cost-effective², can significantly reduce CO₂ emissions from the construction phase.”

Alstom contributes to the visibility of transportation issues and the promotion of sustainable transportation in international negotiations on climate change through its support of the Paris Process on Mobility and Climate (PPMC). Alstom will participate in the PPMC's Transport Day on 13 November at COP22 in Morocco where its Citadis trams have been adopted by Casablanca and Rabat since 2011. In Rabat, up to 120,000 people travel every day aboard the trams, a great success which has led the city to decide to extend the network. Studies³ have shown that two tramway lines should lead to a CO₂ emissions reduction of about 30,000 tons per year.

To find out more about Alstom's commitments to sustainable mobility and read the synthesis of the report, click [here](#)

About Alstom

As a promoter of sustainable mobility, Alstom develops and markets systems, equipment and services for the railway sector. Alstom manages the widest range of solutions in the market – from high-speed trains to metros and tramways – customised services (maintenance, modernisation,...) and infrastructure and signalling solutions. Alstom is a world leader in integrated railway systems. It recorded sales of €6.9 billion and booked €10.6 billion of orders in the 2015/16 fiscal year. Headquartered in France, Alstom is present in over 60 countries and employs 31,000 people today.

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About Carbone4

Founded by Alain Grandjean and Jean-Marc Jancovici, Carbone 4 is a leading independent consulting firm specialized in energy transition that offers its expertise to private or public players. In the course of over 600 missions carried out in France and around the world, Carbone 4 has developed several innovative analytical methods, and has compiled some 10 sectoral methods for measuring carbon footprints. Convinced that anticipation of the constraints of climate change is the best option, Carbone 4 assists its clients to help them transform these constraints into a tremendous innovation accelerator, a commercial differentiator and a motivation for teams.

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² Thanks to optimized project management and construction methods, Attractis is available in the record time of 30 months from the design phase

³ Source: CODATU/Agence Française de Développement (AFD)