

# PORTUGAL



## **Project 1: Porto's yellow metro line extended from Santo Ovídio to Vila d'Este**

**Total project cost:** EUR 169 036 397

**EU contribution (fund):** EUR 43 359 619 (Cohesion Fund)

**Expected start of operational phase:** March 2023

### **Project description:**

Starting from Santo Ovídio station, Porto's yellow metro line is to be extended by 3.15 km. Three new stations – Manuel Leão, Hospital Santos Silva and Vila d'Este – will be built, as will a depot and workshop, and an additional track for reversing vehicles south of Santo Ovídio.

The extension will run across a viaduct comprising three structures totalling 555 m in length between Santo Ovídio and Manuel Leão, and through a 1 km tunnel containing Manuel Leão station – the only underground station covered by the work – and adjacent sections. It will end 160 m from Hospital Santos Silva.

After Hospital Santos Silva, the track will go below ground again, subsequently re-emerging and continuing overground to Vila d'Este. The section between Manuel Leão and Hospital Santos Silva will have an emergency access and ventilation shaft.

As well as allowing the hospital of the same name to be served by the metro, Hospital Santos Silva station will, due to its proximity to major roads, act as a transport interchange and contribute to a reduction in private transport use. The car park at the site will be maintained and renovated to provide a link between the metro station, bus stops and taxi ranks.

Located between Hospital Santos Silva and Vila d'Este, the depot and workshop will improve operation and maintenance of rolling stock. It will include parking for 20 vehicles, a service station, a washing building and a small workshop complemented by warehouses and technical rooms for specialised operations. Access will be via two single-track branch lines.

As a continuation of the existing yellow line, the new track will use a 750 volt, direct current electric traction system with flexible overhead catenary wires. Two traction substations will be built. Signalling, safety, operational support and ticketing systems and equipment will be procured, and the central command and control systems will be adapted to take account of the extension.

Made up of 17 municipalities, the Porto Metropolitan Area has a population of 1.7 million and an area of 2 000 km<sup>2</sup>. Its 2016 Sustainable Urban Mobility Action Plan emphasises that transport is the main source of CO<sub>2</sub> emissions in the area and that road traffic generates particularly high levels of such emissions in the municipality of Porto.

The Porto Metro is currently 67 km long and has 82 stations and 102 vehicles. It carried 62.6 million passengers in 2018. The 2 493 m segment between Jardim do Morro and Santo Ovídio, where the yellow line currently ends, accounts for around 4 % of the network, but 8 % of demand for its services.

The area to be served by the new stations encompasses several sites of metropolitan and regional importance. These include Vila Nova de Gaia Hospital, where each year some 25 000 people are hospitalised, 10 000 operations are performed, 500 000 appointments are scheduled and 180 000 emergency patients are treated. Vila d'Este, a densely populated residential area, is home to approximately 8 000 people; and Soares dos Reis primary school, which has around 1 000 pupils.

Objectives of the project are to increase demand for metro transport, reduce emissions of pollutant gases and thus tackle climate change, and promote local economic development and social and territorial cohesion. It is estimated that more than 20 million passengers per kilometre will travel on the extension in its first full year of operation and that, in the same period, the extension will cut CO<sub>2</sub> emissions by over 2 290 tonnes.

## **Project 2: Metro extension promises greater accessibility to Porto's public transport network**

**Total project cost:** EUR 268 375 086

**EU contribution (fund):** EUR 63 640 380 (Cohesion Fund)

**Expected start of operational phase:** November 2023

### **Project description:**

Construction of Porto metro's Pink Line, from Casa da Música to São Bento, will make public transport accessible to more local residents. The new service should also encourage a shift away from car use, which will benefit the entire Porto metropolitan area by reducing emissions.

The project covers the laying of 3 km of new tracks and the construction of four metro stations: Liberdade - S. Bento, Hospital Santo António, Galiza and Boavista - Casa da Música. Work also includes provision of a branch line to the existing network and the start of a future line towards the nearby municipality of V.N de Gaia.

The Pink Line runs on a double track and is underground throughout, while the branch line is on a single track. The Liberdade - S. Bento, Galiza and Boavista - Casa da Música stations will be constructed by using the cut-and-cover excavation method. The Hospital Santo António station will be built by mining excavation with two access shafts.

Trains will be powered by 750 V dc electric traction using a rigid catenary system. Two traction power substations will be built as part of the scheme.

It will also be necessary to procure equipment for the new line and stations – and to adapt or modify the Central Command and Control Systems. Procurement covers equipment for the signalling, safety, operational support and the ticketing systems for the new stations.

The Pink Line and its stations improve access to the metro system in city's central zone, which has the highest demand for public transport in the Porto metropolitan area. Casa da Música station already has a link with the urban and international road transport network, while São Bento connects with the local railway station. The locality has the region's densest supply of road transport and has several key locations that do not have any metro access.

The new line will therefore give people greater public transport options, encouraging commuters to leave their cars at home. This should cut emissions and help Portugal in its overall efforts to tackle climate change. Estimates suggest the line will meet high levels of demand (over 30 million passenger km in the first full year of operation) and deliver significant environmental benefits (an estimated reduction in CO2 emissions of some 1 500 tonnes over the same period). Operation of the new line also promises to deliver energy savings of 98.61 tonnes of oil equivalent (toe) per year.

**Portugal has received over €1.6 billion from cohesion policy for major project investments in 2014-2020 EU budget period.**