



**Observatoire Europe-Afrique 2030**

**Data Sheet « Value Chain »**

**Data Sheet n°11**

**Tramway**

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## **1. The three steps of the realization of a tramway**

- Design (two years)
- Manufacture of large equipment (eight months), involving up to 6 or more sites:
  - o Engines
  - o Bogies
  - o Traction chain
  - o Control systems
  - o Interior fittings
  - o On-board electronics
- Assembly, integration and testing of trainsets (four months).

## **2. The Assembly Line**

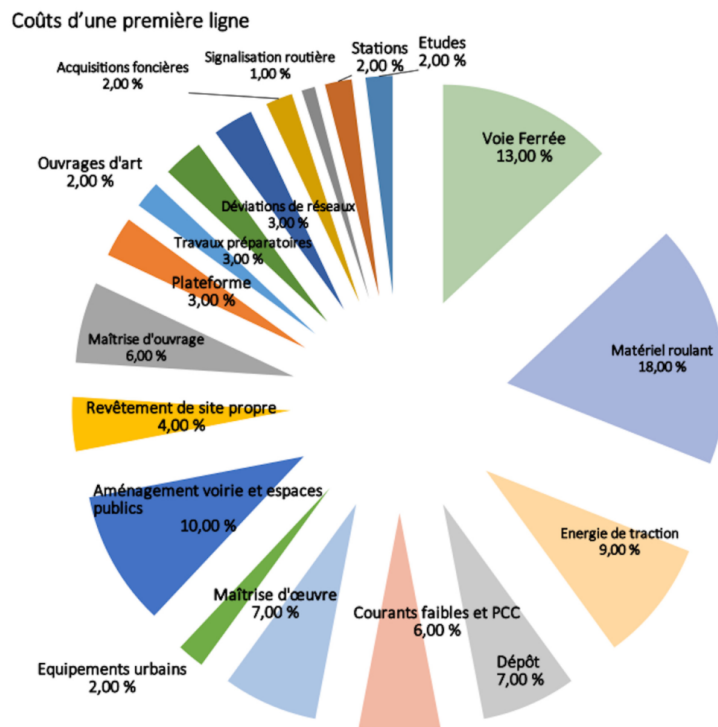
The assembly line comprises the following stages:

- Wiring (1 month).
- Assembly of wired products into sub-assemblies: roof, chassis, door frames and cabins (15 days).
- Assembly of roof, chassis, door frames and cabins, in the form of an 8-meter module. This stage is called the cathedral, as it shapes the parts and secures them together (one day).
- Integration of all equipment within this module: trim, seats, windows (15 days).
- Bogie mounting and coupling of the trainset, made up of two or three modules (3 days).
- Testing the operation of the entire trainset: braking, passenger information system and dynamic running sessions to check the trainset's behavior on a test track (6 weeks).

The total cost of a 160 to 280-seat trainset is in the region of €2 to €3 million, excluding VAT.

## **3. Value Chain of a new tramway line**

The diagram below shows the cost breakdown for the realization of the first tramway line in the Tours conurbation.



Source : EGIS (cité par l'Atelier du tram et repris dans VR&T de septembre 2014).

## 4. Sources of information

<https://mesinfos.fr/provence-alpes-cote-d-azur/dans-la-fabrique-du-tram-du-grand-avignon-4929.html>

[https://www.occitanie.developpement-durable.gouv.fr/IMG/pdf/F33-Le\\_cout\\_des\\_transports\\_cle15daa1.pdf](https://www.occitanie.developpement-durable.gouv.fr/IMG/pdf/F33-Le_cout_des_transports_cle15daa1.pdf)

Comparatif des coûts entre des autobus, des trolleybus et des tramways – Données EDF - 2004