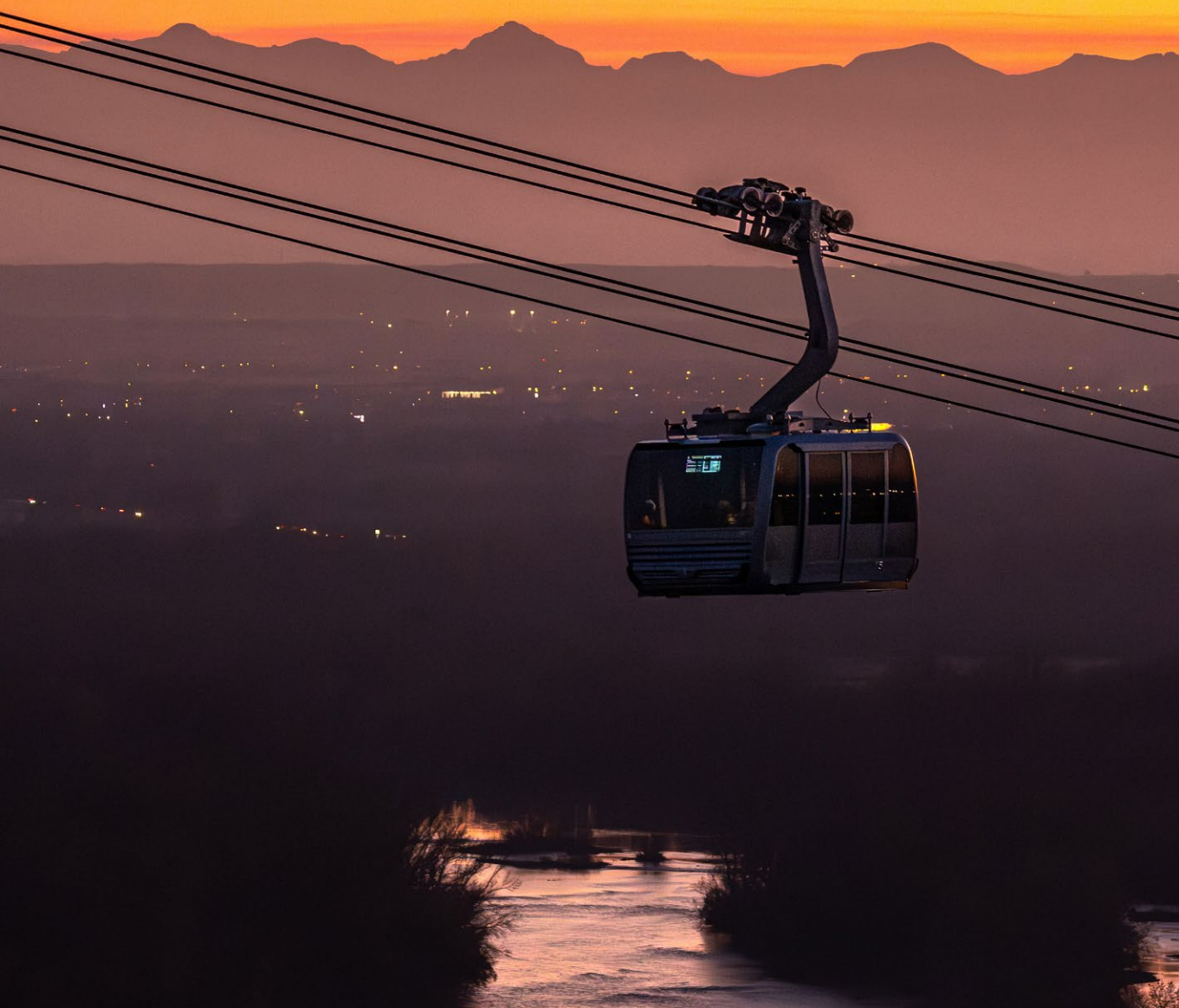
# URBAN CABLE TRANSPORT

SYSTRA

## A low-carbon solution to expand urban mobility options



# A PROVEN ANSWER TO TODAY'S URBAN MOBILITY CHALLENGES

**Urban cable transport is now recognized as a reliable, low-impact way** to strengthen urban mobility networks. It helps cities and transport authorities overcome both natural and man-made barriers, connect underserved neighborhoods, ease pressure on saturated corridors, and do so with a remarkably small physical footprint.

**Perfectly suited to complex urban settings,** cable systems provide an effective answer to some of today's most pressing mobility challenges. They support lower emissions, enhance quality of life, and expand access to dependable, sustainable transport. They are especially valuable where conventional solutions are harder to implement, more expensive, or more disruptive for the city and its residents. They can be delivered far more quickly than most conventional urban transport projects.

**Far beyond its original leisure-based uses,** cable transport has become a fully fledged urban mobility solution for everyday journeys, whether commuting to work, school, or shops. Its growing success is driven by clear and compelling advantages: high-capacity systems can carry **up to 4,000 PPHPD** (passengers per hour per direction); they can operate on the ground, such as inclined lifts and funiculars, or overhead, such as aerial trams, cable cars, and gondola lifts, making them adaptable to a wide variety of urban contexts.

Toulouse
(France)

# THE RIGHT QUESTIONS TO CONSIDER BEFORE STARTING...

**6 Key questions to consider** to assess relevance and feasibility of a transport-by-cable project

## INTEGRATION

The question of **integration** is essential. It is important to determine whether cable transport can effectively address physical crossing constraints and fit appropriately into the territory.

## COVERAGE

The second point concerns **service coverage**. The planned line must respond to actual travel demand and ensure the capacity for tomorrow.

## INTERMODALITY

Another major issue is **intermodality**.
The project should be connected to the main public transport corridors in order to ensure smooth and efficient links with the wider transport network.

## MAINTENANCE

**Maintenance** must also be anticipated.
Project owners need to consider whether they are prepared to suspend service for several days, or even a few weeks each year, to allow for maintenance operations.

## ACCEPTABILITY

Does the route pass over private land? Does it go in front of people's windows?

What level of urban integration am I prepared to accept for the design of stations and pylons?

The project's **acceptability** is another decisive factor. The route may pass over private land or in front of residents' windows, which can raise concerns and require careful consideration.

## ARCHITECTURE

Finally, **architecture and urban integration** play an important role. It is necessary to define the level of urban integration that stakeholders are willing to accept for the design and installation of stations and pylons.

## SUSTAINABILITY

Create a long-term **positive impact** for the territory and its people.

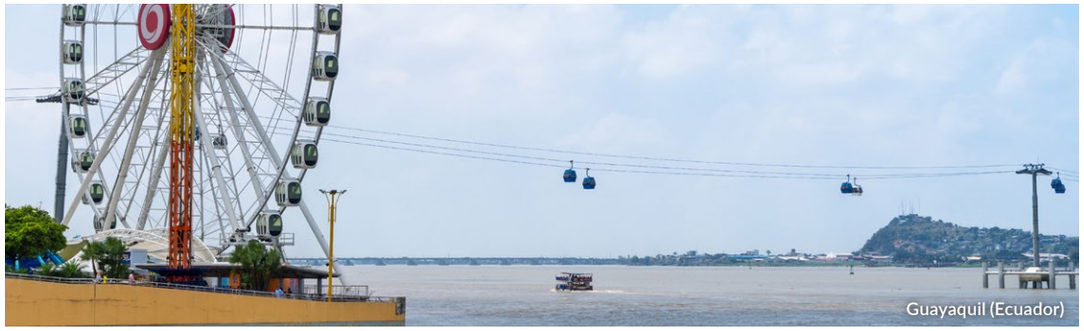
Ask which are the **environmental impacts and benefits**?



# ...FACTS & FIGURES TO HELP YOU MAKE DECISION

## CABLE TRANSPORT: A COMPETITIVE ADVANTAGE

| CRITERIA | CAPITAL COST | CONSTRUCTION TIME | LAND TAKE/ RIGHT OF WAY | CROSSING OBSTACLES | DISRUPTION DURING WORKS | SCALABILITY & FLEXIBILITY |
|---|---|---|---|---|---|---|
| CABLE TRANSPORT | Low–Medium | 2–4 years | Minimal | Excellent | Low | High |
| TRAM | Medium | 4–7 years | Medium | Limited | Medium | Medium |
| METRO | Very High | 8–15 years | High | Good | High | Medium |



Guayaquil (Ecuador)

## WHERE DOES IT WORK BEST?

### IDEAL FOR URBAN CONTEXT WHERE OTHERS STRUGGLE:

**STEP TOPOGRAPHY:** overcomes slopes and uneven terrain efficiently

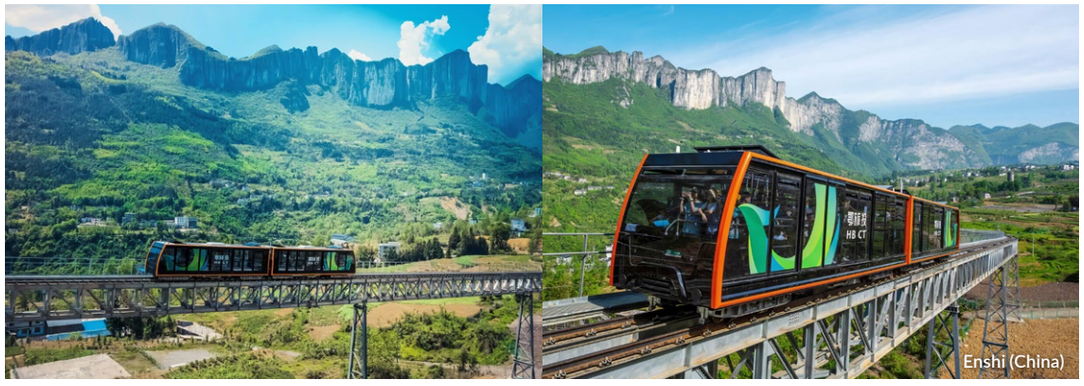
**NATURAL BARRIERS:** crosses rivers, valleys and other natural obstacles with ease

**CONGESTED CORRIDORS:** provide high capacity where roads are saturated or cannot be expanded

**DENSE URBAN AREAS:** minimal footprint and quiet operation for better integration in the city

**ENVIRONMENTALLY SENSITIVE AREAS:** low impact on the environment and visual landscape

**LAST-MILE CONNECTIONS:** connects communities to public transport hubs and key destination



Enshi (China)

# WHY SYSTRA IS YOUR TRUSTED PARTNER

## ADOPTING A LONG-TERM ATTITUDE

Delivering a successful urban cable transport project means making the right choices from the start: the right system sizing, the right traffic and speed forecasts, and the right balance between performance today and flexibility for tomorrow. SYSTRA helps you define and deliver solutions that are **reliable, accurate, cost-effective and ready for future modernization**.

## WE BRING VALUE ENGINEERING FOR TAILOR MADE PROJECTS

Backed by 50 years of experience, we support you in developing aerial cable car systems designed around your specific needs, whether in terms of architecture, onboard equipment, passenger comfort, safety or intelligent technologies.

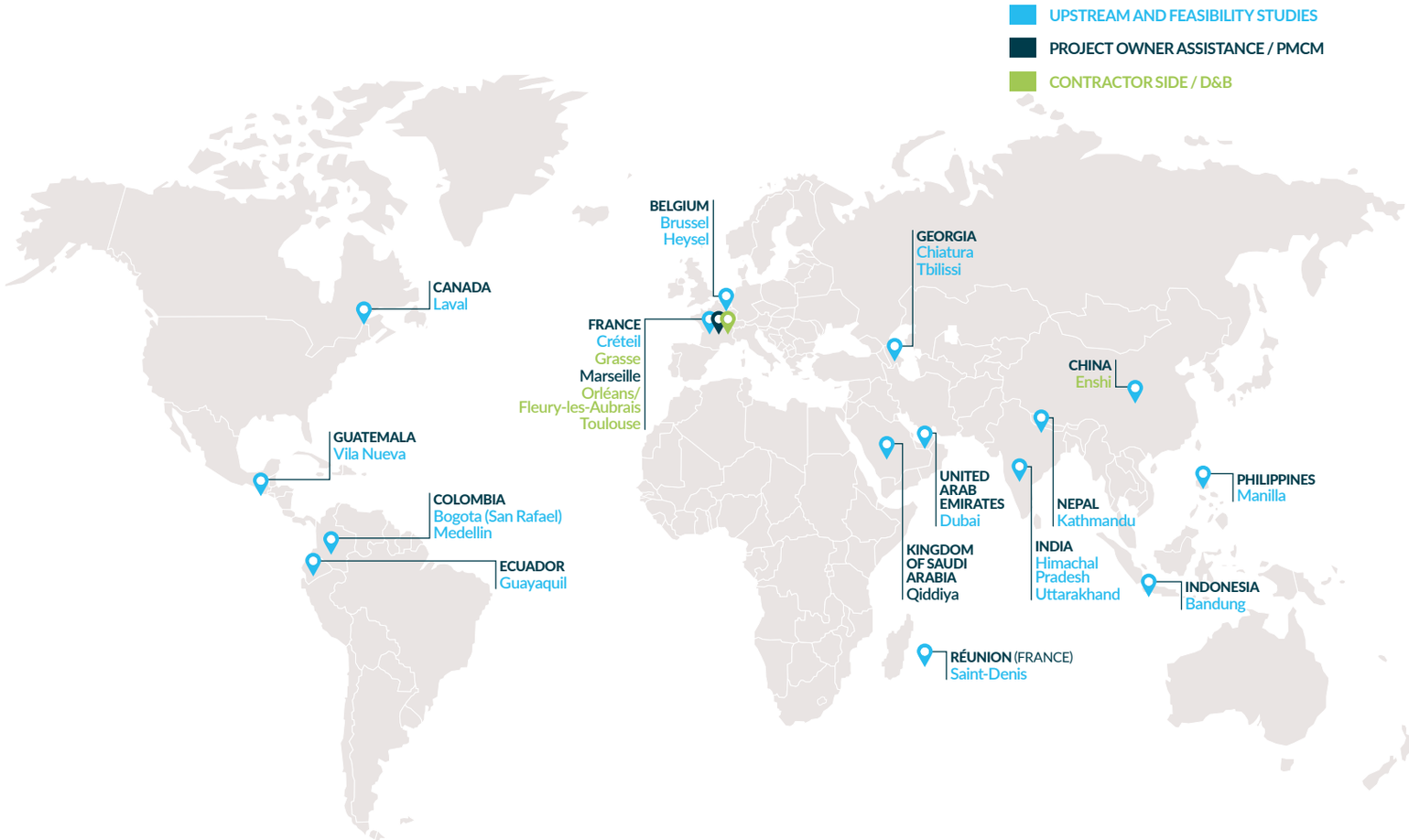
Our approach goes beyond technical design. We help you optimize **whole-life value** by anticipating material, equipment, infrastructure and operating costs from the outset. Combined with broad international experience across proven cable car systems and suppliers worldwide, this ensures solutions that are both practical and high-performing.

Drawing on recognised expertise in **structures, foundations and complex infrastructure projects**, our teams design pylons, stations, substations and urban interfaces that support **safe, durable and well-integrated cable systems**. We also bring a clear understanding of operational realities, enabling us to design depots and maintenance facilities that support efficient cleaning, servicing, stabling and day-to-day performance.

Across the full project lifecycle, from feasibility and design to civil works, system integration and operational support, SYSTRA provides the multidisciplinary expertise needed to turn your ambitions into a **robust, reliable and well-integrated urban mobility solution**.

We deliver the bespoke services needed during the project's critical emerging phases, such as consultations, assistance with regulations, communication strategies and so on.

# OUR PROJECTS AROUND THE WORLD*




## OUR SERVICES — COMPLETE SOLUTIONS FOR YOUR PROJECT

### PLANNING & STRATEGY

- Strategic mobility advice
- Feasibility studies
- Demand forecasting
- Route and alignment optimization
- Business case & funding support

### DESIGN & ENGINEERING

- System selection & technology advisory
- Civil & structural engineering
- Stations & urban integration
- Systems engineering
- Environmental assessment

### DELIVERY & IMPLEMENTATION

- Procurement support
- Project management
- Construction supervision
- Testing & commissioning
- Safety & quality assurance

### OPERATIONS & SUPPORT

- Operational readiness
- O&M strategy & training
- Maintenance advisory
- Asset management
- Modernization & upgrades

## KEY ADVANTAGES —

- → UP TO **4,000** PPHPD**
- → VERY LOW ENERGY CONSUMPTION
- → >99% SYSTEM AVAILABILITY AND RELIABILITY
- → 2–4 YEARS TYPICAL CONSTRUCTION TIME
- → MINIMAL LAND OCCUPATION AND VISUAL IMPACT
- → NEAR ZERO EMISSIONS IN OPERATION

*Projects > €100K
**Passengers Per Hour Per Direction

SYSTRA

www.systra.com


**SYSTRA Brazil**
Avenida das Nações Unidas,
14401 Torre B3 (Jatobá),
6º andar Chácara Santo Antônio,
São Paulo CEP 04794-000 – BRAZIL

**SYSTRA Canada**
1100 René-Lévesque Blvd. W.,
10th Floor, Montreal,
Quebec H3B 4N4
CANADA

**SYSTRA France**
72 rue Henry Farman,
75015 Paris
FRANCE

**SYSTRA India**
4th Floor, Tower 2, L&T Business
Park, 12/4, Delhi Mathura Road,
Sector 27D, Faridabad,
Haryana 121 003 – INDIA

**SYSTRA SAUDI ARABIA**
King Fahad Road–Olaya,
Hamad Tower P.O. Box 84796,
Riyadh 11681
SAUDI ARABIA

**SYSTRA Singapore**
333 North Bridge Road
#05-01 KH KEA
Singapore 188721
SINGAPORE

**SYSTRA Spain**
Madrid
Av. Europa nº34 B, 28023
SPAIN

**SYSTRA UAE**
Al Masraf building,
Baniyas Road, Al Rigga, Dubai
UAE

**SYSTRA UK & Ireland**
3rd Floor, 1 Carey Lane,
London,
England EC2V 8AE – ENGLAND


CONFIDENCE MOVES THE WORLD