

THE FUTURE OF MOBILITY

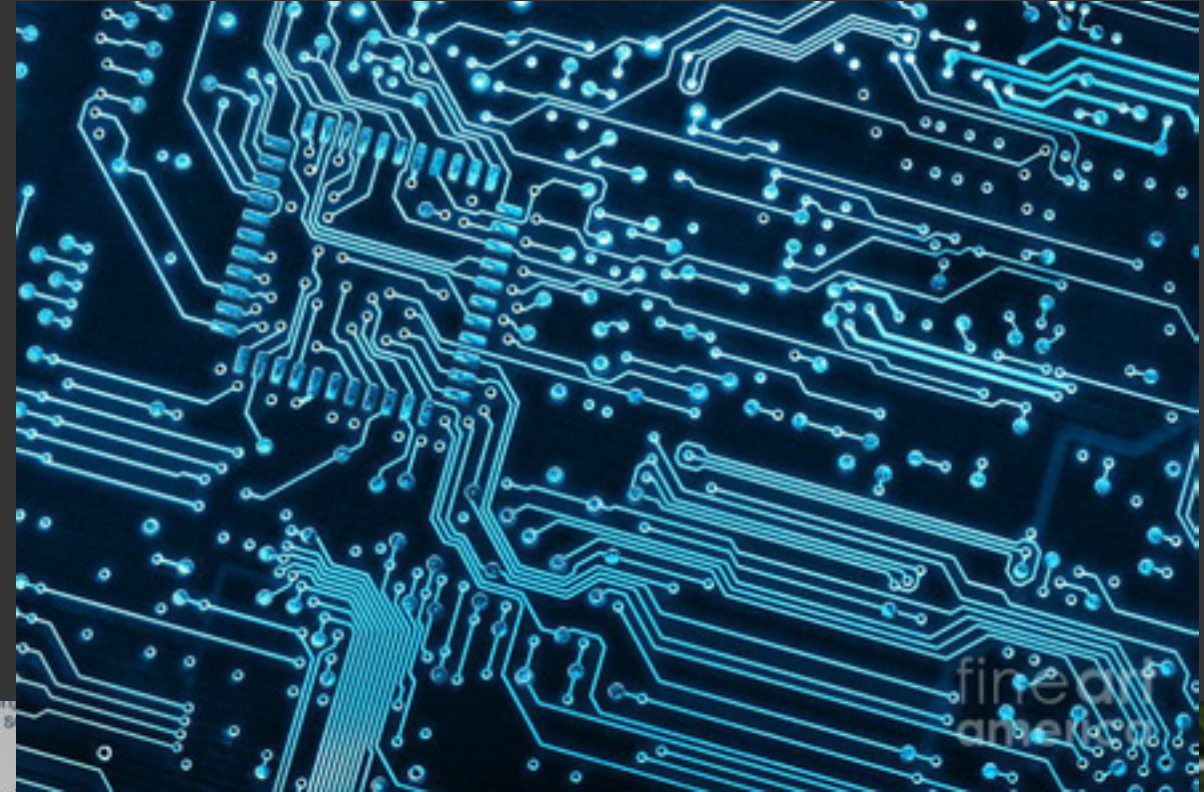
Driving sustainable productivity with tomorrow's transportation systems.





Ryan Janzen

Co-Founder and Chief Technology Officer,
TRANSP^oD





SOFTWARE

- Automated control of trains, cars
-  Computer vision
-  Communication & Signaling
- Ride sharing
- Swarm behaviour
- Artificial Intelligence

HARDWARE

- Drones / UAVs
- Jet aircraft
- Small parcel delivery robots
- Electric vehicles
- Tube transportation

Incremental Improvements

↳ Existing Vehicles

Fundamental Improvements

↳ New Vehicles
↳ New Modes of Transportation

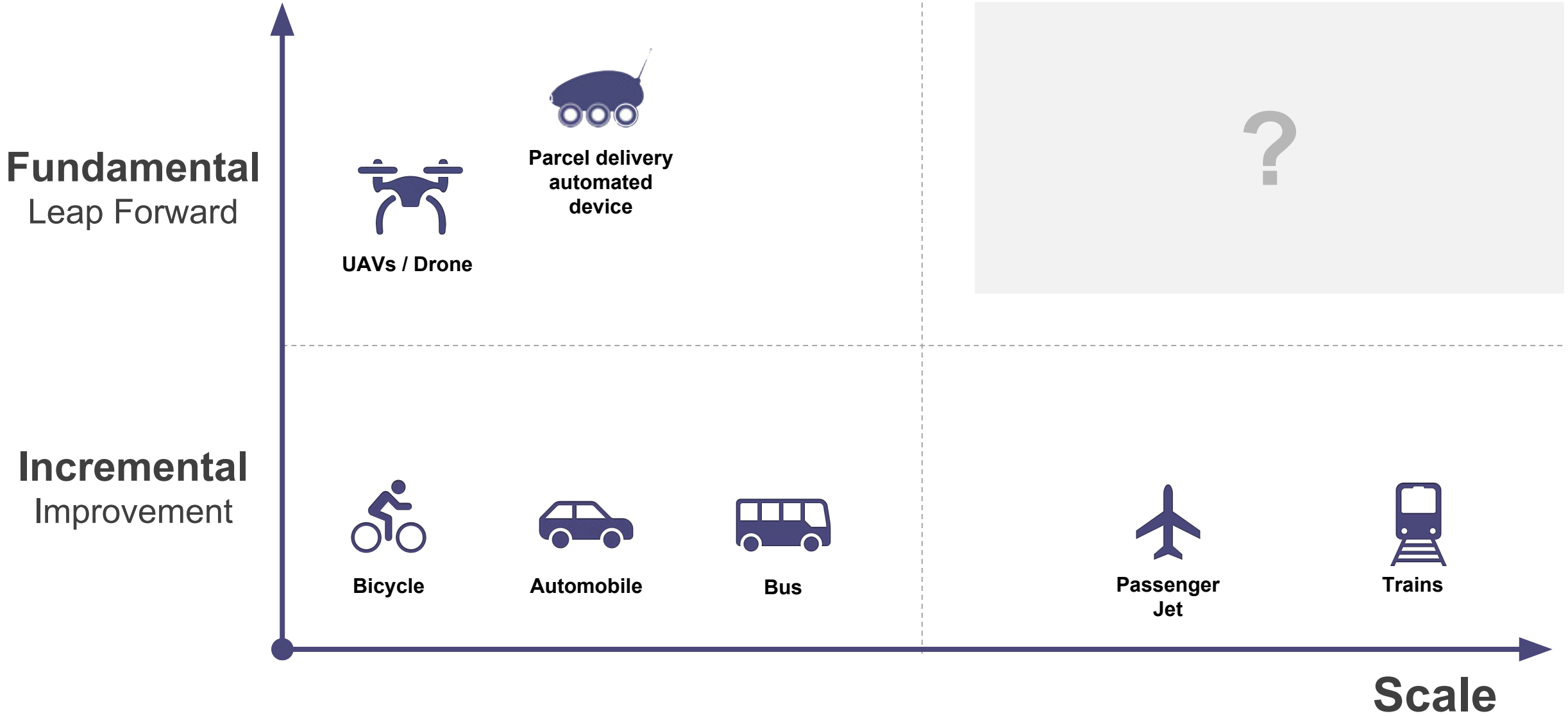


Urban Design
Transport Systems
Human Travel Patterns



Economic Activity
Industrial Collaboration
Social Integration

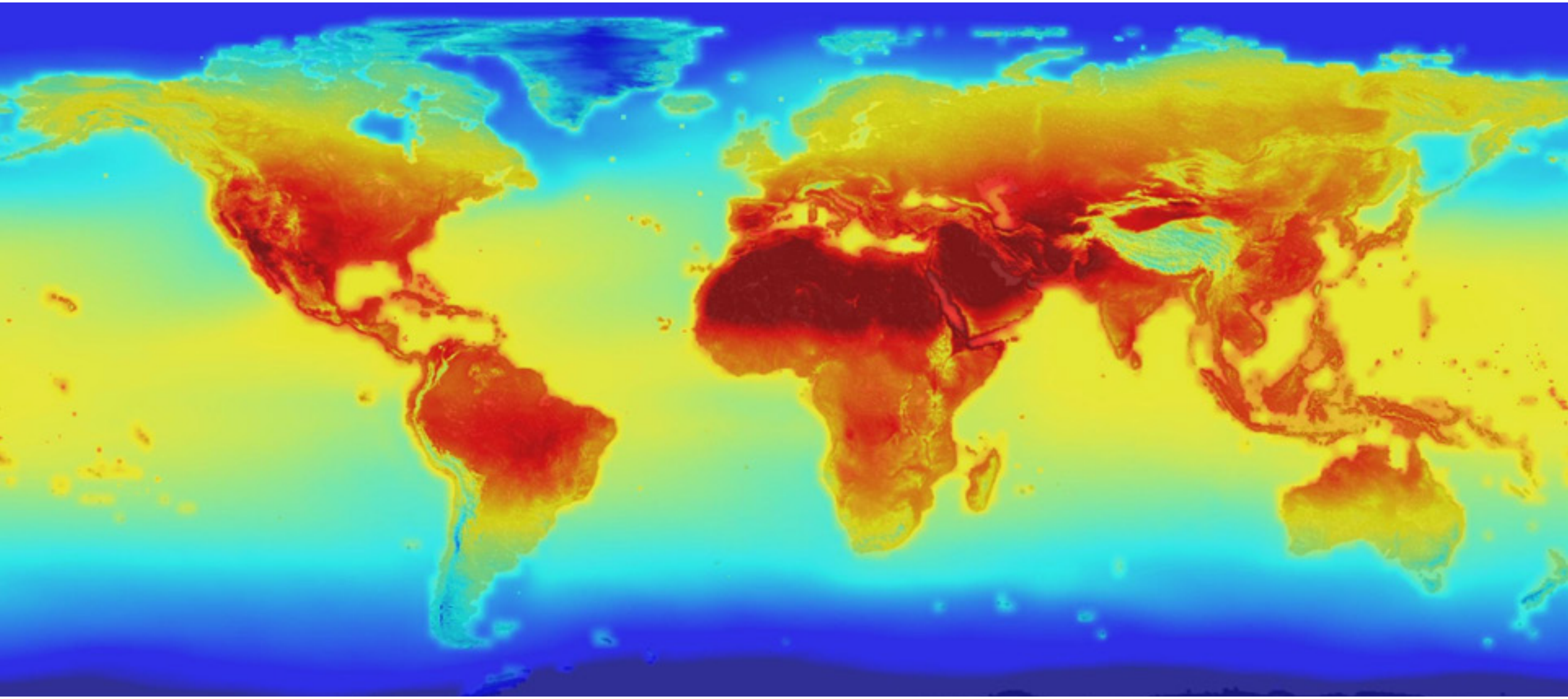


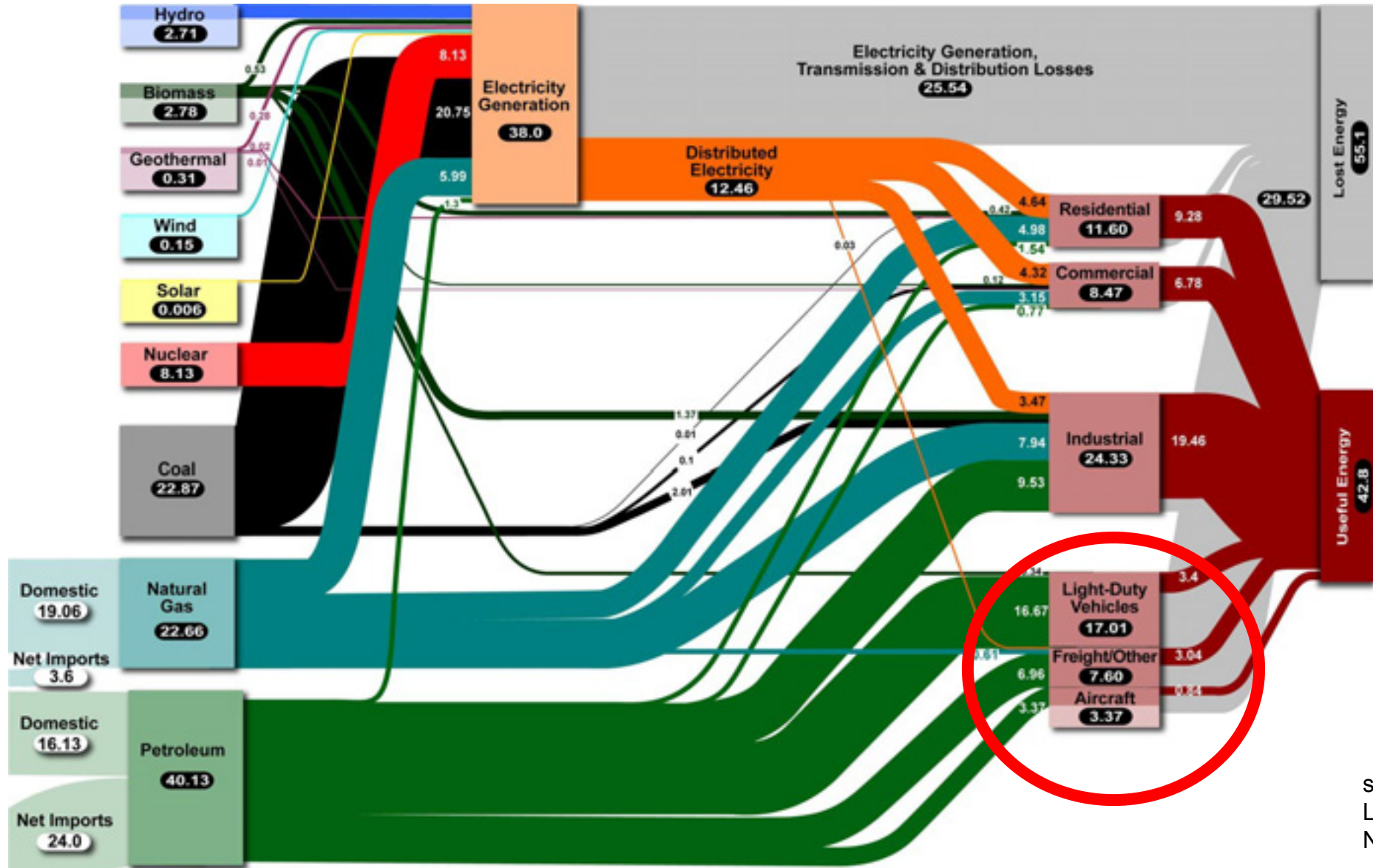


TRANSPOD: TRAVELING AT 1000 KM/H









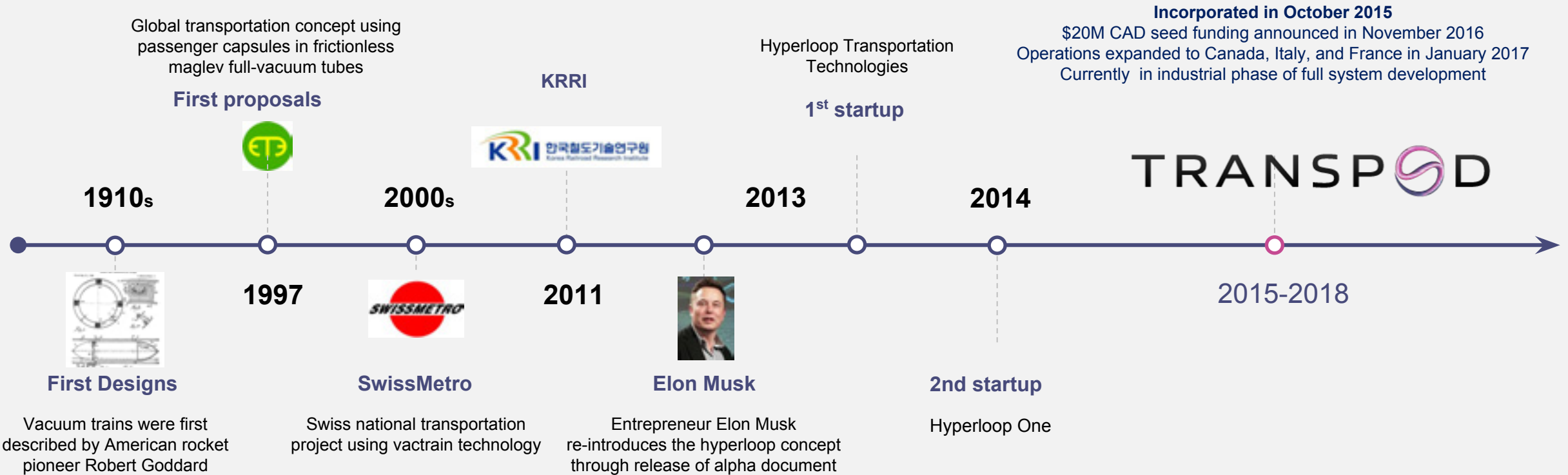
source:
Lawrence Livermore
National Labs











TransPod is electrically-powered ground transportation capable of transporting both passengers and cargo inside low-pressure tubes, reaching speeds up to 1200 km/h.

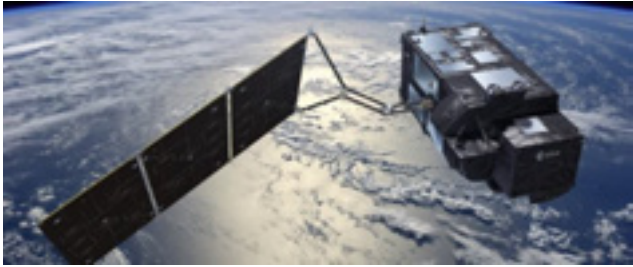
VISION

“A world in which people, cities, and businesses are connected with affordable and sustainable ultra high-speed transportation”

MISSION

“Developing the next generation of affordable and sustainable ultra high-speed transportation for a better connected and fossil fuel-free society”

SITAEEL



 MERMEC



BLACKSHAPE 



Investors


Innovation & Technologies

LIEBHERR




AUTODESK.

Partners


Experience the Sky

 Natural Resources Canada / Ressources naturelles Canada
Canada
CanmetMATERIALS / CanmetMATÉRIAUX



TECHNOLOGY



HOW DOES IT WORK?



Infrastructure

1

Steel tube infrastructure with low pressure to reduce air resistance

2

TransPod vehicles magnetically propelled at 1000+ km/h to transport passengers and cargo

3

Electrically powered, linked to the grid

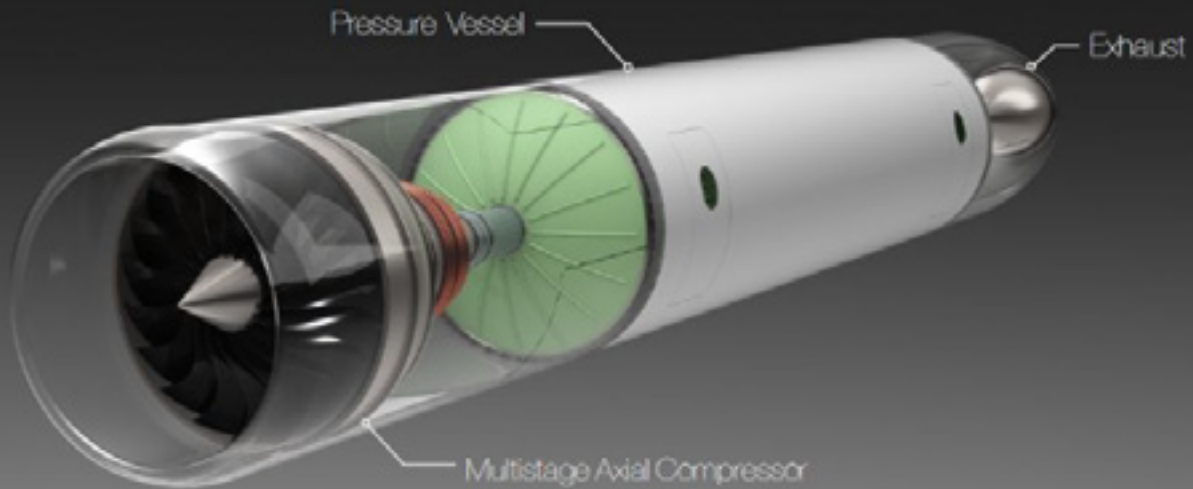
4

Elevated and underground infrastructure to minimise footprint on the landscape





HOW DOES IT WORK?



PASSENGER



Short distances < 100 km

Long distance > 100 km



Rapid transit or airport connection

High frequency, high speeds



Ultra high speed regional transport

Mass transit between city centers

CARGO



High-speed urban cargo

Parcels, containers



Ultra high speed regional cargo

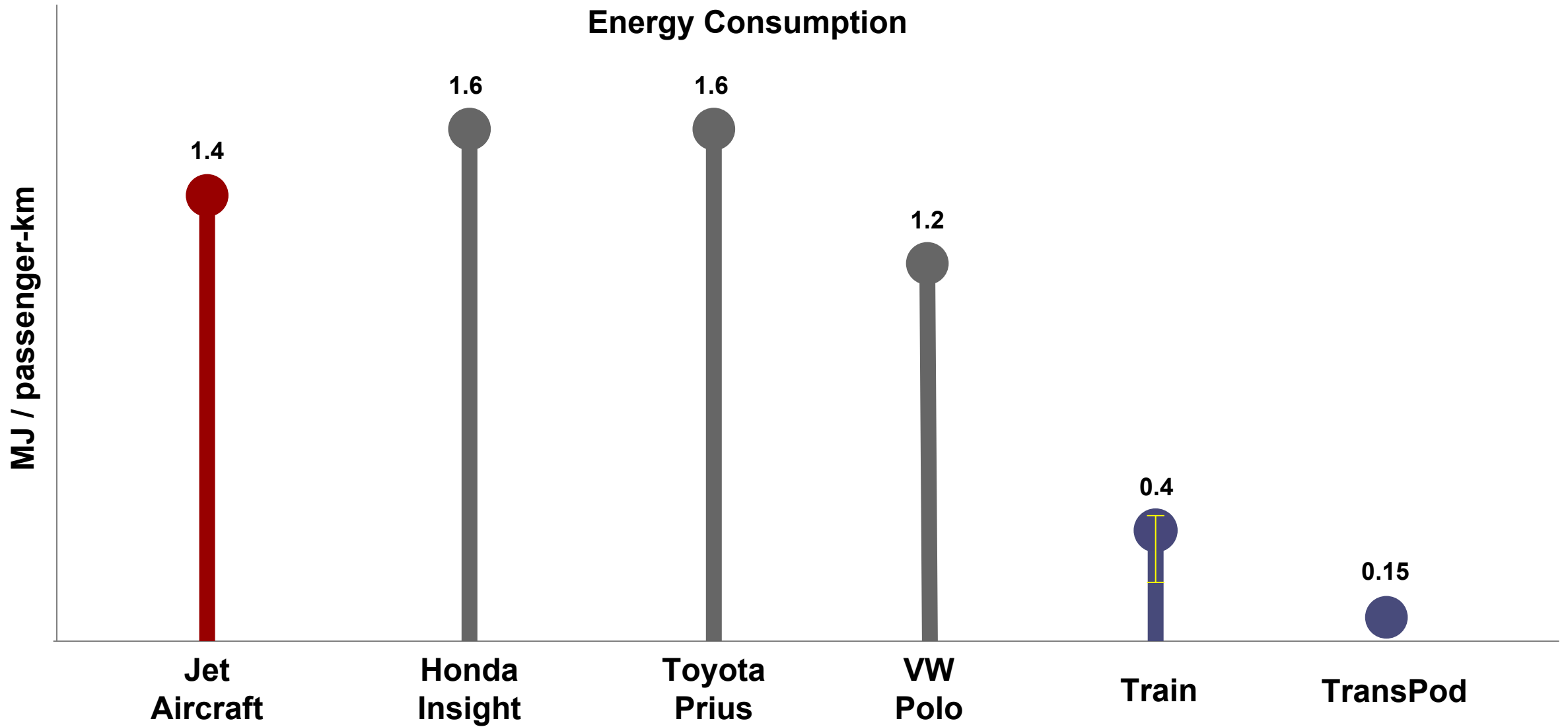
Time-sensitive freight, perishable, high value



Speed
Convenience



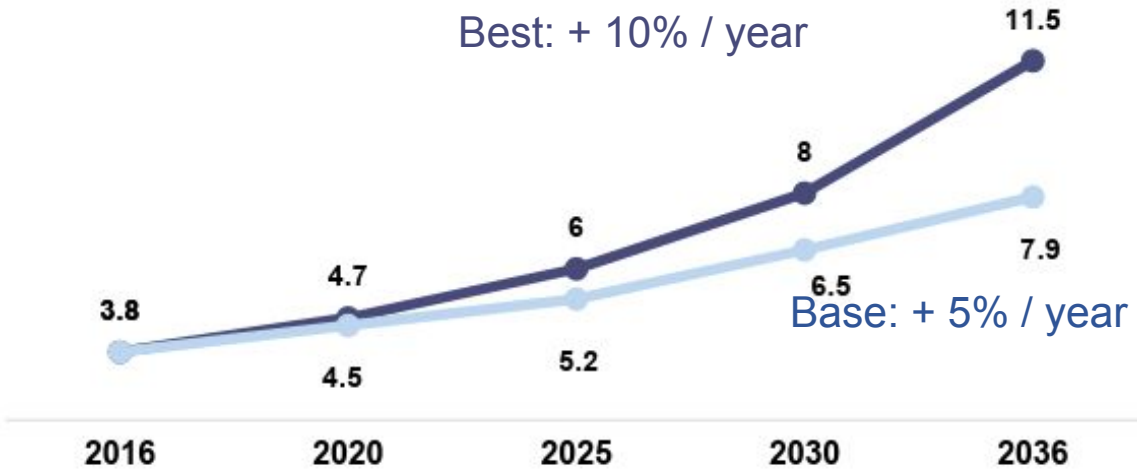
Energy Consumption



PRODUCTIVITY
AND
ECONOMIC
IMPACTS

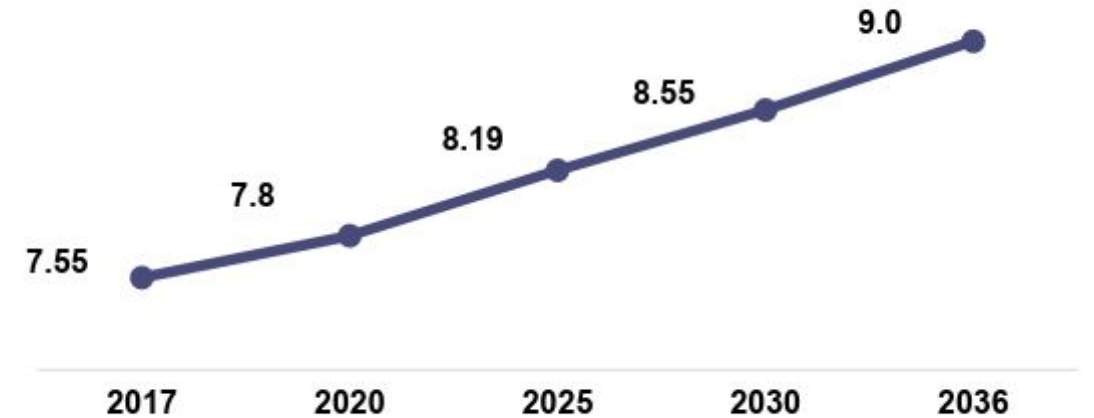


Global air passenger growth (B.)



Source: International Air Transport Association (IATA)

World population growth (B.)



Source: UN Population Division

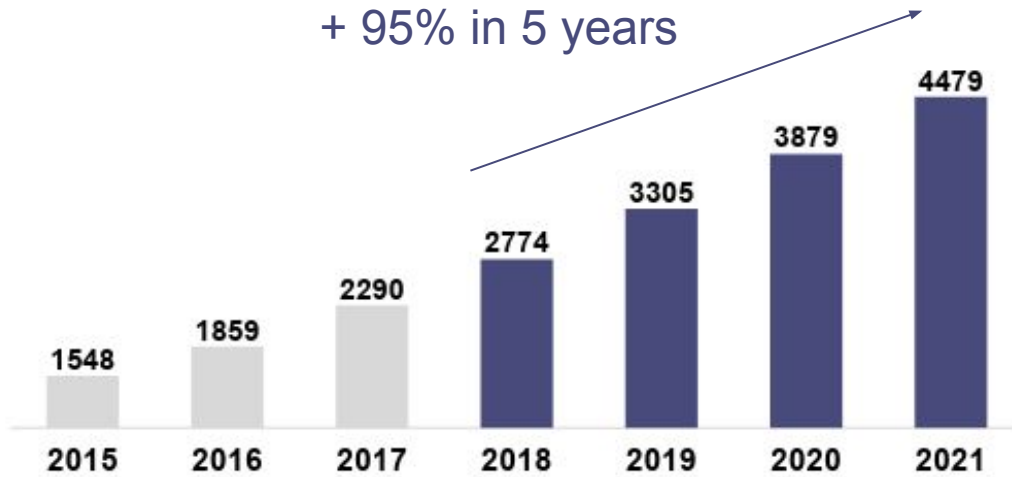
1

People are increasingly looking to travel cheap and fast. However, the aviation sector is struggling to accommodate this new capacity.

2

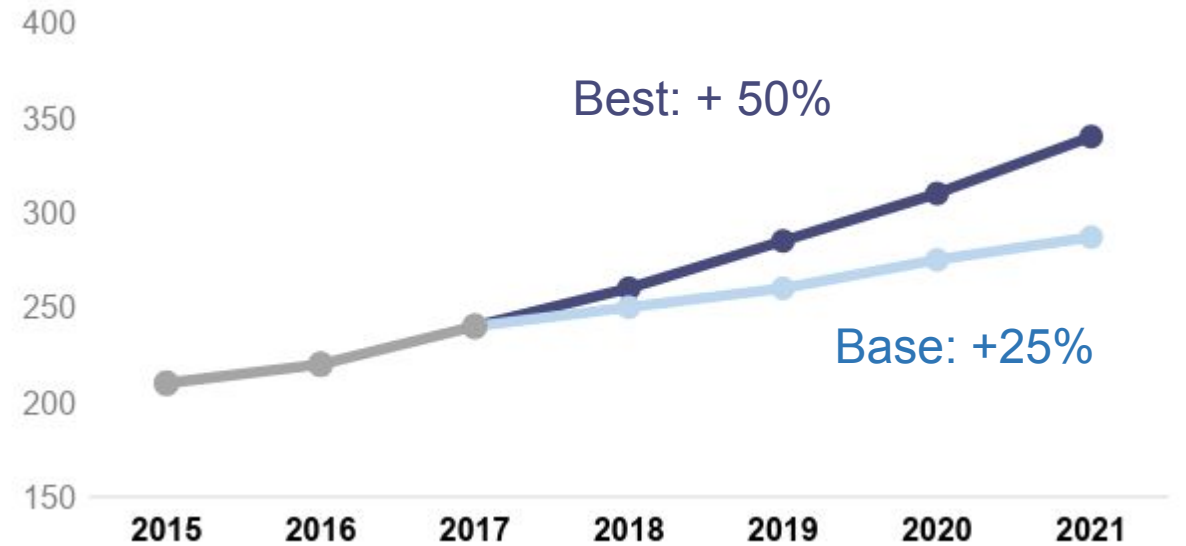
As economies are growing, increased passenger transport will generate significant CO2 emissions and present a threat to human welfare.

Global e-commerce growth (B. of USD)



Source: Statista

Global Air Cargo forecast (B. of tonnes km)



Source: IATA's World Cargo Symposium

1

Infrastructure is severely underprepared, and that mustering up the political will to push through infrastructure improvements is critical.

2

There is a global need for faster and greener freight transport, largely due to the growth of e-commerce worldwide.

— TransPod system



400,000

Tonnes of CO2 Removed / year

300

Freight related car accidents avoided every year.

2,150,000

Hours of freight travel time savings for businesses and consumers every year.

¥ 85 Billion / year

Operating revenues



Sustainable mass transit

CO2 emissions reduction and solar power generation



Substantial time savings

Speed + frequency → redefining distances



Decrease of accidents

Safe and reliable mass transit solution



Major economic stimulus

Virtual clustering between businesses increases productivity



Protection against weather effects

No disturbance due to obstacles or weather effects



Low maintenance and construction costs

Patented levitation & propulsion

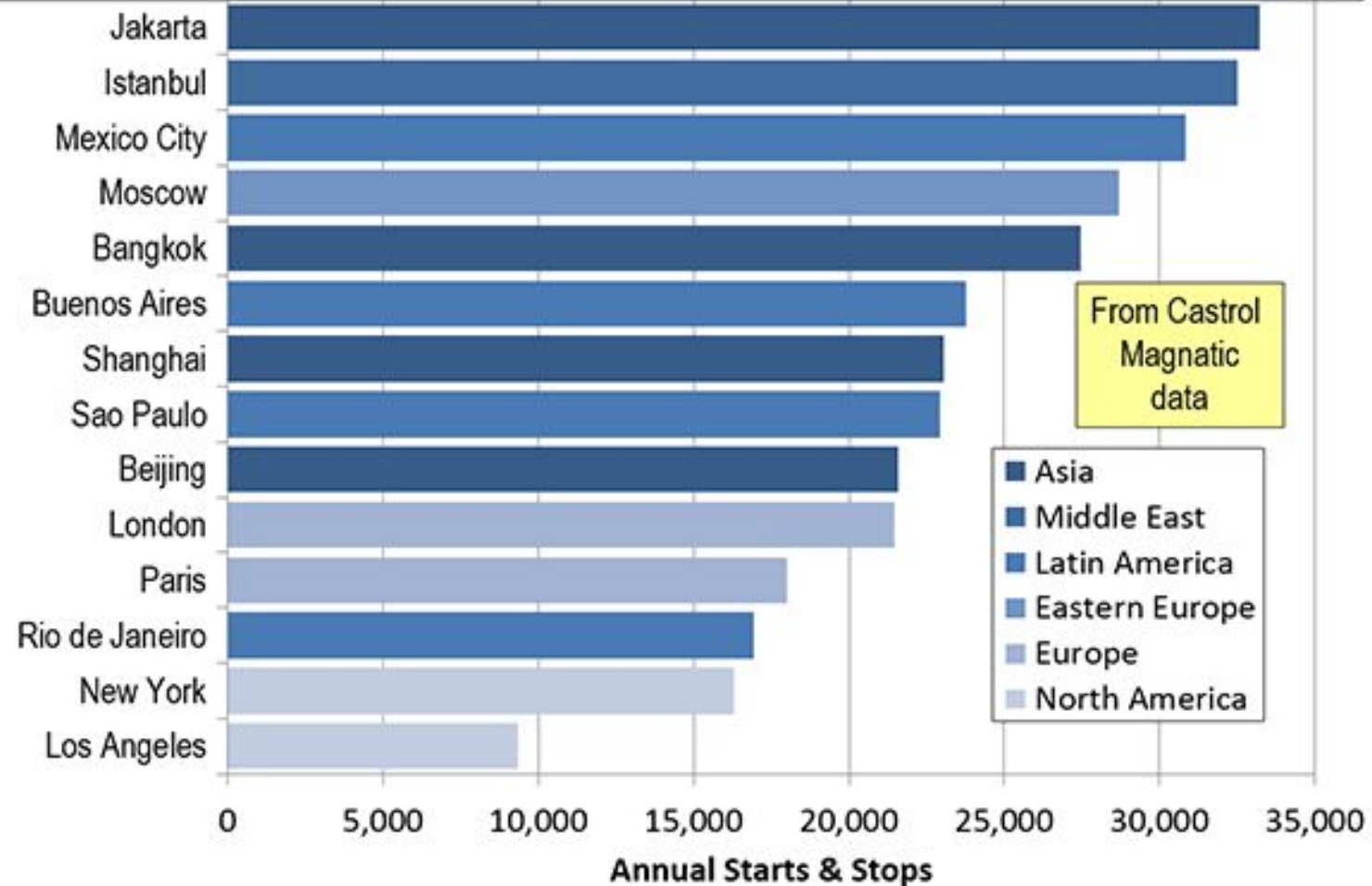




Congestion Worldwide 2016 TOMTOM RANKING

1. Mexico City
2. Bangkok
3. Jakarta
4. Chongqing
5. Bucharest
6. Istanbul
7. Chengdu
8. Rio de Janeiro
9. Tainan
10. Beijing

Annual Starts & Stops by Megacity 2014 CASTROL MAGNATIC START-STOP INDEX





Regular vehicles

2h of commute / day x 250 working days

=

500h of productive time wasted / year



Shared Driverless vehicles

- Time optimisation: working from your car
- Undertaking personal projects
- 30-50% vehicle productivity increase



Delivery robots



Driverless trucks



Drones



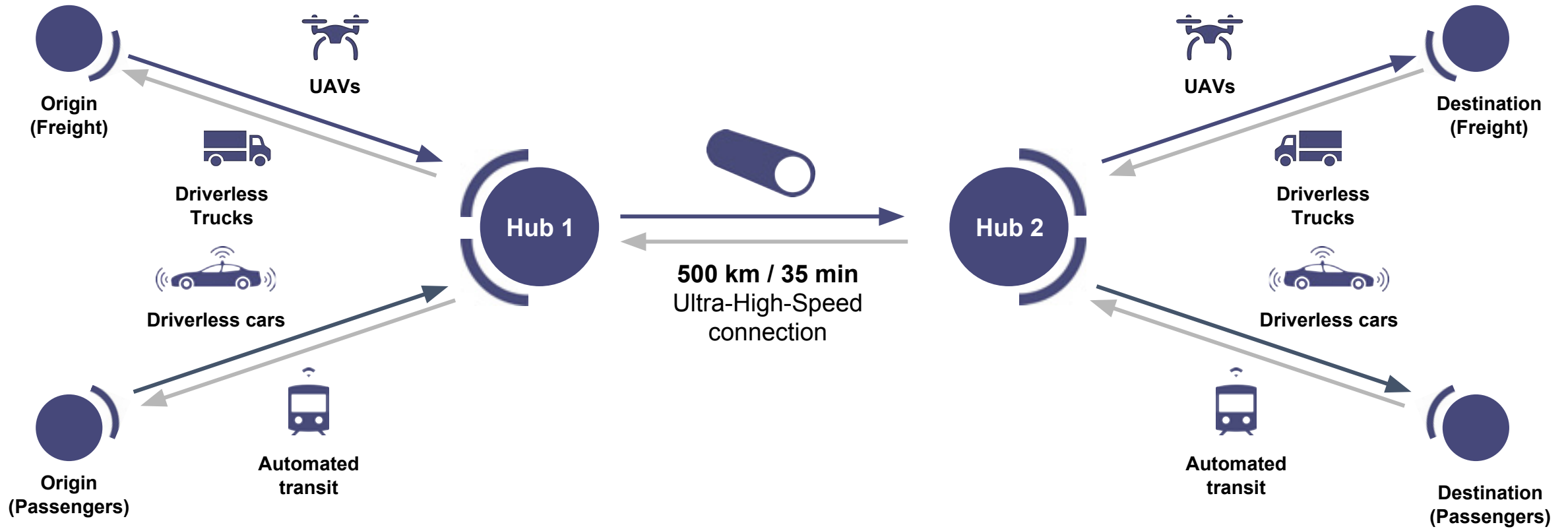
Autonomous ships

Impact on people

- Faster deliveries, time savings
- Ease of access, focus on other tasks
- On demand (groceries, parcels)

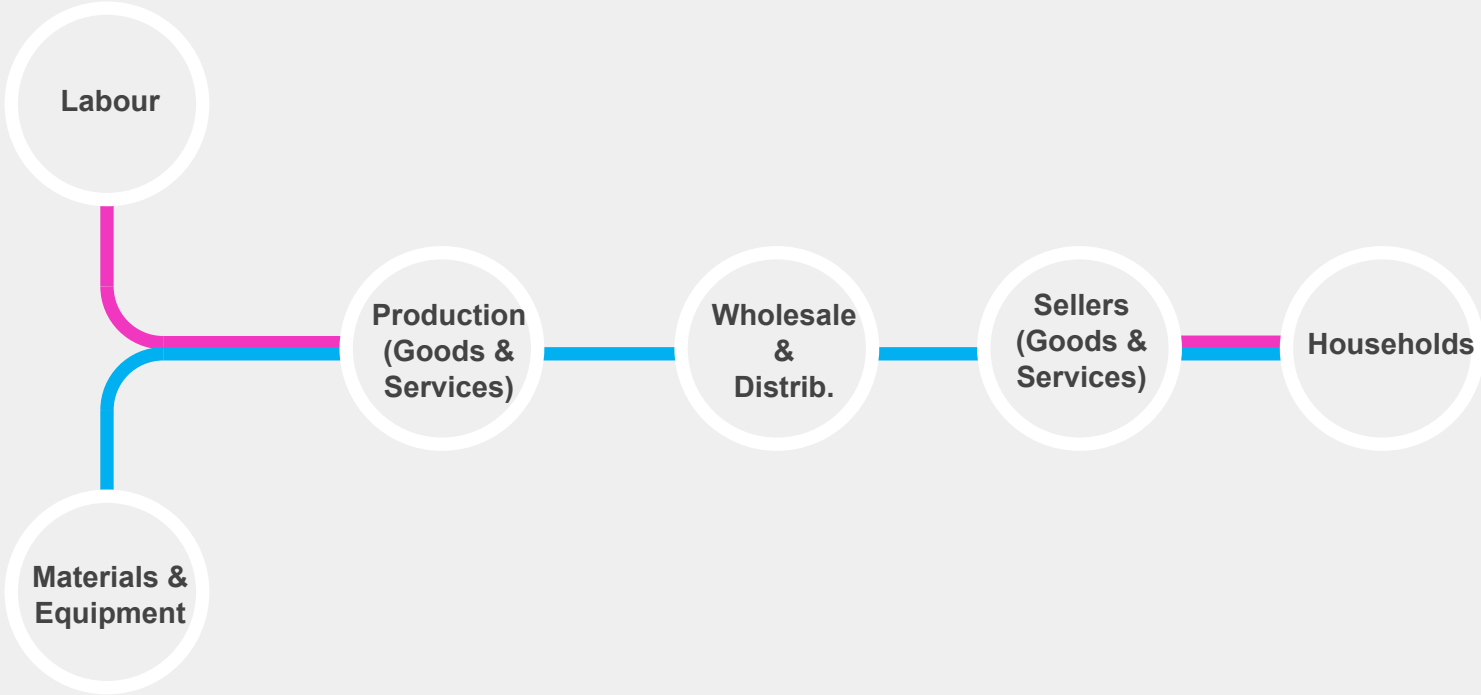
Impact on businesses

- Decreased transport costs
 - e.g. 75% of costs of truck transport is labour. <----> 11 hour/day limit in US
- Supply chain optimization



An **integrated**, **sustainable**, and **efficient** last mile system will be the backbone of economic growth.

- Passenger transport
- Freight transport



— Passenger transport

— Freight transport

Labour Market Access Effects

- Match to specialised skills
- Reliability of workers
- Transportation costs

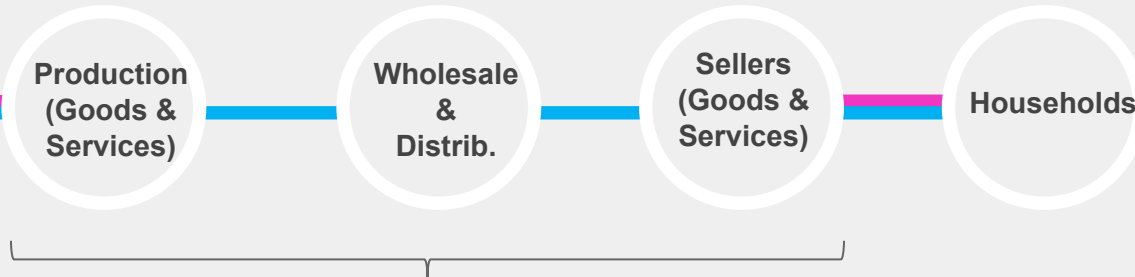


Process/Organisation effects

- Economies of scale
- Economies of specialisation
- Economies of timing

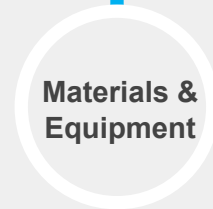
Customer access to store/service

- Market access
- Transportation costs



Supplier Market Access Effects

- Match to specialised supplies
- Reliability of deliveries
- Transportation costs



Supply Chain Effects

- Safety/stocks
- Reliability, Connectivity
- Centralisation of dispatch
- Transportation costs

Needs for developing countries:

- Future-proof planning for long-term sustainability
 - Upcoming transport technologies
 - Sustainable energy sources
- Build regulatory framework + smart policy

How to finance such projects:

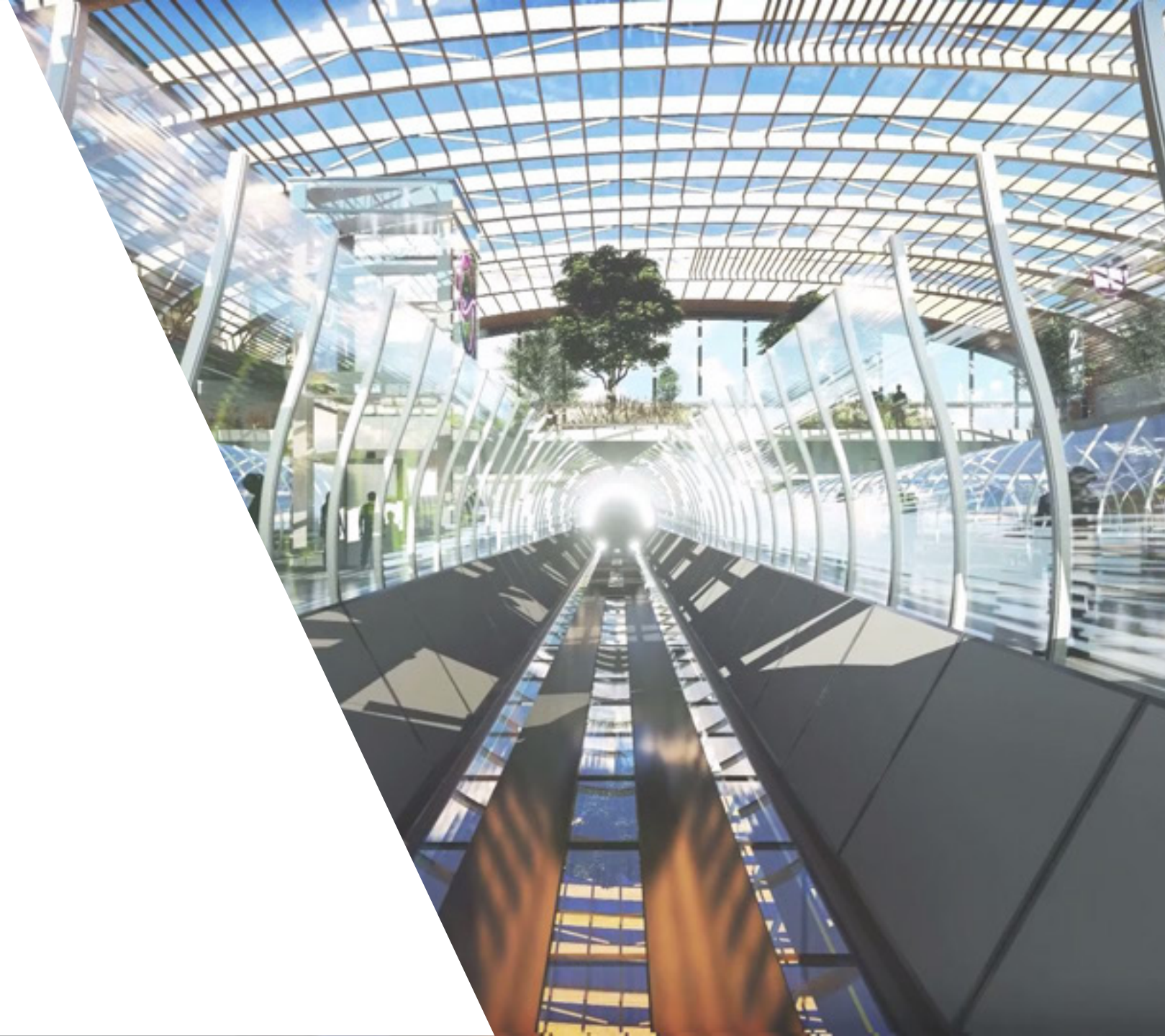
- Liberalise and develop local financial markets to facilitate FDI (Foreign Direct Investment)
- Promote the business case for private investment in infrastructure (long term profitability)

Example

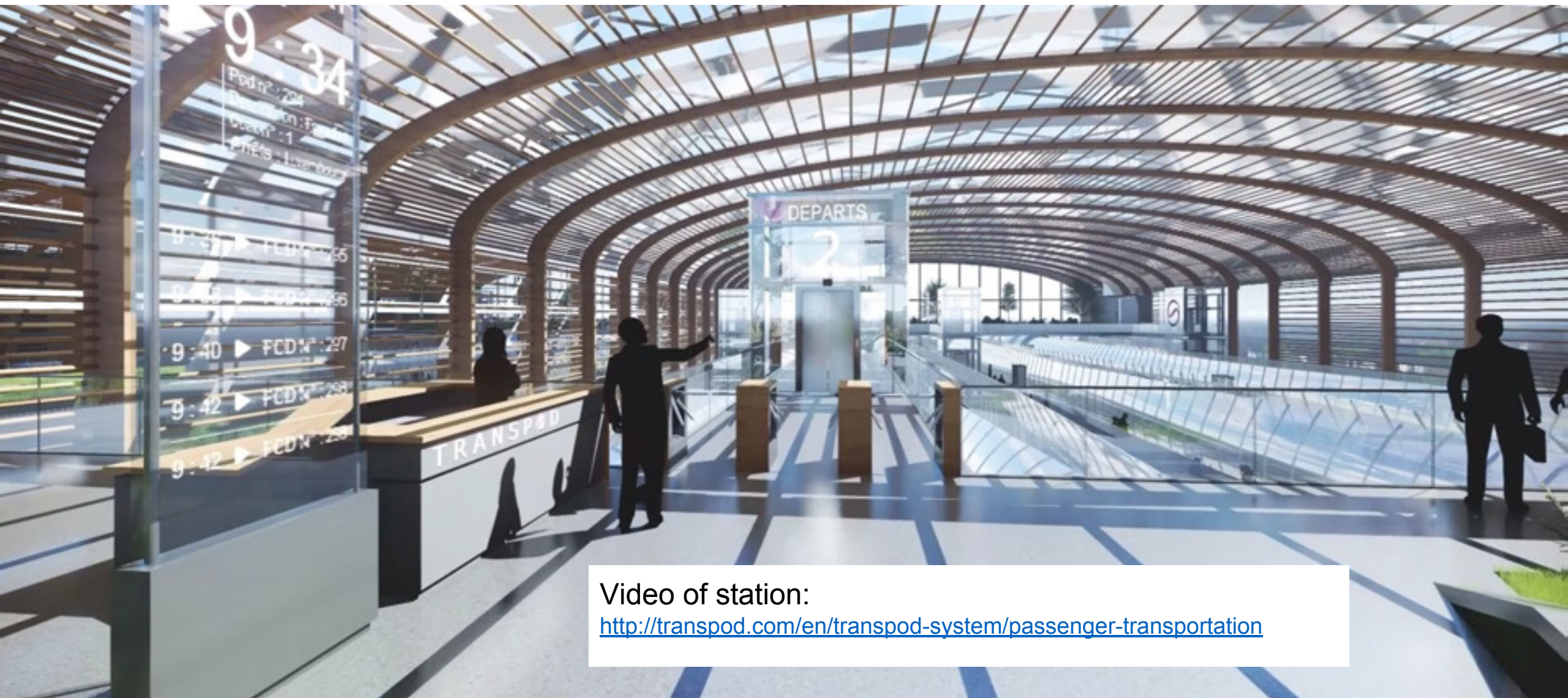
- China built an electrified railway in Ethiopia to increase its presence in Africa
- 3 days travel → 12 hours travel (Ethiopia capital to Djibouti)
- This investment will benefit the local economy by increasing productive time of citizens.



TRAVELING
WITH
TRANSPOD







Video of station:

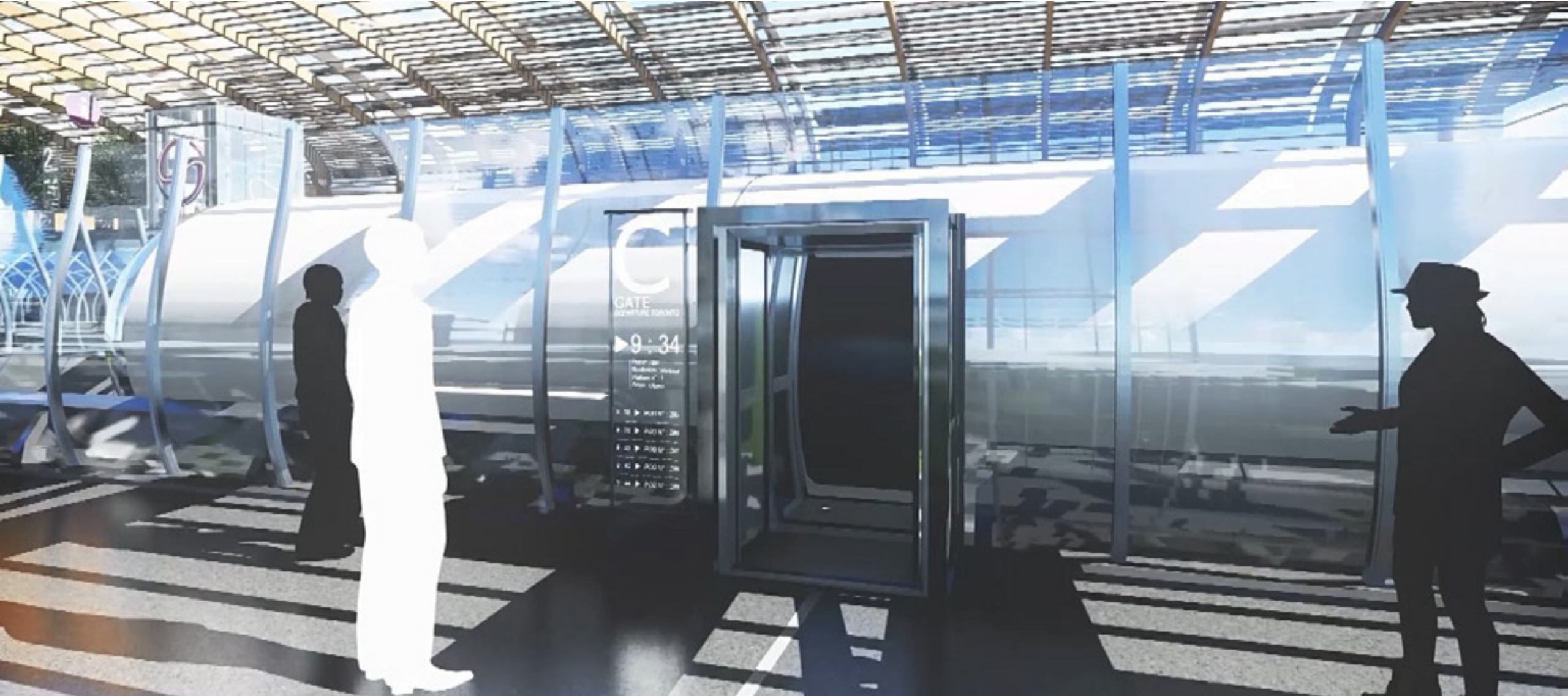
<http://transpod.com/en/transpod-system/passenger-transportation>

SCAN SMARTPHONE TO ENTER THE DEPARTURE PLATFORM





THE POD ARRIVES, THE DOOR OPENS, IT'S TIME TO BOARD



GET TO YOUR SEAT AND RELAX, THE POD WILL LEAVE SHORTLY

[Station Video](#)

TRANSPOD











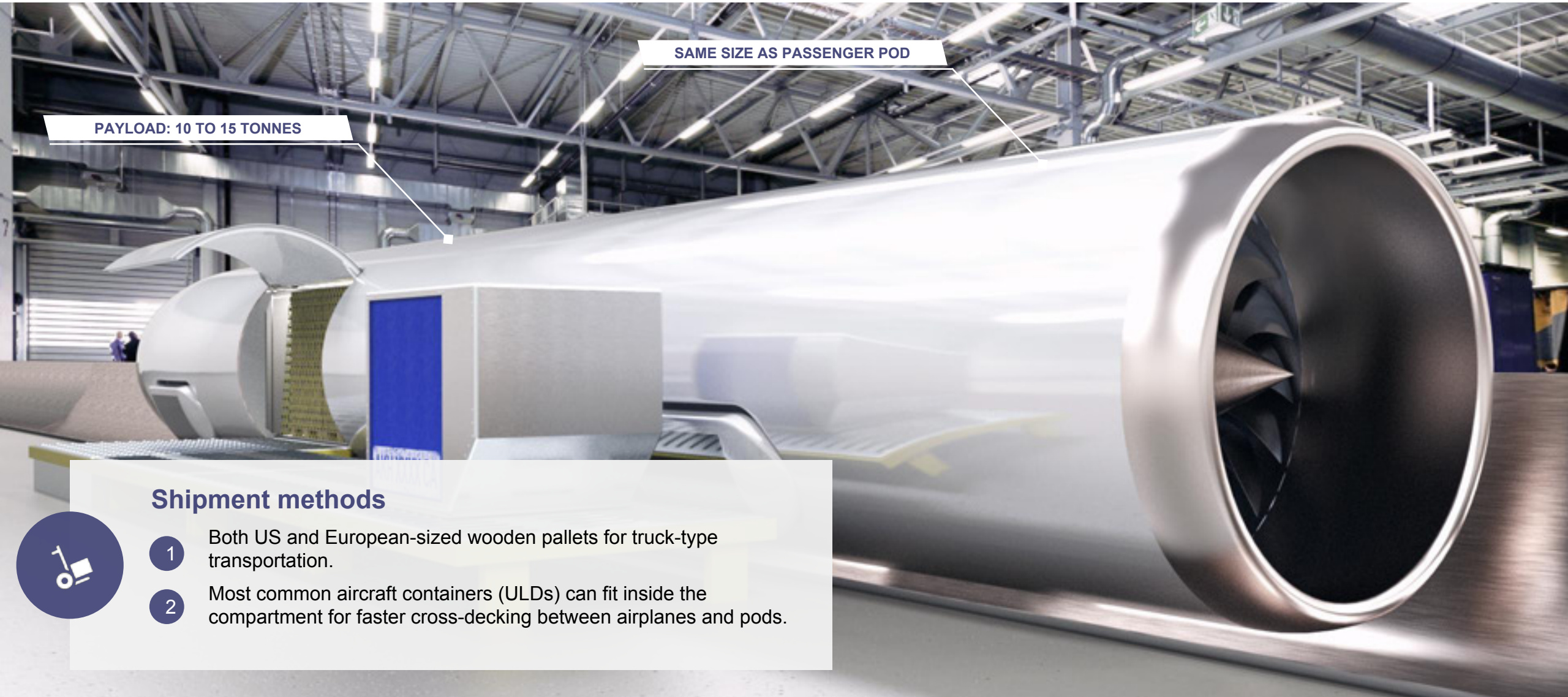






CARGO TRANSPORT





SAME SIZE AS PASSENGER POD

PAYLOAD: 10 TO 15 TONNES

Shipment methods



- 1 Both US and European-sized wooden pallets for truck-type transportation.
- 2 Most common aircraft containers (ULDs) can fit inside the compartment for faster cross-decking between airplanes and pods.



Three types of shipments

Wooden pallets

ULD containers

ULD pallets



US pallets



LD3 container



AAA container



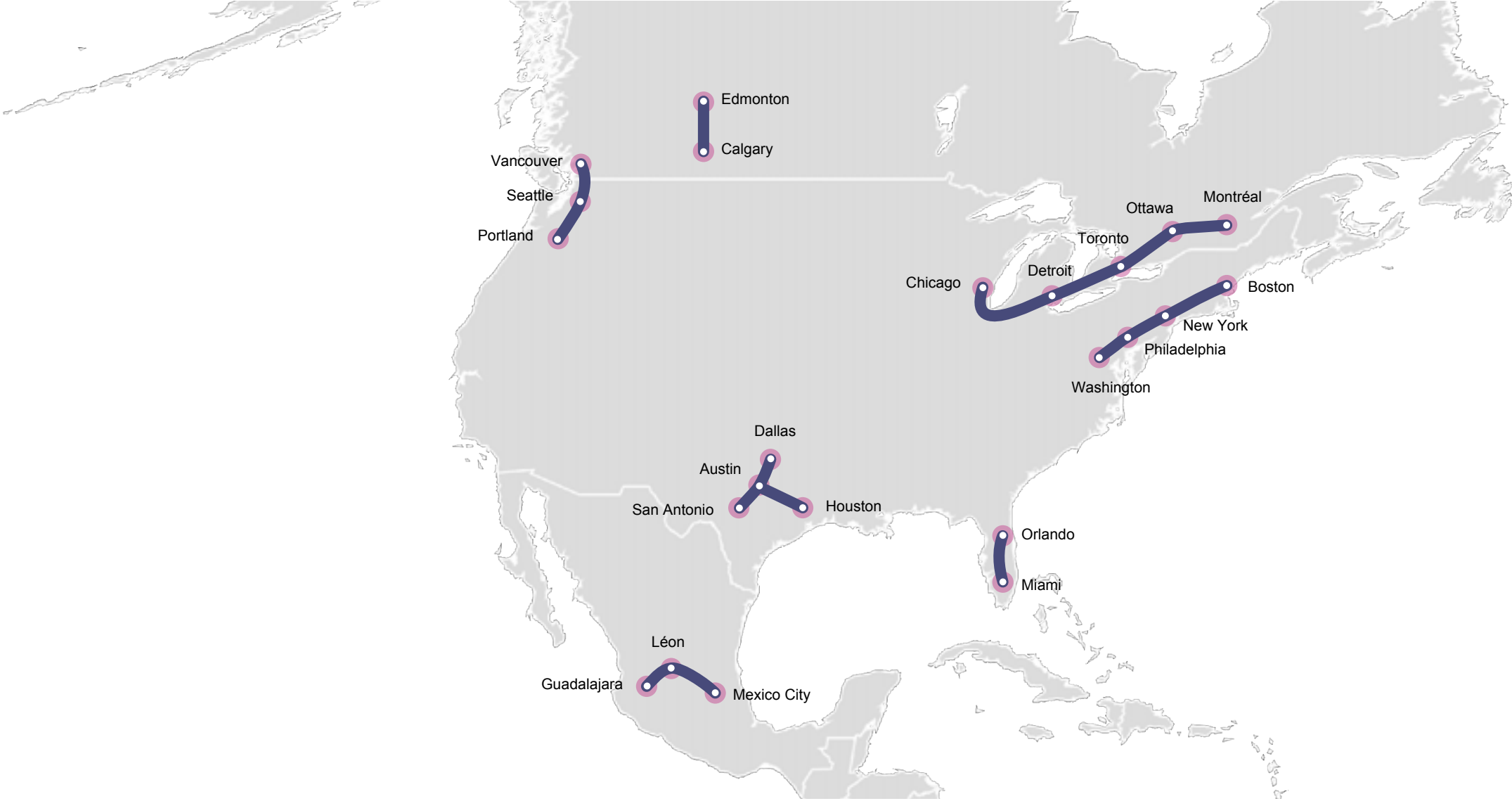
ULD pallet with net

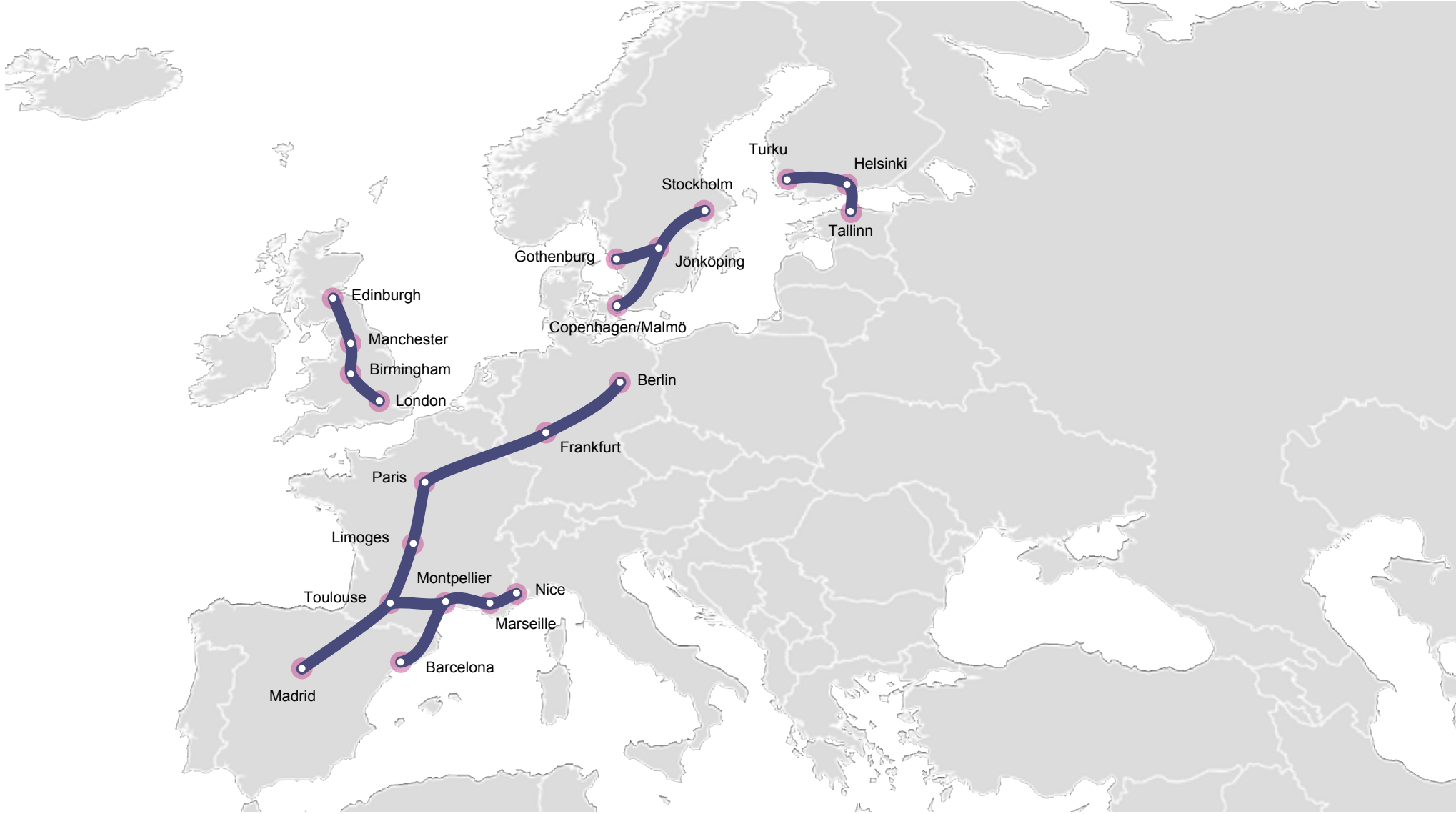


TARGETED
CORRIDORS
AROUND THE
WORLD



POTENTIAL ROUTES IN NORTH AMERICA

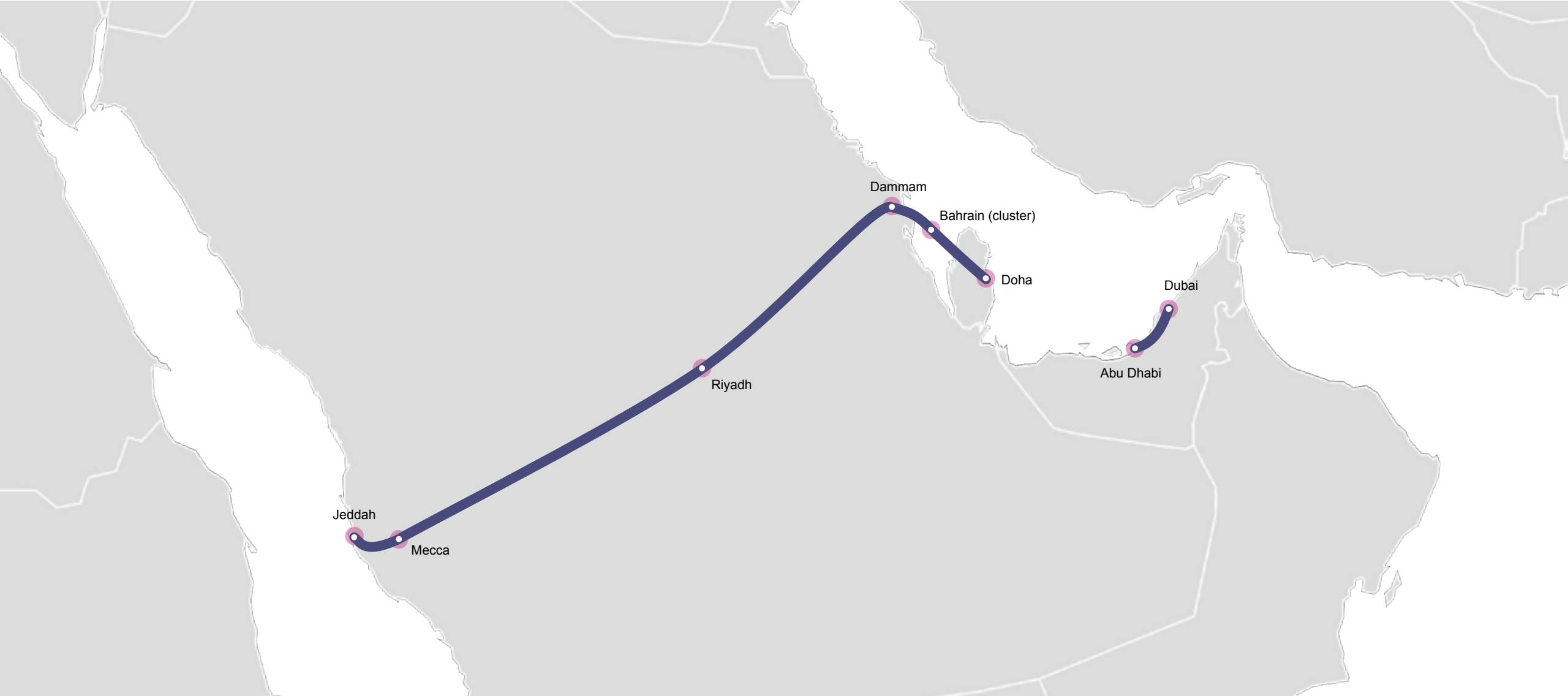




POTENTIAL ROUTES AUSTRALIA / BRAZIL



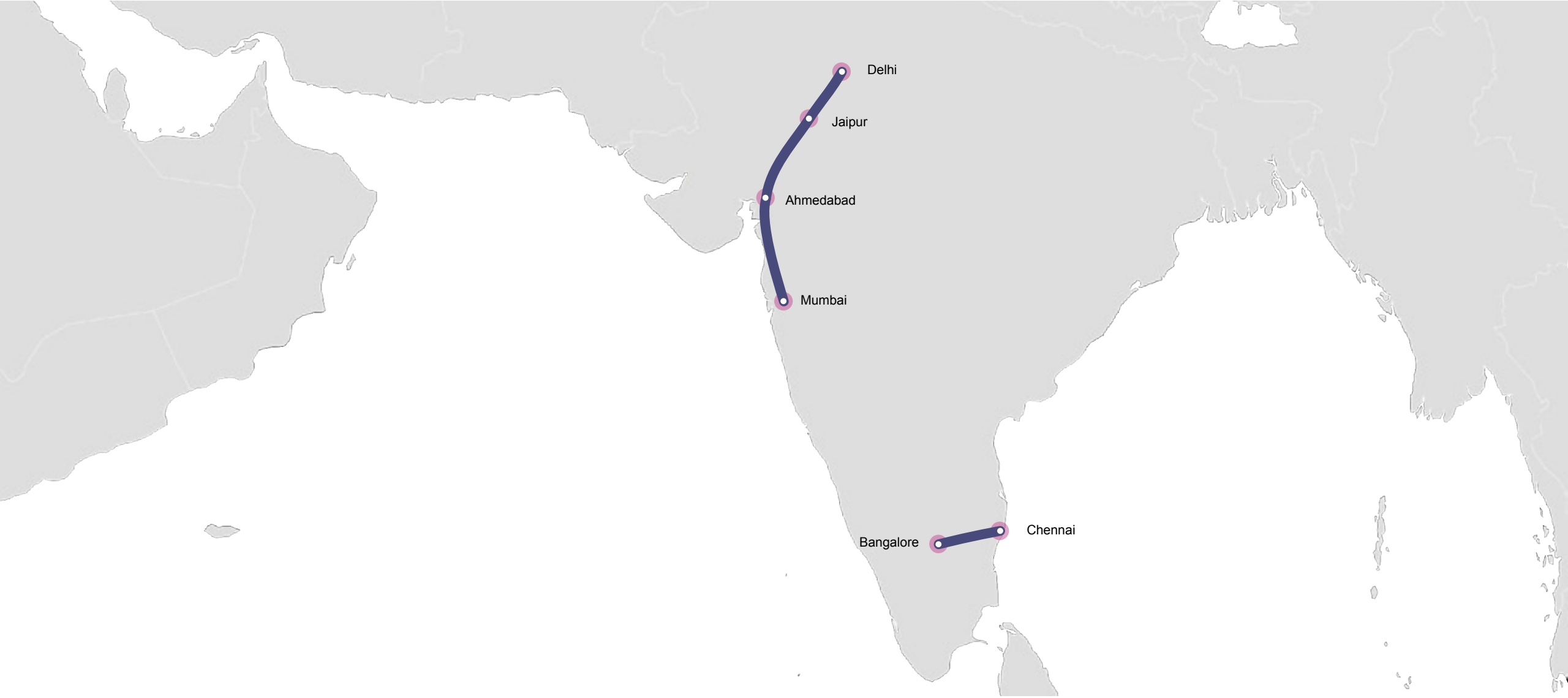
POTENTIAL ROUTES IN THE MIDDLE EAST



POTENTIAL ROUTES IN SOUTH ASIA



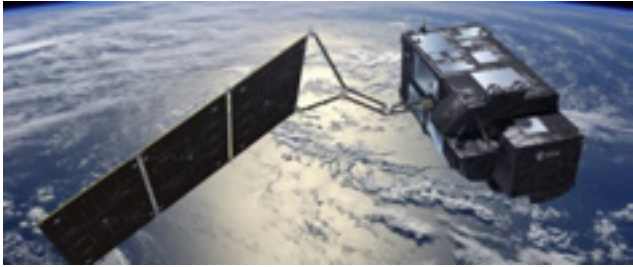
POTENTIAL ROUTES IN INDIA



ENGINEERING DEVELOPMENT



SITAEL



 MERMEC



BLACKSHAPE 



Investors

 **IKOS**
Innovation & Technologies

LIEBHERR

REC
architecture


AUTODESK.

Partners

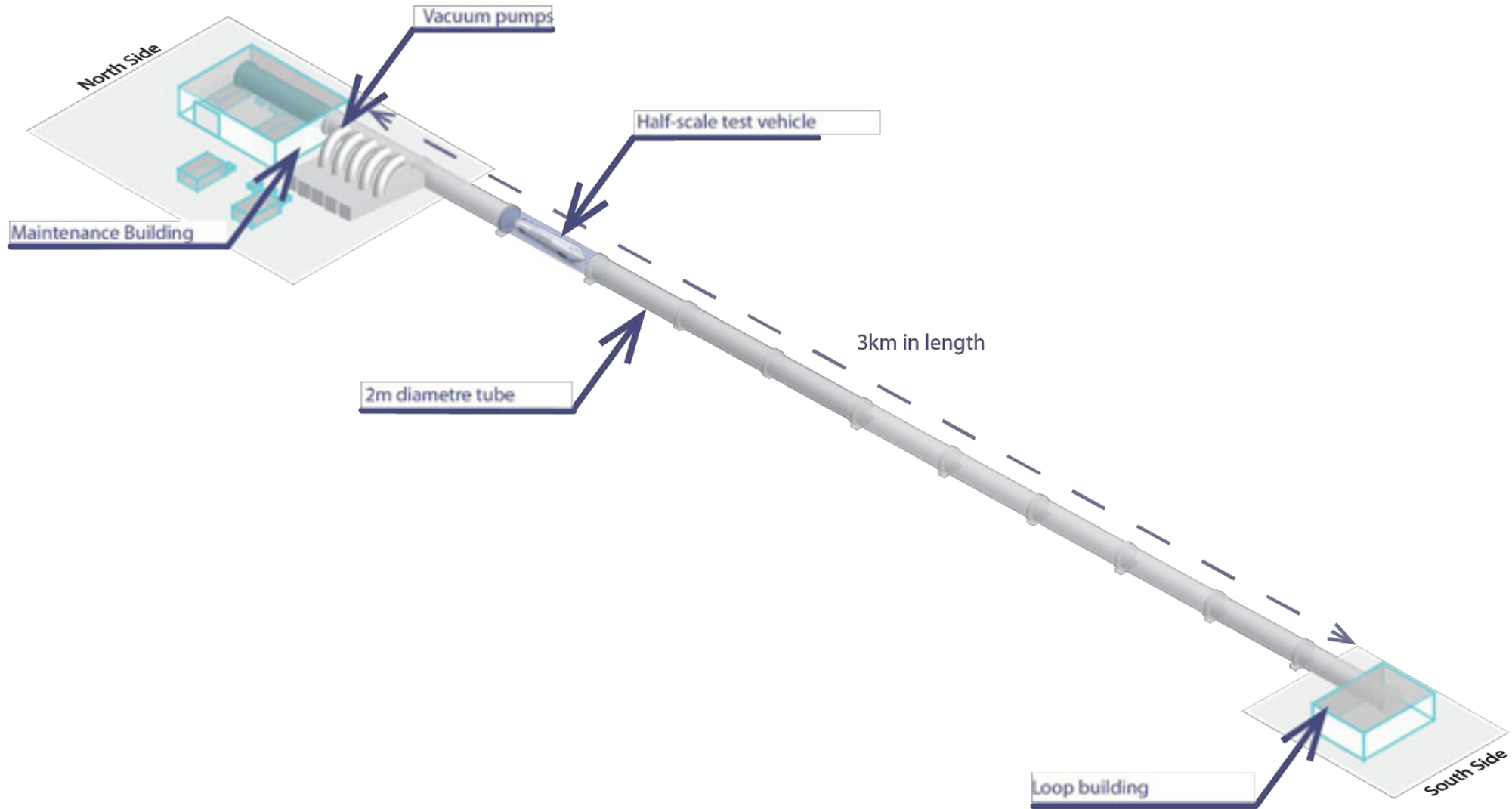
 **coelux**
Experience the Sky

 Natural Resources Canada / Ressources naturelles Canada
Canada
CanmetMATERIALS / CanmetMATÉRIAUX

 **MaRS**







PRODUCTIVITY IN INNOVATION





Certification of the TransPod system with the EU and Canada



OTTAWA

TORONTO

Design and R&D of pod and infrastructure at the headquarters

BRUSSELS

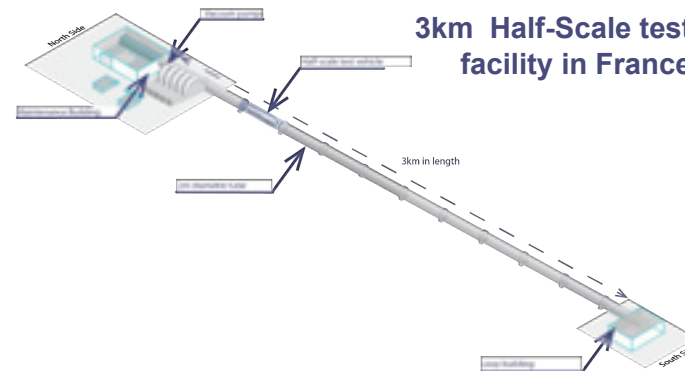
PARIS

Power electronics & safety development with IKOS



LIMOGES

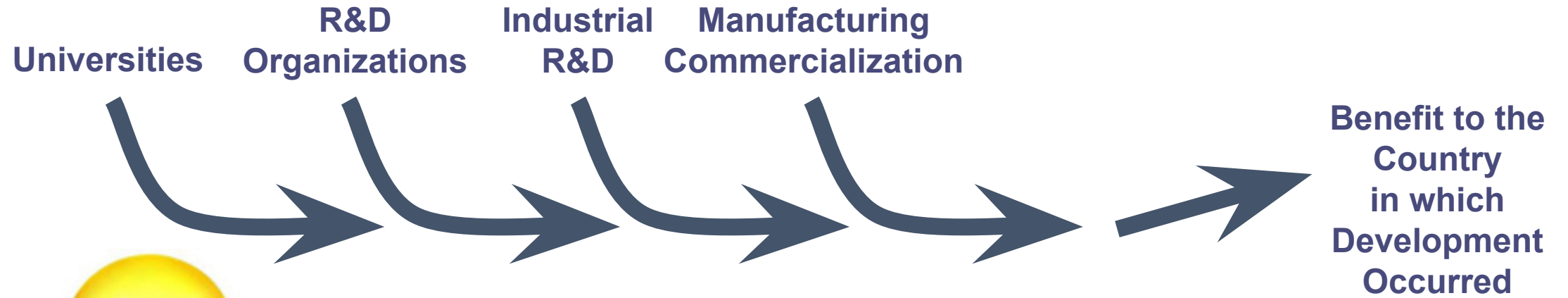
3km Half-Scale test facility in France



BARI

R&D Development with our partners for major hyperloop subsystems

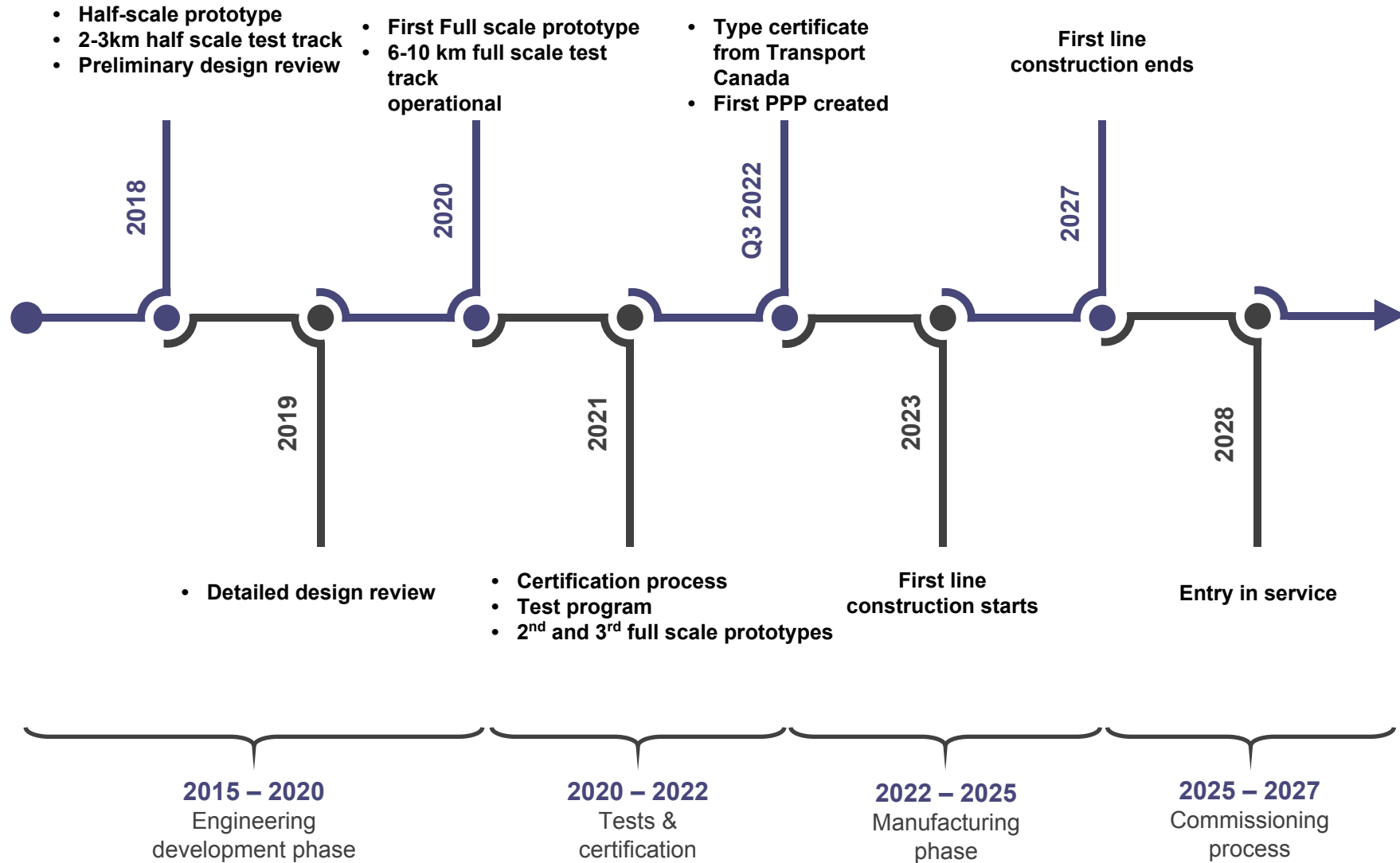




Initial Innovation



Contact
Ryan Janzen
for more info.



TRANSP^{SD}D



Ultra-High-Speed Transportation
Fossil Fuel Free • 1000 km/h+





MORE INFORMATION



Ryan Janzen

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TransPod Inc.

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transpod.com