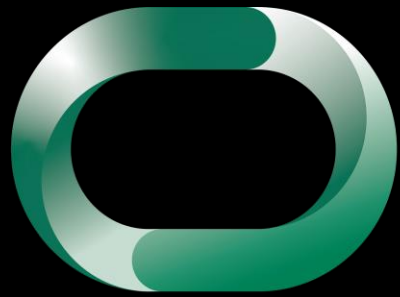


HELIOS
02

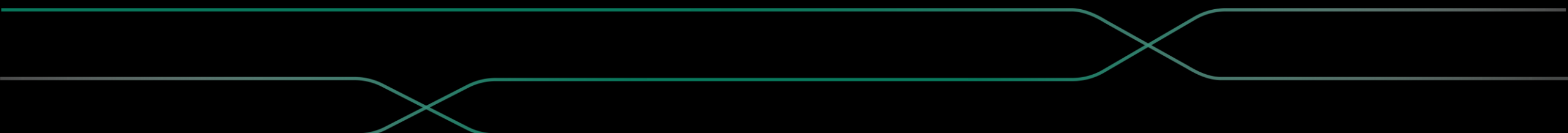
EDINBURGH 2023





DELFT HYPERLOOP

BIG event



TEAM



Cem Celikbas
Team Captain



Olivier Lam
Public
Relations Manager



Noor Rinkes
Public
Relations Manager



Sebastiaan Reinders
Lead Business &
Operations



*How can we travel a **longer** distance in a **shorter** amount of time?*

THE GROUNDS

BOOKING OFFICE

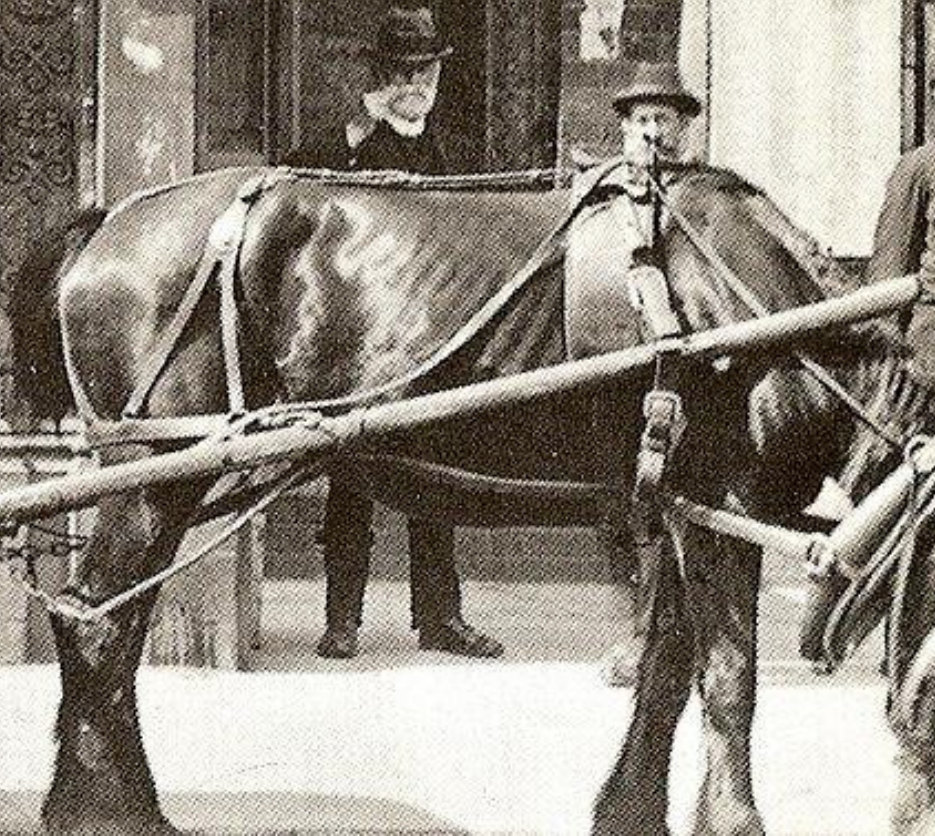
UNDER
TO
SQUARE
WAY

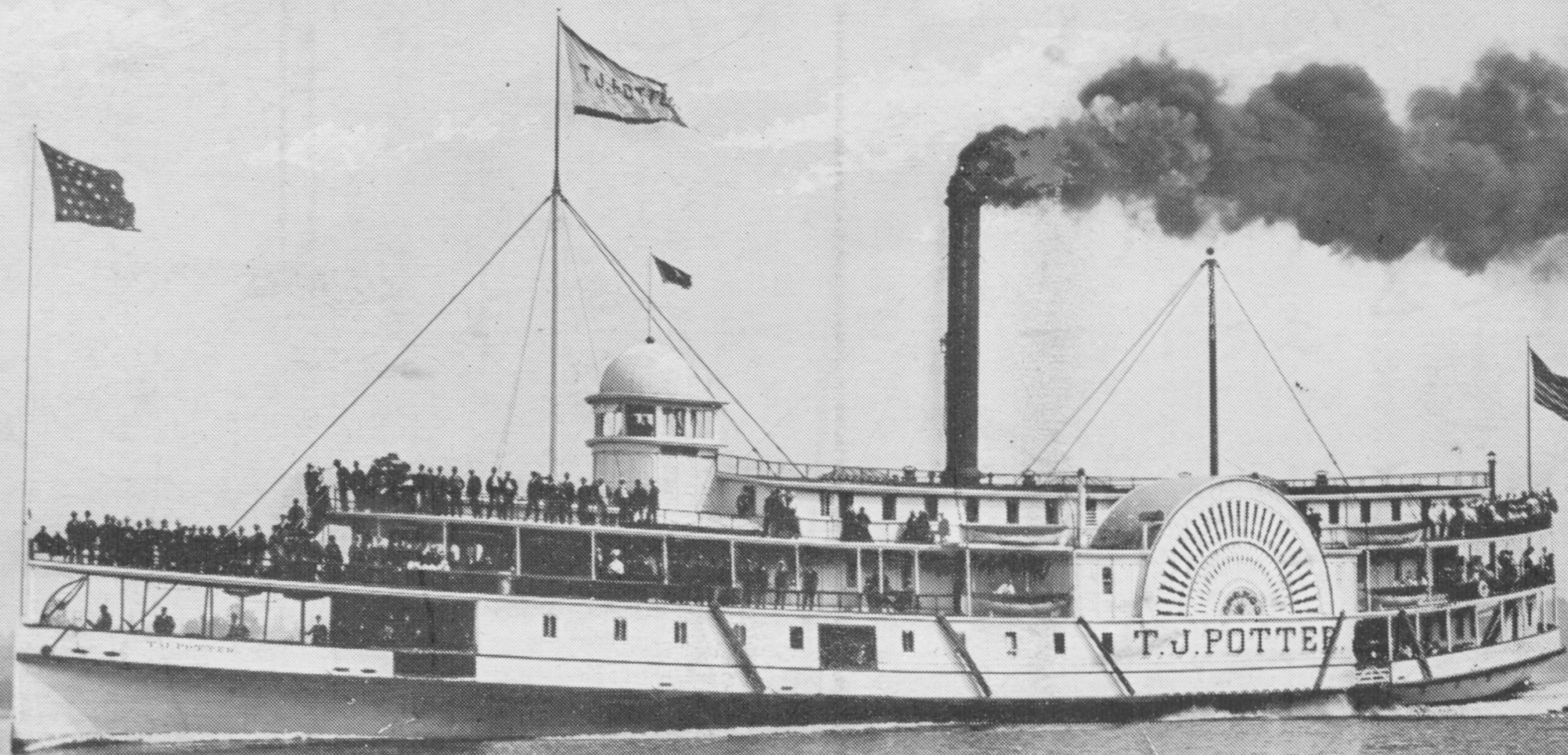
METROPOLITAN RAILWAY



JAPAN-BRITISH
EXHIBITION
BOOK
HERE
ELECTRIC TRAINS
WOOD LAKE
STATION
INSIDE GROUNDS

METROPOLITAN RLY



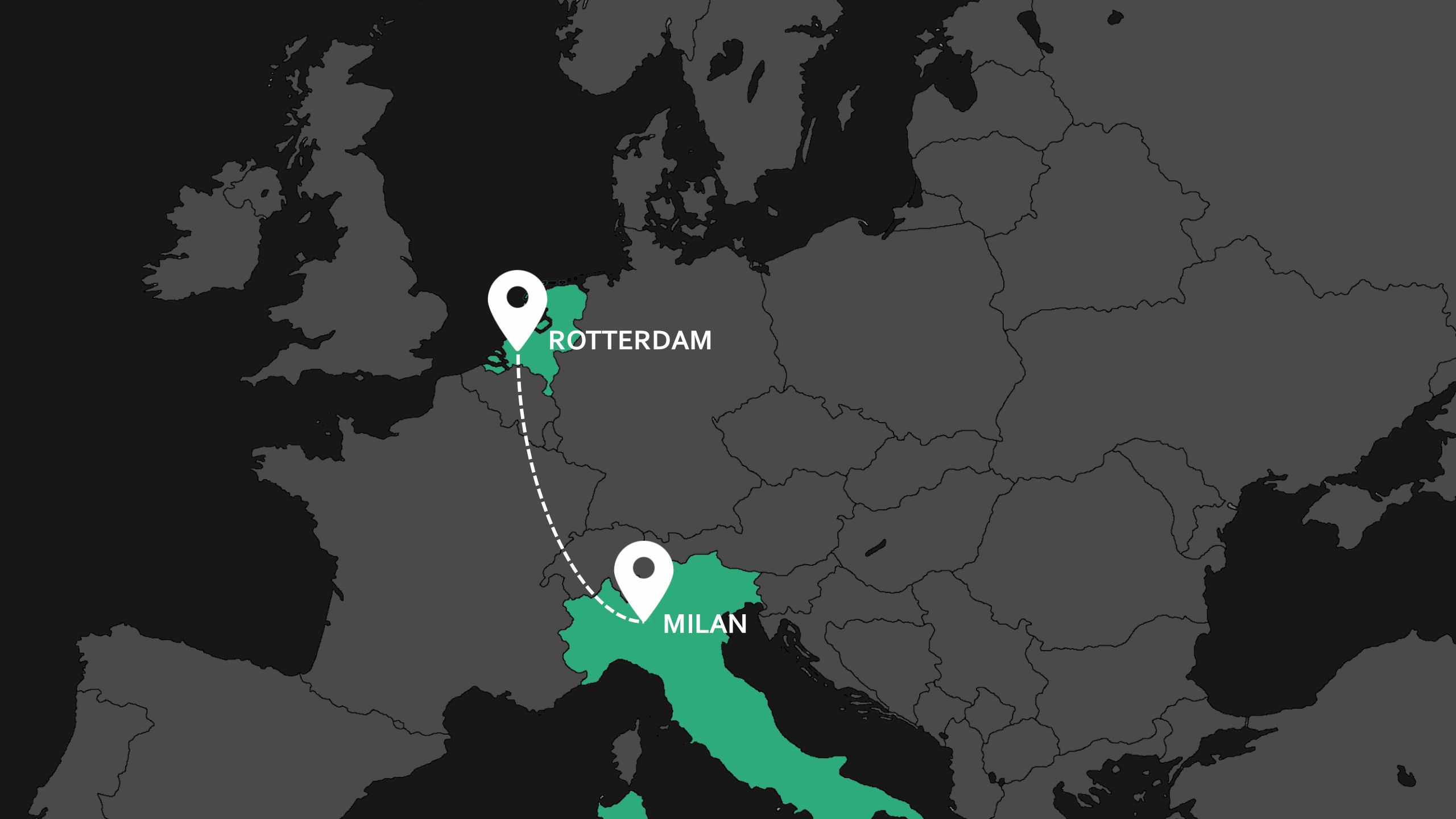


OFF FOR LONG BEACH, WASH.



60103





ROTTERDAM

MILAN





**FAST
COMFORTABLE
SUSTAINABLE**

TRAIN



AIRPLANE



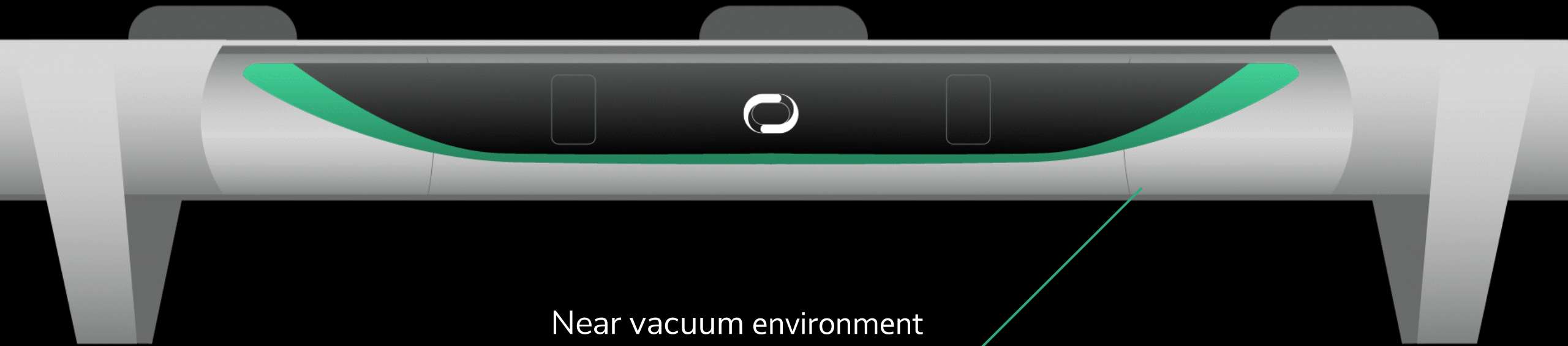
 **Travel time**

 **Energy consumption**

*How can we travel a **longer** distance in a
shorter amount of time in a **sustainable** way?*

AIR DRAG





Near vacuum environment

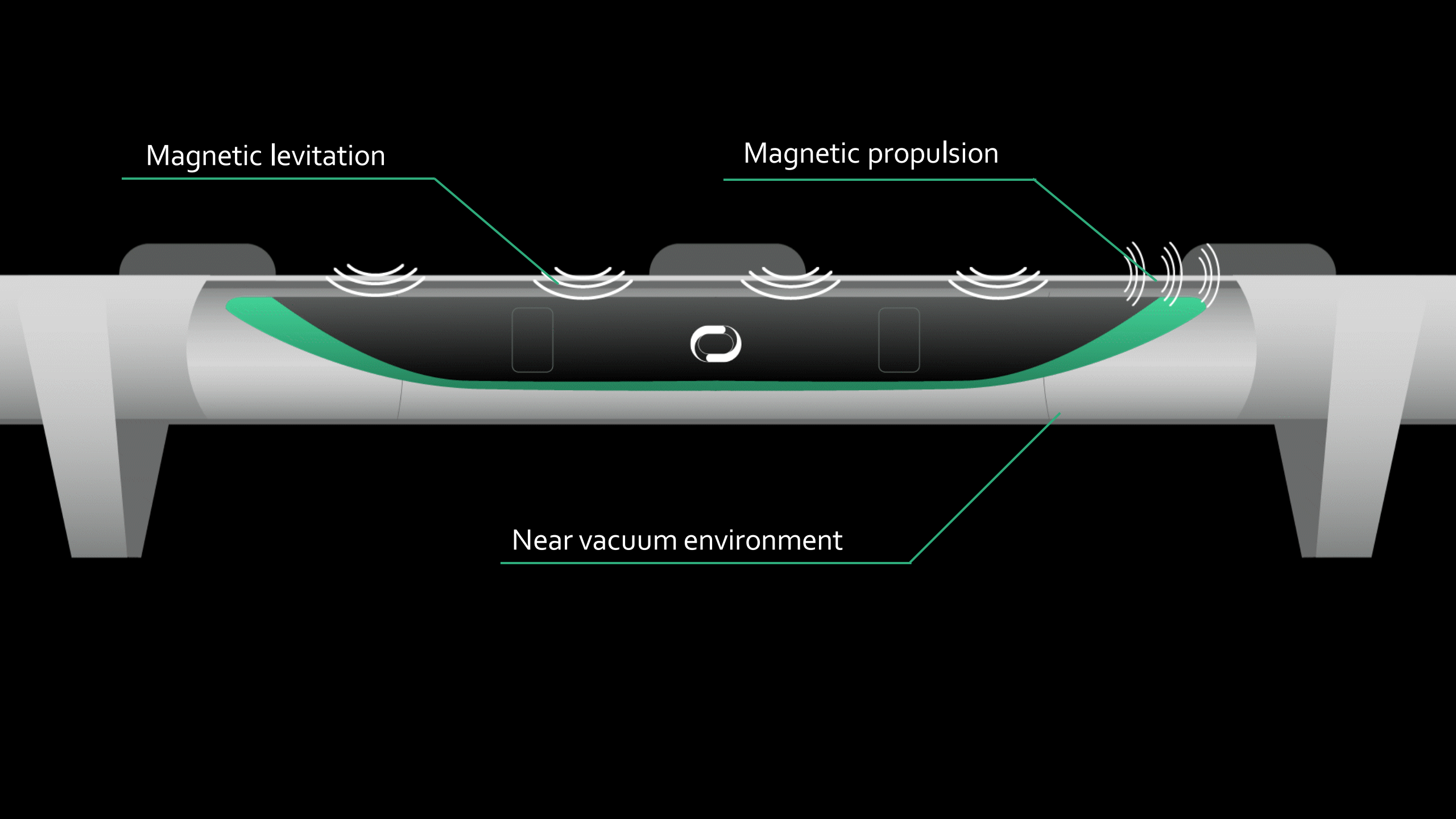
ROLLING RESISTANCE

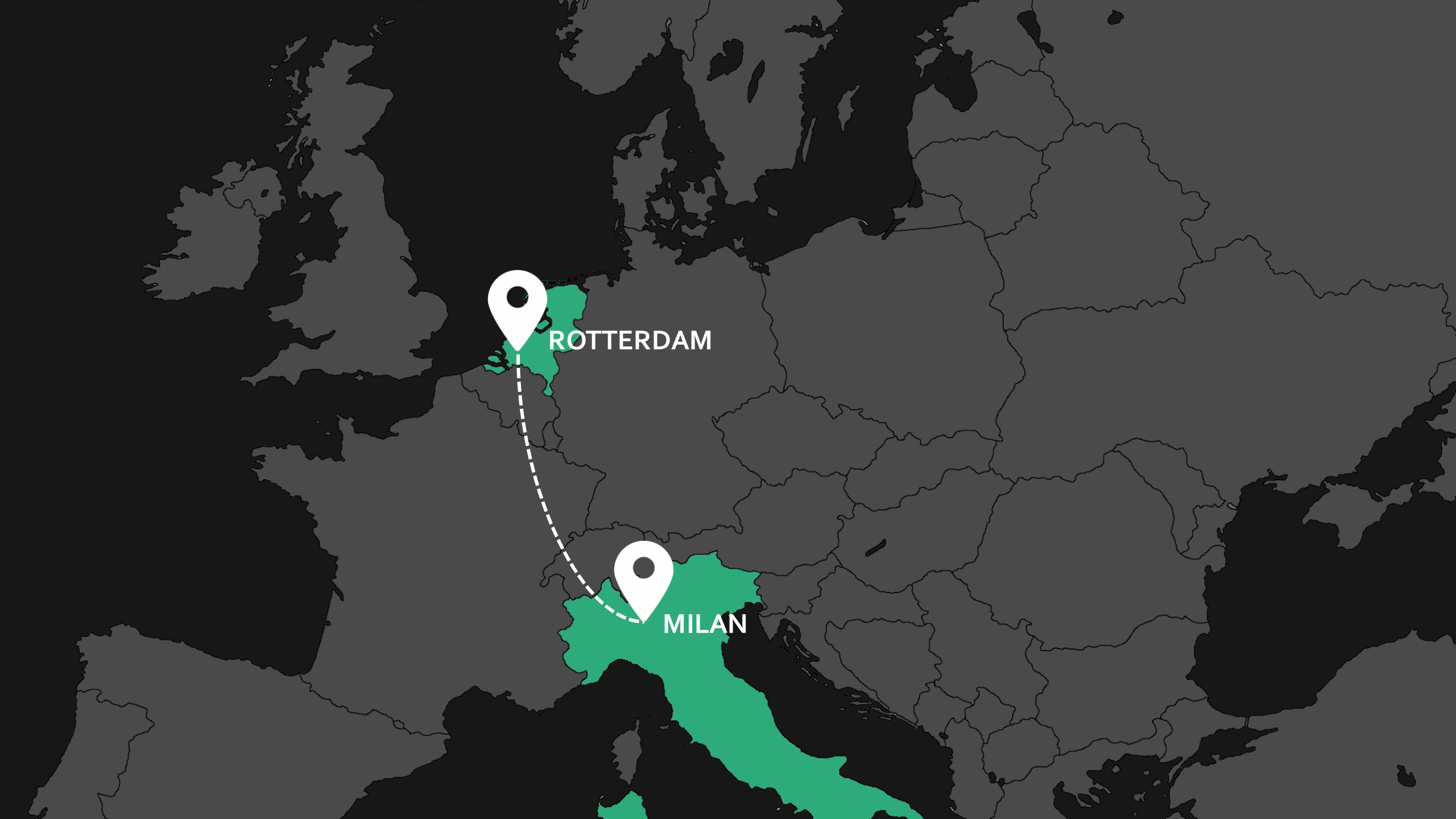


Magnetic levitation

Magnetic propulsion

Near vacuum environment





ROTTERDAM



MILAN

TRAIN



AIRPLANE



HYPERLOOP



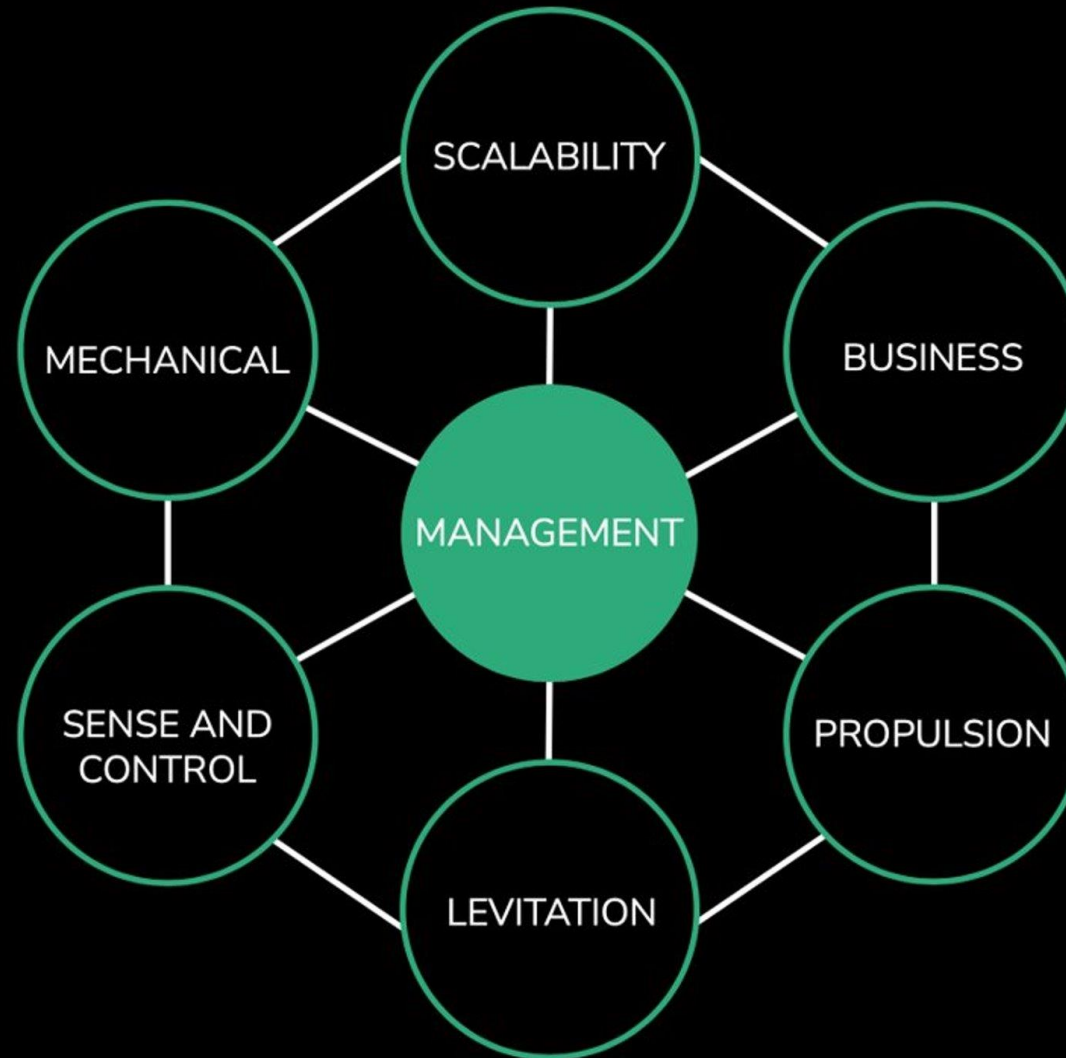
● Travel time

● Energy consumption





DEPARTMENTS



"Our mission is to develop an innovative Hyperloop system to accelerate its full-scale implementation"

MAKING

DREAMS

COME

TRUE

TUDOR Dream Hall





EHW

EUROPEAN
HYPERLOOP
WEEK

AWARDS



Complete pod design award



Full-Scale Awards



Sub-System awards



2017



2023



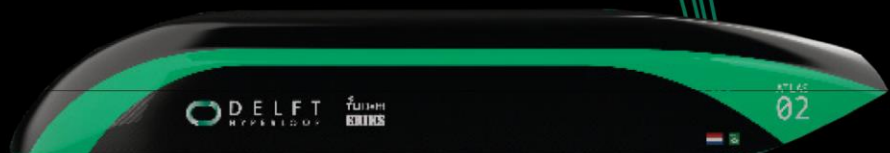
2018



2022



2019



2021



2020



FULL LEVITATION

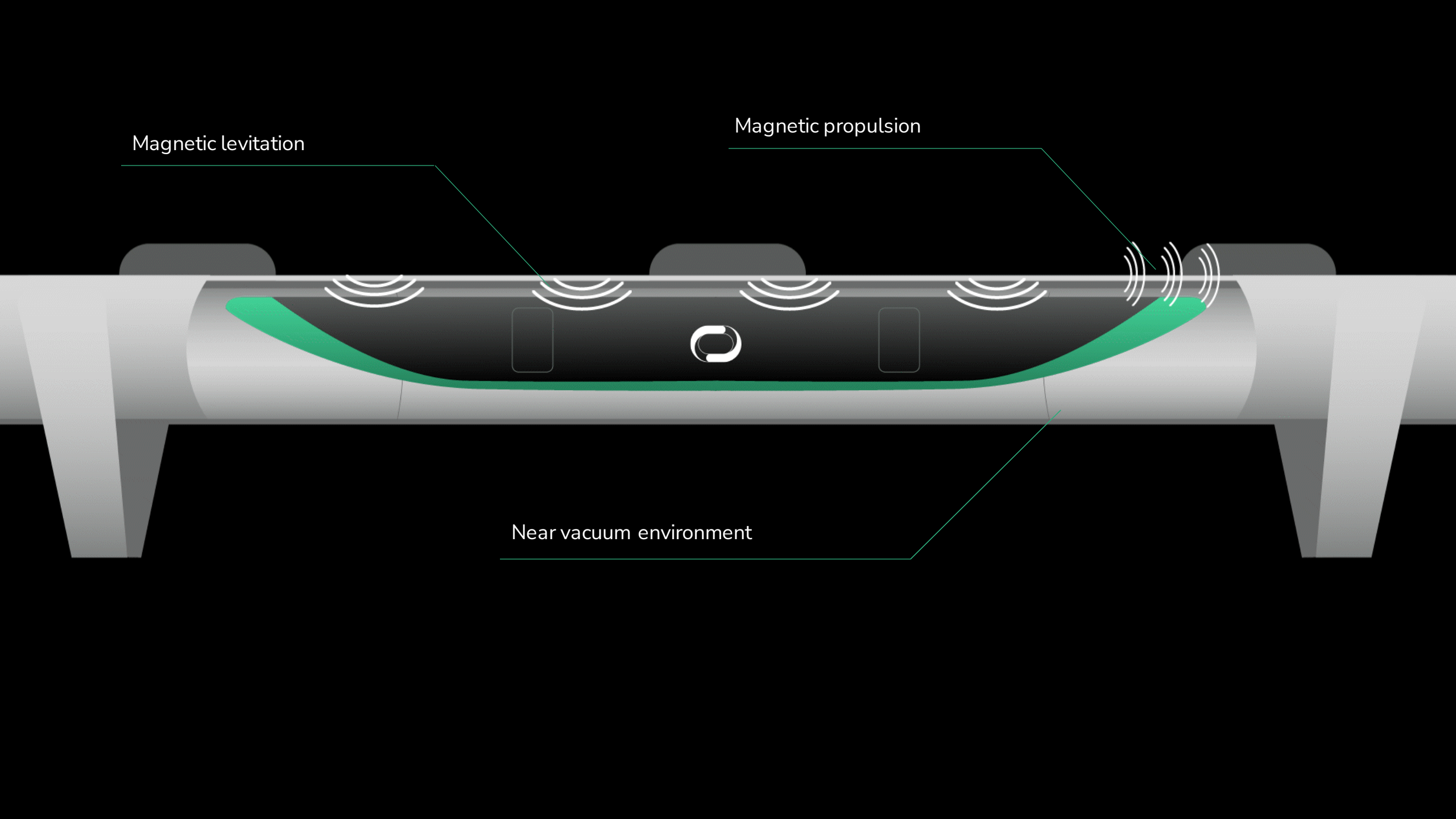
NEW MOTOR

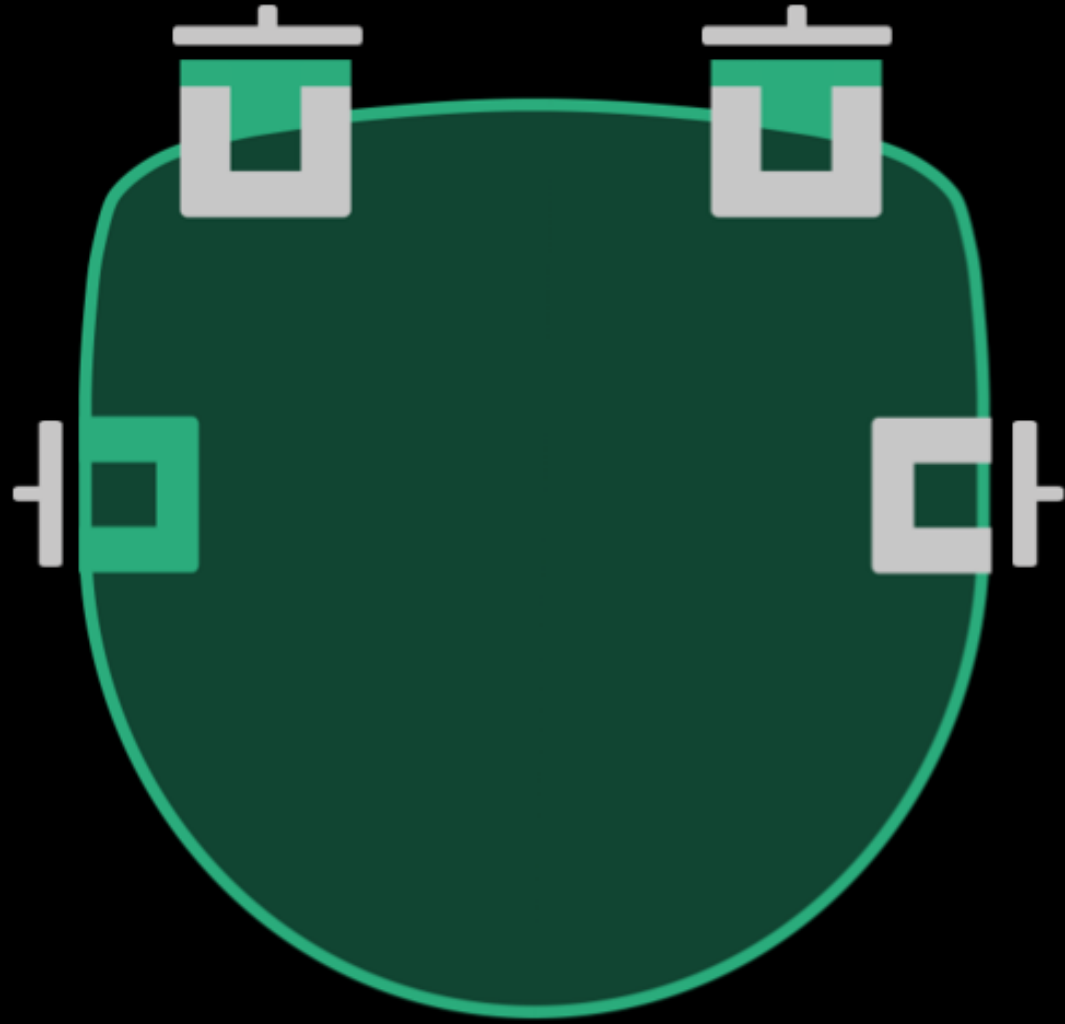
THERMAL MANAGEMENT

Magnetic levitation

Magnetic propulsion

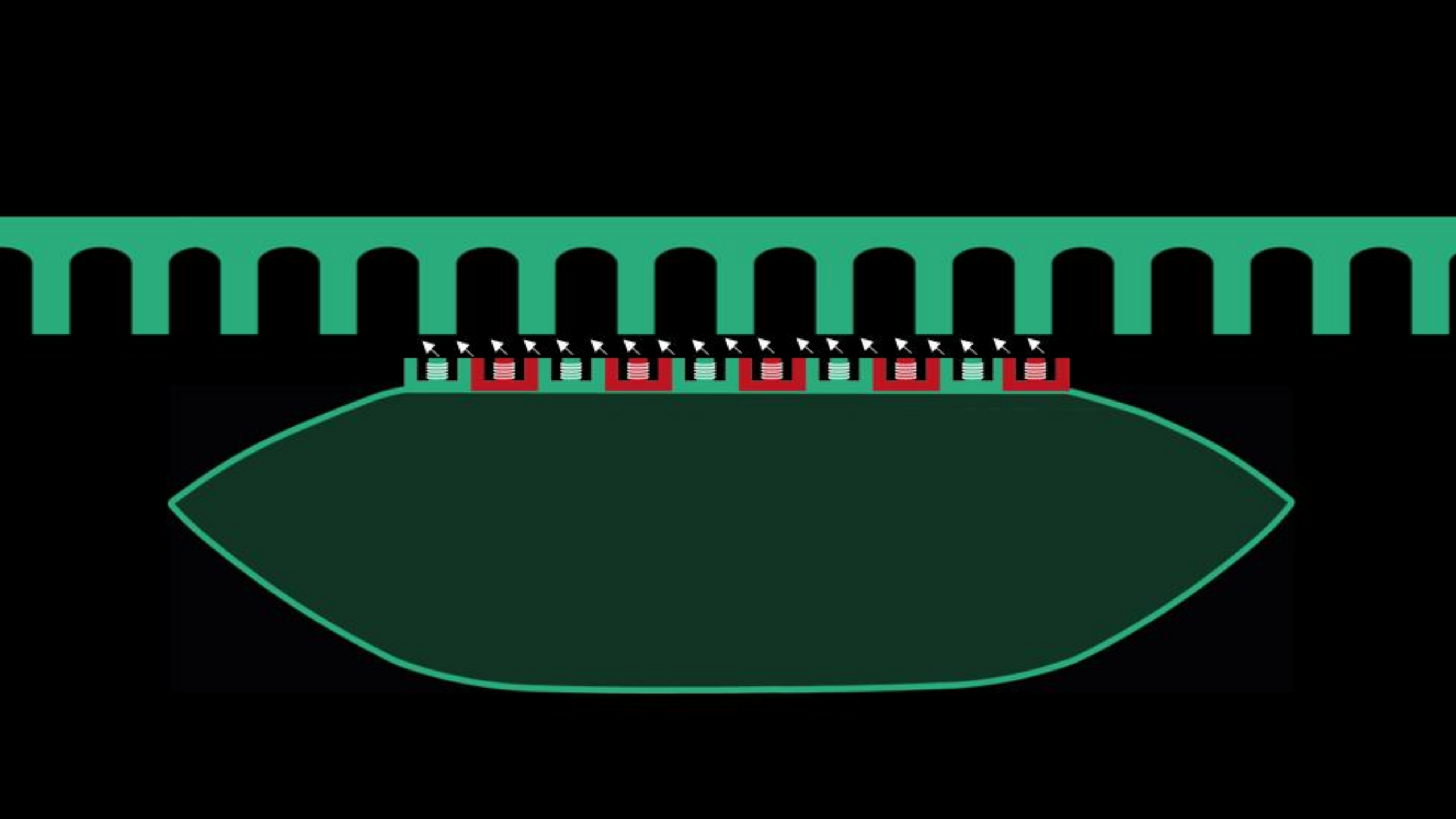
Near vacuum environment



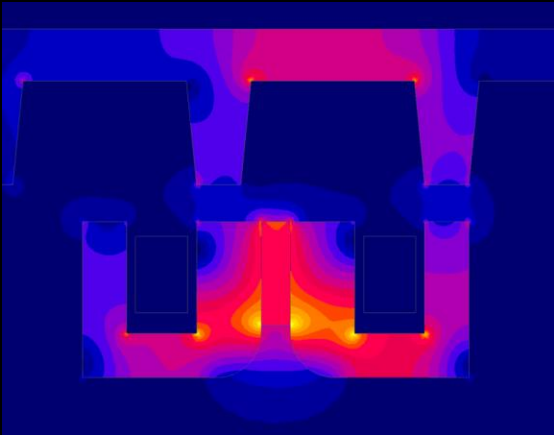


LFSPM MOTOR

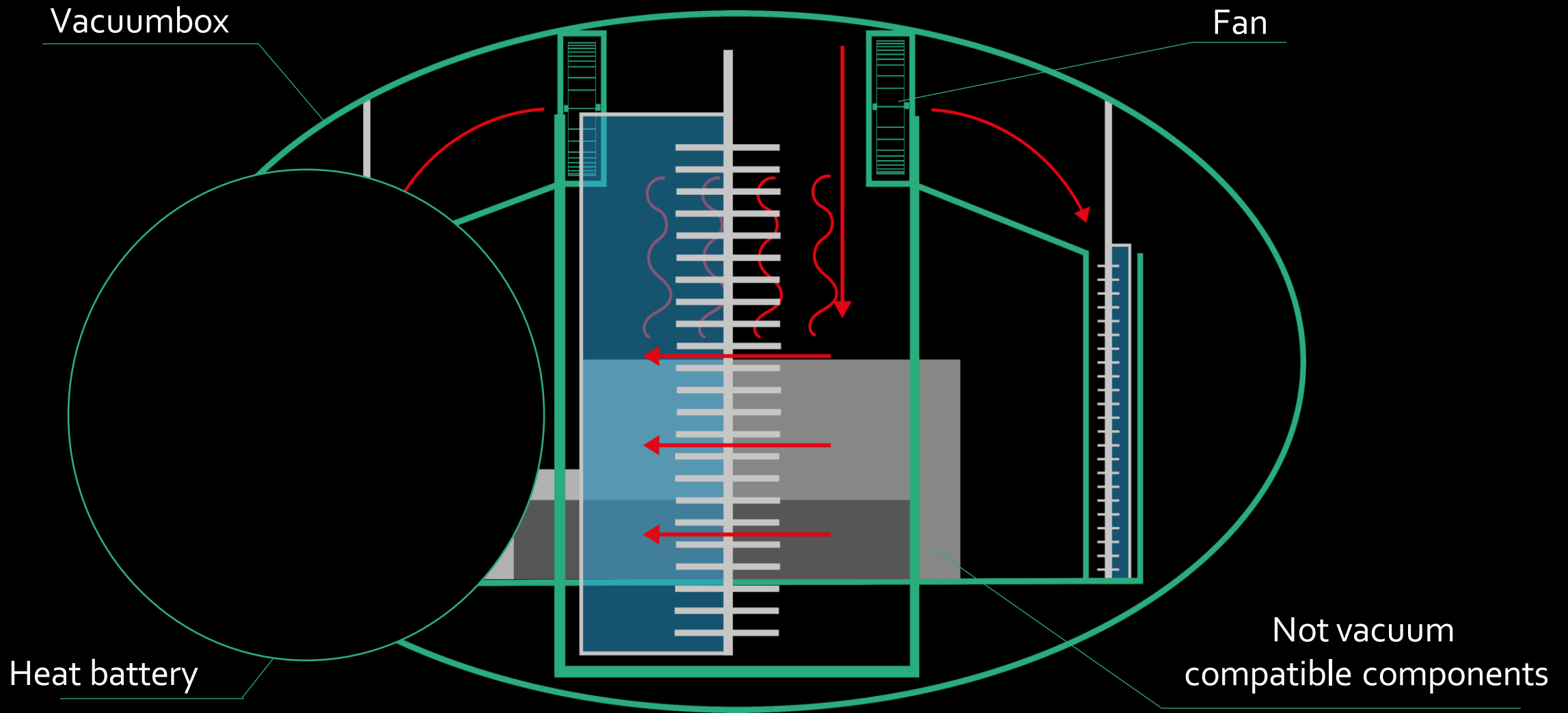
LINEAR FLUX SWITCHING PERMANENT MAGNET MOTOR



LFSPM-MOTOR



THERMAL MANAGEMENT



Magnetic motor

The Linear Flux Switching Permanent Magnet Motor propels the pod forward. This is the first time that this motor is built on this scale.

Vertical levitation module

The four vertical levitation modules on the top of the pod makes the pod levitate in vertical direction. These modules are called Hybrid Electromagnetic Suspension Modules.

Lateral levitation module

The four lateral levitation modules divided on both sides of the pod make the pod levitate in lateral direction. These modules are called Electromagnetic Suspension Modules.

Emergency brakes

The pneumatic emergency brakes consists of four braking calipers with springs that extend outwards to the track when needed.

Vacuum box

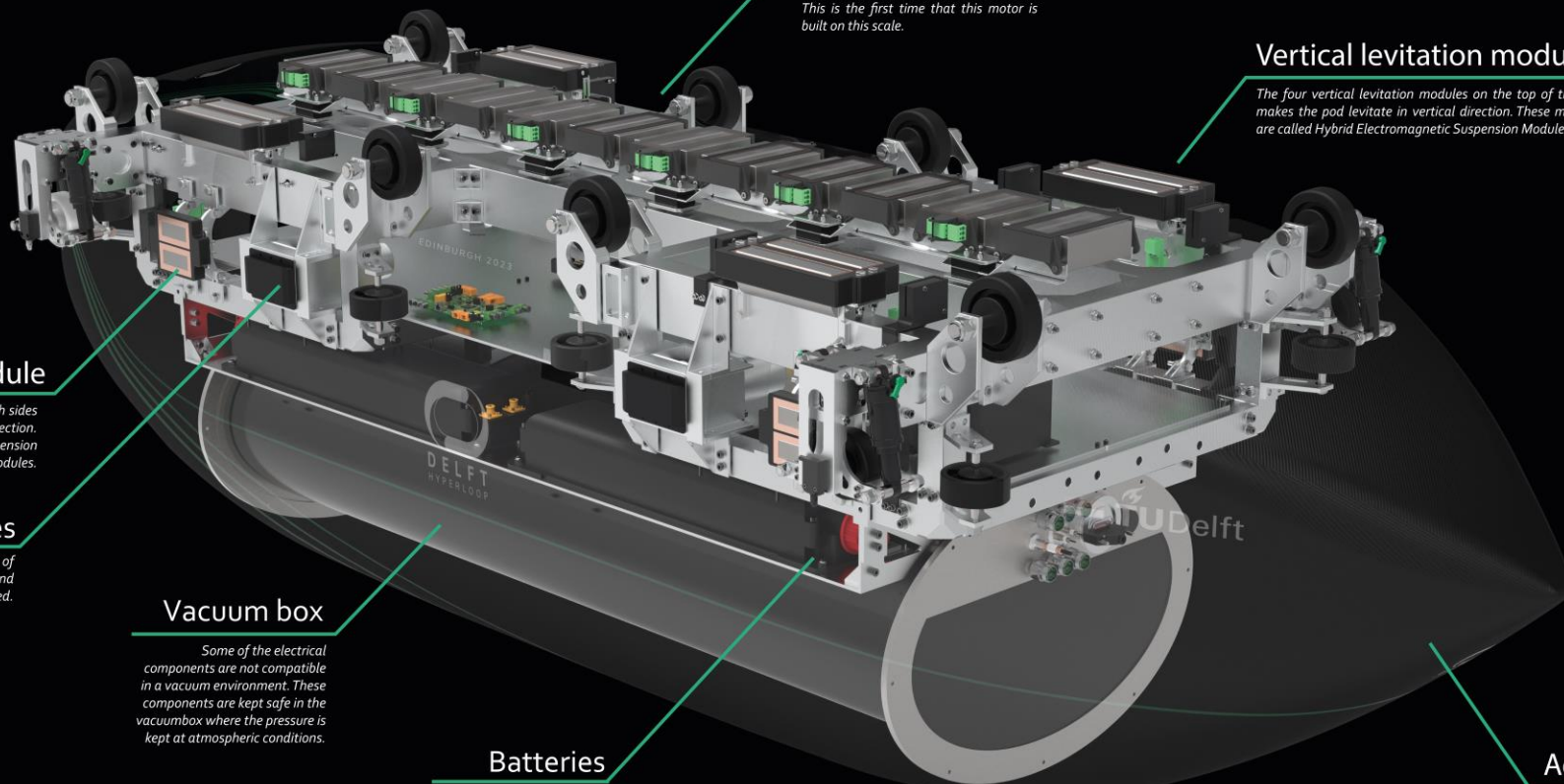
Some of the electrical components are not compatible in a vacuum environment. These components are kept safe in the vacuumbox where the pressure is kept at atmospheric conditions.

Batteries

The batteries power all the subsystems. The battery consist of 672 vacuum compatible lithium-ion cells.

Aeroshell

The aeroshell is a 3,5 metre-long carbon fibre housing that makes sure that all the subsystems are protected.

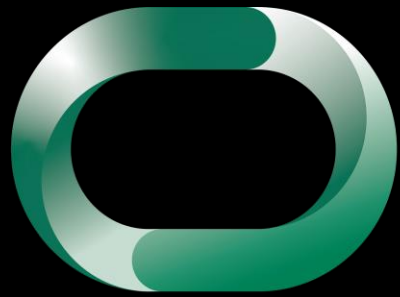




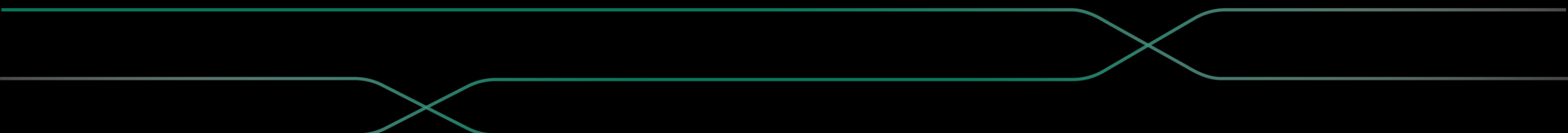
2023

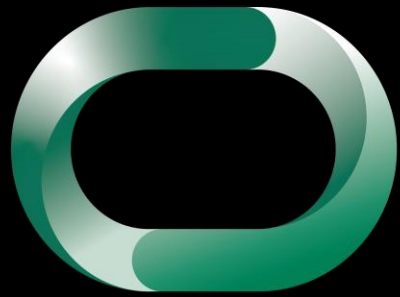
104



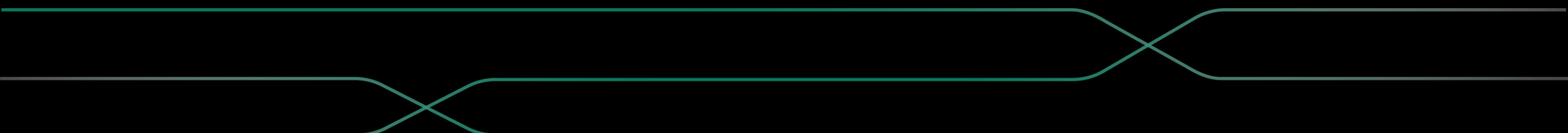


PAUZE





FULL SCALE CHALLENGES




CHALLENGES

Technical

 Scalable systems

 Infrastructure

 Safety

 Lane switching

Many more!

Non-Technical

 Social acceptance

 (International) regulations

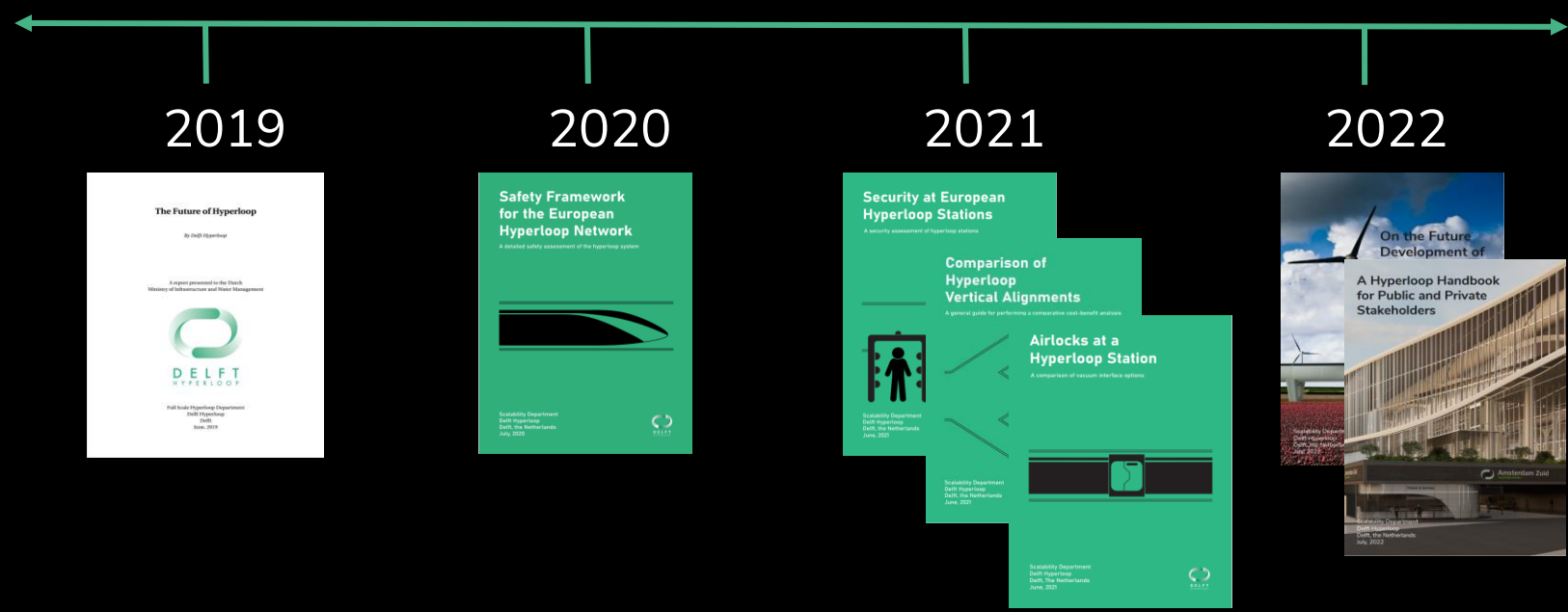
 Price

 Infrastructure

 Sustainability

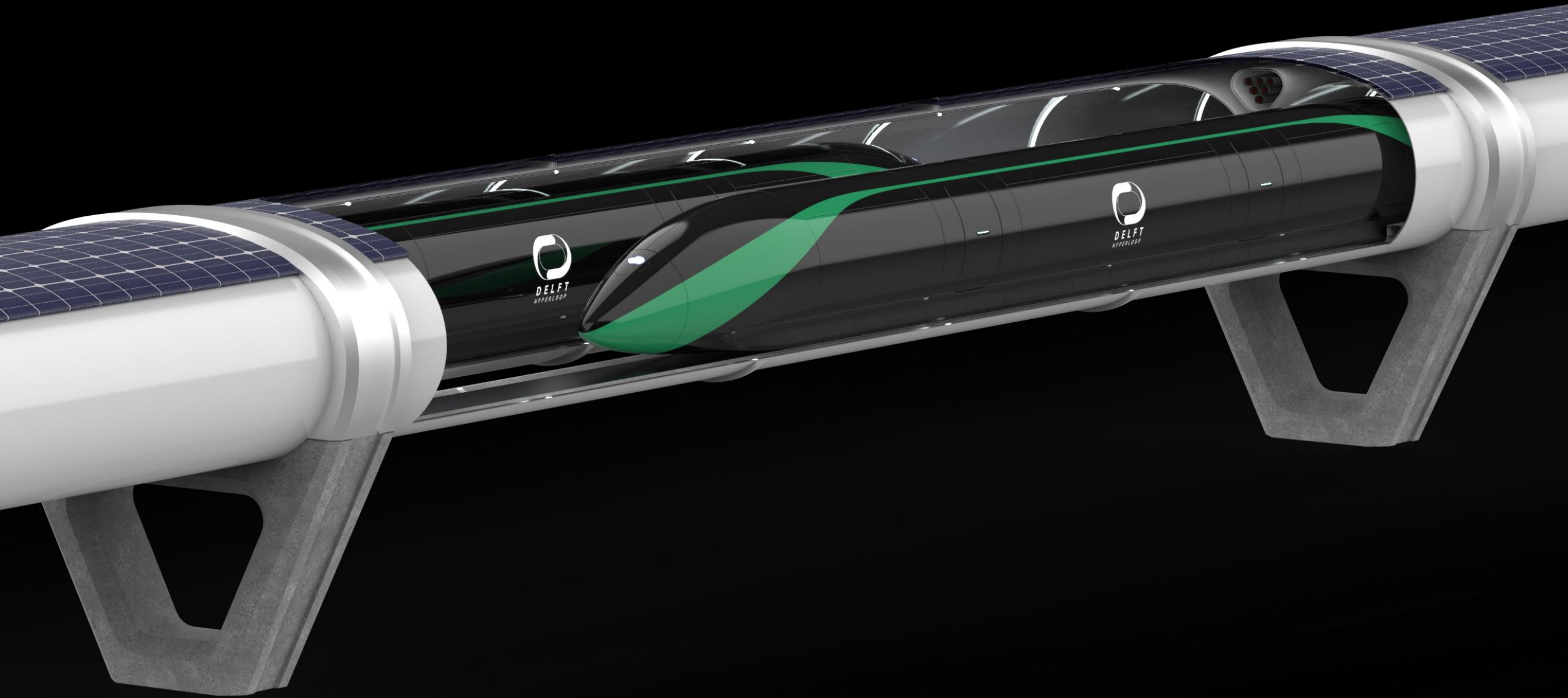
SCALABILITY

- Research department
- Realisation of the hyperloop system
- Goal: two papers for the EHW
- Socio-economic and technical



SOCIO-ECONOMIC CHALLENGES





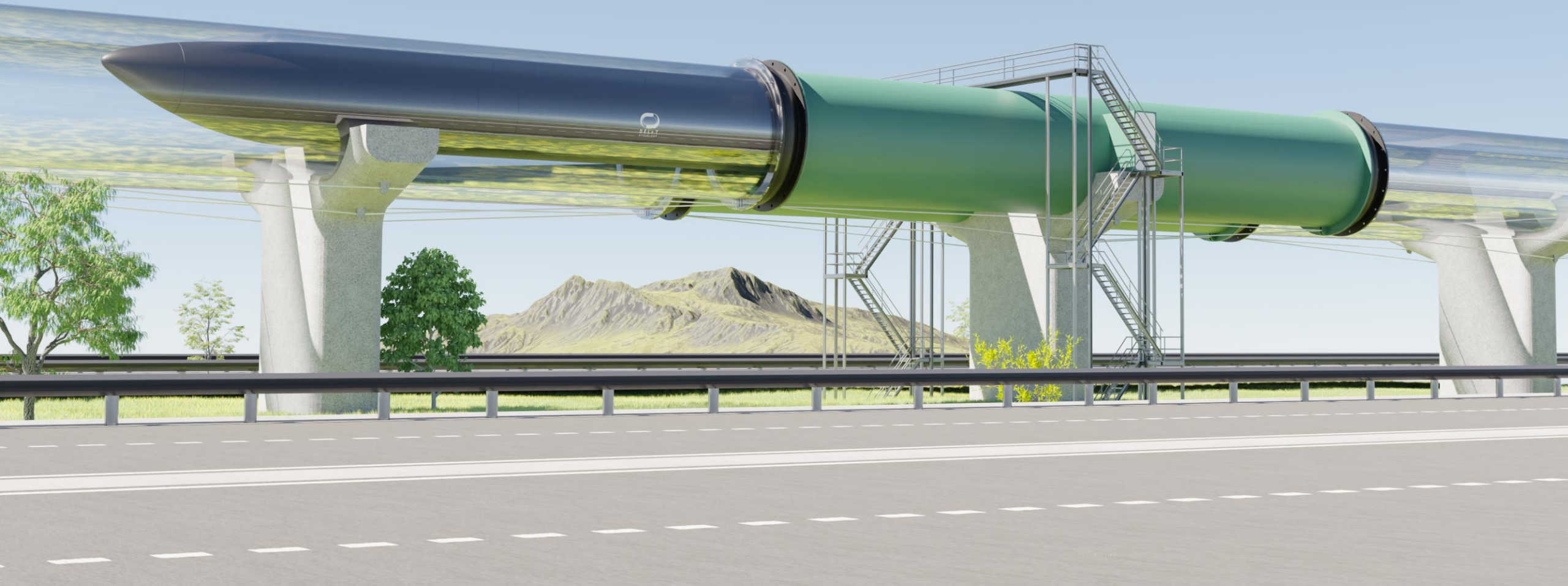


**STEEL & GLASS
INTEGRATED ON A HIGHWAY**



**STEEL
CLIMBING WALL
SPORT FIELD**

INTEGRATION



MULTI-USE





**WHAT OPPORTUNITIES DO YOU
SEE?**

TECHNICAL CHALLENGES



INCREASE DISTANCE

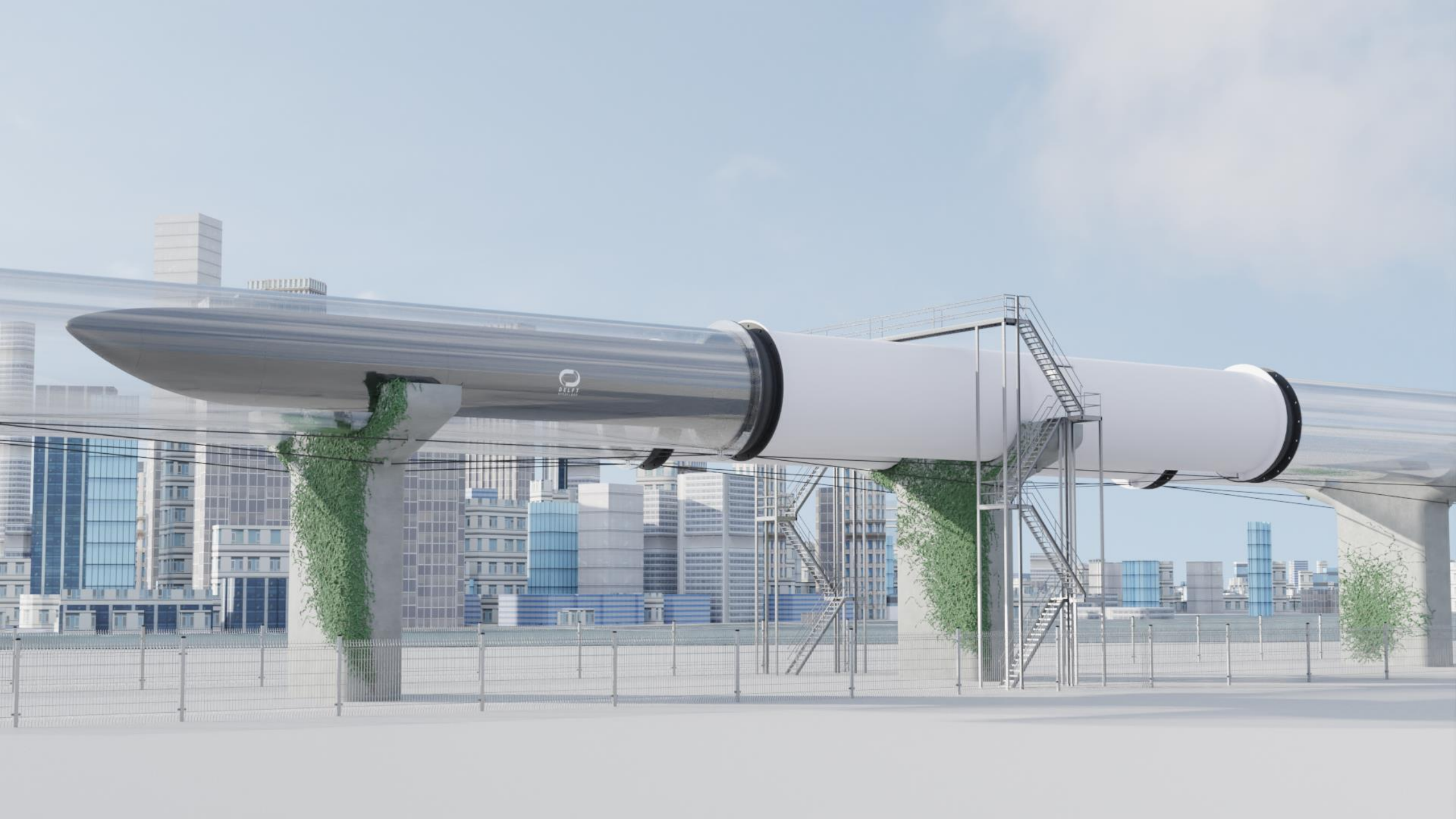
HIGHER VELOCITY

LARGER WEIGHT



93% EFFICIENCY

STILL 7% LOSS...



THERMAL RADIATION

SUBLIMATION

HEAT STORAGE

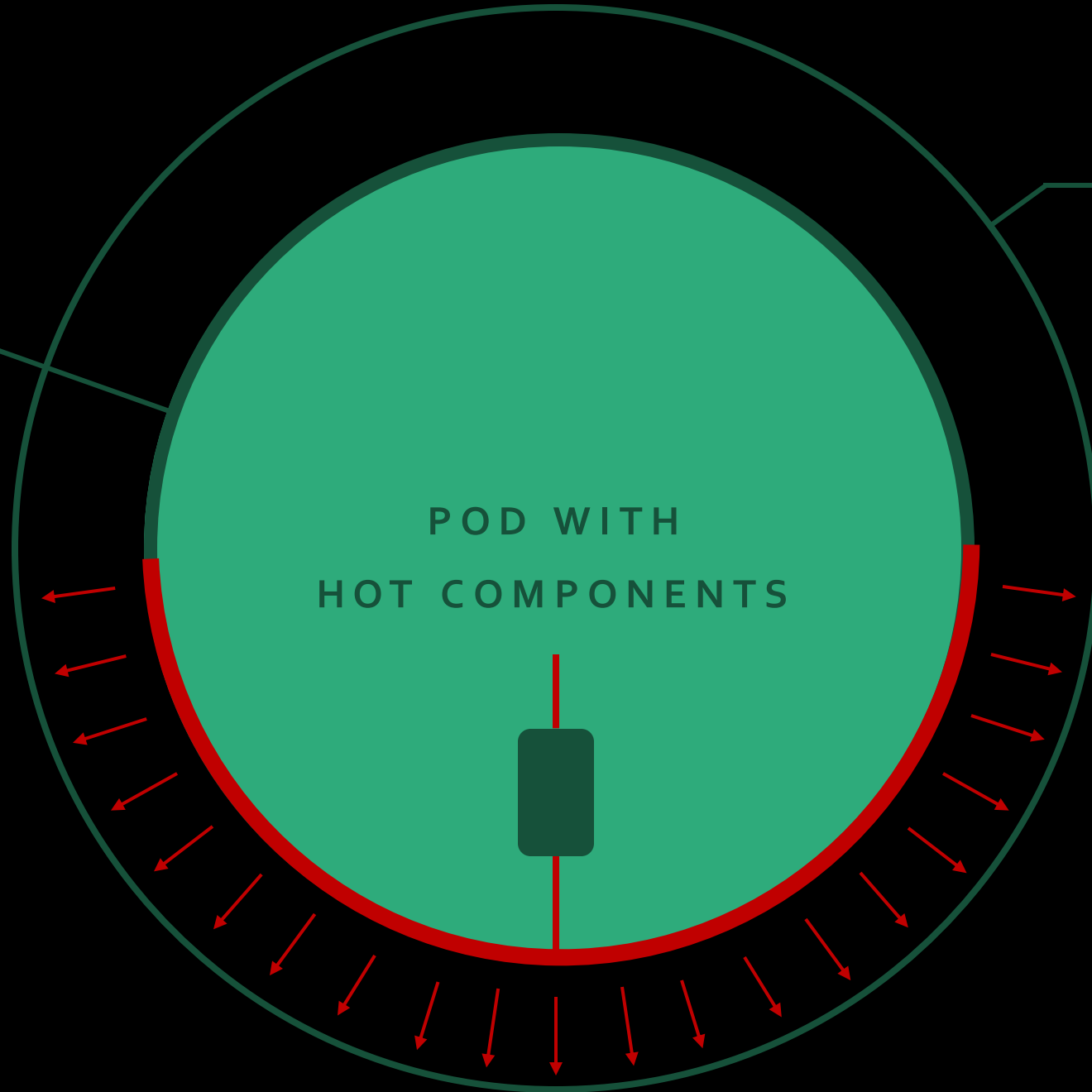


THERMAL RADIATION

RADIATION
PANEL

TUBE

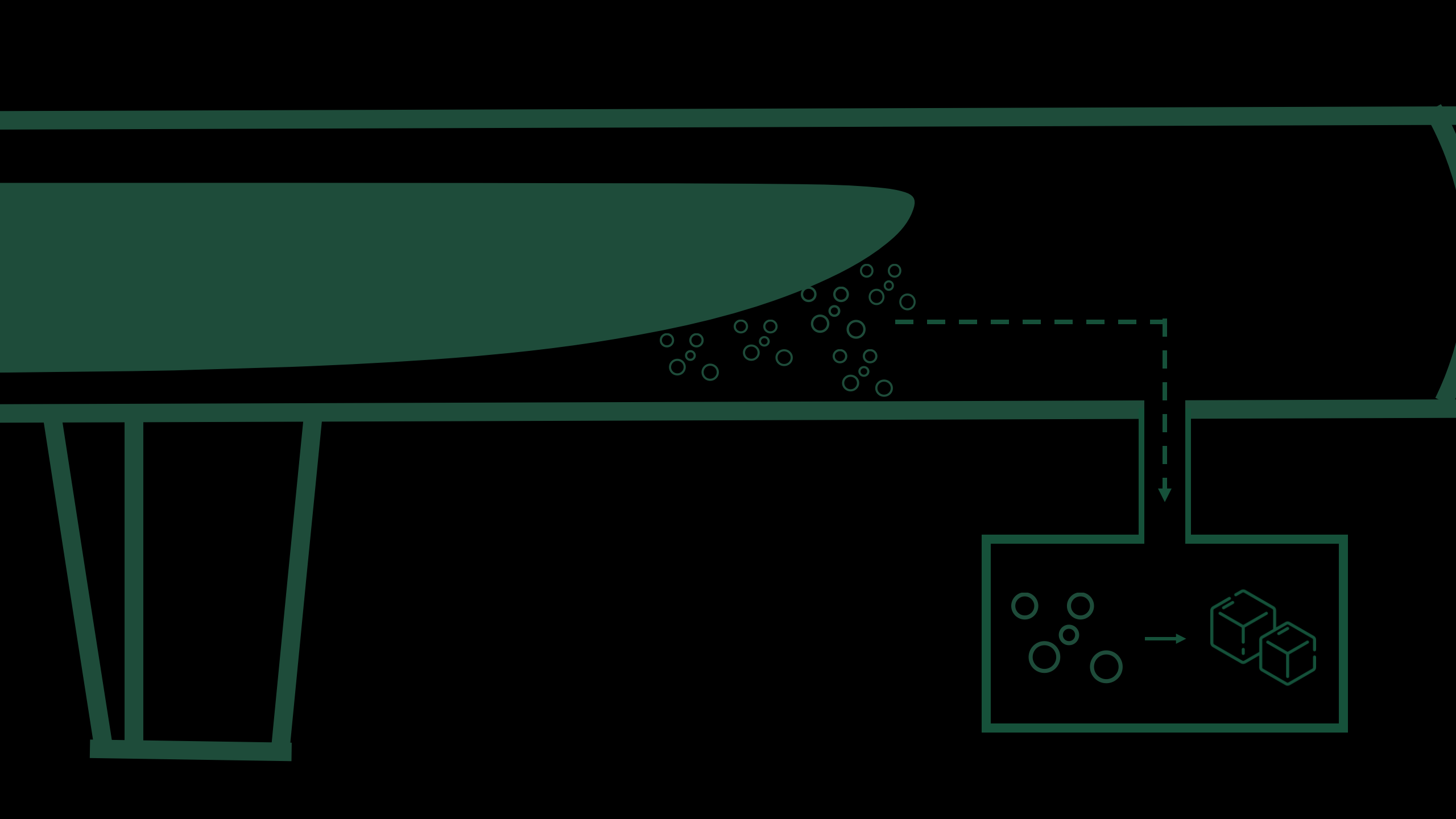
POD WITH
HOT COMPONENTS



An aerial photograph of a frozen body of water, likely a lake or river, covered in numerous irregular, white ice floes. The floes are scattered across a dark, possibly black, surface, creating a dense, textured pattern. The lighting is somewhat dim, giving the scene a cool, blueish-grey tone. The word "SUBLIMATION" is overlaid in the center in a bold, white, sans-serif font.

SUBLIMATION

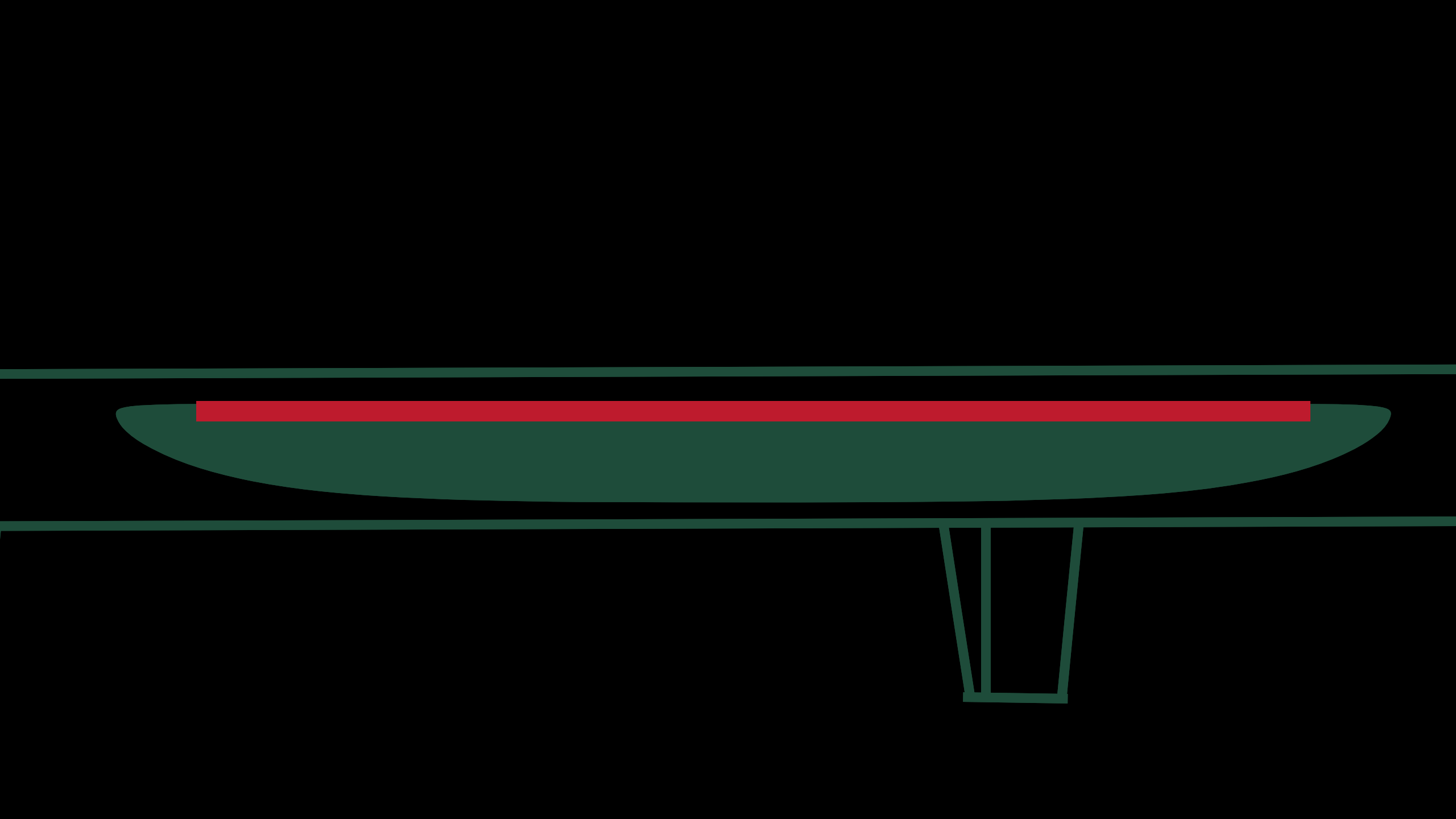




HEAT STORAGE







THERMAL RADIATION

SUBLIMATION

HEAT STORAGE

**DECREASE HEAT
PRODUCTION**

DELFT HYPERLOOP

THE COMMUNITY ACCEPTANCE OF THE HYPERLOOP INFRASTRUCTURE

2023 EUROPEAN HYPERLOOP WEEK
EDINBURGH

SARAH DUISTER
LOTTE WESTRIK BROEKSMASMA

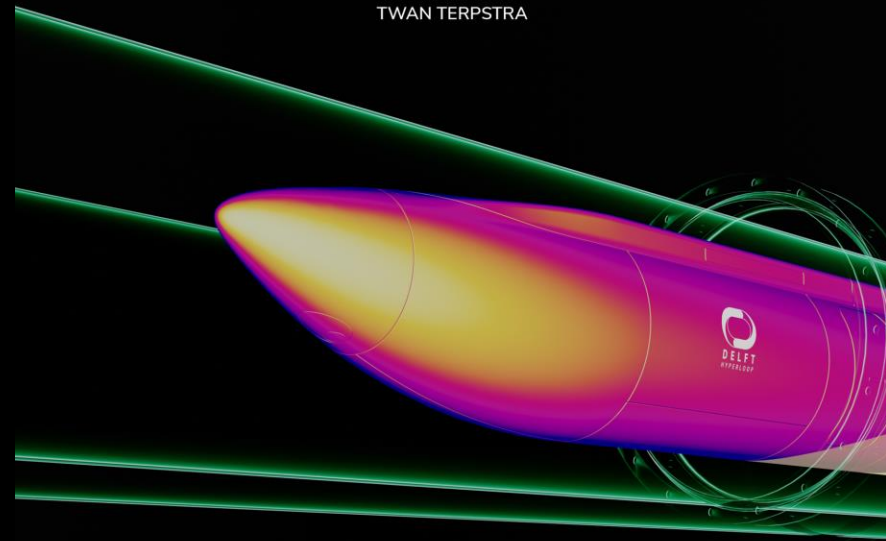


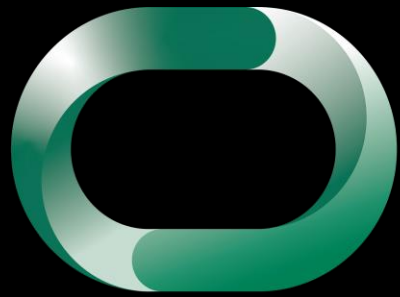
DELFT HYPERLOOP

CONCEPTUAL FEASIBILITY STUDY OF HYPERLOOP VEHICLE THERMAL MANAGEMENT SYSTEMS

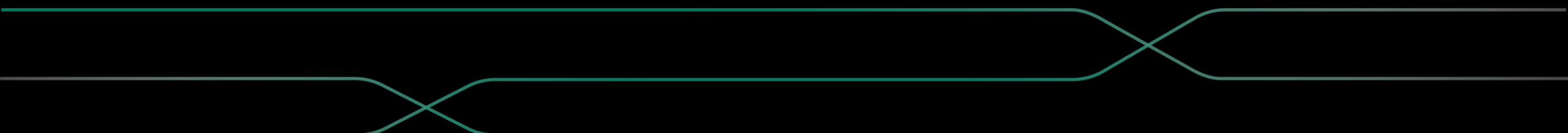
2023 EUROPEAN HYPERLOOP WEEK
EDINBURGH

LIDWIN DE WIT
TWAN TERPSTRA





A JOURNEY IN HYPERLOOP



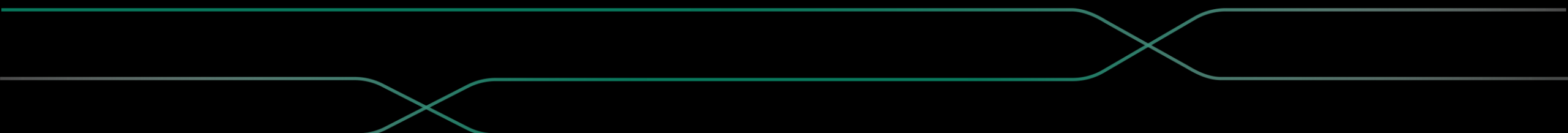


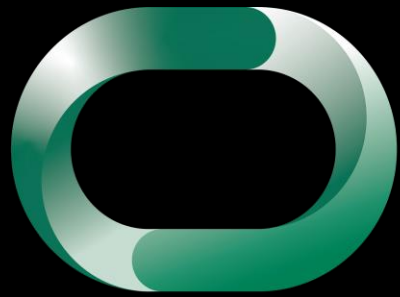
"Innovating high speed transportation to sustainably connect the world"



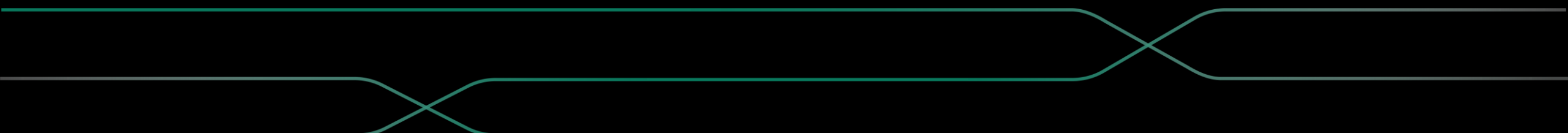
DELFT

HYPERLOOP





TROUBLESHOOTING



Trajectanalyse voor de Hyperloop- buisinstallatie:

Identificeer en analyseer de potentiële uitdagingen en obstakels die kunnen optreden bij het aanleggen van een buis voor de Hyperloop van punt A naar punt B. Formuleer aanbevelingen voor effectieve oplossingen en strategieën om deze uitdagingen aan te pakken.

Veiligheid van een vacuüm buis:

Voer een risico analyse uit om de potentiële gevaren en veiligheidsuitdagingen van een vacuüm buis te identificeren

Beheer en onderhoud van de Hyperloop buizen:

*Onderzoek de meest efficiënte methoden voor
het onderhouden van de buizen en identificeer
de belangrijkste factoren en uitdagingen die
hierbij een rol spelen.*

MORE ABOUT US





DELFT

HYPERLOOP

