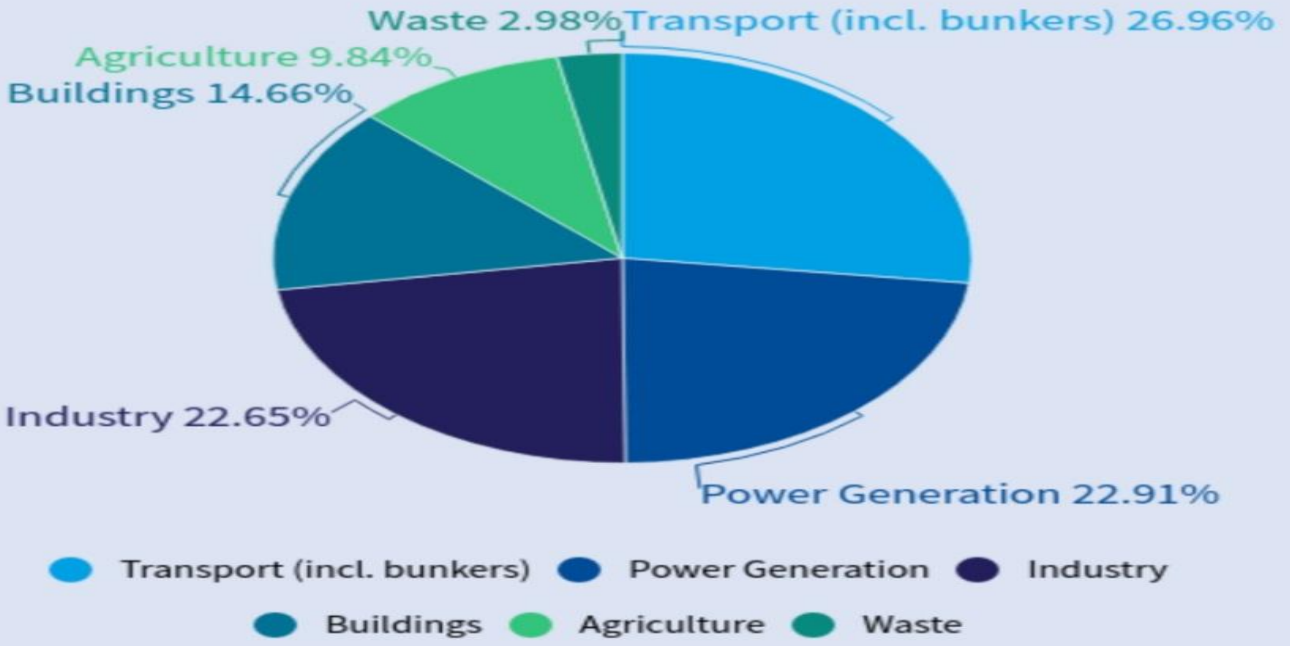

Virgin
hyperloop

Transport in 2016 is Europe's biggest climate problem

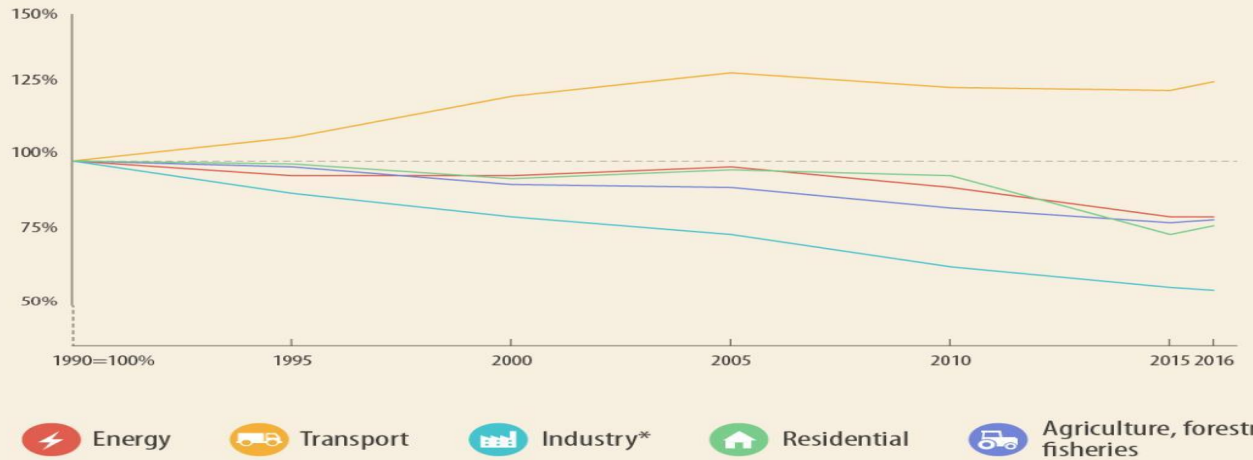


Source: Adapted by T&E from EEA, Approximated EU greenhouse gas inventory 2016

Notes: 2015 emissions shares are used as a proxy to split the 2016 'Energy Industries' (IPCC sector 1.A.1) emissions into 'Power Generation' (IPCC sector 1.A.1.a) and 'Industry' (IPCC sectors 1.A.1.b, 1.A.1.c, 1.A.2. 2), as these splits are not available until official reports are released in spring 2018.

CO2 EMISSIONS IN THE EU

Evolution of CO2 emissions by sector (1990–2016)



* Manufacturing and construction

Source: European Environment Agency

europarl.eu

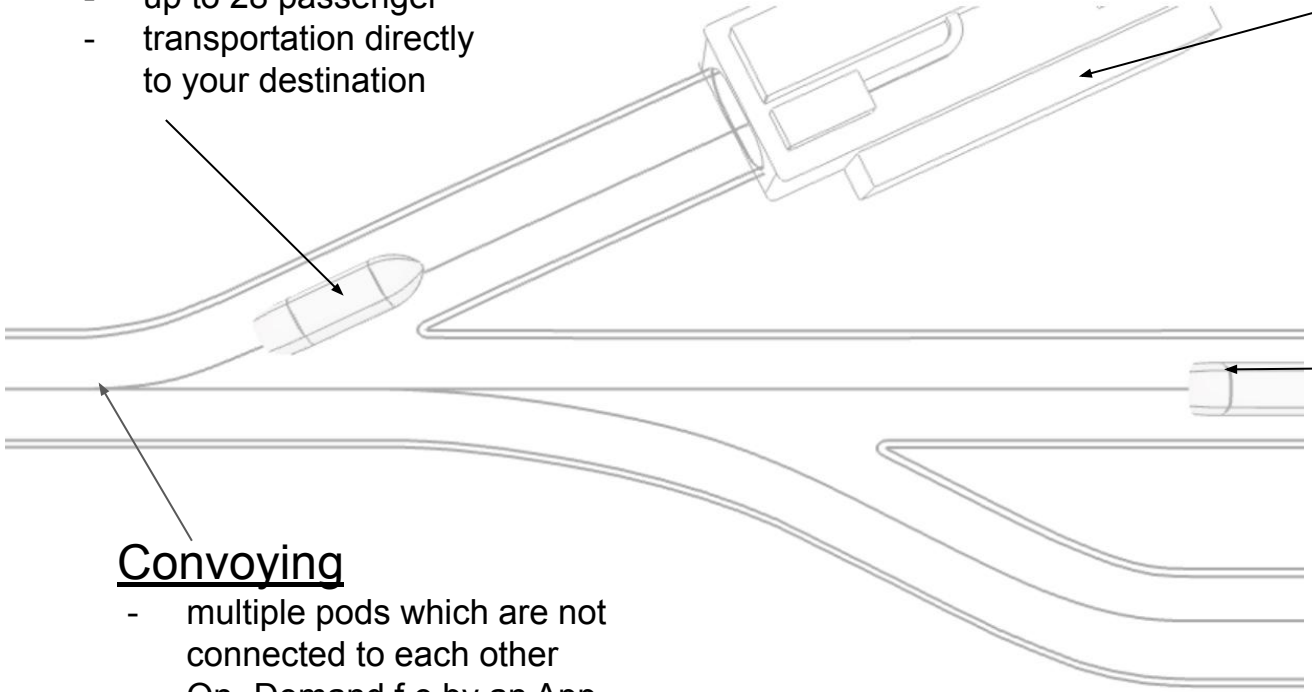
The Company

- commercialize the high speed technology concept called “Hyperloop”
- first ideas and concepts were published by Elon Musk in 2012
- passenger travel over 1000 km/h in floating pods which races along in low pressure tubes
- company was founded June 1 2014
- raised over 400 million dollar by May 2019
- first prototypes and designs in 2016
- first tests track in Nevada in 2017
- first transport of passenger in 2020

System Operation

Pods
- up to 28 passenger
- transportation directly to your destination

Portal
- central hub
- connected to nearby transport modes



High Speed Switching
- able to break from the convoy to continue to their final destination

Convoying
- multiple pods which are not connected to each other
- On- Demand f.e by an App

concept of a cargo pod

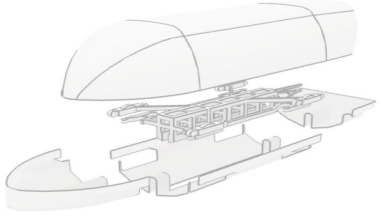
Hyperloop portal

concept of a passenger pod

vacuum tube (test track in Nevada)

prototype of a pod

Technology

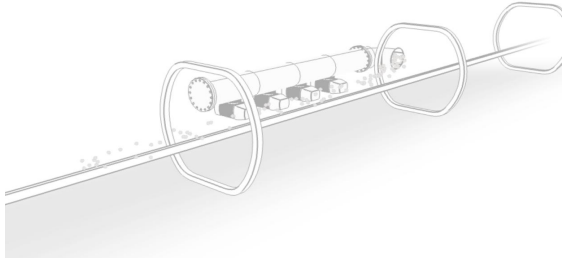


Power Electronics

- controls speed and acceleration of the pods by varying the frequency and voltage of the electric motor

Vacuum

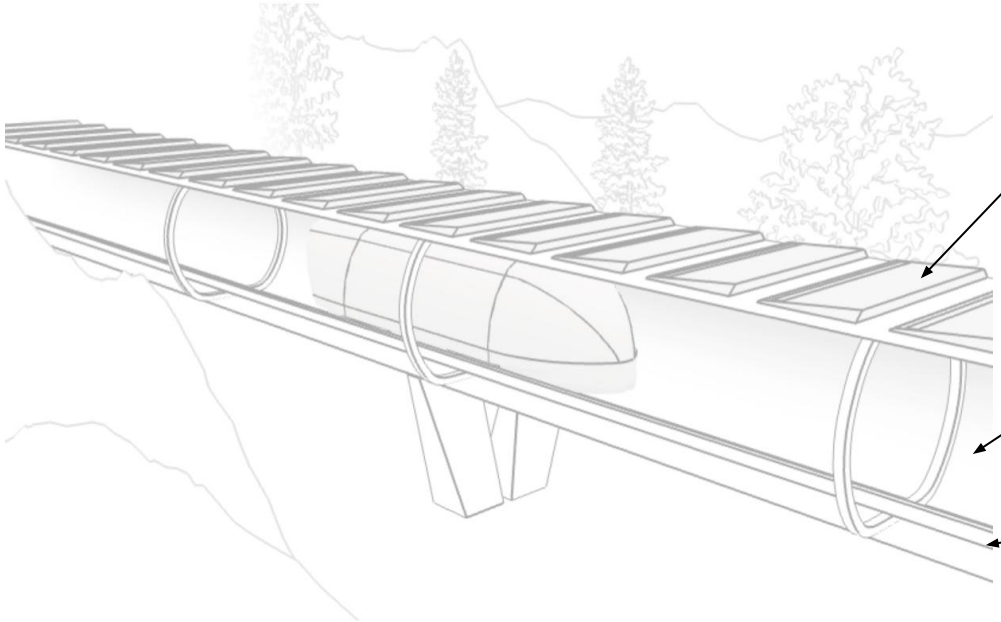
- creation of a near vacuum environment (air pressure got reduced down until 200,000 ft above sea level)
- lower aerodynamic drag makes higher speeds possible



Magnetic Levitation

- pods are racing along with non-contact magnetic levitation
- producing of efficient magnetic flux with high electromagnetic force

Sustainability



Solar Panels

- system is 100% electric
- can draw power from any available energy source (f.e solar panels which cover the tube)

Construction benefits

- Hyperloop can work above and below ground and is less expensive

Noise level

- eliminating of sources of mechanical noise like wheels on a track
- sound barrier in tube

Safety and comfort

Smooth Acceleration

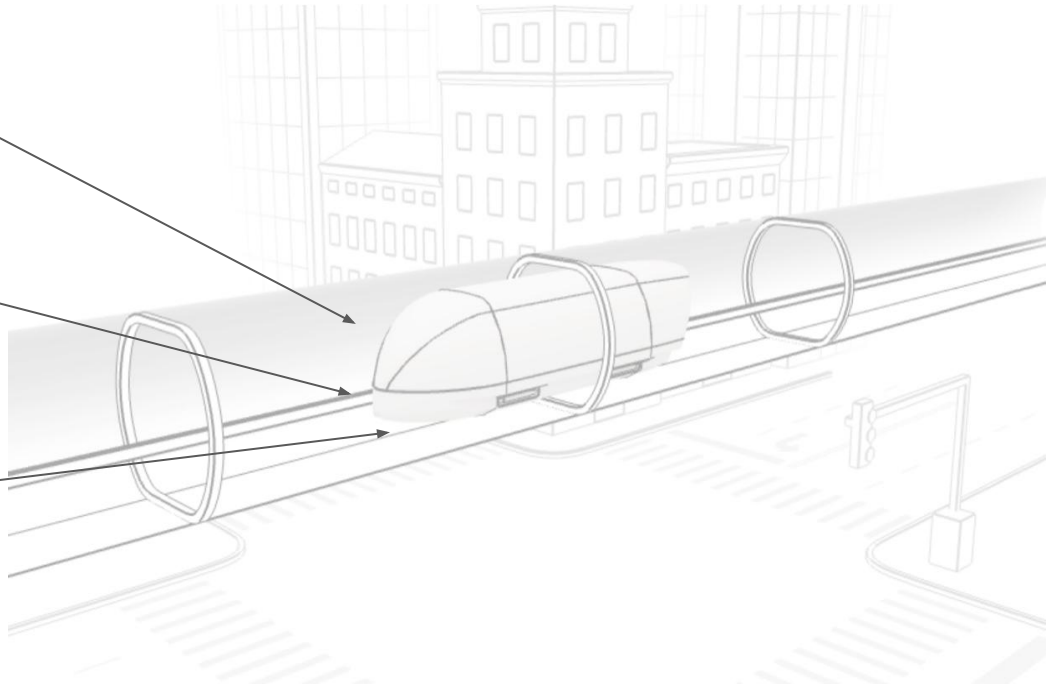
- acceleration of the pod in a vacuum environment

Closed Environment

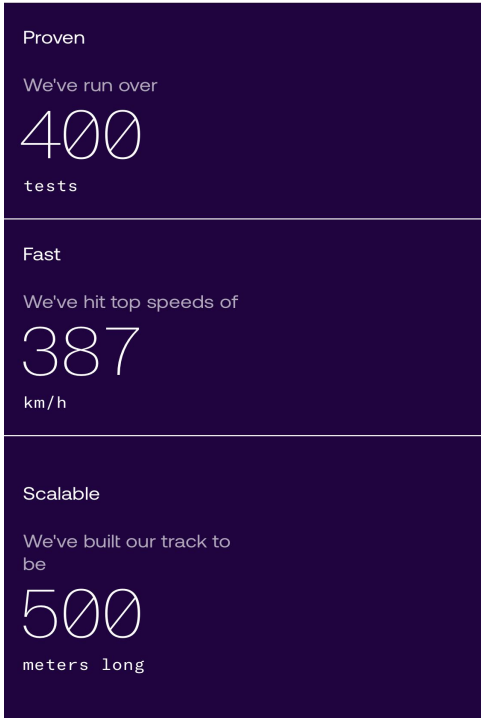
- avoiding of dangerous at- grade crossings
- closed tubes offer zero weather delays or other interferences

Fully autonomous

- near and far-field communication coordinate the pod
- sensors record real time data of location and movement



Future



Improving our system:

- new top speeds
- new test tracks
- more tests to guarantee safety

Realizing first Hyperloop routes by 2030:

- Midwest (Chicago - Pittsburgh)
  6h ≠ 0.45h
- Missouri
  3.45h ≠ 0.30h
- Texas
  7h ≠ 0.54h
- Saudi Arabia (Riyad - Jeddah)
  9.20h ≠ 1.13h
- India (Pune - Mumbai)
  3.04h ≠ 0.25h

Thank you for listening!

https://www.youtube.com/watch?v=xKvbSboQ5_g