Maharashtra's Hyperloop Plan

Why in news?

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Maharashtra government has signed an agreement with Virgin group to build a Hyperloop.

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What is Hyperloop?

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- Hyperloop is a proposed system of transport that would see pods or containers travel at high speeds through a tube that has been pumped into a near-vacuum.
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- The train pods would either float using magnetic levitation technology.
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- The pods would be able to travel at immense speeds with a projected top speeds of 760mph.
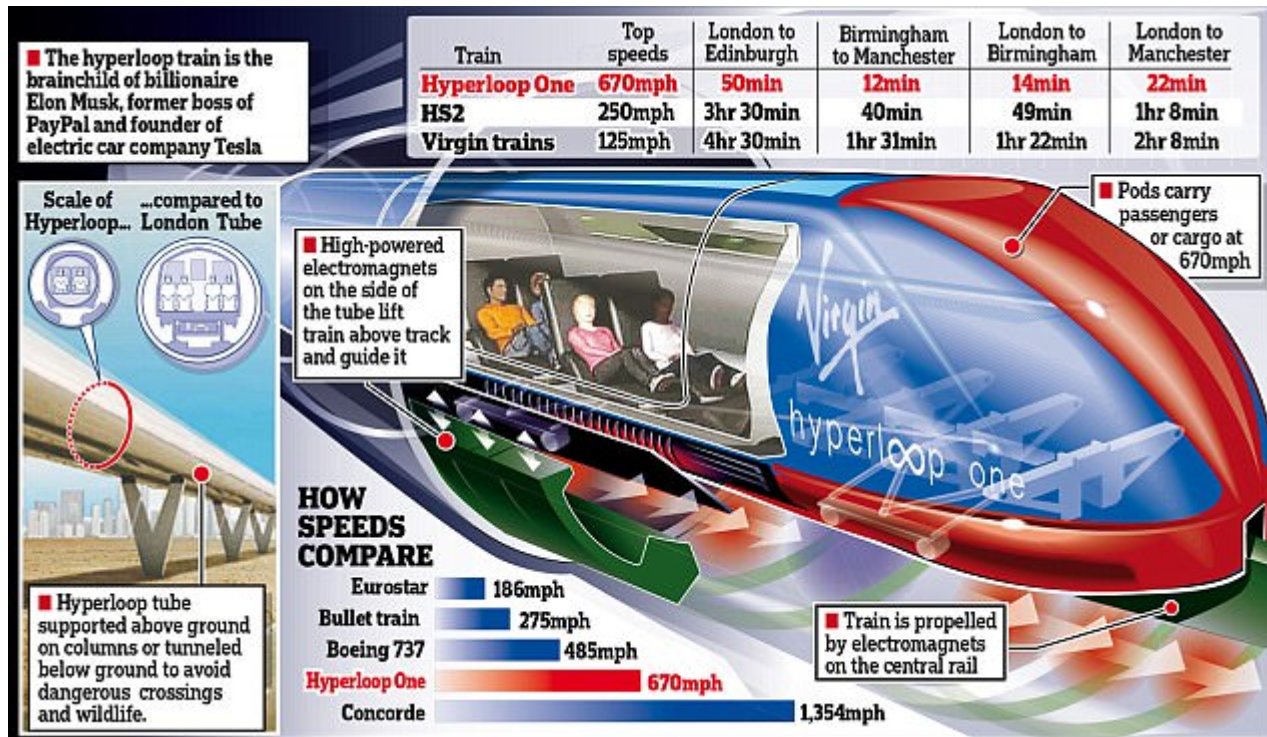\n
- The pod would initially launch using an electric motor before levitation takes place and the pod can glide at cruising speed in the low-pressure environment.
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- Hyperloop One is the company which is working on this technology, has proposed routes in UK, Netherlands, Finland and Dubai, where it has backing from the governments to explore the potential of the system.
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Train	Top speeds	London to Edinburgh	Birmingham to Manchester	London to Birmingham	London to Manchester
Hyperloop One	670mph	50min	12min	14min	22min
HS2	250mph	3hr 30min	40min	49min	1hr 8min
Virgin trains	125mph	4hr 30min	1hr 31min	1hr 22min	2hr 8min

■ The hyperloop train is the brainchild of billionaire Elon Musk, former boss of PayPal and founder of electric car company Tesla

■ Pods carry passengers or cargo at 670mph

Scale of Hyperloop... ...compared to London Tube

■ High-powered electromagnets on the side of the tube lift train above track and guide it

■ Hyperloop tube supported above ground on columns or tunneled below ground to avoid dangerous crossings and wildlife.

■ Train is propelled by electromagnets on the central rail

HOW SPEEDS COMPARE

Eurostar	186mph
Bullet train	275mph
Boeing 737	485mph
Hyperloop One	670mph
Concorde	1,354mph

What was the proposed Hyperloop route in India?

- The proposed Hyperloop route in India will be connecting Mumbai and Pune in Maharashtra.
- The proposed system will cut travel time between Mumbai and Pune to 25 minutes from the 3 hours it now takes by road.
- Mumbai-Pune Hyperloop is estimated to connect 26 million people, support 150 million passenger trips per year, and reduce greenhouse gas emissions by up to 86,000 tonnes over 30 years.

Proposed hyperloop route
Distance: 104 miles (168 km)
Journey time by rail: 2hrs 43 mins
Journey time by hyperloop: 25 mins

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- It is expected that the project will have operational systems in service by 2021.
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What are the advantages of Hyperloop?

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- The system is fully autonomous and sealed, so no driver-related error is anticipated.
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- In a sealed environment with almost no air resistance, the pods are expected to reach very high speeds.

- Motion will not involve contact, so the vehicle will be virtually noiseless.
- The capital and operational costs of Hyperloop will be two-thirds that of high-speed rail.
- Tunnels for the Hyperloop would be built either above or below ground, taking up a smaller ground footprint than traditional rail and road.
- Hyperloop is "energy-agnostic", drawing from whichever source is available, if that's solar or wind, the system will be carbon-free.

Source: Indian Express, Daily Mail