

Gigafactories

June 12, 2020

Why is it in the news?

- NITI Aayog has proposed the establishment of giga factories in India for the manufacture of lithium-ion batteries in the next couple of years.

What are gigafactories?

- In simple terms- these are the **huge factories**
- Elon Musk is believed to have first coined the term 'Gigafactory'.
- He once said production of Tesla model-3 cars from one of his factories would need to be 'something that's **comparable to all lithium-ion production in the world in one factory.**'
- The word comes from the prefix 'giga-,' which is used to denote a measurement that's been multiplied by one billion (10^9). A common example of this is with the kilogram, which adds the prefix 'kilo-' onto 'gram' to denote one thousand grams. 'Giga' is believed to come from the Greek word 'gigas,' meaning 'giant.' In short, Musk is saying he wants a really huge factory."

How many such factories are there in the world?

- There are at present three Gigafactories in the world
- Gigafactory 1: This has been operational since 2013 and is located in Nevada, USA. It primarily develops lithium-ion batteries from start to finish. Alongside the batteries, the factory produces electric motors for the Tesla Model 3, the company's cheapest-ever car, plus the Powerwall and Powerpack energy storage systems designed to work with renewable sources.
- Gigafactory 2: It's located in Buffalo, New York. It produces photovoltaic solar panels, like the ones used

in the Tesla Solar Roof.

- Gigafactory 3: This is Tesla's latest factory where construction started in January 2019. It's located in the Lingang industrial zone of Shanghai, the first Gigafactory located outside of the United States. Gigafactory 3 is planned to produce affordable versions of the Tesla Model 3 and Tesla Model Y for the Greater China market
- More Gigafactories are yet to come up including one in Europe, possibly Germany.

Indian context

- Recently, the LIBCOIN consortium with Magnis Energy Technologies Limited holding 20 percent of non-dilutive ownership along with state-owned BHEL finalised a deal with the Government of India, Ministry of Heavy Industries and Public Enterprises, to build 'India's first Lithium-ion Battery Gigafactory'.
- Country's maiden gigafactory will start at 1GWh and will eventually increase to 30GWh. The project will be a part of the 'Made By India, For India' initiative, which will accelerate domestic manufacturing of the important components for electric vehicles.