Having Two Time Zones for India

Why in news?

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A proposal for two time zones has come from the Council of Scientific & Industrial Research's National Physical Laboratory (CSIR-NPL).

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How is time defined and maintained?

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- If lines of longitude are drawn exactly a degree apart, they will divide the Earth into 360 zones.
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- As the Earth spins 360° in 24 hours, a longitudinal distance of 15° represents 1 hour.
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- In other words, 1° represents a time separation of 4 minutes.
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- So theoretically, the time zone followed by any place should relate to its longitudinal distance from any other place.
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- Political boundaries mean that time zones are often demarcated by bent lines rather than straight lines of longitude.
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- This is the "legal time", as defined by a country's law.
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- The geographic "zero line" runs through Greenwich, London.
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- It identifies the GMT (Greenwich Mean Time), now known as Universal Coordinated Time (UTC).
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- It is maintained by the Bureau of Weights and Measures (BIPM) in France.
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- The United States follows several time zones across its breadth.
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What is the case with India?

- The Indian Standard Time (IST) is maintained by CSIR-NPL.
- The Indian Standard Time (IST) is based on a line of longitude that runs through Mirzapur in UP.
- At 82°33'E, the line is 82.5° east of Greenwich, or 5 hours 30 minutes ahead of UCT.
- But notably, India extends from 68°7'E to 97°25'E (spread of 29°), representing almost two hours from the geographic perspective.
- Evidently, there is huge difference in daylight times between the country's longitudinal extremes.
- So the early sunrise in the easternmost parts causes the loss of many daylight hours by the time offices or educational institutions open.
- Also, the early sunset in the region, leads to higher consumption of electricity and concerns over the costs associated it.
- Thus, over the years, there have been demands and debates over India having two separate time zones.
- **Concern** - Those against the idea cite the impracticability of having different time zones.
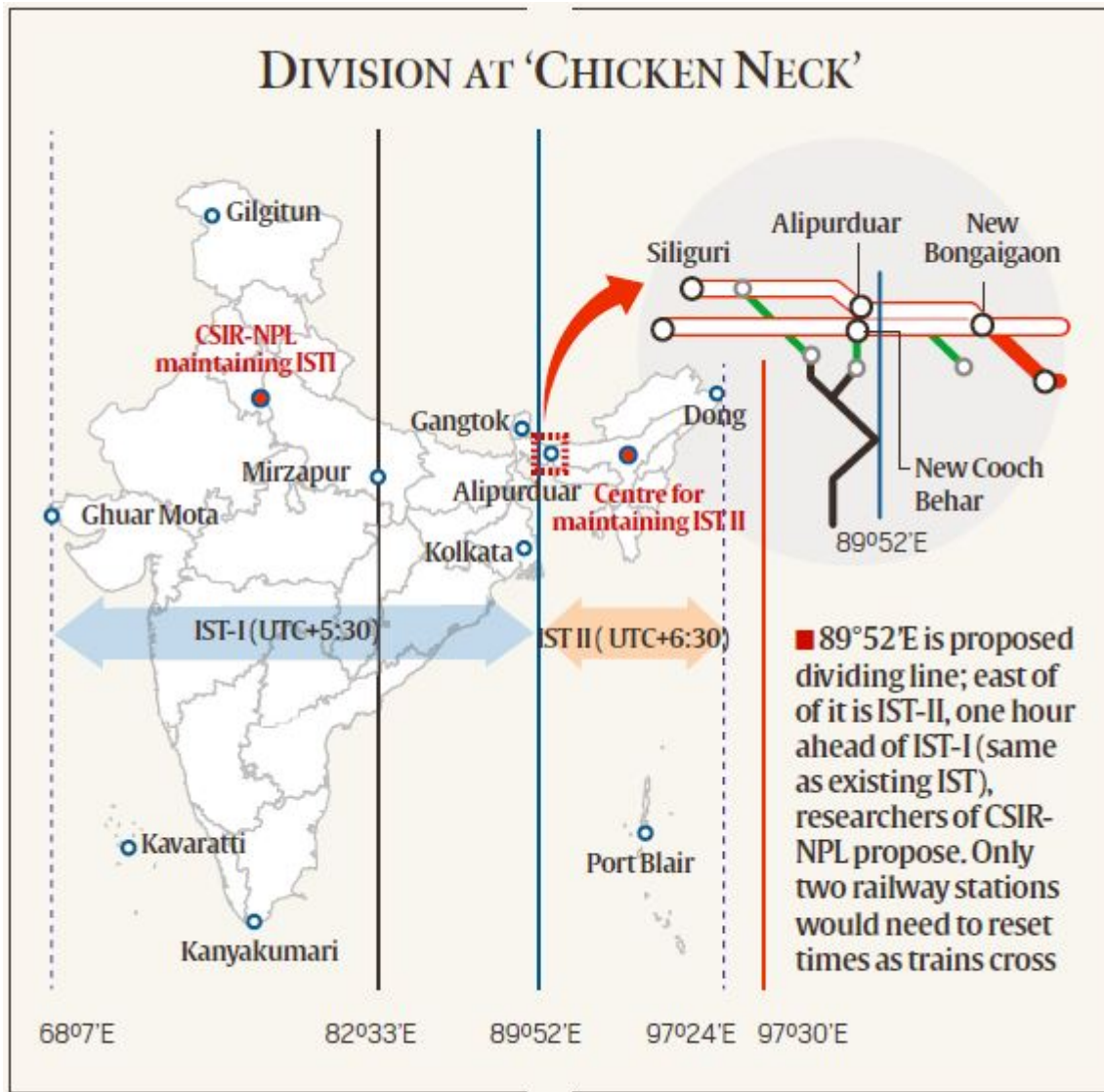- Particularly the risk of railway accidents is cited, given the need to reset times at every crossing from one time zone into another.
- The government has also, in the past, not favoured two time zones citing the complexities involved.

DIVISION AT 'CHICKEN NECK'

IST-I (UTC+5:30)

IST II (UTC+6:30)

■ 89°52'E is proposed dividing line; east of of it is IST-II, one hour ahead of IST-I (same as existing IST), researchers of CSIR-NPL propose. Only two railway stations would need to reset times as trains cross

68°7'E   82°33'E   89°52'E   97°24'E 97°30'E

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What is the recent proposal?

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- The CSIR-NPL has published a research article describing the necessity of two time zones.
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- It has proposed a new time zone with an hour ahead of the existing time zone.
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- It proposes to call the two time zones IST-I (UTC + 5.30 h) and IST-II (UTC + 6.30 h).
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- The proposed line of demarcation is at 89°52'E, the narrow border between Assam and West Bengal.
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- States west of the line would follow IST-I, and states east of the line would

follow IST-II.

- The latter include Assam, Meghalaya, Nagaland, Arunanchal Pradesh, Manipur, Mizoram, Tripura, and Andaman & Nicobar Islands.
- To make the idea possible, CSIR-NPL would need a second laboratory in the new time zone.
- CSIR-NPL already has the technical expertise to duplicate its existing facility, but the move would require legislative sanction.

What is the rationale?

- The "chicken neck", connecting Northeast to the rest of India, is where the two time zones will be demarcated from each other.
- **Railways** - The railway signals have not yet been fully automated in the country.
- In this line, the border between the two time zones has a very narrow spatial-width with minimum number of train stations.
- So the train timings, while crossing the border, can be managed manually without any untoward incidents.
- **Energy** - The country could potentially save 20 million kWh energy a year if it follows two time zones.
- Besides, the importance of synchronising office hours as well as biological activities to sunrise and sunset timings was analysed.

Source: Indian Express