

## 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  $360^\circ$  in 24 hours, a longitudinal distance of  $15^\circ$  represents 1 hour.

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- In other words,  $1^\circ$  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?

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

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

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- The “chicken neck”, connecting Northeast to the rest of India, is where the two time zones will be demarcated from each other.
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- **Railways** - The railway signals have not yet been fully automated in the country.
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- In this line, the border between the two time zones has a very narrow spatial-width with minimum number of train stations.
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- So the train timings, while crossing the border, can be managed manually without any untoward incidents.
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- **Energy** - The country could potentially save 20 million kWh energy a year if

it follows two time zones.

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- Besides, the importance of synchronising office hours as well as biological activities to sunrise and sunset timings was analysed.

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**Source: Indian Express**

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