



## Current Affairs of the Day

### 'Lockdowns slowed green energy push'

1. The lockdowns slowed renewable energy installations in the country and the pace of such installation is lagging India's 2022 target, according to a report by the Institute for Energy Economics and Financial Analysis (IEEFA), a research think tank.
2. As part of its commitment to reducing greenhouse gas emissions, India has said that it would install 175 gigawatts (GW) of green energy by 2022 and 450 GW by 2030 but only 7 GW of such capacity was added in the financial year 2020-21, Vibhuti Garg, report author and energy economist, said.

### 100-GW target

1. Data from the Central Electricity Authority independently shows that India was to have installed 100 GW of solar energy capacity by March 2023 — 40-GW rooftop solar and 60-GW ground-mounted utility-scale.
2. In its analysis of monthly volumes and prices at the largest power exchange in India, Indian Energy Exchange (IEX), the IEEFA study found that the amount of power traded increased by 20% over 2020, by 37% from 2019 figure and by 30% over 2018.

### Zojila tunnel

1. The 13.5 km tunnel will allow all-weather connectivity between Ladakh and Srinagar
2. The 13.5-km tunnel will be Asia's longest bi-directional tunnel and will allow all-weather connectivity between Ladakh and Srinagar, which is disrupted during the winter months. It is located at 11,578 feet above sea level.
3. It takes 3.5 hours to travel between Srinagar and Ladakh. The tunnel will reduce the travel time to 15 minutes.





## CITY ON LINES OF DAVOS



The highways ministry kicked off consultation with stakeholders to develop a satellite township along the 18-km stretch between Z-Morh and Zojila tunnels on the Srinagar-Leh highway. It would be developed as a winter destination with modern facilities for winter sports, luxury accommodation and other necessary infrastructure in collaboration with the administration of Ladakh and Jammu and Kashmir.

### SC lashes out at firecracker firms

1. The Supreme Court lashed out at firecracker manufacturers for violating the spirit of its 2018 judgment banning toxic ingredients such as barium in fireworks, saying the prime focus of the court is the “right to life of innocent people”.
2. “Joined crackers” continue to be burst with impunity across the country despite the ban imposed on them by the top court in a judgment in 2018.





## ENVIRONMENTALLY-FRIENDLY CHANGES

### CRACKERS COMPRISE

#### ALKALI NITRATES

**Potassium nitrate** (A CARCINOGENIC) and **barium** (DAMAGES HEART AND KIDNEY) **have been removed or reduced**

#### ALUMINIUM POWDER

**Aluminium** (CAUSES SKIN ISSUES) **has been replaced with magnesium** to minimise particulate matter in the air

## WHAT ARE 'GREEN CRACKERS'?

Firecrackers that have "less dangerous" and "less harmful" chemicals than conventional ones

**Being Developed by**

CSIR's National Environmental Engineering Research Institute

Production after they are approved by Petroleum and Explosives Safety Organisation (PESO)

### Green Because

- ▶ They have a chemical formulation that produces water molecules
- ▶ This substantially reduces emission level and absorbs dust
- ▶ Is basically a light and sound show that produces lower emissions
- ▶ Promise **30-35% reduction** in particulate matter, nitrous oxide and sulphur oxide

Expected to hit the market in 4-5 years\*

**Also In The Works**

E-CRACKERS BEING DEVELOPED BY CSIR'S CENTRAL ELECTRONICS ENGINEERING RESEARCH INSTITUTE

### OTHER INITIATIVES

Crackers with lower aluminium to reduce emissions substantially	'Anar' or flower pot made using eco-friendly material that can reduce particulate matter by 40%	Bijli crackers that eliminate use of ash as desiccants	Firecrackers without antimony, lithium, mercury, arsenic and lead as directed by PESO last year
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Council of Scientific and Industrial Research





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## Banned chemicals

1. Many manufacturers continued to use toxic ingredients fully knowing that the court had banned them.
2. He said the 2018 judgment had balanced employment concerns in the industry and the right to life of citizens by approving the government's suggestions for "green crackers" and those with reduced emissions.

## Green Crackers adoption Challenges:

Photo: Sanjeev Rastogi

**1 WHY GREEN CRACKERS COULD BE A WAY OUT**

- They are low-emission firecrackers that don't have barium salts
- Barium Nitrate is poisonous. Fumes can irritate respiratory tract
- SC ordered last year that only "green" firecrackers be manufactured and sold countrywide

**2 BUT THE MOVE WAS A DAMP SQUIB LAST YEAR**

Green crackers were not available in market, resulting in rampant violations in NCR on Diwali

### 3 NOT MANY TAKERS THIS YEAR EITHER

WHY?

High price | Lack of variety | Uncertainty over norms

#### VARIETIES AVAILABLE

**Sparklers** ₹400 a pack  
Usual price ₹200

**Charkhas** ₹550 per box  
Usual price ₹250

**Flower-pots** 450 a box  
Usual price ₹250/300



How to identify a green cracker

- QR code and sticker on the box
- No smell of sulphur
- Low smoke and sound





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## Types of green Crackers:

### CRACKERS OF THE FUTURE

SWAS	STAR	SAFAL
<p><b>Safe water and air sprinklers</b></p> <ul style="list-style-type: none"> <li>➤ Eliminate use of potassium nitrate and sulphur</li> <li>➤ Produce water molecules that act as dust suppressants</li> <li>➤ Reduce PM emissions by 30-35%</li> </ul>	<p><b>Safe themite</b></p> <ul style="list-style-type: none"> <li>➤ Eliminates use of potassium nitrate and sulphur</li> <li>➤ Reduces PM emission by 35-40%</li> <li>➤ Significantly reduces SO2 and NOx emissions</li> </ul>	<p><b>Safe minimal aluminium</b></p> <ul style="list-style-type: none"> <li>➤ Minimal use of aluminium</li> <li>➤ Reduces PM by 35-40%</li> </ul>

**All three have matching sound intensity (in 105-110 dBA range) with conventional crackers**

**E-ladi and e-anar**



➤ These are electronic crackers	➤ Developed to give various light\sound effects
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<h3 style="color: blue; margin: 0;">Practice MCQs</h3>	<p style="color: red;">Q. Which of the following harmful substances is/are used in firecrackers?</p> <ol style="list-style-type: none"> <li>1. Potassium Nitrate</li> <li>2. Barium</li> <li>3. Aluminium</li> </ol> <p style="color: red;">a. 1 and 2 only b. 2 only c. 3 only d. 1, 2, and 3</p>
<h3 style="color: blue; margin: 0;">Mains DAWP</h3>	<p style="color: red;">Q. "There is a strong connection between the quality of governance and Happiness in the country." Discuss reasons for India's dismal performance in the United Nations World Happiness Report of 2021 in light of the above statement.</p>