

TDB National award, 2021

May 26, 2021

In news- A Bangalore based startup received the National Award 2021 from Technology Development Board (TDB).

More information-

- The startup was awarded for developing a **commercial solution for conversion of CO₂ to chemicals and fuels**.
- **Breathe Applied Sciences**, a startup **incubated at Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)** developed efficient catalysts and methodologies for the conversion of CO₂ to methanol and other chemicals.
- It was started from the generous funding from the **Department of Science and Technology (DST) Nano Mission**.
- The technology has led to **improvisation of process engineering to enhance the production of chemicals and fuels from anthropogenic CO₂** generated from various sources including coal and natural gas power generation sectors, steel industry, cement industry, and chemical industries.
- It helps in **integrating multiple components involved in the CCUS** (Carbon capture, utilization, and sequestration) to develop a complete solution for the environmental issues due to global warming.
- In the pilot mode, the current capacity of CO₂ conversion is 300 kg per day, which can be scaled up to several 100 tons on an industrial scale.

Carbon capture, utilisation and storage (CCUS)-

- CCUS is an important **emissions reduction technology** that can be applied across the energy system.
- CCUS technologies involve the **capture** of carbon dioxide (CO₂) from fuel combustion or industrial processes and

the **transport** of this CO₂ via ship or pipeline.

- This CO₂ is **used as a resource** to create valuable products or services or its permanent storage deep underground in geological formations.

CCUS technologies provide the **foundation for carbon removal or “negative emissions”** when the CO₂ comes from bio-based processes or directly from the atmosphere.