



**Presentation by
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Decarbonisation in India

R&D for decarbonisation requires us to:

- Reduce carbon emissions, and demand for energy
- Decarbonisation of electricity
- Electrification of uses where fossil fuels are used
- New fuels - hydrogen, biomass-based fuels

Applications for decarbonisation alone are discussed here.

Reduce carbon emissions, and demand for energy

- Interactive connection of renewables-based microgrids with grid
- Development of low-carbon methods
- High efficiency batteries
- High efficiency electrolyzers
- High efficiency chargers
- High efficiency air conditioning

Decarbonisation of electricity

- Enhance performance and cost of PV systems, wind energy turbines, gasifiers, and battery systems
- Grid balancing and integration of variable renewable energy

Electrification of fossil fuel use

- Electricity based heating systems and steam generators
- Electric vehicles
- High efficiency heat pumps
- Fuel cells, and fuel-cell applications

New fuels

- Enhance performance of electrolyzers
- Water management in hydrogen generation from electrolysis of water
- Biomass to fuels – algal conversion to hydrogen
- Production of steel from direct reduction using hydrogen



Thank You