



# Pine Needle Power Projects Prove to be Inadequate

## Why in News?

**Bio-energy projects** set up by **the Uttarakhand Renewable Energy Development Agency (UREDA)**, to use the vast quantities of flammable pine needles for generating electricity have been “unsuccessful”, with officials saying appropriate technology does not yet exist to use them.

## Key Points

- State authorities have frequently attempted to mitigate the risk of worsening annual [forest fires](#) caused by a combination of factors such as **climate change-induced droughts** and increasing stores of organic material like **pine needles and agricultural waste**.
- The Uttarakhand government was criticized by [the Supreme Court](#) following petitions related to the forest fires caused by the accumulation of dry pine due to **low rainfall in April and May 2024**.
  - In 2021, the State government announced a scheme to establish **power projects** utilizing pine needles as fuel to produce electricity.
  - The initial proposal included creating several units ranging from 10kW to 250 kW in three phases (totalling about 150 MW).
  - Despite anticipating the establishment of 58 units, only six 250 kW units (with a total capacity of 750 kW) have been installed so far.
- **In 2023, the Uttarakhand government** said it was **unable to meet its renewable power purchase** due to the shortfall in power generated from pine needle projects.
- The abundance of pine needles in Uttarakhand offers a valuable resource.
  - Official records indicate that approximately **16.36% of the State's forest area**, which is around **3,99,329 hectares, is occupied by [Chir Pine \(Pinus Roxburghii\)](#) forests**.
  - Each year, it is estimated that over 15 lakh tonnes of pine needles are produced.
  - If even 40% of this estimated amount, along with other agricultural waste, could be utilized, it would greatly assist the State in meeting its energy needs while also creating employment opportunities and supporting livelihoods.

## Chir Pine (Pinus Roxburghii)

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- **Pinus Roxburghii**, commonly known as **chir pine**, is a species of pine tree **native to the Himalayan region**. It is an important timber species and is widely used for commercial purposes.
- It is native to the Indian subcontinent, particularly in countries like **India, Nepal, Bhutan, and parts of Pakistan**.
- It is an **evergreen coniferous tree** that can grow up to 30-50 meters in height.
- The **bark** of Pinus Roxburghii is **thick and scaly, with a reddish-brown color**.
- The leaves are needle-like, arranged in bundles of three, and can grow up to 20-30 cm long.
- The tree produces **oval-shaped cones** that **contain seeds**.
- **Conservation Status:**
  - **IUCN Status:** Least Concern (LC)

