

## 1.5 Limitations of RE sources:

Renewable energy has many benefits, but it's not always sunny when it comes to renewable energy. Here are some disadvantages to using renewables over traditional fuel sources.

### 1. Higher upfront cost

While you can save money by using renewable energy, the technologies are typically more expensive upfront than traditional energy generators. To combat this, there are often financial incentives, such as tax credits and rebates, available to help alleviate your initial costs of renewable technology.

### 2. Intermittency

Though renewable energy resources are available around the world, many of these resources aren't available 24/7, year-round. Some days may be windier than others, the sun doesn't shine at night, and droughts may occur for periods of time. There can be unpredictable weather events that disrupt these technologies. Fossil fuels are not intermittent and can be turned on or off at any given time.

### 3. Storage capabilities

Because of the intermittency of some renewable energy sources, there's a high need for energy storage. While there are storage technologies available today, they can be expensive, especially for large-scale renewable energy plants. It's worth noting that energy storage capacity is growing as the technology progresses, and batteries are becoming more affordable as time goes on.

### 4. Geographic limitations:

The United States has a diverse geography with varying climates, topographies, vegetation, and more. This creates a beautiful melting pot of landscapes but also means that there are some geographies that are more suitable for renewable technologies than others. For example, a large farm with open space may be a great place for a residential wind turbine or a solar energy system, while a townhome in a city

covered in shade from taller buildings wouldn't be able to reap the benefits of either technology on their property. If your property isn't suitable for a personal renewable energy technology, there are other options. If you're interested in solar but don't have a sunny property, you can often still benefit from renewable energy by purchasing green power or enrolling in a community solar option

