

# Future energy storage methods for solar systems



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### **std::future::~~future**

Releases any shared state. This means: If the current object holds the last reference to its shared state, the shared state is destroyed. The current object gives up its reference to its shared

### **std::future**

The class template `std::future` provides a mechanism to access the result of asynchronous operations: An asynchronous operation (created via `std::async`, `std::packaged_task`,



[Comprehensive review of energy storage systems technologies,](#)

This paper presents a comprehensive review of the most popular energy storage systems including electrical energy storage systems, electrochemical energy storage systems, mechanical

### **std::shared\_future**

Unlike `std::future`, which is only moveable (so only one instance can refer to any particular asynchronous result), `std::shared_future` is copyable and multiple shared future objects



[Renewable Energy Storage: Complete Guide To Technologies](#)

Comprehensive guide to renewable energy storage technologies, costs, benefits, and applications. Compare battery, mechanical, and thermal storage systems for 2025.

**std::future::get**

The get member function waits (by calling wait ()) until the shared state is ready, then retrieves the value stored in the shared state (if any). Right after calling this function, valid () is false.

**std::future::valid**

Checks if the future refers to a shared state. This is the case only for futures that were not default-constructed or moved from (i.e. returned by std::promise::get\_future ()),

**std::future\_status**

Specifies state of a future as returned by wait\_for and wait\_until functions of std::future and std::shared\_future. Constants

**std::future::wait\_until**

wait\_until waits for a result to become available. It blocks until specified timeout\_time has been reached or the result becomes available, whichever comes first. The return value indicates why

**std::future::wait\_for**

If the future is the result of a call to std::async that used lazy evaluation, this function returns immediately without waiting. This function may block for longer than timeout\_duration due to

**Standard library header (C++11)**

```
future (const future &) = delete; ~future ();
future & operator =(const future &) = delete;
```



```
future & operator =(future &&) noexcept;  
shared_future share () noexcept; // retrieving the  
value
```

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