# EnergyFlow for Tesla

The EnergyFlow for Tesla driver suite enables seamless Control4 integration with Tesla Energy products including Tesla Powerwall, solar installations, and energy management systems. The suite includes:

- **EnergyFlow for Tesla**: The main proxy driver for Tesla API connection
- **Battery Display**: Represents individual Powerwall units
- **Grid Display**: Shows grid connection status and power flow
- **Solar Display**: Displays solar production information
- **Load Display**: Shows house power consumption
- **Storm Mode Display**: Controls and displays storm mode status

## Installation and Updating

### Installation Steps

1. Unzip the driver package.
2. In Composer Pro:
   - Go to **Driver > Add or Update Driver or Agent**
   - Add all bundled drivers from the package
   - All drivers must be added before proceeding with configuration

### Prerequisites

1. Energy products must be provisioned by Tesla installers
2. Customer must have an active Tesla account with access to their energy products
3. Tesla account must have the energy products registered and visible in the Tesla mobile app

## Configuration

### Initial Setup

1. In **System Design**, add **EnergyFlow for Tesla** to the project
2. Select the driver in the project. In the **Properties** tab:
   - In the **Actions** property dropdown, select `Authenticate` and click **Set**
   - Copy the `Authentication URL` that appears
3. Send the authentication link to the customer. The authentication link will direct them to the Tesla authentication site where they will:
   - Enter their Tesla credentials
   - Grant "EnergyFlow Control4 Driver" access to:
     - **Profile Information**: Required to determine customer region for correct API endpoint
     - **Energy Product Information**: Access to installed energy products like Powerwall
     - **Energy Product Commands**: Permission to modify settings such as backup reserve percentage

**Note:** The authentication process will time out after 30 minutes. If the customer takes longer, restart the process with a new **Authenticate** action.

4. Monitor authentication status. The driver will periodically check for completion. Upon successful authentication:

   - `API Status` will display `Successfully authenticated`
   - Status will update to `Last API request was successful`
   - Customer will not need to re-authenticate unless access is revoked

5. After authentication, the driver automatically discovers energy products and creates connection bindings for each Site and feature:

   - **Battery** (Powerwall)
   - **Grid** connection
   - **Solar** panels (if installed)
   - **Load** (House consumption)
   - **Storm Mode**

### Adding Device Drivers

#### Automatic (Recommended)

1. In the **Actions** property, choose `Add Devices` and click **Set**