CATCH Control

Market Trading – Wholesale Energy Markets

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Introduction to Market Trading

There are two main ways homeowners can sign up to electricity plans;

Traditional Energy Rates:
These are fixed-rate plans where the price of electricity is constant throughout the contract period, offering predictability and stability in billing.

Wholesale Energy Markets:
 In this option, electricity prices fluctuate in real-time based on supply and demand. These prices are set by the Australian Energy Market Operator (AEMO).

This can lead to cost savings when energy is abundant but also carries the risk of higher costs during peak demand or low supply, requiring active management and awareness of market conditions.

For customers that partake in wholesale energy markets, this means that when solar and wind energy are abundant, prices can drop significantly— even going negative, where you can sometimes even be paid to use electricity! Conversely, prices can spike during high demand periods or when renewable generation is low.

By leveraging our technology, CATCH Power devices can help you navigate these fluctuations, automatically adjusting your energy usage to take advantage of low prices and avoid high ones.

Please Note:

While CATCH Power's advanced controls help you manage these fluctuations, it's important to understand that wholesale energy markets are volatile and may not always guarantee savings.

We are Different to Amber's Smart Shift

CATCH Power's integration with Amber Electric operates independently from Amber's Smart Shift. In this scenario, Amber should be seen as the energy retailer, much like Origin or AGL. Allowing CATCH Power to make decisions on how Energy Resources are used at the property.

Amber's Smart Shift uses historical data to predict major pricing events and controls to determine how your system is managed. This system updates its energy commands every 30 minutes.

Understanding CATCH Power and Amber

At CATCH Power, our priority is to ensure your Consumer Energy Resources (CER) operate efficiently, even in wholesale energy markets. If the emergency pricing threshold isn't triggered, CATCH Control will seamlessly manage your system using its default settings, keeping your energy use optimised without interruptions.

With CATCH Power's ability to make decisions based on real-time, five-minute pricing data from the Australian Energy Market Operator (AEMO). This allows CATCH Power to take near instant control over your CER allowing it to quickly change from default operation to Market Trading — beyond just adjusting solar output and batteries, CATCH Power can control inverters, batteries, EV chargers, and independent circuits like hot water systems or pool pumps.

Please Note:
If you are using both Amber's Smart Shift and the CATCH Control API integration, Smart Shift will likely take over the site control. Smart Shift will priorities its own algorithms and predictive data. As a result, CATCH Control's ability to respond to live energy pricing or manage your loads, such as hot water systems or battery charging, could be limited.

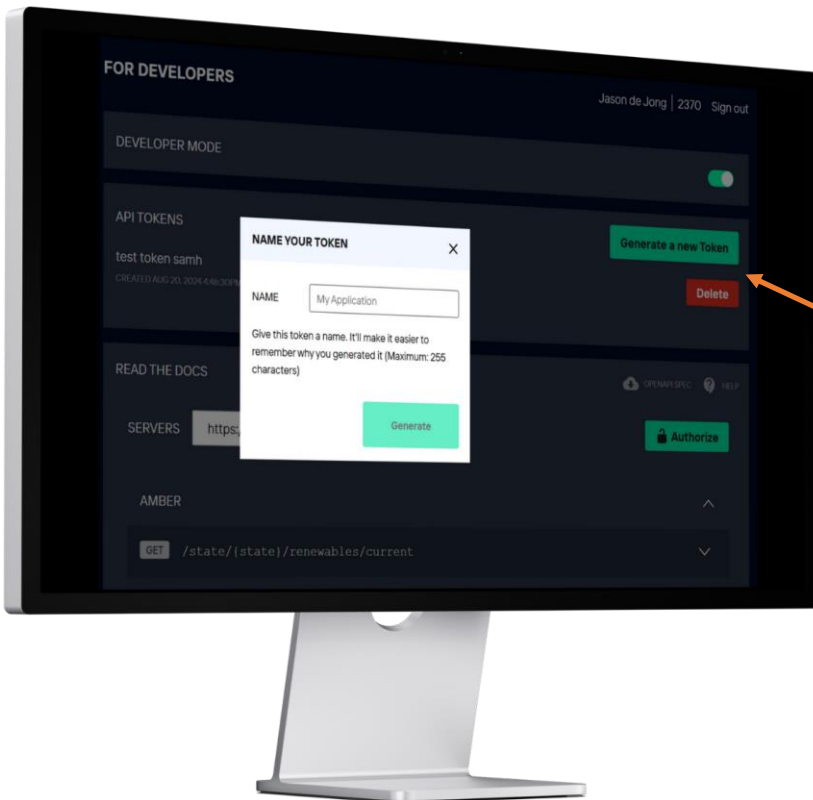# Setting Up Amber Electrical with CATCH Power

Sign Up or Log In:
To start, you must sign up with Amber Electric as your energy retailer.
Visit their website, www.amber.com.au
create an account, and log in.
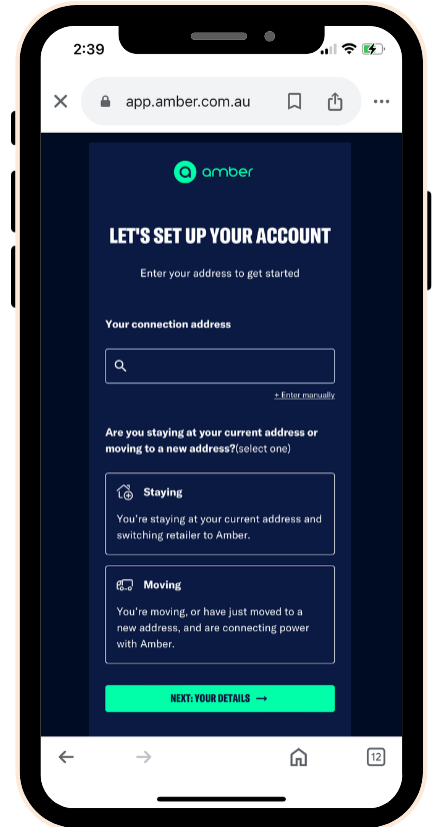
Once logged in:
navigate to the Amber Electric
developers page.

www.app.amber.com.au/developers/

Click 'Create New
Token' and follow the
steps. Then copy the
API code once
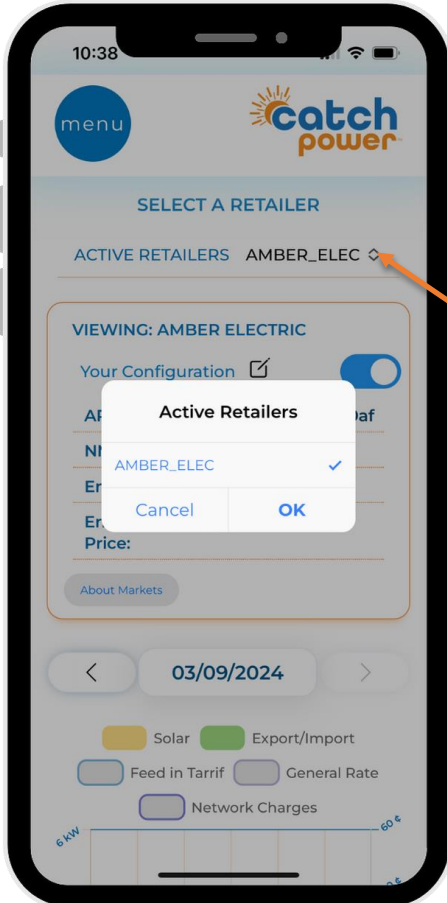generated.

Open CATCH Power's Monocle App:

Head over to The Monocle App:
Navigate to the **Markets** tab from the drop-down menu.

For more information on The Monocle Please visit
www.youtube.com/@GetCATCHPower

Select Your Retailer:
Choose your retailer from the dropdown menu. For example, **Amber Electric**. Then, click to edit your configuration.

Enter Your API Token and NMI:

API Token: Input the API token copied from Amber's webpage.

NMI: Enter your National Metering Identifier (NMI) You can find this on your energy bill.

Activate Settings: Select to activate these settings.

Set Your Emergency Price: Input your desired price threshold in the **Emergency Price** field $0.00 / kWh

Save Your Configuration: Tap **Save** to confirm all settings.
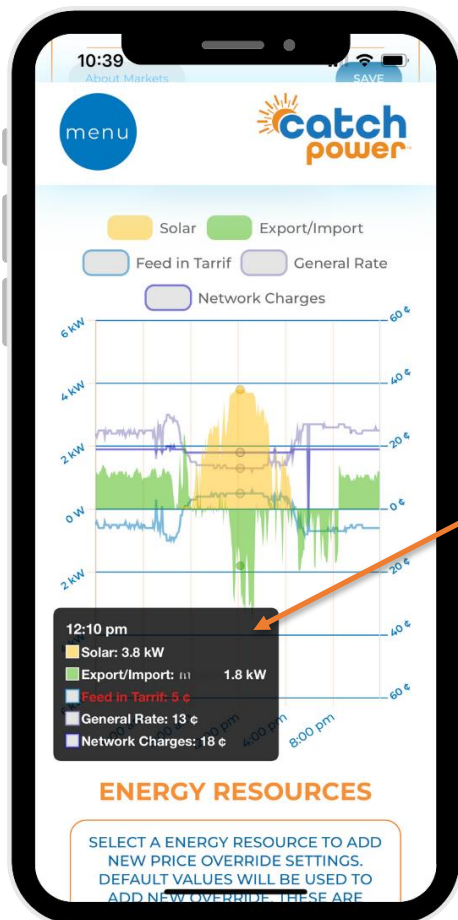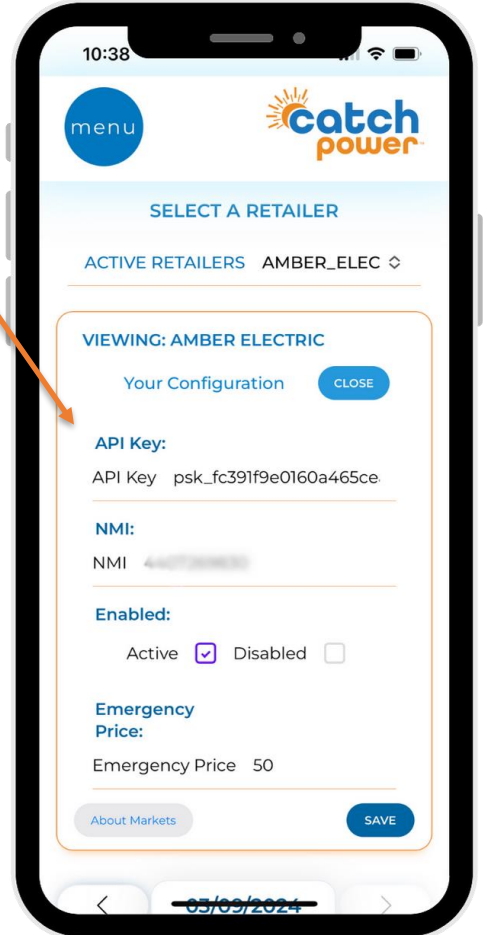
24-hour summary graph: This graph gives you a 24-hour overview of your energy usage. Tap on any part of the graph to see a detailed 5-minute breakdown of your usage and AEMO's pricing.

Energy Resources:
Additional emergency pricing fields that can be set for all Consumer Energy Resources on site includes;

Inverters: CATCH Power can control multiple inverters on site, this can also include different integrated brands.

Batteries: CATCH Power can control a range of popular DC batteries.

**EV Chargers**: CATCH Power can take control over your integrated OCPP EV Charger.

Load Control: CATCH Power can control a dedicated circuit, e.g Electric Hot Water Systems.

Save, Review, and Monitor Your System:

You can update how your Consumer Energy Resources (CER) are controlled at any time.

Monitoring Your System:

Real-Time Data: Use the two main menu options in the app to monitor your system. The home page provides an overview of your energy usage, where you can toggle loads on or off and review how they've operated throughout the day.
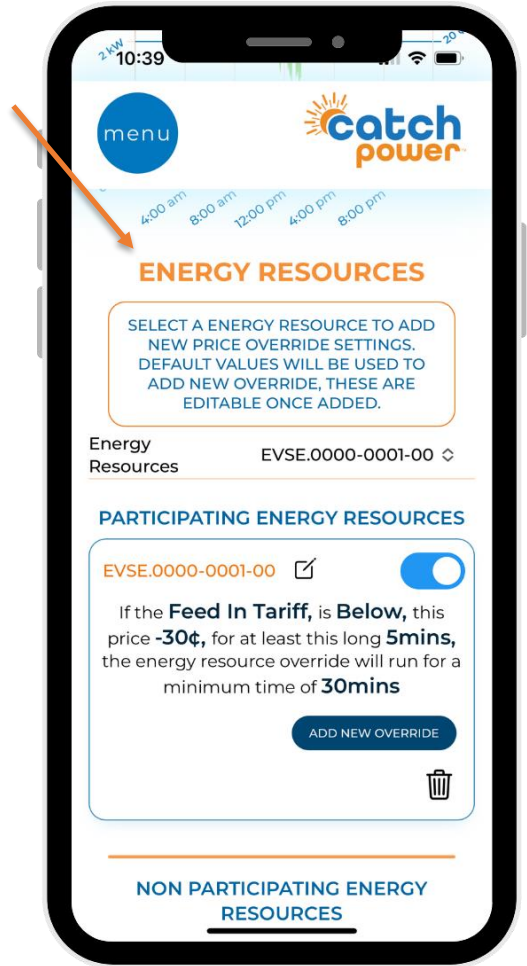
Additional Tips:

Amber App Notifications: Set up notifications for upcoming price changes, so you're alerted to pricing events. This allows you to manually adjust settings, like charging your batteries when energy rates are low.

Regular Monitoring: Stay engaged with both platforms for maximum savings. Regularly review your settings to ensure they match your energy management goals and fully benefit from real-time pricing.

Glossary

Consumer Energy Resources (CER) refers to energy-producing or energy-storing devices that are owned and operated by consumers. These resources include solar panels, batteries, electric vehicles (EVs), hot water systems. CERs allow consumers to manage their energy consumption actively.

Emergency Price is a user-defined price threshold set in energy management systems, such as those used by CATCH Power with Amber Electric integration. When the wholesale electricity price reaches or exceeds this threshold, the system automatically takes action to minimize energy costs or protect against high prices. Actions can include reducing energy consumption, discharging stored energy from batteries, or shutting down non-essential loads. Setting an emergency price helps users manage their energy usage more effectively and avoid unexpectedly high electricity bills.

Feed-In Tariff (FiT) in the context of wholesale energy markets refers to the payment or charge for exporting electricity back to the grid. When the wholesale price is positive, you earn a FiT for the surplus energy your system exports, effectively selling your excess power to the grid. However, if the wholesale price becomes negative (below zero), you are charged for exporting energy. This can happen when there's an excess supply of energy in the grid, and reducing the output is more valuable than adding more energy to it.

General Tariff refers to the standard pricing for electricity consumption from the grid. In this context:

Positive (+): You are charged for the electricity you consume from the grid. This is the usual scenario when you use energy from the grid at times when you are not generating enough of your own.

Negative (-): You actually earn money for consuming energy. This can happen in unusual situations where there is an excess of supply on the grid, and the market offers incentives to increase consumption and balance the system.

In wholesale energy markets, both scenarios can occur depending on the supply-demand dynamics at any given time.

Glossary Continued

Default settings refer to the standard operating mode of the system based on typical market conditions and user preferences. These settings help users optimize their energy use to save costs and enhance efficiency.

For example; When your solar and batteries are in default mode, they function in their normal capacity, supplying power to the site and managing loads like EVs and hot water according to their programmed settings. This continues until a pricing signal activates, triggering actions based on the set emergency pricing thresholds.

NMI: Enter your National Metering Identifier (NMI), a unique 10-digit number assigned to your billing meter. This identifier tracks your energy usage and manages your billing data.

Pros and Risks of Using Wholesale Markets with CATCH Control

Just like stock market trading, using live pricing in the energy market has its pros and cons. Here's an overview of the benefits and risks associated with wholesale energy plans. Please note, this is for informational purposes only, and CATCH Power is not liable for any risks involved in energy trading.

Pros:

Transparency

With wholesale pricing, you see exactly what you're paying for energy, with no hidden markups. This can lead to lower electricity costs, especially when renewable energy generation is high.

Optimised Energy Usage

CATCH Control helps you make the most of your Consumer Energy Resources (CER), including your inverter, batteries, hot water system, and EV charging. This allows you to take advantage of price fluctuations and volatility in the energy market.

Environmental Impact

Using electricity during periods of high renewable generation supports a cleaner energy grid and reduces carbon emissions.

Risks:

Volatility

Wholesale energy prices can change rapidly. Prices may spike during high demand or when renewable generation is low, leading to potentially high costs if not carefully managed. CATCH Power technology helps mitigate this by allowing you to set emergency price triggers and automate responses.

Active Management

Effectively using wholesale markets requires active monitoring of prices and adjusting settings as needed. While CATCH Power makes this easier, you may still need to monitor the Amber app for pricing events and make adjustments to your system to optimise savings.

Wholesale markets are best suited for customers who want to actively manage their energy usage and are comfortable with the risks associated with fluctuating prices.

Additional Resources

The Monocle App Tour
https://youtu.be/bvScaqWaZGs?si=sVrR02CBLNeGwp-_

Registering Your Account
https://youtu.be/_WAmK0lIf1M?si=iZoO8rDvjK_ksQER

Connecting your device to the internet
https://youtu.be/Z74J9YjnclI?si=-PU-ry_OCKURXUKR

Reset your Password
https://youtube.com/shorts/9M7QyA_xUWs?si=OlMPL8HXxI_LLf6n

For a full list of inverter compatibility
www.catchpower.com.au/tech-docs-1