

CLOUD TETHERING

WITH



Unlock seamless control and flexibility with Cloud Tethering Technology. Revolutionising remote export limits with CATCH Control

CATCH POWER

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CATCH Power was founded by like minded people that came together with the same core belief; to make sustainable thinking the norm and not the exception. We all have a role to play in the future energy of Australia, and with that comes many challenges. Our Journey is to build and supply the technology that is required to reach our renewable energy targets.

We design, engineer, manufacture and sell our products all from New South Wales. Where possible we source all of our components locally. It is important for CATCH Power as a company to support our community and to help it thrive.

In the pursuit of Net Zero, we confront various challenges, including outdated reliance on transmission lines and storage infrastructure. However, with CATCH Power, we offer a solution that's ready for immediate implementation at a localized level.

With our innovative technology, you gain precise control over your energy usage, empowering you to make efficient and sustainable decisions in real-time.

WHY CHOOSE US?



LOCAL TECHNOLOGY

CATCH Power was established by a group of like-minded installers who encountered common challenges in their daily work. Through attentive listening to our installer network, we've identified market needs and developed technology to simplify your installations. Our commitment is to empower installers with innovative solutions that streamline processes and enhance efficiency, ensuring a seamless experience for both installers and end-users alike.



LOCAL COMPANY

All of the CATCH power products are manufactured locally in Glen Innes. We support and nurture our local economy and help build the skills our team bring to the table.



LOCAL SUPPORT

Installers can count on CATCH Power for reliable support, whether it's technical assistance, training programs, or ongoing guidance to ensure successful installations and customer satisfaction.

Abstract:

This document explores the innovative application of Cloud Tethering technology with CATCH Control, offering a sophisticated solution for remote export limits in solar installations. By replacing an Inverters Energy meter with CATCH Control and utilising TCP/SUNSPEC/RTU integration, solar installers can streamline installations, improve flexibility, and enhance control over export limiting. This paper details the technical specifications, benefits, and practical implementation of Cloud tethering for remote export using CATCH Control

Introduction

In the ever-evolving landscape of solar energy, the need for export limiting has grown significantly. This poses great impact on installers finding cost effective solutions and alternatives to traditional methods. However, with the release of Cloud tethering technology and the integration capabilities of CATCH Control, a new solution emerges, offering unparalleled control and flexibility in export limiting sites.



Inverter Control via Cloud Tethering;

Traditionally, implementing export limitation at remote sites often entailed laborious trenching or complex RS485 signal transmission methods. However, even with these efforts, total property loads, such as pumping stations or additional dwellings, weren't always accurately captured.

Now, with the introduction of CATCH Control, there is a better option. By replacing the native energy meter with CATCH Control, export limitation at remote sites becomes a streamlined process. The point of export can now be moved to the farthest point, allowing for total site usage and control.

This advancement is particularly invaluable in scenarios where solar inverters and metering points are separated by significant distances. All that's needed are CATCH Control devices and a stable Wi-Fi connection to streamline export limiting.

[Providing unmatched convenience and accuracy.](#)

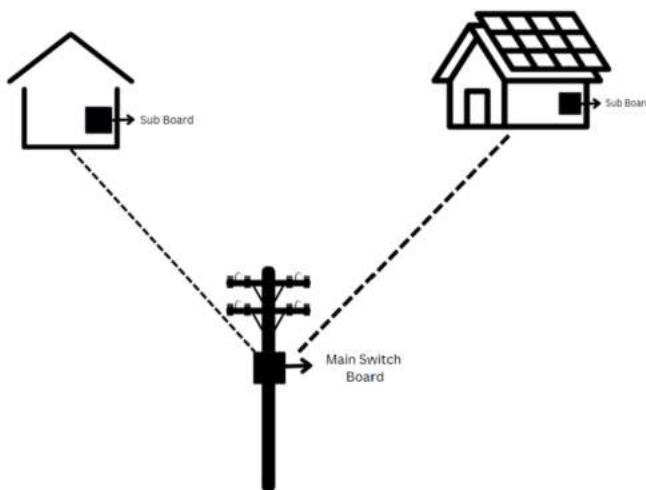
How does Cloud Tethering Work?

Traditional Cloud Tethering required a minimum of two CATCH Control devices. One device functions as the energy meter for the solar inverter and is installed at the solar site. It continuously sends power readings to our cloud-based servers.

The second device is positioned at the main switchboard. Through cloud communication, these devices interact and respond to data signals, regulating the amount of energy produced by the inverter. This control enables total site consumption and loads based on these signals.

Beyond the initial hardware setup, there are no additional costs associated with activating this feature. However, a key must be organised from our team to unlock these capabilities, ensuring seamless integration and operation.

- ✓ Integrate multiple inverter brands
- ✓ Real time monitoring of total site data
- ✓ DNSP compliant
- ✓ No Subscriptions
- ✓ Cloud Tethering Load Control



Under conventional circumstances, when solar panels are installed in a shed and need an export limit, they typically cannot offset the household loads on the secondary sub-board. However, with the implementation of Cloud Tethering, we can move the point of export to the main switchboard without the need for additional trenching, effectively capturing the household loads. Additionally, by integrating a third CATCH Control device, we can program a hot water load based on solar conditions, further optimising energy utilisation.

Cloud Tethering over Sunspec/TCP

SunSpec protocols enable seamless communication and integration between compatible inverter brands. For CATCH Control it means Fronius, SMA and Fimer.

By leveraging TCP/SUNSPEC connectivity, CATCH Control communicates directly with the chosen inverters using Sunspec commands, facilitating efficient data exchange and control. This means that as long as both connection points are on the same Wi-Fi network, you only require one CATCH Control installed at the main metering point.

Single Device TCP/SUNSPEC Mode: Enables export limit across distances without RTU connections to the inverter, facilitating remote control and monitoring.

- ✓ Compatible with Fronius, Fimer and SMA
- ✓ Must be on the same network
- ✓ Only one Control required
- ✓ No subscription required
- ✓ DNSP Compliant for Dynamic and Flexible exports.

Case Studies

Background

Sparks & Smoke Solar Solutions is a leading solar energy company located in regional NSW. The father and son duo focus on residential and small commercial solar for both Grid and Off Grid connections.

Challenge

Sparks and Smoke encountered a challenging installation at a rural cattle farm. The property has been in family for almost 100 years. With this brings challenges, the family home is heritage listed and has high pitched cathedral ceilings roofs. The family did not want the solar located on this roof. Other locations were discussed but after some time it was decided that the 13kW system would be installed on a sheering shed.

With single swirl lines and the potential of a 3 kW export limit, the proposed system would need either heavy upgrades to the existing infrastructure or to be export limited at the sale yards shed. Due to the site details and the main metering point being located at the edge of the property. The system would not offset the household loads. A ground mount option was discussed at this time but was not suitable for the client.

Solution

Sparks and Smokes Solar Solutions partnered with CATCH Power to implement a solution that worked for both the client and their budget. Leveraging CATCH Control and the Cloud Tethering solution. They were able to replace the Sungrow Energy meter and add a secondary device at the meter box. This enabled a seamless communication between the solar inverters and the main switch board. A third CATCH Control was installed at the main house and swapping the element from a 3.6kW to a 2.4kW element allowed for the surplus solar triggers to control the families electric hot water, offsetting one of the larger loads at the property.

Implementation

1. Hardware Setup:

CATCH Control devices were installed at the solar site and the main switchboard and the main house ensuring optimal data exchange and control functionality.

2.. Network Configuration:

Due to the property rural aspects a strong Wi-Fi connection was not present at all three locations. The Sales Yards/Office and Home both had Independent Wi-Fi connections but there was no signal at the main metering point. A Wi-Fi dongle was installed at this point and all three Control devices were configured to the local network.

3. Load Control:

Hot Water element was downsized to ensure it would fit under the allowable export, to ensure it could be triggered by surplus solar.

4. Total site Monitoring and Remote Load Control: The Monocle App was implemented to monitor each premises, the extra CT at the home was used to monitor the individual Hot Water Circuit, so this family gained insight into their usage patterns.

Results

Stand out Solution:

Sparks and Smoke were able to stand out from the competition and offer a solution that better suited the customer and stand out as leaders in their field and not offer a generic solution, while staying under the allocated budget.

Improved Efficiency:

The implementation of CATCH Control enabled precise export limitation and load control, maximizing self-consumption and reducing reliance on the grid.

Cost Savings:

By eliminating the need for trenching and complex RS485 signal transmission methods, Sparks and Smoke achieved significant cost savings in installation and maintenance.

Enhanced Compliance:

The solution ensured compliance with local grid regulations, enabling Sparks and Smoke to operate efficiently while meeting regulatory requirements.

Customer Satisfaction:

The homeowners were highly satisfied with the performance and reliability of the solar system and Sparks and Smoke delivering a bespoke solution for their site. Leading to increased customer loyalty and positive referrals.

Conclusion

Through strategic partnership and innovative technology Sparks and Smoke Solar Solutions successfully addressed the solar energy management challenges faced by the homeowner. The implementation of CATCH Control's advanced features resulted in improved efficiency, cost savings and ultimately contributing to customer satisfaction and business growth.

CASE Study TWO

Background:

AnM Solar is a leading provider of solar energy solutions, specialising in residential clients across the QLD region. They encountered a common challenge when installing solar systems within the Dynamic export requirements. As clients add more solar to existing systems, they are having the option of a 5 kW export or opting into the Dynamic field.

Challenge:

One of AnM clients, Mr. Williamson, wanted to install an additional solar system on his property. However, the shed where the solar panels will be installed is not in the same location as the initial system and is not connected to the main switchboard, leading to difficulties in implementing export limitation. Additionally, the client desired to be part of the Dynamic Export program and take advantage of variable exports.

Solution:

AnM Solar collaborated with CATCH Power to implement their Cloud Tethering software, for Dynamic Exports, providing an innovative solution to address the client's challenges.

The proposed system included a Gen24 Fronius Hybrid Inverter. The existing system comprised of an older style Fronius Primo Inverter. It was proposed these inverters would connect via Sunspec TCP and due to both inverters being on the same network only one CATCH Solar Relay would be required at the main switchboard.

Implementation:

AnM Solar Solutions deployed CATCH Power's Cloud Tethering software, enabling both inverters to work together complying with the single gateway device under the Dynamic Export requirements. This allowed for both the Gen24 and the Primo to communicate directly.

**A combination of up to 6 inverters/BYD Batteries can be programed with one CATCH Control Device, This can be any combination of Gen24/Primo/BYD. **

Export Limitation:

By utilizing Cloud Tethering via Sunspec, AnM Solar was able to move the point of export from the shed to the main switchboard without the need for additional trenching or complex wiring and still adhere to local DNSP requirements for Dynamic Exports.

Results:

Cost Savings:

By using CATCH Control, Mr. Wiliiamson was able to keep his existing system avoiding removing a perfectly good working unit. He also avoided the need for trenching and complex wiring for the new battery that was added. Mr. Williamson benefited from significant cost savings in installation expenses.

Improved Sustainability:

By maximizing the utilization of CATCH Control Mr. Wiliiamson was able to opt into the Dynamic Export program and maximise his export to the grid.

Conclusion:

Through the implementation of CATCH Power's Cloud Tethering software, XYZ Solar Solutions successfully addressed the challenges faced by Mr. Smith in optimizing solar energy management at his rural property. The innovative solution not only provided cost-effective export limitation but also enabled increased self-consumption and sustainability. As a result, Mr. Smith was able to enjoy the benefits of solar energy while minimizing his environmental impact.

Team Expertise



Our team comprises experts in various fields, including Electrical and Software Engineers, Electricians, manufacturing and those that have been in the solar industry for many years.



Scott Young



Jason DeJong



Dale Jubb



Lachlan Hynd



James Copock



Ben Jones



Shannan DeJong



Anthonee Williams



Erin Hilton



Jess Hynd



Sam Hall



Kathleen Ryan



Alex Hynd



James Dohan



Aidan Young



Dee Sharman



David Hynd



Chelsea Canada



Brett Maynard



Jess DeJong



Emily Isaacs



Matt Townsend



James Cameron



Jake Foran