

# Creating markets to increase demand side flexibility

Knowledge Exchange Forum

## Who is KiWi Power?

### WHAT WE DO:

KiWi Power is a leading energy technology innovator and the UK's leading demand response aggregator

### OUR VISION:

To be the global leader in innovative energy technology through innovative smart grid technology: sustainably and cost effectively



**7**  
Countries



**800+**  
Sites



**2009**  
Founded

Yoav Zingher, CEO  
Ziko Abram, Co-Founder



**50+**  
Employees



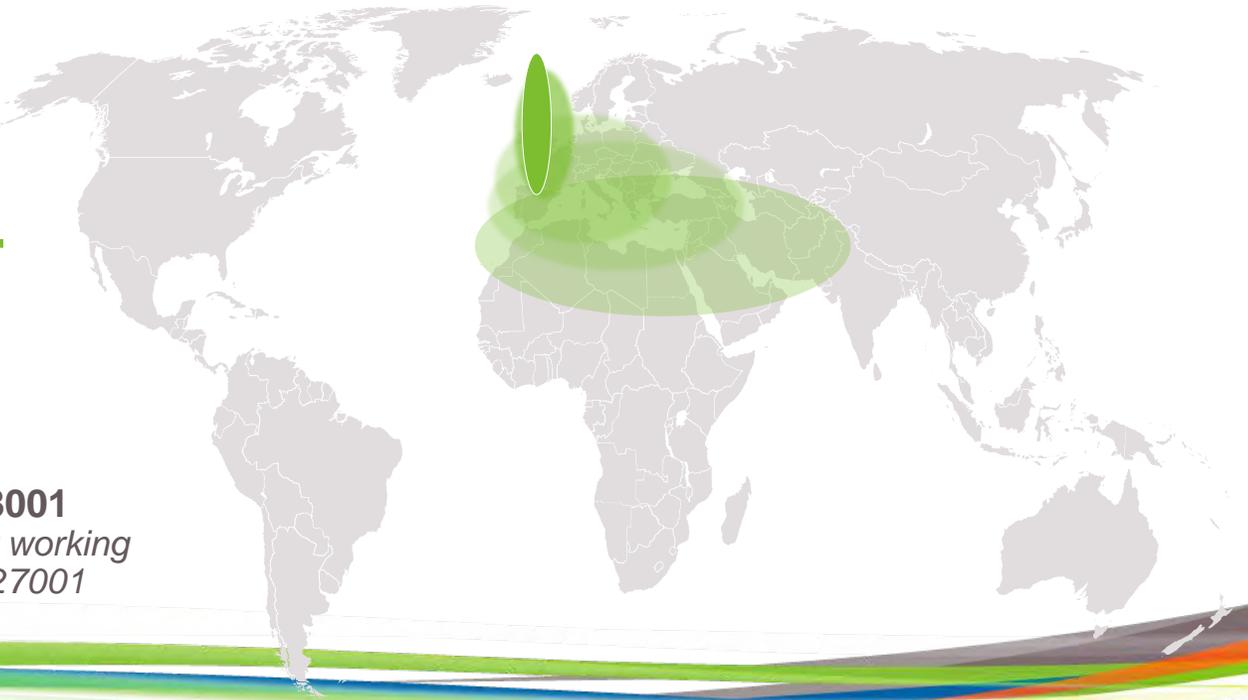
**191%**  
CAGR  
from 2009



**Supportive**  
Shareholders  
**ENGIE &**  
Family Offices

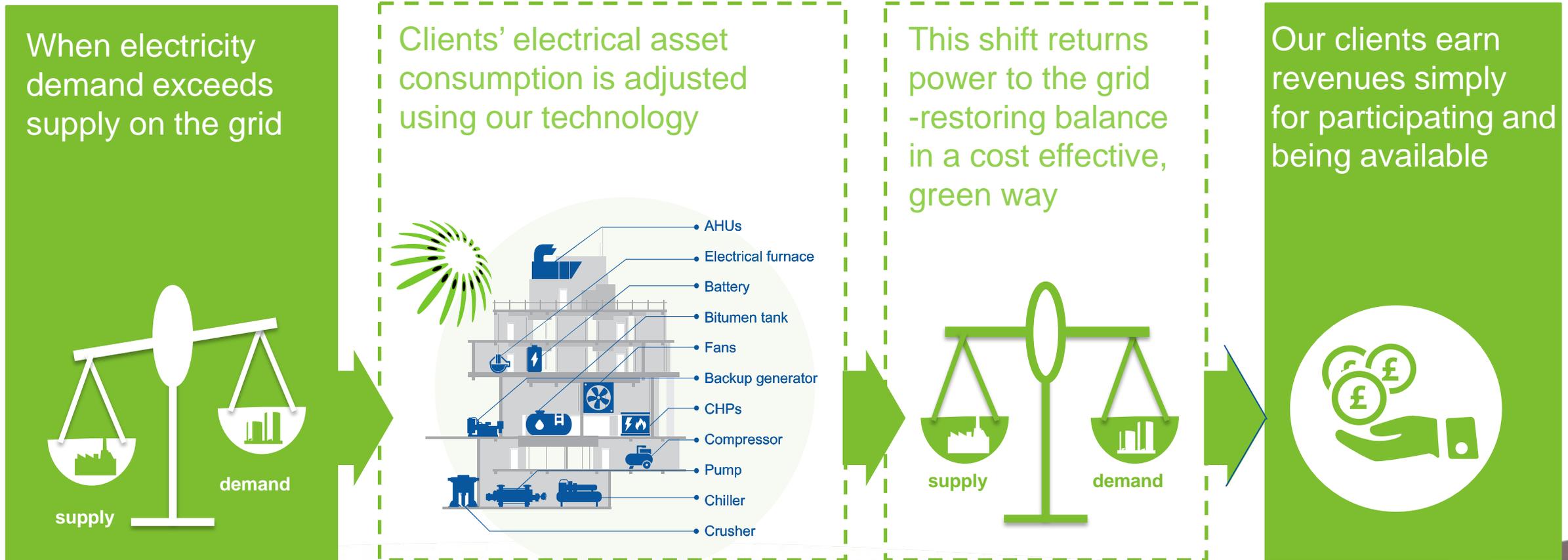
Crown  
Commercial  
Service  
Supplier

**ISO**  
**9001, 18001**  
Currently working  
towards 27001



## What is Demand Response?

Demand response is a way of shifting or reducing electricity usage during peak periods.



# 50%

Goal for UK balancing to be provided by Demand Response

**CEO National Grid, Power Responsive Conference**  
June 2015



# £400 million

Value of DSR to National Grid per year

Based on 50% of 2015 balancing costs

# £8 billion

Annual savings to UK consumers from deployment of DSR, interconnectors and storage

**National Infrastructure Commission Report, "Smart Power"**  
March 2016

## Automation, control and frequency response with Fruit

### Key benefits

- ✓ Installed free of charge
- ✓ **Modbus protocol**
- ✓ Powerful embedded IoT platform for real time power measurement, monitoring, logging and control
- ✓ Preconfigured and designed for easy install with minimal expertise
- ✓ **Built in frequency measurement**
- ✓ Expandable through additional hardware Segments for continuously improved functionality

### Other benefits

- ✓ Used by leading global companies to monitor their energy consumption and meet **ESOS standards**
- ✓ Cellular modem so no hardwiring on-site is required
- ✓ On board compression and security keep costs exceptionally low
- ✓ Wifi network deployments in the local area, reduces communication and cabling costs



### Communications & Features

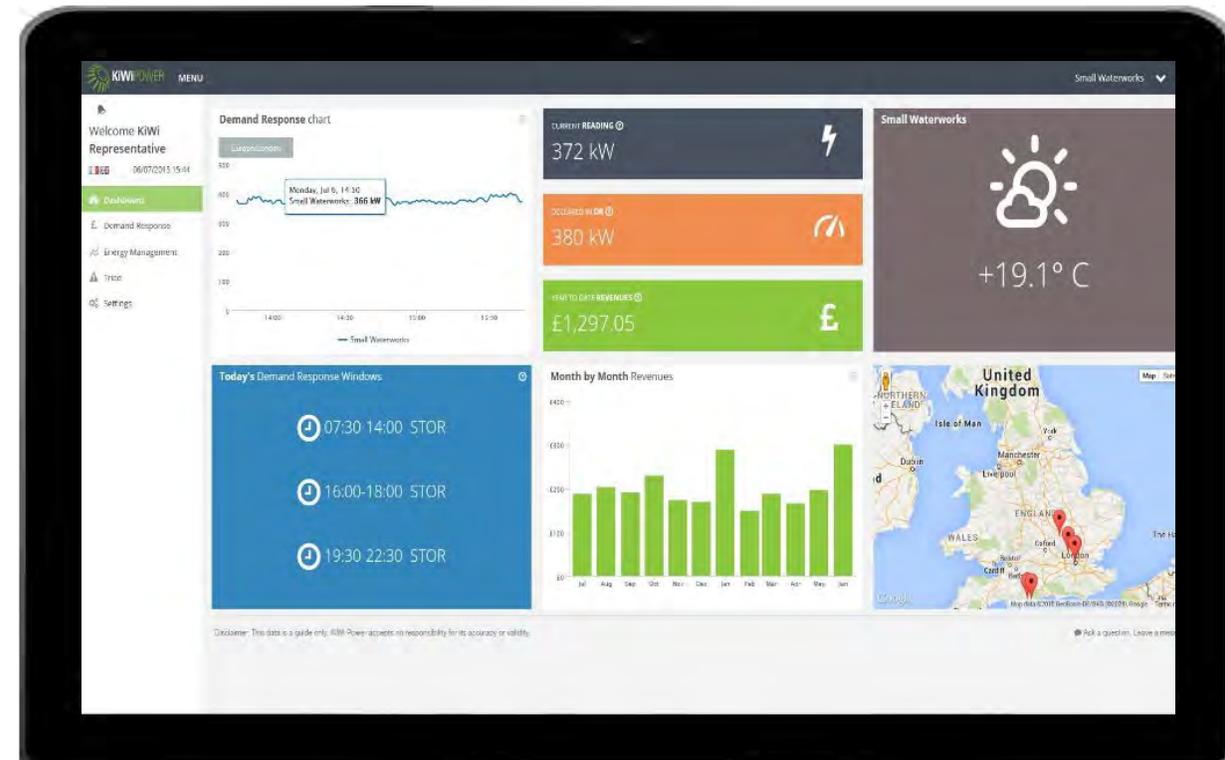
- ✓ Dual band Wifi, GSM and Ethernet
- ✓ Wireless communication capability to minimise cabling and installation costs between modules onsite and back to KiWi Power.
- ✓ Secure, failsafe OTA application and OS updates
- ✓ Flexible interfacing options including GPIO, RS232, RS485 and relay terminals
- ✓ Clear front-panel status and diagnostic indicator
- ✓ Easy to install DIN-rail compatible form factor
- ✓ Pluggable terminal blocks for ease of wiring
- ✓ Integrated with KiWi's cloud-based time-series datastore, for highly scalable real-time data capture

## Client App: Real-time, minute-by-minute monitoring of energy assets with the KiWi Power client application

Installation of our PiP smart meter gives clients access to the KiWi Power client application or "client app"

Through the app interface, clients can access:

- Live monitoring and reporting of kilowatt consumption for each site or meter point
- Active time-of-use management and communications
- Comparative data of historical consumption for each meter
- Real time calculation of revenues generated
- Live tracking and reporting of frequency response events

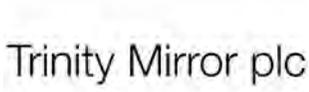


# KOMP

- **Cloud-based infrastructure**, multiple redundancy, 100% up time, fully encrypted storage and communications
- **Real-time monitoring** of system and distribution network operators
- **Live monitoring and reporting** on all meter point connectivity
- **Proprietary software**, developed and managed in-house
- **Active triad management** and communications
- **Live tracking** and reporting of demand and frequency response events
- **Scalable** – designed and tested for tens of thousands of Client sites / billions of real-time meter readings



Proven technical expertise. Multiple industry sectors. 800+ sites

Retail	Commercial operations	Public sector	Hospitality	Utilities and more	Our partners
					
					
					

## Case Study: Hotels have ambitious green objectives that cannot impact their guests experience

- Marriott selected KiWi Power as a demand response partner to help improve their energy efficiency, relieve stress on the National Grid and generate additional revenues for future sustainability projects. KiWi Power and Marriott selected the prestigious Grosvenor House location as a pilot site for demand response in the UK to assess viability.
- Upon successful completion of this pilot an additional 10 hotels have been rolled out and KiWi Power and Marriott are now moving towards implementing demand response programmes across a further 40 UK hotels.



“Marriott was the first international hotel chain to participate in demand response in the US. The UK hospitality industry has an exciting opportunity to generate new, risk-free revenue streams and greater insight into energy usage to actively contribute to sustainability goals.”

**John Conlon** – Senior Director Facilities & Project Management, Marriott International Europe



**Demand response**



**Energy Management**



**Triad management**



**Improved CSR credentials**



**Recurring revenue stream**

## Case Study: KiWi Power and Time Inc. UK partner for demand response

### Bringing demand response to the iconic Blue Fin office building

- Time Inc. UK is Britain's leading publisher of print and digital magazine content. With more than 60 iconic brands – including Decanter, Country Life, Horse & Hound, NME, What's On TV and Wallpaper\* – Time Inc. UK (formerly IPC Media) creates content for multiple platforms, across print, online, mobile, tablets and experiences. They engage with almost half of all UK adults through print and award winning websites reaching over 28 million global users every month.



“KiWi were very good in giving advice on where we may find energy savings that would not be missed for an hour in our high profile office block. We consider our energy efficiency and integration into the National Grid's Short Term Operating Reserve (S TOR) programme with KiWi to be very successful. We continually review our systems in an effort to provide more savings and consider entry into other demand response programmes.”

**Tony Floyde** – Facilities Manager, Blue Fin Building, Time Inc. UK



No recurring revenue streams



Reduction of CO<sub>2</sub> emissions



No disruption to site operations



Access to real time energy management dashboard with enhanced monitoring features

## Case Study: KiWi Power lead the way with healthcare providers

### Partnering with Colchester Hospital University NHS Foundation Trust for demand response

- Colchester Hospital University NHS Foundation Trust has two main sites, Colchester General Hospital and Essex County Hospital. The Trust provides healthcare services to around 370,000 people from Colchester and the surrounding area of north east Essex. Colchester General Hospital opened in 1984 and is one of Essex's largest facilities. Their care covers 596 inpatient beds, 44 maternity beds and 12 critical care beds (excluding A&E).



“We were impressed with KiWis work for the trust in maximising our generator operating revenue within a short period of time. KiWi commenced our programme with 1MW base load and within two months they installed and connected a further 0.4MW. At present we are earning over £100k per annum.”

Vall Rasaratnam – Energy & Sustainability Manager – Colchester Hospital



Annual revenues:  
£100,000+



Zero setup costs



No disruption  
to site operations



Reduction of  
CO<sub>2</sub> emissions



Access to real time energy  
management dashboard with  
enhanced monitoring features

## KiWi Power the chosen provider for European financial services

- Commerzbank is a leading international commercial bank with branches and offices in more than 50 countries
- After our success with CBRE, KiWi Power approached Commerzbank directly about a frequency response programme in their London headquarters office building
- After extensive conversations and an in depth site visit with KiWi Power, Commerzbank decided to move ahead
- The site has two 1.5 MW onsite diesel rotary uninterruptable power supply (DRUPS)
- KiWi Power installed National Grid approved, wireless, proprietary meters suitable for frequency response
- 3 MW of aggregated power responding within two seconds for 15 minutes of full load replacement
- Participant since May 2014
- Seven events, 15 minutes each, 3 MW delivered, £50k+ annual revenues

**COMMERZBANK** 

### CASE STUDY



Annual revenues:  
£50,000+



Reduction of CO<sub>2</sub> emissions



No disruption to site operations



CSR benefits



Access to real time energy management dashboard with enhanced monitoring features

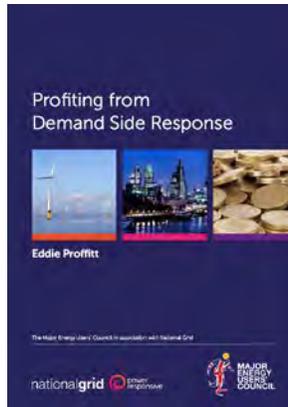
# Barriers

- Complex multiple markets and rules

The Capacity Market (Amendment) (No. 2) Rules 2016



500+ pages



66 pages

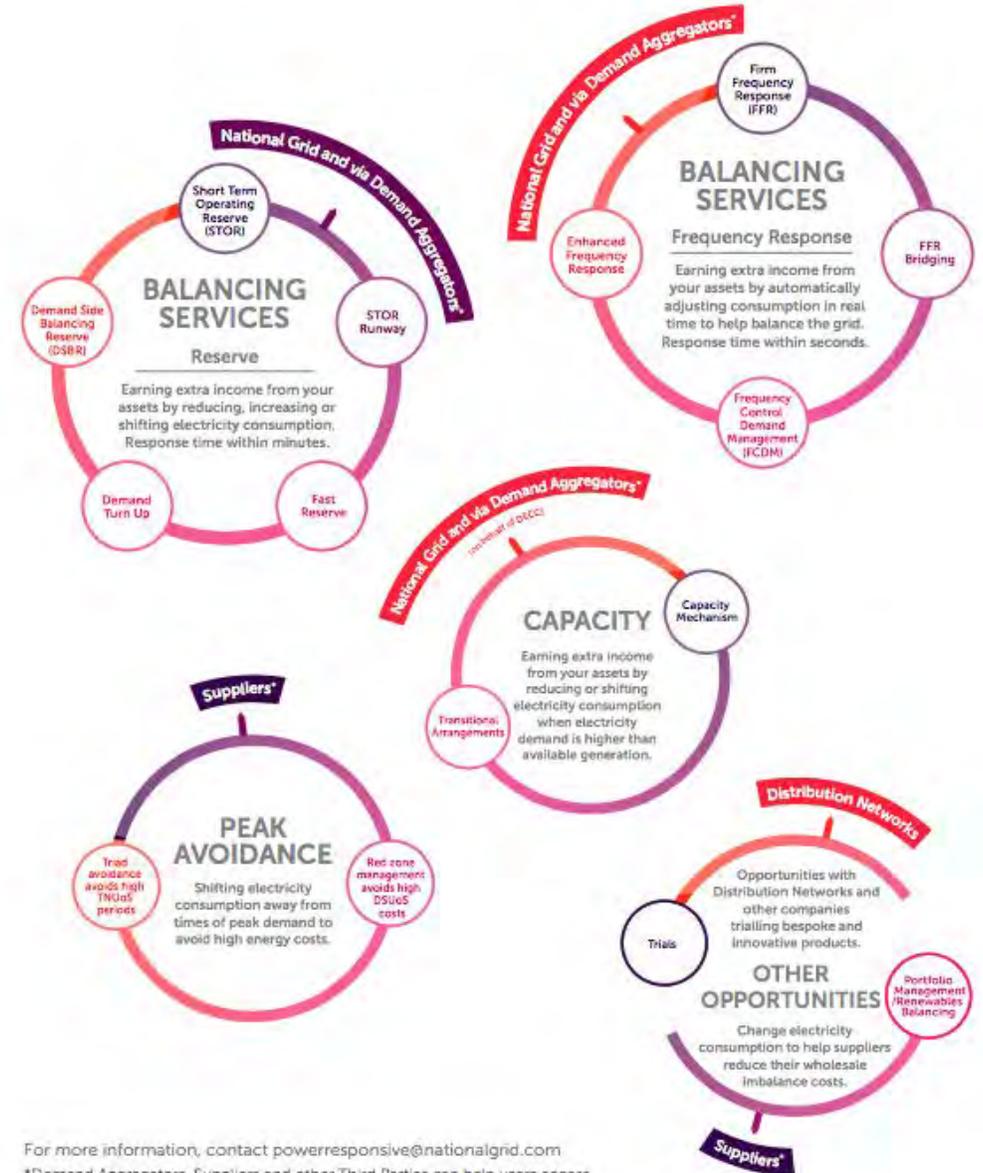
nationalgrid

power responsive  
A short guide to how your business can profit from Demand Side Response



24 pages

- Policy
- Access to Markets



For more information, contact [powerresponsive@nationalgrid.com](mailto:powerresponsive@nationalgrid.com)  
 \*Demand Aggregators, Suppliers and other Third Parties can help users access these opportunities and identify combinations that work best for them.

# Policy and markets

- ✓ National Grid SNAPS process to simplify markets
- ✓ Full Capacity Market
- ✓ Ambitions to open up access to the Balancing Mechanism
- ✗ Capacity Market continues to discriminate against DSR
  - ✗ 1 year contracts for DSR, 15 year contracts for power stations
- ✗ Market pricing far from stable
  - ✗ 2017 auctions clearing prices – T-4: £22.5k; T-1: £6.5k; TA: £45k
- ✗ Continued policy intervention without holistic outcomes
  - ✗ Energy storage projects payments derated
  - ✗ DEFRA emission control for diesel generators – targeting backup generators instead of pure power stations



Thank you.

Please contact KiWi Power today:

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[www.kiwipowered.com](http://www.kiwipowered.com)