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Based on a work at [projectheresy.com](http://projectheresy.com).

## OVERVIEW

### Introduction

My Intelligent Energy (MYIE) is seeking a manufacturer for its in-building power (AC) control package.

The products are to be used to control AC appliances in any building, with some feedback provided via a central unit in regard of power usage, energy usage, the attendant cost, and CO2 output.

The product set comprises two products; a basic system and expert system.

The basic system provides fundamental core functionality for the home user who only requires a simple control system with some feedback information. This is comprised of the controller and slaves.

The expert system extends the basic system to provide appliance scheduling, Ethernet connectivity with HTTP management and the ability to control more variables.

In each case, each system is specified with mandatory requirements. Optional requirements are also provided, and it is expected that these are costed in addition to a base level development/sampling cost, so the effect of more advanced functionality can be clearly assessed.

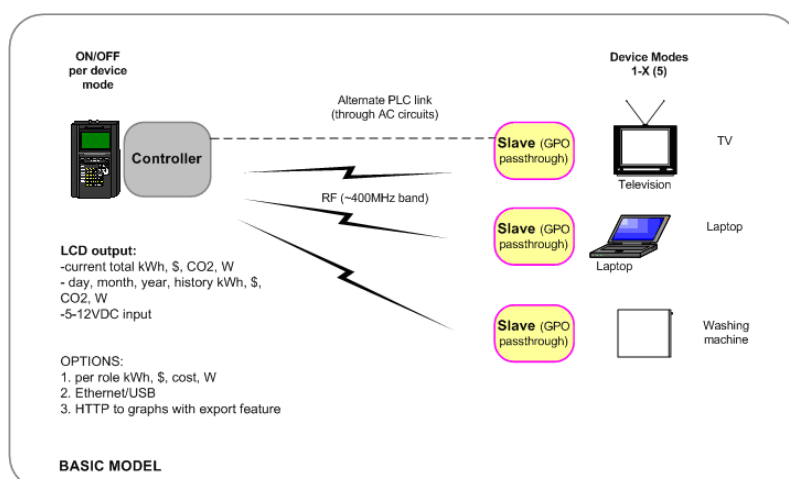
### Design philosophy

Where possible, the design is to conform to industry standards and RFCs, and be designed with a view to providing either now, or via a cost effective and simple upgrade path in the future, compatibility with:

- Google PowerMeter
- Utility companies (AMR/PLC capable, now, or in the future)

The devices are intended to be:

- Scalable through the home
- Extremely robust [IP66 – less by negotiation as specified in following sections]
- Highly efficient in and of themselves
- Highly recyclable
- Low carbon input (use recycled plastics etc where possible)
- Designed for long life



**SLAVE REQUIREMENTS**

Metric	Rating	Comment	Manufacturer Capable? (Y/N)	Manufacturer Comments
Device Pool switch	1-5	Increase to 10 if cost not prohibitive		
Device Operational Control	On/Off	Remote (signaled), physical (switch on device)		
LED/LCD display		Current kWh, \$, CO2, W Able to be turned off		
Power Interface	100-250VAC, 50-60HZ	AU, JP, EU, US, China, India outlets		
Communications	400MHz band	PLC as an option, RF band can be different		
Communications	PLC	In building mains signalling		
Communications	Zigbee			
Communications	IEEE8020.15.4			
Data Storage	CF	No lost data on power loss – if this needs to be a different type of memory, that is ok		
IP rating	IP64	IP63 or IP54/53 by negotiation		

**CONTROLLER REQUIREMENTS**

Metric	Rating	Comment	Manufacturer Capable? (Y/N)	Manufacturer Comments
Pool switching on/off	1-5 (or 10)	Increase to 10 if cost not prohibitive		
Remote (wireless) to control pools (on/off only)				
Output LCD/LED, including info on: -Current, Historical (hour, day, month, year, history) kWh -related \$ cost, CO2, W	- numbers (up/down button to scroll through each metric) - basic graphs			
Configurable Parameters	KWh \$ tariff, peak and off-peak			
Controller Management	http over either or all PLC, Ethernet, Zigbee			
Slave Management	Table of connected slaves Slave groups Slave/group scheduling http over either or all PLC, Ethernet, Zigbee			

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**PAT. PENDING**

**My Intelligent Energy Request for Manufacturer  
Intelligent Energy Management System**

<b>Metric</b>	<b>Rating</b>	<b>Comment</b>	<b>Manufactu rer Capable? (Y/N)</b>	<b>Manufactu rer Comments</b>
Slave, Total Reporting	Total, Per slave, Per Group power/\$/CO2/kWh usage			
Data download (http)	Downloadable graphs/data via PDF, CSV, JPEG			
Power	12VDC via powerpack	AU/NZ, JP, US, EU, GB, China, India		
Communications	400MHz band	Other RF band ok		
Communications	Ethernet IEEE802.3E			
Communications	USB 1.1/2			
Communications	802.11b/g			
Communications	Zigbee standard Zigbee 1.0+			
Communications	IEEE 802.15.4			
Physical interface	USB1.1/2, RJ45, VDC input			
Data Storage	CF, 4GB	No lost data on power loss – if this needs to be a different type of memory, that is ok		
IP rating	IP64	IP63 or IP54/53 by negotiation		
Sustainability Requirements		<ol style="list-style-type: none"> <li>1. Manufactured largely from post consumer plastic</li> <li>2. Minimal carbon footprint input</li> <li>3. Highly recyclable</li> <li>4. No toxins (mercury etc)</li> </ol>		

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