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## ***Coral Bay Wind-Diesel Power System***

### ***Western Australia***

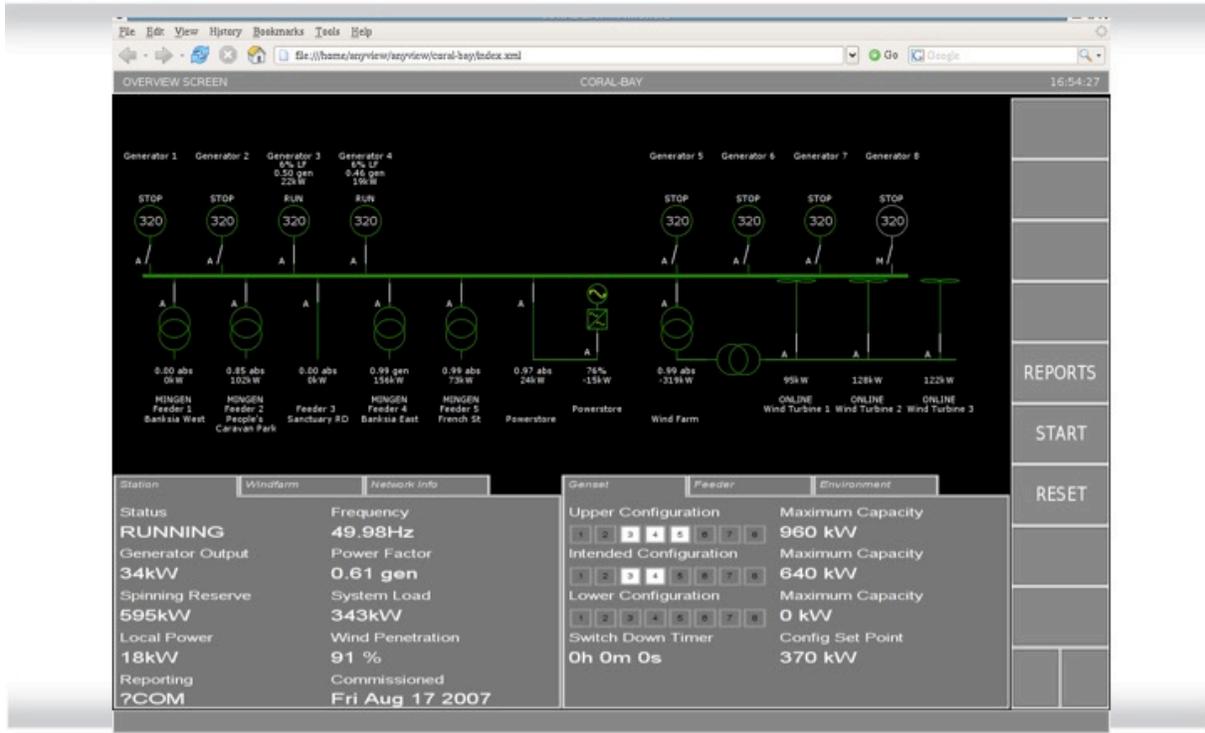
Dustin Murdock  
PB New Zealand Ltd



## **Configuration**

- 7 X 320kW diesel generators
- 3 X 275kW fixed speed WTGs (hurricane rated)
- 1 X 500kW flywheel energy storage unit





## Feeder Control Panel



## Low Load Diesel Generators



## ***PowerStore Installation***



## ***PowerStore Installed***



## ***Vergnet Wind Turbine***



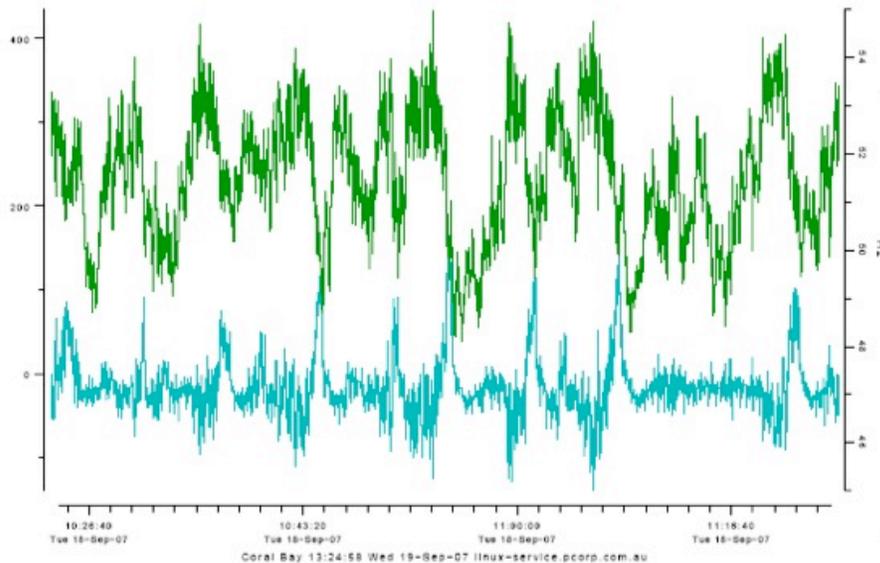
## ***Vergnet Wind Turbine***



# Wind Turbine Control Interface

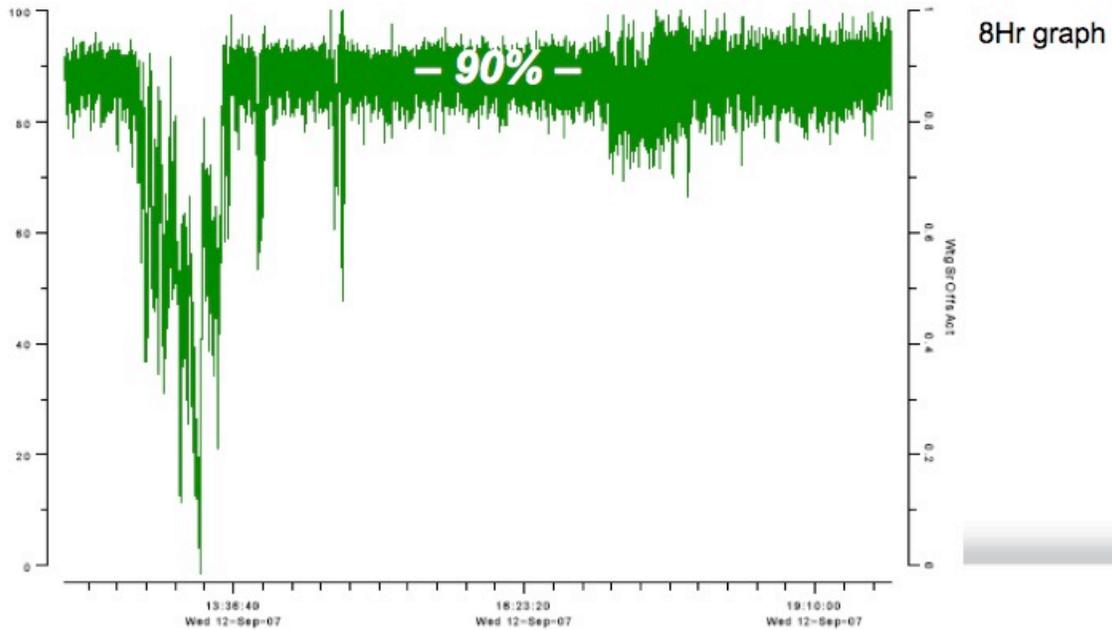


# Characteristics of Renewables



- Most renewable sources are stochastic
- 1Hr graph

## Wind Penetration



## Coral Bay Outcomes

- **Powercorp Turn Key Green Field Site**
- **Installation Commissioning of 3 x 275kW Wind Turbines**
- **Installation Commissioning of New MSB**
- **Installation of 7 x 320kW Low Load Diesel Generators**
- **Installation of 1 x 500kW PowerStore**
- **Integration of Wind + Diesel + PowerStore= Large Fuel Savings**
- **10 months of Operation**
- **Utility Quality of Supply (Isoch 50Hz, 440V)**
- **More than average 50% wind penetration**

## **Average Wind Penetration Since Installation**

**76% September 2007**

**63% October 2007**

**67% November 2007**

**52% December 2007**

**52% January 2007**

**40% February 2007**

**37% March 2007**

## ***Questions?***

