

Solar powered non standard nbn Fixed Wireless station and WIFI repeater

This is a brief description of a solar powered nbn™ Fixed Wireless non standard installation. This example includes a wireless AP, to relay the internet to the user's home. The home and the nbn FW solar site must have line of sight between them.

Further detail on solar design may be found [here](#) (pdf). The WIFI link which connects to the nbn™ Fixed Wireless Network Termination Device (NTD) is discussed [here](#) (pdf).

1. The combined load of the nbn wireless NTU and ODU is **9-10 watts** continuous. When a wireless AP is included at the site, it adds an average **6 watts** continuous. The total load is $10w + 6w = 16 \text{ watts}$ continuous or **1.3A** continuous @ 12.2V. The daily load is $16w \times 24hr = 384Wh/day$, or let's say **400Wh/day** rounded up.
2. A 12v **150W-200W** solar panel is required in the sunny North, whilst a **300-400W** panel will be required in cloudy Tassie.
3. A 12v **200Ah** battery is chosen for this load. The battery provides 3 days autonomy. It sustains service during cloudy days, when little to no solar generation is available.
4. A solar regulator rated at **12v** and **20A** is suitable. This size regulator is sufficient for solar panels up to **300W**.

Here is a typical non-standard installation. It includes a WIFI link to home.



This system was built by Whirlpools [ozziemandias](#). It was commissioned 29 January, 2016.

For this installation nbn™ supplied the 3m mast, the ODU, the NTU, cables and fixings. The slab and everything else was provided by the property owner. The equipment enclosure must be rated to IP55 or better to satisfy nbn™'s requirements. A standard home power meter box was used to house the equipment. The battery was separately housed as shown.

For a non standard nbn™ Fixed Wireless installation, the NTD may be mounted in an existing shed or structure. A shipping container provides a secure waterproof shelter.

This system is fitted with a **200Ah** sealed battery and a **200W** solar panel.





The home meter box, showing the nbn™ fixed wireless equipment at the top of the box

The inverter was used for commissioning. nbn™ may provide a 12V supply in the future. The 'blue box' is a 12V@ 20A solar regulator. The yellow LAN cables connect the nbn™ NTU to the Ubiquiti Nanostation WIFLink, which connects the station by WIFI to the home.