WindFi: Renewable Energy Wireless Basestation

The WindFi basestation was initially designed to address issues of rural broadband in the mountainous, undulating and remote terrain of the Scottish Highlands & Islands in communities where fibre or xDSL access is not available. Using open source software, GIS tools, and driven by the broadband needs of rural communities, whole new business models are enabled by WindFi. The WindFi basestations are designed to achieve 99.98% reliability, operating entirely on renewable energy (or hybrid if electical grid power is available). Wireless access options for users is realised via P2P hopping backhaul links and P2MP customer last mile access. The radio options include a choice of low power wireless standards and chipsets offering a variety of air interfaces runnning with standard or modified MAC layers. The basestation is Linux based hosting the latest low power, MIMO, and intelligent chipsets. From March 2010, the first prototype basestations and network were up and running on the Isle of Bute, Scotland in 5GHz and 700MHz (test) spectrum. Markets for the WindFi basestation include remote communities in both developed and developing countries.

Key Facts

- Low Power Basestations (< 50 watts)
- Renewable Energy: Wind & Solar
- Licensed and Unlicensed Spectrum
- 5GHz Band B and C access
- White Space, UHF (400 to 700+MHz)
- P2P Connections (up to 20km)
- P2MP CPE LOS & NLOS Access
- Opportunistic Spectrum Access
- 3G/ LTE/ Wifi FemtoCell Hosting
- Rural Broadband & Community Networks
- Events Broadband Deployment
- Minimal planning and 2-man installation
- Enabling Coop & Community Ownership

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