

# Embedded generation in BT

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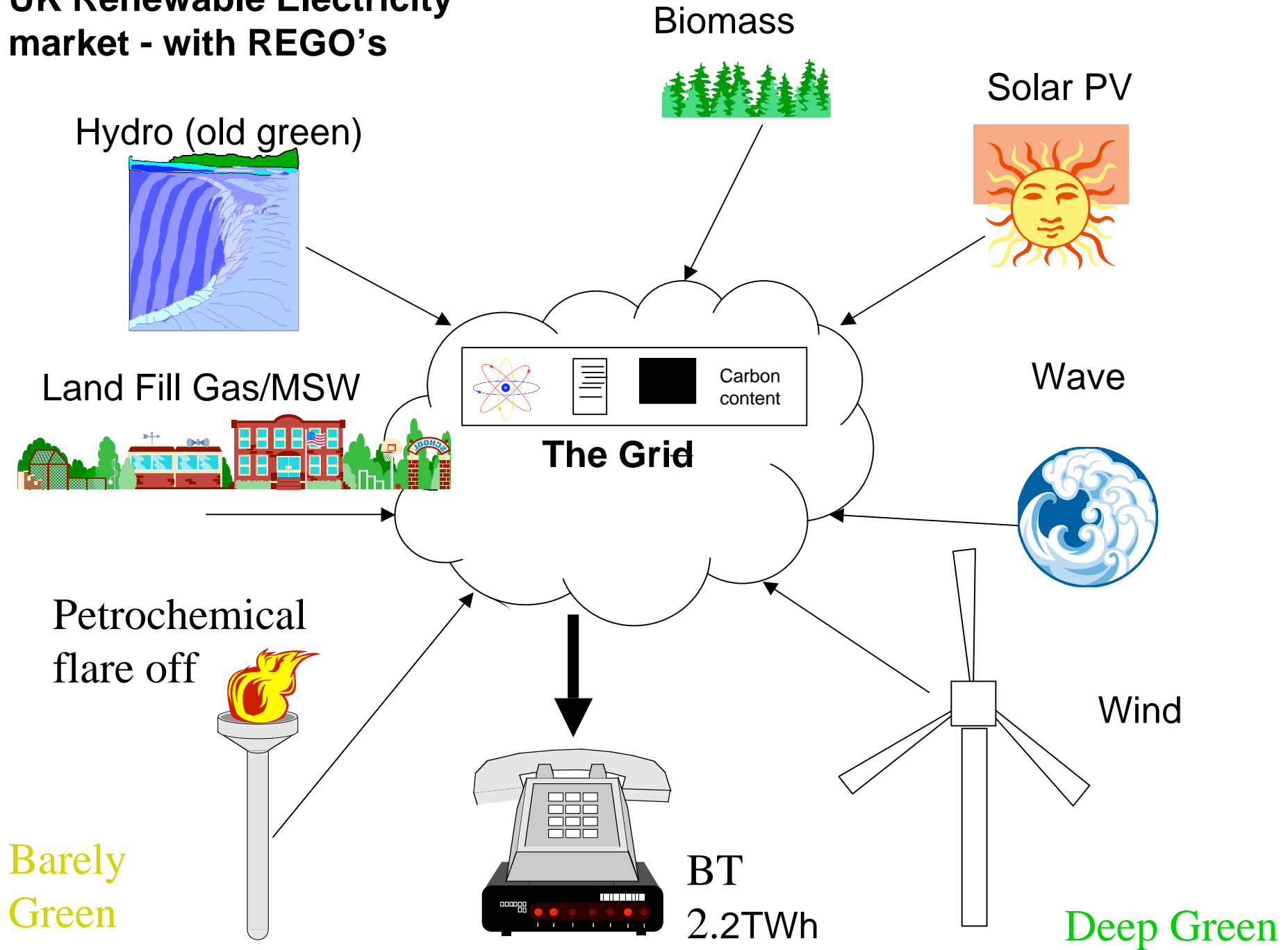
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## First a few facts about BT's new 'Green' electricity Contract

- 950GWh of 'new green' which includes Wind, Solar, Hydro and Biomass
- 1TW of Combined Heat and Power (CHP) which provides a significant CO<sub>2</sub> saving (typically 40%).
- A small quantity of 'brown electricity' to make up the 2.1TWh requirement.

# UK Renewable Electricity market - with REGO's



# Energy reduction projects - progress to date

- Use of Lower Pressure Amplification (LPA) technologies in chillier plant.
- Changed strategy to the use of fresh air cooling plant wherever possible.
- Changing to Variable Speed Drives (VSD) on fan equipment.
- Consolidated offices.
- Promoted Homeworking.
- Starting to insist vendors provide low energy solutions.
- Installed half hour metering at all 5,000 operational sites and used data benchmarking to drive out wastage.

## The longer term

- BT can not continue to covet 10% of the UK Green electricity market.
- More green GW's of must be stimulated in the market.
- Site specific on-site generation must be considered.
- 21<sup>ST</sup> Century Network components must be 'lowest practicable' power consumption.

# The way forward

- Install embedded generation where practicable
- Innovate - integrate intermittent renewable in steady state power systems
- Change mindsets on renewable energy technologies. i.e intermittency and payback periods

# Embedded energy solutions BT is considering

B5 - 20 biodiesel in Standby generation.



Conventional micro WT's typically (1 - 15kW)



Photo Voltaic's (PV) at sites or on buildings



Joint Ventures with our electricity suppliers

typically (1 -2MW each)

Biofuels to heat buildings



## Specific initiatives

- Prospective replacement of ageing Gas boilers at BT's Adastral Park research establishment with Biomass units.
- The provision of a Hybrid Wind, PV and Solar energy project at Goonhilly visitors centre Cornwall.
- Mast mounted wind turbines at Carmenellis Radio Station, Cornwall.
- PV array on a 21st Century Network node - Woolwich?
- B5 biodiesel trial - location TBA.



Some home spun power!