Smart Metering Trials Feedback and Learning

CE Electric GB Smart Customer Response Trials Workshop
May 2011

npower

An RWE company

The Trials

- Have been operation for a minimum of 24 months (to cover seasonal variation in consumption) and trialled a variety of customer products and smart metering technology
- Midlands, Northern and Yorkshire areas
- The trials offered a variety of ‘smart’ customer products to see how customers react to products such as:
  - Time of day tariffs (electricity only)
  - Detailed daily consumption information available via the web
  - Monthly billing based on actual smart reads
  - Pay As You Go offering credit tariffs with prepayment functionality
  - Micro-generation product to accurately measure import and export consumption (electricity only)

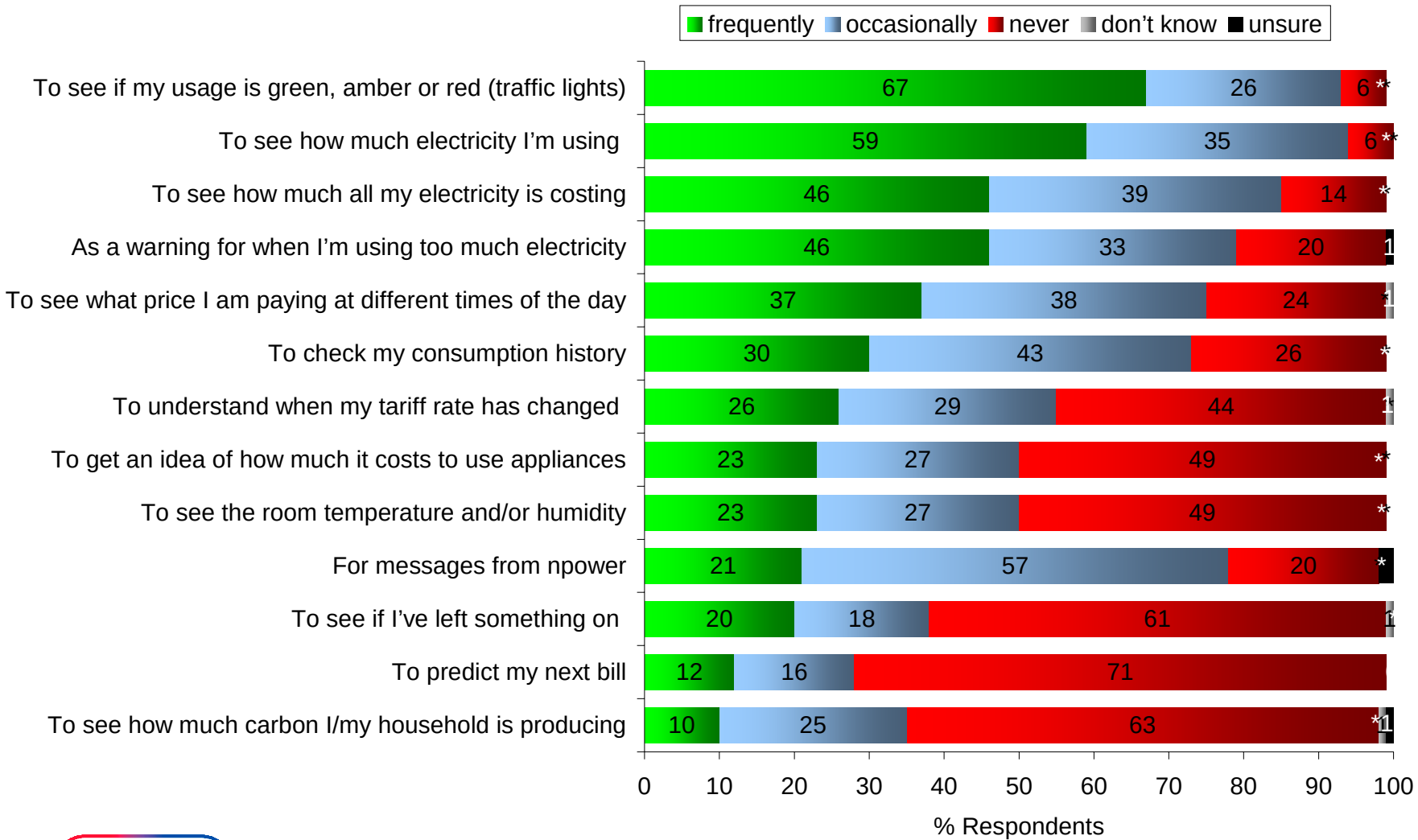
Why We Did Trials

- Start understanding the impact of a UK wide smart metering solution
- Begin to understand the long term benefits smart-metering would bring
- Feed the learning into the industry planning process to ensure effective and efficient roll out for customers.
- Tangible evidence of the impact of smart products on customer consumption behaviour, measuring take-up and satisfaction levels of specific smart attributes:
  - Can we change customer behaviour through time of day tariffs?
  - Would a variable monthly bill on actual reads be preferential to QROB customers? Does it change customer behaviour?
  - Will customers reduce consumption through having more information (online)?

Background

Product	Volume Customers (target)	Start Date	End Date	Customer Selection
Timeout	500 Electricity only	March 2009	March 2011	Cash constrained customers min 12 months supply
Bounty	500 Dual Fuel	July 2009	March 2011	Customers with OBV capability min 12 months supply
Buttons	500 Dual Fuel	July 2009	March 2011	Customers ROB or QVDD min 12 months supply
Twirl	727 Dual Fuel	February 2010	March 2011	PP with Debt, PP no Debt, ROB with Debt, ROB no Debt, min 12 months supply
Heroes	338 Electricity only	February 2010	March 2011	Existing Microgen Customers, no supply constraints

Reasons for using smart



Trial Product Summary - TimeOut

- Aimed at credit electricity customers, this trial offered two time of day tariffs
- **Choose & Use**
  - 3 rates: std week day rate; std night rate (also applies to weekend day) and a peak rate between 16:00 and 19:00 on weekdays
- **Choose & Use 2**
  - Choose & Use PLUS a Happy Hour: which was a 2 hour period (which 2 hours (8-10am or 2-4pm) chosen by the customer) on Saturdays & Sundays at a further reduced rate
- Aim was to establish if price signals encourage changes in customer consumption behaviour

Tariffs

Key

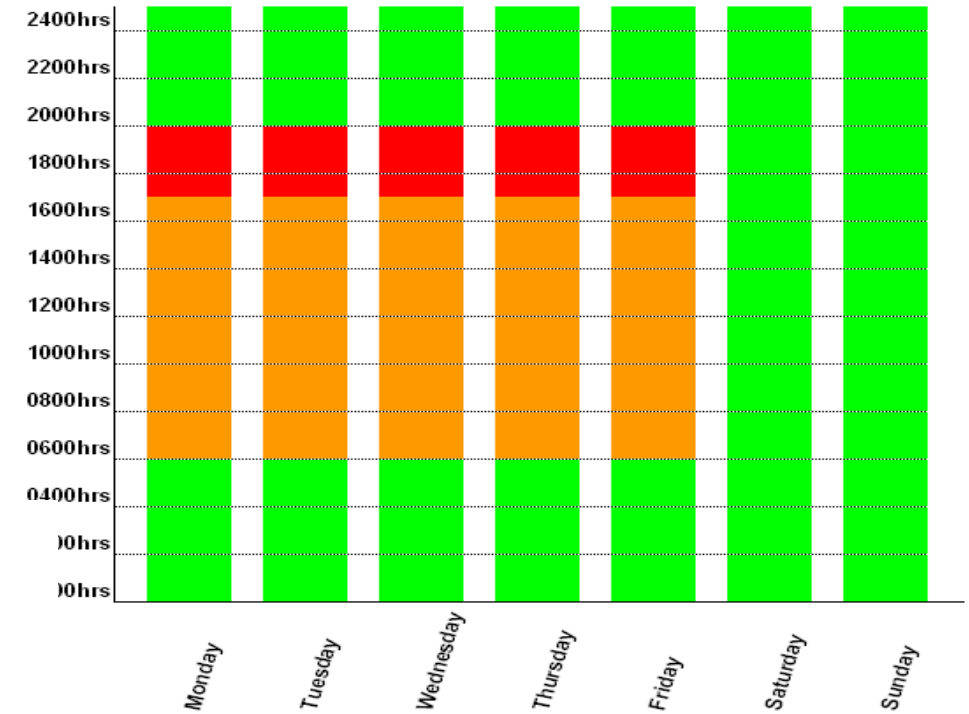
4 = Night/Weekend rate (low rate)

9 = Week day rate (medium rate)

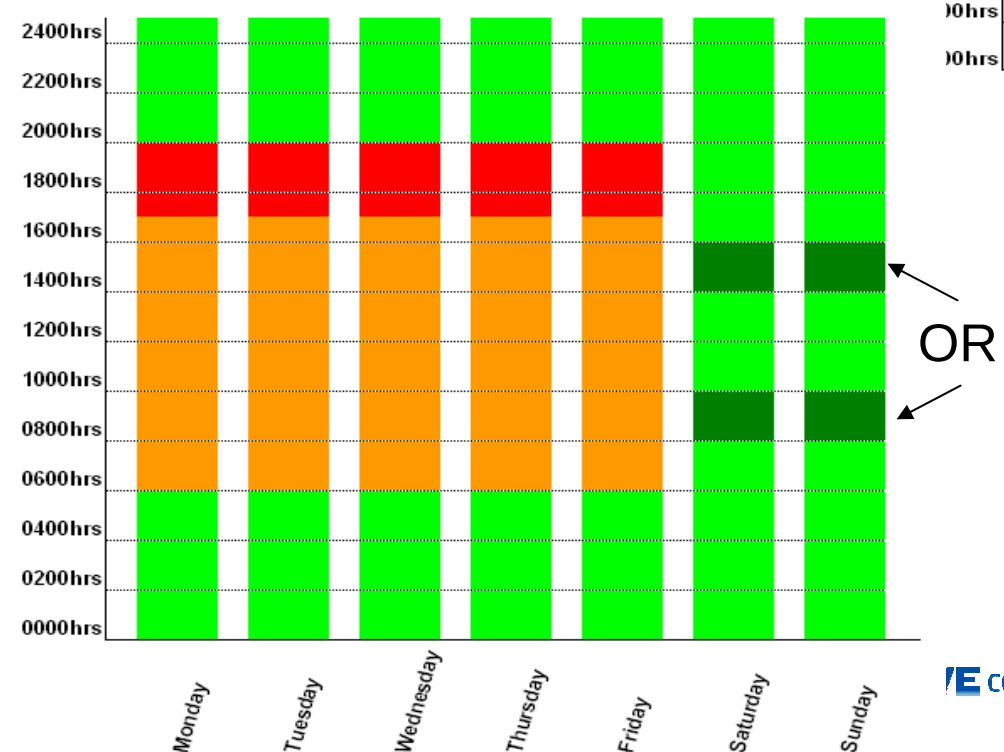
3 = Peak Rate (highest rate)

6.95 = Happy Hours rate (lowest rate)

Time Out Tariff 1



Time Out Tariff 2 (Happy Hours)



OR

Note:

Rates vary between Time Out Tariff 1 and Tariff 2

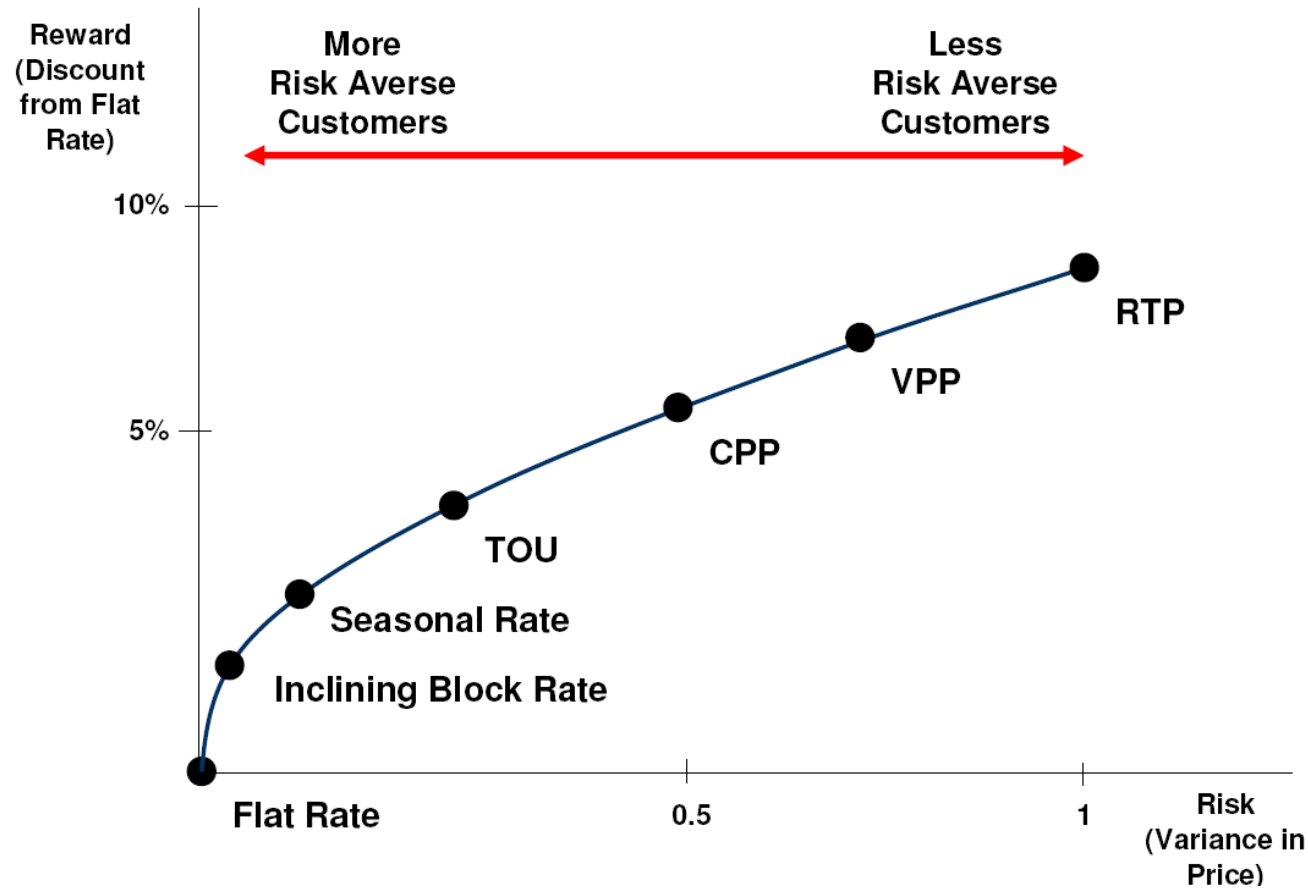
For Time Out Tariff 2, customer can only have one set of happy hours that will be set for both Saturday & Sunday (i.e. 0800-1000hrs for both days but not 1400-1600hrs)

Time Out – High level results

- Product working successfully with customers
- An increase in satisfaction from 4.0 to 4.2 and an increase in likelihood to recommend, with the NPS increasing markedly from 24-42%
- 91% want to keep the smart meter and CDU and 73% would stay with npower for the ToU tariff.
- Drivers are cost savings and responsible use of resources (people becoming more environmentally motivated)
- Actual reads are a major benefit of Smart, though they are a ‘hygiene’ factor
- The CDU is still used heavily, (60% check at least once a day) more than 7months after it’s introduction.

Time Out – Tariff results

- Problem- how do you price ToU to encourage movement in consumption behavior?
- Perceived benefit versus perceived risk



Time Out – Tariff results

- ToU tariff well understood (!) and encourages intervention energy use to be moved
  - CDU important interface for this

Current differential c. x3

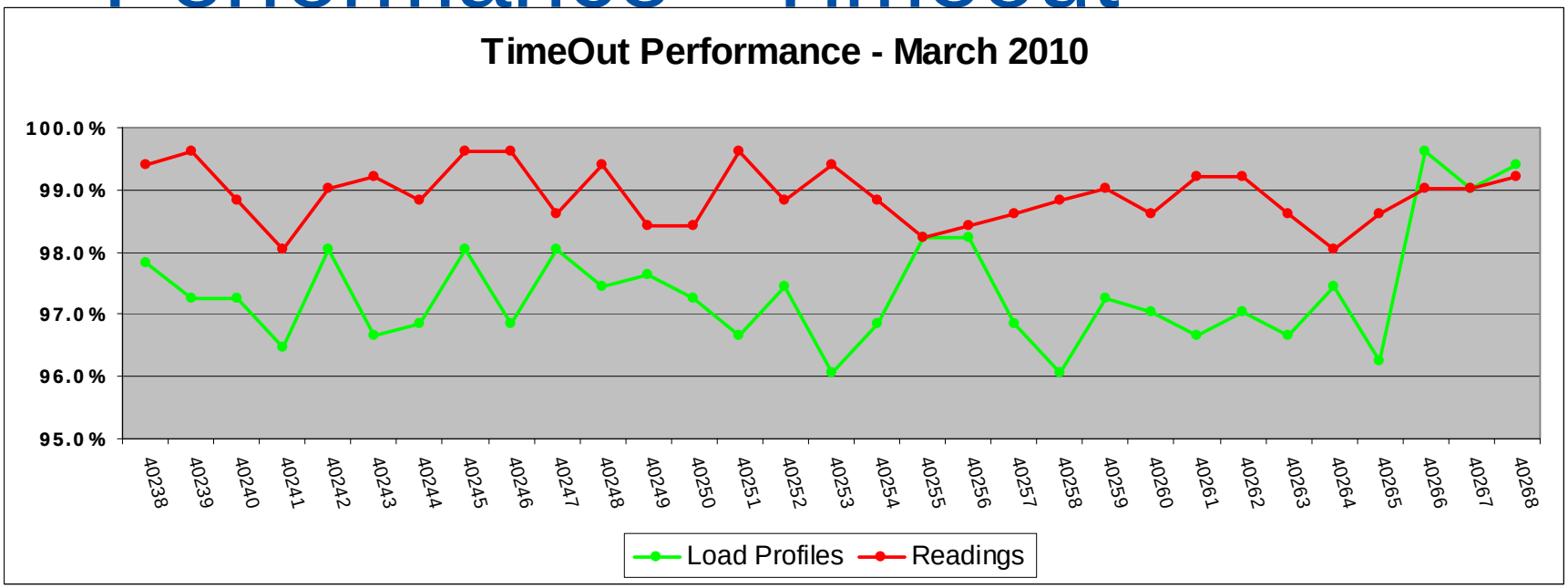
- Strong resistance to greater differentials between Peak and Off-Peak
- Reducing differential between Peak and Off-Peak would reduce the motivation to move consumption
  - Understanding that may cost more for those already using more energy in the day (i.e. that they would subsidise peak users (again!))
- Time of Use tariffs important for the future to enable £ savings
- 'Overall cost' still important when comparing suppliers

How did customers react to TOU pricing structure and what action they took

Fewer (66% cf 77% in wave 2) said that the differences in the prices charged at varying times were significant enough to make them change when they used their electricity; 32% said they weren't (cf 18% in wave 2) and 2% didn't know (the same as in wave 2).
Those who said that they were, were asked what appliances they had started using at different times of the day in order to take advantage of cheaper unit prices. The results were as follows:

Washing machine		86%
Dishwasher	31%	
Tumble dryer	30%	
Cooker		18%
Iron	6%	
Other		5%
Shower		4%
Vacuum cleaner		3%
Immersion heater		2%
Lawnmower	2%	
Microwave	2%	
Kettle		2%
Bread maker	1%	
None		2%

Remote Reading Performance - Timeout



- Read performance average 99% retrieved daily
- Consumption data performance by day 5 is 100%
- Only a handful of occasions where we have been unable to obtain read data, which caused file failures new years eve being the most significant to network traffic being high

Thanks

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Bounty (daily online info)

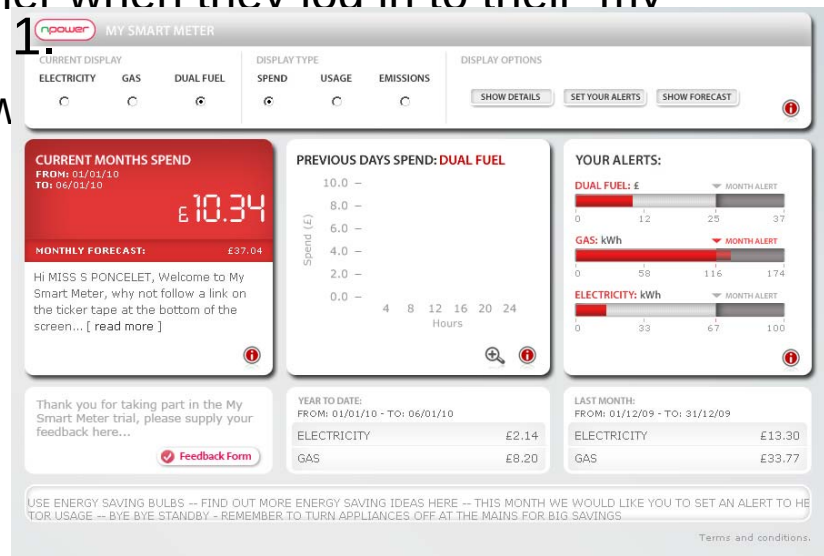
Trial Product Summary - Bounty

- A dual fuel product aimed at credit customers who use the Online Bill View (OBV) service + SOL tariffs
- Via the web customers able to view their energy consumption (gas and electricity) and utilise a range of energy saving options to encourage a change in their energy usage behaviour in a clearly measurable way.
- The web is updated on a daily basis so that the information presented is never more than 24 hours old

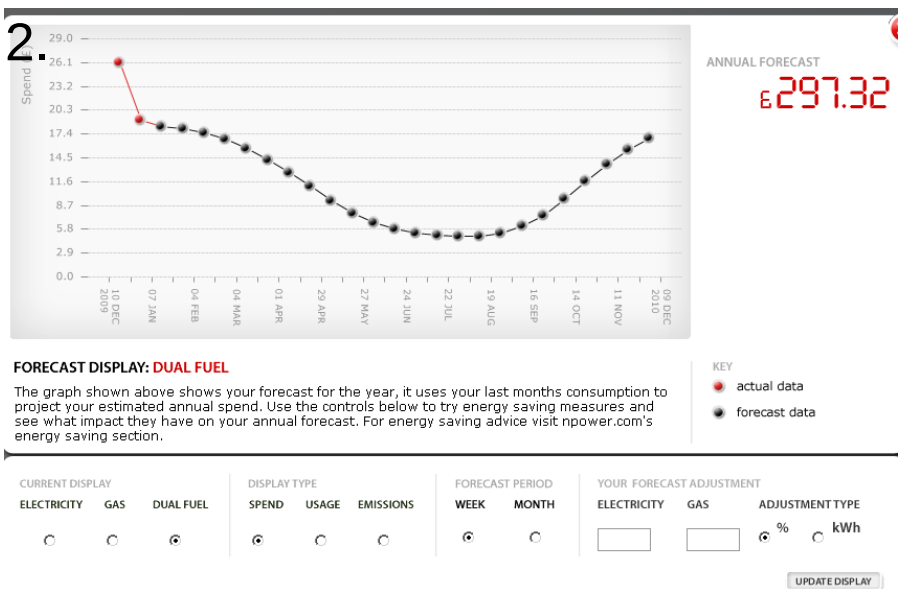
Online Product (Bounty) Screen Shots

- These screen shots are shown to a customer when they log in to their 'my smart meter' page. Examples:
  - (1) High level dashboard (initial log in view
  - (2) Forecasting and predicted spend
  - (3) Detailed consumption view

1.

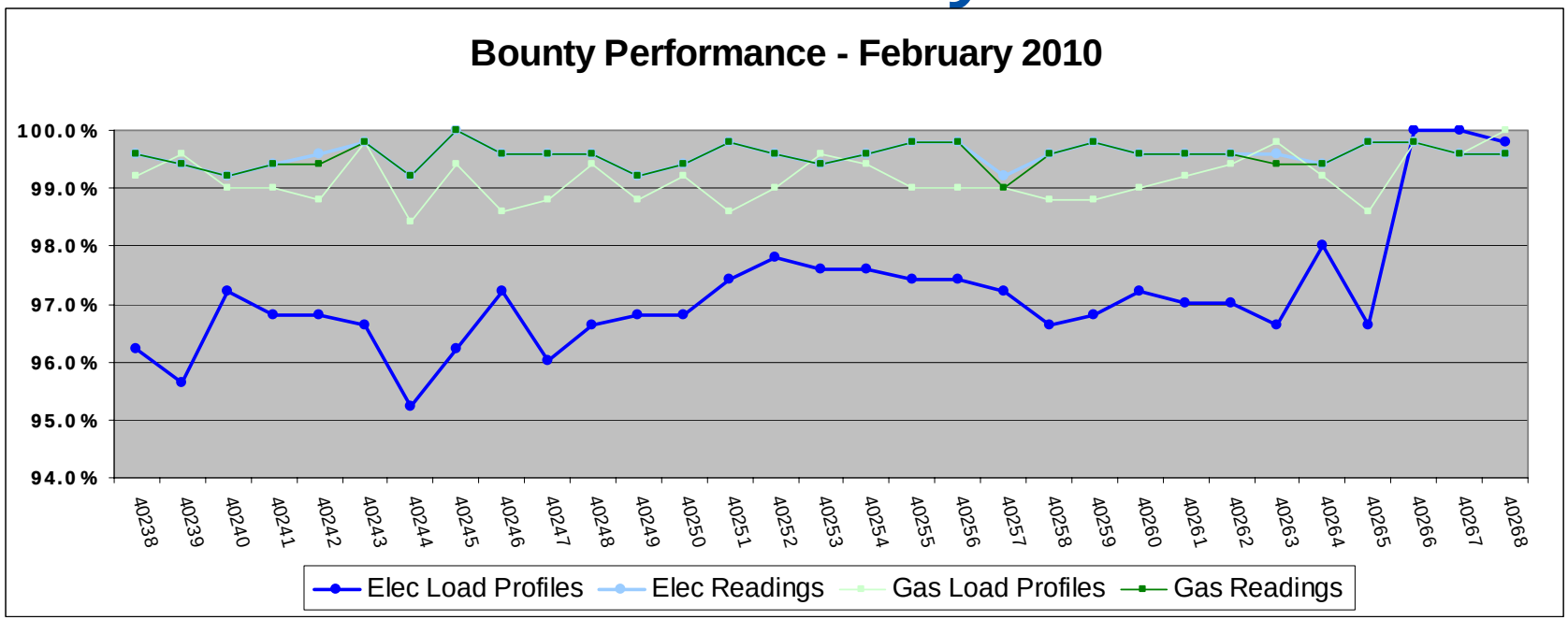


2.



3.

Remote Reading Performance - Bounty



- Bounty web services suffered on several days due to data either not been available or the data files failing to load for varying reasons.
- All consumption data performance is 100% by day 5

Bounty – High level results

- No discernable uplift in satisfaction or recommendation levels at this time. This may be linked to the levels of usage.
- Contact levels with npower have reduced, albeit by only a small amount.
- The dashboard is extremely helpful in helping a customer understand their energy costs and the link to their bill.
- Energy info drives reduction in energy use and not a driver to change supplier (i.e. transparency of our pricing) at this time.
- CDU still important aspect
- Overall, those customers that have used the dashboard have found it a very useful tool
- Online dashboard can be useful driver to get customers to self serve online

Bounty – Dash Board use

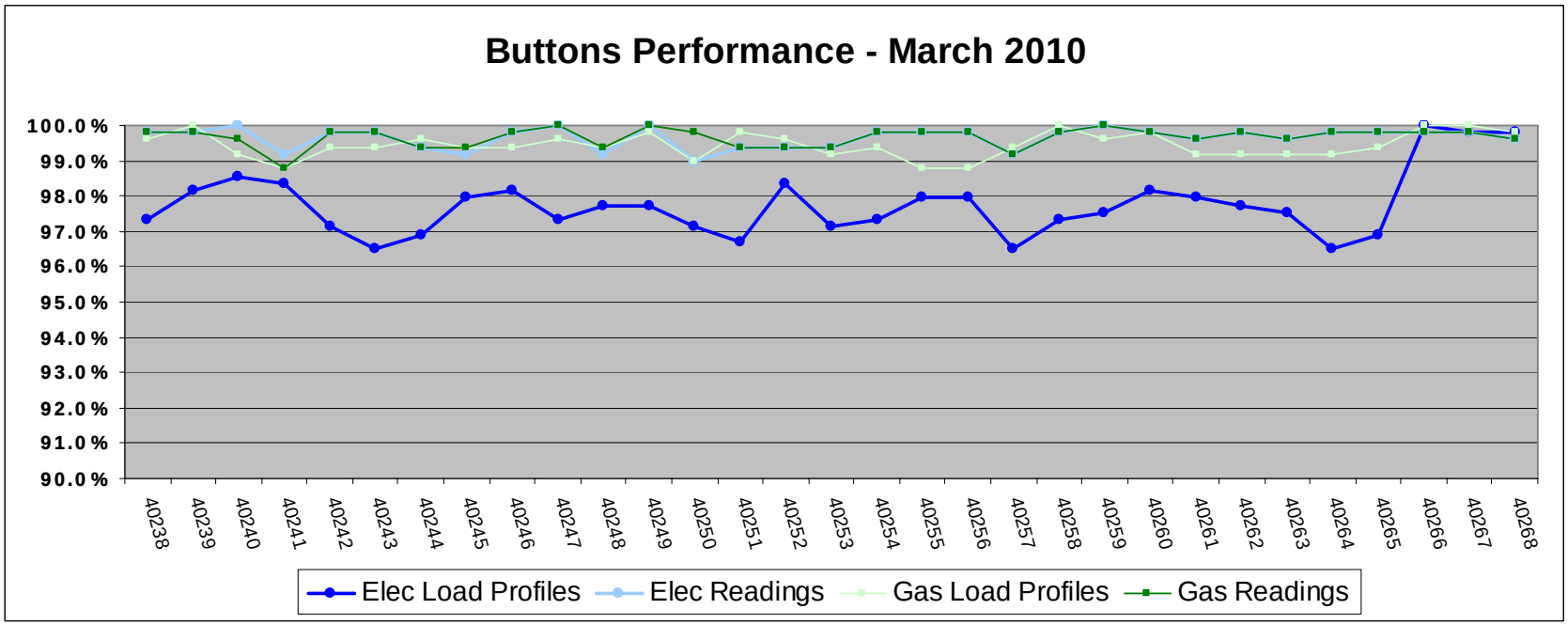
- When asked if they have had difficulty in accessing the dash board, 48% said they did not know or haven't tried.
- Of those that have accessed the dashboard, 39% access it at least once a week.
  - This highlights that once a customer gets access, they are very likely to return to keep using it.
- 79% report that the dashboard is sufficient for what they wanted to use it for.
  - Suggests that we have developed right level of functionality from the start. Reinforced by the fact that 85% reporting that the information us relevant or very relevant.
- 72% report the dashboard has helped them to understand the link between their usage and their bill
- 77% note that the dashboard looks quite or very poor.
  - New products are 'engineer led' and so focus on the functionality? (positive feedback above & 70% say the dashboard is intuitive).

Buttons (Dual Fuel Monthly Bill)

Trial Product Summary - Buttons

- A dual fuel product aimed at customers who pay quarterly on receipt of bill
- Using smart readings we will provide an accurate monthly bill based on their actual energy consumption to test and learn from resulting changes in customer behaviours:
  - how receptive customers are to billing on actuals throughout all seasons
  - if customers billed on actual monthly consumption change their payment methods/timing – aim to move to MVDD or MDD
  - if a reduction in consumption is encouraged
- This will also use the Ampy smart metering technology

Remote Reading Performance - Buttons



- Read performance averaging 99% +
- Consumption data performance 97% day increasing to 100% by day 5

Buttons – High level results

- Paying monthly is common for many household bills, but not Energy
- 80% would recommend monthly billing to family & friends
- 80% would be interested in continuing to pay monthly
  - Note: these customers are previously QCC or QvDD for at least a year and thus have been subject to numerous MDD up sell messages
- Increase in satisfaction with npower from 3.8 to 4.0 and increase in likelihood to recommend npower from 33% to 44%
- Customers fall in to collections process more regularly
  - Review of process required and new channels (text etc.) explored

Buttons – Product results

- Monthly payment facilitates budgeting (69%)
- 75% feel paying monthly is better than their previous payment frequency
- 57% very satisfied with monthly payment
- Monthly billing not a differentiator
- For MROB, most prominent payment methods is cash at the post office followed by internet banking
  - Still like to feel in control of money
- 84% of the MROB are not interested in losing control of payment to npower (i.e. move to MvDD or MDD)
- C. 12% moved to MDD since trial started.

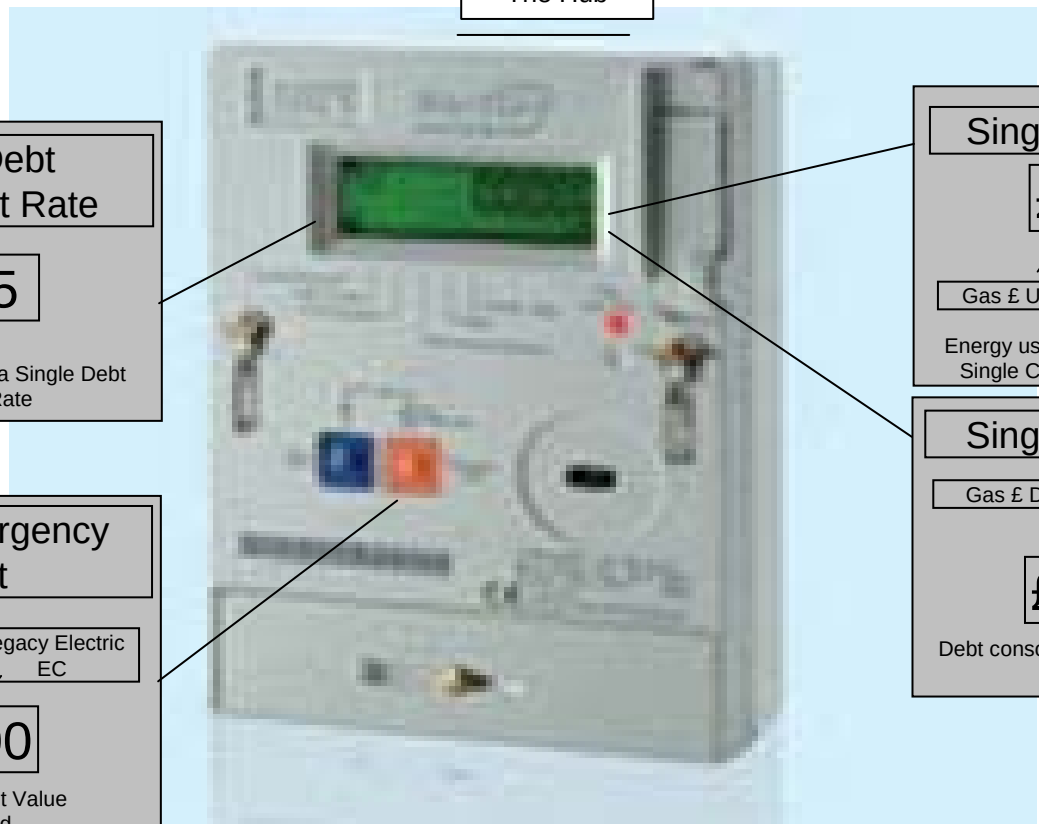
Pay As You Go Trial

- A dual fuel product aimed at customers with debt/payment problems, both from a credit & PP background
  - Change in read frequency, Channel specific measurements for satisfaction
  - Looking for changes in Debt repayment
  - Popularity of PP in Smart by specific area / channel
- Main Product Features:
  - Multiple vend options (text, internet, CDU, monthly set debit card payment and traditional ‘over the counter’ options)
  - Payments credited direct to meter, with no need for further action by the customer
  - Alerts for when credit reaches certain levels and a text message reminder sent to the customers preferred mobile phone (up to 2 mobiles) as a reminder
  - Enables the customer to pay more off any debt when they can afford to and can vary it week by week
  - Provides a single view of both gas and electricity consumption and payments so the customer understands where they are

Twirl (Dual fuel single wallet)

Twirl – Single Wallet

The Hub



Single Debt Repayment Rate

£4.25

Debt consolidated into a Single Debt Repayment Rate

Single Emergency Credit

Legacy Gas EC

Legacy Electric EC

£10.00

Emergency Credit Value consolidated

Single Cash Wallet

£22.01

Gas £ Usage

Electric £ Usage

Energy usage costs decrement from Single Cash Wallet as consumed

Single Debt Wallet

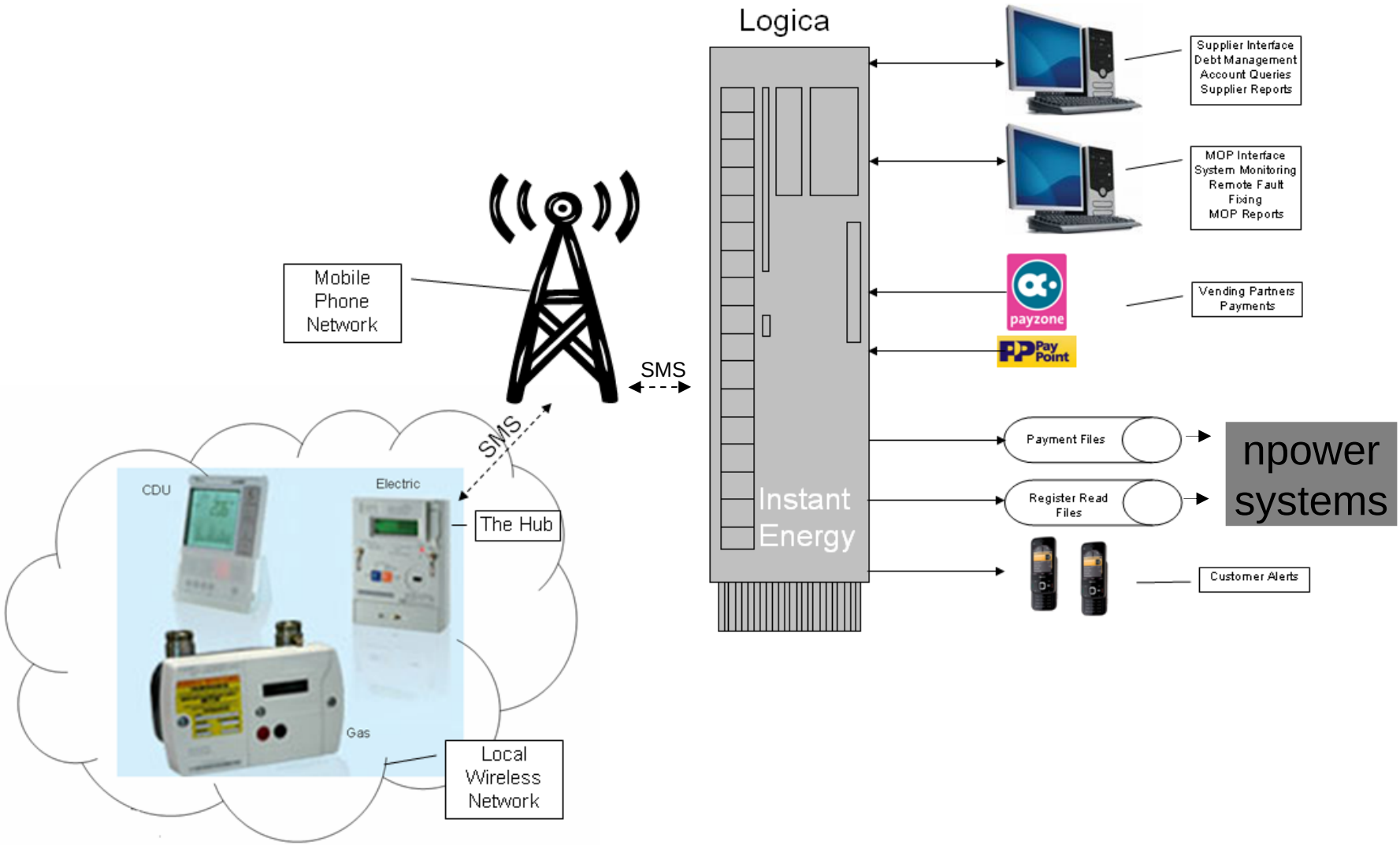
Gas £ Debt

Electric £ Debt

£96.21

Debt consolidated into a Single Debt Wallet

Twirl – End To End



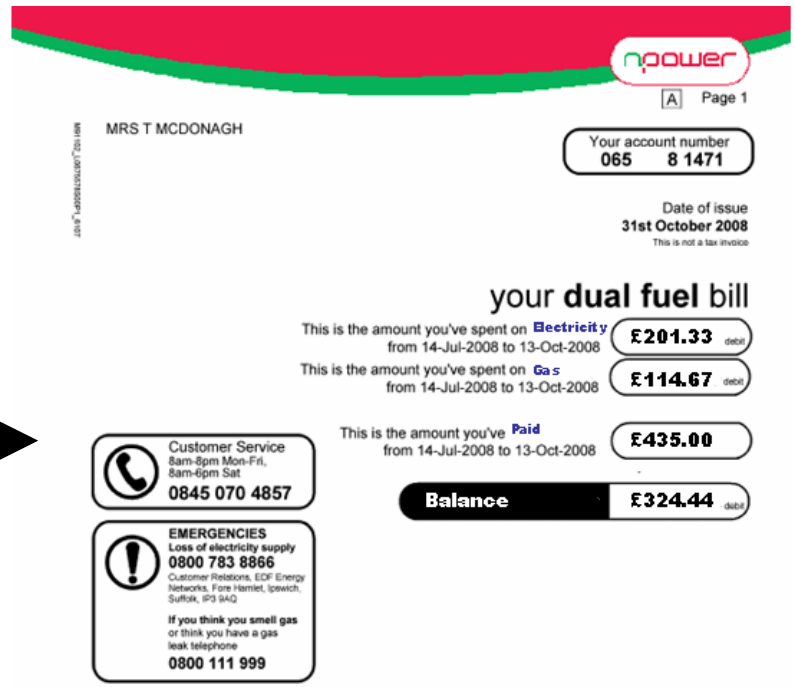
Twirl – Billing

Billing periods synchronised in IB

Standard IB Gas Account Quarterly Statement

Standard IB Electric Account Quarterly Statement

Data from these out puts is used to create a dual fuel multi utility statement



Twirl – High level results

- Assumption that Smart prepay will be more popular in smart world facilitated by greater control of energy and money
  - International experience validates this
- However, trial results do not reinforce this
- Positioning of ‘Smart Prepayment’ to credit customers not effective
- Customers are more receptive to Smart-enabled products and services if capability/services are slowly released/phased overtime.

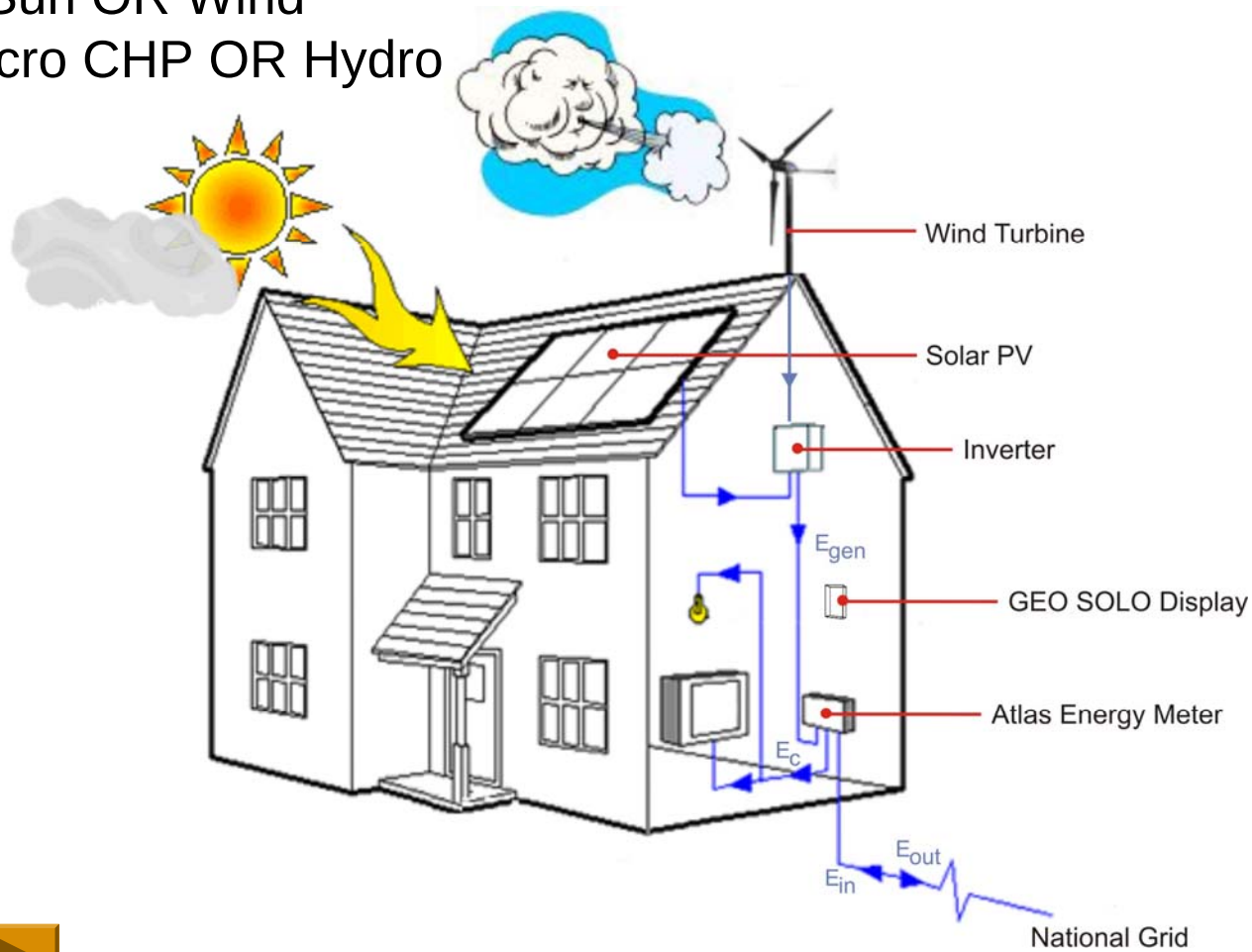
Heroes (microgen)

Micro-generation Trial

- Product aimed at customer using micro-generation products
- Trial objective: to deliver a product that will allow energy exported back to the grid through ‘end customer micro-generation’ to be accurately measured, communicated to the customer and taken into account on the customer’s bill.
- It is envisaged that the trial product will deliver a customer experience where the customer fully understands in real time:
  - how much power and energy they have generated,
  - how much they have used within the home,
  - how much they have imported
  - and that they are accurately recompensed for the amount of power exported back into the grid.

Heroes - Product

Sun OR Wind
OR Micro CHP OR Hydro



Heroes - Product

EDMI – MK7A Meter

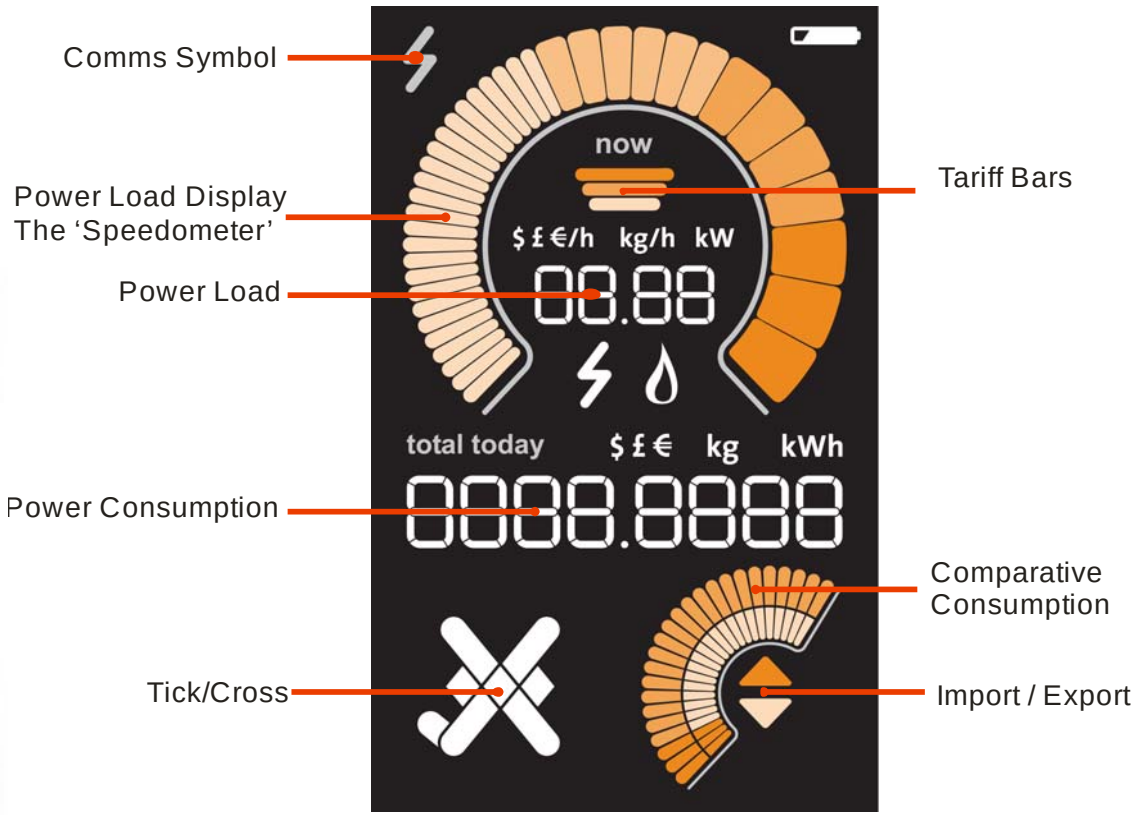
Import

Export

Generated

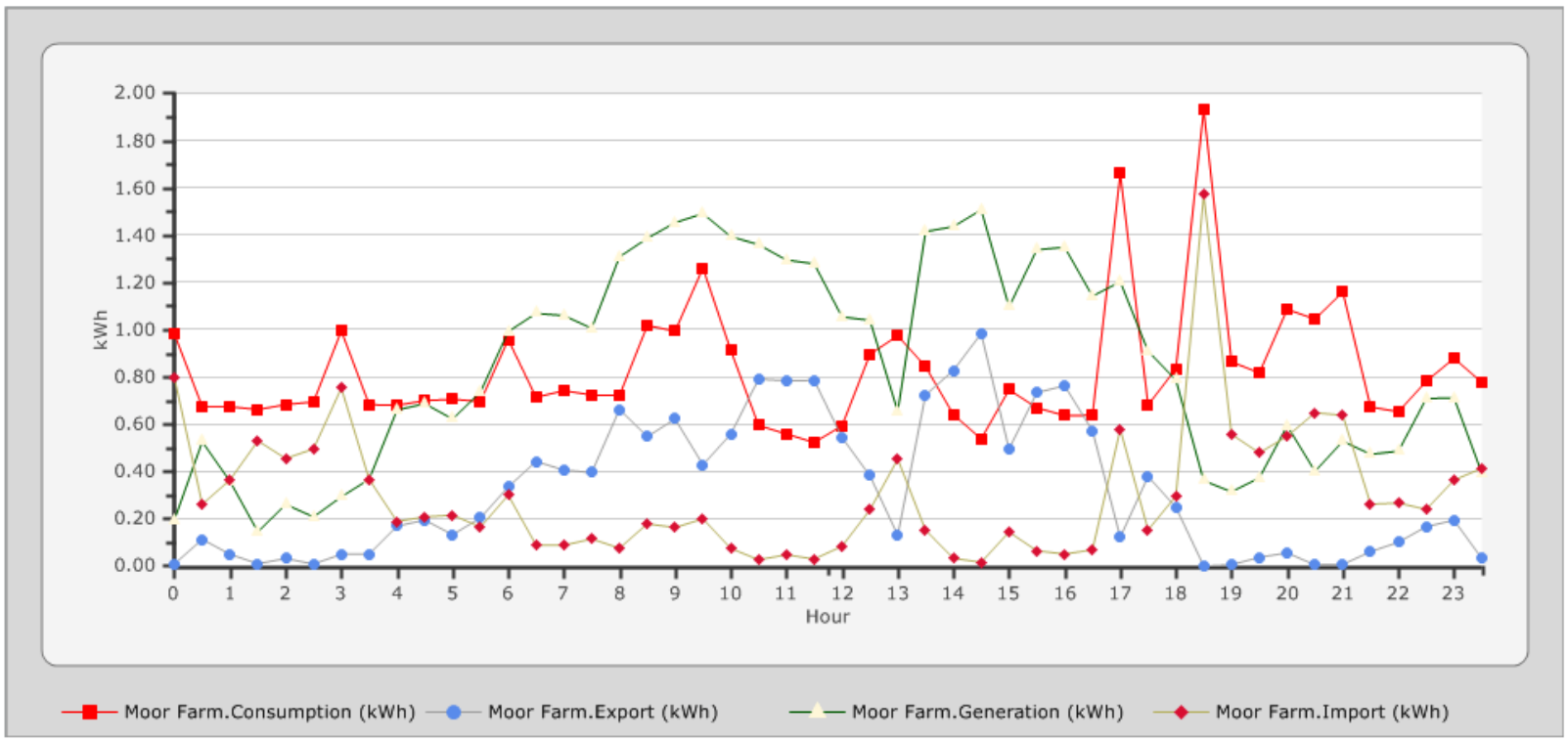
Consumption

Heroes – Customer Display Unit (CDU)



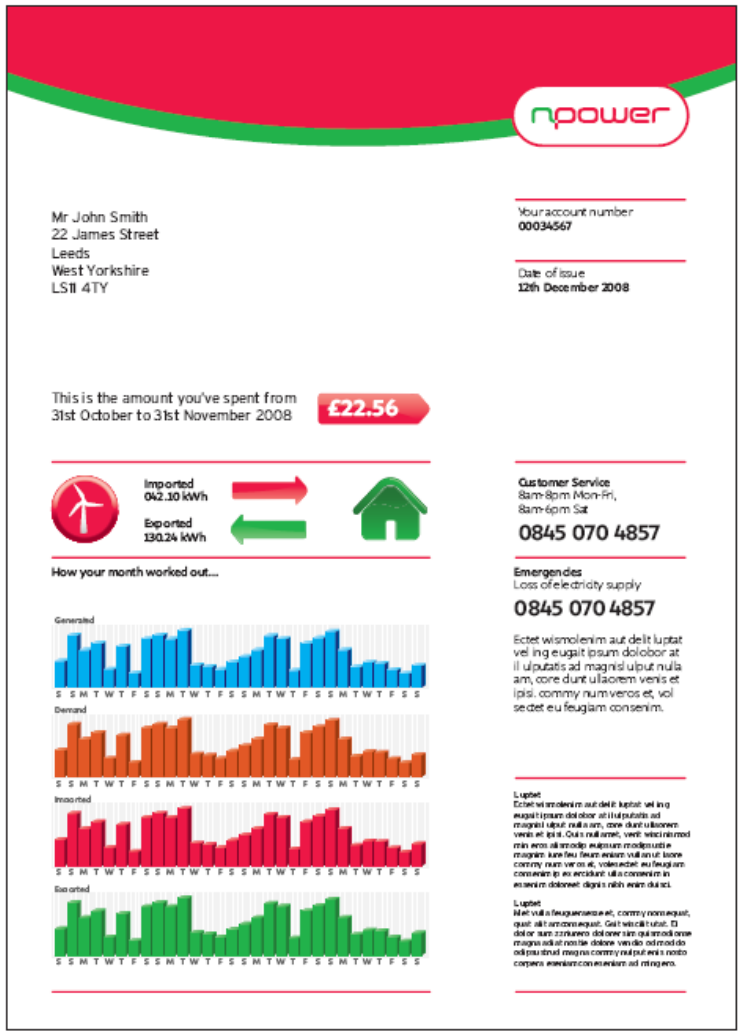
Heroes - WebAnalyser

Energy Analysis - Graphical View



27 Mar 2009 00:00 - 27 Mar 2009 23:59

Heroes – Net Bill (sample)



npower

Mr John Smith
22 James Street
Leeds
West Yorkshire
LS11 4TY

Your account number
00034567

Date of issue
12th December 2008

This is the amount you've spent from 31st October to 31st November 2008 **£22.56**

Imported
042.10 kWh

Exported
130.24 kWh

How your month worked out...

Generated

Demand

Imported

Exported

S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S

Customer Service
8am-8pm Mon-Fri,
8am-6pm Sat
0845 070 4857

Emergencies
Loss of electricity supply
0845 070 4857

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Appendix

AMPY Smart Meters

Smart Electricity Meter

Smart Gas Meter