



Smart Metering Prospectus

In Home Display

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Q1 We welcome views on the level of accuracy which can be achieved and which customers would expect, in particular in relation to consumption in pounds and pence.

- Following our trials, we believe that the likely accuracy will be sufficient for the great majority of consumers

Overall bill display (i.e. payment required), pounds - we believe that the “pounds” figure in large font is sufficient.

Overall bill display, pennies – our understanding is that the pennies figure gives confidence of accuracy but does not need to be in large font

Dynamic consumption – Our best understanding is that tenths of one penny is about right to see the amount change and not include detail of no real relevance. In our trials, the IHD displays hundredths of a penny.

kWh display– Our understanding is the kWh has little meaning to consumers at present. However we do see a benefit of smart as being a better understanding of kW and kWh, in the context both of bill (e.g. 10kWh in a day) or an event (e.g. 0.2kWh for the boiling of a kettle).

Reconciliation to bill – In our trials we have had no complaints about reconciliation of the bill to the display. Our best understanding is that a £1 difference is not noticeable and that even a difference in excess of £10 would not be regarded as sufficiently accurate. Our best expectation is that the likely accuracy of the reconciliation of the bill to the display will satisfy the great majority of consumers. We do note that impact of the time difference between the instantaneous display and the receipt of the bill is measured in days and thence pounds.

The limits of accuracy – Since the metrology for accuracy standards is currently around +/- 2%, then the need for IHD to reflect billing accuracy is more closely related to consumer confidence, than for perfect reconciliation of kWh used and kWh billed (and settled) for. Feedback from customers on the trials is that they were more than happy with level of consumption accuracy displayed.

Calorific Value – Calorific value does change every day, but we feel that the customer benefit of daily update to the CV on the meter is far exceeded by the transactional DCC cost of performing a daily meter configuration change. The billing difference from changes to CV is relatively small. We took this approach in our trials and customers expressed no dissatisfaction. It is worth noting that our smart metering trials have been taken up by a wide cross section of customers

Q2 We welcome evidence on whether information on carbon dioxide emissions is a useful indicator in encouraging behaviour change, and if so, how it might be best represented to consumers

- Based on our trial feedback we found that customers did not find information relating to Carbon Dioxide useful or meaningful



Climate change awareness – Our best understanding that consumers respond best to price/cost signals, although they do make a connection in their minds between sustainability and low bills.

Units of measurement – At this point, we have not managed to convey in our trials a unit of measurement of carbon dioxide that is meaningful to consumers. There are too many steps in the chain between global warming, climate change, atmospheric temperature, atmospheric concentration, global carbon dioxide balance, national anthropogenic emissions, annual benchmarks, consumer annual total, and consumer event total (e.g. boiling a kettle). We do not anticipate carbon dioxide being a meaningful short term measure for consumers in relation to smart meters.

Behavioural change – We believe that money is likely to be the principle communication medium for behavioural change, as well as a driver in its own right. We do believe that kW and kWh will become more meaningful measures, and that behavioural change can be stimulated by comparisons between consumption at a premise and consumption by a benchmark (e.g. properties with similar size and occupancy). Smart meters can make the connection between short term kW and kWh and annual consumption.

Q3 We welcome views on the issues with establishing the settings for ambient feedback

- About 4 kilowatts

Our trials - We performed detailed analysis when defining the requirements for our Smart Meter trials relating to the thresholds for the indicator lights on the IHD. Customer feedback has been that these have generally proved to be accurate.

Establishing the average home “green” “base load” - We defined this in terms of appliances that would always be in use or would be difficult to “switch off”. We assumed all homes had a fridge and freezer, and included a TV and a PC running for 90 minutes. We set two lights for green, with both lit for the higher consumptions within the green band

Establishing the “amber” load - Amber ambient feedback included the use of appliances such as tumble dryers, washing machines, electric kettles, hair dryers and electric ovens.

Establishing the “red” load - For the ambient display to show “red” it should reflect the use of the most power hungry appliances in a home such as power showers and ceramic hobs.

The ambient levels – We set green below 4kW and red above 6.9kW.

kW or kWh - All values are in kW rather than kWh to reflect current demand levels rather than usage over time.

Q4 Do you think that there is a case for a supply licence obligation around the need for appropriately designed IHDs to be provided to customers with special requirements, and/or for best practice to be identified and shared once suppliers start to roll out IHDs?



- No
- Existing licence conditions already protect different consumer groups

Principles- We believe that all society should have the opportunity to benefit from smart meters.

Existing Licence conditions – Existing licence conditions already protect different consumer groups, for example relating to age, disability, chronic sickness, rural and other demographic groupings, off the gas network, etc.. We do not believe that proliferation of conditions is helpful for consumer, and instead suppliers should be bound by existing conditions. These conditions apply to consumers with and without smart meters.

Overarching standards –We note that suppliers are required to observe the overarching standards, that will in practice, for certain customer groups necessitate the provision of IHDs that are appropriate for the tariffs.

Best practice - We believe that best practice will be visible and publicised and that regulation on best practice will not be necessary.

Self regulation – Self regulation has the benefit of rapid implementation, governance of change, response to consumer need, and practicality of application.

Q5 We welcome evidence on whether portability of IHDs has a significant impact on consumer behavioural change.

- Anecdotal evidence suggests that portability to an appropriate position is important

We have no formal analysis on this subject. However we have strong anecdotal evidence from customers participating in our Smart Metering Trials that being able to have the IHD in a location where it can be referred to easily was one of the key positives of the trial.

Q6 Do you agree with the proposed minimum functional requirements for the IHD?

- Yes, with one exception, which npower does not believe is in our customers' best interest.
- We believe that the provision of account balance merits further consideration

Our trials - All other requirements have been successfully supported by the npower Smart metering trials and we have received positive feedback which has been shared with Ofgem.

Consumer required action – Our experience and research tells us that first and foremost, consumers want to know what their required action is, for example to pay a bill. The account balance does not and should not provide this prompt. The billing account total and required payment amount are different figures.

Direct Debit – Customers generally prefer to have the payments evened out of the year, to more closely match their income. At any one time the account balance will be in credit or debit. In particular the seasonal variation of debt in the winter and credit in the summer is quite normal. The prescription of information on the IHD would cause confusion here, as the consumer may believe that a display of debt is a demand for payment.



Discounts – suppliers commonly offer discounts which are paid on future dates, eligibility for which is contingent on the customer still being on the tariff at that future date. This is clearly stated on the bill. Suppliers will need to find ways to communicate such discounts to customers on the IHDs and it would cause confusion if the method is prescribed.

Calorific value – the CV is received by suppliers in arrears. Change in CV will normally cause a difference of pennies in the account balance. Although CV is published daily we do not envisage updating the meter with the CV each day as there will be a transactional charge for this per meter from the DCC. These costs would outweigh the benefit to the customer of any incremental accuracy on the IHD

Customer confusion – Excessive regulatory prescription on the content on the IHD would cause customer confusion. This is a harm to the consumer and will generate contact centre traffic, and complaints. Both cost money (which flows to consumers and which is not included in the Impact Assessment), and complaint traffic would obscure the complaints that guide suppliers to other remedial actions.

Charging structures – Prepayment structures are generally simple, with a daily standing charge and a single unit charge. If standing charge is avoided by having a primary and secondary block structure, or if in future, structures such as rising block tariffs are mandated or requested, or seasonal charging is facilitated, then accurate representation of the billing components uses up more text, which may present difficulties to give sufficient information and clarity on a display.

Key information on a display. Whilst request for payment is clearly key information, the key benefit of smart meters is to promote energy awareness and management through the accumulation of costs (e.g. monthly cost), rather than the payment required at any point in time and which may not have a clear connection to a standard calendar period, such as a month.

Frequency of update - The Prospectus states that a credit customer must be updated at least once a month (more frequent if the customer requests it). This would require the ability to send balances on an ad hoc basis. Given the complexity described above, we do not believe that this should be prescribed, but instead left to competition.

Intermediate solutions – Whilst billing information can be “pushed” through the DCC, this has transactional cost implications for consumers, and in general, the more money information that must travel through the DCC, the more security must be built in.

Transactional charges – We expect the DCC to apply a transactional charge that is in keeping with its costs. Any transaction flow costs money, particularly if a large transaction flow causes capacity to be built in the DCC.

Privacy – There are privacy considerations. It may be that the bill payer does not want this information visible in the home. Whilst configuration possibilities are a potential answer, they come at a cost. For a consumer to hide an IHD for privacy reasons would cause a detriment to their smart meter benefits.

Security – the passage of financial information through the DCC, meter, HAN and IHD has some security implications.



Q7 Do you have any views or evidence relating to whether innovation could be hampered by requiring all displays to be capable of displaying the minimum information set for both fuels?

- We do not envisage a hampering of innovation from this requirement

Our trials – we have experience with taking an “off the shelf” IHD and customising it to support an RWE npower product specific display requirement.

Positives of the requirement - It seems possible that the requirement to support both fuels may actually drive innovation for IHD manufacturers.

Q8 Do you agree with the proposals covering the roles of and obligations on suppliers in relation to the IHD?

- No, they are generally too prescriptive

Supplier’s responsibilities – We accept that suppliers are in a position of responsibility, and that it is appropriate to require the provision of certain information. Suppliers are the key point of contact for energy consumers regarding consumption

Obligations and prescriptions - The extent of the information that suppliers must provide is now very wide and the degree of prescription is increasing. Whilst the requirements and prescriptions come from fragmented sources, suppliers have to make sense of it all to the consumer. In general, the more information that suppliers are required to provide, the less appropriate the degree of prescription on its medium and format.

One IHD and the Lead Supplier – We are generally concerned about the Lead Supplier concept, but we do believe that one IHD for two suppliers could be workable. This is because the first supplier requires everything to work anyway, whilst the second supplier “just” needs to ensure that the second meter can connect to the IHD (which is must do anyway).

Two IHDs. It may be that the second supplier successfully offers an enhanced IHD functionality, such as remote top-up. It may be that two IHDs creates more ultimate choice for the consumer or that it may suit all parties for the second, higher function IHD, to become the single IHD.

When considering the provision and maintenance of the IHD, especially in conjunction with the Lead Supplier complexities it is our belief that further, more detailed discussions are required. npower believes that the expert groups under the supervision of the SMDG are the best forum for this issue.

Cost – The greater the required minimum functionality, the greater the cost of the most basic unit. We expect the cost of the basic unit under current expectations of minimum functionality to be closer to £25-£45 than £15, with functions supporting Prepayment adding a further ~£10 and microgen ~£50-£70. These figures are highly indicative and refer to relatively small volumes and hence depend on the degree of differentiation of IHD that will in practice be delivered.

Warranty to consumers– We believe that the proposed approach, that suppliers provide a one year warranty, is sensible. Any arrangements that suppliers may enter into relating to



the period beyond one year after installation, should be left to competition between suppliers to drive best practice in consumer care for managing malfunction of the IHD. Broadly speaking we do not expect consumers to wish to communicate with manufacturers

Plug and play – Plug and play capability is highly desirable from the perspective of both supplier and consumer. We believe that such capability should not be mandated, and instead left to competition, although we think that the responsibility of the lead supplier to facilitate plug and play capability for the second supplier, should be worked through.

