

I apologise for missing the deadline for consultation, but attended the ETSA Smart Meters session yesterday, and understand there is a short deadline extension for attendees.

I am unable to respond to the specific questions in the consultation document, as the foundation assumptions made in the prospectus are deeply flawed, and this makes the whole project wasteful and damaging. Given the fundamental nature of the flaws, much of the huge volumes of paperwork becomes meaningless. The project was deeply flawed and wasteful even before an acceleration by the present government. Even if their belief that the project could bring benefit is not mistaken, an accelerated project removes the possibility of correcting even the most basic of errors as the programme progresses. If the flaws in the assumptions become even more evident, there is little possibility of adjustment, so an even more flawed system would be rolled out. The project is better cancelled now, and thoroughly rethought.

So it seems appropriate to articulate some of the flawed foundations.

The first, and most fundamental, is the assumption that there is a competitive retail electricity market in this country. Consumers do, it is true, have means for choosing among six Vertically Integrated Large (multinational) Energy companies, or VILEcos. These VILEs behave oligopolistically, so that for any particular household, the cheapest will vary almost month by month. The only reasonable certainty is that those who were once monopoly incumbents will charge more in their home areas.

There are a couple of niche suppliers, who make a strong ethical and low carbon stance. Any other choices between tariffs or suppliers are likely meaningless, and it needed strong (and long delayed) intervention by OFGEM to stop the clear mismarketing by the VILEs of supposedly "green" tariffs. Often consumers are worse off after a switch.

This does not mean that something approaching a competitive market in retail electricity is not possible. It requires liquid, balanced, and equitable wholesale markets, and a balancing mechanism that does not place huge cost risks on suppliers. Since it is only large generators who can play in the BM market, it is they who gain from the suppliers risks, and so only they who can hedge suppliers. By its flawed design of the BM market, and by allowing generators to own suppliers, OFGEM has destroyed any possibility of effective retail competition.

A competitive market also requires sensible ways by which suppliers can react to short term changes in the electricity market. That is, they need to be able to influence their consumers to adjust the overall demand to contribute to balance, so the system does not depend exclusively on high carbon large generation plant for balance. Intelligent and dynamic pricing, and so meters that can support this, are vital.

Yet the project and meters proposed place additional positive barriers in the way of such intelligent behaviour by suppliers and their consumers. It becomes even more difficult for suppliers to implement mechanisms to influence their consumers in desirable ways. An independent supplier, by encouraging such behaviour among its consumers, would, under today's systems face additional cost risks, and the benefit would go almost exclusively to its competitors. Nothing in the project addresses this extraordinary perverse incentive.

This perverse incentive arises because it is not possible to reliably and accurately attribute electricity generated to the various suppliers whose consumers are connected. A common shared channel is used for transport, yet the metering does not provide the information necessary to make the attribution. Currently, this is resolved by profiles, which are measured by sampling a few consumers, and used to attribute consumption to the suppliers according to the profiles of their consumers. Adjustments are made as meter readings become available. Consumers who depart from profiles,

however benign their behaviour, increases uncertainty and so make prediction harder. Departures from predicted aggregate consumption are heavily punished.

Smart meters with attendant (intensive) processing of half hour data do serve to reduce the uncertainty, but do not eliminate it. There are no arrangements to "socialise" this uncertainty, so it remains a cost a risk to suppliers. I have found no material in the prospectus that deals with this matter and ensures that the project will address this.

Today's electricity wholesale so called markets do not include any significant players who would benefit from lower or more appropriate prices to consumers. It has become a mechanisms for "real" electricity prices to be disguised and hidden from all but insiders. Such competition as they may be in no way translates into benefit for consumers.

Yet a competitive retail market depends upon transparent, comprehensible and competitive wholesale markets.

A competitive retail market also depends upon transparency of the costs that make up tariffs. So that, for example, the costs of local distribution services, the costs of metering, the costs of various obligations, such as the renewables obligation, are visible. Yet suppliers are obliged to make many of these costs opaque.

The most damaging is the hiding from consumers the costs of their local (and monopoly) distribution companies. This is a cost that does not change when a consumer changes supplier. (Or at least should not change - if it did, there would be the possibility of transfer pricing between regulated and competitive entities under common ownership, and so cross subsidy and so the undermining of competition). It is fixed. It relates to the capacity of the cables delivering electricity, and these costs do not vary with the volume of electricity delivered. To hide this cost from consumers, suppliers have to **allocate** this cost to various aspects of the electricity consumption tariff, perhaps as a higher tariff on a first fixed block of consumption or as standing charges. However it is done, the per kW rate has to cover other costs that do not vary with consumption. So, even if the smart meter is able to reflect the current per kW rate, this is not reflective of the competitive costs, and will mislead as to savings a householder might achieve by consumption reduction.

Almost equally damaging are the Obligations on suppliers. Currently primarily the Renewables Obligation, this will be extended to the obligation to pay for everybody's meter. Obligations place extra costs on suppliers, often for public good and benign purposes, and the suppliers have to recover these costs from their customers. However, there is no obligations on suppliers to collect these costs in a fair way. They will quite justifiably use whatever charging approaches they can. In general, this means that the poorest and most vulnerable, with least negotiating strength, will pay more, and the better off, in stronger negotiating positions will pay less. So it is effectively a regressive tax, collected by what are arguable the least trusted institutions in the country - the VILES.

If, as appears evident, there is no effective competition in retail electricity, then it behoves OFGEM to scrutinise very carefully the proposals the oligopoly of VILES put forward, and behave in their claimed role of protector of consumers to ensure that the project will benefit consumers, not just allow VILES to enhance the income they collect from consumers, and perhaps to do so without enhancing their own efficiency or delivering any public good. The prospectus falls short in two major respects.

First, there is little reliable evidence that just making the consumption visible to consumers, even if associated with accurate tariff costs, will make a significant or useful difference in consumption. Yet this is the major justification for the project. If efficiencies are achieved, then it will undoubtedly be a minority of consumers where the savings arise, and it may be that these come from people who are already vulnerable. Classically, some form of 80:20 rule will apply. So 80% of the saving will be achieved by 20% of consumers. So 80% of the investment in the meters will achieve nothing. In general, the 20% can be identified in advance, and the 80% of wasted costs avoided.

There is no evidence in the prospectus of any attempt to detect those consumers who will benefit, nor to avoid the "80%" of the costs that achieve no benefit to consumer or society. The working assumption is that all consumers must have the same meter, and the same communications. Such an assumption serves to provide a consumer substantial subsidy to the VILEs so that they get the benefit of universal rollout.

There is no obligation on suppliers to ensure that the consumers who do provide the energy saving benefit proportionately. This may well discourage unrewarded consumers to abandon their efforts.

Secondly, there is no evidence that the structure of the rollout is able to support more extensive energy saving or load shifting capabilities. This omission can result in very substantial avoidable investment (£10s of billions) in fossil fuels CO<sub>2</sub> emitting plant. The resulting system may be able to do so, but there is nothing in the prospectus to enable this, so it would be pure luck if it happens. Indeed, the desired system is unlikely to be in the commercial interest of VILEs so very great luck is needed.

If anything approaching the low carbon targets the Governments has espoused are to be achievable, this will require electricity generation to be almost wholly decarbonised. This can be achieved only if renewable resources such as wind and perhaps solar, provide the vast majority of the generation. Wind and other renewables are variable and uncontrolled. Nuclear is fundamentally inflexible. Advanced low carbon coal plant with CCS is also likely to be inflexible, as well as leaking at least some 20% of the CO<sub>2</sub> formed. So there are two viable alternatives: have and use gas fired flexible generation (and so emit CO<sub>2</sub>), or persuade demand to vary according to available generation. Unfortunately, any gas fired plant will have low utilisation rates, as it is only when the wind is not blowing that it will be needed, so this is a very expensive (as well as CO<sub>2</sub> intensive) option. The alternative of enabling demand to shift according to available generation has potentially huge national and consumer cost benefits.

Yet the prospectus says nothing about how this might be done, beyond some hopeful and unsubstantiated statements that "flexible tariffs will be enabled." What sort of flexible tariffs, and will the communications infrastructure provide the capability to implement adequate flexible tariffs? Winds output can only be predicted reliably a few hours in advance (about 4), so there is the possible need for universal tariff adjustments as frequently as hourly. Where in the prospectus is a capability such as this made a requirement?

The vast majority of flexible load will come from battery vehicles, who will be significant consumers, and provide much of the growth in electricity demand. So it would be appropriate to target smart meters for their (hoped for) role in influencing this demand. Is there evidence that the smart meter will meet these requirements? Would the programme not better be directed towards consumers who will have battery cars?

For loads to be flexible, they need to plan. That is, they need a view of the future. This view of the future can be limited to a view of expected future prices, and this would allow them to minimise the cost of their consumption while meeting the needs of their owning end users. Users could readily instruct a device, such as a dishwasher, to be "urgent" or "cheap", and, if the prices were also optimised, this would enable a supplier to plan the demand that their customers will create, and so optimise their buying strategies. There is no evidence that the meters and systems promised in the prospectus would enable such "smart" behaviour by white goods, or cars, or give the support suppliers would need to implement it.

What we risk instead is that the VILEs will be able to justify charging consumers for meters that serve mostly to reduce their overhead costs, but are quite inadequate to provide what is needed to make loads flexible. In the absence of such flexibility, VILEs will be able to make a case for subsidy of low utilisation gas plant (which they would open and operate).

This seems about as far from a desirable outcome as it is possible for a project claiming to deliver social benefit can be.

Better to cancel it now, before wasting resources making a bad situation worse, and do some serious rethinking as to what it is desirable to achieve.

Do feel free to publish this response if you wish to.

Regards

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