Smart meters will help cut carbon

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If gas, electricity and water became 100 per cent smart metered, a multitude of benefits would ensue. It is estimated that changes in consumer behaviour would drive 5-10 per cent energy savings. Time of day and interruptible tariffs would be enabled, paving the way for charging electric vehicles. Consumers would have the option of remote controlling their homes, they would get accurate bills, and they could exploit microgeneration opportunities. Suppliers would get fewer call centre queries and would no longer have to handle manual meter reads, prepayment cost to serve would be cut, debt management would be improved and energy services companies encouraged. Networks would benefit from better targeting of investment and earlier warning of outages. Generators could optimise plant based on real-time demand information.

Yet despite this long list, the viability of this investment in smart meters remains hotly contested. Why? It is true that implementation costs are uncertain, and so is the value of the benefits. But by far the most important reason is that most smart metering evaluations do not factor in the avoided costs of what will otherwise have to be spent fighting climate change.

The Stern Report estimated the cost of implementing measures to successfully mitigate climate change at 1 per cent of GDP. However, the cost of not investing in mitigation initiatives was evaluated as being at least five times this amount – 5-20 per cent of GDP.

So how should this situation be remedied? Rather than valuing carbon at its level in the European Emissions Trading System (ETS) – which reflects the marginal cost of meeting the imposed cap on carbon emissions – we should place a value on it that reflects the value to society of avoiding the costs of climate change. At a push, one could argue that the current value of carbon represents the 1 per cent investment cost of taking action now to avert the worst effects of climate change. What it definitely does not represent is the cost of dealing with extreme climate change if we fail to mitigate it.

On the basis of the Stern analysis, one could argue that the costs of failing to address the problem are five to twenty times greater than this. So one could argue that when looking at carbon reduction options we should use a figure five to twenty times greater than the current cost of carbon as indicated by the ETS market price. This may be overkill, so using a carbon value of two to three times the current ETS value seems a pragmatic and reasonable option. Indeed, the recently announced government decision to do just this for heating and transport over the time period 2020-30 reflects this logic.

The government would have to guarantee a carbon price of this order. Logically, this would be funded through a levy on carbon. There would be four main outcomes from such a measure. Investment in carbon reduction measures would grow as required to mitigate climate change and renewable energy industries would be stimulated. These are both welcome outcomes. Energy, and potentially water, prices would rise: we calculate bills would go up by between £70 and £140 a year, although this would be offset by consumption reductions. We believe the public would accept this to avoid the extreme costs of failing to address climate change.

Lastly, fuel and water poverty would rise, all other things being equal. This is clearly unacceptable and means that all other things could not be kept equal. One option worth considering would be for the state to pay a proportion, say half, of the bills of the fuel and water poor.

In conclusion, if we wish to mitigate climate change, we need to invest in smart metering, since it has so many positive impacts. We also need to invest in renewables, nuclear, carbon capture, and in the energy efficiency of the housing stock and so on. Without all these investments, we will not reach our 2050 targets.

The current methods of evaluating initiatives to get us there stand in the way of progress because they do not take into account the cost of not mitigating climate change. The key is the price of carbon.

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