It’s been a busy few days for Ofgem.

As most of you will have seen, we made an announcement on Monday outlining our plans for the retail market.

We are taking action to make it less of a hassle, particularly for those on poor value standard variable tariffs, to switch to get a better deal now and in the future.

In some ways the “future” has already begun.

With the roll out of smart meters, we have already begun the journey from a dumb to a smart, data rich energy system.

We are already starting to see more tariffs, products and services on offer.

But this is only the beginning - there will be far bigger choice for consumers and new ways for them to engage in the market.

From passive recipients at the end of the supply chain today, in the future consumers have the potential to become active, empowered agents at the heart of a system which works for them.

What the market looks like will be determined in large part by the choices consumers make.

It's important to say from the outset that Ofgem does not have all the answers.

Predicting consumer behaviour in five or ten years’ time is extremely difficult.

Some new services or business models which sound like certain winners will flop. Some hits will be unexpected.

For consumers too, there will be winners – and potentially losers, including vulnerable households.

I will return to the issue of how we protect the more disadvantaged as we move towards a smarter more competitive market towards the end of my speech.

So today is not about Ofgem telling you how the “future consumer” will be behaving in five or ten years’ time.

It’s more about us asking the right questions.

And we'll be listening carefully to what you have to say in the discussion groups and panel sessions about how we should prepare for this exciting, but unpredictable future.

I'm now going to set out some of the broader trends that we think will be important in shaping consumer behaviour.

Smart meters will act as the gateway to enable other household appliances and services to change how and when people use - and sell - power.

Time of use tariffs, smart appliances and battery storage should allow consumers to manage their demand more flexibly.

Homes which have solar panels on the roof, storage batteries in the garage and electric cars in the drive will be able to sell surplus back to the grid when it is needed.

Some of these homes may even choose to go off grid altogether.

Smart meters, combined with half hourly settlement, should also transform how suppliers interact with their customers.

They will give suppliers, for the first time, accurate, real time data about how much energy their customers use, how and when.

Processing this so-called "big data" will allow suppliers to segment the market much more effectively by targeting specific tariffs, products and services at different groups.

Smart gadgets in the home which can be turned up or down or storage batteries charged or discharged can be harnessed to provide demand side response.

Their owners are likely to be rewarded with lower tariffs, good value time of use tariffs and other extras as a result.

The potential for information-based services to change people's behaviour is huge, as the popularity of "fitbit" personal fitness bands have shown recently.

But the impact of innovations like smart meters and time of use tariffs on long established habits of energy consumption has yet to be fully tested.

As I never tire of saying, energy is an essential service, not an optional extra. So some people may not be prepared to compromise on when they want heat or light.

Earlier this year, Western Power Distribution published the findings of a trial of its "sunshine tariff" time of use tariff among a group of households in the south west, incentivising them to use electricity during daylight hours with a lower rate.

The trial showed that the households which had automated devices such as a timer on their hot water immersion system shifted more of their energy consumption than the group which had to remember to turn off lights and devices manually.

Such early trials tell us that automated devices are likely to play a bigger role than changes in behaviour on their own.

Consumers may no longer interact only with suppliers in the future.

We expect to see a breakdown in the traditional relationship as price comparison websites and other third party intermediaries increasingly deal with consumers directly.

Some consumers may go even further and sign up to a "concierge model" which switches on their behalf.

More and more, suppliers will be supplying services rather than just units of energy.

In the future, consumers could choose to pay their supplier to maintain their thermostat at a certain temperature instead of paying for each unit of energy used, leaving it to the supplier to find the most efficient way of doing so.

So what's Ofgem's role as we move to a smart energy market?

Part of our job is to put the building blocks in place to facilitate these changes.

For example, we are working with industry to overhaul industry systems to make switching more reliable and faster.

We have already made big changes this year for businesses and for those suppliers to domestic consumers who want to settle their customers half hourly, which will enable smart meters to become fully "smart".

In the coming weeks we will also announce the results of our joint consultation on flexibility with the Government looking at issues like how to unlock the full benefits of storage for consumers.

In the retail market, as I've mentioned, we are taking action to help households, as well as microbusinesses, get a better deal.

Part of our job is also to get out of the way.

We have already adopted a more principles based approach to regulating the retail energy market to allow innovation to flourish while ensuring suppliers treat their customers fairly.

I talked earlier how there will be winners, and potentially losers, as we make the energy transition.

At the moment, the differential in energy prices people pay is fairly binary - between poor value standard variable tariffs and cheaper fixed deals.

In the future, it won't just be switching which determines how much you pay.

The most engaged customers who install the latest gadgets and technologies, as well as switch, will be able to save even more money.

Let me be clear - we want to make it as easy as possible for people to engage in the market and benefit from these new technologies.

But not everyone will be confident enough or able to afford to install a storage battery or solar panels.

Many households, particularly the vulnerable or the elderly, may not be able to shift their consumption patterns to benefit from cheaper off peak rates.

Ofgem has a duty to protect vulnerable consumers and as part of Monday's announcement, I set out new work to do that.

One option we will consider is introducing a safeguard tariff so that they do not pay too much for their energy.

We will be holding a summit with consumer groups this month to explore what protections to put in place.

It's worth pointing out under the "dumb" energy market model, the cost of producing energy is already socialised in some way, although arguably more by accident rather than design.

The vast majority of households are still charged the same for a unit of energy regardless of how much it costs to produce at any given time.

As we've discussed, this will change with the advent of a smarter market and time of use tariffs.

But this poses a question for society more widely. Should lower energy prices which result from these new technologies only be enjoyed by those who adopt them?

Or should we distribute the benefits more widely across society and socialise some of the costs – and benefits - as we already do to some extent?

And if so, how would we do this without losing the incentive to innovate and adopt these technologies in the first place?

These are just some the questions I'd like you to all think about this morning.

I'll leave you with one final thought.

At the beginning of my speech I said that consumer behaviour is key.

In the past, technology has constrained consumers from interacting in the energy market.

In the future, the possibilities from new technologies and innovation will be vast.

The extent to which consumers are able or willing to take advantage will be key.

I've said before that it would be a missed opportunity if most smart meters are left untouched gathering dust under the stairs.

The same goes for all the other technological innovations we will be talking about today.

If consumers instead embrace these new technologies and actively engage, it could save billions of pounds on energy bills.

So let's make sure we bring as many future consumers as possible with us on this journey to a smarter, more competitive energy market, whilst making sure adequate protection is in place for the vulnerable.