ofgem **Theme 4**

Ensuring a secure and reliable gas and electricity supply

Sustainable Development Indicators

The UK Government and Devolved Administrations set out a strategy for sustainable development, *Securing The Future*, in 2005. Drawing on this framework and stakeholder feedback, we focus on the five themes which we think capture how the Gas and Electricity Markets Authority should contribute to the sustainability challenges of the 21st century.

The fourth of the five themes is ensuring a secure and reliable gas and electricity supply. Our regulation of the electricity and gas networks, and our commitment to sustaining a regulatory environment that supports investment, underpin our goal to ensure that cost-effective, reliable and diverse energy supplies are always available to consumers.

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Indicator 12: Reliability of supply – network performance

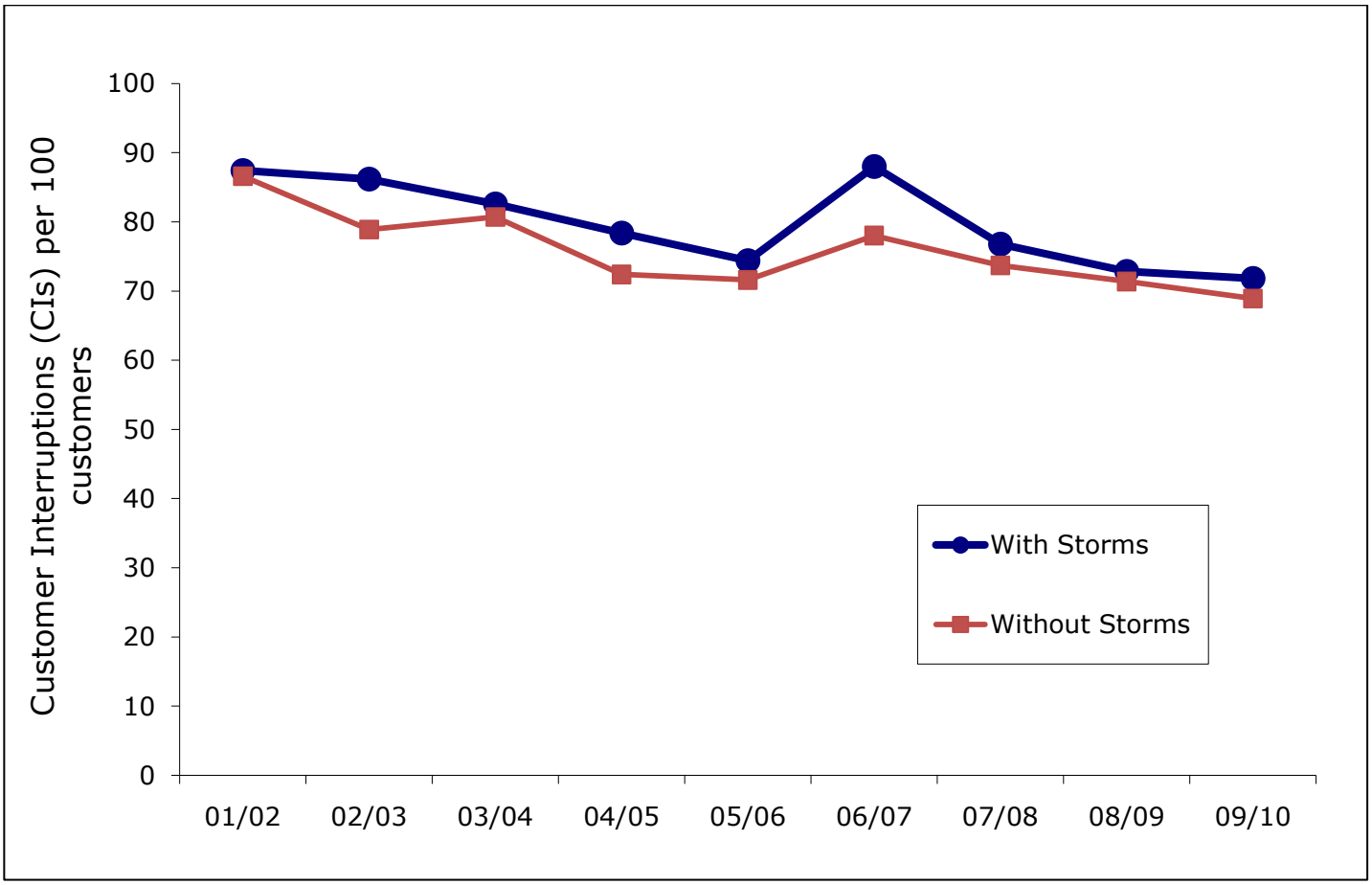

Figure 20 - Average electricity customer interruptions (CI) per 100 customers
Source: Ofgem

The average number of electricity customer interruptions has fallen for the past 3 years. In the 2009/10 reporting year there were 17 fewer interruptions per 100 customers than in 2001/02 when quality of service incentives where introduced.

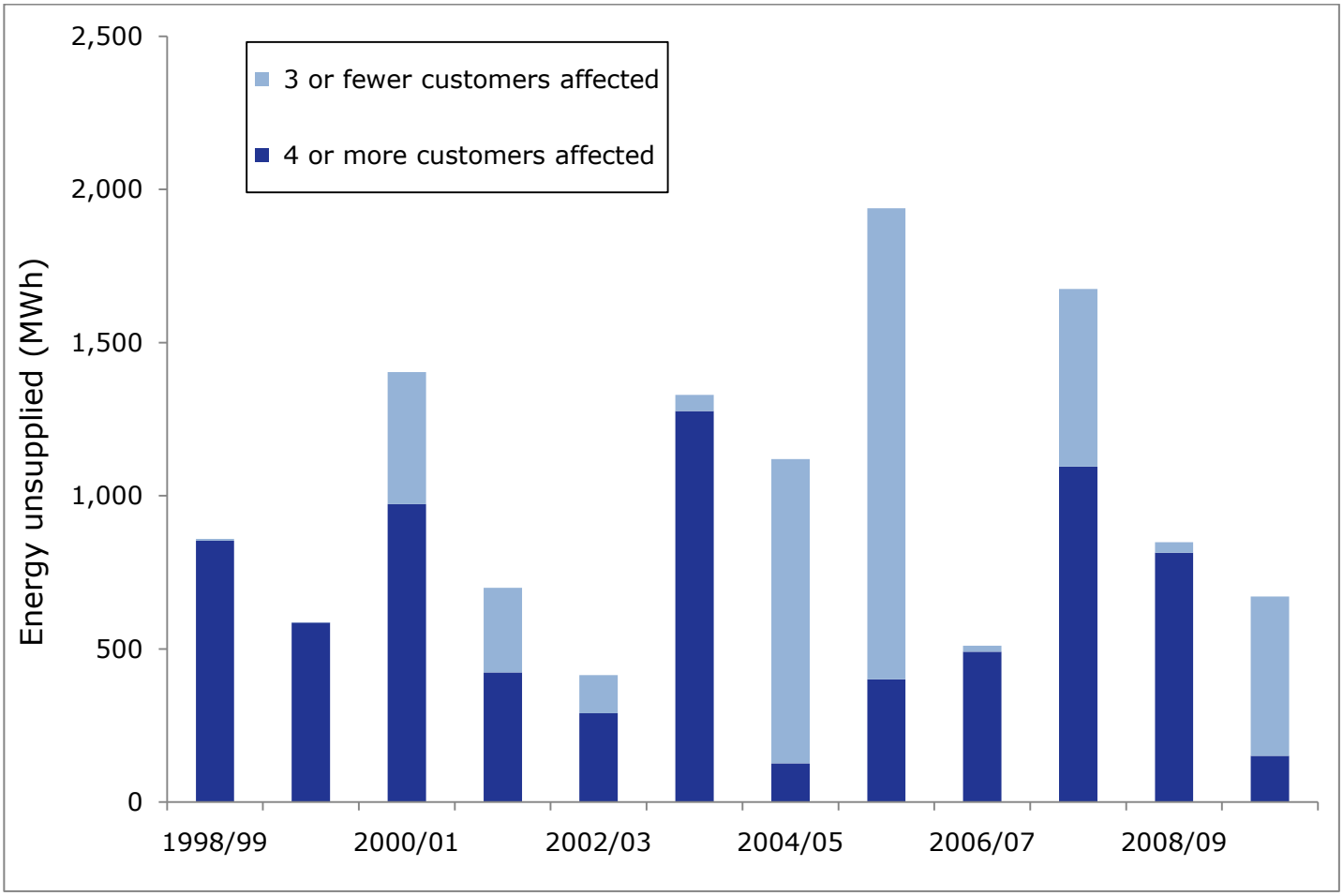

Figure 21 - Energy unsupplied due to transmission network faults
Source: Ofgem

There has been a large reduction in energy unsupplied to 4 or more customers in the last year. The power cuts that occurred this year typically affected fewer customers. The reliability incentive under the Transmission Price Control was created to keep the amount of electricity unsupplied due to transmission network faults low. The electricity unsupplied represents a small percentage of total energy supplied, often less than 0.001%.

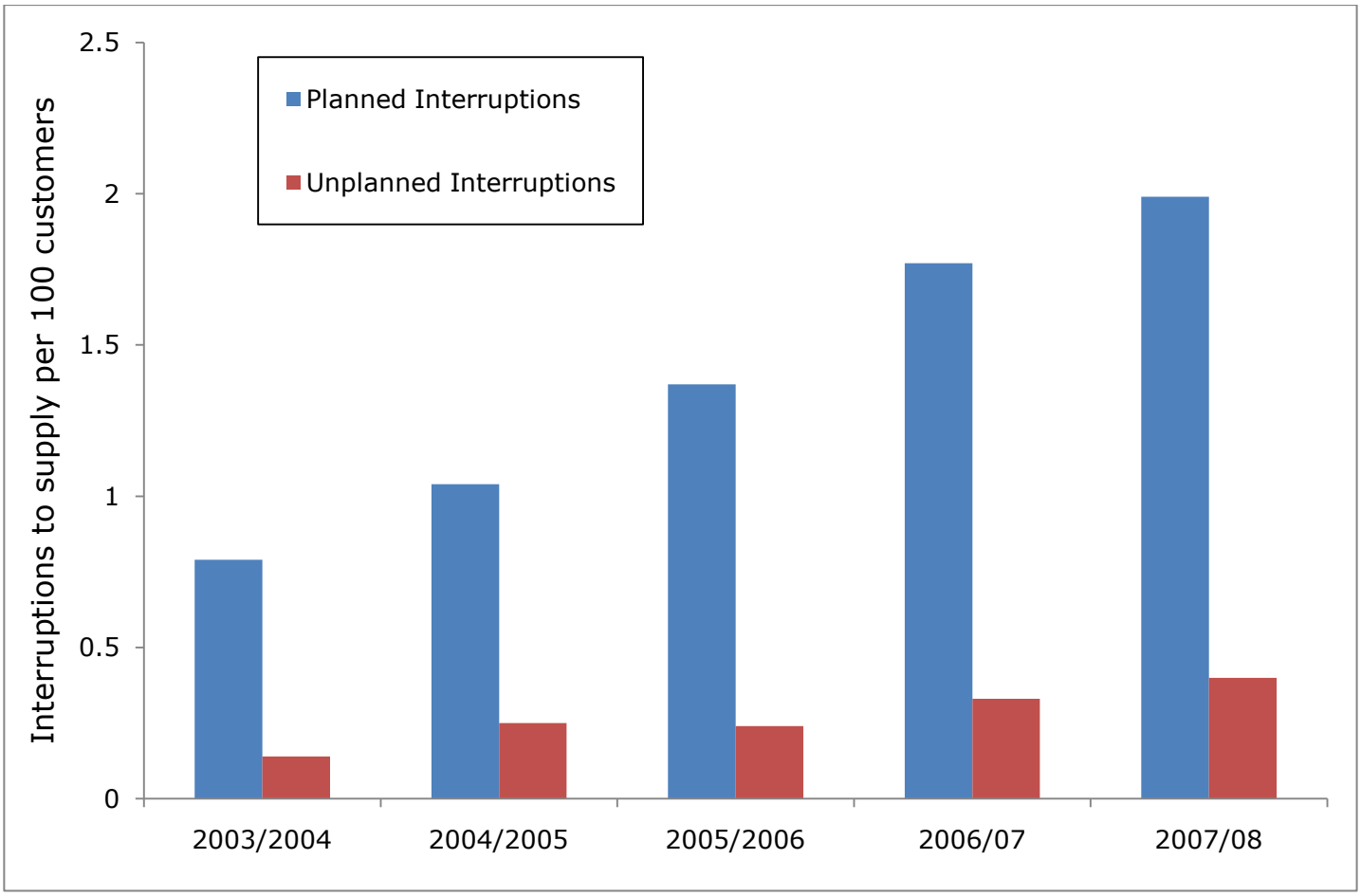

Figure 22 - Average gas customer interruptions per 100 customers
Source: Ofgem

This chart has not been updated since last year due to data availability. We hope to provide an update on this in the near future.

The trend of increasing planned interruptions to the gas supply is due to the ongoing replacement of old iron gas mains for new polyethylene pipes. This replacement programme is a major long-term project to improve the safety of the gas distribution network and reduce the incidences and amount of gas leakage.

Indicator 13: Security and diversity of supply – market response

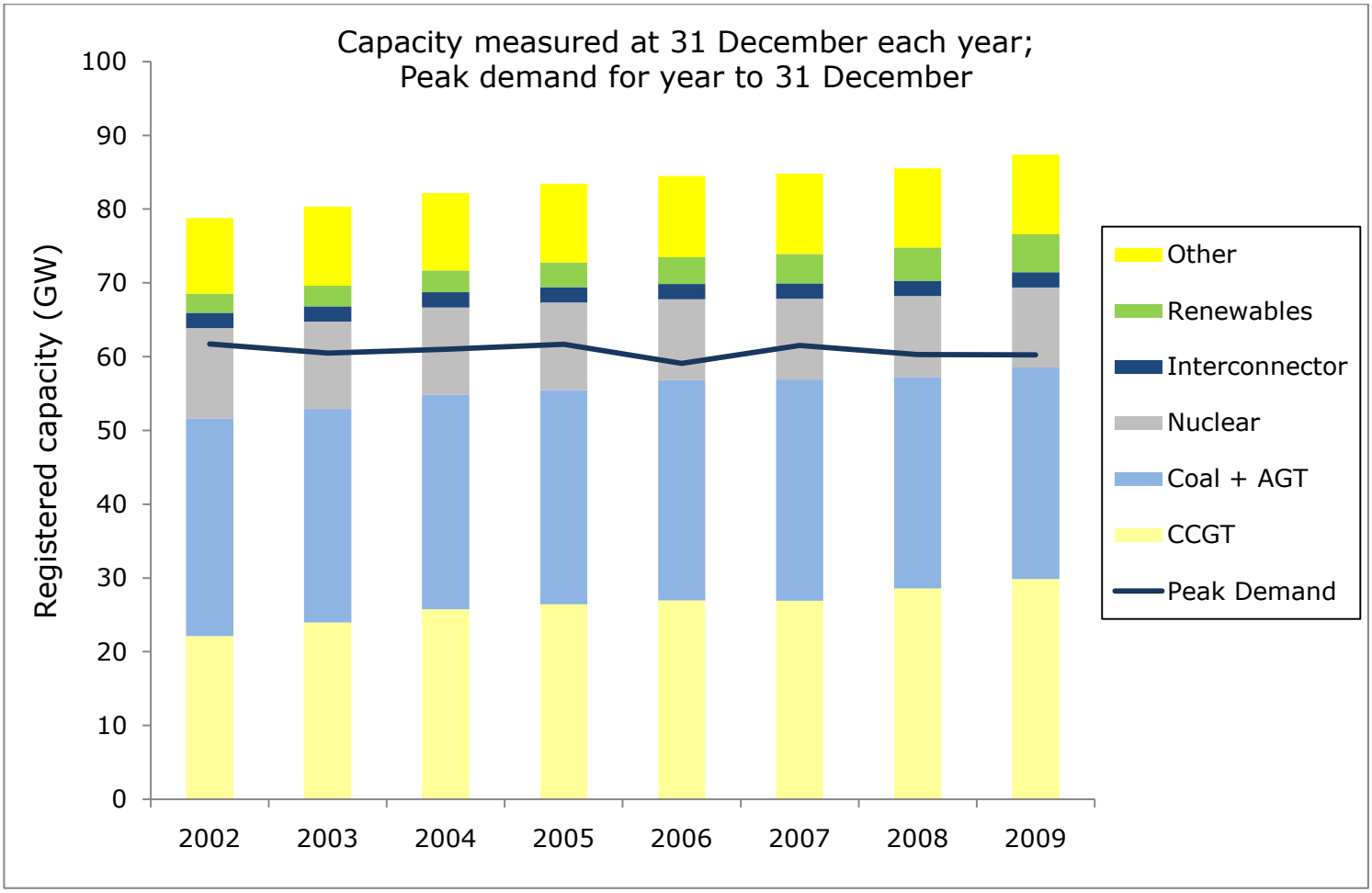

Figure 23 - The UK electricity generation mix
Source: DECC DUKES

There is now more gas fired (Combined Cycle Gas Turbine) generation capacity than coal fired and AGT (Advanced Gas Turbine) in the UK. Renewable generation capacity is also increasing as more projects come online. However, electricity production by technology differs from capacity shares as some sources, such as nuclear, generate almost continuously whereas others only generate when demand, and prices, are higher. Some renewable technologies, in particular wind, generate intermittently due to fluctuations in the natural resource.

The UK's maximum demand this year represented 77 percent of all registered generation capacity in 2009. While capacity margins are currently high by historical standards, this decade will see significant changes to the electricity market with the closure of a number of coal and oil fired plants that are considered too polluting by modern standards and nuclear plant that are coming towards the end of their working lives.

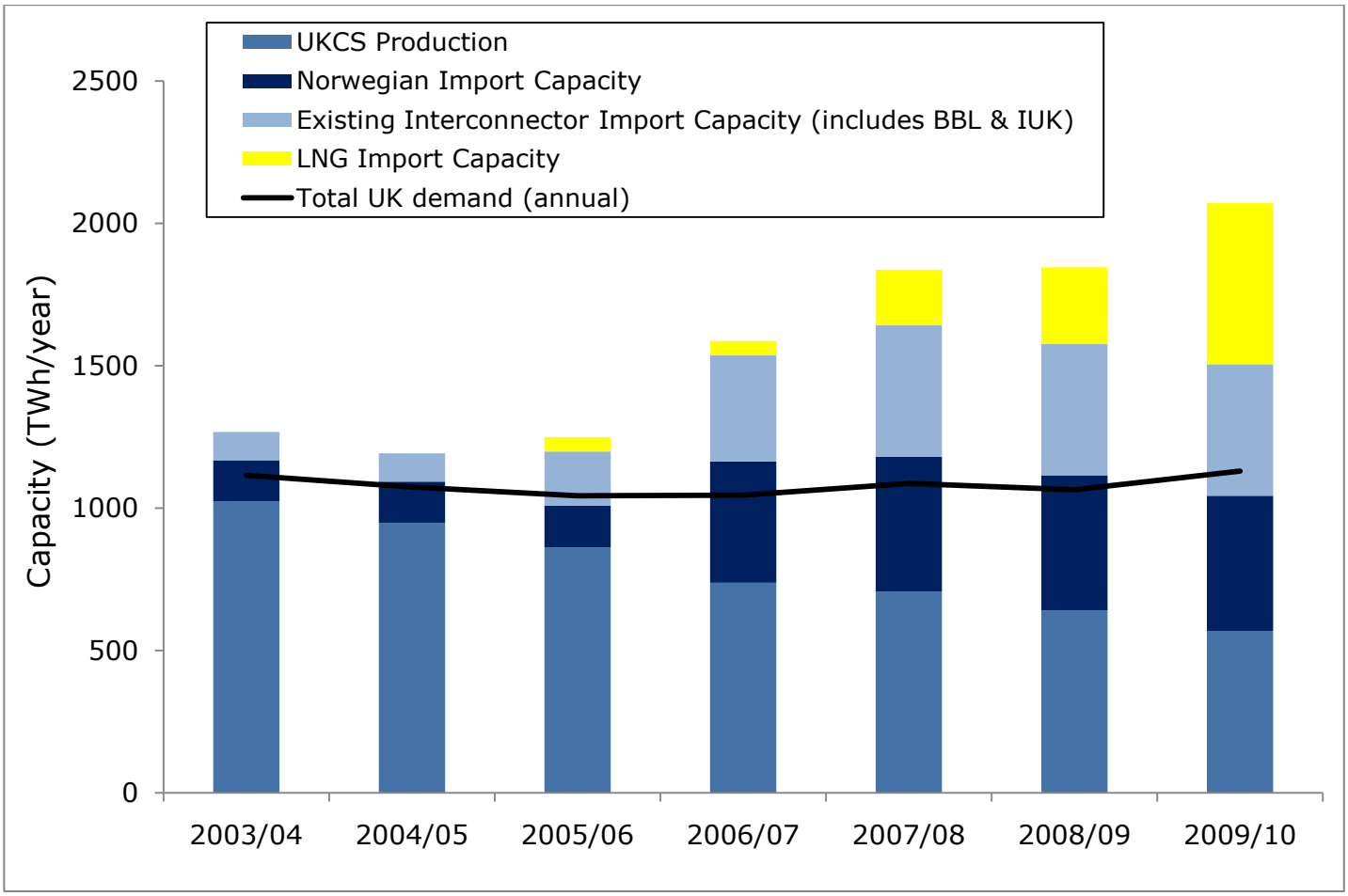

Figure 24 - Gas supply capacity in the UK
Source: National Grid

Liquefied Natural Gas (LNG) and interconnector import capacity have increased due to new projects coming online. Import capacity is becoming increasingly important for gas security of supply as UK continental shelf (UKCS) gas production peaked in 2000 and is now in decline. The UK has a fairly diverse supply as it comes from many different sources including imported LNG. Gas storage capacity is likely to become increasingly important to manage seasonal and short term demand fluctuations.

It is necessary to have sufficient gas import capacity to provide gas security of supply. However, it is also necessary for the gas itself to be available to be imported. This is true of gas provided by pipeline and by LNG. The Interconnector UK (IUK) can and does export gas to the continent, particularly in the summer months when UK demand and prices are lower. It may also supply to the continent in the winter, if prices are higher there than in the UK. There are also plans to allow non physical exports to the Netherlands with the Balgzand-Bacton line (BBL).

Indicator 14: Future supply capacity mix

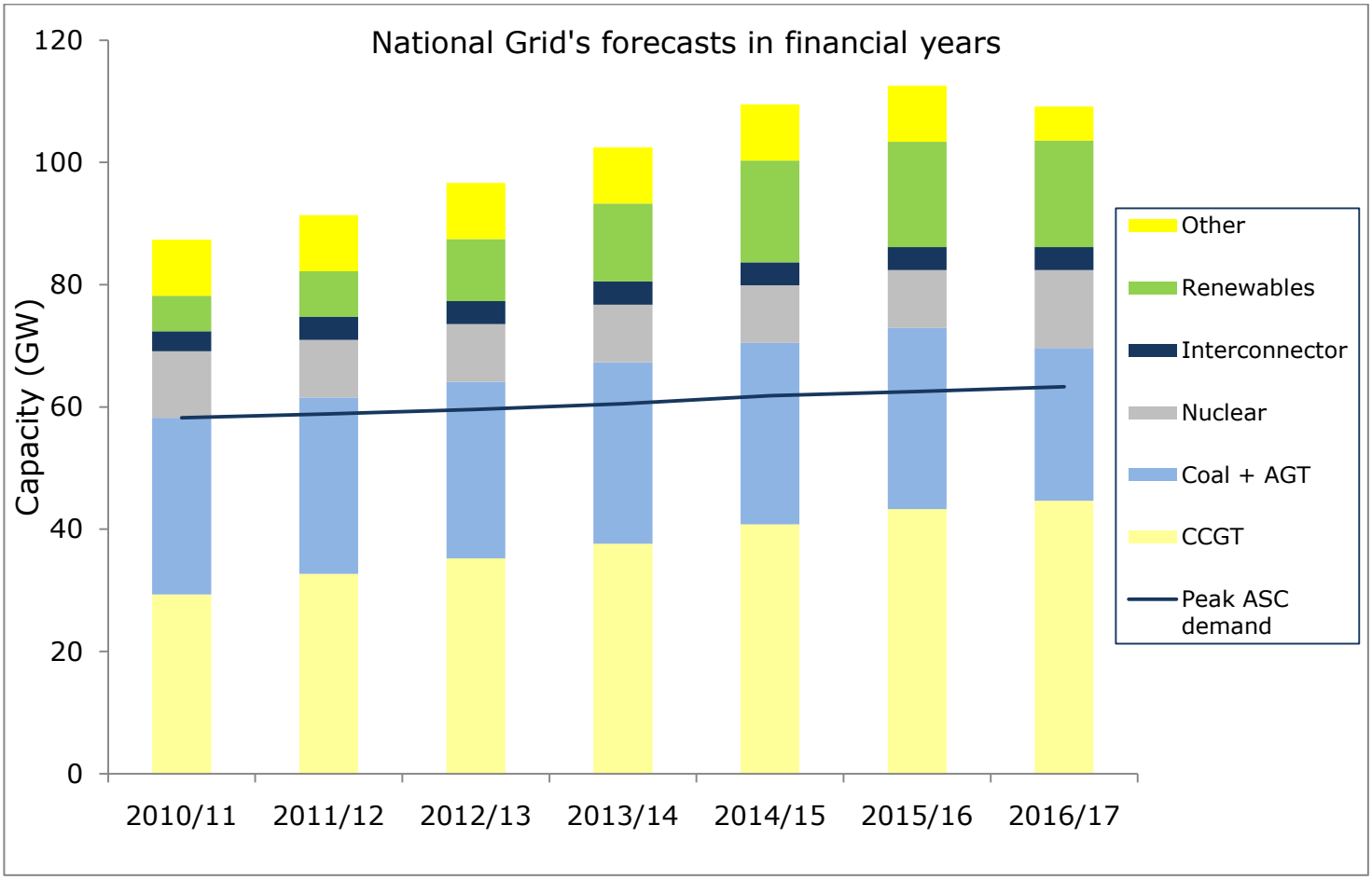

Figure 25 - Projected UK electricity generation mix
Source: National Grid Seven Year Statement 2010

There will be significant changes in the electricity generation market this decade. Associated with this is uncertainty on the future of the UK's generation mix, as was highlighted in Ofgem's Project Discovery. Around 12 GW of coal and oil fired plant is expected to close by 2016 under the Combustion Plant Directive (LCPD). The Industrial Emissions Directive (IED) is a new directive that now groups the LCPD and 6 other air pollution directives together and extends them; this Directive could cause more closures by 2023. According to current time tables up to 7.4 GW of nuclear generating capacity is reaching the end of its operational life and will have to close by 2020.

In light of these expected closures, there is significant new generation capacity either planned and under construction. National Grid's 7 year statements shows that gas and renewable energy generation are predicted to increase over the next seven years. Wind generation, which represents a significant proportion of renewable electricity generation, is an intermittent source of power due to wind variation. According to the Seven Year Statement, renewables would reach almost 16% of the generation mix in 2017 while CCGTs would provide 40% of capacity. Peak agreed supply capacity is predicted to increase slowly over the next seven years. However, as the generation mix changes to include more intermittent renewable generation the margin of spare capacity needed to ensure the same level of security of supply will need to increase.

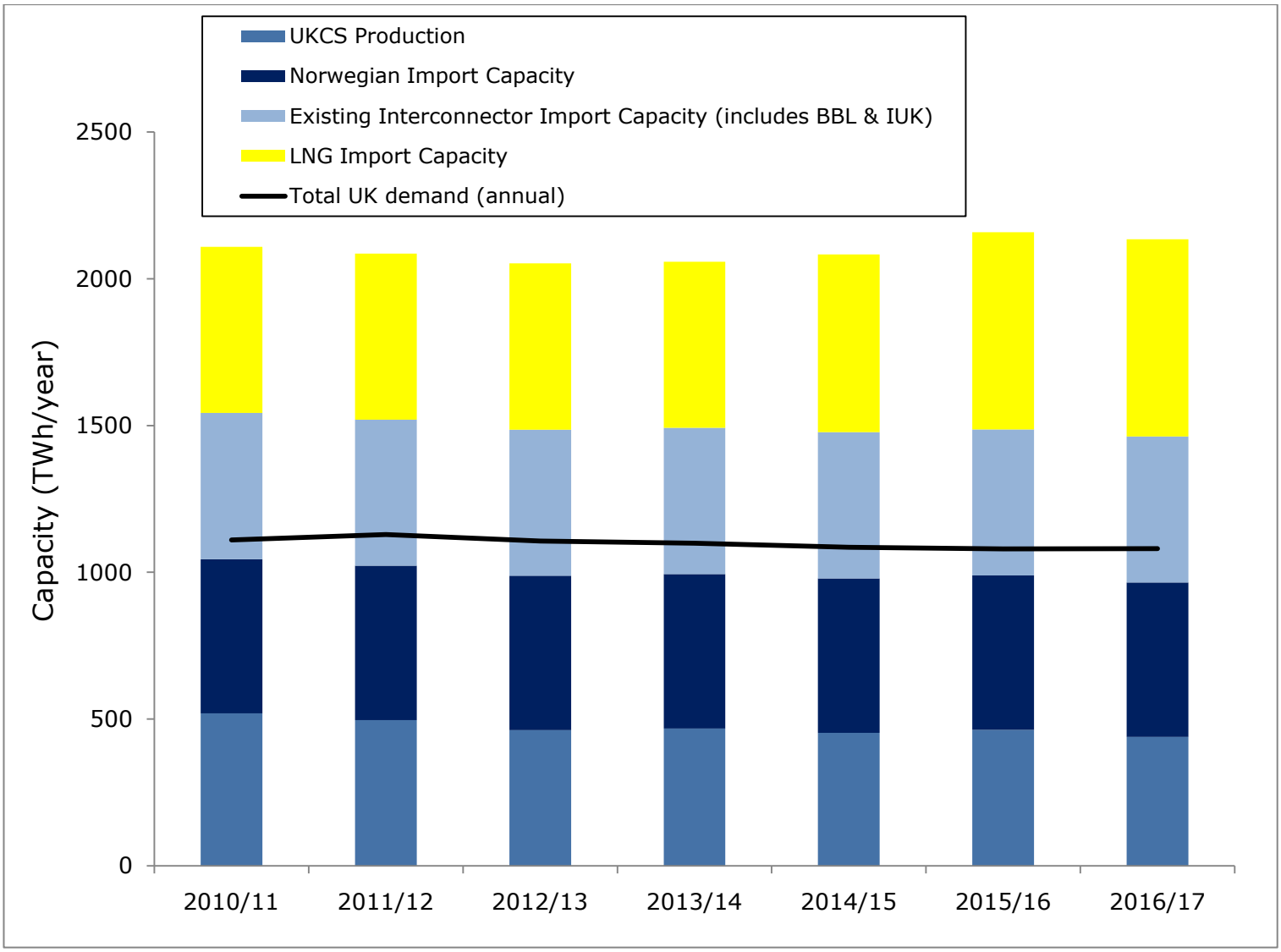

Figure 26 - Projected future gas supply capacity in the UK
Source: National Grid

In the future, UKCS supplies are expected to continue to decline, although this may be slowed by the prospect of new gas supplies from the West of Shetland in the medium term. Unconventional sources such as biogas, coal bed methane and shale also offer the potential for new sources of supply but are unlikely to be available in the UK in significant quantities before the end of the decade. The main increase in gas supply capacity is expected to come from increases in LNG import capacity. However, as highlighted under indicator 13, the availability of import capacity does not guarantee imports; gas also needs to be available to be imported.

Indicator 15: Product Innovation

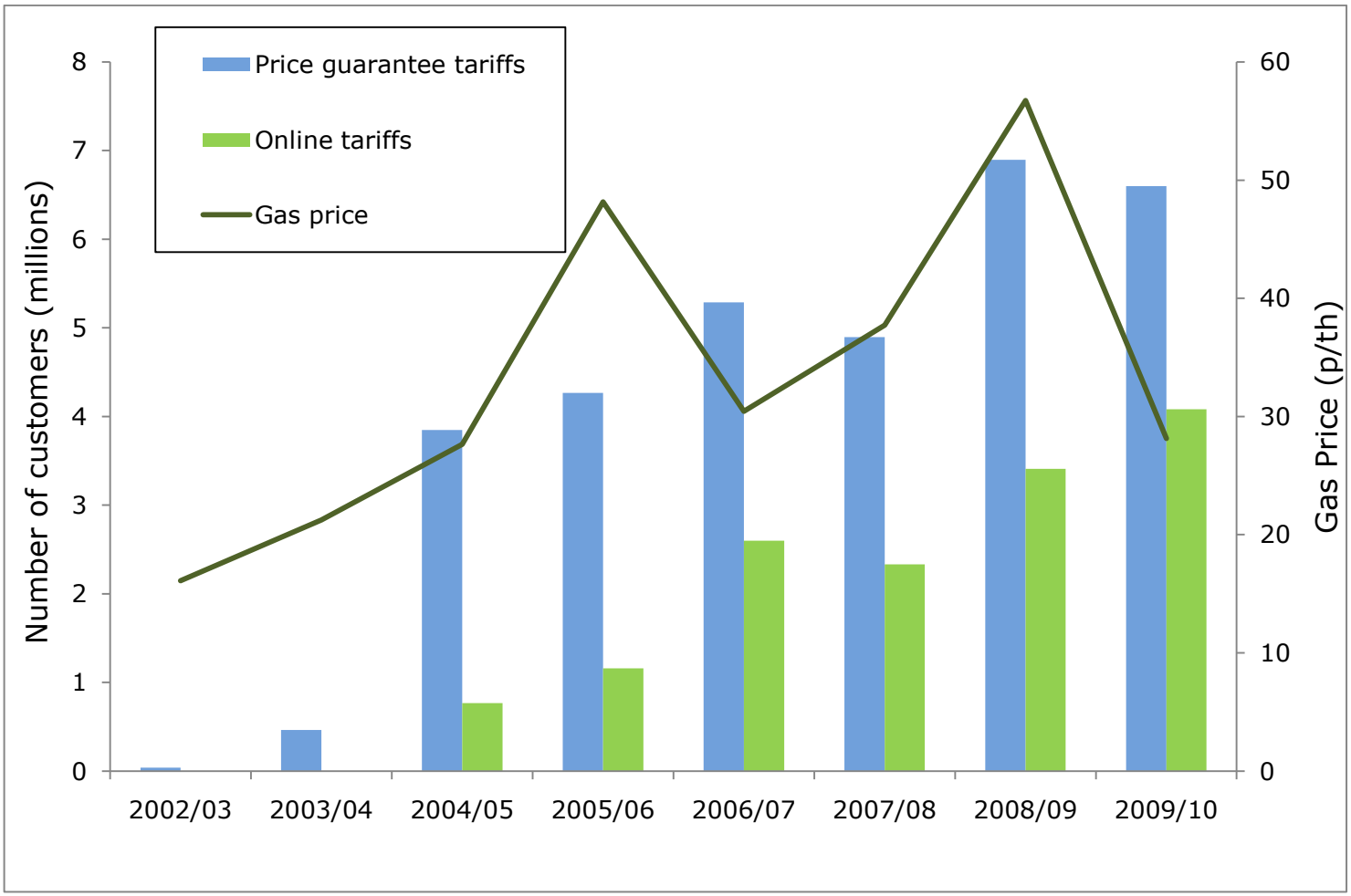

Figure 27 - Number of consumers signed up to price guarantee or online tariffs
Source: Electricity and gas suppliers

The number of online customers has been steadily increasing since 2007. This could be due to increased awareness of lower-cost online tariffs and greater promotion via online comparison websites. Online tariffs have increased by 3.3m since they started in 2004. Price guarantee customer numbers appear to be correlated to the gas price, which reached a peak in 2008. There will be a lag in tariff numbers due to the fixed length of contract associated with these.