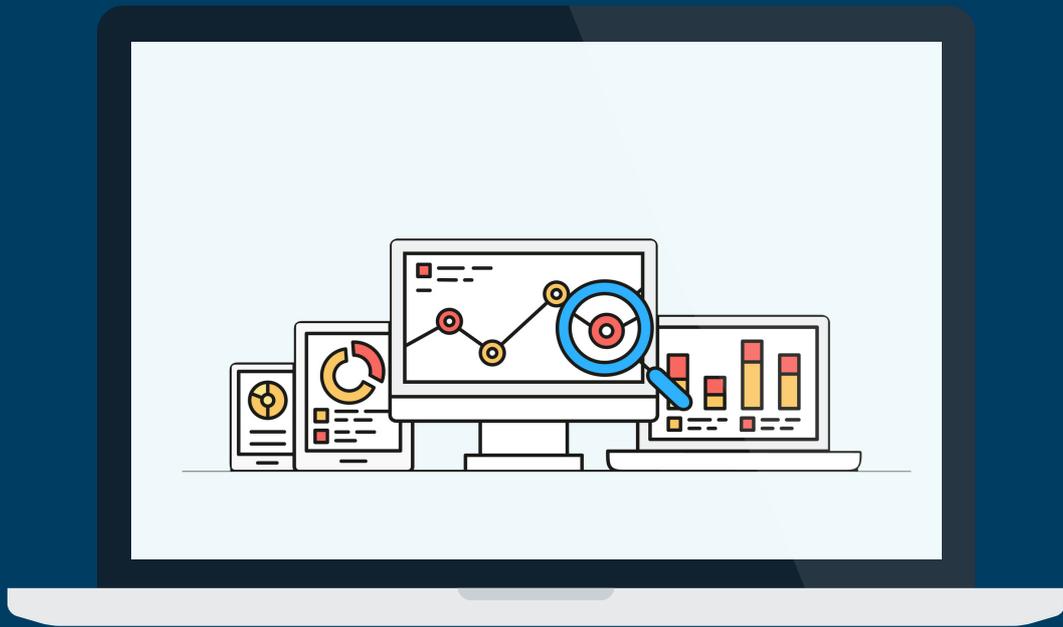


THE ULTIMATE GUIDE to Non-Commodity Costs Management in the UK



Everything You Need to Know About Non-Commodity Costs
— All in One Single Guide —

START YOUR CON

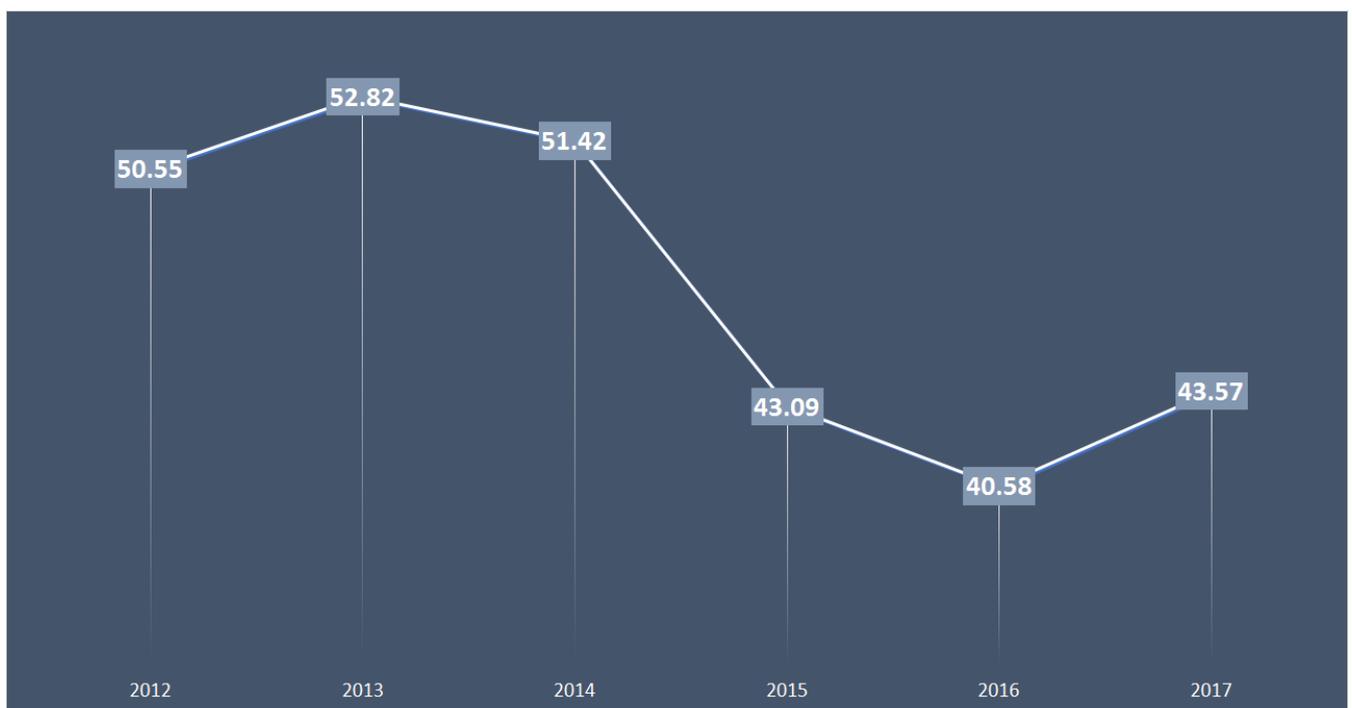
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Introduction

Compared to previous years, we can see that the wholesale electricity market in the UK is low. More specifically, average wholesale electricity prices for the past 5 years have fallen more than 14%, with the strongest downturn from 2013 to the end of 2016, when prices declined more than 23%.

UK POWER YEAR AHEAD (AVG PRICE) in GBP/MWh



Given that, you'd think that businesses should see some great savings on their energy bills as well, right? Well, not really. . .

In fact, quite the opposite is happening – **energy bills are rising at an alarming pace.**

And if you're wondering why is that happening, simply put, *that's the non-commodity charges at work*. In other words, other charges that make up your energy bill that are NOT for the electricity itself.

But you don't hear that too often in the news, do you?

Not surprising, because hearing about "*falling energy prices*" is more exciting than hearing about the fact that by 2020, non-commodity costs could account for up to 60% of your electricity bill.

Yes, you've read that correctly.

By 2020, non-commodity costs could account for up to 60% of your electricity bill.

To put that into perspective, a site with an annual consumption of 5GWh will see an annual increase in cost of around £140,000 between 2016 and 2020, *even if the wholesale cost of electricity does not change*.

DID YOU KNOW?

“

In 2015/16 alone, non-commodity costs accounted for over 50% of the total charges end users received.

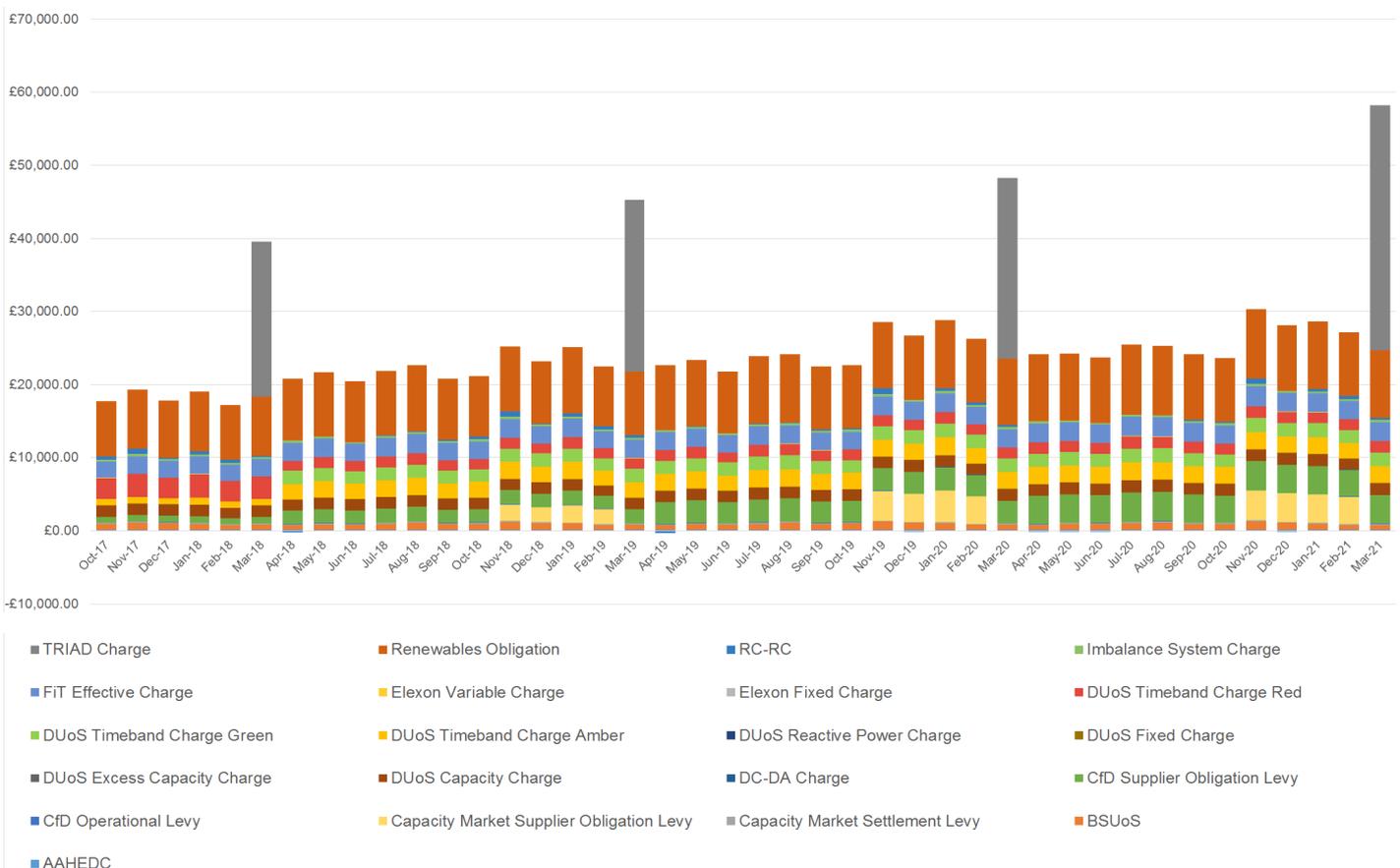
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So What Are You Really Paying For?

Even though this is not meant to be a comprehensive walk-through the entire suite of non-commodity charges, here we're going to focus on some of the most important ones and explore the impact they have on your organisation.

Therefore, what follows is a breakdown of some additional items that may appear on your bill and where that money goes, together with the forecasted rise of these costs in the future.

BUSINESS AS USUAL OCT 2017 — MAR 2021 FORECAST



Transportation & Distribution

- **Transmission Network Use of System (TNUoS) Charges**

This covers the cost of transmitting electricity from power stations to grid supply points across the high-voltage, high-volume transmission system.

Transmission Network Use of System (TNUoS) charges recover the cost of installing and maintaining the transmission system in England, Wales, Scotland and offshore.

- **Balancing Services Use of System (BSUoS) Charges**

This charge relates to the costs of the day to day operation of the transmission system, with the purpose of balancing the grid.

Basically, this is a sophisticated operation that makes sure there is always just the right amount of electricity pulsing around the network – not too much, creating wastage, and not too little, causing blackouts.

As you might imagine, with the increased amount of renewable energy from solar panels, wind turbines, micro CHP's and so on, generation of electricity is switching from a few generators to many generators which, in turn, leads to a much larger number of generators to manage.

Also, as renewable electricity is more dependent on the weather, which is unpredictable at best, balancing the system is much harder than it used to be and costs more.

- **Distribution Use of System (DUoS) Charges**

DUoS charges are levied by the UK's regional DNOs (Distribution Network Operators) and go towards the operation, maintenance and development of the UK's electricity distribution networks. More so, it covers the cost of distributing electricity from the national grid to your premises via a local distribution zone.

- **Transmission and Distribution Losses**

This charge pays for the cost of electricity that is lost as it passes through the network. These losses occur in the process of supplying electricity to consumers due to technical and commercial reasons.

Commissions, Government Levies and Taxes

- **Feed in Tariff (FiT)**

The FiT is a policy mechanism designed to accelerate investment in renewable energy technologies. The Government launched this tariff in April 2010 with the intent of rewarding those customers who have access to their own small-scale power generation (for example, by installing wind turbines or solar panels).

According to Ofgem, the FiT scheme is available for anyone who has installed, or is looking to install, one of the following technology types up to a capacity of 5MW, or 2kW for micro-CHP:

1. Solar photovoltaic (PV)
2. Wind
3. Micro combined heat and power (CHP)
4. Hydro
5. Anaerobic digestion (AD)

The great thing about the FiT scheme is that following an initial investment, not only will you be saving money by generating your own electricity, but you'll also *get paid* for the electricity you generate.

And in case you generate more than you need, you could be paid for driving that energy back into the grid.

- **Renewables Obligation (RO)**

The RO charge was designed to encourage large-scale renewable electricity generation and help the UK government meet its 2020 target of having 15% of energy generated from renewable sources.

- **Capacity Market (CM)**

The CM charge is intended to incentivise investment in more sustainable, low-carbon electricity capacity at the least cost for energy consumers.

This is needed to help secure electricity supplies for the future. The subsidy payment for these generators is paid for by electricity consumers on their consumption in the winter period.

An Introduction to DUoS Charges

What are DUoS Charges and How Do They Affect Your Business

DUoS (Distribution Use of System) charges are levied by the UK's regional DNO (Distribution Network Operator) and have a massive impact on how much a company spends on electricity. These 3rd party costs support the maintenance, development, and operation of the UK's electricity distribution networks.

For Half-Hourly metered customers, DUoS charges are currently split into three separate time-based charging structures and operate on a traffic light system – red, amber and green. Charges are highest during the red zone and are significantly lower than this during the green zone.

The breakdown is as follows:



- **Red:** Peak time, highest demand. The most expensive time to draw power down from the grid. Typically from 16:00 to 19:00, Monday to Friday, including bank holidays.
- **Amber:** Daytime charges, typically from 07:30 to 16:00 and from 19:00 to 21:00, Monday to Friday, including bank holidays.
- **Green:** Night time charges, lowest demand. Typically from 00:00 to 07:30 and from 21:00 to 24:00, Monday to Friday, including bank holidays, and all day Saturday and Sunday.

DISTRIBUTION COMPANY	BAND	MONDAY-FRIDAY (INCLUDING HOLIDAYS)	WEEKENDS
Western Power - Midlands, Southwest & Wales (EMEB & MIDE)	RED	16:00 - 19:00	
	AMBER	07:30 - 16:00 & 19:00 - 21:00	
	GREEN	00:00 - 07:30 & 21:00 - 24:00	All Day
Western Power - Midlands, Southwest & Wales (SWALEC)	RED	17:00 - 19:30	
	AMBER	07:30 - 17:00 & 19:30 - 22:00	12:00 - 13:00 & 16:00 - 21:00
	GREEN	00:00 - 07:30 & 22:00 - 24:00	00:00 - 12:00 & 13:00 - 16:00 & 21:00 - 24:00
Western Power - Midlands, Southwest & Wales (SWEB)	RED	17:00 - 19:00	
	AMBER	07:30 - 17:00 & 19:00 - 21:00	16:00 - 19:30
	GREEN	00:00 - 07:30 & 21:30 - 24:00	00:00 - 16:30 & 19:30 - 24:00
NorthEast (YELG)	RED	16:00 - 19:30	
	AMBER	8:00 - 16:00 & 19:30 - 22:00	
	GREEN	00:00 - 08:00 & 22:00 - 24:00	All Day
NorthEast (NEEB)	RED	16:00 - 19:30	
	AMBER	08:00 - 16:00 & 19:30 - 22:00	
	GREEN	00:00 - 08:00 & 22:00 - 24:00	All Day
London Power (LOND)	RED	11:00 - 14:00 & 16:00 - 19:00	
	AMBER	07:00 - 11:00 & 14:00 - 16:00 & 19:30 - 23:00	
	GREEN	00:00 - 07:00 & 23:00 - 24:00	All Day
Eastern (EELC)	RED	16:00 - 19:00	
	AMBER	07:00 - 16:00 & 19:00 - 23:00	
	GREEN	00:00 - 07:00 & 23:00 - 24:00	All Day
South Eastern (SEEB)	RED	16:00 - 19:00	
	AMBER	07:00 - 16:00 & 19:00 - 23:00	
	GREEN	00:00 - 07:00 & 23:00 - 24:00	All Day
North West (NORW)	RED	16:00 - 19:00	
	AMBER	09:00 - 16:00 & 19:00 - 20:30	16:00 - 19:00
	GREEN	00:00 - 09:00 & 20:30 - 24:00	00:00 - 16:00 & 19:00 - 24:00
Scottish Hydro (HYDE)	RED	16:30 - 19:30	
	AMBER	08:00 - 16:30 & 19:30 - 22:30	16:00 - 20:00
	GREEN	00:00 - 08:00 & 22:30 - 24:00	00:00 - 16:00 & 20:00 - 24:00
Southern Electric (SOUT)	RED	16:00 - 19:00	
	AMBER	07:00 - 16:00 & 19:00 - 23:00	
	GREEN	00:00 - 07:00 & 23:00 - 24:00	All Day
Manweb (MANW)	RED	16:30 - 19:30	
	AMBER	08:00 - 16:30 & 19:30 - 22:30	16:00 - 20:00
	GREEN	00:00 - 08:00 & 22:30 - 24:00	00:00 - 16:00 & 20:00 - 24:00
Scottish Power (SPOW)	RED	16:30 - 19:30	
	AMBER	08:00 - 16:30 & 19:30 - 22:30	16:00 - 20:00
	GREEN	00:00 - 08:00 & 22:30 - 24:00	00:00 - 16:00 & 20:00 - 24:00

Unlike some other elements of an energy contract, these are *non-negotiable* charges agreed and regulated by the local DNO (Distribution Network Operator).

However, this doesn't mean that you can't do anything about it.

As you probably know already, the best way to reduce the costs of some of these charges is through **on-site generation and energy saving technology**. These require an initial investment in the short term, but the returns on it are much greater in the long term.

Alternatively, if you're looking for an efficient way to make almost immediate savings with the lowest possible financial investment, you can do so by reducing or managing load times more effectively.

Traditionally, that's called **load shifting**.

Basically, if you can shift consumption from the red zone into the amber or, preferably, green zones, this will result in lower unit charges. Simply put, **load shifting is about using less power during the most expensive red band periods**.

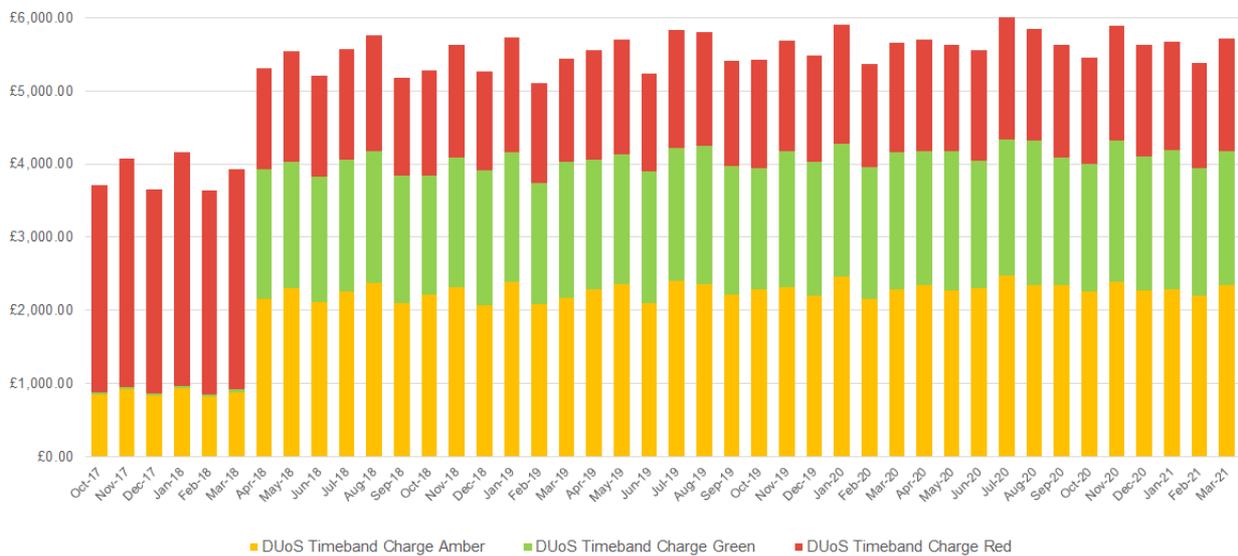
And even though this might all sound common sense, this is not always common practice. In fact, you'd be surprised to know that very few energy users are actually aware of this cost saving opportunities.

But there's more to the story. . .

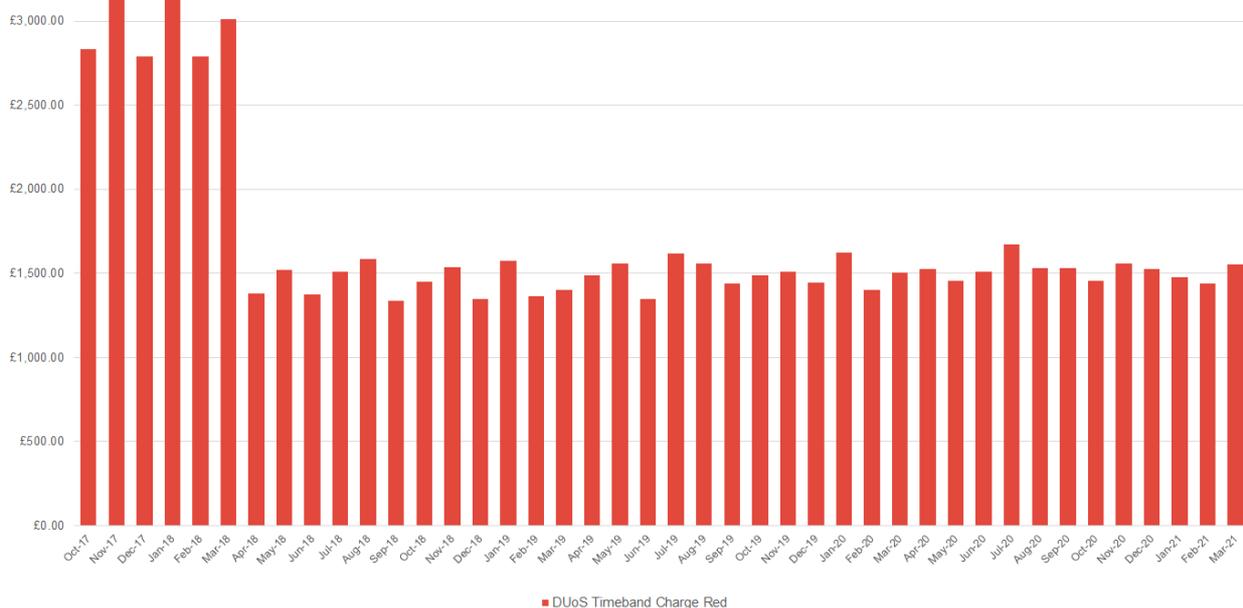
With the introduction of the **DCP228 legislation** which introduces new DUoS charges, this might be all set to change.

DCP228 Changes to DUoS Charges

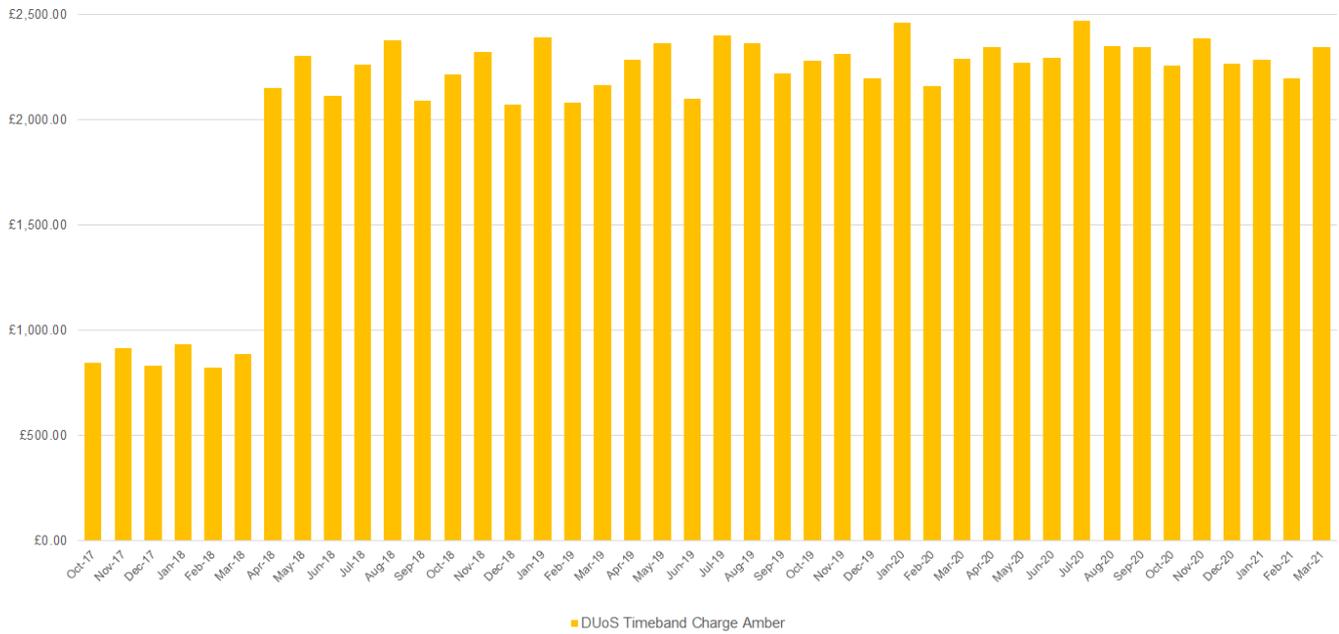
New charges associated with the DCP228 legislation come into effect from 1st April 2018. For customers with Half Hourly meters, the unit charges during the Red band period will *fall*, while the charges during the Amber and Green band periods will *rise*. (Please see the pictures below)



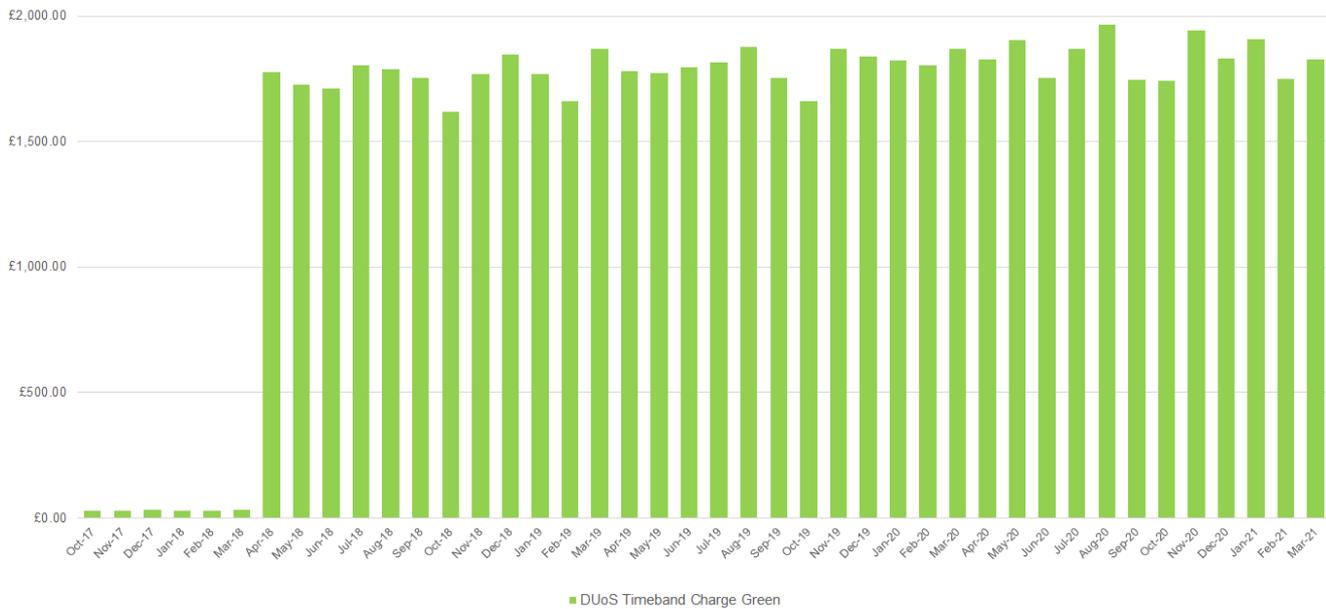
DUoS RED CHARGES OCT 2017 — MAR 2021 FORECAST



DUOS AMBER CHARGES OCT 2017 — MAR 2021 FORECAST



DUOS GREEN CHARGES OCT 2017 — MAR 2021 FORECAST



So What Does This Mean for Your Business?

Firstly, if you've been working hard to shift demand from Red time bands to Amber or Green, you'll now have less of an incentive to keep those changes.

As Red units will cost less and Amber & Green units will cost more, the incentive for shifting demand is reduced.

Secondly, if you aren't reliant on peak demand, and have instead used electricity during Amber and Green times, you may now see a significant cost increase.



Experts' Point of View

A site in the South of Scotland, with an annual consumption of 5GWh, has forward purchased its wholesale electricity for October 15 to September 20 with a 1.7% increase in cost. So far so good, however the bad news is that the delivered cost of electricity will increase 32% over the same period.

So what is the cause of these future increases in cost?

Increases are all down to those mystery charges usually referred to as non-commodity. This group of charges include industry charges to deliver electricity to a meter and government levies. However, **it's not unknown for additional profit to be hidden within the complexity of the non-commodity charges.**

Cost increases of this scale are likely to pose a risk to any organisation. Therefore, the first stage of any risk management strategy involves identifying risks and then moving on to developing methods to manage these risks. The final stage of any strategy should also include continual review to determine if the management methodologies implemented are effectively controlling risks.



The first stage is to identify the risks.

By simply providing the electricity Supply Number (MPAN), site available capacity and 12 months of half-hourly consumption data, EnergyMarketPrice will calculate the likely future non-commodity costs. Some of the charges are based on total consumption, but others are specific to particular time-bands.

The first piece of good news is that because there's full transparency of the costs, there's nowhere for additional profits to be hidden by the supplier. **These additional profits have typically been around 5% to 10% of the delivered cost of electricity.**

Now that the individual non-commodity costs have been identified, the impact of changing consumption patterns can be investigated. Basically, if consumption is reduced in high cost time-bands, then there will be a much higher return on any investment in technologies adopted to reduce this consumption.

Also, it's important that any future electricity supply contracts are fully transparent and all non-commodity charges are clearly identified. Future invoices should show non-commodity costs, which should be billed at the prevailing rates at the time of invoicing.

As to what is the most cost effective technology for managing risks associated with non-commodity costs, there's really no such thing as “one size fits all” solution. These technologies will include **load management strategies, on-site generation and energy storage**. Also, participating in National Grid's demand side response programmes will have the additional benefit of reducing consumption during high cost time-bands.

This all sounds very complicated, but the first question for any organisation should be, *“What can be achieved practically on this site without interfering with the business process?”* Energy Market Price's tools can then be used to investigate the cost benefit of adopting each of the possible technologies, or combination of technologies.

However, simply using data from historic invoices is not going to give an accurate assessment of the cost benefits because there are a number of significant changes being introduced along with additional levies over the next few years:



APR 2017

The process (P272) should have been completed to migrate all meters with profile classes 05 to 08 to half-hourly settlements.



APR 2017

Any meter that meets the necessary technical requirements can be migrated to half-hourly settlements.



NOV 2017 - FEB 2018

The first Supplier Capacity Market Obligation Levy will impact on bills.



APR 2018

DCP161 will come into effect and introduce additional charges for any sites that exceed the agreed available capacity.



APR 2018

DCP228 will reduce the differential in cost between the DUoS Red, Amber and Green time-bands.



Average Cold Spell GB demand for 2016/17 was forecast to be 52.7GW and including minimum reserve 53.6GW. Although available generation is 73.7GW, the derated capacity is 55GW.

The derated value takes into account breakdowns, planned outages and other operational issues that may prevent a plant from generating.

Currently there is 55GW of renewable energy generation that is operational, under construction, or has planning consent. Of this total, 45GW is accounted for by intermittent technologies, i.e. wind and solar photovoltaics.

A consequence of this growth in renewable energy generation is that there will be further expensive changes needed in the transmission and distribution networks required to accommodate this change from centralised to localised generating capacity.

The intermittent nature of wind and photovoltaic technologies will also lead to a growth in energy storage solutions and an increase in the Capacity Market, Contracts for Difference and Renewables Obligation Levies and Feed in Tariff.

Some of the large scale renewable energy technologies may transfer from the Renewables to the Contracts for Difference Levy, so the Renewables Obligation Levy may decrease, but this reduction will be more than balanced by the increase in Contracts for Difference Levy.

To further complicate the picture, the introduction of the Demand Side Response programme combined with the action of sites to avoid TRIAD periods will result in the forecasting of TRIAD periods becoming much more difficult.

“

National Grid's Demand Tariff (TRIAD) is like death and taxes - it cannot be avoided.

”

[CLICK TO TWEET](#)

Implications of all of these future changes are:

1. Any technologies adopted to reduce electricity costs must be sufficiently flexible to be able to adapt to this moving landscape of non-commodity costs to continue delivering acceptable levels of cost benefit.
2. Use Energy Market Price's tools for modelling future costs to constantly review energy cost management strategy.



Mike Davies M.Sc, C.Eng.

Consultant at EnergyMarketPrice

How EnergyMarketPrice Can Help You

Learn how EnergyMarketPrice can help you deal with the complexity of calculating non-commodity costs

Get a free personalized demo of our solutions tailored to your needs from one of our experts. It's simple and takes less than 2 minutes.

1

REQUEST A FREE DEMO

Click the button below to sign up for a free personalized 1-on-1 demo of our solutions that's right for you.

2

TALK TO ONE OF OUR EXPERTS

One of our experts we'll get in touch with you as soon as possible to walk you through our solutions.

3

GET A FREE TRIAL

At the end of the discussion, you'll be able to test-drive our solutions for 10 days. There's no cost involved and the trial is completely free of charge.

It's time to bring clarity and transparency into your business!

[SIGN UP FOR A FREE DEMO](#)

About EnergyMarketPrice

EnergyMarketPrice is a leading provider of customized software solutions for the Energy Industry.

Working on a SaaS business model, services range from energy market data access and ETRM software to full-scale digital utility solutions.

Markets covered include Oil, Natural Gas, Power, Coal, Emissions and country reporting intelligence. The company's tailored technology solutions, powered by its powerful database and market expertise, enable customers to reduce operational costs and embrace the fast paced digital energy markets era.

With more than 20 years of expertise in the energy markets and customers in 40 countries worldwide, we help you answer questions which are crucial to the success of your business.

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