
Lift off

UK Construction
Market View

Autumn 2021



Introduction

The spectre of widespread inflation is looming over the global recovery. The UK economy has bounced back better than expected but capacity constraints and other headwinds are becoming a concern. How much further can prices rise?

Following a buoyant Q2 2021 and a quarter-on-quarter GDP growth of 5.5%, which surpassed initial expectations, Q3 brought a relatively modest GDP increase of 1.3%. Although this was below consensus forecasts, the economy is still coming back to shape quicker than expected and will return to pre-COVID levels by the end of 2021. The continuing bounce back is reflected in expected GDP growth of 6.5% this year and 6% in 2022. Rapid growth is mostly due to base effects. Beyond 2024, forecasts from the Office of Budget Responsibility (OBR) are that the UK economy will return to a relatively low rate of growth of approximately 1.2% a year.

Inflation grew in October 2021 by 4.2% compared to the previous year – higher than expected and more than double the Bank of England's target. In the general economy, inflation is being driven by energy costs and the rapid increase in the cost of scarce goods such as second-hand cars. This higher inflation will spill over into energy intensive sectors such as construction. Latest economic data has strengthened the case for the Bank of England (BoE) to increase the base rate to at least 0.25% - an intervention that should not undermine the capital investment. Both BoE and OBR anticipate inflation to still be around 4% in 2022, before gradually easing off and returning to the 2% target by 2024.

Government employment support schemes (CJRS and SEISS) were withdrawn in September. Jobs data detailing the impact of the end of the schemes is not available yet. However, latest data from the Office for National Statistics pointed to 4.3% unemployment in Q3; well below the 4.7% anticipated by the BoE in the August Monetary Report. Simultaneously, the UK faces a very hot jobs market with a record level of 1.1 million vacancies, which is 40% above the long-term trend. However, many of these vacancies are concentrated in specific sectors, such as hospitality and health. Construction has around 43,000 vacancies,



retail has twice as many. Construction's relatively small requirement is partly due to the sector's high proportion of self-employed operatives. However, for the last four months, the number of vacancies has remained at a record high, more than double the average number from the last 20 years. Salaries in the wider economy are reported to have increased by almost 7% compared to pre-COVID levels, but within construction this is closer to 5%.

Despite multiple headwinds associated with a bumpy recovery, the outlook for construction remains positive. Output fell marginally during the summer, but order books remain healthy. Whilst there is widespread concern regarding inflation and lead-in times, at the same time their impact on business sentiment has been limited. The PMI indicators across all three areas – construction, services and manufacturing - have been positive from Q2 and achieved record levels in June 2021. While they have decreased slightly since then, they remain well above the 50-mark (indicating expansion) and increased across the board in October. Deloitte's latest CFO survey brings further evidence of optimism, with expansion into new markets remaining a top priority. Almost 30% of respondents also mentioned capital expenditure as a priority. Some of this investment is likely to be translated into construction projects.

Recent data on construction output and new orders in Q3 confirms that the market is still going strong, driven mainly by housing and private industrial sectors. Despite constraints on the availability of materials, output in current prices reached £46.2bn in Q3, which is in line with the long-term trend dating back to 2016. New orders also remained strong at £18bn in current prices, the second highest value recorded since Q1 2019. This positive data confirms that there is still a strong demand and removes some of the competitive pressure to secure work from contractors who are now well aware of the plethora of inflationary risks.

The Construction Products Association's latest Autumn 2021 forecast has not changed significantly, compared to the Summer edition. A slight uptick in output in 2021 to 14% reflects more dynamic activity during the first half of the year and the strong level of demand currently. However, looking forward to 2022, the predictions are for growth to slow to 5%. This forecast assumes of course that supply chains can continue to meet high levels of demand, and that clients are willing and able to pay high prices. The collaborative mentality developed by the industry during the pandemic will be useful in tackling the inflationary challenges still on the horizon.

Prices of some raw material inputs such as iron ore and timber have eased during Q3 2021. For example, the price of iron ore at \$93/t is 60% down from its peak price in July, and back to pre-COVID levels. However, the inflationary pressure that raw materials drove has already been replaced by energy costs. Since the end of August, we have faced unprecedented increases across the spectrum of energy sources, with natural gas, thermal coal and metallurgical coal and oil all rising by 100%-250%. This means that the inflationary trend for construction materials has some way to run. The implications are currently unknown.

Famously, the cure for high prices is high prices, as they have the effect of choking off demand. And indeed, in the second half of 2021 we have witnessed a rapid and remarkable lift off in costs, which is likely to still continue into H1 2022. Consequently, we may see a two-speed pattern emerging, with some sub-sectors such as private residential or industrial pressing ahead despite the headwinds, and other more price sensitive markets such as rental and affordable housing seeing some projects placed on hold until markets have stabilised.



Forecast

The third quarter of 2021 brought the continuation of a high volume of delivered output and strong new orders. At the same time, inflationary pressures multiplied, leading to another upgrade to our forecast.

Introduction

The inflationary landscape that emerged over the summer months shows no signs of fading, triggering another upgrade to our forecast. While the pressures related to the costs of raw materials have eased, they have been replaced by rising energy prices. Despite

these headwinds, business confidence is still in place, and demand remains strong. Output is close to pre-COVID levels and new orders for the first three quarters of 2021 were ahead of pre-COVID levels. The performance differs between sub-sectors, with some projects more exposed to materials-driven inflation, and others, like logistics, continuing to run hot despite price increases. Unfortunately, this means that many clients remain exposed to the risk of escalating inflation. Currently it is difficult to predict when the inflationary cycle will peak. As long as demand is in place and input costs continue to grow, we need to brace ourselves for further price increases.

Flying high

Recent data on output and new orders confirms that construction will return to pre-COVID levels of output by the first quarter of 2022. Since March 2021, monthly levels of output have not dropped below £14bn, which is consistent with values observed in 2019. Infrastructure work is 20% higher than the long-term average. The recovery is driven mainly by the sectors which are less sensitive to inflation. For example, private housing continues to boom despite a high exposure to record prices for timber. With Halifax data indicating an 8% annual increase in house prices, there is more than



enough cover for additional build costs. Similarly, the warehousing sub-sector is flourishing, with the new orders for Q1-Q3 2021 already 20% higher than the average annual orders in the last five years. This shows that clients who can pass on the increased costs or have a strong business case are continuing to invest. This appetite is also reflected in our internal survey, in which 70% of the respondents reported an increase in instructions from clients and healthy order books for both main and specialist contractors. Further demand follows the kick-off of the latest rounds of investment in roads and water.

By contrast, the situation in the commercial sector, and especially offices, is mixed. On one hand, output in the first three quarters of 2021 is 20% lower than the same period in 2019. On another hand, new orders in the last quarter exceeded the long-term trend by 25% - as evidenced by both the Office for National Statistics (ONS) and Deloitte's London Crane Survey.

But the picture is not even. As highlighted in the introduction, some sectors are more price sensitive and have seen some projects put on hold. Although this is a concerning development, it is not yet widespread enough to have a material impact on the levels of demand.

No signs of headwinds easing

Both the wider economy and the construction sector have been experiencing accelerating inflation during most of 2021. As described in the introduction, energy has become the main driver of a second wave of inflation for a wider range of construction materials. Products such as bricks, glass, cement and concrete are now among the ones most exposed, due to the energy intensity of their manufacturing (for details, see our 'Zoom into' section). Furthermore, increases in energy prices will also translate into higher costs of plant and transport.

Plant and logistics continue to be an issue. There are still no signs of a resolution of either the ongoing container crisis or the HGV driver shortage. Furthermore, the upcoming removal of the red diesel rebate just adds to the list of cost drivers. The removal of the 48.6 ppl rebate is a 65% price increase. Furthermore, the base cost of diesel itself has increased by around 30% compared to pre-COVID. Overtime, the use of an electric and hydrogen powered fleet will become widespread. Our Spotlight section sheds some light on these issues.



Forecast

Labour cost developments are a mixed picture too. Average UK wages have recorded a 7% annual increase, but wages in construction seem to be lagging, at 5% (ONS). This data point suggests that despite the outflow of EU operatives, labour is not yet an inflationary factor. However, whilst ONS data suggests that labour markets are stable, there is more and more recognition of shortages in specific trades. For example, according to Hudson Contracts, weekly rates for self-employed bricklayers have increased by almost 9% since May 2021 and are now 17% higher than the pre-COVID average. However, rates for many trades have stayed flat. There are regional variations too, with operatives paid 4-6% more in the West Midlands and East of England than in London.

As market conditions improve, contractors are likely to look to improve margins after a tough couple of years. However, with input price rises and many projects facing viability challenges, this won't occur in all sectors. Clients need to be aware that there is less pressure to absorb cost increases within the supply chain, which is resulting in much less predictable tender returns on many projects.

Upgraded price forecast

At the time of this forecast, there was not sufficient data to evaluate the possible impact of the emerging Omicron COVID strain, and hence it is excluded from the below described considerations. However, the escalation of the already known inflationary pressures, together with an emergence of new ones has triggered a further revision of our forecast. The situation is uncertain not only across the sub-sectors but also regions, and hence we have chosen to apply a range of values for our 2021-2022 predictions. The reasons for this are two-fold:

Firstly, the impact of inflation across different building types is quite marked due to exposure to materials inflation and, secondly, due to the degree of inflation that is being passed through to the client. Market feedback highlights that not all sectors are booming, and where clients remain price sensitive, projects are being delayed, turnover is at risk and price levels reflect this reality.

We have seen much stronger evidence of inflation pass-through during the third quarter of 2021. In effect, there has been a lag between disruption appearing in material supply chains at the start of the year and the emergence of high bid inflation, particularly in the building sector. Most of the inflation in 2021 has occurred during the second half of the year and we expect to see this trend continuing into the first half of 2022 until some of the annual materials and logistics inflation falls out of the calculation. However, as tender price inflation has lagged increases in input prices, increases will continue throughout the year.

The difficult year to predict is 2023. From 2024 onwards, our inflation outlook is driven by increasing labour costs resulting from an accelerating skills shortage. As described above, the skills shortage is already a problem, but we think that it will intensify now that a regular flow of migrant labour has been cut off post-Brexit. For 2023, there is no scenario for material and energy costs to continue at their current rate, so a big inflationary driver will fall away. Furthermore, the rate of growth in many sectors is forecast to ease during 2022 and 2023. Our expectation is that inflation will revert in building sectors to the long-term trend in line with Bank of England expectations before entering a new, labour-driven price cycle. This forecast relies of course on sustained demand, and at the moment, the signs are positive. However, in a world as uncertain as today's, little can be taken for granted.



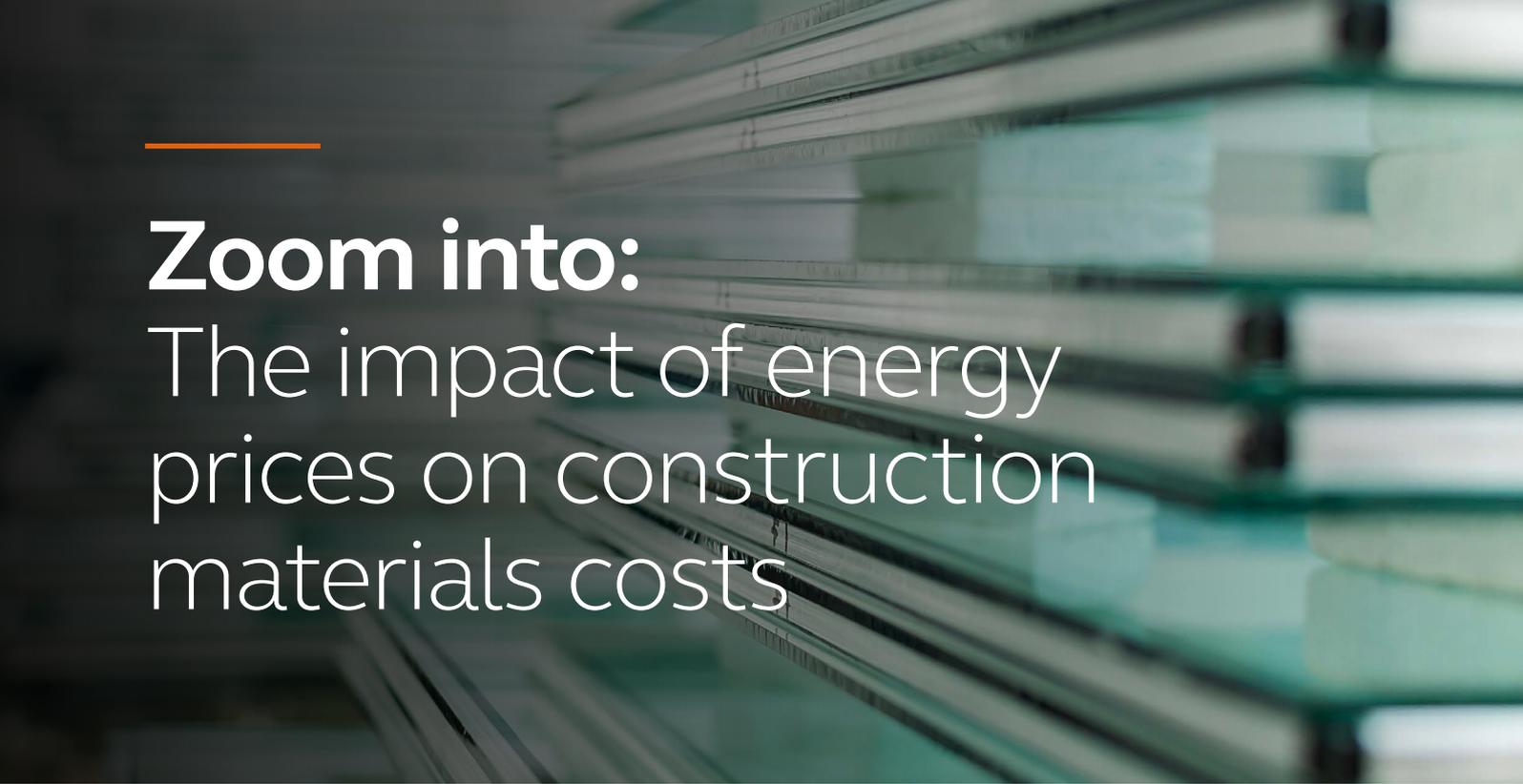
Inflationary drivers

- Increases in construction materials costs across a wider range of products.
- Plant costs related to the red diesel rebate.
- Strong order books and eased pressure on winning new work.
- Contractors less able to price risk and implementing higher risk premiums.
- Contractors aiming to improve margins.
- Logistics costs.
- The general awareness of highly inflationary circumstances.

Deflationary drivers

- Labour wages recovering at slower pace than in the wider economy.
- Sterling still strong against USD.
- Contractors willing to secure workload beyond 2022 and willing to absorb some of the cost increases.

	Regional Building Construction TPI	London Building Construction TPI	National Infrastructure Construction TPI
2021	4% - 5% (3%)	4% - 6% (3%)	5% - 6% (4%)
2022	3% - 4% (3%)	3% - 4% (3.5%)	4% - 5% (5%)
2023	3% (3%)	3% (3%)	5% (5%)
2024	5% (5%)	5% (5%)	5% (5%)
2025	5% (5%)	5% (5%)	5% (5%)
Total	20% - 22% (19%)	20% - 23% (19.5%)	24% - 26% (24%)



Zoom into:

The impact of energy prices on construction materials costs

Increased energy costs are adding to the multiple pressures faced by the wider economy and the construction sector. Is this just a short-term glitch, or are we facing the rise of new long-term inflationary factor?

Recent developments in energy market

Unprecedented cost increases in raw materials, especially timber, iron ore and copper observed since the beginning of 2021 have led to elevated levels of inflation. While this trend has begun to ease recently, the inflationary cycle is far from over. Now, the spotlight has moved from raw materials as the main inflation driver, to energy. The costs of different sources - including coal, gas and electricity - have been increasing since the end of August. Prices have doubled or even tripled compared to pre-COVID levels. Construction products are energy intensive, and this development is going to have a much wider impact than the raw materials boom that mostly affected metals and timber. Below we describe the extent of energy's role in construction and what the likely impacts of the ongoing energy crisis will be.

The role of energy in the construction materials supply chain

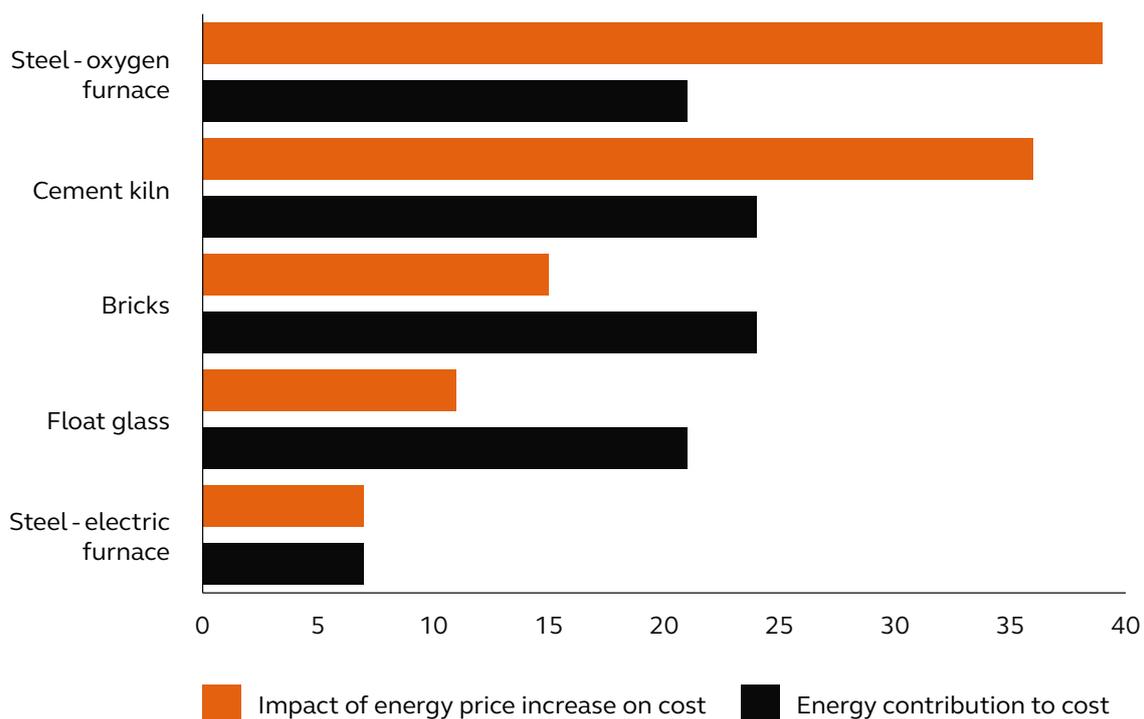
The manufacture of many materials used in construction is very energy intensive. For example, the energy required to produce a tonne of stainless steel is equal to that needed to travel by Tesla from London to Edinburgh - and back - 80 times. Aluminium could get you even further.

Energy used in manufacturing construction materials comes from various sources. Electricity - including renewable sources - is one of them. However, for materials such as steel or cement, more than half of the energy used comes from coal - either metallurgical or thermal. Natural gas, on the other hand, is mainly used in the production of bricks and roof tiles. The high energy demand translates into approximately 25% of the manufacturing cost of construction materials.

A high exposure to coal, gas and electricity makes the construction materials sector vulnerable to prolonged energy price increases. For example, although iron ore prices have recently fallen by almost 50% compared to recent peak values, the price of steel has stayed high due to high coke costs. British Steel has recently announced a second energy-related price increase of £30 per tonne.

In *Figure 1* we illustrate how the recent price increases impact costs for some of the most energy intensive materials. The chart shows that energy costs account for up to 38% of the total costs associated with some energy-intensive manufacturing, such as blast furnace steel and cement. With the energy mix for different processes increasing by around 20-25%, clearly the impact of higher energy costs will be significant. So, what are the factors driving this situation and the likely outlook?

Figure 1: The contribution of energy costs to construction materials prices and impact of recent energy price increases (quantified as % increase on product price)



What is driving the energy crisis?

In common with raw materials, there have been multiple triggers for price increases. Recent developments in the gas market illustrate how different factors combine. Heightened demand for gas, driven by increased materials and products production, now coincides with the Autumn/Winter heating season. China and other countries in Southeast Asia are also importing more gas following a decision to step up decarbonisation efforts by closing coal-fired generation. Limited supply of Liquefied Natural Gas (LNG) from the US, and a squeeze in Europe on supplies from Russia and North Africa have disrupted the global balance of trade. As such, competition for imported LNG has become fierce, with tankers being redirected to the highest bidder. Countries like the UK with limited access to gas storage are particularly exposed.

The price trajectory

The price of power supplied to the industrial sector is not subject to regulation. To manage volatility risk, forward purchase and price hedging mechanisms are used by large energy users. Normally these allow manufacturers to even-out price fluctuations. However, in the current situation, price deals are likely to postpone rather than eliminate the increase in costs.

An example of the scale of the problem came in September 2021, when CF Fertilisers threatened a fertiliser production shutdown that would have triggered a CO2 crisis. Government provided support to the owner, due to the threat of disruption to the UK economy. By contrast, less support has been forthcoming to the materials sector and manufacturers have passed on price

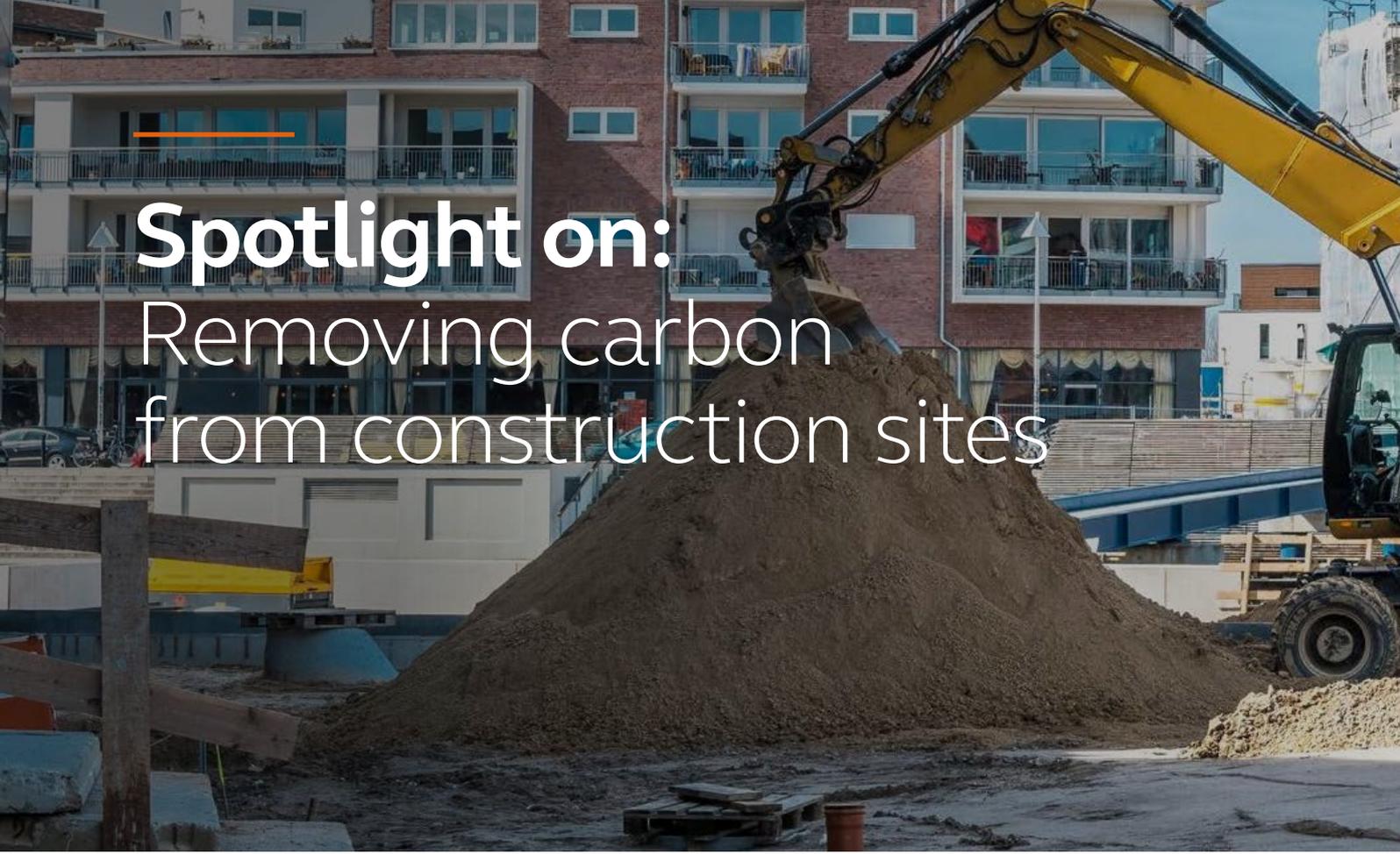
rises. Clearly such price increases are unsustainable, so when will energy prices come back to pre-COVID levels?

There is no simple answer. Neither the International Monetary Fund (IMF) nor the World Bank saw the crisis coming, but they think that the end is in sight. The IMF expects natural gas prices to stabilise by the end of Q2 2022 at a level 50% higher than in Q1 2019. According to the World Bank, price increases will slow to only 2% in 2022 and will fall sharply in 2023 as the result of a significant increase in supply.

What are the likely impacts on construction?

The price of a basket of construction materials tracked by the Department for Business, Energy and Industrial Strategy (BEIS) has increased by over 23% in the past 12 months. As a result of higher energy costs, new categories of domestically produced materials including cement, bricks, glass and plasterboard will increase in price. Price rises of 10-20% will come into force in the New Year, meaning that clients and the construction supply chain will have to endure another year of price uncertainty.

The exposure of construction materials manufacturers to fluctuations in the price of coal, electricity and gas isn't going away. Indeed, the energy transition may result in higher costs of gas and electricity as more generators move away from coal. However, as the share of renewable electricity grows, prices should stabilise and fall, so long as the wind blows. Further developments in energy markets, including the shift of energy transition levies from electricity to gas, will mean that energy costs and material prices remain unpredictable.



Spotlight on: Removing carbon from construction sites

Post COP26 it is clear that to ‘keep 1.5 alive’ we must act urgently, and construction needs to address some big challenges in the coming years. But there are also quick wins that can already make a huge difference – for example limiting the carbon on construction sites.

To paraphrase the slogan of a well-known supermarket, every little counts. But in a quest towards a carbon neutral world, construction has a big role to play. According to the International Energy Agency, construction materials and site operations contribute 10% of global emissions. And while a big part of that is attributable to construction materials, a third is a result of transport and operations on site.

The biggest contributor to emissions from construction sites is energy consumption – after all, the industry relies heavily on diesel-fuelled heavy plant and temporary power for sites where energy infrastructure is not yet in place. And even if COP26 commitments do not put on-site emissions at the top of the agenda, the upcoming reform to Red Diesel, which will remove a tax rebate of 46.81 ppl, is likely to do so.

The removal of the construction sector from the list of industries entitled to use rebated diesel and biodiesel is likely to result in a fuel price increase of at least 65%. Hydrogenated vegetable oil (HVO) is an alternative, but supply is limited, and it will also result in higher costs, because on average it is 50% more expensive than diesel. So, what’s next for plant equipment and how can construction companies lower the carbon footprint of on-site activities? Below we provide some recommendations.

- 1. Reduce the idle and stand-by time of equipment** – reducing the time when equipment is switched on but not in use will cut energy use and carbon emissions. The use of telematics by Costain illustrates how this can be accomplished with the help of real time data gathering and monitoring. Interestingly though, according to a report by the



Climate Neutral Group, maximising the productive use of plant over an extended lifetime also has a positive impact on total carbon footprint, as it helps to spread the embodied carbon impact of the machinery.

- 2. Switch to electric equipment** – subject to access to site power and preferably on a 100% renewable tariff, this is the most efficient replacement of fossil fuels. But one needs to bear in mind that the availability of electric machinery can be limited too. One company that is dedicated to changing this is Wacker Neuson, based in Germany, which produces excavators, wheel loaders and battery-powered rammers.
- 3. Educate plant operators** - operators have a key role in managing carbon emissions on site associated with both standard and low-emissions equipment. The Construction Industry Training Board (CITB) offers courses for ‘eco-operators’ of plant and machinery, which help reduce emissions and, by doing, so can also provide some cost savings on fuel/energy.
- 4. Plan for the adoption of hydrogen** – heavy and highly utilised construction plant is difficult to electrify and is likely to be one of the first industrial fleets to migrate to Hydrogen. The recent announcements by the construction equipment specialist JCB of the launch of their first hydrogen powered plant in 2022 and a deal to purchase green hydrogen highlights that this is no longer a pipedream. Before imported green hydrogen is available on a large scale though, operators may

find themselves competing against bus operators for the UK’s available supply of industrially produced hydrogen.

- 5. Optimisation of logistics and a shift towards electric fleet** – while heavy equipment on-site is the main consumer of fuels and energy, the contribution from transporting machinery, materials and people to site is also significant. Increasing the load factor, selecting the right size truck and van, and limiting the distances travelled through local sourcing of labour, machinery and materials can all help limit the carbon footprint. Replacing fossil fuel run vehicles with electric already helps to cut emissions and, over time, HGVs are likely to start benefitting from the switch to hydrogen fuel cells.

These interventions are first steps towards reducing emissions from construction sites. They align with a key priority of the Construction Leadership Council’s CO2nstructZero initiative, which is to eliminate 78% of diesel plant from construction sites by 2035. These interventions will also have a wider social impact, which is to pave the way not only for carbon footprint reduction but also for healthier surroundings, with less air and noise pollution.

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