Impact of EU ETS & ETD on Real Estate Values

November 2021
Introduction

The EU is attempting to be a leader at the global level in its approach to environmental regulations. In line with its commitments under the Paris Agreement, the EU is targeting a 55% reduction in carbon emissions by 2030 and net zero emissions by 2050. In 2005 it established the world’s first major carbon market, the EU Emissions Trading System (ETS), which has evolved and grown since, with other ETS systems arising in other geographies.

Most recently, in 2021, the European Commission (EC) has made a swathe of new proposals under the European Green Deal, the EC’s flagship strategy to meet its Paris Agreement commitments. This includes an extension of the ETS to include energy supplied to heat buildings, as well as the revision of its Energy Taxation Directive.

As is well known, real estate accounts for some 40% of global carbon emissions, and so it is no surprise that a rigorous regulatory framework aiming to achieve net zero emissions must make requirements of building owners and operators. Increasing legislation poses serious transition risks for the real estate industry, who are simultaneously waking up to the scale of the challenge to decarbonise the world’s real estate.

Following the recent proposals by the EC, EPRA and JLL have investigated the scope and potential impact of the new proposals for the EU ETS and energy taxation directive, as they pertain to real estate.

This White Paper seeks to answer the following three questions:

- What are the proposed changes to EU legislation and how does this compare at the global level?
- How are European property real estate companies and REITs likely to respond?
- What are the likely impacts on real estate actors, and what is the impact on real estate values?

For the purposes of this White Paper, JLL and EPRA have conducted a global regulations review, surveyed several forward-thinking EPRA members, and harnessed JLL’s market-leading expertise in environmental methodologies in valuation to assess the likely impact of the EU’s proposals.

The White Paper concludes that under the current proposals there will be minimal immediate impact on real estate values, however the regulations will contribute to a wider momentum towards decarbonization of real estate stock through energy efficiency upgrades and phasing out of fossil fuel heating. In the medium term, REITs and property companies who do not consider this in their real estate strategy will see negative impacts on value as a result of increased rates of obsolescence.
With the publication of this EU ETS & ETD study, we are confident that as an industry, we endeavour to be ahead of the curve when dealing with the critical topic of carbon emission and the EU’s attempt to regulate the matter. As representatives of LCRE in Europe, EPRA’s mission is to investigate, analyse, prepare and represent our member’s position in such important EU initiatives. This report is part of the bigger climate change puzzle that the industry is addressing and I hope this publication, along with others in the future, help to cement the LCRE as a forward thinking, responsible industry, committed to address the huge challenge of climate change head on.

Hassan Sabir, Finance & ESG Director, EPRA
Summary of proposed changes by the European Commission

The European Green Deal

The EC initiated the concept of the European Green Deal (referred to as the Green Deal) in December 2019, defining and setting clear goals to achieve climate neutrality within Europe. By 2050, the European Green Deal aims for reduction of harmful pollution, support towards the development of clean products and technologies as well as ensuring a just and inclusive transition. The economic sectors of energy, real estate, industry, and transport are especially affected by the Green Deal, as these are the main emitters of greenhouse gases. For the real estate sector, the regulations coming through may stimulate renovation and retrofitting to create energy efficient buildings.

Overall, the aim of the Green Deal is to emphasise the importance of environment and climate protection and to create legal obligations for emitters.

In 2021 a range of new proposals for the Green Deal were announced by the EC, including a new carbon border adjustment mechanism to ensure EU measures do not push energy production to more polluting imports, as well as an extension of the EU ETS and a revision of the Energy Taxation Directive (ETD). This report focuses on the impact of the EU ETS and the ETD. In particular the EU ETS is set to expand its scope to include the heating of buildings.
EU Emissions Trading System

The EU ETS, established in 2005, is a ‘cap and trade’ system. A cap is set on greenhouse gases, which are measured in tonnes of CO$_2$ equivalent (tCO$_2$e). Market participants are given a free allocation of tCO$_2$e which they are permitted to emit. They can then trade allowances – selling to over-emitters if they do not require their full allocation or buying from auctions or other participants if they require more allowances to cover their emissions.$^2$

Already mandatory for the power, industrial and aviation sectors, the EC officially proposed on 14th July 2021 for buildings, as well as the transport and maritime sectors, to be included in a separate but adjacent emission trading system.$^3$ Amongst other benefits, expanding the ETS to real estate is expected to stimulate more accurate measurements of actual CO$_2$ emissions of buildings and to drive low carbon and energy efficient innovation within the sector.$^4$ This is of high importance to the ECs climate goals, as the real estate sector is a highly emitting sector.

The ETS for buildings will apply specifically to energy used in the heating of buildings. This is a cost typically paid by tenants. It therefore remains to be seen whether taxation on heating will encourage action from landlords, given the cost is unlikely to affect their direct expenditure: this is referred to as the “split incentive” problem.

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Energy Taxation Directive

The Energy Taxation Directive (ETD), which is part of EU energy law, outlines the framework for the taxation of electricity and motor, aviation, and heating fuels. On the 14th July 2021 the European Commission proposed the revision of ETD, which has not been amended since 2003, under the Green Deal. The proposed revisions essentially seek to rebalance the taxation of electricity and fuels including heating fuels, to make the incentives for sustainable energy clearer.

Environmental taxation and the associated price signals are a key driver for energy consumption and production. Therefore, it is of great importance to align the ETD, which to date has not differentiated between commercial and non-commercial use, to drive sustainable consumption & production and incentivise the development of clean technologies. For instance, low-carbon biofuels have historically been taxed on a par with fossil fuels. Under the revised directive this will no longer be the case. Hence, the EC proposes the introduction of a taxation system based on environmental performance, as well as a switch from a volume-based taxation (per litre) to an energy content-based taxation (per gigajoules), to avoid incentivisation of fossil fuels and penalising fuels with a lower energy content.

The proposed minimum rate for fossil fuels, such as petrol, is set at EUR 0.9/GJ when used for heating. For sustainable, but not advanced, biofuels it is set at EUR 0.45/GJ when used for heating. Whereas, the lowest proposed rate applies to electricity, advanced sustainable biofuels and biogas, and renewable fuels of non-biological origin such as renewable hydrogen, set at EUR 0.15/GJ.5

The EC suggests transition periods for sectors currently experiencing reduced taxation, such as agriculture, real estate and energy intensive industries, and sectors currently exempt from taxation, such as aviation and fishing. Additionally, it is discussed to exempt vulnerable households from taxation of heating fuels for a period of 10 years and to introduce a transitional period of another 10 years to reach the minimum rate of taxation.6

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How are non-EU countries developing Emissions Trading & Carbon Tax schemes?

Adoption of carbon pricing instruments is accelerating

Whilst the EU ETS was the first emissions trading system of its kind in 2005, at a national level several countries have had a carbon tax scheme in place since the 1990s. For instance, Finland and Poland in 1990, Norway and Sweden in 1991, and Denmark in 1992, and Slovenia in 1996. The first non-European country to develop a carbon tax was Japan in 2012. Recently this has accelerated. In the last five years more than one-third of the currently existing carbon policies worldwide have been introduced. As of 2021 the number of carbon pricing instruments (CPI) in place was 64. Significantly, China’s emissions trading system launched in 2021. Whilst the coverage is fairly limited – applying only to the power sector – it is a major step and is expected to ramp up in scope over the coming years.

A map illustrating those countries currently with an ETS or carbon tax system, or considering implementation of one, is shown below. However, not all schemes include property within their scope.

It is interesting to note that most countries with an ETS system do not implement an additional carbon taxation scheme. However, Switzerland and Canada use both carbon pricing systems (trading and taxation). Moreover, five of the eight countries that already apply a carbon tax system currently have an ETS scheduled or under consideration. Following its departure from the EU, the UK has implemented its own ETS as of 1st January 2021 - this is therefore unaffected by the EU ETS proposals to incorporate buildings. The EU system currently applies WETS and fuel excise duties only, however country level carbon taxes are also in place.
In Canada, it is federally mandated that an ETS or carbon tax must be in place in each province, with a nationally set minimum price – and heating buildings falls within the scope. Two provinces currently have cap and trade schemes while the others employ a carbon tax. Canada’s strengthened climate plan announced in December 2020 proposed to increase its carbon price by CAD 15 (USD 11.94)/tCO₂e annually from the 2022 price starting at CAD 50 (USD 39.79)/tCO₂e to reach CAD 170 (USD 135.30)/tCO₂e by 2030. A 2019 report found that rising carbon prices in Canada are likely to benefit the construction industry, with a wave of new investment and jobs. Studies have also shown a decline in natural gas related emissions in buildings in Canada as a result of these carbon schemes. This suggests carbon schemes will stimulate investment in building improvements, as well as reduce emissions.

Now the world’s largest carbon market - China’s ETS came into effect on February 1, 2021 and is initially covering around 4,000 MtCO₂ or 30% of its national GHG emissions. In 2019, China was responsible for 27% of global carbon emissions more than 10 billion tonnes of carbon dioxide. However, its per capita emissions at about 6.8 tonnes of CO₂ per person are less than half those of nations including the United States, Australia and Canada.

China’s national ETS initially applies to the power sector only, but is set to expand to seven other sectors – these do not include heating of buildings like the EU ETS but do include building materials. The compliance cycle started on January 1, 2021, and covers an estimated 2,225 entities, making it the world’s largest ETS. More than 4.1 million tonnes of Chinese Carbon Emission Allowances (CEAs) traded on the first day at a price of RMB 52.78 (or USD 7.42) per tonne.

Mexico already has a carbon tax affecting residential and commercial buildings. The country is also implementing the pilot phase of an ETS – but this will not initially affect buildings, with scope currently limited to energy and industry sectors, similar to the original EU ETS. During the Mexican ETS Pilot, the allocation is 100% free and the regulation does not impose “economic effects” on regulated entities, so there are no penalties or price for allowances. The purpose of the pilot phase is to enhance the quality of emissions data and build capacity in emissions trading for covered entities. The operational phase is planned to commence in 2023.

Carbon prices currently low but expected to rise

Not only the carbon pricing system itself differs from country to country. There is also a wide span of price levels of carbon in Europe. The price plays a central role in the tax systems as it determines the threshold above which an emitting company would decide to adopt an emission-reducing innovation/technology rather than paying the charges for its current emissions. The prices per metric tCO₂ (including ETS/carbon taxes but excluding purely fiscal fuel taxes) range from under €1 in Poland and Ukraine to a maximum of €162 in Sweden (Figure 2). As of September 2021, the EU ETS carbon price was around €60.

Fig 2. Carbon Price as of 1 April 2021 in Euros – Top 20

In a recent study Kaufman et al have investigated the appropriate level for CO₂ prices. The authors estimated that the carbon price needs to be at around EUR 120 by 2030 in order to be consistent with a pathway to net zero by 2050. Therefore, the current level in the EU ETS appear to be currently not compatible with targeted net zero economy by 2050.⁴

At such low levels of carbon pricing, there is minimal incentive for companies to decarbonise. It may be more efficient to pay the tax and not invest in decarbonisation activities. However, the prices are anticipated to rise around the world; for instance, Canada has set a 2030 carbon price of CAD 170. In comparison to CAD 15 in 2020.

⁴Kaufman, N. et al, “A near-term to net zero alternative to the social cost of carbon for setting carbon prices” Nature Climate Change 2020; https://doi.org/10.1038/s41558-020-0880-3
Coverage of buildings in carbon pricing is low, but impacts are starting to be measured

In terms of scope, many of the existing ETS and carbon tax systems outside of the EU do not yet affect buildings – indeed the OECD estimates that just 14% of OECD and G20 countries have a carbon price of at least EUR 30 for commercial and residential sectors.9 These include Mexico and Canada, which are discussed in more detail on the map on page 8.

Canadian investor QuadReal has analysed the impact of the current Canadian carbon tax of CAD 40/tonne across their entire multi-sector 45 million sq ft portfolio. They found that at a carbon price of CAD 40/tonne the impact is already approaching CAD 1 per sq ft for some assets. Based on the future carbon tax rate of CAD 170/tonne in 2030, over 8 million sq ft of space would see over CAD 1 per sq ft impact, and almost 1.5 million sq ft over a CAD 2 per Sq ft impact. It should be noted that the impact of the carbon price highly depends on the location within Canada as well as on the energy and asset type.10 Again, as with the EU ETS, this cost will mostly be felt by occupiers.

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9OECD, “Effective Carbon Rates 2021” 2021
10QuadReal, “Implications of Canada’s carbon Tax on Commercial Real Estate”, 5th July 2021
Immediate costs to real estate owners appear minimal

It will be the energy companies that take on the added administration of procuring allowances under the expanded EU ETS, and the added cost is likely to be passed down to tenants or owner-occupiers through higher heating bills. This limits both the administrative and financial impact on real estate owners. Currently, the system does not outline any limitations on passing costs through to building occupiers.

The proposed revisions to the ETD should correct incentives towards renewable energy consumption and penalise fossil fuels for heating more effectively via existing tax mechanisms. However, given the costs will most likely be paid by occupiers, the impact on landlords is still limited.

An alternative to this status quo would be a gross lease structure, where the tenant pays a fixed rent inclusive of operating expenses. In this circumstance the landlord is incentivised to minimise heating costs as there is a direct impact to their bottom line. This would also give increased control to real estate owners over their portfolio’s emissions, but whether landlords are willing to bring about such change remains to be seen.

Behaviour change from occupiers will depend on carbon price

Arguably the higher heating bills that will be experienced by those in energy inefficient buildings using fossil fuel heating sources should encourage electrification of buildings and use of renewable energy. However, given energy is not a discretionary spend, unlike aviation for instance, it is unlikely that this will have a major impact on behaviour unless the carbon price is very high. Added to this the fact that tenants are broadly not in control of the replacement of heating, ventilation and air conditioning (HVAC) systems or the efficiency of the building means that there is an extra layer of complexity blocking renovation.

The JLL Global Responsible Real Estate Survey\(^1\) has shown that many occupiers are already prioritising sustainability. Of 405 corporate occupiers surveyed, • 89% said sustainability was increasingly important to their corporate strategy

• 68% said that carbon emissions reduction was currently part of their corporate sustainability strategy

• 65% said they had already adopted or planned to adopt RE100 targets by 2025, committing to 100% renewable energy

• 65% said they had adopted or would adopt by 2025 Net Zero Carbon buildings targets

In this landscape of high sustainability ambition, collaboration between landlords and tenants on improving the sustainability of buildings and sourcing renewable energy is already high on the agenda. Many landlords are therefore already prioritising decarbonization in order to attract the best tenants, which comes with it costs of retrofitting that may not always be recoverable through service charge.

\(^1\)JLL, “Global Research Responsible Real Estate Decarbonizing the Built Environment”, June 2021
The proposed EU policies will contribute to this momentum, particularly as carbon prices rise. This will eventually encourage higher requirements of landlords from their occupiers across the board, leaving those properties that have not been retrofitted prematurely obsolete. The timing of these impacts will be decided by the growth rate of carbon costs.

National carbon taxes have the potential to ramp up impact

In addition to the EU Directives, many EU member states already implemented their own, national carbon taxation schemes, resulting in the existence of many varying carbon taxation mechanisms and pricing policies across the EU. Currently, carbon pricing is applied both at national and EU level.12

Where EU proposals do not currently appear to impose direct cost impacts on landlords – national level implementation of carbon tax schemes have the potential to do so.

In Germany, a national carbon tax has been applied on gas and oil used for heating of private, public, and commercial buildings since the 1st of January 2021. In May 2021, the German federal government aimed to pass a law on an equal split of the taxation costs between tenant and landlord (commercial and non-commercial). However, in June 2021 the proposed law was declined, as it was argued that landlords do not have an impact on the heating behaviour of tenants.

ZIA (German Property Federation) is proposing an approach of the taxation cost distribution which is differentiating between energy-refurbished buildings and non-refurbished buildings. This suggests that owners of assets with no energy retrofitting could need to cover a share of the taxation cost.

In France, a national carbon tax for the buildings sector along with the transport and industrial sector was introduced in 2014. However, in 2018 after significant price increases the “gilet jaune” movement arose, with mass protest leading to the cancellation of further planned price increases. Further, a climate bonus is distributed to low-income households to support the payment of associated energy costs.13

As the example of Germany and France demonstrates, within many EU member states, carbon tax imposed on heating fuels is currently fully borne by tenants. Sweden is an exception; employing an all-inclusive rent system, which is creating incentives for landlords to retrofit their assets, without passing on the associated costs to their tenants. If national level variations to tax schemes and leasing structures continue, this may have greater impact than the EU level policies in their current form.

The big picture – decarbonisation is here to stay

Even where the bill is passed down to tenants, real estate investors will not escape the broader impacts of the move towards decarbonisation. We are already seeing a shift of occupier preferences in many commercial real estate markets towards more energy efficient stock and renewable energy sources.

Higher energy costs in general are likely to accelerate this trend, meaning higher demand for those properties which are highly energy efficient, and especially those with renewable energy generation on-site.

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13BPIE, “Introducing a carbon price on heating fuels: an effective signal for faster decarbonisation in the buildings sector?”, June 2021
How will European REITs and property companies respond?

In order to understand the industry’s response to the proposed EU policies, JLL and EPRA interviewed and surveyed a number of EPRA members on the impact of EU ETS and ETD on real estate values. Eight members were interviewed, with a further three submitting written responses. The market capitalisation of the companies surveyed amounts in all to EUR 90 bn and other more net participants.

The EU proposals will have limited impact on investors’ strategies

Almost 90% of the interviewed companies were aware of the proposed inclusion of buildings in the EU ETS, of which over two fifths thought this was likely to have an impact in the industry and their strategy. Awareness of the proposed amendments to the ETD was lower at around two thirds.

In general, the respondents had mixed views on whether these directives will be impactful and will affect company strategy - although nearly all agreed that the current level of carbon pricing is unlikely to bring material changes to strategy and real estate value, especially considering the cost is not directly taken by the landlord.

REITs and property companies are ahead of regulators in Europe

Currently, regulations are perceived as being relatively weak and spread out over too many different mechanisms. As a result, EPRA members felt that their existing carbon strategies were already ahead of the proposed legislation and therefore would not change.

Most lamented a lack of detailed guidance from the EC on how the expanded ETS would be implemented. Confusion on the EU-wide direction of travel of carbon price is compounded by the implementation of carbon taxation on a national level impeding comparable analysis of carbon reduction mechanisms.

Ahead of the curve

Some EPRA members are already measuring and reporting their carbon emissions, such as Alstria’s Carbon Accounting Report. UK REITs British Land and GPE have introduced an internal carbon price which will futureproof their operations from rising carbon costs and accelerate their Net Zero transitions. British Land now charges circa €71 per tonne on embodied carbon in developments to purchase offsets and retrofit their stock, whilst GPE charges circa €113 per tonne on both embodied carbon and operational emissions towards their Decarbonisation Fund.

The policies are well-intentioned to drive change, but their effectiveness will remain limited while the price of carbon remains so low.

Justin Travlos, Global Head of Responsible Investment, AXA IM Real Assets
The split incentive is unresolved

The message was abundantly clear that to create incentives to retrofit of buildings, the price of carbon must be allocated to those that can decide – the landlords.

“...The proposal in its current form is largely irrelevant. For the policy to be effective it would need a mechanism that prevent landlords from passing the costs on to the tenants, and a tighter supply of allowance that would allow substantially higher carbon price around EUR 500/tonne.

Olivier Elamine, CEO, Alstria Office REIT

Decarbonisation to be accelerated for some

Around 38% of the companies were likely to adjust or accelerate their company strategy or carbon reduction ambitions to some extent based on the discussed policy changes, albeit many had already considered energy use intensity or carbon emissions in their portfolios. Certain EPRA members agree that there are many drivers that are pushing the industry towards sustainability, but these revisions to EU policy are unlikely to be a key driver for them, whilst others are of the opinion that the impact on energy prices and utilities costs could be significant.

To date, only one company had conducted investigations into potential cost/value implications of the EU ETS and ETD, but overall, around half of the companies had done some kind of investigation into cost/value implications of carbon pricing and energy efficiency.

Depending on the level of carbon price, their carbon reduction ambitions could be accelerated and certainly their discussions with tenants were likely to be impacted.
The Impact on Real Estate Values

Earlier this year, JLL produced a valuation methodology paper entitled ‘Valuing Net Zero & ESG’. It set out how sustainability trends such as investor and occupier sustainability targets, lending criteria, and increasing legislation would affect property values in the future.

Generally speaking, the value of assets held for investment purposes generally consist of the present value of the net income of the asset. This value is therefore determinant from income from the gross income (rents) but also from the operating expenditures, capex and other factors illustrated in the next diagram. Thus, in simple terms, the higher the income and the lower the expenditures, the higher the value.

The sections above illustrate that, although the ETS - in the current proposal - would likely have a minimal impact on the landlords, it could impact the lettableity of buildings as energy prices rise and tenants become reluctant to let energy inefficient buildings using fossil fuel-based energy. This will compound existing trends towards reduced rents and increased letting up periods for less energy efficient stock, as well as discounted exit yields as sustainable buildings become the new normal. As such, returns and values will be negatively affected as obsolescence rates accelerate.

Other than for owner-occupied stock, REITs and property companies will not be directly impacted by the EU ETS expansion given heating bills are generally passed down to tenants – unless national level carbon policy dictates that landlords must contribute to tax payments. Based on QuadReal’s portfolio analysis and converting to the current EU carbon price, tenant impacts could be in excess of €2 per sq ft.

It is unclear whether this will be significant enough to put pressure on tenants, with some concerned that it will simply penalise those least able to afford higher bills with little control over the building they occupy.

Current occupier trends already indicate a move towards more energy efficient stock, and particularly as the carbon price increases over time, the expanded EU ETS is likely to contribute to tenant requirements for highly energy efficient buildings with low carbon heating systems. JLL Valuation recently illustrated in the paper Valuing Net Zero & ESG for Offices how the combination of changing occupier requirements, investor commitments, and increasing legislation were contributing to an acceleration of obsolescence for less sustainable buildings, with green premium opportunities for best-in-class stock.
Whilst value trends associated with decarbonization and sustainable buildings are moving at different speeds in different asset classes, current predictions indicate that during the transition period where market and legislative demands for sustainability increase, and supply of net zero carbon buildings is low, premium returns can be generated. In the medium to long term, as sustainable buildings become the new normal, those buildings which have not been retrofitted to a high sustainability standard are likely to experience negative value impacts as a result of increased obsolescence (Figure 3).

Fig 3. Increased Obsolescence of Non-Sustainable Buildings

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<th>Time</th>
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Conclusion & Outlook

Whilst the immediate impacts of the expanded EU ETS and revisions to the ETD may be minimal to real estate owners, the resulting rising energy costs for tenants will contribute to broader trends indicating high tenant demand for decarbonized real estate—especially as carbon prices increase. Risks remain at a national level as differing carbon taxation policies may threaten direct costs to landlords—although evidence of this is yet to be seen.

Opportunities will likely arise for landlords producing on-site renewable energy, and those that have retrofitted stock to higher levels of energy efficiency. Low carbon and renewable energy systems such as photovoltaic panels, air or ground source heat pumps, and solar thermal water technologies are likely to come to the fore. This could also give landlords the opportunity to sell allowances themselves on any excess renewable energy supply for profit.

In addition, increasing focus will be placed on the actual measured in-use energy efficiency of buildings, with energy-use intensity (EUI) figures becoming important to occupiers. However, it may take some time for the carbon price to reach a level that brings this into focus for tenants.

Nonetheless the momentum from legislators, occupiers, and investors all points towards a need for decarbonization—with those real estate owners who fail to prioritise net zero carbon strategies likely to experience increased obsolescence of their stock, with falling values and ultimately the risk of stranded assets in their portfolio.

JLL and EPRA’s survey of EPRA members indicates that the majority of European REITs and property companies are cognizant of the need to prioritise decarbonization of their portfolios, and as a result are unphased by the proposed introduction of these EU policies.