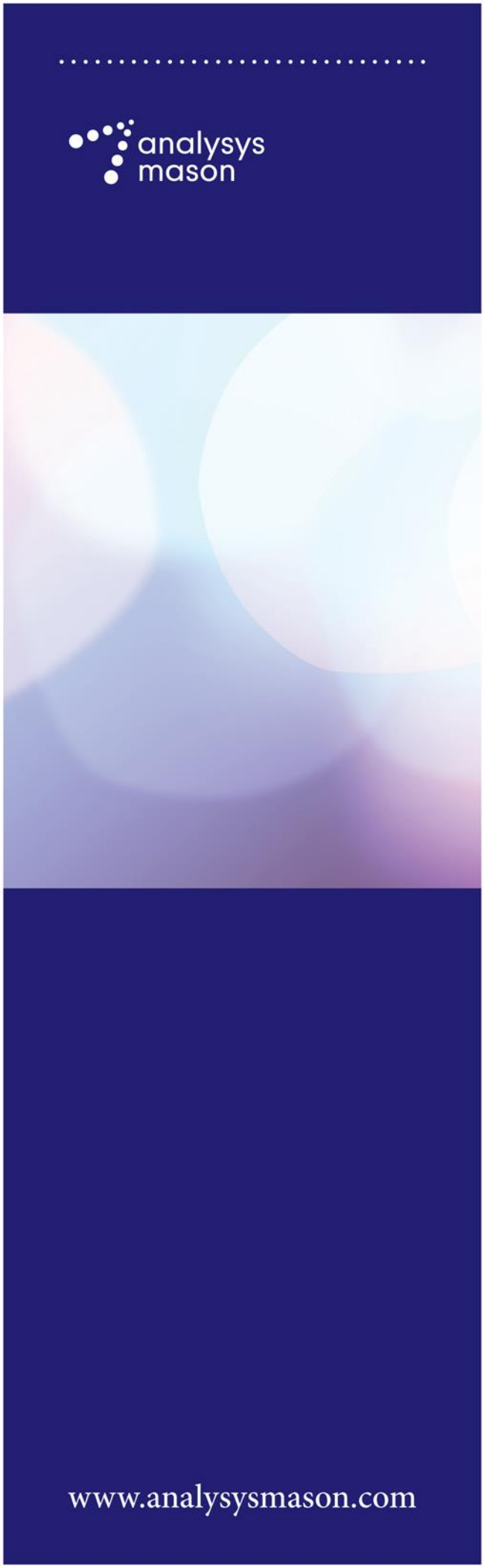


**Report for DCMS**

# Financial impact of ECC changes

*May 2016*

Charles Murray and Matt Yardley

**Ref: 2005861-196**

# Contents

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# Abbreviations used

The following acronyms and abbreviations are used in this report

| Term | Meaning |
|---|---|
| DCMS | Department for Culture Media and Sport |
| EBITDA | Earnings Before Interest Tax Depreciation and Amortisation |
| ECC | Electronic Communications Code (‘the Code’) |
| MNO | Mobile Network Operator |
| SIM | Subscriber Identity Module. Used by MNOs to define a customer’s device which is registered to their network |
| WIP | Wholesale Infrastructure Providers |

# 1 Executive summary

This document is the final report of a project carried out by Analysys Mason on behalf of the Department for Culture Media and Sport, to examine the financial impact of proposed changes to the Electronics Communications Code ('the Code').

The DCMS is considering a set of five key changes, which can be grouped under the following three categories:

- increasing the scope of the Code
- providing MNOs with additional rights
- changing the rental valuation regime.

To conduct the impact analysis we engaged with key stakeholders through phone interviews, submitted information requests and reviewed all the submissions from the consultation of Q1 2015. Our initial findings were further refined through further engagement with the key stakeholders. Our findings suggest the following potential impacts of changing the Code in the three categories:

- Increasing the scope of the Code could impact the GBP145 million of MNO spend on WIP licence fees, with GBP 91 million being directly impacted. GBP54 million of the WIP licence fees are spent on land rents which will not be directly impacted by the scope change, though they could be impacted by changing the valuation regime (see below).

- Providing the MNOs with additional rights would ease roll-out challenges but might increase costs in the short term as the market finds a new rate incorporating all the new rights; longer term cost should then stabilise.

- Changing the valuation regime could produce significant yearly savings, up to GBP 53 million by 2020 for the utility regime. This figure is the maximum savings assuming the MNOs move to the new utility rates on lease renewal, however the actual savings are likely to be much less as the MNOs are unlikely to impose the rates on landowners.

Changing the Code could help MNOs to roll out new equipment and coverage although it is not the only barrier. Planning consent, availability of backhaul and wayleaves for fibre backhaul are all other areas which cause challenges for MNOs deploying network.

We also note the importance of timing considerations: in order to start 5G services using 700MHz spectrum by 2020, negotiations with the WIPs and independent landowners will commence during 2018.

# 2 Introduction

In December 2015 the Department for Culture Media and Sport (DCMS) engaged Analysys Mason to conduct a financial impact analysis of its proposed changes to the Electronic Communications Code (ECC or 'the Code'). The Code enables electronic communications network providers to construct their networks, through the provision of certain rights to build infrastructure on public and private land.

An explanatory note to the Code states: *'The Code is designed to facilitate the installation and maintenance of electronic communications networks. It confers rights on providers of such networks… to install and maintain apparatus in, over and under land, and results in considerably simplified planning procedures.'*

The Code has its origins in the 1980s[1], before the boom in commercial mobile services, and was therefore designed to provide fixed communications operators with rights to build fixed infrastructure.

The DCMS is considering changing the ECC to make it more suited to mobile communications, and Analysys Mason were engaged to analyse the financial impact of the proposed changes. In this report, we present the findings of our financial impact analysis of the proposed ECC changes on mobile network operators (MNOs), wholesale infrastructure providers (WIPs) and independent landowners.

The remainder of this document is laid out as follows:

- Section 3 describes the DCMS's proposed changes to the ECC
- Section 4 explains the methodology we have used in our analysis
- Section 5 outlines the current financial status of the mobile infrastructure market
- Section 6 presents our findings of the impact of potential Code changes
- Section 7 explains the timeframe within which changes to the ECC must be implemented.

The report includes supplementary material in Annex A, which provides information on Project Beacon (Vodafone and $O_2$'s network share).

[1] The Electronic Communications Code is set out in Schedule 2 to the Telecommunications Act 1984 as amended by Schedule 3 to the Communications Act 2003 ("the Act").

# 3 Proposed changes to the Code

The DCMS is considering changing the ECC in five key areas, each intended to address a specific problem in the industry. These have been summarised in Figure 3.1 below:

*Figure 3.1: Summary of proposed ECC changes [Source: Analysys Mason, 2016]*

| Proposed area of change | Problem to be addressed | Proposed change |
|---|---|---|
| **1. Scope of the Code** | MNOs have to follow different processes with land suppliers vs. infrastructure providers | Include infrastructure as well as land in the Code |
| **2. Right to remain** | Lease termination can be used unfairly as a tactic in lease re-negotiation | Provide a right to remain |
| **3. Right of access** | Leases have details of access rights which can be used as a lever in rent negotiation | Ensure access to MNO equipment cannot be withheld |
| **4. Right to upgrade and share** | Leases typically included clauses requiring increased rent in case of upgrade/site sharing | No additional charges for operators upgrading/site sharing |
| **5. Valuation method for market rents** | No standard approach to calculating market rent in case of dispute | New method to calculate (lower) rents for MNOs |

These proposed areas for change are described in more detail below.

- **Scope of the Code.** The ECC powers are currently applied on land but not on infrastructure (for example tower space). This means that mobile operators must follow different processes when they are dealing with land to when they are dealing with infrastructure providers. The DCMS could change the Code so that it includes infrastructure as well as land, thereby increasing the range of assets that the MNOs will have rights over in accord with the Code.

- **Right to remain.** Clauses in leases can allow for termination of the contract, meaning that MNOs may be forced to remove sites without any alternative or possibility of negotiation. Lease termination can thus be used unfairly as a tactic in lease re-negotiation. The DCMS is considering providing a right to remain, in an attempt to reduce termination as a negotiating tactic.

- **Right of access.** Ground leases and licences stipulate specific access rights, such as time-restricted access, required notification period, etc. Even with the agreed access rights, MNOs may be unable to access their sites quickly (for example at weekends, or out of hours when the appointed contact is not reachable). The DCMS is considering ensuring that MNOs cannot be denied access to their equipment, and implementing measures to reduce the use of access as a negotiation tactic.

- **Right to upgrade and share.** Ground leases typically include clauses which increase rents in the case that a site should be upgraded or shared with another MNO. These clauses drive cost during the MNOs' roll-outs, and can lead to disputes. The DCMS is proposing to allow operators to upgrade and share their sites without and additional charges.

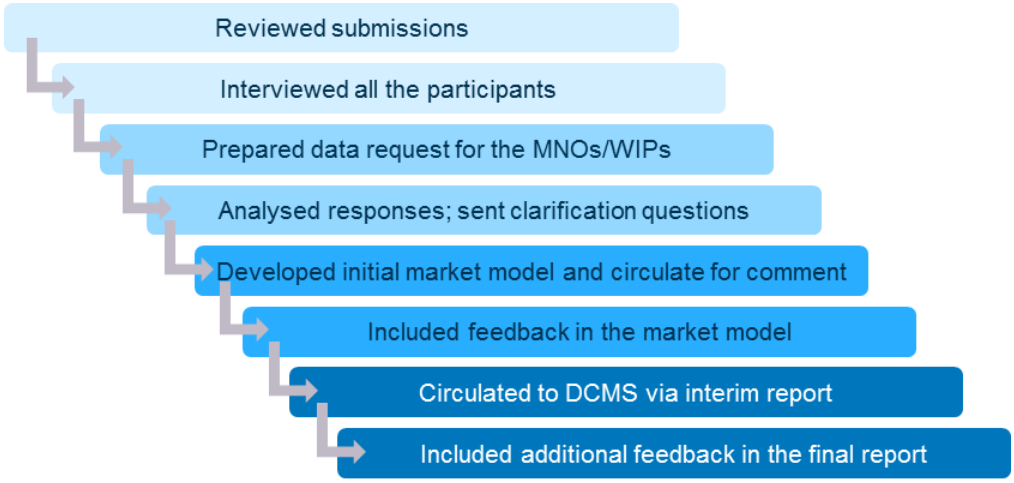
- **Valuation method for market rents.** The process for resolving disputes is not consistent with other property processes (the Landlord and Tenant Act) and there is not a standard approach for calculating market rents in the case of a dispute. The DCMS is considering standardising this process using a 'red book' method or utility calculation, which will ultimately result in lower rents for MNOs.

# 4 Methodology

As shown in Figure 4.1 below, our methodology has involved extensive stakeholder interaction. We began by reviewing submissions to the Q1 2015 public consultation from a number of bodies: MNOs, WIPs and organisations representing independent landowners. Having reviewed the submissions, we interviewed 12 of the participants, and prepared a data request for the MNOs and WIPs.

The analysis of the participants' responses was augmented with desk research and formed the basis for our market model, which was developed after clarification questions had been sent to the operators and WIPs. The initial model was refined based on feedback received, and this was circulated to the DCMS via our interim report. Figures were finalised and additional feedback was included from various parties (including the DCMS) to form the this final report.

*Figure 4.1: Schematic showing methodology followed [Source: Analysys Mason, 2016]*

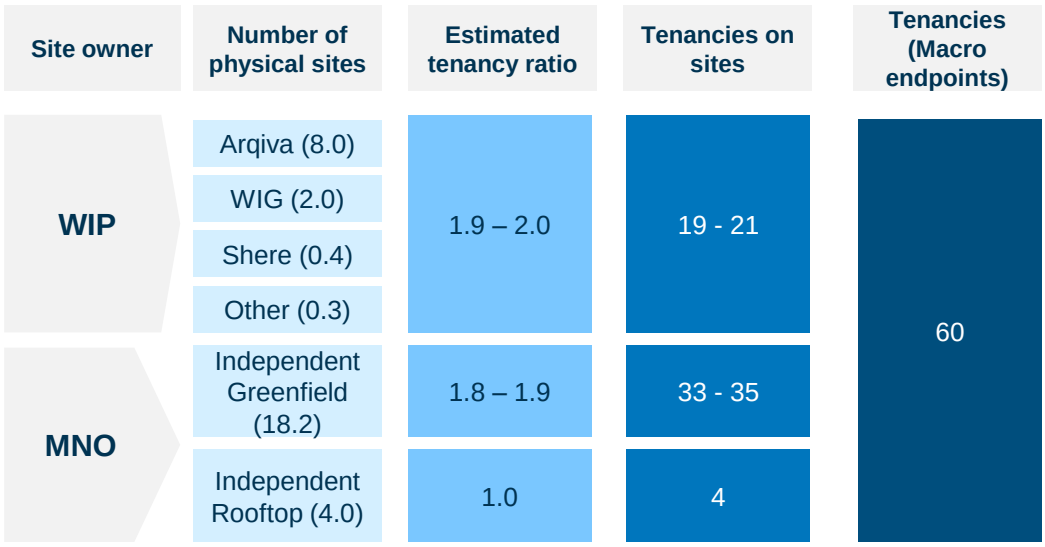


# 5 Industry structure and spend

## 5.1 Number of sites

Based on stakeholder interviews and stakeholder's responses to the ECC consultation, we estimate that there are around 33 000 physical mobile towers/rooftops across the UK. Around 11 000 of these are owned by WIPs (of which Arqiva is the largest), while around 22 000 are owned by the MNOs. As shown in Figure 5.1 below, taking into account tenancy ratios, there are a total of around 60 000 mobile radio endpoints.

*Figure 5.1: Estimated occupancy metrics (numbers in thousands) [Source: Stakeholders' responses to the ECC consultation, stakeholder interviews]*




## 5.2 Events which drive changes in an operator's cost base

Specific 'events', such as the termination of a lease contract or the deployment of new spectrum, will drive changes in an MNO's cost base. These events and their effects on an operator's costs are listed below:

- **NTQ (notice to quit) from a landlord**. This refers to a landlord terminating a lease, and therefore requiring an operator to move to a new site. The new site may have a higher rent than the previous lease.
- **New sites built by MNO or WIP.** If an MNO or WIP builds new infrastructure to support a new site (e.g. in order to increase coverage), then this will increase the operator's cost base.
- **Co-location on existing infrastructure** – either on an operator-owned site or on a WIP site. If an operator deploys equipment on existing infrastructure owned by another MNO, their sharing of the site incurs a 'pay away' cost which goes to the landlord. Co-locating on a WIP

tower provides the WIP with additional income from the licence fees of the new operator (the basic premise of the WIPs' business model).

- **Decommissioning of a site.** If an operator comes off a site, then the cost base is reduced. This is occurring in large numbers at the moment due to Project Beacon (a network-sharing arrangement between Vodafone and $O_2$ – see Section 6). Project Beacon has caused tension in the supply chain due to the reduction in sites (and thus income) for independent landlords and WIPs.

- **Renewals of lease contracts.** When a lease contract between a landlord and an operator expires (or when a licence agreement between a WIP and an operator expires), this may be renewed through a renegotiation process. The uncertainty over the dispute process, and the high costs of moving site, have the potential to give rise to additional cost and tension.

- **4G coverage upgrades.** An operator's base 4G coverage roll-out (using a mixture of 800MHz and 1800MHz), in order to reach its coverage target, gives rise to costs due to the additional equipment needed on each site.

- **4G capacity upgrades.** Operators deploy additional spectrum (1.4GHz, 2.3GHz and 2.6GHz) in order to increase capacity. Generally the additional equipment required for a capacity upgrade is covered by the costs of a coverage upgrade, although this can vary considerably depending on the particular site and the MNO.

We estimate that around 70 500 such events may occur between 2016 and 2020 (across all operators), which implies that each site will be visited twice in that period. As shown in Figure 5.2, upgrades are the most common event (accounting for around 70% of the total), followed by renewals (16%).

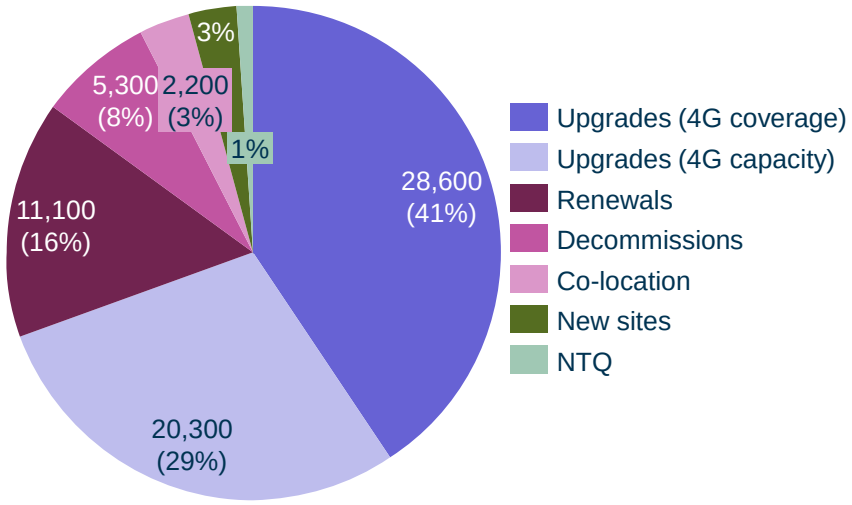



*Figure 5.2: Estimated number of events over 2016–2020, all operators [Source: Industry submissions and interviews]*

## 5.3 Estimated industry cash flows

Based on MNO submissions, we estimate that in 2015 MNOs spent a total of GBP359 million on tower rental and local authority taxes ('rates'). As shown in Figure 5.3, GBP278 million (over 75%) was spent on rent and licences. Of this GBP278 million, GBP133 million (48%) was paid directly to independent landlords as rent, while GBP145 million (52%) was paid to WIPs in licence fees.

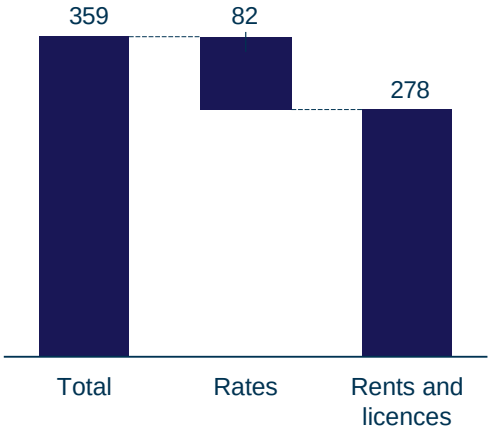



*Figure 5.3: MNO expenditure from tower rent and rates, 2015 (GBP million) [Source: Industry submissions and interviews]*

As shown in Figure 5.4 below, WIPs also paid GBP54 million (37% of their licence fee income from MNOs) to independent landlords, giving the landlords a total revenue of GBP187 million.

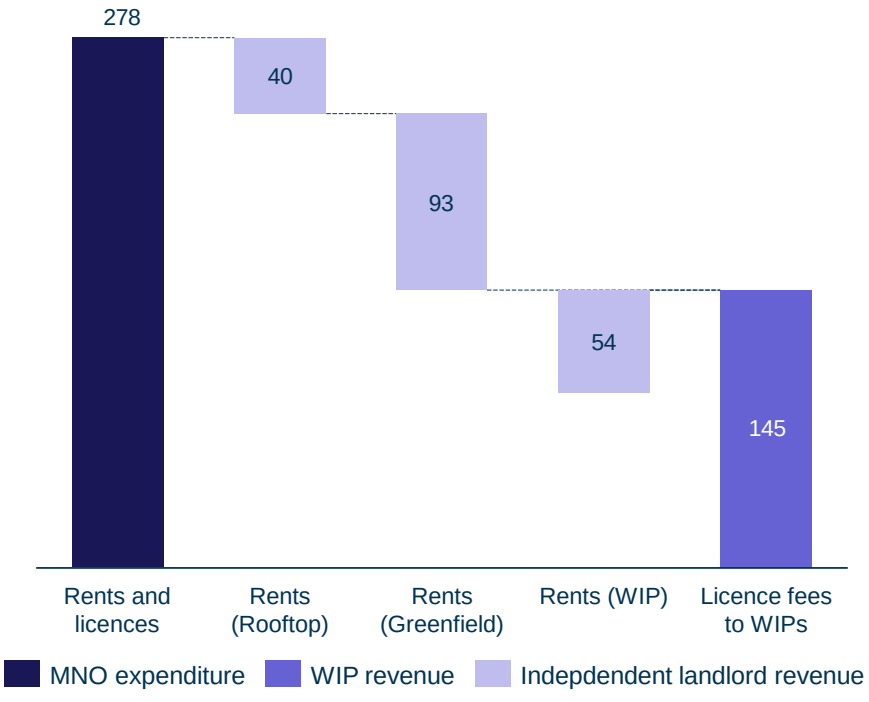



*Figure 5.4: Independent landlord revenue from MNOs, 2015 (GBP million) [Source: Industry submissions and interviews]*

Based on published accounts, we estimate that WIPs' revenue in 2015 totalled GBP324 million. MNOs contributed GBP238 million (73% of total revenue), while non-MNO[2] and non-UK revenues contributed GBP86 million (27%). MNO revenues came mainly through direct licence fees, though a significant fraction (39%) came indirectly through 'pass through' costs. As shown in Figure 5.5, WIPs received GBP26 million in rates (WIPs' rates are passed through to MNOs, meaning the GBP26 million is included in the GBP82 million shown in Figure 5.3). WIPs also received GBP67 million via other pass-through costs, such as energy supply.

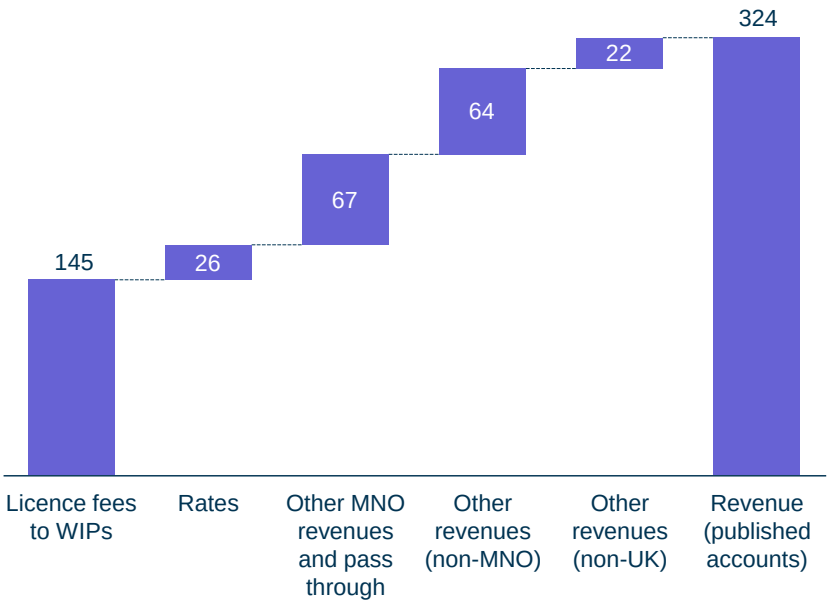



*Figure 5.5: WIP revenue, 2015 (GBP million) [Source: Industry submissions and interviews, Companies House]*

[2] Apart from the four MNOs, WIPs have around 100 other telecoms customers, such as Airwave.

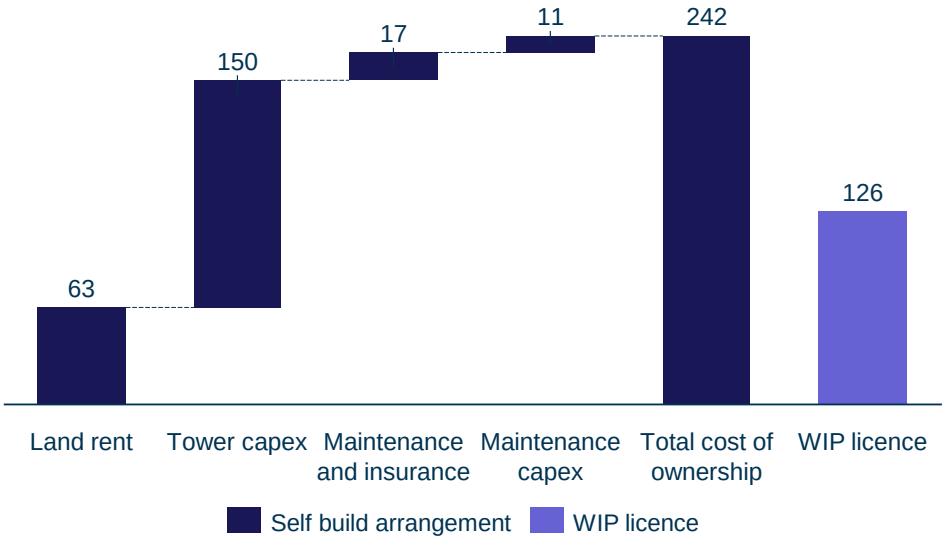
## 5.4 Site costs

Based on consultation submissions, we have estimated the total cost of ownership of a tower using a 20-year model. As shown in Figure 5.6, the ground rental cost (GBP63 000) only accounts for slightly more than 25% (GBP 242 000) of the total cost of ownership. The largest contribution to the total cost (over 60%) comes from the initial build capex. These calculations assume the following parameters:

- annual land rent of GBP5500
- an average tower construction cost of GBP150 000
- annual maintenance and insurance cost of GBP1500
- maintenance capex per year of ~0.7% of construction costs
- WIP licence fee of GBP11 000
- WACC for the MNO of 9%
- price inflation of 2%
- 20-year model.

Assuming an annual WIP licence cost of GBP11 000 (using a 20-year model with the same inflation and WACC as above), an MNO would be required to pay GBP126 000 in NPV terms over the lifetime of the tower. This therefore illustrates that WIPs offer an MNO better value in the long term compared to a self-build arrangement.

*Figure 5.6: Total cost of ownership: comparison of self-build tower vs WIP licence model (GBP thousand per site in NPV terms) [Source: Industry submissions]*



It should be noted that the economic pricing of a WIP tower is significantly more complex than Figure 5.6 above depicts, due to the characteristics of the WIP business model and tower portfolio, including factors such as additional tenants for limited costs, the difference between depreciated lifespan and economic lifespan, and different tower heights and costs.

However, as shown in Figure 5.7 below, a WIP licence costs around 70% more than the direct opex incurred in a self-build arrangement, showing that land rents and WIP licence costs are not directly comparable. The capex element of a self-build tower is capitalised on the balance sheet and then depreciated yearly in the P&L. As depreciation sits below the EBITDA line on the P&L, the cost of the tower is excluded in an MNO's EBITDA figure. As MNOs are compared by investors on an EBITDA multiple basis, any changes which negatively impact EBITDA are undesirable. Thus despite appearing to offer better value, the reduction in EBITDA for a WIP site versus a self-build site means the decision between these two options is not clear-cut. In addition, the characteristics of the WIP business model and the resulting range of economic values for WIP licence fees can cause significant tension in the commercial relationships between the MNOs and WIPs during re-negotiation of licence fees.

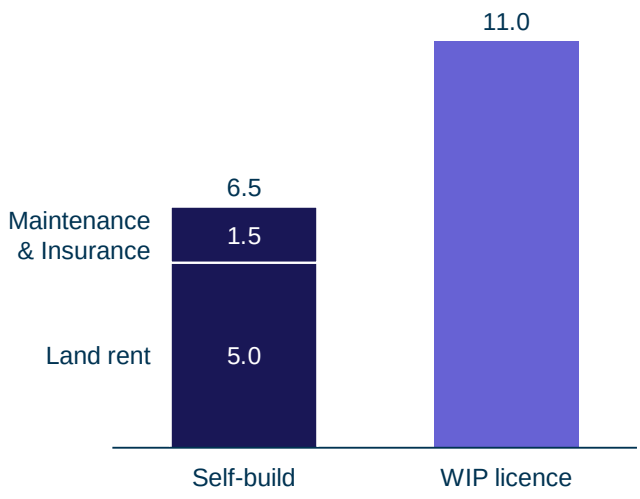



*Figure 5.7: Opex comparison between self-build tower vs WIP licence model (GBP thousand) [Source: Industry submissions]*

## 5.5 Projected rent in 2020

As shown in Figure 5.8 below, assuming no changes to the Code, we have estimated that between 2015 and 2020 the industry will see a net growth in rent of 14% (GBP278 million to GBP317 million). This consists of a set of contributions which affect all operators, and a separate set of contributions which only affect the MNOs involved in Project Beacon (Vodafone and $O_2$). Project Beacon is estimated to produce a significant net saving of GBP21 million (a 6.2% reduction from the total due only to growth from all operators).

The non-Beacon operators (BT-EE and H3G) – which will not benefit from the Project Beacon consolidation – will therefore see a larger cost base increase of around 22%.

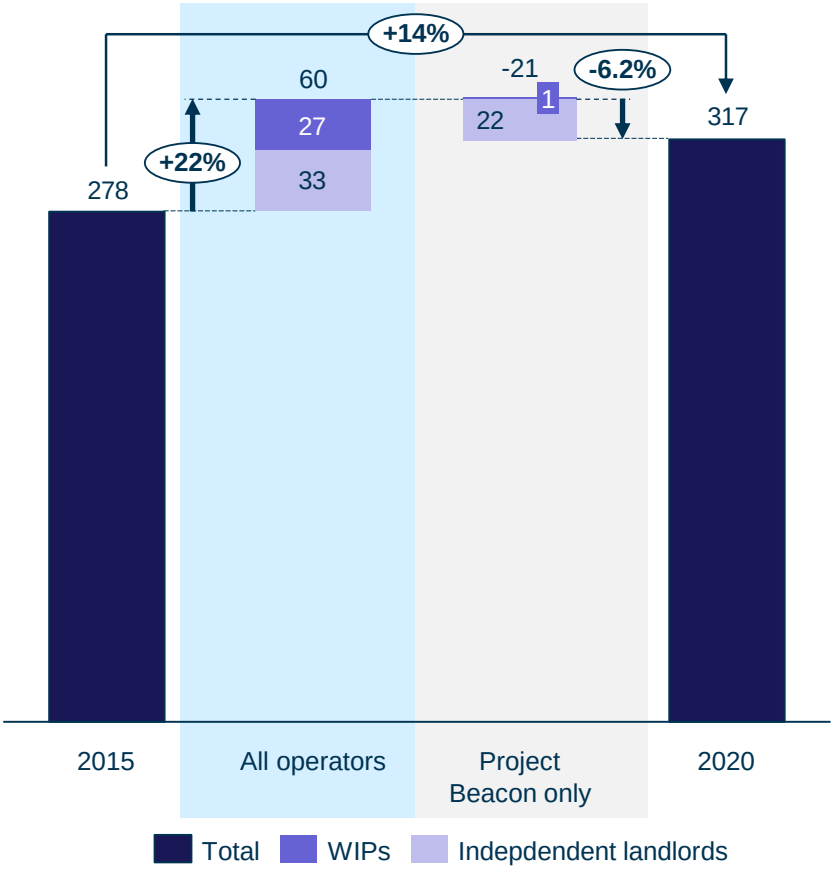
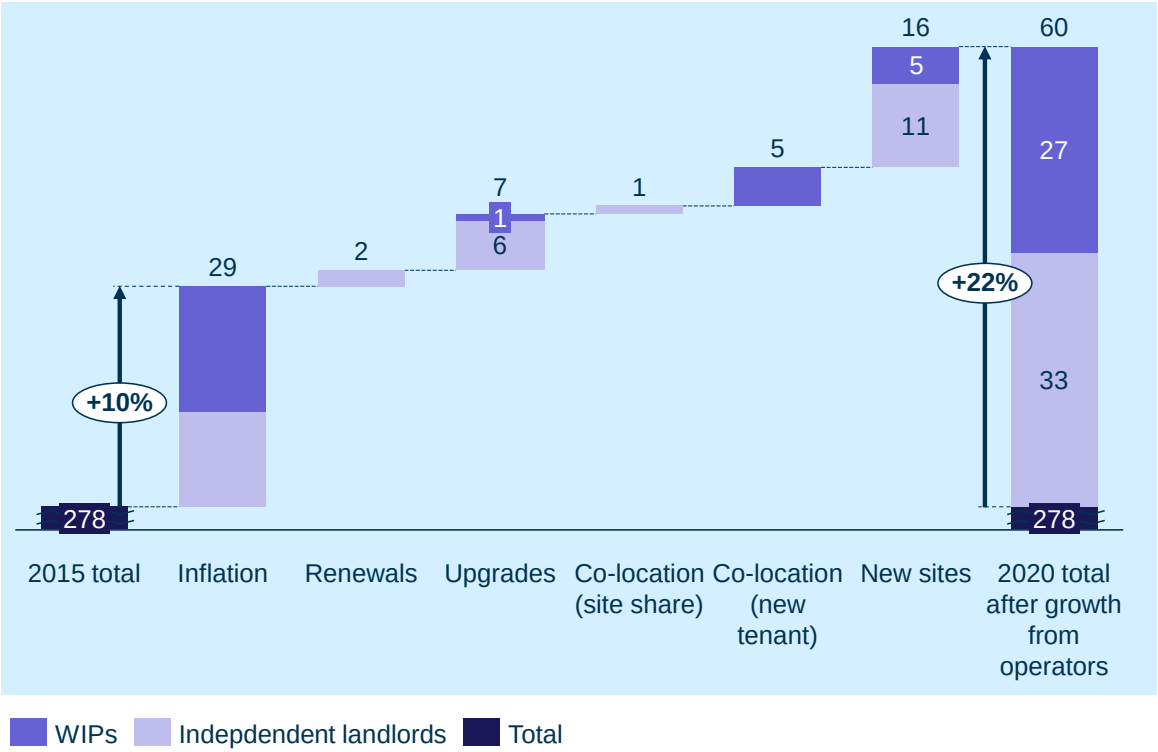



*Figure 5.8: Projected growth in rent assuming no changes to the ECC (GBP million) [Source: Industry submissions and interviews, 2016]*

Growth in rent from factors which affect all operators consists of a GBP29 million contribution from inflation, typically though annual index-linked rent or licence fee inflators, as well as GBP31 million of growth from each of the events listed in Section 5.2, namely new sites, co-location (site-shares with other MNO), co-location (new tenant of WIP), renewals, and upgrades.[3] As shown in Figure 5.9, excluding growth from inflation (which accounts for around half of the total growth), the biggest contributor is new sites (GBP16 million) followed by upgrades (GBP7 million).

*Figure 5.9: Growth in rent from factors affecting all operators (GBP million) [Source: Operator submissions and interviews, Analysys Mason, 2016]*




[3] Decommissioning only applies to the Project Beacon operators, so this event is excluded.

Figure 5.10 below shows the savings which we estimate will be realised through Project Beacon consolidation (decommissioning); these savings will only affect Vodafone and $O_2$. The project will incur an additional rent of GBP5 million which we have categorised as 'Beaconisation'. The technical upgrade to "Beaconise" a site is similar to a 4G base roll-out, however as the site is also transferred to CTIL (from the host MNO) during the process, the lease has to be changed. However, the large consolidation saving of GBP26 million leads to an overall net reduction of 6.2% for the combined Beacon operators compared to the 2020 total, after growth from factors which affect all operators.

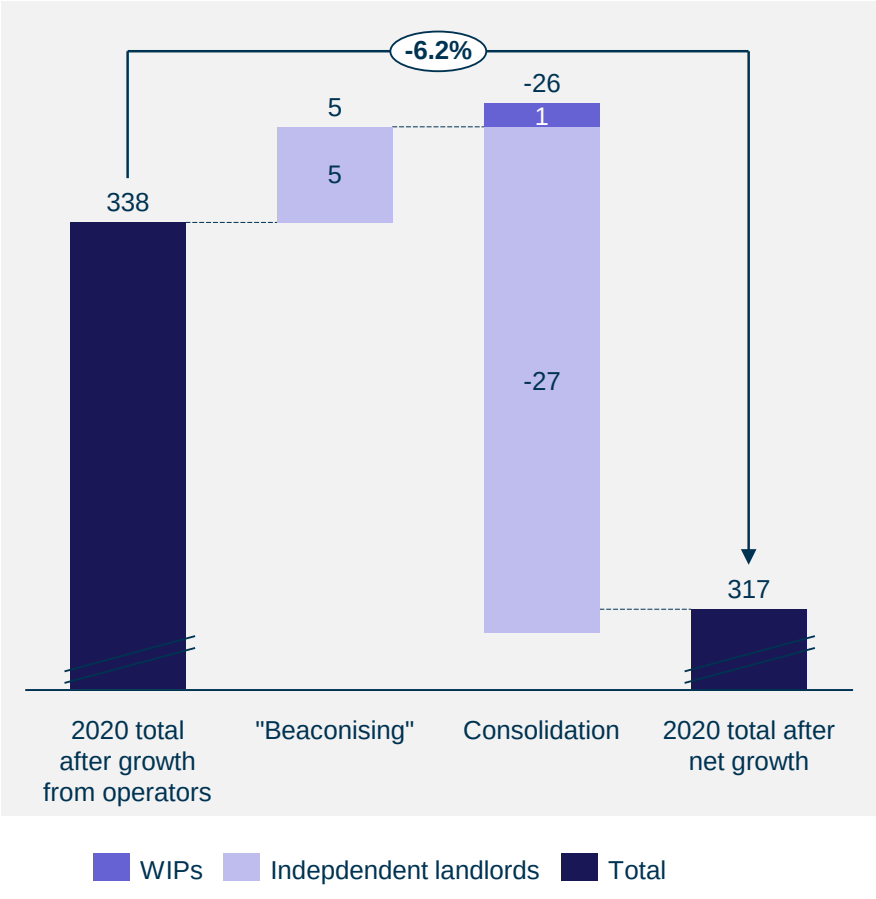
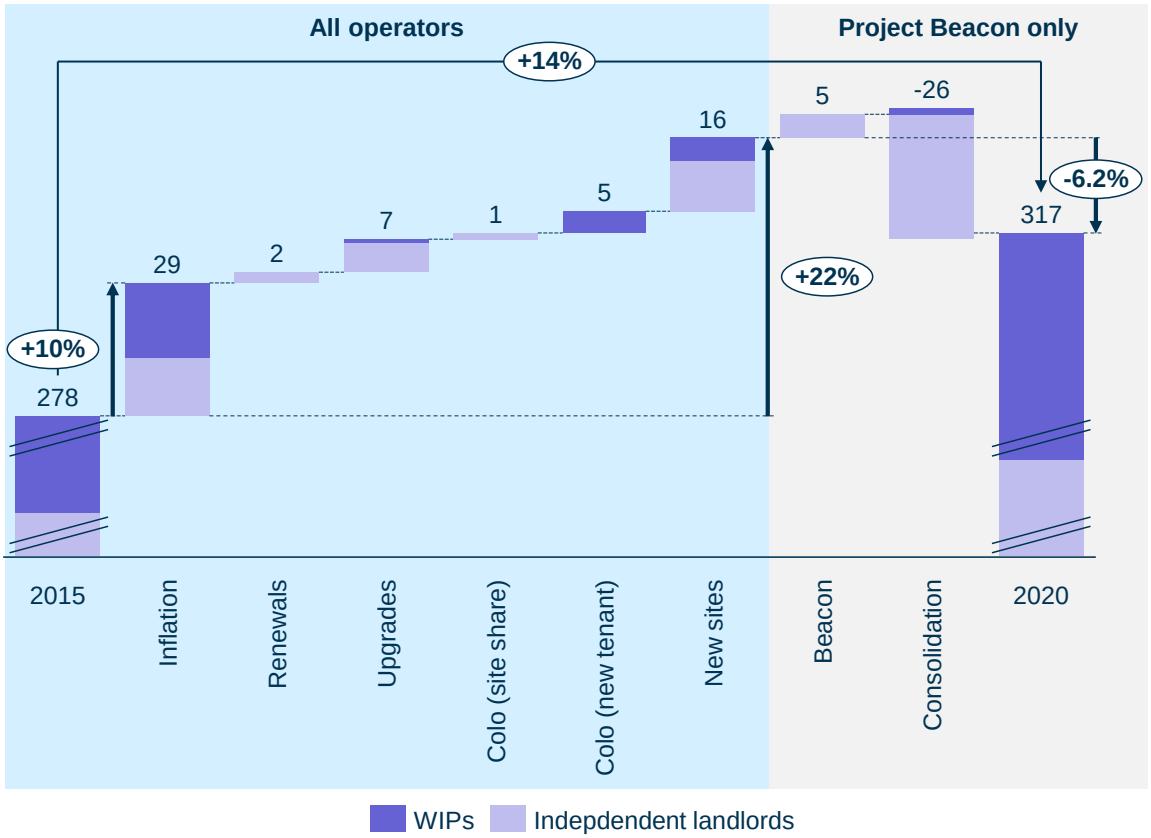



*Figure 5.10: Reduction in rent due to factors affecting only operators involved in Project Beacon (GBP million) [Source: Industry submissions and interviews, 2016]*

These breakdowns have been combined together in Figure 5.11 below.

*Figure 5.11: Summary of projected growth in rent of UK MNOs (GBP million) [Source: Analysys Mason, 2016]*



## 5.6 Historical revenue and cost trends

The increase in UK MNOs' cost base as described above should be viewed against a backdrop of declining revenues, which has led to significant internal cost pressures for the operators. Figure 5.12 below shows the revenues of the four MNOs in 2010 and 2015. Revenue has declined for all operators with the exception of H3G, with total revenue across all MNOs declining by 1.9% from GBP20.3 billion in 2015 to GBP 18.4 billion in 2020. EE's revenue declined the most, seeing a fall of almost 20% across the five year period.


*Figure 5.12: Revenue of UK MNOs (GBP billion) in 2010 and 2015 [Source: GSMA Intelligence, EIU, 2015 values based on extrapolating information available for H1]*

This decline in total revenue is set against increasing subscribers (or SIMs), leading to dropping average revenue per user (ARPU) as shown in Figure 5.13 below. In real terms, the UK subscriber has seen a 20% saving from 2010 to 2015.

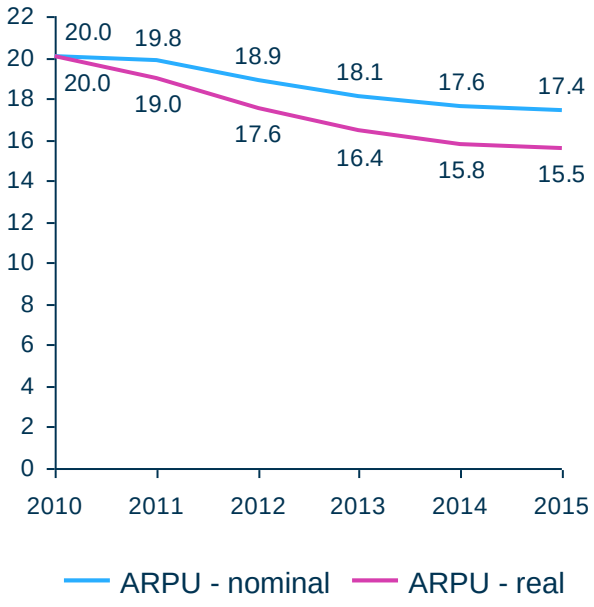



*Figure 5.13: Average ARPU of the UK MNOs, 2010–2015 (GBP/month) [Source: GSMA Intelligence, EIU, 2015 values based on extrapolating information available for H1]]*

During the period, consumers have not only benefited from lower prices (in both nominal and real terms) but have also enjoyed increased data consumption. For example, $O_2$'s data traffic per connection increased from 360MB in Q1 2013 to over 770MB in Q4 2013.

With both revenues and ARPUs falling, operators have struggled to cut costs: as shown in Figure 5.14 below, opex has remained flat, despite significant revenue pressure.

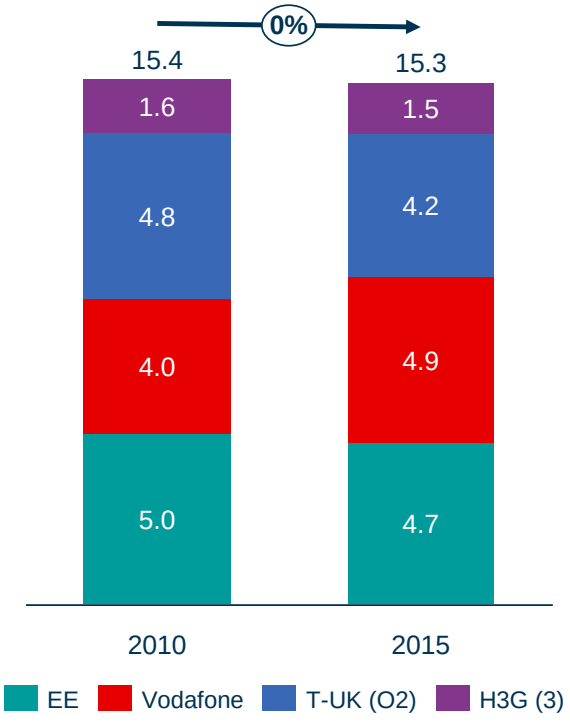



*Figure 5.14: Opex of UK MNOs in 2010 and 2015 (GBP billion) [Source: GSMA Intelligence, EIU, 2015 values based on extrapolating information available for H1]*

In addition, capex spending has left little cash flow available for payment of interest and dividends. As shown in Figure 5.15 below, a total of over GBP13 billion was spent in capex between 2010 and 2015, in addition to the GBP2.3 billion spent in the 2013 spectrum auction.

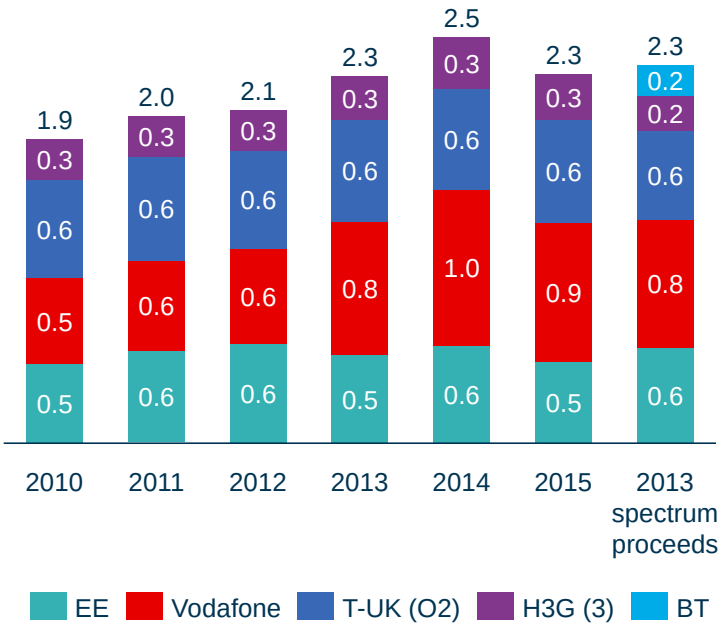



*Figure 5.15: UK MNOs' capex and proceeds from the 2013 auction spectrum (GBP billion) [Source: GSMA Intelligence, Operator annual reports, Analysys Mason spectrum auction tracker]*

Operating free cash flow to financing (summed across all MNOs) has been on a downward trend since 2010, turning negative in 2013 and finishing the year at almost GBP-0.5 billion. 2015 saw a slight recovery, but as shown in Figure 5.16, cash flow to financing still remained in the red.

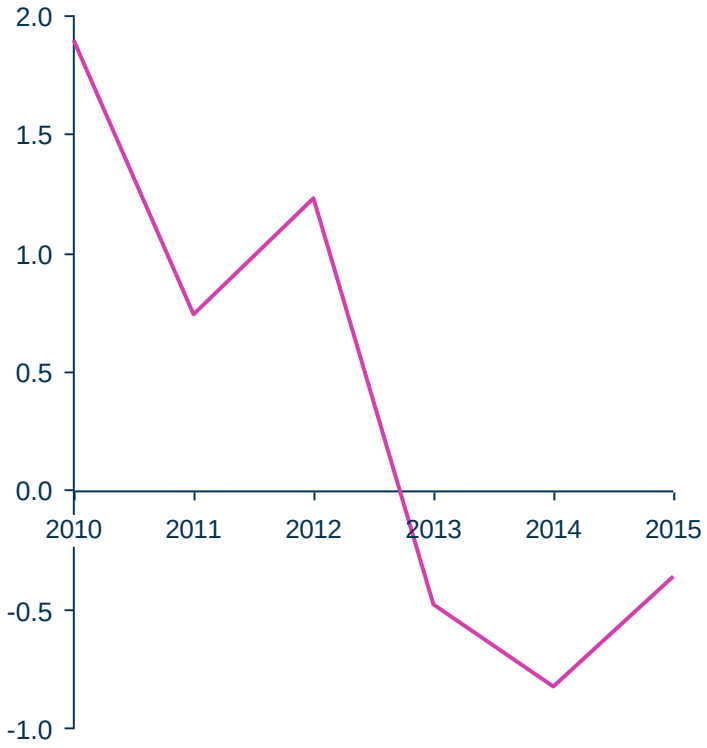



*Figure 5.16: Operating cash flow to financing for all UK MNOs, 2010–2015 (GBP billion) [Source: GSMA Intelligence, Operator annual reports, Analysys Mason spectrum auction tracker]*

## 5.7 Other costs which could be impacted by changes to the ECC

There are a number of other costs which may also be impacted by amendments to the Code, and which could be considered as part of the potential benefits offered by the proposed changes. These are outlined below:

- **Legal fees.** Site negotiations can take 12 to 18 months when an event occurs (upgrade, renewal, etc.) and the site becomes disputed. These lengthy negotiations increase legal costs for the MNOs: for sites which go through some sort of dispute, the additional legal fees range between GBP2500 and GBP5000. Sometimes when a site needs upgrading (for about 20% of upgrades) it also needs its lease renewing, which increases the time it takes to upgrade a site from 30 days to 108 days.

- **Network service degradation**. About 2000 sites per year experience some time when they offer a degraded service due to unplanned failure. At any point in time, the industry estimates that around 50 sites are degraded due to access issues. Operators estimate that they have 24/7 access to about 80% of the portfolio, although this does not necessarily mean the operators can get on site in the case of failure. There is a direct financial consideration in the cost of access rights (which is included in the rental cost), as well as an indirect impact on brand and reputation.

- **Roll-out costs.** Most suppliers of MNO roll-out services are paid on completion, so some direct roll-out costs are not impacted by delays. However, re-booking and other administrative costs are incurred on upgrades which fail due to access issues, which occurs on around 10% of site upgrades The direct cost of an aborted site is around GBP600; there will also be an indirect impact on brand and reputation for a degraded network service.

- **Site relocation.** NTQs are issued on around 3% of the portfolio per annum, and the MNOs estimate that approximately 20% of these NTQs are designed to force a variation in the contract. The cost of relocating to a new site is typically GBP80 000 to GBP100 000.

# 6 Impact of potential Code changes

This section summarises our findings of the potential implications and financial impact of the DCMS's five proposed changes to the ECC.

## 6.1 Proposed change 1: widen the scope of the Code to include infrastructure as well as land

Changing the ECC to include infrastructure as well as land will bring the WIP towers under control of the Code. As explained in Section 1 (and summarised in Figure 6.1 below), this change would directly impact around GBP145 million of MNO spend on licence fees, a figure which is forecast to rise to around GBP173 million by 2020. Of this GBP145 million in income, the WIPs have to spend GBP54 million on land rents, which would not be directly impacted by this proposed change (although it could be impacted by changes to the valuation regime, as set out in Section 6.3 below), resulting in a net GBP91 million which may be directly affected by the change in scope.

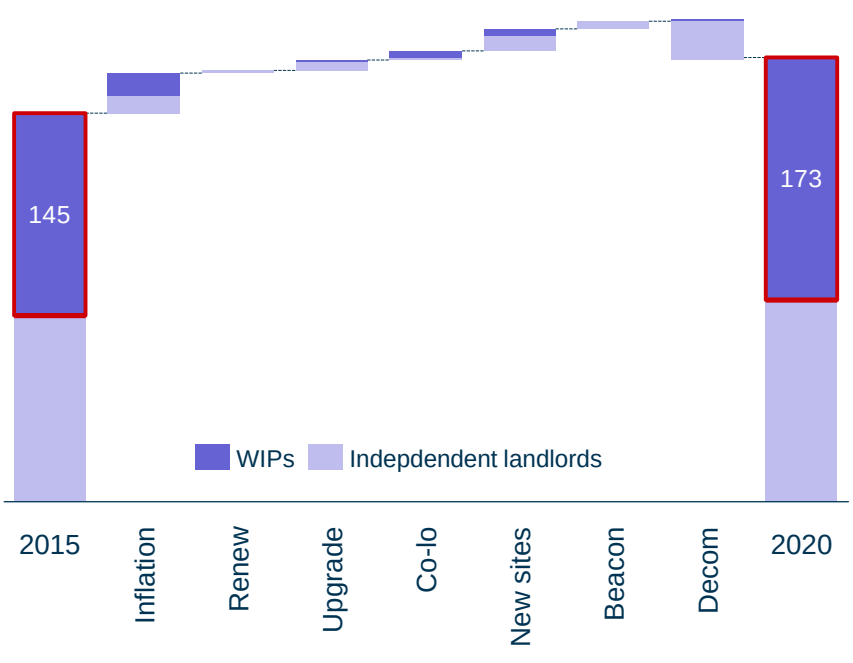



*Figure 6.1: Areas of impact of proposed change 1 (scope of the Code), GBP million [Source: Analysys Mason, 2016]*

As shown in Figure 6.2 below, the commercial relationship between operators and WIPs exists within a highly concentrated part of the market, with the operators interacting with WIPs through their network-sharing joint-ventures MBNL (between EE and H3G) and CTIL (between Vodafone and Telefonica UK).

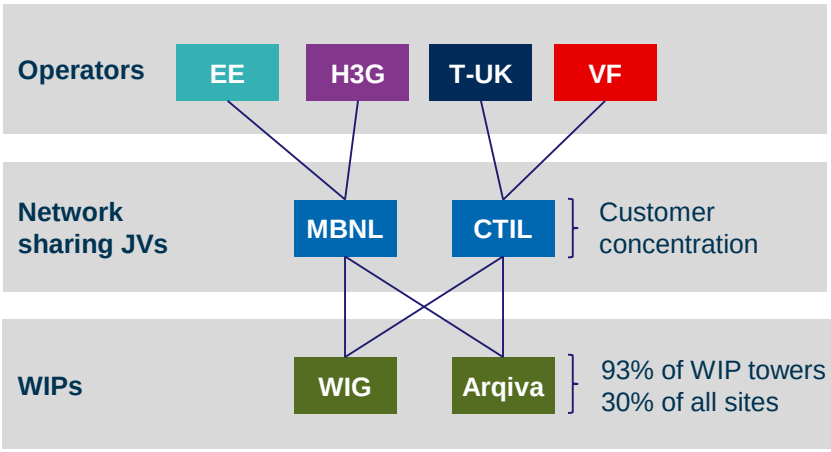



*Figure 6.2: Industry concentration [Source: Analysys Mason, 2016]*

Both sides have made their views on the scope clear in their submissions. The MNOs have agreed contracts to cover most of their 4G coverage roll-out, and are looking for changes to the Code before the 5G timeframe (see Section 7). On the other hand, the WIPs are typically highly geared[4] companies, and therefore particularly sensitive to reductions in revenues.

TowerCos provide a source of investment in mobile infrastructure (e.g. deploying a shared coverage solution along the route of HS1), so if their revenue case for infrastructure investment is diminished through Code reform, then some of this infrastructure investment may be impacted.

Our findings suggest that widening the scope of the Code could impact a large cost base (~GBP91 million), and this effect could be felt quickly. However, there may be some consequences for the structure of the industry which should also be taken into consideration:

- intervening in a very concentrated and commercial market may lead to legal challenges
- the viability of heavily debt-financed suppliers coping with significant revenue reductions is questionable
- there could be some reduction in future investment by WIPs in infrastructure to support mobile coverage.

[4] Gearing is the ratio of debt to equity in a company

## 6.2 Proposed changes 2, 3 and 4: provide the MNOs with additional rights

The second, third and fourth proposed changes to the ECC all provide MNOs with additional rights, namely rights to share, upgrade, access and remain on their sites without incurring additional charges. As shown in Figure 6.3 below, changing the Code to give MNOs these protections would directly impact around GBP15 million[5] of rent increases over the period 2015–2020; the majority of this is due to upgrades (GBP7 million), followed by Beaconising upgrades (GBP5 million).

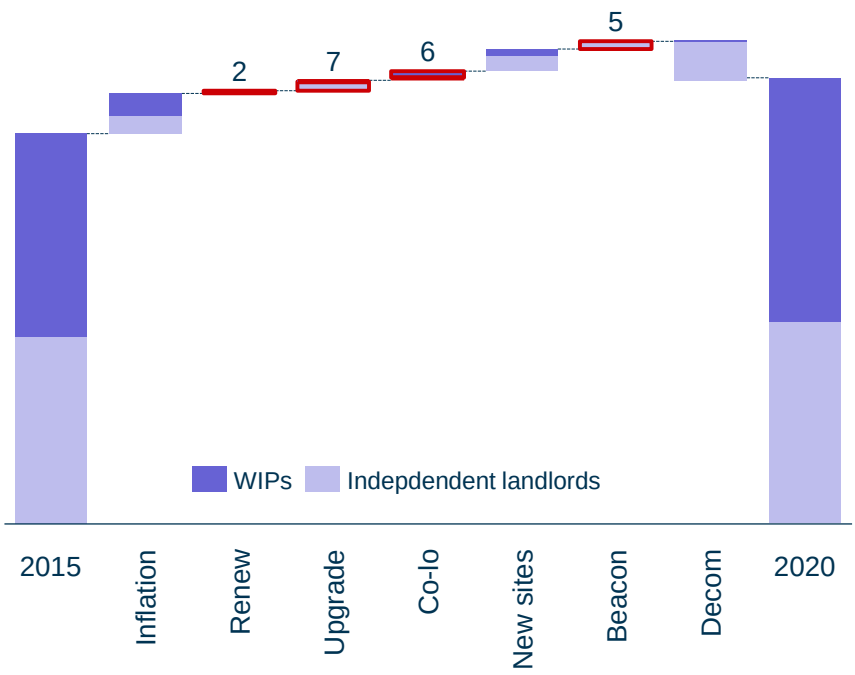



*Figure 6.3: Areas of impact of proposed changes 2–4 (additional rights for MNOs), GBP million [Source: Analysys Mason, 2016]*

The level of rent increases that would be impacted by the proposed Code changes would depend on whether the changes are applied *retrospectively* to leases and licences, or only *on renewal* of the lease or licence. Given that a typical lease has a duration of around 10 years, then if the changes were applied on renewal, only a tenth of the portfolio per year would be impacted by the Code changes. For the period shown, we estimate that Code changes related to lease renewal would only affect a third of the increases shown, whereas if the changes were applied retrospectively then four fifths of increases would be impacted (assuming the changes to the Code are effective from 2017).

[5] This includes only the site-sharing colocation cost of GBP1 million, and excludes the GBP5 million new tenant co-location costs.

Some landlords take advantage of the high cost to an operator of moving a site by increasing the rent (a 'ransom rent'). Changing the Code to strengthen MNOs' rights in one area but not another may not have the desired effect, due to ransom rents still prevailing. For example, mobile networks are constantly evolving, with new technology and additional frequencies coming into use, so sites constantly need upgrades and alterations. However, we understand that about 30% of sites require consent to upgrade. If the Code were changed to provide upgrading as a right, this might not be effective if the landowner was able to raise rent by threatening to remove *another* right, such as timely access or sharing.

Our findings suggest that providing MNOs with additional rights could deal with a number of their tower-base problems, ultimately resulting in a faster network roll-out on existing sites. Additionally, MNO opex increases driven by this roll-out should be more predictable, removing a barrier to infrastructure investment. However, while additional rights would ease roll-out challenges, these changes also come with the following risks:

- Increasing operators' rights may actually *increase* rents rather than reduce them, as the pricing of rights is commercially well understood, and the market could simply price in the additional rights during the next lease renegotiation.

- Introducing changes which impact *all* landlords in order to address only the few which employ ransom rents may cause resentment within the industry.

## 6.3 Proposed change 5: use a new valuation method to calculate rents

The DCMS has proposed changing the mechanism and process used to calculate market rents, by adopting either a red book or utility method. Under the current Code, the industry has specific dispute processes which are not aligned with standard property processes (namely those consistent with the Landlord and Tenant Act). This creates uncertainty regarding the definition and level of a 'market rent'. We have found that all parties agree on the need for the current process to be reformed.

Leases with independent landlords typically have a duration of 10 years, and are expiring at a rate of around 2200 per annum. *Retrospectively* applying changes in the Code to existing leases would therefore require around 22 000 leases to be renegotiated, a scale of task which the industry is not geared for. Additionally, a 'bow-wave' of around 4000 expired leases exists, which increases the number of leases which could be renegotiated in the short term, however this bow wave has been present in the industry for a number of years and there appears little incentive to reduce it.

As shown in Figure 6.4, the value of rents (as of 2015) which could be impacted if this change in the Code was applied retrospectively to existing leases is around GBP133 million.[6] The value of rents impacted between 2016 and 2020, based on lease renewals during the period, is around GBP85 million.

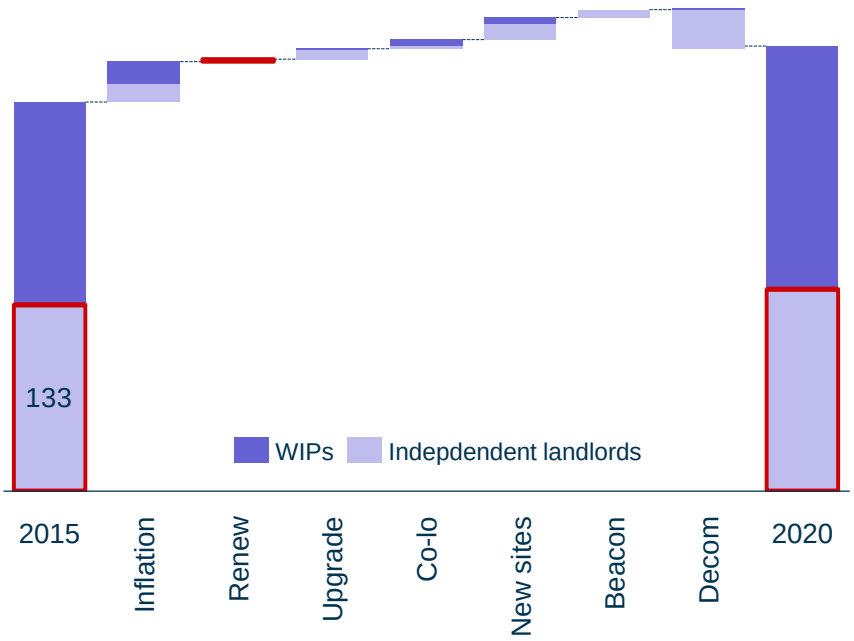



*Figure 6.4: Areas of impact of proposed change 5 (new rent valuation method), GBP million [Source: Analysys Mason, 2016]*

The impact of changing the valuation methodology on MNOs' yearly lease costs are detailed in Figure 6.5 below. The 'renewal only' column shows the yearly savings, by 2020, which MNOs would make through a change to the methodology, if the change applied only to leases renewed during the period. The 'retrospective' column shows the yearly savings which MNOs could make if a new methodology were applied retrospectively to all leases.

| Valuation method | Renewal only | Retrospective |
|---|---|---|
| Law Commission | 8.6 | 15 |
| Energy | 34 | 60 |
| Water | 53 | 93 |

*Figure 6.5: Yearly savings in MNO rents from changing the valuation methodology, GBP million [Source: Analysys Mason, 2016]*

The savings above have been calculated from the methods proposed and information provided in the 2013 Nordicity report[7] and are the maximum achievable assuming that the MNOs are able to renegotiate all leases to the new regime as soon as it becomes legally enforceable, or – in the case of the renewal only – when the lease expires. However it is likely that even with Code powers that

[6] This excludes rents from WIPs to landowners, which could increase figures by up to 40% (although savings may take longer to filter through to the MNOs in lower licence fee)

[7] *Modelling the Economic Impacts of Alternative Wayleave Regimes*, October 2013

provide for utility land rents the MNOs would not enforce this low level of rent on renewal, so the actual savings could be significantly less.

Providing the MNOs with an enforceable and low level of rent may cause friction at the interface between MNOs, agents and landowners as the market resets expectations regarding the rents achievable from MNOs. Depending on the level of changes and the parties involved, that friction may become a public issue which could involve other Government departments.

The figures above do not include the impact that changing the valuation regime would have on WIPs' costs. WIPs are generally Code operators themselves and as they host Code operators, they can enforce the Code on their land owners. Thus the WIPs could also benefit from reduced land rents should the valuation regime change: we estimate that they could see savings of up to 40% of the above figures. The same comment about the application of the Code applies to the WIPs as it does to the MNOs, so it is unlikely that the WIPs would benefit from negotiating rents down to the level provided by the Code. It is possible that WIPs could eventually pass on these savings to the MNOs through lower licence fees, although this may take time and would be based on the commercial pressure the MNOs could apply should WIPs' infrastructure not be included in the Code.

Another impact of changing the valuation regime would be to reduce Government income from rates in direct proportion to the reduction of rate payments made by the MNOs. Figure 6.6 below provides an estimate of the reduction in Government income from rates should the valuation regime be changed.

| Valuation method | Renewal only | Retrospective |
|---|---|---|
| Law Commission | 4.1 | 7.2 |
| Energy | 16 | 29 |
| Water | 26 | 45 |

*Figure 6.6: Yearly reduction in Government income from rates, GBP million [Source: Analysys Mason, 2016]*

# 7 Timing considerations

Given the long lead times required to auction spectrum and deploy networks, the timings of any changes to the ECC must be considered alongside the 5G coverage roll-out timeframe.

It has been suggested by the industry that the main 5G coverage band will be the 700MHz band, which Ofcom will auction. The 700MHz band has to be cleared from the existing use (digital terrestrial television) before the MNOs can deploy 5G services in it. No clearance target date has been announced by Government, but the end of 2021 is considered a backstop 'no later than' date for clearance. An auction date will be announced to reflect the clearance timetable in due course.

Depending on the final dates for clearance and the auction, it is likely that there will need to be negotiations between MNOs, WIPs and independent landowners during the period 2017–2020 to enable 5G roll-out to take place.

# Annex A Project Beacon

Project Beacon is a RAN-sharing arrangement between Vodafone and $O_2$ in which active equipment is owned by each MNO separately, but ground lease, tower and passive equipment are shared through the medium of the joint venture CTIL (Cornerstone Telecoms Infrastructure Limited).

As shown in Figure A.1, in London the networks are separate but use the same sites on a 'common grid'. The rest of the country is split East/West, with Vodafone in charge of network maintenance in the West of the UK (including Wales), while $O_2$ takes responsibility for the East (including Northern Ireland – not shown).

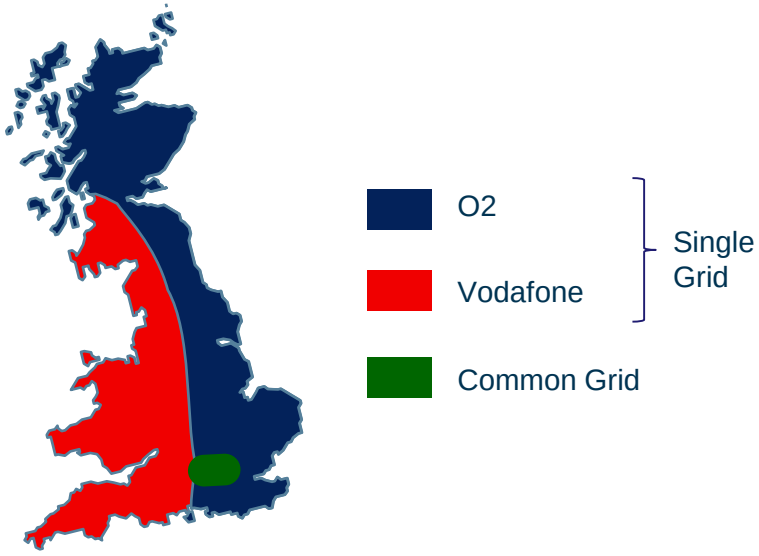



*Figure A.1: Project Beacon: network management geography [Source: Analysys Mason, 2016]*

The venture is introducing tension into the supply chain, due to the expected reduction in the number of sites by 6000 (from 24 000 to 18 000) by 2018. Other factors giving rise to pressure are the opportunity to renegotiate WIP contracts (which has now been done), and limited 'pay away' for sharing (due to only one operator managing each site, and a single lease-holder – CTIL – which owns the tower).

The operators are deploying single RAN 2G/3G/4G equipment in the 800MHz, 900MHz and 2.1GHz bands; the 4G upgrading process is known as 'Beaconising'. Landlords who still have a CTIL tower can benefit financially from the 4G upgrades, as a Beaconised site might attract additional rent.