National Audit Office

Report
by the Comptroller
and Auditor General

Cross-government

Infrastructure investment: the impact on consumer bills

HC 812-I SESSION 2013-14 13 NOVEMBER 2013

Key facts

£310bn

the estimated value of planned investment in UK infrastructure identified in the government's 2012 National Infrastructure Plan (includes investment to replace and maintain existing infrastructure)

67%

of the £310 billion is expected to be financed privately, and repaid through consumer bills in the energy, water and telecoms sectors

Unknown

aggregate financial impact of planned infrastructure investment on consumer bills across all sectors

8 per cent of total household spending, spent on energy and water bills in 2011 by the average household

15 per cent of total household spending, spent on energy and water bills in 2011 by those on the lowest incomes

3.7 times increase needed in the proportion of UK energy from renewable sources by 2020, compared with 2012 level, to meet legally binding renewable energy obligations

£221 estimated increase in the average household energy bill between 2013 and 2030 in real terms. The average household energy bill in 2011 was £1,157 and is projected to rise to £1,255 in 2013 (2012 prices)

Summary

1 Economic infrastructure, including energy, transport, water and telecoms, supports services that are essential to daily life and vital for economic success. HM Treasury has identified £310 billion of planned investment in UK infrastructure that is needed to replace ageing assets, help meet policy commitments (such as climate change targets), and meet our growing population's needs, over the next decade and beyond. £176 billion of this infrastructure is in the energy sector. New infrastructure can be funded through taxes or through consumer bills and charges.

2 Since the privatisation of the public utilities in the 1980s, new infrastructure has increasingly been privately financed and paid for by consumers through their bills. Since 1997, the level of infrastructure investment paid for by consumers has exceeded the amount paid for by taxpayers. HM Treasury expects at least two-thirds of the £310 billion of expected infrastructure to be wholly financed, owned and operated by private companies, which are accountable to their boards and shareholders.

3 This report considers the costs of investment in infrastructure which will be financed privately and repaid through consumer bills. We focus on energy and water infrastructure, and to a lesser extent, we have also looked at infrastructure in the telecoms sector, where consumers have more discretion over their level of spending. Together, investment in these sectors accounts for 67 per cent of the expected £310 billion investment in UK infrastructure.

4 In our 2013 report, *HM Treasury: Planning for economic infrastructure*,[a] we concluded that a failure by government to assess the impact on consumers, could lead to consumers facing financial hardship, and unplanned taxpayer support being required. Furthermore, funding of infrastructure via bills is more regressive than taxation: it requires proportionately greater expenditure from those on low incomes. This makes it particularly important to understand the effect of infrastructure investment on the bills of different groups of consumers.

5 Although investment choices are influenced by trends in consumption, individual domestic consumers have little direct influence over what and how much infrastructure is built. Instead, government departments and economic regulators act to protect consumer interests. Government departments set the overall objectives and policies for each sector. Independent economic regulators have legal duties to protect consumers. The ways regulators do this include promoting competition, acting to prevent and address market abuses and, in some cases, setting the price consumers can be charged. The relevant bodies are listed below:

- In energy: The Department of Energy & Climate Change and the regulator Ofgem.
- In water: The Department for Environment, Food & Rural Affairs and the economic regulator Ofwat. (There are also two quality regulators, the Drinking Water Inspectorate and the Environment Agency, whose work is not covered by this report).
- In telecoms: The Department for Culture, Media & Sport and the regulator Ofcom.

6 The Treasury also has an important role in planning and overseeing new infrastructure. It has established a specialist unit, Infrastructure UK, which is responsible for:

- coordinating and simplifying the planning and prioritisation of investment in UK infrastructure; and
- improving UK infrastructure by achieving greater value for money on infrastructure projects. Infrastructure UK considers that this remit extends to considering consumer affordability.

7 Our report examines:

- the current situation for consumers and how this is likely to change (Part One);
- government and regulators' work to understand the financial impact on consumers and assess whether bills are likely to be affordable (Part Two); and
- the mechanisms regulators and government use to help consumers get value for money from new infrastructure (Part Three).

Limitations on scope

8 There are areas beyond the scope of this report:

- We have not assessed the potential benefits of the infrastructure projects the Treasury has identified, or the consequences if they are not built. We recognise that government and regulators do have to take account of the potential benefits of infrastructure in their decision-making. However, our focus in this report is on whether government and regulators understand the impact on consumer bills, and how they ensure that the infrastructure that is built provides value for money.
- We have not attempted to calculate the financial impact on consumers of new infrastructure. Government has incomplete data on what new investment is expected and when it will be built, and estimates require detailed modelling and assumptions about future government policies and priorities. This is for government and regulators to do.
- We do not consider the variety of policies that aim to make bills affordable for different groups. We are primarily interested in this report in whether the government has appropriate information on which to base its policy decisions.
- While we examine mechanisms to promote value for money in new infrastructure, we do not conclude on the overall effectiveness of regulation.

9 We may return to these issues in future work. Our audit approach is set out in Appendix One and our evidence base in Appendix Two.

Key findings

10 **The UK needs significant investment in new infrastructure.** This is driven by the need to: tackle climate change and ensure energy security; comply with environmental and public health standards; maintain and replace existing infrastructure as it ages; and cope with rising demand from a population expected to grow 11 per cent by 2030 (paragraph 1.3).

11 **Energy and water bills have risen faster than incomes.** The latest data shows that between 2002 and 2011, energy and water bills rose 44 per cent and 21 per cent respectively, in real terms. Telecoms bills fell 2 per cent in real terms over the same period. However, median incomes were at the same level in 2011 as they were in 2002, in real terms. In 2011, the average household spent £1,157 on energy and £380 on water, equating to 8 per cent of household spending. The average household spent £652 on telecoms in 2011. Telecoms differs from the energy and water sectors because consumers have greater choice over the type and level of service they buy (paragraphs 1.8 and 1.9).

12 Rising energy and water bills are a particular concern for those households with incomes in the lowest 10 per cent. Incomes of low-income households fell 11 per cent in real terms over 2002–2011, and 15 per cent of their spending went on energy and water bills in 2011. The Department of Energy & Climate Change estimates that 11 per cent of households are 'fuel poor'. Updating Ofwat's methodology, we estimate that at least 12 per cent of households may now be at risk of not being able to afford their water bills (paragraphs 1.10 and 1.11).

13 High levels of expected investment in new infrastructure mean that energy and water bills may rise significantly. Consumers will pay for the infrastructure itself, along with the costs of maintaining and operating the infrastructure. Future bills will also be influenced by other factors, such as changes in world energy prices and initiatives to help consumers use less energy and water. The Department of Energy & Climate Change's central projection is for an 18 per cent increase in energy bills, in real terms by 2030. There are no official projections of water bills available that take account of current regulatory and policy decisions. The only available projection of water bills, prepared by a water company, suggests up to a 28 per cent increase by 2030. The Department for Environment, Food & Rural Affairs and Ofwat told us they have concerns about this projection because it is out of date, and does not reflect government and regulatory decisions since 2010 or the current lower cost of borrowing. Affordability will depend on changes in incomes and the wider cost of living. Some of the new infrastructure might raise incomes by supporting economic growth. But it does not follow that consumers at all income levels will benefit (paragraphs 1.13 and 1.14).

14 New infrastructure is ultimately a private sector investment choice, but government and regulators take important decisions that can influence the impact on consumers. Consumers typically repay private sector investment in new infrastructure over decades. Government and regulators therefore need good information on the long-term impact on bills, and they need to understand the affordability implications for different groups of consumers. Knowing 'how much is too much' can also help government and regulators mitigate the risk that rising bills undermine public confidence in regulation (paragraphs 1.7 and 1.15 to 1.18).

15 The best efforts to assess the financial impact and affordability of bills have been in the energy sector, although we have some concerns about the forecasting models. There is no consistent approach across sectors to forecasting bills or measuring affordability, and a lack of clarity about who is responsible for assessing affordability in each sector.

For energy:

- The Department of Energy & Climate Change (DECC) has done significant work to assess the impact of its policies on energy prices and bills. This has allowed it to project bills to 2030 and it has also begun to assess future levels of 'fuel poverty'. Its projections are based on complex models that are broadly appropriate for assessing the impact of energy policies on bills. However, there is an inconsistency between the amount of investment the private sector is currently planning, identified in the National Infrastructure Plan, and the amount of investment DECC's models predict is needed to meet government objectives. DECC's models currently predict around three quarters the level of investment that is reflected in the National Infrastructure Plan. We also found weaknesses in the models' quality assurance, which the Department told us it is working to address (paragraphs 2.8 to 2.18).

For water and telecoms:

- Ofwat and Ofcom have both carried out research on the affordability of current bills, but there is no up to date assessment of the likely impact of infrastructure investment on future bills (paragraphs 2.8, 2.19 to 2.25).

16 Government has made no assessment of the overall impact of infrastructure on future bills or whether those bills will be affordable. Therefore government and regulators are taking decisions on behalf of consumers in the absence of full information about the situation for consumers. Affordability can only be assessed taking into account all household bills, household incomes and wider costs of living. Gaps in analysis, and the lack of a common approach to measuring affordability, mean that the government does not have an overall picture of affordability, either for the average household or for those on low incomes. There are schemes to support vulnerable consumers in all three sectors, but we are concerned that government and regulators cannot assess the adequacy of these schemes without a better understanding of affordability (paragraphs 2.26 to 2.30).

17 Where regulators control prices, the effectiveness of scrutiny can vary. Ofgem and Ofwat are placing the onus on companies to innovate and report on results. This move underscores the importance of regulators checking what companies tell them. We reviewed Ofgem and Ofwat's scrutiny of three large infrastructure projects. Ofgem scrutinised the two energy projects well. However, we were concerned by aspects of Ofwat's scrutiny of the one water project we examined. Ofgem and Ofwat are changing their approach to price regulation, including giving companies greater freedom to innovate to meet consumers' needs. It is too early to say whether these reforms will be effective. However, regulators will need to ensure there is proportionate, independent verification of costs and of physical assets. For example, regulators currently have limited assurance on whether companies have built infrastructure to the agreed specifications (paragraphs 3.8 to 3.17, and Appendix Five, Volume II).

18 Consultation with consumers about new infrastructure and the impact on bills is improving, although more could be done, especially by central government. Regulators recognise the importance of reflecting issues that matter to consumers in decisions made on their behalf. In 2008, Ofgem established ways to enable consumers to scrutinise company business plans and it continues to develop its consumer research. Ofwat has made recent changes to how it regulates, requiring companies to engage with local consumer challenge groups. However, Infrastructure UK has had very limited engagement with consumers in its work to plan and prioritise investment and secure value for money in infrastructure (paragraphs 2.27 and 3.18 to 3.20).

19 The government and regulators have led several initiatives to improve value for money, but need to better coordinate their work across sectors. Within sectors, we found some departments and regulators collaborating with private companies to address the high cost of UK infrastructure. However, coordination across sectors is hampered by limited resources and the need for unanimous support of all regulators to take any decisions. There is no clear leadership on activity across sectors (paragraphs 3.21 to 3.28).

Conclusion

20 The UK needs significant new investment in infrastructure to replace ageing assets, and meet policy commitments and the needs of a growing population. As was the case in the past, the majority of this new infrastructure will continue to be paid for by consumers through their utility bills. Despite some good initiatives, notably in energy, the government and regulators do not know how much in total the new infrastructure might cost consumers. Nor do they know whether consumers, particularly those on low incomes, will be able to afford the additional costs. This is particularly concerning, given that energy and water bills have increased significantly in recent years, while incomes have not.

21 Government and regulators take decisions that influence the costs of new infrastructure, and government policies can mitigate those costs for different groups. Therefore they must make sure that these decisions are informed by an understanding of the likely impact on consumers, and must continue their efforts to ensure there is downward pressure on costs.

Recommendations

a **The Treasury should ensure that there are mechanisms in place to assess the cumulative impact of infrastructure investment on consumer bills and the affordability implications, particularly for low-income households.** The Treasury should take the lead to ensure that:

- there are clear roles and responsibilities across government departments and regulators, to assess and monitor the financial impact on consumers of infrastructure investment, and whether bills are affordable now and in future;
- data from each sector are prepared consistently, so they are comparable and can be aggregated;
- the impact on vulnerable groups is assessed explicitly, and the results used to inform government policies, especially those to make bills more affordable for certain groups; and
- assessments and underlying assumptions are either produced or verified independently.

b **The Treasury should publish the expected overall impact on consumer bills, to promote transparency and debate about new infrastructure and bill increases.**

c **Departments should consider the full financial impact and affordability implications before making commitments on infrastructure. The energy and water regulators should consider the financial impact and affordability of proposed infrastructure before approving company revenues and charges.** They should rigorously scrutinise all decisions on both value for money and affordability grounds.

d The Department of Energy & Climate Change should:

- act to increase the transparency and public profile of its modelling of energy markets;
- ensure its models include the full expected increase in infrastructure investment and show the impact of its policies on the cost of all infrastructure; and
- continue to address weaknesses in its quality assurance before taking further major decisions, including reviewing the detailed formulae that drive its models to confirm they are free of errors.

We give more detailed recommendations on the models in our report, *Modelling the impacts of infrastructure investment on consumer energy bills*, Volume II.[b]

e As Ofgem and Ofwat adopt their new regulatory approaches, they should assure themselves in a proportionate way that:

- the data companies report to them are reliable and accurate;
- mechanisms set up to allow consumers to engage with and challenge company proposals are independent and have access to the necessary experience and resources; and
- new infrastructure will be fit for purpose for the whole of its expected life.

In due course, the regulators should formally evaluate whether the changes to their regulatory approaches are ensuring that new infrastructure provides value for money.

f The Treasury, departments and regulators need to formalise and properly resource the mechanisms needed to ensure effective collaboration across sectors:

- Without interfering with regulators' independence, Treasury should set out where regulators and departments should prepare data consistently to allow aggregation. The Treasury should also ensure that appropriate information is gathered to identify peaks in demand for construction skills, as these could increase the cost of new infrastructure.
- Regulators should ensure that the Joint Regulators Group[1] has sufficient dedicated resources. The Group should report annually on the work it has done and areas where it would be useful to collaborate further.

1 The Joint Regulators Group is an association of the UK's economic and competition regulators.