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RIIO-ED1: Real Price Effects

Prepared for SP Energy Networks and SSE Power Distribution

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1. Introduction

This paper gives First Economics' comments on Ofgem's RIIO-ED1 real price effects (RPE) calculations.

The paper focuses on three main issues:

- Ofgem's estimates of long-term average, steady-state RPEs (section 2);
- the allowance that Ofgem has made for out-turn RPEs in 2013/14 (section 3); and
- the glidepath that Ofgem has put in place for labour RPEs during the years 2014/15 and 2015/16 (section 4).

We note upfront that there are other discrepancies between Ofgem's draft determination calculations and First Economics' estimates for the DNOs which we do not cover in this report, most notably the basic methodology for deriving RPEs (i.e. the question of whether real price effects can be calculated in one step or whether it is better to make a forecast of nominal input price inflation and subtract a forecast of RPI inflation as a final step in the analysis). Nothing in the discussion that follows should be taken to mean that our approach to RPE estimation has changed or that we propose to alter our published January 2014 RPE forecasts.

Our focus is on three specific aspects of the calculation where we think there are currently errors in Ofgem's estimates and where it is fairly straight-forward for Ofgem to make corrections prior to making its final determination.

2. Long-term Average, Steady-state RPEs

Like most RPE forecasts, Ofgem's draft determination calculations use historical averages as benchmarks for the RPEs that the industry should expect to encounter in the future.

We have the following observations.

Change in Ofgem's position between RIIO-T1 review and RIIO-ED1 review

The most noticeable feature of Ofgem's numbers is how different Ofgem's July 2014 RIIO-ED1 long-term averages are in comparison to Ofgem's December 2012 RIIO-T1 calculations of the 'steady-state' RPEs for National Grid's electricity transmission business.

Table 1 puts the two sets of numbers side by side. In the case of Ofgem's RIIO-T1 estimates, so as to give what we consider to be a like-for-like comparison, we also recalculate Ofgem's numbers to provide for the 0.4% RPI adjustment that the regulator has introduced across its analysis during the course of this review.[1]

[1] Throughout this paper, all RIIO-T1 and all historical figures are adjusted to include the 0.4% per annum RPI adjustment unless otherwise stated.

Table 1: RIIO-ED1 and RIIO-T1 long-term annual average, 'steady state' RPEs

Input category	RIIO-ED1	RIIO-T1, restated with 0.4% adjustment	RIIO-T1, original
General labour	0.4%	0.9%	1.3%
Specialist labour	1.0%	1.8%	2.2%
General materials	1.3%	1.1%	1.5%
Specialist materials	0.8%	1.8%	2.2%
Plant and equipment	(1.3%)	(1.1%)	(0.7%)
Transport	(0.4%)	(0.4%)	0%
Other	(0.4%)	(0.4%)	0%

Sources: Ofgem (2014), RIIO-ED1 draft determinations for the slow-tracked electricity distribution companies, business plan expenditure assessment; and Ofgem (2012), RIIO-T1/GD1 real price effects and ongoing efficiency appendix.

The discrepancy between the RIIO-ED1 and RIIO-T1 numbers is especially striking because only a short period of time has elapsed since Ofgem made its RIIO-T1 determination. One might expect that Ofgem's RIIO-ED1 document would make reference to some sort of material change in circumstances or other new information which has caused the regulator to alter its previous estimates. No such explanation is given, however, leaving the reader to wonder why it is that there has been such big movements in the numbers.

From our perspective, it is very difficult to believe that Ofgem has uncovered evidence that warrants a fundamental rebasing of the RPEs that electricity networks will encounter over the long term. This is for the following reasons:

- medium- to long-term estimates of economic expansion, both in the UK and globally, are essentially unchanged from December 2012;
- the 19 months that have passed since December 2012 have mostly been atypical, in that the UK economy has been recovering from the effects of recession; and, as a consequence
- Ofgem cannot credibly claimed to have learned anything new during this time about the rates of wage and materials cost inflation the economy will converge back to once it settles back into trend, steady-state growth.

On the face of it, Ofgem has simply taken a different view in July 2014. For example, whereas previously it expected annual average earnings growth / general labour RPEs to settle at RPI + 0.9% after the recovery from recession is complete, Ofgem is now expecting annual earnings growth of only RPI + 0.4%, despite the fact that all the new additional information in the last 19 months being affected by the nascent recovery in the jobs market. Similarly, Ofgem's RPE for specialist materials has more than halved, even though Ofgem has only two more annual data points in what is a notoriously volatile set of indices.

This leaves Ofgem vulnerable to a charge of regulatory inconsistency. By producing two assessments of RPEs within the space of 19 months that are not easy to reconcile, the analysis comes across as lacking the underpinning of sound principles in what ought to be one of the more straight-forward corners of the RIIO-ED1 review.

Averaging method

When one digs deeper into Ofgem's spreadsheets, it is apparent that the discrepancies in table 1 are the consequence of a change to Ofgem's method of calculating long-term averages.

In Ofgem's RIIO-T1 review, Ofgem took a conscious decision to take historical averages up to and including 2009/10. This method was justified in Ofgem's RIIO-T1 initial proposals as follows:[2]

> In deriving RPE assumptions for Initial Proposals our general approach for establishing a forecast of input prices is to draw on the long-term real trend of relevant indices. We have calculated the long-term trend based on data for c. 20 years. We have calculated the long-term trend based on data up to and including 2009/10. We excluded the last two years of data from the long-term average because the impact of the global recession over these years could result in an historical trend which understates the expected growth over the longer-term.

Despite this logic, the historical averages in Ofgem's RIIO-ED1 calculations go up to the year 2013/14. Ofgem is therefore including not only the two years of data (2010/11 and 2011/12) that it previously excluded, but also two further years of data (2012/13 and 2013/14) that are equally affected by the impact of recession.

When one considers that Ofgem's long-term historical averages start from as early as 1988/89, it is apparent that Ofgem's benchmarks for future RPEs are derived from observed RPEs during a period that includes:

- the 1990-92 recession;
- periods of trend economic growth 1992 and 2008; and
- the recession and aftermath of recession between 2008 and 2014.

On average, this does not obviously match up to expected economic conditions during the RIIO-ED1 price control period. All reasonable central forecasts for 2014/15 to 2022/23 have the UK economy growing at trend with no expectation of any sort of contraction at any point. It therefore seems quite odd to benchmark expected RPEs during these favourable economic conditions to observed RPEs across a business cycle comprising recession, growth and recession.

This is illustrated even more clearly in the tables below. For each input category, we break Ofgem's long-term averages into a pre-1992 average, a 1992 to 2008 average and a 2008-14 average.

Table 2: Disaggregation of Ofgem's long-term historical averages

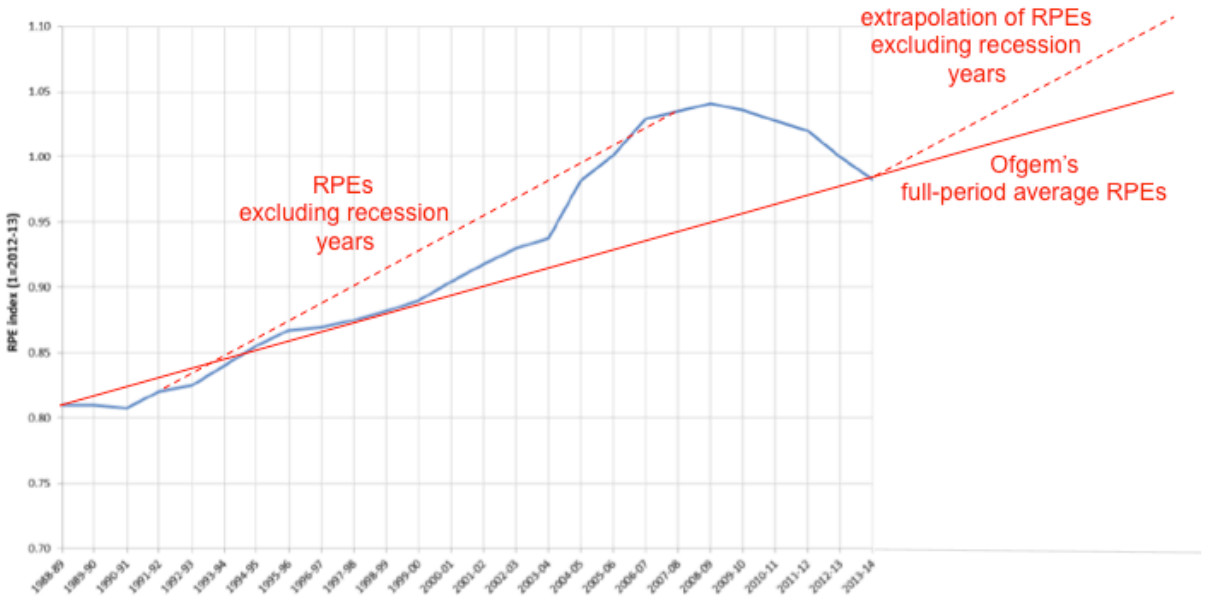
	pre-1992	1992-2008	2008-14		Full period
General labour	n/a	1.1%	(1.8%)		0.4%
Specialist labour	0.2%	1.8%	(1.3%)		0.8%
General materials	n/a	1.1%	1.6%		1.3%
Specialist materials	n/a	1.3%	(0.5%)		0.8%
Plant and equipment	(1.2%)	(1.0%)	(0.9%)		(1.1%)

[2] Ofgem (2012), RIIO-T1/GD1 initial proposals – real price effects and ongoing efficiency appendix, paragraph 2.5.

The table has two stand-out features. First, observed RPEs during periods of normal economic growth are noticeably higher than observed RPEs during periods of recession. Second, as a consequence, taking full-period averages over both types of economic conditions produces benchmark RPEs that sit somewhere in the middle of the growth-period RPEs and recession-period RPEs.

The same point is illustrated graphically in figure 1.

Figure 1: Ofgem's extrapolation of RPEs



We note that Ofgem consciously states in its draft determination document that "our methodology does not involve selecting historical periods that we believe to be representative of the future". Quite apart from the about-turn that this represents from the position that Ofgem took in the RIIO-T1 review, we would suggest that table 2 and figure 1 show that this methodological approach cannot be justified in its own right. The benchmarking that Ofgem is carrying out in its RPE analysis needs to be like-for-like: insofar as Ofgem requires an estimate of the RPEs that the DNOs will encounter during a period of trend economic growth, Ofgem ought, as a minimum, to collect data from historical periods that have seen the same sort of expansion.

Implausible numbers

Ofgem's choice of averaging method, not surprisingly, produces forecasts which feel implausible.

The best example of this is Ofgem's calculation of the general labour RPE from 2016/17 onwards – i.e. RPI + 0.4% per annum. With expected RPI inflation of 3.2% per annum in steady state, Ofgem is saying that the average worker in the UK economy should expect wage increases of 3.6% per annum. This would fall well short of:

- recorded average earnings growth in the 15-year period up to 2008 of approximately 4.3%; and

- the Office of Budget Responsibility's (OBR's) estimate of average earnings growth in long-term steady state of 4.7%.[3]

We do not think that Ofgem can credibly claim that average earnings growth of RPI + 0.4% or 3.6% per annum is a central consensus estimate of the wage inflation that employers will encounter when labour market conditions return to normal. The evidence instead points to wage growth of in excess of 4% per annum, which aligns much more closely to Ofgem's RIIO-T1 general labour RPE of RPI + 0.9% per annum.

Another example of implausibility is Ofgem's calculations of general materials and specialist materials RPEs. Table 1 shows that the RIIO-ED1 draft determination numbers have general materials inflation running ahead of specialist materials inflation. This stands in stark contrast to other previous studies, which have had specialist materials inflation running ahead of general materials inflation, including:

- Ofgem's DPCR5 and RIIO-T1 estimates; and
- all of the DNO business plans submitted during the RIIO-ED1 review.

Providing for specialist materials prices to rise more slowly than general materials costs also makes no sense from an economic point of view. The factor that distinguishes the two categories of cost is the high metal content in specialist materials. All previous studies have had specialist materials price rising faster in order to reflect global pressures on commodity prices. Assuming that specialist materials cost will rise more slowly than the other materials costs from now on is equivalent to assuming that the commodity boom has come to an end. Few, if any, economic forecasters have this as their central case scenario.

Recommendations

The preceding analysis shows that Ofgem's draft RIIO-ED1 RPE calculations:

- sit inconsistently with Ofgem's previous forecasts;
- are based on an illogical averaging rule; and
- contain implausible numbers.

If Ofgem cannot be persuaded to switch to the forecasts that First Economics has put forward, we think it should, as a minimum, revert to its RIIO-T1 approach of benchmarking to historical time periods that are not overly affected by the effects.

3. RPEs in 2013/14

Ofgem's estimates of RPEs in 2013/14 are different from the forecasts described in section 2 in that they relate to a past year. The task is therefore to infer from published data how an efficient DNOs costs will have moved in the 12-month period, so as to be able to roll-forward a set of cost benchmarks that have been calculated in 2012/13 prices.

Our comments here focus on labour costs.

Use of the ONS average earnings growth index

Ofgem's main point of reference for labour RPEs is the ONS' average weekly earnings index. This is a perfectly understandable approach to take: most RPE studies, including previous First

[3] OBR (2011), The long-run difference between RPI and CPI inflation.

Economics reports, have used this index as a benchmark for the wage increases that the DNOs have to pay staff with skills that transfer easily across sectors.

There is, however, a difficulty with using this index in a single 12-month period, and especially during the specific 12-month period 2013/14. This difficulty stems from the ONS' definition of average weekly earnings, i.e.:[4]

> Average weekly earnings for any given month is the ratio of estimated total pay for the whole economy, divided by the total number of employees.

It can be seen from this definition that the index does not measure the wage increase that a typical employee will have obtained. Instead, the index tracks the average salary earned by any individual who is in employment in the UK. The index will therefore pick up not just annual pay rises, but also any short-term change in the mix of employment within the UK labour market, including:

- any change in the mix of part-time and full-time employment;
- any change in the mix of high-skilled and low-skilled jobs;
- any change in working hours among employees that are paid on an hourly basis (including overtime); and
- insofar as Ofgem focuses on private-sector average earnings growth, any transfer of workers from the public to the private sector (or vice versa).

The ONS' guidance notes for its labour market statistics explicitly warn users to be aware of these potential effects:

> AWE reflects changes to the composition of the workforce. In AWE, all other things being equal, an increase in the relative number of employees in a high-paying industry will cause average earnings to rise. This is because the mix of jobs would have changed so that there are more high-paying jobs. Conversely, an increase in the relative number of employees in low-paying industries would cause average earnings to fall. The previous lead measure of earnings, the Average Earnings Index (AEI) did not reflect changes in the composition of the workforce in this way.

Ofgem needs to take heed of these cautionary words in making its 2013/14 labour RPE calculations. There has been a great deal of comment in recent months about the interpretation to draw from observed movements in the average weekly earnings index, with many experts suggesting that the effects that we list in the bullets above have brought headline average earnings growth down and masked the actual experiences of a majority of British workers. As an example, the following comments were made recently by the Bank of England:[5]

> As well as capturing changes in working patterns, the AWE will also capture changes in average wages associated with changes in the composition of employment.
>
> These compositional effects can be material. For example, an increase in the share of young employees would typically be expected to reduce average wages, as young employees tend to be relatively lower paid. As long as the youth share rises this would drag on wage growth.

[4] ONS (2011), Information paper, available at: http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/business-statistics/quality-and-methodology-information-for-average-weekly-earnings.pdf

[5] Bank of England (2014), Inflation Report, August.

> Changes in the mix of other characteristics, such as occupation or education, would also be reflected in AWE ... One observable compositional effect is changes associated with the sectoral composition of employment. During late 2013 and early 2014, compositional effects were bearing down on AWE growth. In other words, increases in employment in sectors with a lower average wage rates masked higher pay within sectors. More generally, changes in the skill and tenure mix of employment may be reducing annual wage growth by around 1/2 percentage point.

In view of these concerns, Ofgem needs to assess a broader range of wage data. In similar circumstances, in the recently completed Competition Commission (CC) inquiry into NIE's price control, the CC placed considerable weight on union wage settlements when calculating out-turn labour RPEs for completed financial years.[6] It also looked to the detailed occupational data in the Annual Survey of Hours and Earnings as a secondary check. Tables 3 and 4 give the relevant data for the last year.

Table 3: Union pay deals by DNO, 2013/14

Company	Annual pay settlement
ENW	
Northern Powergrid	+3.1%
SP	+3.0%
SSE	+4.5%
UK Power Networks	
WPD	+3.5%
National Grid	+3.3%

Sources: https://www.unison.org.uk/upload/sharepoint/Briefings%20and%20Circulars/Pay%20settlements%20latest%20deals%20to%20July%2013.pdf and union websites.

Table 4: Annual wage increase by ONS occupation code, 2013

SOC code	Annual increase in median gross weekly pay
Engineering professionals (212)	+4.0%
Electrical engineers (2123)	+3.4%
Electronics engineers (2124)	+8.9%
Electrical/electronics technicians (3112)	-1.6%
Engineering technicians (3113)	+1.3%
Building and civil engineering technicians (3113)	+7.6%
Skilled metal, electrical and electronic trades (52)	+2.5%
Electricians and electrical fitters (5241)	+1.3%
Electrical and electronic trades (5249)	+3.2%
Skilled construction and building trades (53)	+2.3%

Source: ONS.

[6] CC (2014), Northern Ireland Electricity Limited price determination, paragraphs 11.58 and 11.61.

The tables tell a story of above-RPI pay increases in the electricity industry during 2013/14. Notably, all of the trade union pay settlements provided for wage increases worth at least RPI inflation. The SOC code data is more mixed, but on average also shows annual increases in gross median weekly pay of at least RPI.

We are aware that Ofgem has previously expressed reservations about placing too much weight on union pay deals, on the grounds that it amounts to cost pass-through. On this occasion, however, we would argue that the alternative of referencing only the headline average weekly earnings index brings greater risk of error. It is also clear that the 2013/14 data tell a story that is corroboratable by other means.

We therefore conclude that the labour RPEs for 2013/14 should, as a minimum, be a non-negative number rather than the figures of -0.9% and -1.1% that appear in the draft determination. If Ofgem fails to make such an adjustment it will very clearly misrepresent the positioning of the upper quartile level of actual industry costs at 1 April 2014.

4. Labour RPEs Glidepath

Unlike materials and plant & equipment, Ofgem makes year-specific estimates of labour RPEs in 2014/15 and 2015/16 so as to be able to make use of published forecasts of economy-wide wage inflation in these years.

We think that Ofgem can make better use of the available data as follows.

Use of the ONS average earnings growth index

In using independent forecasts of average weekly earnings growth to anchor short-term labour RPE estimates, Ofgem has to be aware once again of the limitations of this specific index as a measure of average wage increases (see section 3 above).

The CC considered this point in the NIE inquiry and observed that there is an expectation that the average number of hours worked will fall during the forecast period, due mainly to an increase in the number of part-time workers. The CC determined that this change would depress average earnings growth and that it is necessary to make an adjustment to published forecasts so as to eliminate this distortion.[7]

We make the same sort of adjustment in table 5 using the OBR forecast of average weekly working hours.

Table 5: Independent forecasts, adjusted to constant working hours

	2013/14	**2014/15**	**2015/16**
Average hours worked	32.1	32.0	31.8
Forecast AWE growth		2.3%	2.9%
Adjusted wage inflation measure		2.7%	4.0%
RPI inflation		(2.9%)	(3.1%)
Implied RPE		(0.2%)	0.9%

[7] See paragraph 11.66 in the CC's final determination report.

Ofgem should use the final row in this table for its general labour RPEs rather than the draft determination figures of -0.6% and -0.2%.

Skilled premium

It is noticeable that Ofgem's labour RPEs for 2014/15 and 2015/16 do not contain the skilled labour premium that is applied in all other years.

We think this is an error. There is ample evidence[8] that employers are encountering tight labour markets when looking for workers with specialist skills. It would be a leap of faith to assume that the skilled premium that Ofgem observes in the historical data and which it applies from 2016/17 onwards will somehow be absent in 2014/15 and 2015/16, especially if economy-wide inflation is being held down by the readily available supply of workers with transferrable skills.

We therefore recommend that Ofgem should allow for a constant differential between general labour RPEs and skilled labour RPEs throughout the forecast period.

5. Conclusions

The recommendations that this report makes are as follows.

- Long-term, steady state RPEs: Ofgem should revert to the long-term averages in its RIIO-T1 decision or otherwise benchmark to observed RPEs in a time period that exhibits comparable economic conditions to those that are expected to prevail during the RIIO-ED1 period.
- 2013/14 RPEs: Ofgem should be cautious about using data from the average weekly earnings index and should place more weight on information about industry pay increases and occupation-specific wage changes during 2013/14.
- 2014/15 and 2015/16 labour RPEs: Ofgem should follow the CC's lead and make an upward adjustment to forecast average weekly earnings growth to counteract the effect of shorter working hours. It should also provide for the skilled wage premium that it is allowing in the rest of the forecast period.

[8] See, for example, the Bank of England's August Inflation Report, p.29.