UK Power Networks

Business plan (2015 to 2023)

Executive summary

July 2013

"The most reliable, most innovative, lowest price electricity distribution group."

UTILITY INDUSTRY ACHIEVEMENT AWARDS 2012 UTILITY OF THE YEAR

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UK Power Networks
Delivering your energy

Foreword

I am delighted to present a high level summary of our final 2015 to 2023 Business Plan for RIIO-ED1 which aims to maintain UK Power Networks as the most reliable, most innovative and lowest price network group in Great Britain. We have consulted widely with our stakeholders and customers and incorporated their feedback in the development of these plans.

The detailed comments we have received from stakeholders, together with our own internal work, have allowed us to develop well justified RIIO-ED1 business plans which will deliver long term value for money for our customers and stakeholders. Our final business plans will allow us to continue to improve our performance in the areas of safety, network reliability and quality, customer service, cost efficiency and employee engagement.

Since our formation as UK Power Networks nearly three years ago, we have delivered a step change in performance in all of these measures as well as operating in a socially responsible manner and investing heavily in innovation. Customer interruptions and customer minutes lost have improved by 30 per cent and 42 per cent over the last three years. We are ahead of plan on network investment as measured by load and health indices; customer service is improving; we are making cost savings that we will pass on to customers; most importantly the safety of our network is paramount. We have also made significant progress in connections customer service and in meeting the requirement to free up competition in the connections services arena. Our stakeholders have told us there is still more for us to do in customer service and connections, so we will build on these improvements through our transformation project, which is focused on modernising our processes and systems to be in line with best practice. This project is fully funded by our shareholders and it will deliver sustainable future improvements including service enhancements and cost savings for our customers.

Innovation is at the core of our culture of continuous improvement, and our plan fully embraces the transition to a smart grid over the next two price control periods ensuring that we play our part in the transition to a low carbon economy. We already use many 'smart' techniques as evidenced by our high asset utilisation, relatively low cost of our services, and our high network reliability. Our RIIO-ED1 plan incorporates significant savings from smart network operations. We have proved our ability to deliver on difficult assignments as evidenced by faultless electricity distribution not only during the London 2012 Olympic and Paralympic games but also during other high profile events such as the Royal Wedding and Diamond Jubilee celebrations.

In today's tough economic climate, demands on customers are increasing and we are very conscious that whilst electricity distribution costs represent only approximately 16 per cent of the electricity bill, UK Power Networks has a key part to play in making electricity affordable. Therefore, I am pleased that our final business plan aims to maintain UK Power Networks' average prices as the lowest of the network groups in Great Britain.

Basil Scarsella
Chief Executive Officer

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1 Business plan highlights

1.1 We are the most reliable, most innovative, lowest price network group

At UK Power Networks we are focused on the basics: keeping the lights on, keeping costs down, and a culture of continuous improvement and innovation to ensure our performance continues to improve. We are:

- The most reliable network group – our average customer minutes lost for 2011/12 (the last year for which sector data is available) was the lowest of all six network groups in Great Britain,
- The most innovative network group – we have transformed UK Power Networks' performance since our creation in 2010. We spend more on smart innovation research and application than other network groups, and in London we operate the most innovative network in the UK, and
- The lowest price network group – our revenues per domestic customer in 2012/13 (the last published year) are the lowest of all six network groups in Great Britain.

Simply put, on average a UK Power Networks customer enjoys better power quality, at lower distribution charges, than elsewhere in Great Britain despite the fact that we operate in the highest cost part of Great Britain.

Figure 1: UK Power Networks' performance

	Average customer minutes lost		Average revenues per domestic customer		LCNF innovation funding	
Group	2011/12	Rank	(12/13 £ p.a.)	Rank	Expenditure £ million	Rank
UKPN	**40.5**	**1**	**82**	**1**	**44**	**1**
WPD	41.7	2	105	3	39	2
SP	46.0	3	111	5	11	6
ENWL	47.6	4	108	4	16	5
NPGL	66.5	5	92	2	27	4
SSE	68.7	6	124	6	27	3

1.2 Our business plan will deliver even better service and value

Our Business Plan for RIIO-ED1 (2015 to 2023) will build on this success:

- We will cut prices, the average over the RIIO-ED1 period is three per cent lower compared to the end of DPCR5, and
- We will improve reliability, reducing CMLs by more than 19 per cent in SPN and EPN and more than 8 per cent in LPN.

The commitments should maintain us as the lowest priced, most reliable DNO group throughout RIIO-ED1:

- Our £6.7 billion of forecast expenditure (excluding pensions) is a five per cent increase on our DPCR5 forecast but delivers more investment volumes and lower operating costs
- We will maintain the health of our network and reduce network utilisation in RIIO-ED1, optimising work volumes to ensure we only do what we need to do, and applying unit costs that are efficient in the industry,
- Our plan has been significantly influenced by feedback from our extensive engagement process with hundreds of stakeholders, including publishing two draft plans including forecast revenues,
- We have built on our innovation track record to fully cater for industry changes such as the move to a low carbon economy, and the transition to smart grids – we include £135 million of smart savings,
- Through our £50 million shareholder funded business transformation project for UK Power Networks we are currently upgrading our systems and processes to further improve customer service to be in line with the top third performance in the industry at the start of RIIO-ED1 improving from an average of 7.6 to 8.2 by the start of RIIO-ED1,
- We will build further on our good safety record and continue with innovative internal safety programmes,
- We will raise £2.6 billion of debt and £0.8 billion of equity capital to finance our plan, at a cost significantly below our cost of capital for DPCR5, and
- Our plan reflects two years' detailed work by specialists drawn from across our entire business, challenged by external experts, giving us the confidence we can deliver it for the benefit of our customers.

1.3 Our plan reflects comprehensive stakeholder engagement

UK Power Networks has an extensive business-as-usual stakeholder engagement programme, managed within the customer services directorate and reporting to our CEO and the Board. Since 2011, we have incorporated within our engagement an extensive programme of consultation on all aspects of our 2015 to 2023 business plan to ensure that we meet the expectations of our customers and other stakeholders and deliver value for money over the long term.

We have engaged with hundreds of stakeholders, starting with consultation on our planning assumptions nearly two years ago. We were the first network group to publish a comprehensive draft business plan in November 2012, and the first to publish an updated plan following stakeholder engagement in April 2013.

Stakeholder engagement has materially influenced our plan. Section 7.3 summarises the changes we have made as a result of the feedback received from our stakeholders, grouped by key theme.

1.4 We are seeking 'fast track' approval for our business plan

We believe that our Business Plan satisfies our regulator, Ofgem's assessment criteria:

- It is well-justified through a robust process including comprehensive stakeholder engagement (Section 7),
- It delivers the outputs that our customers, stakeholders and our regulator expect from us, and often exceeds the expected regulatory targets (Section 4),
- Our proposed expenditure is efficient and prudent, and reflects savings from innovation (Section 5),
- Our financing proposals reflect the market and are efficient, and our revenues and prices deliver value for our customers (Section 6), and
- We propose a balanced approach to deal with uncertainty and risk (Section 10).

We have published two draft plans already. Our business plan assumes 'fast track' approval by Ofgem in spring 2014, allowing us to start detailed planning and implementation of our business plan at that point.

Our business plan on a page

UK Power Networks
Delivering your energy

UK Power Networks (UKPN)

Business Plan

Key facts about our network

UK Power Networks:
- Is the most reliable network group with the lowest average customer minutes lost;
- Has the lowest average distribution use of system prices; and
- Is the most innovative network group with the highest share of the Low Carbon Networks Fund (Tier 2)

We have transformed our performance since 2010 when UKPN was created. Customer interruptions and customer minutes lost are down for UKPN 30% and 42% respectively, customer service is improving, and our costs are now efficient.

Owner: Consortium of investors owned by Cheung Kong Group
Geographical location: London, South East and East of England

Number of customers:	8,093,302
Length of underground cables (km):	139,000
Length of overhead cables (km):	46,500
Total units distributed annually (GWh):	84,825
Number of employees (full-time equivalent):	4,500
Area covered (sq. km. approx):	29,250
Peak demand:	n/a

Figures quoted are correct as of 31 March 2013

What we plan to do

UK Power Networks' business plan and 77 output commitments for 2015 to 2023 aim to ensure that we remain the lowest priced, most reliable and innovative DNO group throughout RIIO-ED1:

1 - Our £6.7 billion of forecast net expenditure (excluding pensions) is a 5% increase on our DPCR5 forecast but delivers more investment volumes and lower operating costs
2 - We will raise £2.6 billion of debt and £0.8 billion of equity capital to finance our plan, at a cost significantly below our cost of capital for DPCR5
Customer:
3 - We will invest £50 million of shareholder funds to upgrade our systems and processes to further improve customer service by the start of RIIO-ED1, improving customer satisfaction from an average of 7.6 to 8.2 (out of 10)
4- Our plan has been significantly influenced by feedback from our extensive engagement process with hundreds of stakeholders, including publishing two draft plans including forecast revenues
5 - We will ask our stakeholders, through independently chaired DNO critical friends' panels, to continue to improve, influence and review our RIIO-ED1 operational performance & delivery record, including a new annual strategic statement for central London
Safety:
6 - We will build further on our good safety record and continue with innovative internal safety programmes, achieving at least one year with no lost time incidents for employees and contractors and the public
Reliability and availability
7 - We will improve reliability, reducing CML's by more than 19% in SPN and EPN and more than 8% in LPN, getting the lights back on for 90% of HV power cuts within 2 hours
8 - We will maintain network health and reduce network utilisation over RIIO-ED1, optimising work volumes to ensure we only do what we need to do, and reducing our unit costs by 10%
9 - We will increase operational resilience through the opening of two additional 24-hour manned depots in central London
Connections:
10 We will achieve an average time to quote of less than 8.2 days for simple low voltage connections, provide the service our large connection customers request, and offer two hour time-banded appointments for connection site visits
Environmental:
11 - We have built on our innovation track record to cater for industry changes such as the move to a low carbon economy, the arrival of smart meters and the transition to smart grids – we include £135 million of smart savings
12 - We will reduce our business carbon footprint by 2% per annum, underground more than 170km of overhead lines in areas of outstanding natural beauty and maintain our community fund investments of £300,000 per annum
Social commitments:
13 - We will work to improve the service we provide to vulnerable customers through dedicated phone lines, information packs and additional support through third parties
14 - We will improve our operational capability by recruiting and training over 1,000 technically skilled staff and targeting high employee satisfaction by achieving membership of the Sunday Times Top 100 Best Companies

How much we propose to spend and how it will be financed

Cost of Equity	6.7 %	Notional Gearing	65 %

All amounts in 12/13 prices	Total spend £m over the course of the price control	Annual average Percentage change from DPCR5
Network Investment	3,500	17.4 %
Operating Costs***	3,220	-4.5 %

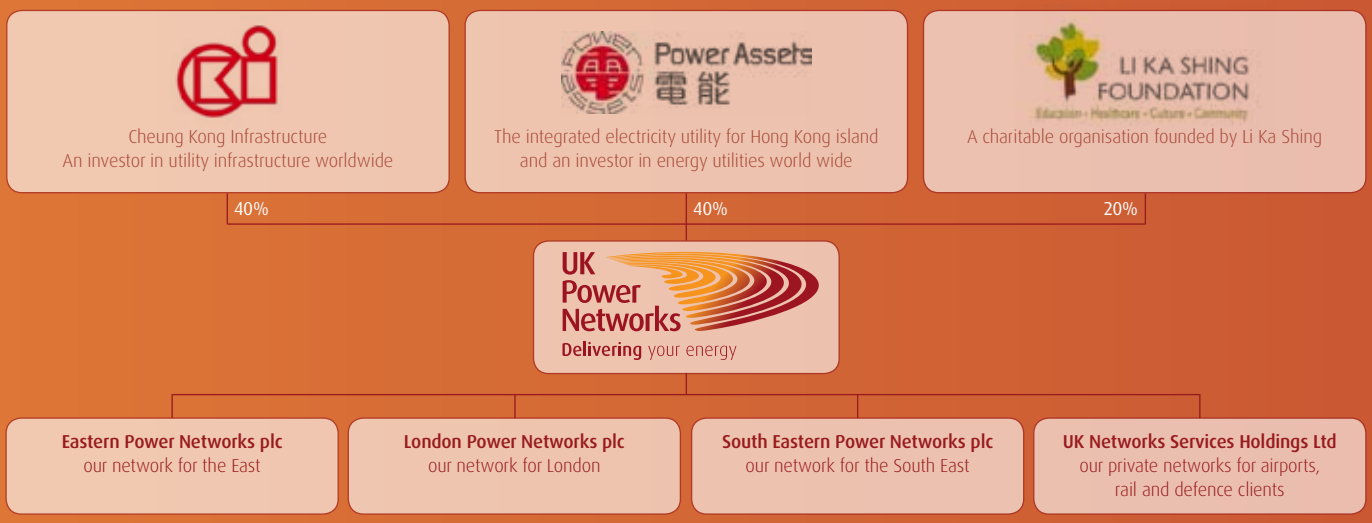
How this will impact domestic customer bills

Distribution charges make up 16% of the average overall domestic bill*

All amounts in 12/13 prices	2014/15**	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Percentage change in distribution costs	n/a	-8.4 %	1.7 %	1.7 %	1.7 %	1.7 %	1.7 %	1.7 %	1.7 %
Annual change in £s	n/a	-£7.30	£1.28	£1.31	£1.33	£1.35	£1.37	£1.40	£1.42
Total distribution charge	£81.90	£74.60	£75.88	£77.19	£78.52	£79.87	£81.24	£82.64	£84.06

2 Who we are and **what we do**

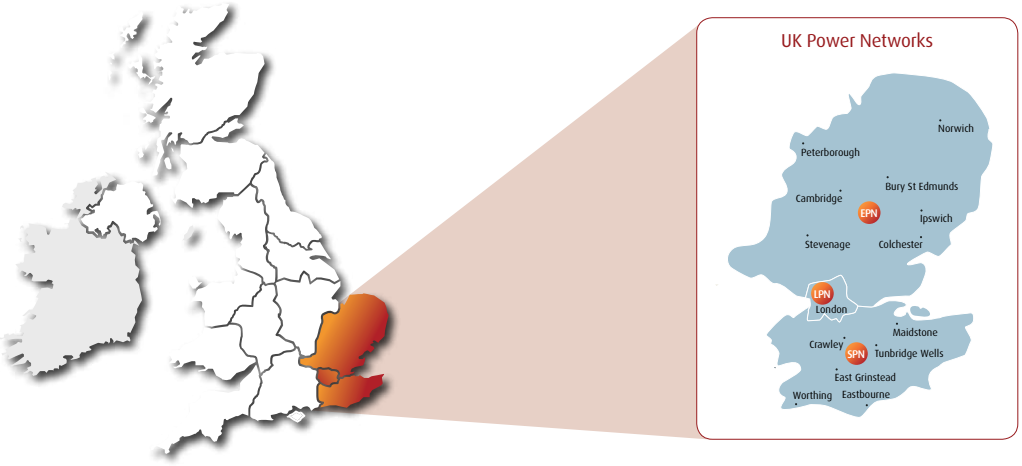
UK Power Networks' ownership structure



UK Power Networks owns, operates and manages three of the fourteen electricity distribution networks (DNOs) in Great Britain and we deliver electricity to eight million customers. We are a pure network operator, we do not generate or buy electricity nor do we sell it to end customers. Our networks operate in the most challenging, fastest growing, and highest cost part of the country.

This executive summary summarises the April 2015 to March 2023 (RIIO-ED1) final business plans of UK Power Networks' three licence holding companies: Eastern Power Networks (EPN); London Power Networks (LPN) and South Eastern Power Networks (SPN) (collectively referred to as the Networks). Our Final Business Plans set out what we plan to deliver for customers, how we have engaged with stakeholders to produce the plans, and what the plans will cost.

Figure 2: Where we operate



Our key responsibility is to 'keep the lights on' for the customers connected to our network and:

- Maintain the safety and reliability of our electricity networks,
- Efficiently connect new customers, including generators, to our electricity networks,
- Restore supply to customers who experience an interruption as quickly as possible,
- Use innovation appropriately to continually improve efficiency together with the services we provide to our customers,
- Facilitate a low-carbon environment by investing in assets, processes and initiatives that minimise the effect that our network has on the environment, and
- Extend and upgrade the network to meet our customers' future needs.

As a natural monopoly our charges are regulated by Ofgem, the economic regulator for the UK electricity and gas utility sector and we must submit business plans such as this one for Ofgem's approval.

UK Power Networks was created in October 2010 from the sale of EDF Energy's three electricity networks in London, the South East and East of England. We are owned by a consortium of Hong Kong based investors controlled by the Cheung Kong Group (CKG), who are long term investors in utility infrastructure worldwide.

CKG is headquartered in Hong Kong and is a robust, well-capitalised shareholder group which has significant global experience in the long-term ownership and operation of utility and infrastructure businesses. In the UK, CKG is active in electricity distribution via UK Power Networks, in gas distribution via Northern Gas Networks and Wales and West Utilities, and in water and wastewater utilities via the Northumbrian Water Group. CKG also has investments in electricity distribution networks in Australia and New Zealand, and in gas distribution networks, renewable energy power transmission and water businesses in Australia. In Hong Kong, CKG has interests in Hongkong Electric, the sole electricity supplier for over 560,000 customers on Hong Kong Island and Lamma Island.

3 Our track record: transformed performance

Our achievements during the Olympic and Paralympic Games have been recognised by our stakeholders

"UK Power Networks staff, whether they were directly supporting the Games at the various Olympic venues or were ensuring that the lights stayed on for the millions of households in the region, have played a key role and can proudly share in the success of the 2012 Olympic and Paralympic Games.

Boris Johnson, Mayor of London

Over the Games period, enhanced reporting kept us informed about what was happening, and provided re-assurance across government that energy supplies were being managed efficiently and effectively.

Edward Davey,
Secretary of State for Energy and Climate Change"

Our track record of improvement is second to no other network group, particularly considering that we operate in the most challenging, fastest growing, and highest cost parts of the country, including London.

When UK Power Networks was created in October 2010, we inherited a business that was underperforming in most key areas. We introduced a simple and clear strategy to address this underperformance based on achieving upper third performance relative to other UK DNOs by 2014 under three key headings:

- Respected corporate citizen (high quality of supply, reliability, customer service and social responsibility),
- Sustainably cost efficient (delivering our outputs at lower cost and facilitating the transition to a low carbon economy), and
- Employer of choice (delivering excellent safety performance and high levels of employee engagement).

We have concentrated on separating from our previous owner EDF Energy, on setting targets and accountabilities for employees, and on resetting our business performance. Some of the key changes we made included:

- Establishing a dedicated customer services directorate, and separating the asset management function from the delivery of capital works,
- Introducing an element of performance related pay for all our employees, linked to our progress against our upper third vision,
- Focusing the business on improved reliability, 'getting the lights back on' more quickly through changing our working patterns and roles, daily operational calls focused on long duration interruptions, clearing backlogs of maintenance, increased use of generation and investment in automation,
- Reducing our 'indirect cost' workforce by around 600 people or 25 per cent, via a voluntary severance scheme, to make our overhead costs efficient,
- Focusing our network investment on delivering health and load outputs, and only reinforcing or replacing assets where there is a clear customer benefit rather than simply following our original investment plan,
- Investing in cultural change programmes across the business to:
  - Promote focus, accountability and visibility across the management team
  - Develop a culture of putting the customer first amongst all our employees
  - Ensure all employees put safety first in everything they do
- Launching a shareholder funded £50 million business transformation programme to deliver best-in-class business processes and systems.

We are pleased that executing our strategy has transformed our performance, with significant benefits for customers. Since we became UK Power Networks in October 2010 we have:

- Maintained UKPN as having the lowest prices on average of any DNO group,
- Reduced customer interruptions and customer minutes lost by 30.3 per cent and 42.5 per cent respectively, with the result that we are now the most reliable DNO group in Great Britain,
- Delivered our network health and load investment targets ahead of the plan agreed with our regulator,
- Improved our average customer service scores by 0.50 (from 7.13 to 7.63 out of ten),
- Improved our employee satisfaction from 69 per cent to 78 per cent as assessed by our annual employee engagement survey,
- Invested £44 million in innovation projects, more than any other DNO group,
- Cut our costs, whilst still delivering our DPCR5 output commitments, so that we are on track to deliver £200 million of cost savings,
- Reduced our business carbon footprint by 25 per cent,
- Reduced our total recordable injury rate by 34 per cent,
- Connected more than 4,300 MW of new customers, and
- Successfully delivered the power to major events including the London Olympic and Paralympic Games, a Royal Wedding and the Golden Jubilee – challenges faced by no other DNO group.

4 Our 77 output **commitments**

This chapter provides an overview of the outputs UK Power Networks proposes to deliver for customers and stakeholders in RIIO-ED1. Our targets are specific, measurable, and time-bounded. This makes them easy for us and our stakeholders to assess, and means that our delivery performance against these targets in the future will be straightforward to measure.

Each year during RIIO-ED1 we propose to publish a report for stakeholders setting out our progress against these output commitments.

We have consulted extensively with our customers and other stakeholders on the outputs in the 2015 to 2023 planning period. In summary stakeholders supported:

- The six output categories defined in Ofgem's RIIO-ED1 Draft Strategy Decision,
- The primary outputs under each of the six output categories (but they requested more detail in some areas), and
- The proposed secondary deliverables, albeit some suggestions for additional secondary deliverables were made. In particular they requested that the secondary deliverables supporting the environmental output should distinguish between UK Power Networks' response to the low carbon economy and its services or activities, over which it has direct control (i.e. services which involve the use of fluid filled cables), which impact negatively on the environment.

We are planning to spend £7.3 billion of total expenditure (including pensions) in RIIO-ED1, and we forecast a further £1.2 billion of customer contributions. Figure 3 illustrates how our forecast RIIO-ED1 expenditure maps to our commitments in the six key output areas. The majority of our forecast expenditure relates to maintaining the reliability and availability of our networks, followed by connections and customer service.

Figure 3: Proportion of forecast totex associated with our output commitments (£ bn 2012/13)

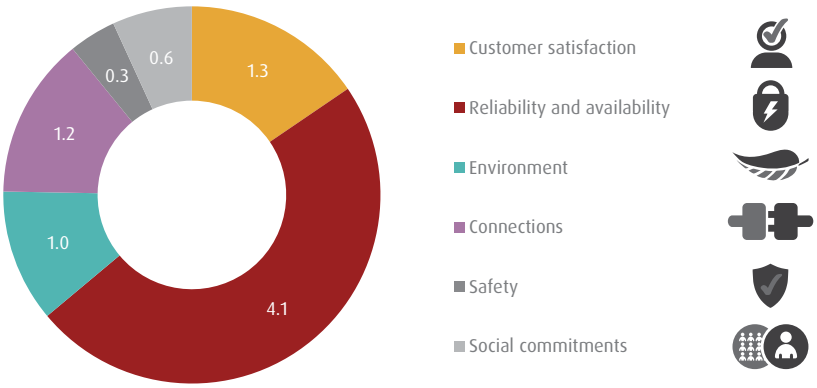


Figure 4 summarises the key output commitments against which UK Power Networks will target and measure its performance delivery in the 2015 to 2023 planning period. These are grouped into the six categories identified by Ofgem.

Figure 4: UK Power Networks' proposed output commitments for RIIO-ED1

Customer satisfaction

1. Improve performance of all UKPN DNOs in all components of the customer satisfaction survey achieving an average overall performance of 8.3 for EPN and SPN and 8.1 for LPN over RIIO-ED1
2. On average, answer calls from customers in less than five seconds
3. Resolve 70 per cent of all customer complaints within 1 day and 95 per cent within 31 days
4. Contact 100 per cent customers within 24 hours to ensure any work they have requested has been completed to their satisfaction
5. Get the lights back on for 90 per cent of HV power cuts within two hours
6. Provide multiple ways for customers to stay regularly updated on the estimated time for supply restoration and of any changes to the estimated time. As a minimum this will include phone, SMS text, twitter and online
7. Proactively contact 100 per cent of registered vulnerable customers to offer support if they are without power
8. Continue with our three critical friends panels per DNO per annum
9. Publish and review a UKPN business plan update every year
10. Publish an annual strategic development statement for Central London
11. Review our economic assumptions with our critical friends panels each year
12. Appoint an independent chairperson to our critical friends panels
13. Hold a Distributed Generation forum annually
14. Continue to use our stakeholder feedback to improve our customer facing business processes

Reliabilty and availability

15. Maintain LPN's position as having the lowest level of customer interruptions and customer minutes lost in the UK targeting 23 CIs (7 per cent improvement) and 30 CMLs (8 per cent improvement) for unplanned interruptions
16. Reduce EPN and SPN customer interruptions by more than 12 per cent targeting 51 CI in EPN and 49 CI in SPN for unplanned interruptions
17. Reduce EPN and SPN customer minutes lost by more than 19 per cent targeting 35 CML in EPN and 35 CML in SPN for unplanned interruptions
18. Maintain the health of the network during RIIO-ED1 as measured by the health index, at least at the end of DPCR5 levels
19. Continue to improve the load index of the networks by reducing the number of highly rated sites to 21 in EPN, 16 in SPN and 12 in LPN by the end of RIIO-ED1
20. Protect 78 substation sites from the risk of flooding
21. Reduce the number of 12 hour failures by more than 30 per cent
22. Reduce worst served customers to less than 10,000 in both EPN and SPN

Environment

23. Reduce our business carbon footprint by 2 per cent per annum
24. Continue to recycle 70 per cent of office and depot waste and 98 per cent of street works spoil
25. Maintain sulphur hexafluoride (SF6) leakage at less than 0.2 per cent as a proportion of SF6 in service
26. Reduce cable fluid leakage of 207,000 litres by 2 per cent per annum
27. Undergrounding the equivalent of 80km of HV overhead line in SPN and 96km of HV overhead line in EPN in Areas of Outstanding Natural Beauty and National Parks
28. Innovation expenditure of 0.5 per cent of allowed revenues and win largest market share of the NIC competition
29. Investigate all noise issues and address all non-compliant sites

Connections

30. Achieve an average time to quote from the time of enquiry of 8.2 days for low voltage single services and 11.7 days for low voltage multiple services
31. Achieve an average time to connect of 42 days for low voltage single services and 53 days for low voltage multiple services
32. Achieve in excess of 99 per cent compliance with of our Guaranteed Standards of Performance (GSoP) targets
33. From Q3 2014, commence the introduction of new online services for customers requiring new or altered metered services and all customers requiring unmetered connections. These services will include:
    a. On-line submission of service requests
    b. On-line quotations and estimates
    c. Service request and job delivery tracking
    d. On-line payment
    e. Appointment booking
34. Integrate Flexible Plug and Play connection offers (as per our Low Carbon Network Fund Project) into business as usual by Q2 2015

Meet our improvement commitments to major connections customers:

35. Engage regularly with other connections stakeholders on a frequency agreed with them
36. From 2014, agree and publish a service development plan with associated key performance indicators
37. Publish quarterly updates to communicate progress against the service development plan
38. Review and revise the plan annually in agreement with stakeholders
39. Publish an annual progress update to Ofgem and stakeholders
40. Complete an annual independent audit of our achievements against the agreed service development plan
41. Work with Connections stakeholders to develop our products and services through 'user groups' three times per annum with common interest customer groups (highway services, distributed generation, metered customers) to gain insight into their needs and requirements and shape innovation and development within UKPN
42. Offer account management to any business/commercial customer who requests this service

Develop more 'pre-application' support for customers to enable them to make informed decisions on their schemes:

43. Extend our 'Ask the Expert' service to include phone, web chat and face to face options
44. Publish 'heat maps' to provide an overview of current network capacities by location
45. Provide access via a web portal to cable diagrams allowing customer access to up to date information
46. Extend the online price illustrator to include all market segments and provide indicative timescales in addition to cost illustrations

47. Extend our current DG surgery sessions to other customer groups to allow customers to discuss their connection proposals informally prior to application

Increase the choice and flexibility of connections services available to customers:

48. Introduce longer office hours for our contact centre
    a. 08.00 to 20.00 weekdays
    b. 09.00 to 16.00 Saturdays
49. Offer two hour time banded appointments for site visits
50. Schedule work delivery across a wider working window to include evenings and weekends
51. Extend the convertible quotes concept so that quotations offered in a competitive market segment can be fully or partly accepted dependent on the customers preference

Continue to support and promote competition in the connections market place through innovative change

52. Self-determination of the Point of Connection for an increasing range of connections
53. HV jointing to existing networks to include all associated planning and operational activities
54. Extend live LV jointing to the LPN interconnected area

Safety

55. No formal notices or prosecutions by the HSE under applicable legislation
56. Deliver the high safety criticality element of the asset health/risk index (deliver all asset improvements with a high safety criticality score (4) in the asset risk index)
57. Reduce the Total Recordable Injuries rate (accident rate per 100,000 hours worked) by 10 per cent per annum to less than 0.5
58. Reduce the Lost Time Recordable Injuries rate (accident rate per 100,000 hours worked) by 10 per cent per annum to less than 0.05
59. Achieve at least one year with no RIDDOR reportable lost time incidents for employees and contractors by the end of the period
60. At least one year with no RIDDOR reportable public harm resulting from our activities
61. Engage with two million children and members of the public, either through face to face or via on line interaction, on public safety issues over RIIO-ED1

Social

Continue to improve the service provided to vulnerable customers:

62. Double the number of customers on our priority service register
63. Proactively contact all registered vulnerable customers to offer support if they are without power
64. Extend our local authority joint response pilot across our geographical footprint and standardise triggers
65. Provide every vulnerable customer an alternative high priority dedicated number
66. Distribute welcome packs to all new priority service register customers

Maintain community engagement during RIIO-ED1:

67. Host two subject-specific priority issue focus groups on vulnerable customers and fuel poverty every year
68. Maintain our community fund investing £300,000 per annum

Work proactively with third parties to reduce the level of fuel poor in our three networks:

69. Work with National Energy Action (NEA) to map and profile fuel poor customers within our footprint
70. Publish information to targeted customers on how energy efficiency and demand-side activity can be used to manage energy consumption
71. Deliver a series of targeted consumer surgeries for vulnerable residents designed to raise awareness of energy efficiency and how to manage energy bills
72. Publish a strategy to explain how smart meters can be used to reduce fuel poverty
73. Create a group of UK Power Networks local community energy champions
74. Develop a project with NEA to educate young carers about energy efficiency
75. Organise and deliver school activity days to encourage safe, efficient use of energy

Be an employer of choice:

76. Measure ourselves against other companies and seek inter and intra sector recognition/accreditation by participating in external benchmarking such as achieving membership of the Sunday Times Top 100 Best Companies
77. Recruit and train over 1,000 staff as well as up-skill and develop existing employees to ensure that we maintain a suitably skilled and motivated workforce

For further information on our output measures please see **UK Power Networks Core Narrative**, Section 4.

5 Our expenditure plans

5.1 Increased investment and lower operating costs

Our RIIO-ED1 total expenditure (totex) forecast is £6.7 billion in real terms (excluding pensions) as set out in Figure 5, which also shows our actual/forecast expenditure over DPCR5 (grossed up to an eight year basis for comparability with RIIO-ED1). Compared to DPCR5 actual expenditure, our work volumes will increase driven mainly by low carbon load growth, increased asset replacement, and the introduction of smart meters. Unit costs are down by more than ten per cent on average, smart savings of £135 million are included, and overheads are broadly flat against an increased workload. On this basis, our total expenditure has only increased by five per cent.

Our total expenditure has reduced from £7.3 billion in our April draft plan. This reduction is mainly due to the inclusion of further efficiencies and reductions in real price effects in RIIO-ED1. Work volumes delivered remain almost unchanged from our April plan.

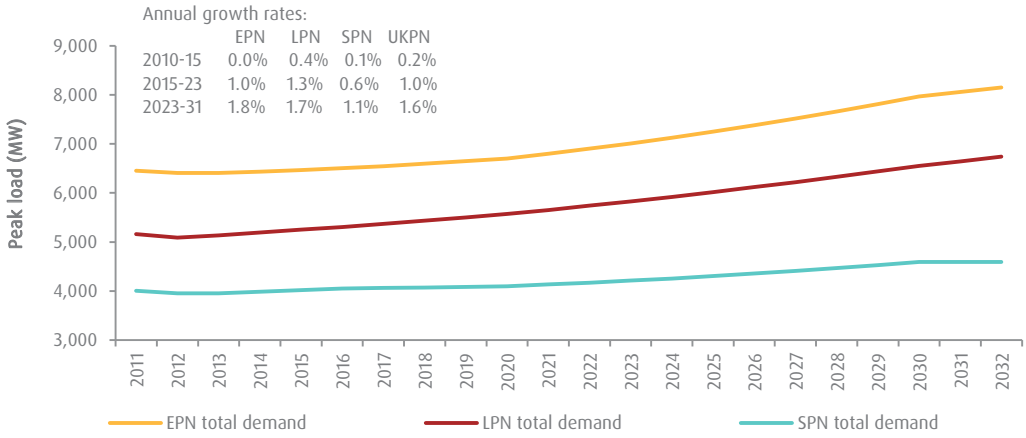
Figure 5: Actual and allowed DPCR5 expenditure compared to forecast RIIO-ED1 expenditure

£ billion Real 2012/13 prices	DPCR5-regulatory allowance (8 year equivalent)	DPCR5 UKPN actual expenditure (8 year equivalent)	% difference	UKPN RIIO-ED1 forecast	% difference between DPCR5 actual expenditure and ED1 forecast
Load related capex	1.35	1.00	-26	1.18	+18
Non load related capex	1.76	1.72	-2	2.02	+17
Network operating costs	1.27	1.40	+10	1.22	-12
Indirect costs	1.87	1.77	-5	1.75	-1
Non-operational capex	0.25	0.27	+8	0.25	-9
RPEs net of future efficiencies	-	-	-	0.03	-
Pensions ongoing costs	0.24	0.24	+1	0.29	+22
Total	**6.74**	**6.41**	**-5**	**6.75**	**+5**
Pension deficit	0.49	0.63	+28	0.58	-8
Total incl. pensions	**7.23**	**7.04**	**-3**	**7.33**	**+4**

The key expenditure categories are:

Load related capital expenditure (investment in reinforcing our network to cater for growth in electricity demand) in DPCR5 is below the regulatory allowance by 26 per cent due to a number of factors, including lower than forecast growth in demand resulting from the 2008 financial crisis and a greater than anticipated impact from domestic energy efficiency together with a delay in certain major tunnelling works projects due to planning issues. Expenditure in RIIO-ED1 is forecast to increase by 18 per cent in order to meet the capacity requirements for forecast load growth, including the impact of low carbon technologies, offset by reduced unit costs and £135 million of savings from smart technologies. Figure 6 shows our forecast load growth across all three of our licence areas.

Figure 6: UKPN peak load growth over RIIO-ED1 and ED2 (regulatory year ending)



- Non load related capital expenditure investment in replacing or refurbishing assets because of deteriorating condition) in DPCR5 is generally in line with the regulatory allowance set by Ofgem, with an underspend of two per cent driven by higher volumes of work on overhead line refurbishment and defects backlogs. Expenditure in RIIO-ED1 is forecast to increase by 17 per cent as our detailed asset modelling forecasts an increase in the amount of asset replacement required as a consequence of our ageing asset base. This increase is partially offset by reduced unit costs.
- Network operating costs (principally tree cutting, faults and inspection and maintenance) in DPCR5 set by Ofgem. However, we have overspent on faults as we focused on improving the quality of supply, and out-performed on tree-cutting and inspection and maintenance. Expenditure in RIIO-ED1 is forecast to decrease by 12 per cent, due to the impact of reduced unit costs by 10 per cent.
- Indirect overhead costs (support costs closely associated with our 'direct' capex and opex, and general business support costs) in DPCR5 are lower than the regulatory allowance by five per cent. Whilst we overspent our allowance at the beginning of the price control period, expenditure has significantly decreased since we separated from the previous owner and reduced our headcount by around 600 people through a voluntary severance programme in 2011. Expenditure in RIIO-ED1 is flat, as further efficiency savings offset the impact of increased work volumes.
- Non-operational capital expenditure (expenditure on new and replacement assets which are not system assets, such as IT and property) in DPCR5 is eight per cent above the Ofgem allowance largely due to expenditure on IT separation from, the previous owner and on the Business Transformation project. Expenditure in RIIO-ED1 is forecast to reduce by nine per cent as a result of efficiency savings off set by the introduction of new business information systems to support the roll out of smart metering and smart networks. .

5.2 Cost efficiency in RIIO-ED1

We support the use of benchmarking as a tool, within the overall toolkit of cost assessment methods and models, to assess our relative efficiency amongst the UK DNOs given the outputs we are required to deliver. We emphasise the inherent limitations of benchmarking and of the comparability of data and note that benchmarking needs to be tailored to meet specific regulatory applications.

We applied the following benchmarking tools to assess the efficiency of our RIIO-ED1 expenditure forecasts:

- **Totex model** – this is a top down statistical model that considers total expenditure (capex and opex) over an extended period of time and takes into account a number of service characteristics, such as number of customers and peak load,
- **DPCR5 benchmarking model** – this is a regression-based model which was firstly introduced at the DPCR5 reset. Unlike the totex model it does not assess capex, which is a significant limitation,
- **Bottom up cost analysis** – using cross utility data, UKPN has developed detailed unit cost targets for its main activities. For indirect costs we have either set the benchmark at industry average or used independent specialist advisors to assess appropriate cost levels,
- **Project specific assessment** – due to the unique nature of some project and programmes of work UKPN has developed specific project justifications,
- **Cost Benefit Analysis (CBA)** – UKPN has used cost benefit analysis to justify projects against Ofgem agreed criteria, and
- **External benchmark review** – external consultants were appointed to review and assess the efficiency of IT and property costs.

The efficiency scores calculated by the models are shown in Figure 7. Overall, on a totex basis, all three networks benchmark as efficient. However, certain spend categories benchmark as 'amber' for individual networks. We believe that this reflects inevitable simplifying assumptions used in the benchmarking process which are averaged out at the overall totex benchmark level.

Figure 7: Efficiency of our forecast expenditure in RIIO-ED1

	Efficiency score based on 8 years RIIO-ED1 forecasts 2015/16 and 2022/23, less than 100% is better than assessed frontier		
Cost category	**EPN**	**LPN**	**SPN**
TOTEX model	95%	88%	97%
Capex core (e.g. replacement)	110%	96%	95%
Capex non-core (e.g. environment)	Project specific benchmark or CBA	Project specific benchmark or CBA	Project specific benchmark or CBA
Civils	Bottom up analysis	Bottom up analysis	Bottom up analysis
Network operating costs (NOC)	108%	94%	87%
Closely associated indirects (CAI)	102%	107%	100%
Business support	113%	93%	92%
IT and Property	External benchmark	External benchmark	External benchmark

Real price effects and ongoing efficiencies (frontier shift)

Key elements of our cost base for the next planning period will increase at a greater rate than the retail price index (RPI), which measures general prices in the economy, due to the specialist labour and materials required to operate our networks. UK Power Networks engaged NERA Economic Consulting (NERA) to independently estimate the real price effects (RPEs) relative to RPI for the next planning period for labour, materials, plant and equipment. NERA's methodology and data sources are consistent with the approach applied by Ofgem in the recent RIIO electricity transmission and gas distribution price reviews. NERA developed a range of scenarios and we have adopted NERA's mid-point RPE estimates as shown in Figure 8.

NERA has also reviewed the potential on-going annual productivity improvements during RIIO-ED1. We have included an on-going productivity estimate of 1.0 per cent per annum for operational expenditure (including total indirect costs) and 0.7 per cent for network investment. In recognition of the slightly higher potential for on-going efficiency in London due to the inclusion of regional cost factors we have increased the on-going annual productivity improvement for LPN to 1.25 per cent. These ongoing efficiencies have been reflected in our forecast capital and operating expenditure forecasts and are also set out Figure 8.

Figure 8: RPEs and ongoing efficiencies for the 2015 to 2023 planning period

Per annum	Operational activities (%)	Network investment (%)
Real price effects	1.2	1.0
Efficiency savings	1.0 (1.25 in LPN)	0.7
Net effect	0.2 (-0.05 in LPN)	0.3

5.3 Network specific initiatives for RIIO-ED1

Through our stakeholder engagement and the asset management requirements for RIIO-ED1 UKPN has identified a number of network specific investment initiatives.

London Power Networks

Improved London operational response – the expectations of stakeholders regarding operational network performance are higher in the UK's capital city London than our other network distribution areas. We are proposing to improve the level of services we provide to our customers served by the central London network through the establishment of two central London operational depots, a 24 hour manned fault response service, removal of technical constraints and removal of service constraints. We have included £4.5 million of annual on-going expenditure in RIIO-ED1 to deliver this improved operational performance. Overall for LPN we expect our CI and CML performance to reduce by a further 0.2 CI and 0.3 CML. However, the CI and CML performance for our central London customers will improve by around 50 per cent.

London infrastructure development – UKPN has consulted extensively with key stakeholders, forming specific working groups. An area of specific debate has been the future development of London's network infrastructure so that it is appropriate for the UK's capital city. In its draft November business plan UKPN proposed an additional investment of £170 million in capital network infrastructure to reduce network utilisation and £40 million of investment to improve network resilience and performance. As a result of further discussions with Ofgem who confirmed that the current regulatory framework does not support ahead of need investment in infrastructure and that they would not support changes in this area UKPN has reduced the additional investment in capital network infrastructure to £100 million. The network resilience investment remains at £40 million. We are confident that these investments are well justified under the existing regulatory framework.

Regional cost adjustment factors – In LPN, through bottom up detailed cost analysis and established (RIIO-GD1 and T1) top down regional cost adjustment methodologies, we have identified and justified £22 million per annum of additional cost items. We have adjusted the unit costs underpinning LPN's 2015 to 2023 expenditure forecasts to reflect the regional cost differences associated with undertaking the investment required to deliver our output commitments to customers served by this network. The main drivers of these additional costs are:

- **Transport and travelling** – congestion charges, parking and site access. Importantly recent changes to legislation relating to street works have increased these costs significantly,
- **Excavations** – accessing underground cable networks in high density urban areas and environmental restrictions on street works,
- **Operations** – scheduling work, accessing sites, and gaining consent from multiple interested parties such as property owners and local authorities,
- **Resources** – higher labour rates and allowances,
- **Security** – higher network asset security requirements and access to assets,
- **Properties** – purchasing and accessing higher cost land and buildings,
- **Contractors** – higher contracted labour rates (due to shortage of skilled labour), and
- **Tunnels** – building tunnels for underground cables.

Eastern Power Networks

Reinforcement due to impact of distributed generation – our EPN network has seen high levels of distributed generation project connections, in particular in the north of the East, where demand is relatively low. Consequently, we have identified a need to invest to address existing network constraints such as voltage and fault levels and thereby ensure the quality and reliability of supply and network safety standards.

We are therefore proposing to undertake four network reinforcement schemes, forecast to cost around £15.4 million, which will increase network capacity by 187MVA. We have robustly tested this investment to ensure that it is prudent and efficient and will deliver outputs and outcomes that are in the long term interests of our customers through Willingness to Pay (WTP) studies, cost-benefit/options analysis, stakeholder engagement at two UK Power Networks' DG forums and technical expert review. The projects selected for investment represent best value for money and would result in a positive return using the DECC non-traded carbon values.

Regional cost adjustment factors – there are additional regional cost adjustment factors that impact on our EPN network, particularly in the south of the region in London. However, we also recognise that labour costs in some of this region tend to be lower than the national average. As a result we have decided not to apply any regional cost adjustment to our EPN network cost base.

Southern Power Networks

Regional cost adjustment factors – in SPN, through bottom up detailed cost analysis and established (RIIO-GD1 and T1) top down regional cost adjustment methodologies, we have identified and justified £11 million per annum of additional cost items. We have adjusted the unit costs underpinning SPN's 2015 to 2023 expenditure forecasts to reflect the regional cost differences associated with undertaking the investment required to deliver our output commitments to customers served by this network. The main drivers of these additional costs are:

- **Resources** – higher labour rates and allowances,
- **Security** – higher network asset security requirements and access to assets,
- **Properties** – purchasing and accessing higher cost land and buildings, and
- **Contractors** – higher contracted labour rates (due to shortage of skilled labour).

For further information on our expenditure plans please see our **UK Power Networks Core Narrative**, or for DNO specific information the respective **EPN Core Narrative**, **LPN Core Narrative** or **SPN Core Narrative**, Section 5.

For further information on how we engaged stakeholders see **Process Overview**, Section 7.4.

For further information on regional cost adjustments please see **Annex 13a: Regional Cost Justification**.

6 Our revenues and prices

6.1 Efficient financing assumptions

Our final business plan has substantial associated financing requirements. Over RIIO-ED1 our regulatory asset value (RAV) is projected to grow by £2.2 billion. This requires £1.5 billion of additional debt which after including existing debt maturing during the period implies a debt financing requirement of £2.6 billion. Shareholders' equity committed to the business grows by £0.8 billion. Therefore it is critical that our Business Plan includes acceptable financing assumptions. Figure 9 summarises these (with DPCR5 for comparison).

We propose the same cost of equity as for DPCR5, because we believe that we can mitigate the increased risk of RIIO-ED1 due to the low carbon transition, smart grids and smart meters through our ability to propose our own business plan package and the various uncertainty mechanisms available. We accept Ofgem's cost of debt index, which will result in a significantly lower overall allowed cost of capital for RIIO-ED1. We also accept that we will recover new capital expenditure from customers over 45 years rather than 20, with a transition over RIIO-ED1. We propose a 30/70 fast/slow costs split which is in line with both DPCR5 on an overall totex basis and with our accounting policies.

Figure 9: Financing parameters

Parameter	Current period (DPCR-5)	2015 to 2023 planning period
Cost of equity	6.7%	6.7%
Notional gearing	65.0%	65.0%
Cost of debt	3.6%	Rolling 10 year average
Vanilla WACC	4.69%	4.05% to 3.72% (estimated)
Totex split (fast/slow)	15/85 (business support + non-operational capital expenditure 100% fast)	30/70 on all expenditure categories
RAV depreciation	20 years	Single period transition to 45 years
Ofgem target dividend yield	5% on regulated equity	5% on regulated equity

6.2 A proposed real terms cut in revenues at the start of RIIO-ED1

Our efficient costs and financing assumptions allow us to cap the average revenues in RIIO-ED1 at three per cent below the end of DPCR5. Relative to the end of DPCR5 our forecast prices in RIIO-ED1 will reduce before inflation by 4 per cent (EPN), 10 per cent (LPN), and 12 per cent (SPN), rising slowly thereafter (1.7 per cent per annum in EPN, 1.4 per cent in LPN and 2.0 per cent in SPN) in line with the growth in our asset base.

The charts below set out our proposed revenues by DNO and for UKPN as a whole. The Po refers to the initial real terms cut in the first year of the RIIO-ED1 price control period and the X refers to real terms growth thereafter (which we require to achieve stable interest cover as our RAV increases). We also show the overall compound average growth rate (CAGR) for the RIIO-ED1 period including both the Po and X.

Figure 10: UKPN's annual revenue requirement

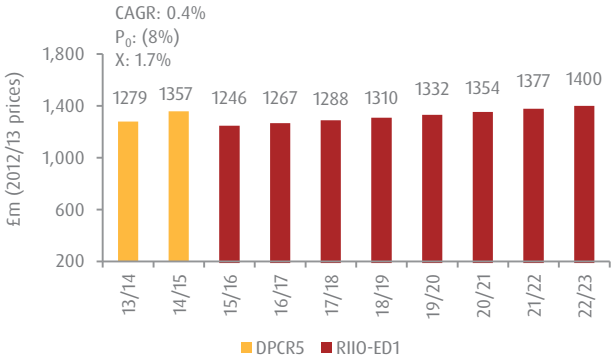


Figure 11: EPN's annual revenue requirement

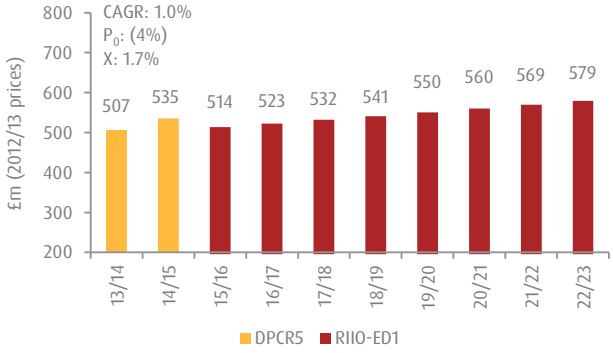


Figure 12: LPN's annual revenue requirement

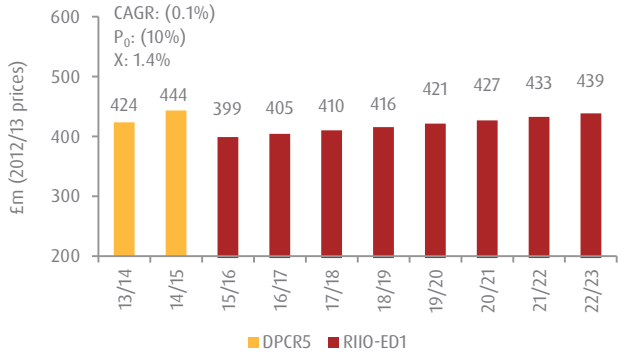
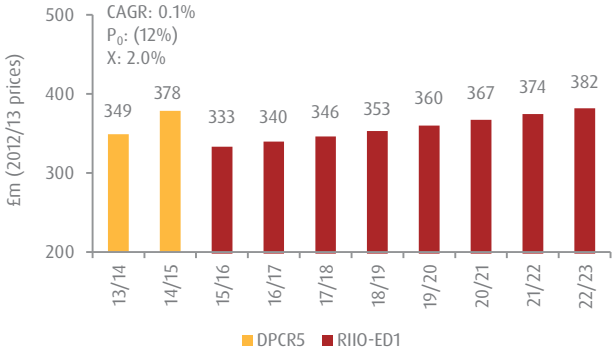


Figure 13: SPN's annual revenue requirement



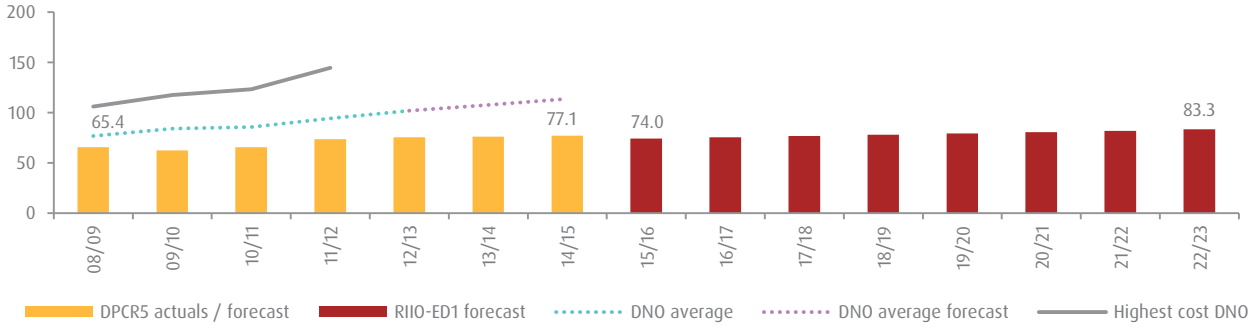
All three networks show initial revenue cuts as we reduce high level of revenues at the end of DPCR5 (which in turn reflect under-recovery in the earlier years). The proposed revenue profiles will result in revenues in 2023, at the end of RIIO-ED1, equal to revenues at the end of DPCR5 for LPN and SPN. For EPN, at the end of RIIO-ED1, revenues will be 8 per cent higher by 2023 compared to 2015.

6.3 Impact on our customers' bills

The forecast impact on customer bills is in line with our revenue forecasts and is shown in Figures 14, 15 and 16 for a typical domestic customer and 17, 18, 19 for a typical non-domestic customer. We expect that these price reductions should maintain us as the lowest priced DNO group on average.

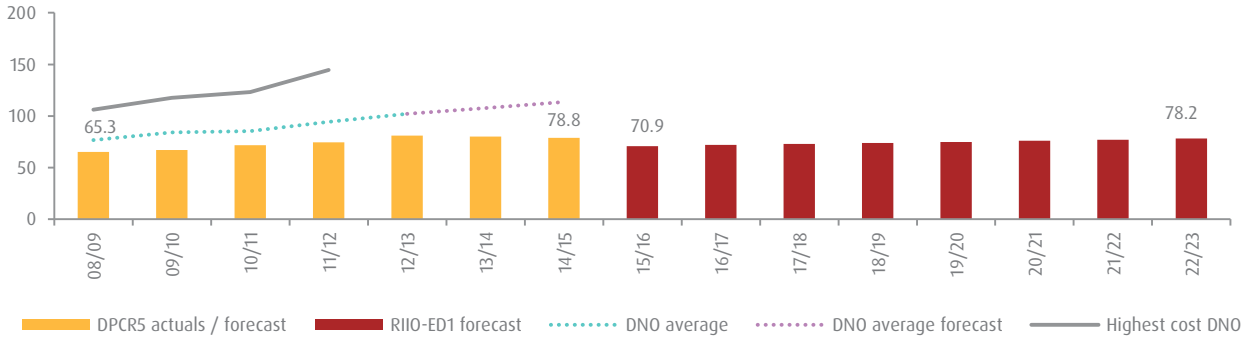
Annual domestic customer bills

Figure 14: EPN projected change in average annual domestic bill (£2012/13)



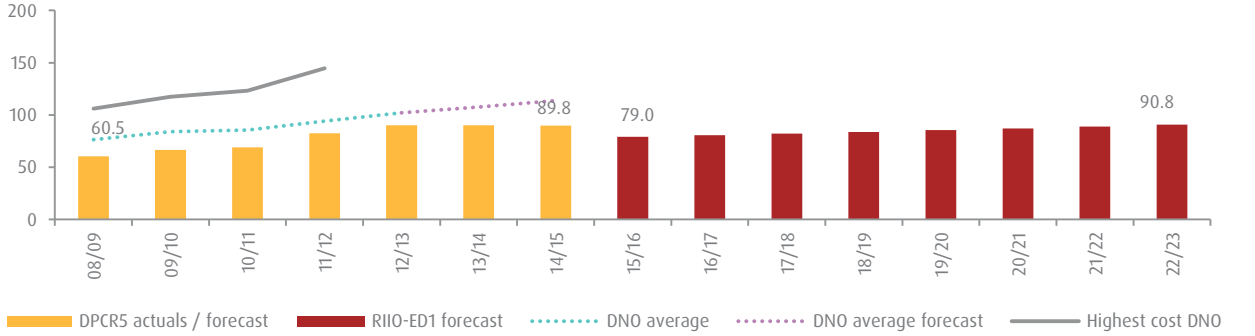
EPN's domestic prices increase slightly between the end of DPCR5 and the end of RIIO-ED1 from £77 to £83. There is an initial cut of £3 in 2015/16. The average domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 2 per cent higher.

Figure 15: LPN projected change in average annual domestic bill (£2012/13)



LPN's domestic prices are the same at the end of RIIO-ED1 (2022/23) and at the end of DPCR5 (2014/15) at £78 and are lower in between. There is an initial cut of £8 in 2015/16. The average domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 6 per cent lower.

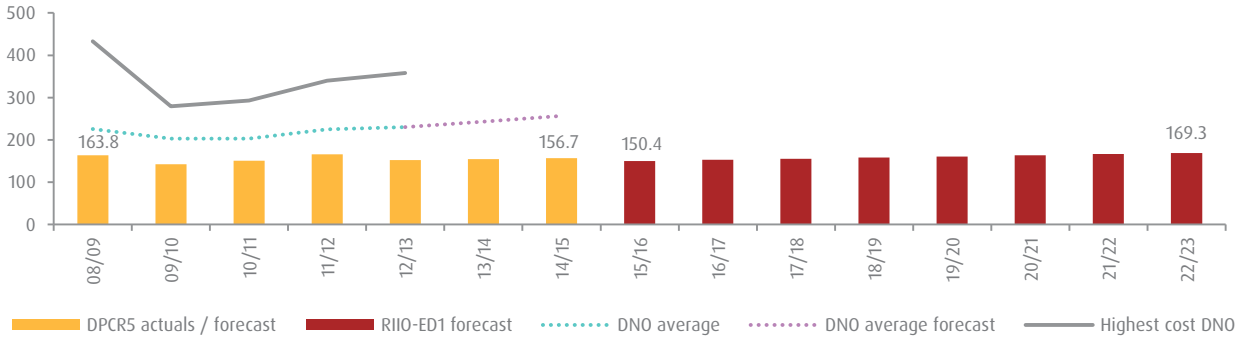
Figure 16: SPN projected change in average annual domestic bill (£2012/13)



SPN's domestic prices are the same at the end of RIIO-ED1 (2022/23) and at the end of DPCR5 (2014/15) at £90 and are lower in between. There is an initial cut of £11 in 2015/16. The average domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 6 per cent lower.

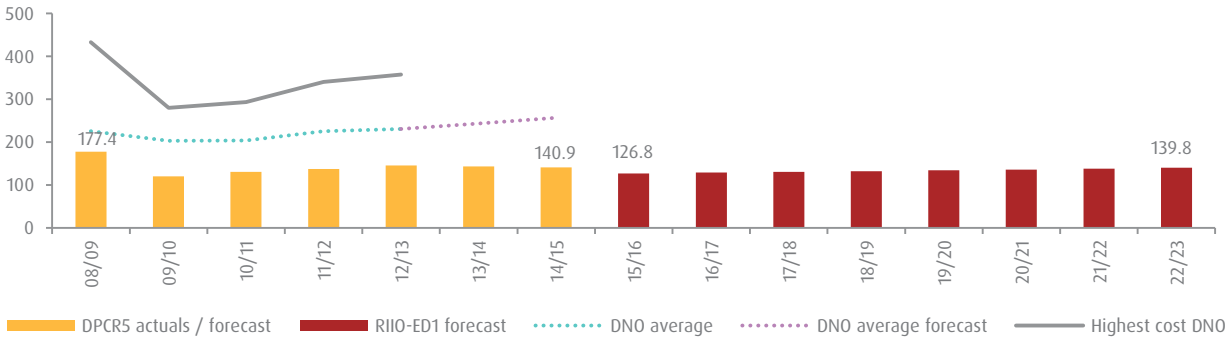
Annual non-domestic customer bills

Figure 17: EPN projected change in average annual non-domestic bill (£2012/13)



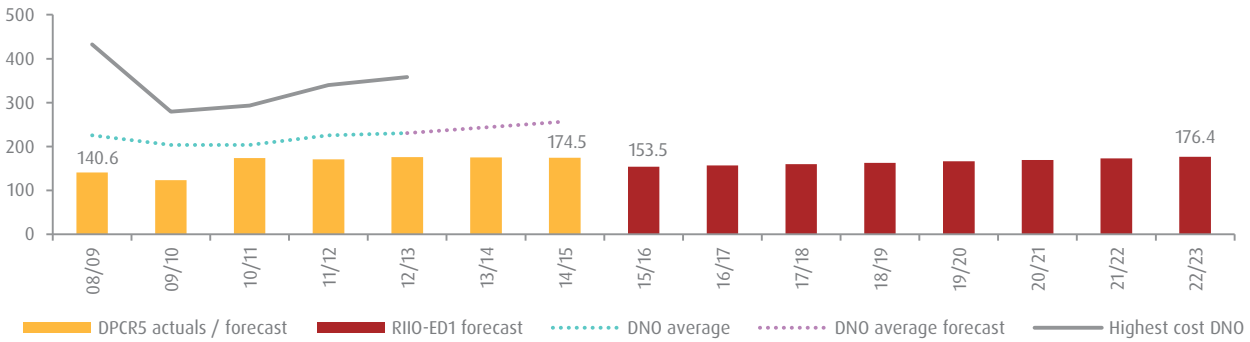
EPN's non-domestic prices increase slightly between the end of DPCR5 and the end of RIIO-ED1 from £157 to £169. There is an initial cut of £6 in 2015/16. The average non-domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 2 per cent higher.

Figure 18: LPN projected change in average annual non-domestic bill (£2012/13)



LPN's non-domestic prices are the same at the end of RIIO-ED1 (2022/23) and the end of DPCR5 (2014/15) at £141 and £140 respectively and are lower in between. There is an initial cut of £14 in 2015/16. The average non-domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 6 per cent lower.

Figure 19: SPN projected change in average annual non-domestic bill (£2012/13)



SPN's non-domestic prices are the same at the end of RIIO-ED1 (2022/23) and the end of DPCR5 (2014/15) at £175 and £176 respectively and are lower in between. There is an initial cut of £21 in 2015/16. The average non domestic price over the RIIO-ED1 period compared to the end of DPCR5 is 6 per cent lower.

6.4 Summary of impact on customer's bills

Figure 20 shows a comparison of the expected annual cost of electricity distribution for an average domestic and average non-domestic customer between 2014/15 (the end of the current price control) and the average bill for RIIO-ED1.

Figure 20: RIIO-ED1 price comparisons

Real 2012/13 prices	2014/15	Average RIIO-ED1	% difference between end of DPCR5 and average RIIO-ED1
EPN			
Domestic	77.1	78.6	+2
Non-Domestic	156.7	159.9	+2
LPN			
Domestic	78.8	74.5	-6
Non-Domestic	140.9	133.2	-6
SPN			
Domestic	89.8	84.9	-6
Non-Domestic	174.5	164.9	-6
UKPN			
Domestic	81.9	79.3	-3
Non-Domestic	157.4	157.5	-3

6.5 Reducing price volatility

DUoS charging volatility is a major concern for our customers including the energy retailers, especially at the start of a price control period when a large step change in revenues may be experienced within a very short notice period and when the outcome of any incentive and uncertainty mechanisms is unknown. Suppliers have indicated that they manage uncertainty by applying a risk premium to their tariffs which consequently raises the price consumers pay for their energy. Suppliers have stated that if there was more notice of future price changes then this would be reflected in lower prices to consumers.

As a result UK Power Networks will provide increased notice of price changes. If we are fast tracked we will publish in December this year tariffs effective from 1 April 2015, and providing 16 months notice.

For further information on the financing of our business plan please see **Annex 17: Financeability**.

For further information on revenue and DUoS volatility please see **Annex 18: Revenue and Pricing**.

> Our final business plan has substantial associated financing requirements. Over RIIO-ED1 our regulatory asset value (RAV) is projected to grow by £2.2 billion. This requires £1.5 billion of additional debt which after including existing debt maturing during the period implies a debt financing requirement of £2.6 billion. Shareholders' equity committed to the business grows by £0.8 billion.

7 Producing a **well-justified business plan**

7.1 Comprehensive process and governance

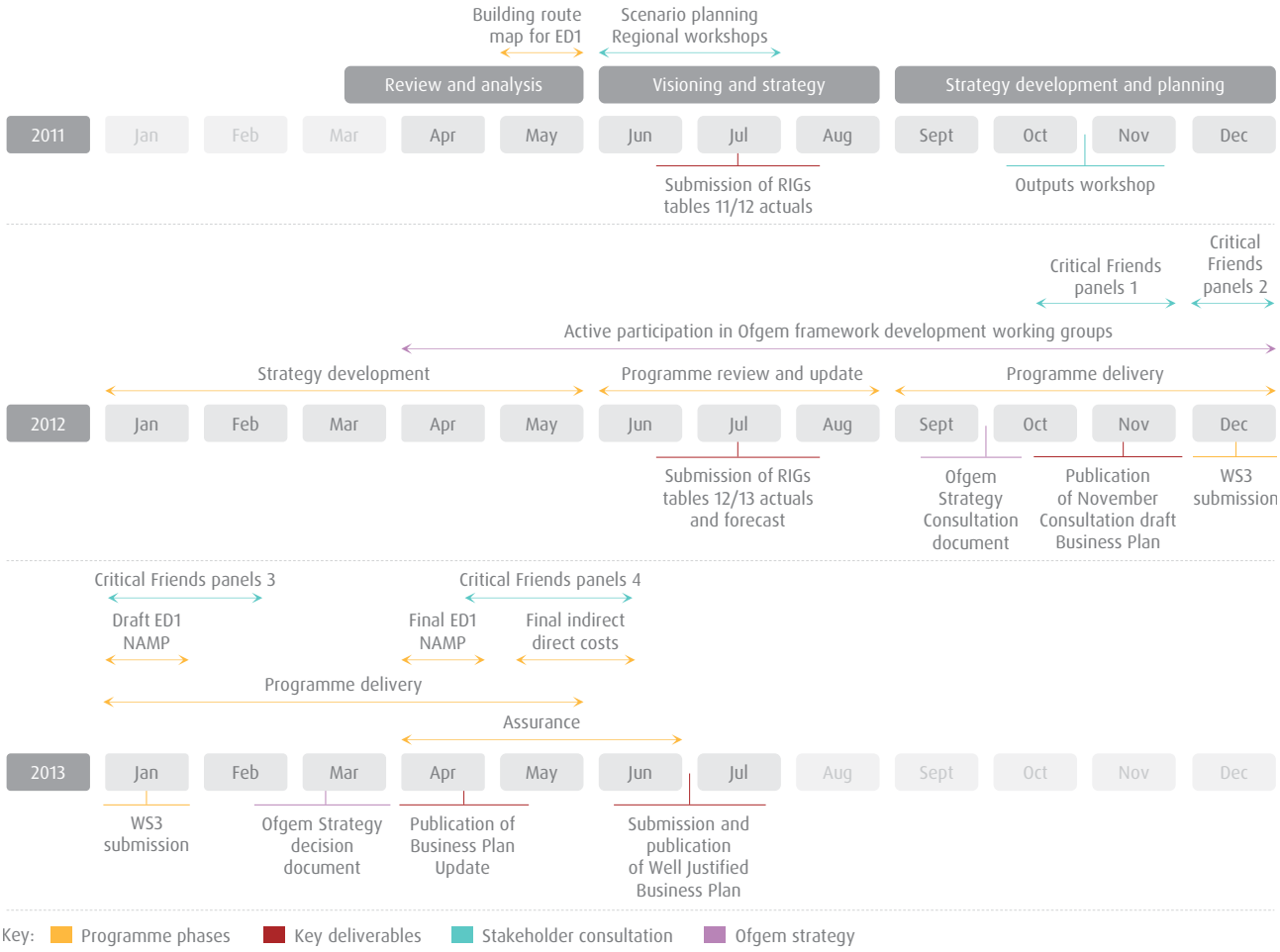
We have taken a whole of business approach to develop our plans for the 2015 to 2023 price control period. The business plan development has been led by UK Power Networks' entire leadership team, coordinated via a RIIO Programme Steering Group comprising senior members of the leadership team, which meets weekly and is chaired by the CEO. The Steering Group has responsibility for making key decisions and periodically updating the Board of Directors. This Final Business Plan was approved by our Board in June 2013. A large number of senior managers and other staff across the business have been involved in producing and confirming our business plan assumptions.

Stakeholder engagement is embedded in our business plan development. Since 2011, our customer services team has led an extensive consultation process with our stakeholders on all aspects of our business plans to ensure that they meet the expectations of customers and other stakeholders and deliver value for money over the long term. We consulted through a range of consultation pathways including business as usual and business plan specific pathways.

Our business plan development has preceded in parallel with our innovation and smart grid activities and each has drawn on the other. Our plan incorporates the lessons we have learned from our own and other DNOs' innovation projects, and includes the first stage of a potential journey towards a smart grid by 2030, together with £135 million of smart grid savings for customers.

Figure 21 shows the key stages of our business plan process. Intensive work started on the plan in 2011 including stakeholder engagement on our macro-economic and load forecasts.

Figure 21: Key stages of our Business Plan development



7.2 Extensive stakeholder engagement process

UK Power Networks has an extensive business-as-usual stakeholder engagement programme, managed within the customer services directorate and through our CEO reporting to the Board. Since 2011, we have incorporated within our engagement an extensive programme of consultation on all aspects of our 2015 to 2023 Business Plans to ensure that where possible they meet the expectations of our customers and other stakeholders and deliver value for money over the long term. We believe that we were one of the earliest groups to start engagement on our Business Plan, and this early start allowed us to be the first to publish a detailed draft business plan including revenue forecasts in November 2012, together with an update to the Business Plan reflecting stakeholder input in April 2013.

Our business plan stakeholder engagement included:

- Twelve Critical Friends Panel sessions,
- 14 focus groups with domestic customers,
- 21 telephony interviews with London business customers to test their Willingness to Pay (WTP) for certain services,
- 1,200 willingness to pay (WTP) interviews with domestic customers,
- 300 WTP interviews with business customers,
- 200 WTP interviews with central London business customers,
- 22 customer connections stakeholder forums,
- Four priority issue topic specific stakeholder panels (vulnerable consumers and fuel poor customers, storm performance, metal theft and street works),
- Two distributed generation customer stakeholder forums and a customer service survey,
- Targeted stakeholder feedback,
- Bilateral engagement with energy suppliers and large business customers,
- Multiple meetings with key central London stakeholders, including establishing a working group with key stakeholders including the Mayor of London, the Greater London Authority, Westminster Council, the Corporation of London, and the City and Westminster Property Associations,
- Publication of our draft Business Plan in November 2012,
- Online consultation on our November 2012 Consultation Business Plan with 23 responses,
- Publication of our Business Plan Update in April 2013, and
- On line consultation on our Business Plan Update.

A selection of stakeholder feedback is provided on the following page.

Feedback on inclusiveness

> Very interesting, excellent range of stakeholders. Good stuff!

Vulnerable and Fuel Poor Customer Focus Group

> Good mix of cross-industry partners.

Metal Theft Focus Group

> The right mix of professionals at the event, which challenged the presenters to respond to most highly political matters.

Street Works Focus Group

Feedback on management engagement

> Really good mix of management, giving ability to provide immediate and informative answers.
>
> Critical friends panel 4 – SPN

> Great to see Basil (CEO) at the event.
>
> Critical friends panel 4 – EPN

> UKPN are dedicated to improve in the future; will be interesting to see the outcome.
>
> Critical friends panel 3 – EPN

> Strong high level engagement providing clear messages to stakeholders and actively inviting feedback.
>
> Critical friends panel 4 – EPN

Comments on the way we implement feedback

> Felt that the issues and challenges we have discussed in past panels are being considered and delivered on.
>
> Critical friends panel 4 – SPN

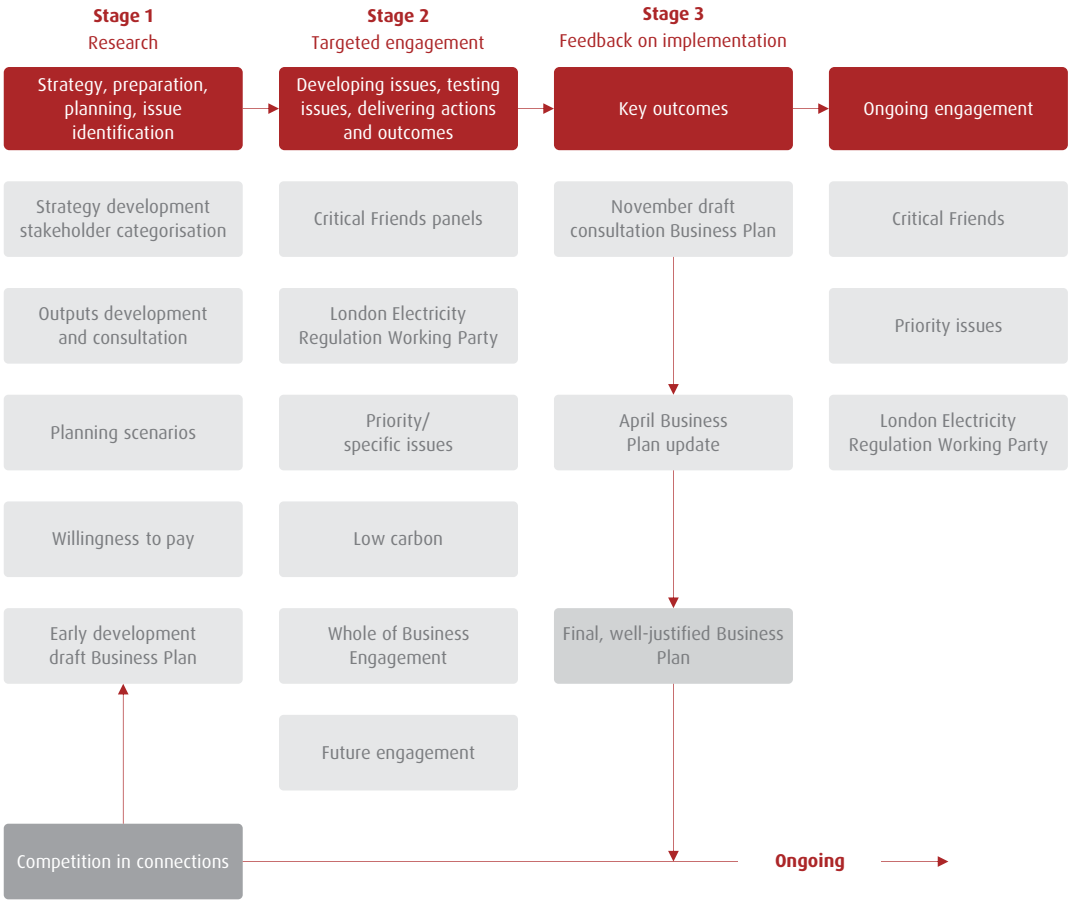
> Would be good to see how continuous improvement, technology deployment, etc. talked about is considered in the planning cycle and how this is reflected in the overall benefit for the customers.
>
> Critical friends panel 2 – SPN

> Good update on business plan. Nice to see our inputs are being listened to.
>
> Critical friends panel 4 – EPN

> UKPN are seriously listening to the panels and taking actions.
>
> Critical friends panel 1 – EPN

Our stakeholder engagement programme on the Business Plan is summarised in Figure 22 and further detailed below.

Figure 22: Stakeholder Engagement Programme



7.3 Stakeholders have influenced our business plan

Our engagement has identified a number of key issues that consistently come through as most important to our stakeholders including:

- Increased transparency – stakeholders have requested greater transparency around reporting, decisions and business processes particularly in connections. In response, we were the first of the UK DNOs to publish information on our annual revenue requirements and prices for the upcoming planning period.
- Improved customer service in particular in connections – stakeholders would like to see improved customer service and support the development of a contestable customer connections market to foster greater choice in service provider and in improvements in service outcomes. This was also evident from the willingness to pay studies for all three networks. Customers identified a range of services, including longer working windows and specific time-banded appointments. In response, we have already significantly improved our customer connection services by listening to and acting on feedback from customers. We are committed to introducing further improvements as part of our Business Transformation project, including the introduction of a connection customer self-service portal.
- Transition to a smart grid – there is stakeholder support for planning to meet the challenges arising from the transition to a low carbon economy, which will drive changes in the role and responsibilities of distribution networks. In response, we have made clear our commitment to the UK's transition to a low carbon economy and to a possible journey towards a 'smart grid' by 2030 without creating stranded assets. We have reflected investment to support our transition to a smart grid in our business plans, and have also reflected £135 million of cost savings from smart interventions. We are taking an incremental smart solution implementation strategy during RIIO-ED1, continuously monitoring the take up of smart technologies. We have sufficient flexibility in our delivery model to move to a faster implementation strategy if necessary.
- Infrastructure development – some of our stakeholders, in particular in London, have questioned whether our Business Plan provides sufficient capacity to accommodate future customer connection requests in certain areas of the network and how the cost of network investment, required to accommodate future connections, should be recovered from customers. In response, we have revised our business plans within the constraints imposed by regulations under which we operate to reflect stakeholder feedback, whilst being careful not to propose investment in new capacity ahead of need, which would result in existing customers subsidising the cost of connecting new customers and is prohibited by our regulator.
- Efficiency of cost delivery – stakeholders have asked for more comparative information on the relative efficiency of our networks in delivering their outputs compared to other DNOs. In response, our vision, to achieve top third performance in our sector in key areas, is founded on comparative benchmarking and this Business Plan is full of information comparing our performance with the sector.
- Willingness to pay survey – our stakeholder engagement has included a quantitative willingness to pay survey to assess our customers' priorities and requirements, administered by the consulting firm Accent. The customer priorities identified are consistent with the key issues identified above. It is noticeable however that in absolute terms customers are not prepared to pay significantly more on top of their existing bills for enhanced services and we have taken affordability into account in our Business Plan and in our proposed revenues which include a real terms price cut for customers.

Stakeholder requirements not included in the business plan

Whilst we have listened to and understood all the feedback we have received, it has not been practical or appropriate to incorporate it all into our Business Plan. Feedback which we have not reflected includes:

- The introduction of a seventh output category and associated targets and incentives relating to the decarbonisation of the UK economy. This was proposed by UK Power Networks during the Ofgem working groups but rejected,
- Whilst we have undertaken to monitor short duration interruptions (less than three minutes) during RIIO-ED1, compensation has not been extended to those customers affected,
- We do not believe we need to move to a Distribution System Operator model during RIIO-ED1, but will continue to review our role as the decarbonisation of the economy speeds up and the requirements on a traditional Distribution Network Operator being to change,
- Requests from major London stakeholders for investment in new capacity ahead of need in London to facilitate economic growth through faster connection times and lower connection charges for new major connections. We have not included this investment, which was discussed in our November 2012 draft business plan consultation, because it is clear to us that our regulator Ofgem will not approve the expenditure because it is contrary to the regulatory principles which apply to electricity distribution, namely that connecting customers rather than existing customers should pay for the cost of incremental capacity for new connections, and that this capacity should not be constructed ahead of need. Ofgem has also made its position clear to our stakeholders directly,
- We have not included investment ahead of need to facilitate the connection of Distributed generation in the East of England. Again, this is because the current regulatory framework does not support the investment requirements,
- We have decided not to create a separate licensed network for central London. We now monitor customer interruptions and customer minutes lost performance separately and provide geographical specific network loading. However, it is not practical due to the interconnection of the London network to try to completely separate the central district from the rest of the London network,
- We have decided not to become a Meter Operator in response to the smart metering roll-out and will focus on responding effectively to network interventions required by the supply companies and their agents,
- It was suggested that we should measure and report on the additional congestion resulting from our streetworks. Whilst this is a worthwhile proposal, it is not clear to us how this can be achieved and hence it has not been included in our plan. We will, however keep this matter under review,
- Moving to a more aggressive programme of removing oil-filled cables to minimise the potential for environmental damage through oil leakage. We will continue to monitor our oil-filled cables carefully and where a suitable investment case exists, (which has considered all externalities including traffic disruption) we will replace them, and
- It was suggested that we should change our DUoS charging to reflect the distance of the customer from the substation. We believe that this would be perceived as a 'postcode lottery' by customers.

7.4 Extensive assurance of our plan

We have subjected our business plans to proportionate and robust internal and external assurance, challenge and verification to improve them and to ensure completeness, accuracy and appropriateness of information, data and assumptions.

- **PA Consulting** has provided advice, quality assurance and monitoring of the development of the Business Plan since 2011,
- A panel of eminent utility executives and other experts organised by **Indepen** has provided an overall critique to challenge and shape the Business Plan,
- **Navigant** and **PwC** provided separate reviews of our November and April business plan consultation documents,
- **Dialogue by Design** has checked that we have set our Business Plan priorities in line with stakeholder requirements,
- **Element Energy** assisted us with economic modelling and reviewed our assumptions for economic growth in the UK economy, and other drivers for load growth including drivers for decarbonisation of the economy (e.g. electric vehicles),
- **Sinclair Knight Merz** assessed the reasonableness of our direct capital investment, opex and outputs forecasts,
- A firm of chartered accountants audited our financial model,
- **PA Consulting** reviewed the cash-flow risk model,
- **Chiltern Power** assessed the feasibility, availability, suitability, and completeness of the smart network solutions being used within our Business Plan,
- **PA Consulting** analysed our indirect costs and identified opportunities for greater efficiency, based on benchmarking our business support costs against a range of other utility companies,
- **Two Tomorrows** reviewed the business plan stakeholder engagement commentary to ensure it accurately reflects the processes we followed and the changes to the outcomes as a result of the ongoing engagement programme,
- **Oxera** and **First Economics** provided advice on the cost of capital and other financial matters (through the Energy Networks Association),
- **NERA** independently estimated real price effects and annual efficiency improvements for the period 2015 to 2023 to ensure that they are economically justified and robust,
- **Investment Property Databank (IPD)** provided cost benchmarking analysis to inform our property related expenditure forecasts and ensure that they are efficient, and
- **ImprovIT** provided benchmarking cost analysis to inform our IT related expenditure forecasts and ensure that they are efficient.

For a more detailed description of the activities undertaken in the construction of our well justified business plan, please see our **Process Overview**.

8 Adding value through innovation

8.1 Innovation is embedded in our business

Innovation is key to our strategy because our vision of upper third performance in our sector requires continuous improvement in order to maintain that position as other networks also improve.

The major changes we have made to our business since we became UK Power Networks demonstrate a substantial level of commercial innovation. We are now embarking on a £50 million shareholder funded Business Transformation project which will accelerate the pace of change in our business and leave us with world class business processes and systems.

Technical innovation in our business and via the Low Carbon Networks Fund is also a major focus for us. We have the leading share of the LCNF and our major projects are already starting to deliver lessons for the DNO community. Our plans incorporate 'smart' interventions on our networks allowing us to build £135 million of savings from smart interventions into our Business Plan.

All of our innovation activities are focused on delivering measurable benefits in the areas of our top third vision: respected corporate citizen, sustainably cost efficient, and employer of choice. We do not make changes for the sake of change.

8.2 Key solutions delivering benefits in the business plan

Our past and present innovation performance has allowed us to achieve a significant reduction in the capital expenditure we require:

- Our work within the Low Carbon London project has given us the confidence to replace 14 traditional reinforcement schemes in our Business Plan with interim solutions which we expect to fulfil through Demand Side Response (DSR). We expect DSR to play a role in managing complex construction timelines within a further six reinforcement schemes. This will provide a saving of £38 million compared with the original planned schemes and will minimise disruption to customers.
- Our change journey is not yet complete, and in particular we still have improvements to make in customer service and in direct cost efficiency. With these goals in mind, early in 2013 we launched a £50 million Business Transformation project. We will not seek to recover the costs associated with this transformation from our customers. The project is focused on process and systems improvements. In particular, it is concerned with ensuring we have best practice, efficient, integrated, common processes and systems across our core work, asset and customer operations. This will enable:
  - Improved customer relationships through greater provision of information, service channels (web, voice, SMS, social media), improved service and self-service options
  - More sophisticated asset performance measurement, refined asset policies and the production of high quality near term asset plans with reduced manual intervention
  - Improved and simplified data capture and management
  - Better managed work planning and the use of contractors
  - Simplified regulatory reporting and internal planning processes
  - Better control of the delivery of capital programmes
- We have reduced our expenditure forecasts on overhead line upgrades by £9 million, in anticipation that we will find simpler upgrade options identified through the use of Light Detection and Ranging (LIDAR) surveys.
- Our trials of a number of transformer monitoring solutions for primary and grid transformers over a number of years, and previous work carried out to model thermal cycling of transformers, has given us the confidence to reduce our capital expenditure forecasts for transformer upgrades by £15 million. We expect to meet the gap by managing existing transformers using a combination of advanced monitoring, modelling of their thermal effects, and potentially pre-cooling of the transformers ahead of system peaks. In addition, Demand-Side Response contracts will be considered where viable to relieve load on transformers in a fault event.

- We are not requesting the full amount of capital expenditure to carry out all the replacement of low-voltage (LV) cable which is predicted by our models to need replacing due to the uptake in electric vehicles, micro-generation and heat pumps. This results in both a financial saving to our customers and in reduced disruption due to fewer excavations on the street. We are confident that there are a variety of technologies being worked on by ourselves and other DNOs which can help to manage voltage issues at either the distribution substation or at the customer's premises, or indeed at a mid-point along the length of the feeder as well as there being opportunities to control load or automatically re-configure the low-voltage network to resolve some loading issues. We have identified a saving of £34 million over the RIIO-ED1.
- Our ability to consider refurbishment rather than replacement of equipment, while maintaining network reliability, has reduced our capital expenditure forecast over the RIIO-ED1 period. This has its roots in our skilled engineers, but who in turn are informed by and develop our innovation programmes such as the Strategic Technology Programme, a joint research programme in which the GB and Irish DNOs participate.
- We have reduced our expenditure forecasts for replacement of switchgear by £9 million on the basis that we expect we can manage the condition of the switchgear using real-time partial discharge monitoring. Real-time monitoring gives a picture of the developing nature of faults, and complements the spot-checks which are carried out across all switchgear on a regular inspection cycle.
- In the context of supporting new generation and demand connections:
  - We have issued new 'interruptible' offers to a number of renewable generation developers as part of our Flexible Plug and Play (FPP) project. If taken up, these could potentially save significant sums for the developers and reduce their time to break even
  - We have trialled Active Network Management (ANM) technology as part of both our Low Carbon London and FPP projects, which is the vital technology enabler behind interruptible contracts and some Demand Side Response contracts

8.3 We have a positive return on investment in innovation

Over DPCR4 and DPCR5 we will have received around £92 million of customer contributions. These contributions have led to £105 million of the total of the £135 million (which includes existing smart solutions) of savings in the RIIO-ED1 business plan and further savings will follow in RIIO-ED2. These savings are as much as:

- 25 per cent in the case of our plans to avoid LV cable reinforcement by using smart grid solutions, and
- 15 per cent in the case of using demand side response to avoid the need to undertake traditional substation reinforcement.

These savings are fully documented in our Innovation Annex, which also contains a more detailed description of our smart grid strategy.

8.4 Our investment in smart metering will realise benefits to customers

The Government's decision to mandate the rollout of smart meters to all domestic and non-domestic customers by the end of 2020 is a major national change programme introduced to support the commitment to transitioning to a low carbon economy and meet long-term challenges including providing an affordable, secure and sustainable energy supply.

Smart meters will replace the existing meters and will empower consumers to better manage their energy consumption and their energy bill by providing real-time information on energy usage. They will also facilitate more sophisticated energy management techniques and should bring an end to estimated billing – consumers will only be billed for the energy actually used.

The smart meter roll-out is the responsibility of the retail suppliers. However, we are innovating to improve our systems and working practices to ensure smart meters will also deliver direct benefits to UK Power Networks and other network operators. These include real-time data on customers interrupted in a fault situation giving us the ability to improve customer service and restore supplies more quickly, and information on load and voltage, enabling us to better target network reinforcement. We will also have the ability to improve services to vulnerable and fuel poor customers.

Figure 23 quantifies the cost savings benefits we are forecasting. Customer service benefits would also arise.

Figure 23: Smart metering benefits

Area	DPCR5 total (£m)	ED1 total (£m)	Comment
Investment decisions	Nil	1.5	Current projected low levels of reinforcement mean that the comparable DECC/ENA benefit cannot be fully realised.
Energisation status	Nil	11.1	We estimate that we will avoid around 11,000 visits a year by the ability to test the meter status.
Reduced fault opex	Nil	3.7	Improved fault information and incremental change to our process.
Total	**Nil**	**16.3**	

The smart meter roll out will also impose significant costs on UK Power Networks, principally for interventions during installations and for IT.

8.5 Our network innovation funding requests for RIIO-ED1

The RIIO-ED1 framework has two main funding mechanisms to allow DNOs additional revenues for innovation expenditure – the Network Innovation Allowance (NIA) of up to 1 per cent of revenues per annum and the Network Innovation Competition (NIC).

We believe that when practical innovation funding should be subject to the scrutiny of a competitive mechanism to ensure value for money. Therefore, we are requesting an NIA allowance of £5 million p.a. (0.5 per cent of allowed revenues), only half of the maximum available. We propose to bid for the majority of our funding through the competitive NIC mechanism, just as we do today through the LCNF scheme where UKPN has the largest amount of approved expenditure under the scheme. This provides the best protection to customers that the expenditure will be efficient and targeted at the best innovation projects as each proposal is assessed on its own merits.

For further information on this chapter please see our **Innovation Strategy** and **Annex 9: Smart Grid Strategy.**

9 Our credible RIIO-ED1 delivery strategy

We have transformed our performance over the past three years and are now a well performing business. However we need to do more to be ready for the delivery challenge posed by our business plan:

- Improve our customer service, systems and processes – through our business transformation project,
- Improve our capital delivery efficiency – through a best in class capital delivery strategy,
- Improve the efficiency of our in house direct work force through our business transformation project using best in class processes and technology, and
- Meet the challenge of an ageing workforce and a shortage of key skills – through workforce renewal.

9.1 Business transformation project

UKPN has made a significant improvement in its performance since the change in ownership in 2010. This has been achieved by introducing clear business objectives which are continuously monitored, focusing on what is important to our stakeholders and introducing innovative business, commercial and technical solutions. We have had three distinct phases of our evolution; separate our operations and systems from the previous owners, reset and improve performance and transform as shown in Figure 24. Two stages of this business transformation have been completed.

Figure 24: Key stages of UKPN's evolution

This change in focus and performance gives confidence that we have a firm foundation to deliver for the future. Our business transformation programme has already started, at shareholders cost, and is focused on improving both cost efficiency and customer satisfaction. The delivery of the Business Transformation programme outcomes is led by UK Power Networks, working alongside our Transformation Partner (Enzen) and our Client Side Adviser (KPMG).The programme is due to be completed by the second quarter of 2015, delivering the business outcomes that will enable us to achieve upper third performance and to deliver our proposed RIIO outputs.

The targeted outcomes from the project are summarised in Figure 25.

Figure 25: Targeted outcomes from business transformation

Back office
- Self-service HR services for employees and managers
- Best in class back office processes, providing integrated financial management
- Flexible and efficient financial and regulatory reporting

Customer
- We will be able to engage with our customers through their preferred channel of communication
- Single view of our customer status in real time
- The majority of customer enquiries will be answered at first point of contact

Connections
- Our customers will able to self-serve (enquire, order, pay, schedule and track) their connections job
- Provision of network information at the appropriate voltage level (e.g. load heat maps) so that customers can make informed decisions
- We will deliver connection's jobs according to the customers' preferred timelines
- For simple connection's jobs, quotations will be provided at first point of contact
- Our customers will have a greater choice of commercial arrangements for the connections services we offer
- The connections processes support the introduction of distributed generation on the network, any associated flexible commercial arrangements and the management of those arrangements

Capital delivery
- Better integration of long term investment planning process with delivery and tracking of capital projects
- Consent management integrated into our delivery processes
- Best practice risk management framework and process deployed across capital investment and delivery
- Application of lean process in construction

Asset Management and Inspection and maintenance
- Single asset register, for linear and non-linear assets, integrated with financial asset information
- Integration of assets and maintenance activity
- Integration of work management across inspections and maintenance, faults response, capital programmes, asset management and connections
- Rationalisation of asset modelling tools and integration with data systems, which are fit for future use of smart meter data
- Integration of planning permissions/consents process with asset planning and delivery planning

Contractor management and strategic sourcing
- A leading edge strategic sourcing and commercial process that is fully embedded across the business
- Integrated contractor working and streetworks management
- Improved cost and performance visibility on outsourced work
- Improved and early visibility of our programme of work to secure cost loaded resource plans from our supply chain to better manage capacity

Faults
- Integrated and accurate updates to customers through their preferred channel of communication
- Integration of 'last-gasp' data from smart meters
- Integration of customer management systems with our network management system (ENMAC) to support enhanced faults service

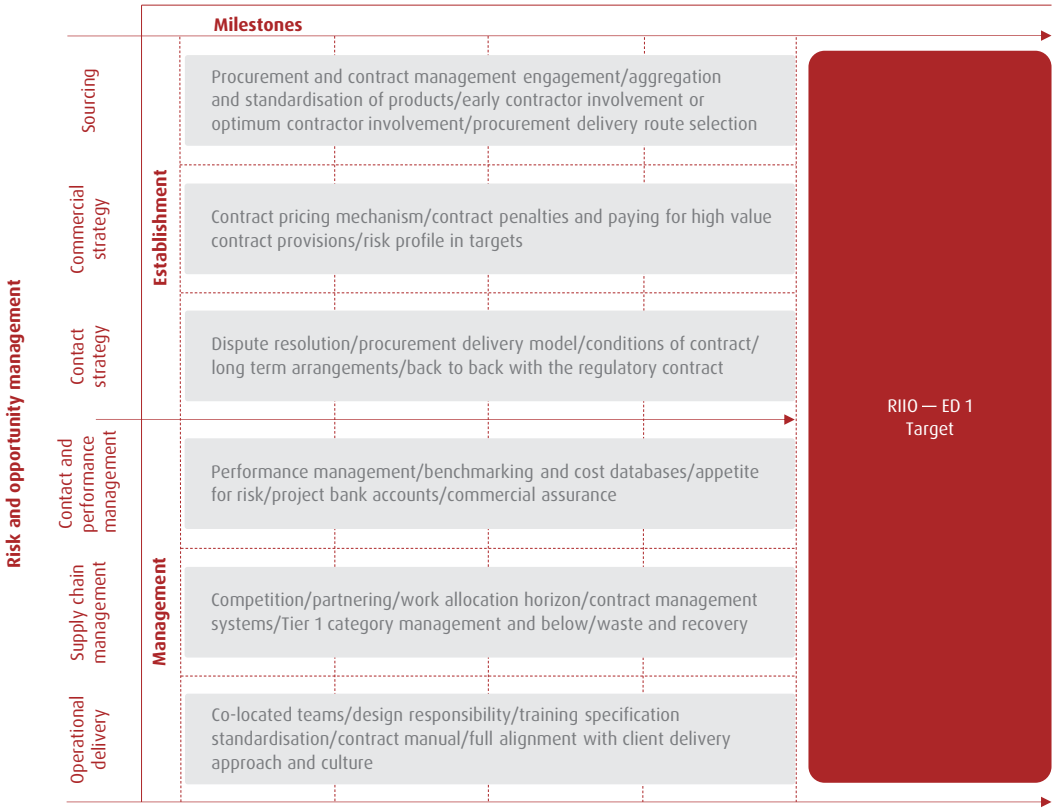
9.2 Capital delivery efficiency programme

UKPN has been working with Turner and Townsend to confirm the required delivery strategy for RIIO-ED1. This strategy will enable UKPN to deliver the required network investment and achieve the required cost efficiency reduction for direct capex. The programme of work has:

- Provided the supply chain with a forward visibility of work (rolling 18 months),
- Engaged the supply chain early and over the longer term,
- Identified the critical resources that are required to deliver the programme, including senior authorising engineers and commissioning engineers,
- Identified the schemes where consents will be on the critical path of delivery,
- Enabled the supply chain capacity to flex in the event of a significant increase in demand (e.g. connections work; take up of electric vehicles, etc.), and
- Identified the necessary planned outages.

This strategy is summarised in Figure 26.

Figure 26: UKPN RIIO-ED1 delivery programme



9.3 Our workforce renewal programme

The UKPN technically skilled workforce totals approximately 5,150 employees, made up of 3,220 UKPN staff and 1,930 Tier 1 contractors working on our network (we also have c. 2,500 employees not working directly on the network). UKPN has been working with EU Skills to develop a model to forecast workforce recruitment requirements. This model takes into account work volume changes in RIIO-ED1, expected retirement profile, expected natural wastage and productivity improvements. During RIIO-ED1 UKPN expects 19 per cent of our workforce to retire and for this to rise further to 27 per cent in RIIO-ED2. UKPN will use six recruitment and training pathways to manage this potential workforce shortfall:

- UKPN unskilled market place recruits (skill level 1-2) – in 2012 we decided to implement a policy of recruiting level 1 and 2 skilled staff directly as this is more cost efficient. We are planning to recruit 94 staff in 2014 and 2015 and we will recruit a further 403 staff in RIIO-ED1,
- UKPN apprentice programmes (skill level 3) – we recruited 73 adult and school leaver apprentices between 2010 and 2013, have up-skilled 37 staff to level 3 craftsmen in 2011 and 2012, we will recruit a further 108 general and 36 smart metering apprentices between 2014 and 2015 and we will recruit a further 236 general and 36 smart metering apprentices in RIIO-ED1,
- Engineering development programme (skill level 4 to 5) – we up-skilled 38 trainees between 2010 and 2013, we will up-skill 47 trainees between 2014 and 2015, and we will up-skill 146 trainees in RIIO-ED1,
- Graduate recruitment (skill level 5 to 7) – we recruited 35 trainees between 2010 and 2013, we will recruit 30 trainees between 2014 and 2015, and we will recruit 120 trainees in RIIO-ED1,
- Market place recruitment (skill level 3 to 7) – we recruited 298 skilled direct staff between 2009 and 2013, we will recruit a further 227 staff between 2014 and 2015, and we will recruit a further 106 in ED1, and
- Contractor delivery – UKPN uses contractors for the delivery of additional work programmes, specialist work and to manage peak workloads. This strategy will continue in ED1 with the contractor to direct staff ratio forecast to fall from 38 per cent/62 per cent in 2015/16 to 32 per cent/68 per cent in 2022/23.

This is expected to cost an average £16.6 million p.a. during RIIO-ED1 which compares to an average cost of £16.1 million p.a. in DPCR5.

For further information on this chapter please see **Annex 12: Transformation**, **Annex 15: Deliverability** and **Annex 16: Workforce Renewal.**

10 Risk and uncertainty

The ex-ante nature of the price control settlement, whereby Ofgem determines prices and outputs upfront for the eight year price control period, means that UK Power Networks is subject to a range of risks and uncertainties in delivering the agreed outputs within the approved financial settlement. The nature and scope of the uncertainties and risks that we will face over the RIIO-ED1 period are more expansive and complex than those faced over the current price control period due to:

- The significant external risk factors driving uncertainty in network investment arising from the UK Government's commitment to transition to a low carbon economy,
- The prospect of significant technical changes to our operations as a result of the smart meter roll-out, the introduction of smart interventions and the long term transition to a smart grid, and
- The extended length of the price control period, which has increased from five to eight years. This has reduced regulatory risk but increased the overall level of operational risk.

We have a robust risk management framework which identifies the likely risks and uncertainties we will face over the RIIO-ED1 period, and sets out our financial protection framework and arrangements which will allow us to manage these risks to ensure that we will deliver our output commitments to customers.

We manage risk through a directorate led risk management programme which includes an active risk register which is reported to the Board on a regular basis.

Risk of an unacceptable RIIO-ED1 outcome

A key risk is the failure to obtain an acceptable RIIO-ED1 outcome following submission of this business plan. The main sources of uncertainty and risk underlying this risk include:

- Revenue risk – that the revenue collected from customers is less than is required to deliver our output commitments, for example because the financeability arrangements are inappropriate, or because inflation is significantly different from forecast. Inflation risk is mitigated by the inflation indexation mechanism for our revenues and RAV. Financeability risk is mitigated by our detailed modelling of credit and equity metrics, and
- Volume risk – the risk that the work volumes underpinning our expenditure forecasts for the RIIO-ED1 period are lower than the actual volume of work that we are required to undertake to provide our output commitments due to:
  - The impact of the transition to a low carbon economy. In particular, higher than forecast uptake of low carbon technology such as distributed generation, heat pumps or electric vehicles
  - Faster than forecast economic growth which would require a significant increase in network reinforcement investment
  - Higher than forecast asset replacement arising from the roll out of smart meters
  - More rapid asset degradation than forecast in the programme of works designed to maintain the health of our network assets

These risks are mitigated by our sophisticated load related and asset replacement expenditure models, combined with extensive scenario analysis, and are also capped through Ofgem's re-opener for load-related expenditure and volume driver for smart meter roll out costs.

- Unit cost risk – the risk that the unit costs underpinning our RIIO-ED1 expenditure forecasts are less than the actual costs that we will incur to provide our output commitments. This risk is mitigated by our detailed bottom up 'should cost' work, detailed cost benchmarking, and our fully developed delivery strategy.
- Indirect cost risk – the risk that our closely associated or business support indirect cost allowances are insufficient to cover our actual spend. This risk is mitigated by our detailed benchmarking together with analysis confirming the deliverability of implied efficiencies versus historic cost levels. UKPN has reviewed work volume changes during RIIO-ED1 and applied these to forecast indirect costs.
- Unrecoverable pension deficit risk – any efficiently incurred pension deficit up to 2010 is funded through extra contributions from customers. However, any increase in pension deficit beyond 2010 will be subject to additional efficiency tests before funding is confirmed. This pension costs benchmarking is new to the electricity distribution industry and therefore introduces some uncertainty into future revenues.

We have analysed the risk in our Business Plan within our Risk, Control and Compliance Framework and on this basis we are not proposing any additional uncertainty mechanisms to those set out in Ofgem's RIIO Strategy Decision documents, as set out in Figure 27.

Figure 27: Regulatory Uncertainty Mechanisms

Regulatory uncertainty mechanism	Risk
Indexation	• RPI indexation of allowed revenue • Indexed allowance for cost of debt
Volume driver	• Smart meter roll out costs
Pass throughs	Regulatory costs: • Business rates • Ofgem licence fees • DCC fixed costs • Transmission connection point charges
Specific reopeners	• Load related expenditure including relating to general reinforcement, new connections, low carbon devices (i.e. heat pumps, PV cells), fault level reinforcement • Street works • Enhanced physical site security • High value projects • Innovation roll out mechanism • Pension deficit repair
Revenue trigger	• Tax

Further, the incentives under the RIIO regulatory framework provide UK Power Networks with strong financial disciplines both within and across regulatory periods. These are summarised in Figure 28.

Figure 28: Regulatory incentive mechanisms

Output	Incentive mechanisms
Safety	· No financial incentives on safety within the Ofgem RIIO framework · Safety has a strong reputational incentive and is subject to criminal fines for breaches
Customer service	· Broad Measure of Customer Service - +/- 1.5 per cent base revenues in total: - Customer satisfaction survey +/- 1 per cent - Complaints -0.5 per cent - Stakeholder engagement +0.5 per cent
Network availability and reliability	· The Interruption Incentive Scheme (IIS) is the primary incentive on interruptions to supply (+/-2.5 per cent return on regulatory equity basis points) · The delivery of health indices is also incentivised with a positive incentive to deliver additional work where merited, rather than just a penalty for under delivery (2.5 per cent of value of over or under delivery) · Potential penalties for inefficient non delivery of load indices (2.5 per cent of value of under delivery) · Guaranteed Standards restoration standard where compensation paid for interruptions that exceed the timescales set (12 hours in normal weather) · Worst served customer allowance for set improvements accessible on an as required basis
Connections	· Time to Connect incentive (+0.4 per cent base revenue) · Incentive on Connection Engagement (-0.9 per cent base revenue) · Broad Measure of Customer Service for minor connections customers (+/- 0.5 per cent base revenue)
Environmental performance	· Losses discretionary award up to £32 million across all DNOs in three tranches · Undergrounding allowance for Areas of Outstanding Natural Beauty and National Parks · Business Carbon Footprint is a reputational incentive using a league table and baseline · Oil leakage and SF6 are reputational incentives based on reporting
Innovations	· Network Innovation Allowance (up to 1 per cent of revenue per annum) · Network Innovation Competition (£90 million per annum for the industry in the first two years of RIIO-ED1) · Innovation Roll-out Mechanism

For further information on this chapter please see **Annex 14: Managing Uncertainty.**

11 The business plan structure of documents and next steps

11.1 Our package of business plan documents

This Executive Summary is one part of a package of integrated documents available on our website:

http://www.ukpowernetworks.co.uk/internet/en/have-your-say/business-plan/

Readers seeking more detailed information may wish to consult the supporting documents including:

- The Core Narrative (an overall UK Power Networks document or individual EPN, LPN and SPN documents),
- The Process Overview,
- The Innovation Strategy, and
- Annex Documents.

The diagram below sets out the package of documents and their contents.

Level of technical understanding required

Low ↓ High

1 **One page summary (separate documents for UK Power Networks overall, EPN, LPN and SPN)**
Key headline Business Plan information in common format for easy comparison between all DNOs.

2 **Executive Summary (separate documents for UK Power Networks overall, EPN, LPN and SPN)**
Succinct and straightforward summary of our Business.
The scope and purpose of this document is set out in section 2.1 above.

3 **Process Overview (single document for UK Power Networks)**
Description of how we developed our Business Plan, including:
- External stakeholder engagement
- Internal engagement
- Creation of the plans and documents
- Our assurance process

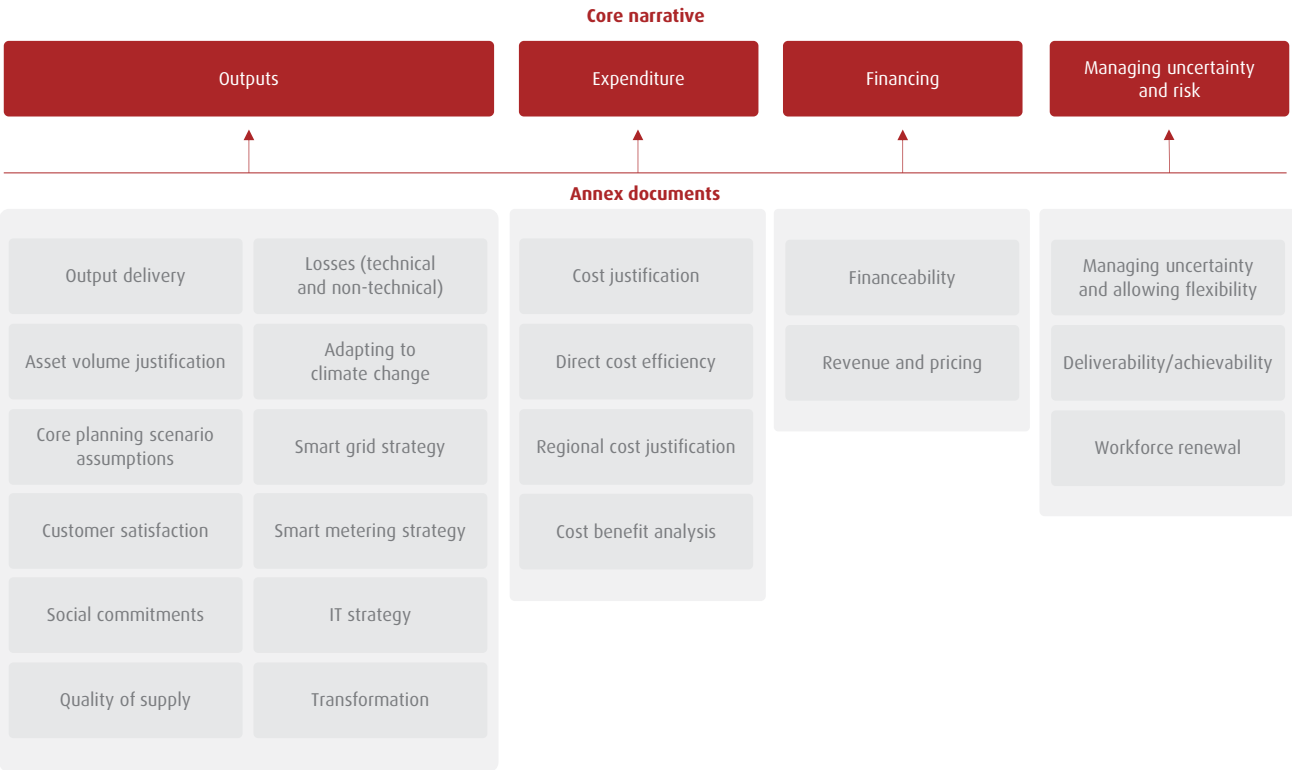
4 **Innovation Strategy (single document for UK Power Networks)**
Detailed discussion on how we will use innovation, including business as usual innovation and smart networks, to deliver our investment programme and services in an efficient and prudent way to meet stakeholder expectations.

5 **Core Narrative (separate documents for UK Power Networks overall, EPN, LPN and SPN)**
Comprehensive but succinct information on key elements of our Business Plan including: outputs, expenditure, innovation, smart grids, financing, risk and uncertainty.

6 **Annex documents**
Provide detailed supporting technical information on all aspects of our Business Plan.

7 **RIGs data tables (separate tables for EPN, LPN and SPN)**
Determined by Ofgem, these report information on the costs, volumes, outputs and financial data underpinning our business plan.

The diagram below sets out the package of documents and their contents.



11.2 Next steps: your feedback is important

We believe that our final Business Plan is a natural evolution from our draft plan published in November 2012 and our updated plan published in April 2013, and incorporates much of the feedback we have received from our extensive consultation with stakeholders.

We also believe that our plan strikes the best balance between low prices, quality of service, investment for the future, and the need to finance our operations.

Ofgem will now consider our plan together with those of the other DNO groups, before publishing its views in October this year.

However your views remain important to us, and in addition any comments you make on our final Business Plan may be considered in Ofgem's assessment. Please visit our website at:

http://www.ukpowernetworks.co.uk/internet/en/have-your-say/business-plan/

to give your comments on our plan.

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UTILITY INDUSTRY ACHIEVEMENT AWARDS 2012

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