

CASE STUDY:

How Scottish and Southern Energy is Preparing for RII0-ED1

THE COMPANY

SSE plc (formerly Scottish and Southern Energy plc) is a FTSE 100 company based in Perth, Scotland. It took shape out of the privatization and merger of Scottish Hydro-Electric and Southern Electric. Today, SSE is the UK's second largest supplier of electricity and natural gas, the largest generator of renewable energy, and the only UK energy company involved in electricity transmission and distribution and gas distribution.¹

The UK has an 813,000 km transmission and distribution network, longer than the distance to the moon and back.² Scottish and Southern Energy Power Distribution (SSEPD), a division of SSE, is responsible for maintenance, service quality, and regulatory compliance for a 130,000 km distribution network which feeds power from local substations directly into the homes and businesses of 3.7 million residential and commercial customers in the UK.

SSEPD is one of six electricity Distribution Network Operators (DNOs), which service communities in England, Scotland & Wales. The UK Office of Gas and Electricity Markets (Ofgem) regulates them. SSEPD assets regulated by Ofgem include one electricity transmission network (high voltage) and two lower voltage distribution networks comprising 130,000 km of overhead lines and underground cables and 106,000 substations.³



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- RII0-ED1 demands that historically conservative regulated companies take more calculated risks.
- The TOTEX-based investment model is one of the first of its kind in the electricity industry.
- VISION is helping SSEPD hugely improve the value it delivers to customers, shareholders and the regulators.

'We know the world in which we do business now has changed substantially from when we entered,'

**Alan Broadbent,
Director of Engineering**

1 SSE Annual Report, 2014 <http://sse.com/media/241200/2014AnnualReport.pdf>

2 Ofgem Energy Network Info graphic <https://www.ofgem.gov.uk/publications-and-updates/infographic-energy-network>

3 SSE 2014 Annual Report, page 5 <http://sse.com/media/241200/2014AnnualReport.pdf> Ofgem Infographic <https://www.ofgem.gov.uk/publications-and-updates/infographic-how-ofgems-network-price-control-proposals-riio-ed1-will-affect-you>



'Our Investment Management Team now drive clear commitments from delivery teams to deliver on schedule, on budget and on agreed levels of value generation in a regulated environment - circuit by circuit,'

Mark Kelly,
SSE Network Portfolio Manager

THE PROJECT

In August 2013, members of SSEPD's senior management team expressed concerns that the division was being overtaken by other DNO's in the face of significant changes affecting the industry and how the regulator judged companies. The most obvious concern was the pace of change to prepare for RIIO-ED1, the eight-year Ofgem price control model, which came into effect 1 April, 2015 and ends in 2023.⁴

The RIIO-ED1 Network Regulation Model, (Revenues = Incentives + Innovations + Outputs) is the most radical change in UK electricity distribution regulatory policy since privatisation and Ofgem's most market-driven, customer-focused model. While Ofgem financial incentives are nothing new, RIIO-ED1 pushes DNOs much harder to deliver on all the outcomes customers care about—keeping the lights on, keeping bills low and making sure people are safe—with tougher penalties if DNOs don't. For instance, RIIO penalties for planned and unplanned interruptions are more than double what they were during the last regulatory period. Previously, customers received

reductions in their bills if the electricity was off 18 hours or more. Now the threshold is 12 hours. Savings from better management of unplanned service interruptions and planned shutdowns are now split between consumers and their DNO. For example, a £100k of operational savings would be split with £60k for SSEPD and £40k savings for its customers.

Ofgem's TOTEX (total expenditure) accounting requirement is another game changer for the DNOs. TOTEX accounting, which eliminates the distinction between capital expenditures (CAPEX) and operational expenditures (OPEX), is designed specifically for capital-intensive, regulated industries. Ofgem regulators believe the TOTEX approach for utilities will result in more efficient use of capital to maintain the quality of the electricity network and reduce bills for customers. For SSEPD and other DNOs, TOTEX accounting has implications for long-term infrastructure investment planning, budgeting and routine spending decisions and for increasing shareholder value.

⁴ Ofgem RIIO-ED1 Price Control Network Regulation Model <https://www.ofgem.gov.uk/network-regulation-riio-model/riio-ed1-price-control>

The RIIO-ED1 message from Ofgem to DNOs is clear: if your company puts the customer at the heart of operational decisions, it can perform better financially and deliver better service. Conforming to that message is hard. It is professionally and emotionally difficult for any business to change its definitions of success and drive that shift through an entire workforce. It is especially challenging for the UK utility industry. Even post-privatisation, the vestiges of its regulated monopoly roots remain.

In October 2013, SSEPD asked VISION to help the division get ready for RIIO, and to use this transition to make a larger change in its operations and culture. The goals of the project were to design a TOTEX-based capital management model and implement processes to alter how SSEPD manages network maintenance. To do this, VISION partnered with SSEPD to drive broader organisational and behavioural changes, and build new competencies. With VISION's arrival, senior management made a commitment to drive out elements of the firm's legacy culture that were unfit for purpose and to ensure it remains the leader in the UK's electricity sector and the energy industry as a whole.

THE CHALLENGE

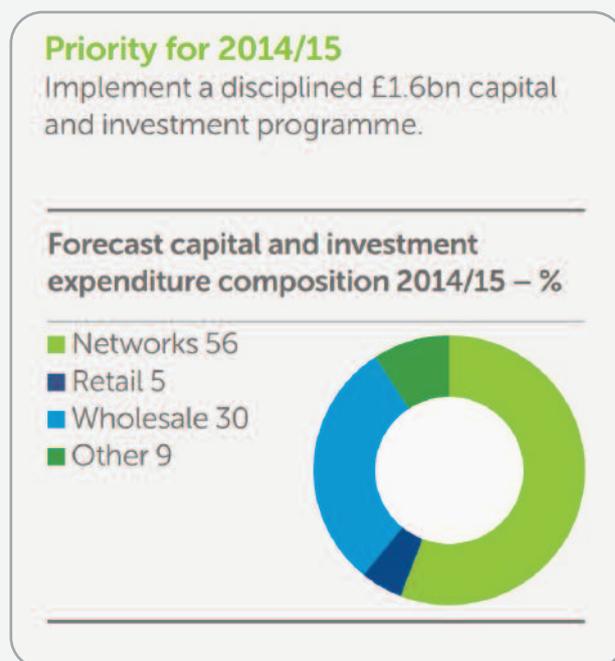
In August 2013, Alan Broadbent, SSEPD's Head of Engineering, (now the Director of Engineering) circulated a call-to-action memo. 'We know the world in which we do business now has changed substantially from when we entered.' 'But we have not moved our business targets, reporting structures or success metrics, he wrote.'⁵

One challenge all DNOs are learning is how to meet these different expectations from Regulators and Customers. Traditional metrics such as the number of replaced and refurbished circuits and the amount of ground covered in kilometres did not allow SSEPD maintenance teams to be sufficiently focused on the cost and quality of network performance.

Broadbent also argued that command-and-control management norms were another barrier to change. 'It is clear to many of us that the kind of agility and broadly held responsibility that will be essential for success with RIIO-ED1 are inconsistent with the way that work has been driven over the past few years by instructions and tight control from the top.' Broadbent saw that capturing more value from TOTEX accounting would require that personnel in the field use their knowledge of the network to become more self-directed decision makers.

More than in any of Ofgem's previous price control regimes, RIIO places the onus on field engineers and their project managers to work smarter to reduce operating costs, while improving network reliability. But the engineers and managers on the ground frequently said things like: 'Incentives are above my pay grade.' 'I have never been asked to think about incentives before; so why should I now?' They had some justification. They were never trained to think like accountants and investors. Worse, senior executives hesitated to cede control. SSEPD needed to change the minds and hearts of its professionals throughout the division. Mobilising a workforce of engineering professionals— many of whom had worked for SSE for decades – to embrace new ways of working is a tall order.

Success in changing the culture and performance of the division is significant for SSE as a whole and for shareholders. Networks under SSEPD's control represent 56% of the firm's forecast capital expenditures for 2014-15.⁶ Of SSE's four divisions, Networks has the biggest slice of the firm's £1.6 billion programme.



Ofgem regulators set a 3.4% return on SSEPD assets regulated under RIIO, but the CEO of SSE promised his board of directors a 5% return so that he can deliver a year-on-year dividend increase to shareholders. SSEPD leadership set out to maximize the regulator's financial incentives through better returns on large capital projects and through better management of investments in network maintenance. That way they hope to capture the difference between a 3.4% and 5% return.

⁵ SSE Power Distribution, Internal memorandum, August 2013

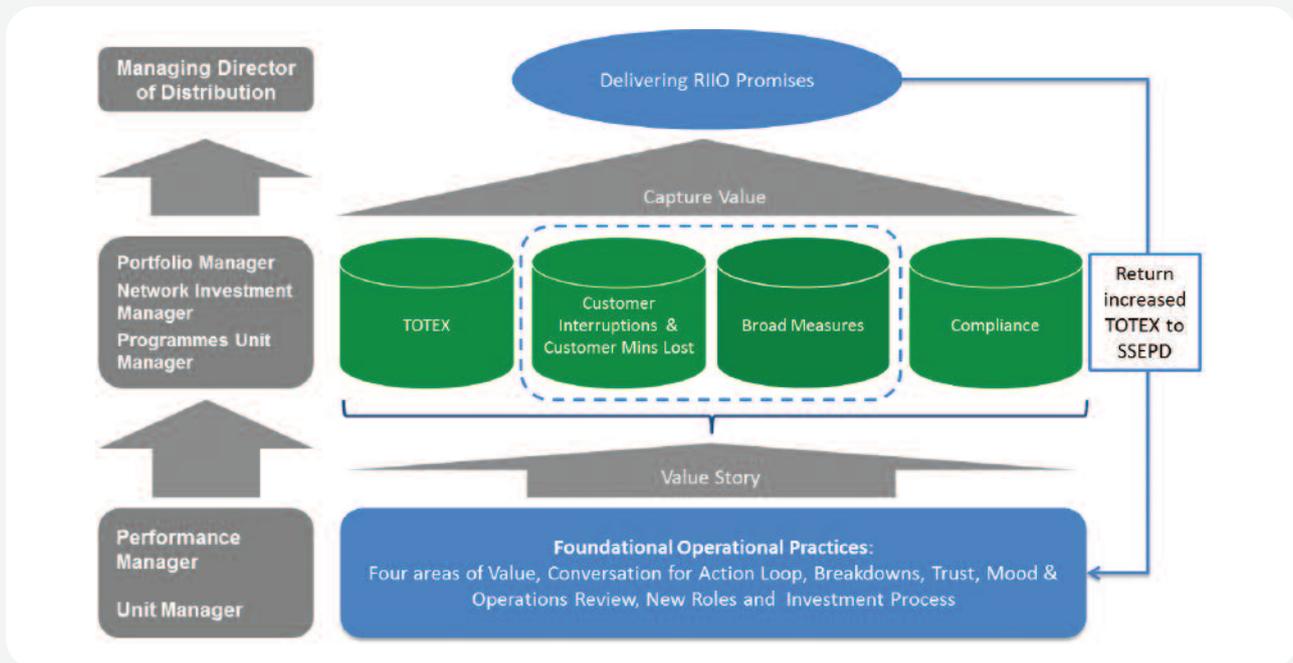
⁶ SSE 2014 Annual report, page 12 <http://sse.com/media/241200/2014AnnualReport.pdf>

THE SOLUTION

VISION used its Commitment-based Management™ (CbM) approach to redesign work and roles by changing the recurrent requests and promises that managers made to field engineers and project managers. Managers requested the delivery of certain levels of RIIO financial value from project managers and field engineers. The project managers and field engineers used tools designed for them to make decisions on the ground (e.g., whether to cut this tree or leave it for later.)

In short, the new promises focused on reorienting individuals—how they see their roles, contributions and performance—so that the entire organization can move in the desired direction. VISION named this new way of working the “investment management style” and renamed the field engineers “entrepreneurial engineers,” and the two terms have stuck.

Exhibit 1 - A New Model for Value creation



The Value Management Model

Together, SSEPD managers and VISION designers created a new value creation management model for network maintenance, shown in Exhibit 1. It encourages managers to look at the network as assets and to prioritise work on those assets which return the highest value or decrease risk significantly. In this way, the Value Model encourages coordination of short- and long-term operating and investment decisions across three management areas:

- Investment Management Decisions (managing a portfolio of investments in network infrastructure assets)
- Field Engineering and Construction (building and maintaining the infrastructure)
- Political and Relationship Risks (managing the relationship with the UK government, Ofgem customers and communities)

The Value Model is designed to get executives, managers, and field workers asking the same questions: How can we influence TOTEX, reduce service interruptions, raise customer satisfaction, satisfy the regulator, and meet shareholder expectations? It's four 'value pillars' were selected because these are the key RIIO incentive targets and to ensure these are implemented in a compliant manner. The Value Model assures leaders that the performance and unit managers on the ground are paying attention to the factors and measures that maximise the value of RIIO incentives.

The Value Model is supported by two new investment management roles: a Network Portfolio Manager who oversees capital investment for all network assets and Network Investment Managers, responsible for circuit performance in specific asset types. They work with the Network Portfolio Manager to maximise TOTEX and customer satisfaction across assets. The Network Portfolio Manager's commitments are to deliver value to each stakeholder:

- For shareholders, TOTEX outperformance across the entire portfolio
- For the consumer, the best service for the money
- For Ofgem, outputs that yield a higher return on inputs
- For everyone, investments that ensure health and safety

The Commitment Loop

VISION introduced the Commitment Loop (Exhibit 2) for use in everyday management discussions to show how all work revolves around a customer, who makes requests or who receives offers, and a performer, who promises to fulfill requests or who makes offers to the customer. The concepts of performer and customer remove traditional hierarchical and functional distinctions that often inhibit coordination and collaboration. Customers and Performer roles can switch. For example, when people in the field make requests of senior managers—as they must do to act efficiently and with agility— they then become customer and the senior manager becomes the performer.

Exhibit 2. The Commitment Loop

The Loop is not just about customers and performers making requests and promises. A Loop-based management system drives the best promises. Following the Loop, performers do not just accept requests but negotiate with their customers to ensure that promises have clear conditions of satisfaction and are made thoughtfully and sincerely. People using the Loop to feel more connected to their work, to their co-workers and to their shared responsibilities for producing satisfaction. Performers should know precisely the levels of quality, timing, and resources needed to fulfill a promise. They renegotiate with the customer whenever conditions change. Robust promises eliminate rework, friction, confusion, and speed up the tempo of work while increasing transparency and accountability.



Circuit Investment Contracts

To organize the work into value driving projects, VISION and SSEPD’s managers developed the Circuit Investment Contract (CIC). The CIC is an application of the Commitment Loop focused on a key asset, the circuit. It creates a contractual basis for discussing and executing planned maintenance for specific circuits or regions.

The CIC sets out the scope of work agreed upon, the time frame and cost. CICs are used in team meetings to discuss, track and modify work offers, requests, commitments and promises. Since CICs seek to maximise value or minimise risk, they break such bad habits as servicing a circuit just because it is easy to fix or skipping over a problem that needs urgent attention because it is not on a list.

VISION’s Commitment

VISION committed to aggressive financial targets for the project to show how fast CbM can change behaviours, improve performance, and lead to better financial results. VISION committed to deliver for the worst performing circuits (20% of all circuits) a 15% increase in TOTEX savings and a 50% reduction in Customer Interruptions or Customer Minutes Lost (CI/CML). These financial goals are the basis for CIC Contracts between the Field Engineering and Construction people responsible for building and maintaining the infrastructure and the Investment Managers making the investment decisions.

THE RESULTS

The impact of the first year of VISION's work reveals itself in financial returns, culture change, and industry leadership:

Financial returns

The VISION and SSEPD project's incentive value, created over the regulated period, will be in excess of £100 million. Prior to VISION's arrival, SSEPD was projecting a loss of £1.2 million a month as measured against Customer Interruptions or Customer Minutes Lost. TOTEX savings on each circuit is averaging 15%. Circuit work completed so far has generated about £2 million in savings with £7 million more projected for the next 12 months.

Organisational and cultural change

The TOTEX-based Value Model has become the common frame of reference for investing, maintenance and compliance budgets. SSEPD managers use the Value Model to explain to the regulators work priorities and delivery plans. Before there were CICs, when a field unit manager started a project, he would simply say, 'I'm starting now. I will tell you how much it costs when I'm finished.' CICs create a promise based on six key variables: manpower, cost, resilience, compliance, health and safety and date of completion. Field unit managers now make promises on each.

The growing use of CIC's has instilled a new 'culture of completion' for network maintenance that encourages looking at the big picture and confidence in achieving big goals. Managers take a broad view and develop in their CICs plans to mitigate all the situational challenges. That planning discipline gives the managers the confidence they can deliver what they promise.

Industry leadership

The VISION project is one of the first in the electricity industry to create a TOTEX-based investment management model. The approach is already showing results that give SSEPD leaders and teams a high degree of confidence they can achieve RIIO's new and challenging goals and sustain the firm's future leadership in the industry.

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ABOUT US

VISION consultants are change agents who work with businesses that are committed to driving and sustaining transformational changes in performance. A pioneer and leader in the practice of Commitment-based Management™, every VISION engagement starts with the premise that businesses are fundamentally networks of commitments between people.

VISION works shoulder-to-shoulder with customer-facing, back-office and senior leadership teams to build trust-based relationships internally and externally that deliver more value to customers at lower costs and are a unique source of competitive advantage. Founded in 1984 and headquartered in Dublin, Ireland, VISION serves clients throughout the world.

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