1.5 Annex

SP Energy Networks 2015–2023 Business Plan

Information technology & telecommunications

SP Energy Networks

June 2013

SP ENERGY NETWORKS

Information Technology & Telecommunications

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IT & TELECOMS COSTS

IT & Telecoms costs for SPD and SPM are influenced by their respective user numbers, and Capex and Opex activities. Most non operational costs are provided through our UK Corporate Shared Services model, where Group services are charged to business units by direct allocation, where possible, or by agreed apportionment. The charging methodology is reviewed annually by Ofgem as part of the cross-subsidy agreed-upon-procedure undertaken by our external auditors.

Our overall strategy is described below:

1. IT & TELECOMMUNICATIONS STRATEGY

A Multi-Layered Strategic Approach
Iberdrola operate a global IT model with local implementation by Group companies with objectives for Service, Efficiency and Integration:-

- **Global Solutions** –to provide "best in class" capability through integration of people and teams globally;
- **Global Consolidation** – to reduce complexity and Total Cost Of Ownership by unifying core applications to be shared globally
- **Exploit Global Scale** - to unify to a small number of strategic suppliers – hardware, software and services – to leverage and exploit the size and geographical reach of Iberdrola Procurement ;
- **Sharing Best Practice Globally** – to maximise efficiency and provide service excellence to IT "customers" by sharing knowledge and promoting best practice technologies, processes and methods.

These objectives require common, globally aligned, IT disciplines across:-

- **Governance** – common governance across all IT activities;
- **Service Delivery** – centralised service delivery for day to day operations and fulfilment of end user requests;
- **Project Delivery** – a common approach to project management underpinned by a strong centralised programme management office;
- **Architecture** – a centralised architecture function to promote "best practice"; consolidated IT solutions optimizing infrastructure investments and services.

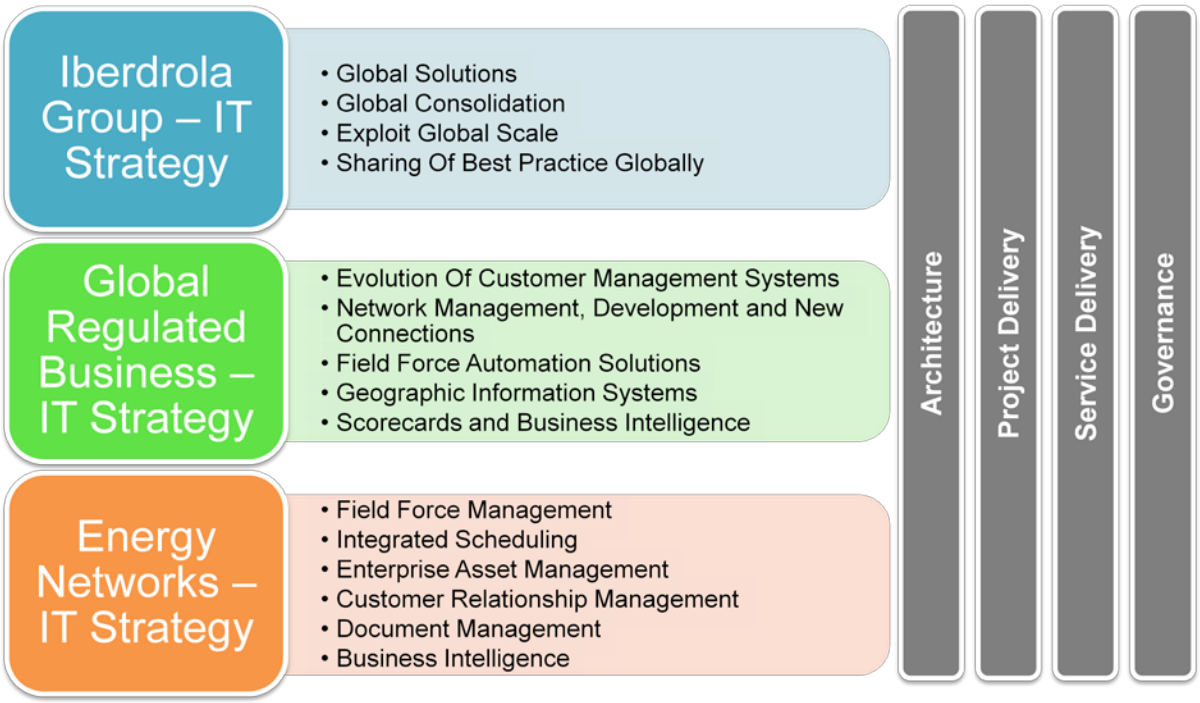
The IT strategy cascades from a holistic global strategy to specific strategies for each global line of business. Energy Networks in the UK is driven by the Global Regulated Business IT Strategy, which fully applies to Non-Operational systems and applies where possible to the Operational systems. This strategy has been developed under the Networks Business

Applications Road Map (NBAR) with input from the regulated businesses in Spain, UK and USA. NBAR spans:

- Evolution Of Customer Management Systems;
- Network Management, Development and New Connections;
- Field Force Automation Solutions;
- Geographic Information Systems;
- Scorecards and Business Intelligence.

Energy Networks – UK Regulated Business – IT Strategy

Energy Networks developed an IT strategy aligned to the Global Energy Networks IT Strategy to meet local requirements. This includes the Non-operational systems and the Operational systems (SCADA/Real Time Systems). The overall strategic approach is summarised in the diagram below:-



Implementation of Strategy in the UK

Systems UK deliver all IT services to Energy Networks, except for SCADA systems and associated Critical National Infrastructure (CNI), which relate to monitoring and operation of the live power network (415 to 132kV in SP Manweb and 415 to 400kV in SP Distribution / SP Transmission); these are supported by the Real Time Systems (RTS) group within Energy Networks.

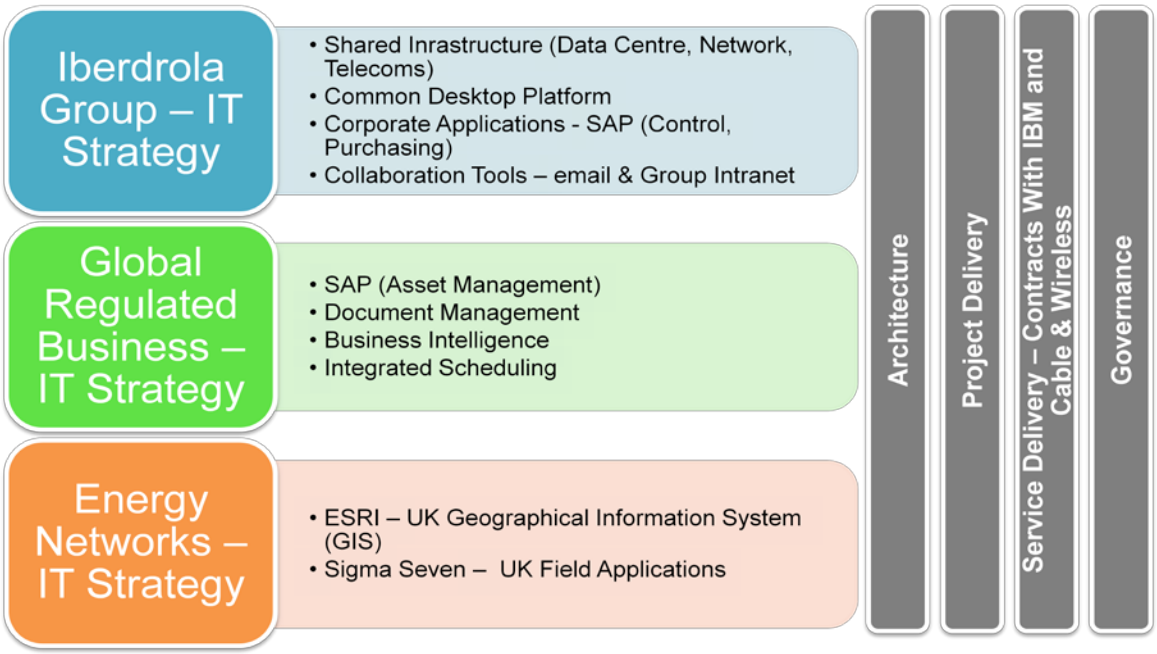
The Systems UK team provide commercial & planning, operations and technical architecture expertise and specific project delivery resource. Project delivery is managed and governed by the Systems UK team, with development and integration of solutions being provided by external parties. Development work is put to competitive tender, where possible, to ensure the best solution is provided at the most competitive cost.

Major contracts for service delivery are competitively tendered by Iberdrola leveraging the size and scale of the Iberdrola group to deliver solutions and services shared globally. In many cases Energy Networks consumes a portion of a UK wide or global service, application or contract. Significant examples are:

- SAP – Energy Networks uses the global SAP platform for financial and asset management.
- Telecoms – a UK wide contract with Vodafone (Previously Cable & Wireless Worldwide) for the provision and support of telecoms infrastructure for data and voice. There is also a contract for Energy Networks strategic telecoms infrastructure covering fibres on overhead lines, pilot wires under the ground, microwave links and radio communications associated with operation of the live power network.
- Service Delivery – a UK wide contract with IBM for the provision of IT infrastructure (data storage, servers, desktops, laptops, workstations, databases) and business application support, including Operational IT.

Costs for services are re-charged to individual business units, based on a formula pro-rated on numbers of users that consume the service.

Major contracts to support the strategy are mapped out below:-



Key Investments (Non-Operational Capex)

Energy Networks shares IT applications where possible for Distribution and Transmission assets. Core IT platforms support major business functional requirements. A bottom up view of Distribution's Capex plans for 2015 to 2023 has been captured, following interviews with EN Directors and Senior Business Managers, and costs were estimated based on expert knowledge and both previous and similar programmes of work. In some cases, particularly the introduction of SMART, we have consulted with IT suppliers and other industry experts to estimate costs. This covered the following initiatives:

a. Field Force Management – (1) Replacement of Mobile Communications Framework and Mobile Field Devices. (2) Mobile Fault Management (3) Automated Field Data Management
b. Integrated Scheduling – Development of fully integrated scheduling capability to enable resource forecasting, capacity planning, and real-time scheduling of the field work force;
c. Customer Relationship Management – Upgrade, automation and streamlining of CRM processes. Integration of work logger, workflow automation. Customer self service functions via web - integration with design tools. More pro-active communication options with customers to arrange appointments, notify outages. Improved Customer Knowledge. Ability to take payments via multiple methods. Full SMART integration with CRM - including purging of meters, feedback from meter to CRM. Move to single Telephony solution.
d. Enterprise Asset Management – (1) Expansion of Asset Management to include additional asset types (2) Intelligent Network Knowledge - increase in online real-time data (3) Integrated Project Information Management (4) Optimisation of asset inspections and maintenance incorporating SMART data.

e. Business Intelligence – (1) Central reporting and analysis tool, focussing on production of regulatory reports directly from core applications. (2) Operational Reporting and Analytics

f. Document Management - Document Management (DM) and Enterprise Content Management (ECM) solution for Diagrams (Autocad), Designs, Documents, Controls. Solution will also link documentation to Assets and Operational Data Returns

g. Other Initiatives – (1) Integrate Network Design function using GIS platform, SAP and Power Systems Analysis software (2) .Application Product Upgrades in line with product owners recommendations (3) Infrastructure Upgrades to underpin core applications – Hardware. Operating Systems and Databases

h. Green IT– (1) Consolidation and Virtual Platforms for applications & databases., reducing carbon footprint through reduced space, power and air conditioning (2) Centralised UPS to save money on maintenance and support, reduce carbon footprint and maximise Power Usage Effectiveness (PUE) (3) Increasing paperless office through mobile device use (4) Reduced pollution effects due to improved remote telemetry and work scheduling
i. SMART Legacy Changes – Changes to Legacy systems for Customer Service, Meter Point Registration, Map based asset recording, Income Management, Work & Asset

Management, Mobile based access, and Handling of Industry flows to support SMART roll out.

j. SMART Meter Data Management – Communication with New Industry Smart Meter Gateway, New Meter Data Management solution to act as intermediary for all Smart Meter message interaction.
k. SMART Operational – Introduce Master repository for Grid Metering information, Master Repository of network model in CIM compliant form, Business Process Engine to model and re-engineer business working practices
l. SMART Analytics and Decision Support – Real Time Business Intelligence Reporting and Historical state analysis to support planning, forecasting and investment strategies.
m. SMART Technologies – Communications bus to share information between the main Energy Network platforms, Rule based event processing for Smart Grid, Non-SCADA field data acquisition and management, Upgrade to Communications networks to support increase in data traffic emanating from a Smart Grid
n. SMART Security - End-to-end Security for Smart Metering and Smart Grid.

Basis of Allocation of costs to businesses

Contracts and costs directly associated with business specific applications are apportioned directly to each business. This covers 3rd Party maintenance and support of applications, dedicated internal resources providing IT services, project delivery and application development.

Contracts and costs associated with applications shared between ScottishPower businesses are based on an apportionment model depending on the number of users in each business. In general, SPD and SPM have been allocated 43% of overall Energy Networks costs each (SPT accounts for 13%, and circa 1% relates to Out of area customers, and hence is not recharged to the licensed businesses). This is based on the average of the last 3 years historical figures.

Contracts and costs associated with infrastructure which is shared with other ScottishPower businesses are based on an apportionment model using a mixture of capacity utilised and number of users.

The UK wide contract with Vodafone (Cable & Wireless Worldwide), covering Non-Operational elements, for provision and support of telecoms infrastructure is based on a percentage of line and service usage.

Applications and Infrastructure which are supported in Spain are recharged along with Depreciation at year end from Iberdrola. We have used the latest forecast received from the Control department.

Key Investments (Operational Capex – Real Time Systems)

This section covers Operational Costs and associated IT initiatives around non-core SCADA systems, mainly covering Smart Metering interfaces, mobile solutions and off-line reporting systems.

Workshops and meetings, including employees, consultants and relevant 3rd party companies were held to formulate our proposals, and provide insight into the strategic direction as a result of using smart metering data, what developments would be needed to support the change, and what likely funding would be required. Where possible, this would tie in with existing systems and solutions and utilise established industry infrastructure. There remains significant uncertainty in many areas of Smart Metering. In taking an industry wide view and considering the input from a number of external experts, a reasonable and balanced proposal has been compiled. This includes:

- New infrastructure to interface with the Distribution Control Centre to capture / store key Smart Metering data
- Modernisation of Networks IT systems including increased use of mobile technology to further improve operational efficiency and reduce our carbon footprint
- Provide more accurate information from Smart Meters in Control Room environments when fault situations arise as meters can send “last gasp” messages associated with the appropriate customer property. This will enable better validation of Network Property Linking information and greater accuracy of messages presented via the Interactive Voice Recording systems. Developments will be needed to transfer secure and accurate information from the Data Collection Company to the live SCADA system.
- Developments to the main SCADA systems to provide receiving symbols for the storage and presentation of relevant Smart Metering information.
- Storage of key Smart Meter information in offline historian systems to support retrospective analysis and assist with customer service improvements. The information conveyed to the Control environment will allow numerous possibilities of potential applications to improve the service the DNO can provide to customers. Examples include the use of current Information from the power network to assist in design work and carrying out detailed analysis prior to a planned or proposed outage; by offering more granular information from Smart Meters a more considered decision can be taken.
- Investments in mobile SCADA solutions will allow this information to be displayed on hand-held devices used by Field staff, enriching the level of detail available to them when dealing with faults. It is planned that mobile devices used in Field Force applications will provide a platform for this technology rather than providing separate devices, therefore achieving an efficient overall solution.

Operating Costs (Operational – Real Time Systems)

In addition to corporate support charges apportioned to Operational systems, separate 24x365 support arrangements are needed for vendors and support partners associated with the core SCADA systems. It is assumed that this will increase slightly over DPCR5 and will see a step change rise at the time of the introduction of Smart Metering and mobile interfaces into the estate.

In the Cyber Security arena, the need to be ever-vigilant in the protection of the CNI from attack and intrusion is a high priority. Ongoing investment will be required in this area which will result in increased support costs associated with having a support partner in a position to react rapidly to current threats.