Technology underpinning our RIIO-2 ambition
IS Change Forum – October 2019

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Key themes and investments of ESO RIIO2

Theme 1: Ensure reliable, secure system operation to deliver energy when consumers need it	Theme 2: Transforming participation in smart and sustainable markets	Theme 3: Unlocking consumer value through competition in networks	Theme 4: Driving towards a sustainable whole energy future

Theme 1:

- Network control
- Interconnectors
- Emergent tech. and system mgt.
- ENCC operator console
- Op. awareness & decision support
- Frequency visibility
- Enhanced balancing capability
- Workforce and change mgt. tools
- Future training simulator and tools
- Balancing asset health
- Data and analytics platform
- ENCC asset health
- Digital engagement
- Forecasting enhancements
- Future innovation
- Restoration
- Ancillary services dispatch

Theme 2:

- EU regulation
- GB regulation
- Charging and billing asset health
- Charging regime & CUSC changes
- EMR and CfD Improvements
- Digitalised code management
- Single markets platform
- Ancillary services settlements refresh
- Auction capability
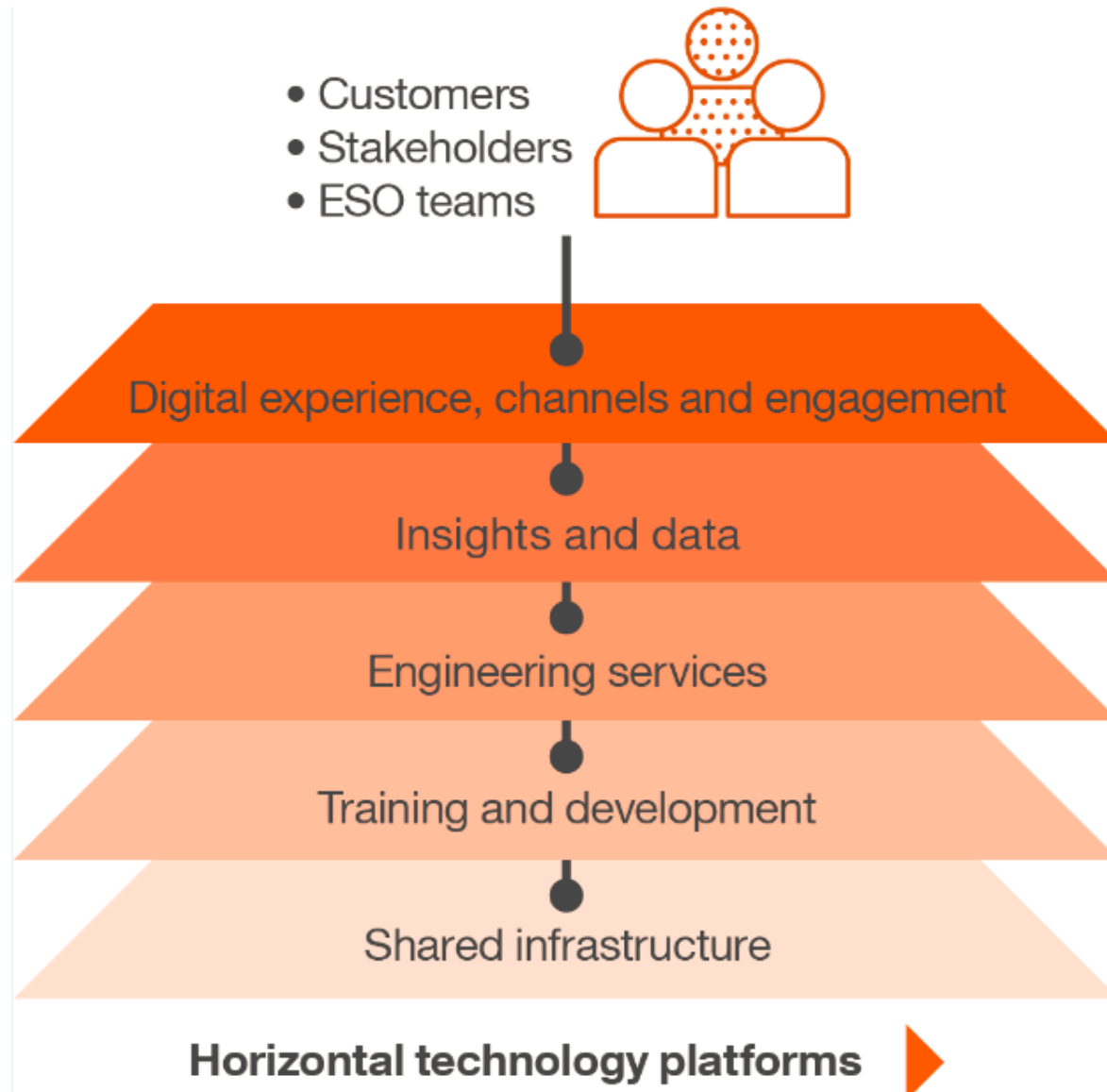
Theme 3:

- NOA Enhancements
- Support CATO tender process

Theme 4:

- Offline network modelling
- RDP Implementation & extension
- Zero Carbon Operability
- Connections platform
- Planning & outage data exchange

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Platform architecture approach

- Customers
- Stakeholders
- ESO teams

Digital experience, channels and engagement

Insights and data

Engineering services

Training and development

Shared infrastructure

Horizontal technology platforms ▶

Vertical business capability ▼

Example: Issuing and reporting of balancing instructions

API access to data (e.g. MW, price, duration of instruction)
Decision transparency (reason for instruction)

Internal access to all unit parameters to send instruction and system limits in all relevant systems

Ability to instruct any type of service to any type of unit
Economic and secure decisions supported by AI

Control centre engineers have rehearsed scenarios using digital twin

Applications hosted on critical national infrastructure
Dual-redundant, high-availability, and highly secure

As-is / To-be architectural approach

As-is: Stakeholders
Services are consumed on a point-by-point basis where users are expected to find relevant information

Multiple point specific solutions

Multiple point specific datasets

To-be: Stakeholders
Users are guided through process-driven services with high levels of consistency in the user experience

Process-driven solutions

Harmonised data set

Application to Capability Platform Roadmap

Stage 0

App ···· App

App · App ··· App

App ···· App

- Specific applications
- Complex integration
- Complex dependencies

c = Capability

Stage 1

App App

App

| c | c | c | c |

- Base platform established
- Applications become capabilities
- Data lake defined
- Integration rationalised

Stage 2

| c | c | c | c |
| c | c | c | c |

- Platform fully established
- All applications become capabilities
- Data lake populated
- Integration rationalised

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We will start by enabling the transformation

RIIO-1　　　RIIO-2

	Enabling	Transforming	Sustaining
Process	Implement ways of working • Scaled agile • Governance • Workspace	Embed and scale across portfolio	Continuous improvement
People	Implement people strategy • Capability requirements • Training • Sourcing	Embed and scale across portfolio	Continuous improvement
Technology	Implement technology • Reference architecture • Platform establishment • Data architecture	Embed and scale across portfolio	Continuous improvement

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Operating model

Head of IT for ESO	
Strategy and planning	Change delivery	Service delivery

Strategy and innovation
Leads the development of strategic IT roadmaps with the inclusion of emerging technology

Architecture
Translates strategy into IT roadmaps that govern solution development

Solution development
Defines and delivers IT solutions, partnering with stakeholders, development and infrastructure teams, and external vendors

Infrastructure and operations
Builds and maintains infrastructure and production application operations, manages service desk, acts as a single point of contact for IT support of NG employees

Security
Understands threats to better assess risk, balance benefit and cost of security controls against risks and aids the organisation to better prioritise measure against increasing cost challenges

Commercial
Coordinates all aspects of external spend, including monitoring SLAs, providing reporting on vendors, aid in maintaining an overall beneficial vendor relationship

Data
Responsible for the governance and utilisation of information as an asset to generate business value and deliver actionable insight

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IT for ESO

- Dedicated IT team for ESO
- Dedicated group resources
- Leveraged group resources

ESO Business Partner

Strategy and planning	Change delivery	Service delivery
• Strategy development	• Prog. and project mgt.	• Operational (CNI) support
• Investment planning	• Project mgt. office	• Non-operational support
• Portfolio perf. and reporting	• Solution development	• Service design
• Investment governance	• Delivery governance and reporting	• Service transition
• Portfolio mobilisation		• Incident & problem mgt.

	Strategy and planning	Change delivery	Service delivery
Strategy and innovation	●	●	●
Architecture	● • Enterprise architecture	● • Enterprise architecture • Solution architecture	●
Solution development	●	● • Engineering services • Business analysis	●
Infrastructure and operations	●	●	● • CNI management • Customer service mgt.
Security	●	● • Security architect • Security engineer	● • Security architect • Security engineer
Commercial	●	● • Contract management	●
Data	●	● • Data architecture	●

We are building complementary delivery capabilities

As we transition from RIIO-1 to RIIO-2, we will build a complementary delivery capability to accelerate the pace and flexibility of change.

Prototyping

Agile

Waterfall

Delivery approach

Innovation
Driving consumer benefit

- AI / machine learning
- Advanced modelling and simulation

Systems of differentiation
Rapid response to market

- Modular architecture
- Core platforms (e.g. data, digital, engineering systems)

Systems of record
Robust, standardised systems

- Commodity computing
- Shared business services
- Cloud and infrastructure

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