



RaaS - Resilience as a Service

local energy resources to improve security of supply

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Scottish & Southern
Electricity Networks



SSEN DISTRIBUTION

WHO WE ARE

We're Scottish and Southern Electricity Networks (SSEN) Distribution. We're the Distribution Network Operator (DNO) responsible for delivering power to almost 4 million homes and businesses across central southern England and the north of Scotland.

We serve some of the UK's most remote communities - and some of the most densely populated. Our two networks cover the greatest land mass of any UK DNO, covering 72 local authority areas and 75,000km² of extremely diverse terrain.

We're also at the forefront of delivering the decarbonised electricity system of the future, connecting new low-carbon technologies to the network. Through this, we're helping support sustainable economic growth for decades to come.

SSEN DISTRIBUTION NETWORK AT A GLANCE

Nearly **4 million** homes
and businesses

Over **128,000km** of overhead
lines and underground cables

Over **460km** of subsea cables
powering our island communities

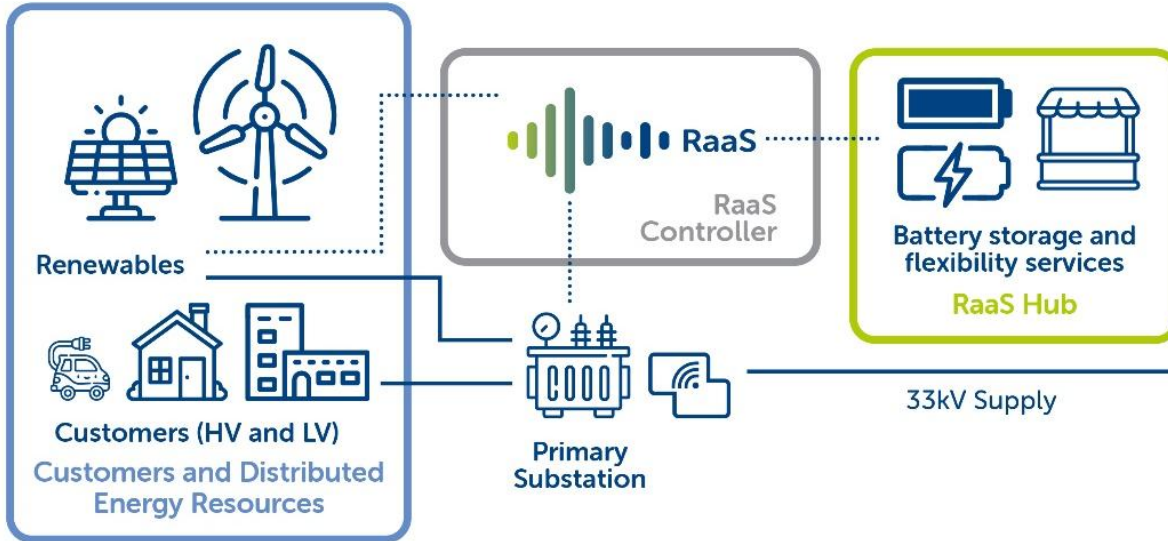
Over **4,400** employees
across the country



North of Scotland
SSEH/SHEPD LICENCE AREA

Central Southern England
SSES/SEPD LICENCE AREA

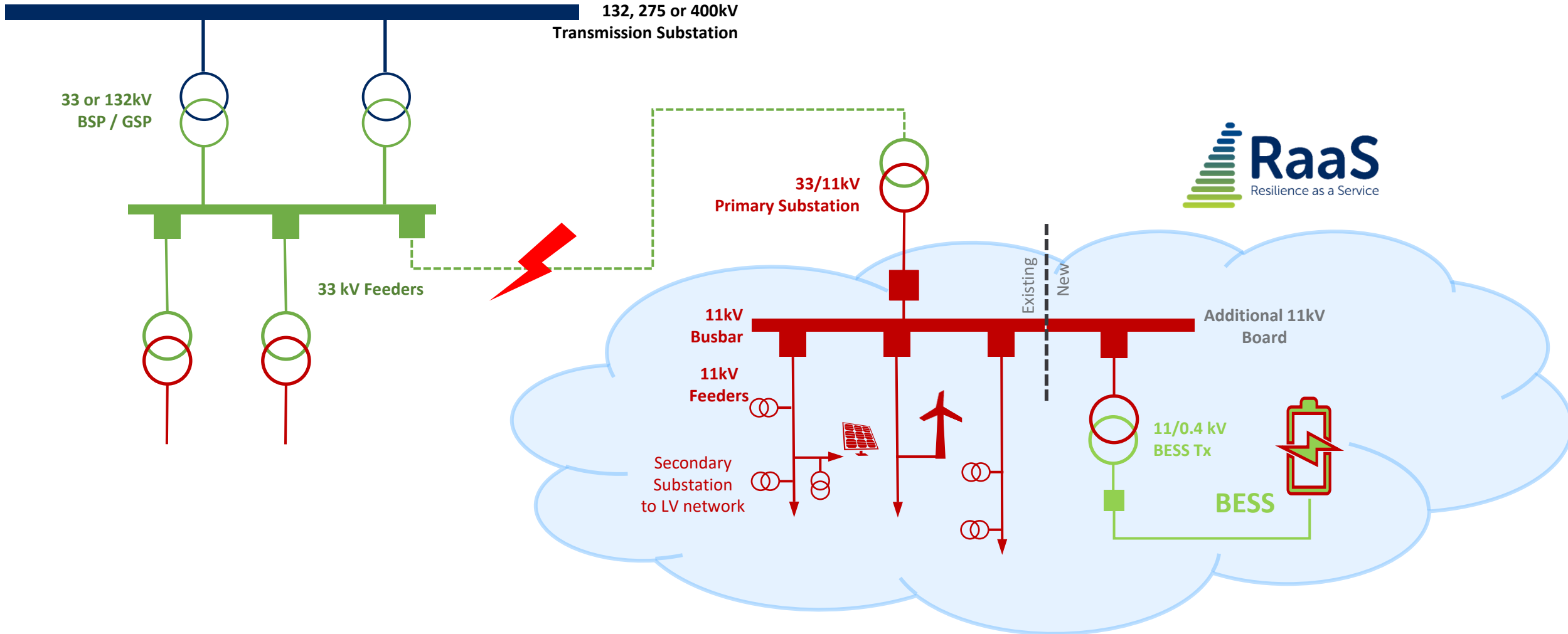
RaaS - Resilience as a Service



Benefits

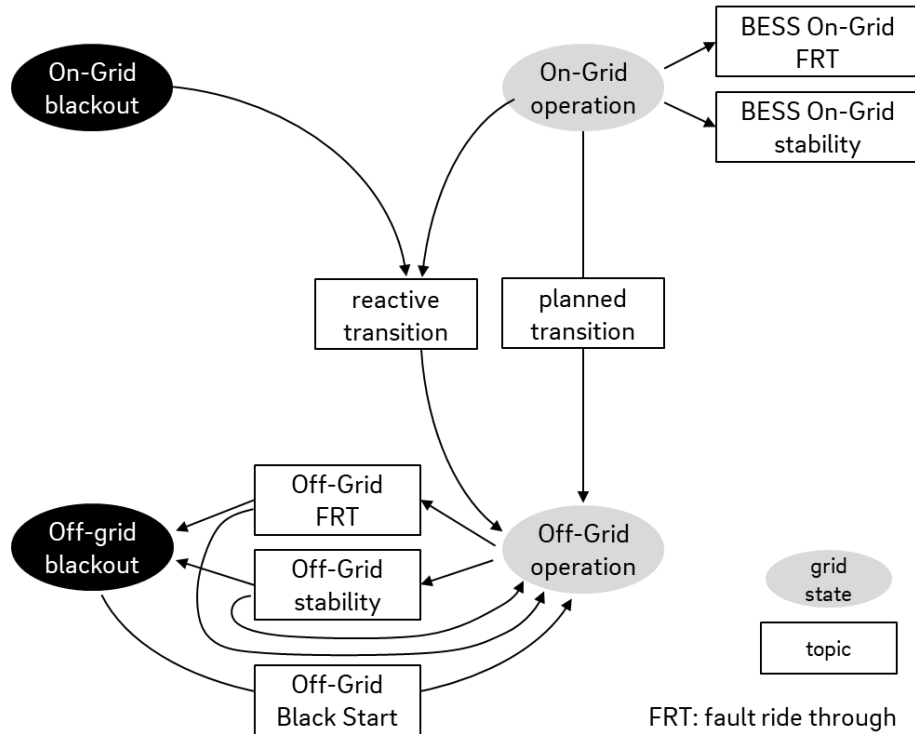
- Security of Supply - customers experience fewer and/or shorter interruptions
- Increased uptime - distribution connected renewables continue to generate & export to grid at times when that energy would otherwise have been lost
- Reduced use of temporary diesel generation
- Additional income stream for storage/flexibility market assets

RaaS Technical Solution



Design Approach

RaaS operational modes and transitions



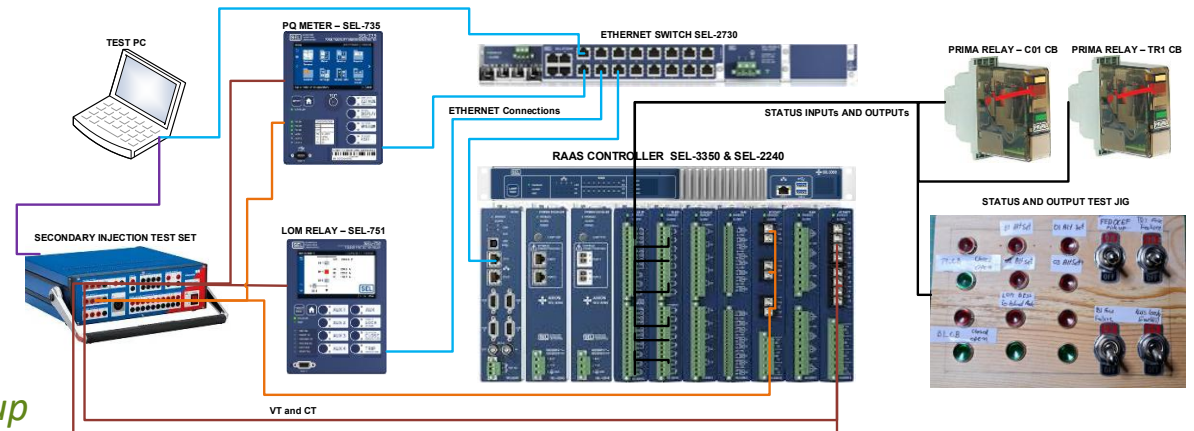
DNO RaaS Controller FAT set up

SSEN

- Modelling & Feasibility Studies - RaaS at primary substation level - [WSP](#)
- Modelling of Inrush Currents During a RaaS Black Start Scenario - [WSP](#)
- Protection & Control Settings Study - [WSP](#)
- PoW Switching Studies - [Enspec](#)
- Detailed DNO Control Scheme Design - [SGS](#)

E.ON

- Request for Information & Request for Proposals stages
 - identification and qualification of potential suppliers for BESS components & functionalities
- RaaS BESS Detailed Engineering Design



RaaS Trial Scheme



Project Deliverables

PD1 - Site Selection and Front End Engineering Design

PD2 - Detailed Design

PD3 - Business Model

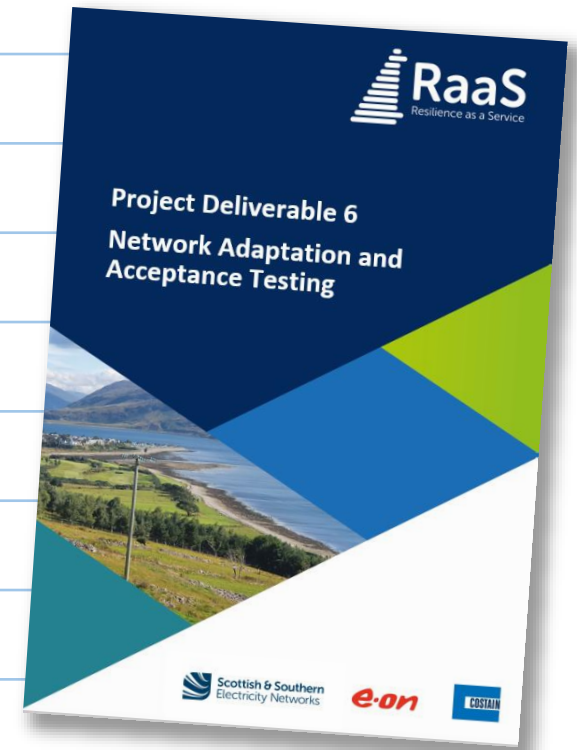
PD4 - Stakeholder Engagement & Stage Gate Decision

PD5 - Supply Chain Engagement

PD6 - Network Adaptation and Acceptance Testing - *just out !*

PD7 - Trial 1 - Demonstration at first site complete

PD8 - BAU Preparation



project reports available via the website <https://ssen-innovation.co.uk/raas/project-docs>



Next steps...



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RaaS - Resilience as a Service

- Can local energy resources be used to automatically keep customers on supply during a fault ?

looking good

- What are the business case considerations around this ?

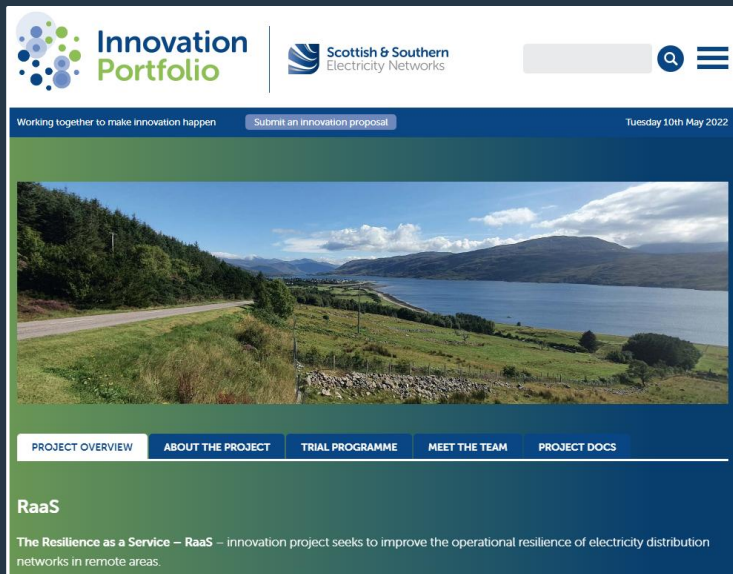
PD4 'Stakeholder Engagement & Stage Gate Decision'

PD5 'Supply Chain Engagement - Commercial Framework'

- How does this new solution for network operators sit within the existing regulatory framework ?



thank you



Questions & comments welcome - RaaS@costain.com
<https://ssen-innovation.co.uk/raas>



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