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Flexibility and Storage Seminar: unlocking new revenue streams for renewable energy

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Morag Watson

Director of Policy

Scottish Renewables

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Co-location, co-location, co-location: the advantages and opportunities of onsite storage

Peter Lo

Senior Commercial Advisor and Digital Strategy Director

ITPEnergised

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Trusted Technical Advisor

Colocation Overview

Scottish Renewables

Peter Lo

Senior Commercial Advisor
Digital Strategy Director

"We believe passionately in the world's transition to net zero. We are a team of trusted technical advisors who meet and exceed our clients' aspirations."

Overall Trends

1 Increasing quantity of planning applications

2 Increasing number of technologies

3 Both option value and grid fix

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Opportunities

1 Primary

Storage is the negative space commercially of intermittent renewables
A shared grid connection has the potential to reduce capex
Defer investments in grid upgrades

2 Revenues

Wind and solar are negatively correlated resources that give higher project load factors and flatter dispatch profiles when combined
Diversify risk with larger number and variety of revenue streams

3 ESG

Higher renewable energy yield per acre of land, potential for multi-sector decarbonisation

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Challenges

1 Permitting

Potential to cross a number of planning regimes and LPAs
Increased number of stakeholders
Increased cost and complexity

2 Grid

Different application approaches across DNOs – combined, export, import. Optimising component sizing to minimise curtailment. Rulesets around grid access priority

3 ???

Macro - HVDC links, interconnection, cannibalisation, subsidies, composite PPA, regulatory and; Micro – timing of readiness -> phasing

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Colocation Screening Tool Demonstration

1

Colocation Screening Tool

One of ITPEnergised digital tools on our Net Zero Accelerator® digital platform that give more rapid techno-commercial business insights compared to conventional approaches

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For further discussions please contact:

Peter Lo

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ITPEnergised Group offices in:

Bristol, London, Edinburgh, Glasgow, Lisbon, Madrid, Delhi, Beijing, Canberra and Auckland

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Achilles UVDB SILVER PLUS

Priyanka Mohapatra

Grid & Regulation Manager

ScottishPower Renewables

Co-Located Assets

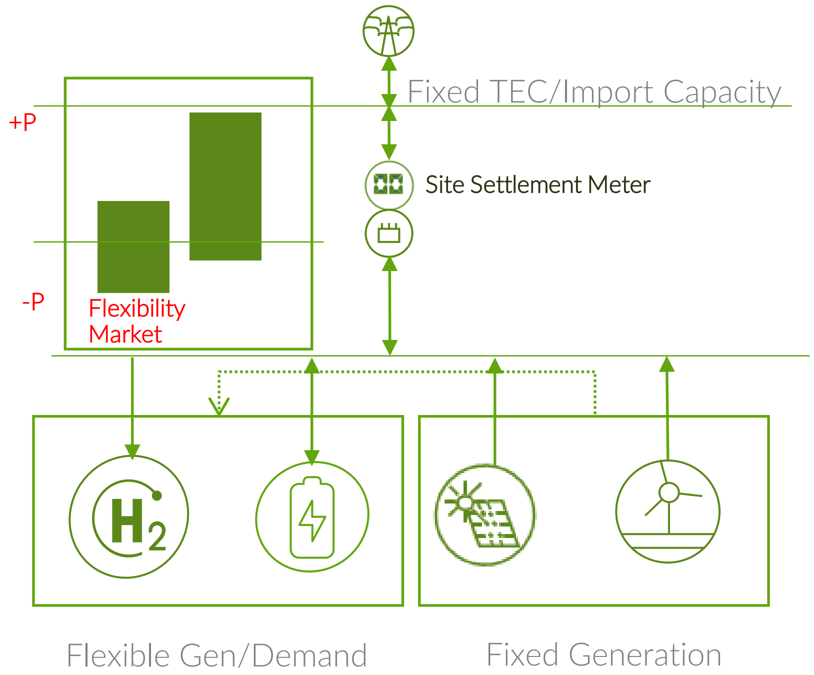
Grid and Regulation

19th August 2022

Advantages of Hybrid Operation of Co-Located Sites

Operability+Flexibility Services

1. A collocated site is operated the same beyond the settlement point. At PoC the TEC and import capacity is fixed as per the connection agreement. Thus metering at settlement point is necessary for site import and export monitoring.
2. Individual generators, storage and electrolysers can be flexibly managed behind the meter, to provide the grid with following services
   1. Constraint Management
   2. Flexible demand and generation
   3. Frequency and other ancillary services



Internal Use

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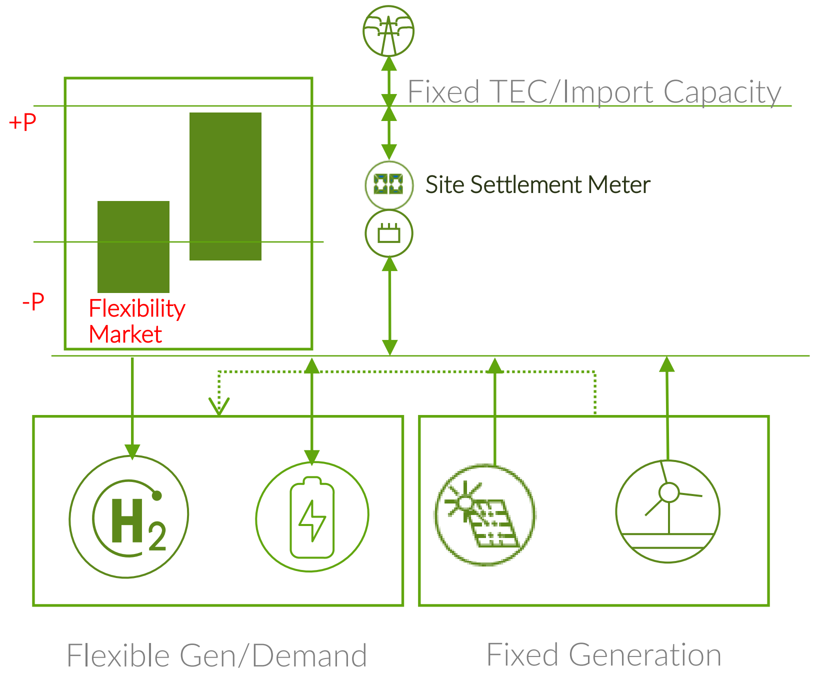
Advantages of Hybrid Operation of Co-Located Sites

Operability+Flexibility Services

- **Operational:** Co-located but not co-optimised, each co-located asset is operated separately as there is no real concept of a hybrid BMU
- **Regulatory:** For ROC sites accreditation for co-located site is done after commissioning thus creating a risk for the developer. There is no clear guidance for hydrogen co-location
- **Markets:** Current BM does not incentivise co-located assets to operate more flexibly and REMA does not take co-location into account



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Max Collins

Commercial Manager

Statkraft

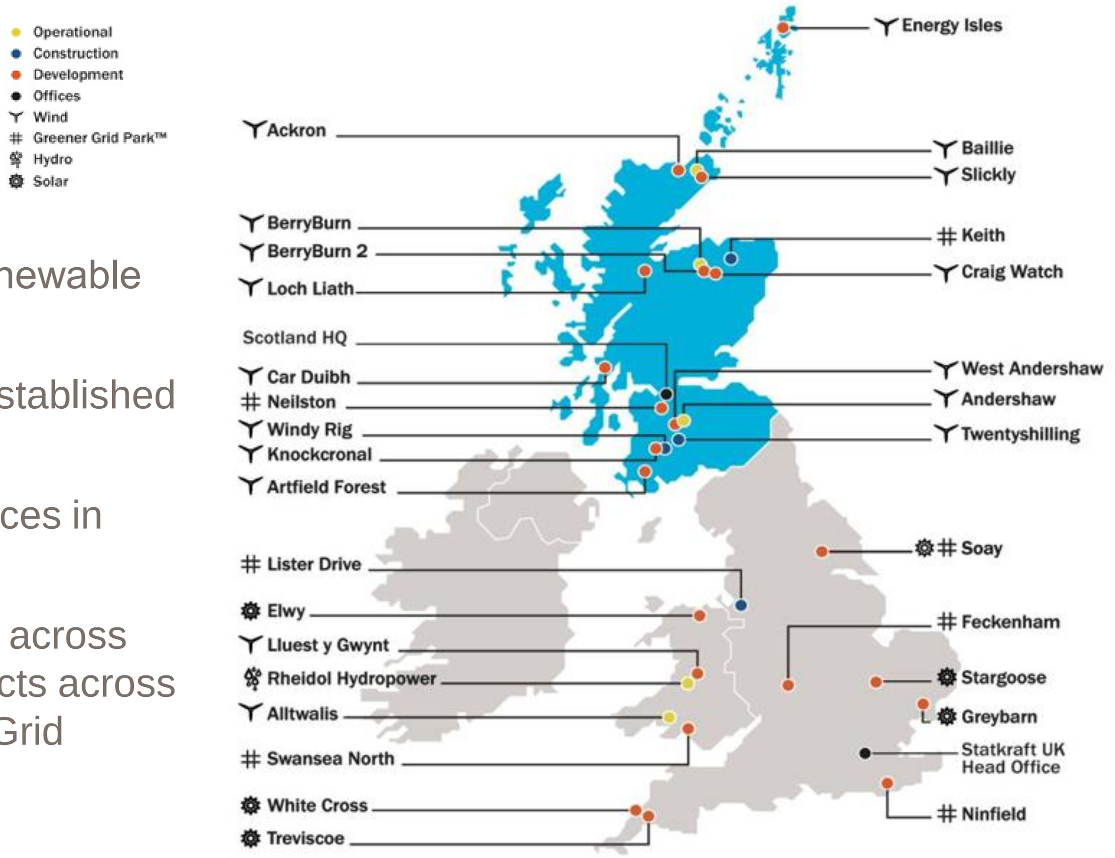
Statkraft

Flex Seminar

2023 MARCH

Statkraft UK

Projects and Locations



About Statkraft

- Europe’s largest generator of renewable energy
- Norwegian state-owned utility, established 125 years ago
- Active in UK since 2006 with offices in Glasgow, Cardiff and London
- Looking for co-location activities across existing and development projects across wind, solar, hydro and Greener Grid Parks.

Case Study: Keith Greener Grid Park

More information go to https://www.statkraft.co.uk/projects/Keith-energy-storage/

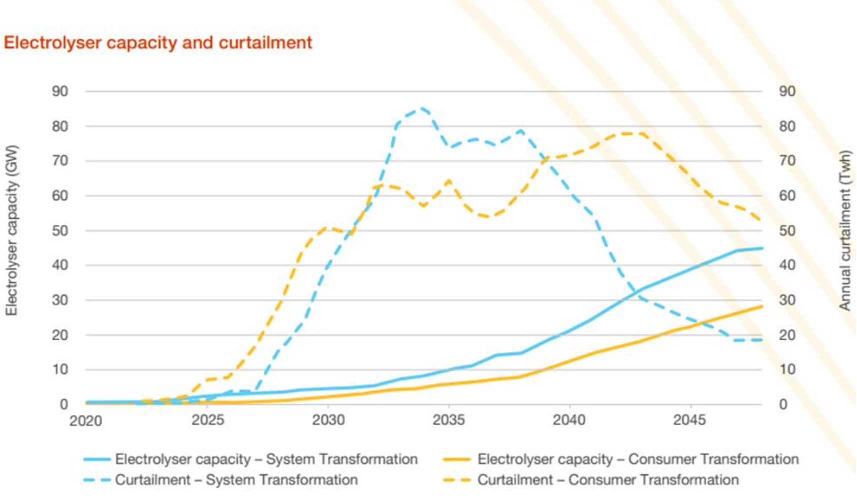
Statkraft

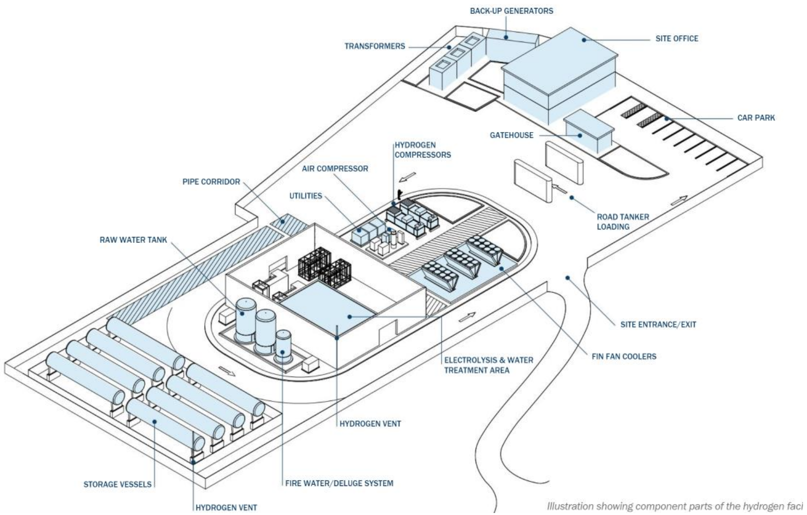
Co-Location – Battery Storage

- [Project documents (statkraft.co.uk)]

Statkraft

Co-Location – Power-to-X





- download (nationalgrideso.com) pg 91
- Trecwn Green Energy Hub (statkraft.co.uk)

statkraft.com

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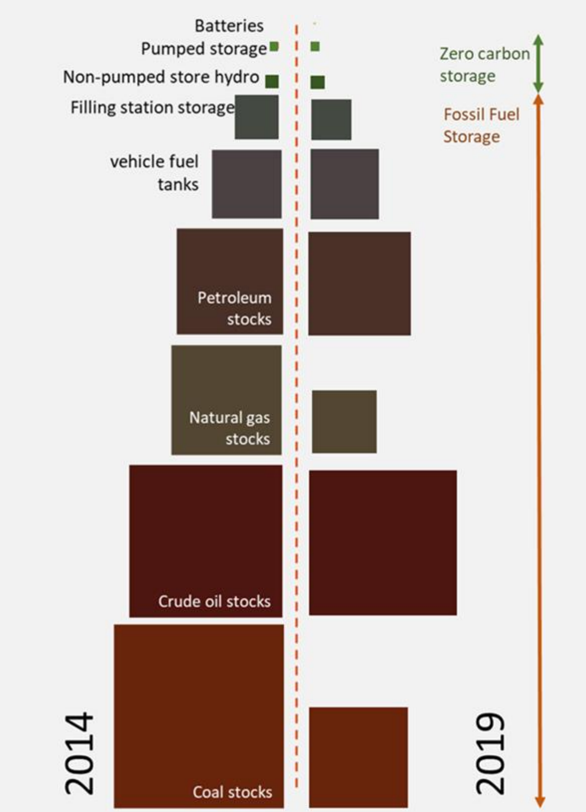
5PM THURSDAY 16 MARCH 2023

The future of flexibility on the road to net-zero

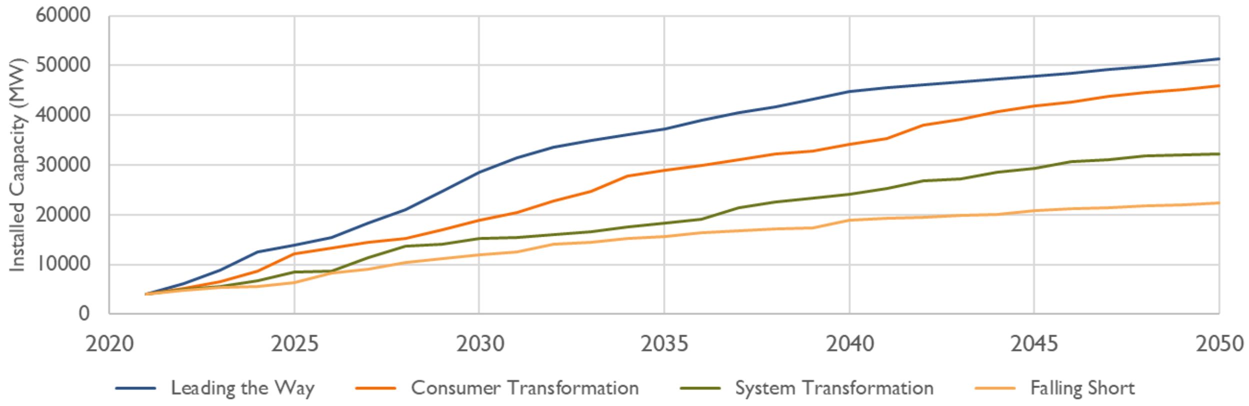
Chaired by Simon Gill, Independent Energy Systems Consultant, The Energy Landscape

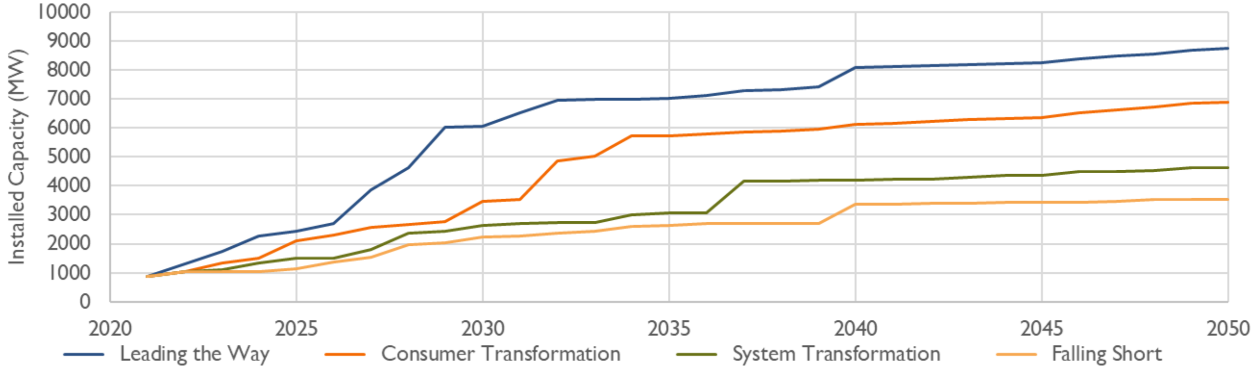


UK Energy storage 2014 and 2019

Why we need low carbon flexibility

Analysis by Simon Gill

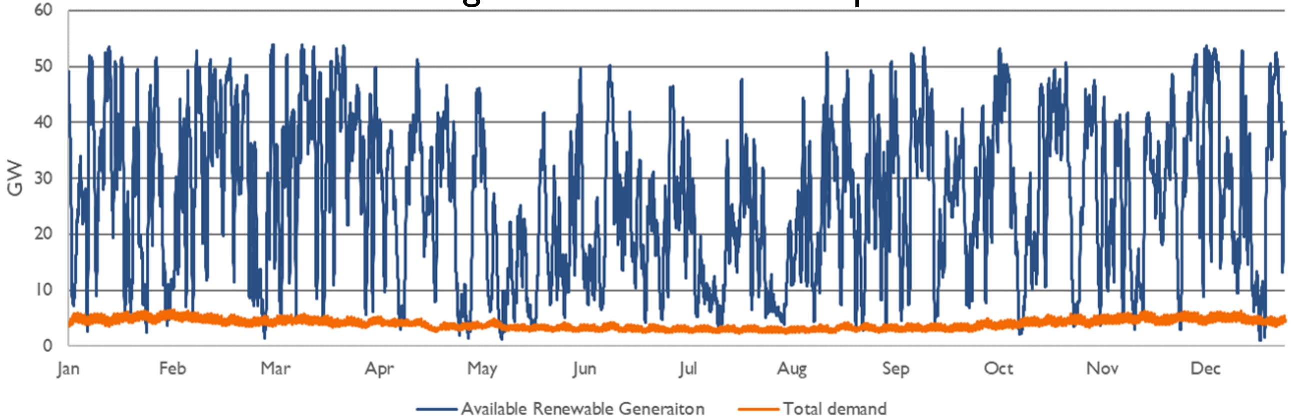


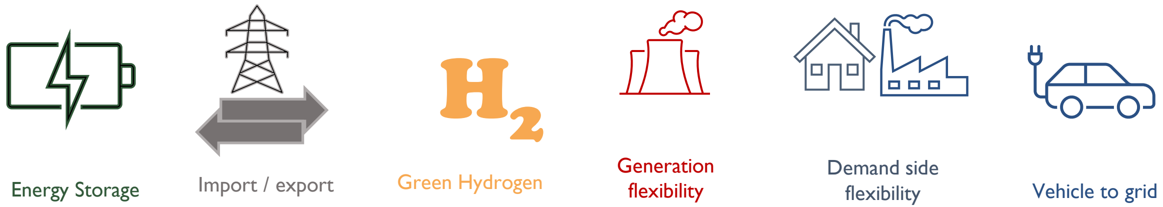


Future Energy Scenarios 2022: Energy storage in GB and Scotland

Analysis based on [NGESO FES 2022](#) data workbook.

Illustration of Scotland’s generation and demand profile





Balancing supply and demand, Scotland’s contribution to GB decarbonisation and the facilitating role of flexibility

Analysis by Simon Gill

the energy landscape

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