

Open Challenges for Research Infrastructures to Support Grid Transition at Pace

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Dynamic Power Systems Laboratory
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University of Strathclyde:
the place of useful learning



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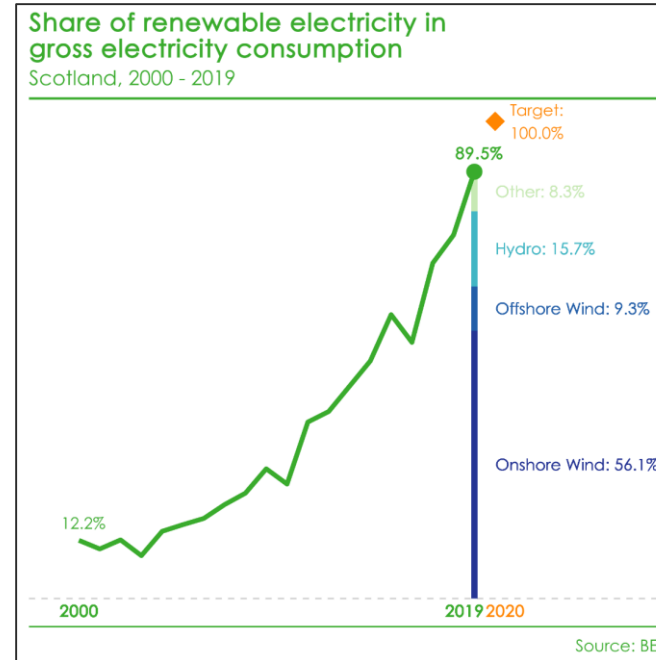

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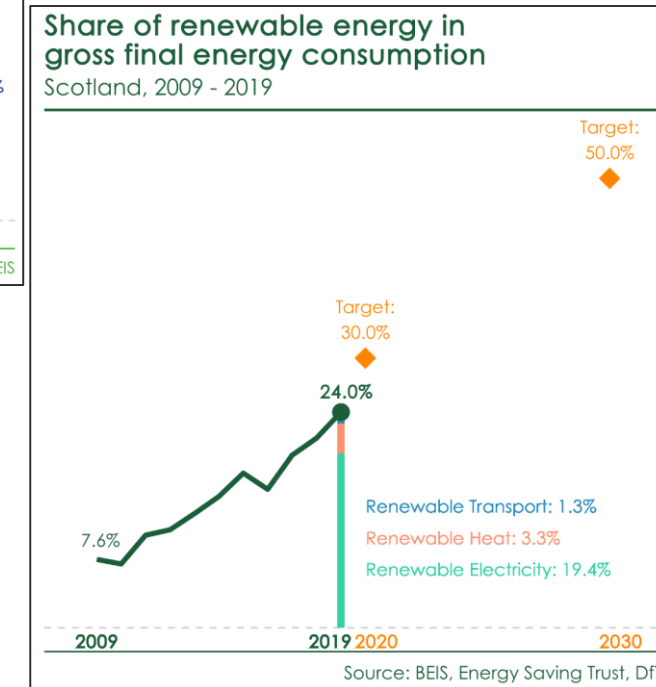
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Transformation of our Grid

- ❑ Significant progress in decarbonising electricity grid
- ❑ Transport and heat account for 50% of energy demand
- ❑ An increased focus on whole energy systems driving change

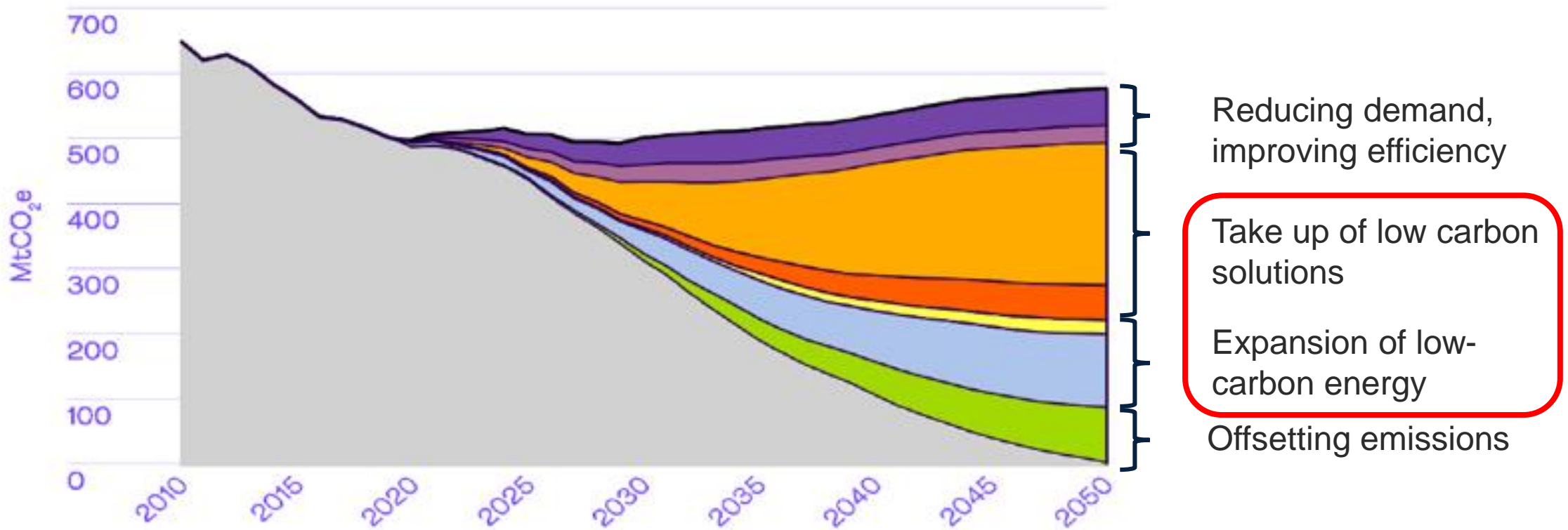


Extract from the Scottish Energy Strategy, December 2017



Tackling the Transformation

Meeting sixth carbon budget requires action across four key areas



Research Infrastructures Accelerating Technology Adoption

❑ Academically established technologies

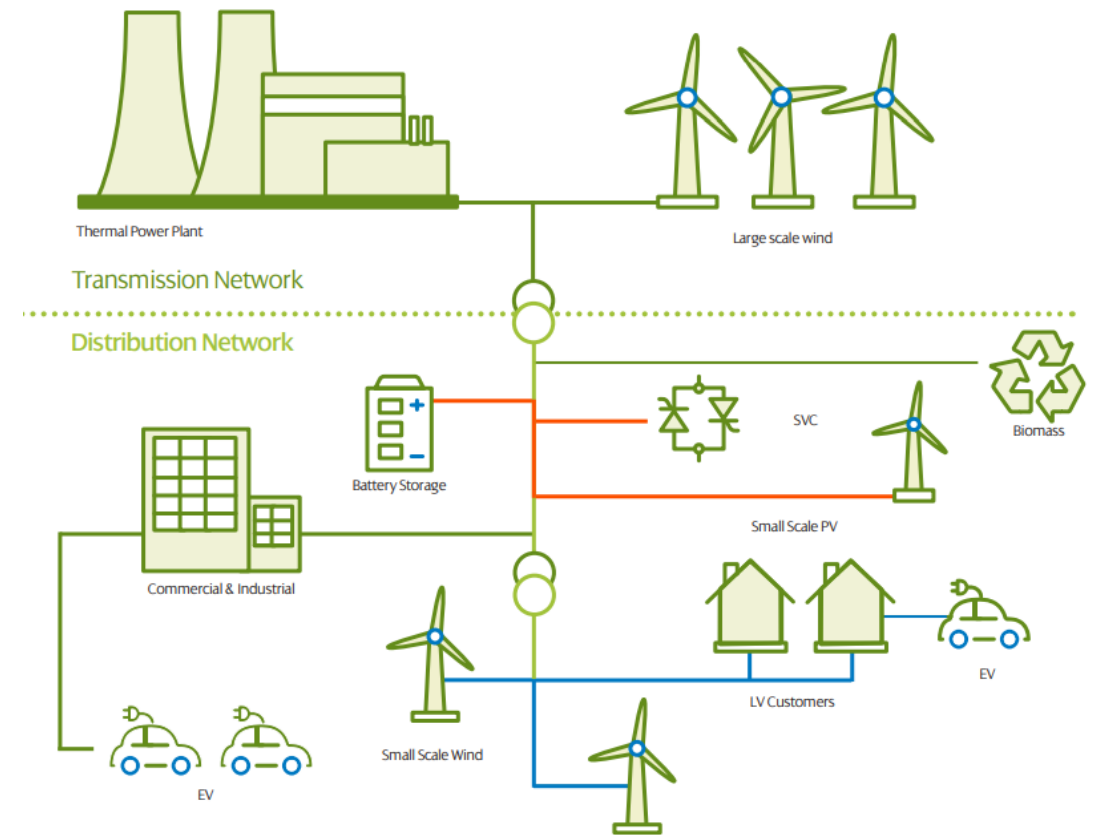
FUN-LV - 30 soft open points deployed in London Network after testing at PNDC

❑ Novel Technologies

LV-ENGINE - World's first solid state transformer installation within distribution network in Scotland

❑ Witness Testing

Wind Farm controller witness testing for Vestas



Active distribution network with bidirectional flow

Source: LV Engine A Smarter Electricity Network

Challenges for Research Infrastructures

- ❑ Scalability and Interoperability: Tackling the progressive integration and uptake of technology
- ❑ Increasing complexity: Trusted validation that justifies investments with confidence
- ❑ Business models validation: Future uncertain markets

Collaborative Effort

H2020 Project ERIGrid 2.0

- ❑ 20 Partners
- ❑ 13 Countries
- ❑ 21 Smart Grid Laboratories

Developing novel test methods, tools and services to support the validation of smart integrated energy system.





University of **Strathclyde** Engineering

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