



Northern Connections (Noco) A Transnational Cluster Cooperation

- Unlocking the potential for regional innovation

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What we will cover

- **Why get involved?**
- **Falkirk area context**
- **About Northern Connection**
- **Living Lab events – Addressing sustainable energy challenges in partnership**
- **Developing the Carbon Capture and Utilisation Opportunity**
- **Outcomes to date**
- **Covid-19 Impact – Emerging messages**
- **International collaboration opportunities**



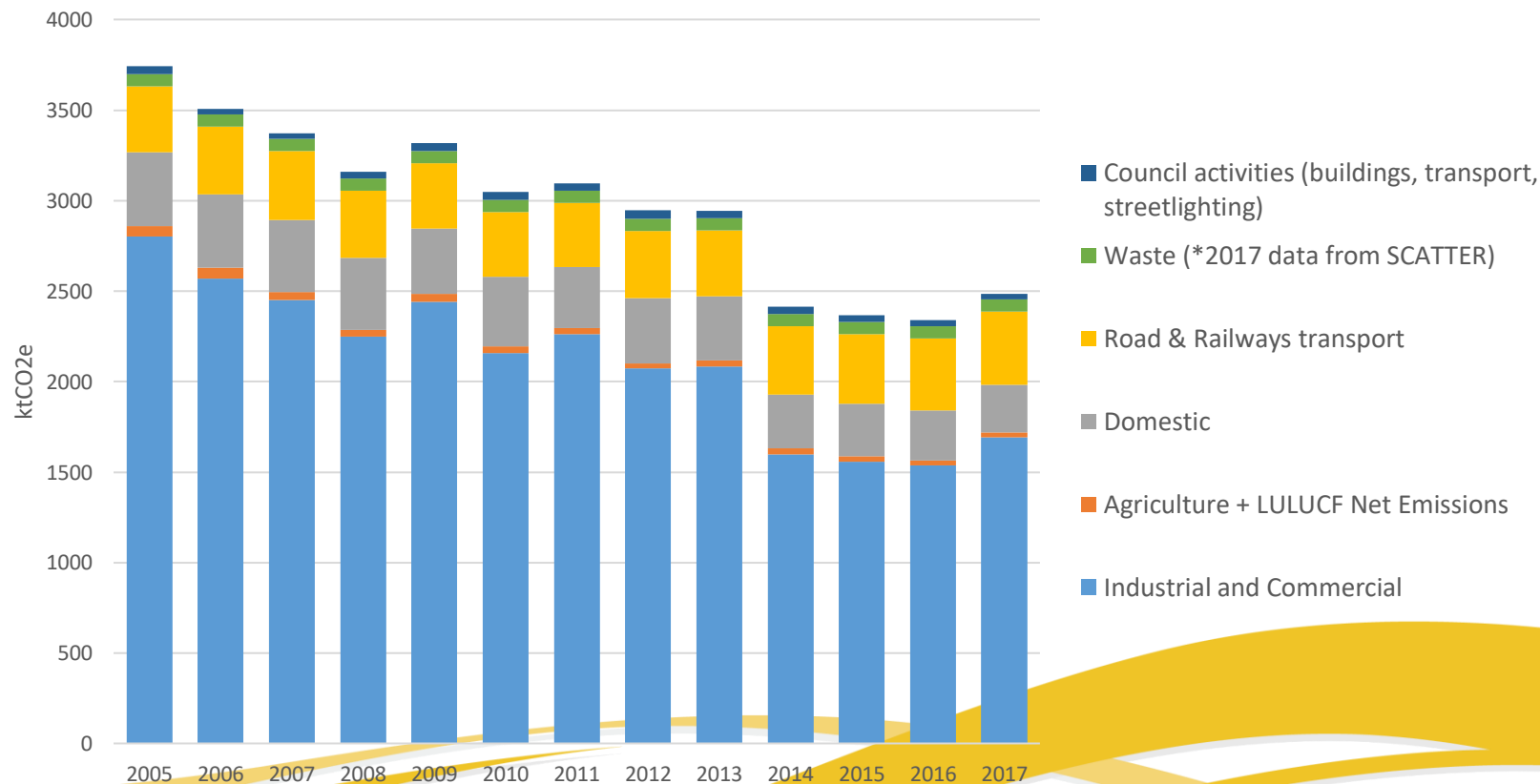
Drivers

- Response to national low carbon transition priorities
- Internationalisation opportunities for SMEs
- International knowledge sharing and collaboration opportunities low carbon, sustainable energy projects
- Long term transnational networks
- Addressing common challenges around emerging sustainable energy projects.
- Statutory obligation in line with National Policy priorities, Falkirk Council has an obligation to address carbon abatement, decarbonisation, fuel poverty, energy efficiency, adaptation and mitigation.
- Joined up multiple priority and policy areas around specific emerging opportunities



Baseline emissions – area wide

Evolution of Falkirk Council area-wide emissions



Area-wide emissions
~ **2.5 MtCO₂e**

Falkirk Council's
emissions = **2%** of
the area
→ Importance to
influence partners &
businesses

Sources: UK local authority and regional carbon dioxide emissions
national statistics: 2005-2017,
SCATTER (2017 Waste data, assumed stable)
Falkirk Council (scope changed in 2013/14)



Falkirk vs Scotland

Companies in Grangemouth emit **33%** of the total emissions from companies in Scotland
(*companies which have a mandatory reporting duty)

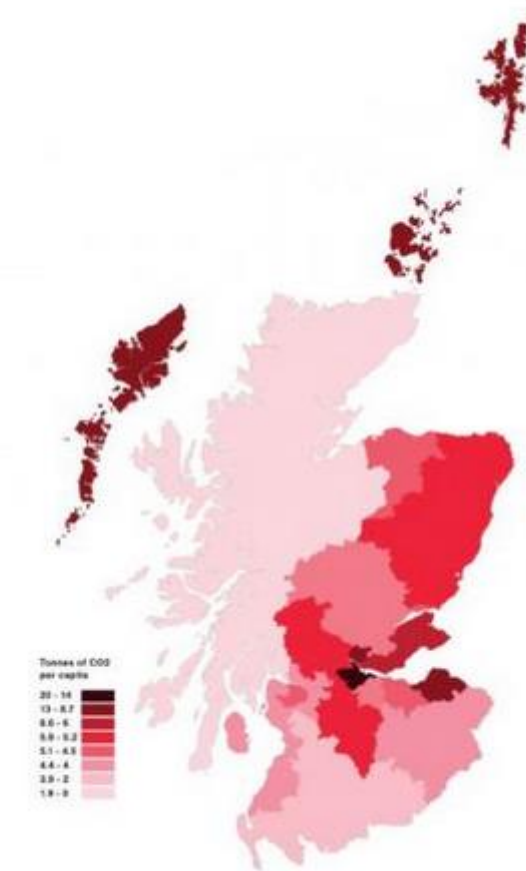
Falkirk Council residents have the **highest per capita emissions** in Scotland (similar to the average American)

Companies with mandatory GHG reporting	ktCO2e
UK	145,753
Scotland	11,055
Grangemouth	3,666
Grangemouth vs Scotland	33%

Source: UK local authority and regional carbon dioxide emissions national statistics: 2005-2017



Source: The Telegraph



Top 15 highest per capita emissions	tCO2e
Falkirk	14.9
East Lothian	11.1
Clackmannanshire	10.3
Shetland Islands	10.2
Orkney Islands	8.7
Eilean Siar	8.7
Fife	8.1
Perth and Kinross	6.1
West Lothian	6.0
North Ayrshire	5.8
Aberdeenshire	5.7
Angus	5.6
Stirling	5.5
Aberdeen City	5.4
North Lanarkshire	5.4

Source: UK local authority and regional carbon dioxide emissions national statistics: 2005-2017



Falkirk and Grangemouth Growth and Investment Deal

- Falkirk and Grangemouth contribute significantly to Scotland's GVA – with a rich blend of nationally-important industrial assets, reputation for high-value manufacturing, vital post-Brexit export gateway in the form of its container port and internationally-recognised tourist attractions.
- Need to diversify and build resilience in Grangemouth for industry
- The proposed Falkirk and Grangemouth Investment Zone Growth Deal has the potential to realise a genuine return for UK and Scottish Government investment, delivering an estimated 5,400 jobs and increased GVA of £230m for the Scottish economy.
- This lead us to participate in the Northern Connections INTEREG partnership with Scottish Enterprise.



Northern Connections 2017-2020

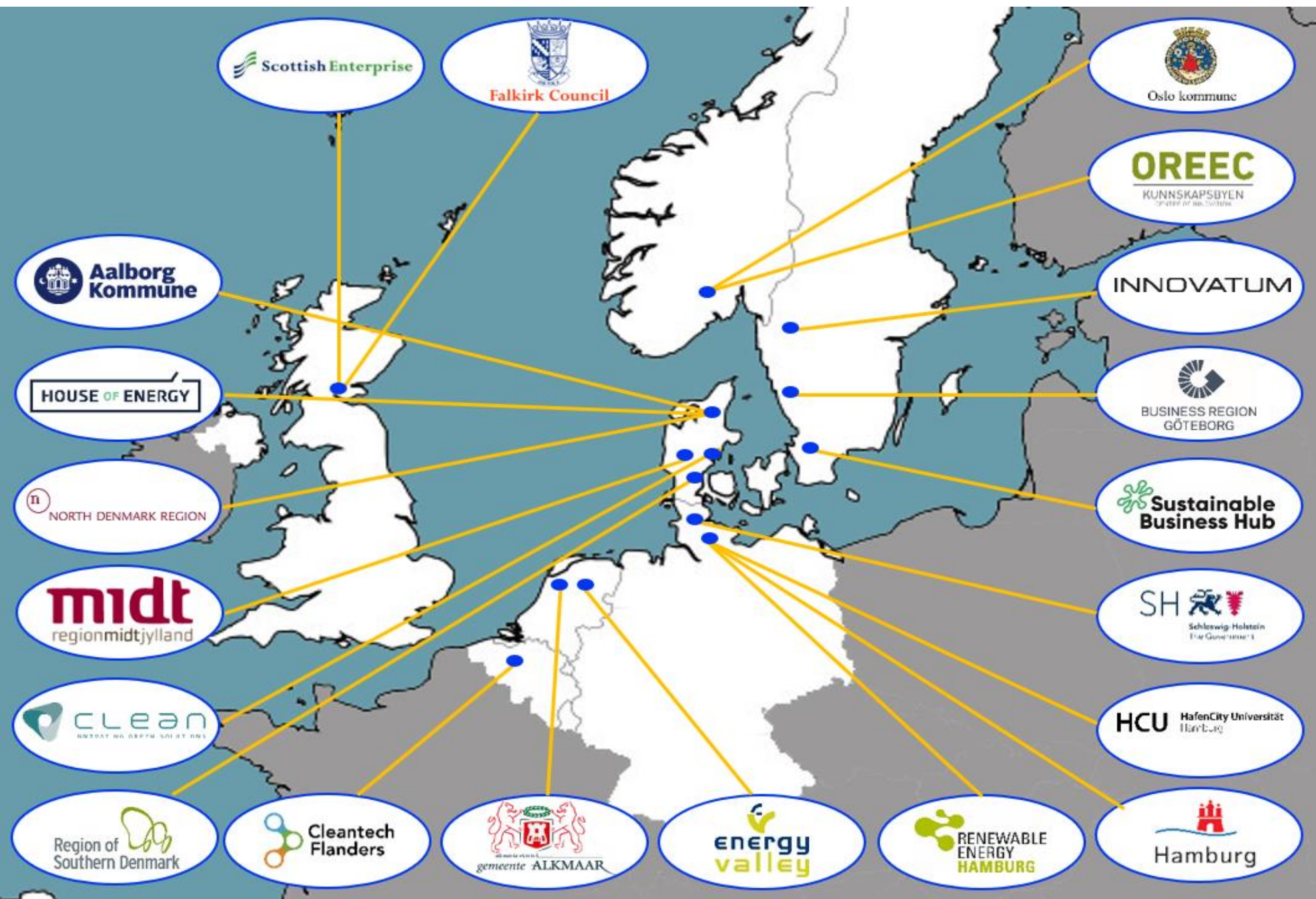
Theme: Sustainable Energy

The Northern Connections partnership consists of 21 cluster, cities, regions and knowledge institutions. 7 countries are represented in the partnership.

Our objectives:

- To get more enterprises to participate in transnational innovation collaboration strengthening transnational cluster and city/region cooperation around the theme of sustainable energy.
- Enhance regional innovation support capacity to increase long-term innovation levels and support smart specialization strategies.







The joint challenge

- Innovation support is mainly applied within narrow geographies.
- Calls to action /innovation challenges and opportunities are not visible transnationally.
- Cities & clusters lack capacity to involve SMEs broadly.





Project Work Packages

WP1 – Project Management (Aalborg Municipality)

WP2 – Communication (CLEAN Cluster)

WP3 – Knowledge (HafenCity University, OREEC)

WP4 – Cluster Capacity (Gothenburg Municipality)

WP5 – Political & strategic capacity (Schleswig-Holstein)

WP6 – Living Labs (Renewable Energy Hamburg, INNOVATUM)

Outputs : [Interreg Northern Connection Website](#)





What are Living Labs?

Living Labs are **concrete** projects and real demonstrators for sustainable energy applications.

Living Labs are **uniting** experts from the North Sea Regions to stimulate B2B-partnerships.

Living Labs are demand driven, **are the buyer**, inviting in solutions from project area SMEs.

Living Labs are **governed** to facilitate fruitful and successful, **open solution**, workshops.

Further information <https://northsearegion.eu/northern-connections/>



9 Living Labs events

- **Denmark** – Sensor technology, Smart homes, Improve consumer green behaviour.
- **Norway** – Sustainable Urban Centre Development
- **Sweden** – Fossil Free buildings
- **Germany** – Integrated energy supplies and e-mobility hub infrastructure
- **Netherlands** – Techno Economic blue print for 100% hydrogen heat supply to homes, Biomass and gasification technologies, Liquified Hydrogen for transport
- **Belgium** – Fossil free mobility hub and CO2 neutral thermal grids
- **Scotland** – Carbon Capture and Utilisation (CCU)
- **Denmark** – Sustainable hospitals (Sept 2020)
- **Sweden** - Fossil Free construction procurement (Nov 2020)



Carbon Capture and Utilisation (CCU) opportunity development

- [CCU Innovation systems study](#) and national plan for Scotland
- Industry engagement across the value chain
- Presentation of early stage innovative CCU technologies
[CCU Response to Climate Change & Rise of New Industry Event](#)
- Transnational expertise input into Scotland's CCUS plans



Two Projects Present their Opportunities & Challenges

Grangemouth Living

Lab – Building world class CCU Hub and Enterprise centre.

- **Generation of renewable energy and/or models for provision of green energy** to Grangemouth for CCU activity.
- **Hydrogen solutions and models for integrating hydrogen with CCU activity** (at multi-megawatt scale).
- **Solutions for direct uses of CO2 and uses of captured CO2** (including chemical, bio, horticultural).
- **Ideas and models for infrastructure and service models required for collaborative CCU activity.**

Acorn CCS –

Opening CCU opportunities from Carbon Capture and Storage infrastructure.

- **Supply of CO2.** the Acorn project is looking for regional and industrial partners across Europe to capture and supply their CO2 initially for sequestration.
- **Revenue Model.** To justify the required scale of investment, the business models (including financial mechanisms with Government) for industrial capture and CO2 transport and storage are needed.
- **Collaboration Partners.** To implement the company's ambitions Acorn requires to identify enterprises **with interest in CO2 capture, and the road, pipeline and ship transportation of CO2.** Alongside interest, innovative solutions and technology are sought, regarding both CO2 capture and CO2 transportation via the various channels.



Outcomes for Scotland

- Innovation Systems Approach and action plan for CCU industry in Scotland –Shared transnationally
- Improved linkages between industry, academia and public sector across CCU & Storage opportunity
- Clearer opportunities and linkages between CCU (Utilisation) and CCS (Storage)
- Increased industry engagement shaping CCU plan and related activities
- 23 possible collaborations around CCUS across the UK and transnationally
- Scottish organisations linked to CCUS Horizon 2020 call
- Increased Learning/ best practice tools to engage companies in transnational innovation collaboration
- Long terms relationships stablished across the North Sea sustainable energy community
- Opportunity to embed co benefits for regional outcomes within the infrastructure capacity of the project, for example fuel poverty and transport
- Strengthened collaboration between key emitters and Local Authority in meeting national low carbon objectives
- Strong stakeholder group collectively addressing the Net Zero 2045 ambition – Clearer joined up map of key activities/project



COVID-19 Impact – Emerging messaging

- **Increase and strengthen national supply chains**
- **Importance to digital capabilities – AI, remote access to facilities, digital modelling**
- **Focus on innovation and future proofing**
- **Strengthen collaborations and partnerships – share assets and resources**
- **Just Transition and green recovery**



International collaboration opportunities

- Green Deal EU Horizon 2020 calls – Opening in Sept 2020
- Enterprise Europe Network – Finding International partnerships



Thank you! 😊

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For Northern connection project information follow us on twitter, see more on our homepage or subscribe to our newsletter.

@NorthSeaConnect

www.northsearegion.eu/northern-connections

Northern Connections is a partnership of 21 clusters, cities, regions and knowledge institutions working together transnationally to create North Sea Region innovation in the energy sector