

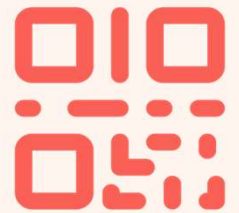


ENVIRONMENTAL SUSTAINABILITY FOR PIPELINE AND OFFSHORE PROJECTS

Lucy Thomas and Kathy Bradshaw RSK



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**Join at slido.com
#1185259**

ⓘ Start presenting to display the joining instructions on this slide.



Our aim is to demystify environmental aspects of sustainability in 45mins!

By the end of this session you should know:

- Why should we bother?
- The role IFC performance standards and the ESIA process play in the delivery of sustainable projects
- What are the trends in decarbonization, natural capital and biodiversity net gain
- What's the story?

RSK



Drivers for change

Climate and war

Residents evacuated as wildfire on outskirts of Athens threatens homes

Clouds of thick smoke build over Greek capital's southern suburbs as more than 100 firefighters fight blaze



A fireman at the scene of a wildfire in threatening power lines and infrastru.

Huge expansion of oil pipelines endangering climate, says report

More than 24,000km of pipelines planned around world, showing 'an almost deliberate failure to meet climate goals'



Pipes sit in a cotton field waiting to be installed for new oil pipelines in Lenoir, Texas. Photograph: David Goldman/AP

More than 24,000km of new oil pipelines are under development around the world, a distance equivalent to almost twice the Earth's diameter, a report

Pressure



Response

- Paris agreement
- Government policies, legislation and subsidies
- Lenders and banks
- Companies



IFC environmental and social performance standards

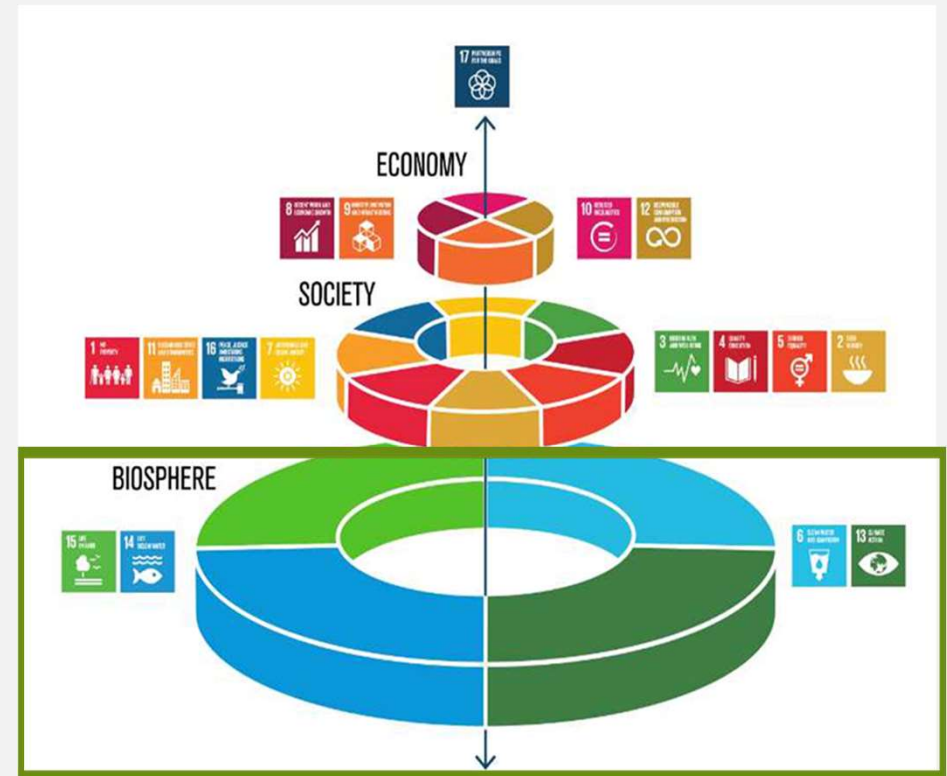


SDG and links with pipeline construction

IFC

- Risk management
- Biodiversity
- Resource efficiency

Ultimately, if we don't look after our land, water, climate and biodiversity we don't have the potential for future pipelines



Key stages



ESIA process

Photos are the best part of the environment part!



Biodiversity net gain

Becoming mandatory

Results in greater biodiversity post construction

Requires a robust baseline

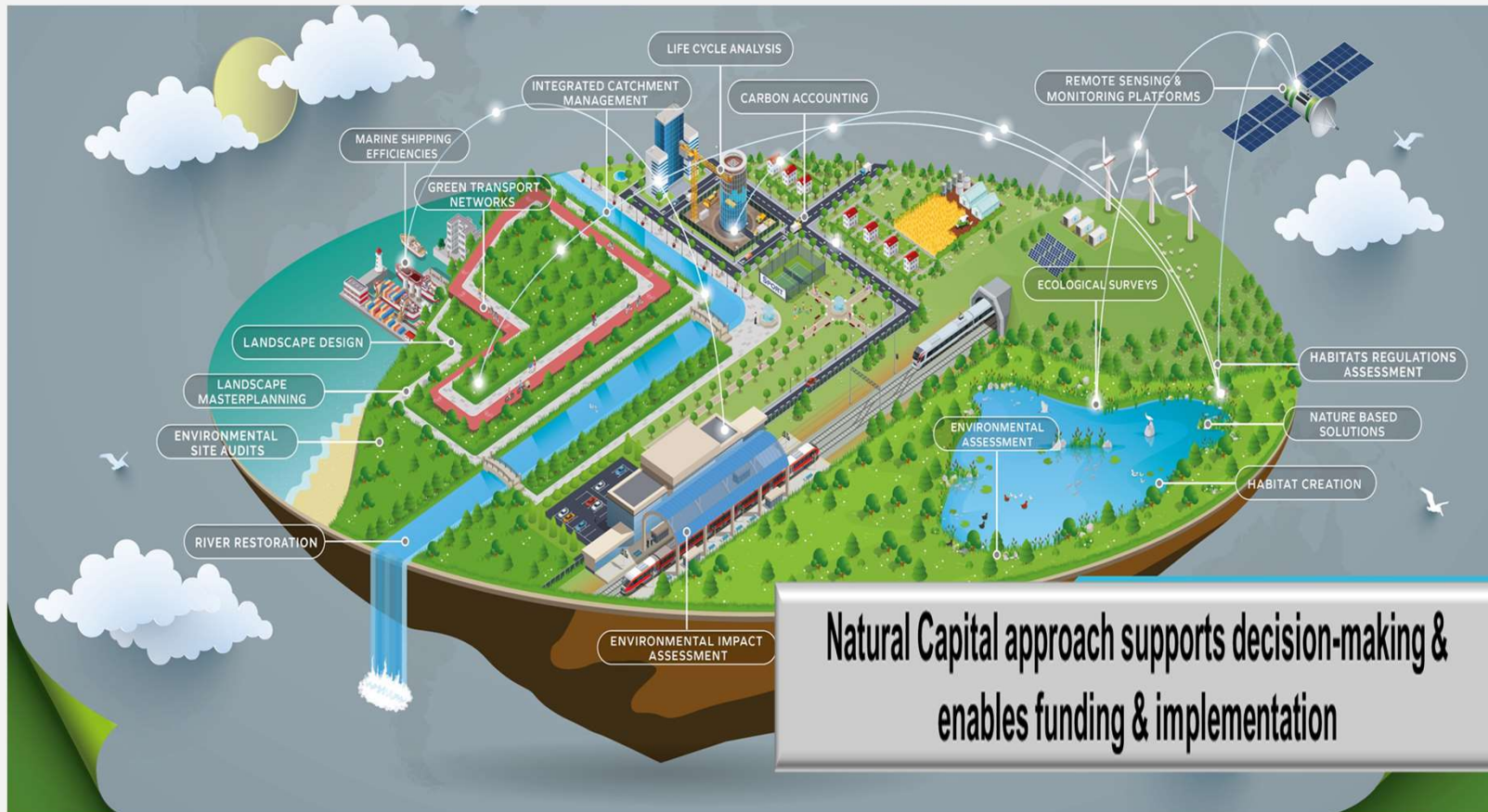
Carbon and Biodiversity Opportunities: Costs and Benefits



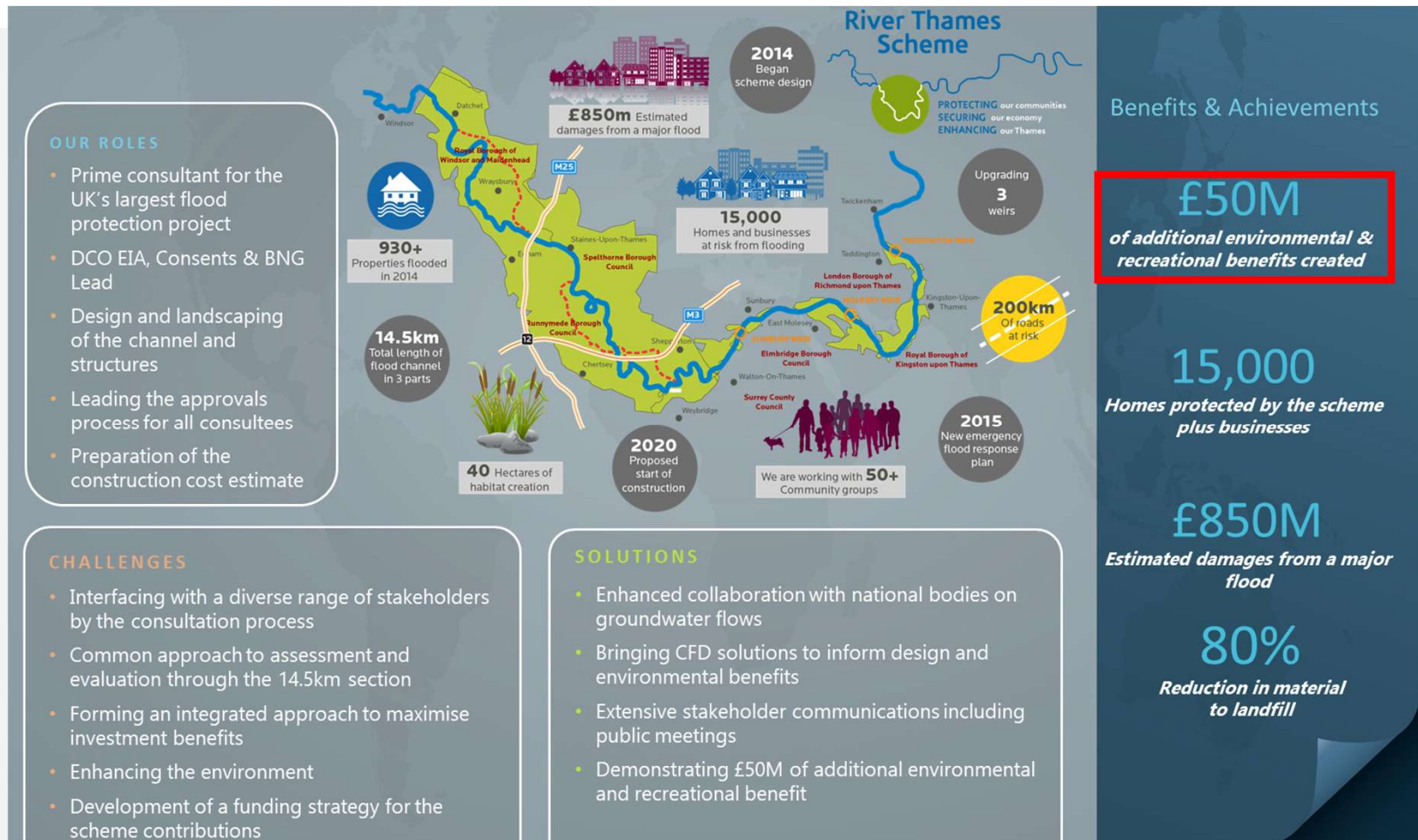
Spatial Scale	Opportunity	Cost	tCO2 Benefit		BU Benefit	
			£m PVb	CBR	£k	CBR
Black Esk WTW	1.2 Ha of onsite enhancement and habitat creation (woodland, hedgerows, grassland, ponds and wetlands)	£50k	0.06	1.2	284	5.7
	3.5Ha Land Purchase and compensatory habitat enhancement	£45.4K	0.15	3.4	259	5.7
	0.7Ha of Green roofs	£522K-£895K	0.08	0.2	75	0.1
Scottish Water Land	1.76ha area wetland creation	≤£25k	0.09	3.6	138	5.5
Reservoir Catchment	88ha – Peatland Restoration	£1009/ha** £88,792	2.47	27.8	3,389	43.2



Natural capital



Benefits of natural capital, River Thames

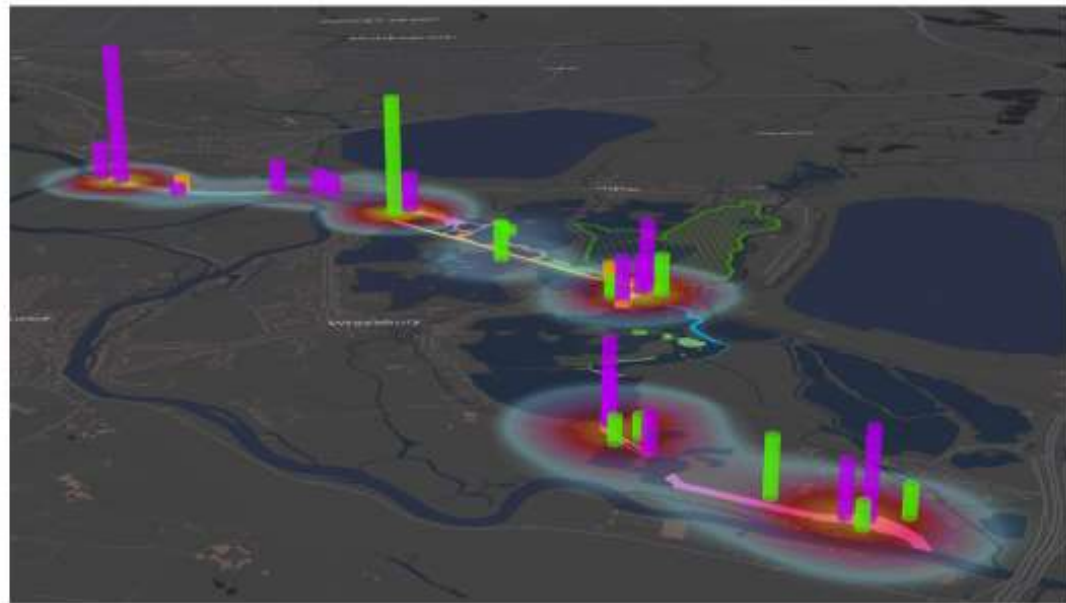


Decarbonisation

Carbon Heat Map:

Highlights *where* carbon is focussed

Helps to understand *what* type of construction is most significant



Key: **Purple** – point carbon (bridges etc) : **Green** linear carbon (piles): **Orange**: area carbon (channel excavation)

Marine Environment

"I must go down to the seas again, the lonely sea and the sky"
 (John Masefield, 1913)

The collage features several images related to the marine environment: a boat on a shallow reef, a whale breaching the surface, a vibrant coral reef, and a portrait of John Masefield. A central diagram illustrates the four categories of ecosystem services provided by the marine environment, centered around a globe icon.

PROVISIONING SERVICES	SUPPORTING SERVICES
<ul style="list-style-type: none"> Food Minerals Fibres Timber Fuels 	<ul style="list-style-type: none"> Nutrient cycling Soil formation Genetic diversity Primary production Habitat formation
CULTURAL SERVICES	REGULATING SERVICES
<ul style="list-style-type: none"> Education Spiritual Aesthetic Mental wellbeing Recreational 	<ul style="list-style-type: none"> Carbon management Climate regulation Flood regulation Erosion prevention Water purification Pollination

At the bottom of the diagram, icons for Sustainable Development Goals 13 (Climate Action), 14 (Life Below Water), 15 (Life on Land), 16 (Peace, Justice and Strong Institutions), and 17 (Partnerships for the Goals) are displayed, along with the 'Sustainable Development Goals' logo.

What do we do if it keeps going wrong.....

Our team today

- Stephanie Wray
- Katrina Cooper
- Lucy Thomas
- Kathy Bradshaw
- Jenny Hughes
- Jordi Bruno

Google Earth
These images show projected future sea levels at Plaza de España in Seville, Spain due to human-caused global warming under two different scenarios. Climate and energy choices in the coming few decades could set the destination, but the timing of rise is more difficult to project: these sea levels may take hundreds of years to be fully realized.

CLIMATE CO CENTRAL

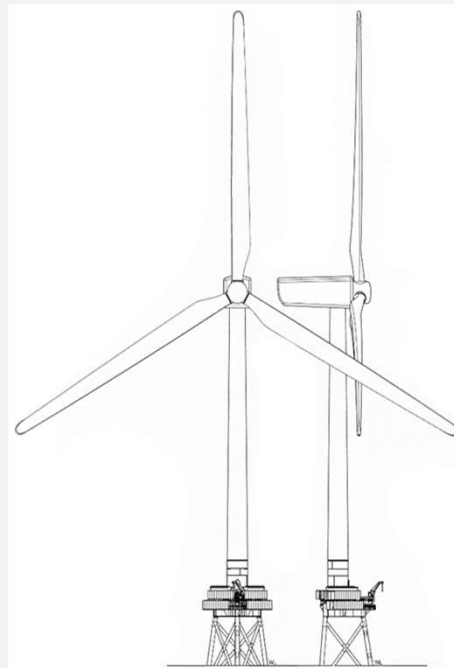
Australian Government
Great Barrier Reef Marine Park Authority
AUSTRALIAN INSTITUTE OF MARINE SCIENCE

Pipeline Case Studies

Oil and Gas



Hydrogen



CCCS



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How and when should developers and contractors factor environmental aspects into pipeline projects?

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EACOP

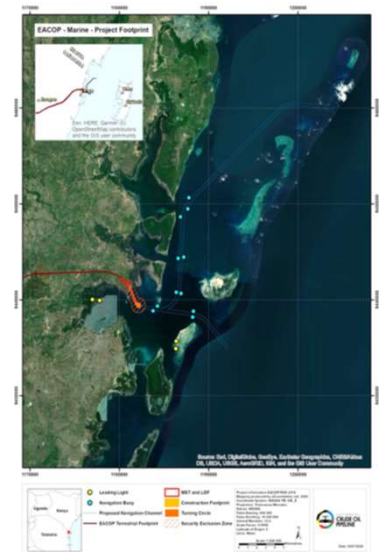
East African Crude Oil Pipeline

Project description

RSK was contracted to write the EIA for the marine (and terrestrial) sections of the project, including the new jetty facility plus further assessments to address design changes. Part of the remit also included updating the Critical Habitat Assessment (CHA) and writing a Biodiversity Action Plan (BAP) to meet IFC Performance Standard 6 (IFC PS 6) Biodiversity Conservation and Sustainable Management of Living Natural Resources (IFC, 2012).

Key aims

- BAP is the first stage in documenting the measures that will be implemented, adhering to the mitigation hierarchy, to manage the potential biodiversity impacts associated with the marine components, both during construction and operations, as well as decommissioning. It documents the biodiversity features of concern, how they could be affected by construction and operation of the LOF and what measures will be implemented (and by whom) to either avoid impacts or reduce them to acceptable levels. Where residual impacts are identified, the need for biodiversity offsets are documented.
- CHA is triggered where there are habitat areas containing protected species (e.g. humpback dolphin, coelacanth, palearctic waders).



Proposed elements

- EACOP includes a crude oil export pipeline that originates from in Hoima, Uganda and transports oil for export through Tanzania.
- The export pipeline will terminate at the Chongoleani peninsula in Tanga district 5–6 km northeast of the seaport of Tanga on the Indian Ocean coast, at a marine storage terminal (MST).
- From the MST, the oil will be transported via a trestle to a Load out facility (LOF) where it is loaded on to tankers.
- Field surveys were required to provide robust evidence to underpin residual impact calculations and devise mitigation strategies to deliver net gain outcomes. Surveys covered coral reefs, seagrass beds, mangroves, coelacanth, seabirds, plus ongoing humpback dolphins and soundscape.

Hydrogen Project

UK – Lead EIA services, Offshore and Onshore HT1 Vattenfall

Project description

In the British Energy Security Strategy published in April 2022, the government doubled the UK's hydrogen production ambition from 5GW to 10GW, by 2030¹.

The offshore project RSK that are currently working on comprises the proposed retro-fitting of Hydrogen Electrolysis equipment on an existing OWF WTG.

Hydrogen will be produced from seawater during the process and be piped under pressure to an onshore storage facility.

RSK are managing the offshore and onshore EIA which includes preparation of marine license and Town and Country planning applications.

Pipelines

- Hydrogen flowline to onshore storage and distribution facility.



Proposed elements

- Retrofitting of hydrogen electrolysis equipment on one of the WTGs
- Hydrogen flowline to shore
- Fibre Optic Cable
- Onshore storage and distribution facilities.
- Pipeline route assessments and onshore siting studies have also been carried out by our marine and onshore teams.

¹Hydrogen Strategy update to the market: July 2022

CCUS Project

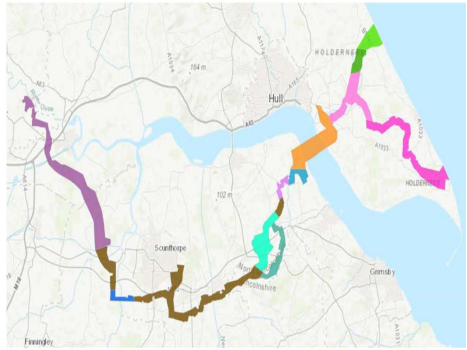
UK – EIA Marine Services - Humber Low Carbon Pipelines Project (HCLP)

Project description

The Humber region is an important part of the UK economy, contributing £18 billion each year and providing 55,000 jobs across a range of industries including refineries, petrochemicals, steelmaking and power generation. As the UK's largest industrial cluster, the Humber is responsible for producing around 12.4 million tonnes of carbon dioxide emissions per year. This means it can play a crucial part in helping the UK to transition to a low carbon economy and reach its ambitions around net-zero by 2050. RSK are supporting the onshore DCO application and the marine licence deemed as part of the DCO. The main offshore part of the project is BP.

Pipelines

- onshore network of underground pipelines for the Humber region to transport hydrogen and captured carbon dioxide.
- The pipelines will continue to a landfall point on the Holderness coast which comprises a CO2 pipeline which goes to the storage site at the old Endurance field.



Proposed elements

- Forms part of the East Coast cluster – one of the UK government's 'Track One' Carbon Capture, usage and Storage (CCUS) clusters
- the development of CCUS and low carbon hydrogen technologies can help decarbonize the UK's industrial powerhouse, supporting a low carbon future, UK economy and vision for net zero by 2050
- pipelines are intended to connect major emitters in the region, a new power station, a steel plant and major hydrogen production unit
- includes Carbon dioxide pipeline and pumping station to transport to an offshore underground storage site, Above Ground Storage (AGS) sites and a tunnel under the River.



We can make a difference!

Good for the environment, people and business
....and it's not rocket science!



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<https://rskgroup.com/service/environment/marine-services/>

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What do you think our combined carbon footprint* for travelling here is?

***carbon dioxide equivalent CO₂e**

Hint it's somewhere between 1 tonne and 100 tonnes of carbon



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