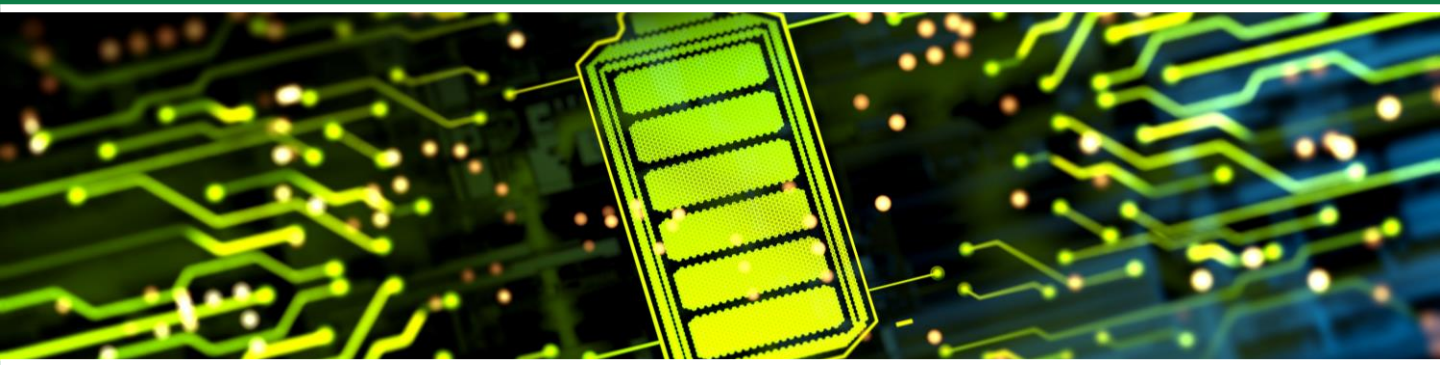
Energy Transition & Net Zero

Supporting rapid and far-reaching transformations in the delivery of energy, security, industry, agriculture, and transport.

FRAZER-NASH CONSULTANCY
A KBR COMPANY



The challenges facing our planet are huge: the pace and impact of technological change both a part of the problem and, potentially, part of the solution. With a key trend of the last 50 years being a shift from solely productivity-driven goals, to a focus on sustainability, there is increasing emphasis on considering not only individuals' needs, but those that best address society's multiple requirements.

Integrated approaches are essential to ensure the security of energy and food supplies, the decarbonisation of power, and to increase climate change resilience. Our Systems Approach is ideally suited to addressing these challenges. We are working to make the world a more sustainable place.

Our expertise:

- We champion natural capital, combining environmental consultancy with modelling and economic analysis to offer a fully 'Green Book compliant' appraisal service, which puts the value of natural capital at its heart
- We work with government and industry to ensure infrastructure and technology projects are delivered efficiently, effectively and sustainably
- We manage and support emerging technological innovation that will help develop novel solutions to sustainability challenges
- Our multi-disciplinary teams can provide expert advice on the development of low carbon vehicles, including on improvements to vehicle fuel efficiency; regenerative braking systems; and electric steering systems

Working towards Net Zero

Our Systems Approach is enabling the energy transition towards a Net Zero world, actively supporting in the reduction of existing emissions and removal of greenhouse gases.

Our experience in working with government and industry, coupled with our expertise in parallel sectors, enables us to deliver technical solutions to some of the most challenging problems out there.

We understand that there is no silver bullet to overcoming the climate change conundrum; an integrated and collaborative approach is required, which considers commercial and technical challenges. Our extensive cross-industry exposure gives us a whole systems outlook to meet the demands of tomorrow.

We can help you work towards Net Zero by:

- Supporting the development of carbon capture, utilisation and storage (CCUS) including direct air capture (DAC)
- Providing technical advice on the establishment of hydrogen as a clean energy source
- Developing 'Net Zero' company strategies
- Enabling implementation of future transport systems
- Advancing clean energy technology and innovation
- Managing assets' environmental impact
- Supporting project and programme delivery.

Find out more

Telephone +44 (0)333 032 9500, or email Ian Tarplee, Group Leader for Environmental Sustainability at **i.tarplee@fnc.co.uk**

Carbon capture, utilisation and storage

Our cross-sector experience means we're well placed to support carbon capture, utilisation and storage projects.

With our extensive experience in oil and gas, turbo-machinery, power generation and renewables, we are well placed to support CCUS. As displayed in the infographic below, we use our Systems Approach to deliver technical solutions to some of the most challenging problems out there.

CCUS can act as an influential tool in combatting climate change through the:

- Capture of CO_2 from electricity generation, industrial sources (e.g. steel or cement production), and ambient air (using direct air capture (DAC))
- Transportation of CO_2 via pipeline or ship
- Utilisation of CO_2 in creating products (e.g. concrete), or to enhance oil recovery
- Storage of CO_2 permanently underground in a compatible reservoir.

Our Systems Approach, coupled with our cross-sector expertise working with industry and government, enables us to understand the CCUS value chain. We can support you with:

- Business case support and stakeholder management
- Cost estimating, with optioneering and techno economic assessment
- Requirements capture, with mechanical and electrical design
- Supply chain assessment
- Strategic asset support
- Technology innovation and management
- Structural integrity analysis, fluid and thermal analysis
- Materials and corrosion management
- Project life cycle and asset management
- Reliability, supportability and digital security
- Project and project risk management
- Software innovation and digital development
- Regulatory and decision-making support
- Environmental impact assessment and waste management
- Testing and inspection
- Knowledge management and safety advice and support.

Climate resilience

Climate change poses a risk to assets, infrastructure and business continuity. Frazer-Nash can help you understand and reduce your exposure to these risks. We apply our deep expertise in sustainability and systems engineering, innovation and business transformation to develop solutions that work.

The flipside of every risk is an opportunity. We actively look for climate adaptation solutions that deliver additional benefits. For example, re-engineering for resilience can reduce exposure to other risks, improve efficiency or even create new sources of revenue.

The first step is to understand how climate change could impact your organisation. We have developed our climate impact screening methodology to assess the risks and opportunities for your organisation. This involves a facilitated workshop involving key organisational stakeholders and subject matter experts from Frazer-Nash with practical experience in leading FTSE100 companies.

Building on the approach set out by the Taskforce for Climate-related Financial Disclosures (TCFD), we look at physical and transition impacts using a bespoke climate risk framework.

We then design the next stages according to your needs. This may include, for example:

- Scenario analysis using latest Met Office (UKCP) data to help understand and communicate the impacts that climate change could have on your organisation
- Evaluating financial exposure to climate risks
- Analysis of structures, mechanical components or supply chains
- Design validation to help you demonstrate resilience over the applicable range of future climatic conditions
- Modelling networks to identify pinch points
- Creating a digital twin of your organisation to explore alternative options in a virtual environment
- Multi-criteria decision analysis to inform climate resilience planning
- Evaluation of the socio-economic impacts of alternative scenarios including, for example, extended service outage.