

DEFINE

Our systems approach ensures we define the full context of our Clients' end goal and hence develop effective solutions

Business Case Support & Stakeholder Management

Business case development for investors/developers

Consumer fuel/carbon pricing (forecasting)

Capability Definition

Engaging with potential partners (e.g. carbon emitters utilising CO₂ transportation pipeline)

Cost estimating with Optioneering & TEA Carbon Accounting

Project/technology/whole life cost estimation

Scope 1, 2 and 3 carbon calculation

Auditing of carbon storage

Feasibility studies (options assessment)

Requirements Capture with Mechanical & Electrical Design

Project (cluster) requirements to meet Net Zero target

Testing facilities design (Test Rig control systems)

Concept/FEED/Detailed (new facilities)

Rotating machinery expertise including turbines, pumps and compressors

Supply Chain Assessment

Component procurement specification

General equipment specification

Technical reviews

Test and acceptance policies / specifications

UNDERSTAND

A comprehensive capability to assess and improve the fundamental behaviour of engineering equipment and systems

Strategic Asset Support

Asset integrity assessments (e.g. life extension)

Integration of systems (legacy and new)

Technology Innovation & Management

Technology readiness (cost reduction forecasting)

Roadmapping (e.g. cluster development timeline: risks, dependent activities)

Structural Integrity Analysis, Fluid & Thermal Analysis

CO₂ transportation pipeline network

CFD and FEA modelling (e.g. Gas dispersion, flow assurance or combustion)

CO₂ compression analysis

Joule-Thompson cooling (CO₂ injection into reservoir)

Materials & Corrosion Management

Pipework assessment (reuse) for CO₂ transport

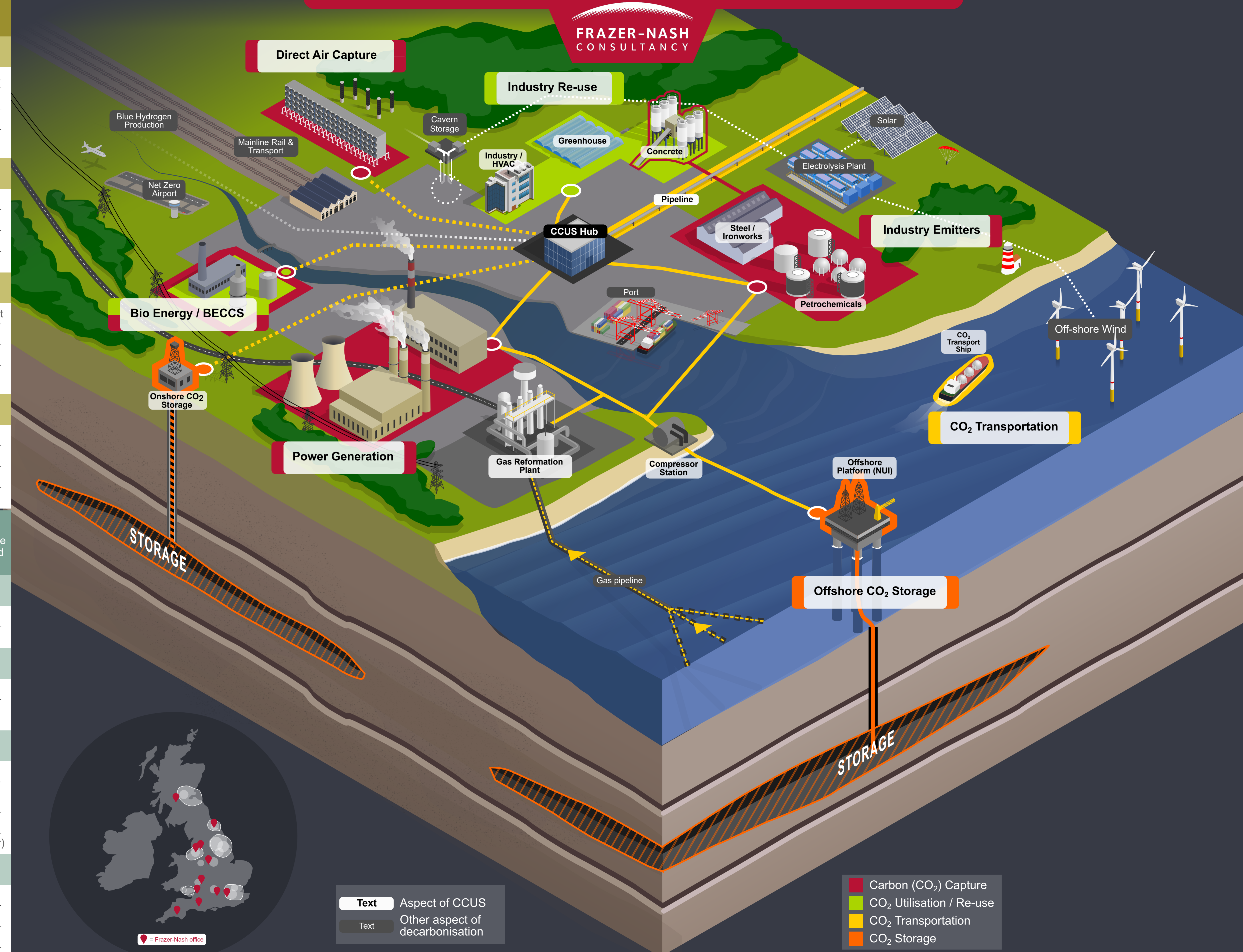
Pipeline survey / management

Corrosion diagnosis (CO₂ pipeline)

Turbomachinery flow analysis

Supporting Carbon Capture Utilisation & Storage (CCUS)

FRAZER-NASH
CONSULTANCY



INTEGRATE

The systems engineering expertise to deliver integrated solutions across the full project lifecycle

Project Life Cycle & Asset Management

Strategic services in line with "ISO 55000" to optimise financial and engineering performance

Creation / supporting client's "Net Zero Strategy" (in terms of the role of CCUS)

Station systems owners support

Multi-disciplinary optimisation

Reliability, Supportability & Digital Security

Reliability and maintainability support

System verification & validation

Risk assessment of a project / site

Digital Twin modelling

Project and Project Risk Management

Industrial project support

Project management

PMO support

Software Innovation & Digital Development

Data processing (Carbon storage tracking)

ASSURE

The stature to support critical decisions on safety, the environment and business risk

Regulatory & Decision Making Support

Decommissioning regime of CCUS assets (e.g. reuse of existing assets or new assets)

Regulatory & policy advice

Engineering substantiation

Enterprise Assurance

Environmental Impact Assessment Waste Management

Long term impact of CO₂ injection (risks of leakage, erosion)

Environmental assurance

Technical and strategic due diligence

Transport and storage interface

Testing and Inspection

Verification and validation

Trials support

Knowledge Management & Safety Advice / Support

Decision analysis

Project Safety Case development

Independent safety assurance

Independent technical audits