

The background of the slide features a close-up, low-angle view of several rows of solar panels. The panels are dark blue with a grid of white lines. The lighting is warm, suggesting a sunset or sunrise, with a soft orange glow. In the far distance, the silhouettes of wind turbines are visible against the horizon.

**DWD**

**What new infrastructure  
do we need for Net Zero  
and how are we planning  
for it through the DCO  
process?**

Waterfront NSIP Forum 2023



*DWD's Infrastructure and Energy consenting practice has decades of expertise in planning large scale thermal and renewable energy, having obtained an array of Section 36 consents as the energy sector privatised. Since 2013 we have supported more than 18 Nationally Significant Infrastructure Projects.*

*Today DWD's unrivalled experience of the key sectors, technologies, planning processes and locations, for energy infrastructure helps a diverse range of clients to deliver Net Zero infrastructure.*

*We are often instructed at the very start of the process, assisting clients in structuring their teams and even acting as lead consultant to bring together environmental, property, legal and land referencing teams on behalf of our clients. We continue to advise throughout the preparation and submission of the DCO application.*

*With a Net Zero electricity system targeted for 2035, this paper provides insights into the emerging types of infrastructure we are planning for and how we are supporting their delivery. Thank you for reading.*

**Colin Turnbull, Partner, DWD**

# The Planning Act 2008 - A Framework for Net Zero NSIPs?

DWD

The 2008 Act establishes a number of “fields” - energy, transport, water, waste water and waste – with types and thresholds specific to each field. Business and commercial projects can also be opted in via section 35(2). National Policy Statements were published for most fields, providing a clear framework against which applications would be consulted on and determined. The fields and the NPSs are central features of the decision making regime and underpin its effectiveness. Crucially, the NPSs put beyond question the urgent need for new energy infrastructure.

The Committee on Climate Change in its Technical Report recognises that a wide variety of infrastructure will be needed to deliver Net Zero. Interestingly, some of these do not appear to fall within a field, or within the thresholds established under each field, in the 2008 Act. For example, hydrogen production, depending on its location and its integration with a generating station, might not qualify as an energy NSIP, even though this emerging sector is important to achieving a net zero electricity system. Hydrogen and carbon dioxide transport pipelines do not always qualify for a DCO, even though in some instances they may underpin the viability of a Carbon Capture, Utilisation and Storage (CCUS) cluster.

Fortunately, the Planning Act 2008 allows a promoter to opt-in a project of national significance if the Secretary of State agrees. This ‘Section 35’ process means the 2008 Act is well able to support the delivery of new types of infrastructure. DWD is experienced in seeking S35 directions.

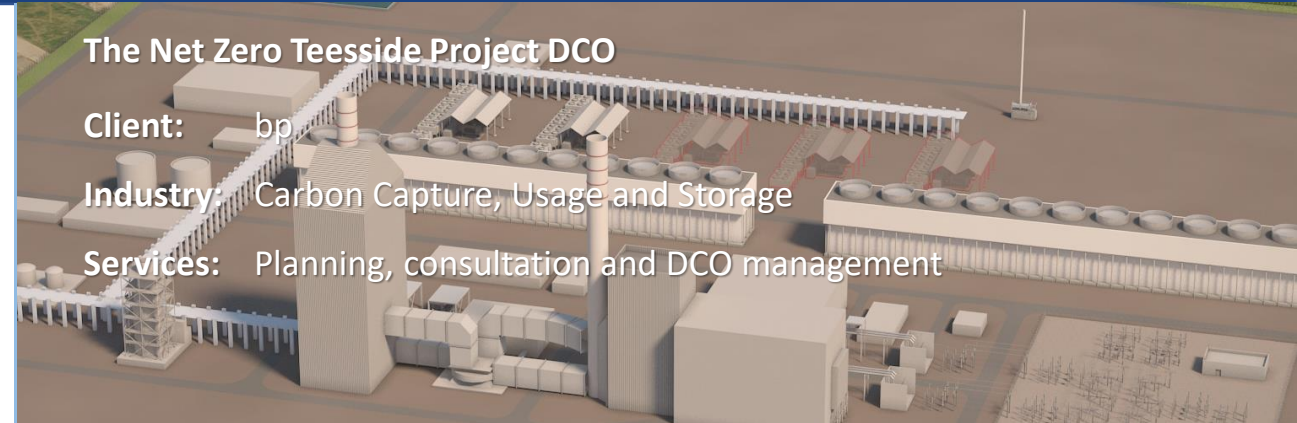
Battery Energy Storage Systems were recently removed from the 2008 Act as they were being ‘caught’ by the 50MW threshold originally established in 1989 for coal generating stations. This has allowed for strong growth in planning approvals of these facilities, which do not have substantial local impacts and can be determined at the local level in a similar way to industrial or employment developments. DWD has obtained a number of planning permissions for BESS projects of up to 500MW scale.

## The Net Zero Teesside Project DCO

Client: bp

Industry: Carbon Capture, Usage and Storage

Services: Planning, consultation and DCO management



Net Zero Teesside (NZE) is a Carbon Capture, Usage and Storage (CCUS) project which comprises a number of elements, including a new gas-fired power station, with state-of-the-art carbon capture technology, and a CO<sub>2</sub> pipeline transport network connecting to local industry.

Teesside is a region with a proud industrial heritage and home to a diverse and geographically compact cluster of industrial, power and hydrogen businesses who together account for around 5.6% of all UK emissions. Up to 10 million tonnes of CO<sub>2</sub> each year will be transported to the coast, and onwards to safe, secure offshore storage in the Endurance carbon store in the southern North Sea.

Early in the development of the project DWD obtained a direction from the Secretary of State that categorised the CO<sub>2</sub> gathering network, booster station and transport pipeline as being of national significance. Based on experience promoting projects in Teesside, DWD then designed and implemented an adaptive consultation strategy that provided safe opportunities for communities to engage, deploying the AECOM online exhibition tool and advertising among other methods.

An iterative process followed involving several rounds of consultation and information as the project developed. DWD prepared the Consultation Report, Planning Statement, and Needs Case documents, checked compliance with published guidance, and coordinated the submission of the DCO application.

The direction enabled a comprehensive single application to be made for the project, rather than separate applications to multiple authorities.



**The adopted NPSs date from 2011 and while they remain formal policy they do not sufficiently support new types of infrastructure. For example, carbon capture power stations are explained in terms of coal generation when they are needing to be deployed on gas power stations. Solar is not covered in the extant NPSs.**

The recent draft Energy National Policy Statements (NPS) set a significantly different tone to the current EN-1 around fossil fuels, with a large focus on net zero and what this means for the energy sector. While wind remains central, solar energy is covered for the first time in the draft EN-3 with focus on allowing flexibility in design and the ability to accommodate energy storage solutions. This is particularly welcome in an area where the technology continues to evolve at a fast pace and gives applicants comfort that they will be able to make best use of the latest, most efficient products rather than being wedded to a specific set-up.

The emerging NPSs identifies that the lowest cost option for achieving Net Zero will involve high levels of wind and solar. But there is recognition that natural gas, mainly with carbon capture, is still required during this transition phase and at lower running hours to support system stability during low wind speed and low irradiance periods. Strong support for CCUS and hydrogen development is provided in the emerging NPSs. Additional nuclear beyond Hinkley Point C may include large-scale nuclear, small modular reactors, advanced modular reactors and even fusion power plants.

Unfortunately, the emerging NPSs do not yet reflect the siting considerations for solar projects sufficiently, and there has been no comprehensive exercise by government to define suitable sites for Small Modular Reactors, which are potentially suitable for many other locations besides the locations established in EN-6 for large nuclear. A robust site selection report is central to many of our projects, so it seems anomalous that there is no formal requirement for a site selection report to accompany DCO applications, despite there being requirements in regulations for matters such as grid connection statements.



More widely, the Net Zero Strategy: Build Back Greener (HM Government, 2021) calls for “four carbon capture usage and storage (CCUS) clusters, capturing 20-30 MtCO<sub>2</sub> across the economy, including 6 MtCO<sub>2</sub> of industrial emissions, per year by 2030”. It should be kept in mind that this goes beyond energy infrastructure delivery as these constitute subregional scale clusters of both existing and proposed energy and industrial emitters supporting tens of thousands of jobs. Nevertheless we consider the NPSs should encourage a move towards an integrated approach to siting, where it does not affect deployment, in regions where multiple NSIPs or related projects are proposed, to provide infrastructure delivery efficiencies and benefit communities.

DWD has obtained the first DCO for a carbon capture power station – Keadby 3 (SSE and Equinor) and is supporting Net Zero Teesside (bp), along with an equivalent scale Section 36 project in Scotland - Peterhead Carbon Capture Power Station - for SSE and Equinor.

We have also recently obtained a Section 35 Direction for H<sub>2</sub> Teesside on behalf of bp, a project comprising a hydrogen production plant, a hydrogen distribution pipeline network (to supply the hydrogen to offtakers) and the compression and export of CO<sub>2</sub> for onward geological transportation and storage.

DWD has considerable experience in promoting NSIP and non NSIP planning proposals in the East Coast Cluster, across Teesside and Yorkshire and the Humber.

We recently obtained the first DCO for a carbon capture power station – Keadby 3 (SSE and Equinor) and are supporting VPI Immingham and Phillips 66 with developing substantial Carbon Capture Plants at existing refinery facilities in Immingham. The North Lincolnshire Green Energy Park DCO is currently in examination and we have previously

obtained a DCO for the South Humber Bank Energy Centre and a Section 36 consent for Keadby 2 CCGT.

In Teesside DWD is supporting Net Zero Teesside (bp) and previously supported the Tees CCPP DCO for Sembcorp and a number of industrial Net Zero related facilities on the Wilton site including a Lithium Hydroxide Manufacturing Plant for Tees Valley Lithium. We have recently obtained a Section 35 Direction for H<sub>2</sub> Teesside on behalf of bp, a project comprising a hydrogen production plant, a hydrogen distribution pipeline network (to supply the hydrogen to offtakers) and the compression and export of CO<sub>2</sub> for onward geological transportation and storage. We are also supporting bp on their green hydrogen project ‘Hygreen’.

“DWD are leading the planning and consenting on three of the main low carbon and CCUS projects currently being advanced in England and Scotland. These projects have a crucial role to play in helping to deliver the UK Government’s commitment to establish four CCUS clusters by 2030, and Net Zero by 2050.

Our involvement on these and other projects means that we are at the forefront of helping to deliver decarbonised power and CCUS infrastructure across the UK.”

**Geoff Bullock, Partner DWD**

# Case Study: Keadby 3 Carbon Capture Power Station



**Keadby 3 Carbon Capture Power Station in North Lincolnshire is being developed by SSE Thermal and Equinor and would have a generating capacity of up to 910MW and capture up to one and a half million tonnes of CO2 a year. The low-carbon flexible power station could be operational as early as 2027. The project is being brought forward by SSE Thermal and Equinor and earlier this year a Front End Engineering Design (FEED) contract for the proposed plant was awarded to a consortium comprising Aker Solutions, Siemens Energy and Altrad Babcock, with Aker Carbon Capture supporting on the carbon capture technology.**

In December 2022 Keadby 3 became the first power carbon capture and storage (CCS) project in the UK to receive development consent. The project received a Development Consent Order ('DCO') following an extensive period of pre-application consultation and public examination.

The Secretary of State for Business, Energy and Industrial Strategy (BEIS) granted the necessary powers following a positive recommendation from the Planning Inspectorate's examining authority, who commented that Keadby 3 "represents a considerable commitment to removing barriers to carbon capture, and deploying related infrastructure and would be a significant contribution towards the urgent national need for low carbon electricity generation established in NPS EN-1, carried through in the emerging draft NPS EN-1, and which has become more urgent following the legally binding target of net zero by 2050"

DWD led on the DCO application submission and its examination, providing planning, local authority engagement, statutory consultation, valuation, and examination management support to SSE Thermal as part of a consultant team comprising AECOM, Dentons, and Ardent Management. The application was accepted by the Planning Inspectorate on 28 June 2021 and the DCO was made 18 months later.

It is the latest milestone achieved by the project and marks a major step forward for Keadby 3, which is currently in the due diligence stage of the UK Government's Cluster Sequencing Process. This process will give the project the opportunity to receive government support, allowing it to deploy cutting edge carbon capture technology and to connect to the shared CO2 and hydrogen pipelines being developed as part of the Zero Carbon Humber and East Coast Cluster proposals.

SSE Thermal and Equinor are also collaborating on Peterhead Carbon Capture Power Station in the north-east of Scotland for which DWD is providing the planning support. DWD previously led the consenting of the Keadby 2 CCGT project, currently at commissioning stage.



## Keadby Carbon Capture Power Station

**Client:** SSE Thermal and Equinor

**Industry:** Carbon Capture

**Services:** Planning, consultation and DCO management



In December 2022 the Keadby 3 Carbon Capture Power Station DCO was awarded - the first carbon capture power station in the UK to receive development consent. Keadby 3 is being developed by SSE Thermal and Equinor and could become the UK's first power station equipped with carbon capture technology by the mid-2020s. SSE has publicly committed to only build power stations with a clear route to decarbonisation. With an electrical output of up to 910MW, Keadby 3 will use natural gas as its fuel and will be fitted with a carbon capture plant to remove the CO<sub>2</sub> from its emissions. It will connect into the Humber Low Carbon Pipelines Project, which is being promoted by National Grid Ventures and will also require a DCO.

The DCO examination for Net Zero Teesside closed in November 2022 and a DCO decision is expected in May 2023. Net Zero Teesside is a first-of-a-kind fully integrated gas-fired power and carbon capture project and a key driving force behind plans to make Teesside the UK's first decarbonized industrial cluster. It includes a combined cycle gas turbine electricity generating station with an electrical output of up to 860 megawatts (MW) of low carbon electricity.

DWD has led the planning of both projects and some early observations of interest to promoting this form of infrastructure are shared here.

## **Picking an appropriate site**

These first of a kind projects are located in regional clusters identified by government as suitable for CCUS, and proximate to strategically significant geological carbon storage sites in the North Sea via pipelines being developed by others. They are located near to existing electricity and cooling water connections on previously developed land which reduces local impacts and improves the speed at which they can be deployed.

## **Setting defensible parameters and building flexibility into the DCO powers**

To allow for the relevant connections to be constructed and operated in the future over a period of time – to the carbon transport pipeline network, and between the carbon transport pipeline and other emitters – parameters are required for a robust Environmental Impact Assessment. The DCO itself is drafted in order to allow relevant third parties to be 'beneficiary' of specific works.

## **Early engagement with landowners**

While a degree of flexibility around the final design of the project is inevitable, providing adequate information to landowners ahead of the DCO application and seeking voluntary agreements for land interests is important. In the CCUS clusters where a range of projects are being brought forward and connecting to each other this will be of wider benefit. Where projects contain optionality, compulsory acquisition powers can be drafted whereby they can only be exercised once optionality is reduced (after DCO award).

## **Effective and coordinated pre application consultation**

Communities in regions with CCUS clusters may be aware of a number of projects seeking development consent. Each promoter should engage responsibly and schedule consultations in coordination with other promoters, and seek opportunities for sharing consultation efforts or providing representation at other consultations in case of questions. Keadby 3 received only 15 relevant representations, a very low number.

# DWD's Infrastructure and Energy Planning Team



## Dedicated experts

DWD has unrivalled experience of energy DCO projects, including nuclear, multifuel, solar and carbon capture. The team members below have a strong working knowledge of the sector and provide advice on many types of NSIP, managing the DCO process from feasibility studies to build out. Contact the team by emailing [netzero@dwdllp.com](mailto:netzero@dwdllp.com).



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