



Department for
Energy Security
& Net Zero

National Policy Statement for Natural Gas Electricity Generating Infrastructure (EN-2)

March 2023



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1 Introduction

1.1 Background

- 1.1.1 In the October 2021 Net Zero Strategy¹, we committed to take action so that by 2035, all our electricity will come from low carbon sources, subject to security of supply, whilst meeting a 40-60% increase in demand. This transition, as reiterated in the April 2022 British Energy Security Strategy², must be orderly, to ensure a secure, reliable, and affordable energy system.
- 1.1.2 The majority of new generating capacity will need to be low carbon. But new unabated natural gas generating capacity will also be needed during the transition to net zero. This will ensure that the system remains reliable and affordable.
- 1.1.3 This National Policy Statement (NPS), taken together with the Overarching NPS for Energy (EN-1), provides the primary policy for decisions by the Secretary of State on applications they receive for nationally significant natural gas electricity generating stations.
- 1.1.4 The way in which NPSs guide Secretary of State decision making, and the matters which the Secretary of State is required by the Planning Act 2008 to take into account in considering applications, are set out in Sections 1.1 and 4.1 of EN-1.
- 1.1.5 Applicants should ensure that their applications, and any accompanying supporting documents and information, are consistent with the instructions and guidance given to applicants in this NPS, EN-1 and any other NPSs that are relevant to the application in question.
- 1.1.6 This NPS may be helpful to local planning authorities (LPAs) in preparing their local impact reports.

1.2 Role of this NPS in the wider planning system

- 1.2.1 Section 1.2 of EN-1 provide details on the role of this NPS in the wider planning system.

1.3 Relationship with EN-1

- 1.3.1 This NPS is part of a suite of energy infrastructure NPSs. It should be read in conjunction with EN-1.

1 <https://www.gov.uk/government/publications/net-zero-strategy>

2 <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

- 1.3.2 This NPS does not seek to repeat the material set out in EN-1, which applies to all applications covered by this NPS unless stated otherwise.

1.4 Geographical coverage

- 1.4.1 This NPS is made under the Planning Act 2008 and applies to all natural gas-fired generation NSIPs, which in England includes generating stations with over 50MW generating capacity and in Wales is limited to natural gas generating stations with over 350MW generating capacity.
- 1.4.2 In England it will also apply to natural gas generation proposals that are directed into the NSIP regime under section 35 of the Planning Act 2008.
- 1.4.3 The Secretary of State has no functions in relation to planning applications in Wales and Scotland that do not relate to nationally significant infrastructure. However, energy policy is generally a matter reserved to UK Ministers and this NPS may therefore be a relevant consideration in planning decisions in Wales and Scotland.
- 1.4.4 In Northern Ireland, policy and planning consents for all energy infrastructure projects are devolved to the Northern Ireland Executive, so the Secretary of State will not examine applications for energy infrastructure in Northern Ireland.

1.5 Period of validity and review

- 1.5.1 See Section 1.5 of EN-1 for guidance on the period of validity and review of the energy NPS.

1.6 Infrastructure covered by this NPS

- 1.6.1 This NPS covers onshore natural gas-fired electricity generating infrastructure.
- 1.6.2 Natural gas-fired generating stations can be configured to produce Combined Heat and Power (CHP) and be Carbon Capture Ready (CCR) and/or have Carbon Capture and Storage (CCS) technology applied. Details of the government's policy in these areas are set out in EN-1. See Section 4.7 for guidance in relation to CHP and Section 4.8 for guidance in relation to CCR and CCS.
- 1.6.3 Hydrogen gas-fired electricity generating infrastructure over 50MW electricity generating capacity in England and over 350MW electricity generating capacity in Wales will require consent from the Secretary of State. The guidance that follows in this NPS has been drafted in respect of natural gas-fired electricity generating infrastructure but may also be important and relevant to hydrogen gas-fired electricity generating infrastructure.

1.7 Appraisal of Sustainability and Habitats Regulations Assessment

- 1.7.1 All the NPSs have been subject to an Appraisal of Sustainability (AoS) required by the 2008 Act and the Environmental Assessment of Plans and Programmes Regulations 2004. A Habitats Regulations Assessment (HRA) has also been prepared in accordance with the Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017.
- 1.7.2 These are published alongside this NPS and available at <https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-revisions-to-national-policy-statements>.

2 Assessment and technology-specific information

2.1 Introduction

2.1.1 As set out in Section 1.3, this NPS is additional to EN-1. Therefore, applicants and the Secretary of State should consider this NPS and EN-1 together.

2.1.2 When considering impacts for natural gas electricity generating stations, all of the generic impacts covered in EN-1 are likely to be relevant.

2.1.3 This NPS has additional policy on:

- factors influencing site selection and design;
- air quality and greenhouse gas emissions;
- landscape and visual impacts;
- noise and vibration; and
- water quality and resources.

2.2 Factors influencing site selection and design

2.2.1 Factors influencing site selection by applicants for natural gas electricity generating infrastructure are included in the section below.

2.2.2 These are not a statement of government policy but are included to provide the Secretary of State and others with background information on the criteria that applicants may consider when choosing a site.

2.2.3 The specific criteria considered by applicants, and the weight they give to them, will vary from project to project.

2.2.4 Where there are requirements on applicants or the Secretary of State to consider specific information, these are made clear in the text.

2.2.5 The choices which applicants make in selecting sites reflect their assessment of the risk that the Secretary of State, following the general points set out in Section 4.1 of EN-1, will not grant consent in any given case.

2.2.6 It is for applicants to decide what applications to bring forward and the government does not seek to direct applicants to particular sites for natural gas electricity generating stations.

2.3 Climate change adaptation and resilience

- 2.3.1 Part 2 of EN-1 covers the government's energy and climate change strategy including policies for mitigating climate change.
- 2.3.2 Section 4.9 of EN-1 sets out generic considerations that applicants should take into account to help ensure that natural gas generating infrastructure is resilient to climate change, and that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime.
- 2.3.3 As natural gas generating stations are likely to be proposed for coastal or estuarine sites or inland rivers and climate change is likely, for example, to increase risks from flooding or rising sea levels, applicants should in particular set out how the proposal would be resilient to:
- coastal changes and increased risk from storm surge;
 - for inland projects, increased risk of flash flooding from surface water or rivers;
 - effects of higher temperatures, including higher temperatures of cooling water; and
 - increased risk of drought leading to a lack of available cooling water.
- 2.3.4 The resilience of the project to climate change should be assessed in the Environmental Statement (ES) accompanying an application. For example, climate change impacts on cooling water as a result of higher temperatures should be covered in the impact assessment section on water quality and resources.

2.4 Applicant assessment

Factors influencing site selection

Land Use

- 2.4.1 Natural gas generating stations have large land footprints and will therefore only be deliverable where the applicant is able to acquire a suitably-sized site. The site will also need to be big enough to conform to government policy on CCR, Decarbonisation Readiness (DR) and CCS, set out in Section 4.8 of EN-1.
- 2.4.2 Depending on the processes adopted, CCR, CCS and mitigation measures for emissions by natural gas generating stations may require storage and use of hazardous chemicals regulated under the Control of Major Accident Hazards (COMAH) Regulations 2015³, which may have an impact on potential land-use in the vicinity. This in turn may affect the applicant's choice of site.

³ See <https://www.hse.gov.uk/comah/background/comah15.htm>

- 2.4.3 Development of a CHP generating station may also have an effect on the size of site required and land-use. Details of land-use impacts are set out in Section 5.11 of EN-1.

Transport Infrastructure

- 2.4.4 New natural gas electricity generating stations need to be accessible for the delivery and removal of construction materials, fuel, waste and equipment, and for employees.
- 2.4.5 Government policy encourages multi-modal transport and materials (fuel and residues) may be transported by water or rail routes where possible. (See Section 5.14 of EN-1 on transport impacts).
- 2.4.6 Applicants should locate new natural gas electricity generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether or not such methods are viable is likely to be determined by the economics of the scheme.
- 2.4.7 Road transport may be required to connect the site to the rail network, waterway or port. Any application should therefore incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the Secretary of State should satisfy themselves that the impacts of the new infrastructure are acceptable as set out in Section 5.14 of EN-1.

Water Resources

- 2.4.8 Some natural gas electricity generating stations have very high water demands, for example combined cycle gas turbine (CCGT) generating stations. Other technologies, for example open cycle gas turbines (OCGT) and reciprocating engines, have little water demand.
- 2.4.9 In CCGT generating stations, purified water is needed to produce the steam to drive the generating turbines and additional large volumes of water are needed to condense this steam back to water for reuse.
- 2.4.10 A supply of water will be needed for CCS processes as set out in section 4.8 of EN-1. The amount of water abstraction required and whether discharge is necessary will depend on the applicant's choice of technology, particularly the cooling system, in the proposed design.
- 2.4.11 The volumes required and availability will depend on a number of factors including:
- the extent of the water resource;
 - the likely flow rate within the body of water;
 - water supply company management plans;
 - the visual impact of the chosen system;
 - the power consumption of the cooling system; and
 - the size of the plant.

- 2.4.12 High water demands will mean that applicants' preferred sites are likely to be coastal, beside estuaries or alongside large rivers.
- 2.4.13 If sufficient quantities of water from natural sources are not available at a site then some use of mains supplies may be necessary, although it should be noted that a water company has no duty to supply water.
- 2.4.14 The regulation of water abstraction and discharge is described in Section 5.16 of EN-1.
- 2.4.15 The applicant should have investigated the availability of such a supply at an early stage. Any proposals for alternative sites proposed during the application process should demonstrate that an adequate supply of water would be available.
- 2.4.16 It is important to consider environmental impacts and mitigation measures holistically across terrestrial and marine environments. This is particularly important when considering new facilities as the siting of this infrastructure will likely be within already constrained and busy estuarine environments.
- 2.4.17 If a sufficient supply of water is not available, an alternative means of cooling such as air-cooled condensers would be required.

Technical considerations

Network Connection

- 2.4.18 Natural gas electricity generating stations connect into either the transmission or distribution networks. The technical feasibility of export of electricity from a generating station is dependent on the capacity of the grid network to accept the likely electricity output together with the voltage and distance of the connection.
- 2.4.19 Applicants will usually have assured themselves that a viable connection exists before submitting the development proposal to the Secretary of State and, where they have not done so, they take that commercial risk.
- 2.4.20 Even if the precise route of a connection has not been identified, in accordance with Section 4.10 of EN-1 any application to the Secretary of State must include information on how the generating station is to be connected and whether there are any particular environmental issues likely to arise from that connection.
- 2.4.21 Further advice on the relationship with grid applications is set out in EN-1 and the NPS for Electricity Networks Infrastructure (EN-5).

Impacts

- 2.4.22 The impacts identified in Part 5 of EN-1, 2.6 of this NPS and below, are not intended to be exhaustive.
- 2.4.23 Applicants must provide information on relevant impacts as directed by this NPS and the Secretary of State.

Air quality and greenhouse gas emissions

- 2.4.24 The applicant must carry out an assessment on air quality and greenhouse gas emissions, as required in EN-1, consulting the Environment Agency (EA), Natural

Resources Wales (NRW) and other statutory authorities at the initial stages of developing their proposals, as set out Section 4.2 of EN-1.

- 2.4.25 If the applicant requests a scoping opinion from the Secretary of State before an application is submitted, any views received from the EA should be made known to the Secretary of State so that they can take account of the EA's advice on potential emissions.

Landscape and visual

- 2.4.26 The main structures for a natural gas generating station, including the turbine and boiler halls, exhaust gas stacks, storage facilities, cooling towers, and water processing plant, are large. They will have an impact on the surrounding landscape and visual amenity. The overall size of the development will inevitably be dependent on technology and design. Night-time lighting for continuous operation will also have an impact on visual amenity.
- 2.4.27 The applicant must include a landscape and visual impact assessment as part of the ES, as set out in Section 5.10 of EN-1.
- 2.4.28 The applicant must also consider the design of the plant, including the materials to be used, and the visual impact of the plant, as set out in Section 5.10 of EN-1 in the context of the local landscape.

Noise and vibration

- 2.4.29 The ES must include a noise assessment as described in Section 5.12 of EN-1 including an assessment of the effect of underwater or subterranean noise.

Water quality and resources

- 2.4.30 Where the project is likely to have effects on water quality or resources the applicant must undertake an assessment as required in Section 5.16 of EN-1. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.
- 2.4.31 The design of water-cooling systems for natural gas electricity generating stations will have additional impacts on water quality, abstraction and discharge. These include:
- discharging water at a higher temperature than the receiving water, affecting the biodiversity of aquatic flora and fauna;
 - use of resources may reduce the flow of water courses, affecting the rate at which sediment is deposited, conditions for aquatic flora and potentially affecting migratory fish species (for example salmon);
 - 'fish impingement and/or entrainment' – i.e. being taken into the cooling system during abstraction; and
 - chemical anti-fouling treatment of water for use in cooling systems may have adverse impacts on aquatic biodiversity.

2.5 Mitigation

Air quality and greenhouse gas emissions

- 2.5.1 Mitigations for air quality and greenhouse gas emissions will depend on the type and design of a generating station. However, Selective Catalytic Reduction (SCR) – which reduces NO_x by the injection of a suitable reagent into flue gas over a catalyst – will have additional adverse impacts for noise and vibration, release of dust and handling of potentially hazardous materials, for example the ammonia used as a reagent.
- 2.5.2 In line with Section 5.2 of EN-1 the Secretary of State, in consultation with EA and NRW, should be satisfied that any adverse impacts of mitigation measures for emissions proposed by the applicant have been described in the ES and taken into account in the assessments.

Landscape and visual

- 2.5.3 It is not possible to eliminate the visual and landscape impacts associated with a natural gas electricity generating station.
- 2.5.4 Mitigation is therefore suggested to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable.
- 2.5.5 Applicants should design natural gas electricity generating stations with the aim of providing the best fit with the existing local landscape so as to reduce visual and landscape impacts. This may include design of buildings to minimise negative aspects of their appearance through decisions in areas such as size, external finish and colour of the plant as far as compliance with engineering and environmental requirements permit.
- 2.5.6 The precise architectural treatment will need to be site-specific.
- 2.5.7 Reduction of visual and landscape impacts may often involve enclosing buildings at low level as seen from surrounding external viewpoints. This makes the scale of the plant less apparent, and helps conceal the lower level, smaller scale features of the plant.
- 2.5.8 Earth bunds and mounds, tree planting, or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities.
- 2.5.9 Where the existing landscape is more industrial, design may involve other forms of visual impact mitigation.

Noise and vibration

- 2.5.10 As described in Section 5.12 of EN-1, the primary mitigation for noise from natural gas electricity generating stations is through good design, including enclosure of plant and machinery in noise-reducing buildings wherever possible and to minimise the potential for operations to create noise. Noise from gas turbines should be mitigated by attenuation of exhausts to reduce any risk of low-frequency noise transmission.

- 2.5.11 Noise from apparatus external to the main plant may be unavoidable. This can be mitigated through careful plant selection.

Water quality and resources

- 2.5.12 In addition to the mitigation measures set out in Section 5.16 of EN-1, design of the cooling system should include intake and outfall locations that avoid or minimise adverse impacts.
- 2.5.13 There should also be specific measures to minimise fish impingement and/or entrainment and excessive heat from discharges to receiving waters.

2.6 Secretary of State decision making

Impacts

Air quality and greenhouse gas emissions

- 2.6.1 The Secretary of State should generally give air quality and emissions considerations substantial weight, following the advice in Section 5.2 of EN-1.
- 2.6.2 In addition, there are specific considerations which apply to natural gas electricity generating stations as set out above.
- 2.6.3 Operational CO₂ emissions are a significant adverse impact of natural gas electricity generating stations. Although a carbon assessment will be provided as part of the ES, the policies set out in Part 2 of EN-1 will apply.
- 2.6.4 As set out in Section 5.3 of EN-1, the Secretary of State does not, therefore, need to assess individual applications for planning consent against operational carbon emissions and their contribution to carbon budgets, net zero and our international climate commitments.
- 2.6.5 Natural gas generating stations are likely to emit nitrogen oxides (NO_x). To meet the requirements of Defra's legislation on industrial emissions⁴, natural gas generating stations must apply a range of mitigation to minimise NO_x and other emissions.
- 2.6.6 These emissions are regulated by the EA and NRW through the Environmental Permitting Regulations, which require applicants to obtain an Environmental Permit (EP) before commencing operation of a new natural gas generating station.
- 2.6.7 Details of the EP regime are set out in Section 4.11 of EN-1.

Landscape and visual

- 2.6.8 Generic landscape and visual impacts are covered in detail in Section 5.10 of EN-1.
- 2.6.9 The applicant should have undertaken an appropriate landscape and visual assessment using recognised methodologies and have taken measures to

4 <https://www.gov.uk/guidance/industrial-emissions-standards-and-best-available-techniques>

minimise the effects of the natural gas electricity generating station on landscape and visual amenity as far as reasonably practicable.

- 2.6.10 In considering whether the measures proposed are sufficient to achieve these objectives the Secretary of State should take advice from the relevant statutory consultees.
- 2.6.11 In requiring any design adjustments to minimise adverse effects, the Secretary of State needs to be aware of the statutory and technical requirements that inform plant design and may require the incorporation of certain design details, for example chimney stack height, as set out in Section 5.10 of EN-1.
- 2.6.12 If having regard to the considerations in respect of other impacts set out in EN-1 and this NPS, the Secretary of State is satisfied that the location is appropriate for the project, and that it has been designed sensitively (given the various siting, operational and other relevant constraints) to minimise harm to landscape and visual amenity, the visibility of a natural gas electricity generating station should be given limited weight.

Noise and vibration

- 2.6.13 Generic information on the assessment of noise and vibration impacts are covered in detail in Section 5.12 of EN-1.
- 2.6.14 In addition, there are specific considerations which apply to natural gas electricity generating stations as set out above. Sources of noise and vibration from natural gas generating stations may include:
- gas and steam;
 - the gas and steam turbines that operate continuously during normal operation; and
 - external noise sources such as externally sited air-cooled condensers that operate continuously during normal operation.
- 2.6.15 The Secretary of State should be satisfied that noise will be adequately mitigated through proposed requirements, and if not strengthen these as part of the consent.
- 2.6.16 The Secretary of State will need to take into consideration the extent to which operational noise will be separately controlled by the EA or NRW.
- 2.6.17 The Secretary of State should not grant development consent unless it is satisfied that the proposals will meet the aims set out in Section 5.12 of EN-1.

3 Glossary

3.1.1 This glossary sets out the most frequently used terms in this NPS. There is a glossary in each of the energy NPSs. The glossary set out in EN-1 may also be useful when reading this NPS.

Term	Definition
AoS	Appraisal of Sustainability
Associated infrastructure	Development associated with the NSIP as defined in Section 115 of the Planning Act
BEIS	Department for Business, Energy and Industrial Strategy
Biomass	Material of recent biological origin derived from plant or animal matter
CCGT	Combined Cycle Gas Turbine
CCR	Carbon Capture Readiness
CCS	Carbon Capture and Storage
CHP	Combined Heat and Power
Co-firing	Use of two fuel types in a thermal generating station
DEFRA	Department of Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero (established in February 2023) focussing on the energy portfolio from the former Department for Business, Energy and Industrial Strategy (BEIS).
DLUHC	Department for Levelling Up, Housing & Communities
DR	Decarbonisation Readiness
EA	The Environment Agency
EN-1	Overarching NPS for Energy
EP	Environmental Permit issued by the EA
ES	Environmental Statement
Generic Impacts	Potential impacts of any energy infrastructure projects, the general policy for consideration of which is set out in EN-1
HRA	Habitats Regulations Assessment

LPAs	Local Planning Authorities
MMO	Marine Management Organisation established under the Marine and Coastal Access Act 2009
NDC	Nationally Determined Contribution
NOx	Nitrogen oxides
NPS	National Policy Statement
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
OCGT	Open Cycle Gas Turbine
SCR	Selective Catalytic Reduction
SEA	Strategic Environmental Assessment (under the Environmental Assessment of Plans and Programmes Regulations 2004)
Thermal Generating Station	Electricity generating station that uses a heat source (combustion of fuel or nuclear) to create steam that drives a generating turbine or which uses gas directly to drive a generating turbine
Weight	Within this NPS the hierarchy of weight is 1) limited 2) moderate 3) great 4) significant 5) substantial

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