



A specialist energy consultancy

Solar energy
services

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TNEI is an independent specialist energy consultancy providing technical, strategic, environmental and consenting advice to organisations operating within the conventional and renewable energy sectors.

Solar energy services

Our team of experts has extensive knowledge and experience in conventional photovoltaic (PV) and concentrated solar power (CSP) technologies, both tower and trough type, as well as storage solution technologies. We provide site identification and feasibility studies, site design and grid studies, consenting services and project management of multiple sites.

Site identification and feasibility

Our site identification and feasibility services include:

- GIS - sieving techniques using both publicly available and TNEI-compiled datasets, including topography, aspect, flood risk, grid shading and Global Horizontal Irradiance
- Environmental constraints and sensitivity mapping
- Grid feasibility – a high level assessment provides a risk review based on connection points and an indicative cost. The main value of these studies is to highlight any significant technical difficulties in grid connection
- Reporting – preparing bespoke, site specific feasibility studies that will assess the opportunities and constraints of the proposed development site, including solar resource and shading
- Landownership identification and initial approaches
- Portfolio creation – creation of portfolios of sites to target specific areas or assess existing land-banks to identify appropriate development sites
- Solar resource assessment
- Constructability assessments, including ground risk quantification, construction programming and transport / logistics planning.

Grid and site design

Our grid and site design services include:

- Grid connection studies and applications, submitting and managing budget and formal grid connection applications, including negotiation with the Distribution Network Operator (DNO)
- Power system studies, including modelling, flow and losses, protection coordination, flicker, harmonics studies, earth system design and over-voltage studies
- Grid code compliance studies, e.g. P28 power quality, G5/4-1 harmonic assessment and low and high voltage ride through (LVRT and HVRT) compliance assessments
- Grid code compliance testing, onsite support
- Indicative site layouts and shading assessments can be produced using GIS and solar design software, e.g. PV Syst.

Consenting services

TNEI is experienced in assessment of environmental impacts and the submission of planning applications for solar developments and our experts can assist in obtaining planning consent for all scales of solar development, including:

- Pre-application discussions with key stakeholders and the Planning Authority
- Environmental Impact Assessment (EIA) Screening and Scoping
- Preparation and management of EIAs and environmental reports
- Preparation and management of programmes of community engagement
- Preparation and management of planning applications, including preparation of planning statements, design and access statements, statements of community involvement and other planning documents
- Commissioning and management of other specialist technical consultants
- Negotiation of planning conditions for consent
- Satisfaction or removal of planning conditions
- Preparation of and management of planning appeals.

Our experienced team undertakes site design, production of site layouts, noise assessment, and other technical assessments as required to enable you to gain consent for your project.

Project management of multiple sites

Project management plays a hugely important role where site portfolios are being considered. Having worked on renewable energy project portfolios with clients such as Tesco, Severn Trent Water and RES UK & Ireland Ltd, TNEI has extensive experience of managing multi-site projects through the planning process within defined timescales and to agreed budgets.

Our project management expertise ensures that realistic project programmes are developed and managed so that deadlines can be achieved, budgets are met and a high level of quality is maintained. Utilising our in-house team at an early stage to complete an initial due diligence review assists in prioritising sites and considering the entire portfolio as a programme.

The use of a single consultancy, managing all sites, helps to deploy economies of scale through, for example, the use of template application formats, the use of the same sub-consultant teams across all projects, lessons learned and a reduction in the risk of issues being overlooked. We are always happy to tailor our approach to client specific requirements or use existing client templates where required.

Case studies

Service: Prediction and assessment of operational noise
Client: Green Hedge Renewables

TNEI was commissioned by Green Hedge Renewables to provide an environmental Noise Impact Assessment (NIA) to support the planning application of a proposed solar farm in Fife, Scotland. The purpose of the NIA was to determine the impact of the development in noise terms on nearby noise sensitive receptors (NSRs) and provide details of any required mitigation, where necessary. The assessment included the following methodology:

- Noise predictions — noise propagation modelling to recognised international standards for two development layouts, based on a centralised system and a de-centralised system, as well as considering multiple noise sources, including transformers, centralised inverters, string inverters and associated cooling.
- Assessment of noise — noise imission levels were compared against noise rating (NR) curves including calculation of internal noise levels and consideration of tonal content.
- Production of figures – operational noise contour plots were presented as isopleth contour lines overlaid on digital mapping data.
- Consultation with the Environmental Health Service in order to discharge noise related planning conditions.

The NIA report was submitted on time as part of the planning application for the development. No comments were received from the Environmental Health Service during the determination of the application and the development was subsequently consented.

Following issue of the decision notice, TNEI consulted with the Environmental Health Officer (EHO) to discharge a noise related planning condition, which was resolved quickly and to the satisfaction of both the client and EHO.

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Key contacts

Jason McGray
Principal Consultant



Jason has over 8 years' experience in the environmental consultancy sector, working on Environmental Impact Assessments, environmental safeguarding and environmental due diligence projects for energy related developments of varying scales. He is an Institute of Environmental Management and Assessment (IEMA) accredited Registered EIA Practitioner, Chartered Environmentalist and Full IEMA Member. Jason has extensive experience of coordinating Environmental Impact Assessments, technical review of a range of environmental assessments, production and review of environmental statements and consenting documents and undertaking a range of topic specific assessments.

Email: jason.mcgray@tneigroup.com
Tel: +44(0)191 211 1430

Johan Smith
Senior Consultant



Johan has 10 years' experience in power systems analysis, including transmission and distribution system modelling, network planning and feasibility of integrating power plants into electrical grids, HVAC/HVDC interconnections and grid code compliance. During his career, he has developed system models for electrical power networks, both in Africa and internationally. Since 2012, he has been performing grid integration and compliance studies for independent power producer renewable energy projects in South Africa and the UK.

Email: johan.smith@tneigroup.com
Tel: +27(0)21 410 8912

Get in touch

We are a specialist, independent company. That's why we can offer a flexible, personal service and help our clients quickly and efficiently, without all the big corporate distractions.

But most of all, we love to solve problems.

For more information about our solar energy services, please contact one of our experts on the methods above.



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For more information about who we are and what we do, please contact: info@tneigroup.com

tneigroup.com



Manchester
2nd Floor Bainbridge House
86 - 90 London Road
Manchester
M1 2PW
+44 (0)161 233 4800

Newcastle
7th Floor West One
Forth Banks
Newcastle Upon Tyne
NE1 3PA
+44 (0)191 211 1400

Glasgow
Queens House
19 St. Vincent Place
Glasgow
G1 2DT
+44 (0)141 428 3180

Cape Town
1st floor
Willowbridge Centre
39 Carl Cronje Drive
Cape Town 7530
+27 (0)21 974 6181

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