



A specialist energy consultancy

Acoustic and
noise 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.

Acoustic and noise services

We offer a complete suite of noise consultancy services including environmental and occupational noise assessments, vibration and blast monitoring and noise control and management.

Our large team, all of whom are affiliated with the Institute of Acoustics, has experience across a wide range of sectors from residential developments to renewable energies and oil and gas to major infrastructure projects. Our diverse mix of knowledge and experience means that we can match specifically skilled consultants to your project, ensuring you receive the best possible advice.

The projects we work on are often subject to high levels of scrutiny by planning authorities, enforcement agencies and third parties. TNEI provides robust technical services to ensure that the assessments are defensible throughout planning and application processes, at Public Inquiries or through other legal proceedings. Our Expert Witnesses regularly work on planning appeals and attend Public Inquiries and we have an excellent record of success in this area. Our team has prepared evidence for over 30 Public Inquiries, for which all noise issues have been resolved to the satisfaction to the appointed Inspector / Reporter.

We strive to deliver accurate and compliant assessments whilst also offering a pragmatic approach to noise problems. We take an active role in the advancement of industry knowledge and are regularly involved in acoustics steering groups and consultation panels. Our staff formed part of the peer review group for the Government-endorsed Institute of Acoustics document 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (IOA GPG) and also produced one of the Supplementary Guidance Notes.

The TNEI team utilises the latest noise modelling software alongside our own bespoke software models to produce accurate, quality controlled assessments. Hardware includes a large stock of environmental noise monitoring kits, meteorological measurement equipment and occupational noise monitoring equipment, which means we can respond quickly to our clients' monitoring requirements and run multiple projects concurrently and efficiently.

Our noise and acoustics experts, together with our modelling software and hardware mean we are expertly placed to support the noise requirements of your projects.

Our expert consultants provide a range of noise and acoustic services for a variety of developments, spanning industrial sectors, renewable and conventional energy, commercial and residential property.

Industrial noise services

We offer noise services to a diverse range of sectors, including waste management, manufacturing, oil and gas, food and drink, animal rendering, quarrying and sawmills. Specialist services include:

- Environmental / PPC permitting and planning applications
- Noise propagation modelling
- Compliance monitoring
- Noise control and noise management
- Silencer, enclosure and barrier specification
- Investigation of noise complaints
- Occupational noise assessment.

Renewable and conventional energy services

TNEI specialises in energy, and as such, we have expert knowledge that can be applied to a wide variety of energy and infrastructure projects. Typical projects and activities that we undertake include:

- Baseline noise level monitoring (short, medium and long term)
- Planning applications for hydro (ROR and storage), solar farms, anaerobic digestion and biomass schemes
- Energy from waste – planning and IPPC applications
- Noise propagation modelling for substations and electrical infrastructure
- Wind turbine performance testing
- Construction noise prediction, monitoring and management
- Due diligence
- Expert witness, public inquiry and planning appeals
- ETSU-R-97 wind farm noise assessments, cumulative conditioning and mode management specification.

Master planning, commercial and residential services

Acoustics and noise are becoming increasingly important in the design and specification of new commercial and residential developments. This has been driven, in part, by changes in standards and adopted guidelines, but is also a major consideration in the implementation of sustainable development through schemes such as BREEAM. Our services which we offer to planners, architects and developers include:

- Site suitability assessments and master planning
- Assessments of proposed developments on existing residential receptors
- Assessments of existing noise sources on future developments
- Discharge of planning conditions
- Facade and glazing configurations
- Sound insulation specification
- Calculation of internal noise levels from mechanical ventilation systems
- Impact assessment of road, rail and air traffic noise and vibration on new developments
- Construction noise assessments, noise monitoring and control.

Case studies

Service: Noise propagation modelling
Client: Alstom / GE Grid Solutions

TNEI was commissioned to undertake noise propagation modelling of the onshore substation for the 300MW Galloper Offshore Wind Farm. The purpose of the project was to ensure that noise levels from the development would be below the noise level limits set within the development's planning conditions.

The Galloper Substation is particularly complex, utilising multiple harmonic filter compounds, some of which have the potential to generate high levels of operational noise. TNEI produced a comprehensive noise propagation model incorporating over 100 individual noise sources. Initial modelling indicated that noise limits had the potential to be exceeded, therefore, TNEI worked with the client throughout the procurement process over an 18 month period to assess the acoustic performance of all potential plant items. Careful selection of plant and investigation of possible noise control measures resulted in the overall sound pressure levels being reduced by more than 20dBA at the nearest noise sensitive receptors. Continual assessment throughout the tendering process enabled specification of plant; achieving appropriate levels of protection for the nearest receptors whilst minimising the requirements for expensive noise control measures.

Service: Environmental Impact Assessment (EIA) and production of Environmental Statement (ES)
Client: Future Earth Energy

An ES Noise Chapter was required to be authored as part of TNEI's management of the EIA process and ES production of a proposed 15MW combined heat and power, energy from waste plant.

The proposed development would introduce new noise sources into the local area in the form of fixed plant, including exhaust stacks, externally located Air Cooled Condensers (ACC), and internally located superheaters, boilers and associated plant. An operational noise assessment was undertaken in accordance with BS4142, considering existing nearby receptors as well as a proposed 2,000 unit housing development to be built on the neighbouring site. In order to determine appropriate noise limits, baseline noise level monitoring was undertaken for a period of one week, alongside simultaneous meteorological monitoring. A noise propagation model was produced and the predicted noise levels at the receivers were assessed against the derived limits before appropriate noise control measures were identified.

The operational noise assessment was incorporated into the ES and the development has since received planning consent. TNEI is now engaged in managing the Environmental Permit application process. As part of this work, the noise model is being refined further to take account of the final plant design and to this end, TNEI has recently carried out operational noise monitoring of similar plant at a site in Italy. This data has been used to inform the new noise model and subsequent work will include an assessment of BAT (Best Available Techniques) to support the IPPC permit application.

Key contacts

James Mackay
Head of Technical Services



Since joining TNEI over 10 years ago, James has developed a detailed knowledge of wind farm noise assessments and has managed the growth of TNEI's noise team.

James holds the Diploma in Acoustics and Noise Control, is a Member of the Institute of Acoustics and was involved in the drafting and review of the Institute of Acoustics document 'A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise.'

Whilst at TNEI, James has been involved with more than 160 ETSU-R-97 wind farm noise assessments and several hundred assessments of smaller single turbine schemes. In addition to baseline noise assessments James also has experience of wind turbine compliance testing, complaints investigations and Planning Appeals.

Jim Singleton
Principal Technical Consultant



Jim carries out environmental noise propagation modelling, assessment and reporting for a wide range of sectors, with particular expertise in industrial, commercial and energy projects. Recent projects of note include energy from waste plants, capacity mechanism schemes, port activities, electrical infrastructure and road, rail and aircraft noise.

He leads projects for IPPC permitting, planning applications, conditions discharge, EIA, and noise control and management. He is also experienced in noise and vibration monitoring (including blasting), construction and decommissioning work, occupational noise assessments and architectural acoustics.

Jim has 10 years' experience working on projects across the UK and abroad. He is a full Member of the Institute of Acoustics (IOA), holds a first class BSc (Hons) and the IOA Diploma in Acoustics and Noise Control.

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 acoustic and noise services, please contact James Mackay; email: james.mackay@tneigroup.com or call: +44 (0)191 211 1414.



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

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