



## Job description - Energy Modelling Analyst

### Background

The Energy Technologies Institute (ETI) is looking for an Energy Modelling Analyst to join its modelling and strategy team. This role will be on a fixed term basis, up until December 2017.

ETI is a public private partnership between global energy and engineering companies (BP, Caterpillar, EDF, Rolls-Royce, Shell) and the UK Government. ETI's work links industry, academia and government to develop energy technologies to help the UK address its long term emissions reduction targets.

ETI's strategy team works to identify valuable low carbon technology opportunities and to assess the strategic challenges surrounding the commercialisation of such new technologies. This work is underpinned by an analysis of the UK energy system including ETI's Energy System Modelling Environment (ESME – see <http://www.eti.co.uk/project/esme/>). Over time ESME has developed into one of the most powerful energy system models for the UK, with outputs and insights from the modelling used in a variety of contexts. In addition, ETI also works with a suite of other modelling tools which study low-carbon heating, renewable energy sources, transport technologies and more.

This role offers an exciting opportunity to bring to bear your strong quantitative and modelling skills in a creative and forward looking environment.

### Purpose

To support the ETI's energy systems analysis work by applying and developing modelling tools for strategic insights into the options for the UK energy system. You will undertake modelling, interpretation and analysis, and you will present results to colleagues and to a broad set of energy stakeholders.

### Principal accountabilities

Working with the Strategy Manager for Modelling you will use and develop ETI's modelling tools to deliver insights on the options for the future energy system and implications for energy policy.

Specific accountabilities may include:

- Support the Strategy Manager for Modelling in using ESME and other models for technical and economic analysis of key low carbon technologies for the 2020-2050 energy system.
- Perform targeted model runs, e.g. sensitivity analysis of key scenarios, using your judgement to translate policy-related questions and technology-related questions into the quantitative modelling framework.
- Assist with maintenance and development of modelling software code, e.g. Excel VBA, SQL databases, AIMMS, Matlab and similar.
- Produce high quality summaries and analyses of modelling work for the ETI strategy team and external audiences.

- Support ETI analysis of pathways, decision points, option values and barriers to transition. This will include developing an understanding of 'real world' costs and constraints, and how well they are represented in modelling work.
- Assist in projects to research specific technology areas. This could involve background research of technology performance, cost, subsidies or uptake.
- Build understanding of the economic implications of modelling methodologies (e.g. discount rates, treatment of timing). Support the Strategy Manager for Modelling in exploring alternative approaches to using systems modelling to inform policy debate.
- Working with technical experts to maintain, update or adapt modelling assumptions and inputs
- Managing and delivering discrete modelling or analysis tasks as components of ETI projects or contracts commissioned by third party clients

### Qualifications, experience & competencies required

This role requires:

- Quantitative skills – experience of quantitative analysis, mathematical modelling and use of computer models, ideally including some experience of mathematical optimisation.
- Coding skills – experience with Excel VBA, Matlab, SQL Server databases or similar in a technical or scientific application.
- Experience in a sector related to energy is desirable but not essential.
- Good presentation skills – ability to present technical work to colleagues and to external audiences.
- Graduate in a relevant quantitative subject, e.g. science, engineering or mathematics, preferably with a further degree.
- High quality writing and analytical skills – ability to distil key messages from complex source data/reports.
- Strong inter-personal skills, articulate and able to work with a diverse team of colleagues with backgrounds across science, engineering, business, economics and policy.

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