



# Energy Potential

Energy Potential provides risk management products and advisory services to the GB energy sector.



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# Energy Potential

Energy Potential was created by Gary Huish and Andy Pace who have over 40 years' experience in the UK Energy Sector. Both have worked at senior levels and can provide expertise in many aspects of the energy supply chain.

Energy Potential provides advisory services to clients who are developing or changing business strategies in the UK Energy Markets. We develop and review strategic plans, quantify market and regulatory risks, and undertake due diligence assessments.

Energy Potential also develops risk management tools and provides market analysis services. We offer advice and training in many other aspects of the energy industry, ranging from network charging to market data, risk analysis, financial modelling and asset valuation.

Energy Potential supports its clients to maximise the potential within their business. Client satisfaction is paramount to our way of working and our core focus is to help your business succeed.

## About Us

Gary has worked across Utilities, Banking and Fund Management. He was Global Head of Commodity Risk for Morgan Stanley, the US based Investment Bank and most recently created the risk and accounting infrastructure for an Investment Manager. He started his career in the UK electricity sector in 1988.

Andy has worked in distribution, generation and supply within the UK electricity sector. He was the Senior Energy Trader at NRG Energy, and helped develop the new UK power distribution charging methodologies while working for Electricity North West. Most recently he worked as a Senior Consultant for Cornwall Insight, advising clients on commercial and regulatory aspects of the electricity industry. Andy also currently sits on the CUSC panel.

Detailed Biographies are appended.



## Our Philosophy

- + Understand client objectives and create risk management strategies that support consistent, successful outcomes
- + Transparent, evidence-based analysis drives good decisions
- + Detail matters, but analysis needs clear and effective communication



## Energy markets are changing...

The UK energy markets are evolving rapidly with emerging technologies, disruptive business models, the continued push for decarbonisation and substantive regulatory change.

Most commentators expect the energy sector landscape to change dramatically over the next ten years as it reacts to these new drivers.

In a dynamic and fast changing environment, the importance of risk management and understanding future change becomes critical.

Energy Potential is active in shaping how the energy market is evolving. We can help you understand the impact of market change and develop strategies to mitigate risk and capitalise on opportunities as they emerge.

## Our Products

Energy Potential has developed a number of risk management models for the energy sector. To date, we have three models which are now available to clients and more are under development. Our aim is to provide models that add value to our clients on an ongoing basis. More details are provided below:

### Power Purchase Agreement (PPA) Assessment Model

The Energy Potential PPA model allows suppliers and generators to assess the income and risks associated with PPAs. The model can be used for:

- **PPA Negotiation** – The model can be used to assist both generators and suppliers in the negotiation of a PPA. The model uses half hourly granularity to determine individual income streams based on actual or forecast data including a half hourly wholesale market forward curve and embedded benefits.
- **Budgets & forecasting** – The model can be used to determine forecast income over a number of years and help set budgets further out.
- **Regulatory change** – As regulatory decisions are made, they are implemented into the model. This enables users to see the impact of these changes from the planned implementation date.
- **Price risk** – The model allows price scenarios to be applied to determine the range of income and potential risk associated with the PPA for the supplier. This enables the supplier to assess these risks within the PPA to the benefit of both the supplier and generator.
- **Custom/ standard tariff generator** – The model provides two standard tariffs formats for the wholesale element of a PPA and the ability to create custom seasonal time of day tariffs that more closely match the expected export from a generator. This enables suppliers to manage their risk better and share the benefit of this with generators.
- **Regular updates** – The model is updated every two months with the latest prices or forecasts and any regulatory change that has been implemented in the intervening period. This ensures that the user is making decisions based on the latest data.

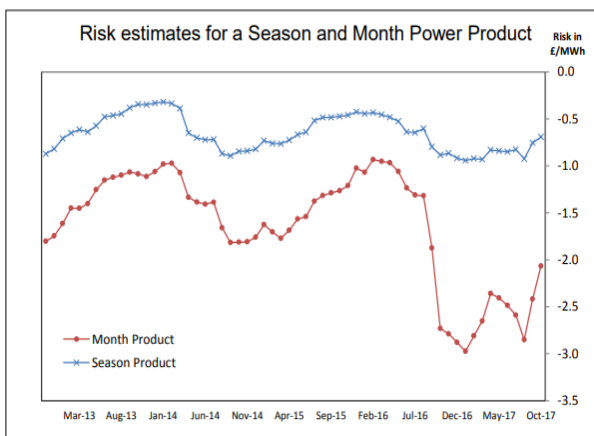
The PPA model is available on a subscription basis. If you are interested in finding out more about this product please contact [enquiries@energy-potential.com](mailto:enquiries@energy-potential.com)



## Value-at-Risk Model

Measuring the risk of an asset portfolio is one of the classic problems in finance, and a favoured solution is the Value-at-Risk (VaR) concept.

The Energy Potential VaR model provides a comprehensive solution to monitoring and managing risk for smaller organisations who want to avoid complicated, costly implementation processes.



Our VaR engine is designed to be low cost and require minimal configuration; but it does not compromise and is based around a robust methodology used by many leading financial institutions, consistent with current Regulatory standards. The model and functionality can be used through Excel which makes it easy to use and allows an analyst to run your risk, fully independently, very quickly.

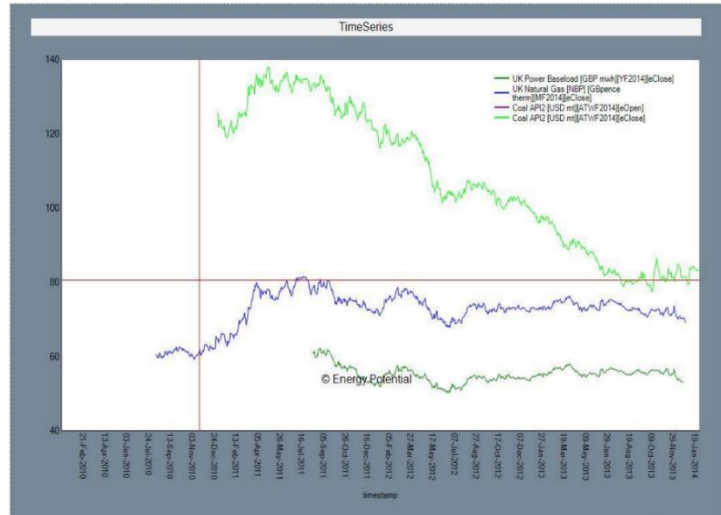
In addition to determining VaR, the model can also act as a full analysis and reporting suite for VaR, risk positions, and market risk data. This includes the assessment of potential trades and the incremental increase/ decrease in risk that will result. The model also allows separate portfolios to be managed and the exposure measured separately and in aggregate taking account of the correlations between assets in each trading book.

The VaR model is available on a subscription basis and market prices can be supplied from the Energy Potential data warehouse if required. If you are interested in finding out more about this product please contact [enquiries@energy-potential.com](mailto:enquiries@energy-potential.com)

## Data solutions

Energy Potential has developed a comprehensive data warehouse which is used for internal analysis and the provision of market data. This has an extensive history of price data across energy assets and we have a rich collection of fundamental data across power and fuels markets.

The data warehouse has a chart application that sits on top of the data. This adds functionality to raw data sets and, for example, supports dynamic cleaning of data, manages currency and asset units conversions, and ensures cross sectional consistency in all data. The flexibility of this system allows data to be added very easily, charts to be saved and output data sets exported to Excel.



The data solutions warehouse is available as a standard package or a subscription basis where market prices are updated on a regular basis. If you are interested in finding out more about this product please contact [enquiries@energy-potential.com](mailto:enquiries@energy-potential.com)

## Our Services

We help our clients manage risk using clear analysis to provide insightful and practical solutions.

### Risk Management

We can identify and quantify the price risks affecting your business

- + business strategy development and review
- + risk frameworks and policies
- + hedging and risk mitigation
- + contract structuring and valuation

### Regulation

We can help clients understand their regulatory environment

- + current regulatory advice
- + anticipate regulatory change
- + process hedging approaches to mitigate risk
- + regulatory process benchmarking

### Due Diligence

For asset purchases to takeovers we can support

- + strategic assessment
- + market and regulatory environment
- + asset financial modelling
- + contractual T&C review

### Analysis

Independent and fact driven analysis, using our own data sets and models

- + fundamental and market driven approaches
- + transparent model approach
- + thoughtful interpretation, clear communication



## Risk Management

The measurement and management of Energy Risks requires specialist skills. We believe that forward assessment and planning are vital.

A well-defined risk appetite provides the context to assess a business idea. Clear, detailed analysis helps you identify and quantify risks; an accurate risk representation and the ability to understand risk as its drivers change place you in a strong position to execute a successful strategy.

### + Risk policy and frameworks

- + Governance: defining risk appetite, risk policy frameworks and documentation
- + Creating and calibrating risk controls

### + Risk measurement

- + Risk factor identification
- + Risk models, valuation and risk sensitivities
- + Process design
- + Portfolio risks: VaR

### + Risk Systems and reporting

- + Risk system advice
- + Tailored market reporting



## Regulatory Risk

Energy Potential has been actively involved in the development of the regulatory framework within the electricity industry. Andy Pace has chaired numerous Industry Code working groups and is currently a member of the CUSC panel. Andy also sits on the Ofgem forward looking charges taskforce which is undertaking a fundamental review of network charging.

Gary Huish has experience of the regulatory framework for UK Energy and more recently of the new Banking regulations introduced by Prudential Regulation Authority in the UK and Federal Reserve in the US. He has a good working knowledge of these regulations and has implemented procedures and monitoring systems and has authored several firm-level regulatory submissions. Our services in this area include:

### + **Inform**

- + Inform on the current regulatory regime
- + Identify and assess regulatory change
- + Help manage regulatory change processes

### + **Assess impact and develop strategies**

- + Bespoke impact assessment of regulatory change
- + Risk mitigation strategies
- + Ensuring compliance and process review



### + **Support the change process**

- + Support regulator consultations, providing analysis and drafting responses
- + Develop proposals for change and provide representation on working groups
- + Review client operations and benchmark against regulatory requirements

## Due Diligence

The Energy Potential approach is to focus on a no 'surprises' mentality. When investing in assets or acquiring a business, it is essential that due diligence is performed by individuals with the correct expertise and knowledge.

We have experience in the analysis and sign off for large, complicated transactions, both paper and asset driven. We can undertake due diligence to a high standard, identifying risks and opportunities.

- + **Strategic review**

- + Assessing the market environment
- + Developing business cases and strategic plans
- + Independent review of client business strategy

- + **Asset valuation**

- + Market price approaches
- + Regulatory risk impacts
- + Valuation scenario development

- + **Cashflow modelling**

- + Return on capital
- + Risk adjusted return

- + **Financial Model Audit**

- + Review and qualify internal valuation schemes
- + Independent model implementation testing
- + Methodology replication



## Analysis

Energy Potential is able to provide robust analysis and market intelligence to support the business needs of our clients. We are proficient in a range of analytical techniques and offer both standard products and bespoke solutions. We know how to price flexibility and optionality, a value driver often missed in standard economic approaches.

- + **Market Intelligence**

- + Timely, accurate, organised market data
- + Bespoke reporting that is tailored to meet your requirements

- + **Analysis**

- + Impact assessments and stress testing
- + Optimisation approaches
- + Trading signals

- + **Model development**

- + Suite of models under development
- + Bespoke analysis tools

- + **Portfolio risk analysis**

- + Our flexible VaR engine supports portfolio risk assessments, including back-testing



## Gary Huish – Director



### Education

- BSc Physics, 1st Class, Manchester University 1988-1991
- PhD Mathematical Physics, University of Newcastle Upon Tyne 1991 -1995

### Summary

Gary has 19 years' experience working in the wholesale energy markets and has a unique perspective having worked in the Utility, Banking, and Investment Manager Sectors.

Most recently Gary ran the Risk and Finance function of Nanook Advisors, an alternative Investment Company based in London. He built risk, reporting and finance systems, had daily oversight of the asset portfolio, and managed the valuation processes.

Previously Gary was European and then Global Head of Commodity Risk for Morgan Stanley, the US based Investment Bank. He managed teams in London and New York and was responsible for all aspects of Market Risk and supported Operational Risk. As well as day-to-day trading book oversight, he was responsible for Large Transaction due-diligence, with sign-off responsibilities. He helped design risk systems, risk limit frameworks, and risk-reporting processes. He had significant interaction with regulators (in the US and UK) and authored several regulatory submissions.

From 2006 Gary worked for Tudor Investment Corporation, a global asset investor, as an Energy Investment Strategist. He developed investment ideas across the Commodity space, requiring fundamental and technical analysis, model development, and price and asset value forecasting.

Gary joined Barclays Capital - the Investment arm of Barclays Bank - in 2002 as they expanded their Commodities business unit. He supported the UK and European Power and Gas business, specifying trading and risk infrastructure requirements. He was the Risk Manager for the business and was also responsible for any model used for Balance Sheet valuation in the wider Commodity business; model fair value approvals, Value-at-Risk, balance sheet valuation adjustment methodologies.

Gary entered the industry in 1998 with Norweb Energy, as a Risk Analyst. He helped manage the energy supply portfolio and was involved in managing the transition from the Pool to NETA trading arrangements. After a takeover by Texas Utilities (TXU), he worked in Geneva as a Trading Risk Manager, building and implementing risk systems and overseeing the European Trading and Asset portfolios.

### Skills and capabilities

Gary has exceptional experience that spans the trading and energy risk space, and more broadly the commodity space. He has worked at a senior level and understands the need for consistent, clear communication and has presented complex ideas to senior, non-specialist forums. He has worked on large, complicated projects and values good planning and organisation, and well-defined process with clear deliverables.

He is an experienced pricing and risk analyst, and modeller, and has a broad base in economic forecasting. He is highly proficient in Excel modelling, with excellent skills in more advanced approaches (C++, .NET languages). He has built and implemented risk systems, data gathering systems, forecasting processes and systems, and trade decision support systems.



## Andy Pace – Director



### Education

- MBA, Manchester Business School, 1996-1999
- BSc (Hons) Building Surveying, Liverpool John Moores University, 2005-2008
- BA (Hons) Business Studies, Portsmouth University, 1990-1994

### Summary

Andy has over 20 years' experience within the electricity industry where he has worked within Supply, Generation and Distribution. He currently sits on the CUSC Panel as the consumer representative and is also a member of the Ofgem Forward Looking Charges taskforce which is reviewing the network charging methodologies at distribution and transmission.

Prior to setting up Energy Potential Limited, Andy worked as a senior consultant for Cornwall Energy. This wide-ranging role included advising clients on a variety of projects such as investment cases for generation and storage sites and undertaking due diligence for acquisitions. In addition, Andy has also been an active participant in the long running embedded benefits debate, including writing a published report assessing the cost reflectivity of embedded benefits for the Association of Decentralised Energy. Andy also ran the Cornwall Energy flexibility forum which is a monthly seminar providing information and analysis on the market for flexibility services and regularly ran training courses for clients.

Andy also spent 6 years in networks as the Charging Manager for Electricity North West. In this role, Andy represented Electricity North West in negotiations to agree new national distribution charging methodologies at low voltage, high voltage and extra high voltage. As part of this process, Andy chaired work stream C which looked at transparency and volatility issues associated with the extra high voltage charging methodology and chaired the Methodology Issues Group.

Andy has also gained valuable experience in a range of other roles within the electricity industry. Andy was Senior Energy Trader for NRG based at their European Headquarters in Canary Wharf where he was responsible for setting up and running their trading desk to trade power and gas for Killingholme and Enfield power stations. He has also traded power for First Hydro who owned the Dinorwig and Ffestiniog pumped storage assets in North Wales. Andy has passed his SFA exams which enables him to trade electricity derivatives.

### Skills and capabilities

Andy has a broad experience that spans the electricity supply chain. He has experience of managing complex regulatory projects and bringing them to a successful conclusion. Andy is a positive individual who enjoys challenging work and will go the extra mile to get the right solution. He has excellent written and oral skills and one of his most valuable assets is the ability to explain complicated concepts in an easy to understand way.





## Mo Sukumaran - Associate



### Education

- BA (Mathematics, Statistics and Computing), Open University UK, 1991
- Higher National Diploma in Electrical & Electronic Engineering, Portsmouth Polytechnic and Southern Electricity Board Engineering Scheme, 1978-1981
- IIE: Incorporated Engineer, 1987-1993
- Member of the Institution of Engineering and Technology (MIET)

### Summary

Mo worked for Scottish and Southern Electricity Networks (part of SSE plc Group) for over 38 years and held various Engineering and Commercial roles. He started his career as a trained power engineer working in electricity distribution networks including over 7 years in system planning (up to 132kV). He joined Commercial in 1989 and was closely involved in electricity privatisation work on distribution charging policy and use of system tariffs. In 1996, as Head of Distribution Pricing, he was responsible for setting Southern Electric's distribution use of system tariffs and charging policy. Following the merger in 1999 with Scottish Hydro Electric, Mo was appointed Pricing Manager responsible for setting licence compliant transmission owner charges, distribution use of system charges (for networks owned and operated in England, Wales and Scotland) and supporting commercial / regulatory arrangements (revenue c £1.2bn in 2016). Over the years Mo has engaged with SSE, Ofgem and industry Senior Management on matters relating to network charging. He has also provided charging advice to SSE teams developing innovation project bids to Ofgem and to customers seeking clarity use of system tariffs.

In 2004/05 Mo was part of the BETTA Project team's Charging work stream which delivered new GB electricity trading arrangements on 1 April 2005.

Mo was also involved in setting Scotia Gas Networks (SGN) LDZ transportation charges for two years following SGN's acquisition from National Grid Transco in June 2005.

Mo has been extensively involved in industry in developing transmission owner and distribution charging methodologies including holding a number chairmanship - Transmission Charging User Group, ENA Common Methodologies Group, Distribution Charging Methodologies Forum (DCMF) and DCUSA working groups.

Mo is currently the Principal Consultant with Intellect Partners and an Associate for Energy Potential.

### Skills and capabilities

Mo has substantial broad engineering and commercial experience in electricity networks. He has developed extensive network charging expertise over the years and his proactive contribution and leadership is well respected in the industry. He has managed multi-discipline teams to deliver challenging and complex projects.

## Contact details

Please visit our website [www.energy-potential.com](http://www.energy-potential.com)

Please contact either of our directors using the details below to discuss our services or for general enquiries email us at [Enquiries@energy-potential.com](mailto:Enquiries@energy-potential.com)

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