

**Michael John Raine BSc (Mech. Eng.)**  
Kenilworth, Warwickshire

**Skills & Experience**

- Recently acting as an engineering consultant on
  - fuel cell systems
  - business consultant on the market impact of environmental legislation
  - wind turbine performance and investment appraisal
  - concept design of gas turbine power boost system
- A senior engineer with 30 years experience within a global gas turbine company (Rolls-Royce), principally within power generation and new product development. This concluded leading the company's Product Strategy. Renewable energy (specifically Wind power) was a key interest.
- Extensive experience working in alliance with overseas businesses on commercial and technical relationships. Including Westinghouse, KHI & Toyota.
- Management & technical leadership of teams developing novel products (microturbine systems) and project delivery of power stations.
- Experienced at communicating with a wide variety of people at various levels throughout organizations and in the market place.
- Setting up and managing sizeable engineering departments (30+) in start up companies.
- Particularly enjoy front-end activities and known as a creative thinker.

**Key Strengths**

- Technical and economic knowledge on future power generation options
- Thermodynamic and technological understanding of gas turbines and power systems.
- Understanding of power generation market trends, particularly in responses to increased environmental concerns – global warming, Kyoto etc.
- Good lateral thinker, combined with experience.
- Team player with leadership ability.

**Career Summary**

**Engineering consultancy (2002 –**

- Currently working with Rolls-Royce on fuel cell system cost build up and as technical consultant on system engineering and safety issues.
- Performance and investment appraisal of wind turbines in the UK
- Acted as a consultant to Rolls-Royce on the impact of environmental drivers on global energy and power generation.

**Head of Product Strategy – Rolls-Royce Energy (1999 – 2001)**

- Responsible for business strategy development to ensure market focus whilst making business and technical sense.
- Working with teams developing power plant concepts for the 2005-2015 timeframe, including next generation gas turbine systems and renewables.
- Led a detailed study into wind turbine business options.
- Reported to Marketing & Business Development Director.

**Engineering Director – Rolls-Royce Industrial Power Systems (1996 – 1999)**

- Set up and managed the project engineering department for gas turbine power stations, including CCGT plant, package gensets and turnkey plant.
- Established a multi-disciplinary department of 26 staff from scratch. This involved significant external recruitment of skills not available within Rolls-Royce. Contracts value circa £125 million
- Reported to Managing Director.

**Chief Engineer – GT Projects, Parsons Turbine Gen (1993 – 1995)**

- Development of standard Combined Cycle packaged plant with Westinghouse using the Rolls-Royce Trent.
- Leadership of a small team of engineers was involved, with considerable work with Westinghouse and Fiat under a technology transfer relationship.
- Reported to Director, Power Generation Systems.

**Chief Engineer – Rolls-Royce Business Ventures Ltd (1989 – 1993)**

- Leadership of an engineering & manufacturing team responsible for design and development of recuperated a 50 kW microturbine system.
- Considerable novelty was achieved including electromagnetic bearings and a new design of spiral recuperator which has since been developed to a pre-commercial phase.
- Working with various partner including Aisin Seiki (Toyota) - and a number of UK Universities. A Demonstrator power system was produced, tested, and verified with extensive component rig testing.
- Team size circa 10.
- Reported to Engineering Director.

**Previous Career**

- Includes University/apprenticeship and periods as a power plant Commissioning engineer, product development (in USA and in Japan) and as Chief Engineer in a Joint Venture company, GEC Rolls-Royce Ltd.

**Other Information**

- DOB: 1944
- Married.
- Widely traveled and interested in other cultures. Elementary French.
- Interests include antique clocks and Badminton.