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## **Energy Strategy Group**

### **Historical information about electricity production**

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#### **Background**

In 1918 the UK Government formed a committee of enquiry under Sir Archibald Williamson to investigate the provision of electricity in the country. The resulting Williamson Report stated that the very diverse nature of electricity production (there were 438 electrical power generators in the UK) resulted in the costs to the customer being much greater than would be the case if larger interconnected units were used. The creation of such larger facilities under government control was proposed but the House of Lords would not accept legislation that would allow this to happen.

By 1926 it was becoming clear that government action to control electricity supply was badly needed. A group of three people was asked to report on the matter led by Lord Weir (of Weir Pumps) and including Archibald Williamson (now ennobled as Lord Forres).

Their report states that 'Great expenditure is being incurred in many directions, and as in our view that expenditure is not being employed to best advantage, not only is waste taking place, but further obstacles are being placed in the way of rapid and efficient development along the right lines.' This statement has a very modern ring to it. Their recommendations to reduce the number of generating facilities and to interconnect them with a 'gridiron' was accepted. A Central Electricity Board was formed as part of the Department of Transport. The purpose of this board was to implement the recommendations of the Electricity Commissioners. The Board was not a technical body but the Commissioners were strongly technical. Care was taken to try to ensure that they had no business interests in the electricity market. It appears that this combination of an independent technically oriented group to recommend what should be done and a Government body to implement these proposals worked well.

## **Chronology**

1871 First UK electricity generating station in Godalming, Surrey.

1918 The Williamson Report recommends more centralisation and the formation of the National Grid.

1919 The Electricity (Supply) Act passed by Parliament. Electricity Commissioners appointed as a central co-ordinating authority but wording of the Act was such that the Williamson proposals could not be properly implemented.

1925 438 'undertakers' of electricity in the UK all working locally. Some of these providers are local authorities and others are private companies. The 'Weir' report states that the cost of electricity was much higher than would be the case with more centralised facilities and using a National Grid. An amendment to the Electricity (Supply) Act to this effect is passed by Parliament under Baldwin's Conservative Government). The number of generating stations reduced to 132 but 90 of these were under municipal control. According to an article in the Times at that time, both the municipal and private producers of electricity - "accepted their responsibilities in making the supply of electricity an instrument of social and national service" .

A Central Electricity Board and the National Grid are established. The Board has control but not ownership of the production and supply. The (seven) Electricity Commissioners form a technical and strategic unit that considers all the relevant issues when making decisions i.e. they use an engineered approach.

1947 Electricity production and supply is privatised by Atlee's Labour Government. The Central Electricity Generating Board for England and Wales is established. Scotland has a South of Scotland Electricity Board and a North of Scotland Electricity Board? These boards are engineering led. World leading nuclear power projects are commissioned.

1989 Under the 1990 Electricity Act production and supply and the National Grid is privatised by Thatcher's Conservative Government.

1989 – 2010 Gradual change of ownership of most of the major power companies from the UK to other countries – Germany, France, Spain. Long term planning becomes absent. No concept of 'social and national service' by power companies. Government seeks to protect consumers via the Office of the Gas and Electricity Markets (Ofgem). Control therefore moves from an engineering perspective to a market perspective. Climate change issues start to dominate Government policy for electricity production.

The production of renewable energy is supported via Renewable Obligations Certificates (ROCS) which are paid for by the customers although such payments do not appear on the bills issued by the suppliers. Investment in nuclear power stops.

1990 'The Pool, incorporated in 1990 at the time of privatisation, had a form of capacity payment based on half-hourly calculations of the risk of having a shortage of generation. The payment was determined by multiplying this risk by a pre-determined value to the customer of this 'lost load'.

2001 The Pool was superseded for England and Wales by NETA (New Electricity Trading Agreement) which was an energy only market (no capacity payments) based on bilateral contracts between Generators/ Suppliers and customers.

2005 BETTA (British Electricity Trading and Transmission Arrangements) extended the NETA arrangement to the whole of GB.

2010 A national crisis in the production of electricity is identified. Due to EU directives at least 25 GW of electricity generating capacity are scheduled for closure by 2015. Procurement of replacement of such capacity is well behind schedule - mostly there is no schedule. Strong political support for wind power has resulted in proposals for large scale investments based on significant underestimates of overall cost and very low levels of technical analysis of how the intermittency of the wind will be controlled.

2013 The 2013 Energy Act recognises the failure of the market to provide adequate capacity for meeting peak demand. Suppliers are invited to bid in capacity auctions. This is a step in the right direction but the acceptance of lowest bids for power does not take account of system issues such as security of operation and does not optimise the combined provision of power and energy.

### **Conclusion**

The historical record shows that control over private producers of electricity can be satisfactorily achieved by a government sponsored, engineering led arrangement. This situation pertained during the period 1926 to 1947.

The recent historical record shows that the needs of customers are not being well served by the existing market arrangements. It is now essential that engineering control be re-established to avoid unacceptable price increases and system failures.