RESPONSE TO THE RSE ENQUIRY INTO ENERGY ISSUES FOR SCOTLAND

General Comments

I believe that the Scottish Government's target of 40% of energy generation from renewable sources by 2020 to be a difficult but achievable target. However, as the enquiry into renewable energy conducted by the Scottish Parliament's Enterprise and Culture Committee in 2003/4 found, without specific intervention by the Scottish and potentially UK Governments, it is likely that market forces will result in the bulk of that renewable element coming from onshore based wind, as this is perceived to be the most mature renewable energy technology available.

My comments are, therefore, offered from the point of view of consideration of the most viable alternatives to prevent a proliferation of onshore wind based renewables, with all of the attendant planning and community issues which this has so far generated. I, therefore, wish to make broad comment on three aspects:

1. **The potential for increasing the renewable elements of conventional power generation and related issues.**
   In order to ensure security of supply, it is likely that the majority of the UK's energy needs will continue to be derived from fossil based fuel sources for the foreseeable future. The current sources are of course Coal, oil and gas. It is anticipated that coal fired power stations will largely be phased out by 2015**. I believe this target to be unrealistic largely because of timescales involved in building new power stations, and the lack of capacity within the UK system for alternative generation sources.** I believe there is considerable potential for the use of materials combined with coal and gas, which would significantly reduce carbon emissions and therefore help achieve some of the climate change targets. I will deal with these in turn:-
   Coal
   Evidence shows that an increase to 20% of other materials combined with coal for power generation would result in a ten million tonne reduction in CO2 emissions, some 11.5% of the total UK target. Given the importance of coal fired generation in Scotland, our opportunity for biomass coal firing and the consequent CO2 reduction is significant. I also believe that it will be necessary to continue energy production from coal for some time beyond 2015. This therefore, raises issues of the extension of the life of existing coal fired power stations and the capacity of those stations, and the ability of the equipment in those stations to increase the amount of coal fired material beyond that which is already being trialled in some power stations such as Longannet. The second issue which arises is the availability of biomass and the incentives for its production. It is clear that there will be insufficient forestry residue reserves to meet the demand which would be generated by a significant increase in coal firing and it will therefore be necessary to acquire biomass material from other sources. It is also

desirable that such sources be as close as possible to the point of use, ideally within 25 kilometres of any firing source. It is also desirable that these materials should be able to be transported to power stations by rail rather than road whenever possible. The lack of financial incentive in Scotland for the production of energy crops per se, is I believe a significant barrier to the development of a thriving market in such crops. In England government support of £1,000 per hectare for the production of energy crops allows farmers and others to make commercial decisions about planting and production. In Scotland the forestry grant support which is currently available is only £600 per hectare.

I therefore, believe that the energy crop grant of a value equivalent to that available in England should be made available in Scotland.

Rules on Blending and verification

It is at present the case that OFGEM rules demand that blending of biomass with coal take place on the unlicensed generation sites. This, I understand is in order to be sure of the provenance of the materials used and their quality. However, many co-producers and handlers who currently ship large quantities of coal to generation sites have the facilities and the space to do such blending at the point of production and then to transport the blend of materials directly to the power stations, in many instances using existing rail facilities. **It is essential that a way is found to allow blending to take place closer to production sites than is currently the case.**

Presumption against development of open cast

I believe that current planning regulations in England which have a presumption against open cast coal production have been highly detrimental to both coal and the power generation industry. It has led to the inability of coal producers to deliver adequate stocks of coal to UK generation sites and has consequently led to a considerable increase in imported coal. It is not the case, as I believe has been stated in some quarters that the UK is incapable of producing sufficient coal to meet our generation needs. The coal exists and could be recovered but difficulties in achieving consents for such production largely caused by the presumption against licences and planning consents has led to the current situation. I believe that the introduction of a presumption against Scotland will rapidly lead to a similar reduction in recovery of indigenous coal and will lead to an even greater increase in importation.

Definition of Waste

I have come across a number of industrialists who produce as by products, material which could be used for energy generation. They are currently prevented from doing so because these materials are classified as waste. I refer specifically to Timber Manufacturing businesses, but also sewage sludge. Current regulations would

appear to prevent these materials from being used for coal firing because of their classification**. This needs to be urgently addressed so that materials which have a use as a fuel source are able to be used for fuel and are not as at present either land filled or disposed of in some other way**. This may lead to opportunities for the building of new power stations which burn at a considerably higher temperature than current fossil fuelled stations, such as proposed at The Fife Energy Park in Westfield.

Gas

For some years now policy has been to encourage the use of gas for electricity generation, however, the UK stocks of gas are diminishing. Although I believe, with enhanced recovery techniques, the life of the UK gas supplies is likely to be longer than is currently being projected. However, it is undoubtedly the case that gas will be required to be imported into the UK and whilst in many instances this will come from north sea neighbours, it is also increasingly likely that supplies sourced from considerably further a field will be required. In many instances these sources will be from and use pipelines which travel through nation states with significantly unstable political regimes. I fear for the security of the UK's gas supplies in this scenario, it is therefore essential that ways are found, such as with coal above to use other materials to combine with the gas in order to use less of it and therefore increase the length of time indigenous gas is available to us

The above measures would allow for long term security for the coal and biomass industry. This would of course give greater opportunities for investment in research into enhanced fuel recovery techniques such as CO2 sequestration and gasification. I have been very impressed by the work being done at the chemistry department at St Andrews University in collaboration with Edinburgh University and into fuel cell technology and other advanced fuel matters, and also by the work being done by the SASOL Institute also based in the Chemistry Department of St Andrews University on fossil fuel related energy matters. In order for such investment to be able to continue, it is essential that the fossil fuel industry and its member businesses continue to have a long term future.

The use of food crop residues as fuel sources

My second major point is on the potential for bio fuels and other energy Sources – non electricity. Much of my comments on biomass and use of food crop residues for electricity generation can equally apply to an increase in the production of bio fuels. Current liquidfication techniques for electricity generation can equally apply to an increase in the production of bio fuels. Current liquidfication techniques are considerably advanced and government support for pilot projects and some relatively small scale industrial production has been very welcome, however, I believe government could and must take greater action in this respect in order to develop such fuels.

Two things could be done, firstly to increase the support in Scotland which has been given to production of bio fuels in order to encourage farmers to plant crops which would be suitable for such fuels. Secondly the taxation level on bio fuels currently applied by The Treasury should be reviewed in order that farmers for example, are encouraged through lower prices to increase their use of such fuels. Work on fuel cells and hydrogen solutions such as is being done at St Andrews and other universities in Scotland will require further resourcing and support as these technologies come closer to the market. ITI's must include all of the above technologies in the programs which they support, this includes biomass and bio fuels, which currently appear to have less support from Scottish Enterprise Energy Division and the ITI's than I believe their potential warrants.

Small grants which are available for energy conservation and installations in homes and other premises should continue and I also believe that they have the potential to reduce the current growth in energy demand by an increase in the level and value of grants available but also perhaps through some element of reduction in fuel costs for those who use such sources to reduce their other energy demands.