

SCOTTISH EXECUTIVE ENQUIRY REPORTERS  
PUBLIC INQUIRY

PROPOSED BEAULY TO DENNY 400KV ELECTRICITY TRANSMISSION LINE  
ELECTRICITY ACT 1989 SECTION 37

CLOSING SUBMISSION  
BY

JOHN MUIR TRUST LIMITED  
THE NATIONAL TRUST FOR SCOTLAND  
THE RAMBLERS ASSOCIATION SCOTLAND  
THE ASSOCIATION FOR THE PROTECTION OF RURAL SCOTLAND  
SCOTTISH WILD LAND GROUP  
THE MOUNTAINEERING COUNCIL OF SCOTLAND  
("BDLG")

**SECTION HEADINGS.**

- 1.1 Motion.
- 1.2 National Planning Framework.
- 1.3 Statutory Context of Supply and Transmission of Electricity.
- 1.4 The Requirement on the Applicants as licensees to offer terms for connection
- 1.5 Failure to Meet the Requirements of Electricity Act 1989 section 3A (as amended).
- 1.6 The Proposed Line is not needed to secure that all reasonable demands for electricity are met.
- 1.7 The Proposed line fails to promote efficiency and economy on the part of the Applicants.
- 1.8 The Proposed line fails to contribute to the achievement of sustainable development
- 1.9 The Proposed line fails to pay adequate regard to its effect on the environment.
- 1.10 The Statutory and Regulatory Context of Environmental Protection.
- 1.11 The Landscape and Visual effects of the proposed line will cause unacceptable environmental damage contrary to government policy.

- 1.12 A viable on shore alternative exists which has been not adequately examined or reported on.
- 1.13 A viable sub sea cable alternative exists which has been not adequately examined or reported on.
- 1.14 A Different Approach to the Operation of the Existing Grid System.
- 1.15 Conclusion

## **1. Motions:**

Walter Semple acting for BDLG makes the following motion to the Reporters:

“To recommend to Scottish Ministers that they refuse consent to the Application of SHETL/SPT under the Electricity Act 1989 s. 37 to construct and operate a 400kV steel tower double circuit overhead electricity line between Beauly and Denny (“the Proposed Line”).”

He further confirms the motion made to the Reporters in the Submission by him to the Reporters dated 12<sup>th</sup> March 2007 for the reasons set out in that Submission.

## **2. National Planning Framework.**

**2.1.** The National Planning Framework.(CD C01) includes at paragraph 139 the following statements:

“The key improvements to the electricity transmission system to facilitate the development of Scotland’s renewable energy resources are the rebuilding of the grid spine between Denny and Beauly; ...While grid reinforcement will in general take place along existing routes some new connections and route modifications will be necessary. The routing of new strategic connections will need to take account of opportunities for unlocking the potential of additional renewable energy resources.”

The following points arise from this.

**2.2.** The way in which this paragraph is expressed appears to prejudge the decision that the Proposed Line is needed. However the introduction at paragraph 1 states: “It is not intended to be a prescriptive blueprint, but will be a material consideration in framing planning policy and planning applications and appeals. It will be taken into account by the Executive and its agencies in policy and spending decisions.”

2.3. The law imposes requirements on a body such as the Scottish Ministers which is entrusted with a statutory power or discretion as to the extent to which it may evolve and apply a policy in making its decisions. The case of *Elder v Ross and Cromarty District Licensing Board 1990 SLT 307 at 311* summarises it in this way:

- A policy must be based on grounds which relate to and are not inconsistent with or destructive of the purposes of the statutory provisions under which the discretion is operated.
- The policy must not be so rigidly formulated so that if applied the statutory body is thereby disabled from exercising the discretion entrusted to it, and
- The individual circumstances of each application must be considered in each case whatever the policy may be.

2.4. The effect of this law is that this application must be considered in relation to the terms of the statutes which confer power to decide it on the Scottish Ministers and all the relevant facts. These statutes relate both to generation and transmission of electricity and to environmental protection. The statement in the National Planning Framework cannot as a matter of law prevent the proper examination of the application against the relevant statutory provisions.

2.5. It would be unlawful to regard Paragraph 139 of the National Planning Framework as obliging the Scottish Ministers to approve the application in principle. To the extent that it disables the Scottish Ministers from exercising the discretion entrusted to them by law it must be disregarded.

2.6. The present application is not a planning application or appeal but an application under Electricity Act 1989 section 37. The Scottish Ministers may direct that deemed planning consent may be granted under Town and Country Planning (Scotland) Act 1997 section 57(2).

### **3. Statutory Context of Supply and Transmission of Electricity.**

3.1. This application to the Scottish Ministers is for consent to install an electricity transmission line from Beaully to Denny under Electricity Act 1989 section 37.

3.2. In terms of Electricity Act 1989 section 3A subsection (1) (as amended by Utilities Act 2000 section 13 and Energy Act 2004 section 83) “The principal objective of the Secretary of State and the Gas and Electricity Markets Authority (OFGEM) in carrying out their respective functions under this Part is to protect the interests of consumers in relation to electricity conveyed by distribution systems, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity.”

3.3. Under subsection 1 (2) The Secretary of State and the Authority shall carry out those functions in the manner which he or it considers is best calculated to further the principal objective, having regard to-

- (a) the need to secure that all reasonable demands for electricity are met; and
- (b) the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part or the Utilities Act 2000.

3.4. Section 3A subsection 1 (5) (as amended by Energy Act 2004 section 83) states: “Subject to subsection (2), the Secretary of State and the Authority shall carry out their respective functions under this Part in the manner which he or it considers is best calculated-

- (a) to promote efficiency and economy on the part of persons authorised by licences or exemptions to transmit, distribute or supply electricity and the efficient use of electricity conveyed by distribution systems;
- (b) to protect the public from dangers arising from the generation, transmission, distribution or supply of electricity;
- (ba) to contribute to the achievement of sustainable development, and
- (c) to secure a diverse and viable long-term energy supply,

and (so far as not otherwise required to do so by this subsection) shall, in carrying out those functions, have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity.”

- 3.5. The Scottish Ministers were substituted for the Secretary of State by The Scotland Act 1998 (Transfer of Functions to the Scottish Ministers etc.) (No. 2) Order 2001.
- 3.6. Electricity Act 1989 section 6 (1) allows the Scottish Ministers to grant a licence authorising any person to transmit electricity for the purpose of giving a supply of electricity to any premises in that person's authorised area.
- 3.7. Electricity Act 1989 section 9 subsection (2) states that it shall be the duty of the licence holder of a licence authorising him to transmit electricity to develop and maintain an efficient coordinated and economical system of electricity transmission and to facilitate competition in the supply and generation of electricity, and in Scotland to make his transmission system available to his competitors on terms which neither prevent nor restrict such competition.

#### **4. The Requirement on the Applicants as licensees to offer terms for connection.**

Mr. Densley said that the mandatory licence conditions applying to the Applicants as licensees demonstrated the need for the Proposed Line. He explained in his precognition paragraphs 16 and 17 the requirement on the Applicants as licensees to offer terms for connection. He referred to Conditions C7 and C8 in Document APL 2A/4. As so many developers had applied for connections and the Applicants were obliged to offer terms for connection, he said that the need for the Proposed Line was demonstrated.

The relevant clause appears to be C8.3. :

"The connection offer shall reflect any associated TO offer...and shall make detailed provision regarding:...

(b) the carrying out of works (if any) in connection with the extension or reinforcement of the GB transmission system rendered (at the discretion of a transmission licensee where the works are to be carried out on that licensee's transmission system) appropriate or necessary by reason of making the connection or modification to an existing connection and for the obtaining of any consents necessary for such purposes....

(f) such further terms as are or may be appropriate for the purpose of the agreement."

In explaining the overall situation Mr. Barlow referred to Document APL 4/7 "Future Transmission Development and Access". Page 1 paragraph 2.1.2. sets out the position on applications from generation developers.

- 69 schemes comprising 627MW were connected.
- 60 schemes comprising 881 MW were contracted to connect without condition as to the Beaulieu Denny upgrade.
- 82 schemes comprising 6176 MW were contracted to connect with a condition as to the Beaulieu Denny or other grid upgrades (being carried out).

The evidence of Mr. Barlow was that the existing transmission system was adequate to deal with the connections made or unconditionally contracted.

In consequence according to the evidence the position is that if the upgrade does not proceed, the conditional connection contracts come to an end because the condition has not been fulfilled. That circumstance cannot be used to justify a need for the line. If the need for the line cannot be justified by external criteria, that situation cannot be nullified by non fulfilment of a contract which is conditional on the upgrade.

It is submitted that this argument by the Applicants is without merit.

#### **5. Failure to Meet the Requirements of Electricity Act 1989 section 3A (as amended).**

BDLG submits that the Reporters should recommend refusal of the Application to install the Proposed Line because the Applicants have not shown that the Scottish Ministers and the Regulator have or will be in a position to carry out the following functions in the manner which he or it considers is best calculated:

- 5.1. to secure that all reasonable demands for electricity are met,
- 5.2. to promote efficiency and economy on the part of the Applicants,
- 5.3. to contribute to the achievement of sustainable development,
- 5.4. to pay adequate regard to its effect on the environment.

#### **6. The Proposed Line is not needed to secure that all reasonable demands for electricity are met.**

- 6.1. The Perspective of the securing all reasonable demands for electricity in Scotland.

Peak generation capacity in Scotland is around 10.4GW. Peak demand in Scotland is the equivalent of around 6GW. (Evidence of Mr. Bayfield). The surplus is available for export from Scotland. There is no need for additional generation of electricity to meet demand in Scotland. It follows that there is no need to install the Proposed Line in order to secure that all reasonable demands for electricity in Scotland are met.

The target for renewable generation in Scotland is 6GW installed capacity by 2020 which is not a cap (SPP6 Document APL C-17A). Of this around 1.5GW is hydro generation leaving around 4.5GW for others including biomass but mainly on shore wind. According to the FREDS Report (Document CD L02) at paragraphs 17 on page 5, the intention is to create 4GW of capacity in consented generation schemes within the SPTL area. SPTL have themselves stated in their submission to OFGEM on the upgrade of the Scotland/ England Interconnector (Document BDLG 18) at 2.4.5 on page 4: "There is therefore close to 4.4GW of contracted generation that can connect in Scotland without Beauuly-Denny" (that is the Proposed Line). SPT made this statement in 2005 or 15 years before the 2020 date for achievement of the Scottish executive target. It can only be concluded from this evidence that the transmission of renewable generation by the Proposed Line is not needed to secure that all reasonable demands for electricity in Scotland are met in relation to the Scottish Executive 2020 target. This can be done without recourse to the additional renewable generation which the Proposed Line would transmit.

## 6.2. The perspective of the securing all reasonable demands for electricity in rest of the United Kingdom.

No evidence was presented to the inquiry that additional generation of electricity in the SHETL area in Scotland was needed for the United Kingdom as a whole. We heard no evidence about the amount of generation in the UK or consumer demand in the UK. The Reporters have no information upon which to form a view on whether there is a need to install the Proposed Line in order to secure all that reasonable demands for electricity are met.

Evidence was presented that in order to export the surplus electricity generated in Scotland extensive upgrades to the Scotland / England Interconnector were required, some but not all of which had been approved by the Regulator.

### 6.3. Conclusion.

On the basis of the evidence submitted it cannot be said that the Proposed Line is needed to secure that all reasonable demands for electricity are met either in Scotland or in the rest of the United Kingdom.

## **7. The Proposed line fails to promote efficiency and economy on the part of the Applicants.**

7.1. The Reporters must include in their recommendations information as to whether the Proposed Line is economically justified in relation to the charges it imposes on consumers to whom the main duty of the Scottish Ministers is owed. The evidence on economic justification from Professor Bain and Mr. Bailey was detailed and technical. It became apparent that economic expertise was not within the expertise of the Technical Assessor. He did not attend when Professor Bain was giving evidence. The Reporters therefore took on themselves without technical assistance the responsibility of considering this evidence, assessing it, and forming conclusions. Professor Bain challenged the evidence of Mr. Bailey in a number of important ways. In one respect he said that Mr. Bailey's evidence was so unreasonable that it could be described as what a lawyer would call "Wednesbury" unreasonable. At that point the Reporters did not ask him to explain the reason for his view as the Technical Assessor had done in relation to the engineering and other technical evidence. They ruled that the evidence of Professor Bain was inadmissible. Thus the Reporters have deprived themselves of the opportunity to learn about the reason for the controversy. In my submission this ruling has the effect that they cannot place reliance on the evidence of Mr. Bailey except in those areas where they did allow evidence on the challenges by Professor Bain to the evidence of Mr. Bailey.

7.2. The construction of the Proposed Line was included in an investment approved by OFGEM, the Regulator in 2004. For the reasons set out in Section 2 above and the law explained in the case of *Elder v Ross and Cromarty District Licensing Board* 1990 SLT 307 at 311, this approval cannot be taken as decisive. The power to decide the Application is in the hands of the Scottish

Ministers not the Regulator. It is therefore necessary for the Reporters to examine the facts relating to the economic justification for the Proposed Line. They may not lawfully rely on the recommendations of the Regulator which are simply a factor which must be taken into account.

- 7.3. There was a direct and fundamental clash of the evidence of Mr. Bailey of SKM in his precognition and addendum and Document APL 4/6 on the one hand and the evidence of Professor Bain on the other. The position of Professor Bain was supported by Sir Donald Miller who has the technical experience and expertise of one who spent a lifetime in the industry and rose to its top level. Regrettably and as I set out in my letter of 2<sup>nd</sup> May 2007 to the Reporters, in a manner which was unfair, discriminatory and prejudicial to my clients, part of the evidence of both Sir Donald Miller and Professor Bain was disallowed on procedural grounds. In both cases, as I submitted at the time, it was central to consideration of the statutory criteria which apply to this case.
- 7.4. I submit that the Applicants have to persuade the Reporters of the economic case for the Proposed Line and that in material respects that evidence is so unsatisfactory that it cannot be relied to provide economic justification for the installation of the Proposed Line.
- 7.5. Professor Bain's evidence was that the case for economic justification of the Proposed Line had not been made. The question of whether there is a need for grid reinforcement, such as the Proposed Line, will depend on the extent of any longer term development, i.e. after 2020, of renewable generation in the North of Scotland, all of which is currently speculative for either technological reasons, economic reasons, or both. If the existing hydro and pumped storage power stations are managed appropriately, and if operational inter-tripping facilities are installed on the grid, the development envisaged by Highland Council up to 2020 can be accommodated most of the time by the current grid. Any excess will be insufficient to warrant investment on the scale required by the Proposed Line. As regards on-shore wind, this is only economic at present with the aid of very large subsidies. There is no suggestion that these should be continued indefinitely. Wave and tidal generation are still at a fairly early stage of technological

development. They are currently much more expensive than wind, and will probably remain so. The long-term future for wind and wave generation depends on either very large increases in cost for conventional (including nuclear) generation and/or inherently unlikely reductions in cost of renewables. The aim of policy is to cut greenhouse gas emissions. At current levels of fossil-fuel costs the addition of CCS facilities to conventional power stations is expected to produce cheaper power, with much reduced carbon emissions, than wind, wave or tidal power stations.

7.6. The conclusion of Professor Bain at page 32 of his precognition was that at least 1750 MW of wind and biomass capacity would need to be in operation before constraint cost justified the necessary investment. Professor Bain's approach was to estimate the amount of wind and biomass capacity that needed to be in operation before constraint cost justified the necessary investment (Cost constraint valuation). At chapter 2 on pages 14 to 15 of his precognition, Professor Bain refers to the OFGEM estimate of the breakeven point for investment in the Proposed Line of 1200MW. At chapter 3 he explains why he considers this to be incorrect and at 3.7 on page 22, that the estimate should be increased by 550MW to at least 1750MW. The reasons he gives are:

- The effects of the likely changes in the ROCs scheme: 150MW. Note that the principle of this is conceded by SKM in Document APL 4/6 at page 13 paragraph 124.
- The effect of system management using hydro: 300MW
- Minimum contribution from Foyers: 100MW compared with nil in the OFGEM report.

Professor Bain firstly declined to quantify the increase to be achieved through the different application of grid security standards. In his oral evidence and based upon what he had learned during the course of the inquiry he revised the 1750MW total by an increase of 750MW to 2500MW as follows:

- Additional 50MW for growth in local demand (that is not requiring transmission south.) That is an estimated average in period 2012-2020.
- Hydro reduced by 50MW to 250MW to accord with SHETL's own estimates as revealed by National Grid's Seven Year Statement

- Foyers: At least an additional 200MW to a total of 300MW (based on the evidence of Sir Donald Miller)
- Additional NW boundary capacity conceded by Mr. Punton in evidence: at least 50MW.
- Correct application of Grid Standards to manage peak flows through inter-tripping: 500MW.

#### 7.7. Hydro and Pumped Storage.

Hydro and Pumped Storage generation can be stopped and started at very short notice. It also allows storage of energy in the form of water in the reservoir. In the case of pumped storage surplus electricity flows can be used to return water to the upper reservoir. As this kind of generation can be readily be used to manage peak flows of an intermittent supply of wind generated electricity in the North of Scotland it will significantly reduce the need to transmit that electricity south.

Sir Donald Miller pointed out the discrepancy between the Applicant's failure to take advantage of the presence of hydro and pumped storage to manage high transmission system flows from wind generation and the assessment published in the Statutory Seven Year Statement by National Grid in conjunction with the Applicants. In this assessment for year 2012 with some 6000MW of installed wind capacity in Scotland (assumed to be operating at 60% capacity), the output of conventional generation operating on a UK order of merit basis was superimposed to give the appropriate N-D transmission loadings. This assessment was prepared on the basis that both Foyers and Cruachan pumped storage stations were not generating - instead they were being used to manage peak wind flows - and that some 500MW of hydro (approximately half in the North West and half in West Perthshire) has been constrained off. Under cross examination he added that detailed analysis showed that this hydro had been carefully allocated to those stations with substantial storage and where any changes to the hydraulic regimes downstream can be accommodated. The effect of employing pumped storage and hydro to manage peak wind outputs in this way was to increase the NW boundary capability by some 440MW increasing to 700MW if advantage were taken of the pumping facility. This evidence compares with the allowance of a total for both hydro and pumped storage of 100MW referred to in the revised SKM Report (Document

APL 4/6) in direct contradiction of the Applicants position set out in the National Grid seven year statement. As Professor Bain pointed out at his precognition at page 21 this also contrasts with the original evidence of SKM in the first report that Foyers alone could be used to manage down 1400MW to 700MW. The Applicants evidence in this respect is entirely unsatisfactory and unreliable. Professor Bain has allowed conservative figures of 250MW for Hydro and 300MW for pumped storage in his calculations.

#### 7.8. Correct Application of the Grid Code to the North West Boundary Limits.

Mr. Punton in evidence conceded an increase of 50MW to 100MW. Professor Bain gave evidence about the use of operational intertripping about which Mr. Punton was asked in evidence. Mr. Punton thought it inappropriate to rely on operational intertripping on anything but a temporary basis. That is not what GBSQSS [CD L11] says. The key references are to paragraph 4.10 on page 19 and to the definition of transmission capacity in section 7 on page 39.

Paragraph 4.10. identifies the circumstances that determine the need for investment in transmission capacity. There are technical criteria to be satisfied, and operational measures, if they are economically justified, can be employed to meet the technical criteria. These operational measures include balancing services, such as the use of hydro and pumped storage to accommodate variations in wind generation.

The key, however, lies in the definition of “transmission capacity”, which is “The ability of a network to transmit electricity. It does not include the use of *operational intertripping* **except in respect of paragraph 2.13 in Section 2 and paragraph 4.10 in Section 4**”. In other words, in the context of investment decisions, investment in operational intertripping is to be regarded as a means of satisfying the technical criteria, and thus guaranteeing the safety and security of the grid as a whole.

The combined winter circuit rating for SHETL’s NW boundary is 1710MVA, compared with N-D and N-1 boundary capacities of 660MVA and 1185MVA respectively (APL4/5, Table 3.2). In other words, as operational intertripping is feasible it could add 525MVA to the NW boundary limits

Mr. Punton and Mr. Bayfield said that operational intertripping is used in connection with the Scotland/England Interconnector. Comparable arrangements in the NW of Scotland would cost a small fraction of any other reinforcement and, would bring about a very large reduction in compensation costs for constrained-off energy at relatively low cost.

Professor Bain's conclusion was that taking advantage of the flexibility incorporated in the GBSQSS adds over 500MW to the NW boundary condition.

#### 7.9. The Scotland/ England Interconnector.

Sir Donald Miller pointed out what he described as the unjustified and incorrect assumption that the Beaulieu-Denny line will remove most of the need (and the costs) for constraining off generating plant. In reality further heavy additional expenditure is required for reinforcement of the cross border transmission to carry the wind generated energy to load centres in England. The costs of these works are as relevant to removing constraints as are those of the Beaulieu-Denny line and their exclusion invalidates the economic analysis provided by the Applicants. Professor Bain's evidence on the point was disallowed but Sir Donald made the same point. In any event it follows from the evidence of the Applicants:

- 40% of Scottish peak electricity generation is available for export.
- To make the export it is necessary transmit through the Scotland/ England Interconnector.
- The most recently approved upgrade to the Interconnector was approved by the Regulator on the basis that it was required without Beaulieu Denny (The Proposed Line). (Document BDLG 18 at 2.4.5 on page 4)
- The Proposed Line is required to transmit large additional electricity flows from the North of Scotland to Denny.
- These additional electricity flows will further increase the demand on the capacity of the recently upgraded Scotland/England Interconnector thus making further upgrades necessary. (Mr. Bayfield confirmed this in evidence).
- Neither the effects of the interconnector in limiting transmission through the Beaulieu-Denny line nor, alternatively, the cost of the future upgrades have been taken into account in the OFGEM or the Applicants cost benefit analysis.
- They should have been.

7.10. Estimate of Future Installed Capacity to be transmitted over the NW boundary.

Professor Bain referred to the Highland Council 2020 target figures at page 23 of his precognition, subsequently amended in oral evidence. From the total of 4000MW installed capacity he deducted:

- Hydro 500MW because it could be shut down if required without substantial constraint costs
- Offshore wind 1000MW because it was speculative, and would connect to the grid East of SHETL's NW boundary (Mr. Barlow's oral evidence)
- Wave and tide 400MW because it was too speculative to warrant new transmission capacity (FREDS, CD L02, paragraph 28).

This leaves 2100MW which remains a target, not a prediction. For the reasons set out in his precognition at pages 24 and 25, the evidence of wind developments so far does not support a forecast at any level higher than the Highland Council Targets.

7.11. Comparison

Comparing the breakeven point for the investment of 2500 MW with the relevant part of the Highland Council target of 2100MW, leaves a margin of 400MW. In the circumstances of the damaging environmental effects of the Proposed Line, investment in it cannot be economically justified.

7.12. The Double Counting Issue.

Professor Bain explained this in his precognition at page 26. Mr Bailey countered in his Rebuttal precognition at page 5 and 6. Professor Bain responded in his oral examination. The circumstances of conditional connection contracts have been referred to already (in Section 4). I invite the Reporters to prefer the evidence of Professor Bain, because the reply of Mr Bailey is not a direct, adequate or intelligible response to the clear points made by Professor Bain. Mr Bailey mainly relies on the financial attractiveness of wind based generation (paragraph 12 of his rebuttal precognition). This conflicts directly with the evidence in paragraph 5 of his rebuttal precognition showing that on any view wind generation of electricity is much more expensive than the others shown and relies for its viability on consumer subsidy.

Thus rather than disagreeing with the underlying argument of Professor Bain on double counting he supports it. Even if the Reporters were not to accept this, Mr Bailey accepts “about 11% of the 1200MW case” (paragraph 13 of his rebuttal precognition) would be double counted. Professor Bain pointed out in his oral evidence that the 11% is 100% of the electricity constrained off that goes into the calculation. So it does not matter whether it is 11%, 13%, 50% or whatever, the ROCs are accounting for a high proportion of the compensation costs, and they should not be there at all.

#### 7.13. The Evidence of Mr. Bailey and constrained energy costs.

The unsatisfactory nature and conclusions of the evidence of Mr. Bailey in Document APL 4/6 have been addressed in relation to the issues as they have arisen. His approach to constrained energy costs was vigorously disputed by Professor Bain. This is a material consideration because the higher the constrained energy costs the more investment in transmission can appear to be economically justified. If they are not properly and fairly done, extrapolations and projections can be used which lead to absurd results. Document 4/6 was not an OFGEM document but was commissioned by the Applicants.

Some of the evidence of Professor Bain contesting Mr. Bailey's estimates of constrained energy costs was regrettably disallowed. This resulted in a written complaint expressed in a letter by me to the Reporters dated 2<sup>nd</sup> May 2007 to which reference is made. However some of this evidence of Mr. Bailey was subject to cross examination, and in particular that relating to gas prices.

SKM built up their figures by adding together projections of fuel costs, power prices and EU ETS, ROCs etc. The fuel costs and power price projections were based very heavily on the experience of 2005 and 2006, when gas prices and power prices were both, by historical standards, very high. Effectively they extrapolated these high prices forward for a period of 20-40 years, beginning in around 2012/13. There is no justification for this at all.

If conditions are to be predicted over long periods, such as the 20-40 years after 2012, predictions must be based either on a fundamental economic analysis of the conditions

that are likely to prevail in that period, or, in the absence of solid information to go on, on average experience over a reasonably long past period.

What will not lead to a sensible result, is to extrapolate from a short period, particularly when specific temporary factors can be identified which have driven up gas prices, such as supply shortages in Europe, gas pipeline difficulties, lack of storage, inadequate LNG facilities at ports - many of which have already been remedied. The point is well illustrated by the graph in Document APL 4/6 at Appendix A page 5 paragraph 99. This clearly shows the price spike which Mr. Bailey has relied on. It was put to Mr. Bailey in cross examination in mid-February that natural gas in the month ahead market had already fallen to around 20p/therm. He did not disagree.

It is absurd to extrapolate from short-term figures which may be temporarily low, just as it would be absurd to extrapolate from the unusual conditions of 2005/6. Extreme conditions like these have no place in determining forward projections. Extrapolating from a short, demonstrably atypical, period, into the distant future is simply a methodological error. This applies to both the fuel costs and to the margin for overheads and profits, which (with any EU ETS element) go to make up the power price. They make a big difference.

Regrettably the evidence of Professor Bain on other detailed criticism of Mr. Bailey's cost constraint valuation was disallowed as has been referred to. However the criticism of his methodology as regards the gas price shows that his approach was unsound and that his analysis should not be taken into account.

#### **8. The Proposed line fails to contribute to the achievement of sustainable development**

Professor Crofts who has worked extensively with the concept of sustainability said that the Proposed Line did not meet sustainable investment criteria. They do not justify the construction of wind turbines remote from the sources of consumption with consequent need to transmit electricity over long distances. Electricity generated by wind in locations remote from its consumers is much more expensive than electricity generated from thermal sources, and electricity generated by wind in locations close to its consumers. Wind generated electricity and its transmission over long distances relies on large

consumer subsidy for its existence. These factors are not consistent with long term sustainability.

OFGEM the Regulator has ignored the question of the contribution of the Proposed Line to Sustainable Development contrary to its statutory obligation.

The Environmental Statement at Chapter 11 refers to Sustainability. It includes at Table 11.1. 28 “principles of sustainable development”.

The first refers to chapters 3 and 6 of the Environmental Statement. Issue is taken elsewhere in this submission with the Applicants view of the Need for the Project and of the inadequate extent of their consideration of Alternatives.

The second refers to the involvement with local communities and the extensive consultations which took place. It makes no reference to the unprecedented scale of written protest by over 17,000 objectors, and also interest groups such as those who make up the Beaully Denny Landscape Group. Although these protests were largely made on legitimate and relevant planning grounds, the Applicants dismissed them as being of insufficient weight, (David Bell precognition at 5.2.18).

The Application is opposed by Highland Council, Cairngorms National Park, Scottish Natural Heritage and many other affected persons and groups of persons.

This is a very serious matter. The Applicants are unable to demonstrate the need for the Proposed Line in relation to the Scottish Executive targets. They have produced evidence of economic justification which is entirely unsatisfactory. They have refused directly to consider the east coast alternative proposed by Sir Donald Miller. The only remaining basis for approval of the Proposed Line is the financial benefit of the Applicants’ companies and their shareholders which can be set against the environmental damage caused by the Proposed Line.

This investment by the Applicants is not subject to commercial risk in the normal way. If they invest within the limits approved by the Regulator they are guaranteed a good rate of return.

In these circumstances approval of the application would cause widespread public resentment and loss of confidence in any system which allowed it to proceed.

**9. The Proposed line fails to pay adequate regard to its effect on the environment.**

9.1. Environmental Protection has become increasingly the subject of legislation and regulation. This recognises the importance of preserving the environment in the face of intrusion for whatever commercial or industrial purpose may seem important at a particular time. If environmental protection law is not respected in every such application, the effect of developments having long terms effects over a period of time will be gradual attrition of the environment leading to the effects which proper observance of the law is designed to avoid.

9.2. In deciding whether or not to allow installation of the Proposed Line in environmentally sensitive areas a balance is to be struck between the conflict of energy policy and of environmental policy (Evidence of David Bell). It follows that there is a heavy onus on proposing developers to seek solutions which avoid environmental damage to the greatest extent possible.

9.3. If as in the present case, the need for the Proposed Line is not established or is not clear the importance of respecting environmental protection increases relative to the demands of energy policy.

9.4. Where there is a direct conflict between energy policy and environmental policy as is the case in the present application, there is a high priority in seeking a solution which has the possibility of satisfying both or at least reducing the conflict as much as possible.

9.5. The Applicants have failed to pay proper regard to the demands of environmental protection law and policy :

- by failing to take account of the degree of adverse effect of the Proposed Line on the high quality landscape of much of the route
- by limiting their proposal to the Beauly Denny corridor,

- by failing to take into account and by refusing to explore an east coast route for an overhead line with much less damaging environmental effects than the Proposed Line after hearing responsible evidence that such a route is available and viable and consistent with current grid standards
- by failing to take into account the less damaging environmental effects of a sub-sea cable route from Beaulieu direct to the East coast of England avoiding the cost and environmental consequences of an upgrade to the Scotland to England Interconnector, which was suggested by the Applicants but rejected by them on the basis of an economic comparison which was manifestly incorrect.

9.6. The Applicants have failed to provide evidence that OFGEM has complied with its duties under Electricity Act 1989 section 3A (5) to carry out its functions in a manner which is best calculated to contribute to the achievement of sustainable development and also have regard to the effect on the environment of activities connected with the generation, transmission, distribution or supply of electricity. This failure has been addressed in detail in the Legal Submission for BDLG on dated and lodged on 12<sup>th</sup> March 2007 and will not be repeated here.

9.7. The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 imposes duties on the Applicants as regards environmental aspects of the Proposed Line. Under Regulation 4(1) of the Regulations the Applicants are required to submit an environmental statement which includes (inter alia) the information referred to in Part II of Schedule 4. Part II of Schedule 4 at paragraph 4 states: "The main alternatives studied by the applicant and the main reasons for his choice taking into account the environmental effects". This failure has also been addressed in detail in the Legal Submission for BDLG on dated and lodged on 12<sup>th</sup> March 2007 and will not be repeated here.

9.8. The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (Regulation 4 (1) (b) also imposes duties on the Applicants for the content of the Environmental Statement as regards environmental effects of cumulative and secondary effects of the Proposed Line. This failure has also

been addressed in detail in the Legal Submission for BDLG on dated and lodged on 12<sup>th</sup> March 2007 and will not be repeated here.

## **10. Statutory and Regulatory Context of Environmental Protection.**

10.1. The Countryside (Scotland) Act 1967 section 66 places on the Scottish Ministers a duty to have regard to the desirability of conserving the natural beauty and amenity of the countryside. This conflicts with the effects of the Proposed Line.

10.2. NPPG 14 (CD C11) places duties on the Scottish Ministers to protect and enhance Scotland's landscapes and wild land. It includes the following statements:

“Scotland is fortunate in having a rich diversity of landscapes. Many areas, for example in the Highlands and Islands, possess mountain and coastal landscapes which are valued nationally and internationally for their quality, extensiveness and wild land character. Other landscapes ... contribute powerfully to regional identity and quality of life. Upland ranges ... provide the landscape settings for our towns and cities and, at a more local level, the interplay of features such as hills, watercourses, lochs, woodlands and shorelines makes an important contribution to environmental quality and a sense of place”  
(Paragraph 11)

“The varied landscapes of Scotland are an essential and much valued component of our natural heritage and the Government's objectives in relation to their protection and enhancement should be reflected in development plans and planning decisions. The scale, siting and design of new development should take full account of the character of the landscape and the potential impact on the local environment”  
(Paragraph 15)

“Planning authorities should seek to safeguard and enhance the wider natural heritage beyond the confines of nationally designated areas”  
(Paragraph 47)

10.3. The government has ratified the European Landscape Convention. This recognises the evolving national commitment to greater landscape protection. It includes the following statements:

“... the landscape has an important public interest role in the cultural, ecological, environmental and social fields, and constitutes a resource favourable to economic activity and whose protection, management and planning can contribute to job creation”

“... the landscape is an important part of the quality of life for people everywhere ...”

“... the landscape is a key element of individual and social well-being ...”

- 10.4. Electricity Act 1989 Schedule 9(3) places on the Applicants and the Scottish Ministers an express duty to have regard to the desirability to preserve natural beauty

## **11. The Landscape and Visual effects of the proposed line will cause unacceptable environmental damage contrary to government policy.**

- 11.1. The Highlands of Scotland are of special importance and value to the people of Scotland. They comprise an essential component of the history and culture of the country. They are highly valued for recreation. They are of predominant commercial importance for those who earn their living from tourism. The wild land which they include is in practice and in policy of special importance. The Highlands of Scotland are not to be used as an industrial convenience for electricity transmission of the scale proposed unless all possible alternatives have been explored and rejected as not viable and need is clearly demonstrated. The evidence offered by the Applicants shows clearly that they have not done this. They have chosen the Beaully to Denny route because they believe it to be an economic and efficient way to transmit electricity generated from renewable sources. They have failed to pay adequate regard to a number of material considerations which should have led them to consider much more carefully other available solutions with less adverse environmental impact.
- 11.2. The proposed line is one of the largest and most intrusive developments ever to be proposed in the Highlands of Scotland. The approach of the Applicants has been to acknowledge intrusive effects and to seek to mitigate them. They could and should have made greater efforts to seek other technical solutions and/or alternative routes beyond the Beaully Denny corridor which would have avoided the environmental damage which the proposed line would cause. It is perhaps understandable if the Applicants have been misled by the terms of paragraph 139 of the National Planning Framework. As already explained that is not the correct test.

11.3. The Environmental Statement at 23.11 sets out the Applicants view of the Residual Effects on Landscape Character, including long term effects. A summary is included in 23.12. The lists are long. If the Beaulieu Denny corridor must be used, all the Applicants can do is try to mitigate the damage. It was clear from the evidence of Mark Turnbull that the Applicants had presented him with no other route possibility than the Beaulieu Denny corridor.

11.4. The Applicants say that the fact that an electricity transmission line already exists is a reason for building a new much larger and visually more intrusive line on the same route. In areas which are environmentally sensitive, this argument is false. The visual intrusion is not the same as the present line. It is far worse. If this needed to be shown it was shown by the evidence of Stuart Young. The Applicants' evidence offers to justify a proposal which they agree has many significant adverse impacts. They say that it is acceptable to increase the scale of the adverse impact of the existing transmission line. This can only conflict with the principles of government landscape policy and the legal duties which bind government as regards the environment. It suggests an approach by the Applicants to the importance of landscape policy which is consistent with their failure to pay adequate regard to examination of alternatives and their environmental effects.

**12. A viable on shore alternative exists which has been not adequately examined or reported on.**

12.1. An alternative was considered and rejected by the Applicants which BDLG are advised is a viable alternative and which according to Sir Donald Miller would avoid the adverse environmental impacts of the Beaulieu Denny line. Sir Donald Miller made it clear that it is not the same east coast route which is referred to in the Environmental Statement Volume 1 at 6.2.1.3. The Beaulieu to Keith section would involve a new build line which is much shorter than the Proposed Line. It would include otherwise re-conductoring existing lines, which, as OFGEM say in the OFGEM 2004 Document (CD L-15) at Appendix 1 paragraph 1.10, would result in much less visual intrusion than would a new build. The overall cost of transmission to Kincardine would be either less than the proposed line or not materially different. Sir Donald has dealt in his proposal

with both cost of harvesting wind generation and the way in which grid standards would be respected. Mr. Barlow in his rebuttal precognition at 4.5 accepted that under normal conditions the impact of wind generated output on the system is controllable using frequency control and generation reserves. He gave examples which include fast start generation (gas turbines and pumped storage). Dr Band of SNH confirmed in evidence that this alternative would have far less adverse environmental impact. SNH had not considered it because they lacked the necessary engineering expertise and had to rely on the Applicants.

12.2. As there is in this application a direct conflict between energy policy and environmental policy the importance of exploring alternative solutions becomes high. The Reporters refused to allow Sir Donald Miller to explain the detail of the east coast proposal he had made in his precognition which he explained was different from the east coast alternative proposed by the Applicants. This has deprived them of the opportunity to ascertain facts which are at the heart of the objections of Sir Donald and BDLG to this application. BDLG submits that the procedural rules and practices which apply to this inquiry and in particular Circular 17/1998 at paragraph 1 are designed to ensure that relevant and material facts are placed before the inquiry. They are not designed to bring about rigid adherence to timetables set in advance so as to result in suppression of relevant and material facts. This has been the effect of the decision of the Reporters to refuse to allow Sir Donald to lodge additional technical papers. The unfairness and prejudice of this ruling is emphasised by the fact that the Applicants lodged and were asked to lodge numerous documents with the object of exploring technical matters which needed to be clarified. Further detail of this was given in a letter by Walter Semple to the reporters dated 2<sup>nd</sup> May 2007 to which reference is made. No objection was taken to this on behalf of BDLG nor should it have been. The same treatment should have been given to Sir Donald Miller and Professor Bain. It was not.

**13. A viable sub sea cable alternative exists which has been not adequately examined or reported on.**

13.1. The Applicants have given evidence that they had considered and rejected a number of sub sea cable alternatives including the alternative of a

route from Beaulieu to Teesside by sub sea cable. (Precognition of M Barlow at page 60, Table at paragraph 10.3.4. and Document APL 5/18). This table gives an estimated cost of £555M. It rejects the route because it exceeds by £205M the Beaulieu Denny line projected cost of c. £350M. This comparison is patently invalid as it ignores the cost which would be required to take the electricity south from Denny to Teesside.

13.2. According to Mr. Bayfield, the cost of the Scotland/England Interconnector upgrade, which has been approved to take the power from Scotland to the conurbations of England, is estimated at £190m. According to Mr. Bayfield a further upgrade to the Interconnector was needed and had been applied for. It is not unreasonable to suppose that the cost of this might be of similar proportions. If so, it might amount to a further £380m to complete the upgrades approved and applied for. In support of this estimate, the OFGEM 2004 Document at page 29 Table 1 refers to NGC proposed upgrades north of Tees-side, namely the NE Ring and the Heysham Ring. The estimated costs of these in 2004 were £140m and £65M respectively (that is a total of £205M) and may have increased in the interval.

13.3. The alternative route of a sub sea cable to Tees-side would avoid the costs of transmission through these Interconnector transmission lines, and all of the adverse visual and landscape impact of the Beaulieu Denny Line. Evidence about a proper cost comparison and of the associated environmental effects of a sub-sea cable route to Tees-side is a material and relevant consideration.

#### **14. A Different Approach to the Operation of the Existing Grid System.**

Professor Bain has explained that the National Grid is a more flexible system than the Appellants have allowed for. The alleged need for the Proposed Line arises mainly because of proposed new wind generation of electricity in the North of Scotland. Large scale wind generation presents new problems for the National Grid because of the effect of intermittency. Electricity flows are generated at times which need bear no relationship to consumer demand and which can change in a short time. This places a more difficult task on those responsible for transmission in managing flows of electricity in relation to demand. Hydro and pumped storage are of high importance to assist with this as they can be stopped and started quickly, and because they offer a unique way to store energy not needed at any particular time. Operational intertripping similarly has an

essential role in allowing the transmission capacity of the grid to be used fully. This has now been recognised by the Grid Security Standards as explained by Professor Bain. The Proposed Line has been long in its preparation, partly because of the deep public controversy which it has caused. In the meantime circumstances have changed. The effects of intermittency are being better understood partly as the result of experience in other countries. The Proposed Line is an outdated solution to a challenge which can be met for the foreseeable future by a new approach to operating the existing system.

## **15. CONCLUSION**

The perspective of BDLG as regards this Application is initially founded on the high quality of many of the affected landscapes which are highly treasured by many thousands of those who live in and near the route of the Proposed Line and many more thousands who visit the area to enjoy the landscapes and the opportunities for work and recreation that they offer. Mr. Turnbull in cross examination did not dissent from such an approach.

BDLG gives clear and undisputed support for the policy objective of reducing carbon emissions.

The Scottish Executive has decided a target (not to be a cap) of 40 percent of electricity demand in Scotland (stated as 6GW) to come from renewable generation. BDLG accepts that. That is entirely different from saying that there is a need for the proposed reinforcement of the Beaulieu Denny Line.

Even the Applicants agree that the Proposed Line will be much more visually intrusive than what exists. They have gone to immense trouble to try to mitigate these effects. The difficulty is that the nature of the proposal limits what can be done.

BDLG have asked: Is this line upgrade really needed? I submit that the need has not been demonstrated by this inquiry. It is manifestly not needed to reach the Scottish Executive 2020 target. There has been no evidence to show that it is needed to reach UK government targets although the National Grid is a UK system of which Scotland forms a small part.

BDLG have asked: Is there a better route? BDLG are not in a position and have not sought to challenge the Applicants mitigation proposals. However they do say that Sir Donald Miller and Derek Birkett have advised that an east coast alternative which differs from that referred to by the Applicants is a viable and cheaper route. The refusal of the Applicants to consider this proposal has been a matter of profound concern. The disallowance of the detailed evidence of Sir Donald Miller has given rise to profound concern.

BDLG have asked: Is the Proposed Line economically justified? They have sought advice from a highly qualified and respected independent source, namely Professor Bain. His unreserved advice was that it was not economically justified. The Reporters have not sought expert advice on the technical issues raised by this disagreement. Instead they have disallowed part of Professor Bain's evidence. This has given rise to profound concern.

In my submission a fair and reasonable assessment of the evidence presented to the inquiry supports the position of Professor Bain.

Without large consumer subsidy, there would be no economic justification for wind generation of electricity in locations remote from consumers or for its transmission over long distances. Subsidies are made available to achieve short term policy objectives. The evidence shows that the subsidy regime which has motivated the demand for this line is to be changed. It would be a betrayal of those affected by the Proposed Line if after future changes to subsidies it were to become a stranded asset as Sir Donald and Mr. Birkett believe is likely.

To gain perspective on stranded assets the Reporters may wish to consider the massive Chungwa TV picture tube factory built in 1996 beside the M8 motorway near Glasgow as one of Scotland's largest inward investments. Hardly used, it still stands as a monument to the unwise use of subsidy. At least it was not built in landscape comparable to that of the present proposal.

Management of an electricity grid which sources significant amounts of generation from wind turbines requires new and developing techniques to deal with intermittency. These have not been properly factored into the Applicants' calculations.

There is clear legislative and policy support for protecting the treasured environment which the Proposed Line would damage.

There is no policy support for driving through a proposal of this kind

- which is not needed to implement government policy and
- which is associated with many economic and other doubts and concerns which will be resolved as experience is gained of managing wind on the grid
- which relies on consumer subsidy
- which has resulted in a massive public protest.
- which could be carried out by an alternative route at less expense.

The Reporters should recommend refusal of this proposal.

For BDLG,

Walter Semple, Solicitor,  
116 West Regent Street,  
Glasgow G2 2QD.