

**Wednesday, 30 August 2017 - DOUGLAS INGRAM**

Unfortunately I was not able to attend any of the presentations in Shetland, however I have read the consultation document and wish to comment as follows.

1.

It is perfectly feasible to supply Shetland through a subsea HVDC cable, and I understand that it is now necessary to bury such a cable. It is unclear in the document whether it is intended to lay two single cables in a single trench and from speaking to others I understand that you may be intending to lay a two-core single cable.

The cable rating, at 60MW seems to be rather low, if required to fully supply Shetland, as the maximum demand will surely rise over time.

It is almost certain that the cable, even if buried, will sustain damage at some time and a realistic repair time would be 2 months therefore Shetland will have to rely on the standby arrangement during this period. If the fault occurs during the summer months when maximum demand is lowest this may be sufficient but if the fault occurs during the winter months there will certainly be weather delays and the standby arrangement will prove inadequate. The 2 month repair period may then be optimistic. In that case surely it would be better to lay either two separate circuits either 2 x 2 single cables or 2 x two core cables

I understand that the cable will pass up Clift Sound to the landfall near Scalloway and ask if consideration has been given to the fact that there are numerous fixed installations in the area representing salmon farming and mussel growing interests.

It is also unclear as to where the converter station will be sited. This will be a fairly large building as all DC equipment has to be under cover.

The track of the AC cable to Lerwick has not been discussed and I therefore assume that the wayleave will be obtained by compulsory purchase as it will have to pass over privately owned land.

2.

I am of the opinion that the proposed standby arrangement of 64 containerized generators will be a huge maintenance problem and this also includes the requirement to also have a fuel supply on site for 30 days. Each generator, when running at rated capacity, will have a daily fuel consumption of at least 2.5 tonnes per day. If all are running this equates to an overall daily consumption of 160 tonnes. 30 days supply will therefore equate to 4800 tonnes and this will require the building of a storage installation unless local suppliers are able to provide a daily supply.

Modern gas oil deteriorates more rapidly than in the past and if, as hoped, the standby system is only run every two years we would expect fuel system problems. There will always be condensation problems within the generator fuel tanks and with long storage this may give rise to bacterial growth unless great care is taken to add sufficient biocide to the fuel.

As the generator sets will be fitted with low level exhaust systems there will be a problem with exhaust smoke and this may be unacceptable as the smoke blows over Lerwick, depending on wind direction.

## **CONCLUSION**

I am of the opinion that the proposed supply from the Scottish Mainland, although workable, is the absolute minimum solution and it appears that the solution has been reached first and the other facts arranged to fit. The original solution to build a new diesel powered station would be unlikely to cost any more in the long term and would provide security of supply which cannot be guaranteed by the present proposals.

It is not necessary for SSE to own the power station as no doubt one of the major diesel engine builders would be able to construct and man the power station with SSE carrying out distribution. I understand that in the present political climate the diesel engine is considered to be an evil object however it is the most efficient type of engine available and if waste heat recovery is fitted feeding into the local district heating system the overall efficiency is very high.

Douglas Ingram