

**AYRSHIRE JOINT PLANNING STEERING GROUP**

**13 May 2010**

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**South of Scotland Regional Aviation Solution: Final Radar Feasibility Study**

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**PURPOSE OF THE REPORT**

1. The purpose of this report is to update the Steering Group on the work of the South of Scotland Regional Aviation Solution Group (SSRASG) as detailed in the Final Radar Feasibility Study (FRFS) recently published by Scottish Government.

**BACKGROUND**

2. As reported to the December Meeting of the Steering Group the SSRASG was set up in the early part of 2009 under the chairmanship of the Scottish Government's Energy Consents Unit to investigate the development and application of a 'regional solution' to overcome adverse impacts of proposed wind farm developments on aviation radar in Southern Scotland. The SSRASG includes representation from wind energy developers, Ministry of Defence (MOD), Civil Aviation Authority (CAA), National Air Traffic Services En-Route (NERL), Glasgow Prestwick Airport (GPA), BAA airports, British Wind Energy Association, Scottish Renewables Forum (SRF), Department for Energy and Climate Change (DECC) and the Scottish Government. Significantly there has been no local authority representation on the group. The focus was to be on those areas where a 'solution' could free up the greatest wind energy generating capacity by removing aviation objections. In February 2010 the SSRASG published its findings in a Final Radar Feasibility Study. The full report is at: <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance>

**FINAL RADAR FEASIBILITY STUDY**

3. Within the South of Scotland study area 68 developments comprising 1251 turbines had actual or likely primary radar based objections associated with their development and operation. The study's aim was to find a solution which could free up the most turbines.
4. The Study considered how the concept of "blanking out" areas of radar which are affected by false returns from wind turbines and "in-filling" with radar feeds from other locations may be capable of being deployed more generally in Southern Scotland. Scottish Power's mitigation in relation to Whitelee wind farm, using an additional terrain shielded radar at Kincardine to substitute for the affected area in Glasgow Airport's primary radar, has already been effectively deployed. The additional radar at Kincardine creates an image of airspace above the turbines down to 2,500ft, without seeing the Whitelee turbines, which is then "patched into" the blanked area in Glasgow's primary radar.

5. In summary the proposed solution arrived at by the working group is to:
- integrate Scottish Power’s existing Kincardine Radar (designed for Whitelee wind farm) into Glasgow, NERL and Edinburgh surveillance data processing systems with additional wind farm operators contributing to asset and management costs at these facilities. One additional “infill” patch can be accepted by Glasgow airport. This is likely to cover an area in Central Scotland to the east of Glasgow.
  - update the existing surveillance data processing system at Glasgow airport.
  - provision of updates, integration capability and asset management costs with NERL and Glasgow Airport.
  - installation and commissioning of Edinburgh surveillance data processing, including additional running costs.
  - provide for new radar to provide “infill” information for the Afton area, associated integration capacity and upgrades with NERL and GPA’s current facilities and longer term asset management and associated running costs.
  - total costs for these mitigations are of the order of £20-30m over 25 years. Afton would cost somewhere in the order £10m which would cover installation, commissioning, running costs and upgrades.

## IMPLICATIONS & CONCLUSIONS

6. In summary if all the actions proposed in the report were to be successfully deployed it would be possible to mitigate 1,033 of the 1,251 turbines which are currently constrained. However the report stresses that this is likely to be the maximum limit with current technologies. Of these the Afton Radar (which is the name given to the range of measures necessary to satisfy GPA’s Air Traffic Control ) if successfully implemented in isolation would remove aviation objections from approximately 212 turbines proposed within areas which currently are subject to objections from GPA, (any objections to these developments on grounds other than aviation will still remain).
7. The current developments in Ayrshire which can potentially be mitigated are:
- |                       |             |
|-----------------------|-------------|
| • Afton               | 27 turbines |
| • Dersalloch Hill     | 23          |
| • Kyle South          | 55          |
| • Pencloe             | 18          |
| • Hare Hill Extension | 39          |
- No Aviation solution exists for:
- |              |             |
|--------------|-------------|
| • Burnhead   | 19 turbines |
| • Kyle North | 30          |
8. The Study also confirms that a second radar patch at Glasgow airport would cover an area based in central Scotland and would therefore not be available to provide mitigation for areas in North Ayrshire. As Glasgow airport will not accept more than two patches into its primary radar this effectively means that the proposed solution will not extend to North Ayrshire and therefore any current aviation objections will remain.

9. An Afton Radar patch would provide potential for developers with new proposals for other sites within central Ayrshire covered by the Afton patch which have been previously subject to aviation objections, but still with other constraints, to now come forward.
10. Potential for an Afton Radar to provide a feed to NERL's Lowther Hill Radar is likely to bring areas of Ayrshire and particularly Dumfries & Galloway into consideration by wind farm developers where previously there has been little or no prospect due to aviation objections.
11. The study recognises that while these radar proposals offer a technical solution, further work is required and a number of significant issues remain unresolved. In relation to the Afton Radar, which is of most direct concern to GPA, this would involve answers to who would own and operate the radar and who would pay. There would also be lengthy testing to satisfy the safety regulator. Significantly it is understood that the Afton Radar mitigation would also make it necessary to impose a Transponder Mandatory Zone (TMZ) in relation to GPA which would require all aircraft to carry transponders.
12. There is a danger that the FRFS may raise expectations amongst developers and those involved in the consenting process, that the "problem is solved" and that as a consequence there may be a temptation to use suspensive conditions prematurely in relation to the granting of wind farm developments.
13. It will be important to avoid a situation where the problem of agreeing the practical details and enforcement of a radar mitigation is not resolved by Scottish Government but simply left to GPA and an indeterminate number of wind farm developers, who are likely to be at different stages of the consenting process, to attempt to agree a workable solution amongst themselves.
14. To date local authorities have not been included in the SWSRAG's deliberations and it is understood that no formal consultation on the FRFS is planned. As there are implications for GPA and therefore more generally aerospace and the wider Ayrshire economy as well as wind farm development and related policy a joint response from the 3 Ayrshire Councils may be appropriate.

## **RECOMMENDATION**

15. The Ayrshire Joint Planning Steering Group is asked to note the contents and to remit this report to the Technical Management Team for formulation of a joint response to the Final Radar Feasibility Study, to monitor further developments and to explore the likely implications for wind farm policy.

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