



**Methodological Critique of the Report**  
***‘Wind Farms and Tourism Trends in Scotland’***  
**Revised Version by Biggar Economics Ltd,**  
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**An opinion for the John Muir Trust**

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## 1. INTRODUCTION

### 1.1 Improvements in This Revised Paper

There are a number of improvements in this revised Biggar economics paper compared to the original version of July 2016. The author particularly welcomes:

- The omission of the ‘Moffat’ and other ageing studies from this revised paper. The Moffat Report<sup>1</sup> in particular has often been used in PLIs to deny any substantive socio-economic effects of wind farms but *inter alia* relied in large part on face-to-face interviews with visitors to *built* attractions, not the nature or recreational tourists who might well be more sensitive to large constructions in the landscape. It is also the case that the fieldwork for the Moffat Report was undertaken 10 years ago in the summer of 2007 when the installed capacity of onshore wind turbines was 21% of that in 2015, so would not have been perceived as so intrusive;
- A longer and more contemporary timescale for the study, seven years inclusive from 2009 to 2015 rather than the five years inclusive from 2009 to 2013 of the original study. Neither did we understand or agree with the exclusion of the then available 2014 ONS employment data from the original study. As we observed in our critique of the original Biggar Report, choosing that year created an apparent increase of tourism and employment of 5% rather than the 0% which would have resulted from including 2014;
- The attempts by Biggar to respond to earlier criticisms of the research design and appropriateness of the ONS data for this particular type of study – though these responses (in Appendix B) are not necessarily convincing.

This revised critique is focused on the remaining methodological weaknesses.

### 1.2 Context: Renewables and Wind Energy in Scotland 2009 to 2015

From 2007 onwards the Scottish Government has set significantly and increasingly more ambitious targets for the development of electricity from wind turbines (and from ‘renewables’ generally) in Scotland than those set at UK or European level. Provisional statistics show that Scottish Government had already met its interim target that renewables should generate the equivalent of 50% of gross annual electricity consumption by 2015<sup>2</sup> and progress is well on track to achieve its ambition for 100% equivalence by 2020. This has been facilitated by a policy environment explicitly designed to encourage the very rapid development of electricity from renewables, and especially in recent years that from on-shore wind turbines. Both UK-wide policy and subsidy support and specifically Scottish initiatives had, until recently, been actively harnessed to this particular ‘drive for renewables’ in Scotland, though the early phased end in 2016 of the ‘ROCs’ subsidy regime clearly now represents a weakening of those policy drivers at UK level.

A key consequence has been that both generation by, and installed capacity of, onshore wind turbines in Scotland have increased markedly over the past decade and at a much faster rate than elsewhere in the UK. Since 2010 wind has provided the largest single

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<sup>1</sup> ‘The Economic Impacts of Wind Farms on Scottish Tourism’ Moffat Centre, Glasgow Caledonian March 2008.

<sup>2</sup> 56.9% is claimed in the Scottish Government’s ‘Energy Statistics for Scotland’ June 2016, which is the source for all statistics in section 1.1 which are not specifically attributed elsewhere.

generating component of renewables in Scotland, overtaking hydro sources in that year. The increase in actual wind *generation* between 2000 and 2015 was from 216.7GWh to 13,295.5GWh (a factor of over 61x over the period). Even in the period of six years between the base of 2009 and final year of 2015 chosen by Biggar Economics for this revised study, actual generation increased from the higher base figure of 4,553.9GWh by a factor of 2.92x. In *capacity* terms, the latest DECC figures for Scotland<sup>3</sup> show that installed wind turbine capacity over the revised ‘Biggar’ study period increased from 2,021.2MW in 2009 to 5,359.1MW in 2015, a factor of 2.65x. These statistics on the rapid growth of installed wind capacity in Scotland are, unlike other key elements of the Biggar Economics (BE) analysis, beyond dispute here.

### 1.3 The Arguments

The alleged negative impacts of wind farms on surrounding communities have been matters of increasing contention in recent years throughout Scotland as the pace of turbine construction has accelerated and developers’ attention has moved from easier to more controversial sites.

The major concern for the John Muir Trust, as it is for like-minded recreational bodies such as Mountaineering Scotland and the Ramblers Association and for many countryside and environmental bodies, is the growing intrusion of major wind farms into hitherto remote and unspoiled upland landscapes. In socio-economic terms, such areas are usually characterised by fragile economies with a disproportionate reliance on ‘nature’ or recreational tourism as a source of employment and income, which in many cases may be supplementary or seasonal. **A key objection to new large-scale wind farms from local residents is often that the intrusion of such large and visible structures may lead to recreational and leisure tourists choosing not to stay in the immediate area - and therefore a decline in purchases and business activity locally.** These concerns cannot realistically be met by analyses at national or local authority level as displacement could realistically be to the next settlement, glen or upland area perhaps up to 25 km distant but incapable of capture in such wider area analyses. In the author’s view, the ‘scale’ issue in both versions of the Biggar Report - driven by Biggar’s reliance on secondary analyses of data from the Office of National Statistics (ONS) with its smallest analytic unit the Scottish Data Zones – is a continuing major methodological failing. The research design is simply not ‘granular’ enough to create reliable evidence on local displacement effects. We expand on this later in this critique.

Applicants, understandably, concentrate almost exclusively on the claimed benefits of their schemes to Scotland or to the local area in additional jobs or ‘community benefit’ monies and typically ignore, deny or minimise any possible disbenefits. In practice, wind farm applications at either local authority or Scottish level (under Section 36 of the Electricity Acts) are determined primarily on relevant planning grounds of landscape, habitat or peatland impacts but there have been persistent arguments by objectors at Public Local Inquiries (PLIs) and elsewhere that potential disbenefits such as turbine noise, construction and transport disruption, impacts on property values and (especially) impacts on tourism activity should also be considered. Reporters have usually allowed some discussion of these ‘externalities’ at PLIs but, to date, no wind farm application has been refused on grounds of projected adverse impacts on local tourism economies or businesses. The received wisdom, indeed, is that no convincing evidence has yet been adduced either to support or refute such concerns.

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<sup>3</sup> in its data series at <https://www.gov.uk/government/statistics/regional-renewable-statistics>

The revised Biggar Economics Report claims to offer a definitive resolution of this particular area of contention, based on its interpretation of evidence collected by the authoritative UK Office of National Statistics (ONS). The BE Report concludes<sup>4</sup> that *‘Although this study does not suggest that there is any direct relationship between tourism sector growth and wind farm development, it does show that **wind farms do not cause a decrease in tourist employment** either at a local or a national level.’*

This critique of the BE Report, however, concludes – with references to ONS’s original methodology and ONS caveats on its own data - that BE has misused the ONS statistics for purposes for which they were never designed and so fails to provide a reliable evidence base for its claimed trends in local tourism employment. Further examples of Biggar’s misuses of ONS data are its failure to note that the design of ONS’s key Business Register and Employment Survey (BRES) of VAT and PAYE-registered businesses necessarily excludes many of the seasonal family-run businesses which are typical of remote tourism economies (because they often do not require either registration<sup>5</sup>), or again that a large but unrecorded percentage of what ONS carefully calls ‘tourism-characteristic activity’ is actually generated by locals, business travellers and wind farm construction workers rather than leisure visitors who may be attracted or repelled by wind farms. This critique of the revised Biggar Report suggests once more that any Inquiry Reporter wishing an independent judgement on its adequacy might usefully refer the revised Biggar Report to ONS itself for its views on Biggar’s interpretation and use of the underlying ONS statistics.

## **1.4 Objectives of This Appraisal**

This appraisal seeks to critically examine the arguments and evidence base of the revised Biggar Report to reach a considered view on whether that Report should be accepted as a robust statement of the relationship between wind farm expansion and tourism employment in Scotland. This appraisal has been prepared by Douglas Wynn<sup>6</sup>, who is solely responsible for its contents and conclusions.

## **1.5 Structure of This Appraisal**

This appraisal is organised in the following sections:

1. Introduction and Context (this section);
2. Key Methodological Failings of the Revised Report;
3. Conclusions;
4. Is Authoritative Research Possible on this Issue?

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<sup>4</sup> final sentence, page 20.

<sup>5</sup> Prior to 2015 ONS only included enterprises with both PAYE and VAT registration in its annual survey of 80,000 businesses in the ‘Tourism-Characteristic Industries’, so omitting family-run businesses such as seasonal B&Bs or shops (typical secondary employment in remote areas) with a turnover of under £83k.p.a. From 2016 onwards ONS will drop the PAYE requirement for inclusion but not the VAT qualification. Source: ONS ‘BRES Provisional Results 2016’.

<sup>6</sup> Douglas Wynn was an academic and researcher in three university departments over a period of eighteen years and subsequently a Managing Consultant in the UK public sector practice of Deloitte for over ten years. He subsequently established and ran his own consulting practice for a further ten years, providing organisational reviews and investment appraisals to many public bodies. He is now a Trustee of the John Muir Trust but please note that, despite Biggar’s claim, this critique was prepared independently and not commissioned by JMT.

## 2. KEY WEAKNESSES OF THE REVISED REPORT

The Biggar report is based on a secondary analysis of employment data prepared by the Office of National Statistics for other purposes, namely, to track employment trends across the many ‘Standard Industry Classifications’ (SICs) which constitute the UK economy. The Biggar report refers throughout to ‘*sustainable tourism*’ as its primary analytic category and specifically to the ONS Business Register and Employment Survey (BRES) as its primary source of base data<sup>7</sup>.

There are a number of real methodological difficulties in applying the ONS base dataset<sup>8</sup> for Biggar Economics’ purposes in tracking ‘Tourism Trends’.

### 2.1 ONS ‘Tourism Characteristic Activities’ are Also Used by Non-Tourists

ONS lists what it calls ‘the main tourism-characteristic activities’ as:

- accommodation in hotels, short stay accommodation, camping grounds and parks;
- food and beverage serving activities;
- passenger transportation activities;
- travel agencies and other reservation activities;
- cultural activities;
- sports and recreation activities;
- country-specific tourism activities;

but then adds an essential qualification: ‘*a feature of food and beverage serving activities is that, although they are considered tourism-characteristic activities, establishments in these industries also cater to a large degree to non-visitors or local residents. For some establishments but also for the industry as a whole, these non-visitors might represent the majority of customers, permanently or at certain times of the year only.*’ Similar considerations apply *inter alia* to cultural, sports and recreation activities, though these are much less significant in the ONS categorisation (see below). Although loosely referred to as ‘Tourism Industries’, this means that we cannot rely on even the unadulterated BRES statistics to accurately capture the contributions to local employment by visitors attracted into a local area from outside, let alone assess the variances due to any alleged wind farm ‘disincentive’ for outsiders to choose to visit.

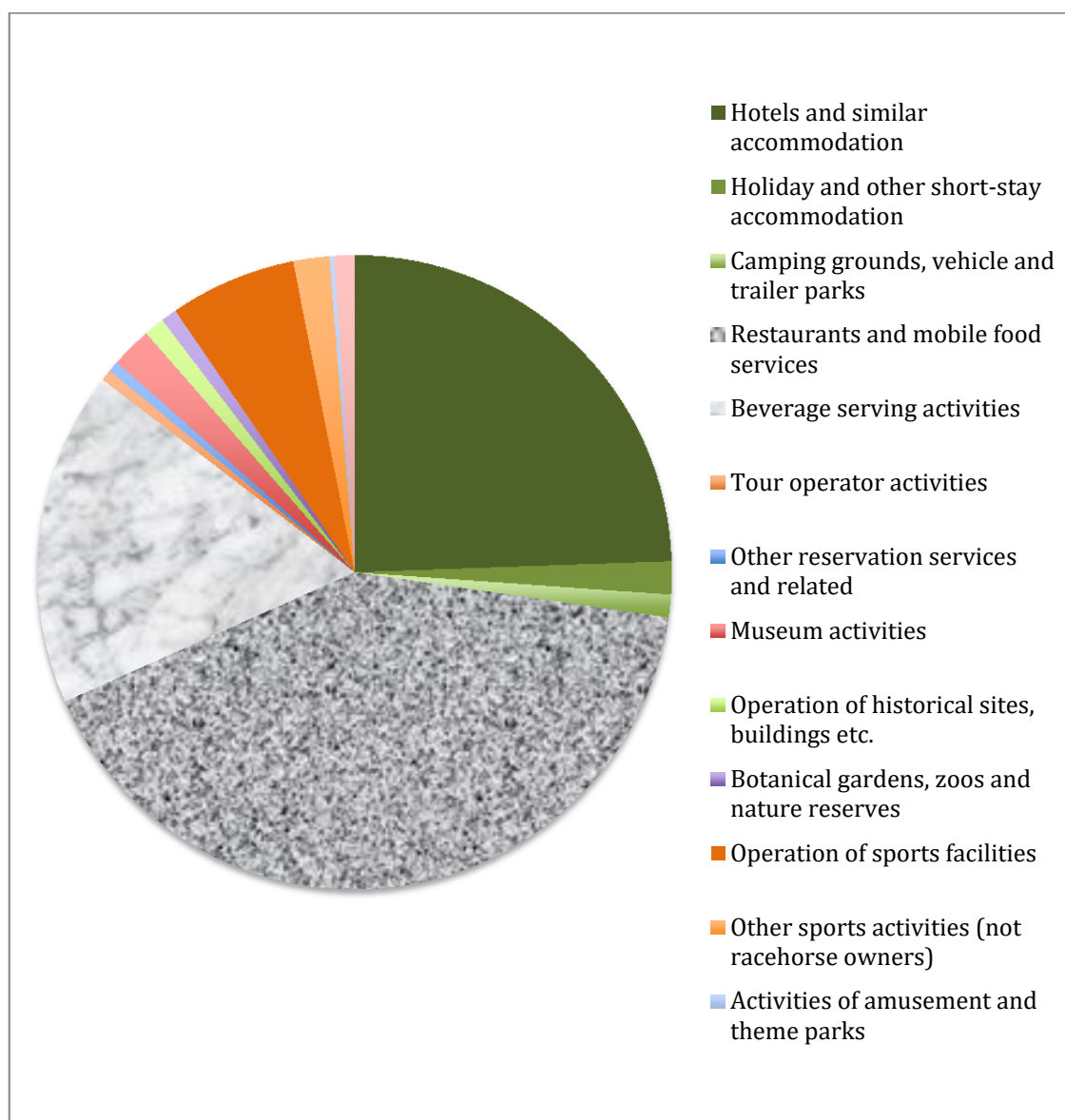
The accommodation and food and beverage elements within the ONS ‘tourism’ data are by far the largest elements, together constituting 83% of the total, and are actually presented by ONS on one line of the standard BRES data sets as ‘Accommodation and

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<sup>7</sup> It would have been very helpful, however, if the BE report had actually identified the precise datasets within ONS or BRES being referred to at various points. Please note ONS’s general caveat that ‘*since BRES is based on a sample of businesses, it can be affected by sampling variability. In particular, the quality of the estimates may deteriorate for smaller geographies and this should be taken into account when making inferences about the figures*’. This is a particularly salient caution by ONS as the cells in the Biggar report’s sub-national analysis are rounded to the nearest 100 (See ONS Information Paper on Quality and Methodology Information at <http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/qmis/businessregisteremploymentsurveybresqmi>)

<sup>8</sup> in its paper ‘Definitions of Tourism (Version 2, 2012, revised February 2016) See <http://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/methodologies/economicvalueoftourismguidancenote1definitionsoftourismversion22012#guidance-note-1-definitions-of-tourism-version-2-appendix-1>

Food Services’<sup>9</sup>. In principle, this can be precisely captured by Standard Industry Classifications (SICs) and indeed ONS itself is throughout clear on methodologies. The graph below shows the composition of the ONS ‘Tourism Characteristic Activities’.



We do not understand the very slight treatment by Biggar Economics<sup>10</sup> of the crucial methodological point made by ONS that *‘for some establishments but also for the ‘tourism’ industry as a whole ... non-visitors might represent the majority of customers’* and by the Chief Economic Adviser in Scotland that *‘some of the spending in these sectors comes from residents and not tourists’*. Biggar refers in passing to some of its own earlier work in the Stirling Council area to estimate that roughly half of all spending in ‘sustainable tourism businesses’ in Stirling was from residents and half was from visitors. It fails, though, to analyse this to any adequate degree by either SIC codes (which will vary greatly in the extent to which their employment is driven by residents and other non-tourists) or to give any estimate of a ‘correction factor’ which may be applied across the whole of Scotland. In consequence, the employment statistics on

<sup>9</sup> See Table 4 of the annual BRES datasets on Regional Level Employment for Scotland.

<sup>10</sup> last paragraph of Section 3.1 of Biggar’s Revised Report - on ‘Sustainable Tourism Employment’

which Biggar's analyses are based are not corrected for this well-recognised and systematic over-statement of the impacts of spend by travellers into particular areas – and the purpose of the study after all is to assess the possible effects of wind farms in dissuading 'outsiders' to visit areas where turbines are erected.

There is another implication of BiGGAR's failure to distinguish between residents' and visitors' spend within the 'tourism industries': given that a substantial, variable but unrecorded proportion is due to *residents or wind farm construction workers* and that the timeframe chosen for the revised study is 2009 to 2015 – an unknowable share of the ostensible growth trend on which Biggar founds its conclusions will actually be due to a recovery of domestic activity after the global economic crisis of 2007-08.

## 2.2 'Sustainable Tourism' is not an ONS Analytic Category

Though Biggar repeatedly uses the Scottish Government term 'Sustainable Tourism Growth Sector' ONS itself does not recognise or use 'sustainable tourism' as an analytic category. In correspondence with ONS on this precise point, ONS tourism specialists informed this author that *'Sustainable Tourism' is an area where a lot of work has been done on definitional issues in particular – but there is no formal workable definition as yet.* The latest considered statement of ONS views on the practicality of applying the concept of 'Sustainable Tourism' in statistical analysis is in an October 2011 paper by its Information Policy Team *'Sustainable Tourism: A Review of Indicators'*<sup>11</sup>. It has not subsequently chosen to apply it. On 28 July 2016 ONS announced the *'Cessation of the Sustainable Development Indicators'* across the UK economy. In reality, it has clearly proved difficult enough for ONS to provide a coherent and discrete definition and scoping of 'tourism' itself, let alone 'sustainable tourism'. There is a certain irony in basing Biggar's review of employment trends in 'sustainable tourism' on data collected by a professional organisation which itself declines to use that as an analytic category.

A review of official Scottish Government literature for workable definitions of 'Sustainable Tourism' for the purposes of practical statistical analysis reveals this somewhat imprecise 'definition' by VisitScotland<sup>12</sup>:

*'Sustainable tourism is tourism committed to generating a low impact on the surrounding environment and community by acting responsibly while generating income and employment for the local economy and aiding social cohesion.'*

A more recent and apparently authoritative statement is this verbatim 'Growth Sector Definition' in 'Growth Sector Briefing – Sustainable Tourism' from the Office of the Chief Economic Adviser to the Scottish Government of February 2016, which offers:

*'Sustainable Tourism sector was identified in the Scotland's Economic Strategy as one of the growth sectors in which Scotland can build on existing comparative advantage and increase productivity and growth. Scotland's tourism sector is a diverse industry, with a range of sub-sectors such as hotels, camping sites and other provision of short stay accommodation, restaurants, bars, travel agents, museums and other recreational and cultural activities. In addition, other sectors in the Scottish economy, for example retail and transport, benefit directly and/or indirectly from the tourism industry. Economic activity generated by tourism expenditure cannot be precisely captured using*

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<sup>11</sup> <http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/rel/tourism/sustainable-tourism/review-of-indicators/rep-st-indicators.html>, DECC had earlier commissioned

<sup>12</sup> At [http://www.visitscotland.org/business\\_support/sustainable\\_tourism/what\\_is\\_sustainable\\_tourism.aspx](http://www.visitscotland.org/business_support/sustainable_tourism/what_is_sustainable_tourism.aspx)



*SIC Codes, as tourism is a characteristic of demand rather than specific products or services. However, a number of industries within the service sector can be used to capture economic activity in a set of tourism-related industries outlined below. Data based on this classification do not represent a direct measure of economic activity from tourism, as part of the demand in these industries will be generated by non-tourists as well as tourists.'*

In reality, it is not at all clear that the Scottish-only category 'Sustainable Tourism Growth Sector' as used by Biggar is actually sustainable, nor exclusively tourism-derived, nor again consistent in growing year-by-year. It is an optimistic thesis rather than a definition. Neither of the above attempts at definition is particularly useful in statistical analysis but it is much to be welcomed that the Chief Economic Adviser for Scotland agrees with the ONS caveat that only an undefined proportion of the recorded demand in 'tourism industries' is actually generated by visitors from beyond the area.

### **2.3 Other Expenditures by Real Tourists are Omitted from the ONS Data**

Tourists from elsewhere in the UK account for 81% of all tourism trips to Scotland but just 62% of total visitor spend<sup>13</sup>. 62% of transport used by British-domiciled visitors is by car, 17% is by train, 9% by plane, 4% by regular bus or coach services and a further 2% by coach trips. Transport usage by the higher-spending overseas visitors is not recorded by mode but can be assumed to involve higher percentage spending on hired cars, trains, coaches, buses and ferries. None of the employment generated by these transport expenditures are included in the ONS category of 'Tourism Characteristic Activities', nor is employment supported by actual tourist spending on petrol or diesel fuels for owned or hired vehicles.

Employment supported by purchases by tourists of food for self-catering or incidentals such as souvenirs, gifts and general retail spending also fall into other categories of the ONS analysis of employment across Standard Industrial Categories. Though these may be substantial they are not counted as economic benefits of tourism.

### **2.4 Tourism Employment Trends have Multiple Drivers**

Statistical trends in tourism and the employment generated from that - even if and when the analysis could be restricted simply to 'real' tourists but their full range of spending captured - have always been driven by multiple factors and we may not have appropriate data or the statistical tools to disentangle these. The revised report professes simply (whatever its other strengths or weaknesses) to examine co-variance of trends in 'tourism' employment with the single factor of wind farm development.

Examples of other factors strongly influencing 'tourism' employment trends are, firstly, the fluctuations in the relative strength of the UK pound as the total spend on tourism, from both domestic and international visitors, is known to be inversely correlated with its external value and, secondly, the general economic recovery over the study period, following the global financial crisis of 2008. In future it can be anticipated that actual tourism trends in all areas of Scotland will also be strongly influenced by the regime adopted by the UK Government on 'freedom of movement' following its Brexit negotiations. An adequate study of tourism trends would attempt to control for these and other known significant influences on such trends in Scotland, insofar as data could permit. It is submitted that any local or even regional impact on tourism due specifically

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<sup>13</sup> Source: Visit Scotland 'Key Facts on Tourism in 2016'

to wind farm construction in Scotland will be swamped by these other and greater influences. Given that, the only logical approach to disentangling the effects of wind farms would be comparative case studies of local areas with and without wind farms.

## 2.5 The Scale Problem in Biggar's 'Immediate Area' Analysis

To supplement its calculations of trends at all-Scotland and local authority levels Biggar Economics also claimed to examine possible co-variance in '*Immediate Areas Around Wind Farms*' (defined by Biggar as '*Scottish Data Zones that lie within a 15km radius of the wind farm*<sup>14</sup>').

In principle we would welcome any study of such truly local displacement of tourism activity by wind farms but Biggar is unclear on what this definition actually means in practice. '*Within a 15km radius*' ostensibly means settlements which lie within a circle of that radius drawn on a map, centred on a particular wind farm. The difficulty is that the units on which employment data is collected and published by ONS do not correspond to that framework. Neither postcode analysis nor the Scottish Data Zones can fit this ostensible constraint. It seems from Biggar's own worked examples that in practice it actually means *all data zones which fall at least partly within that radius but may extend much further*. This implementation would create very large '*immediate areas*' and so fail to capture any change in tourism employment trends which might be caused by local displacement within those areas.

The only mapped example provided in the Biggar revised report of an area of socio-economic analysis constructed on the basis stated<sup>15</sup> is not a circle of 15km radius but actually an irregular area of some 40km north to south and the same east to west. A further example of what Biggar's '*immediate areas around wind farms*' actually means in practice can be found in Biggar's evidence on socio-economic impacts of wind farms to the recent Caplich Hearings<sup>16</sup>, where it mapped its area of analysis for that wind farm as extending 70km north to south and 70km east to west. It is submitted that aggregating statistics on the basis of such large areas is wholly inappropriate for the purpose of compiling evidence on local displacement of tourism activity.

We also note that ONS warns users of its BRES data of an unavoidable impairment of statistical accuracy which necessarily accompanies the rounding of 'small area' estimates based on its sample survey to the nearest 100 - but Biggar Economics uses the ONS base data for this purpose anyway and attempts to justify this in its Appendix B. Whilst it may be convenient for a researcher to be provided with a dataset which does not require actual fieldwork, we consider this use of BRES data for 'small-area' analysis to be rash and to ignore the direct advice of the statistics professionals in ONS.

ONS actually provides sound guidance on terminology and appropriate methodologies for small area analysis in its 'Guidance Notes: Measuring Tourism Locally', which contains inter alia this: '*These concepts and definitions relating to tourism are used at a national level within ONS and find their way into definitions and classifications used in the National Accounts and Balance of Payments, International Trade in Services, and Household and Migration statistics. It is important, therefore, that these standards are adopted more widely at the sub-national level to promote a cohesive approach to the measurement of tourism. It is crucial that this conceptual framework is adopted by users*

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<sup>14</sup> Section 5 first paragraph.

<sup>15</sup> 'Allt Dearg Wind Farm and Local Area' at Figure 5.2 of the revised paper.

<sup>16</sup> Chapter 5 of its submission on behalf of Muirhall Energy to the Hearing on 19 June 2017 in Lairg.

*when undertaking data collection or analysis on tourism, particularly at the local level*'. That advice seems to be ignored by Biggar Economics in both its overlay of the Scotland-only concept of 'sustainable tourism' on the ONS data and in its framework for 'immediate area' analysis

## **2.6 Exclusion of non-PAYE and VAT Registered Business from ONS Data**

ONS is careful to note at several points in its methodological guidance that its Business Register and Employment Survey is based on an annual survey of c80,000 of the c2,000,000 GB companies which are registered for VAT and PAYE<sup>17</sup>. Its sampling frame then, by its very design, excludes family businesses with an annual turnover of less than £83,000 (such as many cottage letting, farm bed and breakfast or catering business operated on a seasonal basis or for supplementary income). These are the very types of businesses which are typical of the fragile economies of rural and remote communities which are our central concern. Biggar's sole comments on this issue (at 8.3.2) do not acknowledge the greater significance of this exclusion of small family businesses in remote and fragile local economies than in tourism employment in urban areas or in larger-scale analysis, where indeed they will be a small part of a wider economy.

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<sup>17</sup> See footnote 5 above and references at:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/businessregisterandemploymentsurveybres>

### 3. CONCLUSIONS

#### 3.1 The Purpose of Research in This Field

It is helpful to remember the central issue which concerns communities in upland and rural areas: **whether or not the construction of wind farms across many parts of Scotland has the potential to put off at least some external visitors – especially to remote communities - and so can have some adverse economic effect on actual tourism-generated services and employment at a local level.**

The practical question for this appraisal is whether the research methodology used in the Biggar Economics' Revised Report is appropriately designed and focused and its evidence base robust enough that the Report is capable of establishing reliable conclusions on these issues.

#### 3.2 Summary of Structural Failings in the Biggar Research Design

- ONS caveats third-party uses of its published data on 'tourism' by noting *inter alia* that its small-area statistics are rounded to the nearest 100 employees and that it is 'crucial' that third party users should adopt and adhere to the ONS conceptual framework in data analysis, 'particularly at the local level'.<sup>18</sup> Biggar obfuscates the first caveat here and totally ignores the second by continuing to use the concept of 'sustainable tourism' in its analysis, despite that having no warrant from ONS, the provider of the base data.
- Biggar acknowledges that actual levels of tourism activity in the UK are driven by many factors of which wind farm construction is only one - and probably of less significance than others such as movements of exchange rates. Biggar continues – mistakenly in our view - to apply a simple two-factor co-variance in a multi-causal context. It is entirely possible that any negative or displacement effects of wind farm construction on tourist visits at a local level will be swamped by wider changes in the economy: but that does not provide evidence that they are absent or negligible.
- There are no control cases in the Biggar analysis. We would suggest that a comparison of trends in 'tourism' employment (however inadequately specified) in small areas surrounding built wind farms with trends in similar areas without wind farms should be included in any adequate analysis.

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<sup>18</sup> ONS provides sound guidance on terminology and appropriate methodologies for small area analysis in its 'Guidance Notes: Measuring Tourism Locally', which contains *inter alia* this: 'These concepts and definitions relating to tourism are used at a national level within ONS and find their way into definitions and classifications used in the National Accounts and Balance of Payments, International Trade in Services, and Household and Migration statistics. It is important, therefore, that these standards are adopted more widely at the sub-national level to promote a cohesive approach to the measurement of tourism. It is crucial that this conceptual framework is adopted by users when undertaking data collection or analysis on tourism, particularly at the local level'.

### 3.3 Summary of Objections to the Use of ONS Data for non-ONS Purposes

As stated, the Biggar study relies on a secondary analysis of data collected and analysed for other purposes by ONS. This is certainly more convenient than undertaking original research to capture evidence specifically focused on the matters of current dispute, but cannot guarantee the appropriateness or robustness of that underlying data for new purposes.

The ONS base data are essentially estimates of employment trends by SIC codes, based on an annual sample survey of VAT and PAYE-registered enterprises across the UK. Though reliable, authoritative for the purposes for which it was designed and widely used to track the performance of specific sectors of the economy, the ONS data on ‘Tourism Characteristic Activities’:

- *incorporate* only some segments of the UK economy relevant to actual tourism – namely employment in hotels and other accommodation, restaurants, cafes and bars (which together constitute some 83% of the ONS category) and some other smaller areas of activity in operating sports, theatre, museums and galleries and booking agencies;
- *exclude* employment supported by other important areas of spending by actual tourists, such as transport fares, fuels, food and other retailing, and so do not claim to provide a comprehensive account of the overall value of voluntary visits by UK or foreign residents at national, local authority or smaller areas;
- *explicitly exclude* employment in non-VAT registered enterprises, typical of supplementary or seasonal income generation (including family-run B&Bs or shops) in remote or fragile economies<sup>19</sup>;
- *do not differentiate* between the economic impacts of spending by local residents or those visiting for business, professional or other purposes on the one hand, and genuine tourists who visit by choice for leisure, recreation or sightseeing on the other. Possible voluntary displacement of the latter is the key concern which a study of local economic impacts should address. Professional statisticians at both ONS and Scottish level warn that the contribution of non-tourists to the ONS category ‘Tourism Characteristic Activities’ is substantial and may well constitute the majority;
- *are explicitly caveated* as unsuitable for small area analysis due to its rounding to the nearest 100 jobs. In any case it cannot provide small area analyses of sufficient granularity to capture local displacement of economic activity in the ‘immediate areas around wind farms’ when these are interpreted by Biggar as areas variously of 40 or 70 km extent north to south and east to west.

For these reasons we consider the evidence base used by Biggar in these studies to be inappropriate for any reliable analysis of local economic impacts of wind farms.

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<sup>19</sup> See footnote 7 above.

#### 4. IS AUTHORITATIVE RESEARCH POSSIBLE ON THIS ISSUE?

Further research is badly needed on this issue if future decisions on wind farm consents are to be properly informed in respect of socio-economics – and we are not alone in that view. For example, we have seen correspondence from the Chief Executive of VisitScotland on 28 June 2014 to a major business in highland Scotland that: *“since the beginning of 2014, VisitScotland has been consulted on 28 renewable sites across Scotland - either through scoping opinion requests or application representations. In each response to developers, via the Scottish Government, we continue to push for Tourism Impact Statements to be drawn up as part of the Environmental Impact Analysis, and prior to any approval process. It continues to be imperative that any potential detrimental impact of the proposed development on tourism - whether visually, environmentally and economically - be identified and considered in full.”*

For the longer term, **it would be of immense assistance to have a robust empirical study by a genuinely independent and professional economic research institute of the actual performance of local tourism in remote areas where wind farms have been developed.** Such research would be focused on the specific areas and their particular pattern of ‘tourism’ businesses and use comparisons with control cases where no wind farms were constructed to assess impacts in a series of case studies.

At the moment the evidence base for assertions on the level of impacts of wind farms on local tourist numbers and spend is poor *inter alia* because:

- regular tourism statistics are simply not collected at an appropriate level of granularity to inform such research;
- the base data from ONS and BRES are subject to several important caveats (freely acknowledged by themselves and noted in the body of this appraisal) such as the inclusion of non-visitor generated spend in reported ‘tourist industry’ statistics;
- neither ‘objectors’ nor applicants have any material interest in funding a controlled, longitudinal study of pre- and post-construction impacts.

Until and unless we have such robust statistical evidence on the actual impact on visitor numbers and expenditure in areas where wind farms have been developed, compared to control cases and national trends, the socio-economics of wind projects will remain unnecessarily controversial.

**An adequate empirical study should also comply with the professional advice of the Office of National Statistics in its ‘Guidance Notes: Measuring Tourism Locally’, on consistency of terminology and methods.**

**We would also very much welcome a direct reference of the Biggar Report to ONS by any Reporter at a PLI who wishes a definitive judgement on the appropriateness or otherwise of Biggar’s uses of ONS’s BRES base data. For our part we do not believe that ONS’s professional specialists on tourism statistics would be much impressed – but that would, of course, be for them to judge.**