AEA

Scoping Study:

Options for a Local Authority Renewable Energy National Indicator

Report to Department for Energy and Climate Change

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Title	Options for a Local Authority Renewable Energy Indicator – Scoping Study
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Executive Summary

The UK has set a target to deliver 15% of final energy demand from renewable energy sources by 2020. Achieving this target will meet the UK's obligation under the EU Renewable Energy Directive.

Local Authorities (LAs) have a number of crucial roles in the achievement of these aims:

- As the planning authority for many renewable energy developments;
- Through setting local plans and standards which encourage, or require, renewable energy in new developments;
- Through use of renewable energy in their own estate.

The scoping study has been split into three separate tasks each with their own processes and deliverables:

Task 1: Identified the strengths and weaknesses in the current arrangements for accounting for Renewable Energy in NI 186 CO_2 reductions through reviewing the existing indicator and inventory methodology and discussions with LAs

It was identified that NI 186 has the following strengths:

- ☑ Places little burden on LAs for reporting;
- ☑ Gives CO_2 emissions estimates using a nationally consistent methodology;
- ☑ Increase awareness of carbon reduction in a locally significant way.

NI 186 also has the following weaknesses:

- ☒ Doesn't explicitly show progress against renewables targets;
- ☒ Time lag between local actions and NI 186 publication;
- ☒ Doesn't give LAs guidance on how to progress towards targets.

Task 2: Investigate methods to address these weaknesses

A list of options has been compiled for monitoring renewable energy in LAs through or alongside the Local Government Performance Framework. These are listed below and discussed in the relevant section of this report.

- Adapt current NI 186 methodology – although further investigation may be needed into whether a double count will be caused. This could be through either of the following methods:
  - Develop a local emission factor for electricity to take into account renewable electricity generation in local areas
  - Additional column for NI 186 dataset which gives a 'negative emission' for electricity generated through renewables
- Renewable energy matrix
  - As a self assessment tool
  - As an additional or supplementary indicator
- Make use of existing LA requirements and actions

Task 3: Produce a decision matrix for use by LAs to support NI 186

A matrix has been produced which will help LAs to assess their current progress against renewable energy targets and to plan for improvements in the future. This matrix was developed through consultations with LAs.

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1 Introduction

DECC's Office of Renewable Energy Deployment (ORED) commissioned this scoping study under the Emerging Energy Technologies (EET) programme. The intention behind this is to increase the profile of renewable energy within LAs and to improve monitoring of LAs' progress in this area.

1.1 Background

The Integrated Energy and Climate Change Package of January 2007 endorsed by the European Council in March 2007, underlined the objective of limiting the rise in global average temperature to no more than 2° Celsius above pre-industrial levels. This 2° Celsius objective is indeed considered an upper limit for preventing dangerous anthropogenic interferences with the climate system as requested by Article 2 of the United Nations Framework Convention on Climate Change. To achieve this goal, Member States agreed to reduce the EU's greenhouse gas (GHG) emissions by 20% in 2020 compared to 1990 levels and by 30% provided other developed countries commit themselves to comparable reduction targets. The EU intends to increase energy efficiency by 20% and increase the share of renewable energy to at least 20% and biofuels to 10% by 2020.

1.1.1 Renewable energy targets

The UK has set a target to deliver 15% of final energy demand from renewable energy sources by 2020. Achieving this target will meet the UK's obligation under the EU Renewable Energy Directive.

This target is also is a critical element of the UK's response to the threat of climate change, driven by the European Union's Community reduction commitment. The Renewable Energy Strategy sets out a lead scenario illustrating how this could be achieved if renewable energy provides:

- 30% of electricity generation;
- 12% of heat supply;
- 10% of transport fuels.

This is a significant and profound challenge as this represents:

- A seven fold increase in renewable energy in just over a decade;
- Increasing renewable energy across all forms of energy demand.

Local Authorities (LAs) have a number of crucial roles in the achievement of these aims:

- As the planning authority for many renewable energy developments;
- Through setting local plans and standards which encourage, or require, renewable energy in new developments;
- Through use of renewable energy in their own estate.

1.1.2 Purpose of this scoping study

The purpose of this scoping study is to address the following issues:

- At present there is no specific performance indicator that assesses how well LAs are discharging these roles;
- The current indicator NI 186 on CO_2 emissions per capita does not show what progress LAs are making with renewables;

- There is a 2 year time lag between when new renewable energy sources start to generate and the availability of NI 186 results;
- There is an even greater time lag between the planning policy and planning decisions made by a LA and the availability of NI 186 results.

1.1.3 National Indicator 186 (NI 186)

NI 186 is part of the Local Government Performance Framework. It is a centrally calculated indicator which gives per capita percentage reduction in CO_2 emissions in the local authority area.

Action by local authorities will be critical to the achievement of the Government's climate change objectives. Local authorities are uniquely placed to provide vision and leadership to local communities by raising awareness and to influence behaviour change. In addition, through their powers and responsibilities (housing, planning, local transport and powers to promote well-being) and by working with their Local Strategic Partnership, LAs can have significant influence over emissions in their local areas.

1.2 Stakeholders

There are many stakeholders involved in the management and use of NI 186 and the national statistics that feed into it. It is important that any alterations to these data are researched thoroughly to ensure any implications are known and understood. Any potential changes to the indicator would need to be communicated and understood by the main stakeholders involved, which are listed in the section immediately below.

1.2.1 DECC

Office for Renewable Energy Deployment

DECC's Office of Renewable Energy Deployment (ORED) commissioned this scoping study under the Emerging Energy Technologies (EET) programme. The intention behind this is to increase the profile of renewable energy within LAs and to improve monitoring of LAs' progress in this area.

ORED's mission is to "accelerate the deployment of renewable energy in order to reduce carbon emissions, increase energy security and create business opportunities in the UK".

One part of this mission involves overcoming the non-financial barriers to the deployment of wind and other technologies, including supporting reforms to ensure an effective planning system is in place at a local and regional level. Including renewable energy information in part of the local government performance framework would help with this work to improve planning systems.

UK GHG Statistics & Inventory team – part of the Science and Innovation team

NI 186 is based on data which is a national statistic produced for DECC's Greenhouse Gas Inventory (GHGI) team as part of the UK's GHGI. The Local Authority CO_2 Emissions Estimates have been classified as national statistics. Part of this classification means that strict quality assurance procedures are maintained and any amendments to the methodology would need to be announced and made public.

Local, Regional and Devolved Government Team

DECC's Local, Regional and Devolved Government Team are the main point of contact for the DECC based National Indicators. They have direct contact with the LAs and Government Offices (GOs) so deal with any queries or issues which arise from the NI 186 data set. Any changes to NI 186 or additions to the performance framework would need to be discussed with this team in order to understand any possible repercussions.

1.2.2 Communities and Local Government (CLG)

The national indicators are managed by CLG and the requirements of this scoping study have been discussed with CLG during this process. Discussions with CLG showed that they would be reluctant to introduce a new indicator or anything additional which would add to the burden of LAs. The idea of a self assessment matrix was viewed favourably it was thought that it shouldn't replace NI 186 but should be used as an evidence base and supporting guidance.

1.2.3 LAs/GOs

The main route of communications between DECC and the LAs is through the GOs. It is clearly important that any changes to a national indicator or any reporting requirements are explained well to the GOs and LAs. LA involvement in development of indicators is also useful and consultations during this study have been very valuable.

1.3 Scoping study processes

The scoping study has been split into three separate tasks each with their own processes and deliverables. The bullet point lists below set out the processes which have been undertaken during this project.

- **Task 1**: Identify the weaknesses in the current arrangements for accounting for Renewable Energy in NI 186 CO_2 reductions
    - Review of how NI 186 and the inventory represent renewable energy technologies
    - Discussions with relevant stakeholders on how they perceive NI 186 with regard to renewable energy and whether renewables should be represented in the local government performance framework
- **Task 2**: Investigate methods to address these weaknesses
    - Analysis of available renewable energy data
    - Identify options for including renewable energy information in NI 186
- **Task 3**: Propose methods to add to the existing indicators to provide an early indication of LA success with renewables in their area
    - Produce a decision matrix for use by LAs to support NI 186
    - Consult with LAs during development process on content and ease of use

2 Task 1 - Review of existing indicator

From the initial discussions with DECC it is apparent that NI 186 does not represent renewable energy in a clear and transparent way.

This task is to investigate, and report on how NI 186 copes with renewable energy as:

- Electricity generation;
- Heat supply;
- Transport fuels.

This task covers all the current and future renewable energy technologies that will contribute to the 2020 target. For each technology the following subjects are investigated:

- How the CO_2 reduction is dealt within the national inventory and NI 186;
- The strengths and weaknesses of the current reporting methods and the significance of any over or under reporting (including double counting).

The strengths and weaknesses are reviewed by considering the NI 186 methodology and through discussions with LAs.

2.1 How renewable energy is represented in the national inventory and indicator

This task covers all the current and future renewable energy technologies that will contribute to the 2020 target. Table 6-1 in Annex 1 gives details of how each renewable energy technology is represented in both the inventory and NI 186.

2.1.1 National Inventory

The UK greenhouse Gas Inventory (GHGI) is produced annually by AEA on behalf of DECC. The principle purpose of the GHGI is to fulfil the UK's commitment to the United Nation's Framework Convention on Climate Change (UNFCCC) and under the Kyoto Protocol. Parties to the convention are committed to develop, publish and regularly update national emission inventories of greenhouse gases and agree to integrate climate change considerations into their policies on agriculture, industry, energy, natural resources and to develop national programmes to slow climate change. The member countries of the UNFCCC negotiated and adopted the Kyoto Protocol in 1997, setting mandatory targets on greenhouse gas emissions.

As part of this report, an investigation has been carried out into how the renewable technologies which are reported in RESTATS are represented in NI 186 and the UK GHGI as a whole. For a detailed breakdown of each technology, see Table 6-1 in Annex 1 for full details.

Due to the nature of the GHGI – developed to report on estimates of national totals of emissions of GHGs – renewable energy isn't reported in the inventory. Some renewable energy types, such as biomass combustion are considered however within the inventory where emissions of GHGs are involved. For example, waste incineration has a carbon emission factor associated with it which is calculated depending on the type of waste being incinerated. Consideration is also taken into account of the mixture of biofuels used in transport. Emissions from biomass are excluded from national totals in the inventory.

NI 186 was developed from a subset of the GHGI using localised datasets to distribute national totals to local authorities.

2.1.2 National Indicator 186 (NI 186)

NI 186 is based on a national statistics data set; Local Authority CO_2 Emissions Estimates[1] ($LACO_2$). This is an 'end user' data set which means that emissions from the production of fuels are attributed to the users of those fuels rather than the fuel producers. So for example, emissions from the production of electricity are attributed to those using the electricity rather than the power stations themselves. In this way no LA is penalised for having a power station in their area, with its associated carbon emissions.

Emissions which are deemed outside LAs' control have been excluded from this data set to produce NI 186. These include motorways, railways, emissions from EU ETS sites and Land Use, Land Use Change and Forestry (LULUCF).

The LA CO_2 dataset is produced as a subset of the UK national Greenhouse Gas Inventory (GHGI) which is produced annually on behalf of DECC by AEA. There are also some exclusions from the GHGI in the LA CO_2 dataset which could not be attributed to certain LAs. These include aviation, shipping, exports and off shore activities.

Attributing CO_2 emissions to LAs is a complex procedure. The activity data used to produce these estimates come from three main sources:

- DECC local authority gas and electricity consumption statistics;
- Point source emissions from large industrial installations; and
- High resolution (1x1 km) emissions distribution maps developed under the NAEI programme.

Emissions from the consumption of gas and electricity are distributed using a national emission factor applied to consumption data from the DECC local authority gas and electricity consumption statistics. In the case of electricity, renewable energy is already taken into account when calculating this emission factor although emissions reductions due to the use of renewable energy is spread across all LAs using this national emission factor, see Table 2-1. This is the feature of NI 186 which is looked at in greatest detail in this study. The reason for the slight change in emission factors used for each year is due to the change in fuel use by power stations over time.

Table 2-1 Electricity emission factor calculated for NI 186 (Table 4 in LA CO_2 methodology report)

Year	Total UK Emission for Electricity kt CO_2	Total Consumption GWh	Electricity CO_2 Factor kt CO_2 per GWh
2005	170,484	334,561	0.510
2006	179,016	332,495	0.538
2007	174,686	324,332	0.539

Emissions from large industrial installations are included in NI 186 through the emissions reporting the large installations are required to do to the Environment Agency's Pollution Inventory. The remaining industrial and domestic emissions from other fuels and industrial off road emissions are mapped using 1x1 km resolution distribution maps which are developed under the National Atmospheric Emissions (NAEI) programme. These maps take into account national fuel consumption; regional fuel distribution (such as gas networks); employment data and household data.

The use of renewable energy production as a replacement for these 'other fuels' in both the industrial and domestic sectors would be represented through a reduction in national fuel consumption data.

More information on the methodology used in producing these estimates can be found in the methodological report on the DECC website.

The main area of NI 186 which could be improved is that of electricity generation through renewable energy technologies. Currently, this 'emissions saving' is passed on to LAs through NI 186 but only through a reduction in the national emission factors (in kt CO_2 per GWh, see Table 2-1) which is calculated each year.

[1] http://www.decc.gov.uk/en/content/cms/statistics/climate_change/gg_emissions/uk_emissions/2007_local/2007_local.aspx

2.2 Local Authority Consultations on NI 186

2.2.1 Results from the questionnaire

During this exercise, a total of 30 LAs were contacted and supplied with the questionnaire. Due to the short time frame, not all of them were able to complete it and after chasing, replies were sent by eleven LAs (~37%). Information was also sent by the Tees Valley Unlimited which is a partnership of public, private and voluntary bodies that coordinates activities, appropriate to a city region level, designed to improve the economic performance of the entire Tees Valley. The following is a summary of the answers provided by the LAs that were interviewed.

It was agreed with the LAs that specific answers would not be published in order to encourage open and honest feedback. The LAs consulted were spread across a range of urban and rural areas and between those who are and are not reporting to NI 186, see Table 2-2. The below answers are a summary of those supplied by LAs with repetitions of answers removed. An example questionnaire is included in Annex 3.

Table 2-2 Types of local authorities which completed the questionnaire

	Local Authority reporting NI 186	Local Authority not yet reporting NI 186	Total
Urban	2	2	4
Semi-urban	1	2	3
Rural	2	2	4
		Total	11

Q1: Do you think that renewable energy should be represented within the Local Authority Performance Framework, and why?

This question brought a variety of responses, the majority of which were positive. The main reasons for a positive reaction are as follows:

- ☑ Specific targets would mean a more focused response to renewables from councils
  - ☑ More senior council support
  - ☑ Would provide an incentive – improvements won't happen without this
- ☑ Would give greater visibility to renewable energy initiatives
- ☑ LAs have more influence over the building of renewable energy installation than they do over energy use/emissions so it would be a better indicator to use

However, there were some more negative views and concerns as well

- ☒ Not all LAs would be starting from the same point in terms of capacity and potential for renewables
  - ☒ LAs are concerned about being compared with other LAs with much greater potential for renewable energy
  - ☒ This should be reflected in any indicator
- ☒ Some LAs don't have as much control as other over planning and installing renewable energy
- ☒ This might defer funding away from other, more important areas
- ☒ Renewable energy isn't the only method for reducing CO_2 emissions, why should there be an indicator for just this method?

Q2: How well do you think NI186 currently deals with renewables, and why?
The majority of LAs were aware of the limitations of NI186 with regard to renewable energy. They realised that NI 186 can only really show the uptake of renewable energy through the reduction of emissions from fossil fuels but that it couldn't be specifically attributed to this uptake. They also commented that NI 186 doesn't help with planning next steps for LAs or recording local actions.

Q3: Do you think NI 186 would be a good place to record LAs' progress with renewable energy, and why?
There was quite a mixed response about whether NI 186 was a good place for renewable energy information. The consensus was that if anything were to be changed, comprehensive explanation and guidance would be needed.

- ☑ Including RE information in NI 186 would be preferable to a whole new indicator
- ☑ It will be likely that more support would be gained from senior staff
- ☑ Would be useful as part of the NI 186 evidence portfolio
  - ☑ However, it is felt energy conservation and efficiency should be a priority
- ☑ It would be good if a local electricity emission factor could be developed
  - ☑ This would reduce LAs' reliance on national commitments and other LAs for targets and projections
  - ☑ If this happened and it was explained in a way the general public could understand, it might reduce the number of arguments against RE such as wind turbines

The negative reactions are as follows:

- ☒ Some LAs feel that NI 185 and CRC are a more appropriate place for this type of reporting.
  - ☒ More likely to be able to control their own estate renewables
  - ☒ Larger scheme are out of LAs' hands and managed by national planning authorities
  - ☒ This might put pressure on LAs to approve inappropriate planning applications in order to meet targets
- ☒ Some LAs are worried that the 'End User' aspect of NI 186 would be lost and those LAs with power stations would be unfairly penalised

Q3: What key actions do you think LAs should do to encourage renewable energy?
LAs were asked what five key actions they should be doing to encourage renewable energy. Below is a list of some of the most popular:

- Ensure renewable targets are set out in planning policies and frameworks
  - Minimum amount of energy to be renewable/on site generation
- Compulsory training for planning officers and planning committee members
- Leading by example – renewable energy on own estate and community buildings
- Providing clear policies and supporting guidance – education for all
- Procurement policy – life cycle assessments
- Schemes and financial incentives for local householders and organisations
- Support and promotion for local installers including subsidised training
- Renewables to be included in integrated energy strategy for major developments
- Promote low carbon communities
- Find where there is greatest need
  - Undertake heat mapping
  - Use available data such as Display Energy Certificates (DECs)
- Partnership working with regional/nation outside agencies such as energy suppliers
- Investment in public transport

Q4: How is you LA performing against these targets?
Most LAs spoken to are beginning to perform well against their particular targets. On the whole these are relatively new and progress can be held back by time and budgetary constraints as well as not enough engagement from council leadership.

Q5: Is you LA producing or has it already produced, an evidence base to underpin renewable energy policy?
There was a varied response from the LAs to this question. Very few had nothing at all set out; most had started on or produced a climate change or carbon reduction strategy but nothing specifically to do with renewables. A few LAs had begun to work on a renewable energy capacity/potential assessment following DECC's methodology.

Q6: Are there any particular barriers that you encounter that hinder renewable energy deployment?
Below is a list of barriers the LAs spoken to face with installing and promoting renewable energy.

- Public and senior officer perception
  - Affordability
  - Reliability
  - Aesthetics
- Cost
  - Budgetary requirements in other areas
  - Length of payback
- Supply chain bottlenecks
- Lack of knowledge
  - Technical capacity in planning teams
  - The need to move away from fossil fuels
- Inconsistencies in national and regional policies and guidance
- Suitability of area and technologies
- Areas of Outstanding Natural Beauty
- Act of Parliament
  - LAs unable to sell electricity back to the grid

Q7: What initiatives or actions does your LA have to assist with the development of renewable projects?
Most LAs spoken to have begun to implement some initiatives to encourage renewable projects. These range from grants for social and private households to install solar hot water and air source heat pumps to supporting installations in community buildings. Some LAs have also employed a Merton rule style policy in their local plan where 10% of energy used in developments over 1000 m^2 is required to come from renewable or low carbon sources.

LAs were asked whether they held data on renewable developments and installed capacity in their area. Some LAs had very little data although others did provide some useful data which was then checked against what is currently in RESTATS.

LAs were shown the draft version of the decision matrix which will be discussed in detail in section 4. The consensus amongst LAs was that a matrix would be a good way of indicating how prepared they are for the inclusion of RE in their areas. It was also preferable to the LAs to have the matrix as a stand alone indicator or a self assessment tool rather than to go alongside NI 186 as it currently is.

Summary of answers to questionnaire

Summary	Reasoning	Implications
Introduction of an indicator for renewable energy would be popular	• LAs are keen for appropriate measurement of progress in this area • Renewable energy would gain more support, recognition and funding if it contributed to an indicator	Introduction should not be strongly opposed
LAs felt a renewables indicator should be separate from NI 186 unless the current indicator is adapted to provide local emission factors for electricity.	LAs felt that renewable energy is a separate issue to CO_2 reduction, or at least not the only method.	Consideration should be made about how renewable energy information should be added to the performance framework
If changes are made, additional guidance and information must be provided	Guidance is important for LAs – both for the environment/energy/climate change officers and senior management.	It could be considered whether a process of local government education could be beneficial for all aspects of a low carbon economy.
LAs' potential for renewable uptake should be taken into account	LAs are concerned they may be ranked against others who have more potential for renewable energy than them.	It should be considered whether simply using carbon reduction through renewables is appropriate.

2.3 Summary of review of existing indicator

Strengths of NI186:

- Places little burden on LAs for reporting;
- Gives CO_2 emissions estimates using a nationally consistent methodology;
- Increase awareness of carbon reduction in a locally significant way.

Weaknesses of NI186:

- Doesn't explicitly show progress against renewables targets;
- Time lag between local actions and NI 186 publication;
- Doesn't give LAs guidance on how to progress towards targets.

3 Task 2 - Identification of improvements

Having identified the strengths and weakness of NI 186 with respect to renewable energy, this task is to identify and evaluate ways to improve how performance indicators could measure LA progress on renewable energy.

This commences with a review of how the renewable energy data is collected.

3.1 Review of available renewables data

Legislation and incentive mechanisms are the most important drivers influencing renewable energy deployment in the UK; this is represented graphically in Figure 3-1 (*white boxes*). The latest EU Renewables Directive now provides a clear framework for the development of UK policy; in particular imposing – for the first time – a mandatory contribution target for renewables against which progress will be closely monitored. The Renewables Directive provides input to the UK Renewables Policy which in turn must report progress back to Brussels.

The Government's UK Renewable Energy Strategy published on 15 July 2009 provides a clear framework for the growth in deployment required by the UK's 15% target of total energy from renewables by 2020 under the Renewables Directive. It builds on the financial incentives adopted in recent years (Figure 3-1 – *green boxes*), such as the Renewables Obligation (RO) and Renewable Transport Fuel Obligation (RTFO), and shows how these will now be complemented by new measures (Figure 3-1 – *red boxes*) to support heat (Renewables Heat Incentive - RHI) and small-scale electricity production (Feed in Tariffs - FITs). The strategy also provides a wide range of other measures to ensure that renewables can maximise their contribution to energy consumption. These incentive mechanisms serve two purposes; they stimulate new projects and provide new data sources about the performance of these projects. The latter will, in future, include the Extended RO, FITs and RHI Registers that will be managed by Ofgem.

Renewables are therefore now at the centre of UK energy policy, providing a very different environment from that in the past and it is crucial that the Government have reliable information to monitor the impact of these wide-ranging measures.

Biennial reporting to Brussels will be required as part of the UK's National Action Plan, where progress against the UK target will be presented and corrective measures outlined if it is off-track. There is therefore a need for two reporting systems:

- One providing evidence for the effectiveness of legislation/policies (RESTATS - Renewable Energy STATisticS database)
- A predictive tool to help make forecasts about when new projects will come on-line (REPD - Renewable Energy Planning Database)

These reporting systems therefore contain data sources that might be exploited to provide information for renewables indicators at the Local Authority level. Further information indicating policy inter-relationships with RESTATS and REPD, including a representational diagram of information sources and reporting relationships (primarily electricity), is shown in Figure 3-1.

These and other relevant data sources are summarised in the following sections and in more detail in Annex 2.

3.1.1 RESTATS (Renewable Energy STATisticS database)

RESTATS, the UK's Renewable Energy STATisticS database, is a project that has been running for more than 20 years and over this period has become the primary source of accurate, up-to-date

energy statistics of UK renewable energy sources. The coverage for data collection activities and its classification into the various technology bands is summarised, together with that for REPD, in Table 3-1 and Table 3-2, respectively. It covers electricity, heat and, since 2006, liquid biofuels. The technologies investigated include active solar heating; solar photovoltaics (PV); onshore and offshore wind power; wave power; large- and small-scale hydro; biofuels (biomass and biowastes, including co-firing); geothermal aquifers. It is thus the most reliable means by which the success of the UK renewables programme can be both measured and monitored.

Data for RESTATS are gathered on an annual basis and the results are published in the Digest of UK Energy Statistics (DUKES), Energy Trends and also via the DECC and RESTATS (*http://www.restats.org.uk*) web sites.

As these are Official Statistics, there will be some restrictions relating to both the timing of publications (an embargo is placed on the release of statistics until an agreed date/time) and maintaining the anonymity of respondents and the security of commercially sensitive information; the latter is covered by the '3 site rule' relating to disclosure.

The '3 site rule' states that in order to quote data on renewable generation, there must be more than three installations of the same technology type and comparable installed capacity. This clearly could cause some problems if breaking data down to LA area.

Data on **electrical generation** are, in most cases (except for the contribution from very small wind turbines – 'teenyturbs' category in RESTATS), at the individual project level and georeferenced according to the Nomenclature of Units for Territorial Statistics (NUTS) down to NUTS 4 – essentially to the Local Authority level and so could be used for LA National Indicators.

Data on **heat schemes** are more fragmented and are currently based on:

- Limited surveys under the Gap Analysis activity
- Other data sources, including external surveys (e.g., by the Forestry Commission) and databases (e.g., Bio-Energy Capital Grants Scheme and CHAPSTATS)
- Estimates and modelling (e.g., Active Solar)

As a result, it is therefore not possible to meaningfully georeference many of these data to the individual site level; e.g. domestic wood use, straw combustion and therefore these would not be available for LA National Indicators; only estimates would therefore be possible. Without georeferencing of these scheme it has not been possible so far to include them in the NAEI mapping work which feeds into NI 186.

Microgeneration and **Liquid Biofuels** are dealt with in more detail in Sections 3.1.3, 3.1.4 and 3.1.5 of this report.

3.1.2 REPD (Renewable Energy Planning Database)

In parallel and complimenting RESTATS, the Renewable Energy Planning Database (REPD) project meets the need to track the progress of potential new projects from inception, through planning, construction and operational stages. When schemes become operational, they are then picked up by RESTATS.

These data are gathered on a monthly basis and the key stages of the process are summarised in the following box:

Box 1. The Planning System for Renewables

The Planning System for Renewables

The data held in the REPD essentially summarises the experiences of planning submissions handled in following way:

- **Schemes ≤ 50MW (on-shore) are handled by the Local Planning Authorities**
- **Schemes > 50MW (on-shore) or > 1MW (off-shore) are handled under Section 36 (essentially by a government department)**

There will be changes to the way in which large schemes are to be handled in England.

- **Schemes =100MW or > 1MW (off-shore) to limit of territorial waters will be handled by the by Marine Management Organisation (MMO)**
- **Schemes > 50MW (on-shore) or > 100MW (off-shore) will be handled Infrastructure Planning Commission (IPC)**

There are essentially two phases to the monitoring process:

Pre-consent Phase

a) **Schemes sometimes go through a Scoping phase; these are essentially schemes under development and are tentative ideas being sounded out by the developers before formal submission to planning. The decision to submit may be influenced by the sort response received.**
b) **A scheme formally submitted to planning for which a decision has yet to be made is described as an Application Submitted**
c) **When a scheme is determined (i.e., a formal decision is reached) it may either be Approved or Refused. Refused schemes have the option of going to Appeal for another opinion.**

Post-consent Phase

d) **When a scheme has been Approved, its Post-consent status is described as Awaiting Construction. This is a time when the developer assesses the conditions that might come attached to the planning approval and whether he might meet them. It is also a time when project funding is more seriously considered. Occasionally, schemes might be Abandoned at this stage.**
e) **The Under Construction phase is when the first formal ground works begin to take place; in the case of off-shore activities, it is when the first off-shore work takes place and is not used to describe the on-shore work to receive cabling, etc.**
f) **Finally, when the project begins to generate power, it is described as Operational.**

The coverage for data collection activities and its classification into the various technology bands is summarised, together with that for RESTATS, in Table 3-1 and Table 3-2, respectively. What should be noted are the discrepancies between the way in which REPD and RESTATS classify technologies. This issue will be resolved as part of the current work to integrate RESTATS more closely with REPD; the key elements of this that impact this work are listed in Table 3-3. Linking the two databases will not only ensure the completeness of what is held in RESTATS but will provide useful generation commenced dates that would assist in creating time-series data for LA Renewables Indicators back to the start of the reporting period (2005).

All database entries are currently georeferenced according to the following categories but in future, will also be recorded in terms of NUTS 4:

- Country
- Region
- County
- District (essentially Local Authority)

These data may therefore be used to forecast future LA National Indicators.

As with RESTATS, these data are also Official Statistics, and so there will be some issues relating to both publication dates (an embargo is placed on the release of statistics until an agreed date/time)

and the security of commercially sensitive information. At present, data on Scoping schemes and Comments fields containing Commercial-in-Confidence information are not disclosed.

There are a number of problems associated with gathering renewable energy planning submissions from the local authorities in that their interactive (database driven) planning portals may not necessarily list all the correct submissions when queried. This is because they are very much reliant on the title of the planning application containing the correct words to assist in the search. It is therefore suggested that in view of the benefits to LAs of more complete coverage of their renewable energy activities, perhaps the onus should be placed on the LPAs to periodically flag such submissions to DECC/RESTATS-REPD; DECC are currently considering how this might be taken further with the CLG to see if there is a way that this could be implemented with the Local Authorities as it would be in the interests of both parties.

3.1.3 Renewables Heat Incentive (RHI)

The RHI, proposed in the 2008 Energy Bill, is likely to apply to the generation of renewable heat at all scales, through a range of technologies (including microgeneration) covering biomass, solar hot water, air- and ground-source heat pumps, biomass CHP, biogas produced from anaerobic digestion, and biomethane injected into the gas grid, although it will potentially be banded by size and technology.

Government currently expects the RHI to be in place by April 2011. There is currently a consultation process underway about how the RHI might operate and the data that might be made available from it. DECC, in discussions with AEA, have made recommendations to Ofgem as to what data should be recorded. DECC should continue to pursue this vigorously with Ofgem but may be limited in what can be achieved. Whatever the final outcome of the consultation process, there would essentially be another key data source administered by a regulatory body or its contractor to interrogate and import into RESTATS, but it is believed that data could be made available down to the Local Authority level and therefore of value to producing LA National Indicators.

3.1.4 Feed-In Tariffs (FITs)

The 2008 Energy Act allows for the introduction of Feed-In Tariffs (FITs) to provide incentives to build renewable electricity installations up to a maximum capacity of 5 MW. It is a particularly important incentive mechanism for microgeneration. FITs are described as those fees that the micro-generator - who is normally the power supplier's customer - will be paid when they can show that they are putting power back into the grid. The government intends to implement FITs by April 2010. As with the requirement for a central register of installations for the RHI, a similar register would need to be kept for payments made via FITs which could be taken advantage of collect information on energy production from microgeneration.

Discussions have also taken place between DECC and Ofgem as to what data could be made available. This is still ongoing but it is believed that data could be made available down to the Local Authority level and therefore of value to producing LA National Indicators. It is likely that these data would be provided on a quarterly basis. DECC should continue in their discussions with Ofgem to ensure the best possible outcome in terms of what is made available towards the compilation of these National Statistics but at this stage in the process there may not be anything further that can be done.

3.1.5 Renewable Transport Fuels

Two road transport fuels, biodiesel and bioethanol, are sold blended with diesel and petrol, respectively. The Government's Renewable Transport Fuel Obligation (RTFO) came into effect in April 2008, and has since been amended following the conclusions of the Gallagher Review released in July 2008. The RTFO now requires road transport fuel suppliers to ensure that, by 2013, 5% of total road transport fuel supply in the UK is made up of renewable fuels, equivalent to around 2.5 billion litres of fuel per annum.

The RTFO is administered by the Renewable Fuels Agency (RFA), which has set up a reporting system to capture the information required to verify that obligated suppliers are meeting their obligations under the RTFO. The RFA is publishing monthly **production** reports on biofuels supplied to the UK market from large volume suppliers, quarterly reports which will include data on smaller volume suppliers and an annual independently verified dataset for the whole financial year. Biofuel **consumption** figures can be obtained from figures published by HM Revenue and Customs (HMRC) derived from road fuel taxation statistics.

Whilst the location of these biofuels production plants and suppliers is known, from the point of view of LA National Indicators, it is where the fuel is used that is important and not where it is produced or sold. Any figures generated would therefore need to be an estimate based on a detailed transport model that can proportion these consumption data to the local authority level. As it is just UK biofuels we are interested in, the UK contribution could be estimated from the percentage split between imported and home produced which is gathered under these surveys.

A summary of the current limitations with various data sources is given in the following data box; many of these will be addressed in the work to integrate these databases and data sources outlined in Table 3-3.

Box 2. Summary of Current Limitations with data sources

Summary of Current Limitations with data sources

- **RESTATS started 1989; REPD started 1995. Therefore some discrepancy in the data held by both – not an issue for NI 186 as base year is 2005**
- **REPD only records projects that are submitted to the planning system – schemes that do not require planning applications (Sewage gas, most co-firing and historic hydro are therefore not covered)**
- **RESTATS is therefore more comprehensive from the point of view of operational schemes**
- **REPD currently records electricity-only schemes, hence no data on heat. Gathering data on heat via this tool would not be comprehensive as many heat use schemes do not require planning approval.**
- **Permitted developments would not be gathered via the REPD but should be picked up via the FITs and RHI registered held by Ofgem.**
- **There remain uncertainties concerning the level of detail, frequency and timing of data to be made available from the RHI register but it is hoped this will not be too different to that being of offered for FITs**
- **RESTATS records information on both electricity and heat but heat data are limited. Heat data vary in quality. Based on limited surveys and models.**
- **Limited data on Transport Fuels – liquid biofuels only**
- **REPD Biomass classifications are not comprehensive**
- **RESTATS and REPD are currently being more closely integrated to improve data quality and consistency and further improvements to the georeferencing of these data**
- **The location of the use of biofuels in transport can not currently be mapped so would not be able to be estimated in NI 186.**

Figure 3-1 RESTATS and REPD information sources and reporting relationships

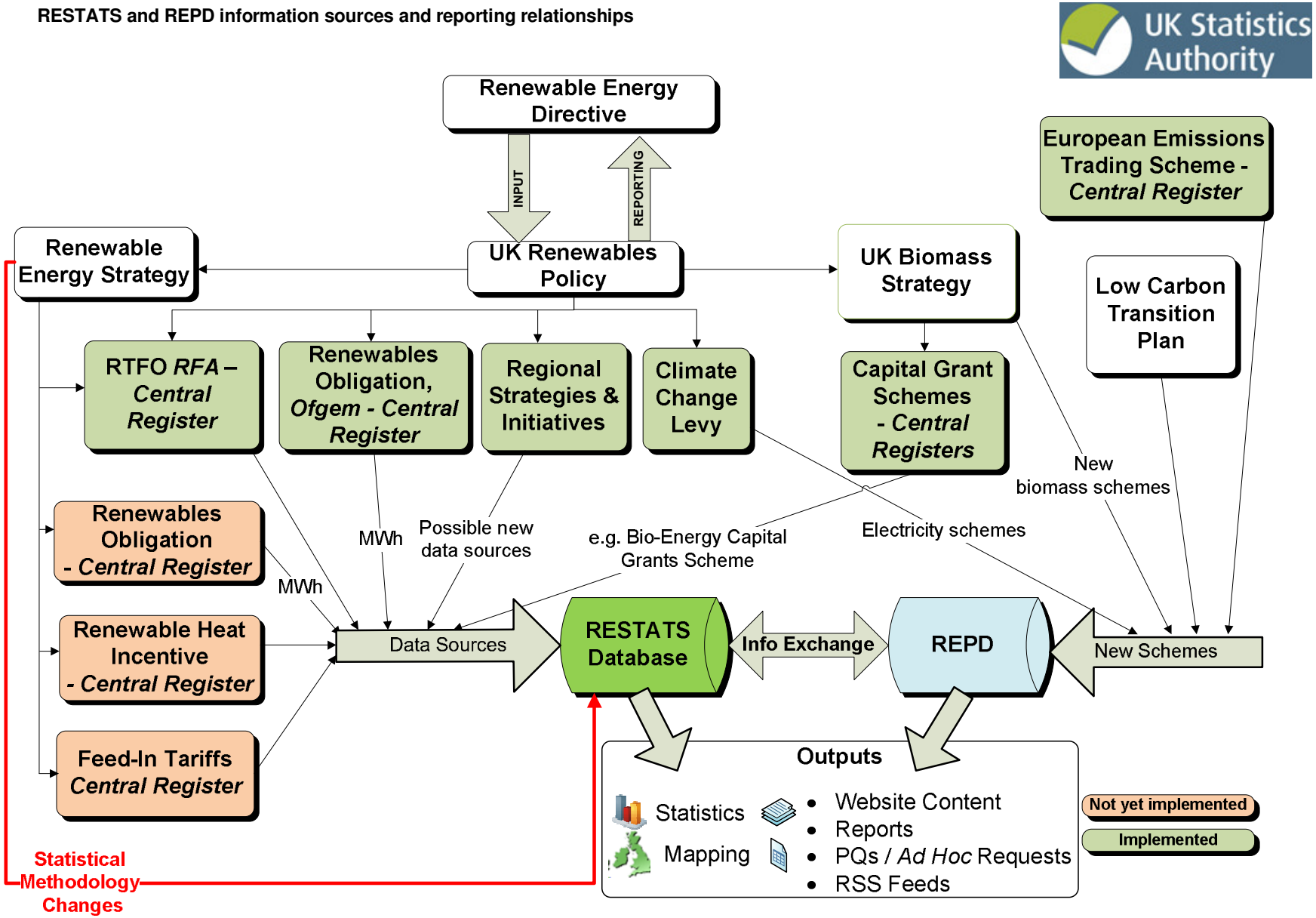

Table 3-1 Data Collection – Statistics Coverage

RESTATS	REPD
Technologies	
• Co-firing (biomass with fossil fuels) • Biomass (dedicated)[1] • Biomass (wastes)[2] • Geothermal Aquifers • Hydro (large- and small-scale) • Solar (PV & Active Solar Heating) • Tidal and Tidal Stream • Wave • Wind Offshore • Wind Onshore **Transport Fuels** (biodiesel/bioethanol) **Microgeneration** 1 LFG, Sewage Gas, Domestic Wood, Industrial Wood, Energy Crops & Forestry Residues, Straw 2 MIW, Specialised waste - AD, Hospital, Meat & Bone,, Poultry Litter, Scrap Tyres	• Biomass - Co-firing • Biomass – Dedicated (**more detail**) • Landfill Gas • Hydro • Municipal and Industrial Waste (MIW) • Solar PV • Sewage Gas • Tidal and Tidal Stream • Wave • Wind Offshore • Wind Onshore
Data required	
• Project details (address, technology, IC) • **Geographical location** • Generation (**Electricity and/or Heat**) and Uses • **Fuel Input** (Energy Input - Indigenous or imported) • **Microgeneration** • **Transport fuels**	• Project details (address, technology, S36/LPA, IC) • Geographical location • Scoping, Grid Connection • Stages of planning application - **key dates** • Material issues/reasons for refusal • Post consent status; date operational

Table 3-2 Relationship between RESTATS and REPD Technology Bands

RESTATS	REPD		
Technologies	Technologies	Energy Form	NOTES
Biomass			
Co-firing (biomass with fossil fuels)	Biomass - Co-firing	electricity only	
Domestic Wood	N/A	heat only	Estimates supplemented with limited survey; working with Forestry Commission to amend survey
Energy Crops/SRC	Biomass - Dedicated	electricity and/or heat	
Forestry Residues	Biomass - Dedicated	electricity and/or heat	No field yet but some Biomass to go here
Straw	Biomass - Dedicated	electricity and/or heat	Estimates, based on limited survey for heat: working with Defra to get better data on straw for heat
Industrial Wood	Biomass - Dedicated	heat only	Heat only at the moment is RESTATS
Biomass	Biomass - Dedicated	electricity and/or heat	A catch all but some needs to be reclassified
Hospital Waste	Biomass - Dedicated	electricity and/or heat	
Farm Anaerobic Digestion	Biomass - Dedicated	electricity and/or heat	
Meat & Bone	Biomass - Dedicated	electricity and/or heat	
Poultry Litter	Biomass - Dedicated	electricity and/or heat	
Scrap Tyres	Biomass - Dedicated	electricity and/or heat	
Landfill Gas	Landfill Gas	electricity and/or heat	
Municipal and Industrial Waste	Municipal and Industrial Waste	electricity and/or heat	
Sewage Sludge Digestion	Sewage Gas	electricity and/or heat	
Large-Scale Hydro >=5MW	Hydro	electricity only	
Small-Scale Hydro <5MW	Hydro	electricity only	
Solar Photovoltaics	Photovoltaics	electricity only	
Solar - Active	N/A	heat only	Modelling with Independent assessment/verification: revisions to data required
Tidal Barrage and Tidal Stream	Tidal Barrage and Tidal Stream	electricity only	No entries yet for operational sites
Shoreline Wave	Wave	electricity only	
Wind Offshore	Wind Offshore	electricity only	
Wind Onshore	Wind Onshore	electricity only	
Geothermal Aquifers	N/A	heat only	Only one scheme; possibility of one other
Transport Fuels			
Biodiesel/Bioethanol	-	-	Working with RFA to improve survey; details of Producers and Suppliers are held
hydrogen	-	-	watching brief only
electricity	-	-	watching brief only
Microgeneration			
< 45kW heat		heat only	Greater focus on Renewable Heat; RHI register (from April 1 2011) - form of data currently unknown
< 50kW electricity		electricity only	FITs register (from April 1 2010) - form of data currently unknown

Table 3-3 New Database - Improved Reporting for Local Authorities

RESTATS	REPD
New Database	
• Integrate with REPD • Improved data quality/consistency • Mapping	• Integrate with RESTATS • Improved data quality/consistency • Improved mapping • Heat & CHP to be considered
Geographical	
NUTS (Nomenclature of Units for Territorial Statistics) • NUTS1 – Regions • NUTS2 and NUTS3 - close to counties • NUTS 4 aka (LAU Level 1) - Local Authorities • Will also integrate at REPD address level	• Country • Region • County • District • Local Authority • Will also be to NUTS
Publishing Statistical Data (current limitations)	
• Some issues relating to disclosure (3 site rule)	• Scoping schemes currently not released • Some fields containing C-in-C information

3.2 List of options for monitoring renewable energy through the Local Government Performance Framework

AEA has put together a list of options for monitoring renewable energy in LAs through the Local Government Performance Framework. These are listed below and discussed in the following sections.

- **Adapt the current NI 186 methodology**. This could be through either of the following methods:
  - Develop a local emission factor for electricity to take into account renewable electricity generation in local areas
  - Additional column for NI 186 dataset which gives a 'negative emission' for electricity generated through renewables
- **Create a renewable energy matrix**
  - As a self assessment tool
  - As an additional or supplementary indicator
- **Make use of existing LA requirements and actions**

3.2.1 Alteration of existing NI 186 data to include renewables

Although the RESTATS data isn't currently available down to LA level for output for all years, these calculations have been produced using an extract of electricity generation from RESTATS for a small number of LAs. The production of a new version of the RESTATS database will soon be complete and these extracts will become more accessible.

It should be noted however that these data are from 2008 when the emissions data are from 2007. It should also be noted that due the '3 sites' disclosure rule, some local data may need to be suppressed and might affect the resulting emissions data. For more information on the '3 site rule', see section 3.1.1.

Currently georeferencing of heat schemes is not as easily available through RESTATS and other data sources.

For 2007, 5% of the UK's electricity was generated through renewable energy generation, see Table 3-4. The LA CO_2 methodology uses the total amount of electricity used and the total emissions for that generation to produce an emission factor for electricity. This emission factor takes into account the 5% renewable proportion.

For these calculations another emission factor has been produced for electricity which is without the use of renewable energy generation – assuming a zero emission factor for renewable generation, see Table 3-5. This emission factor is then used for all non-renewable generation, so for example if a LA has 15% of their electricity generated using renewables, 85% of their electricity consumption will be treated with this non-renewables factor and 15% will have zero emissions applied to it.

Table 3-4 Fuels used in generation of electricity in the UK – taken from Energy Trends, December 2008[2] and the LACO$_2$ methodological report

Fuel	Percentage shares of generation	Generation GWh
Coal	34.5%	111,895
Oil	1.2%	3,892
Gas	41.5%	134,598
Nuclear	15.9%	51,569
Hydro	**1.3%**	**4,216**
Other renewables	**3.7%**	**12,000**
Other	1.9%	6,162
Total	100%	324,332

Note: Other includes coke oven gas, blast furnace gas and waste products from chemical processes.

Table 3-5 Calculation of emission factors for electricity

Total UK Emission for Electricity (kt CO_2)	174,686
Total Consumption (GWh)	324,332
Electricity CO_2 Factor (kt CO_2 per GWh)	0.539
% total UK electricity consumption from non-renewables	95%
% total UK electricity consumption from renewables	5%
Total consumption, produced from non-renewables (GWh)	308,115
Electricity CO_2 Factor for non-renewable proportion (kt CO_2 per GWh)	0.567

Table 3-6 shows the current NI 186 data set for 5 LAs (some are included from Scotland and Wales due to the current availability of data). Included in this table are the nationally set % of electricity from renewables and electricity emission factor.

Table 3-7 shows one option for changing NI 186. This option involved calculating a local electricity emission factor to take into account renewable electricity generation in particular areas. It can be seen from this table that while Dartford has renewable electricity generation in its area, the percentage of electricity coming from renewable generation is less than the national average. This means that the total and per capita emissions for Dartford actually increase using this method. For some LAs, this local emission factor produces a significant decrease in total and per capita emissions.

Table 3-8 shows a slight variation on the local emission factor. This is in the form of a 'negative' emission so it explicitly shows the decrease in emissions which is due to the production of electricity using renewable generation. The reduction in total and per capita emissions is the same using this method as using the locally calculated emission factors.

It should be noted that these emission factors may not be the final ones used if this methodology is adopted. The total amount of electricity generated and electricity used differ due to losses on the public distribution system (grid system and local networks) and other differences between data collected on sales and data collected on availability[3].

[2] http://www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx
[3] http://decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx

Table 3-6 Electricity emissions from NI 186 data set

RegionName	SecondTierAuthority	LARegionName	Year	% Electricity from renewables	Electricity Emission Factor Used (kt CO2 / GWh)	A. Industry and Commercial Electricity	O. Domestic Electricity	Grand Total (including all sectors) (kt)	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Yorkshire and the Humber	East Riding of Yorkshire	East Riding of Yorkshire	2007	5%	0.539	577	353	2,956	333	8.9
South East	Kent	Dartford	2007	5%	0.539	171	93	737	91	8.1
Wales	Wales	Ceredigion	2007	5%	0.539	107	94	547	78	7.0
Scotland	Scotland	Highland	2007	5%	0.539	553	409	2,280	217	10.5
Scotland	Scotland	South Lanarkshire	2007	5%	0.539	444	374	1,945	310	6.3

Table 3-7 Possible output from NI 186 using locally calculated emission factors

RegionName	SecondTierAuthority	LARegionName	Year	% Electricity from renewables	Electricity Emission Factor Used (kt CO2 / GWh)	A. Industry and Commercial Electricity	O. Domestic Electricity	Grand Total (including all sectors) (kt)	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Yorkshire and the Humber	East Riding of Yorkshire	East Riding of Yorkshire	2007	11%	0.505	543	332	2,900	333	8.7
South East	Kent	Dartford	2007	3%	0.552	175	95	745	91	8.2
Wales	Wales	Ceredigion	2007	79%	0.117	23	21	389	78	5.0
Scotland	Scotland	Highland	2007	70%	0.172	177	131	1,626	217	7.5
Scotland	Scotland	South Lanarkshire	2007	24%	0.434	359	302	1,788	310	5.8

Table 3-8 Possible output from NI 186 using 'negative emissions' for renewables

RegionName	SecondTierAuthority	LARegionName	Year	% Electricity from renewables	Electricity Emission Factor Used (kt CO2 / GWh)	A. Industry and Commercial Electricity	O. Domestic Electricity	RESTATS data: generation from renewables (GWh)	"Negative Emissions" from renewable electricity generation	Grand Total (including all sectors) (kt)	Population ('000s, mid-year estimate)	Per Capita Emissions (t)
Yorkshire and the Humber	East Riding of Yorkshire	East Riding of Yorkshire	2007	11%	0.567	610	373	190	- 107.92	2,900	333	8.7
South East	Kent	Dartford	2007	3%	0.567	180	98	13	- 7.39	745	91	8.2
Wales	Wales	Ceredigion	2007	79%	0.567	114	100	299	- 169.34	389	78	5.0
Scotland	Scotland	Highland	2007	70%	0.567	584	433	1,249	- 708.39	1,626	217	7.5
Scotland	Scotland	South Lanarkshire	2007	24%	0.567	469	395	358	- 203.17	1,788	310	5.8

Issues arising from adapting NI 186 methodology

NI 186 was designed to be produced on an end user basis which means that LAs should not be penalised for power stations being located in their area. There is some consideration needed into whether a large wind plant for example, installed under a national rather than local scheme, should be used in this way in an end user inventory.

The potential for renewable energy is very dependent on the resources and geography of each LA. Hence a rural authority will have different opportunities and challenges to an urban one; a coastal authority will differ from an inland one etc. This means that there is not a 'level playing field' for potential emission reductions from renewable energy unlike energy efficiency measures which are applicable to all LAs. Hence the development of ideas will need to take local circumstances into account.

During the consultations with LAs, it was obvious that some were particularly worried that they would be ranked against other LAs who would have a higher potential capacity for renewable energy generation than they do. Changing the methodology of NI 186 would not take this potential into account.

One major consideration which is needed is whether using local renewable electricity generation data would cause a double count through the use of the DECC sub-national energy consumption data which are compiled using meter readings. Currently electricity meter readings relate to the net draw from the grid. Where there are microgeneration technologies installed and provide a positive supply to the grid then it would be recorded as having a negative consumption. Currently it is not known where the size of installation cut off point is for including in the DECC data set. It is possible that more will be known about this once FITs scheme begin. **This issue is important and may warrant further discussion.**

The '3 site rule' for disclosure may affect the renewables data which can be reported and included in NI 186. It states that data on renewables can only be quoted if there are more than three sites or the same technology type and of comparable size generating electricity in that area. If sites were excluded from LAs' NI 186 data, this might considerably affect their per capita emissions.

It is currently only possible to use the RESTATS data on electricity generation in NI 186. This is due to there being less georeferenced data for heat installation in RESTATS. Adding heat installations would also increase the risk of double counting in the NI 186 data.

3.2.2 Matrix

During discussions with LAs it had become clear that a matrix tool would be a useful method for not only monitoring progress with furthering renewable energy generation but would also help with knowing what the next steps should be. Many LAs have used similar tools previously and have found them to be beneficial.

There are two ways in which the matrix tool AEA has developed could be used. Firstly as a self assessment tool for LAs to use themselves to gauge their progress and secondly as and additional or supplementary indicator within the local government performance framework.

It is recommended that the approach should be to encourage LAs to use the matrix as a self assessment tool. This would encourage open and honest answers when it comes to the barriers faced and the areas where improvement are needed such as senior management involvement. It would also mean that additional burden would not be placed on LAs to complete and submit the matrix. Additional burden was something that CLG were keen to discourage when they were consulted at the beginning of this process.

The matrix would also not penalise LAs which have a low potential for renewable energy as it focuses more on actions, policy and evidence.

During discussions with Bristol City Council it was suggested that the matrix could be used as part of the Low Carbon Framework (LCF) pilot of which they are part of. This would help to develop the matrix and would identify how it could best be used by LAs, DECC and CLG. This would need to be discussed with CLG in order to progress this idea.

3.2.3 Existing requirements and actions of LAs

Planning Policy Statements

There are particular data and information that LAs are already required to collect as an evidence base for Planning Policy Statements (PPS). PPSs offer detailed advice to local planning authorities (LPAs) on the renewable energy content of local development documents. This would be a useful package of information to use as part of monitoring LAs' progress on renewables without giving them additional reporting burden.

More information can be found about PPSs in Annex 4

Renewable and low-carbon energy capacity methodology

In January 2010 a methodology outlining the process to determine renewable and low-carbon energy capacity at a regional level was published by DECC[4] following stakeholder review and comment on an earlier version.

The main purpose of this methodology is to ensure that there is synergy between regional approach to determining renewable and low-carbon energy capacity and national strategy and policy. The methodology will ensure consistency in the region's evidence bases. These evidence bases will underpin regional renewable and low-carbon energy targets.

The methodology will be important for local evidence bases, and associated renewable and low carbon targets, to be consistent with the methodology for the regions. The methodology could be combined with the PPS evidence bases as a method for tracking progress against renewable energy generation.

[4] http://www.decc.gov.uk/media/viewfile.ashx?filepath=what%20we%20do/uk%20energy%20supply/energy%20mix/renewable%20energy/ored/1_20100305105045_e_@@_methodologyfortheenglishregions.pdf&filetype=4

4 Task 3 - Methods to add to the existing indicator

4.1 Background to need for a matrix

One particular concern with the use of NI 186 is the time delay between LA action on renewable energy and the impact on NI 186 for that LA. There are two elements to this.

Firstly, there is the delay between LA action and the start of actual generation of renewable energy. This time delay includes several elements:

- Policy delay – the time to develop and implement a LA policy or standard on renewable energy.
- Planning delay – the time in applying for, and gaining, planning consent, including planning appeals.
- Construction delay – may be several years for large projects.

Secondly, once a project is generating there will be a further delay of 2 years before the CO_2 impact of the project could influence the NI 186 for the LA as a result of the time it takes for the data to be collected and analysed for the Green House Gas Inventory.

So irrespective of the improvements that could be made as part of Task 2 to NI 186, there appears to be a need for an earlier indicator of progress by LAs.

Hence, AEA have developed an assessment tool that could help identify strengths and weaknesses on how well LAs are prepared for their roles in helping the development of renewable energy. This was identified as a positive action through consultation with LAs and could be used as a separate tool, or as part of NI 186.

The principle is to identify the critical success factors that lead to better decision making by LAs. For each of these critical success factors, the LA is scored using four scoring criteria/levels. LAs would report their progress against these critical success factors using self- assessment.

In addition to identifying strengths and weaknesses, the matrix provides a list of improvement actions which would be needed to improve against each of the critical success criteria.

4.2 Development of the matrix

During the development of the matrix tool, the following steps have been taken:

- Consultations (by phone or email) with 6 LAs currently reporting NI 186, 6 LAs currently not reporting NI 186 and stakeholders selected from project developers, planners and CLG representatives to identify the critical success factors, criteria and scoring levels;
- Development of a draft scoring matrix;
- Testing of the draft matrix with a sub sample of the LAs;

The matrix is provided as an indicative tool. It should not be used and submitted by LAs yet as a scoring matrix, more work would be needed for a scoring and recording mechanism before that could be done. The matrix document can be found in Annex 5.

There are a number of options that DECC may care to consider in terms of how the matrix should be used, these are:

1) As a self-assessment tool for LAs own knowledge and understanding of renewable energy (RE) and low carbon (LC) thinking mainly before the planning stage. It can show them how to assess their current level of knowledge and make progress towards a more advanced level and would NOT be submitted.

2) As a national indicator as part of a wider group of requirements or, on its own, that is submitted and used to monitor year on year improvement. In order for the matrix to be used as an indicator it would need a guidance note to explain its purpose, describe the methodology and how to complete it. Ideally it could also be piloted in its entirety to check that it is appropriate and provides DECC with the information it needs to judge how RE/LC are expanding across the country.

During discussions with Bristol City Council it was suggested that the matrix could be used as part of the Low Carbon Framework (LCF) pilot of which they are part of. This would help to develop the matrix and would identify how it could best be used by LAs, DECC and CLG. This would need to be discussed with CLG in order to progress this idea.

On its own the matrix provides just qualitative information with no requirements to provide supporting evidence or numerical data. It could be integrated into a broader indicator and/or include more numeric sections. The extra sections could be:

a. Quantitative data could be requested to expand the scope of the indicator. This could also be used to check the RESTATS and FITS databases. However, to achieve this process LAs would need to be provided with detailed guidance as to how to complete the table so that DECC receives consistent data. In addition, this harmonisation process needs expert knowledge and is time consuming to complete and this needs to be taken into consideration before a decision is made.

Installed capacity	**Electricity (kW)**		**Heat (kW)**	
	Your LA Buildings	Your LA Area	Your LA Buildings	Your LA Area
Onshore wind				
Solar photovoltaic				
Solar hot water				
Wave				
Biomass				
Hydro				
Micro-hydro				
Bio-fuels				
Ground source heat pumps				
Air source heat pumps				
Landfill gas				
Energy from waste				
Building integrated RE technologies				
Retrofitting of existing housing stock				

b. An additional tool could also be provided to calculate estimated CO_2 savings from RE/LC generation. This could either; be given to the LAs to provide indicative values (linked to self-assessment in option 1); or, DECC could have it and take the data from a. to plug in and calculate bottom-up data. It would be a relatively quick process to produce this tool. The time needed to process the information if the matrix (and any additional data) is submitted has not been estimated and this would need to be part of any future discussions.

5 Conclusions and recommendations

5.1 Conclusions

- There will shortly be enough regional renewable electricity generation data (down to NUTS 4 level) to use in calculating NI 186. The renewable heat data will not be suitable for this purpose.

- There are two methods which could be used to alter the current NI 186 data, the first by calculating a local electricity emission factor and the second by inserting an addition 'negative' emissions column for renewable electricity generation.

- Local Authorities are on the whole positive about introducing an indicator or other assessment tool to monitor progress on renewable generation. The sample used would suggest Las would be willing to adopt these measures.

- If any changes additions were to be made, clear guidance for local authorities and general public would be needed.

- The LAs consulted would prefer the use of a matrix to be as a voluntary self assessment tool

5.2 Recommendations

- Amend the current NI 186 methodology so insert a 'negative' emission for electricity generated using renewable energy. This method would clearly show where the savings are being made.

    - It would need to first be established whether this would cause a double count in the renewables used in electricity generation, this might not be clear until FITs data begins to be collected.

- Introduce the decision matrix as a self assessment tool to provide LAs with an insight into how they could improve renewable use and reduce their emissions.

- Consider how these matrix data should be used. It should be considered whether the data should remain as a self assessment tool and not reported or if LAs' answers should be reported to DECC or CLG. If reporting is required, a suitable method of receiving and recording answers should be developed.

- Consider how RHI ad FITs reporting could be improved to help with data collection for RESTATS to feed into NI 186.

6 Annexes

Annex 1 – Analysis table of representation of renewable energy in the UK GHGI and NI 186

Table 6-1 Analysis of representation of renewable energy in the UK GHGI and NI 186

Technologies	Energy Form	Covered in GHGI				Covered in NI186			
		Biological carbon, No carbon emission associated with it	Power generation emission factor is derived from plant specific data. Renewable electricity not accounted for.	Not Covered	Other	Included as a reduction of national electricity emission factor	Included as a decrease in fossil fuel consumption. If replacing coal or oil, will not be spatially defined. If replacing gas, will come through metered LA consumptin totals.	Not Covered	Other
Biomass									
Co-firing (biomass with fossil fuels)	electricity only		☑			☑			
Domestic Wood	heat only	☑					☑		
Energy Crops/SRC	electricity and/or heat	☑				☑	☑		
Forestry Residues	electricity and/or heat	☑				☑	☑		
Straw	electricity and/or heat	☑				☑	☑		
Industrial Wood	heat only	☑				☑	☑		
Biomass	electricity and/or heat	☑				☑	☑		
Hospital Waste	electricity and/or heat				There are carbon factors associated with power generation using MSW and industrial waste. The emission factor considers that some of the elements of the waste are biological carbon (mixed with things like plastic), hence the EF is calibrated to consider this component. The carbon EF from this waste source is higher than from MSW due to higher contribution of plastics as opposed to natural waste such as paper.	☑			Incineration of MSW and industrial waste only covered for electricity generation - will produce a change in national electricity emission factor
Farm Anaerobic Digestion	electricity and/or heat	☑				☑	☑		
Meat & Bone	electricity and/or heat	☑				☑	☑		
Poultry Litter	electricity and/or heat	☑				☑	☑		
Scrap Tyres	electricity and/or heat				There are carbon factors associated with power generation using MSW and industrial waste. The emission factor considers that some of the elements of the waste are biological carbon (natural plastic). EF is from the british cement association who did a test to see the natural plastic component of the tyres they were burning.	☑			Incineration of MSW and industrial waste only covered for electricity generation - will produce a change in national electricity emission factor

Technologies	Energy Form	Covered in GHGI				Covered in NI186			
		Biological carbon, No carbon emission associated with it	Power generation emission factor is derived from plant specific data. Renewable electricity not accounted for.	Not Covered	Other	Included as a reduction of national electricity emission factor	Included as a decrease in fossil fuel consumption. If replacing coal or oil, will not be spatially defined. If replacing gas, will come through metered LA consumptin totals.	Not Covered	Other
Landfill Gas	electricity and/or heat	☑				☑	☑		
Municipal and Industrial Waste	electricity and/or heat				There are carbon factors associated with power generation using MSW and industrial waste. The emission factor considers that some of the elements of the waste are biological carbon (mixed with things like plastic), hence the EF is calibrated to consider this component	☑			Incineration of MSW and industrial waste only covered for electricity generation - will produce a change in national electricity emission factor
Sewage Sludge Digestion	electricity and/or heat	☑				☑	☑		
Large-Scale Hydro >=5MW	electricity only		☑			☑			
Small-Scale Hydro <5MW	electricity only		☑			☑			
Solar Photovoltaics	electricity only		☑			☑			
Solar - Active	heat only		☑				☑		
Tidal Barrage and Tidal Stream	electricity only		☑			☑			
Shoreline Wave	electricity only		☑			☑			
Wind Offshore	electricity only		☑			☑			
Wind Onshore	electricity only		☑			☑			
Geothermal Aquifers	heat only		☑				☑		
Transport Fuels									
biodiesel/bioethanol	liquid biofuels only				The amount of biodiesel and bioethanol used is subtracted from the consumption of petrol/diesel from the DUKES figures. No biodiesel/bioethanol in aircrafts and no biofuels included in railways.				Will be covered in the national emission factors for transport fuels, no local factors
electricity				☑				☑	
hydrogen				☑				☑	
Microgeneration									
< 45kW heat	electricity and/or heat		☑			☑	☑		
< 50kW electricity	electricity and/or heat		☑			☑	☑		

Annex 2 – Detailed description of renewable energy data sources

6.1.1 RESTATS (Renewable Energy STATisticS database)

RESTATS, the UK's Renewable Energy STATisticS database, is a project that has been running for more than 20 years and over this period has become the primary source of accurate, up-to-date energy statistics of UK renewable energy sources. The coverage for data collection activities and its classification into the various technology bands is summarised, together with that for REPD, in Table 3-1 and Table 3-2, respectively. It covers electricity, heat and, since 2006, liquid biofuels. The technologies investigated include active solar heating; solar photovoltaics (PV); onshore and offshore wind power; wave power; large- and small-scale hydro; biofuels (biomass and biowastes, including co-firing); geothermal aquifers. It is thus the most reliable means by which the success of the UK renewables programme can be both measured and monitored.

These data are used by the Department of Energy and Climate Change (DECC), the Statistical Office of the European Communities (SOEC, also referred to as Eurostat) and the International Energy Agency (IEA); RESTATS tracks the performance of these schemes; these data are gathered on an annual basis and the results are published in the Digest of UK Energy Statistics (DUKES), Enegry Trends and also via the DECC and RESTATS (*http://www.restats.org.uk*) web sites. It has proved particularly valuable in recent years by providing independent statistical evidence in support of various aspects of renewables activities and has been used by Government, industry and various contractors in a range of activities related to related to renewable energy.

As these are Official Statistics, there will be some issues relating to both the timing of publications (an embargo is placed on the release of statistics until an agreed date/time) and maintaining the anonymity of respondents and the security of commercially sensitive information; the latter is covered by the '3 site rule' relating to disclosure.

The '3 site rule' states that in order to quote data on renewable generation, there must be more than three installations of the same technology type and comparable installed capacity. This clearly could cause some problems if breaking data down to LA area.

Data on **electrical generation** are, in most cases (except for the contribution from very small wind turbines – 'teenyturbs'category in RESTATS), at the individual project level and georeferenced according to the Nomenclature of Units for Territorial Statistics (NUTS) down to NUTS 4 – essentially to the Local Authority level and so could be used for LA National Indicators.

Data on **heat schemes** are more fragmented and are currently based on:

- Limited surveys under the Gap Analysis activity
- Other data sources, including external surveys (e.g., by the Forestry Commission) and databases (e.g., Bio-Energy Capital Grants Scheme and CHAPSTATS)
- Estimates and modelling (e.g., Active Solar)

As a result, it is therefore not possible to meaningfully georeference many of these data to the individual site level; e.g. domestic wood use, straw combustion and therefore these would not be available for LA National Indicators; only estimates would therefore be possible. Without georeferencing of these scheme it has not been possible so far to include them in the NAEI mapping work which feeds into NI 186.

Microgeneration and **Liquid Biofuels** are dealt with in more detail in Sections 3.1.3, 3.1.4 and 3.1.5 of this report.

6.1.2 REPD (Renewable Energy Planning Database)

In parallel and complimenting RESTATS, the Renewable Energy Planning Database (REPD) project meets the need to track the progress of potential new projects from inception, through planning, construction and operational stages. When schemes become operational, they are then picked up by RESTATS.

These data are required in order to make forecasts about when targets for electricity generation from renewable energy sources might be achieved as failure to do so would result in financial penalties against the UK. Furthermore, these data help identify where problems may be occurring in policy, incentive mechanisms and in the planning process; it therefore provides good quality information to Government to assist in evidence-based policy making. These data are gathered on a monthly basis and the key stages of the process are summarised in the following box:

The Planning System for Renewables

The data held in the REPD essentially summarises the experiences of planning submissions handled in following way:

- **Schemes ≤ 50MW (on-shore) are handled by the Local Planning Authorities**
- **Schemes > 50MW (on-shore) or > 1MW (off-shore) are handled under Section 36 (essentially by a government department)**

There will be changes to the way in which large schemes are to be handled in England.

- **Schemes =100MW or > 1MW (off-shore) to limit of territorial waters will be handled by the by Marine Management Organisation (MMO)**
- **Schemes > 50MW (on-shore) or > 100MW (off-shore) will be handled Infrastructure Planning Commission (IPC)**

There are essentially two phases to the monitoring process:

Pre-consent Phase

g) **Schemes sometimes go through a Scoping phase; these are essentially schemes under development and are tentative ideas being sounded out by the developers before formal submission to planning. The decision to submit may be influenced by the sort response received.**
h) **A scheme formally submitted to planning for which a decision has yet to be made is described as an Application Submitted**
i) **When a scheme is determined (i.e., a formal decision is reached) it may either be Approved or Refused. Refused schemes have the option of going to Appeal for another opinion.**

Post-consent Phase

j) **When a scheme has been Approved, its Post-consent status is described as Awaiting Construction. This is a time when the developer assesses the conditions that might come attached to the planning approval and whether he might meet them. It is also a time when project funding is more seriously considered. Occasionally, schemes might be Abandoned at this stage.**
k) **The Under Construction phase is when the first formal ground works begin to take place; in the case of off-shore activities, it is when the first off-shore work takes place and is not used to describe the on-shore work to receive cabling, etc.**
l) **Finally, when the project begins to generate power, it is described as Operational.**

The coverage for data collection activities and its classification into the various technology bands is summarised, together with that for RESTATS, in Table 3-1 and Table 3-2, respectively. What should be noted are the discrepancies between the way in which REPD and RESTATS classify technologies. This issue will be resolved as part of the current work to integrate RESTATS more closely with REPD; the key elements of this that impact this work are listed in Table 3-3. Linking the two databases will not only ensure the completeness of what is held in RESTATS but will provide useful generation

commenced dates that would assist in creating time-series data for LA Renewables Indicators back to the start of the reporting period (2005).

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The database only contains data on electricity generating schemes; information on heat may also be included, but this is only for combined heat and power schemes. Heat schemes are very difficult to pick up via this route, with the exception of projects involving a major construction, as many do not require planning permission. As a result of new government incentive mechanisms for micro-generation, many small schemes will be classified as Permitted Developments (i.e., no planning applications required) and would therefore not be picked up via the REPD. These should, however, be picked up via the FITs and RHI registered held by Ofgem and will be discussed more fully in the next Sections.

All database entries are currently georeferenced according to the following categories but in future, will also be recorded in terms of NUTS 4:

- Country
- Region
- County
- District (essentially Local Authority)

These data may therefore be used to forecast future LA National Indicators.

As with RESTATS, these data are also Official Statistics, and so there will be some issues relating to both publication dates (an embargo is placed on the release of statistics until an agreed date/time) and the security of commercially sensitive information. At present, data on Scoping schemes and Comments fields containing Commercial-in-Confidence information are not disclosed.

There are a number of problems associated with gathering renewable energy planning submissions from the local authorities in that their interactive (database driven) planning portals may not necessarily list all the correct submissions when queried. This is because they are very much reliant on the title of the planning application containing the correct words to assist in the search. It is therefore suggested that in view of the benefits to LAs of more complete coverage of their renewable energy activities, perhaps the onus should be placed on the LPAs to periodically flag such submissions to DECC/RESTATS-REPD; DECC are currently considering how this might be taken further with the CLG to see if there is a way that this could be implemented with the Local Authorities as it would be in the interests of both parties.

6.1.3 Renewables Heat Incentive (RHI)

The RHI, proposed in the 2008 Energy Bill, is likely to apply to the generation of renewable heat at all scales, through a range of technologies (including microgeneration) covering biomass, solar hot water, air- and ground-source heat pumps, biomass CHP, biogas produced from anaerobic digestion, and biomethane injected into the gas grid, although it will potentially be banded by size and technology.

The scheme would be paid for by the introduction of a levy on suppliers of fossil fuels for heat, administered by Ofgem. For microgeneration it is expected to combine a capital payment for installation with ongoing payments for heat energy production. Smaller (e.g., domestic and small commercial solar thermal) installations would most likely be considered ‘deemed’ with heat output figures based on a series of agreed models.

Any such scheme involving the payment of substantial incentives for heat generation will need a central register of installations verifying their unique identity and the evidence of the useable heat they are producing (most likely recorded through the use of approved heat meters). This is potentially a new data source for statistics collection.

Government currently expects the RHI to be in place by April 2011. There is currently a consultation process underway about how the RHI might operate and the data that might be made available from it. DECC, in discussions with AEA, have made recommendations to Ofgem as to what data should be

recorded. DECC should continue to pursue this vigorously with Ofgem but my be limited in what can be achieved. Whatever the final outcome of the consultation process, there would essentially be another key data source administered by a regulatory body or its contractor to interrogate and import into RESTATS, but it is believed that data could be made available down to the Local Authority level and therefore of value to producing LA National Indicators.

6.1.4 Feed-In Tariffs (FITs)

The 2008 Energy Act allows for the introduction of Feed-In Tariffs (FITs) to provide incentives to build renewable electricity installations up to a maximum capacity of 5 MW. It is a particularly important incentive mechanism for microgeneration. FITs are described as those fees that the micro-generator - who is normally the power supplier's customer - will be paid when they can show that they are putting power back into the grid. The government intends to implement FITs by April 2010. As with the requirement for a central register of installations for the RHI, a similar register would need to be kept for payments made via FITs which could be taken advantage of collect information on energy production from microgeneration.

Discussions have also taken place between DECC and Ofgem as to what data could be made available. This is still ongoing but it is believed that data could be made available down to the Local Authority level and therefore of value to producing LA National Indicators. It is likely that these data would be provided on a quarterly basis. DECC should continue in their discussions with Ofgem to ensure the best possible outcome in terms of what is made available towards the compilation of these National Statistics but at this stage in the process there may not be anything further that can be done.

6.1.5 Renewable Transport Fuels

Two road transport fuels, biodiesel and bioethanol, are sold blended with diesel and petrol, respectively. The Government's Renewable Transport Fuel Obligation (RTFO) came into effect in April 2008, and has since been amended following the conclusions of the Gallagher Review released in July 2008. The RTFO now requires road transport fuel suppliers to ensure that, by 2013, 5% of total road transport fuel supply in the UK is made up of renewable fuels, equivalent to around 2.5 billion litres of fuel per annum.

The RTFO is administered by the Renewable Fuels Agency (RFA), which has set up a reporting system to capture the information required to verify that obligated suppliers are meeting their obligations under the RTFO. The RFA is publishing monthly **production** reports on biofuels supplied to the UK market from large volume suppliers, quarterly reports which will include data on smaller volume suppliers and an annual independently verified dataset for the whole financial year. Biofuel **consumption** figures can be obtained from figures published by HM Revenue and Customs (HMRC) derived from road fuel taxation statistics.

Information on transport biofuels has now been gathered under the RESTATS project since 2006 as the current surveys being undertaken by the RFA do not provide complete coverage; the long-term plan, however, is for the RFA to undertake all this work. The information required is the quantity of biofuels produced in the UK, and the quantities of biofuels supplied to UK road markets. Hydrogen powered and battery powered cars are currently not major players but a watching brief is being kept on this area.

Whilst the location of these biofuels production plants and suppliers is known, from the point of view of LA National Indicators, it is where the fuel is used that is important and not where it is produced or sold. Any figures generated would therefore need to be an estimate based on a detailed transport model that can proportion these consumption data to the local authority level. As it is just UK biofuels we are interested in, the UK contribution could be estimated from the percentage split between imported and home produced which is gathered under these surveys.

A summary of the current limitations with various data sources is given in the following data box; many of these will be addressed in the work to integrate these databases and data sources outlined in Table 3-3.

Summary of Current Limitations with data sources

- **RESTATS started 1989; REPD started 1995. Therefore some discrepancy in the data held by both**
- **REPD only records projects that are submitted to the planning system – schemes that do not require planning applications (Sewage gas, most co-firing and historic hydro are therefore not covered)**
- **RESTATS s therefore more comprehensive from the point of view of operational schemes**
- **REPD currently records electricity-only schemes, hence no data on heat. Gathering data on heat via this tool would not be comprehensive as many heat use schemes do not require planning approval.**
- **Permitted developments would not be gathered via the REPD but should be picked up via the FITs and RHI registered held by Ofgem.**
- **There remain uncertainties concerning the level of detail, frequency and timing of data to be made available from the RHI register but hopefully this will not be too different to that being of offered for FITs**
- **RESTATS records information on both electricity and heat but heat data are limited. Heat data vary in quality. Based on limited surveys and models.**
- **Limited data on Transport Fuels – liquid biofuels only**
- **REPD Biomass classifications are not comprehensive**
- **RESTATS and REPD are currently being more closely integrated to improve data quality and consistency and further improvements to the georeferencing of these data**

Annex 3 – Example Questionnaire

Renewable Indicator Questionnaire

Background

The UK has set a target to deliver 15% of energy demand from renewable energy sources by 2020. This is a critical element of the UK's response to the threat of climate change. The Renewable Energy Strategy sets out a lead scenario illustrating how this could be achieved if renewable energy provides:

- 30% of electricity generation;
- 12% of heat supply;
- 10% of transport fuels.

Local authorities (LAs) have a number of crucial roles in the achievement of these aims:

- As the planning authority for many renewable energy developments;
- Through setting local plans and standards which encourage, or require, renewable energy in new developments;
- Through use of renewable energy in their own estate.

Discussions between DECC and AEA have identified that:

- At present there is no specific performance indicator that assesses how well LAs are discharging these roles;
- The current indicator NI 186 on CO_2 emissions per capita does not show what progress LAs are making with renewables. This is because electricity generated within a LA is assigned to the grid and spread across the whole of the UK, not allocated to the LA where it is generated;
- There is a 2 year time lag between when new renewable energy sources start to generate and the availability of NI 186 results;
- There is an even greater time lag between the planning policy and planning decisions made by a LA and the availability of NI 186 results.

Questions

- Do you think that renewable energy should be represented within the Local Authority Performance Framework?
    - Follow up question – why?
- How well do you think NI186 currently deals with renewables?
    - Follow up question – why?
- Do you think NI186 would be a good place to record LAs' progress with renewable energy?

- What five key actions do you think LAs should do to encourage renewable energy?
    - How is your LA performing against these five actions?
    - How could you improve on your performance?
- Is your LA producing, or has it already produced, an evidence base to underpin renewable energy policy?
- Are there any particular barriers that you encounter that hinder renewable energy development?
- What initiative or actions does your LA have to assist with the development of renewable projects?

We are looking at a couple of options for how to incorporate renewable energy information into NI186.

Option 1

The first option is to collect data on renewable energy being used in local authorities in order to amend the current data being produced for NI186. So for example, if a LA has a wind farm in their area, their electricity emissions will be reduced.

To produce this data we will be using data from RESTATS which is a project run by AEA on behalf of DECC which produces national statistics on renewable energy in the UK. RESTATS identifies all relevant renewable energy sources and, where possible, information is collected on the amounts of energy derived from each. The database now contains 20 years of data from 1989 to 2008.

In order for us to ascertain whether RESTATS is lacking any local data it would be great if you could help us with supplying some information on renewables in your area.

- Do you hold data on renewable energy developments in your area?
- Do you hold data on the amount of energy supplied through renewable energy in your area?
- Would you be willing to supply us with that data to check against RESTATS?
- If so – great! See below:
- Please provide data for the number, capacity and type of installation if it is available for:
    - Installations currently in use
    - installations with planning permission awaiting construction
    - installations at planning application stage

- installations at the pre-planning/scoping stage

- Which technologies are being considered? (circle all that apply)

Onshore wind	Biofuels
Solar photovoltaic	Ground source heat pumps
Solar hot water	Air source heat pumps
wave	Landfill gas
Biomass	
Hydro	
Micro-hydro	

Option 2

The second option is to produce a matrix for LAs to complete in order to ascertain how much progress they have made and how much more is still needed to develop renewable energy in their area. This would be an instant indicator, available for LAs to use at any time to enable more immediate action rather than waiting for NI186 number to be released.

We would be very grateful if you would try using the matrix and provide to us any feedback you have on how it is used and where you think you score on the scale.

Any answers you provide in this questionnaire will not be linked back to your LA, this is being collected in order to improve the currently system for LAs in the future.

Annex 4 – Planning Policy Statements

Planning Policy Statements (PPS) offer detailed advice to local planning authorities (LPAs) on the renewable energy content of local development documents. Table 6-2 provides a table of the relevant requirements from the following PPSs:

- PPS1: Delivering Sustainable Development.
- PPS1 supplement: Planning and Climate Change.
- PPS3: Housing.
- PPS22: Renewable Energy.

In addition, PPS12 has a number of critical tests of soundness – a local authority's approach should be justified, effective and consistent with national policy. An authority's spatial planning approach should also be demonstrably effective, deliverable, flexible and able to be monitored.

Several consistent themes emerge from the PSS documents.

- The high priority accorded to climate change mitigation and adaptation.
- The important role of development plans in reducing the use of resources, including energy, and in meeting national and regional targets to this end.
- Encouragement for the use of criteria-based policies on renewable energy projects, avoiding sequential approaches, and with site-specific allocations made only where there are clear indications that the development is viable and likely to proceed.
- The need for LPAs to avoid duplicating requirements set out in other legislation, including the Building Regulations.
- The value of effective community engagement.
- The need for LPAs to promote and encourage renewable and low carbon generation.
- The ability of LPAs to expect a proportion of energy demand from new development to be met by on-site or decentralised generation.
- The potential to use Local Development Orders to facilitate renewable energy use.
- The need to support innovation in sustainable buildings through planning policy.
- The need for local requirements for decentralised energy supply to be set out in a development plan document, as opposed to a supplementary planning document, to enable examination by an independent inspector.
- The value of effective monitoring.

Table 6-2 Energy efficiency and renewable energy evidence base: principal requirements from relevant Planning Policy Statements

PPS1	PPS1 CCS	PPS3	PPS22	Ref.	PPS requirement
13(ii). 20. 22. 36.	9.	38.	1(ii). 18.	1.	Development plans should address climate change and promote energy efficiency (EE) and renewable energy (RE) use.
22.	19.		1(ii). 18.	2.	Development plans should promote and encourage, rather than restrict, the use of renewable resources
30.	11.			3.	Planning policies should not conflict with the Building Regulations or other legislative requirements
32(ii).				4.	Integrate sustainable energy policies with other development and regeneration policies
36.	41.			5.	Design and Access Statements can be used to show how policy objectives will be met.
41.		38.	1(vii).	6.	Importance of community involvement
	9. 30. 37.			7.	Plans should make a full contribution to delivering the government's Climate Change Programme and energy policies
	10. 24. 28.		18.	8.	Plans should make good use of opportunities for decentralised, renewable and low carbon energy in new development
	18.			9.	LDFs should build upon RSS, SCS and local climate change strategies
	20(a).			10.	LPAs should not require energy developers to demonstrate need.
	20(b).		19.	11.	Landscape and townscape protection should be consistent with PPS22 and not restrictive
	20(c).		1(iii). 6. 7.	12.	Policies should be criteria-based but can identify suitable areas or sites for RE if there is clear certainty that an RE project will come forward.
	20(d). 26-28.	38.	8.	13.	LPAs can set targets for the proportion of energy supply in new development to come from decentralised, renewable and low carbon energy sources, where there are clear opportunities, with specific requirements to facilitate connection
	21.			14.	Consider using LDOs for decentralised, renewable and low carbon energy
	26.			15.	LPAs should have an evidence-based understanding of renewable and low carbon energy
	27.			16.	Co-locate potential heat suppliers and customers
	30.			17.	Policies should support innovation in construction and support the national timetable for reducing carbon emissions from buildings
	31-33.			18.	LPAs can anticipate higher sustainability standards where there is clear and justified potential, on an area or site-specific basis, in a DPD

	34-36.			19.	Annual monitoring should assess against PPS1-CCS targets
			1(v)	20.	LPAs should not make assumptions about commercial and technical feasibility of RE projects
			12. 14.	21.	Identify criteria for the type and size of RE development in nationally designated areas, and do not create buffer zones around these areas
			16.	22.	LPAs should not use a sequential approach to site selection for RE projects, and should recognise the potential of remote brownfield sites
			22.	23.	RE development should be located and designed so as to minimise any increase in ambient noise levels
			23.	24.	RE plants that generate odour should not be located close to existing residential areas
			24.	25.	Ensure that any traffic increase associated with RE development is minimised,
			25.	26.	Policies should not specify minimum separation distances between wind turbines and power and transport infrastructure

Annex 5 – Matrix Document

Renewable energy matrix to support NI186

The matrix is designed to assess LA preparedness for their role in helping to develop renewable energy (RE) and low carbon (LC) generation.

		1	2	3	4	
A	**Leadership**					**Comments**
A1	**To what extent do senior management support and promote renewable energy (RE) and low carbon (LC) in your LA?**	Senior management do **not** promote or support renewable energy.	Senior management are starting to think about renewable energy and are gathering the evidence base	Senior management have a robust evidence base and are considering how to influence so that renewable energy is promoted more to increase its priority. There is an understanding that the LA contributes to UK 2020 RE targets.	Senior management support and promote RE widely through coordination and linking across partners and departments. There is a clear vision on how the LA contributes to UK 2020 RE targets.	
A2	**Does your LA promote RE/LC through their procurement strategy?**	There is no procurement policy	The procurement policy does not include RE	The procurement policy includes consideration for RE but is limited in scope. The activities are not monitored for compliance	The procurement policy encourages the consideration of renewable/low carbon energy in all purchases made by the LA e.g. outsourced services, office refurbishments, building improvements. The activities are regularly monitored to ensure compliance	
A3	**Does your LA have RE/LC schemes installed on their own premises, social housing or have they developed schemes in town centres?**	The LA has **no** renewable/low carbon energy installed on own premises, social housing or in town centres	The LA is **considering** installing renewable/low carbon energy on its own premises, social housing or in town centres	The LA has installed a number of renewable/low carbon energy schemes on own premises, or social housing, or in town centres	The LA has renewable/low carbon energy installed on own premises, and social housing and in town centres	
B	**People**					**Comments**
B1	**To what extent are people in your LA equipped and knowledgeable about RE/LC?**	There is no-one with a specific role that includes RE	There is one member of staff whose role includes RE but time or resource constraints mean that they are not readily available to provide advice or they outsource the advice provision to an external provider	There is **one** member of staff with the appropriate skills, time and knowledge within the LA	There is a dedicated team of appropriately skilled staff within the LA to provide advice about RE	
B2	**Does your LA encourage community involvement in planning for RE/LC, through consultation exercises during plan-making?**	The consultation process is ad hoc and maybe during or after planning. It may or may not cover a range of neighbours to the project and/or the wider community	There may be consultation during the planning process of either immediate neighbours to the project and/or the wider community	There is always consultation during the planning process of the immediate neighbours to the project	There is always consultation during the planning process including both immediate neighbours to the project and the wider community	

		1	2	3	4	
B3	Does your LA support appropriate community-led (any size as long as there is community participation) development proposals?	The LA has no community-led development proposals	There is a community-led development proposal under discussion with the LA or in the planning process	There is one or more community-led proposal(s) under development	There is one or more community-led development proposal(s) completed and operational	
C	Policy and strategy					Comments
C1	How developed is your local RE/LC planning policy and strategy?	There is no RE strategy or planning policy	The strategy is either in preparation or was published but is more than 5 years old	The strategy is published but there are some gaps and the links to planning policy could be strengthened	The strategy is up to date with a relevant and recent evidence base, strongly linked to recent planning policy and with criteria-based policies	
C2	Does your regional spatial/economic/energy strategy have a renewable energy target and how is it reflected LOCALLY?	There is no regional target for either electricity supply or heat from renewables and the LA has not set its own	There is a regional target for increasing the percentage of electricity supply from RE but the LA has not adopted the target	There is a regional target for increasing the percentage of electricity supply from RE and/or there is a separate target for heat supplied from RE, and the LA has adopted one or the other	There is a regional target for increasing the percentage of electricity supply from RE and there is a separate target for heat supplied from RE, both of which the LA has adopted/gone beyond	
C3	Has your LA set RE targets or a higher level Code for Sustainable Homes target for new developments?	No targets for on-site RE and LC have been set	Targets for on-site RE and LC are set just for large sites	Targets for on-site RE and LC are set covering all new sites and significant extensions/refurbishments	Targets for on-site RE and LC are set covering all new sites and significant extensions/ refurbishments and there is monitoring to ensure compliance	
C4	Does your LA have supplementary planning documents, linked to existing policy, illustrating how RE/LC technologies, or design principles, can be applied in the local context?	No supplementary planning documents available or in development	One or more supplementary planning documents produced or in development, but not yet available to developers – or documents are out of date	One or two supplementary planning documents recently produced and available to developers. Documents are not recent and not consistent with the UK 2020 RE target.	A range of supplementary planning documents recently produced and available to developers. Documents are up to date and consistent with the UK 2020 RE target.	
C5	Does your local renewable energy planning policy encourage developers to consider a range of renewable energy technologies on their sites?	There is no local renewable energy planning policy	There is a local renewable energy planning policy, but it does not specifically encourage developers to consider RE technologies	There is a local renewable energy planning policy that encourages developers to consider RE technologies. However, there is no monitoring of RE uptake by developers. Policy is not recent and not consistent with the UK 2020 RE target.	There is a local renewable energy planning policy that encourages developers to consider RE technologies. There is also a process for monitoring of RE uptake by developers. Policy is up to date and consistent with the UK 2020 RE target.	
D	Partnerships					Comments
D1	How developed and effective are arrangements for promoting and managing RE/LC with partners, e.g. developers, architects, construction and energy Cos?	The LA publishes information on its web site that is available for all to see	The LA recognises that targeted promotion to partners would be valuable but has not yet carried out any activities	The LA has campaigns to promote RE/LC with partners but they are limited to specific times and/or publications	The partners are part of a group and there are regular communications through meetings, newsletters, web etc with partners to discuss issues, overcome barriers and receive feedback	
D2	Does your LA have a steering group, made up of local stakeholders, to oversee RE/LC policy developments?	The LA has no steering group	The LA has a steering group, only LA stakeholders as members	The LA has a steering group, with predominantly public sector stakeholders as members	The LA has a steering group, with a wide range of public and private sector stakeholders as members	

		1	2	3	4	
E	**Processes**					**Comments**
E1	**To what extent do your processes enhance the development of RE/LC, i.e. procedures for consultation, policy making, impact assessment, programme management and service delivery?**	The LA does not consider RE/LC in its processes	The LA is assessing its processes with a view to including RE/LC	Some processes include RE/LC in their coverage	All processes and procedures consider RE/LC	
E2	**To what extent to your planning procedures assist with increasing RE/LC installations and capacity?**	RE/LC is considered along with other planning criteria but is given no enhancement	Lack of coordination between departments mean that RE/LC planning applications may be complicated and potentially delayed	The LA has revised planning guidance but it is not well implemented and there are no specialist advisors to support the process	The LA processes enhance RE/LC. The LA has revised planning guidance to fast-track RE applications and there are specialist advisors to assist applicants with providing the appropriate information	
F	**Technical – PPS1 & 22 Evidence Base**					**Comments**
F1	**To what extent does the LA have an understanding of existing energy demand and supply in the LA area?**	Little or no understanding of existing energy demand and supply	Some understanding of existing energy demand and supply	Good understanding of existing energy demand and supply, with analysis/mapping of energy use.	Full understanding of existing energy demand and supply and, where appropriate, mapped as part of the evidence base	Electricity ❑ Heat ❑ Both ❑
F2	**To what extent does the LA have an understanding of future energy demand and supply in the LA area?**	Little or no understanding of future energy demand and supply	Some understanding of future energy demand and supply	Good understanding of future energy demand and supply, linked to spatial development plans.	Full understanding of future energy demand and supply and, where appropriate, mapped as part of the evidence base	Electricity ❑ Heat ❑ Both ❑
F3	**To what extent does your LA have an understanding of current RE/LC installations at any stage of the planning process?**	No data available for the number, capacity or type of installation	Limited data available, with limited figures for the number, capacity or type of installation	Data for the number, capacity and type of installation is generally available, but is not publicly available	The data for the number, capacity and type of installation can be readily found and is publicly available	Installed ❑ With planning permission awaiting construction ❑ At planning application stage ❑ At pre-planning/scoping stage ❑
F4	**To what extent does your LA have an understanding of the potential capacity for RE?**	Little or no understanding of the potential capacity for RE	Some understanding of the potential capacity for RE	Good understanding of the potential capacity for RE, with studies to underpin estimates of potential capacity.	Full understanding of the potential capacity for RE and, where appropriate, mapped as part of the evidence base and consistent with UK 2020 RE target	Wind ❑ Biomass ❑ Energy from waste ❑ Building integrated RE technologies ❑ Retrofitting of existing housing stock ❑
F5	**What is the status of your LA's evidence base for RE generation statistics by type, capacity, and location?**	Not started	Initial scoping exercise and gap assessment carried out	Evidence base development underway	Evidence base completed – targets incorporated within planning requirements, and Local Development Framework documentation (e.g. Core Strategy). Supplementary planning guidance documentation issued	

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