

UK Renewable Energy Strategy:

Analysis of Consultation Responses

Prepared for: Department of Energy and Climate Change

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Background and Introduction

On 26th June 2008 the Department for Business, Enterprise & Regulatory Reform launched a public consultation to help shape the UK's renewable energy strategy (to be published in Spring 2009). Specifically, the UK has signed up to the EU target of increasing the use of renewable energy sources by 20% by 2020, which means increasing the share of renewable energy to 15% in the UK.

The consultation document set out different measures that could be used to meet this target, breaking this down into chapters covering the renewable energy and climate challenge, saving energy, centralised energy, heat, distributed energy, transport, bioenergy, innovation, business benefits, wider impacts and delivering the target, as well as an annex on feed-in tariffs for small-scale electricity generation. It invited people to give their thoughts on specific aspects of each measure, with 49 questions for consideration across the range of topics.

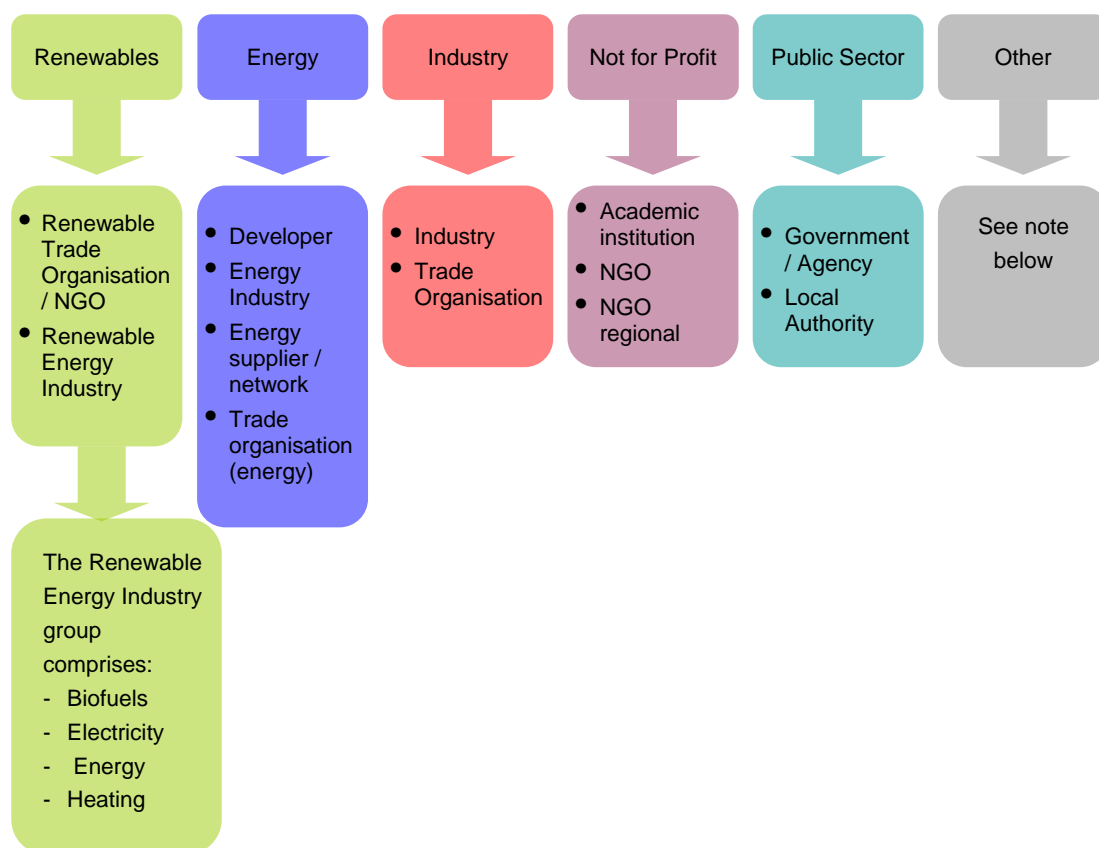
The consultation closed on 26th September 2008. In total 748 responses were received from a variety of interested parties and stakeholders, including: those in the energy sector (renewables as well as others), from public sector bodies, from industry organizations and not for profit groups, such as charities and academic institutions, and many more diverse groups and individuals.

This report is a summary analysis of those responses. Specific details of responses, are not given, the purpose being to identify bodies of opinion. Each of the questions raised in the consultation document is addressed, looking at any responses that either directly addressed that question or those that touched on topics directly related to that question. Few respondents answered every single question, and many replied at an overview rather than question by question level.

It is worth remembering that responses were given to relatively open questions in respondents' own words. This means that where they have not mentioned an issue, it cannot be assumed that the issue is unimportant to them, simply that they have not raised it spontaneously. For example, if 5% of those answering a question speak favorably about solar power, it does not mean that 95% are neutral or negative about solar power in that context, just that they have raised other issues as more of a priority for them.

Respondent types

To aid analysis, the 748 respondents have been categorised into six types. Four in ten (38%) of respondents answered online and categorised themselves, and the remainder were categorised by BMRB in consultation with DECC based on relevant information given in the response. These six groups, and some examples of the kind of sub-groups they include, are shown below.



'Renewables' refers to companies with a *specific* renewables focus.

'Energy' refers to companies with a general energy focus, which *could* include renewables.

'Industry' refers to non-energy industry.

Responses categorised as 'Other' were from a wide variety of people and groups. Some were limited companies, some were campaign groups, some were from people responding as individuals, and many simply did not provide sufficient information to categorise them more precisely.

The table below shows the number of respondents in each of the sub-groups:

Category Level 1		Category Level 2		Category Level 3	
88	Renewables	8	Trade Org/NGO (renewables)	6	Biofuels
		80	Renewable Energy Industry	44	Electricity
				23	Energy
				7	Heating
100	Energy	22	Developer		
		54	Energy Industry		
		10	Energy supplier/network		
		14	Trade Organisation (energy)		
110	Industry	69	Industry		
		41	Trade Organisation		
126	Not for profit	34	Academic Institution		
		50	NGO		
		42	NGO regional		
83	Public Sector	25	Government/Agency		
		58	Local Authority		
241	Other				

Notes on the reporting

Please note, in this analysis the response “Don’t know” is used to incorporate vague answers such as “time will tell” as well as those literally saying that they do not know. For most questions, such answers have been removed from the base of those responses being looked at.

When describing the underlying reasons that lie behind the top level response to a question, only the most frequently mentioned issues are shown, and not all, as the nature of the responses was extremely diverse.

Because answers are given verbatim, and respondents may give a range of answers to any one question, the figures shown may add to more than 100% or the number of respondents; for example, many questions ask whether more can be done by Government or by other parties on certain issues, and some respondents may feel more can be done by both.

Due to the low numbers of any given respondent type answering each question, throughout the document where the text refers to one group being more or less likely to voice a particular opinion, this means proportionally, and is not intended to convey a statistically significant difference.

Executive Summary

The majority of respondents agree with the assessments and proposals set out in the consultation on most issues, in particular regarding carbon dioxide emissions and security of supply, but also on environmental and energy market issues. When asked at an overall level, there were more than four times as many expressing agreement with the general approach as disagreement, albeit that for most that support was conditional. The most frequently mentioned proviso was to stress the urgency with which change is required.

A consistent point of consensus was that the Government could be doing more on all of the issues raised (investment in training and research and development and offering financial incentives were recurring themes to many of the issues). Engendering community support and tackling air quality were the only two issues where many respondents thought non-governmental parties had much of a role to play alongside the Government. Some areas of action for Government prompted by the consultation are:

- Offering greater business certainty when designing policies to meet the 2020 renewable energy target (as a priority over the need for flexibility)
- Tackling the energy efficiency of buildings (through new building regulation and through incentivising retrofit, especially insulation, through financial incentives and feed-in tariff schemes), appliance efficiency and raising public awareness and buy-in
- Protecting the security of the UK's electricity supply by focussing on smart metering and improved storage capacity and avoiding too heavy a reliance on wind energy
- Reducing the constraints on renewable development arising from grid issues, predominantly addressing improving access to the grid and expansion of the network
- Addressing supply chain issues by pre-empting any future skills gap with investment in training
- Providing further support for small-scale renewable electricity, a large proportion advocating feed-in tariffs as the most appropriate mechanism; overall agreement with the Government's current position that it should not introduce statutory targets for microgeneration at this stage in its development

- **Doing more to meet the potential of renewable heat. Whilst there is no consensus on what that action should be, some spoke of the role that Local Authorities could play in this regard and some of regulation to ensure that Combined Heat and Power is adequately incorporated into new builds**
- **Addressing biomass sustainability concerns with proper land evaluation and by ensuring bioenergy crop production does not encroach on land for food crops; whilst overall projections for the biomass market tend to be positive, they are less so when regarding the future for biomass imports**
- **Taking further regulatory measures on waste sorting to discourage the landfill of biomass waste**
- **Simplifying and clarifying the planning system and making it operate more swiftly in order to facilitate renewable deployment**
- **Improving the recharging infrastructure for electric/hybrid vehicles**

There is very strong support for retaining the Renewables Obligation as the prime support mechanism for centralised renewable electricity, although one in seven suggest changes be made to the RO in light of the EU targets, such as extending the end date to 2038 or longer, introducing a standard length of time under which projects get RO support for 20 years or more, and supporting headroom and grandfathering.

Asked about incentivising renewable and low-carbon transport in a sustainable and cost-effective way, respondents' focus revolved around biofuels, electric/hybrid vehicles and, to a lesser extent, public transport. Whilst most can see the potential for impact from encouraging uptake of electric/hybrid transport, most do not predict an impact prior to 2020.

Relatively few issues were met with majority disagreement:

- **Most respondents do not support the deployment of any of the UK's renewable energy targets in other countries**
- **A slim majority of respondents disagree with the Government's assessments of the *potential* of different renewable electricity technologies, there being a body of opinion that marine energy, solar energy and hydrogen storage have been underemphasised at the expense of wind energy**

- **A very small majority do not see a Renewable Heat Obligation as workable (whereas an Renewable Heat Incentive is seen as viable)**
- **Whilst more respondents acknowledge the potential of the off gas grid market than reject this idea, a very slim majority do not wish to see off grid prioritisation, mostly because they see this as too narrow a focus and wish to see renewable heat encouraged both on and off grid**
- **The analysis of energy prices was disputed, with some querying the cost assumptions in the proposal; the analysis of fuel poverty and the economy divided the response between those agreeing and those disagreeing**
- **Very few addressed the issue of putting in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation. Of those who did, the majority did not support safeguards, and there was opposition to limitations on either the overall number of new installations in a given period or on newly installed capacity in a given period. Respondents did support prioritisation being given to those in fuel poverty.**

1 Renewables and the Energy and Climate Challenge

1.1 Chapter 1 Overview

Addressing renewables and energy and climate challenges in a way that offers both business certainty and also flexibility of response in a developing market is by no means straightforward. However, for the majority of those responding to the consultation, whilst flexibility (in particular of targets and of financial incentives) is key, ensuring business certainty is the clear priority.

“Certainly flexibility in the system is desirable, but certainty for business is essential and so we believe strongly that policies should be designed with certainty for business paramount and flexibility in the system only to the extent that certainty is not significantly undermined.” (Renewable electricity organisation)

There was more opposition than support for meeting some of the renewable energy target through supporting deployment in other countries (especially from “Others”). The only group in favour of doing this were the Energy supplier/networks. The support that existed tended to be qualified.

“The primary overarching goal of the RES should be the achievement of domestic delivery of the targets. Trading, or secondary deployment must only be considered against this goal, and confined to voluntary bilateral agreements at Government level.” (Energy supplier)

1.2 Question 1

Q1. How might we design policies to meet the 2020 renewable energy target that give enough certainty to business, but allow flexibility to change the level of ambition for a sector or the level of financial incentive as new information emerges?

Answered by 213 respondents (excl. DKs): 28% of all respondents. Only 54% of those answering made reference to the renewable energy target in their response; however, the figures below are the most commonly mentioned themes based on all 213 answering.

54% discussed issues such as certainty, confidence and commitment without making reference to flexibility.

19% addressed flexibility as a key issue.

21% talked about the need for both.

6% raised other issues without reference to either business certainty or the need for flexibility.

75% mentioned CERTAINTY overall, higher at 87% amongst Renewables / Energy / Industry / Not for profit sectors and lower at 51% amongst Public sector and "Others".

- 44% of all answering this question stressed the need for strong Government leadership and policy commitment
- 30% spoke of investor confidence being key
- 15% discussed the need for long term certainty
- 12% said business certainty is key

40% mentioned FLEXIBILITY overall (51% amongst Industry and Public sectors and 37% amongst the remaining respondents)

- 18% spoke of flexibility of targets being key
- 16% discussed the importance of flexibility of financial incentives being key
- 18% spoke of (general / unspecified) flexibility being key

Other issues raised

- 21% discussed the merits of incentives rather than regulatory enforcement
- 20% made positive mention of policy measures that are being taken or could be taken to help
 - o 12 of these responses made reference to investor confidence
 - o 12 to commitment being required from the Government
 - o 10 to the 2020 targets
 - o 10 to flexibility of financial incentives being key
 - o 9 to investment concerns
 - o 7 to policies regarding carbon emission reduction
 - o 6 to policies regarding climate change
 - o 6 to wind energy policy
- However, an equal number (20%) had negative mentions of policy measures that are being taken or that should be avoided
 - o 20 of these spoke negatively about the 2020 targets
 - o 8 called for greater focus on reducing demand and improving energy efficiency
 - o 7 said that flexibility of financial incentives was key
 - o 6 felt incentives need to be increased
 - o 6 spoke of the importance of investor confidence
 - o 6 noted the commitment being required from the Government
 - o 6 felt greater support for R&D was key
- 15% talked about needing to look long term with targets, to think beyond 2020 or 2050, or not losing sight of the longer term consequences beyond 2020
- 13% spoke of financial investment required from Government
- 13% stressed the importance of R&D and supporting emerging technologies

- 10% raised security of supply as a key issue
- 10% expressed views in favour of nuclear energy
- 10% expressed views in favour of wind power

1.3 Question 2

Q2. To what extent should we be open to the idea of meeting some of our renewable energy target through deployment in other countries?

Answered by 298 respondents (excl. DKs): 40% of total respondents.

Energy supplier/networks are strongly in favour of meeting some of the renewable energy target through deployment in other countries. All other respondents were more likely to oppose this approach, particularly "Others" (a ratio of 2:1 against).

Sector	In favour	In favour - with limitations	Mixed response / DK	Somewhat against	Strongly against	Other issues are key	Don't know	Total answered
Renewables	5	8	5	13	4	0	0	35
Energy	8	10	6	9	6	4	1	44
Industry	8	9	4	18	6	4	0	49
Not for profit	8	19	6	25	6	0	0	64
Public sector	2	12	4	12	4	1	0	35
Other	11	10	6	25	16	4	2	74
Total	42	68	31	102	42	13	3	301

The only group of respondents more likely to be in favour of this approach were the Energy supplier/networks, with none at all rejecting it. Apart from the strongly opposed "Others", all remaining groups, including other types of energy organisations, had just slightly more speaking out against this approach than for it (on average 5:4 against).

Of those in favour (110 respondents):

- 22% specified that their support was for the UK encouraging renewable energy development overseas rather than meeting some of our target by supporting deployment abroad and that any such measures should be in addition to the UK target. Their focus was on assisting other countries as a means to dealing with the global issue of climate change and finite fossil fuels as quickly and efficiently as possible, or "future-proofing" the economies of developing nations, not as a substitute for action in the UK

- 18% of those in support nevertheless felt that the UK should get its own house in order first and lead by example, although that need not necessarily prevent some limited deployment of the UK target overseas
- 13% restricted their support to EU countries only, partly because of the UK's strong economic links to the rest of the EU

Of those opposing the deployment of part of the UK target abroad:

- 38% said they felt the UK should meet its targets domestically as a matter of principle and take responsibility for itself; that supporting deployment abroad suggested "guilt easing" rather than genuinely addressing issues such as climate change and finite fossil fuels
- 14% put their concerns more strongly, saying deployment abroad seemed like passing our problems along to someone else, and therefore being exploitative or imperialistic; they felt this would mean stripping other countries of their resources whilst we maintain our privileges. Concerns were also expressed that doing this might hinder or prevent another country's ability to meet their own targets, and also that it may not be realistic to stop developing nations from using fossil fuels
- 14% did not see any need to deploy part of the target abroad, believing that the UK has sufficient renewable energy potential to meet the target domestically if these are adequately harnessed
- 14% were concerned that deployment abroad would jeopardise security of the UK energy supply, believing that self-sufficiency is a vital goal for the UK, both to ensure our energy needs are met and to protect our economy
- 10% felt overseas deployment would mean the UK would lose too much control, placing itself at the mercy of foreign politics and economics

2 Saving Energy

2.1 Chapter 2 / Question 3

Q3. In the light of the EU renewable energy target, where should we focus further action on energy efficiency and what, if any, additional policies or measures would deliver the most cost-effective savings?

Answered by 306 respondents (excl. DKs): 41% of total respondents.

Key areas suggested for focus for energy efficiency are new building regulation, insulation and retrofitting of existing builds, addressing appliance efficiency and tackling public awareness and buy-in.

Three quarters (74%) of respondents answering addressed the issue of energy efficiency measures; of these:

- 26% talked about tightening new build regulations to ensure new buildings are energy efficient
- 23% stressed the importance of insulation, some proposing grants to assist and encourage installation/upgrading, some speaking of regulation to enforce uptake
- 21% discussed the importance of retrofit measures other than insulation in existing buildings
- 14% raised the issue of appliance efficiency, be that the merits of low energy light bulbs, encouraging the public not to leave appliances on standby (or legislating that devices be fitted so that appliances turn off automatically after a certain period on standby), or regulating against low efficiency appliances
- 14% saw the key to energy efficiency being the improved education of the general public on the matter
- 11% spoke of tackling corporate or public sector wastage that the Government could address, such as requiring business and public sector buildings to turn off lights when those buildings are not in use, consideration of whether safety concerns really merit the full extent of all street lighting used at present, and measures such as powering traffic lights from renewable resources
- 11% saw smart meters as key to energy efficiency

- 9% thought a focus on those on lower incomes, such as those in social housing, would be beneficial, allowing them to rent suitable technologies (e.g. solar water heating and wind turbines) at a subsidised rate; also broadening the eligibility of schemes such as the social housing solar water heater installation scheme to low income homeowners and private tenants

3 Centralised Electricity

3.1 Chapter 3 Overview

A slim majority of respondents disagree with the Government’s assessments of the potential of different renewable technologies, there being a body of opinion that marine and solar energy has been underemphasised at the expense of a bias towards wind energy; however, many also felt wind energy has a role to play, albeit perhaps not to the extent set out in the consultation document. Some made reference to Germany as providing a good role model for renewable electricity.

There is very strong support for retaining the Renewables Obligation as the prime support mechanism for centralised renewable electricity, especially amongst Renewable and Energy organisations. Not for profit organisations and “Others” are most likely to oppose this. However, most did propose changes to the Renewables Obligation; whilst relatively few addressed each specific aspect, of those who did, more favoured increasing the number of bands, increasing the maximum cap, extending the end date to 2037 or longer, introducing a standard length of time under which projects get RO support for 20 years or more, and supporting headroom.

It is felt that the planning system could be simplified, clarified and made to operate more swiftly in order to facilitate renewable deployment, and that Local Authorities have a key role to play.

Engendering community support is the one issue where it is felt that other parties have the greatest role to play alongside Government. For both Government and non-Government bodies, the keys to greater community support are seen to be funding, consultation and improving awareness/increasing support from the general public.

There is clear support for more being done by the Government to reduce the constraints on renewable development arising from grid issues, predominantly addressing improving access to the grid and expansion of the network.

The key to addressing supply chain issues is felt to be pre-empting any future skills gaps by investing in training; large-scale electricity generation was considered by some to be a priority in terms of reducing supply chain constraints.

Most saw the need for change to the RO in light of the EU 2020 target. Changes proposed included the extension of the end date of the RO to 2037 or longer, and increasing the current maximum cap of 20%. Those calling for what

they saw as minor changes were more likely to support increasing the number of bands and requesting a margin (or “headroom”) for manoeuvre. More significant changes were seen to be introducing a standard length of time for which projects get RO support of 20 years or more, and maintaining or reducing the number of bands.

There was strong agreement that changes were required to protect the security of the UK’s electricity supply, with a view that smart metering and improved storage capacity were a better focus than heavy reliance on wind energy.

3.2 Question 4

Q4. Are our assessments of the potential of different renewable electricity technologies correct?

Answered by 232 respondents (incl. DKs): 31% of total respondents.

Those feeling the Government has not correctly assessed the potential of different renewable technologies have a slight majority with a ratio of 11:9.

Sector	Agree	Disagree	Mixed response / DK	Total answered
Renewables	11	13	11	35
Energy	12	11	8	31
Industry	13	12	12	37
Not for profit	15	15	24	54
Public sector	6	4	13	23
Other	8	26	18	52
Total	65	81	86	232

Proportionally most likely to disagree with DECC’s assessment were:

- Renewable energy organisations (5 out of 8 answering)
- Others (26 out of 52 answering)
- Developers (4 out of 9 answering)

Those disagreeing with the assessment of potential (81 respondents) were most likely to raise the following concerns (total number of mentions shown):

- 24 Wind energy being overemphasised and unreliable / perceived misplaced Government bias in favour of wind energy (a view mostly liked to be put forward here by “Others”)

- 19 Marine energy being underemphasised in the proposals
- 16 Solar power being underemphasised
- 13 Wind energy being underemphasised
- 7 Biomass being underemphasised
- 7 Specific report(s) they felt should be taken into consideration when assessing the potential of different renewable technologies
- 7 The playing field not being a level one for all technologies - with commercial or political agendas being prioritised over the need to tackle the issues of climate change and finite fossil fuels; i.e. technologies that could assist in meeting the targets were not being sufficiently considered for this reason (this theme was only raised by Industry / Not for profit / "Others: and not by Renewable or non-renewable Energy organisations, or by Public sector respondents)

"The basis for deciding which renewable technologies to promote through fiscal incentives, stems from the life-cycle carbon accounting work led by DEFRA. This analysis did not take into account any other environmental or social impact, or the life-cycle carbon costs of the necessary infrastructure including large scale grid connection projects. This has resulted in over-emphasis toward large scale wind arrays set in relatively remote parts of rural England. Other technology and scale options, as successfully pursued on mainland Europe, have consequently been underplayed even though their environmental and social impacts may be far lower and their lead-in times shorter than those required for major infrastructure projects." (Government Agency)

"The carbon savings of wind turbines is minimal, frequently grossly over stated by the energy companies, and is far from secure. Furthermore, the government strategy favours the exaggeration of these carbon savings by wind energy in order to attempt to meet its own unrealistic targets." (Regional NGO)

"You are placing too much emphasis on wind, and not enough on tidal. Wind turbines are subject to breakdown due to the massive stresses placed on the structures, and need frequent, expensive maintenance." (Energy services company)

"There are renewable energy technologies that can be harnessed which would eventually provide a greatly expanded proportion of the UK's electric heat and power needs. Technically, for example, Concentrating Solar Power (CSP) would do, but is not mentioned in the Consultation report. The potential of the oceans and waves surrounding the UK's shores has barely begun to be realised. Whereas first-generation biomass and biofuel technologies have severe drawbacks, second and

third generation technologies could avoid much of the threat currently posed to food availability and prices, although their energy input: output ratios will need careful scrutiny. Wind energy, noting that the UK has a relatively good wind resource, should also have a role to play, but this should not be over-emphasised. In this respect the present Consultation report is deeply flawed.” (Other)

“I think there is a implied bias towards wind in this consultation. I have no problem with wind turbines at all and strongly believe they should be in the mix, but I want to maximise base load. Therefore, for centralised energy I am most interested in tidal, biomass, hydro and to a certain extent offshore wind and wave.” (Other)

Trade organisations, whether Renewable, Energy or Industry (10 out of 20 answering) were most likely to agree with the assessment of renewable electricity potential.

Amongst all of those agreeing, they were most likely to mention (total number of mentions shown):

- 22 Wind energy; 9 specifically mentioning off-shore; 6 on-shore
- 17 Marine energy
- 12 Solar power
- 7 Biomass
- 7 Despite overall agreement, raising environmental concerns
- 6 Despite overall agreement, raising a perceived Government bias in favour of wind energy

3.3 Question 5

Q5. What more could the Government or other parties do to enable the planning system to facilitate renewable deployment?

Answered by 234 respondents (excl. DKs): 31% of total respondents.

Three quarters of those answering felt that there is more that can be done by the Government to enable the planning system to facilitate renewable deployment, primarily by trying to make it more simple, clearer and faster; it was also felt that Local Authorities have a key role to play in this.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	28	3	0	2	2	33
Energy	24	4	0	2	0	30
Industry	33	5	1		1	40
Not for profit	48	7	2	2	3	58
Public sector	27	7	0	5	1	39
Other	28	11	1	3	6	47
Total	188	37	4	14	13	247

At least 7 out of 10 in all groups felt more could be done by the Government.

Amongst those thinking more could be done at all (218 respondents), the following were the most commonly cited suggestions (actual number of mentions shown):

- 68 Simplifying or speeding up the planning application process, not allowing it to become a block to renewable energy development. Although 15 made specific reference to large-scale electricity generation and 13 to microgeneration of electricity in this context, most talked about planning processes and issues in broad terms and were rarely explicit about which part of the UK or consenting body they were referring to. The comments could therefore have been made about larger cases, including those dealt with by the Secretary of State, or those handled by local planning authorities
 - o Renewables (15 out of 29 answering raised this)
 - o Energy (10 out of 28)

- Not for profit (16 out of 53)
- Other (11 out of 37)
- Industry (9 out of 38)
- Public sector (7 out of 33)
- 38 The current planning regulations require clarification
 - Industry (11 out of 38)
 - Energy (6 out of 28)
 - Public sector (6 out of 33)
 - Not for profit (8 out of 53)
 - Renewables (4 out of 29)
 - Other (3 out of 37)
- 37 Improving the availability of advice, ensuring that there are local expertise / advice centres available to assist and advise investors, businesses and the general public
 - Public sector (9 out of 33)
 - Not for profit (14 out of 53)
 - Energy (4 out of 28)
 - Industry (4 out of 38)
 - Renewables (3 out of 29)
 - Other (3 out of 37)
- 22 In favour of facilitating planning for microgeneration at a community level
- 16 In favour of facilitating planning for wind generation development
- 13 The planning system must adequately consider environmental concerns
 - Not for profit (5 out of 53)

- Public sector (3 out of 33)
- Other (2 out of 37)
- Renewables, Energy and Industry: 1 respondent from each sector
- 12 Regional targets or solutions need to be flexible; a one-size fits all approach is not appropriate for national planning (3 said the opposite, namely that regional consistency is key)
 - Renewables (3 out of 29)
 - Public sector (3 out of 33)
 - Not for profit (4 out of 53)
 - Industry (2 out of 38)
 - Not mentioned by Energy or Others
- 12 Investing in improved training for planners to deal with the nature and increased number of renewable energy applications

3.4 Question 6

Q6. What more could the Government or other parties do to ensure community support for new renewable generation?

Answered by 203 respondents (excl. DKs): 27% of total respondents.

Most respondents felt more could be done by the Government to ensure community support for renewable generation, but a significant minority also saw scope for support from other parties. Of all the issues raised in this consultation, this was the issue where most saw opportunities for other parties to also make a significant contribution.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	23	5	1	0	0	28
Energy	20	9	1	0	0	26
Industry	28	6	0	1	0	33
Not for profit	43	12	1	2	2	55
Public sector	23	8	1	0	0	27
Other	24	10	2	1	4	40
Total	161	50	6	4	6	209

More than eight in ten (82%) of all respondents answering the question (apart from “Others”, for whom the figure was 67%) felt that more could be done by Government. There was also a body of support for more to be done by other parties to ensure community support for renewable generation, especially amongst Government/Agency, Energy supplier/network and Energy industry organisations.

Of the 161 who suggested that more could be done by Government, the most frequently mentioned actions to ensure community support were (actual number of mentions shown):

- 46 Provide funding for community projects (some spoke of specific projects, some in generalised terms)
 - o Not for profit (15 out of 43 answering that more can be done by Government)
 - o Public sector (8 out of 23)
 - o Energy (7 out of 20)

- Renewables (6 out of 23)
- Industry (7 out of 28)
- Other (3 out of 24)
- 39 Tackle public awareness so support for community schemes comes from bottom up
 - Public sector (7 out of 23)
 - Other (7 out of 24)
 - Energy (5 out of 20)
 - Renewables (5 out of 23)
 - Not for profit (10 out of 43 answering)
 - Industry (5 out of 28)
- 29 Local Authorities could play a key role in supporting community schemes
 - Public sector (7 out of 23)
 - Industry (6 out of 28)
 - Energy (4 out of 20)
 - Not for profit (7 out of 43 answering)
 - Other (3 out of 24)
 - Renewables (2 out of 23)
- 24 Open up channels of communication with local communities; consult directly with them
- 20 Make local advice / expertise more readily available
- 13 Compensate locals getting renewable energy projects built in their neighbourhood (e.g. free / cheap electricity, tax rebates)

From the 50 who suggested others could do more, the most frequently mentioned actions were (actual number of mentions shown):

- 14 Tackle public awareness

- Not for profit (6 out of 12 answering that more can be done by non-Government parties)
- Industry (3 out of 6)
- Energy (3 out of 9)
- Public sector and Other: 1 respondent each
- Renewables: 0
- 7 Improve awareness amongst school children on the issues; generate support amongst this generation
- 7 Direct consultation with communities

3.5 Question 7

Q7. What more could the Government or other parties do to reduce the constraints on renewable wind power development arising from:

- a) marine navigation
- b) environmental legislation
- c) aviation and radar
- d) any other aspects of regulation?

Answered by 165 respondents (excl. DKs): 22% of total respondents.

3.5.1 Marine navigation

6% of all respondents addressed the issue of whether more could be done to remove constraints on developing wind power arising from marine navigation.

Of these 45 respondents, who said more could be done by Government or by others regarding the potential conflict of needs between renewable energy growth and marine navigation:

- 9 Stressed the need to clearly designate and protect the areas required by marine navigation
- 9 Said renewable energy projects should not be considered at all in shipping lanes, or should only be permitted in areas deemed dangerous for shipping, or not within a certain distance of the shore

- 5 Called for further evaluation and feasibility studies

3.5.2 Environmental legislation

8% of all respondents directly addressed the issue of whether more could be done to remove constraints on developing wind power arising from environmental legislation (24% amongst Government/Agency, 15% amongst Not for profit NGOs). Among those answering about environmental legislation, 88% of Renewables or Energy organisations felt more could be done by Government on this issue (80% amongst Industry, Not for Profit and Public Sector, 63% amongst “Others”).

In total 55 respondents said more could be done by Government or by others regarding the potential conflict of needs between renewable energy growth and environmental concerns.

The call here was for clear, practical, consistent application and interpretation of environmental legislation, giving guidance on how renewable energy development can work within conservation areas, so that projects are not simply slowed down or developers deterred.

“We would stress that it is important to ensure consistency of application of process for the Habitats Directive, which appears to be applied differently by region and can give the appearances of being a convenient tool to deter renewable investment.”
Energy industry trade organisation

“Ensure that renewables potential is considered whilst designating protected areas and that management flexibility is built in to allow renewable projects where compatible.” Energy supplier

3.5.3 Aviation and radar

The greatest proportion of responses to this question (9% of all respondents) directly addressed whether more could be done to remove constraints on developing wind power arising from aviation or radar. A higher proportion of those in the Renewables, Not for profit and Public sector felt more could be done by Government on this issue, although there was agreement across the sectors.

Of these 67 respondents who said more could be done by Government or by others regarding the potential conflict of needs between renewable energy growth and aviation and radar:

- 18 Felt there should be funding made available to help develop technology to could address this issue
 - o 6 Industry (no industry trade organisations)

- 2 Energy industry
 - 2 Energy supplier / networks (no developers or energy trade organisations)
 - 2 Non-regional NGOs (no regional NGOs or academic institutions)
 - 2 Government/Agency
 - 1 Local Authority
 - 1 Renewable energy industry
 - 1 Renewable trade organisation
 - 1 Other
- 7 Called for further evaluation and feasibility studies
 - 7 Spoke against wind energy, seeing the Government proposals as giving this undue support without fully considering any potential impact on aviation or radar
 - 4 Saw off-shore wind generation as having less impact on aviation than on-shore

3.5.4 Other aspects of regulation

Of the 76 who raised other issues:

- 16 Spoke negatively about wind energy, of whom 9 said they saw the Government proposals as unduly biased towards this
- 7 Spoke about using incentives as opposed to regulation or legislation
- 6 Spoke about supporting R&D to realise the potential of wind energy

3.6 Question 8

Q8. Taking into account decisions already taken on the offshore transmission regime and the measures set out in the Transmission Access Review, what more could the Government or other parties do to reduce the constraints on renewable development arising from grid issues?

Answered by 145 respondents (excl. DKs): 19% of total respondents.

There was clear support for more being done by the Government to reduce the constraints on renewable development arising from grid issues, predominantly improving access to the grid and expansion of the network.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	21	1	2	0	3	27
Energy	21	5	1	0	5	32
Industry	23	0	1	1	1	25
Not for profit	28	1	1	1	9	39
Public sector	16	2	0	1	3	20
Other	16	2	2	4	2	25
Total	127	11	7	7	23	168

Apart from a lower response among “Others”, this question was addressed by 1 in 4 of all respondents, 91% of those responding (excluding don’t knows) believing that there was more that could be done by Government to reduce the constraints on renewable development arising from grid issues (vs. 7% citing more that could be done by non-Government bodies).

The key issues raised for Government action were (actual number of mentions shown):

- 42 Addressing access to the grid / connection problems
- 33 Strategic expansion of the grid network

12 respondents spoke of the need to address these issues urgently.

4 of the 19 Renewable energy industry respondents saying Government needed to do more said storage was a key issue and there was a need for greater investment to improve the standby storage reserve of renewable energy.

5 of the 23 from an Industry background saying Government needed to do more said cost effectiveness should be a key consideration in this issue.

3.7 Question 9

Q9. What more could the Government or other parties do to reduce supply chain constraints on new renewables deployment?

Answered by 161 respondents (excl. DKs): 22% of total respondents.

Ensuring that the right skill set is in place in the future by investing in training now is seen as key to addressing supply chain constraints.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	21	5	2	1	1	27
Energy	21	6	0	0	2	27
Industry	27	4	0	2	1	33
Not for profit	32	10	1	1	0	38
Public sector	15	4	0	1	0	18
Other	18	4	2	0	0	22
Total	134	33	5	5	4	165

83% of those answering felt the Government could do more to reduce supply chain constraints on new renewables deployment. 100% of Energy Trade Organisations and Government/Agency who gave an opinion agreed. One in five suggested ways other parties could do more, including 3 out of the 7 Energy suppliers/networks answering.

Of those who thought any more could be done by anyone to address supply chain constraints:

- 25% called for a focus on skills development, a drive to attract students into studies related to the development and deployment of renewable energy technology, thereby ensuring that the right skills are available in the future

“Skills are an important part of the supply chain. The government has already recognised this in the nuclear industry with the promise of an “academy” for skills: however the money might be better spent in skills development for the renewables industry, including training for technicians and installers, and “mid-career” training for those in other areas of the energy industry.” (Industry)

- 19% thought the key focus should be addressing supply chain constraints for large-scale electricity generation
- 16% spoke of ensuring sufficient incentives were in place that all parties were motivated to minimise constraints
- 16% spoke of the need to boost investor confidence so that commercial funds would be put into addressing this issue
- 10% spoke of the need for investment by the Government

3.8 Question 10

Q10. Do you agree with our analysis on the importance of retaining the Renewables Obligation as our prime support mechanism for centralised renewable electricity?

Answered by 173 respondents (excl. DKs): 23% of total respondents.

Those agreeing with the importance of retaining the Renewables Obligation as the prime support mechanism for centralised renewable electricity have a clear majority to the ratio of 19:4.

Sector	Agree strongly	Somewhat agree	Disagree	Nothing – this is not the key issue	DK	Total answered
Renewables	14	11	1	0	5	31
Energy	16	12	1	0	1	30
Industry	10	21	4	0	1	36
Not for profit	13	20	11	0	6	50
Public sector	7	8	1	0	6	22
Other	5	5	12	1	3	26
Total	65	77	30	1	22	195

Of those directly answering the question, 88% agreed, with 12% in disagreement. Of the former, just over half agreed somewhat i.e. agreeing despite reservations, or seeing the RO as important but not necessarily *the* prime driver, or because they felt the delays and uncertainties of taking an alternative approach were not worth the gains. Nearly half (45%) of those in agreement did so without such caveats.

Amongst those responding directly, those most in favour of the RO were:

- Renewables organisations (96% in favour, 54% strongly)
- Energy organisations (excluding developers) (95% in favour, 64% strongly); whilst all developers support the RO, 71% agreed somewhat

Amongst the 65 strongly in favour of retaining the RO the following reasons were mentioned (number of mentions shown):

- 11 Investor confidence
- 4 Minimising planning permission delays for renewable energy projects, ensuring that they are given planning consent as quickly and non-bureaucratically as possible
- 4 Using banding to assist particular technologies which may need it more than others

The 77 more cautiously in favour of retaining the RO mentioned:

- 24 The benefits of feed-in tariffs / the benefits of feed-in tariffs for microgeneration, RO for large-scale
- 8 Referenced Germany as a good example to follow
- 5 Investor confidence
- 4 The benefits of banding

Of those giving a response, those most likely to oppose the RO were:

- "Others", with 57% disagreeing or proposing an alternative mechanism or issue for attention
- Not for profit organisations; 25% disagreed (rising to 4 out of 10 amongst non-regional NGOs)

Of those 30 who opposed retention of the RO:

- 8 Disagreed with the assessment of costs for changing support schemes, or were concerned by the cost implications
- 6 Saw feed-in tariffs as a more effective incentive than the RO for renewables uptake
- 3 Referenced Germany as a good example to follow

3.9 Question 11

Q11. What Changes (if any) should we make to the Renewables Obligation in the light of the EU 2020 renewable energy target?

Answered by 120 respondents (excl. DKs): 16% of total respondents.

Most respondents did propose changes to the Renewables Obligation; as the question did not prompt on specific issues, each was raised independently by relatively few. However, of those who did, more favoured extending the end date to 2038 or longer, introducing a standard length of time under which projects get RO support for 20 years or more, and supported headroom and grandfathering.

Sector	Oppose further change to RO	Some change is necessary	Reject RO	DK	Total responding
Renewables	1	21		8	30
Energy	1	22	3	4	30
Industry	0	23		6	29
Not for profit	0	21	4	13	39
Public sector	0	12		8	19
Other	1	8	3	4	17
Total	3	107	10	43	163

Of those respondents calling for changes (actual number of mentions shown):

- 40 Supported the extension of the end date of the RO to 2035 or longer (of whom 29 supported an end date of 2038 or longer)
- 14 Were in favour of an indefinite or unspecified extension
- 2 Opposed any extension
- 0 Proposed an end date prior to 2035

- 21 Advocated introducing a standard length of time under which projects get RO support for 20 years or more
- 0 Opposed this or proposed introducing a standard length of time that was less than 20 years

- 21 Supported increasing the current maximum cap of 20%
- 17 Wanted to remove the current maximum cap of 20% in the RO
- 1 Maintain the cap

- 17 Supported headroom
- 2 Supported predetermined annual target levels
- 3 Supported a combination of both

- 27 Spontaneously proposed increasing the number of bands
- 19 Opposed increasing the number of bands

- 6 In favour of hydro-electric
- 5 Wanted a banding change that favours wind projects (of whom 3 specifically referenced off-shore wind)
- 2 In favour of biomass
- 2 In favour of other renewable technologies

- 4 Supported introducing a link between revenue provided by the RO and changes in wholesale prices
- 2 Opposed such a link

- 13 Grandfathering (positive mention)
- 1 Grandfathering (negative mention)

Other issues raised were:

- 37 Spoke of the importance of boosting investor confidence

3.10 Question 12

Q12. What (if any) changes are needed to the current electricity market regime to ensure that the proposed increase in the renewables generation does not undermine security of electricity supplies, and how can greater flexibility and responsiveness be encouraged in the demand side?

Answered by 154 respondents (excl. DKs): 21% of total respondents.

Only two respondents expressed the view that changes were not necessary to the current electricity market regime to ensure that the proposed increase in the renewables generation does not undermine electricity supply.

Proposals were very diverse, especially from the renewables and Industry sectors, but themes that were frequently mentioned were (actual number of mentions shown):

- 24 Smart metering is key, particularly stressed by:
 - o those concerned with flexibility
 - o "Others" (6 mentions out of 23 answering)
- 19 Storage technology and standby capacity are key; most likely to be mentioned by:
 - o Energy organisations (6 out of 28 answering)
 - o Not for profit organisations (6 out of 32)

- 16 Felt that wind power is too intermittent and unreliable and that the current proposals are too reliant on it; most likely to be mentioned by:
 - o "Others" (6 out of 23 answering)
- 14 Suggested financially incentivising greater responsiveness of demand; most likely to be mentioned by:
 - o Not for profit organisations (6 out of 32 answering)
- 13 Said that ensuring a diversity of energy sources was what was needed to avoid undermining the security of electricity supplies; most likely to be mentioned by:
 - o Public sector (3 out of 17 answering)
- 10 Recommended greater interconnection with other countries, or the need or benefits of an international rather than national outlook
- 9 Believed that nuclear power is key to the security of UK electricity supplies; most likely to be mentioned by:
 - o Energy organisation (3 out of 28 answering)

4 Heat

4.1 Chapter 4 Overview

Nearly twice as many respondents agreed with the Government's assessment of the potential of renewable heat deployment as disagreed, and more than twice as many agreed as disagreed that the proposal captures the key features of a Renewable Heat Incentive and a Renewable Heat Obligation. However, whilst the majority of those expressing an opinion see an RHI scheme as workable, and agree that it would work better in the heat market, the views are very mixed as to the viability of an RHO.

Whilst there is a clear feeling that there is more the Government could be doing to meet the potential of renewable heat, there is no consensus on what that action should be. Amongst other proposals, some spoke of the role that Local Authorities could play in this regard, some of regulation to ensure that Combined Heat and Power is adequately incorporated into new builds. Air quality is an area where it is felt that non-Government bodies have as much of a role to play as the Government.

Whilst more respondents acknowledge the potential of the off gas grid market than reject this idea, a very slim majority do not wish to see off grid prioritisation, mostly because they see this as too narrow a focus and wish to see renewable heat encouraged both on and off grid.

4.2 Question 13

Q13. Assuming financial support measures are in place, what more could the Government do to realise the full potential of renewable Combined Heat and Power?

Answered by 190 respondents (excl. DKs): 25% of total respondents.

Sector	More can be done by Gov	More can be done by others	Sufficient steps taken	Not the key issue	DK	Total respondents	Any mention of financial support measures
Renewables	21	0	0	1	4	26	11
Energy	17	3	1	3	1	35	14
Industry	27	3	1	1	4	36	17
Not for profit	41	3	1	1	2	48	24
Public sector	21	2		4	2	29	11
Other	19	2	3	2	4	30	4
Total	146	13	6	12	4	194	81

Nine in ten (89%) of those from Renewables, Industry and Not for profit organisations who gave an opinion described what more they felt could be done by the Government to realise the full potential of renewable Combined Heat and Power (74% amongst other groups). Relatively few suggested there was no more to be done, or proposed alternatives, either in terms of focus or alternative bodies who could help realise this goal.

Of those who thought any more could be done:

- 13% discussed the advantages of large-scale CHP
- 10% saw Local Authorities as being in a key position to ensure the full potential of CHP is met
- 9% suggested regulating to ensure CHP is adequately incorporated into all new builds
- 8% discussed the advantages of small-scale CHP
- 8% spoke positively about District Heat Schemes
- 8% spoke positively about heat pumps

- 7% said the RO required changes in order to see CHP meet its potential

4.3 Question 14

Q14. Are our assessments of the potential of renewable heat deployment correct?

Answered by 144 respondents (incl. those who were unsure): 19% of total respondents.

Those agreeing with the Government's assessments of the potential of renewable heat deployment outnumbered those disagreeing in the ratio of 7:4.

Sector	Yes	No	Mixed response / DK	Total answered
Renewables	10	7	2	19
Energy	9	6	12	27
Industry	14	4	8	26
Not for profit	16	10	5	31
Public sector	10	2	9	21
Other	6	8	6	20
Total	65	37	42	144

Proportionally most likely to agree were:

- Non-regional NGOs (9 out of 14 answering)
- Renewable trade organisations / NGOs (3 out of 5 answering)
- Industry (8 out of 14 answering)
- Academic institutions (4 out of 7 answering)

Most likely to disagree with the assessment of potential:

- Academic institutions (3 out of 7 answering)
- "Others" (8 out of 20 answering)
- Renewable trade organisations / NGOs (2 out of 5 answering)
- Energy industry organisations (3 out of 8 answering)

No Government/agency organisations disagreed, although half gave a mixed response.

Of the 37 who did disagree with the Government's assessment of the potential of renewable heat deployment, the following were felt to have been underemphasised (number of mentions shown):

- 7 The overall potential of renewable heat
- 7 The benefits of heat pumps
- 6 Incentives for renewable heat uptake
- 5 Insulation
- 5 The benefits of air source heat pumps in particular
- 4 Costs to the consumer
- 4 Solar power
- 4 Small-scale renewable heat

4.4 Question 15

Q15. Have we captured the key features of a Renewable Heat Incentive and a Renewable Heat Obligation as they would apply to the heat sector correctly? Would both of these schemes be workable and are there alternative ways of structuring the schemes to ensure they can operate effectively?

Answered by 108 respondents (excl. DKs): 14% of total respondents.

Those agreeing that the proposal captures the key features of RHI and RHO outnumbered those disagreeing in the ratio of 5:2. On balance RHI is seen as workable (15:4), whereas the views on a RHO were very marginally that it was not workable (8:7).

Sector	Key features captured	Not captured	RHO workable	RHO not workable - cost	RHO not workable - non-cost	RHI workable	RHI not workable	Not the key issue	Number answering this question
Renewables	12	2	6	0	4	6	2	1	18
Energy	16	7	7	1	5	9	2	2	25
Industry	11	4	5	2	2	7	2	1	21
Not for profit	9	5	3	2	4	4	2	3	22
Public sector	9	4	1	0	2	2	0	1	14
Other	4	2	0	1	2	0	2	0	8
Total	61	24	22	6	19	28	10	8	108

Two and a half times as many felt that that the key features of an RHI and RHO have broadly been captured (56% agreed v 22% who did not). Two thirds (64%) of Renewables, Energy and Public sector organisations expressing an opinion agreed.

Of the 61 agreeing that the key features have been captured:

- 5 Stressed that commitment to renewable heat should be long term and stable, not subject to short term financial considerations
- 4 Felt there should be a focus on benefitting those on lower incomes

- 4 Said that key to keeping such schemes workable was keeping them simple
- 4 Spoke of the benefits of solar power

A quarter (26%) of those answering felt the RHI would be workable (34% amongst Renewables, Energy and Industry) as opposed to one in ten (9%) who expressed the view that it would not.

Although only slightly fewer (20%) expressed the view that RHO would be workable, significantly more (23%) thought it would not (a quarter of those specified this was due to cost reasons).

Common themes expressed by those who did not see the schemes as workable, or the key points captured, were:

- 8 Simplicity was key to a successful renewable heat scheme
- 5 Minimise costs for the end consumer
- 5 The key to improved uptake of renewable heat was increased commitment from Government to make it happen

*“Renewable Heat Incentives (RHI) seem to be ideally suited to domestic users and Renewable Heat Obligations (RHOs) seem to be ideally suited for the utilities.”
(Renewable trade organisation)*

“We also agree with the main thrust of your analysis and therefore have some concerns about the practicality of an Obligation. In particular, we agree that it could be overly complex.” (Renewable energy industry)

“Both schemes (RHI and RHO) would be potentially workable however we consider a Renewable Heat Obligation would be more difficult to administer and generate opposition from small-scale suppliers of non-renewable heating fuels.” (Industry)

4.5 Question 16

Q16. Do you agree with our assessment that a Renewable Heat Incentive would work better in the heat market?

Answered by 120 respondents (incl. DKs): 16% of total respondents.

Those agreeing that a Renewable Heat Incentive would work better in the heat market outnumber those who disagree to the ratio of 7:2.

Sector	Agree	Disagree	Mixed response / DK	Total answered
Renewables	13	2	2	17
Energy	12	6	7	25
Industry	18	5	1	24
Not for profit	22	2	1	25
Public sector	10	3	3	16
Other	7	5	1	13
Total	82	23	15	120

Proportionally most likely to agree were:

- Renewable heat organisations (4 out of 4 answering)
- Not for profit sector (22 out of 25 answering)
- Renewable trade organisations / NGOs (4 out of 5 answering)
- Industry trade organisations (non-energy) (8 out of 10 answering)

Most likely to disagree were:

- "Others" (5 out of 13 answering)
- Energy suppliers / networks (3 out of 7 answering)

There were no common reasons underlying agreement or disagreement on this issue.

4.6 Question 17

Q17. What more could the Government or other parties do to encourage renewable heat deployment with regard to:

- a) awareness raising
- b) air quality
- c) building regulations
- d) planning
- e) anything else?

Answered by 154 respondents (excl. DKs): 21% of total respondents.

Only two responses suggested that encouraging renewable heat was the wrong focus. The remainder were in favour of more being done by the Government on all of these issues. Air quality was the only area where it was felt that non-Government bodies had as much of a role to play as the Government.

Sector	Total answering	More can be done by Government	More can be done by others	Nothing more - sufficient steps taken
Awareness raising	101	80	19	2
Air quality	69	32	32	5
Building regulations	71	63	6	2
Planning	68	58	8	2
Anything else	54	42	9	3

4.6.1 Awareness

95 respondents (94% of those answering on this issue) felt more could be done to raise awareness by either the Government or other parties (number of individual number of mentions shown):

- 19 Wanted to see improved availability of advice, such as funding training to build up local expertise to provide advice / technical assistance through the process of setting up renewable projects, from planning to installation; creating locally-based accredited renewable energy advice services; making such advice available to potential investors as well as businesses and general public
- 18 Wanted to see investment in training to ensure the required skills pool is available
- 17 Focussed specifically on awareness raising amongst the general public (as opposed to businesses or school children, for example)
- 17 Said Local Authorities should be drivers of raising awareness

Some of the most frequently mentioned issues where respondents felt awareness needed raising were:

- 15 Solar power
- 10 Carbon emission reduction
- 10 Retrofitting

4.6.2 Air quality

63 (91% of those answering on this issue) felt more could be done with regard to air quality by either the Government or other parties (number of individual number of mentions shown):

- 14 Said Local Authorities should take the lead in tackling air quality issues
- 9 Specifically mentioned incentivising renewable heat
- 9 Spoke about the benefits of solar power in terms of addressing / improving air quality

4.6.3 Building regulations

69 (97% answering on this issue) felt more could be done with regard to building regulations by either the Government or other parties (number of individual number of mentions shown):

- 15 Said Local Authorities should take the lead in tackling building regulations
- 15 Felt building regulations needed to be addressed and improved regarding solar power
- 10 Specifically addressed regulations regarding new builds
- 10 Specifically addressed regulations regarding existing buildings

4.6.4 Planning

64 (94% answering on this issue) felt more could be done with regard to planning issues by either the Government or other parties (number of individual number of mentions shown):

- 11 Specifically addressed planning matters regarding retrofitting

4.6.5 Anything else?

No further issues were raised beyond those already raised in answering the specific topics above.

4.7 Question 18

Q18. How far should the Government go in focusing on areas off the gas grid as offering the most potential for renewable heat technologies?

Answered by 164 respondents (incl. those who were unsure): 22% of total respondents.

Whilst more respondents acknowledged the potential of the off gas grid market (71:45), a very slim majority rejected prioritising this market (76: 69).

71 respondents agreed that off gas grid has the most potential for renewable heat technologies.

- 53 of these also agreed it is the right focus; most commonly citing that those off the gas grid are most likely to be in fuel poverty and therefore deserving of prioritisation, or because off gas grid is “an easy win” to convert to renewables, or because those off grid are most likely to be closest to sources of biomass
 - A further 14 did not clarify how much potential they saw in the off grid market but agreed it should be a priority, generally on the grounds of addressing fuel poverty
- 18 agreed that it offers great potential; however, they disagreed that it should be the focus
 - 9 of these did so on the basis that they do not believe any areas should be prioritised, it is equally important to bring renewable heat to all areas

“Given the scale of the task of meeting the 2020 target, there should be a campaign of renewable heat deployment across a broadest possible front.” (Local Authority)

“It is important that the social equity between on and off gas grid consumers is considered. It is anticipated that on gas grid consumers will fund the support which is fed to renewable heat.” (Developer)

- 3 of these felt that because off gas grid offers great potential, market forces will ensure the uptake of renewable heat there without the need for Government focus
- 3 were concerned about cost effectiveness, despite the potential

“The economic disadvantage between off-gas fuels and grid-based gas will provide the relative swing toward this market without the need for future bias within a renewable heat framework. A more cost-effective solution is available through amendments to Building Regulations and planning policy, which should stipulate the use of renewable heat systems for off-gas areas.” (Energy Supplier)

“We would question the merits of any prioritisation of support to off-gas areas, given the potential difficulties of securing supply chain support and concerns over the cost-effectiveness of investment relative to other areas.” (Government Agency)

45 did not agree that off grid offers the most potential, all but two of whom disagreed that it should be a focus; these two believe that off grid should be a focus in order to address fuel poverty, as opposed to addressing matters of potential.

- 16 disputed the argument of potential on the grounds that off grid accounts for a minority of the population and see the greatest wins to be had in urban, densely populated areas

“For the Strategy to focus on the off-gas main households to supply renewable heat - rather than those on mains gas - which is the source of 81% of the UK’s heat demand - in our view is perverse.” (Energy trade organisation)

“Our view as a major urban area is that this could potentially miss some creative urban renewable heat options. It would be best that no discrimination is necessary.” (Local Authority)

“This approach will miss the opportunity to create big wins. Renewable heat opportunities are likely to co-exist with the existing gas supply network.” (Local Authority)

- 15 believe that the potential is there in all areas, and no one group should be prioritised

“Surely any conversion to renewables is valid and those who strongly wish to “go greener” do not all live in rural areas?” (Other)

“It is not particularly helpful to single out off-gas-grid areas for offering a greater potential in terms of renewable heat, with the continual increase in fossil fuel prices renewable heat is becoming viable in all areas” (Industry)

“There is a huge opportunity to reduce carbon emissions from heating in all UK properties.” (Energy supplier)

“The application of renewable heat technologies should be considered everywhere, so significant is the energy security/foreign policy threat to the UK.” Other

- 5 felt that market forces would or should determine uptake, rather than Government intervention

A further 15 did not clarify how much potential they saw in the off grid market but disagreed that it should be a priority, generally on the grounds that they felt that renewable heat should be encouraged amongst all, not prioritised for a few.

5 Distributed Energy

5.1 Chapter 5 Overview

More than twice as many respondents agree with the Government's analysis of the mechanisms of support for small-scale renewable electricity than disagreed, with near universal agreement that support is indeed required. A large proportion spontaneously advocated feed-in tariffs as the most appropriate support mechanism.

When prompted, agreement that better information will aid the development of distributed energy was also extremely strong, with the focus being on targeting that information at the general public and communities.

There was further agreement with the Government's current position that it should not introduce statutory targets for microgeneration at this stage in its development, apart from the "Others", who disagreed. However, support was weaker amongst Not for profit and Industry organisations than other groups.

Financial incentives and feed-in tariff schemes were considered the best means of encouraging retrofitting, although ensuring availability of advice and expertise was also mentioned by many of those who expressed an opinion.

5.2 Question 19

Q19. Do you agree with our analysis of the mechanisms for support of small-scale renewable electricity?

Answered by 146 respondents (incl. DKs): 20% of total respondents.

Those agreeing with the Government's analysis of the mechanisms of support of small-scale renewable electricity outnumber those disagreeing in the ratio of 9:4.

Sector	Agree	Disagree	Mixed response / DK	Total answered
Renewables	12	6	4	22
Energy	12	10	2	24
Industry	12	7	3	22
Not for profit	29	4	6	39
Public sector	13	2	3	18
Other	10	10	1	21
Total	88	39	19	146

The strength of agreement here was largely driven by two sectors:

- Not for profit (29 out of 39 answering)
- Public sector (13 out of 18 answering)

Of those 88 supporting the analysis (number of individual mentions shown):

- 45 Spoke in favour of feed-in tariffs (only 1 raised objections to it at this question)
- 15 Spoke in favour of the Government financially incentivising / providing grants for microgeneration
- 8 Expressed support for solar power as a viable small-scale energy source
- 6 Spoke of Germany as a good example to follow in terms of encouraging microgeneration

What disagreement existed was also largely driven by two sectors:

- “Others” (10 out of 21 answering)
- Energy (10 out of 24 answering)

Of the 39 who disagreed with the Government’s analysis:

- 5 Felt it underemphasised the potential of solar power
- 4 Felt it underemphasised the non-cost benefits of microgeneration
- 4 Pitched very specific technical solutions

5.3 Question 20

Q20. Given the analysis on the benefits, costs and potential, in what way and to what extent should we direct support to microgeneration electricity?

Answered by 137 respondents (excl. DKs): 18% of total respondents.

Very few respondents (12 respondents) felt microgeneration electricity required little or no support compared to 125 who felt it did. Nearly half (47%) of those who felt it need supporting felt that a strong focus was required.

Sector	Strong focus required	Some focus required	Support required (extent unspecified)	Little or no focus required	DK	Total answered
Renewables	9	7	2	2	3	23
Energy	7	8	3	4	2	24
Industry	13	7	2	2	1	25
Not for profit	14	14	2	1	3	34
Public sector	8	7	3	2	5	25
Other	8	3	8	1	1	21
Total	59	46	20	12	15	152

Those most in favour were:

- Not for profit NGOs (regional and non-regional) (25 out of 25 in favour of supporting this issue; 12 seeing it as a key focus)
- “Others” (19 out of 20 in favour of supporting this issue; 8 of these as a key focus)

- Industry (22 of 24 supportive; 13 of these see it as key)

Least support came from the Energy sector, with the exclusion of Developers who were more favourable.

Amongst those 105 who felt at least some focus on supporting microgeneration electricity was merited (actual number of mentions shown):

- 43 Spoke in favour of feed-in tariffs as a mechanism for this (6 specifically advocating feed-in tariffs for microgeneration and the Renewables Obligation for large-scale electricity, 5 saying they saw feed-in tariffs as a better scheme than the RO regardless of the scale of generation)
- 13 Proposed encouraging solar power for microgeneration
- 10 Felt grants were appropriate
- 8 Suggested the key to encouraging microgeneration was educating the public, addressing awareness and raising support
- 6 Advocated the approach taken by Germany in this area

5.4 Question 21

Q21. If you agree that better information will aid the development of distributed energy, where should attention be focused?

Answered by 127 respondents (excl. DKs): 17% of total respondents.

Those agreeing that better information will aid the development of distributed energy outnumber those disagreeing in the ratio of 15:2, with the focus being on providing that information to the general public and communities.

Sector	Agree	Disagree	DK	Total answered
Renewables	18	2	0	20
Energy	18	1	0	19
Industry	19	2	1	22
Not for profit	26	4	0	30
Public sector	14	1	3	18
Other	17	5	1	23
Total	112	15	5	132

The only group for whom agreement was lower than 8 in 10 was “Others” (5 out of 22 disagreed with the premise).

Amongst those 112 agreeing that better information was needed, the following were the most frequently mentioned areas for focus (actual number of mentions shown):

- 51 General public / individuals / householders / consumers / “a bottom up approach is required”
- 22 Communities / local councils / community centres / local organisations
- 11 Public sector / local authorities / public buildings / housing associations / social housing providers
- 10 Energy companies
- 10 Planners
- 9 Developers
- 9 Businesses (in general, not energy companies or SMEs)
- 7 SMEs

As it was not part of the question, few proposed preferred methods of communicating such information, but some mentioned were:

- 15 Via local organisations
- 11 Websites
- 7 Schools, colleges, educational bodies

Fewer still suggested subject matter for improved distributed energy information (again, this was not directly asked); however, 5 did spontaneously mention focusing information on micro-wind generation.

5.5 Question 22

Q22. Do you agree with the Government's current position that it should not introduce statutory targets for microgeneration at this stage in its development?

Answered by 163 respondents (excl. DKs): 22% of total respondents.

Those agreeing that the Government should not introduce statutory targets for microgeneration at this stage in its development outnumber those disagreeing in the ratio of 3:2. Only amongst "Others" did disagreement outweigh support, although support was weaker amongst Not for profit and Industry organisations than other groups.

Sector	Agree – no caveat	Agree – at this stage	Disagree – set targets now	Disagree – this is the wrong focus	Total answered
Renewables	11	5	5	2	23
Energy	16	5	6	2	29
Industry	8	6	11	0	25
Not for profit	16	4	14	5	39
Public sector	10	6	4	2	22
Other	9	2	11	3	25
Total	70	28	51	14	163

Those most likely to agree were:

- Public sector (16 out of 22 answering, of whom 10 agreed without caveats)
- Energy sector (21 out of 29; 16 without caveats)
- Renewables sector (16 of 23; 11 without caveats)

Those most likely to disagree were:

- "Others" (14 out of 25 answering; 11 want targets set now)
- Not for profit (19 out of 39 answering; 14 want targets set now)
- Industry (11 out of 14 answering; all 11 want targets set now)

The question did not call for elaboration so few provided further detail.

5.6 Question 23

Q23. What more could the Government do to incentivise retrofit of distributed energy technologies?

Answered by 146 respondents (excl. DKs): 20% of total respondents.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Not answered
Renewables	16	3	1	0	0	18
Energy	14	5	1	1	0	20
Industry	13	4	1	1	1	19
Not for profit	31	6	0	1	2	40
Public sector	21	4	0	0	1	26
Other	22	2	1	4	1	28
Total	117	24	4	7	5	151

57% of Energy industry and trade organisations, other than those for renewable energy, agreed that more could be done by the Government to incentivise retrofit of distributed energy technologies. For all other respondent groups, 83% agreed.

Only 1 in 6 respondents cited more that could be done by non-Government bodies.

Of those seeing scope for something to be done by either Government or other parties (actual number of mentions shown):

- 49 Spoke of financial incentives (13 specifying grants, 6 specifying tax relief)
- 21 Felt feed-in tariffs were the best method of incentivising retrofitting
- 11 Believed the most important thing was to ensure that advice on retrofitting was readily available to encourage uptake
- 10 Felt regulation was the solution
- 9 Argued that the skills shortage needed to be addressed to ensure that the expertise to carry out retrofitting was available
- 8 Thought the key was to tackle public awareness and engender support through publicity

“The Government must consider some form of incentive for retrofit, whether in the form of mandatory target, financial incentive or built into an extension of the Carbon Reduction Commitment.” (Government Agency)

“Financial incentives, improved guidance and advice are needed to increase the uptake of renewable energy technologies in existing buildings” (Local Authority)

“A feed-in tariff to encourage retrofit of microgeneration renewable technology would be a very welcome measure.” (Local Authority)

6 Transport

6.1 Chapter 6 Overview

Asked about incentivising renewable and low-carbon transport in a sustainable and cost-effective way, respondents' focus revolved around biofuels, electric/hybrid vehicles and, to a lesser extent, public transport.

When prompted specifically on electric/hybrid vehicles, more than twice as many respondents see the potential than do not, with approximately 1 in 12 of those expressing an opinion that widespread introduction of these vehicles would have an immediate impact. Nevertheless, a quarter of respondents do not think such vehicles could realistically contribute to the renewable energy and carbon reduction targets in 2020. Only Industry organisations think such impact might be effective prior to 2020, and Renewables organisations and "Others" only believe it would if significant change was implemented immediately. The Energy, Not for profit and Public sector groups do not think introduction of electric vehicles could make an impact prior to 2020.

Improvement of the recharging infrastructure is the most frequently cited proposal for accelerating the introduction of such vehicles.

6.2 Question 24

Q24. How can we best incentivise renewable and low-carbon transport in a sustainable and cost-effective way?

Answered by 160 respondents (excl. DKs): 21% of total respondents.

For the most part, respondents discussed their preferred solution to renewable and low-carbon transport rather than how to incentivise achieving that goal.

46 opposed the Renewable Energy Directive's 10% target for transport biofuels; of these 34 were "Others" almost certainly responding to an environmental NGO circular, the opposition of this target being one of their objectives.

42 discussed incentivising transport biofuels (24 specifying that they did not see sustainability of biofuels as a concern; 11 mentioned the cost effectiveness of this solution).

41 spoke about incentivising electric / hybrid vehicles (31 making it clear they were discussing financial incentives such as tax relief; 16 raised the cost effectiveness of such vehicles).

34 saw encouraging public transport as the best approach (12 mentioned the cost effectiveness of public transport).

21 spoke specifically of encouraging greater rail use, especially commercially.

6.3 Question 25

Q25. What potential is there for the introduction of vehicles powered through the electricity grid in the UK? What impact would the widespread introduction of these kinds of vehicles have on:

- a) energy demand and carbon emissions;
- b) providing distributed storage capacity;
- c) smoothing levels of electricity demand on the grid?

What factors would affect the scale and timing of these impacts?

Answered by 101 respondents (incl. DKs): 14% of total respondents.

Those seeing potential for the introduction of vehicles powered through the electricity grid in the UK outnumbered those who did not to the ratio of 9:2.

Sector	Potential	No potential	Not the key issue	DK	Total answered
Renewables	8	2	2	1	13
Energy	16	2	0	2	20
Industry	11	2	2	4	19
Not for profit	19	4	2	7	32
Public sector	12	3	0	4	19
Other	11	4	1	9	25
Total	77	17	7	27	128

The only groups where fewer than 8 in 10 of those who expressed an opinion saw such potential were the Renewables sector and “Others” (and even here 7 out of 10 could). Of the 77 seeing potential for vehicles powered through the UK electricity grid:

- 20 Anticipated an increased impact on energy demand
- 19 Saw the need for an improved charging infrastructure as hindering that potential

- 12 Proposed that electric vehicles only be charged at off peak periods / overnight to smooth demand; or made specific proposals such as alternating vehicle batteries (using one and charging the other off-peak) or reducing night time street lighting so vehicle re-charging would not overburden the grid at night
- 11 Discussed the impact that would be seen on the peaks and troughs of demand experienced by the grid, or the impact the grid's peaks and troughs would have on electric vehicles. Of these, half believed the impact would be beneficial, smoothing demand; the other half agreed - *provided* the charging was done off-peak and accepting that this would most likely need to be encouraged through measures such as demand based electricity pricing or a system of dynamic load control
- 11 Anticipated reduced carbon emissions
- 10 Did not foresee an impact on carbon emissions, or at least argued that the key issue in this regard was whether the vehicles were powered by clean electricity or not
- 10 Saw smart meters as being of benefit in managing demand from electric vehicles
- 9 Anticipated benefits in terms of providing distributed storage capacity
- 8 Saw potential for electric vehicles but felt their spec would need to see significant improvement before it could be met
- 7 Spoke of the benefits of hydrogen fuel cells
- 6 Felt that electrification of public transport vehicles should be a priority

1 in 6 could not see the potential for electric vehicles in the UK (1 in 4 amongst Local Authorities and "Others").

6.3.1 Energy demand and carbon emissions

Of the 45 who discussed high impact on either energy demand or carbon emissions:

- 8 Said that such vehicles will need to see spec improvements on issues such as practicality, range, performance, appearance etc. before the impact will be seen
- 5 Saw a high impact on energy demand but not in reducing carbon emissions
- 5 Felt further feasibility studies were required

6.3.2 Distributed storage capacity

Very few directly addressed this issue, and it split opinion amongst those who did, with 11 respondents believing electric vehicles would impact on distributed energy capacity, 9 disagreeing.

6.3.3 Smoothing levels of demand on the grid

18 respondents anticipated high impact in terms of levels of demand on the grid

- 6 raised storage concerns in this regard
- 5 Spoke of improvements required to charging infrastructure
- 3 Spoke of the energy saving benefits of smart metering
- 3 felt further evaluation was required
- 3 Said that electric vehicles performance spec would need to see improvements to address grid demands

“A meaningful contribution will not happen until 2015 at the earliest and this will be from relatively small beginnings. The early adopters will be evangelists, but their cry will not be heard by the masses until the charging infrastructure (widespread availability and sufficient current rating) is in place and the market accepts the whole proposition (cost, practicality, range, performance etc) as an acceptable alternative to the ICE powered vehicle. The limit is therefore likely to be the speed of infrastructure development, which may have to be incentivised or subsidised by the State to ensure that it leads the process, rather than lags behind it. Clearly any taxation regime (vehicle excise duty etc) that further incentivises the consumer to adopt this technology will help to drive consumer demand and accelerate both technology development and the take-up rate.” (Renewable energy industry)

“The technology for electric vehicles is already here. The problem is the price performance ratio, when this is addressed sales volumes will increase followed by economies of scale and electric/electric hybrids will become common place. In answer to the question though, time scales may be in the order of a decade depending on what renewable technology finally makes the grade.” (Other)

6.4 Question 26

Q26. (i) Over what timescales do you think electric vehicles could plausibly contribute to our renewable energy and carbon reduction targets and (ii) what could the Government most effectively do to accelerate the introduction of such vehicles in the UK?

(i) Projected timescale was answered by 71 respondents (excl. DKs): 9% of total respondents.

Sector	Number answering	No impact	Immediate impact	Number anticipating a longer term impact	Average timescale for those expecting longer term impact
Renewables	11	5	1	5	11 yrs
Energy	18	3	0	15	14 yrs
Industry	7	3	1	3	9 yrs
Not for profit	18	2	2	14	14 yrs
Public sector	6	2	1	3	22 yrs
Other	11	2	1	8	12 yrs
Total	71	17	6	48	13 yrs

A quarter (24%) of those answering thought that electric vehicles would not realistically contribute to renewable energy and carbon reduction targets in 2020, whereas 8% thought the impact would be immediate. Amongst the remainder, who believed there would be an impact, just not an immediate one, the average projection was about 13 years. Given that the responses were made mid-2008, it appears that Energy, Not for profit and Public sector groups do not think this would have an effect before 2020, and Renewables organisations and “Others” only believe it would if significant change was implemented immediately.

The least optimistic group were the Public Sector; 2 out of 6 thought there would be no impact, and 3 out of 6 projected an average impact of 22 years.

(ii) Whether more can be done was answered by 57 respondents (excl. DKs): 8% of total respondents.

Sector	More can be done by Government	More can be done by other parties	Nothing – this is not the key issue	DK	Total answered
Renewables	4	1	1	0	5
Energy	7	0	0	2	9
Industry	10	1	0	5	13
Not for profit	14	3	2	3	21
Public sector	7	1	0	2	10
Other	7	3	1	0	11
Total	49	9	4	12	69

Of the 57 who gave an opinion at this part of the question:

- 9 Wanted to see improvements in the charging infrastructure for electric vehicles, with increased numbers of public charging points of sufficient rating
- 9 Proposed financial incentives to encourage use, be that private or commercial vehicles or use of electric public transport
- 9 Felt investment in further R&D would be required to improve issues such as practicality, range, speed, performance, charging times, mileage range, size of vehicles, appearance and/or their ability to go up hills, before consumer demand will grow
- 4 Said that the costs to users of electric/hybrid vehicles needs to become comparable, or lower than, the costs of non-electric vehicles, before they will become acceptable in the market

7 Bioenergy

7.1 Chapter 7 Overview

One in five of all respondents did directly address the matter of biomass sustainability when prompted, and of these, four in five felt there were constructive steps that could be taken to better ensure biomass sustainability. Many consider the best way to do this is proper land evaluation. Responses also raised the importance of ensuring bioenergy crop production does not encroach on land for food crops.

Whilst overall projections for the biomass market tend to be positive, they are very mixed when specifically considering longer-term prices and are predominantly negative regarding the future for biomass imports.

There is very strong support for the Government taking further regulatory measures to discourage the landfill of biomass waste. Regulation on waste sorting is the most likely proposal for preventing biomass waste ending up in landfills.

There was also support for more being done to ensure the provision of sufficient Waste Incineration Directive-compliant combustion capacity to burn available waste wood alongside other biomass, the most likely actions to be recommended being addressing potential public opposition and keeping Local Authorities involved.

7.2 Question 27

Q27. How can we best ensure that our use of biomass is sustainable?

Answered by 169 respondents (incl. DKs): 23% of total respondents.

One in five (21%) of those answering felt that biomass was not the most effective solution in sourcing renewable energy, half of these because they have concerns about sustainability, the other half rejecting biomass for other reasons.

136 respondents suggested ways to ensure that biomass was sustainable (actual number of mentions shown):

- 23 Discussed the need to evaluate the potential of land properly i.e. ensure it is used for the best practicable environmental option, taking into account all ecosystem goods and services provided by the area, including carbon stocks, biodiversity, water availability, cultural uses, food and fuel; making a thorough evaluation of the energy content of the complete supply chain (including cultivation, fertilisers, harvesting,

transport, processing through to combustion and waste disposal) and also pollution impact

“All land subject to biomass production should be assessed for its ‘land potential’ i.e. taking account of all ecosystem goods and services it delivers. This assessment should include working with users and beneficiaries to understand how the land is currently used and how it could be used in the future. Developing criteria on land potential would ensure that social, economic and environmental considerations are fully taken into account and thus implement the ecosystem approach.” (Government Agency)

- 20 Said that the promotion of bioenergy crops should not be allowed to impact on food production; that it is wrong to risk reducing food production in order to grow crops for energy; or that land suitable for food must not be used for bioenergy crops

“Diverting good quality agricultural land into biomass crops should be avoided since it can lead to displacement of agricultural production elsewhere in the world with the potential for forest/habitat loss. The use of productive agricultural land also creates increased competition with food production and is likely to be less economic.” (Academic institution)

- 15 Spoke of the advantages of wood fuel/forestry as a sustainable resource
- 13 Felt further land restrictions are required and that current environmental allowances made are insufficient i.e. not subsidising the conversion of sites that were previously semi-natural or natural woodland or marsh; broadening the current focus on selected habitats (such as undisturbed forests and grasslands) to also consider protection of high conservation value habitats; ecosystems of critical importance due to their high environmental, socio-economic, biodiversity or landscape values; rare, threatened or endangered ecosystems for species of national, regional and international conservation concern; essential ecosystem services on which indigenous and local communities depend
- 12 Saw the key to sustainability of biomass as maximising the efficiency of its processes i.e. ensuring that nitrates are extracted and returned to the land or that forestry waste is used as a fuel and not just left to waste
- 11 Spoke in favour of an independent accreditation scheme such as the Forestry Stewardship Scheme; requiring producers to demonstrate

sustainability principles compatible with the developing standards for all current and future contracts in order to create credibility in the market, ensure that the environmental process are being tackled not just moved elsewhere in environmental chain, and that bioenergy crop harvesting is done under sustainable management schemes

- 11 Spoke of the advantages of deriving energy from waste as a sustainable resource
- 10 Specified that imported biomass needs to be carefully regulated to ensure sustainability
- 9 Raised concerns about environmental impact
- 9 Considered the issue required further evaluation
- 9 Spoke of the advantages of anaerobic digestion as a sustainable resource
- 9 Suggested the use for bioenergy crops of low grade land not suitable for food crops i.e. some energy crops can withstand high levels of inundation so flood storage areas may be an efficient use of land of otherwise limited use

7.3 Question 28

Q28. How do you see the market for biomass developing in 2020? What are the implications for:

a) imports

b) longer-term prices and costs

Answered by 119 respondents (excl. DKs): 16% of total respondents.

Whilst overall projections for the biomass market tend to be positive, responses are very mixed regarding longer-term prices and costs and predominantly negative regarding imports.

Projection	Number answering	Positive	Negative	Mixed / Neutral
Overall projection	55	30	13	12
Specific projection re. imports	73	23	40	10
Specific projection re. longer-term prices and costs	52	18	18	16

Only the Energy sector were more positive than negative about the future for imported biomass (6 out of 10 answering). Disproportionate negativity came from “Others” (11 out of 12 answering re. imports were pessimistic), however this poor projection was shared by the Renewables organisations (7 out of 11) who were the group most positive about the future of biomass overall (7 out of 8).

Of the 40 who were pessimistic about biomass imports, 8 called for a reduction in imported biomass, regarding dependency on overseas biomass as a last resort, or else for a stop in the exporting of subsidised biomass. A further 6 stressed the importance of the security of supply.

Of the 52 giving their projections regarding longer-term prices and costs, they were evenly split three ways, between those who were positive, those who were negative and those who were neutral.

“With the current price fluctuations for fossil fuels the market for biomass is likely to increase and the impact on imports depends on the biomass that is used and whether the UK is true to its word of working sustainably.” (Industry trade organisation)

“It seems ridiculous to import biomass. It is a bulky commodity that is best used close to its place of origin. The only possible justification is the import of vegetable oil from certified sustainable plantations that do not encourage further deforestation.” (Other)

“We are concerned that an increase in deployment of biomass will impact upon the UK’s ability to source renewable fuels. We believe that importing biomass fuels will place a greater demand on other countries, which will create an incentive for land use change to energy crops. This could have a significant negative impact upon land used for food crops and could increase global deforestation rates.” (Government Agency)

7.4 Question 29

Q29. Should the Government take further regulatory measures to discourage biomass waste, including food waste, from going to landfill? If so, which types? What, if any, other measures should be taken to encourage its use to generate bioenergy?

Answered by 132 respondents (excl. DKs): 18% of total respondents.

Those agreeing that the Government should take further regulatory measures to discourage biomass waste outnumber those disagreeing in the ratio of 9:1.

Sector	Agree	Disagree	Not the key issue	Mixed response / DK	Total answered
Renewables	14	1	2	3	20
Energy	10	2	2	4	18
Industry	30	2	2	4	38
Not for profit	21	3	1	7	32
Public sector	16	2	1	5	24
Other	19	2	2	3	26
Total	110	12	10	26	158

Of those 100 who agree that further regulation was required:

- 35 Proposed a focus on sorting waste better to ensure no recyclable or combustible biomass ends up in landfills
- 18 Spoke in favour of anaerobic digestion (as did 3 of the 12 who disagreed with further regulation)
- 13 Argued that recycling (including composting or the manufacturing of products from recycled materials) should be prioritised before combustion
- 12 Said that waste collection services and facilities need to be improved
- 11 Specified types of biomass waste other than food waste as being of equal or greater importance
- 9 Felt the key was not regulation but maximising the efficiency of deriving energy from biomass waste

7.5 Question 30

Q30. What more could the Government or other parties do to help ensure the provision of sufficient Waste Incineration Directive-compliant combustion capacity to burn available waste wood alongside other biomass, and what else might constrain the development of this capacity?

Answered by 88 respondents (excl. DKs): 12% of total respondents.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	11	3	1	0	1	14
Energy	10	1	0	0	4	15
Industry	20	0	0	0	5	25
Not for profit	15	1	0	1	2	18
Public sector	13	2	0	1	4	18
Other	10	1	1	3	1	15
Total	79	8	2	5	17	105

The majority of those answering thought that there was more that could be done by Government, in particular 20 out of 20 from Industry organisations and 6 out of 6 from Not for profit NGOs (both regional and non-regional).

- 8 Recommended addressing potential public opposition

- 8 Felt that Local Authorities had a key role to play
- 4 Proposed reclassification to remove constraints, be that declassifying wood as waste or re-classifying efficient incineration facilities as recovery facilities
- 4 Said improved waste sorting was key
- 4 Said that keeping the administrative burden light was important
- 4 Considered that further evaluation of this issue was required

7.6 Question 31

Q31. What further actions will improve supply chain efficiency, consumer confidence and sustainable growth of the biomass supply chain?

Answered by 114 respondents (excl. DKs): 15% of total respondents.

A quarter of those referencing consumer confidence spoke of the need for the public to be better informed. There was less agreement on actions that would improve supply chain efficiency or improve sustainable growth, although there were suggestions that the former would benefit from attempts to minimise wastage.

59 responses specifically discussed supply chain efficiency

- 7 of these focussed on minimising wastage e.g. ensuring that nitrates are extracted and returned to the land or ensuring forestry waste is used as a fuel and not just left to waste

49 specifically discussed consumer confidence

- 12 spoke of the need to educate the public on the issues and improving public support

43 specifically discussed growth

- 5 spoke positively about Combined Heat & Power generation in the context of growing the biomass industry
- 5 spoke positively about wood fuel and forestry as a renewable biomass source in this context

7.7 Question 32

Q32. What barriers exist to the cost-effective deployment of anaerobic digestion, biogas and the use of biomethane injected directly into the gas grid, and what are the options to address them?

Answered by 111 respondents (excl. DKs): 15% of total respondents.

There was a great breadth of response to this question focussing on barriers rather than end uses, and therefore response to this question does not provide any clear over-arching themes.

The National Grid itself raised a number of technical challenges to be addressed before the full potential of biogas can be achieved within the UK, in particular gas quality (the potential injection of hazardous compounds and elements) and the metering and monitoring requirements being onerous and costly for small sites. This view was largely echoed by one of the gas transporters.

Others spontaneously rejected this position. One renewable energy industry organisation suggested as a barrier that the National Grid is a regulated monopoly, and that the Government should require the National Grid to provide the facility of direct injection, via a revised licence condition if necessary.

A Local Authority rejected that issues are technical, observing that Germany has found solutions. Instead they saw the key barrier as the low production levels of biomass in the UK, and proposed that it be made illegal to send food or other digestible material to landfills; instead, using such material as biofuel should be encouraged as a commercial enterprise.

“Germany is mirroring many of the provisions established for the priority access of renewable electricity to the grid, in the treatment of biomethane. There may be elements that could be considered for the UK”. (Environmental group)

An Industry organisation and Not for profit NGO argued that the National Grid’s requirements render it almost impossible to inject direct to the grid without extensive processing first. The Industry respondent asked that the Government require the National Grid to accept gas which contains up to 40 – 50% nitrogen, by raising the limit for the sooting index. The NGO believed that the only hope to make such an expensive process commercially viable was if natural gas costs become so prohibitively high that the biogas processing costs become justified.

An environmental group called for clearer specifications and criteria of the standards which biofuels, in particular biomethane, must meet.

Several addressed the issue of greater incentivisation being required:

“Currently, no incentives exist for the injection of compliant quality biomethane injection into the gas grid and so we would encourage Government to consider the notion of equivalence, extending the ROC mechanism or similar incentive to this activity to encourage the initial capital investment required.” (Industry organisation)

Those who specifically considered anaerobic digestion also raised a great breath of issues, including the cost effectiveness of set up, of waste collection and of upgrading the output to the quality necessary to inject to the grid, and also the need to broaden waste collection from household and food to, in particular, farming waste.

“At present, attention is focused on too limited a range of sources of materials such as food and garden waste, which may not be present in sufficient quantities, so our view is that a larger spread of biodegradable wastes needs to be considered and in some case AD may require to be coupled with other wastes such as farm wastes, or located close to other sources of methane such as old landfill sites.” (Local Authority)

“At the moment there is no incentive for a farmer to treat his/her own farm slurries by AD. A slurry pit will suffice, even though it emits methane.” (Industry trade organisation)

“We have decided in favour of composting over anaerobic digestion to enable the provision of a simpler collection service where food and green waste can be co-collected and composted. We considered the relatively low food waste capture rates achieved on existing food waste schemes, resulting in high collection costs and significant quantities remaining in the residual stream.” (Local Authority)

“The capital costs associated with anaerobic digestion facilities are the main barrier to take-up. It is therefore important that the ROC system is utilised to financially encourage such investments and that multiple ROCs are granted over the life of the engine rather than exploring the complications of injecting locally generated gas into the grid for consumption elsewhere.” (Industry trade organisation)

“In order for Anaerobic Digestion to be cost effective, the biogas must be used as it is produced. It is not easy to store or deliver biogas - each of these options requiring great expenditure of energy in compression of the gas. We also observe that merely removing the CO₂ component of biogas uses some 16% of the energy in the gas. Local heat generation is likely to represent a cost-effective application for biogas, as most treatment and compression steps are not required. Incentives for renewable heat will improve the economics further.” (Industry)

7.8 Question 33

Q33. What action could we take to make biomass communications more effective to both improve public awareness and help to address acceptability issues, and how should this be delivered?

Answered by 102 respondents (excl. DKs): 14% of total respondents.

Only 4 of those answering suggested that this was not an issue that should be considered a key focus. Responses were very diverse in answer to this question, with few suggestions being mentioned by more than isolated cases:

- 6 Suggested Local Authorities could play a key role here
- 6 Thought prioritising messages on recycling and improved sorting of waste was key
- 4 Referenced particular report(s) they thought were of relevance
- 3 Favoured communications through schools to improve children's awareness
- 3 Felt that public demonstrations of biomass technology would increase awareness, understanding and support
- 3 Said that compensating residents for biomass schemes being built in their locality (be that tax incentives or reduced fuel costs) was key to encouraging acceptability
- 3 Consider that biomass would mean cost savings to the consumer, and that this message would be key to acceptability

7.9 Question 34

Q34. Are there issues constraining biomass supply and use other than sustainability, supply chain and information issues? How should these be tackled?

Answered by 89 respondents (excl. DKs): 12% of total respondents.

Of these, only 51 directly answered the question, of whom 18 thought either there were no issues, no further steps required to tackle this or that this was not a key area to focus on.

- 12 Discussed issues of sustainability being key, regardless of the phrasing of the question
- 9 Raised supply chain issues
- 7 Talked about information issues
- 6 Suggested lack of appropriate skills was a significant constraint and that investment in training was required
- 6 Thought wood fuel / forestry need particular focus in removing constraints

8 Innovation

8.1 Chapter 8 Overview

There is clear agreement that there are barriers to the development of renewable and associated technologies that are not addressed by current or proposed support mechanisms. Many call for investment in and broadening of R&D support schemes to address this.

Many respondents favour adapting the Renewables Obligation rather than leaving it as is or using alternative approaches. The nature of those adaptations centre on banding measures, support for marine technology and investment in R&D. Support for these issues was broadly shared even with those who do not support the RO.

A sizeable majority believe that there is evidence that specific emerging renewable and associated technologies are not receiving appropriate support, with many in favour of increased financial incentives and/or providing greater support for marine technology.

8.2 Question 35

Q35. How can we adapt the Renewables Obligation to ensure that it effectively supports emerging as well as existing renewable technologies? Are there more effective ways of achieving this?

Answered by 140 respondents (incl. DKs): 19% of total respondents.

Amongst those answering, the majority do favour adapting the RO rather than leaving it as is or using alternative approaches. The nature of those adaptations centre on banding measures, support for marine technology and investment in R&D. Support for these issues was broadly shared even with those who do not support the RO.

97 were in favour of adapting the RO:

- 24 Energy
- 20 Renewable
- 18 Not for profit organisations
- 15 Industry organisations
- 11 Public sector

- 9 Others

20 were in favour of keeping the RO largely as is:

- 5 Industry (none trade organisations)
- 4 Renewable
- 4 Energy
- 3 Not for profit organisations
- 3 Public sector
- 1 Other

38 expressed negative views of the RO:

- 9 Not for profit organisations
- 8 Energy
- 8 Others
- 7 Industry organisations
- 4 Renewable
- 2 Public sector

Of those in favour of adapting the RO:

- 52 spoke of supporting emerging technologies
- 23 spoke of supporting marine technologies specifically
- 21 saw banding as a positive measure, proposing it be introduced / used to encourage particular benefits / to differentiate in favour of those technologies which require more assistance
- 19 spoke of supporting existing technologies
- 13 spoke of R&D required to support emerging technologies
- 11 made positive reference to marine renewable energy in this context

- 10 said that, whilst they were in favour of adapting the RO, not scrapping it, they felt subsidies or financial rewards would provide a better incentive than the RO

Of those not in favour of the RO:

- 23 stated that they saw feed-in tariffs as a better means of supporting emerging technologies than the RO
- 5 spoke of banding as a positive measure
- 5 felt subsidies or financial rewards would incentivise better than the RO
- 5 spoke of R&D required to support emerging technologies
- Only 2 specified other funding instruments they saw as better suited for marine technologies

Of those in favour of keeping the RO as is:

- 5 of the 20 raised banding as a positive measure

8.3 Question 36

Q36. Is there evidence that specific emerging renewable and associated technologies are not receiving an appropriate form of support?

Answered by 133 respondents: 18% of total respondents.

Those who believe that there is evidence of specific emerging renewable and associated technologies not receiving an appropriate form of support outnumber those disagreeing in the ratio of 8:1.

Sector	Yes	No	Nothing – this is not the key issue	Total answered
Renewables	19	0	2	21
Energy	23	4	4	31
Industry	19	4	2	25
Not for profit	18	3	4	25
Public sector	9	0	2	11
Other	17	2	1	20
Total	105	13	15	133

Those areas thought to be receiving insufficient support were (number of mentions given):

- 27 Inadequate financial incentives being offered
- 26 Marine energy
- 12 R&D of renewables in general
- 9 Renewable technology demonstrations would boost support
- 7 Hydrogen storage
- 5 Saw a perceived bias in favour of wind energy as evidence that other renewable sources were not receiving sufficient support
- 5 Air sourced heat pumps
- 4 Very specific solutions (e.g. specific companies or brands endorsed)
- 4 Storage issues (other than hydrogen)
- 3 Resolving grid connection problems

- 3 Solar power
- 3 Renewable heat
- 3 Energy from manures and slurries
- 3 Cited Germany as a positive role model
- 3 Cited Portugal as a positive role model

8.4 Question 37

Q37. Are there barriers to the development of renewable and associated technologies that are not addressed by current or proposed support mechanisms?

Answered by 127 respondents: 17% of total respondents.

Amongst those answering, agreement is nearly universal that there are barriers to the development of renewable and associated technologies that are not addressed by current or proposed support mechanisms.

Sector	Yes	No	Nothing – this is not the key issue	Total answered
Renewables	17	1	2	20
Energy	27	1	1	29
Industry	21	1	0	22
Not for profit	28	0	0	28
Public sector	10	1	1	12
Other	14	1	1	16
Total	117	5	5	127

Of those 117 who did think there were unaddressed barriers:

- 47 Spoke of the need to provide further support for R&D schemes, to make these more widely available and less restrictive in qualifying criteria
- 14 Did not think training had been adequately considered to ensure that the right skill set will be in place
- 13 Thought the barriers to marine energy needed more attention
- 13 Felt there needed to be more consideration given to engendering public support for renewable energy

- 6 Said that issues concerning connection to the grid need addressing
- 4 Raised concerns about investor confidence
- 4 Felt that meeting developers at an early stage and assisting them with installation and encouraging plant trials would help to address the barriers
- 4 Felt that feed-in tariffs would help

Whilst 19 respondents did speak of the need to improve incentives, this was almost always in the context of improving incentives for R&D or encourage training e.g. take up of engineering courses or for employers to re-train existing staff with relevant engineering skills.

9 Business Benefits

9.1 Chapter 9 / Question 38

Q38. What more could the Government or other parties do to ensure that the UK secures the maximum business and employment benefits from the EU renewable energy target?

Answered by 149 respondents (incl. DKs): 20% of total respondents.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	22	2	0	0	0	24
Energy	21	3	0	0	0	23
Industry	29	1	0	0	1	30
Not for profit	30	4	0	3	0	35
Public sector	13	3	2	1	1	17
Other	16	3	1	2	0	20
Total	131	16	3	6	2	149

Amongst the vast majority of 141 who felt more could be done, either by Government or others (number of mentions shown):

- 57 Stressed the importance of investing in training to ensure the UK has the right skills base to meet the challenges and seize the business opportunities ahead
- 20 Focussed on the importance of investment in R&D to ensure the UK has the right technology to meet the challenges and opportunities to come
- 16 Felt that the UK is particularly well placed to harness marine technology
- 15 Specified strong leadership and commitment from the Government as crucial in maximising the benefits to the UK
- 11 Spoke of the importance of investing in improvements in the UK's large-scale renewable generation facilities and moving more of our industries over to renewable resources
- 11 Said that fostering investor confidence was vital

- 9 Felt that solar power offers the UK many opportunities
- 9 Suggested that the focus should not be on the EU targets, but on longer term thinking
- 9 Argued that profit and market forces will ultimately dictate the outcome, and that one should apply the principle of first defining the needs of the market, and then how to meet those needs. Some suggested that the Government could stimulate that need or consumer demand by focussing on winning over the public.
- 8 Referenced Germany as a positive role model
- 8 Believed that the key issue, politically and/or economically, is protecting the security of the UK's energy supply
- 8 Felt that wind power offers the UK many opportunities
- 7 Said it was important to encourage communication with and between the non-governmental bodies involved, such as scientists and engineers, academics and businesses, investors and technology providers

10 Wider Impacts

10.1 Chapter 10 / Question 39

Q39. Do you agree with our analysis of the likely impacts the proposed increase in renewable deployment will have?

- a) carbon dioxide emissions
- b) the local environment
- c) security of supply
- d) energy prices
- e) fuel poverty
- f) the energy market
- g) the economy
- h) any other wider issues we should be considering?

Answered by 262 respondents: 35% of total respondents.

Respondents predominantly agree with the Government's analysis on (a) carbon dioxide emissions and (c) security of supply.

There is support, though less marked, for the analysis on (b) the local environment and (f) the energy market.

The numbers agreeing/disagreeing are fairly equal regarding (e) fuel poverty (g) the economy.

Respondents predominantly disagree with the Government's analysis on (d) energy prices.

Issue	Number answering	Agree	Disagree	DK	Ratio
CO ² emissions	88	51	32	5	8:5 agree
Local environment	80	42	34	4	5:4 agree
Security of supply	95	55	34	6	8:5 agree
Energy prices	98	33	58	7	7:4 disagree
Fuel poverty	94	42	45	7	1:1
Energy market	81	41	32	8	9:7 agree
Economy	76	38	34	4	10:9 agree
Other issues raised	79	-	-	-	

10.1.1 Carbon dioxide emissions

Agreement with the analysis was in the ratio of 8:5 amongst the 88 answering.

The 51 in agreement were proportionally more likely to be Energy (11 respondents), Not for profit (11) and Public sector (8) organisations. They were most likely to focus on:

- 7 Sustainability issues
- 6 Opposing consumer cost increases
- 5 Cost effectiveness
- 5 Querying the cost assumptions made in the consultation
- 4 Accepting as inevitable consumer cost increases
- 4 Reducing demand / increasing efficiency

The 32 disagreeing were proportionally more likely to be Others (10 respondents) and Not for profit (8) organisations (obviously a divisive issues for Not for Profit groups). They were most likely to focus on:

- 5 Opposing consumer cost increases
- 4 In favour of nuclear
- 3 Calling for further evaluation / feasibility studies

10.1.2 The local environment

Agreement with the analysis was in the ratio of 5:4 amongst the 80 answering.

The 42 in agreement were proportionally more likely to be Not for profit (11 respondents), Energy (8) and Public sector (7) organisations. They were most likely to focus on:

- 8 Sustainability issues
- 4 Cost effectiveness
- 4 Querying the cost assumptions made in the consultation
- 4 Reducing demand / increasing efficiency
- 4 Opposing consumer cost increases
- 4 Accepting as inevitable consumer cost increases
- 3 Intermittency / unreliability of certain resources
- 3 The investment required by government
- 3 In favour of nuclear
- 3 The urgency with which action is required

The 34 disagreeing were proportionally more likely to be from the Public sector (6 respondents), obviously a divisive issues for them. Overall these 34 were most likely to focus on:

- 5 Opposing consumer cost increases
- 4 Sustainability issues
- 3 Perceived Government bias towards wind generation
- 3 Addressing climate change as the absolute priority
- 3 Querying the cost assumptions made in the consultation
- 3 Specific report(s) they considered beneficial and relevant

10.1.3 Security of supply

Agreement with the analysis was in the ratio of 8:5 amongst the 95 answering.

The 55 in agreement were proportionally more likely to be Not for profit (14 respondents), Energy (10) and Renewable (9) organisations. They were most likely to focus on:

- 6 Sustainability issues
- 5 Cost effectiveness
- 4 Opposing consumer cost increases
- 4 Accepting as inevitable consumer cost increases
- 4 Querying the cost assumptions made in the consultation
- 4 The urgency with which action is required
- 4 Reducing demand / increasing efficiency
- 3 Intermittency / unreliability of certain resources
- 3 The investment required by government
- 3 In favour of nuclear
- 3 In favour of solar

The 34 disagreeing were proportionally more likely to be Not for profit organisations (9 respondents), obviously a divisive issues for them. Overall these 34 were most likely to focus on:

- 6 Opposing consumer cost increases
- 5 Calling for further evaluation / feasibility studies
- 5 Opposing wind generation on the grounds of intermittency / unreliability
- 3 Perceived Government bias towards wind generation
- 3 Addressing climate change as the absolute priority
- 3 Intermittency / unreliability of certain resources
- 3 In favour of nuclear

- 3 Querying the cost assumptions made in the consultation

10.1.4 Energy prices

Disagreement with the analysis was in the ratio of 7:4 amongst the 98 answering.

The 33 in agreement were proportionally more likely to be from the Public sector (7 respondents). Overall these 33 were most likely to focus on:

- 3 Sustainability issues
- 3 Opposing consumer cost increases
- 3 Accepting as inevitable consumer cost increases

The 58 disagreeing were proportionally more likely to be Industry (14 respondents), Renewable (11), Not for profit (14) and Energy (10) organisations. They were most likely to focus on:

- 10 Opposing consumer cost increases
- 9 Querying the cost assumptions made in the consultation
- 7 Calling for further evaluation / feasibility studies
- 6 Cost effectiveness
- 6 Sustainability issues
- 4 The cost benefits of renewable energy
- 4 Job opportunities as a key benefit / priority
- 4 In favour of nuclear
- 4 Specific report(s) they considered beneficial and relevant
- 3 Intermittency / unreliability of certain resources
- 3 In favour of Germany as a positive role model
- 3 In favour of a broader mix of energy sources
- 3 Ensuring renewable energy is cheaper to the consumer than alternatives
- 3 Reducing demand / increasing efficiency

- 3 Opposing wind generation on the grounds of intermittency / unreliability
- 3 Perceived Government bias towards wind generation

10.1.5 Fuel poverty

Agreement/disagreement with the analysis was evenly split amongst the 94 answering.

The 42 in agreement were proportionally more likely to be Renewable (9 respondents), Not for profit (11) and Public sector (7) organisations. They were most likely to focus on:

- 4 Sustainability issues

The 45 disagreeing were proportionally more likely to be Energy (8 respondents) and Not for profit (10) organisations, obviously a divisive issues for the latter. Overall these 45 were most likely to focus on:

- 10 Opposing consumer cost increases
- 7 Querying the cost assumptions made in the consultation
- 5 Calling for further evaluation / feasibility studies
- 5 Reducing demand / increasing efficiency
- 5 Specific report(s) they considered beneficial and relevant
- 4 Cost effectiveness
- 4 Intermittency / unreliability of certain resources
- 4 In favour of nuclear
- 4 Ensuring renewable energy is cheaper to the consumer than alternatives
- 4 Perceived Government bias towards wind generation
- 3 Opposing wind generation on the grounds of intermittency / unreliability
- 3 Addressing climate change as the absolute priority
- 3 Accepting as inevitable consumer cost increases

- 3 Sustainability issues

10.1.6 The energy market

Agreement with the analysis was in the ratio of 9:7 amongst the 81 answering.

The 41 in agreement were proportionally more likely to be Renewable (8 respondents), Not for profit (10) and Public sector (7) organisations. They were most likely to focus on:

- 4 Sustainability issues
- 3 Accepting as inevitable consumer cost increases
- 3 Reducing demand / increasing efficiency
- 3 In favour of solar

The 32 disagreeing were proportionally more likely to be Industry (7 respondents), Energy (6) and Renewable (6) organisations, obviously a divisive issues for the latter. Overall these 32 were most likely to focus on:

- 4 Opposing consumer cost increases
- 4 Querying the cost assumptions made in the consultation
- 3 Calling for further evaluation / feasibility studies
- 3 Intermittency / unreliability of certain resources
- 3 Opposing wind generation on the grounds of intermittency / unreliability
- 3 Specific report(s) they considered beneficial and relevant

10.1.7 The economy

Agreement with the analysis was in the ratio of 10:9 amongst the 76 answering.

The 38 in agreement were proportionally more likely to be Public sector (8 respondents), Not for profit (9) and Energy (7) organisations. They were most likely to focus on:

- 5 Opposing consumer cost increases
- 4 Sustainability issues
- 3 Market forces (as opposed to regulation/intervention) being key to stimulating uptake of renewable energy

The 34 disagreeing were proportionally as likely to come from any of the different respondent groups apart from the Public sector, which saw only 1 respondent disagree. Overall these 34 were most likely to focus on:

- 4 Opposing consumer cost increases
- 3 Accepting as inevitable consumer cost increases
- 3 Calling for further evaluation / feasibility studies
- 3 The investment required by government
- 3 Ensuring renewable energy is cheaper to the consumer than alternatives
- 3 Specific report(s) they considered beneficial and relevant

10.1.8 Anything else?

Those raising other issues cited a very diverse range of matters, with no single topic being spontaneously raised by more than a few:

- 4 The intermittent nature of some renewable energy sources
- 3 Wind generation in particular being intermittent / unreliable
- 3 Support emerging technologies / R&D
- 3 Against passing on cost increases to the consumer
- 3 Acceptance that renewable energy may mean consumer cost increases

11 Delivering the Target

11.1 Chapter 11 Overview

More than four times as many respondents agree than disagree with the Government's overall approach to developing a UK Renewable Energy Strategy. However, the majority of that support comes with provisos, the most frequently expressed concern being the urgency with which change is required.

Nearly all respondents do believe that there is more that can be done to ensure the UK meets the EU renewable energy target. However, there is a great range of opinion as to what the focus for such action should be.

11.2 Question 40

Q40. What more could the Government or other parties do to ensure the UK meets the EU renewable energy target?

Answered by 164 respondents (excl. DKs): 22% of total respondents.

9 in 10 of those answering believe there is more that can be done by the Government to ensure the UK meets the EU renewable energy target as opposed to 1 in 8 who mentioned more that could be done by other parties. However, there was a breadth of opinion on what the focus for the action should be.

Sector	More can be done by Government	More can be done by other parties	Nothing - sufficient steps taken	Nothing – this is not the key issue	DK	Total answered
Renewables	21	2	1	0	0	22
Energy	19	4	1	0	0	23
Industry	26	2	0	0	1	28
Not for profit	33	8	0	1	0	37
Public sector	24	2	0	1	0	26
Other	23	4	3	1	1	30
Total	146	22	5	3	2	166

Not for profit non-regional NGOs (7 out of 13 answering) and Energy industry organisations (3 out of 11) had a slightly above average focus on what non-governmental bodies could be doing to help meet the targets.

Amongst those 157 saying more could be done by the Government or by other parties the responses were extremely diverse (actual number of mentions shown):

- 18 Spoke of the need to focus on reducing demand / increasing efficiency as much if not more than sourcing alternative renewable energy resources
- 14 Thought support for R&D to assist emerging renewable markets / technologies was key
- 13 Spoke of the need to provide incentives to aid the renewables market
- 13 Stressed the urgency with which they felt action is required
- 12 Considered that Local Authorities could take a lead role in ensuring the UK meets the EU targets
- 12 Thought it was key to keep the processes and administrative burden as simple as possible
- 12 Spoke of the strong leadership and commitment that would be required of Government to drive the necessary changes
- 10 Spoke favourably of marine technology as a key way forward
- 10 Saw training of relevant skill sets as key
- 9 Felt educating the public, raising awareness and generating public support will be very important
- 9 Were in favour of an ongoing consultation process
- 9 Stressed the importance of ensuring investor confidence

11.3 Question 41

Q41. Do you agree with our overall approach to developing a UK Renewable Energy Strategy?

Answered by 234 respondents (incl. DKs): 31% of total respondents.

Those agreeing with the Government's overall approach to developing a UK Renewable Energy Strategy outnumber those disagreeing in the ratio of more than 4:1. However, those whose agreement came with caveats outnumbered those whose support was unconditional by 3:1, the most frequently expressed concern being the urgency with which change is required.

Sector	Agree	Disagree	Ambivalent	Total answered
Renewables	26	4	4	34
Energy	33	2	4	39
Industry	33	3	5	41
Not for profit	37	9	5	51
Public sector	20	4	7	31
Other	18	16	4	38
Total	167	38	29	234

Of those agreeing with the Government's overall approach, 27% felt that the proposed approach should address most concerns, or did not suggest in response to this question any amendments to what was proposed. A minority agreed to the proposal overall but with some points in the proposal that they considered needed *revision*. The majority of those agreeing did so with the caveat that they felt additional measures needed to be *added*.

Sector	Agree - sufficient	Agree – but more can be done	Agree – but some revisions
Renewables	11	16	3
Energy	11	20	6
Industry	8	21	6
Not for profit	6	26	8
Public sector	4	13	7
Other	5	5	9
Total	45	101	39

Agreement that the proposal was sufficient was highest amongst the Energy suppliers / networks (5 out of 7 answering) and lowest amongst Not for profit non-

regional NGOs (1 out of 19 answering) and Energy industry organisations (1 out of 12).

Agreement with the proposal, with the caveats of additions or revisions, was highest amongst:

- Not for profit non-regional NGOs (16 out of 19 answering)
- Energy industry organisations (10 out of 12)
- Developers (8 out of 10)

The issues raised by the 122 agreeing with the proposal but with caveats were (number of individual mentions shown):

- 31 Rapid action required / time is running out
- 15 Climate change is the key issue
- 14 Cost effectiveness is a key consideration
- 13 The Government should keep the processes required by the proposals as simple as possible / ensure the administrative burden is light
- 12 The Government will need to put investment behind its proposals
- 11 The targets are too low or an absolute minimum requirement, given the greater goal(s) (be that tackling climate change, security of supply etc)
- 10 The need to improve public awareness, support and education on the issues is key
- 9 The proposals must be transparent and simple to understand
- 8 Were in favour of nuclear energy
- 7 Were opposed to nuclear energy
- 7 Said interim targets were required prior to 2020, either because the respondent felt this was the best way to ensure meeting the 2020 targets, or because they feared that otherwise real change would be left until the last minute
- 7 Made positive reference to specific report(s) they considered relevant

Disagreement with the overall approach was highest amongst:

- Others (17 out of 37)
- Government / Agency (4 out of 14)

The 42 disagreeing raised similar issues to the provisos made by those in agreement, some of the most frequently mentioned being (number of individual mentions shown):

- 8 Rapid action required / time is running out
- 7 Climate change is the key issue
- 6 Cost effectiveness is a key consideration
- 6 Concerns about vested interests, be they Government interests or the interests of the energy companies, interfering with the objectives
- 5 Further evaluation / feasibility studies required
- 5 Querying the cost assumptions in the proposal
- 5 Made positive reference to specific report(s) they considered relevant that they would like to see taken into consideration
- 5 Storage of renewable energy is underemphasised in the proposal
- 5 The targets are too optimistic, unrealistic or demanding

12 Annex 2: Feed-in tariffs for small-scale electricity generation

12.1 Annex 2 Overview

Of the 748 respondents, 242 (32%) addressed any part of the Annex questions:

- 68 Other
- 49 Not for profit
 - o 18 Regional NGOs
 - o 18 Non-regional NGOs
 - o 13 Academic institutions
- 39 Industry
 - o 20 Industry (other than trade organisations)
 - o 19 Industry trade organisations
- 35 Renewables
 - o 17 Renewable electricity
 - o 10 Renewable energy
 - o 3 Renewable heating
 - o 3 Renewable trade organisations
 - o 2 Renewable NGOs
- 32 Energy
 - o 13 Energy industry
 - o 7 Developers
 - o 7 Energy supplier/networks
 - o 5 Energy trade organisations
- 19 Public Sector
 - o 12 Local Authorities

- o 7 Government/Agency

Few demonstrated a majority view when answering the annex questions. However, there is clear agreement with the Government’s assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to, a support spontaneously raised by those who addressed Chapter 5.

12.2 Question A1

QA1. Do you agree with our assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to? Are there other principles you think we should consider?

Answered by 97 respondents (excl. DKs): 40% of annex respondents.

Those agreeing with the Government’s assessment of the basic starting principles that feed-in tariffs for small-scale electricity generation should adhere to outnumber those disagreeing in the ratio of 8:1.

Sector	Agree	Disagree	Other principles	DK	Total answered
Renewables	13	1	7	1	19
Energy	14	2	4	2	19
Industry	13	3	4	1	19
Not for profit	20	2	5	1	27
Public sector	4	0	1	0	5
Other	10	1	2	3	14
Total	74	9	23	6	103

Of those referencing other principles that required further consideration on this issue:

- 10 Mentioned boosting investor confidence
- 10 Spoke of Germany as a good role model
- 9 Said the Government should not discriminate against large generators by only offering tariffs for microgeneration
- 9 Did not want to see double incentives i.e. the same installation should not be eligible for feed-in tariffs and ROC

12.3 Question A2

QA2. What are your views on the option we have described? Factors we would like you to consider in your response include:

- If there are problems with the option described or improvements you could suggest;
- If you can envisage a more effective way of implementing feed-in tariffs for small-scale electricity generation?

Answered by 66 respondents (excl. DKs): 27% of annex respondents.

Sector	Positive	Positive but problematic	Negative	Improvements	DK	Total answered
Renewables	2	7	0	9	0	12
Energy	6	4	0	8	0	12
Industry	5	2	3	4	0	11
Not for profit	4	4	2	12	1	21
Public sector	3	0	0	1	0	3
Other	4	2	0	4	2	10
Total	24	19	5	38	3	69

Whilst the weight of opinion amongst those answering is broadly positive, a proportion do mention problems, barriers or constraints with the option for feed-in tariffs for small-scale electricity generation as described, or improvements for a more effective manner of implementation which could be made. Detailed responses have not been reported here as the numbers answering this question are so low.

12.4 Question A3

QA3. Are there any other bodies or organisations that would be impacted by feed-in tariffs for small-scale electricity generation that we have not considered?

Answered by 48 respondents (incl. DKs): 20% of annex respondents.

12 of the 48 answering this question did not believe there would be further impacts that had not been considered. Amongst those who disagreed, the most frequently cited groups for whom the impact was deemed insufficiently considered were:

- Consumers / general public (10 mentions)
- Installers / tradesmen / electricians / plumbers (8)
- Manufacturers / suppliers / developers of microgenerating systems (8)
- Farmers and landowners (5)
- Businesses who microgenerate (5)
- Local Authorities (5)

12.5 Question A4

QA4. Who do you think should have access to feed-in tariffs for small-scale electricity generation?

Answered by 76 respondents (incl. DKs): 31% of annex respondents.

Whether generation is primarily for own use, supply locally or for export is considered an important consideration in who should have access to feed-in tariffs for small-scale electricity generation, as is differentiating generation technologies and basing eligibility on the scale of the generation station (e.g. supporting large-scale generation under RO not feed-in tariffs). Differentiating by on versus off grid or energy efficiency were not considered as important.

Issue	Number answering	This is a key issue	Not a key issue	DK
Use of energy	57	49	7	1
On v Off grid	34	12	20	2
Different generation technology	33	28	4	1
Size of generation station	32	28	3	1
Energy efficiency measures required	31	18	22	2

12.6 Question A5

QA5. Do you think it is reasonable to put in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation, and if so how could those safeguards be set, and what would the access criteria be? Possible factors we would like you to consider include:

- a limit on overall number of new installations in a given period;
- a limit on new installed capacity in a given period;
- whether priority should be given to particular groups; for example, people in fuel poverty?

Answered by 114 respondents: 47% of annex respondents.

However only 37 (5% of total) made their agreement or disagreement explicit in answering this question, of whom the majority did not see it as reasonable to put in safeguards to limit the potential cost of feed-in tariffs for small-scale electricity generation.

Sector	Agree	Disagree	Ambiguous	Different focus	Total answered
Renewables	3	5	9	2	19
Energy	5	3	11	1	20
Industry	1	4	13	1	19
Not for profit	1	5	22	1	29
Public sector	1	2	4	0	7
Other	3	4	12	1	20
Total	14	23	71	6	114

Again, very few addressed the specific points for consideration. However, amongst those who did respond, they did not favour limitations on either the overall number of new installations in a given period or on newly installed capacity in a given period, but did support prioritisation being given to those in fuel poverty.

Issue	Number answering	In favour	Against	DK
Limiting numbers of new installations	34	5	29	0
Limiting new installed capacity	24	1	23	0
Prioritise those in fuel poverty	29	20	8	1
Prioritise groups other than those in fuel poverty	18	7	10	1

12.7 Question A6

QA6. How would we set the feed-in tariffs for small-scale electricity generation?

Answered by 106 respondents (excl. DKs): 44% of annex respondents.

Whilst there was a great diversity of response here, certain themes were evident, such as extolling the good international examples of feed-in tariff across Europe (especially Germany and France) which could be used as a basis for designing the UK feed-in tariff scheme. Some felt that setting the tariffs at the same level as it is proposed in the RO banding, mirroring the time periods and also the principles established by differentiated ROCs, was likely to be the best approach.

A key recurring theme was to avoid complexity in the scheme, ensuring feed-in tariffs are simple, transparent and easy for customers.

“Tariff bands should be kept to the minimum, review periods should be specified in advance (not more than 5 years, recognising the rapid pace of development of the technologies), appropriate grandfathering should be put in place. Smart Metering will resolve multiple technology installation issues.” (Energy supplier)

“Keep it as simple as possible. Electricity generated from whatever source should receive a flat rate payment.” (Other)

“It must apply equally to all forms of generation including multiple installations both on and off grid, this should also include for own use, supply locally or for export. A guaranteed minimum price per KW/Hr must set by BERR.” (Industry trade organization)

However, in conflict with this need for simplicity is also a request for flexibility, a conflict some respondents acknowledged:

“It would be reasonable to set the tariff according to the energy payback factor; thus technologies with a high pay back factor (like run of river micro hydro at 25:1) could have a higher tariff. However this also introduces complexity so why not set a single tariff and then adjust in the future if a particular technology is becoming over-subscribed.” (Renewable energy industry)

The key issue with flexibility was the range of factors to be taken into account to encourage the full spectrum of renewable generation technologies with a level ‘playing field’. Such encouragement would make emerging technologies as financially viable as established ones, to ensure that they can “stand alone” at the end of the feed-in tariff measure and to maximise the contribution to the 2020 target and beyond.

Of the factors mentioned for consideration in banding were the relative cost of deploying each technology / incentivising upfront costs, and to a lesser extent the region in which they are proposed / location of the site. Factors such as the electrical efficiency of the device / the energy payback factor and the capacity threshold were also mentioned by some.

“The key consideration is the level of support needed to make these technologies attractive to customers to grow the market as rapidly as possible.” Renewable trade organisation

12.8 Question A7

QA7. What arrangements should apply to:

- Currently existing small-scale renewable electricity installations;
- Installations which enter into operation before feed-in tariffs come into effect?

Answered by 65 respondents (excl. DKs): 27% of annex respondents of whom only 36 addressed currently existing small-scale renewable electricity installations and 16 referred to installations which enter into operation before feed-in tariffs come into effect .

Eleven did specify that any arrangements should be applied equally regardless of when installations came into operation (5 of these being from the non-renewable Energy sector, none from the Renewable).

Nine said there should be no double incentives and that installations should not be able to claim Renewables Obligation Certificates and feed-in tariffs.

Two spoke positively about grandfathering.

12.9 Question A8

QA8. Do you think that financial markets will move to assist potential small-scale electricity generators with financing of the initial capital cost of renewable installations, or should we seek to introduce policies that will guarantee frontloaded support?

Answered by 69 respondents (excl. DKs): 29% of annex respondents.

Amongst the few who answered this, 37 believed that the financial markets will move to assist potential small-scale electricity generators with financing of the initial capital cost of renewable installations (mostly with the caveat of certain factors being in place), as opposed to 30 who favoured the introduction of policies that will guarantee

frontloaded support. There was overlap between these two groups, respondents not seeing it as an either/or option, but some believing that the markets' assistance could work alongside supportive policy.

Sector	Markets will assist - no caveats	Markets will assist - caveats	Policies required	Other proposals	Total answered
Renewables	3	6	7	0	13
Energy	5	6	1	1	13
Industry	1	6	4	2	11
Not for profit	1	3	9	3	16
Public sector	0	3	2	0	3
Other	1	2	7	4	13
Total	11	26	30	10	69

12.10 Question A9

QA9. How should the costs of feed-in tariffs for small-scale electricity generation be met?

Answered by 61 respondents (excl DKs): 25% of annex respondents.

- 41 made reference to who should administer the payment for feed-in tariffs for small-scale electricity generation
- 24 discussed who should monitor / regulate the payment for feed-in tariffs
- 20 spoke of the frequency of payments made to microgenerators who feed energy back to the grid by the energy companies
- 19 discussed how administration for feed-in tariffs for small-scale electricity generation should be funded
- 17 considered who should meet the costs of the district network operators for the use of their systems for exporting excess electricity fed back to the grid by microgeneration
- 17 spoke of the frequency of payments made to the suppliers from the feed-in tariffs

Very few addressed the issue of how the overall costs of feed-in tariffs should be disbursed or amongst whom.