

2006 EPRG Public Opinion Survey on Energy Security: Policy Preferences and Personal Behaviour

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Executive Summary

A representative sample of over 1000 UK residents was surveyed for their views on issues ranging from the future of the electricity supply to their current purchasing decisions. Both environment and fuel prices ranked among the top ten issues facing the UK and climate change ranked as the top environmental concern. The young, Liberal Democrats and readers of left-of-centre newspapers such as the Guardian and the Independent, expressed the greatest concern for the environment and global warming. These groups were also least supportive of nuclear power, most supportive of wind power and subsidies for renewables, least trusting of existing market arrangements for electricity, and least concerned about growing dependence on foreign sources of energy. Individual behaviour did not mirror expressed policy preferences. Indeed, political affiliation and newspaper readership had no impact on energy saving behaviour and older respondents, who were least concerned about the environment and global warming, were much more likely to have adopted any measures to reduce energy consumption such as insulating their homes, buying more efficient lightbulbs and more efficient appliances and lowering their thermostats.

Background

In May 2006, the Electricity Policy Research Group commissioned YouGov, the public opinion firm, to conduct a public survey on attitudes towards energy and the environment as the first in a series of regular annual opinion polls on public attitudes towards electricity supply and on individual behaviour. 2,254 residents of the United Kingdom over 18 were contacted via the Internet, of whom 1,019 responded (45% response rate). YouGov uses Internet polling, rather than traditional polling methods of telephone or face-to-face interviewing and also recruits its panel over the Internet.¹ YouGov maintains a panel of 46,000 electors in the United Kingdom, recruited via non-political websites through invitations and pop-up advertisements. Respondents are provided a small monetary incentive for each survey in which they participate. Results are weighted based on demographic information provided by the panelists to YouGov (Kellner, 2004). Annex I provides the full questionnaire as administered as well as additional demographic information.

The past year had seen significant attention to the question of climate change. Prime Minister Blair had made global warming one of the two main issues at the G8 Summit at Gleneagles in

¹ There is an ongoing debate over the advantages and disadvantages of alternative survey methods. Proponents of traditional survey methods argue that biases in sampling may be introduced if the panel is selected over the internet (access to those that are more technologically aware, away from the poor or those employed in certain jobs). Online polling supporters can point to flaws in traditional surveys such as: telephone surveys are biased towards those who are home at the right time; telephone surveys exclude those who use mobile phones as their main telephone, and people tend to conceal responses when traditional survey methods are used. See Kellner (2004). Certain types of question can more easily be presented in some formats versus others (e.g., providing information in graphical format). *The Economist* has compiled a comparison of the final polls from a number of outlets to the final results and the findings show that online polling is equal to or better in predicting the final election results. See <http://www.economist.com/media/pdf/YGrecord.pdf>.

the Summer of 2005, and at the time of the survey, the Government was in the process of conducting a major Energy Review into the future of UK energy needs to follow up on its 2003 White Paper (DTI, 2003). Energy had also emerged as an issue at the forefront of the news. Fuel prices had risen rapidly and oil and gas firms have announced records for quarterly profits. This past winter, concerns over the security of the gas supply led major industrial actors to threaten that they might need to shut down facilities because of problems. The very public row between Russia and Ukraine over gas supply caused many to worry about the likely increased reliance of the UK on imported gas for use, primarily, in the electric sector.

Using an internet-based survey instrument, we asked a battery of questions on some of the key policy questions facing the UK electricity sector in the coming years. We also tried to understand whether there was any relationship between policy preferences and the expressed attitudes and actions being taken that impact on energy demand.

This analysis presents only some basic results. Subsequent analysis will investigate additional aspects of the survey including willingness to pay, the role of information and conduct a proper econometric analysis to model the interaction between key variables.

General Attitudes

We surveyed respondents on the three most important overall issues facing the UK (Table 1a) chosen from a prompted list of some 25 priorities. With the addition of fuel prices and pensions, the list of options is similar to that asked in a previous poll on UK attitudes towards climate change and energy technologies that we conducted in September 2004 together with the Massachusetts Institute of Technology (Curry et al 2004; Reiner, 2005) and the results are similar – asylum seekers was the dominant leading concern followed by terrorism, crime and health care, all scoring above 20%. In the current survey, three energy and environment related issues (fuel prices, environment, and energy) were listed in the top twelve, all in the 10%-20% range.

Table 1a. Most Important Issues Facing the UK Today

Asylum seekers	45%	Aging population	8%
Crime	30%	Family values	8%
Health care	26%	Foreign policy	7%
Terrorism	22%	Economy	7%
Pensions	22%	EU	5%
Fuel prices	17%	Public transport	4%
Environment	14%	Unemployment	3%
Education	12%	Social Exclusion	3%
Drugs	11%	Euro/Pound	2%
Race	11%	Welfare	2%
Poverty	11%	Deficit	2%
Energy	10%	AIDS	1%
Taxes	9%	Abortion	1%

A sizable minority also cited pensions and fuel prices, which were not asked in the previous survey, and environment remained virtually identical to the previous survey at 13%. It is worth noting that at the time of the survey, fuel prices were at or near the highest level in two decades. Taxes, the EU and aging population were notably lower as concerns in 2006, although the latter response and pensions are closely related.

As seen in Table 1b, the young were most likely to have listed environment as a top priority compared to issues such as pensions and asylum seekers, which were cited much more frequently by older respondents.

Table 1b. Breakdown of Most Important Issues by Age Group

Concern	<30	30-44	45-59	60+
Asylum seekers	30% ***	44%	44%	49%
Pensions	12%***	15%***	30%**	37%***
Fuel prices	14%	11%**	19%**	16%
Environment	20%**	22%***	15%	8%***

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

Not surprisingly, there are wide differences across the political parties: 51% of self-identified Conservatives list asylum seekers as one of their top three concerns compared to 40% of Labour backers and 22% of Liberal Democrats.

National priorities varied widely with newspaper readership (Table 1c). Environment was actually the top national priority listed by Guardian and Independent readers, whereas it was ranked third by those reading other broadsheets and near the bottom by most tabloid readers.

Table 1c. Breakdown of Most Important Issues by Newspaper Readership

Concern	Guardian/ Independent	FT/The Times/ Daily Telegraph	Sun/Star
Asylum seekers	10%***	31%***	58%***
Crime	14%***	29%	36%*
Health care	31%	23%*	25%
Terrorism	10%***	15%**	33%***
Pensions	22%	28%	16%
Fuel prices	3%***	9%***	18%
Environment	40%***	20%*	8%**
Education	21%**	18%	9%**
Poverty	31%***	9%	9%**
Energy	15%	15%	6%
Foreign policy	15%***	7%	2%**
Social exclusion	13%***	3%	0%**

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

Environmental Concerns

We also asked respondents to identify the first and second most important environmental problems facing the UK. Global warming continues to increase as a priority -- 55% listed it as one of the top two environmental concerns compared to 49% in our 2004 survey. Most other responses were virtually identical to 2004 with a slight increase in GM crops and a small decline in concern over water pollution.

Table 2a. Two most important environmental problems facing the UK today

Environmental Concern	1st priority	2nd priority
Global warming/ Climate change	38%	17%
Overpopulation	18%	11%
Urban sprawl/ Lack of green space	11%	13%
Resource depletion	10%	15%
Ozone depletion	4%	11%
Destruction of ecosystems	4%	11%
Toxic Waste	4%	8%
Water pollution	2%	3%
GM crops	2%	3%
Endangered species	1%	2%
Smog	1%	1%
Acid rain	0%	0%

On global warming, Labour and Liberal Democrat respondents offered similar rankings, whereas fewer Conservatives listed global warming as either their top or one of their top two environmental concerns. Compared with 2004, however, supporters of all three major political parties were more likely to list global warming as one of their top two environmental concerns and the biggest increase was actually among Conservative voters.

Table 2b. Two most important environmental problems facing the UK today

Environmental Problem	Labour	Conservatives	Liberal Democrats	<30	30-44	45-59	>60
Global Warming	64%	48%**	68%**	65%***	61%*	50%	48%**
Overpopulation	22%**	41%***	15%***	20%***	27%	30%	46%***

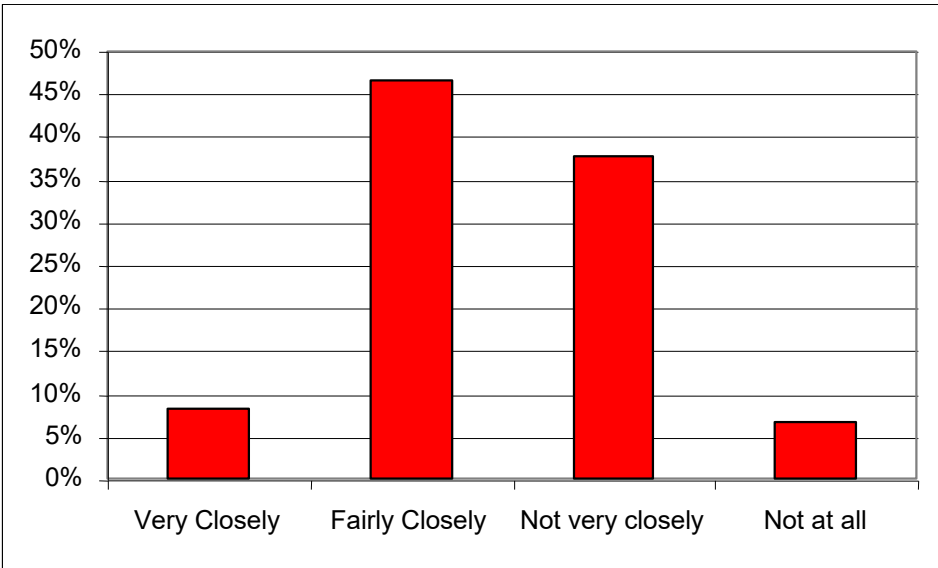
Note: *** indicates significant at 99% confidence level; ** 95%; *90%

Those listing environment as one of their top three overall concerns clearly believed that global warming is the preeminent threat -- 78% cited it as one of their top two environmental concerns, of which 62% listed it as their very top concern.

Awareness and Understanding of Energy and Environment Issues

We asked a series of questions to investigate the attention the general public pays to questions of energy and environment. As one measure of awareness, we asked respondents how closely they claim to be following the debates over the future of energy in the UK. Figure 1 shows that, overall, less than 10% claim to have followed the debate “very closely”. Two-thirds of men claimed to be following the subject closely – either “very closely” (13%) or “fairly closely” (55%) – compared to only half of women (5% and 45% respectively). Those citing Environment or Energy as a top national concern were most likely to say they are following the debates very or fairly closely (76% and 81% respectively).

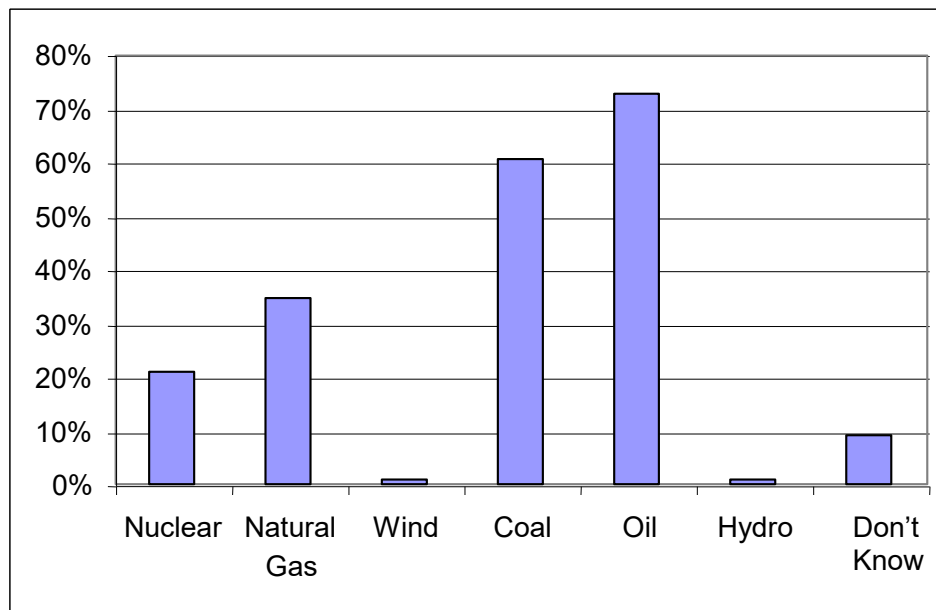
Figure 1. In the last few months, how closely have you been following debates over the future of energy in UK?



Broadsheet readers are far more likely to be engaged on the issues than tabloid readers. 17% of Guardian and Independent readers claimed to be following the debates very closely and 63% fairly closely and readers of the Financial Times (FT), The Times, and Daily Telegraph expressed a similarly high level of interest (12% very/72% fairly). By contrast, only 37% of Sun/Star readers were similarly attentive (5% very/32% fairly).

We also tested basic understanding of the causes of climate change. On the question of which fuels are significant contributors to global warming, over 70% identified oil and over 60% listed coal, which are the two most carbon-intensive fossil fuels (respondents were allowed to select as many answers as they wanted). Natural gas was selected by only some 35%. Natural gas does emit only half the carbon dioxide as coal when burned, but the low figures may also reflect the much cleaner burning nature of gas, which unlike oil or coal, emits few other pollutants such as sulfur oxides and particulates. Just over 20% listed nuclear power as a major contributor and negligible numbers listed hydroelectric power or wind. None of the three emit carbon dioxide directly and on a lifecycle basis, all emit several orders of magnitude less greenhouse gases than fossil fuels (Spadaro, Langlois and Hamilton, 2000).

Figure 2. Which of the Following Contributes Significantly to Global Warming?



The association between nuclear power and climate change is a longstanding and persistent one. Results in this survey are actually a marked improvement over earlier surveys. Asked a similar question 2002, 45% of UK respondents² thought that nuclear did contribute significantly to global warming compared to 27% did not and 28% replied “Don’t Know” (Eurobarometer 2002).

At the time, the UK was in line with the EU-15 average of 47% who believed it was a significant contributor and 27% who believed that it did not. The only countries where the majority reported the “correct” answer that nuclear power is not a significant contributor to global warming in the 2002 survey were in Scandinavia, including 67% of Swedes, 58% of Danes and 54% of Finns. By contrast, 39% of Germans, 59% of the French, 64% of Spaniards and 79% of Greek respondents offered the “incorrect” answer. There has been a persistent (and pervasive) misconception by many that nuclear power would not offer any benefits in combating climate change, not only in countries without nuclear power such as Greece, but even in countries such as Germany and Spain, which have had active political debates over the future of nuclear power and France, which is widely seen as the most pro-nuclear member state because 80% of its electricity is produced by nuclear energy.

Table 3. Significant Contributors to Global Warming

Energy Source	Male	Female	<30	>60	FT/Times/Telegraph	Guardian/Independent	Sun/Star
Nuclear	12%***	30%***	25%***	15%	12%***	13%***	30%***
Gas	49%***	28%***	48%***	36%	57%***	55%***	26%***
Oil	82%***	69%***	80%**	69%	88%***	88%***	63%***
Coal	73%***	54%***	66%	65%	74%**	81%***	47%***

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

² UK results were based on 1000 respondents in Great Britain and an additional 300 in Northern Ireland. The survey was conducted by telephone by the polling firm EOS Gallup on behalf of the European Commission.

Unsurprisingly, given the much lower level of attention paid to energy issues by both women and tabloid readers, they were more likely to either give the incorrect answer or to respond “don’t know”. There was an interesting difference across age groups, where the younger respondents were more likely to assert (correctly) that fossil fuels were a significant contributor but also (incorrectly) that nuclear power was a significant contributor.

Policy Preferences

We also asked a series of questions to assess preferred policy options at a time when the Government was in the process of undertaking a major Energy Review. We sought to distinguish which public concerns fell under the broad rubric of energy security, identify which forms of intervention in energy markets were viewed most favourably, and determine how best to meet future electricity needs and address global warming.

Technologies for addressing global warming

On the question of how to address global warming, Figure 3 shows very strong support for renewables and more efficient cars and appliances. Views of nuclear power and carbon capture and storage (CCS) were much more divided, although roughly half of the respondents did not have an opinion on CCS.

Compared to the same question in 2004, support for tree planting and biomass has declined (see Reiner, et al, 2006), support for solar and wind has weakened slightly and those arguing to “definitely not use” nuclear power has declined by 5% from 19% to 14%. As in the previous poll, those listing environment as one of their top three overall concerns were most opposed to nuclear power (25% vs 14% overall). Women were also twice as likely to be strongly opposed to nuclear power (21% vs 10% of men).

Political party, age and news sources all affected support. Liberal Democrats were far more likely to oppose nuclear power, whereas opposition to wind was greater among Conservatives. Opposition to wind increased with age and opposition to nuclear power decreased with age (Table 4a). 42% of Guardian and Independent readers were opposed to nuclear power and only 1% opposed to wind, compared to roughly equal numbers (18%) of readers of the centre-right broadsheets opposing both nuclear and wind power (Table 4b).

Figure 3. Preferred Technologies for Addressing Global Warming

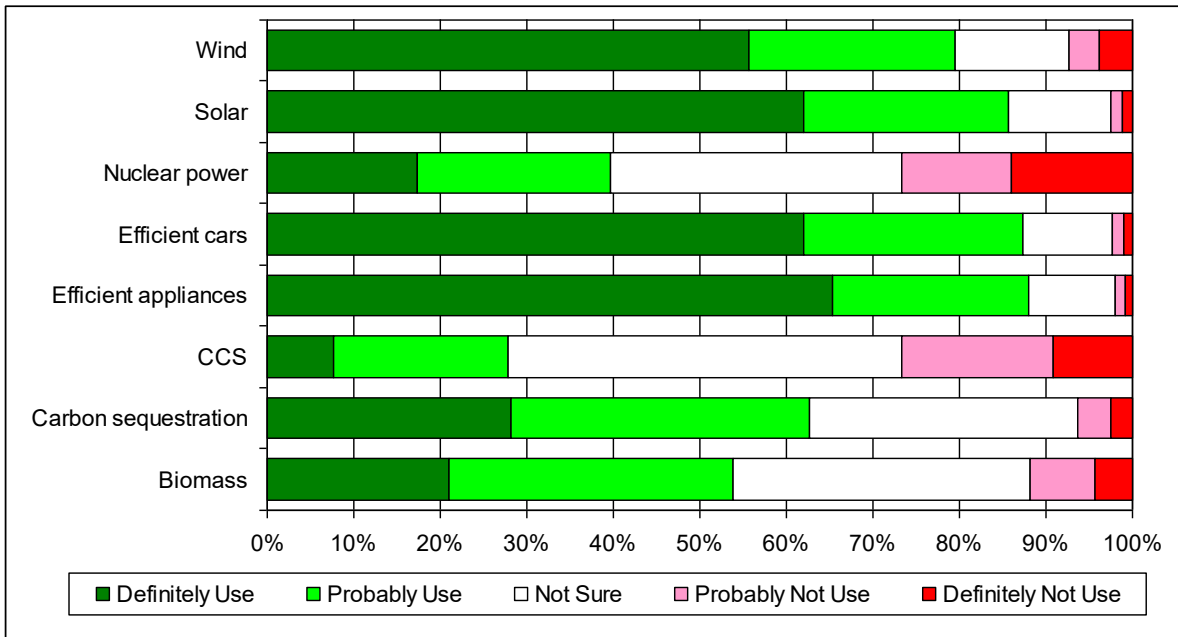


Table 4a. Opposition to Wind and Nuclear by Gender and Age Group

	Male	Female	<30	30-44	45-59	60+
Total Opposed to Nuclear	21%***	37%	34%**	30%	24%	22%
Total Opposed to Wind	9%	5%	5%**	5%***	8%	16%***

Note: „total opposed“ include public who claimed „definitely not use“ and „probably not use“
 *** indicates significant at 99% confidence level; ** 95%; *90%

Table 4b. Opposition to Wind and Nuclear by Political Party and Newspaper readership

	Labour	Conserv -atives	Liberal Democrats	Guardian/ Independent	Sun/ Star	FT/Times/ Telegraph
Total Opposed to Nuclear	27%	22%*	40%*	42%***	28%	18%***
Total Opposed to Wind	4%	13%**	3%**	1%***	8%	18%***

Note: „total opposed“ include public who claimed „definitely not use“ and „probably not use“
 *** indicates significant at 99% confidence level; ** 95%; *90%

Those who claimed to be following the energy debate “very closely” also offered the strongest support for a diverse portfolio of options. In addition to strong support for wind and solar, this group was twice as likely to offer strong support for both CCS and nuclear power and above average support for biomass and tree-planting as options.

Electric Sector Options

We also posited that over the next 10 to 15 years, the UK would face challenges to its electricity supply because of the retirement of a number of nuclear and coal generating stations. We then asked respondents to rate a wide range of possible government actions to avoid a potential shortfall:

- Significant investment in research and development into advanced technologies such as solar power, tidal power, hydrogen, and fuel cells
- Build wind farms in your local area
- Build onshore wind farms
- Build offshore wind farms
- Build gas-fired power stations that can capture carbon dioxide and store it underground
- Build coal-fired power stations that can capture carbon dioxide and store it underground
- Build new coal-fired power stations
- Extend the life of existing coal stations
- Build new gas-fired power stations
- Build new nuclear stations at new sites around the UK
- Build new nuclear stations on the same site of existing nuclear plants being phased out
- Extend the life of existing nuclear power stations

The clear favourite across all demographics was for significant investment in R&D, followed by the various wind options, notably offshore wind. When asking explicitly about wind in their local area, the negatives increased and the level of those strongly opposed was similar to that of natural gas or cleaner fossil. Still, support for all forms of wind exceeded 60%, whereas no form of fossil electricity reached the 50% threshold. The least favoured option was building new coal plants, although opposition diminished to a level equivalent or less than nuclear power if the option of capture and storage of carbon dioxide (CCS) was offered.

Figure 4. Support for Government Actions to Avoid a Potential Shortfall in Electricity Supply

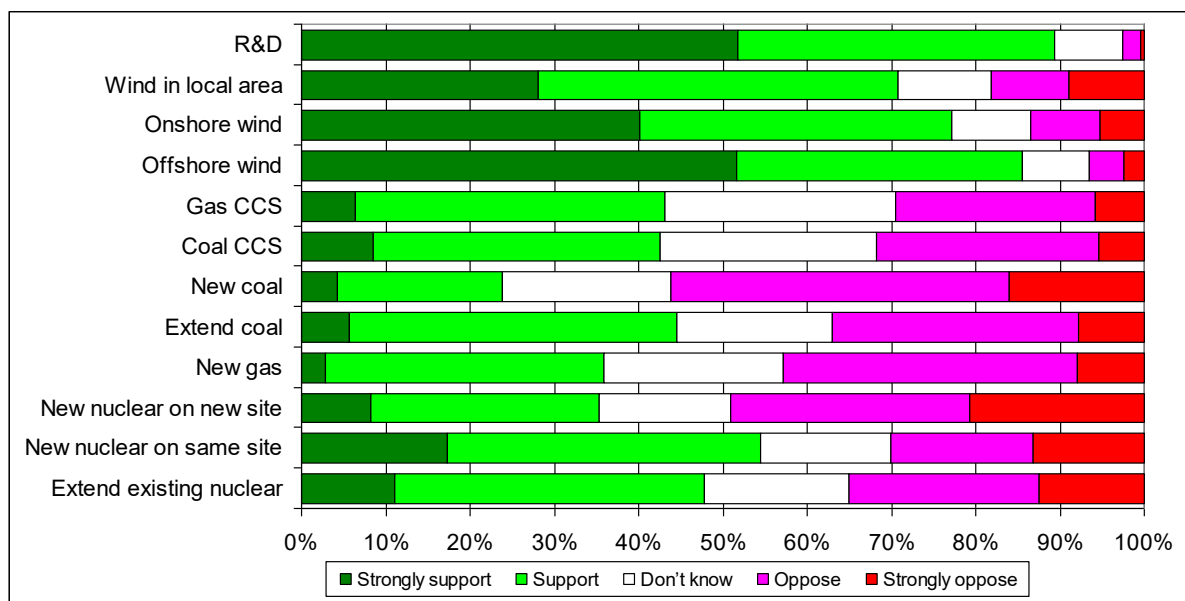


Table 5a. Preferred Options for Electricity Sector by Gender and Political Party

Total support (%) (Strongly support (%))

Option	Male	Female	Labour	Conservatives	Liberal Democrats
Extend nuclear plants	60%*** (16%)***	35%*** (6%)***	43% (8%)**	66%*** (21%)***	41% (6%)
New nuclear on same site	71%*** (28%)***	37%*** (9%)***	52% (14%)**	69%*** (29%)***	45% (11%)**
New nuclear at a new site	51%*** (15%)***	19%*** (3%)***	33% (8%)	49%*** (16%)***	24%* (5%)**

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

Table 5b. Preferred Options for Electricity Sector by Age Group

Total support (%) (Strongly support (%))

Option	<30	30-44	45-59	60+
Extend nuclear plants	43%* (8%)	66% (8%)	41% (13%)	41%** (19%)*
New nuclear on same site	50% (16%)	53% (17%)	58% (21%)	62%** (21%)
New nuclear at a new site	31% (9%)	30%** (6%)**	39% (10%)	45%** (13%)
New coal	14%*** (2%)	20% (2%)*	31%*** (6%)	27% (7%)**
Wind in local area	79%** (39%)***	78%*** (33%)	70% (25%)	51%*** (15%)
Offshore wind	89%* (57%)	90%** (59%)*	86% (48%)	74%*** (37%)**

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

The broad support for renewables is similar to the findings of the recent Tyndall/UEA survey (Poortinga et al, 2006)

Priorities for a National Energy Policy

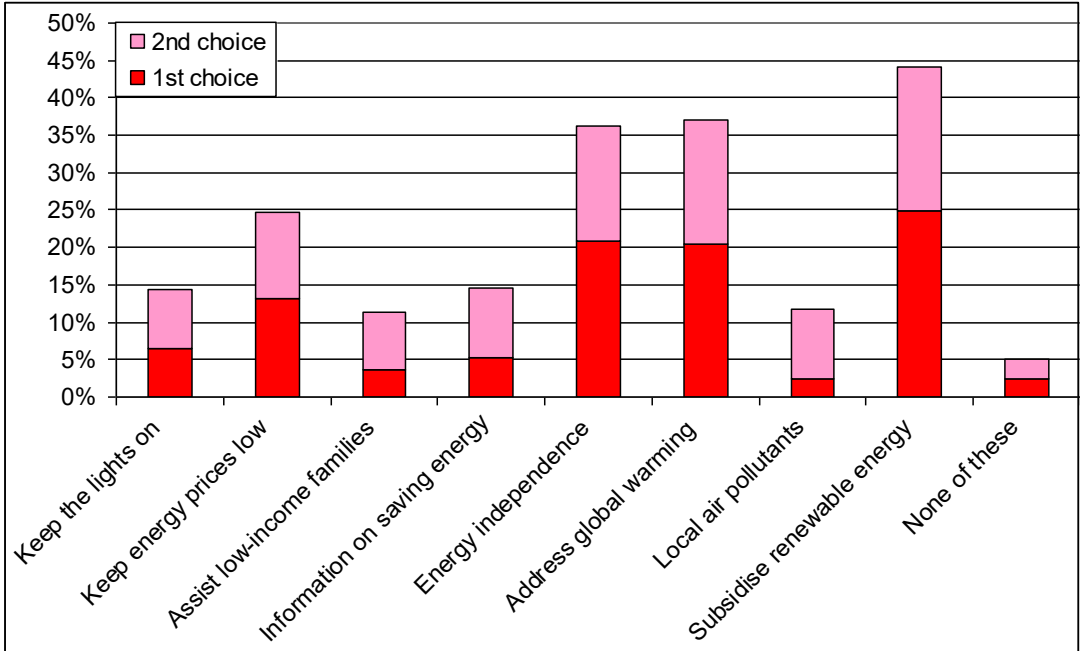
Asked to identify what should be the top priorities for a national energy policy, subsidising renewables was the leading first *and* the leading second choice, although not by huge margins (see Figure 5). Almost 45% listed subsidies for renewables as one of their top two choices compared to just over 35% for addressing energy independence and global warming respectively. Next in popularity was keeping energy prices low. Requiring that energy security should focus on keeping the lights on “no matter what” was only tied for fifth place, alongside providing consumers with more information on energy savings.

To reprise a familiar theme, support for renewables as a priority was endorsed most strongly by women (52% of women vs 39% of men), younger respondents (48% under 45 vs 35% over 60), Liberal Democrats (52% vs 49% Labour and 44% Conservatives) and Guardian/Independent readers (57% of vs 29% of Sun/Star readers).

Amongst those answering “energy independence”, there were also some notable differences across subgroups. Only 29% of women cited it as one of their top two priorities compared to 41% of men. The results across age were even more divided; only 26% of under-30’s felt self-sufficiency should be one of the two top priorities, compared to 44% of 45-59 year olds and 48% of those 60 and over. The difference across party affiliation and newspaper readership was equally marked. 45% of Conservative voters listed energy independence as a concern compared to 32% of Labour supporters and 21% of Liberal Democrats. Once again, newspaper readership offered similar patterns: 48% of readers of the FT, The Times, and Daily Telegraph listed it as a concern compared to 26% of Guardian and Independent readers.

We separately asked a more specific question of whether respondents were concerned that the UK is “becoming increasingly dependent on foreign sources of energy”, the differences across age groups were more glaring still – 60% of over-60s and 50% of 45-59 year olds claimed they were “very concerned” compared to only 21% of under-30s. Other demographic variables were less significant although men (42%) and Conservatives (44%) were more likely than women (34%) and Liberal Democrats (27%) to express similar levels of concern.

Figure 5. What should be the top priority of a national energy policy?



The relationships are roughly reversed in analysing those who answered, “address global warming” as being one of their top two priorities. The young were more likely to place it at the top (45% for under-30’s compared to 30% for those over 45). Political party and newspaper readership followed similar patterns. 52% of Liberal Democrat supporters consider global warming to be a top energy policy priority versus 30% of Conservatives. Even more dramatically, 58% Guardian and Independent readers did so compared to responses in the 27-33% range for readers of all other newspapers.

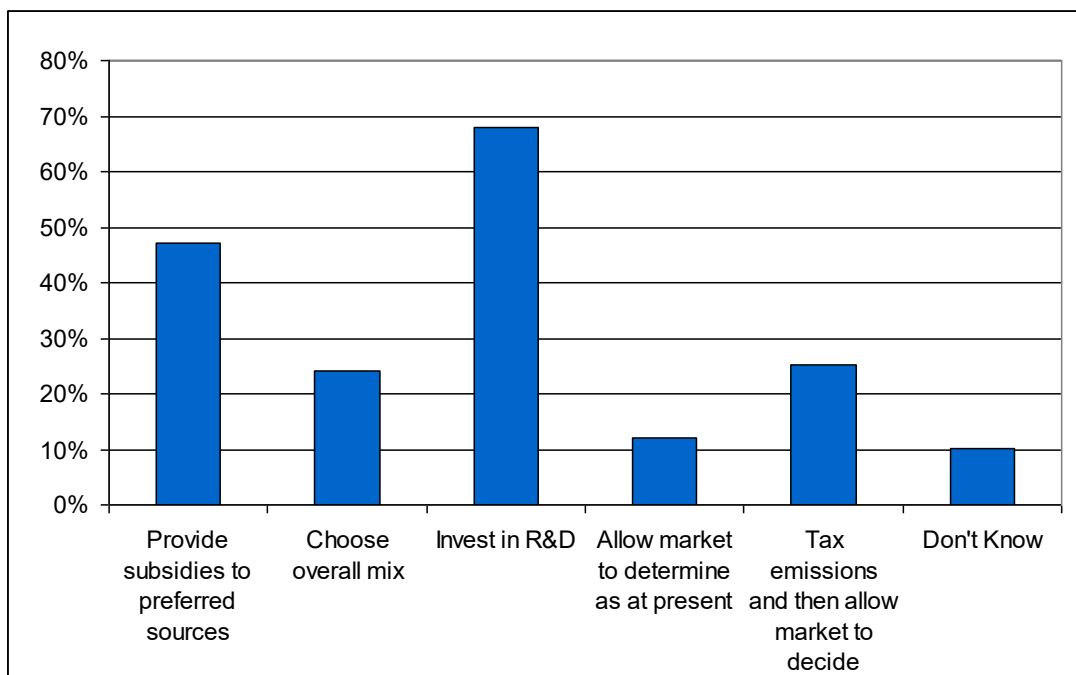
By contrast, “keep energy prices low” was cited by only 6% of Guardian/Independent readers compared to 37% of Sun/Star readers. 39% of those that listed fuel prices as one of their top three national priorities also wanted to keep prices low, compared to only 4% of those listing environment and 6% of those listing energy.

Choosing the Mix

We also tried to assess the preferred combination of approaches to arrive at the mix of fuels in the electricity supply. Investing in research and development and subsidising preferred sources garner the highest levels of public support. The next two most popular choices, taxing emissions and choosing the overall mix were supported by roughly one-quarter of respondents. The least popular choice was to simply allow the market to determine the mix “as at present”.

Newspaper readership appeared to have a significant bearing on support for different alternatives. Only 3% of Guardian and Independent readers supported having the market determine the mix as at present compared to 12%-14% of tabloid readers and 17% of those who regularly purchase The Times, FT or Daily Telegraph. 60% of Guardian and Independent readers favour subsidies for renewable energy sources compared to 40% of Sun/Star readers and 45%-48% for all others. Sun/Star readers were also much less likely to favour investing in R&D (54%) compared to the broadsheets and particularly Guardian and Independent readers (86%).

Figure 6. There have recently been concerns over the future of the electricity supply in the UK. Do you believe that the current Government should...?



Environmental taxation is an issue that all three main political parties have emphasised recently (FT, 2006), but support among party faithful is fairly tepid. Liberal Democrats were the strongest supporters, but still only 33% favoured such an approach compared with 27% of Conservatives and only 19% of Labour supporters. Conservatives displayed a slightly higher level of support for allowing current market arrangements to set the mix, but even so, this support was only 18% (versus 8% of Liberal Democrats and 10% of Labour supporters).

Higher Standards for Electrical Goods?

Finally, moving away from national level policy questions, we turned to an issue that might impinge on respondents more directly as consumers. Respondents were told, that, many electrical goods consume “a lot of power unnecessarily”, for example, television sets that “currently use the power of a 60 watt bulb when switched to „standby“”. We then asked if the government should “make laws to force electrical goods manufacturers to include more energy saving features in their products?” 81% of respondents were willing to support such legislation. If such a measure “meant that electrical goods would be slightly more expensive”, 78% of those originally in favour of such legislation would still support it, whereas if the law implied that “new devices will not work quite as quickly or as well as they do today”, support dropped to 54% of those who voiced initial support. Thus, a price increase was less likely to elicit a negative response than a decline in quality.

Clear majorities supported such a measure, ranging from 91% of Guardian/Independent readers to 72% of the Sun/Star readers. If price or quality suffered, the falloff for all but Guardian and Independent was quite dramatic. Majorities still supported the laws if prices increased, but the drop was even steeper if instead quality was expected to worsen.

Table 6. Support for Laws to Require Energy Saving Appliances by Newspaper Readership

	Express / Mail	Sun / Star	Mirror / Record	Guardian / Independent	FT / Times / Telegraph	Other Paper	No Paper
Laws to require energy saving appliances	82%	72%***	86%**	91%***	79%	86%	86%
<i>Of those who support such a law:</i>							
Still would support even if more expensive	76%	71%*	65%***	91%***	81%	74%	75%
Still would support even if not quite as good	53%	45%***	47%*	77%***	57%	48%	54%

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

The levels of support might be compared to the BBC global survey (PIPA, 2006) which found that the British were near the top of an international comparison in supporting auto makers “increase fuel efficiency, even if this means the price of cars would go up” surpassed only by Italy, and perhaps surprisingly, the United States and Canada. Support in the UK was much stronger than France or Germany.

Among the subcategories analysed, the lowest support for such a law (66%) came from those who expressed a preferences for markets in regulating the electricity sector and most supportive were those who list “environment” as one of their top three priorities (91%).

Personal Behaviour

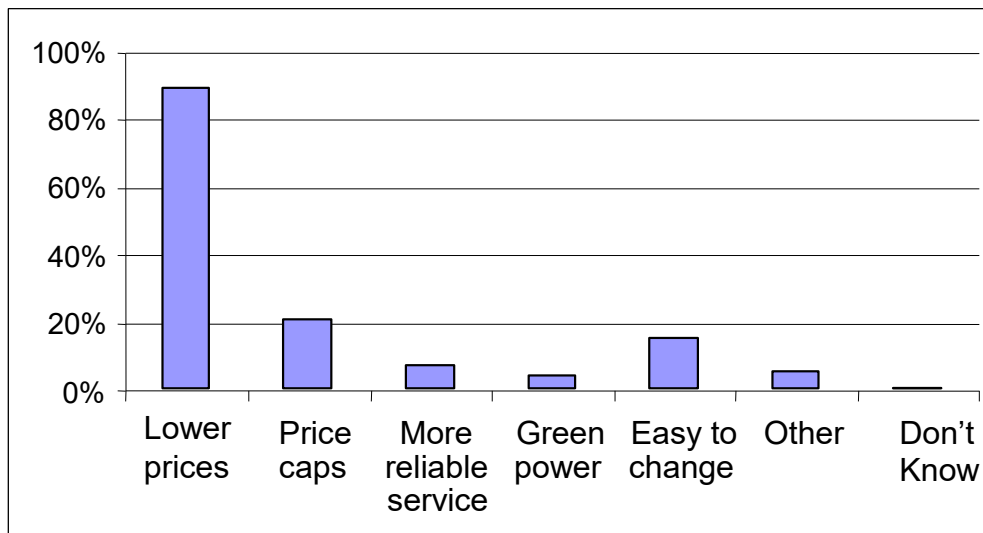
In addition to eliciting views on broader public policy questions, we also inquired about the personal behaviour of the respondents to see how actions, or at least claimed actions, relate to the policy positions espoused.

Changing Suppliers

Given the liberalisation of electricity markets in the last fifteen years, and particularly the rise in energy prices over the last year, many households have taken advantage of the opportunity to change suppliers. We find that 48% claim to have changed suppliers over the last five years, which is roughly consistent with figures from Ofgem (2006). Given the high energy prices in the previous year, Ofgem found a higher-than-usual rate of over 4 million domestic customers (16% of all households) switched energy supplier in 2006. (Ofgem, 2007).

Unlike the views on policy, there are remarkably few differences in the demographics of respondents to explain the decision to change suppliers – there is no significant difference across gender, newspaper readership, or political parties. Age does play a role, as under-30's are significantly less likely to have switched (only 30% compared to 56% among those over 30). Our findings of both the magnitude of the switching and the demographics of those who switch are similar to those of Giulietti, Waddams and Waterson (2005).

Figure 7. Reasons for changing gas or electricity provider



More interesting were the reasons offered for changing suppliers. Respondents were allowed to choose multiple reasons, but price was the overwhelming response across all demographics. 84% listed lower prices as one their reasons for switching and almost 70% chose price as the sole reason. Similar responses were offered regardless of age, gender, party affiliation and social grade. Broadsheet readers and tabloid readers from across the spectrum were equally likely to have cited price as the main reason for changing suppliers.

There were some differences with respect to the less common responses. Women were twice as likely to cite price caps or price guarantees (20% vs 10%), and almost no Guardian or Independent readers (3%) cited the benefits of price gaps, whereas 15%-20% of readers of other broadsheets and tabloids claimed that such guarantees were a reason for switching. Age also played an important role. Only 10-15% of those under 60 cited price caps, whereas almost a third of over-60s listed it as a reason.

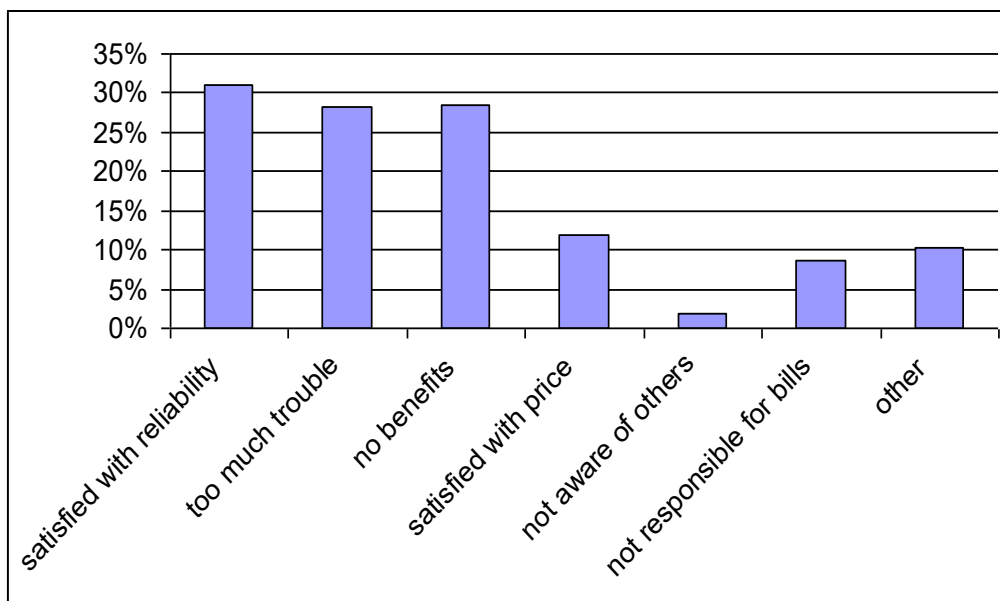
Finally, on the question of switching to environmentally friendly electricity, age and newspaper readership again offered some interesting insights into the makeup of those select

few who switched on environmental grounds. 10% of under-30's claimed to have switched to obtain greener electricity, compared to 6% of the 30-44 group, 3% of 45-59 and none over 60. Similarly, only 1-3% of tabloid readers listed environmentally friendly electricity compared to 5% of FT/Times/Daily Telegraph readers and 15% of Guardian/Independent readers.

Nevertheless, of the 4% who listed environmentally friendly electricity as a reason for switching, roughly half also listed price, thus only about 2% of the overall sample listed a desire for greener power as their exclusive reason for switching.

In explaining the reason for *not* shifting, the explanations were overwhelmingly satisfaction or at least complacency, rather than a lack of awareness (Figure 8). Only 2 % claimed not to be aware of other suppliers.

Figure 8. Reasons for NOT changing electricity or gas supplier



Changing Energy Consumption Patterns

Roughly three-quarters (76%) of the sample, answered in the affirmative when asked about their current efforts to reduce energy consumption (“Are you deliberately doing anything to reduce your use of energy - that is; your use of petrol, electricity, oil or natural gas?”). The question offers a wide and there is no clear baseline from which they are reducing emissions. Those least likely to have said that they had taken any action were young (70% of under-30s), male (70% of men) and Sun/Star readers (61%), whereas those most likely to have said they were taking action were older (86% of over-60s), female (80% of women) and readers of any other broadsheet or tabloid aside from the Sun/Star (78%-82% of all other readers including tabloids and the Guardian and Independent). Although we did not have a specific question on income because of concerns over non-response bias, the first two groups (women and older respondents) are clearly also lower income overall than their counterparts

Results were high for those segments listing environment or energy as one of the top three issues facing the UK (88% and 89% respectively) and for those following the energy debate

very closely (89%). By contrast, those listing global warming as a top environmental priority were virtually identical to the rest of the UK population (78% vs 76%).

Asking only those three-quarters of the sample what specific action they were doing from a long list of options, over 90% listed turning off lights, followed by purchasing energy efficient compact fluorescent lightbulbs and lowering the thermostat, both at over 70%. Other popular answers include using appliances less or more efficient appliances, home insulation and reducing water use. Least popular were the options addressing personal transport decisions.

Figure 9. Which, if any, of these are you doing to reduce energy consumption?

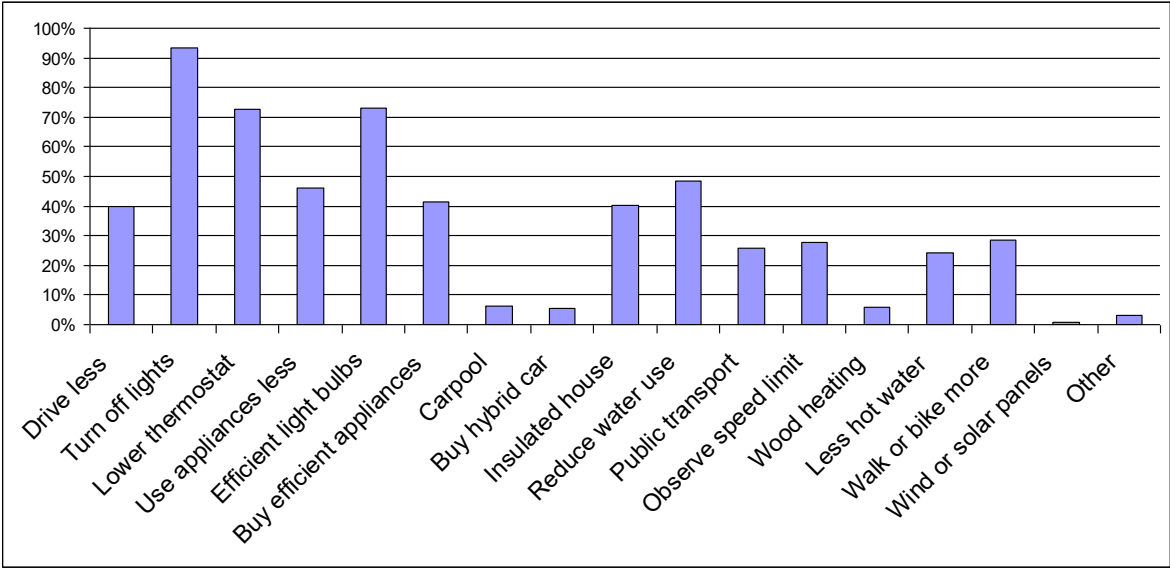


Table 7a. Options to Reduce Energy Consumption by Age Group

Option	<30	30-44	45-59	>60
Use public transport more	35%***	25%	16%***	26%
Carpool	8%	10%***	4%*	0%***
Buy efficient appliances	30%***	45%	51%***	39%
Drive at the speed limit	15%***	29%	36%***	34%
Use wood heat	1%***	7%	9%**	7%
Buy a hybrid	1%***	6%	8%**	8%
Lower thermostat	65%***	71%	79%**	78%
Insulate their home	19%***	40%	52%***	62%***

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

Table 7b. Options to Reduce Energy Consumption by Newspaper Readership

	Express / Mail	Sun / Star	Mirror / Record	Guardian / Independent	FT / Times / Telegraph	Other Paper	No Paper
Do anything to reduce energy?	78%	61%***	78%	81%*	79%	82%	77%
Of those doing anything:							
<i>Household Options</i>							
Turn off lights	92%	92%	91%	96%	95%	94%	94%
Lower thermostat	75%	76%	83%**	70%	66%*	63%*	75%
CF Light bulbs	74%	69%	71%	76%	71%	76%	78%
Use appliances less	45%	43%	48%	47%	47%	47%	48%
Buy more efficient appliances	41%	41%	36%	39%	43%	41%	49%
Insulated home	46%	40%	53%**	34%	41%	26%*	39%
Use less water	49%	40%**	43%	48%	57%**	57%	46%
Reduce use of hot water	28%	21%	25%	24%	22%	30%	19%
<i>Transport Options</i>							
Drive less	38%	34%	43%	39%	41%	40%	47%
Public transport	17%**	17%**	21%	44%***	31%	36%*	19%
Bicycle more	20%**	24%	23%	41%***	33%	29%	32%
Purchase hybrid vehicle	6%	3%	2%	4%	9%*	3%	9%
Carpool	4%	5%	7%	6%	5%	7%	14%***

Note: *** indicates significant at 99% confidence level; ** 95%; *90%

The only significant differences between Guardian/Independent readers and others was found in a greater likelihood to use bicycles and public transport, but otherwise, they were equal or less likely to claim to be undertaking the energy saving behaviour.

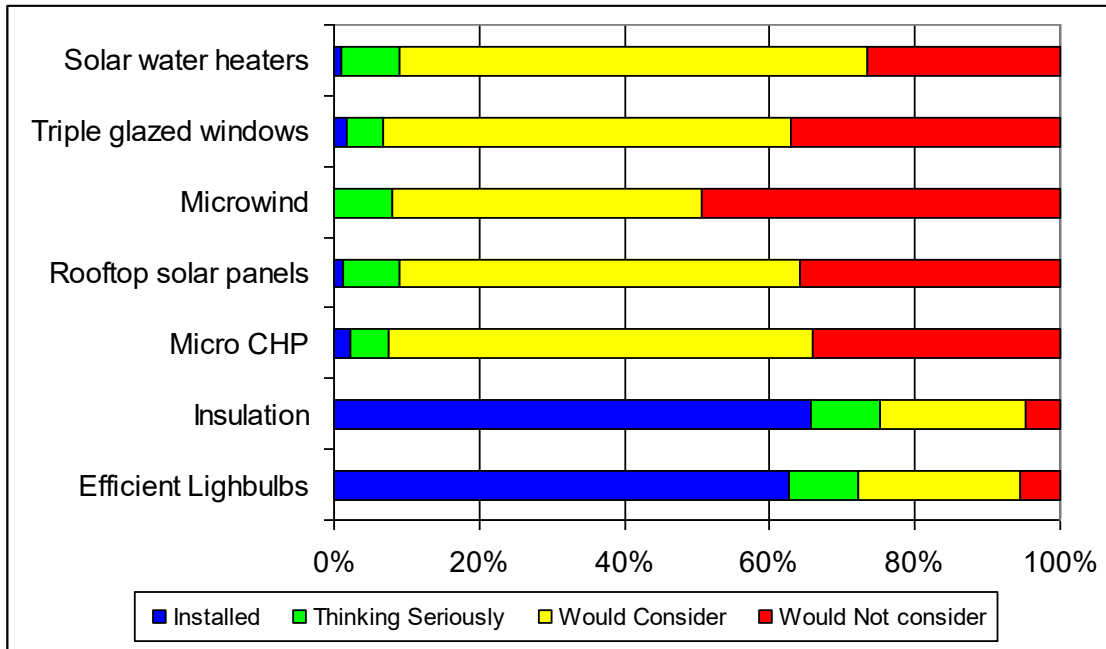
It is important to contrast the results of Table 7b with those of our previous question on mandatory standards for appliances found in Table 5. When asked a hypothetical question about willingness to pay a higher price, we found much higher support from *Guardian* and *Independent* readers, yet when we examine actual (professed) behaviour, for example on use of appliances and purchasing energy efficient appliances, we find that there is little difference across readers of most major tabloids and broadsheets.

We also asked a separate question as to whether respondents had installed or would consider installing a range of energy-saving or clean energy technologies including fairly common options such as energy-efficient compact fluorescent (CF) lightbulbs and home insulation, energy saving technologies such as solar water heaters and triple-glazed windows, as well as a variety of technologies to generate on-site energy including adding a generator to the boiler to make use of its waste heat (also known as micro CHP or central heat and power), installing rooftop solar panels or a personal wind turbine. As seen in Figure 10, insulation and efficient lightbulbs were the only options that most respondents claim to have installed. Each of the other five options listed had been installed or were being seriously considered by less than 10% of the sample.

Relating these decisions to the level of hardship imposed by energy prices, we find that those most severely impacted by higher prices were at least slightly more likely to have taken some actions (81% of those claimed to be suffering serious or moderate hardship versus 69% for those reporting no impact). Level of hardship did have a clear impact on some types of energy savings behaviour but not others. There was no difference in willingness to turn off lights or purchasing energy efficient appliances or lightbulbs, nor on transport decisions.

There was however a significant relationship with turning down the thermostat, reducing use of appliances and reducing water consumption and hot water use in particular.

Figure 10. Installation or willingness to install energy-saving equipment or own generation



There were striking differences across age groups, which might reflect home ownership patterns to some extent or price sensitivity to high up-front capital costs by younger consumers (and the simple fact they have been decision makers for a much shorter period). Only 53% of under-30s have installed high efficiency CF lightbulbs compared to 73% of over 60s; only 37% of under 30s have insulated their homes compared to 59% of 30-44 year olds, 79% of 45-59 year olds and 81% of over 60s. Only 42% of Guardian or Independent readers have installed insulation compared to 72% of Express readers (indeed, all other newspaper readers had an installation rate of 55% and above).

On this same question, it is also interesting to examine the breakdown of those who insisted they “would not consider” installing particular technologies. Here, the oldest age group was least willing to consider installing many of the technologies. The least popular technology was microwind turbines. 62% of over-60’s opposed microwind compared to 44-46% for the other age groups. 50% of 60+ would not consider micro CHP compared to 22% of under-30s and 29% of 30-44 year olds. A similar age spread was found for triple glazed windows, where 50% of those over 60 were opposed compared to 27% of under-30s and 33% of 30-44 year olds. Thus, the young were most willing to consider install technologies that few respondents were seriously considering, whereas older respondents actually did install some of the more widely available energy savings options at a much higher rate.

Conservatives were also less likely to support several of the options compared with adherents of other major political parties: 55% of Tories and 46% of Labourites opposed microwind compared to 34% of Lib Dems. Similarly, 43% of Conservative voters would not consider installing rooftop solar panels compared to 34% for Labour and 28% of Liberal Democrats.

Conclusions and Next Steps

On the broad questions of national policy, we found relatively consistent views across most major demographics. We found very strong support for research and development and for renewable sources such as wind energy, whereas support for nuclear power (and the newer concept of capturing carbon dioxide and storing it in underground or in sub-seabed reservoirs) was more divided, although there is a broad recognition of the importance of a portfolio approach to addressing both environmental and energy challenges. On the nuclear question, there is stronger support for building new plants on the site of existing plants than for retrofitting existing plants and especially than building nuclear power plants at new locations.

In identifying the major energy policy challenges, we found greatest concern about the environment and global warming and support for measures such as renewable energy expressed by those groups one might have anticipated at the outset: younger respondents, especially those under 30, Liberal Democrats, which has tried to cast itself as the most environmentally conscious political party, and readers of centre-left broadsheets such as *The Guardian* and *The Independent*. By contrast, older respondents, especially those 60 and over, Conservatives, and readers of the centre-right broadsheets such as the *Financial Times*, *The Times* and *The Daily Telegraph* are less concerned about global warming and more concerned about energy self-sufficiency, more supportive of nuclear power and sceptical of wind. Tabloid readers, particularly *The Sun* and *The Daily Star*, generally fall into the latter group but pay much less attention to energy and environment issues and are more concerned about fuel prices. There are relatively few gender differences worthy of note other than a generally lower level of interest among women about energy and environment issues and a much lower level of support for nuclear power.

Our findings on age in particular mirror those of Viscusi and Hersch (2005) who also find, using data from a 1999 Eurobarometer, that there is a clear generational effect on support for climate change policies within the European Union. Our findings on party preferences help David Cameron's efforts to distance his Conservative party from support for nuclear power and to focus on green issues such as global warming as an appeal beyond the party base. On news sources, *The Guardian* and especially *The Independent* have devoted extensive coverage to environmental concerns in past years and so it is also not surprising to find high levels of awareness and support for action amongst their readers.

The recurrent theme which reappears often in this survey is the disconnect between our role as consumer and citizen. Greater awareness of the nature of the environmental threat and support for policies to encourage renewable energy sources such as wind power does not translate into more environmentally conscious purchasing or energy consuming behaviour.

Clearly the behaviour of older respondents regarding energy savings is not motivated by concern for the environment or climate change. Nor do those relatively small handful of respondents who place environment at the top of the national agenda display notably more "virtuous" energy or environmentally conscious behaviour. The (slightly more than) half of the sample that placed global warming as one of the leading environmental concerns was indistinguishable in terms of either policy views or behaviours from the other half of the sample that did not rate it as a top concern.

In light of our findings, it is perhaps unfortunate that politicians, environmentalists and the public so frequently focus on behavioural change as a major driver of action on climate

change. A recent survey, conducted by MORI for Tyndall/UEA list possible supply and demand actions for tackling climate change. The leading answer was to manage demand through behavioural change (69%), followed by increasing the use of renewable sources (68%) and expanding the use of energy-efficiency technologies (54%). Large-scale low-carbon options such as nuclear power and CCS were far less popular, as was regulation and taxation to reduce consumption (12%).

Clearly, the favoured options of behavioural change, renewable sources, and energy efficiency are appealing. *The Independent* recently surveyed MPs on their environmental behaviour, and the partial responses indicate, for example, a level of adoption of technologies, such as those listed in Figure 10, at a rate far higher than for the public as a whole (Ellingham, 2006). While laudable, and perhaps the early edge of a very long-term trend, we find little indication that there is any significant relationship between professed behaviour and support for greener policies. Indeed, if there is a bias in the data, one might expect that those claiming greatest concern about the environment and global warming would also be most reluctant to admit the dearth of energy-savings behaviour in their daily lives.

A serious policy to address climate change will need to address individual behaviour by providing clear incentives to change current patterns of behaviour. There is little evidence of switching suppliers on environmental grounds or a willingness to adopt measures other than those that are familiar, relatively low cost and show clear returns on investment such as home insulation, long-lived efficient lightbulbs and basic conservation measures such as lowering the thermostat and turning off lights and appliances. While not negligible, the sum of the measures being taken continue to advance us along our current trajectory that depends, essentially, on the level of economic growth and the mix of fuels we use.

There is clearly a public appetite for policy actions to address global warming, but our survey offers a clear indication that relying on self-motivated behavioural change, even (or perhaps especially) among the most earnest and best intentioned, is inadequate to the task. Instead, widespread support for government action would need to be translated into greater financial support for research and development, stronger incentives and clear price signals to effect tangible change.

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