Smart meters and energy usage: a survey of energy behaviour before and after upgrading to a smart meter

APRIL 2017
Methodology of the research and sample composition

Smart Energy GB asked Populus to conduct this research to better understand if and how smart meters and understanding of what a smart meter is change energy usage behaviour.

1. Populus asked 2,557 people in November 2016 about their understanding of smart meters and (for those who already have a smart meter) changes in their energy usage behaviour since getting their smart meter.

2. The research identifies the reported actions of those who have a smart meter as to how they have changed their behaviour and used their smart meter to reduce their energy consumption.

3. It also identifies the reported actions of people who don’t yet have a smart meter but understand in detail what one is, and those who do not understand what a smart meter is.

4. ‘Understanding’ is defined as knowing three key facts about smart meters: that they are fitted by energy suppliers, that they bring an end to estimated bills, and that they show the user what they’re spending in pounds and pence.

Online survey amongst 2,557 respondents

The sample has been structured on knowledge of smart meters...

- Does not understand what a smart meter is: N=1028
- Understands what a smart meter is, but does not have one: N=1028
- Has a smart meter: N=501
Executive summary

• People with smart meters have greater insight into how much energy they use. They are more likely than people who don’t have a smart meter to say they understand how much energy they use and how to save energy.

• People who understand in detail what a smart meter is but have not yet had one installed in their home also demonstrate greater insight into the energy they use, and are taking more steps to use less energy, than people who don’t understand in detail what a smart meter is.

• Those who have had their smart meter for longer report greater reductions in energy use, take more steps to save energy, and are more habitual in their day-to-day energy saving actions.
Energy saving attitudes and behaviours
We asked about 21 different energy saving activities...

**Change the way you do things around the house**
- Turn off lights in an empty room
- Turn heating down or off when it is not required
- Make an effort not to overfill the kettle
- Make an effort not to leave electrical items in standby mode
- Change the time at which you use appliances

**Make changes to your home**
- Fit energy efficient lighting
- Fit insulation
- Fit double or triple glazed windows
- Fit an energy efficient boiler or heating system
- Fit radiator reflectors
- Fit an energy generating device
- Have a smart thermostat installed

**Look into it**
- Monitor more closely how much energy is being used
- Look into appliances that are more energy efficient
- Look into ways to make your home more energy efficient
- Seek advice from energy supplier
- Seek advice from a consumer advisory body

**Talk about it**
- Encourage others in the household to use less energy
- Discuss ways of saving energy with others

**Purchase an energy efficient product**
- Purchase a large appliance which is more energy efficient
- Purchase a small appliance which is more energy efficient

*where appropriate we prompted respondents with relevant examples (see notes page for full list) Respondents were able to reference other activities if they weren’t listed above*
All groups claim to be taking steps to use less energy. Those who have detailed understanding of smart meters or who already have a smart meter are taking more steps, on average, to save energy.

Claimed existing behaviours (average number of activities done) - split across three groups: Those without understanding of what a smart meter is, those with understanding, and those who have a smart meter.

People who do not understand what a smart meter is
People who understand what a smart meter is but do not have one
People who have a smart meter

*Denotes significant difference @ 95% (colour of asterisk) denotes which group is being compared.

Q19b. Which of the following activities, if any, have you done to try and use less energy in the last 6 months? (wording adapted to be appropriate for each audience) Base (W1(1025/1015/299) W2 (1028/1028/501)
Those who have or understand what a smart meter is are typically doing a little bit more to try and use less energy than those who don’t understand what a smart meter is

Claimed existing behaviours (NETs)

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Does not understand what a smart meter is</th>
<th>Understands what a smart meter is</th>
<th>Has a smart meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET: Changed the way you do things around the house to use less energy</td>
<td>84%</td>
<td>95%</td>
<td>(86%)</td>
</tr>
<tr>
<td>NET: Made changes to your home</td>
<td>49%</td>
<td>64%</td>
<td>(56%)</td>
</tr>
<tr>
<td>NET: Looked into ways to use less energy</td>
<td>34%</td>
<td>63%</td>
<td>(66%)</td>
</tr>
<tr>
<td>NET: Talked about ways to use less energy</td>
<td>44%</td>
<td>41%</td>
<td>(47%)</td>
</tr>
<tr>
<td>NET: Purchased an energy efficient product</td>
<td>23%</td>
<td>31%</td>
<td>(30%)</td>
</tr>
</tbody>
</table>

*Denotes significant difference @ 95% (colour of asterisk denotes which group is being compared)
Monitoring energy more closely with a smart meter is a catalyst for increasing energy saving activities

Existing activities – Has a smart meter

Average number of activities for those who HAVEN’T monitored more closely than before:

Whether monitoring more closely than before:

- Doesn’t monitor more closely than before
- Monitors more closely than before

Average number of activities for those who HAVE monitored more closely than before:

Q19b. Which of the following activities, if any, have you done to try and use less energy in the last 6 months / since getting a smart meter? (wording adapted to be appropriate for each audience. Haven’t / have monitored. Have a smart meter wave 1 (159 / 140) Have a smart meter Wave 2 (251 / 250)
Those who have a smart meter are more likely than others to say they understand how much energy they use and how to save energy

NET agreement with statements

- Does not understand what a smart meter is
- Understands what a smart meter is, but does not have one
- Has a smart meter

Q16/17. To what extent do you agree or disagree with the following statements? Base: All respondents. Does not understand what a smart meter is (n=1028), Understands what a smart meter is (n=1028), Has a smart meter (n=501)

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Impact of length of time with a smart meter
Reported change in energy usage since getting a smart meter

Q18. Thinking about your overall energy usage, since receiving your smart meter, has your usage increased, decreased or stayed about the same? Base: All respondents who have a smart meter (501)

- 0-3 months (n=122)
  - Increased a lot: 43%
  - Increased a little: 5%
  - Stayed about the same: 50%
  - Decreased a little: 48%
  - Decreased a lot: 5%

- 4-6 months (n=90)
  - Increased a lot: 50%
  - Increased a little: 60%
  - Stayed about the same: 5%
  - Decreased a little: 7%
  - Decreased a lot: 1%

- 7 months – 1 year (n=108)
  - Increased a lot: 35%
  - Increased a little: 3%
  - Stayed about the same: 60%
  - Decreased a little: 7%
  - Decreased a lot: 5%

- 1 year + (n=177)
  - Increased a lot: 43%
  - Increased a little: 2%
  - Stayed about the same: 47%
  - Decreased a little: 10%
  - Decreased a lot: 40%

NET T2B: 43% Decreased

*Denotes significant difference @ 95% versus total with a smart meter
Those who have had a smart meter for a longer time become even more likely to have taken action to use less energy.

Existing activities since getting a smart meter:

- Turned heating down or off when it is not required
- Fitted energy efficient lighting (e.g. LEDs)
- Purchased a large appliance which is more energy efficient

This pattern is consistent for similar simple day-to-day energy saving activities.

Denotes significant difference @ 95% between groups (parentheses indicates which group is being compared)

Q19b. HAVE SM: Which of the following activities, if any, have you done to try and use less energy since getting a smart meter? Base: Have a smart meter (n=501) 0-3 months (n=122), 4-6 months (n=90), 7 months – 1 year (n=108), 1 year + (n=177)
Not only have people who’ve had their smart meter longer taken more actions to use less energy, but they are more habitual in their day-to-day energy saving actions.

### Activities % always doing

- **Turn off lights in an empty room**
  - 0-3 months: 53%
  - 4-6 months: 50%
  - 7 months – 1 year: 59%
  - 1 years +: 62%

- **Make an effort not to leave electrical items on standby**
  - 0-3 months: 28%
  - 4-6 months: 19%
  - 7 months – 1 year: 24%
  - 1 years +: 40%

This pattern is consistent across simple day-to-day energy saving activities.

Denotes significant difference @ 95% between groups (parentheses indicates which group is being compared)

Q21. How often do you do each of following? Base: Have a smart meter (n=501) 0-3 months (n=122), 4-6 months (n=90), 7 months – 1 year (n=108), 1 years + (n=177)
The average number of energy saving activities also increases for those who have had a smart meter for longer.

Mean number of activities since getting a smart meter

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Mean Number of Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 months</td>
<td>4.6</td>
</tr>
<tr>
<td>4-6 months</td>
<td>5.0</td>
</tr>
<tr>
<td>7 months – 1 year</td>
<td>5.9</td>
</tr>
<tr>
<td>1 years +</td>
<td>6.5</td>
</tr>
</tbody>
</table>

*Denotes significant difference @ 95% (colour of asterisk denotes which group is being compared)

Q19b. HAVE SM: Which of the following activities, if any, have you done to try and use less energy since getting a smart meter? Base: Have a smart meter (n=501). 0-3 months (n=122), 4-6 months (n=90), 7 months – 1 year (n=108), 1 years + (n=177)
IHD, apps and online accounts
A large majority of smart meter users have an IHD, with half having access to either an online account or app.
In-home displays are checked at a much greater frequency than both the app and online accounts

IHD, app and online account usage

- *Daily* 47%
- *Once or twice a week* 6%
- *Once or twice every 2-3 months* 13%
- *Once every 6 months* 9%
- *Less often* 6%

Q15c/e How often, if at all, do you check the information on your In-home Display / app / online account? Base: All respondents with a smart meter (n=501). IHD (n=439) App (n=71) Online Account (n=198)
Smart meter users will often have more than one method to look at their energy usage data

IHD, app and online account access

- **IHD Only**: 36%
- **IHD + 1 other**: 37%
- **App Only**: 2%
- **App + 1 other**: 7%
- **Online Only**: 3%
- **Online + 1 other**: 33%

44% use two or more viewing methods.

Q15b/d Do you have an In-home Display (IHD) / App / Online account with your smart meter? Base: All respondents who have a smart meter (n=501)
Having multiple viewing methods drives an increased level of checking usage

Frequency of checking any smart meter viewing method

More than 1 viewing method

1 viewing method

Daily
Once or twice a week
Once or twice every 2-3 months
Never

Every other day
A few times a month
Once every 6 months

A few times a week
Once or twice a month
Less often

Q15c/e How often, if at all, do you check the information on your In-home Display / app / online account? Base: All respondents with a smart meter (n=501). ? Q15b/d Do you have an In-home Display (IHD) / App / Online account with your smart meter? Base: All respondents who have a smart meter (n=501). 1 viewing method (n=256) Has more than 1 viewing method (n=212)
Those who have multiple viewing methods are more engaged with saving energy. They are more likely to understand their own energy use and, importantly, how to reduce it.

NET agreement with statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Has only 1 viewing method</th>
<th>Has more than 1 viewing method</th>
</tr>
</thead>
<tbody>
<tr>
<td>I look out for expert advice when seeking information on energy saving</td>
<td>49%</td>
<td>59% *</td>
</tr>
<tr>
<td>I want to know how my energy usage compares with other households</td>
<td>49%</td>
<td>59%</td>
</tr>
<tr>
<td>I understand what I need to do to save energy around my home</td>
<td>81%</td>
<td>90% *</td>
</tr>
<tr>
<td>I always keep track of the amount of energy I use around my home</td>
<td>59%</td>
<td>76% *</td>
</tr>
</tbody>
</table>

* Denotes significant difference @ 95% between groups