



# BEIS SME

Final deliverable and writeup

July 2018



Department for  
Business, Energy  
& Industrial Strategy

Softwire



INZENKA

# Exec summary

The main findings from the 12-week Alpha project examining opportunities to engage SMEs with energy efficiency through a digital tool

## Project context

Engaging SMEs with energy efficiency is a strategic policy goal for BEIS as the Clean Growth Strategy commits Government to develop a package of measures to support businesses to improve their energy productivity by at least 20% by 2030. 99% of businesses are SMEs, making them a key focus for the success of this policy

Following a Discovery project that was completed in November 2017, BEIS engaged external suppliers (Inzenka and Softwire) to undertake an Alpha project, starting in May 2018

The aim of this project was to design, prototype and test 3 digital tools that would engage SMEs with energy efficiency. If one of these prototypes proved effective, BEIS was seeking to take it through to Beta for further scaling and development

## Deliverable summary

Based on user testing, two potential routes have been identified for BEIS to engage SMEs with energy efficiency:

**The first route** is to take a step back from a digital tool strategy and develop a benchmark data set for the financial benefits of energy efficiency measures. Throughout the project a consistent theme was that SMEs engage with energy efficiency when it can save them money, but there was a lack of benchmark data available to build financial cases for SMEs in a scalable manner. We believe there is a significant opportunity for government to develop these data sets and use them to build financial cases that begin to engage SMEs to take action on energy efficiency

On Slides 25 - 28, this presentation contains initial cost estimates for developing the data sets, immediate next steps if this route is chosen by BEIS and long-term options for leveraging these data sets for the greatest effect

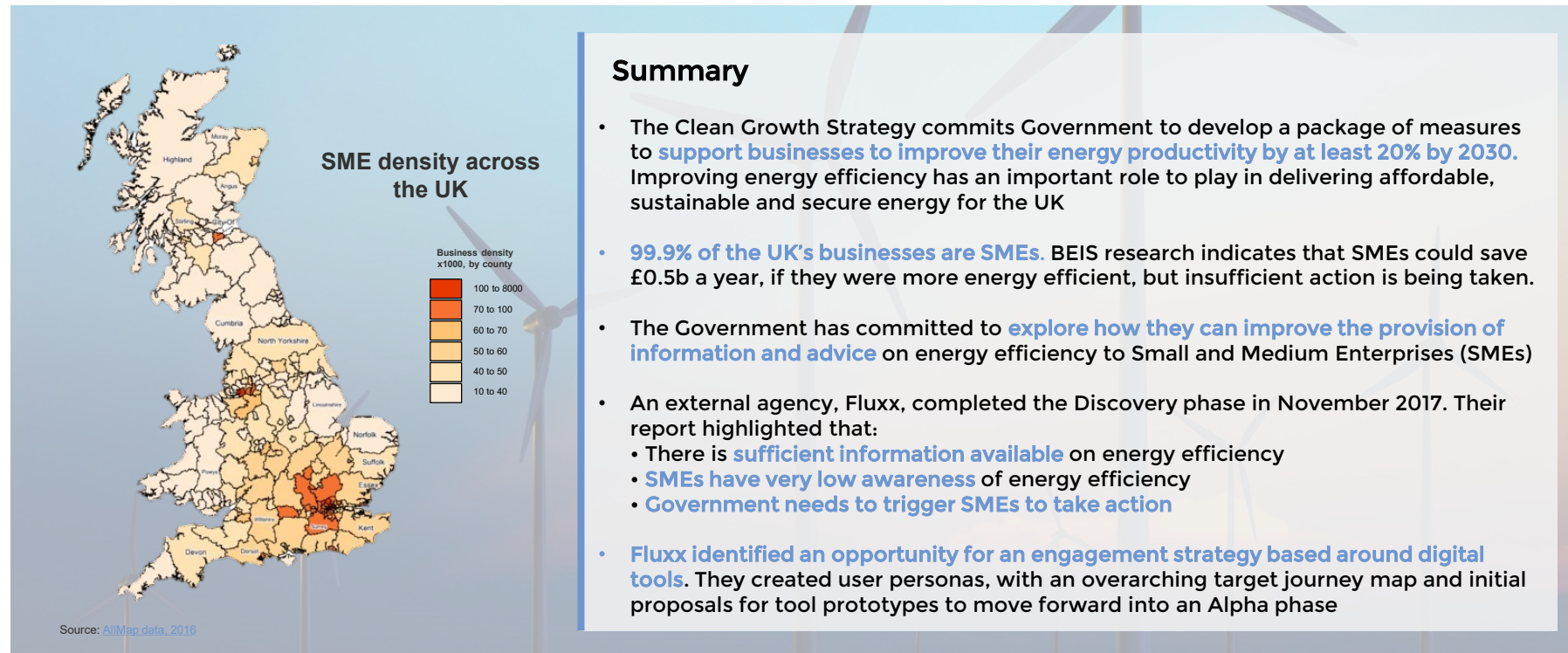
**The second route** is for BEIS to undertake a Private Beta / 3 month test period for the 'Zapp' application. This test period could be led internally by BEIS staff, with limited technical support from a third party supplier. Zapp is a system tray application, designed to nudge office workers to change their behaviours in regards to energy efficiency. The primary value of this tool is seen as changing the narrative around energy efficiency in the workplace, and building a channel for further future engagement

The section 'Zapp Private-Beta deep-dive' contains a detailed project plan for this route, including cost estimates, KPIs, activities and resource required, as well as a high-level plan for a Public Beta. All necessary materials, including on-boarding documents, tool links and code have also been shared

**Beyond the tool recommendations** this project also confirmed and built upon many of the insights from the Discovery project. Primarily that SME engagement with energy efficiency is extremely low in the market, and there are many structural issues that limited their incentives to engage. For example, many SMEs rent their properties and energy costs make up a very low proportion of their total cost base. These two factors are very large disincentives to invest. Additionally, time rather than money is the crucial barrier to action. To drive action on energy efficiency, tools must present a *business case* to SMEs that accounts for the opportunity cost of their time, not just a positive financial case

# Strategic context

## Government policy aims, strategy and Discovery phase work



### Summary

- The Clean Growth Strategy commits Government to develop a package of measures to **support businesses to improve their energy productivity by at least 20% by 2030**. Improving energy efficiency has an important role to play in delivering affordable, sustainable and secure energy for the UK
- **99.9% of the UK's businesses are SMEs**. BEIS research indicates that SMEs could save £0.5b a year, if they were more energy efficient, but insufficient action is being taken.
- The Government has committed to **explore how they can improve the provision of information and advice** on energy efficiency to Small and Medium Enterprises (SMEs)
- An external agency, Fluxx, completed the Discovery phase in November 2017. Their report highlighted that:
  - There is **sufficient information available** on energy efficiency
  - **SMEs have very low awareness** of energy efficiency
  - **Government needs to trigger SMEs to take action**
- **Fluxx identified an opportunity for an engagement strategy based around digital tools**. They created user personas, with an overarching target journey map and initial proposals for tool prototypes to move forward into an Alpha phase

# Alpha objectives and deliverables

The 12-week Alpha was designed to prototype, test, iterate and prioritise 3 tools

GOV.UK

Service Manual Guidance

## Agile delivery

### How the alpha phase works

**Alpha is the development phase that comes after Discovery.**

**In the Alpha phase you need to:**

- Build prototypes of your service
- Test your prototypes with users
- Demonstrate that the service you want to build is technically possible

**You should use your experience building prototypes in the Alpha to:**

- Find the problems with the design of your service and decide how you'll solve them
- Make some estimates about how much your service will cost
- Identify the biggest risks for the beta stage, as early as possible

**By the end of Alpha you should know:**

- Whether to move your service into the beta phase
- What you need to build in beta if you are moving into beta

Source: Gov.uk

## Agreed project deliverables

### User-validated tools built in partnership with your future users:

- A clear vision for 3 separate tools following an initial prioritisation exercise
- 3 coherent concepts validated with multiple prototypes that test different aspects of the tools
- Detailed research and analysis of user needs and user stories, including initial view on assisted digital model

### Plans for the future / de-risking:

- Detailed plan for the Beta phase (if applicable) including a recommendation on whether or not to progress
- Technical feasibility assessed
- Detailed risks understood incl. plan for mitigation
- Third party systems / data sources for integration understood

### Value-added outcomes:

(beyond scope)

- Input into SME engagement strategy
- Industry bodies engaged
- Shared experience and techniques from a strongly collaborative agile way of working



# The vision

As defined by the team for a final tool launched publicly, beyond the scope of Alpha

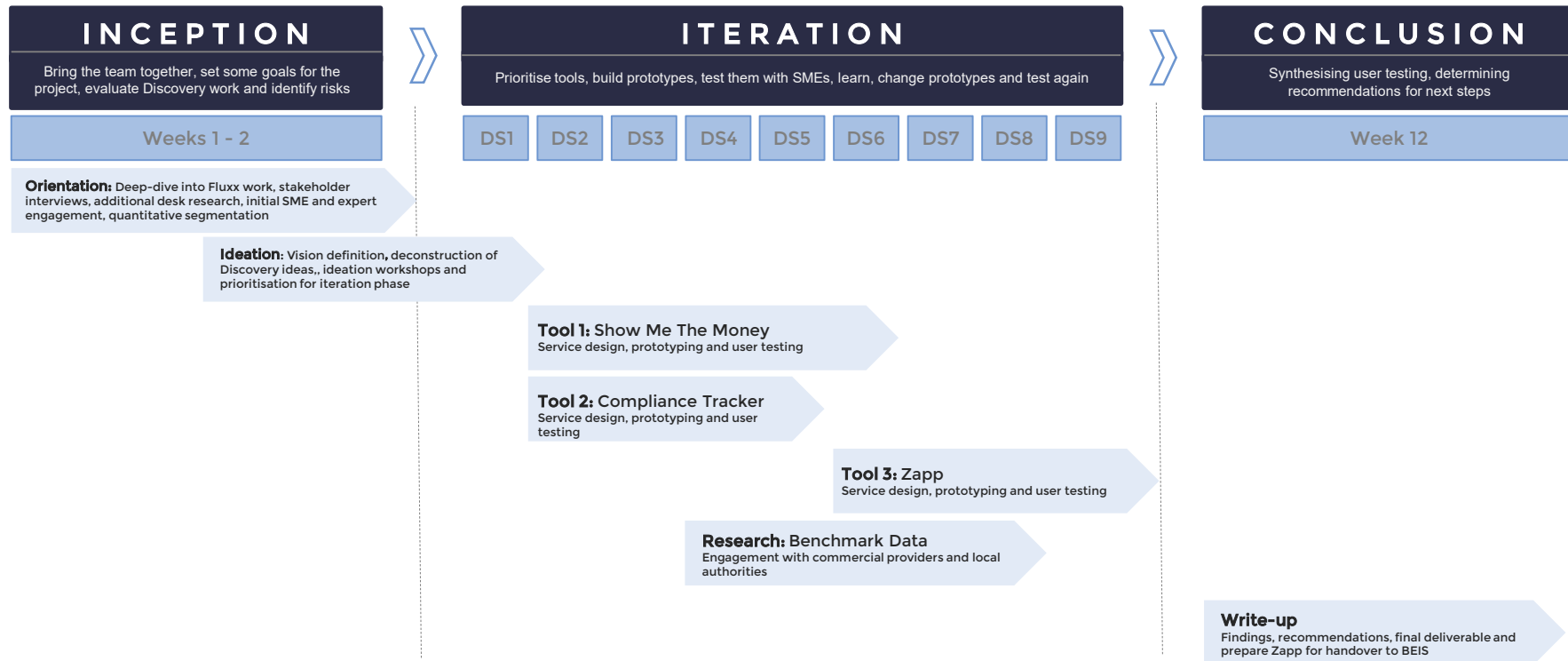
## A tool that...

Enables SMEs to **make a significant contribution** to the ambition that business improve their energy efficiency by **at least 20% by 2030**

Achieved through a world-leading service **built in partnership with users**, which excites, inspires and supports SMEs to **make changes** that increase their energy efficiency and make it a **core part of their day-to-day business**

# Alpha approach on a page

We followed the GDS guidelines for Alpha, engaging more than 60 users to test our prototypes



# We have engaged a range of SMEs and experts

Our findings are based on in-depth engagements with over 60 SME owners / employees, policy experts from across England and a cross-section of BEIS stakeholders



# Our findings

Throughout the project we used the user interviews and research to refine and update the initial Discovery work, as well as gain deeper insights on the tools and their impact



**Additional  
insights**



**Tool  
feedback**



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**Additional  
insights**



**Tool  
feedback**

# Digital tools must support a wider policy strategy

User and expert interviews have reinforced that many market incentives are fundamentally misaligned, it is clear that a digital tool alone will not be able to address all of these issues



## STRUCTURAL

### Tenant vs. landlord accountability

High % of SMEs lease their properties, especially in the office sector (55%). Therefore, bill payers don't have an incentive to invest in the building and building owners don't have incentive to reduce bills

### Shortening leases

Official data shows commercial lease terms have fallen from an average of ~25 years in 1980 to ~7 years in 2017<sup>2</sup>. Our engagements with commercial landlords have suggested they may continue to fall to an average of 5 year leases. This exacerbates the problem of asking SMEs to invest directly in improving the building

**NOTE:** There is however, the beginning of a shift to serviced properties that may realign some market incentives as landlords will pay energy bills. This increases the opportunity to target landlords as a conduit to increase energy efficiency



## FINANCIAL

### Energy costs are not significant

For most SMEs energy costs are a small % of their cost base, ranging from 1-5% (based on interview responses). Therefore, there is a limited incentive to focus on making savings here as it has a limited impact on their bottom line

### SMEs demand quick ROI

All SMEs engaged expected payback periods between 0 - 2 years, some went as high as 5, but generally there is low demand for long-term investment

### Energy spending and use are opaque

Actual spending is not transparent to SMEs, it is difficult for SMEs to know if they are spending more than they should and what the causes of this are. Until smart meters are installed and data is widely available, it will be challenging to meaningfully benchmark businesses



## ORGANISATIONAL

### SMEs are incredibly time poor

This was cited by all SMEs we spoke to. They have very limited resources and have to spend their time as effectively as possible to drive business success - due to the limited potential size of savings, it is not feasible to have a dedicated individual working on energy efficiency, but the shared responsibility creates accountability issues within businesses

To have a significant impact, other policies that fundamentally realign market incentives should also be pursued

Sources: <sup>1</sup>BEES data set, 217; <sup>2</sup>PIA Property Data Report., 2017

# Government can increase trust in the market

Trust in the commercial energy market is low, testing has suggested users would value government as a trusted source of unbiased information

## Summary

**Government could act as a trusted information source.** The majority of users we interviewed saw government as a credible source of reliable information

An additional problem was highlighted by external policy researchers spoke of 'cowboy' energy brokers in the commercial energy market

These operators damage trust and create uncertainty among SMEs by selling work based on unrealistic savings potential that is then never delivered



*"I generally like government information sources, they are trustworthy"*

## The energy broker problem

*Please note, this is based on anecdotal evidence from discussions with local authorities and policy researchers. Before conclusions are drawn, further investigation is required*



Trust is broken in the market as SMEs share stories with others, leading to scepticism about energy saving measures



Energy brokers contact SMEs to sell them commercial energy contracts



As part of their service, brokers offer opportunities to make savings through energy efficiency measures



SMEs accept the contracts and implement efficiency measures



The savings promised by the broker are not delivered



# We initially identified 5 target segments for change

We segmented the market based on publicly available energy usage and abatement data, throughout the project we further refined our segmentation based on user testing

## Why segment?

### 1. Create a manageable scope for Alpha

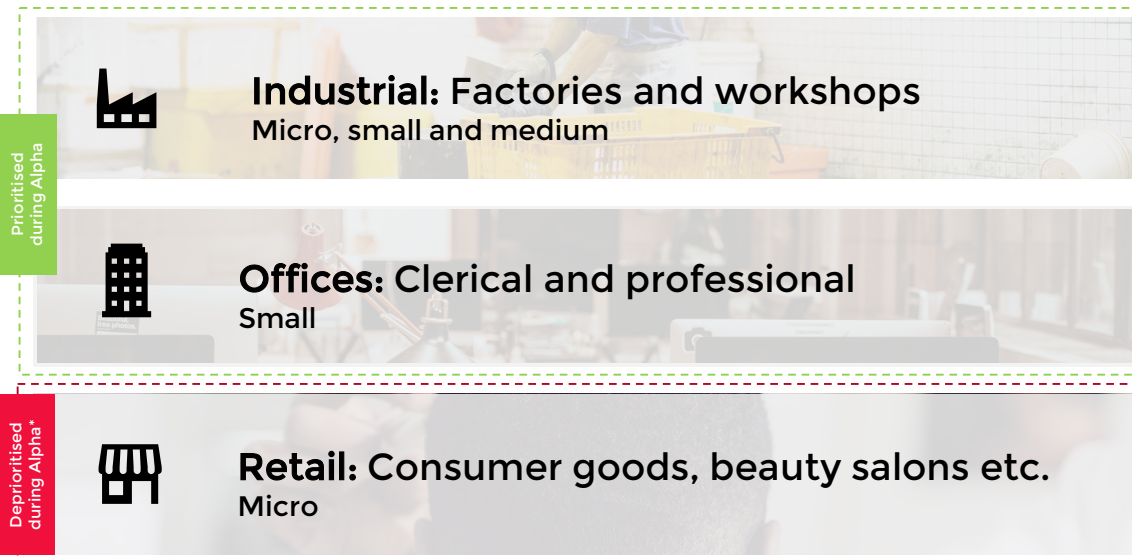
- The Alpha scope was extremely broad as there are millions of SMEs and dozens of segments. There was a risk that we would fail to focus early on and not reach any clear outcomes

### 2. Ensure we were focussed on the areas where we could have the biggest impact

- With limited resources it was essential we prioritised segments that would give us the greatest ROI, which meant targeting SMEs with the highest abatement potential

### 3. Ensure we built tools based on detailed understanding of specific user needs

- We knew that user needs would vary by segment, so we needed to build tool for clearly defined personas to maximise effectiveness



These 5 segments account for a combined 52% of SME energy consumption

*\*See slide 66 for rationale to descope in Retail Alpha. For detail on segmentation method, please see Appendix A*

# SME *engagement* is driven by money and regulation

Based on our research, we have prioritised money as an incentive and identified regulation as an additional incentive for engagement

## Discovery output

Incentives / motivations for SMEs to engage with energy efficiency

Money



I want to make sure there's money in the account

Ethics



I want to create a business I can be proud of

Fulfilment



I want to be as good at my job as possible

Growth



I want to focus my effort on expanding my business

People



I want to do right by my employees and customers

Source: Discovery final deliverable, Fluxx 2017



REGULATION

STRENGTH



The updates to MEES combined with the fine structure **provided a very clear incentive for commercial landlords**

**SMEs were also interested** in understanding their landlord's obligations to them, and using this to put pressure on them for change

Landlords did **have concerns about their ability to deliver increases to energy efficiency for existing leases** without removing tenants from the property for a period

*Note: other than supporting compliance/enforcement a digital tool cannot effect this incentive*



MONEY



**Cost savings provided a clear motivation** for SMEs, although other research has shown that this **alone will not lead to implementation** of energy efficiency measures

All SMEs, regardless of sector, cited desired **payback periods of between 0 and 2 years**. They were interested in grants, but the ability to fund improvements wasn't generally a concern

The **main driver appeared to be the absolute size of the cost saving** vs. the 'hassle' of achieving it



ETHICS / SOCIAL



**This proved to have limited weight with the SMEs** we spoke to, across all sectors. Although, there was notably more resistance from landlords

The narrative of 'waste reduction' however, had traction with the majority of SMEs

Ethical / social incentives are becoming more powerful as awareness of environmental impact grows. While they are not the priority for SMEs, they **can interwoven with other incentives and this may have impact**



# SME *action* is driven by the wider business case

All SMEs we spoke to are very time poor, they make decisions based on how they can best apply their limited time and resources to driving the success of their business

IF a **positive financial case** can be made, SMEs will *engage* with the energy efficiency.....



*"Environmental impact is important, but it's a 'nice to have' compared to cost savings"*



*"Business is tough right now, I'm focused on saving money and getting customers"*



*"Being energy efficient is all well and good, but at the end of the day, it's all about the bottom line"*

Source: Alpha user testing, June/July 2018

**...but, money isn't a panacea. A full business case is complex and people default to what they have knowledge of**

Even when a positive financial case for change can be made, this must be weighed against other factors, for example:

**Risk and cost of disruption to the business, e.g.:**

- Down tooling while significant changes are made
- Uncertainty about actually delivering promised cost reductions

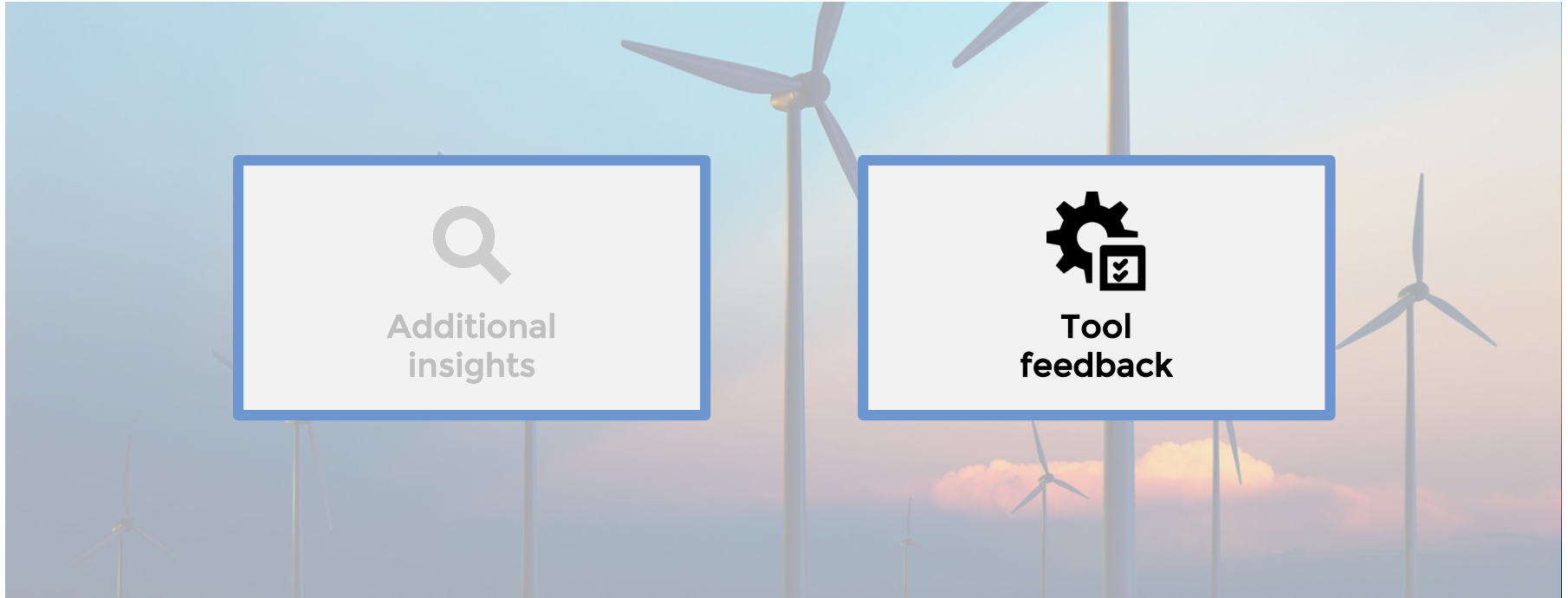
**Opportunity cost of action, e.g.:**

- The time spent on researching and implementing energy efficiency measures, plus the cost of the investment, could be better spent on other BAU activities such as marketing, sales, repairs, production, hiring etc.

**Many SMEs are incentivised to stay with BAU activities**, because energy efficiency investments have to compete with the business cases for other investments that they have greater experience with and knowledge of – faced with this decision, many SMEs revert to what they know most about

# Our findings

Throughout the project we used the user interviews and research to refine and update the initial Discovery work, as well as gain deeper insights on the tools and their impact



# We prioritised 3 ideas for development and testing

The tools were prioritised based on initial user testing, expert interviews and impact analysis

## Summary

We created a list of 8 ideas for tools / propositions to engage SMEs with energy efficiency

Each took a different strategic approach and targeted different segments of the SME market

To focus our efforts in Alpha, we prioritised three tools

For each priority tool, we created prototypes and carried out deeper user testing to iterate and pivot the ideas

Throughout testing we further prioritised and refined our tools, their features and their target segments

**Note:** For detail on all ideas, please see Appendix A

1. Show me the money

Tested well initially, strong incentive for action and strong abatement potential (dependent on SME payback expectations)

2. Compliance tracker

Tested well initially, strong incentive for action and supports government policy - but smaller target segment (17% of property)

3. Zapp

Tested ok initially, low barriers to adoption, different set of target users - but low abatement potential as focussed on behavioural change

4. Competitive energy

Hasn't tested well initially, but has traction with internal stakeholders, precedent for success in Australia (NABERS)

5. Energy pack

Tested relatively poorly with users, potentially a small segment - but good incentive based on a trigger point

6. Green community

Tested poorly with users and feels more relevant to local authorities and their initiatives

7. Green chain






















Tested poorly with users, internally seen as potentially very complex as requires the support of big businesses

8. Energy advocate

Tested poorly with users, incentive seen as weaker for action - danger of creating 'trouble maker app'

# Zapp and Show Me the Money tested well

Zapp tested well and should be explored further, while Show Me The Money was well received but had to be deprioritised in the short-term due to a lack of financial data

Tool	1. Show Me the Money	2. Compliance Tracker	3. Zapp
Incentive(s)	  	  	  
Target segment	   	   	   
Summary	An online tool that SMEs enter their address into an receive their EPC recommendations, cost and impact estimates, with links to local tradesmen who can help them implement the measures	An online tool that landlords enter their address into and find out if their property is compliant with current MEES regulation. They are also shown recommendations on how to increase their rating	A system tray application designed to nudge employees to make behavioural changes. Including, HVAC notifications based on temperature and a reminder to turn everything off at the end of the day, while auto-hibernating their computer
Result	<b>Deprioritised:</b> (see slide 20) Lack of sufficient financial data currently available, If financial data is developed, this should be re-explored in an additional Alpha	<b>Descoped:</b> (see slide 21) The tool added insufficient value to a landlord's existing journey to compliance, as many of them have existing surveyors / contractors to help them with compliance	<b>Recommended:</b> (see slide 22) for an extended test period, to ensure the tool provides sufficient value to businesses over time - reflecting the context in which the tool will be used (i.e. long-term, daily use)

**Note:** For detail on each prioritised tool, please see Appendix B


# Tool 1: Show Me The Money

This tool tested well with users, but is deprioritised until financial data is made available

## Deprioritised

### User testing

 **11X Industrial**  
Plant Managers and owners

 **14x experts**  
From local authorities  
and policy research

### Opportunities to save at 13 Mandela Street

Based on an EPC assessment on your building from 18/01/2012

Save money and reduce energy waste by acting on your energy efficiency recommendations listed below.

 This certificate is 6 years old.


You may want to consider reassessment, especially if changes have been made to the property since this inspection.

[Find an EPC assessor](#)

Recommended measures	Indicative cost	Typical savings per year	Repay cost in	
Replace 38mm diameter (T12) fluorescent tubes on failure with 26mm (T8) tubes.	£850 - £1,400	£730	1-2 years	<a href="#">Find a local provider</a>
<a href="#">Learn more</a>				
Replace tungsten GLS lamps with CFLs. Payback period dependent on hours of use.	£1,100 - £1,500	£870	1-2 years	<a href="#">Find a local provider</a>

### Testing summary

 *"Having an indicative cost is essential for me to even bother clicking on the next step"*

 *"Based on this information, I'd look at measures with a 1 - 2 year payback period, then call a supplier to get a more detailed quote!"*

Show Me The Money was limited by the available financial data. When we used stub / dummy data however, the tool tested very positively with users who were interested in contacting local tradesmen for quotes. If financial data can be sourced, further testing should be carried out to test the end to end journey and develop additional features

## Total impact assessment: Limited

### Actions driven

User testing showed SMEs would be primarily driven to undertake EPC recommended measures with 0 - 2 year paybacks, these are:

- Updating lightbulbs (e.g. T8 to T5)
- Solar control measures (e.g. reflective coatings for windows)
- High frequency electrical ballasts
- Installation of more efficient water heaters
- Investigation of chiller systems to identify improvements

### Number of users

We have modelled scenarios based on benchmark data and assumptions for user retention throughout the end to end journey. The primary determinants of success are the breadth of outreach, the number of companies presented with a suitable financial case and the implementation rate

Tool	Show Me The Money		
<b>Number of Campaigns</b>	<b>2</b>		
Outreach and user journey scenarios	H	M	L
Campaign acquisition	2,962	273	3
Word of mouth acquisition	289	12	0
<b>Total users who implement measures</b>	<b>3,250</b>	<b>285</b>	<b>3</b>
Users as % of Total Addressable Market	4%	0.4%	0%

NOTE: For detailed impact assessment please see slide 71



# Tool 2: Compliance Tracker

This tool tested poorly with users and was descoped in Design Sprint 3

Descoped

## User testing

**7X property**  
Commercial landlords

### Ways to improve at Unit 310, Highgate Studios

Inspection date: 10/10/2014 G

**⚠ This property is not compliant!**  
It looks like your building is not compliant with the new MEES regulation. Check the below recommendations for ways you can get compliant and avoid the fines.

Recommended measures	Indicative cost	Impact on EPC rating	
Consider replacing T8 lamps with retrofit T5 conversion kit.	£1,000 - £1,800	🟡 1 step	Test a local provider
<a href="#">Learn more...</a>			
In some spaces, the solar gain limit in criterion 3 of ADKZA 2010 is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows.	£500 - £900	🟠 2 measures	Test a local provider

## Testing summary

*"When I get notified of regulatory change the first I do is go straight to my energy assessor, he tells me what to do and how to do it"*

*"We have experts who keep us up to date on these changes, I then go straight to my contractors for advice"*

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Compliance Tracker tested poorly with users who reported it did not add sufficient value to their existing compliance processes. Commercial landlords were primarily focussed on getting compliant quickly and cheaply. Even when we used stub data to provide cost estimates, the tool just created an unnecessary additional step between them and getting accurate quotes from the assessors / conveyancers

Total impact assessment: **Too low**

### Actions driven

User testing showed that landlords would seek to make the cheapest, fastest adjustments to their building that would enable them to be compliant with regulation

Although, some landlords saw value in doing higher impact measures if:

- It protected them from future regulatory increases
- Could be done alongside other measures that were being done and therefore reduce total cost / disruption to an existing lease

Because the tool was unable to provide value within their journey, we are not confident that it would have driven any net new actions as users would either have done them anyway or dropped out of the tool journey

### Number of users

Compliance Tracker was aimed at commercial properties below an E grade EPC. These make up ~17% of the commercial building stock

As with other tools, the number of users would have been highly dependent on the effectiveness of outreach

# Tool 3: Zapp

This tool tested well with users, and is recommended for a Private Beta

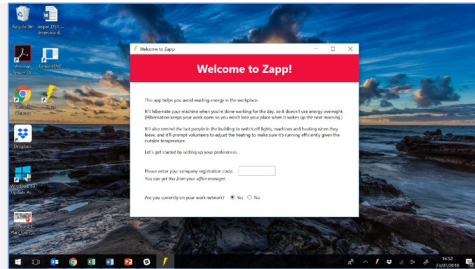
## Recommended

### User testing


 **8X Office managers**


 **32X Office employees**

 **14X experts**  
From local authorities and policy research



### Testing summary

 *"It's simple, that's the selling point. I now turn off my computer everyday"*

 *"The aircon notification is very useful, it makes me get up out of my seat and adjust it in the morning - I never used to do that"*

Zapp has tested very well with a small set of users. They have consistently allowed that app to hibernate their computers, when previously this did not happen. In addition, the Office Manager has reported that the notifications push her to make adjustment to HVAC based on temperature - an action she previously did not do

## Total impact assessment: **Low to medium**

### Actions driven

Zapp is focused on driving three actions in an office environment

- Switching off lights at the end of the day
- Hibernating computers at the end of the day
- Encouraging users to adjust HVAC systems and turn them off at the end of the day

### Number of users

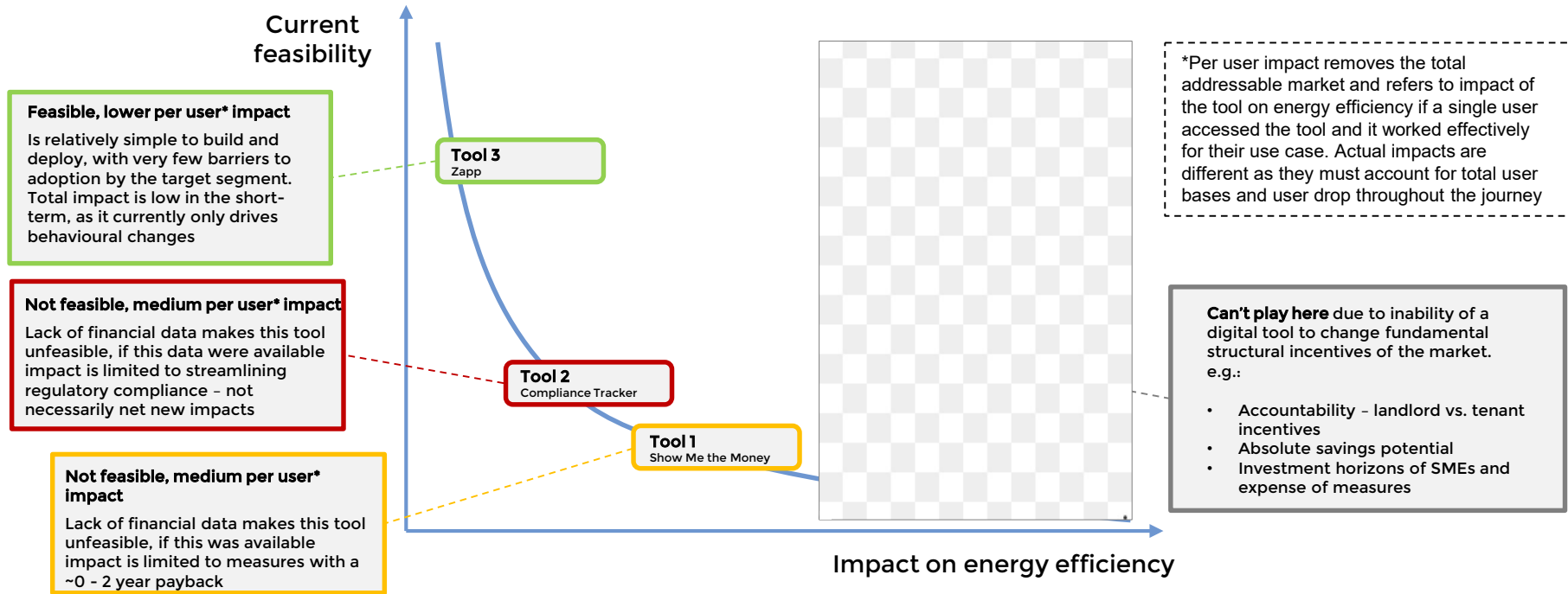
We have modelled scenarios based on benchmark data and assumptions for user retention throughout the end to end journey. The primary determinants of success are the breadth of outreach, the positioning of the tool to users and the ease of deployment/installation

Tool	Zapp		
	H	M	L
Number of Campaigns	2		
Outreach and user journey scenarios	H	M	L
Campaign acquisition	40,956	3,811	44
Word of mouth acquisition	3,993	165	0
<b>Total users who implement measures</b>	<b>44,949</b>	<b>3,976</b>	<b>45</b>
Users as % of Total Addressable Market	15%	1%	0%

NOTE: For detailed impact assessment please see slide (\*X\*)

# There is a trade-off between impact and feasibility

The feasibility of Tools 1 and 2 is limited, Zapp is feasible, but will have a lower impact *per user* in the short-term, as it drives smaller behaviour change



# The challenge

In Discovery, it was identified that engagement with energy efficiency is very low among SMEs

## Discovery output

BEIS | Energy Efficiency Discovery

### Takeaways

- The “barriers” cited in most research are excuses. Most SME owners and managers are simply not thinking about energy efficiency.
- For most SMEs, the potential cost savings are not enough to trigger action.
- There is no shortage of useful content, but few businesses are motivated to seek it out.
- A one-stop content hub is unlikely to be the solution.

[X] Big thinking brought to life

Source: Discovery final deliverable, Fluxx 2017

## Our Aims

**To build and test digital tools that drive SME engagement with energy efficiency, delivering:**

- **A clear vision for 3 separate tools following an initial prioritisation exercise**
- **3 coherent concepts validated with multiple prototypes that test different aspects of the tools**
- **Detailed research and analysis of user needs and user stories, including initial view on assisted digital model**

# Segmentation method

We combined publicly available data on energy use and abatement potential to score segments

## Data used

### Abatement potential

Data was initially only available at sector level – so we couldn't use this as the only segmentation measure as it wasn't precise enough to SMEs by size

### Energy consumption

We used this at a business-size level, combined with abatement potential, to generate a score and ranking indicative of a business' total abatement potential

*Note: Education, Emergency and Military sectors were out of scope as public services*

## Combined consumption and abatement scorings

Sector	Size	Energy Consumption by SME's (GWh/year)	% of consumption	Cumulative % of SME energy consumption	Total Annual energy savings (GWh)	Score	Rank
Industrial	Medium	10240	17%	17%	11710	21950	1
Retail	Micro	8470	14%	31%	9430	17900	2
Industrial	Small	4390	7%	39%	11710	16100	3
Offices	Small	4570	8%	47%	10550	15120	4
Industrial	Micro	3000	5%	52%	11710	14710	5
Offices	Medium	3030	5%	57%	10550	13580	6
Offices	Micro	2530	4%	61%	10550	13080	7
Retail	Small	2710	5%	65%	9430	12140	8
Retail	Medium	1130	2%	67%	9430	10560	9
Hospitality	Micro	4020	7%	74%	4300	8320	10
Storage	Medium	2680	5%	79%	5120	7800	11
Hospitality	Small	3330	6%	84%	4300	7630	12
Community, Art & Leisure	Medium	2360	4%	88%	5090	7450	13
Hospitality	Medium	2870	5%	93%	4300	7170	14
Health	Medium		0%	93%	7080	7080	15
Health	Small		0%	93%	7080	7080	15
Health	Micro		0%	93%	7080	7080	15
Storage	Small	1600	3%	96%	5120	6720	18
Community, Art & Leisure	Micro	1290	2%	98%	5090	6380	19
Storage	Micro	800	1%	99%	5120	5920	20
Community, Art & Leisure	Small	470	1%	100%	5090	5560	21
Education out of scope							
Emergency Services out of scope							
Military out of scope							

Business size: Micro = 0-9 employees; Small = 10-49 employees; Medium = 50-249 employees  
Source: BEES data set, 2017



# Research: SME wider business needs

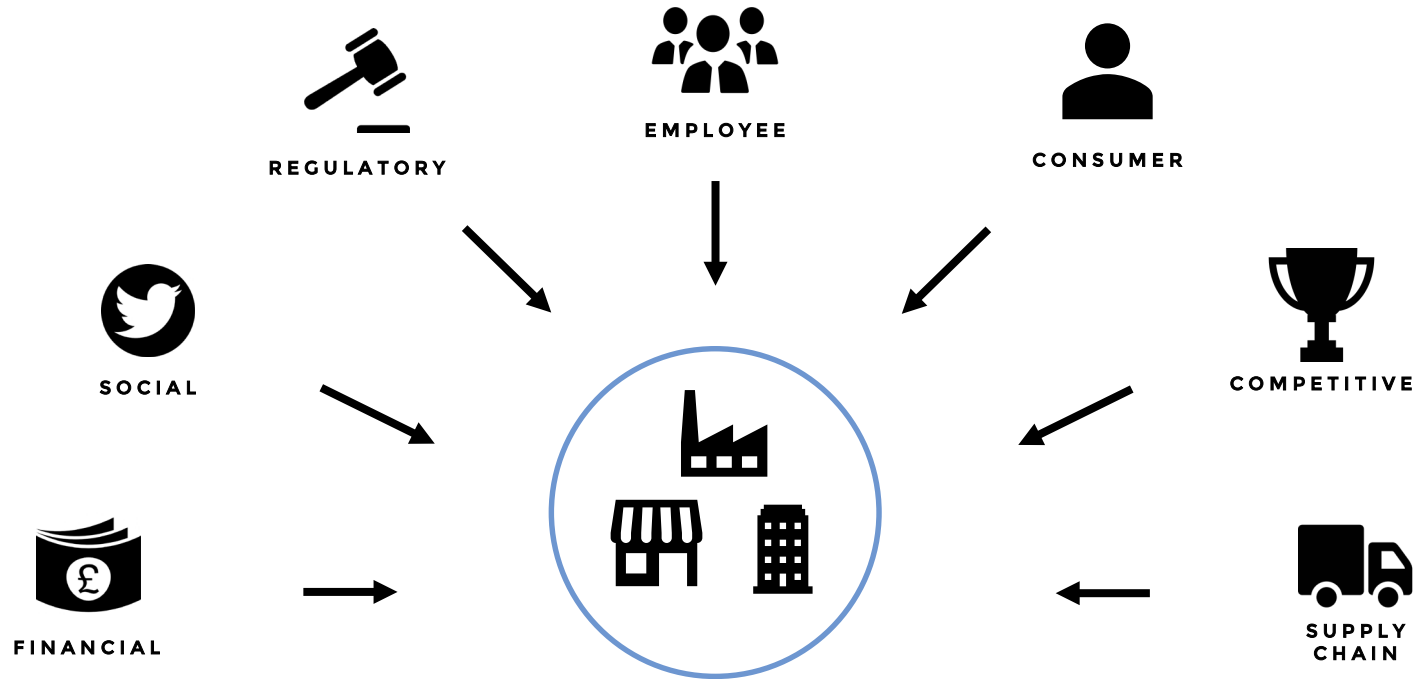
Through further market research and SME engagement, we built on the wider business needs identified in Discovery



Source: Desk research and prior Inzenka engagements with SMEs

# Different incentives for SME action

We identified existing pressures on SMEs that we could link to energy efficiency and therefore incentivise SMEs to engage with the topic



# Show me the money

*Helps decision makers identify measures they can take, by analysing and presenting a tailored business case for taking action*

## Target sector(s)



## Stakeholders and need

Decision maker *"I want to keep control of my energy costs, so that I can maximise my cash flow and fund my growth"*

## Pressures / incentives for action

Financial pressure on the business owner to save money and plan for the future

Social pressure on all actors to do their bit to reduce energy consumption

## How it could work

- Outreach highlights the **potential for financial savings** from EE measures
- User accesses the site and uses Problem Diagnoser to understand **their current state of play**
- Action Identifier asks **filters their options according to categories** (e.g. "Low investment", "See what your peers do", "Make the biggest impact")
- Once they select an option they upload their bill through a QR code scanner and Calculator **visualises their investment, payback period and savings over time**
- **specifically for them** based on desired savings, investment and payback period
- If they don't like what they see, they are **nudged to consider other options** like downloading the RemindS ME app onto the employees phones and computers
- If they want to continue, Finance Finder helps them **identify the best way to pay** and provides them **clear advice on next steps to take**

## Primary tools

- Problem Diagnoser
- Action Identifier
- Calculator

## Roadmap tools

- RemindS ME
- Finance Finder
- PeerConnect

# Zapp

*A plug-in that nudges employees to make small behavioural changes, by giving them timely reminders for action*

## Target sector(s)



## Stakeholders and need

Business owner *"I want to keep control of my energy costs, but limit my investment, so that I can maximise my cash flow and fund my growth"*

Employee *"I want to do my bit to help the environment, but I always forget to do things"*

## Pressures / incentives for action

Financial pressure on the business owner to save money and plan for the future

Social pressure on all actors to do their bit to reduce energy consumption

Effort incentive for business owners, as requires no/little investment or effort from them

## How it could work

- Outreach **highlights the value of doing the little things**
- Users sign up the service and **download the app or install browser plug-in**
- App users receive time and location based reminders integrated into their phone's existing functionality
- They have the option of **using generic pre-sets and writing their own reminders**
- **The application is gamified to driver continue engagement**
- **Sharing functionality built in**, e.g. "Not last in the office today? Send X a message to remind them to turn out the lights" - new users are then prompted to sign up
- Users are **nudged to use Action identifier** add-on - to highlight the best, more impactful EE measures for them if they want to make more of a change

## Primary tools

- RemindS ME app
- RemindS ME browser plug-in

## Roadmap tools

- Action Identifier

# Compliance tracker

*Helps building owners get to EPC E and beyond, by highlighting the best efficiency measures for them to take and supporting them to get it done*

## Target sector(s)



## Stakeholders and need

Building owner "I have to meet my PRS obligations, but I don't know where to start and I keep delaying action"

## Pressures / incentives for action

Regulatory pressure on the building owner to meet the PRS 2023 standards for EPC ratings or face significant fines (>£150k)

## How it could work

- Outreach **highlights the coming regulation** and pushes people to the tool for support
- User **enters their building address** and sees their EPC rating with two options: 1) You are below, find out how to improve; 2) your above, get ahead of the next regulations and find out how you can make simple changes
- **Answers some questions** to identify measures already taken
- Action identifier uses BEES data to **determine next best steps**, connecting to the calculator so users can **filter by time, cost and payback periods**
- Users selects an action and is **connected to peers for advice**, as well as clear roadmap and next steps to get it done
- User **receives reminders of how they can get ahead** and keep progressing along their EE journey

## Primary tools

- MyEPC finder
- Problem diagnose
- Action identifier
- Calculator

## Roadmap tools

- Finance Finder
- PeerConnect

# We prioritised 3 ideas for development and testing

The tools were prioritised based on initial user testing, expert interviews and impact analysis

## Summary

To focus our efforts in Alpha, we prioritised three tools. This was done through a working session with senior stakeholders, using initial user testing and the BEES data set to guide our decisions

For each priority tool, we created prototypes and carried out deeper user testing to iterate and pivot the ideas

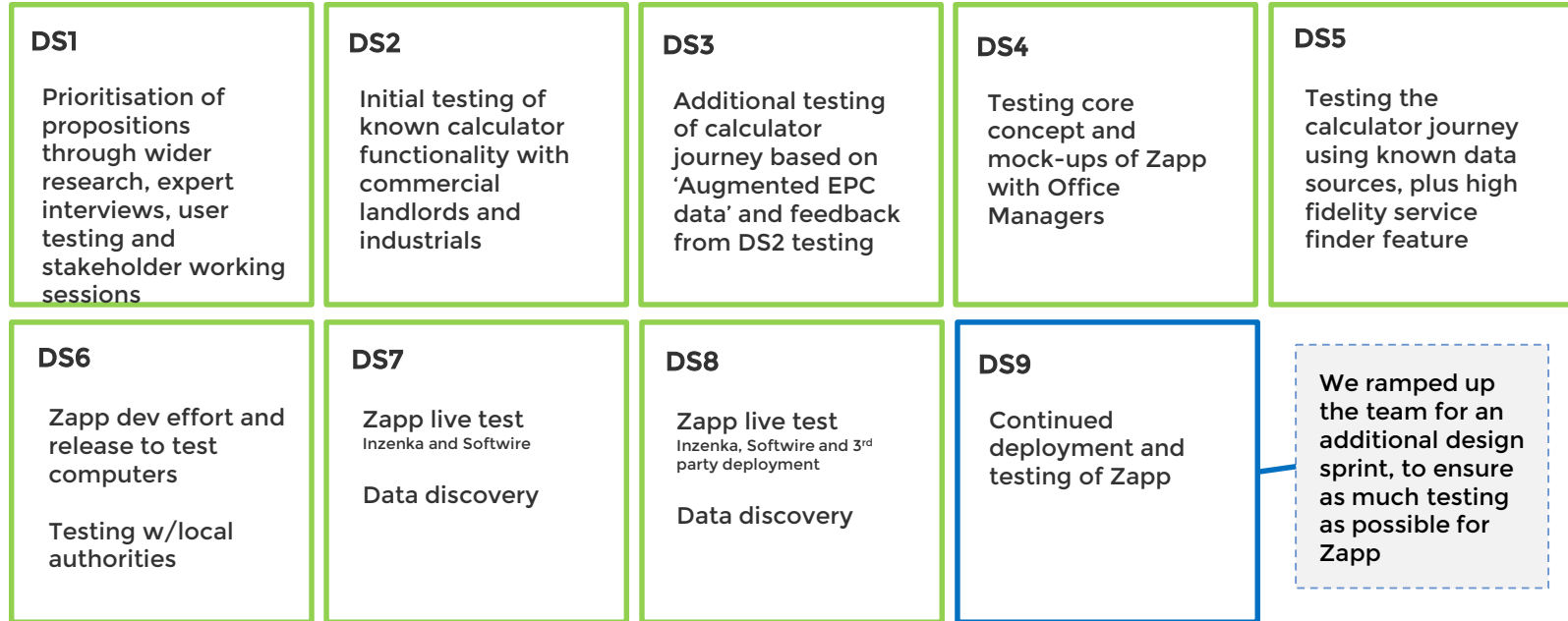
Throughout testing we further prioritised and refined our tools, their features and their target segments

**Note:** For detail on all ideas, please see Appendix A

1. Show me the money	Tested well initially, strong incentive for action and strong abatement potential (dependent on SME payback expectations)
2. Compliance tracker	Tested well initially, strong incentive for action and supports government policy - but smaller target segment (17% of property)
3. Zapp	Tested ok initially, low barriers to adoption, different set of target users - but low abatement potential as focussed on behavioural change
4. Competitive energy	Hasn't tested well initially, but has traction with internal stakeholders, precedent for success in Australia (NABERS)
5. Energy pack	Tested relatively poorly with users, potentially a small segment - but good incentive based on a trigger point
6. Green community	Tested poorly with users and feels more relevant to local authorities and their initiatives
7. Green chain	Tested poorly with users, internally seen as potentially very complex as requires the support of big businesses
8. Energy advocate	Tested poorly with users, incentive seen as weaker for action - danger of creating 'trouble maker app'

# Design sprints summary

The three priority tools were prototyped, tested and iterated throughout the design sprints



For outcomes of the sprints please see the Tool Deep-Dives (Appendix B) or the Summary Findings section



# NOTE: Descoping micro retail from Alpha

Based on additional data, initial testing and tool design, micro retail was deprioritised as a target segment for initial SME engagement with energy efficiency



## Retail: Consumer goods, beauty salons etc. Micro

### User research

- Not engaged with topic at all
- **Very time and cash poor**
- **Energy costs make up small % of total cost base**
- Interested in making savings (even <£300), but require a 1 year payback period
- Not interested in competitive benchmarking, Reminds ME, Green Badge

### Abatement potential

All measures: 22% of target segments' potential  
 3 year payback period: 12% of target segments' potential  
**<3 year payback period: 0% (no measures)**

Source: BEES data set, 217

### Segment size

There is a longtail of firms, with retail micro accounting **for >150k businesses (>50% of our target market)**. This would put huge pressure on the efficacy of outreach - targeting hundreds of thousands of firms to make small changes

### Lease incentives

>50% are in leased buildings, reducing incentives to make structural changes

**NOTE: We can target this segment indirectly through landlord propositions**



# Contents

Overview and strategic context

Summary findings and next steps

Zapp Private Beta deep-dive

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Appendix A: Summary of Alpha approach

→ **Appendix B: Tool deep-dives**

Appendix C: Team, stakeholders and participants

# Show Me the Money

## Tool 1

# Updated Proposition

## Show me the money

*Encourage building fabric improvements by illustrating the savings achievable by following building EPC recommendations.*

### Primary target sector: Industrial (Small and Medium)



These businesses are most likely to own their premises.

### Stakeholders and need

Decision maker *"I want to keep control of my energy costs, so that I can maximise my cash flow and fund my growth"*

### Pressures / incentives for action

The primary incentive is financial pressure on the business owner to save money and plan for the future

### Principle

Building EPC recommendations are available through an API, for assessments made since 2008. The recommendations listed would result in a substantial reduction in energy usage. By clearly illustrating the savings potential in the cost of that energy, we can use the SMEs' financial incentive to drive action

### How it could work

- Outreach highlights the **potential for financial savings** from EE measures
- User accesses the site and brings up their premises' EPC to understand **their current state of play** as well as **potential actions for improvement**
- Measures are grouped by payback time and ordered by cost, so users can **clearly see value** and make prioritization decisions
- For each measure, the tool provides a **call to action** in the form of links to local providers of the relevant service

# Impact assessment: Actions driven

Testing showed that behaviours are mainly limited to those with paybacks of <2 years, however the tool may be able to nudge users towards other actions in the long-term



*“I’m immediately drawn to anything with less than 2 years to payback, that’s a no brainer for us”*

## Actions driven

User testing showed us SMEs would be primarily driven to undertake EPC recommended measures with 0 – 2 year paybacks, these are:

- Updating lightbulbs (e.g. T8 to T5)
- Solar control measures (e.g. reflective coatings for windows)
- High frequency electrical ballasts
- Installation of more efficient water heaters
- Investigation of chiller systems to identify improvements

Exact data for the impact of these measures is not available, but some can be calculated relatively simply, for example:

Savings per bulb from switching T8 to T5, based on 9 hour day:

- 3.8 kWh saved per light bulb, per month
- @ £0.14 per kWh = 53p saved per lightbulb, per month

NOTE: numbers may not sum, as rounded for simplicity

Lightbulb savings calculations:

**Current Cost per Month** = (Current wattage / 1,000) x usage in hours p/day x cost p/kWh x 30 days

**New Cost per Month** = (New wattage / 1,000) x usage in hours p/day x cost p/kWh x 30 days

# Impact assessment: Campaign user acquisition

The potential impact of Show Me the Money is primarily driven by factors outside of the scope of the tool, i.e. breadth of outreach and implementation rate

## Number of users by journey stage

Based on 1x email campaigns (1 less than summary on slide 20)

**Target segment:** Industrials

**Total addressable market:** 80,715

Source: [Business Population Estimates, gov.uk, 2017](https://businesspopulationestimates.gov.uk/2017)



	Outreach		Open rate <sup>1</sup>		Click through rate <sup>1</sup>		Quotes sought		Implementation rate <sup>2</sup>	
	Breadth of outreach achieved, % of market who receive email communications		% of people who have received an email that open the email		% of people who open the email and click through to the tool URL		% of users who are incentivised to get a quote for the work, based on the tool information		% of people who, with a quote and a positive financial case, actually implement the measures recommended	
High	75%	60,536	42%	25,183	39%	9,872	50%	4,936	30%	1,481
Medium	50%	40,358	26%	10,654	19%	2,067	33%	689	20%	136
Low	25%	20,179	14%	2,906	3%	96	17%	16	10%	2

**NOTE:** Numbers may not sum based on rounding used in the model. This model does not account for decay in the efficacy of email campaigns

Sources: <sup>1</sup>[Smart Insights, 2018](#); <sup>2</sup>[DECC, 2014](#)

# Impact assessment: Word of mouth user acquisition

The potential impact of Show Me the Money is primarily driven by factors outside of the scope of the digital tool, e.g. open and click through rates for email campaigns

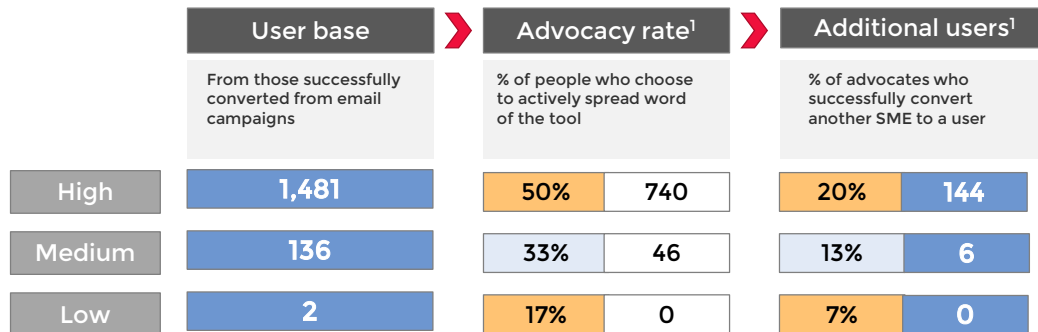
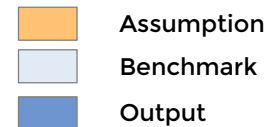
## Number of users by journey stage

Based on 1x email campaigns (1 less than summary on slide 20)

**Target segment:** Industrials

**Total addressable market:** 87,007

Source: [Business Population Estimates, gov.uk, 2017](#)



**NOTE:** Numbers may not sum based on rounding used in the model. This model does not account for decay in the efficacy of email campaigns

Source: [Harvard Business Review, 2007](#)



# User journeys and design

## Finding the property

### Energy Advice Service

See how you could save money on your energy bills

Enter your postcode below to receive your recommendations

Postcode

Search

The user enters their postcode and selects their address from the list of properties.

Currently this list only shows properties with EPCs registered in the API. If this tool were to be developed further, it would need an alternative journey where the user's EPC is not registered – likely to recommend getting an EPC assessment, and assisting with the start of that process.

Another route would be a series of questions and answers to try and discern the users' current energy usage and state of their building, mapping this against possible basic recommendations

### Energy Advice Service

See how you could save money on your energy bills

Postcode

Search

#### Properties

Courtyard 1, Highgate Studios	Courtyard 2, Highgate Studios	Unit 110, Highgate Studios	Unit 305 (Cafe), Highgate Studios
Unit 310, Highgate Studios	Unit 311, 53-79 Highgate Road	Unit 320, Highgate Studios	Unit 330, Highgate Studios
UNIT 400, Highgate Studios, 53-79 Highgate Road	Unit 420, 53-79 Highgate Road	Unit 421, 53-79 Highgate Road	
Unit 430, Highgate Studios	UNIT 441-442, Highgate Studios, 53-79 Highgate Road	Unit 501, Highgate Studios	
Unit 502, Highgate Studios	Unit 511, Highgate Studios	Unit 520, Highgate Studios	Unit 531, Highgate Studios
Unit 603 Highgate Studios, 53-79 Highgate Road	Unit 604, Highgate Studios	Unit 611, 53-79 Highgate Road	Unit 612, Highgate Studios
Unit 613, Highgate Studios	Unit 700, Highgate Studios	Unit 701, Highgate Studios	Unit 702, Highgate Studios
Unit 710, Highgate Studios	Unit 800, Highgate Studios	Unit 801, Highgate Studios	Unit 802, Highgate Studios
Unit 900, Highgate Studios			

# User journeys and design

## Discovering recommendations

Date of assessment so users can gauge its accuracy

List of recommendations, with more detail available on a click-through where needed

**Opportunities to save at Unit 110, Highgate Studios**

Based on an EPC assessment on your building from 21/01/2011

Save your business money and reduce waste by acting on your energy efficiency recommendations listed below.

Recommended measures	Indicative cost	Typical savings per year	Repays cost in	
Consider replacing T8 lamps with retrofit T5 conversion kit. <a href="#">Learn more...</a>	£1,000 - £1,800	£930	1-2 years	<a href="#">Find a local provider</a>
In some spaces, the solar gain limit in criterion 3 of ADLZA 2010 is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows. <a href="#">Learn more...</a>	£500 - £900	£470	1-2 years	<a href="#">Find a local provider</a>
Replace tungsten GLS lamps with CFLs: Payback period dependent on hours of use. <a href="#">Learn more...</a>	£1,100 - £1,500	£870	1-2 years	<a href="#">Find a local provider</a>
Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required. <a href="#">Learn more...</a>	£1,000 - £1,800	£930	1-2 years	<a href="#">Find a local provider</a>
Add time control to heating system. <a href="#">Learn more...</a>	£400 - £600	£110	3-6 years	<a href="#">Find a local provider</a>
Add optimum start/stop to the heating system. <a href="#">Learn more...</a>	£260 - £560	£60	7+ years	<a href="#">Find a local provider</a>
Some walls have uninsulated cavities - introduce cavity wall	£9,500 - £14,000	£1,600	7+ years	<a href="#">Find a local provider</a>

Cost, savings and payback time indicating the relative value of each measure

Button to take action, i.e. find a provider to carry out the recommendation


# User journeys and design

## Related functionality on the recommendations page

### Opportunities to save at Unit 110, Highgate Studios

Based on an EPC assessment on your building from 21/01/2011

Save your business money and reduce waste by acting on your energy efficiency recommendations listed below.

 This certificate is 7 years old.

You may want to consider reassessment, especially if changes have been made to the property since this inspection.

[Find an EPC assessor.](#)

Recommended measures	Indicative cost	Typical savings per year	Repays cost in	
Consider replacing T8 lamps with retrofit T5 conversion kit. <a href="#">Learn more...</a>	£1,000 - £1,800	£930	1-2 years	<a href="#">Find a local provider</a>
In some spaces, the solar gain limit in criterion 3 of ADL2A	£500 - £900	£470	1-2 years	<a href="#">Find a local provider</a>

If the EPC is over 5 years old, the user is alerted that it may be out of date and they should consider reassessment. This links to a register of EPC assessors.

[Learn more...](#)

Consider installing renewable energy sources such as PV and solar water heating

[Learn more...](#)

[Download as PDF](#)

The results can be downloaded as a PDF, to provide a permanent record for the user and to support discussion with other parties (e.g. landlords).

# User journeys and design

## Taking action – finding a provider

### Find a Local Provider

Here's an accredited list of providers in your local area, they'll help you get accurate cost information and estimate the impact changes any changes you make will have on your monthly bills!

#### Your recommendation

Consider replacing T8 lamps with retrofit T5 conversion kit.

Company	Website	Phone Number
Greenoke Energy Ltd	<a href="http://www.greenoke.co.uk/index.php">www.greenoke.co.uk/index.php</a>	01722 439 838
City Energy Network Ltd	<a href="http://www.cityenergy.org.uk">www.cityenergy.org.uk</a>	02920 499183
GEN4U Ltd	<a href="http://gen4u.co.uk/">gen4u.co.uk/</a>	0800 035 5902
Solarwise Renewables Limited	<a href="http://www.solarwise-rl.co.uk">www.solarwise-rl.co.uk</a>	0292 088 5887
Local Energy Limited	<a href="http://www.localenergy.org.uk">www.localenergy.org.uk</a>	01616 153762
InstaGroup Limited	<a href="http://www.instagramroup-homes.co.uk">www.instagramroup-homes.co.uk</a>	0800 093 1306

The user's postcode is used to search a database of providers appropriate to the measure in question – similar to the Green Deal Orb functionality. Websites and phone numbers are provided to make comparison and contact as easy as possible.

This ends the user's journey on the tool. The next steps are with the providers, to actually implement the measures – which is outside the tool's scope.

# Research & Design History

Different versions we tested

## **We tested with various different combinations of data.**

- Cost and saving metrics from BEES data: Not specific enough to be valuable.
- CO2 impact, currently available from API: Not valuable.

The two key pieces of data to users were specific cost (not currently available) and payback time (currently available via the API). Without these, users did not know how to assess recommendations for value.

## **We also tested without a specific follow-on action.**

Overwhelmingly, users' expectation and desire was to be helped to contact an installer.

# Compliance Tracker

## Tool 2

# Updated Proposition

## Compliance Tracker

Assist with MEES compliance by surfacing EPC recommendations.

### Target Sector: Commercial Landlords



Regulations directly affect landlords

### Stakeholders and need

*Building owner "I have to meet my PRS obligations, but I don't know where to start and I keep delaying action"*

### Pressures / incentives for action

Regulatory pressure on the building owner to meet the PRS 2023 standards for EPC ratings or face significant fines (>£150k)

### Principle

Landlords must bring properties up to EPC E or higher according to new MEES legislation – and currently 17% of rented commercial buildings fall below this target. We know the regulatory incentive to act is strong. We can obtain details of a property's EPC rating and recommendations for improvement from the registry API. By showing this to landlords, we can help promote action to save energy in these buildings, and potentially encourage action even on compliant buildings.

### How it could work

- Outreach highlights the **necessity to comply with regulations**
- User accesses the site and brings up their premises' EPC to understand **their current state of play** as well as **potential actions for improvement**
- Measures are ordered by cost and impact, so users can **clearly see value** and make prioritization decisions
- For each measure, the tool provides a **call to action** in the form of links to local providers of the relevant service



# Impact assessment

We have not carried out a full impact assessment for Compliance Tracker, as testing showed it did not add value to users' routes to compliance with new MEES regulation



*"I'm going to do the minimum to get compliant and get tenants back into the property"*

## Actions driven

User testing showed that landlords would seek to make the cheapest, fastest adjustments to their building that would enable them to be compliant

Although, some landlords saw value in doing higher impact measures if:

- It protected them from future regulatory increases
- Could be done alongside other measures that were being done and therefore reduce total cost / disruption to an existing lease

Because the tool was unable to provide value within their journey, we are not confident that it would have driven any net new actions as users would either have done them anyway or dropped out of the tool journey

**NOTE:** MEES / PRS regulation targets all commercial properties that are leased and below an E grade EPC, this amounts to 17% of the commercial building stock

# User journeys and design

## Finding the property

### Minimum Energy Efficiency Standards

Regulatory standards have increased for the EPC rating of leased properties. Enter your postcode below to:

- see if you are compliant
- get recommendations to increase your EPC rating
- find local service providers to estimate costs and install recommended energy efficiency measures

Postcode

Search

The landlord enters the property's postcode and selects its address from the list.

Currently this list only shows properties with EPCs registered in the API. If this tool were to be developed further, it would need an alternative journey where the user's EPC is not registered – likely to recommend getting an EPC assessment, and assisting with the start of that process.

### Minimum Energy Efficiency Standards

Regulatory standards have increased for the EPC rating of leased properties. Enter your postcode below to:

- see if you are compliant
- get recommendations to increase your EPC rating
- find local service providers to estimate costs and install recommended energy efficiency measures

Postcode

NW5 1TL

Search

#### Properties

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Unit 710, Highgate Studios	Unit 800, Highgate Studios	Unit 801, Highgate Studios	Unit 802, Highgate Studios
Unit 900, Highgate Studios			

# User journeys and design

## Discovering recommendations

### Ways to improve at Unit 330, Highgate Studios

Inspection date: 30/04/2017

F

**⚠ This property is not compliant!**

It looks like your building is not compliant with the new MEES regulation. Check the below recommendations for ways you can get compliant and avoid the fines.

Recommended measures	Indicative cost	Impact on EPC rating	
Consider replacing T8 lamps with retrofit T5 conversion kit. <a href="#">Learn more...</a>	£1,000 - £1,800	D ↑ HIGH	<a href="#">Find a local provider</a>
In some spaces, the solar gain limit in criterion 3 of ADL2A 2010 is exceeded, which might cause overheating. Consider solar control measures such as the application of reflective coating or shading devices to windows. <a href="#">Learn more...</a>	£500 - £900	E ↑ MEDIUM	<a href="#">Find a local provider</a>
Replace tungsten GLS lamps with CFLs: Payback period dependent on hours of use. <a href="#">Learn more...</a>	£1,100 - £1,500	F ↑ LOW	<a href="#">Find a local provider</a>
Introduce HF (high frequency) ballasts for fluorescent	£1,000 - £1,800	F ↑ LOW	<a href="#">Find a local provider</a>

Alert that the property is not compliant and action must be taken

List of recommendations, with more detail available on a click-through where needed

Clear display of EPC rating

Cost and EPC impact indicating the relative value of each measure

Button to take action, i.e. find a provider to carry out the recommendation

# User journeys and design

## Related functionality on the recommendations page

### Ways to improve at Unit 110, Highgate Studios

Inspection date: 21/01/2011





E

Stay ahead of regulation by acting on your EPC recommendations.

 This certificate is 7 years old.

You may want to consider reassessment, especially if changes have been made to the property since this inspection.

[Find an EPC assessor.](#)

Recommended measures	Indicative cost	Impact on EPC rating	
Consider replacing T8 lamps with retrofit T5 conversion kit. <a href="#">Learn more...</a>	£1,000 - £1,800	 ↑ HIGH	<a href="#">Find a local provider</a>
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Replace tungsten GLS lamps with CFLs: Payback period dependent on hours of use. <a href="#">Learn more...</a>	£1,100 - £1,500	 ↑ LOW	<a href="#">Find a local provider</a>
Introduce HF (high frequency) ballasts for fluorescent <a href="#">Learn more...</a>	£1,000 - £1,800	 ↑ LOW	<a href="#">Find a local provider</a>

Consider installing renewable energy sources such as PV and solar water heating  
[Learn more...](#)

 ↑ LOW

[Find a local provider](#)

[Download as PDF](#)

If the EPC is over 5 years old, the user is alerted that it may be out of date and they should consider reassessment. This links to a register of EPC assessors.

The results can be downloaded as a PDF, to provide a permanent record for the user and to support discussion with other parties (e.g. tenants).

# User journeys and design

## Taking action – finding a provider

### Find a Local Provider

Here's an accredited list of providers in your local area who can help you get accurate cost information and estimate the impact any changes you make will have on your EPC rating

### Company contact details

- 1.
- 2.
- 3.

The property's postcode is used to search a database of providers appropriate to the measure in question – similar to the Green Deal Orb functionality. Websites and phone numbers are provided to make comparison and contact as easy as possible.

This ends the user's journey on the tool. The next steps are with the providers, to actually implement the measures – which is outside the tool's scope.

# Research & Design History

Different versions we tested

## We tested with various different combinations of data.

- Cost and saving metrics from BEES data: Not specific enough to be valuable.
- CO2 impact, currently available from API: Not valuable.
- Payback period, currently available from API: Not valuable – only useful to tenants.
- Savings per year, not currently available: Not valuable – only useful to tenants.

The two key pieces of data for landlords were specific cost and EPC impact, neither of which are currently available. Without these, users did not know how to assess recommendations for value.

## We investigated the “find a local provider functionality.

Some landlords did not require this feature, as they have trusted contractors already covering most jobs. However, some did not, and even some of those that did have trusted contractors found value in comparison with other providers.

# Zapp

Tool 3



# Updated Proposition

## Zapp (FKA Reminds ME)

Encourage behavioural change through well-timed and well-targeted reminders.

### Primary target sector: Offices (Small and Medium)



Predictable energy environments, computer-based work

### Stakeholders and need

Business owner "I want to avoid paying for energy we're not really using - it's a waste"

Employee "I want to help avoid wastage, but I always forget"

### Pressures / incentives for action

Financial pressure on the business owner to save money by avoiding wastage

Social pressure on all actors to avoid wasting energy and to "do their bit" to help the environment

## Principle

Behavioural change (e.g. switching off devices when not in use; setting HVAC controls appropriately; closing windows) has a lower impact on energy usage than other measures, but is much less costly to implement. By encouraging behavioural change in workspaces, we can make a smaller change more easily - and therefore potentially more widespread. This also acts to raise awareness of energy usage, providing impetus for cultural change, and can be used as a delivery mechanism for higher-impact notifications/nudges in the future

## How it could work

- Outreach highlights the **prevalence of wastage** and the **ease of avoiding it**
- **Office Manager arranges install** of Zapp throughout office
- Users receive reminders and take **small, straightforward actions** to reduce energy wastage
- Business owners and managers can see **savings visualized** in a dashboard and are encouraged to continue - or **take further action**

# Impact assessment: Actions driven

Testing showed that Zapp is driving behavioural change, but these changes revolve around small adjustments, rather than large structural shifts



*"I now adjust the air conditioning every morning, I didn't used to do that"*

## Actions driven

Zapp is focussed on driving three behavioural changes in the office environment:

- Switching off lights at the end of the day
- Hibernating computers at the end of the day
- Encouraging users to adjust HVAC systems and turn them off at the end of the day

Precise impact depends on the current status quo in each user's office, however impact can be benchmarked. In the case of switching off lights:

		On all the time	On all the time	On for 6 hours a day	On for 6 hours a day
Lightbulb type	Typical power - 700 lumens (W)	Energy use per year (kWh)	Cost per year (£)	Energy use per year (kWh)	Cost per year (£)
Incandescent	60	526.0	£84.15	131.5	£21.04
Halogen	45	394.5	£63.12	98.6	£15.78
CFL	15	131.5	£21.04	32.9	£5.26
LED	12	105.2	£16.83	26.3	£4.21

Source: [Centre for Sustainable Energy, 2015](#)

# Impact assessment: Campaign user acquisition

The potential impact of Zapp is primarily driven by factors outside of the scope of the tool, i.e. breadth of outreach and click through rate

## Number of users by journey stage

Based on 1x email campaigns (1 less than summary on slide 20)

<b>Target segment:</b> Offices
<b>Total addressable market:</b> 297,660
Source: <a href="https://www.gov.uk/business-population-estimates">Business Population Estimates, gov.uk, 2017</a>

<span style="display: inline-block; width: 15px; height: 15px; background-color: #f9a825; border: 1px solid #ccc;"></span> Assumption
<span style="display: inline-block; width: 15px; height: 15px; background-color: #d9e1f2; border: 1px solid #ccc;"></span> Benchmark
<span style="display: inline-block; width: 15px; height: 15px; background-color: #4f81bd; border: 1px solid #ccc;"></span> Output

	Outreach	Open rate <sup>1</sup>	Click through rate <sup>1</sup>	Deployment rate	Retention rate
	Breadth of outreach achieve, % of market who receive email communications	% of people who have received an email that open the email	% of people who open the email and click through to the tool URL	% of potential users who download and deploy the application at their company	% of users who keep the application installed across their machines after an initial trial period
High	75% 223,245	42% 92,870	39% 36,405	75% 27,304	75% 20,478
Medium	50% 148,830	26% 39,291	19% 7,622	50% 3,811	50% 1,906
Low	25% 74,415	14% 10,716	3% 354	25% 88	25% 22

**NOTE:** Numbers may not sum based on rounding used in the model. This model does not account for decay in the efficacy of email campaigns

Sources: <sup>1</sup>[Smart Insights, 2018](#); <sup>2</sup>[DECC, 2014](#)

# Impact assessment: Word of mouth user acquisition

The potential impact of Zapp is primarily driven by factors outside of the scope of the tool, i.e. breadth of outreach and click through rate

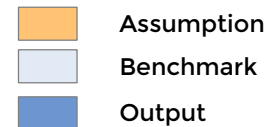
## Number of users by journey stage

Based on 1x email campaigns (1 less than summary on slide 20)

**Target segment:** Industrials

**Total addressable market:** 87,007

Source: [Business Population Estimates, gov.uk, 2017](#)



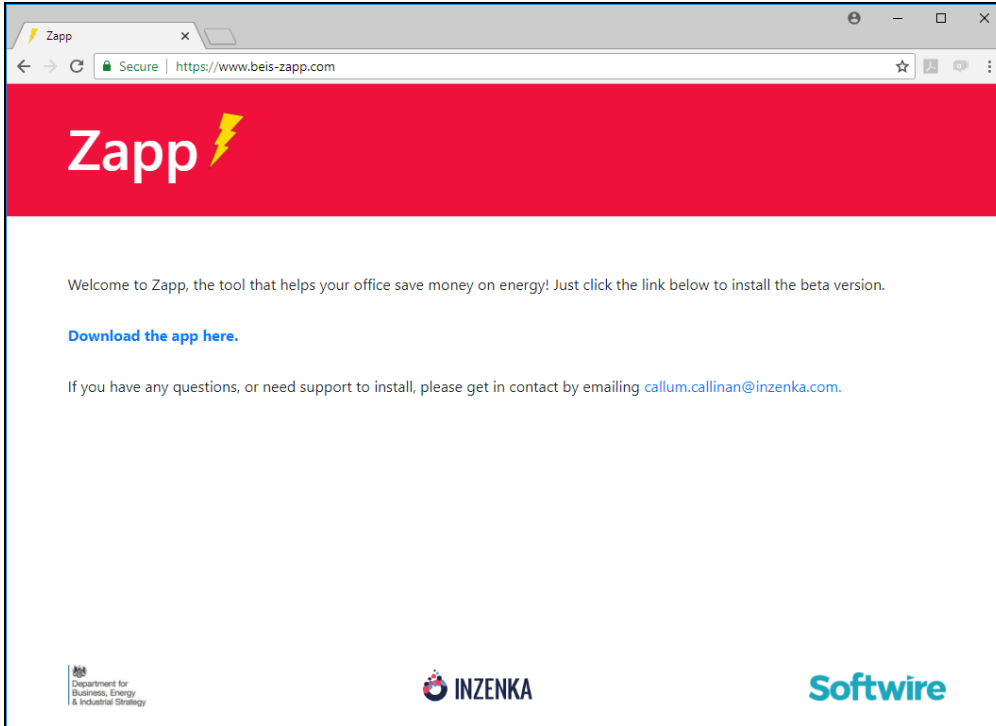
	User base	Advocacy rate <sup>1</sup>	Additional users <sup>1</sup>
	From those successfully converted from email campaigns	% of people who choose to actively spread word of the tool	% of advocates who successfully convert another SME to a user
High	20,478	50%   10,239	20%   1,997
Medium	1,906	33%   635	13%   83
Low	22	17%   4	7%   0

**NOTE:** Numbers may not sum based on rounding used in the model. This model does not account for decay in the efficacy of email campaigns

Source: [Harvard Business Review, 2007](#)

# User journeys and design

## Installation

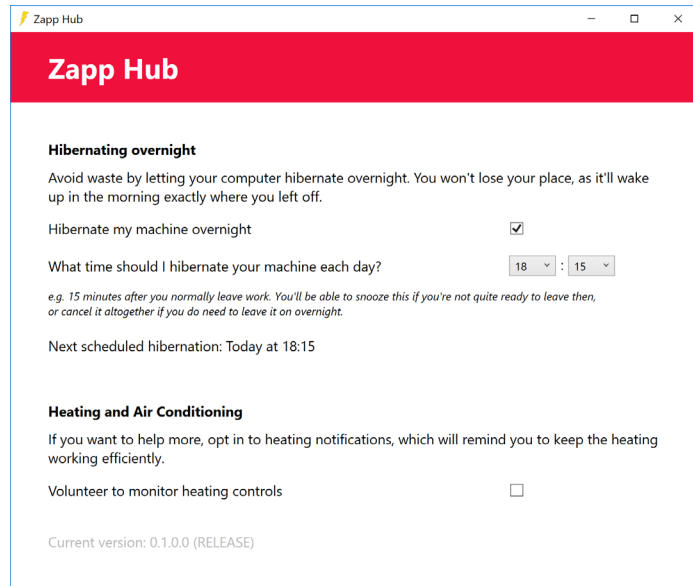
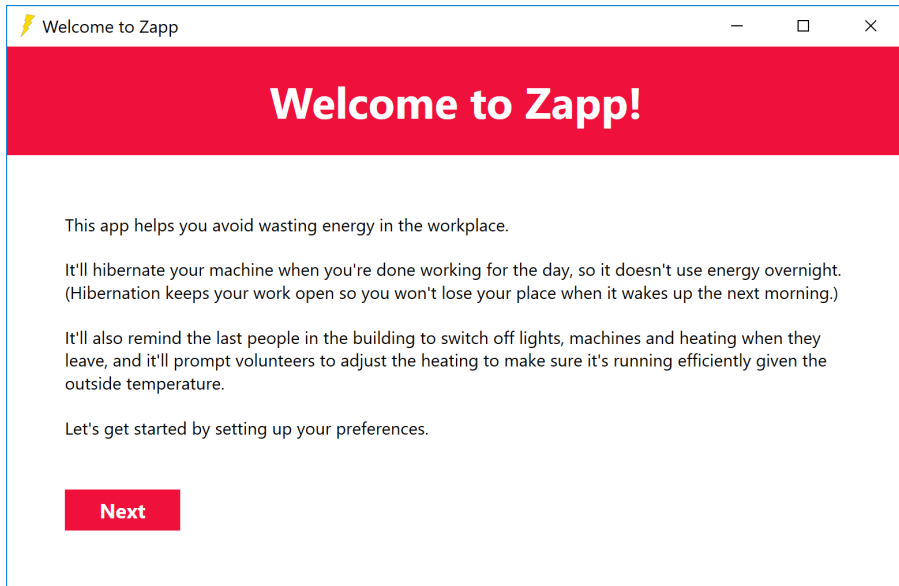


The user downloads the application and installs to their PC. Installation is a one-click process once the application is downloaded. Once installed, the application runs in the Windows system tray, and will update automatically.

Currently the application is Windows-only as this covers the majority of office computers. A future phase could consider the value of a Mac equivalent.

# User journeys and design

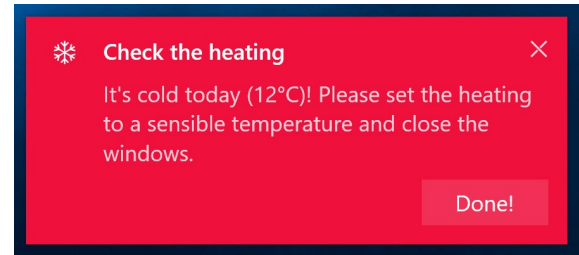
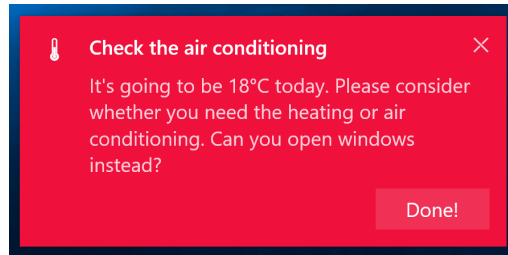
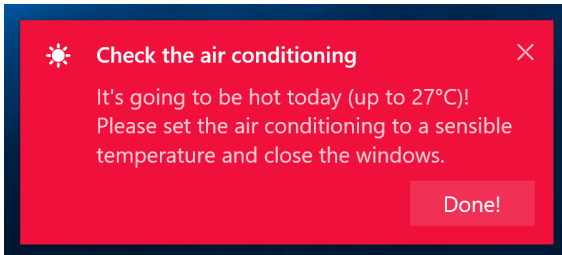
## First use



The user sees a welcome screen explaining the purpose and functionality of the application. They are then taken to the “hub” where they can adjust settings if necessary.

# User journeys and design

## Heating / air conditioning notifications

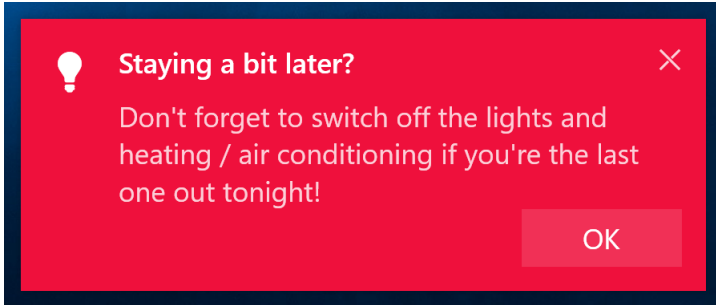


Users can opt in to heating and air conditioning notifications. If they do, they'll receive a notification when they first log on for the day, suggesting appropriate action based on the expected temperature that day.

This is opt-in functionality because it is not useful or practical to have all staff acting to adjust the heating / cooling systems (and if notifications were sent to all staff they would likely be ignored). The intent is that only the office manager and perhaps a small group of volunteers would opt in to this (and this was borne out by user testing).

# User journeys and design

## Last-to-leave reminders



When there are only three users remaining logged on to their PCs, they are reminded to switch off lights and heating / air-conditioning when they leave.

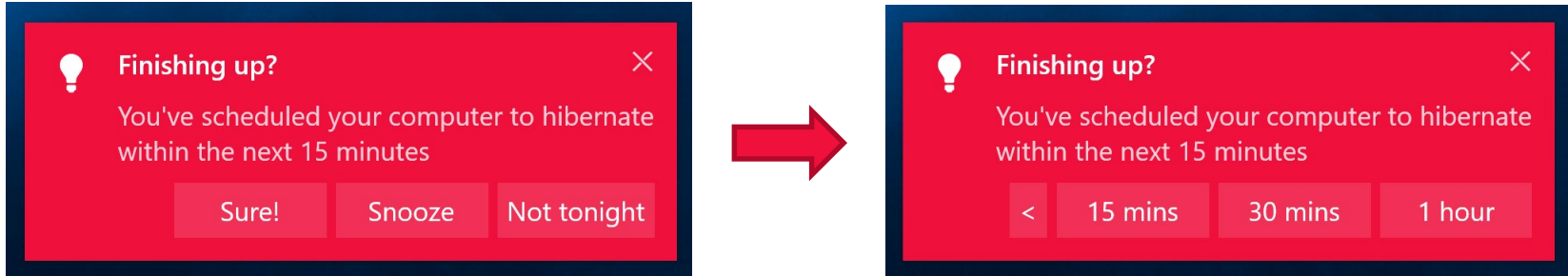
This is targeted to the last three users to avoid becoming irritating by notifying everyone. Ideally we'd target the last person to leave, as they left, rather than just notifying the last three as soon as they are the only ones remaining – but this is not feasible with a desktop application as once the last user is getting up to leave, they will not be watching their PC screen. In the future a companion application and/or text alerts could be used to provide notifications after leaving the computer.

User testing revealed the need to be able to customise this message appropriately for the specific office environment – e.g. it shouldn't include lighting if the lighting is already motion-sensitive and does not need switching off manually. This has not been implemented in this phase but is on the roadmap for public beta.



# User journeys and design

## PC Hibernation



At the end of the working day, the application will hibernate users' PCs. This can be done automatically with no action from the user. Hibernation preserves the current state of the machine (so the user does not lose work) while still requiring no ongoing power.

Users can configure their default hibernation time in the "Hub", but they also receive a 15-minute warning before hibernation. At this point they can accept, snooze for a variable amount of time, or cancel tonight's hibernation.

# User journeys and design

## PC Hibernation

### About To Hibernate

Your computer will hibernate in 26 seconds  
or you can choose to snooze for an hour.

Snooze

Not tonight

When hibernation is about to be triggered, users receive a more obvious notification with a thirty-second countdown, to avoid surprising them. Again they can snooze or cancel tonight's hibernation.

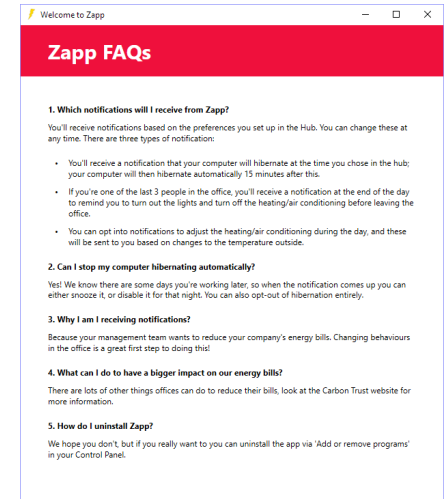
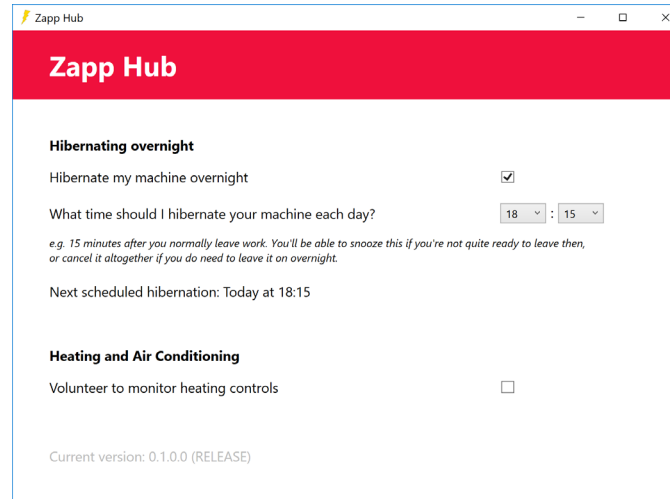
# User journeys and design

## Configuration and more info

By opening the application from the system tray, users see the hub page.

Here they can configure their default hibernation time (or opt out of hibernation altogether) and opt in to heating / air conditioning notifications.

They can also view the FAQs, which provide short explanations for some of the basic questions about the application.



# Research & Design History

More building required here, therefore fewer test cycles

## Concept testing interviews were promising

- Office Managers were interested in a simple app to help manage energy.
- Generally agreed that non-invasive reminders were best.

## Positive trial feedback – app has made a difference

- Users are letting it hibernate their computers – some even switch off proactively.
- Office Manager is checking the heating regularly where she didn't before.
- Users are pleased it's having an impact.

## Key hypotheses confirmed

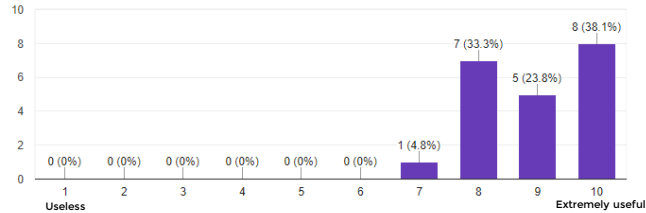
- Low barrier to entry means no hard proof of benefit needed – “it's definitely helping” is enough.
- Low user impact means no frustration and users are happy to keep it installed.

# User Survey

## Results from 21 users

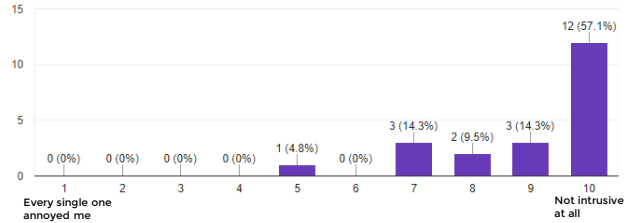
### Usefulness

21 responses



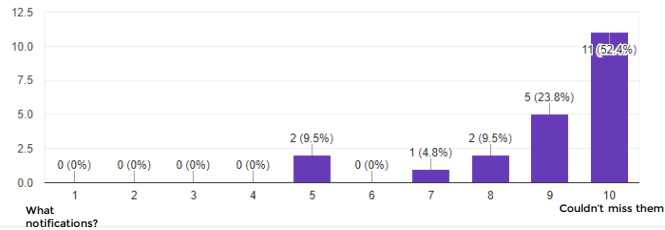
### Intrusiveness

21 responses



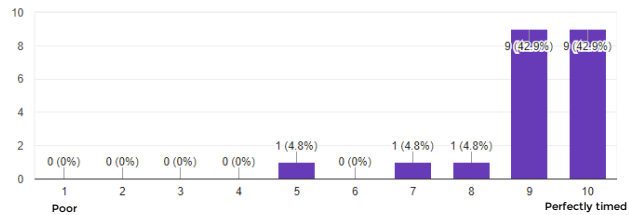
### Noticeability

21 responses



### Timing

21 responses

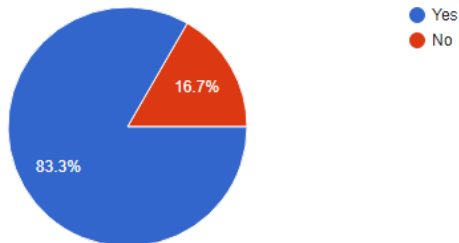


# User Survey

## Results from 21 users

Have you seen any changes in behaviour in the office around energy use?

12 responses



## Qualitative Feedback

Overall very positive. Users were impressed by the tool and believed it was having an impact.

Users believed computers were running faster due to regular shutdowns allowing updates to be regularly installed. We don't expect hibernation to trigger updates so this is unexpected - it could be investigated further but we don't believe it's a priority.

One or two low-priority bugs were uncovered, but nothing that would jeopardise further trials.