

International Energy Agency
Energy Technology Initiative on
Demand Side Management Technologies and Programmes



Subtask 6&7: Ireland

Task 24 – Phase II
Helping the Behaviour Changers

Cross-Country Case Study Comparison of Energy Saving
Kit Programmes

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Background

Ireland joined IEA DSM Task 24 in late 2015, when the Sustainable Energy Authority of Ireland (SEAI), the national sustainable energy authority, came on board as a sponsor. As part of the Irish participation, we undertook several Task 24 workshops in Ireland. These workshops helped shape the top DSM issue and Irish case study, which will be discussed in this report.

Initial Issue Scoping

IEA DSM Task 24 Workshop 1, Dublin, April 8, 2016

The first workshop (in April 2016) concentrated on the background of behaviour change programmes in the Irish and wider UK contexts. We then focused in on identifying the top three DSM issues in Ireland with a wide audience group comprising government, industry, the third, expert and service sectors. The top issues were decided to be:

1. Different behavioural practices in commercial/SME sectors
2. Training of Middle Actors in sustainable energy communities (SECs) in the residential sector
3. Landlord split-incentive issues in the residential sector.

After long discussions, the top DSM issue that was chosen to have the greatest (technological, financial, social and political) opportunities and lowest risks, was *Training of Middle Actors in SECs*. The risks that were discussed were: proving how well a pilot would work; scalability; reliance on volunteers; privacy and trust issues; lack of access to households and delays. The Task 24 “magic carpet” Behaviour Changer Framework (see [Rotmann, 2016](#) for detailed description) was used to visualise the current Irish energy system on the issue of Middle Actor training.



The Irish Behaviour Changer Framework, Task 24 Workshop 1.

Task 24 Workshop 2, Dublin, January 31, 2017

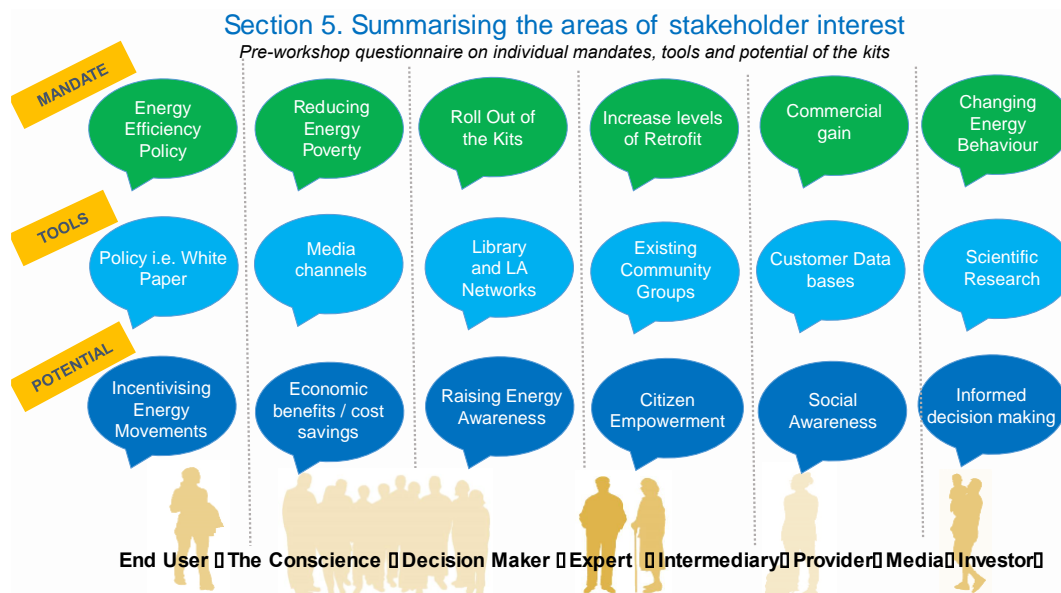
The second Irish workshop, in January 2017, was focusing on a case study chosen by SEAI which would look at using *Middle Actors* (in this case, public libraries in Dublin) to loan out residential

energy saving kits to their customers. The workshop was facilitated as a *Design Thinking* process and attendees were divided into groups and were asked to assume one of four user personas. They then **mapped the end user journey** in relation to the use of the [Home Energy Saving Kits](#), taking particular note of potential **pain points and opportunities**. They were then asked to act as **Behaviour Changers**, to delve into the particular pain points and investigate tools available to them that could be adopted to address these, highlighting any restrictions and other stakeholders that they require to enable this to work (following the Task 24 “magic carpet” exercise, see [Rotmann 2016](#)).

These opportunities were identified, from the end user perspective:

1. *Library system has advantages for management of the kits* – there is also the possibility to use the marketing around the kits to draw in new library users (creating a ‘win-win’)
2. *Benefits to having ‘batch’ loans for structured communities* such as SEC’s or existing focus groups – seasonal consistency of data
3. *Opportunity to create a ‘community of libraries’*
4. *High percentage of feedback possible* through engaging with established communities
5. *Energy champions in libraries* and offices – tap into what’s already there
6. *Local Authorities can be intermediaries* for accessing social housing users.

The identified pain points were reviewed in Workshop 3, and will be discussed below.



Section 6. Strategic Framework for Action – stakeholder roadmap

Codema / Libraries	<i>Librarian training and kit launch</i>	<i>Seek energy champions for media campaign</i>	<i>Collect feedback and evaluate</i>	<i>Wide range of events to generate public interest</i>	<i>Sustaining interest and monitoring feedback</i>
The Provider / Conscience	<i>Establish contact with partners</i>	<i>Training Development</i>	<i>Carry out evaluation of the kit</i>	<i>Promote kit at national events, through website</i>	<i>Support homeowners with advice</i>
End User / SEC	<i>Carry out a trial run of kit</i>	<i>Consider wider roll out of training</i>	<i>Strengthen community links with SEAI and LAs</i>	<i>Support data collection and sharing</i>	<i>Develop information platforms – IT links</i>
Intermediary (SEAI)	<i>Seek to establish an urban SEC of Libraries</i>	<i>Energy Health check ups – review ‘wizard’</i>	<i>Facilitate sharing of BER data for energy baselines</i>	<i>Review SEAI domestic guides against kit material</i>	<i>Consider video case studies / media platforms</i>
The Expert	<i>Support knowledge transfer</i>	<i>Share data and other research into initiatives that work</i>	<i>Evaluate the Home Energy Kit initiative</i>	<i>Data comparison with other initiatives</i>	<i>Dissemination through academia, policy, civil society</i>
Policy makers	<i>Support SEAI in facilitation role</i>	<i>Monitor and review proposals - advocacy</i>	<i>Use Ministerial platform where appropriate</i>	<i>Identify linkages: SEAI BEU / Healthy Ireland etc</i>	<i>Work to improve media visibility of grant funding</i>

Figures from Workshop 2 minutes (Source: M.CO).

The Home Energy Saving Kits

An initial *Home Energy Saving Kit* trial was run by **Codema**. It consisted of 17 kits in 10 Dublin libraries and ran for 12 months in 2016. This pilot was decided to be expanded with **SEAI** funding in 2017.

What is in the Home Energy Saving Kits?

The Home Energy Saving Kit contains 6 measurement tools to assess current energy use, or determining/fixing the (in)efficiency of:

- **heating** (radiator key),
- **appliances** (plug-in energy monitor),
- **insulation** (thermal leak detector),
- **fridge/freezer** (fridge thermometer)
- **thermal envelope** (digital thermometer and humidity metre)
- **water** (stopwatch to measure water flow in e.g. shower)

Some of these tools are very simple to use (e.g. stopwatch or fridge thermometer) and some require more reading instructions and effort (e.g. plug-in energy monitor or thermal leak detector). Some are simply to provide insights into the current situation, including showing potential issues like leaks or draughts or energy-draining appliances which would require further (possibly high-cost if it involves changes to the building envelope) investment or the call-out of professional tradespeople. Others can be used to immediately remedy a problem – e.g. the fridge/freezer thermometer or radiator key used to bleed radiators to improve their efficiency. The kit also comes with an [instruction manual](#) and Home Energy Savings Tips [booklet](#), a top ten [checklist](#), guide to [light bulbs](#) and [energy savings](#), [map](#) of where to get it, [promotional booklet](#) and [worksheets](#) to easily fill in the results. There are also public information sessions in some libraries where end users can learn about how to use it. And there are videos to help with ease-of-use.



Figure showing the content of the Home Energy Saving Kit (Source: CODEMA)

Who is collaborating on this research and what are its aims?

The joint steering group includes *Behaviour Changers* (see Rotmann 2016 for description) from **Codema**, Dublin's Energy Agency ("The Providers" of the kit); **SEAI** ("The Decision-makers" and funders of the more extensive roll-out of the kit, representing government); **Dublin City Public Libraries** ("The Middle Actors" loaning out the kits); **M.CO** ("The Experts" doing roll-out and evaluation) and, to a lesser extent, the See Change Institute, **SCI** (supporting "beyond kWh" survey design and evaluation) and a Sustainable Energy Community, **SEC** ("The Conscience" helping with roll-out).

The research aim is to **evaluate the impact of these kits** on both habitual energy use behaviours and energy investment behaviour. Consideration is also being given to expanding the reach of the kits through schools in the future. **SEAI** also want to add a **social dimension** to see if embedding them within an existing community / interest group (i.e. one of SEAI's Sustainable Energy Communities) improves the likelihood of deeper behaviour change. It is intended that there will be **greater emphasis on evaluation** of impact by gathering both quantitative and qualitative feedback through surveys, phone interviews and focus groups. The Task 24 Subtask 9 "Beyond kWh" tool, developed by SCI (see [Karlin et al, 2015](#)), was used to support more in-depth behavioural evaluation of this trial. The initial survey and sample group was aimed at reaching around 200 end users in the public library trial. The more in-depth "beyond kWh" pre- and post-survey is aimed at around 40 households in SECs. Research methodology and all surveys can be found in the Evaluation Report (soon to be published). Interviews and/or focus groups were conducted to triangulate with the surveys, providing more in-depth findings into end user motivations and behaviour changes.

Workshop 3, Dublin, May 12, 2017

Workshop 3 invited the main *Behaviour Changer* collaborators to undertake an informal, interim evaluation of how the pilot was tracking. We established the main mandates, stakeholders, restrictions and tools of each *Behaviour Changer*:

Table with the various mandates, stakeholders, restrictions and tools of each Behaviour Changer

	Decisionmaker (SEAI)	Provider (CODEMA)	Expert (MCO)	Middle Actor (Public Library)	Conscience (SECs)
Mandate	Proof of concept; scalability of pilot; feed into bigger government targets on EE	Make Dublin more sustainable; proof of concept	Provide expertise and data analysis	Providing information and support	Make his SEC more sustainable
Stakeholders	CODEMA, Minister, SEAI Management Committee	Libraries, Dublin City Council, public, SEAI	SEAI CODEMA	Staff, CODEMA, SEAI and Dublin residents	SEAI and SEC members
Restrictions	Minister encouragement and support for further roll-out must be balanced against need to consider feedback from the pilot before nationwide launch	Resourcing, staff time, being too successful!	Nature of the data, paper collection of surveys	Having to advise on how to use kits; more effort to loan out kits than books	Lack of uptake and interest (especially in summer)
Tools	Funding, Task 24, scale-up, being able to build on political will	Provide and market kits; education, training & support	Understands technology in residential sector	Being trusted advisors to the public; system that supports loaning	The kit and face-to-face contact providing advice

Some insights from each of the Behaviour Changers' motivations

Middle Actors: Libraries are also running an information campaign which is helping to educate people on energy awareness. Various supporting documents they have may still lead to behaviour change as well. They are trusted intermediaries and the fact that there are waiting lists for kits is a **success measure**. All the leaflets are gone as well. They want to be **change agents**, and also help change the traditional perception of librarians as 'fuddy duddies' to showing them as the **innovators** they already are. It was clear for the library management that they would like to trial this kit once they heard how well it worked in South Australia. It is part of them helping to engage with climate change issues and also part of their civic service (also clearly making them part of the '**Conscience**' here).

Provider: CODEMA really want to have the **data of how, or if, this programme was successful** in changing behaviour. It would help them to know who they are marketing other EE initiatives to. This will help them in **tailoring and better understanding** their demographics. It is also great to be seen as being successful in such activities as an Energy Management Agency, as **raising awareness and engaging** with citizens and stakeholders successfully is part of their mandate. They see themselves as influencers as to how society thinks.

Conscience: In the case of the Cope Cross SEC (who participated in this interim evaluation), their rep Aidan felt that they wouldn't be so concerned about the kit per se, but he saw it as a **gateway** to get people to engage with the SEC by creating **energy awareness** which will benefit the Community. Their big motivation is trying to create **community cohesion**. Previously, the estate's management company (of which Aidan sits on the board) had a real problem showing why it was a good idea to form an SEC. It was hoped that the kit would demonstrate that the new board is attempting to do something **progressive and altruistic**. It also makes for a **good news story** for their community.

Decision-maker: SEAI's overarching motivation is to **lead Ireland's transition** to smarter and more sustainable energy, by helping homes, businesses, communities and industry to be more energy efficient and to **comply** with National and EU energy-saving targets. **Raising awareness** about the need for energy efficiency in general and **encouraging behavioural change** is really important. **Habit changes** are really important, as it is to get energy on people's radar in general. They were looking at policies associated with using trusted intermediaries and this **multi-stakeholder collaboration** offers the ability to **scale these efforts up**. For them, this project seeks to test if the kits will motivate people towards habitual behaviour change at home, but also into making energy efficient investment decisions involving their home, which will link with other SEAI programmes.

Expert: One of M.CO's main motivations is to **think creatively** and **solve problems** and this programme fulfils that by drawing on their experience in **connecting ideas, people and action**. It is also important to **engage** with your funders and stakeholders and the international research community in order to inform policy and **enable intrinsic thinking and altruistic communities**.

How are we tracking against the pain points identified in Workshop 2?

1. Getting the word out - levels of media interest/web traffic: **more than** succeeded!
2. Limitations of the library user as a target market: this is not a problem for the library per se, as most people come across the kit in the libraries or via the media. However, we could potentially miss out on some groups by targeting library users only (but now we also rolled them out to SECs).
3. Getting buy-in from established groups – existing agendas: didn't have the opportunity to approach any of the library groups yet as the individual loans were so successful.
4. Engaging the renters/landlords – changing perceptions: split incentives are probably still an issue, they don't collect the data on who is a renter vs home owner on the library survey (but "beyond kWh" tool did).
5. Number of kits available – waiting lists/backlog: some libraries have waiting lists, but it isn't a big problem. But there are not enough kits for display purposes in each of the libraries.
6. Transporting the kit home is a consideration for some users i.e. the elderly/cyclists: it is too big for some and looks like a toy. Maybe we can have a smaller, 'business-like' case as well?
7. Competency for using the kit elements at home: some bits aren't that easy to use, it's important we check the survey data to date to see where problems may arise.

8. **Kit quality-maintenance:** put a checklist into the kit for people to circle if something isn't working. CODEMA also gets emails if something isn't working.
9. **Reading the User Manual:** no problem anecdotally, hasn't been mentioned in survey.
10. **Recording your data-user form is not in the kit:** this is resolved, it's now on paper and online.
11. **Lack of benchmarking information (possible to use BERs?):** not looking at it yet. *Beyond kWh* questionnaire does provide some benchmarking info.
12. **Lack of information on solutions for 'bad' results:** how to get from bad results to action? CODEMA helps with end-to-end service and follow-ups.
13. **Returning the kit:** not a problem so far.
14. **Lack of follow up support – demonstrated by low feedback in pilot (less than 5%):** feedback has increased but data quality is still an issue.
15. **Weather and climate will influence the data:** important to record the time of year kits are loaned out. Already clear that summer is much lower rate of loans than in winter.
16. **Completing the feedback form:** some problems and differences between paper and online versions.
17. **Expectations on library staff – need for energy awareness training:** essential to have training as staff need to know the story around the kits and are very interested too. If they are not trained they would be at a disadvantage in terms of not having all the information when library users query them on the kits.
18. **Next steps – accessing finance/getting impartial advice:** for example, advice on energy efficient investment measures to carry out in the home (e.g. attic or wall insulation) or grants to do a much bigger programme or expanding it into schools.

Task 24 learnings

The Collective Impact Approach¹

Task 24 uses two different, yet complimentary, approaches in the [more practice-oriented Phase 2](#): The **Collective Impact Approach** and the **Behaviour Changer Framework** developed by Task 24. The *Collective Impact Approach* (CIA) was first developed by [Kania and Kramer in 2011](#) to aid social entrepreneurs. This approach, aimed at long-term social change, proposes a collective, rather than an individual approach for solving social problems. *Collective Impact* is a framework to tackle deeply entrenched and complex social problems. It is an innovative and structured approach to making collaboration work across government, business, philanthropy, non-profit organisations and citizens to achieve significant and lasting social change.

The **Collective Impact Approach** is premised on the belief that no single policy, government department, organisation or programme can tackle or solve the increasingly complex social problems we face as a society – wasteful (energy) consumption just being one of them. The approach calls for multiple organisations or entities from different sectors to abandon their own agenda in favour of a common agenda, shared measurement and alignment of effort. Unlike collaboration or partnership, *Collective Impact* initiatives have centralised infrastructure – known as a backbone organisation – with dedicated staff whose role is to help participating organisations shift from acting alone to acting in concert. [Walzer et al. \(2016\)](#) argue that complex situations which would normally be difficult to solve, can be solved using the CIA. Five conditions are listed that are needed to create such a collective impact:

1. *A common agenda,*
2. *Mutually-reinforcing activities,*
3. *A shared measurement system,*
4. *Continuous communication, and*
5. *A backbone support organisation.*

¹ More detail on Task 24 tools and how they are applied in practice in Cobben (2017): <http://www.ieadsm.org/wp/files/ST67-NL-ICT-case-study.pdf>; Cowan, Sussman and Rotmann (2017): http://www.ieadsm.org/wp/files/IEA-DSM-Task-24-Subtask-11-CHS-case-study_FONTS.pdf and Kallsperger and Rotmann (2017): http://www.ieadsm.org/wp/files/Task-24_Final-Status-Report_Austria.pdf

How well is the Collective Impact Approach applied here?

A common agenda:

The common goal for all involved *Behaviour Changers* in this trial is to **increase energy awareness among Dublin citizens**. This would help people to understand their energy use at home better, which will hopefully lead to changes in energy habits and investments. These changes can then hopefully also translate into people's energy use at work (CODEMA ran some energy awareness events and loaned kits out to staff in their office but these responses were not separately evaluated as part of this survey).

Mutually-reinforcing activities:

There was a [launch event in March 2017](#), attended by the Minister of Communications, Climate Action and the Environment, at which he spoke enthusiastically about the Home Energy Saving Kits. The toolkit also was awarded "Best Energy Smart Initiative" at [LAMA Community and Council Awards](#) ceremony and won the [EU's Sustainable Energy Award](#) in the consumers sector. Every *Behaviour Changer* involved in this programme has had the chance to contribute positively and fulfil their specific mandate to their stakeholders (see above).

A shared measurement system:

The library paper survey, available in hard copy and online, is part of the data collection to ensure the Home Energy Saving Kits are performing as expected (although the online version is performing less well as expected), as is the more in-depth 'Beyond kWh' tool from Task 24 which was incorporated into the pre- and post-surveys deployed to the SEC participants. The latter is hoped to help create a standardised measuring system when the pilot is rolled out across the country, particularly when the survey data is triangulated with focus groups and interviews.

Continuous communication:

Through the establishment of a dedicated Steering Group, the *Behaviour Changers* have regular meetings and stay in touch via email. In addition, there have been a number of Task 24 workshops.

A backbone support organisation:

CODEMA has been the link between all *Behaviour Changers* and fulfils this role well.

The Task 24 "Behaviour Changer Framework"

To create a more hands-on tool to identify and work on the five conditions of the *Collective Impact Approach*, Task 24 developed the "Behaviour Changer Framework", which was later dubbed "the magic carpet of behaviour change" by a major US utility during a Task 24 workshop. This framework was created to provide an overview of the social ecosystem, focusing on all relevant stakeholders, i.e. the *Behaviour Changers* from the different sectors and their relationships with one another, and the *End User*. This framework focuses on a chosen issue from the perspective of the *End Users* and their behaviour, and their context in terms of technology, social aspects, infrastructure and environment. It also focuses on each of the *Behaviour Changers* in the system, what their main mandates, stakeholders, restrictions and tools are and how they interact with one another and with the *End User* (for detailed description of the process and actor types, see [Rotmann 2016](#)).

How well does this pilot follow the Behaviour Changer Framework?

As discussed above, the "magic carpet" has been utilised to frame this collaboration in all three Irish Task 24 workshops. It initially helped visualise the current system; it helped identify the various *Behaviour Changer* mandates, tools, stakeholders and restrictions; and was used to ascertain their relationships with one another and various motivations for engagement.

The small population in Ireland and the nature of community means that relationships and connections were either already established, or easily fostered as part of this pilot ("2 degrees of separation"). The connection of the different *Behaviour Changers* and how they became part of this pilot can clearly be traced from the libraries, DCC and CODEMA to SEAI, MCO and finally, Task 24. The relationships between each of the *Behaviour Changers* and the *End User* (households, both tenants and home owners in Dublin) were strong and mutually beneficial. The normally often

forgotten, or hard-to-identify *Middle Actors* are the focus of this intervention and a strong, well-supported and self-driven group. The potential scale-up of the pilot as part of the *Conscience*' mandate of fostering SECs across the country, could also be a major success factor. It is clear from the self-described motivations of each of the *Behaviour Changers* that they are all in this together with a clear common goal and all have highly altruistic motivations and drivers.

⇒ Thus, all major conditions for successful multi-stakeholder collaboration are met by this Irish pilot.



Figure shows “Twister” relationship exercise, where all Behaviour Changers with already-established relationships touch one another

Evaluation of the pilot

Dublin public library survey

The original trial was developed using public libraries in Dublin as the *Middle Actors* loaning out the energy saving kits. Unfortunately, this trial was commissioned before the ‘beyond kWh’ tool could be modified to be tested with it. The kit contains a (paper and online) survey for people who have borrowed the kit (to be filled in after they return it), with a chance to win a €100 shopping voucher as incentive. Ultimately, over 30% of the kit borrowers in the 12 month study period completed the survey. The draft research methodology is [outlined here](#).

Sample size: Aim was for 200 surveys for the public libraries (213 surveys obtained).

Survey Type: basic PROFILING, assessment of MOTIVATIONS, EXPERIENCE, UTILITY and IMPACT of the kits.

The survey is short and largely asks questions on the **usefulness of the kit** (*How useful was each tool (rank) and explain why you chose the most/least useful option? Did the kit meet your expectation? Which part of kit made you most change your daily energy use? Would you recommend the kit? What would you change in the kit? Is there anything else you want to tell us about the kit?*), some **background/demographics** (*How did you hear about the kit? I borrowed my kit through...? Which library did you borrow it from? Age/employment/gender/type of home?*) and some **behavioural** (*Since using the kit I have done, or am thinking of doing the following (curtailment questions)? Since using the kit I am thinking of doing the following (efficiency/investment questions)?*) and **attitudinal** questions (*What was your main reason for borrowing the Home Energy Saving Kit?*).

Beyond kWh questionnaire

A more in-depth pre- and post-version of the survey, which incorporated the [Subtask 9 ‘Beyond kWh’ toolkit](#) was then developed by M.CO and SCI in conjunction with the SEC control group

representative. It has many questions that overlap with the library survey, thus we aimed to triangulate the data from both. Focus groups and interviews (done in April 2018) also helped further triangulate and sharpen the data (see Evaluation Report). The “beyond kWh” survey includes some questions that have been psychometrically-validated and include changes in ENERGY KNOWLEDGE, PERSONAL AND SOCIAL NORMS and CONNECTION & CONCERN (as this is relevant to SECs and their motivations to use the kit). The tool comprised a PRE- and POST survey and we are looking at also getting an SEC control group for it. **Sample size** Aim was for 40 pre- and post-survey responses (44 pre- and 38 post-survey responses were obtained).

Issues

The % survey return and quality of data was the biggest issue faced in terms of being able to provide the most useful analysis and possible re-iteration of the Energy Saving Kit before hopefully rolling it out more widely across SECs and potentially other public libraries in Ireland. However, the library loan rates also dropped markedly during summer, showing seasonal variability which needs to be accounted for.

International case study comparison

Which countries have similar programmes?

CODEMA and Task 24 have identified and contacted libraries and programme managers in several countries. Some of their Programme Managers were interviewed about their experience using a questionnaire (see Appendix for answers and a table summarising all main programme features).

Australia:

Australia was the first country to use public libraries to loan out energy saving kits. As far as we can tell, all other countries copied these initial efforts.

South Australia

Interview with the Programme Manager can be found in the Appendix.

What's included?

1. **Appliance Meter** - Measures appliance energy use, stand-by power, cost and greenhouse gas emissions.
2. **Infrared thermometer** - Measure the temperature of your hot water and pinpoint hot and cold spots in a room.
3. **Spirit thermometer** - Measure room and fridge and freezer temperatures.
4. **Compass** - Identify which direction your home faces to make the most of free heating from sun.
5. **Stopwatch** - Used to calculate the water flow rate from your showers and taps.
6. **Guide** - Information, pictures and diagrams to help you carry out your audit.

Availability/ Borrowing Procedure

- The program has been in place since the early 2000's and the Home Energy Toolkit is available in most public libraries in South Australia.
- The reason the toolkits were developed was to meet a demand for individual householder energy auditing. This added to the range of “opportunities” for in home auditing, previously/concurrently available via brochures/fact sheets/online resources and professional 3rd party auditors.
- The public library services are operated by local government councils throughout metropolitan Adelaide and regional South Australia.
- They are heavily borrowed in many metropolitan libraries, with some reporting long waiting lists. Borrows typically range from 2 to 4 weeks. A 2 week borrowing period was recommended. As a result of the demand, SA have sold more additional toolkits to libraries.
- The toolkit are offered to SA's 'Energy partner' organisations (social welfare organisations, environmental orgs, etc.).
- The toolkit are offered at a subsidised rate of \$170 AUS (inc. tax) to libraries and partner organisations. SA subsidise half of this, as all the components put together cost closer to \$340 or so.
- Borrowing in some regional libraries has been a bit slower, but it is also important to allow regional access to the resource.

- In 2012-13, 181 toolkits in 133 public libraries and 1279 total borrows of the toolkit. The mean average of borrows was 42.84 per metropolitan library service.
- Some feedback of Library managers and some minor surveys of borrowers was conducted. All feedback has generally been positive.
- Testimonials on the Home Energy toolkit have also praised the resource.

Training

Free energy training and education is available to staff and volunteers to help organisations support their clients. This is facilitated via the Energy Partners Program and is customized based on the audience. [United Care Wesley Bowden](#) delivers training courses to community workers and volunteers in metropolitan and regional South Australia.

Further Information

- [Home Energy Toolkit worksheet](#)
- [Saving Energy at Home](#)
- [Do your own home energy audit](#)
- [Understanding bills and meters](#)
- [Energy Partners Program \(EPP\)](#) - works with around 90 organisations across the state to help South Australians manage their energy use and costs. Assistance from the EPP is tailored to the needs of each partner organisation, helping partners to help their clients.
- [Energy Made Easy](#) – the Australian Government’s price comparison service
- [Free Energy Advisory Service](#)



[ACT Smart – Home Energy Action Kit](#), loaned out by libraries in Australian Capital Territory (ACT, we made contact with the Programme Manager but he never filled in the questionnaire). The kit contains: a **power meter** to measure energy consumption and running costs of appliances, **infrared thermometer** to measure fridge, freezer and hot water temperatures, **compass** to identify the orientation of the home and passive solar heating opportunities, **stopwatch** to measure shower and tap flow rates and **instructions** on using the equipment and worksheets to calculate home energy efficiency

[Home Energy Audit Toolkit \(HEAT\) Tasmania](#), Burnie City Council and Hobart City Council (no answer), includes **same tools** and borrowing procedure as SA toolkit.



New Zealand:

[Auckland Home Energy Audit Toolkit \(HEAT Kit\)](#), loaned out by Auckland libraries (interview can be found in the Appendix). Kit contains: **Infrared thermometer, stopwatch, thermometer and hygrometer, power meter and instructions, record booklet and tips** how to save energy as well as a feedback form. The HEAT kit and its in-depth evaluation regime have been described in Rotmann, 2018.



USA:

[Kill A Watt Meters, IDAHO Power](#) are posted out to utility customers throughout Idaho – this NOT a library loan programme but led by the utility (no answer). The kit contains a

- Kill A Watt® power meter and instructions,
- Nine LED bulbs
- LED night light
- High-efficiency showerhead*
- Two faucet aerators (kitchen and bath)*
- Digital thermometer (to check refrigerator, freezer and water temperatures)
- Shower timer
- Water flow-rate test bag (to measure water flow)

*Sent only to customers with electric water heaters.

[Silicon Valley Energy Watch Do-it-Yourself \(DIY\) Home Energy Saving Toolkit](#), loaned out by public libraries in San Jose, California (interview can be found in the Appendix). Their kit contains a **Kill A Watt® meter, thermal leak detector, fridge/freezer thermometer and water flow rate bag**:

[Do-it-Yourself Energy and Water Savings Tool Kits at 3 Sonoma County libraries](#), California (interview can be found in the Appendix). Their kit contains same set of tools to measure energy and water usage as San Jose (and energy and water saving tips as well as **free LED light bulbs, faucet aerators, low-flow showerheads and weather-stripping**):.

[North Valley Energy Watch, DIY Home Energy Saving Toolkits](#), loaned out by Butte County, California (no answer).

What's included?

- **Kill-A-Watt® Meter** for measuring the energy use of appliances and equipment
 - **Thermal detector** that checks for heat loss through windows, vents and doors
 - **Special thermometer** that helps set refrigerators and freezers to appropriate temperatures
 - **Water flow rate bag** that measures the true rate of flow from faucets and shower heads
- When you check-out a kit, you get to keep the **LED light bulbs, faucet aerators, low-flow shower head, outlet gaskets, weather stripping, water nozzle, and water leak detection tablets**. The toolkit includes a **user guide** with step-by-step instructions for measuring and reducing energy use, as well as links to **instructional videos**.

Availability/ Borrowing Procedure

Anyone with a valid Butte County Library card can check out a Toolkit for up to 4 weeks. Toolkits are available in 5 library locations: Chico, Durham, Gridley, Oroville & Paradise.

Further Information

<https://www.buttecounty.net/bclibrary/diytoolkits>

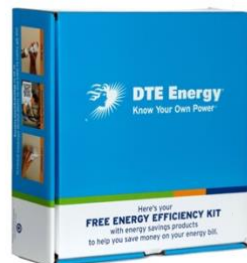
<http://www.savingwaterpartnership.org/diy-toolkit/>



[DTE Energy, Ohio](#) (interview can be found in the Appendix): NOT loaned out by public libraries, but sent to residential customers after they fill out a survey to see if they are eligible.

What's included?

- **Electric kits (electricity consumers only)**
 - 5 LED Light Bulbs
 - 2 LED Night Lights
 - 4pk of Safety Plugs
- **Gas Kits (Distributed to customers with Gas ONLY service)**
 - 1 Kitchen Faucet Aerator
 - 1 Bathroom Faucet Aerator
 - 1 Showerhead
 - 6ft of Pipe Wrap
 - 4pk Safety Plugs
- **Combo Kits (Distributed to customers with both Electric & Gas service)**
 - 5 LED Light Bulbs
 - 2 LED Night Lights
 - 1 Kitchen Faucet Aerator
 - 1 Bathroom Faucet Aerator
 - 1 Showerhead
 - 6ft of Pipe Wrap
 - 4pk Safety Plugs



Canada:

[Edmonton Library Green Home Energy Toolkits](#) (Interview can be found in the Appendix):

What's included?

- **Kill-A-Watt Meter** - Measures the energy demand of an electrical appliance.
- **Imaging IR (Infrared) Thermometer** - Measures the temperature of areas, objects and surfaces.
- **Stopwatch** - Records accurate time for shower or tap flow rate test.
- **Light Meter** - Measures the amount of light in a room.
- **LED Light Bulb** - Use with the Kill-A-Watt Meter to see the difference in energy use compared to conventional incandescent or compact fluorescent light bulb.
- **Battery Charger & Rechargeable Batteries** - Batteries for each tool and a charging station to recharge them.

Further Information

- Toolkit Manual – How to Use the Green Home Energy Toolkit - https://www.edmonton.ca/programs_services/documents/GreenHomeEnergyToolkitManual.pdf
- Energy Audit Video - https://www.edmonton.ca/city_government/urban_planning_and_design/energy-audit-video.aspx



Union Gas Energy Saving Kit (ESK) Programme specifically to save hot water and gas (see interview in Appendix). NOT loaned out by public libraries.

Each ESK contains the following components:

- Energy efficient showerhead
- Energy efficient kitchen aerator
- Energy efficient bathroom aerator
- Pipe wrap 2 lengths each one meter long
- Roll of Teflon tape for ease of showerhead installation
- ESK Installation Guide
- Programmable Thermostat \$25 on-bill rebate

Customer must mail coupon, purchase receipt and UPC (bar code) from thermostat package.

Their approach to market when the program started had 3 delivery channels:

1. They would send a direct mail brochure explaining the gas, water and \$ savings if the kit was installed. Customers who responded and sent in the application form would be mailed a kit free of charge.
2. HVACs would talk to customers and could promote this program directly to the customer. If they were doing heating, ventilation and A/C work in the home and the customer did not have the above items, the HVAC would leave them a kit.
3. Customers could obtain a kit from retail shops, like **Home Depot, Home Hardware**, etc. after going through the required process of submitting a copy of their gas bill so we could verify that they received one.
4. Customers could order it online. Kits were then mailed to the applicants in a box made of recycled cardboard.

In the last 3 years of the program, as the market got more and more saturated, their delivery strategy [changed to a door-to-door approach](#). Customers receiving a FREE ESK were asked to sign a customer acknowledgement form for tracking and reporting purposes only. They stopped the first 3 delivery options stated above, leaving the option of ordering online only. Online orders were mailed. The door-to-door approach was very successful as it was extremely easy for the customer since the kit was literally brought to their door.

Energy Saving Kit
Door to Door Delivery Program

We Are Visiting Your Neighbourhood!

Expect a visit from our authorized partner
ecofitt
in the next few days to deliver your
FREE energy saving products
\$60 value (See reverse for details)

SAVE up to \$100*
a year on your energy bills

uniongas
A Spectra Energy Company

FREE Energy Saving Kit
(\$60 value)
Install this kit and save up to \$100 a year in energy costs!

This kit contains these energy saving items:

- Energy Efficient Showerhead
- Energy Efficient Kitchen Aerator
- Energy Efficient Bathroom Aerator
- Pipe Wrap
- Teflon Tape
- ESK Installation Guide

uniongas
A Spectra Energy Company
uniongas.com/kit

[Red Deer City Home Energy Audit kits](#) (not interviewed)

Kill-A-Watt electricity usage monitor: a tool that measures how much electricity is used by various electronic devices. It can measure electricity use both when the electronic device is turned on and when it is turned off.

Details:

- Calculates costs and forecasts by week, month and year
- Built-in battery backup
- Accurate to within 0.2%
- [Operation manual](#)

Fluke 59 MAZ infrared thermometer: this mini infrared thermometer checks the temperature of surfaces, which helps identify places in the home that would benefit from increased weatherproofing and insulation.

Details:

- Displays the minimum, maximum or average temperature, or the difference between the two measurements
- Requires 1 AA battery (not included in the kit)
- [Features, specs and manual](#)

Power Cost Monitor Elite wireless energy monitor: provides real-time information on energy consumption and cost for the entire household, to give big picture data on electricity use in the home. It shows how much money is being spent on electricity moment-to-moment, as well as which devices are costing the most.

Details:

- Attaches to electric meter
- Displays live electricity use in kWh or dollars or cents
- Requires 4 AA batteries (not included in the kit)
- [Operation manual](#)

Here are some more tools to help you do your own home energy audit:

[ATCO EnergySense House Sustainability at Home Toolkit](#)

Germany:

[Kemnath Stadtbücherei](#) (no answer). Kit contains **plug-in meter with extension cord** and instructions as well as energy-saving tips.

Table showing summary of what is contained in different kits in different programmes (in bold: tools to keep, others to return in the kit)

Tools	Reason	Australia	Ireland	NZ	Canada Edmonton UG	DE	USA Idaho	USA California	USA Ohio
Infrared thermometer	Thermal comfort	X	X	X	X		X	X	
Spirit thermometer	Thermal comfort	X					X	X	
Hygrometer	Thermal comfort		X	X					
Weatherstripping	Thermal comfort							X	
Radiator key	Thermal comfort		X						
Compass	Passive solar	X							
Stopwatch	Hot water use	X	X	X	X		X		
Water flow rate bag	Hot water use						X	X	
EE shower head	Hot water				X		X	X	X
Faucet aerators	Water use				X		X	X	X
Outlet gaskets	Water use							X	
Toilet leak detection dye	Water use							X	
LED bulbs	Light use			X			X	X	X
Thermostat	Thermal				X				

Pipe wrap	Maintenance					X				X
Safety plugs	Appliance power use									X
Lumen meter	Light use				X					
Kill-A-Watt ®	Appliance power use							X	X	
Other power meter	Appliance power use	X	X	X	X		X			
Fridge/Freezer Thermometer	Appliance power use		X		X			X	X	
Extension cord	Support			X			X			
Battery charger	Support				X					
Thread tape	Support					X		X	X	
Pliers	Support								X	
Magnifying glass	Support			X						
Handbook	Support	X	X	X	X		X	X	X	
Data recording	Data		X						X	
Feedback survey	Data		X		X			X	X	

Some main insights and comparisons with Ireland’s Home Energy Saving Kit trial:

Lack of data means lack of proof a behaviour change has taken place

It becomes clear that lack of data and feedback is a major issue in terms of determining programme success. Even though many countries say a major goal or motivation was to “change behaviours” and raise energy education and awareness, only Ireland and New Zealand really attempted to measure such change has actually taken place. Most other programmes also do not include feedback sheets or surveys and data recording sheets. Edmonton included a SurveyMonkey link in their handbook, yet they had zero returns on the feedback forms, despite there being quite a substantial incentive (a full home energy audit). Similarly low rates of return (even where there were prizes) were found elsewhere. None of the programme managers that were interviewed had clear information on actual behaviour changes or energy savings that resulted from the very high borrowing rates of the kit – except for **Union Gas**, who used a third party to undertake user surveys from a customer sample every 2 years. These surveys showed that 80% of users had installed the items supplied in the kits (however, their kits differed from the library kits in that customers could keep the items). US utility-led programmes are estimating energy savings from kit borrowing/sign-up rates and simple calculations. It is thus highly commendable that Ireland and New Zealand set out to collect and analyse data from surveys, questionnaires and focus groups and interviews. They may be the only countries that can clearly point to actual behaviour changes and learnings from the usefulness of the kits loaned out in library programmes.

These energy saving kits are generally seen as gateways to greater energy efficiency programmes, such as home energy audits or full retrofits or even home energy ratings (e.g. in Canada). The idea is that such bigger investments start by improving energy awareness in one’s home. However, other than being able to point to a lot of interest by high kit borrowing rates, not much deeper insights can be gained without collecting more (behavioural) data. It is thus imperative to collect pre- and post-surveys that include measures of user motivation, energy literacy, attitudes and behaviours and ease-of-use as well as simple demographics. The Task 24 “**beyond kWh tool**” is such a standard measurement tool. The difficulty lies in ensuring that it is not too onerous for end users and the *Middle Actors* who loan out the kits to ensure these surveys are filled in (correctly). A control group is also highly recommended, especially where there are homogenous populations (e.g. in SECs which are thought to have higher pro-environmental attitudes than the general population).

Types of tools and differences depending on country contexts

There are usually very similar tools in each toolkit, although some are very country-specific. For example, only the Irish kit contains a radiator key as radiator heaters are uncommon outside the EU. Only Australian kits provide a compass that helps people measure which direction their house faces, thus promoting the use of passive solar. Only Canada added an LED light bulb so the difference between an incandescent vs LED bulb could be measured with the light meter (lumens)

and the plug-in meter (energy). Only US kits included Kill A Watt® power meters and only US utility-funded kits contained take-home products like weather stripping, faucet aerators and LED light bulbs. Almost all kits contained thermal leak detection measures (e.g. infrared thermometers); something to assess (hot) water usage (e.g. stopwatch or water rate flow bag); something to assess appliance power use (e.g. plug-in meters or fridge/freezer thermometers); and a handbook with how-to-guide and energy-saving tips.

Some kits aren't as comprehensive as the Irish one, whereas others, especially the US ones, are almost too full of tools. One of the programme managers said they regretted not piloting their kit with only one library first as it would have shown them that having too many tools inside (especially take-away ones which needed to be replaced each time a kit was returned) made it logistically very difficult for their *Middle Actors*. Some toolkits are very cheap (e.g. the New Zealand one, which is almost 10 times cheaper than the Canadian toolkits). The look of the toolbox, even more than their contents, elicited a lot of anecdotal feedback. A big aspect of the high Canadian price tag was the very light and strong suitcase that "looked like it could contain one of James Bond's guns". There was anecdotal feedback from Irish customer surveys that some loved the look of the toolkit ("like a children's lunchbox") and others thought it was too bulky or difficult to transport. The New Zealand HEAT kits had an enormous amount of positive and humorous feedback due to their sturdy and serious-looking nature. Library staff, for example, called them the "Obama kits" because they looked like "they contained the nuclear codes" (see Rotmann, 2018).

Learnings from this analysis and the feedback from the Irish kits will be presented in the final Country Report for Ireland (July 2018).

Utilising a collective impact approach helps getting it right

It became clear from the Irish case study that the fulfilment of each of the underlying conditions to make a collective impact approach work (a common goal, shared measurement system, mutually-reinforcing activities, continuous communication and backbone support organisation) is indeed highly useful when designing such pilots. Apart from the Irish trial, only the Californian case studies seem to have forged such a solid alliance of collaborators that fill each of the Task 24 *Behaviour Changer Framework* roles and mandates. However, they did not include data collection from the start, or encountered problems halfway through surveys, with residents not understanding how to complete data record sheets and surveys correctly.

Even though e.g. Edmonton has a real estate institute as a co-funder, they were little involved in the roll-out or design of the toolkit. It was unclear to the programme manager if the real estate agents were talking to their clients about the tool and why it was useful. In most cases, the toolkits, though successful in terms of borrowing rates, are driven in a top-down manner, with relatively little regard to end user needs or their possible concerns regarding the toolkits. Even though high-quality data collection with its associated cost is clearly the biggest restriction in Ireland, it is doing so.

The Irish trial has probably the greatest chance to become a success, where actual behavioural outcomes in terms of habit and investment changes towards greater energy efficiency, can be measured. Other programmes, such as in California which have strong *Behaviour Changer* networks and government drivers and funding support, could benefit from utilising a standardised measurement tool like Task 24's "beyond kWh tool", together with interviews and focus groups, to fulfil all aspects of a *Collective Impact Approach*.

Appendix 1 - Interview Q&A from other programmes

A summary table with the overarching information from each of these interviews [can be found here](#).

GENERIC INTERVIEW QUESTIONS

What is your job and role at your organisation?

How did you come up with the idea of using libraries to loan out energy saving kits?

Who else was involved?

Who was your target audience?

Who funded it and how much was it?

What exactly was in the kit?

Did you collect feedback from the residents who rented the kit? In what way?

Did you get their energy data or measurements and was any analysis undertaken with it? If so, how?

Did you use the data to continue improvement of the programme?

Did you change or reiterate any components based on the data?

What worked really well?

What do you think could have been done differently?

Did you have specific champions or people who could train others how to use the kit?

If there were other collaborators (like in our [Behaviour Changer Framework](#), see <http://www.ieadsm.org/wp/files/Rotmann-BEHAVE-2016.pdf>):

Did you have a clear, shared vision of what you wanted to achieve here, including a shared understanding of the problem and a joint approach to solving it through agreed-upon actions?

Did you have shared measurements of successful outcomes? That means, collecting data and [measuring results consistently](#) across all the participants.

Did you have a plan of action that outlines and coordinates mutually-reinforcing activities?

Did you have open and [continuous communication](#) across the many players to build trust, assure mutual objectives, and create common motivation?

Did you have a [backbone organisation\(s\)](#) with staff and specific set of skills to serve the entire initiative and coordinate participating organisations and agencies?

Did you involve the end user at all in the design or reiteration of the kits?

Are there any other reports or findings you can share with us?

Are you happy for this information to be written up and published as an IEA DSM report?

AUSTRALIA

South Australia – Glenn Holder, Department of Prime Minister and Cabinet (answered email interview questions on July 6, 2017): “Although I have managed the Home Energy Toolkit program since 2010, the program started well before me, I think as early as 2002-03. A small component of my overall role relates to the management of the home energy toolkit program. My current role is to provide ongoing maintenance for the program, in a more “reactive” fashion (i.e. responding to requests for repairs, new kits, queries, etc.) and some reporting and stock control. There have been no real established goals since my time, as we have already reached pretty much saturation to all libraries in our state, with over 95% of libraries carrying the kit.”

What is your job and role at your organisation?

I am a project officer in Energy and Technical Regulation with the South Australian state government. I have many duties under my umbrella from working in the energy advisory service and providing the community with information on energy saving in a multitude of ways, to managing the home energy toolkit program.

How did you come up with the idea of using libraries to loan out energy saving kits?

I was not around during this period sorry.

I believe the original intention was to target households via libraries as there is limitation in only providing the kit to the community workers e.g. financial counsellors. Having it available in a library gives greater public access and availability.

Who funded it and how much was it?

We buy bulk components of the kit, from the case to the tools and print materials. Total price usually is about \$350 each for one completed toolkit. This price can increase or decrease depending on the total number of kits we want to manufacture. We then subsidise half this unit cost and sell to libraries and partner organisations for \$170 incl. GST.

What exactly was in the kit?

Please see the following which also includes worksheets:

<https://www.sa.gov.au/topics/energy-and-environment/using-saving-energy/home-energy-audits/home-energy-toolkits>

Kit contains appliance meter, spirit thermometer, infrared thermometer, compass (to identify which direction the house faces to make most of free heating from the sun), stopwatch and guide.

Did you collect feedback from the residents who rented the kit?

We currently are conducting an online survey for feedback in relation to use of the kits, but feedback has been very low, even after we have offered a free energy saving pack.

CANADA

Edmonton Library Green Home Energy Toolkits, Robyn Webb. Interviewed by phone on July 1, 2017: <http://www.cbc.ca/news/canada/edmonton/green-energy-tool-kits-an-instant-hit-at-edmonton-public-library-1.3458681>

What is your job and role at your organisation?

Energy transition unit, climate change mitigation team of 13, environmental grant programme for the city, sponsorships and one-off programmes like energy kits. Crux of programme is behaviour change – for and in Edmonton City. Privatised electricity and natural gas market, normally, energy saving programmes are run out of utilities, but not here. But they just created *Energy Efficiency Alberta* to take over these kinds of programmes which is why municipality stepped in. Municipal electrical utility was privatised in 90s, city is still main shareholder but different to other Canadian jurisdictions.

How did you come up with the idea of using libraries to loan out energy saving kits?

Red Deer City in Alberta decided to do it, they saw it, borrowed their kit through inter-municipal library loan, looked at tools and built off of that. Summer students did review and found number of municipalities in Australia who they built upon too. Slightly different, one of their educational tools is *Edmonton Green Home and Green Living Guide*. Seems like South Australia is the origin of the idea.

Who else was involved?

External funder – the Alberta Real Estate Foundation. Very interested as realtors could share it with their clients as they sold and bought homes. Public Library funded by city but at arm's length. Kits were made by summer students here in municipality, secure custom cases were a bit of a challenge. Their kits are a bit more James Bond-esque, could carry gun in it! Tried to make them as small and light weight as possible, Library wanted them to be in high-quality case so that especially infrared meter was safe. Little bit of trepidation of loaning out something so expensive at the beginning, once they talked to higher ups they became more comfortable. Pretty low risk seeing someone else paid for it and had legal agreement that they always would have a couple of backup cases for them. Kits were incredibly popular with huge waiting lists especially after media launch. 300 holds placed on them after first week and media launch! Kept going up, they made more kits, finally started tailing out. Had on loan for 3 weeks. 30 kits now. Also gave them to the public school. School had no system for loaning resources to teachers. Haven't checked in with the school, worked very closely with Sustainability Coordinator from public school board.

Who was your target audience?

Home owners, not tenants. **Green Home guide** is more for substantial retrofits, **Living guide** is more appealing to tenants as more lifestyle and behaviour-based. Split incentive issues with landlords always an issue.

Who funded it and how much was it?

Alberta Real Estate Foundation and City of Edmonton (more than half). Changed from 1st to 2nd iteration, especially price of infrared cameras. Around CAD1500. Case is huge amount of the cost.

What exactly was in the kit?

Infrared thermometer (with heat map, very visual); timer for water flow tests; kW meter; light meter to see their spaces were over- or under-lit (guide said how many lumens they needed for each task); battery charger for rechargeable batteries in kit (for optics, as the municipality is in charge of reducing waste); LED light bulb to plug into lamp to show difference with kW meter and infrared thermometer to shine at bulbs and lumen meter. Told people to use IR thermometer on fridge/freezer. Long conversations about light bulbs with people, thinks fluorescent bulbs really caused issues of perception. Not common radiators, only in commercial or multi-family buildings (homes have forced air natural gas). Lots of net zero builders in Edmonton. No humidity/temperature meters – thinks it'd be interesting to see what temperature of a room is vs their heaters' set points. Restrictive covenances on some titles of land for not letting people dry clothes outside, for example. Everyone has electric clothes dryers in Edmonton.

Did you collect feedback from the residents who rented the kit?

In instructional booklet there's a survey monkey link but no one has filled it out yet.

Did you get their energy data or measurements and was any analysis undertaken with it?

No not part of the design. Their major motivation was to give people baseline of info to get them to do full-on energy audit – EnerGuide federal govt evaluation programme. Certified advisor does full-home test properly. Give out house labels. This is meant to be the gateway. Launched incentive programme with city where they pay for 80% of audit costs. “Home Audit Light” version. Can’t track how many people have moved to do proper audit. 40 people signed up but no one has done audit yet (with new programme). Will not capture data of how many people who do audits have had kits out. Have contractor to manage incentive programme and they already asked him to do so many things as it’s also tied to online sharing platform to put house label score online. Intent to assign value to EE in the market. Not mandatory labelling. By 2019 Canada will make it mandatory. EnerGuide has been in existence for over 20 years yet less than 10% penetration label. Robyn used EnerGuide to sell a home but there is angst in real estate and developer industry that it shouldn’t be used as comparison. AREF is progressive group amongst realtors.

Did you change or reiterate any components based on the data?

Yes, second batch looks exactly the same, but there was so much demand. Library has loan to hold ratio, don’t like items with too many holds on it, so they needed more kits. No different tools just a updated version of home and living guide. Won’t be doing them again cause now there is the incentive programme and EE Alberta is doing new stuff where people will go to houses to change light bulbs, install faucet aerators, thermostats etc. Had done this in total vacuum in environment of most conservative political government in 40 years. Municipality is independent and had very strong mandate from their Council to do CC mitigation work. Had long-term CC plans in city for 15 years. Largest city nearest oil sands.

What worked really well?

Marketing was great – City Councilor did press release and media could take out tools and walk around library to try them out.

What do you think should have been done differently?

Instruction booklet could have used more time with entering results from IR thermometer to show what it means. If this is what you saw, this is what it means and what you can do about it.

Did you have specific champions?

E.g. librarians trained to explain kit? Head of Edmonton Public Library won award for best library in world and this was part of showing they are open to expanding what libraries are meant to do in the future. Non-profit Edmonton Tool Library Society will move into new library.

If there were clear collaborators (like in our Behaviour Changer Framework):

Did you have a clear, shared vision of what you wanted to achieve here, including a shared understanding of the problem and a joint approach to solving it through agreed-upon actions?

Goals emanated from the City and EREF took on their vision. Wasn’t done in collaboration but everyone knew what outcomes were.

Did you have shared measurements of successful outcomes? That means, collecting data and measuring results consistently across all the participants.

Outcomes were number of loans per year, no energy reduction targets (too hard to measure). People already have major problems understanding their utility bills and municipality doesn’t own any utilities nor have access to their data. Their utilities also have been unwilling to work with them and refuse to share data. Problem is totally privatised market with many retailers. Problem is if one retailer works with them it will only capture small number of citizens.

Did you have a plan of action that outlines and coordinates mutually-reinforcing activities?

Not really. Formal legal agreement with libraries which laid out responsibilities. But very top-down driven. Don’t need to drum up any more business as waiting list was still so long. Social media publicity was strong – 100000 followers just from City. 5 big media stories written about it. Then just grew from word-of-mouth as no more publicity was needed.

Did you have open and continuous communication across the many players to build trust, assure mutual objectives, and create common motivation?

Not really. EREF were partner as in funder but let them do their thing. Little article in their newsletter were going to do presentation but never happened. Not sure if realtors are part of drumming up interest but they are working very closely with them on the incentive programme. Library also functional partner, other than marketing initially nothing else. Don't need to provide loan stats either as they are online.

Did you have a backbone organisation(s) with staff and specific set of skills to serve the entire initiative and coordinate participating organisations and agencies?

City of Edmonton's Energy Transition Group.

Did you involve the end user at all in the design or reiteration of the kits?

Not at all. Had shoestring budget and just did it. Only 30 kits so impact is only going to be so much with 1 million residents.

Are there any other reports or findings you can share with us?

Green Home and Green Living guide and maybe the student report (all shared). Sent photos of kit.

UNION Gas, Ontario, Dianne Lobo-Pires. Emailed interview May 2018.

What motivation led you to create the kits? As a gas utility in Canada, in the province of Ontario, we are directed by the Provincial Energy Board – Ontario Energy Board, to design programs for residential and commercial customers that would create awareness of the gas savings and influence customers to change their behaviour and reduce their usage of gas not just in the short term but more importantly for long term results. The energy saving kit (ESK) program was one such program that helped residential customers save hot water, i.e. less gas is used to heat the water, and change their behavior for long term gas and water savings. The kit was an approx. \$60 value and was FREE to the customer. The useful life term of the products was 14 years, hence if the customers continued using them, it would amount to long term savings.

What was inside them?

The ESK is designed to save energy through reduced hot water usage and water heating. Each ESK contains the following components:

- Energy efficient showerhead
- Energy efficient kitchen aerator
- Energy efficient bathroom aerator
- Pipe wrap 2 lengths each one meter long
- Roll of Teflon tape for ease of showerhead installation
- ESK Installation Guide
- Programmable Thermostat \$25 on-bill rebate

Customer must mail coupon, purchase receipt and UPC (bar code) from thermostat package to Union Gas

Our approach to market when the program started had 3 delivery channels:

1. We would send a direct mail brochure explaining the gas, water and \$ savings if the kit was installed. Customers who responded and sent in the application form would be mailed a kit free of charge.
2. HVACs would talk to customers and could promote this program directly to the customer. If they were doing heating, ventilation and A/C work in the home and the customer did not have the above items, the HVAC would leave them a kit
3. Customers could obtain a kit from retail shops, like Home Depot, Home Hardware, etc. after going through the required process of submitting a copy of their gas bill so we could verify that they received one.
4. Customers could order it online. Kits were then mailed to the applicants in a box made of recycled cardboard.

In the last 3 years of the program, as the market got more and more saturated, our delivery strategy changed to a door-to-door approach. Customers receiving a FREE ESK will be asked to sign a customer acknowledgement form for tracking and reporting purposes only. We stopped the first 3 delivery options stated above, leaving the option of ordering online only. Online orders were mailed.

The door-to-door approach was very successful as it was extremely easy for the customer since the kit was literally brought to their door.

(How) did you evaluate their success? Were you able to infer any actual behavior changes from them?

Since 2004, every 2 years, Union Gas would survey a sample of customers who received a kit and ask them questions to determine and confirm if they received the kit, installed all or certain items, were the items still installed and some 'satisfaction' questions, to determine if they were satisfied with the energy saving products, delivery method, etc. Union Gas hired a professional third party research firm to do this. This report was provided to the **Ontario Energy Board** during the audit reporting of all programs. The report proved that more than 80% of the customers surveyed had installed and were using the energy saving products for multiple years.

Did you design them in collaboration with other parties?

Union Gas has partnered with **Ecofitt** to source the items and act as the delivery agent of this program. Ecofitt deployed professional delivery agent in field to visit pre-identified qualified customers as provided by Union Gas, and offer a free Energy Saving Kit per household. Ecofitt is Union Gas' authorised partner to deliver energy conservation programs to Union Gas' residential, low-income and commercial customers since 2008. They specialize in providing energy efficiency products and are a leading provider of complete conservation solutions including the delivery of mass distribution programs. Additionally, Ecofitt provides a toll-free line for their customer service call centre 1 877 326 3488, and assumes all responsibility for following up with customer questions regarding the ESK Delivery program and the products included in the kit.

What made you decide to end the program?

This program had been in market for more than 15 years – 1997 – 2015 and hence reached saturation. Also, the Ontario Energy Board decided in their 2015-2020 DSM Plan that this program would not generate as much savings as other programs and hence directed us to discontinue this program.

NEW ZEALAND

Auckland City Council interviewed by phone December 16, 2017

What is your job and role at your organisation? Liz Ross and Adrian Feasey (low carbon living team) Auckland City Council Sustainability Initiatives in Env't service unit. Programme Managers of HEAT kits (home energy audit toolkits).

How did you come up with the idea of using libraries to loan out energy saving kits? From Australian programme – weren't part of it from beginning, came from strategic planning part of Council. Auckland has low carbon plan with targets to reduce GHGs by 40% by 2040. Many different ideas, this is one that came out of the Sustainability Office, building on what others had done. Had budget left over one financial year and bought the toolkits. July 2016.

Who else was involved? Only Council. Chief Sustainability Office came up with ideas and they are implementation arm. Public libraries also part of Council, collaborated with them on designing it.

Who was your target audience? All households, owners and renters. Actions are a bit of a mixture of both. More skewed towards owners than tenants.

Who funded it and how much was it? One kit is NZ\$260. Council-funded.

What exactly was in the kit? Chunky cases, built up from 15 initially, to 30 and then decided to put one in every library (55)! Power meters, with only small display so they needed a magnifying glass! Some of the writing is really small. Thermal leak detector, big manual. Thermometer/Hygrometer – minimum/maximum, doesn't log. Don't tell people specifically to put it into the fridge. Stopwatch for shower flow. Extension cable for smart plugs.

Did you collect feedback from the residents who rented the kit? In what way? Yes. In the kit, there is a folder with all the instructions (will send copy) with data recording booklet with pics of each tool. Quick feedback form, how easy it was to use, any problems. Write down 3 actions you took because of using the kit. Name, address and they get free energy light bulbs. Also tried to get contact details to ask them more questions.

Did you get their energy data or measurements and was any analysis undertaken with it? If so, how?

Kits started piloting in March 2017 with first 15. Had 57 kits available by June. Since then, up until end of October 473x, wait list of 130 people. Little record-keeping booklet, have ~55 returns of feedback forms (11% return rate). Training with library staff with first 15 kits, talked them through tools and kits and checked they were working correctly especially when kits were returned. Asked to encourage people to fill in feedback form. With more kits, could only send email to library managers with the information. Any chance to find out who sent in feedback forms, i.e. from which library? No, can't track that. But can tell where the kits were issued but not where the feedback forms came from, only where people lived if they gave their address. Can request kits from any library. Also includes some data of what was measured and also have a survey monkey link which people could fill in. Share beyond kWh with ACC, want to do something more in-depth.

Did you use the data to continue improvement of the programme? Haven't really changed anything yet as not looked at data in depth.

Did you change or reiterate any components based on the data? See above.

What worked really well? Kits were very well received, working through libraries worked really well, have all the facilities for borrowing and tracking set up. Quite surprised how well it worked, thought they had to push people a lot harder. Didn't have to do much promotion as there was such a big waitlist. Also found much bigger use in winter and summer. Still waiting to do interviews, none of these more in-depth motivational questions were asked so far. Didn't do much design-thinking just needed to spend money and got cases for good \$. Let's work together with ACC.

What do you think could have been done differently? Spent more time planning and designing it up-front. But it was also good to get something going, see how it went and to modify it later. Talked to EECA (to Christian) to help with the draft guidelines. Have another 10 kits which they'll loan out to

Eco Matters Environmental Trust (home energy advice similar to *Sustainability Trust*) and *Habitat for Humanity*. Also thinking along school resource. Don't have that much money but have great connections with schools. Adrian does advisory services to homes. Review of advisory service in the moment, very timely to have a look at how different advice is trusted – e.g. independent vs Council-owned.

Did you have specific champions or people who could train others how to use the kit? Libraries a little bit but not really trained on how to train others to use the kit. Are looking at videos and training workshops with Eco Matters and HfH. They would become their champions.

Did you involve the end user at all in the design or reiteration of the kits? No user testing. Ask them later. Used the foam which makes it quite easy to change tools over. Also the manual has clear foil to insert anything different if need be.

Are there any other reports or findings you can share with us? Yes, Liz will send it to us.

Are you happy for this information to be written up and published as an IEA DSM report? Yes, absolutely. Can also help with interviews.

CALIFORNIA – San Mateo

County of San Mateo, received via email October 2017

What is your job and role at your organisation?

I am a sustainability coordinator for a local government in the San Francisco Bay Area (County of San Mateo), which means that I help manage government programs that conserve energy and support residents of my jurisdiction. My day-to-day activities include program design, program implementation, marketing, and administrative tasks in support of these programs. One of my primary programmatic areas of focus is to support the San Mateo County Energy Watch (SMCEW), which is a Local Government Partnership (LGP) between the City/County Association of Governments of San Mateo County (C/CAG) and Pacific Gas and Electric Company (PG&E), which has a goal of reducing energy use by providing energy efficiency services to PG&E ratepayers countywide. C/CAG is a Joint Powers Authority consisting of all twenty cities within, and the county government of San Mateo County. C/CAG is unique in the region for its ability to access and influence local government jurisdictions in the county. SMCEW is able to leverage C/CAG's structure and relationships to promote its energy efficiency programs at multiple levels within local governments, from elected officials to city staff. C/CAG contracts with the County of San Mateo, Office of Sustainability (OoS) to staff the SMCEW program. Through its many environmental programs, OoS has established working relationships with environmental, planning/building, and public works staff at cities and the County. SMCEW will continue to leverage these connections with local governments, non-profit organizations, businesses, schools, and farms to encourage participation in energy efficiency and water conservation programs.

How did you come up with the idea of using libraries to loan out energy saving kits?

The idea to use libraries as a vehicle for distributing the *Check It Out! Home Energy and Water Saving Toolkit*, and thereby delivering energy and water efficiency information and tools to local residents, came from a neighboring local government (City of San Jose, which oversees the Silicon Valley Energy Watch program) who had been successfully running the program for several years before us. Additionally, a person serving on the City of Menlo Park's Environmental Quality Commission was a lead advocate in the idea of launching a similar library toolkit program in San Mateo County. This advocate worked with SMCEW and PG&E staff to promote the concept and advocate that an allocation of funding be made toward this program.

Who else was involved?

San Mateo County Energy Watch (SMCEW): Provide toolkits and all materials necessary to restock kits. Coordinate with libraries to replace lost items. Provide outreach materials to libraries. Collect quarterly data on check outs and assess program success.

San Mateo County Library System (SMCL): Distribute kits to County branches. Store excess materials at 125 Lessingia Ct. Administrative Facility. Provide restocking materials to County branches. Coordinate with branches on replacing lost items. Provide check out data quarterly to SMCEW.

City Libraries: Distribute kits to City branches. Store excess materials at each branch. Coordinate with SMCEW on replacing lost items. Requesting restocking materials from SMCEW. Provide check out data quarterly to SMCEW.

Environmental non-profits, city (from cities within our County) sustainability staff, citizen advocates: Promoted and supported the program concept, and help market the toolkits through their own channels.

Utility companies (energy and water): Are funding partners.

Who was your target audience?

The handbook included with the kit is geared towards people with little or no knowledge about residential energy use or energy efficiency. The provided tools can be used in any type of residence including RV, Apartment, and Single Family Home (rental or own). Children can also use the kit, but only with adult supervision. Our marketing primarily takes place at the library, so regular library patrons are most likely to use the kit.

Who funded it and how much was it?

The County and City Association of Governments (C/CAG) receives ratepayer dollars from the California Public Utilities Commission (CPUC) to fund the Energy Watch program in partnership with Pacific Gas and Electric (PG&E). The Energy Watch program helps local businesses, governments, non-profits, farms, schools, and residents save energy by providing various incentives for energy efficiency projects. The Check It Out! Home Energy and Water Saving Toolkit is an initiative funded by the Energy Watch program. Energy Watch has partnered with the County Library System and the Peninsula Library System to disperse kits to residents through our local libraries.

What exactly was in the kit?

Items for residents to keep:

- 1 LED lightbulb
- 1 1.5gpm faucet aerator
- 2 0.5 gpm faucet aerator
- 1 package of weatherstripping
- 1 packet of outlet gaskets
- 1 low flow showerhead
- 1 packet of toilet leak detection dye tablets
- 1 roll thread tape (to help install faucet aerators)

Items for residents to return:

- Informational handbook on how to use tools (available in several locally relevant languages)
- Pliers (to remove old faucet aerators)
- Blue tape (to protect fixtures from damage)
- Kill-A-Watt meter
- Infrared Laser Thermometer
- Water flow bag
- Plumbing handbook
- Thermometer to measure water temperature
- Fridge thermometer
- Heavy duty toolbox

Did you collect feedback from the residents who rented the kit?

Not formally.

Did you get their energy data or measurements and was any analysis undertaken with it?

Not formally.

Did you use the data to continue improvement of the program?

Too soon to share, program was only launched at the end of April 2017

Did you change or reiterate any components based on the data?

Too soon to share.

What worked really well?

The partnership with the library worked really well as they have a distribution system (for books and media) already set up that can accommodate the distribution of energy efficiency kits. Our libraries also focus on being community spaces and providing as many resources as possible to residents, but often don't have proper funding to offer a whole suite of resources. By providing the kits, the libraries can enhance their services without having to worry about how the new service is funded or having to dedicate a staff-person to manage the new program.

What do you think could have been done differently?

Initially, the kits were released in 31 libraries in San Mateo County. For future programs, we would first launch a pilot in just one library in order to work out all of the administrative and implementation issues that aren't totally clear ahead of the launch. For example, we would want to make sure that library staff knows how to check out and restock the kits appropriately before releasing all of the kits to the public. We might also include fewer items in the kit. With only a few months of experience under our belts it is already quite clear that the LED lights, showerheads, and faucet aerators are by

far the most popular items. The more items in the kit makes it harder on library staff to restock it in a timely fashion.

Did you have specific champions or people who could train others how to use the kit?

Library staff are our community champions.

Did you have a clear, shared vision of what you wanted to achieve here, including a shared understanding of the problem and a joint approach to solving it through agreed-upon actions?

Yes. We had all parties sign a memorandum of understanding (MOU) agreeing on the problem and joint approach.

Did you have shared measurements of successful outcomes? That means, collecting data and [measuring results consistently](#) across all the participants.

With the help of the San Mateo County Library System we are measuring the number of checkout and waitlist records by library branch, as well as the number and type of take-home items that are used. It was deemed too difficult at this time to measure/estimate or claim (with the California Public Utilities Commission) the energy savings resulting from this program. We will remain open to the possibility of tracking energy savings metrics in the future.

Did you have a plan of action that outlines and coordinates mutually-reinforcing activities?

The kit handbook is designed to not only provide a basic education about home energy and water use, as well as residential energy and water efficiency strategies, but also to promote the utilization of County-wide programs for energy efficiency, water conservation, waste reduction, and active transportation. Many local residents are also members of the local business community, so one goal of this kit is to promote the utilization of small- and medium-sized business energy efficiency incentive program that is also managed by SMCEW (i.e., the Regional Direct Install program).

The goals and design of this program is outlined in the Program Management Plan for SMCEW, which is an obligatory document developed and updated by SMCEW on a rolling basis for PG&E in adherence with C/CAG's contract with PG&E for the Energy Watch program. The Program Management Plan is a living document; in that a certain level of adaptability is allowed so that SMCEW can capitalize on new and emerging opportunities, or make changes to existing programs that no longer function as intended.

Did you have open and [continuous communication](#) across the many players to build trust, assure mutual objectives, and [create common motivation](#)?

Very open communication and it is essential to have when coordinating a program that is across departments and communities.

Did you have a [backbone organisation\(s\)](#) with staff and specific set of skills to serve the entire initiative and coordinate participating organisations and agencies?

Yes, there is one dedicated staff-person with the County of San Mateo's Office of Sustainability who is funded through SMCEW to spend up to 15% of their time on this program.

Did you involve the end user at all in the design or reiteration of the kits?

Yes.

Are there any other reports or findings you can share with us?

I can share any of the documents we created like the MOU, handbook, tracking spreadsheets. Just ask!

Are you happy for this information to be written up and published as an IEA DSM report?

I consent.

CALIFORNIA – San Jose

San Jose, received via email November 2017

What is your job and role at your organisation?

I am an Associate Environmental Services Specialist for the City of San Jose. My role consists of managing several programs as a part of the Silicon Valley Energy Watch (SVEW) team, including the DIY Home Energy Savings Toolkit.

How did you come up with the idea of using libraries to loan out energy saving kits?

SVEW awarded a grant to the City of Cupertino who used the funds to start a toolkit program in their city. SVEW felt that the program was a great idea and decided to copy the program in the rest of the libraries throughout the County.

Who else was involved?

The City of Cupertino helped us get the program off the ground. The San José Public Library District (24 branches), the Santa Clara County Library District (8 branches), and the Sunnyvale Public Library (1 branch) are the library organizations that agreed to be a part of the program. We discussed the program with the District level employees who agreed to participate and then disseminated the information to their branches.

Who was your target audience?

The DIY Home Energy Savings Toolkits that are distributed through the library system are targeted at residents of the County of Santa Clara, which includes the City of San José. We also targeted students in grades 6-8 through the “Green Ninja” program, which is a collaboration between the College of Science, College of Education, College of Humanities and CommUniverCity San José at San Jose State University. The mission of this program is to build science curriculum that inspires students to design a more sustainable world. Green Ninja is a character superhero that shares stories supported by science and data. The delivery to young people supports and inspires a life-long interest in energy conservation and climate solutions. Participants can become energy conservation champions and influence home behaviors. Additional information about the impacts of the Green Ninja program are included in the attached report.

The biggest challenge we face with the toolkit program is community awareness. In order to increase the awareness, we are going to be trying several unique marketing campaigns.

1. We will have a 30-second informational video that will run on the screens in our local California Department of Motor Vehicles (DMV). The screens show what number is being called, so patrons have to look at the screens while they wait. We will run it in one DMV office to gauge the success, and then we will consider expanding depending on budget and success.
2. Through an existing partnership with the San Jose Sharks, a professional hockey team, we will run advertisements in the arena during the Sharks games in the month of February (6 home games.) This partnership could extend beyond the arena, as we would be allowed to use the ads (which feature Sharks players) on buses, light rail stations, Facebook, etc.
3. We are also translating our marketing and informational materials into several other languages that are popular within our County (Spanish, Vietnamese, and Chinese.)

Who funded it and how much was it?

The DIY Home Energy Savings Toolkit is a program through the Silicon Valley Energy Watch. The Silicon Valley Energy Watch is a local government partnership between our local utility, PG&E, and the City of San José to provide energy efficiency programs to the County of Santa Clara. The funding for this program comes from California’s ratepayers, who pay into the energy efficiency programs managed by investor-owned utilities (IOUs) through a small charge on their electricity and gas bills. The California Public Utilities Commission (CPUC) regulates this and all energy efficiency programs in California to ensure they are meeting the goals and cost-effectiveness metrics the CPUC is statutorily required to set for the IOU efficiency portfolios. \$79,121 was budgeted to create and support this program. We will likely budget an additional \$6,000 for these innovative new marketing strategies (e.g., DMV video ad campaign, Sharks hockey stadium ad campaign).

What exactly was in the kit?

- LED (Light Emitting Diode) Light Bulb
- Weatherstripping

- Outlet Gaskets
- Low-Flow Showerhead
- (3) Low-Flow Faucet Aerators
- Water Leak Detection
- Dye Tablets
- Drip Gauge
- Water Flow Rate Bag
- Pliers
- Pipe Thread Seal Tape
- Leaky Faucet and Toilet Guide
- Kill-A-Watt® Meter
- Infrared Laser Thermometer
- Refrigerator Thermometer
- Painters Tape
- Thermometer

Did you collect feedback from the residents who rented the kit?

PREVIOUSLY: Yes. We had a worksheet for the residents to see how much water and electricity they were saving, as well as a survey card that the residents could turn in when they returned the kit.

PRESENTLY: No. We stopped collecting this data because the residents completed the information incorrectly. The only data we currently collect is how many checkouts each library branch has per quarter. We have been considering including another physical survey or a link to an online survey, but this has not happened yet.

Did you get their energy data or measurements and was any analysis undertaken with it?

See previous answer – we used to. Presently, no. Based on the checkout numbers and some simple calculations, we assume the energy savings

Did you use the data to continue improvement of the program?

The data that we have been using to improve the program is tracking checkout numbers with where we have been conducting marketing or outreach events.

Did you change or reiterate any components based on the data?

N/A

What worked really well?

It works really well having the toolkits in the libraries, and continually training the library staff so they are educated and engaged. It's also very helpful to set up booths in the library branches every so often to increase awareness and checkout numbers.

What do you think could have been done differently?

I wasn't around for the start of the program, so I can't comment.

Did you have specific champions or people who could train others how to use the kit?

Yes. Internal program staff hosts trainings for library staff to ensure they know how to use the tools in the kit and why the kits are important.

Did you have a [backbone organisation\(s\)](#)?

The City of San José holds a contract with PG&E to deliver the Silicon Valley Energy Watch (SVEW) program, and thus the City's SVEW program is the backbone organization for this toolkit effort. SVEW started in 2004 and serves a total of fourteen jurisdictions located in Santa Clara County. As the lead agency and implementer of PG&E's Local Government Partnership (LGP) program in Santa Clara County, the City of San José works closely with PG&E, Ecology Action (EA), other LGPs, and third party providers to augment program success through enhanced coordination and outreach. SVEW is a true partnership, delivering comprehensive, coordinated, and strategic EE market transformation. Key partnership representatives convene monthly as the Partnership Coordination Meetings to coordinate program marketing and delivery strategies.

Ohio – DTE Energy

What is your job and role at your organisation? Marketing Analyst in the Energy Waste Reduction (EWR) Department at DTE Energy

How did you come up with the idea of using libraries to loan out energy saving kits? DTE does not use libraries to loan out energy savings kits. The Home Energy Survey (HES) program was recommended to DTE by a consulting company. The program offers DTE customers the ability to learn about their home's energy usage through taking an online energy survey. Once the survey is completed, they are provided with energy savings tips and the option to request and Energy Savings Kits with easy to install products.

Who else was involved? The consulting company and DTE Energy Waste Reduction (EWR) Management

Who was your target audience? Email Campaigns are sent to all customers in the DTE Electric (Customers with Electric ONLY service), DTE Gas (Customers with Gas ONLY service), and Combo (Customers with both Electric & Gas service) Territories.

Who funded it and how much was it? The program is funded through the EWR customer surcharge. Surcharge amount unknown

What exactly was in the kit? DTE offers 3 types of Energy Savings Kits. Kits contents are listed below by kit type:

- **Electric Kits (Distributed to customers with Electric ONLY service)**
 - 5 LED Light Bulbs
 - 2 LED Night Lights
 - 4pk of Safety Plugs
- **Gas Kits (Distributed to customers with Gas ONLY service)**
 - 1 Kitchen Faucet Aerator
 - 1 Bathroom Faucet Aerator
 - 1 Showerhead
 - 6ft of Pipe Wrap
 - 4pk Safety Plugs
- **Combo Kits (Distributed to customers with both Electric & Gas service)**
 - 5 LED Light Bulbs
 - 2 LED Night Lights
 - 1 Kitchen Faucet Aerator
 - 1 Bathroom Faucet Aerator
 - 1 Showerhead
 - 6ft of Pipe Wrap
 - 4pk Safety Plugs

Did you collect feedback from the residents who rented the kit? In what way? Customer feedback is gathered by a 3rd party evaluation company. They use the information obtained through a survey customers to do a process impact analysis and rate customer satisfaction with the program.

Did you get their energy data or measurements and was any analysis undertaken with it? If so, how? There is not an analysis completed on energy data and measurements. Savings from the kit products installed are considered deemed savings.

Did you use the data to continue improvement of the programme? Yes, to drive installation of energy savings products and improve program satisfaction.

Did you change or reiterate any components based on the data? Products are assessed and improved based on Installation Rate Adjustment Factor (IRAF) and Net to Gross (NTG) rates as well as trending new products that are introduced to the market.

What worked really well? **Small incremental process/program improvements that were made over time.**

What do you think could have been done differently? **N/A.... improvements that were thought of have already been tried and/or implemented.**

Did you have specific champions or people who could train others how to use the kit? **Instructional videos on how to install the products were included in the kits.**

If there were other collaborators (like in our Behaviour Changer Framework, see <http://www.ieadsm.org/wp/files/Rotmann-BEHAVE-2016.pdf>):

Did you have a clear, shared vision of what you wanted to achieve here, including a shared understanding of the problem and a joint approach to solving it through agreed-upon actions? **N/A... This was not a joint effort.**

Did you have shared measurements of successful outcomes? That means, collecting data and [measuring results consistently](#) across all the participants. **N/A... This was not a joint effort.**

Did you have a plan of action that outlines and coordinates mutually-reinforcing activities? **N/A... This was not a joint effort.**

Did you have open and [continuous communication](#) across the many players to build trust, assure mutual objectives, and create common motivation? **Yes... communication between the program's implementation contractor and utility occurred daily.**

Did you have a [backbone organisation\(s\)](#) with staff and specific set of skills to serve the entire initiative and coordinate participating organisations and agencies? **Yes....an implementation contractor**

Did you involve the end user at all in the design or reiteration of the kits? **No**

Are there any other reports or findings you can share with us? **No**

Are you happy for this information to be written up and published as an IEA DSM report? **Yes**

IEA Demand Side Management Energy Technology Initiative

The Demand-Side Management (DSM) Energy Technology Initiative is one of more than 40 Co-operative Energy Technology Initiatives within the framework of the International Energy Agency (IEA). The Demand-Side Management (DSM) Energy Technology Initiative, which was initiated in 1993, deals with a variety of strategies to reduce energy demand. The following member countries and sponsors have been working to identify and promote opportunities for DSM:

Austria	Norway
Belgium	Spain
Finland	Sweden
India	Switzerland
Ireland	Canada
Italy	United Kingdom
Republic of Korea	United States
Netherlands	ECI (sponsor)
New Zealand	RAP (sponsor)

Programme Vision: Demand-side activities should be active elements and the first choice in all energy policy decisions designed to create more reliable and more sustainable energy systems

Programme Mission: Deliver to its stakeholders, materials that are readily applicable for them in crafting and implementing policies and measures. The Programme should also deliver technology and applications that either facilitate operations of energy systems or facilitate necessary market transformations

The DSM Energy Technology Initiative's work is organized into two clusters:

The **load shape cluster**, and

The **load level cluster**.

The 'load shape' cluster will include Tasks that seek to impact the shape of the load curve over very short (minutes-hours-day) to longer (days-week-season) time periods. Work within this cluster primarily increases the reliability of systems. The 'load level' will include Tasks that seek to shift the load curve to lower demand levels or shift between loads from one energy system to another. Work within this cluster primarily targets the reduction of emissions.

A total of 24 projects or "Tasks" have been initiated since the beginning of the DSM Programme. The overall program is monitored by an Executive Committee consisting of representatives from each contracting party to the DSM Energy Technology Initiative. The leadership and management of the individual Tasks are the responsibility of Operating Agents.

These Tasks and their respective Operating Agents are:

Task 1 International Database on Demand-Side Management & Evaluation Guidebook on the Impact of DSM and EE for Kyoto's GHG Targets – Completed
Harry Vreuls, RVO, the Netherlands

Task 2 Communications Technologies for Demand-Side Management – Completed
Richard Formby, EA Technology, United Kingdom

Task 3 Cooperative Procurement of Innovative Technologies for Demand-Side Management – Completed
Hans Westling, Promandat AB, Sweden

Task 4 Development of Improved Methods for Integrating Demand-Side Management into Resource Planning – Completed
Grayson Heffner, EPRI, United States

Task 5 Techniques for Implementation of Demand-Side Management Technology in the Marketplace – Completed
Juan Comas, FECSA, Spain

Task 6 DSM and Energy Efficiency in Changing Electricity Business Environments – Completed
David Crossley, Energy Futures, Australia Pty. Ltd., Australia

Task 7 International Collaboration on Market Transformation – Completed
Verney Ryan, BRE, United Kingdom

Task 8 Demand-Side Bidding in a Competitive Electricity Market – Completed
Linda Hull, EA Technology Ltd, United Kingdom

Task 9 The Role of Municipalities in a Liberalised System – Completed
Martin Cahn, Energie Cites, France

Task 10 Performance Contracting – Completed
Hans Westling, Promandat AB, Sweden

Task 11 Time of Use Pricing and Energy Use for Demand Management Delivery- Completed
Richard Formby, EA Technology Ltd, United Kingdom

Task 12 Energy Standards - to be determined

Task 13 Demand Response Resources - Completed
Ross Malme, RETX, United States

Task 14 White Certificates – Completed
Antonio Capozza, CESI, Italy

Task 15 Network-Driven DSM - Completed
David Crossley, Energy Futures Australia Pty. Ltd, Australia

Task 16 Competitive Energy Services
Jan W. Bleyl, Graz Energy Agency, Austria / Seppo Silvonen/Pertti Koski, Motiva, Finland

Task 17 Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages
Seppo Kärkkäinen, Elektraflex Oy, Finland

Task 18 Demand Side Management and Climate Change - Completed
David Crossley, Energy Futures Australia Pty. Ltd, Australia

Task 19 Micro Demand Response and Energy Saving - Completed
Linda Hull, EA Technology Ltd, United Kingdom

Task 20 Branding of Energy Efficiency - Completed
Balawant Joshi, ABPS Infrastructure Private Limited, India

Task 21 Standardisation of Energy Savings Calculations - Completed
Harry Vreuls, SenterNovem, Netherlands

Task 22 Energy Efficiency Portfolio Standards - Completed
Balawant Joshi, ABPS Infrastructure Private Limited, India

Task 23 The Role of Customers in Delivering Effective Smart Grids - Completed
Linda Hull. EA Technology Ltd, United Kingdom

Task 24 Behaviour Change in DSM: Phase 1 - From theory to practice
Phase 2 – Helping the Behaviour Changers
Dr Sea Rotmann, SEA, New Zealand

Task 25 Business Models for a more Effective Market Uptake of DSM Energy Services
Ruth Mourik, DuneWorks, The Netherlands

For additional Information contact the DSM Executive Secretary, Anne Bengtson, E-mail: anne.bengtson@telia.com and visit the IEA DSM website: <http://www.ieadsm.org>

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