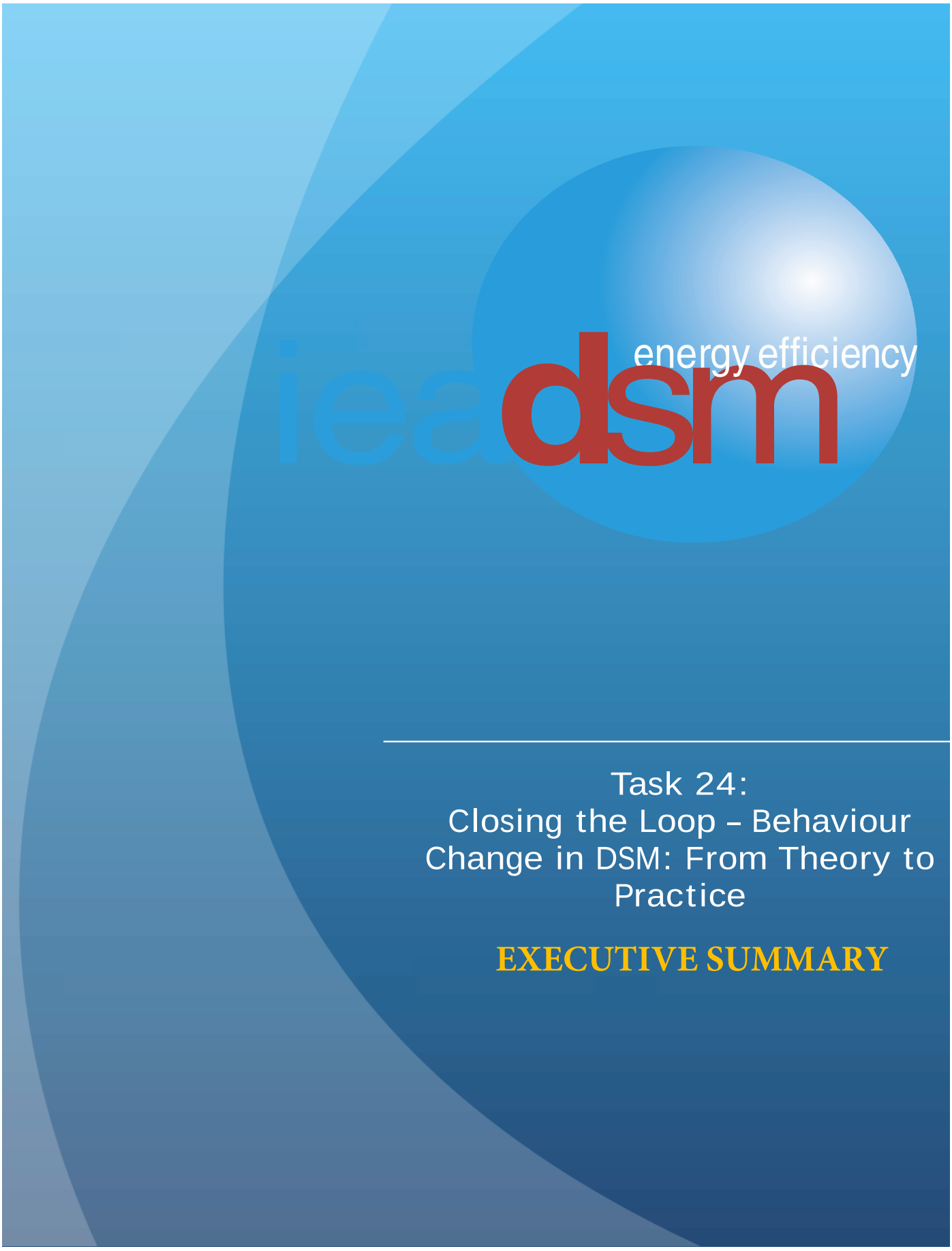

Task 24: Closing the Loop – Behaviour Change in DSM: From Theory to Practice

EXECUTIVE SUMMARY

Most of the time what we do is what we do most of the time. And sometimes we do something new[1]

Analysis of case studies IEA DSM Task 24 Closing the Loop - Behaviour Change in DSM: From Theory to Practice.

Deliverable 2 for IEA Implementing Agreement DSM Task 24

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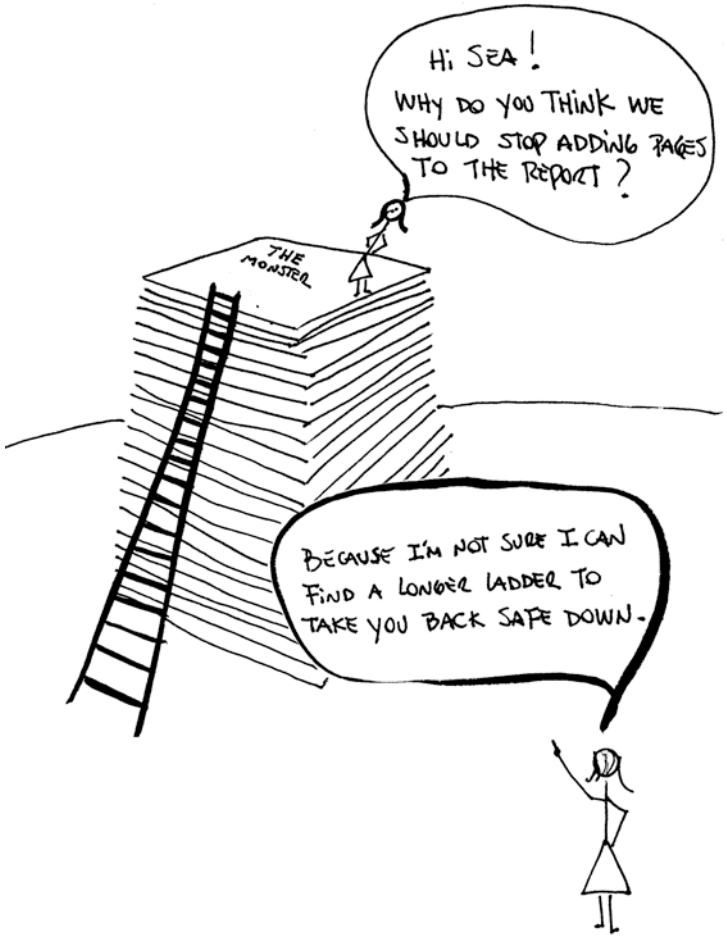

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Executive Summary

This report is the analysis of Subtask I - Helicopter overview of models, theories, contexts and evaluation metrics. It summarises almost 40 case studies from more than 10 countries. The case studies were provided by our national experts of the 9 participating countries, and other experts from countries that support this Task in-kind. The case studies were based on policies, programmes and pilots, driven from both, the top-down and the bottom-up. They were explicitly or implicitly based on various models of understanding behaviour or theories of change (of behaviour). They were collected from four main domains: transport, building retrofits, SMEs and smart meters, thus encompassing a very wide range of DSM interventions. Some came from government (both national and local), some from the energy industry, some from businesses, some from the third sector and some from researchers. Some have used similar models or similar approaches, but they all encompass a wide variety of themes, contexts and outcomes. There is a lot of shared learning in this report, and there are a lot of great stories.

Due to the large variability and inter-disciplinarity of both the models and the stakeholders applying the models, we have realised early on that we were going to have a potential communication problem. Each model comes from a discipline with very specific jargon: policy speech is very different from business speech and marketers and academics further muddy the waters. End users are often bombarded with information which is either too mathematical as it's based on economics, statistics or engineering, or too generic, warm and fuzzy to be of much meaning or value (people get more and more cynical after all). Thus, we decided to eschew jargon as much as possible, which is quite hard to do when talking about demand side management and behavioural science. During our 'baptism by fire' at our Task 24 workshop in Oxford (October 9-10, 2012), we learned that there was one language tool that surpassed all the inter-disciplinary bickering and infighting. It was more powerfully clear than policy, marketing or business speech and more direct in getting to the gist of it than economics, engineering, sociology or psychology can ever dream of being. It is thousands of years old and probably the one communication tool that remained since before the Tower of Babel crumbled and made us all turn to our own niche jargons and languages. The magical language tool I am talking about is...STORYTELLING.

So, despite not always being able to stop ourselves from engaging in the jargon that came from the different disciplines, sectors, stakeholders and case study interventions, we have made several attempts to translate them via the power of storytelling. There are three types of stories in this report: **Overarching stories**, so wonderfully described by Dr Katy Janda[2] (inspired by some of the work we did at our Oxford workshop), as *hero stories*, *learning stories*, *horror stories* and *love stories*. We have examples of all of these stories here, though we haven't marked them as such yet (we hope it is something we will do together in future workshops). Examples of each of these stories are as follows: Italy's **Time of Use Tariff** is a typical *hero story*, promising a silver bullet technology and solid economic approach (smart meters plus time of use tariff to encourage peak load shifting). However, we often find that a lot of our hero stories are actually *learning stories* - like the neoclassic economics-inspired **EECA SME** programme in New Zealand, that found that it was only successful in getting SMEs to take up their subsidies for energy audits and corresponding interventions, if a trusted industry association ran collaborative learning workshops with the SMEs first. A wonderful *love story* is the New Zealand **WUNZ** building retrofit programme, which realised that it's not about the energy savings but the associated huge health benefits from insulating cold and draughty houses, especially for the poor. The Australian **Energy Efficiency Homes** counterpart (not explained in detail here) is a classic *horror story* - where bad programme design led to gigantic fraud, burning houses and even

[2] http://proceedings.eceee.org/visabstrakt.php?event=3&doc=1-406-13

deaths of insulation installers. Each one of our case studies falls into such a story element, although most of them are learning stories, and that is good for us and this report.

The second way of using storytelling was in telling the **stories of each model** that was used in the various domains from the perspective of both the end user, and the programme designer. For example, the **neoclassical or behavioural economics** approaches which are most common in buildings retrofits and smart metering rollouts are inherently flawed as they assume that **incentives plus information provision** (with maybe some clever **nudges**) will make (rational) people change their behaviour. As most energy use is wholly habitual, and not at all rational, these approaches are often of limited success when outcomes are actually measured, rather than estimated or modeled. But, these approaches lend themselves very well to our current political and economic system, are relatively straightforward to implement and still somewhat successful and thus still have their place. There will also always be some people who are more rational, economically or technically motivated than others. They are, however, not the norm, but rather the exception. The more **systemic, social approaches** have more engaging stories. They sound like something you'd like to be engaged in, rather than a top-down approach that is 'done to you' by a faceless bureaucrat. However, they also bring their unique problems as they usually take a lot of collaboration, are hard to evaluate and at first glance, more costly. The morale of most of our stories is that it depends on who you tell the story for, when, how, why and with what capability at your disposal. There definitely is no silver bullet model or story here, like there is no silver bullet technology that will make us more energy efficient all by itself.

But let this not deter you! We have collected some really good yarns and they all bring us a lot of insight and learnings. In order to make you remember the 35+ case studies we are describing here, we have told little **individual stories**, the way your mom did before you went to sleep, for each of them. This will hopefully keep them fresh in your mind when you read through these cases. Our brains are set up to remember little stories or visual plots much better than facts and numbers and we were lucky to have an amazing cartoonist among our experts - Juan Pablo Garcia's cartoons and pictures from the case studies are also used to illustrate some of our stories here. In addition, some experts provided us with the very short version of their case studies, in form of tweets (140 characters maximum).

Each of the domains also had some unique storylines: For example, **driving** is a very routine behaviour, with built-in capacity for adaptation/adoption to new cars/routes/traffic; **retrofitting**-related behaviour deals with investment decisions at the planning stage where unappealing new behaviours can be quickly rejected or even result in cancelling a planned action. **Smart metering** cases demonstrate that this domain deals with an entirely new behaviour, presenting opportunities for impact through training but also almost no existing behavioural context to use as a starting point. And in the case of **SMEs** many of the behaviours that need to change require a lot of risk taking and senior leadership, with potentially big impacts on staff and productivity.

The evidence presented here suggests that trying to transfer approaches across many different settings without tailoring them to the specifics of the context is itself a cause of failure. The best story we can tell you is that a **mix of interventions that are tailored** to different (national, local, organisational, domestic) levels; tailored at both the **individual and social** level; aiming at changing both the **investment and habitual** behaviour; targeting **multiple motivations** (not only economic and informational ones); adding strong **quantitative and qualitative evaluation** (of actual and perceived/modelled behaviour changes) into project design; and focusing on the **lifestyle** in which energy is key to performing functions will probably get you long-term success. We hope you enjoy the learnings from this report.

Below you find a short list of the lessons we drew for policymakers, intermediaries or other initiators on DSM retrofitting, SME, transport and smart metering interventions (the longer list follows each chapter).

Recommendations to behaviour changers

DSM Retrofitting interventions

1. It's not only about the houses, but first and foremost about the people who live there. Involve , engage and target multiple members of a social group, at the collective level, not only at the level of the individual. FOCUS ON THE SOCIAL SIDE**.**
2. Focus on both investment and habitual behaviour to avoid bad and unnecessary rebound effects. IT'S NOT JUST WHAT WE BUY, IT'S WHAT WE DO.
3. Use insulation as a gateway, not a one-off change. CHANGE LIFESTYLES NOT LIGHTBULBS.
4. Beware if only the supply side or the implementer of the intervention seems to benefit. THINK OF THE BENEFITS FOR THE END USER AS WELL.
5. Trusted messengers are everything. FOCUS YOUR MESSAGING.
6. When targeting the individual need for money and financial support, do not ask for prefinancing. PAY THE SUBSIDY UPFRONT AND DON'T ASK FOR TOO MUCH UPFRONT INFORMATION FROM END USERS.
7. Tailor to your end users' needs which may not be about kWh savings. Cooperate widely and make it about more than money.USE A TOOLBOX OF INTERVENTIONS AND GO BEYOND kWh TARGETS.
8. Pre-scope to find out what is most important to end users. IF YOU KNOW WHAT THEY WANT, MAKE SURE YOU TRY AND GET IT FOR THEM.
9. People don't live according to sectoral divisions, even people in a household have different needs and habits. DON'T BOX PEOPLE IN TOO MUCH.
10. It should not be left to the individual to buy and install metering devices to meter the actual impact of retrofitting. BENCHMARK YOUR HEART OUT, MEASURE, NOT MODEL
11. 'Decliners' or opt-out households are potentially as valuable to survey as those engaged. LEARN FROM THE UNWILLING.

DSM transport interventions

1. Cars mean everything to many people, be careful how you approach them. DON'T TAKE AWAY THEIR WHEELS.
2. An energy efficient car can be sexy (see the Tesla!). CARS REFLECT LIFESTYLES.
3. Use a toolbox of interventions that work together. YOU NEED MORE THAN ONE TOOL TO FIX A CAR.
4. Active coaching by trusted peers is key. TRUST IS EVERYTHING.

5. Focus on concrete actions and capacity building, not sustainability guidelines to change the behavioural routine. PRE-SCOPE AND TRAIN, VISUALISE THE GAP BETWEEN ACTUAL AND GOAL BEHAVIOUR.

6. Make smart driving the social norm. BE SMART, DRIVE SMART.

7. Leverage change moments to normalise the desired behaviour. A NEW CAR/LICENCE IS A GREAT PLACE TO START.

8. Change the institutional and infrastructural environment! IT'S ABOUT MUCH MORE THAN JUST THE CAR.

9. Create a sense of community amongst drivers in an intervention and use social based marketing. YOU'RE NEVER ALONE WHEN YOU'RE DRIVING.

10. Beware of perverse outcomes! RISK MESSAGES CAN BE RISKY.

11. Money is a good start but not enough to affect change in the long run. MONEY AIN'T EVERYTHING.

DSM smart metering interventions

1. In many instances it is clear that economic gains or losses are not necessarily the only trigger necessary. TIME ISN'T ALWAYS MONEY**.**

2. The successful implementation of smart metering is dependent on the creation of an intervention that goes beyond acceptance and aims at creating multiple benefits through the introduction of a smart meter. TECHNOLOGY ISN'T EVERYTHING.

3. Who benefits and who pays (eg with assumed loss of privacy)? MAKE SURE THERE IS CLEAR VALUE FOR THE CUSTOMER.

4. Information isn't everything - it needs to be coupled to active or shared learning. AUTOMATONS DON'T TEACH AS WELL AS REAL PEOPLE.

5. If they want it, they're already convinced it's a good idea and not your main target. FIND AND CONVINCE THE 'LUDDITES' THAT YOUR TECHNOLOGY IS A GOOD IDEA FOR THEM.

6. Don't just tackle the behaviour of people, but also of their home. THE HOME AND THE HOUSEHOLD DYNAMICS HOLD YOUR KEY.

7. Beware of the strong effect of personalities when using intermediaries, champions or advisors. SOCIAL CUES ARE MORE POWERFUL THAN TECHNOLOGY.

8. A home is not where energy is used, it is where people live (comfortably, thanks to energy). MY HOME IS MY CASTLE.

9. Use trusted champions and advisors. SEEING IS DOING.

10. The technology solution needs to match the technology literacy/maturity of the target. DON'T SELL IPHONES TO PEOPLE WITH NO POWER.

11. Focus not on individuals but on their practices. IT'LL TAKE A LONG TIME TO CHANGE 7 BILLION PEOPLE ONE BY ONE.
12. Engage your customers through multiple channels. PARTICIPATION IS KEY.
13. Being wasteful can feel worse than spending money. NO ONE LIKES WASTE.
14. I wanna know what others are up to and where I stand. TELL ME HOW I'M DOING COMPARED TO MY NEIGHBOURS.

DSM SME interventions

1. Top-Down, middle and bottom-up is needed, plus some external validation. IT CAN'T ALL COME FROM THE TOP OR THE BOTTOM.
2. Compare and celebrate successful companies and interventions. BENCHMARK YOUR HEART OUT.
3. Find your champions in your organisation and work with them. IT'S ALL ABOUT THE PEOPLE.
4. If you have shared goals, you're halfway there. I WANT WHAT YOU WANT, SO LET'S DO IT.
5. The 'laggards' can have a powerful negative effect on your staff. DON'T BE AFRAID TO LOSE THE NAY-SAYERS.
6. Nudges can thus support people as reminders about their motivations and attitudes but more (e.g. changing social norms, institutionalisation of norms) is needed to change attitudes and motivations. NUDGING IS WHAT IT IS: A NUDGE, NOT A LIFE SAVER.
7. Validate where possible. SHOW WHO'S A LEADER.
8. Tailor to each SME, they are not all the same. TAILORING IS ESSENTIAL.
9. Be fair, and support innovators. THEY LEAD - OTHERS FOLLOW.
10. Build your own capability if you want to share learnings. CONSULTANTS DON'T CARE AS MUCH ABOUT YOUR COMPANY AS YOUR STAFF DO.
11. Go to trusted intermediaries. TRUST IS EVERYTHING.