

IEA DSM TASK 24

Closing the Loop -

Behaviour Change in DSM: From Theory to Practice



Dr Sea Rotmann Operating Agent BECC conference Sacramento, November 20, 2013















I ask 24;









lask 24;











I ASK 24;













iea

what's special about Task 24?













iea

what's special about Task 24?

















2

target audience of Task 24

1. Intermediaries

lea





3. Researchers











Pics via: theinnovativeeducator.blogspot.com, dreamstime.com, agu.org, lifesupplemented.org, rassutassu.com, change.comminit.com

target audience of Task 24 CHANGING THE BEHAVIOUR OF BEHAVIOUR CHANGERS

iead



Zenova

NTNU Norwegian University of Science and Technology







5 – Expert platform

1- Helicopter view of models, frameworks, contexts, case studies and evaluation metrics 2– In depth analysis in areas of greatest need

Evaluation tool for stakeholders

3-

4– Country– specific project ideas, action plans and pilot

projects



Subtask V - expert platform



World Map of

Participating countries, contributing experts



Expert platform currently has over 192 experts from 21 countries and 7 main sectors.



Babel to Babelfish?



Babel to Babelfish?

THE ECOLOGICAL TOWER OF BABEL





Babel to Babelfish?

the hitch-hiker's guide to the galaxy





sh?

ww.bbc.co.uk/cult



energy stories: personal



 \odot



Janet Stephenson interview



IEA DSM Task 24 Energy Stories: Gerri

CC







energy stories: sectoral





energy stories: national

ULB



IEA DSM – Task XXIV



UNINCERE TENERHUNG



Norwegian Energy Story

Brussels, September 7, 2012

 Concerning behavior change

 Dr. Aurelio Fetz, Market Regulation, Swiss Federal Office of Energy

 Schweizerische Eidgenossenschaft

 Confédération suisse

 Confederazione Svizzera

 Confederaziun svizra

Swiss Energy Strategy and research projects

BFE Bundesamt für Energie

Workshop IEA DSM Task 24, 15.10.2013



demand-side The New Zealand energy story



Sea Rotmann and Janet Stephenson



Norwegian University of Science and Technology

subtask l





<image>

- Inventory of experts
- Overview of definitions
- Overview of models and theories of change used in case studies in 4 domains
- 'Translation tool' to translate theory to be useful by practitioners





Subtask I – Overview of definitions

http://www.slideshare.net/drsea/definitions-for-task-24





Subtask – Overview of models, disciplines and frameworks



An insight into different models of behaviour change in energy



https://www.youtube.com/watch?v=DOTkdA97Woo&feature=c4-overview&list=UU_p3PIWDpLyDBh8TwUBmVHQ







feedback from workshops



"All models are wrong, but some of them are useful" George E.P. Box (1979)



energy efficiency Task 24

worked examples in Task 24

Case studies collected for IEA DSM Task 24 in transport, building retrofits, SMEs and smart metering Note: Blue boxes denote government-led policies and programmes, green boxes denote business, research or community-led programmes and pilots

Domain/Country	Netherlands	New Zealand	Switzerland	Italy	Austria	Norway	Sweden	Belgium	UK	Other countries
Cases and used theories/models				-						
Smart Metering/ Feedback	Theories/Models used: Expectancy Value Theory	Prices for Electricity (Otago Uni) Theories/Model used: Classical	EWZ and EKZ		Theories/Models: Shared learning,	Demosteinkjer Theories/Models: Theory of Planned Behaviour	Clockwise Theories/Models: Constructivist Learning Theory Shared learning		Rettie, Ruth <u>CHARM</u> Theories/Models used: social norms approach practice theory	Spain (Juan Pablo Garçia): VERDIEM Theories/Models: Classical Economics
			Smart Metering EKT Dietikon Theories/Model used: behavioural model of residential energy use by Raaij & Verhallen behavioural economics and social norms/comparisons Munx Repower website		€CO2 Management Theories/Models: Classical Economics					Portugal (Joane Abreu): Smart meter feedback in North Theories: Nudge, classical economics, moments of change US (Michela
			Theories/Model used: behavioural economics, social norming							Beltracchi): Opower feedback programme Models: Cialdini's Social Norming
	retrofitting programme Theories/models used: Behavioural economics	Warm Up New Zealand: Heat Smart Theories/Models used: social marketing; social norms; classical economic; TPB	Swiss Building Retrofit Program Models: Classical Economics 2000 Watts Society (housing)			Retrofitting of Myhrenenga Housing Theories: TPB	Building retrofits Theories: Shared Learning			
			Models: Ethics, long-term visioning							
SMEs	Theory/model used: Nudge	EECA SME Crown Loans Scheme Theory/model used: originally based on TPB; changed to social learning and social norm theories	Energy-Model and SME-Model from (EnAW) Theories/Models used:			Finnfjord Theories: Leadership		Build4Change Model: Nudge		
		Energy Cultures SMEs pilot Model used: Energy Cultures								
	Het Nieuwe Rijden (the New Driving) Theories and models used: Psychology: Henry A Murray (1938) and the acceptability/availability model of behaviour by Rose (1990).	Active a2b Theory/models used: Norm Activation Theory Elaboration Likelihood Model Stern's Principles for Intervening Triandis TIB Lewin's Unfreezing/Refreezing McKenzie-Mohr				Electric vehicles Nobil Theories/Models used: TPB	Stockholm congestion tax Models: activity based models		Chatterton & Wilson Framework Combining individualistic (eg Triandis) and societal (Practice theory) approaches to help UK policymakers	Kevin Luten UrbanTrans (Australia) Transport behaviour change based on BJ Fogg
		behaviour training Theory/models used: Value Action Gap Theory	Fuel consumption of newly purchased cars Theory of Planned Behaviour (TPB) and Norm-Activation Model (NAM)							



THE MONSTER

HI SEA, I THINK I WIL

THE REPORT ...

MISS HIM WHEN WE PUBLISH

Most of the time what we do is what we do most of the time. And sometimes we do something new¹

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

September 2013

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With contributions from, in alphabetical order:

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- 4 Matt Batey (& IESD, UK, Belgium)
- 4 Michela Beltracci (OPower, USA)
- Sylvia Breukers (DuneWorks, Netherlands)
- Vicente Carabias-Hütter (ZHAW Zurich University of Applied Sciences, Switzerland)
- 4 Tom Croskery (New Zealand Post)
- 🔱 Juan Pablo Garcia (Leantricity, Spain)
- 4 Tim Harries (Kingston University, UK)
- Cecilia Katzeff (Interactive Institute Swedish ICT, Sweden)
- Henrik Karlstrom (NTNU, Norway)
- Gerhard Lang (Grazer Energie Agentur, Austria)
- Evelyn Lobsiger-Kägi (ZHAW Zurich University of Applied Sciences, Switzerland)

Townsend & Bever







research







3 ways of telling the stories:







3 ways of telling the stories:

I.The cases fall into story groupings: hero stories, love stories, horror stories, learning stories...







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2. The models and theories used in the cases tell their own story from the implementer's or end user perspective







3 ways of telling the stories:

I.The cases fall into story groupings: hero stories, love stories, horror stories, learning stories...

2. The models and theories used in the cases tell their own story from the implementer's or end user perspective

3. Each case can be told as a short story



Neoclassical economics retrofitting



Several of our Retrofitting cases informed by neoclassical economics: money and information

	74,81	+1,78	460300	19,04	17,36	Abiudi-cons	13	+0 +0	4
1		-4,25	329100	4 94	316	Air Canada	12,7		3
	5,63 33,94	+0,38	70000	77 48	145	Alberta Energy	65,55	+0	
	45,81	+1,94	244700	20 18	17.69	Banque Nationan inte	26,4	+0	2
	45,06	-0,42	407600	12 31	10.99	Barrick Gold . = .	25	+0	4
	74,44	+0,94	14711:00	23 19			42,05	+0	14
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	5.81	-1,19	1470700	20/14	1/4	Camelo	24,85	+0	14
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	35,56	+2,89	527400		i /	lan.i periok.comm	45,95	+0	5
	26,88	+6,46	899500		2,51	Dota in Inc	19.9	+0	
	9,88	-1,79	972300		1000	Domtar Inc	13	+0	9
	60,38	+1,91	100 M 100 M 100 M 100 M	29,89	23.31	Echo Bay Mines Ltd .	0,54	+0	15
	8,75	-0,68	132900	101000000000000000000000000000000000000	81	raiconuroge	16,45	+0	1
	15,69	-2,73	86400	9,63	8,1 8,01	Fletcher Chall -a	15,3	+0	
	15,75	-3,43	435800	9,1	7.29	Gaz Metro Lp	15.75	+0	4
	61.06	+1 97	1118200	12.65	27 75	Gull Cda Res	6,95	+0	11



energy efficiency Task 24

The story of neoclassical economics and retrofitting



Money makes the world go round

You need to change your home's energy use and we will help you by paying (part of) its retrofitting

By the way, you need to pay up first and it might take a while before we pay you back

The info we need from you will teach you all you need to know.

You only need to make a one-off decision to invest

We have the technology you need, contractors or installers (you will need to find/choose) will put it in and that's it!

If you do not understand the technology, just don't touch the buttons...

You will save money for a nice weekend to the Bahamas

You only need to give us a bill from your installer, we probably won't check how much energy you actually saved

What counts for us is how many m2 are insulated, how many homes are retrofitted or how much money is spent. Oh yes, and how many kWh are saved of course!

We will do the number crunching, don't worry, we do not need to know what you actually saved, we will use models to calculate all energy savings

But if you want to know how much energy you saved, buy a metering device.

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The story of neoclassical economics and retrofitting



Mγ

.earning

Stories





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Behavioural economics retrofitting



enayetkabir.blogspot.com greenbookblog.com



The story of behavioural economics & retrofitting



Money still makes the world go round

By the way, you still need to pay up first and it might take a while before we pay you back

The info we need from you will teach you all you need to know

You have many choices but we will design choice architecture to ensure you make the right one to retrofit your home

You only need, not only for yourself but for the sake of all, to make a one-off decision to invest

And to do so, we have the money, technology you need and we will design rules, regulations, institutions, or infrastructure that will nudge you in the right direction

You will save money, or the environment or whatever matters to you

You only need to give us a bill from your installer, we won't check how much actual energy was saved

What counts for us is how many m2 are insulated, how many homes are retrofitted or how much money is spent. Oh yes, and how many kWh are saved of course!

We will do the number crunching, don't worry, we do not need to know what you actually saved, we will use models to calculate all energy savings

But if you want to know how much energy, CO2, trees or polar bears you saved, buy a metering device



The story of behavioural economics & retrofitting









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Systemic approaches and retrofitting





165





Systemic approaches and retrofitting



Together we will make the world go round

You embody what we need to know and change: do, feel, learn

We will help you understand and use the technology, and train those that install and sell it to you

We will create a supportive material, institutional and social environment

Your needs are important so we need to do this together, as if this were your kitchen or bathroom!

Your life will change

It's all about us now, and our grandchildren

Quality matters and we will keep learning and sharing

If we need to be flexible we will

This is only the start of a long way and your home is the first step

We will monitor, calculate and report on energy, money, health, welfare, comfort, wellbeing

And learnings based on qualitative and quantitative inputs will be shared (with you)

We will help you figure out what your impact is to be able to make sure you get where we collectively want to!



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Types of stories: retrofitting









25

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the short stories: retrofitting







Once upon a time... there was a beautiful country called New Zealand, which had very cold, damp houses.

Every day...Kiwis shivered and froze, but they just told each other to stop being a sissy and put on another jumper.

But, one day...the new right-wing Government decided it needed to show it wasn't uncaring and evil and created a programme called Warm Up New Zealand. It was meant to insulate a quarter of the housing stock, create many jobs and a new market, and reduce energy use, energy bills and CO2.

Because of that...the Energy Efficiency and Conservation Authority set about tendering for the best contractors in the country to fulfil this lofty goal.

But then...they realised that people weren't that interested in insulation, they rather spent their money on a new kitchen and kept putting on those jumpers!

Because of that... they concentrated on using Third Party Providers and other community groups to ensure that at least the most needy and vulnerable people got free insulation and clean heating installed.

So, finally... they did an evaluation of the programme and found that the real benefits - \$5 for every \$1 spent, lay in the health improvements, not a new market or energy savings or lower bills.

And, ever since then... The other Kiwis also slowly realised that being warm and cozy in your home was maybe just as important as having a new kitchen.

the short stories: retrofitting



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the short stories: retrofitting



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example: insulation subsidies

But over the ditch, it got more serious...

Your Brisbane Brisbane Traffic

Read later

Comments 6

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example: insulation subsidies

But over the ditch, it got more serious...

This? or this? Queensland B You are here: Home Insulatio February 11, 2010 **Courtney Trenwith** STweet <2 Email article Ads by Google oops! Automatic Smo Automatic Smoke (

News Home Just In Local ▼ World Business Entertainment Sport The Drum Weather More ▼

🕒 Print) 🖾 Email) 📑 Facebook) 💽 Twitter) 🖾 More

Report scathing of insulation scheme

online political correspondent Emma Rodgers

Updated Fri Oct 15, 2010 12:10pm AEDT

The department implementing the Government's failed home insulation program underestimated safety risks and was unable to cope with mounting problems, the auditor-general has found.

The \$2.5 billion program was suspended in February after it was linked to four deaths, hundreds of house fires and widespread rorting.

It is estimated the cost of cleaning up the Government's insulation program will be around \$400 million.

A report released today by the Australian National Audit Office has found the program to be costly, caused householders serious inconvenience and damaged the reputation of the insulation industry and the reputation of the public service.

It has also found that while the program created 6,000 to 10,000 jobs during the height of the global financial crisis, people then lost those jobs when the program was closed.



PHOTO: It is estimated the cost of cleaning up the program will be around \$400 million

RELATED STORY: Employer fined for insulation death

RELATED STORY: Scrapped scheme sending insulation firms broke

MAP: Australia

Peter Garrett force Was close



example: insulation subsidies

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Courtney Trenwith

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Email article

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It has also found that while the program created 6,000 to 10,000 jobs during the height of the global financial crisis, people then lost those jobs when the program was closed.

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MAP: Australia

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d for insulation death

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Peter Garrett force

energy efficiency Task 24

Smart meter fears





Smart meter fears

MAYBE THIS SMARTMETER IS BECOMING TOO SMART ...

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There is a new and unique development in human history that is taking place around the world; it is unprecedented in reach and volume, and it is also the greatest threat to all global power structures: the 'global political awakening.' -Andrew Gavin Marshall

WEDNESDAY, SEPTEMBER 26, 2012

Proof Smart Meters Are Being Used to Spy On Us

Andrew Puhanic, Contributor

If you have ever wondered if your smart meter is being used to spy on you, well now there is proof that governments and private organisations are using data collected from smart meters.

Information about power usage, which can be used to identify when a home is being occupied, is being shared with third parties including government agencies, private organisations and off-shore data processing centres.

This unethical breach of privacy was discovered on the website of one of Australia's largest electricity retailer, Origin Energy. Electricity customers who sign up for an online service that

provides the account holder with detailed information about their electricity usage are unwillingly agreeing to share their private information with third parties.

A 496-word Privacy/Consent policy form explicitly states that customers who wish to sign up for the service that provides them with information about their electricity usage, must agree that the following organisations have access to their private data:

- Government authorities
- Electricity installers
- Mail houses
- Data processing analysts
- IT service providers
- Smart energy technology providers
- Debt collection agencies
- Credit reporting agencies

A spokesperson for the electricity company (Origin Energy) responsible for this revelation was recently quoted as saying 'the additional information requested about each household adds to the richness of the Origin Smart experience' (Source: The Age).





Smart meter fears

If you like what Hitler did



You will love what PG&E and the Smart Meters Are Doing



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Smart meter fears

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want to hear more of our stories?

to join the expert platform: drsea@orcon.net.nz

