

Task 24

Behavioural changes are necessary to get the full impact on energy efficiency.

A selection of what works and what doesn't



Ruth Mourik

DSM day Halifax Canada 2015



smart metering



transport



building retrofits



SMEs

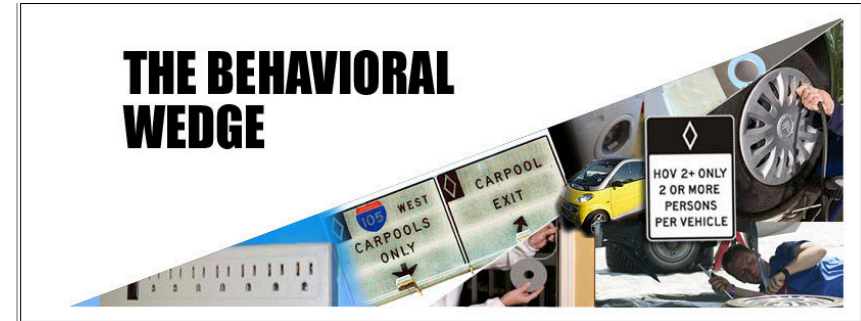
Task 24 premise

30% of energy demand locked in behavioural wedge

purchasing investment
Use, habits
maintenance
social acceptability

Lack of unlocking this behavioural wedge results from:

- ✓ Homo economicus bias
- ✓ Overly technocratic approaches
- ✓ Limited transfer of best practice and research to the policy domain
- ✓ Lack of meaningful monitoring and evaluation



Achieving *lasting* behavioural change in DSM

is more likely to take place

if social practices are targeted

And the context in which these practices are embedded change
as well



This room is insawely cold.
How many times must I teach you
to leave the fridge open in winter?





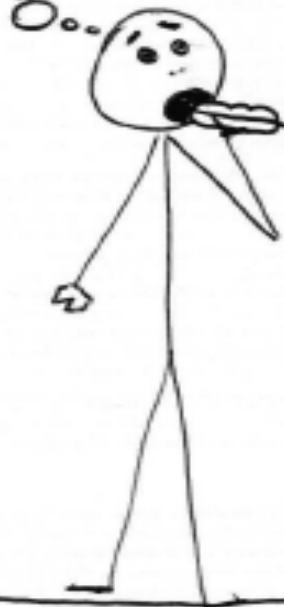
1. Focus on both the individual and the social context
2. Its not just what we buy, its what we do with it
3. Retrofitting is a gateway: Change lifestyles not lightbulbs
4. Think of the (non energy) benefits for end users as well
5. Partner Up! Use a toolbox of interventions and go Beyond kWh
6. Do not leave monitoring of performance up to the end-user!
7. Pre-scope, benchmark your heart out, measure and model
8. Learn from the unwilling



DO'S & DON'TS



MAYBE THIS SMART METER IS BECOMING TOO SMART...



SORRY ALFRED,
I THINK YOU ARE
ABOUT TO EAT 200 KCAL MORE
THAN YOU SHOULD...



LEANTICITY 2013

**SMART METERS/
FEEDBACK**



1. Time isn't always money
2. Distribution issues matter! be transparent
3. Smart meters are not asked for, key are value/multiple benefits!
4. Information needs more than a display, peer to peer is a key!
5. Be aware first users have a family! household dynamics kill
6. Intermediaries are very influential
7. The home is a castle: Focus on the why
8. Participation is key: co-create
9. Tell me how I am doing

How did we analyse the cases?

Repertoire of Human Behavior



Many interventions underpinned (un)consciously by models and theories

Understanding their benefits and drawbacks

Impact design, implementation, monitoring and evaluation



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



Several of 'our' cases informed by neo classical economics: money and information

74,81	+1,78	460300	19,04	17,36	Abitibi-cons	13	+0	4
5,63	-4,25	329100	4,94	3,16	Air Canada	12,7	+0	3
33,94	+0,38	70000	22,48	14,5	Alberta Energy	65,55	+0	2
45,81	+1,94	244700	20,18	17,69	Banque Nat. Canada	26,4	+0	2
45,06	-0,42	407600	12,31	10,99	Barrick Gold	25	+0	4
74,44	+0,94	1471100	23,19	20,5	Bechtel	42,05	+0	14
49,88	+1,28	521100	15,74	13,3	BT Telus Comm	41,3	+0	5
96,81	-0,33	269500	34,7	31,1	BK Of Montreal	79,2	+0	4
38,06	-0,18	263500	11,1	10,1	BK Of Nova Scotia	42,2	+0	26
25	+0	1088100	9,9	9,1	Canadian Pacific	22,85	+0	10
27,38	-0,22	705200	9,9	12,45	Cameco	22,6	+0	7
24,2	+4,54	319800	28,14	14,2	Camco Inc	0,41	+0	3
5,81	-1,19	1470700	14,77	17,47	Cameco	24,85	+0	14
5,4	-4,42	63600	3,33	2,15	Canadian Pacific	41,7	+0	20
2	-6,1	2096400	14,77	17,47	Cascades Inc	6,4	+0	5
26,25	+0,23	260100	17,6	17,6	Cdn Oil & Petroleum	34,95	+0	2
44,31	+4,73	557000	17,6	17,6	Cdn Tire Corp	39	+0	5
35,56	+2,89	527400	17,6	17,6	Cdn Trpwr bk comm	45,95	+0	5
26,88	+6,46	899500	17,6	17,6	Dofasco Inc	19,9	+0	5
9,88	-1,79	972300	17,6	17,6	Domtar Inc	13	+0	9
60,38	+1,91	1520600	29,89	23,31	Echo Bay Mines Ltd	0,54	+0	15
8,75	-0,68	132900	9,11	8,1	Falconbridge	16,45	+0	1
15,69	-2,73	86400	9,63	8,01	Fletcher Challenge	15,3	+0	4
15,75	-3,43	435800	9,1	7,29	Gaz Metro Lp	15,75	+0	4
61,06	+1,97	1118700	32,65	27,75	Gulf Cda Res	6,95	+0	11



<http://www.contemporaryartdaily.com/wp-content/uploads/2012/02/2.jpg>

<http://pinterest.com/kyrpersa/homo-economicus/>



A Story on an economic theory-based approach in 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 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.

What can we learn?

Benefits: Do well within what they intend to do

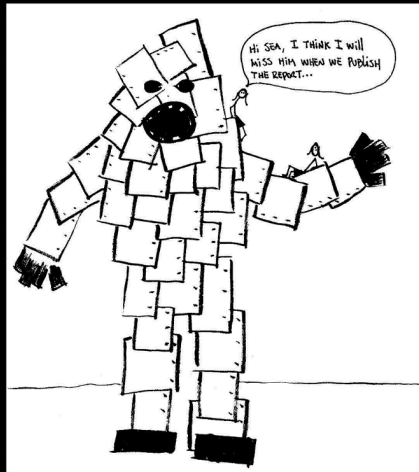
- The programmes are relatively easy to evaluate quantitatively
- The retrofitting market can grow
- Subsidy often used to the max
- Many homes insulated
- Economic discipline underpinning does manage to nudge a certain percentage
- Sometimes even a new norm seems to be emerging...
- Participants often already decided to retrofit, but now retrofit more comprehensively

Drawbacks:

- One-off programmes, no continuity after insulation
- Paradox: information + prefinancing required!
- Hardly no flexibility: Only financial and technological tailoring
- Not focused on changing use patterns (routine behaviour).
- Danger of rebound
- And: will this really create mass demand for EE?

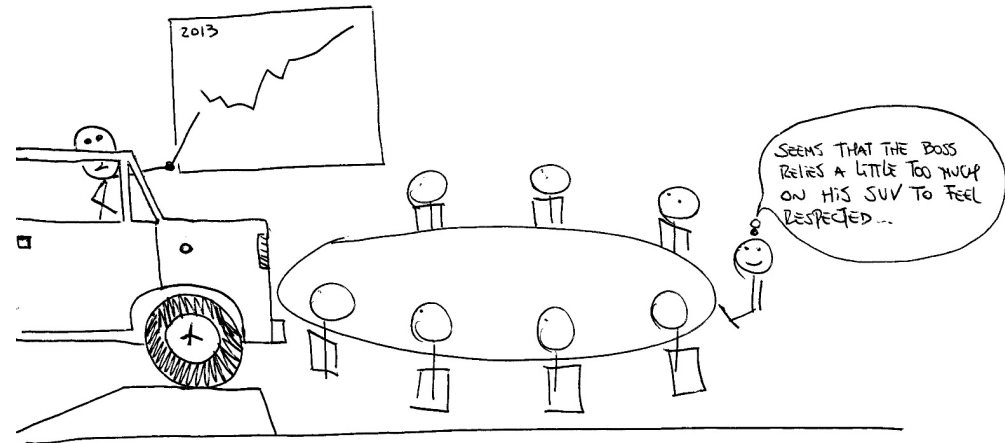
The Monster

Subtask 1 analysis of IEA DSM Task 24:
Closing the Loop: Behaviour Change in DSM - From Theory to Practice



Dr Ruth Mourik
Dr Sea Rotmann

Read the full monster here: <http://bit.ly/task24monster>



Once upon a time... in a country full of speedsters called The Netherlands, eco-driving was a practice for organic, whole-grain musli-eating animal rights activists - or hippies. 'If there's even the slightest bit of testosterone in your blood, you'll make your engine roar' they'd say.

Every day... these proud Dutchmen would spill way too much gasoline during their drives, so as to feel their freedom and protect their status as the alpha male in the concrete jungle.

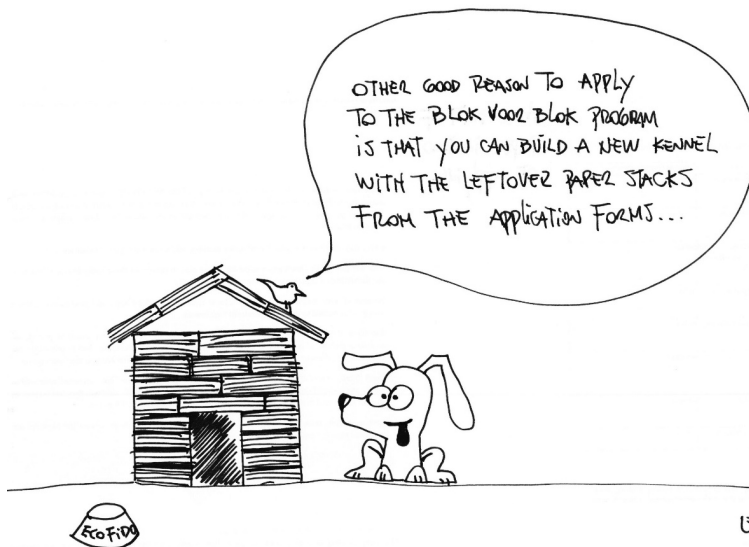
But, one day... the national government decided to start a campaign to promote more economical driving. After all, too much gas was spilled, too many greenhouse gasses were emitted and too many particles were set free to pollute the cities. The campaign basically showed that you can be a tough guy even when driving economically. A parody of The Dukes of Hazard was used in advertisements on eco-driving to support this message. Furthermore, training sessions were offered to learn the new way of driving, these techniques became a part of the driving school curriculum and fuel saving technology (such as feedback systems) and tire pressure controls were promoted.

Because of that... between 2,2 and 3,75 Mton of CO2 emission were avoided through HNR between 2000 and 2009. The costs for the campaign were below 10 €/ton CO2, which is a very cheap solution to the problem! 69% of all drivers in The Netherlands used one or more principles of eco-driving in 2009, and 84% were familiar with the concept. The campaign was a roaring success.

But then... due to a change in government after 2008, this success declined. This can be largely ascribed to the budget cuts and the changing course of the Dutch policy (technology instead of behaviour as a solution; increasing the speed limit from 120 km/h to 130 km/h which sends a very confusing message to drivers!).

But still... eco-driving is now embedded in the Dutch society. The implementation on different levels, such as the integration of the techniques in driving schools and the support of sector organisations such as ANWB (AA patrol) were a key factor of this change in social norm.

And, ever since then... you can be a tough guy whilst driving economically. And a nice addition: it will save you some money too. **The end.**



Task participants

Phase 2:

Countries *participating* in the Task

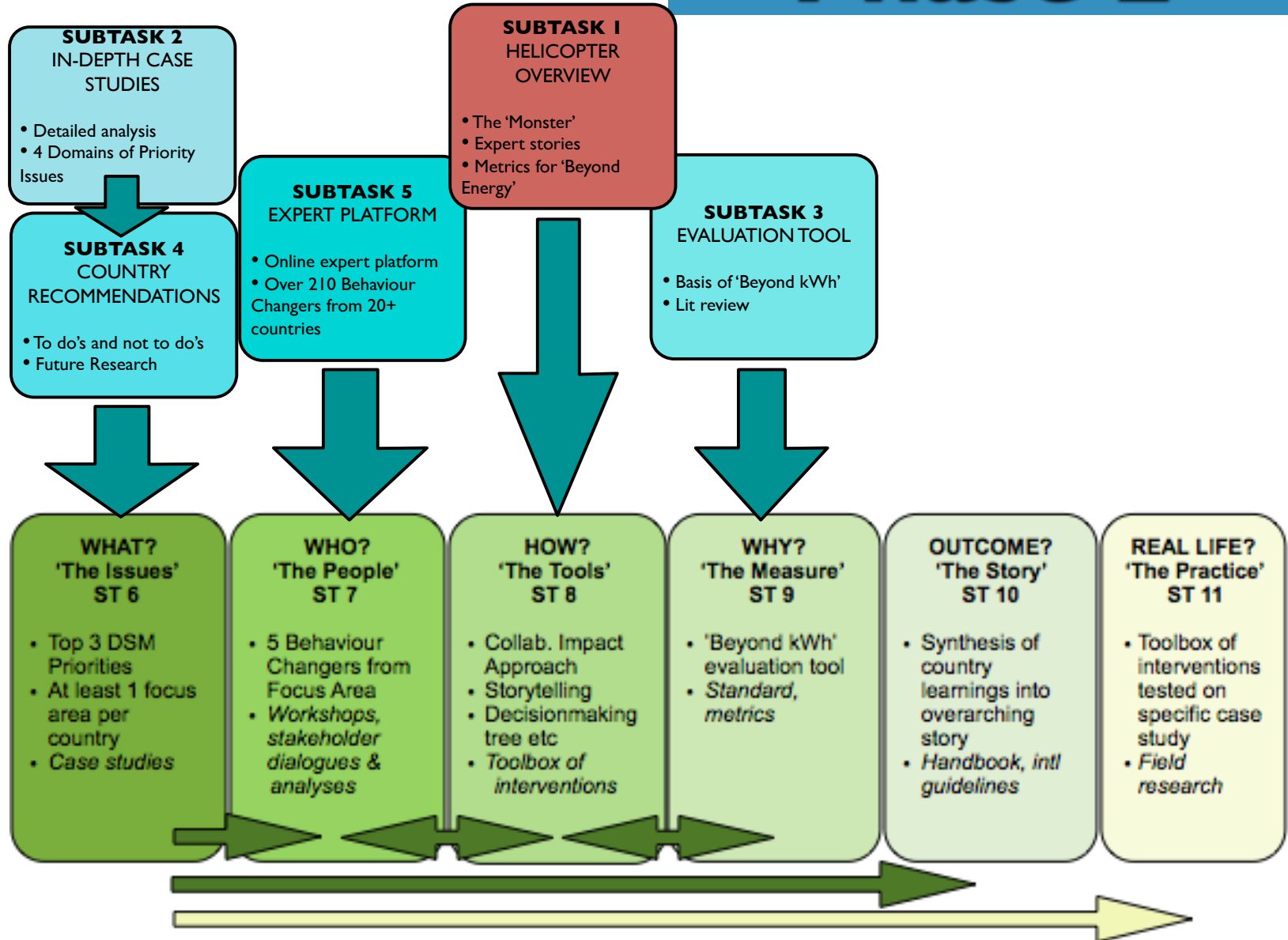
Netherlands, New Zealand, Sweden, Austria.....

.....Canada, Ireland?

225 experts from around the world *contributing in kind*



Task Phase 2

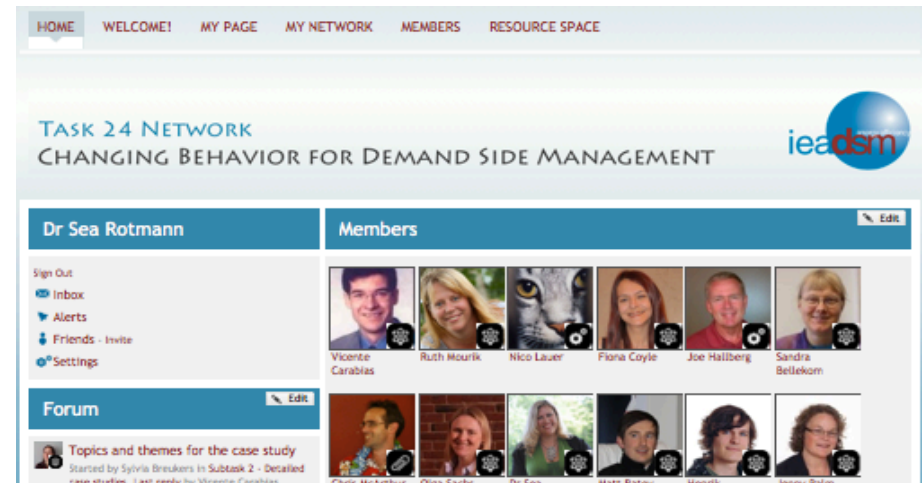




subtask 5 Expert platform

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