

TAKING
COOPERATION
FORWARD



Jihlava, Czech Republic



Demand Side Management: a new way of thinking energy efficiency?



Manuel Nina, Director of Innovation - SNAP! Solutions

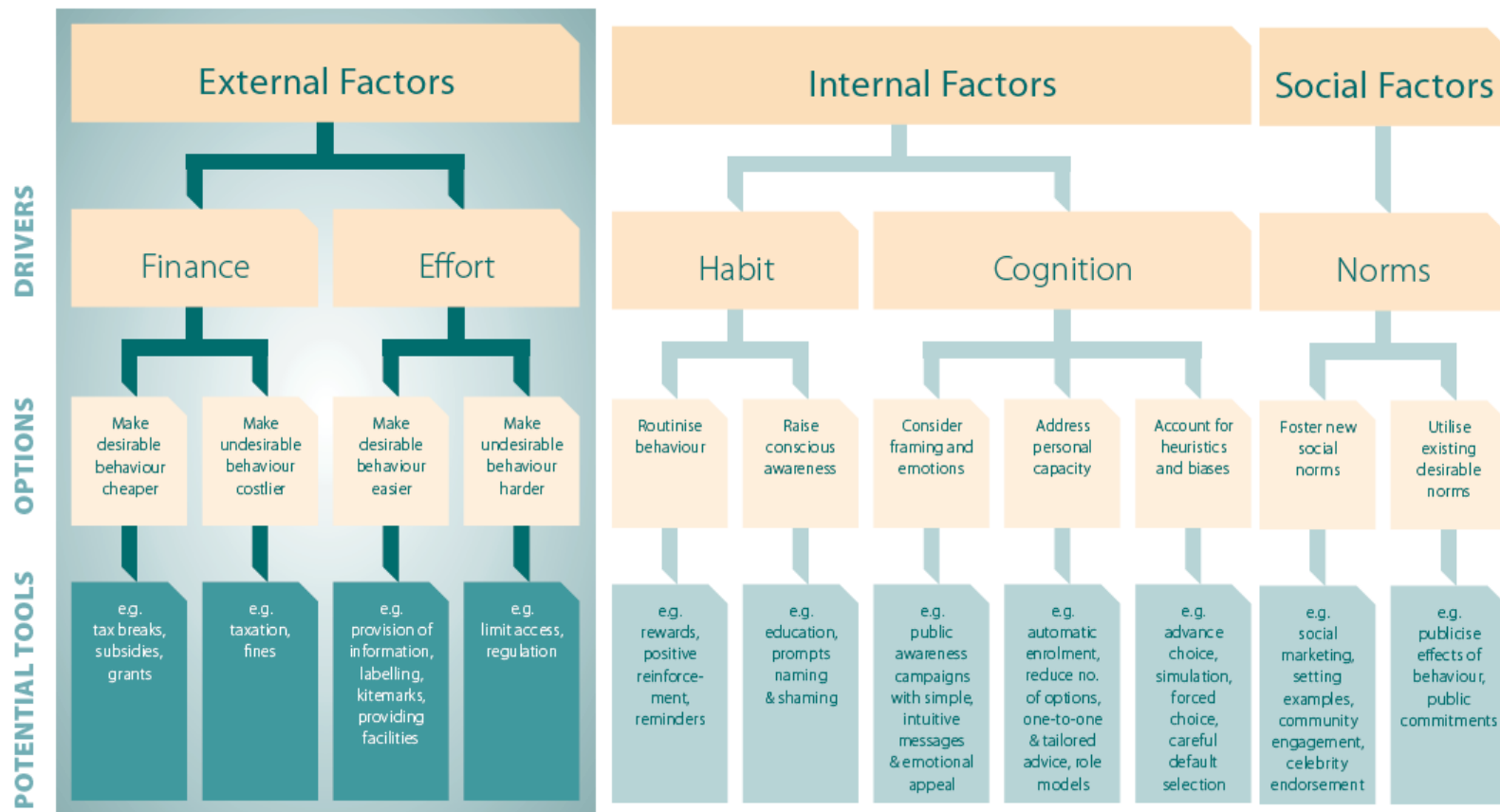
CREATURES OF HABIT?

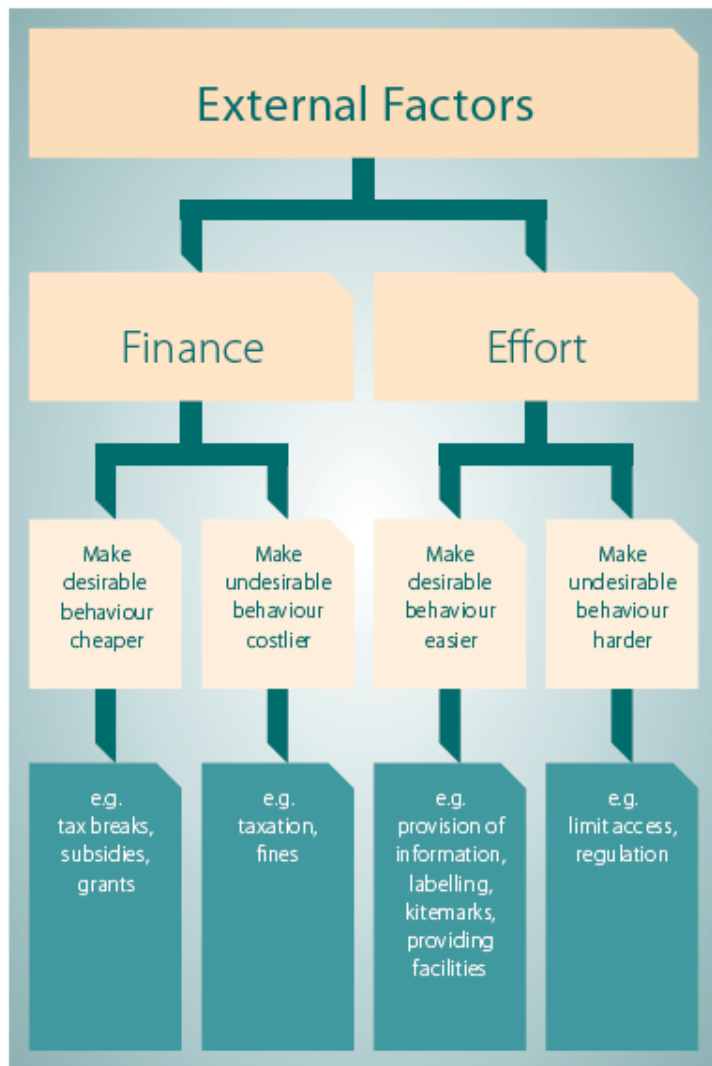
The Art of Behavioural Change

Jessica Prendergrast, Beth Foley,
Verena Menne and Alex Karalis Isaac



FRAMEWORK FOR BEHAVIOUR CHANGE

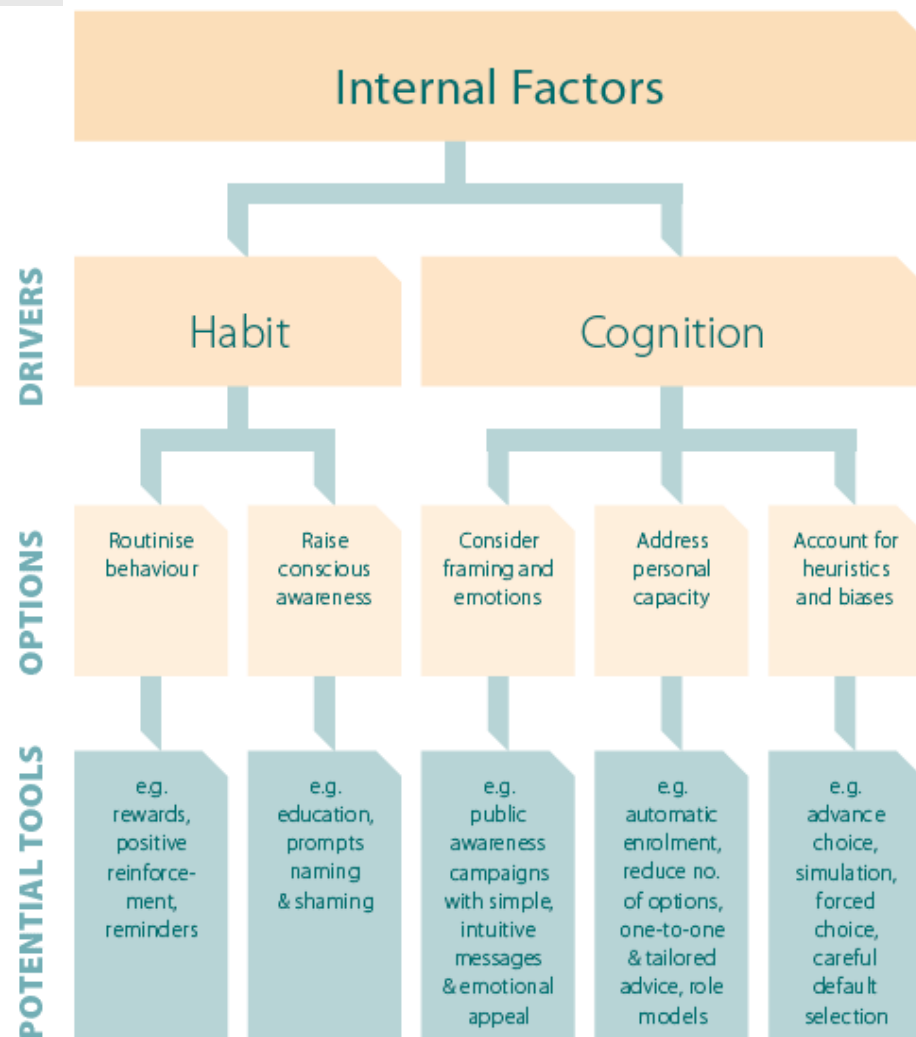




Policy based

- Internal policy - Top-Down approach
 - > Define targets and rewards/consequences
- Internal procedures
 - > Management of the Power of Agency (lighting, HVAC, Equipments)

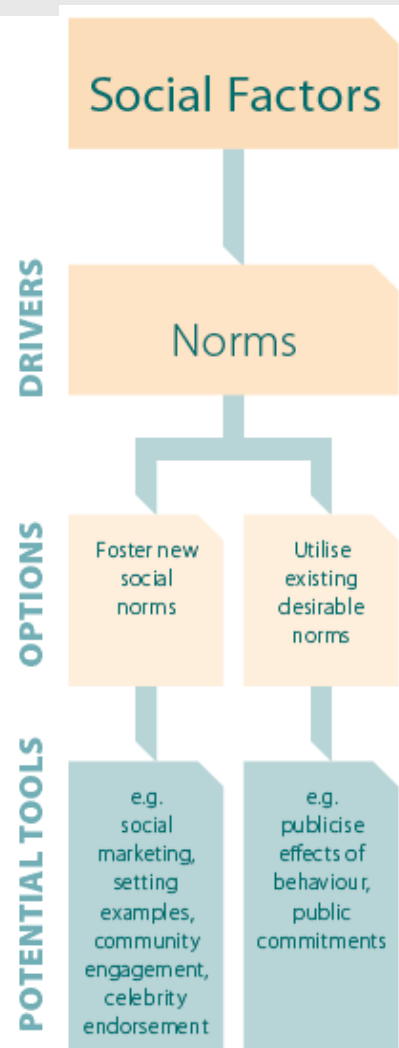




- Rewards, Positive reinforcement
- Education, prompts, ranking
- Emotional appeal - motivations
- Individual training - Agency
- Biases - resistance, simulation

TAKING COOPERATION FORWARD





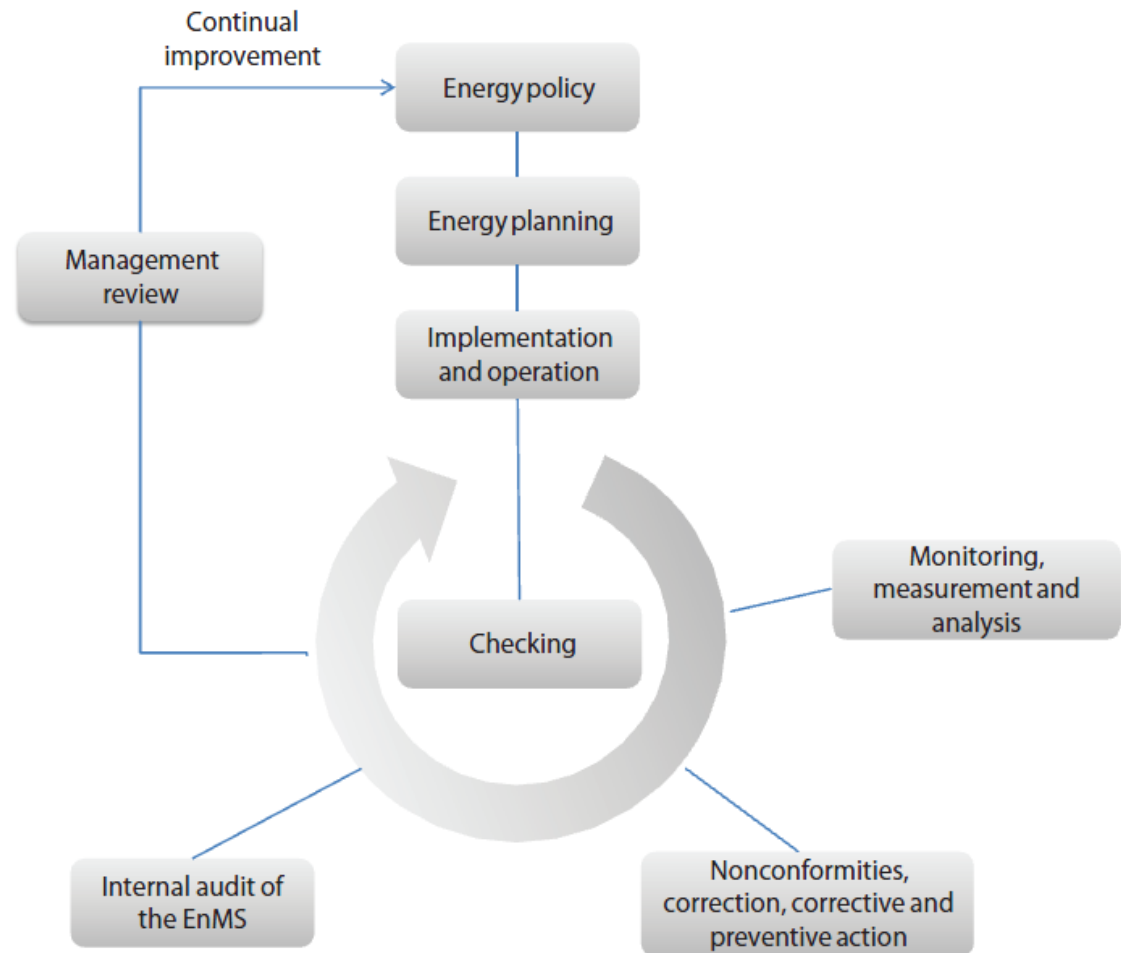
- New social norms
 - New examples, social marketing, purpose (charity)
 - Role-model
- Promote existing norms
 - Publicize best practices
 - Public commitments
 - Top-down examples



HOW TO IMPLEMENT CHANGE?

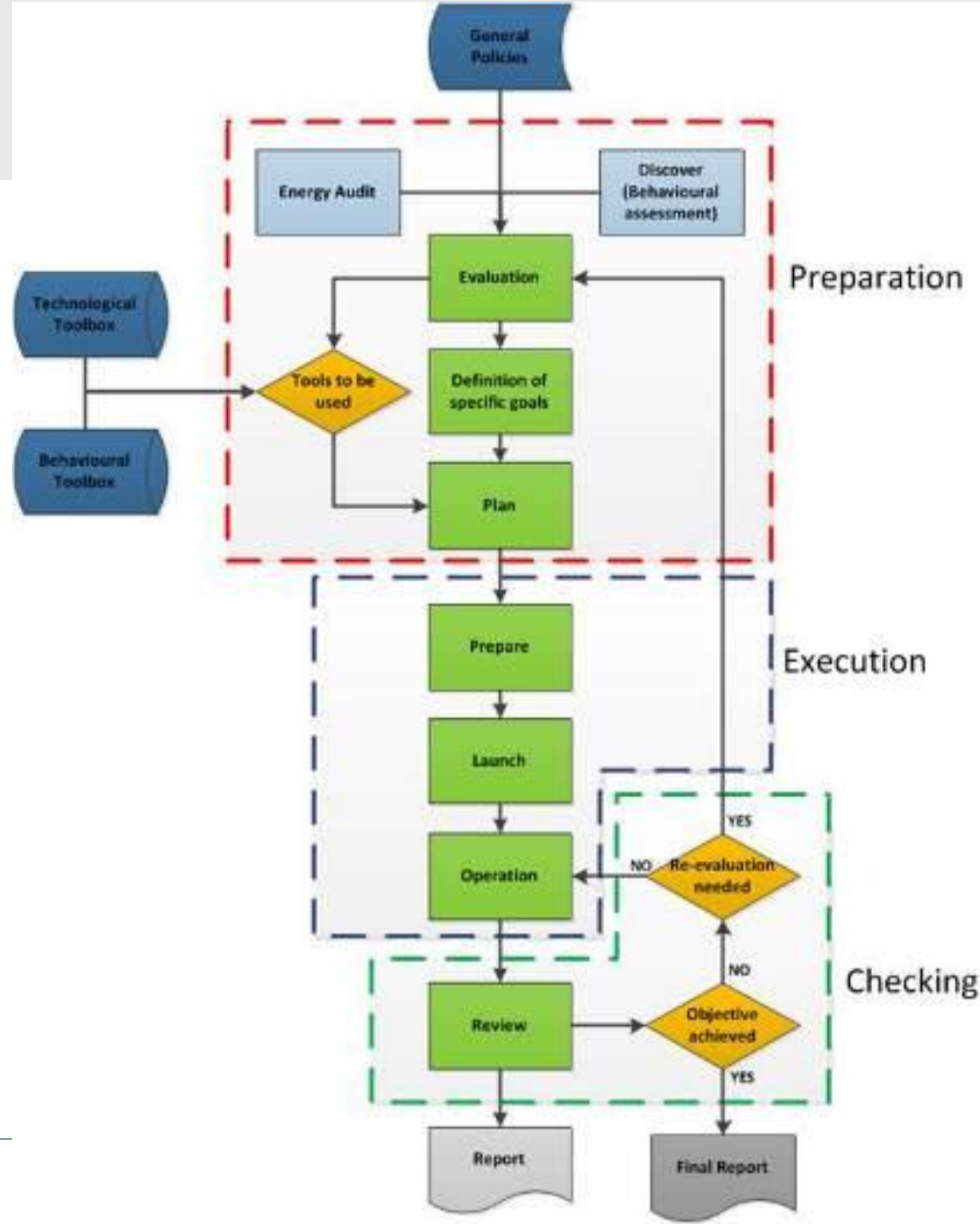


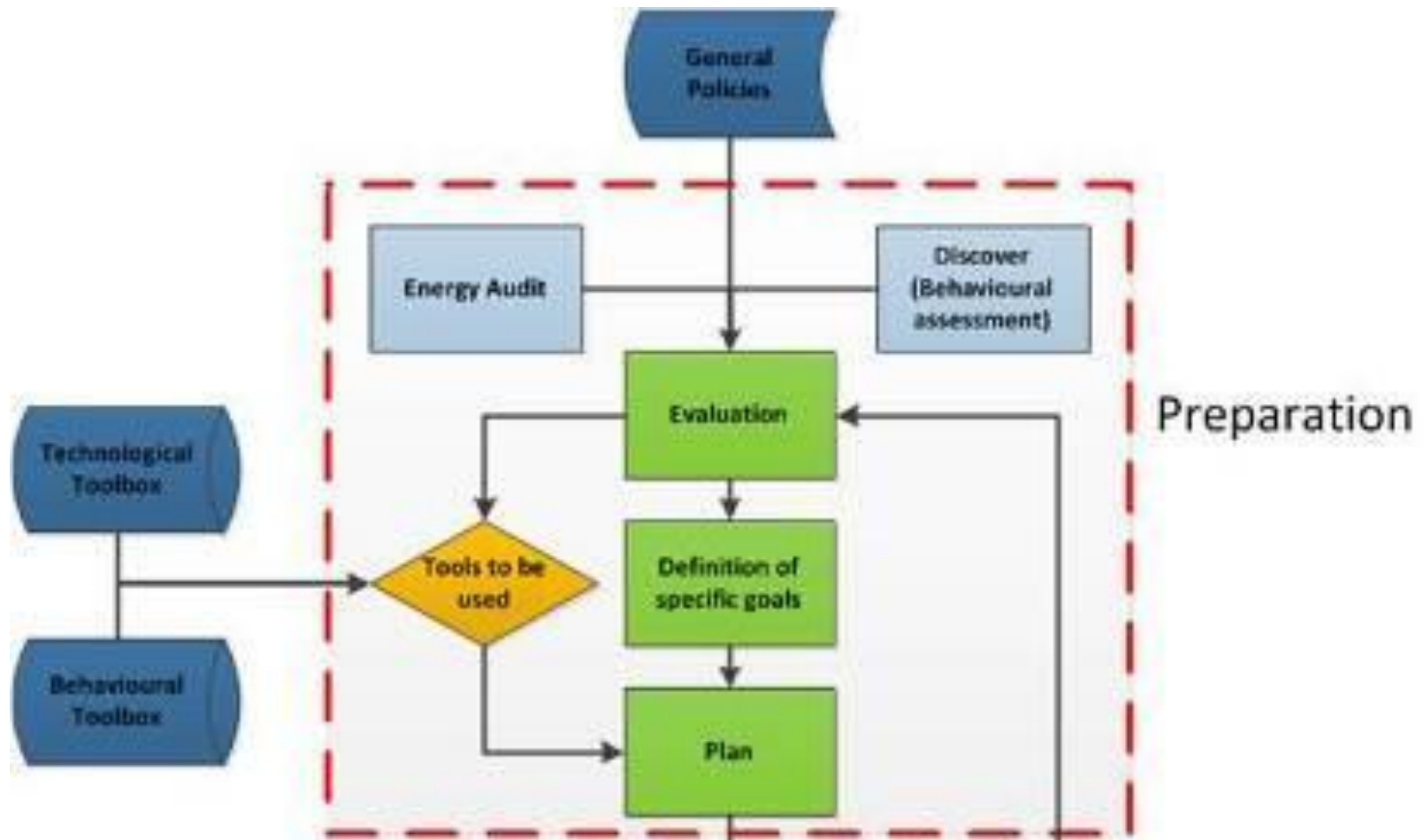
Behaviour Change Tool	Educate			Motivate		Prompt
	Is there a problem?	Do i know what to do?	Will the solution work?	Do i care?	What will others think?	
Informal Meeting	●	●	●	●	●	●
Formal Meeting	●	●	●	●	●	●
Energy Audit	●	●	●	●	●	●
Actions Checklist	●	●	●	●	●	●
Energy Helpdesk	●	●	●	●	●	●
Corporate Policy	●	●	●	●	●	●
Metered Billing	●	●	●	●	●	●
Personal Objectives	●	●	●	●	●	●
Set Examples	●	●	●	●	●	●
Suggestions Box	●	●	●	●	●	●
web/ tv/ radio	●	●	●	●	●	●
Social Network - share experience	●	●	●	●	●	●
Social Network with data	●	●	●	●	●	●
Leaflet (information)	●	●	●	●	●	●
Poster/ Signage	●	●	●	●	●	●
Newsletter (stories)	●	●	●	●	●	●
Report (with real data)	●	●	●	●	●	●
Real Time Energy / Cost	●	●	●	●	●	●
Performance vs Baseline	●	●	●	●	●	●
Historic Information (graphical)	●	●	●	●	●	●
Energy Saving Tips	●	●	●	●	●	●
Competition / Incentives	●	●	●	●	●	●



USER BEHAVIOUR TRANSFORMATION METHODOLOGY

- Preparation
- Execution
- Checking





- **Evaluate the pre-requisites and the users**

General policies, City objectives, etc. and the users capacities and needs.

- **Make an energy audit of the building/observations**

- **Define the goals based on the input from the evaluation**

What is possible to achieve and what cost is acceptable for achieving this.

- **Select the needed tools from the Behaviour Toolbox (includes technology?).**

- **Plan your activities**

One of the most important tasks is to plan for the user involvement. Plan the meeting schedule, how to provide information etc. to the users. Also consider, who is the user? Of course people in the building, but perhaps also local management, visitors, etc.?



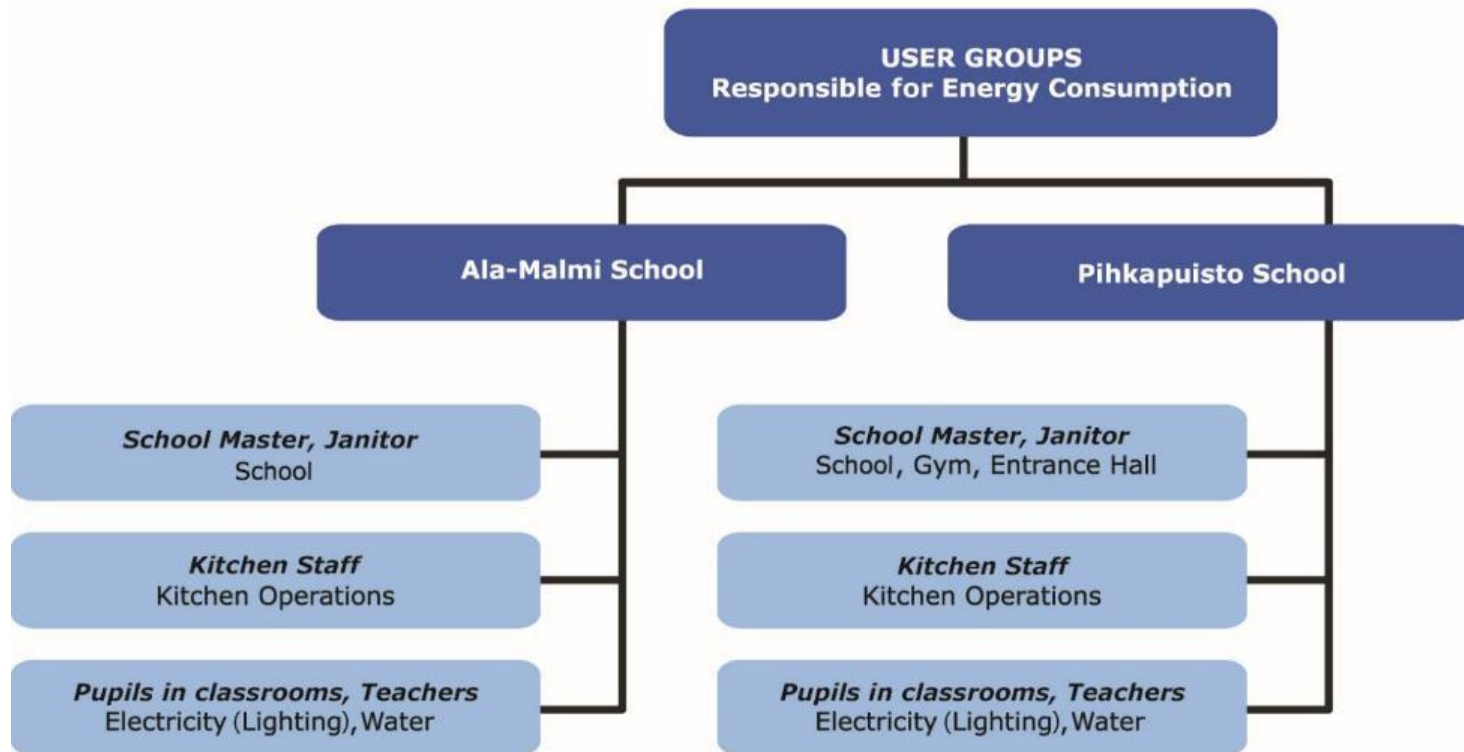
Our actions are generally dependent on the questions that are asked and answered by our sub-conscious mind:

- Is there a problem?
- Do I care?
- Do I know what to do about it?
- Will the solution work?
- What will others think about what I do?

When attempting to change the behaviour of other people we need to use educational techniques to answer questions 1, 3 and 4 along with motivational techniques to answer questions 2 and 5. Even when we are fully educated and motivated, we still often need a reminding prompt to do the right thing.

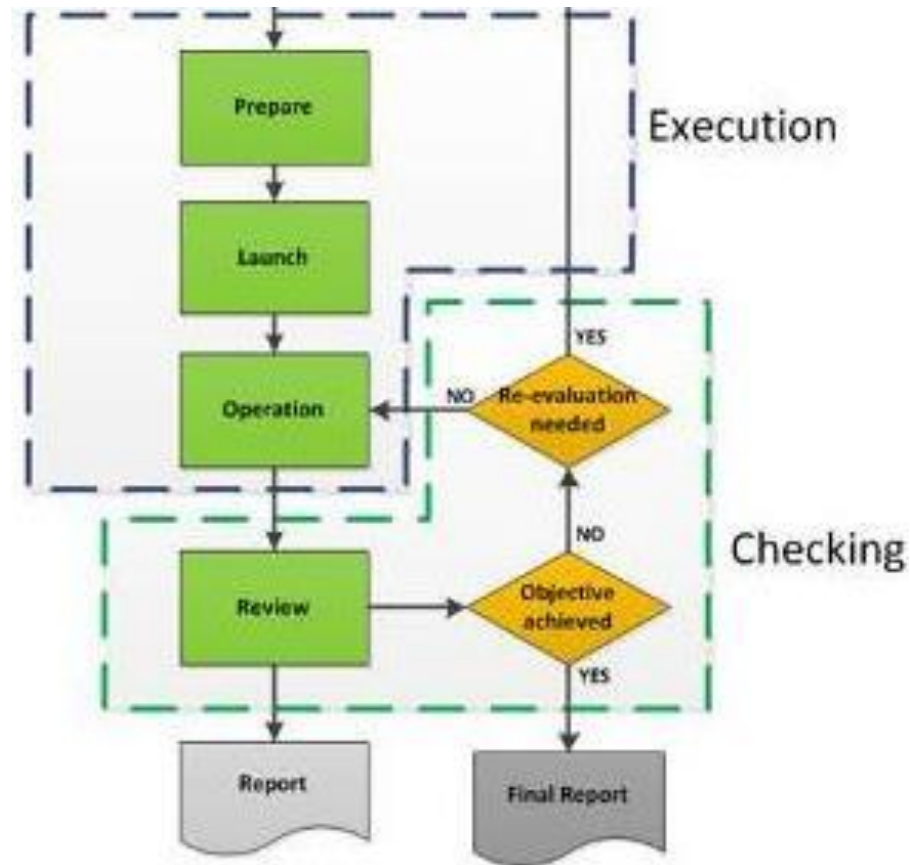


USER GROUPS AND AGENCY POWER



- Who is pushing forward?
 - Who gives more suggestions?
-
- Eco-motivators
 - Team leaders
-
- Extra training (internal project)





- *Prepare* by installing technology, establishing reference baseline, correction factors etc.

i.e. Use historical energy consumption data (or plan for your own reference period where you establish these historical data) or similar areas (e.g. floors).

- *Launch* the program officially

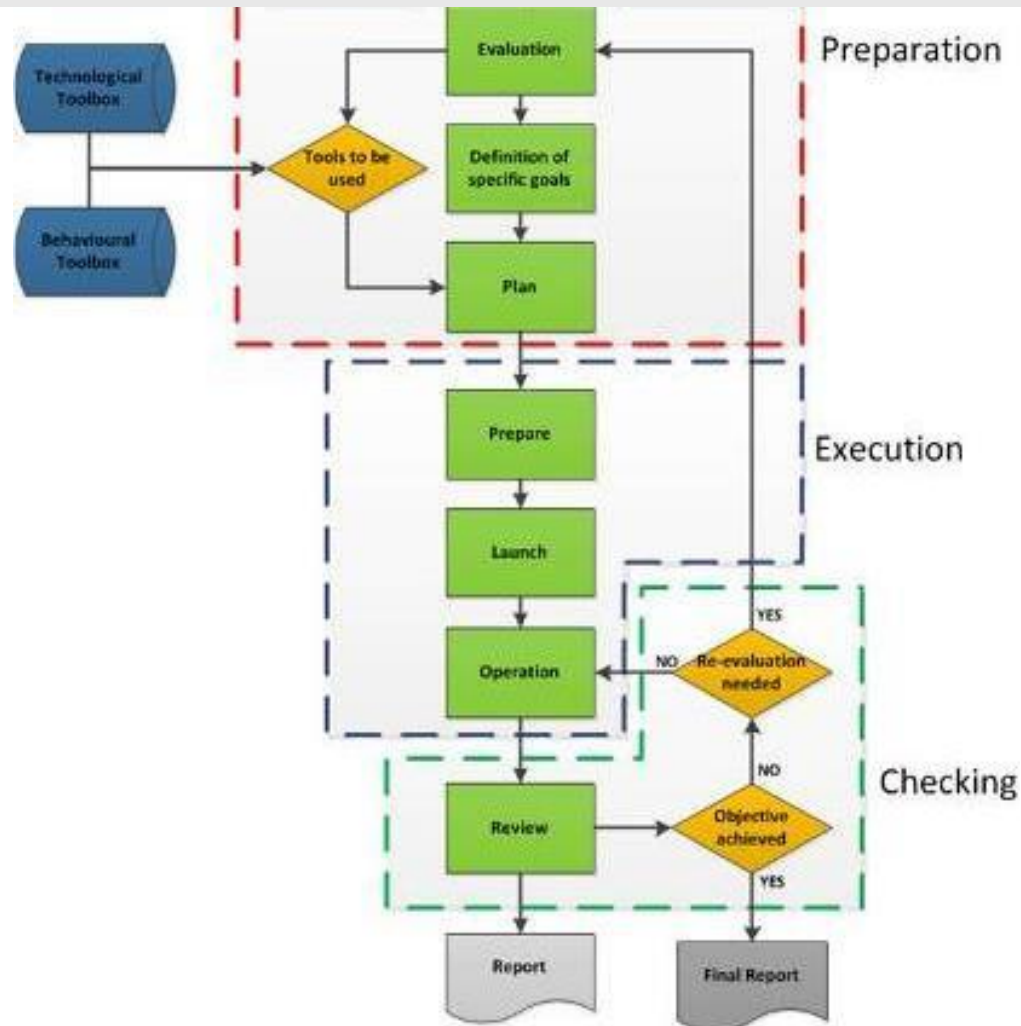
Involving all the users so that everyone is aware and committed.

- *Operate* the execution

Monitor technology, users and building to see that everything is running normally and according to plan.

Do we need to re-evaluate the goals? If so jump back to the preparation phase.





- *Review* the progress and analyse the intermediate results. What adjustments are needed? Have the goals been reached?
- Send short intermediate reports about the current status compared to the goals after every Review.
- A final report should be issued stating the results compared to the defined goals when you have finished the process.



Best Practice	Notes
Know the organisational culture	<p>The best approach to behaviour change will depend on the culture of the organisation. Note that this can significantly change dependent on other factors such as looming job cuts or rapid growth</p> <p>If there have been other recent change programmes implemented, people may be getting tired of constant change. Conversely people may be hungry for more change</p>
Recognise that everyone is different	<p>It is easy to believe that everyone will react in the same way and that the vociferous people represent the views of everyone. Seek out ways to engage with every individual</p>
Target the key energy saving opportunities	<p>Roughly calculate the scale of potential savings before committing project time and equipment to a specific opportunity</p>
Use a range of user behaviour transformation tools	<p>The most appropriate range of tools should be selected at the project commencement and then reviewed and improved over time (see Toolbox)</p>
Keep it changing	<p>Just like any advertising campaign that seeks to change behaviour, it is important to keep it changing to maintain interest and engagement</p>



Best Practice	Notes
Maximise person to person contact	Person to person contact is probably the most important aspect of any behaviour change programme. Without some form of personal contact, change is unlikely to be sustained. Social media is fast becoming an important factor in normal day to day contact between people
Select an appropriate change manager	The ability of a change manager to gain respect, educate and motivate in the target environment is essential. If the programme includes “green champions” then select them carefully. Just because someone is keen, doesn’t mean that they will necessarily be able to successfully influence others
Continually review management commitment and leadership	If senior personnel are do not openly demonstrate their commitment to the change, then others are unlikely to change
Identify individuals who are likely to have a significant influence on their peers	All organisations have particularly influential individuals. These people may have a position of authority or they may be particularly popular or have a strong personality. These key individuals are likely to have a significant influence on the general behaviour within an organisation. Having these people on your side, or if necessary, reducing their influence will have a major impact
Integrate with other energy saving initiatives	People need to see that other energy saving initiatives are taking place and appropriate investments are being made, otherwise they will quickly become cynical about changing their behaviour



■ Monetary

- ☐ Direct - % of savings - shared revenues (ESCO business model)
- ☐ Indirect - % of savings - common pot (training fund, team building, etc.)

■ Non-monetary

- ☐ Reputation - “team 2nd floor won this week’s challenge!”
 - > **Charity contributions**
 - > Local associations
 - > Wheelchairs
 - > Make-a-wish
- ☐ Prizes
 - > Cinema tickets every week

Suggestions from end-users - football team equipment, leisure fund, anual event



EXAMPLE - THE PVISION BUILDING IN HELSINKI

- 3 floors competition
- Teambuilding fund (sailing day)
 - First floor tried hard and improved 15%
 - Second floor tried hard too, **got worst** 10%
 - Third Floor not committed, improved 20%
 - > Connected high consumption equipment to 2nd floor electric system



CONTEXT ANALYSIS WITH PEOPLE: GUERRILLA OBSERVATION IN MILANO



CONTEXT ANALYSIS WITH PEOPLE: AS-IS SCENARIO IN MILAN

STUDENTS	TEACHERS	STAFF
open the windows of the corridor in order to smoke although it is forbidden in public buildings	do not care of the fan-coil on/off condition	do not care of the fan-coil on/off condition
use the classrooms independently of the lessons and do not turn lights off when leaving	often leave lights on in their rooms	
use lifts when they can easily and healthy use the stairs	use lifts when they can easily and healthy use the stairs	use lifts when they can easily and healthy use the stairs



■ Define who can and who can't

- ☐ HVAC - set point regulation
- ☐ Lighting - on/off
- ☐ Equipment



■ Lighting

- ☐ Last one out shuts the lights
- ☐ Open suggestions to Energy manager

■ Equipment

- ☐ Facilitate - power cords with switches
- ☐ Individual empowerment/responsibility



- Using video game principles for behaviour transformation
- Fun!
- Reputation-based (social visibility)
 - Social media visibility
 - #saveenergy
- Badges, ranking systems (points), competitions
 - Special events/tasks give badges



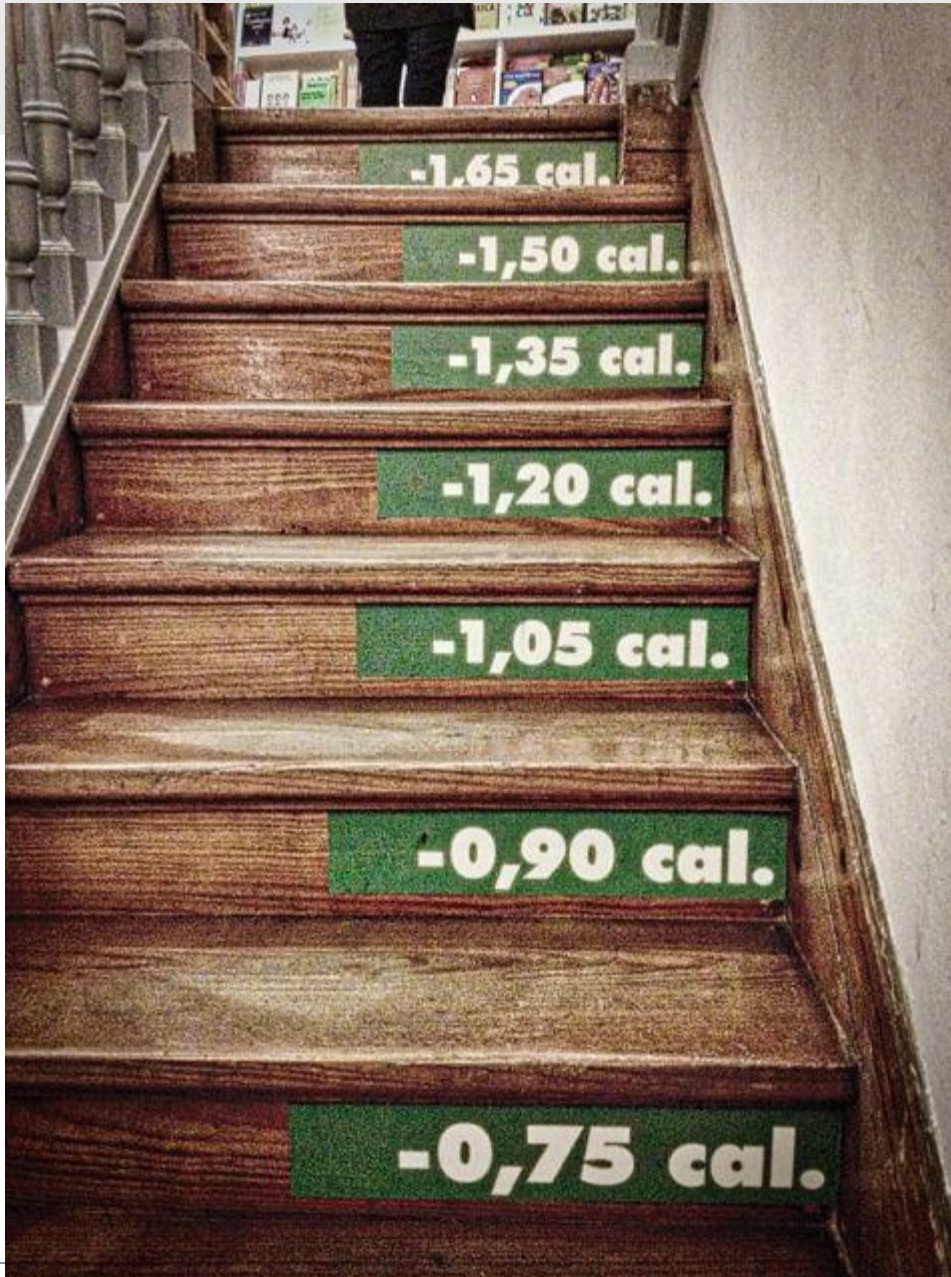
Burn Calories, Not Electricity



Take the stairs!

Skip the elevator and escalator. Walking up stairs just 2 minutes per day helps prevent weight gain. And it helps the environment by saving electricity!





0.17 calories per step
climbed, and **0.05** calories
per step descended







A group of high school students in Sicily invented a vending machine that turns trash into phone cases. The machine grinds plastic bottles into pellets, which are melted down to be reused by a 3D printer that creates a variety of phone cases and encourages students to recycle more.





- Shut down computers/laptops
 - Eco-motivator/Janitor leaves chocolate/”good job” sticker

- Elevators:
 - Calory counter on the stairs (up and down)

- Read more: Gamified Energy Efficiency Programs



Sometimes who pays the electricity is not the same entity as who uses it:

- ☐ Restaurant rent includes fixed electricity/water fee
- ☐ New business model, consumption-based



- Old behaviours tend to return
 - Prompt / Re-assess / New training
- Community motivation, continuous action
- Projects (rewards) need to be limited in time
 - No cinema tickets forever, but a “eco season” every year (the EU does it, with the European Sustainable Energy Week - federated events!)





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