



Don't just press the button! The importance of appliance settings

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ECEEE Summer study 2015
4 June 2015



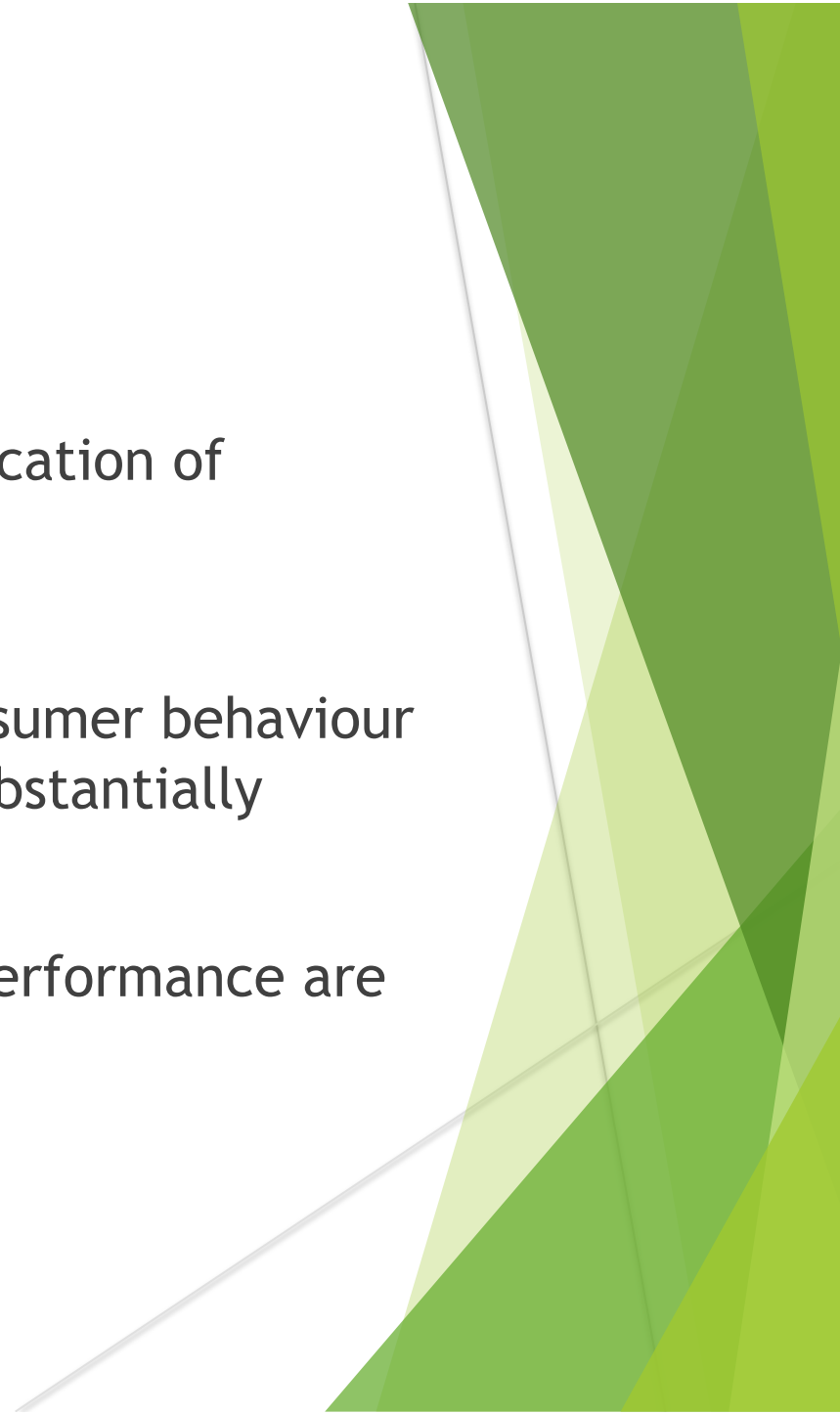
Overview

- Introduction and motivation
- Extent of the issue
- ‘Eco-modes’ in washing machines/ water heaters
- Policy recommendations

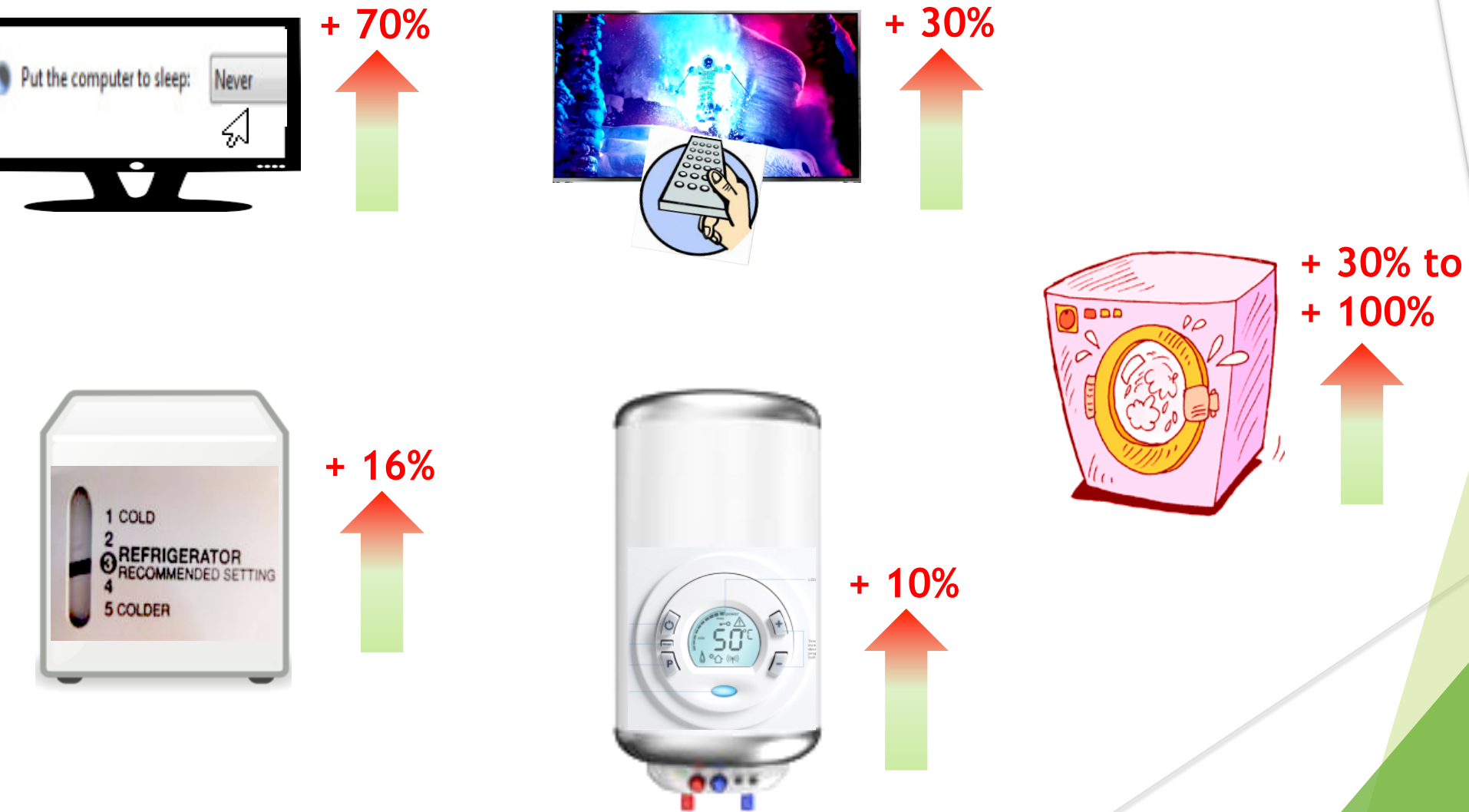


Introduction

- ▶ Appliances are more sophisticated with a multiplication of programmes and auxiliary features
- ▶ Users pay little attention to product settings/consumer behaviour understudied; real life energy use may diverge substantially
- ▶ Risk that the standard test methods for energy performance are not representative of actual use



User settings affecting energy consumption



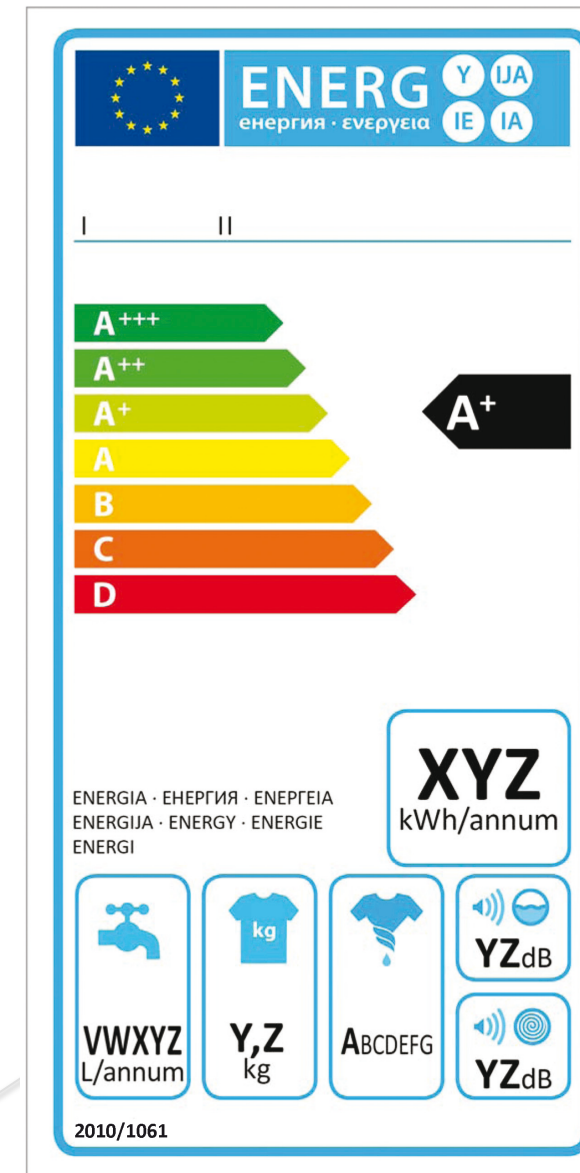
Actual use of different dishwashing programmes

Percentage of households using mainly this programme	Intensive	Energy saving / Eco	Automatic	Glass/Care	Short	Normal 50-55 °C	Normal 60-65 °C	Other programmes
Reichle (2010a) (n = 1209)	12,4	17,0	14,8	7,8	11,3	29,1		7,7
Hammerling and Streichardt (2009) (n = 2599)	8,9	17,7	7,8	--	8,7	27,7	29,1	6,0
Reichle (2015) – Online-study (n = 3836)	14,5	18,7	14,3	6,4	12,2	17,0	16,9	--
Reichle (2015) - Usage diary study (n = 202)	13,7	22,4	25,7	0,5	11,5	8,2	16,9	1,0

‘Eco mode’ in washing machines

Programmes	Load (Kg)	Energy consumption (kWh)	Water consumption (litre)	Approximate programme duration (minutes)	Remaining moisture (%) ¹⁾
Cottons 60 °C	9	1.55	79	170	52
Cottons 40 °C	9	0.97	79	164	52
Synthetics 40 °C	3	0.55	54	109	35
Delicates 40 °C	3	0.60	59	89	35
Wool/Hand wash 30 °C	2	0.35	58	60	30
Standard cotton programmes					
Standard 60 °C cotton	9	0.64	58	226	52
Standard 60 °C cotton	4.5	0.35	40	185	52
Standard 40 °C cotton	4.5	0.35	40	199	52

Instruction manual for a washing machine (AEG L89495FL)



Result: possible misleading claims



Water Heaters (WH) and the 'eco-mode'



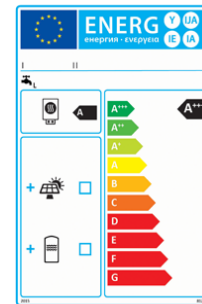
Water Heaters often offer multiple operating modes!

Test can take place in the most favourable mode for the manufacturer!

TEST LAB



WARNING:
TESTING
IN ECO-
MODE



Test results demonstrate good performance!

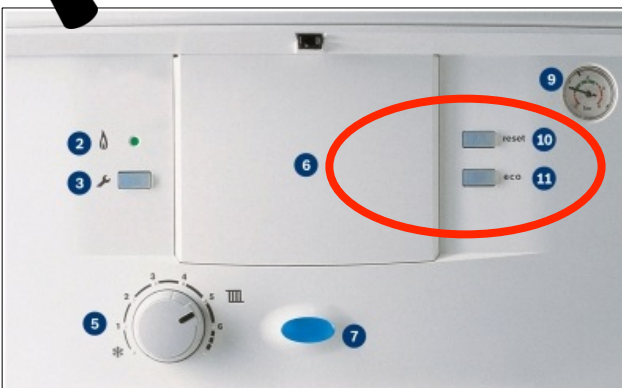
BUT...

REAL LIFE

In reality, consumers at home may not use the eco-mode!



Lower performance in normal mode...



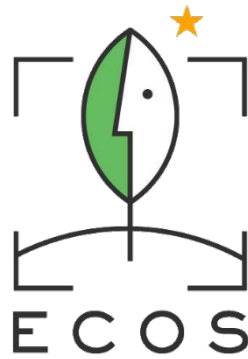
WH compromise: 'out-of-the-box' mode

EC Communication on transitional methods for water heaters

Specifies that each water heater shall be tested in the "out of the box-mode"

Recommendations

1. Clear test conditions, representative of real life use; **add safeguard principle to the Energy Labelling Directives**
2. Inform consumers of basis for Energy Label rating and display important parameters (eg. T) - opportunities through **digitalisation of the energy label**
3. Deliver products **with energy management features enabled by default**
4. **Educate/inform on energy saving behaviours** through improved manuals, campaigns, as well as consumer organisations
5. **Research systematically real life user behaviour** with energy related products (eg. in revisions of Ecodesign and Energy Labelling white goods regulations)



THANK YOU!

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