



CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

CAP. 2

CAP. 3

CAP. 4

CAP. 5

Home Energy Report

A case-study on behavioral measures

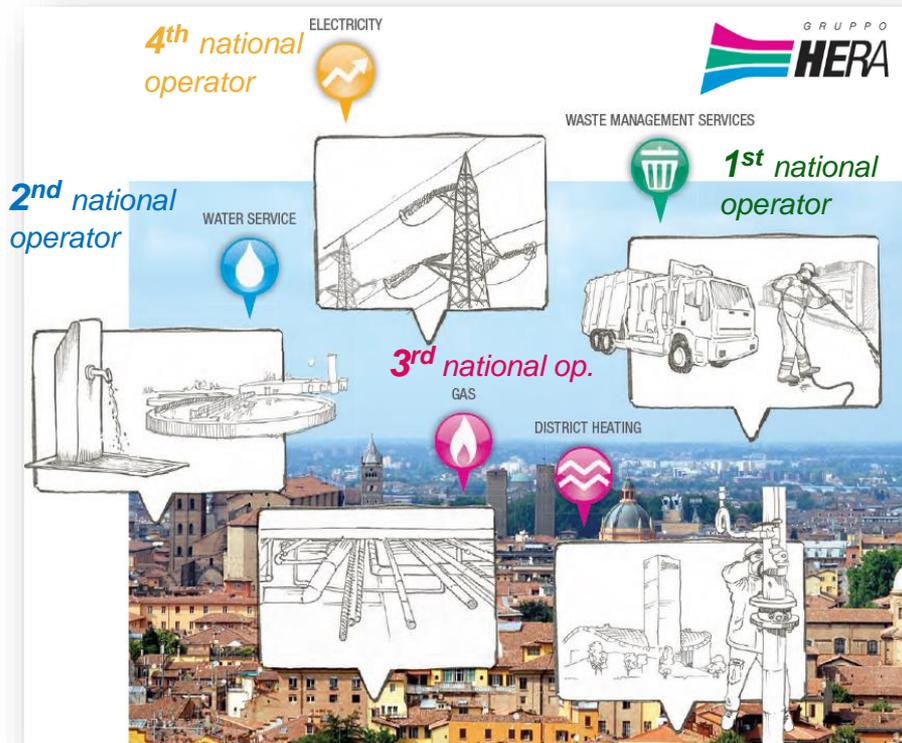
Margherita Cumani

Energy Management & Renewable Energy Production

Hera S.p.A.

Stockholm, 11th October 2022

Offering primary local services to citizens



A major Italian multi-utility

HERA operates mainly in **environmental services** (collection and disposal of waste), **water** (mains water, sewage and purification) and **energy** (distribution and sale of electricity and gas).

-  ~ 7 millions of tons/y of **waste treated**
-  ~ 35,000 km of **drinking water network**
-  ~ 21,000 km of **gas network**
-  ~ 1,1 million **electricity customers**
-  ~ 20,000 m³ served with **district heating**

Think global, act local

HERA creates shared value working on Global Agenda Goals

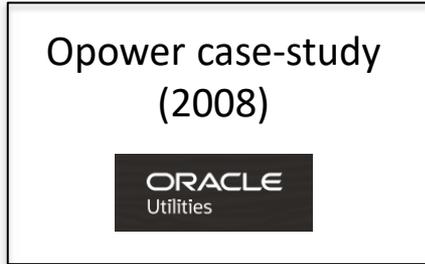
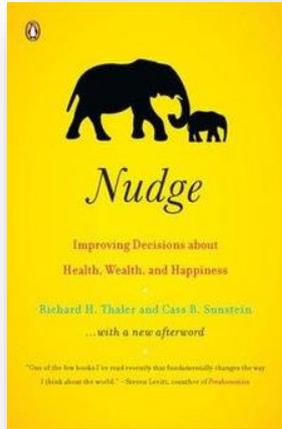
Activities carried out by HERA cover 10 over 17 global goals of United Nations Organization for Sustainable Development.



Home Energy Report is contributing to reduction of CO₂ emissions/Scope 3



6 goals are involved in our Energy Efficiency strategy



Principle of awareness raising
R.Sayers, UNESCO 2006

Home Energy Report: layout



- ✓ Nice format
- ✓ Highly accessible
- ✓ Including elements of social comparison

HEADING

Customer data by supply

BENCHMARK

Comparison with "similar" and more "virtuous" customers

COMPARISON

Consumption comparison with previous year/ period

ENVIRONMENTAL KPI

Environmental impact (CO2 emissions)

INSTANT TIPS

Savings advices and self-reading reminders

REPORT E.E.



Report dei tuoi consumi Energia Elettrica
01 Luglio 2017 - 1 Settembre 2017
(62 giorni)

Intestatario
ZONARELLI FEDERICO
Codice cliente
39358293383
Numero contratto
39358293383
Punto di fornitura
393582933832234

La tua casa
3 abitanti, 65 m²
Indirizzo di fornitura
Via Alessandro Bonici 3, Bologna (BO)
Potenza (kW)
8
Tipo di casa
Residente, casa di proprietà,
appartamento

Come consumi rispetto ai clienti simili a te?

- Consumo precedente
- Consumo per questo quadro

CLIENTI VIRTUOSI

Abilitati nella stessa provincia simili alla tua per dimensioni e numero abitanti

CLIENTI MEDI

Abilitati nella stessa provincia simili alla tua per dimensioni e numero abitanti



Bravo!
-70%

Complimenti! Stai consumando meno di altri clienti simili a te!

Come consumi rispetto all'anno scorso? (kWh)

Temperatura media della provincia di Bologna



Hai cambiato le tue abitudini?

In questa sezione scopri come è cambiato il consumo dell'energia durante la giornata rispetto all'anno scorso.



Fai la differenza!

I tuoi consumi influiscono in modo significativo sull'ambiente.



Bravo!

Hai contribuito a ridurre le emissioni nell'ambiente di 193 kg di CO₂ rispetto all'anno scorso.

Se vuoi risparmiare, puoi!



Mantieni la temperatura del frigorifero tra gli 1° e 4° C: per ogni grado in meno aumenti i consumi del 5%.



Il forno a microonde consuma circa la metà di un forno elettrico tradizionale!

Fai l'autolettura, è semplice!

Per un report con valori precisi ricorda di fare l'autolettura del tuo contatore e trasmetterci i dati su servizioline.gruppohera.it

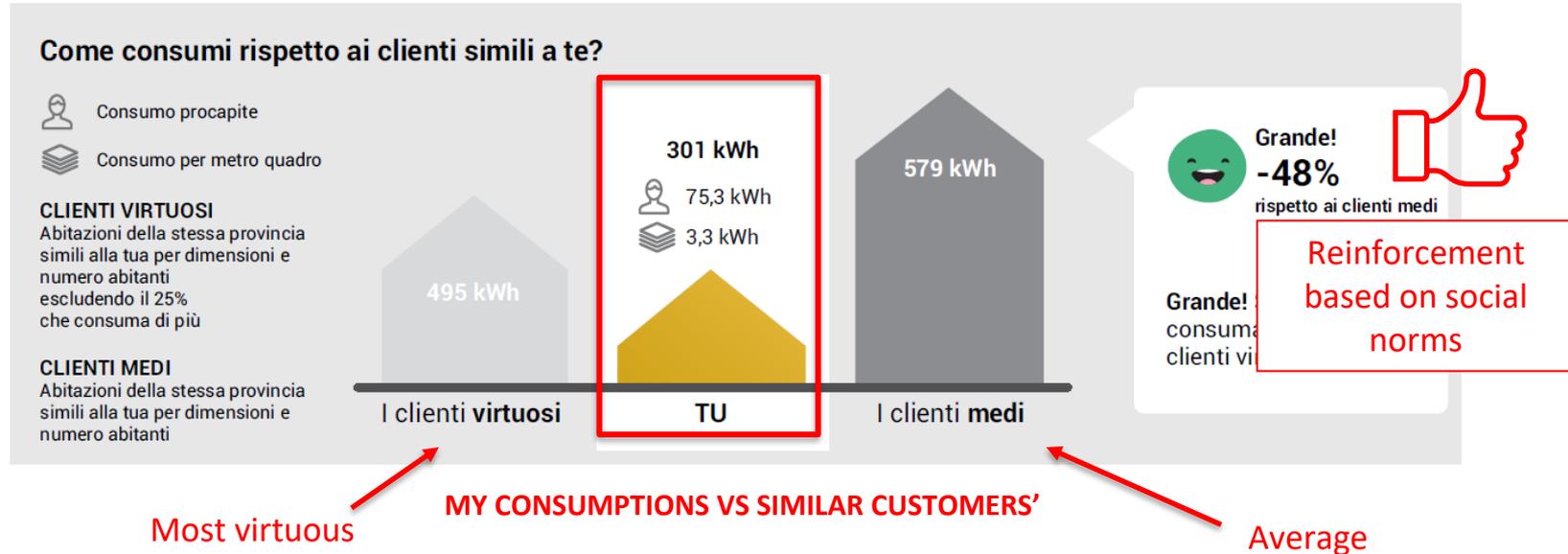
Approfondisci la tua analisi: servizioline.gruppohera.it



- Sent for free to new customers or customers changing contract
- same periodicity of bills, but a few day earlier to be paid more attention

Home Energy Report: focus (1/3)

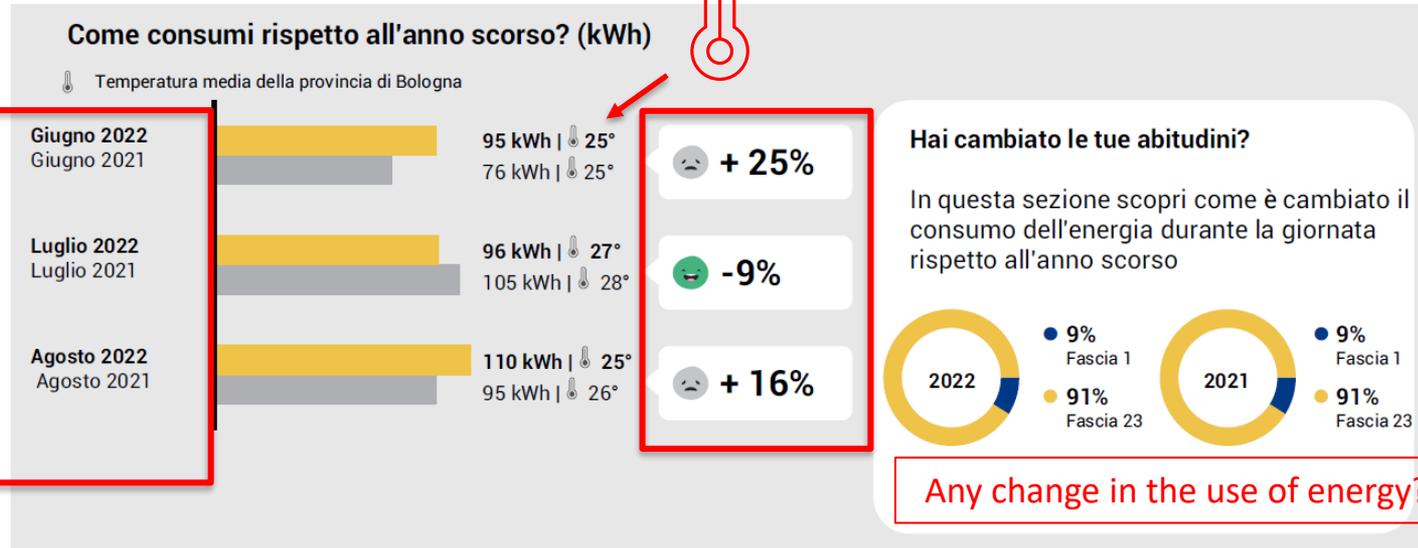
BENCHMARK



Similar customers → same town, dimension of the house and n° of components

Home Energy Report: focus (2/3)

COMPARISON



MY CONSUMPTION OF CURRENT PERIOD
Vs
SAME PERIOD OF THE YEAR BEFORE

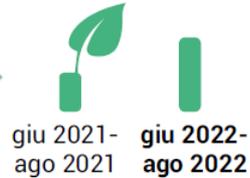
Self comparison for continuous improvement

Impacts in terms of CO2 emissions

ENVIRONMENTAL KPI

Fai la differenza!

I tuoi consumi influiscono in modo significativo sull'ambiente.



Attenzione!

Hai contribuito ad aumentare le emissioni di 9,2 kg di CO2 rispetto all'anno scorso

INSTANT TIPS

Se vuoi risparmiare, puoi!



Avvia la lavastoviglie solo a pieno carico e usa cicli di lavaggio a basse temperature

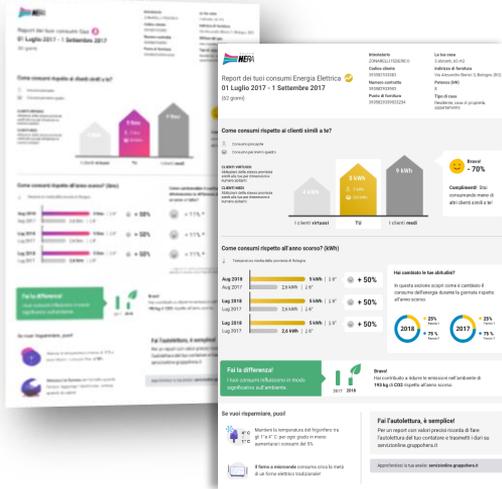


Ricordati di controllare l'efficienza energetica del tuo frigorifero ogni 2-4 anni

Tips are:

- Technological or behavioral
- Diversified and variable depending seasonality

So what...??



Are there energy savings measurable?

Energy savings have been measured using a methodology based on mathematical and statistical principles



Awarded with energy efficiency incentive of White Certificates

Integration with WhCs mechanism

White Certificates are one of the main policy supporting energy efficiency in Italy



In 2017 it was introduced the category «Behavioral measures»

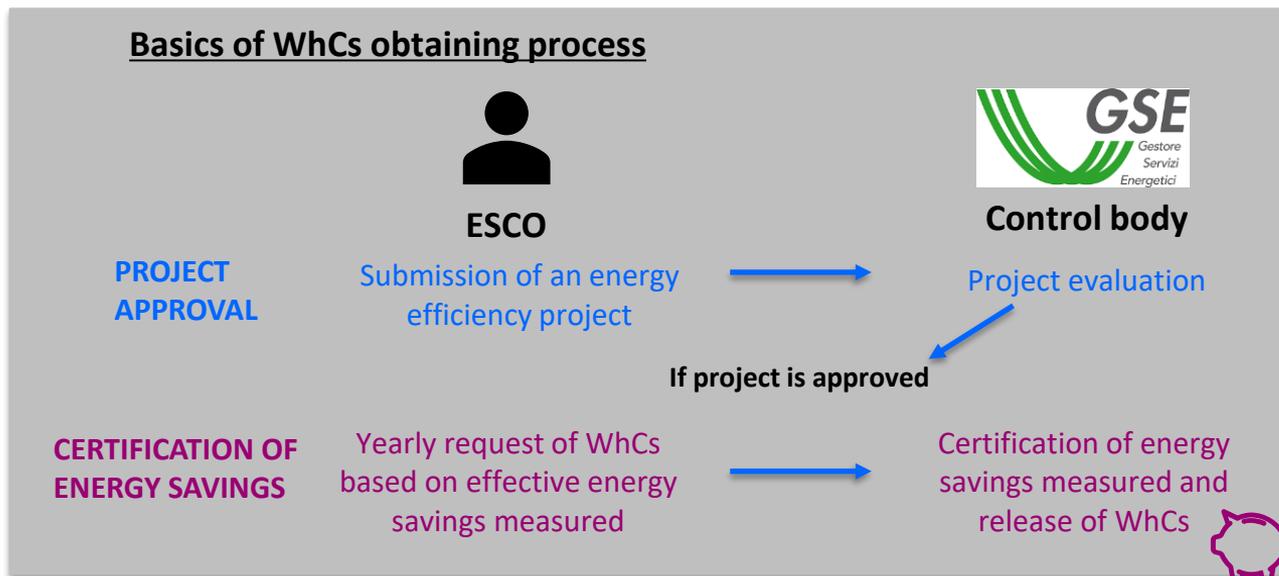
Incentive duration: 3 years



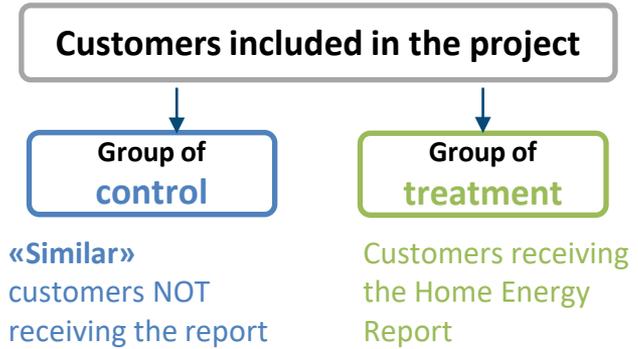
Savings have to be measured!

No estimation are admitted

**Energy efficiency obligations
Art.8 EED**



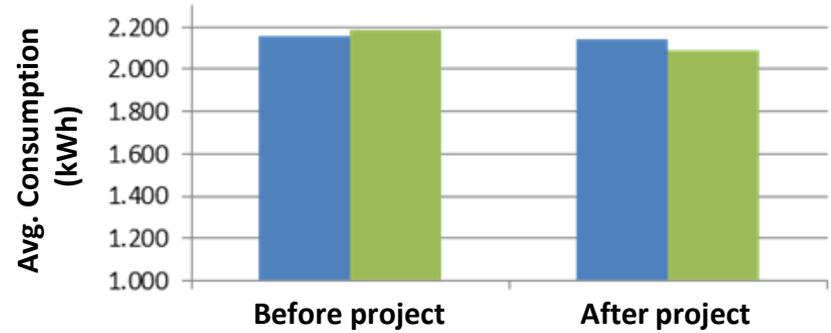
How savings are measured



SIMILARITY criteria:

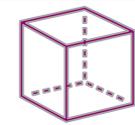
- SAME number
- SAME town
- Approx. SAME annual consumption

METHODOLOGY
Differences in differences



EN. SAVINGS measured

$$\gamma = \sum (\Delta \text{Cons.Treatment} - \Delta \text{Cons. Control})$$



Statistical model (lin. Regression)

estimation $\hat{\gamma} = (\bar{C}_{ta} - \bar{C}_{tp}) - (\bar{C}_{ca} - \bar{C}_{cp})$

Statistical significance checked every year $t = \frac{\hat{\gamma} - \gamma}{SE(\hat{\gamma})}$

Average Energy savings
measured

≈3%

Home Energy Report – 1° slot

	Savings measured	
	1° year	2° year
# Customers included	96.191	79.221
Avg. Consumption ex-ante [kWh/anno]	1.942	1.956
Disregarded > < 15%	6.644	2.782
Energy savings %	3,0%	2,6%
White Certificates released	# 960	716
	€ 240.000€	180.000€

The **effectiveness** of the report is **expected to decrease over the years**



- ✓ Continuous updates of format
- ✓ Invitation to integrate with technologies → become active and advocate!
- ✓ Awards and prizes initiatives

Thanks for your attention



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