

Politiche energetiche e climatiche

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Aprile 2021

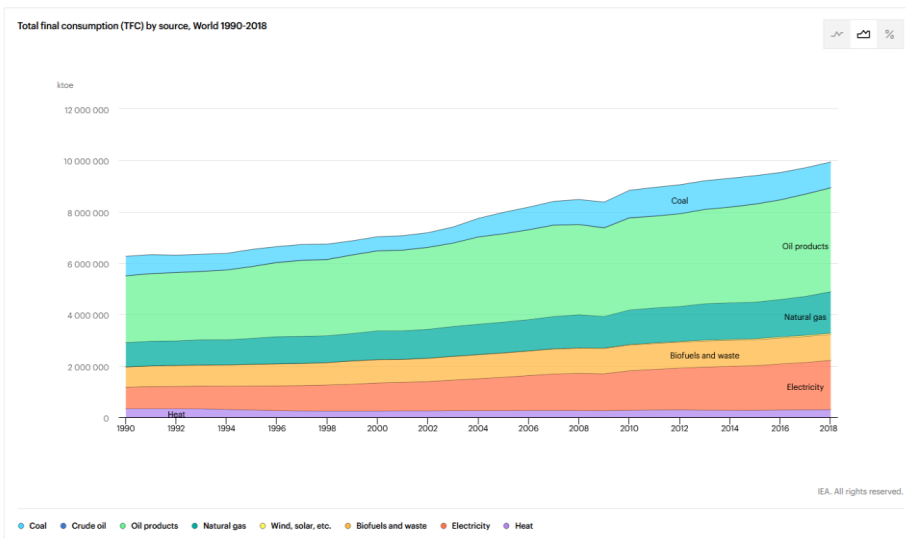
Punti trattati

- Problemi ambientali ed economici
- Politica energetica e climatica
- Non solo costi ma anche benefici

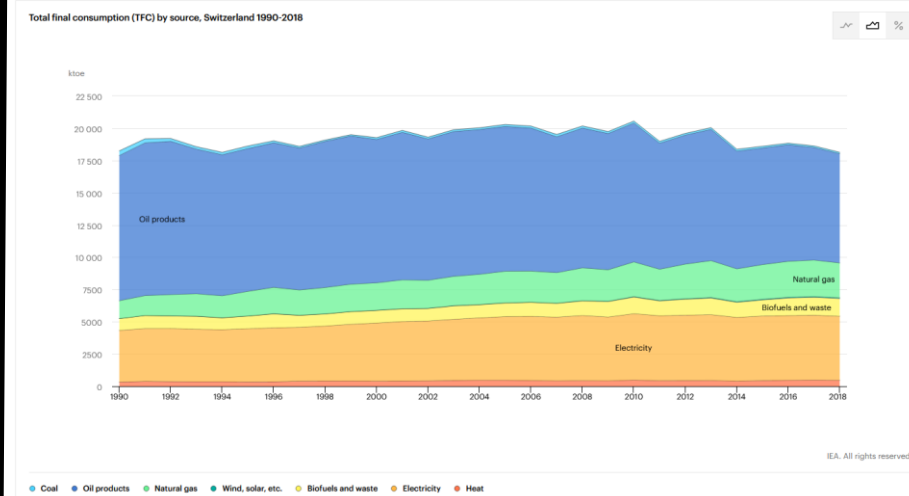


Sistemi energetici basati su combustibili fossili

Mondo



Svizzera



- **Aumento costante del consumo**
- **Fonti fossili (~ 80%), fonti non rinnovabili**
- **Problemi ambientali ed economici globali e locali**

Problema globale

*Emissioni CO2 e di altri gas
ad effetto serra*

Cambiamento climatico
*Aumento temperature, precipitazioni,
del livello del mare*

*Riduzione produzione agricola
Riduzione PIL
Serio pericolo per la salute
Impatto negativo sul benessere
Forti differenze
NORD-SUD*

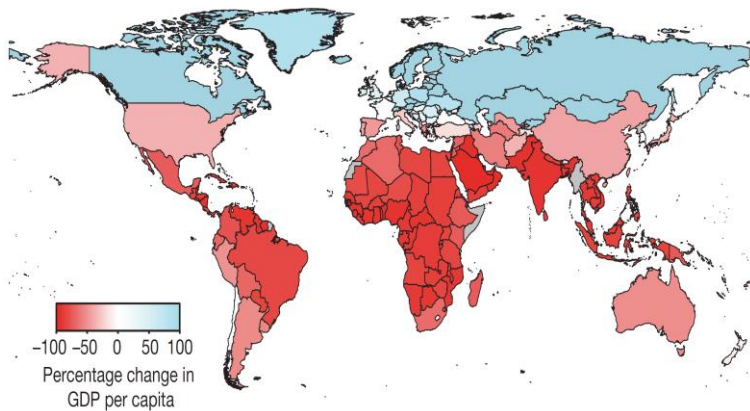
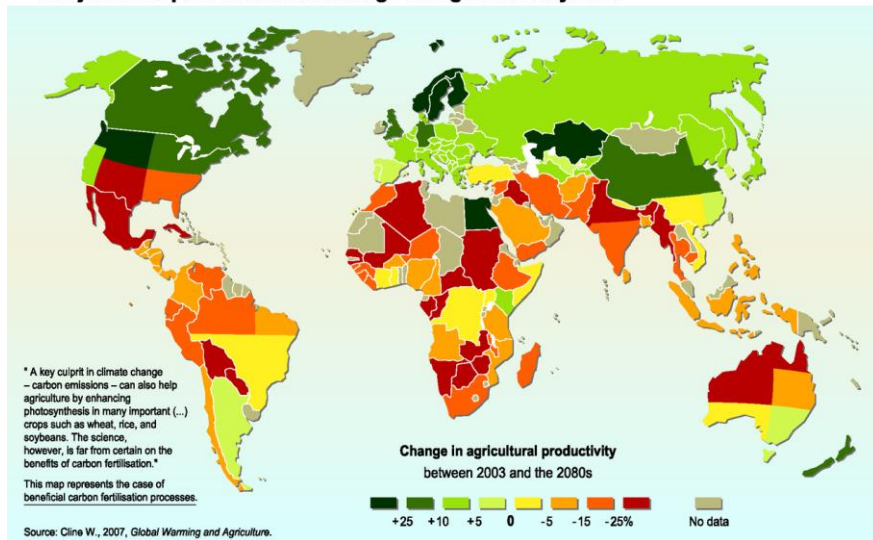
Problema locale

*Emissioni di CO2, polveri fini,
ossidi di azoto,..*

Inquinamento dell'aria

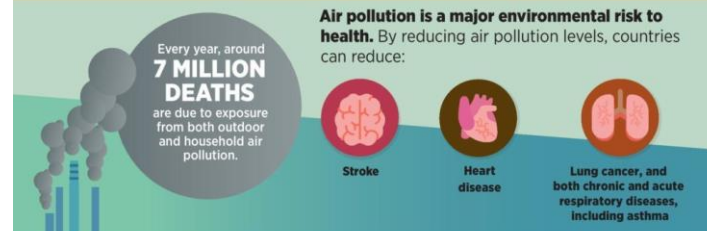
Danni alla salute, all'ambiente
*Impatto negativo sul PIL e
sul benessere in generale
(qualità di vita)*

Projected impact of climate change on agricultural yields



Quelle: Burke, Marshall, Solomon M. Hsiang, and Edward Miguel. "Global non-linear effect of temperature on economic production." *Nature* 527.7577 (2015): 235.

AIR POLLUTION – THE SILENT KILLER



REGIONAL ESTIMATES ACCORDING TO WHO REGIONAL GROUPINGS:



CLEAN AIR FOR HEALTH

#AirPollution

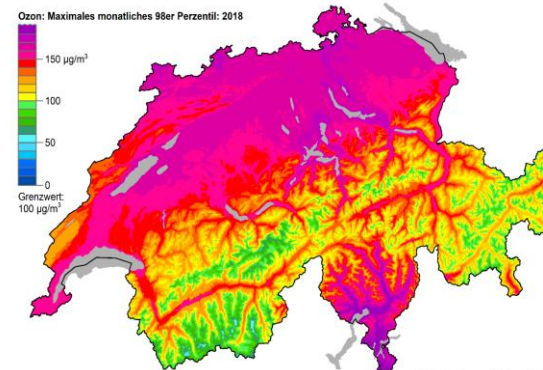


Abbildung 8: Karte Jahreswerte Ozon: Maximales monatliches 98er Perzentil für das Jahr 2018.

Costi sociali solo inquinamento dell'aria trasporti **472 franchi pro capite (ARE; 2017)**

<https://www.are.admin.ch/are/it/home/mobilita/basi-e-dati/i-costi-e-i-benefici-dei-trasporti.html>

Per la trasformazione del sistema energetico attuale

**Politica
climatica ed
energetica**



- ↘ **investimenti nelle fonti di energia rinnovabili**
- ↘ **investimenti nell'efficienza energetica**
- ↘ **Modifica degli stili di vita**



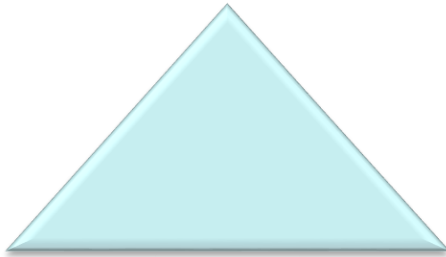
POLITICHE ENERGETICHE E CLIMATICHE



Obiettivi

Politica energetica

**Sicurezza di
approvvigionamento**



**Approvvigionamento
economico**

Politica climatica

- 1. entro il 2030** le emissioni dovranno essere almeno **dimezzate** rispetto ai valori del 1990
- 2. emissioni** nette pari a **zero entro il 2050**

**Tutela e rispetto
dell'ambiente**

**Riduzione drastica emissioni (zero emissioni
nette)**

Politiche energetiche e climatiche in Svizzera

➤ Legge sull'energia (2017)

<https://www.uvek.admin.ch/uvek/de/home/uvek/abstimmungen/abstimmung-zum-energiegesetz/worum-geht-es.html>



➤ Legge sul CO2 (2011) e nuova legge sul CO2 (referendum giugno 2021)

<https://www.bafu.admin.ch/bafu/de/home/themen/klima/recht/totalrevision-co2-gesetz/faq-co2.html>



➤ Leggi sull'energia a livello cantonale

Strumenti di politica energetica e climatica

Strumenti orientati al mercato

- Imposte e sussidi



Alcuni esempi:

- Imposta CO2 sul consumo di olio combustibile, benzina, gas,...
- Imposta sui biglietti aerei
- Sussidi per auto efficienti o elettriche
- Sussidi per investimenti nelle fonti di energia rinnovabili, nell'efficienza energetica degli stabili
- Sussidi per la R&S di nuove tecnologie
-

Strumenti non orientati al mercato

- Regolamentazioni (Norme e controlli)
- Informazione e formazione



Alcuni esempi:

- Standard di consumo energetico negli stabili
- Standard di emissioni CO2 per le auto
- Programma di formazione clima
- Divieti di vendita (es. *lampadine ad incandescenza, auto troppo inefficienti,..*)
- **Nudges (Spinte gentili)**
-

Nudges

- **«spinte» gentili**: strumenti, incentivi, regole “dolci” che spingono l’individuo a cambiare comportamento, a scegliere il meglio per sé e per la società

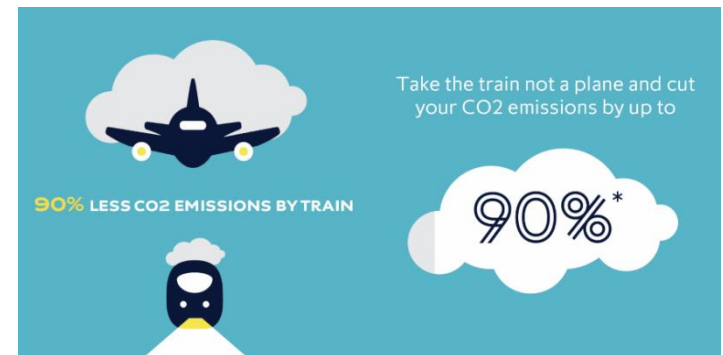
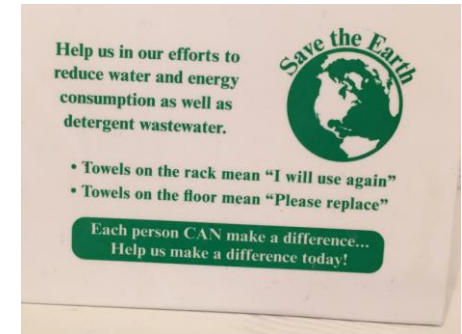
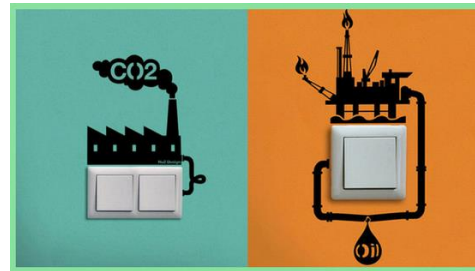
↳ scelte più consapevoli

↳ senza incentivi economici o regolamenti

↳ paternalismo libertario

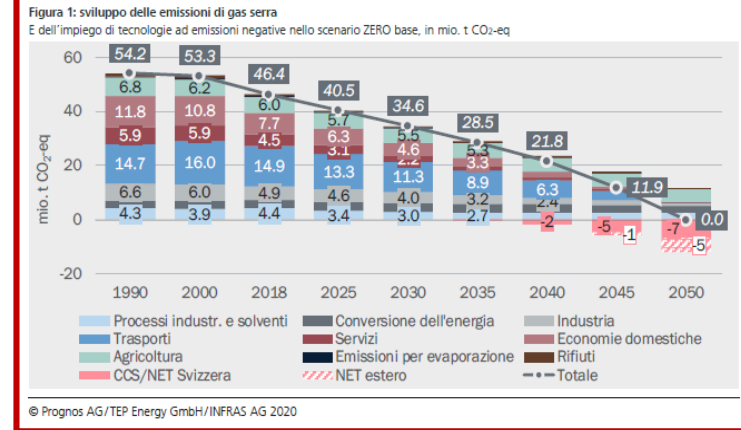


| Energieetikette «Jahr» | |
|-----------------------------|--|
| Modell | «Marke + Modell» |
| Antriebsart | «Antrieb» |
| Leistung | «XXX» kW / «XXX» PS |
| Leergewicht | «XXX» kg |
| Verbrauch | «Treibstoff» «Energieverbr.» kWh / 100 km |
| CO ₂ -Emissionen | Dieses Modell «XXX» g / km* 115 g / km** |
| Energieeffizienz | A |



Obiettivo politica climatica

Saldo netto delle emissioni pari a zero entro il 2050



COSTI E BENEFICI

COSTI della trasformazione del sistema energetico per raggiungere la neutralità climatica **entro il 2050**

Trasformazione del sistema energetico per raggiungere la neutralità climatica determina dei **costi supplementari** rispetto ad uno scenario «business as usual»

Stime costi supplementari

- **Energieperspektiven** (BFE, 2020; tasso di sconto 1.6%)
 - ↳ valore medio di tutti i 4 scenari: ~**380** franchi pro capite per anno
- **Consorzio istituti di ricerca universitari** (2021; tasso di sconto 2.5%)
 - ↳ valore medio di tutti i 9 scenari: ~**417** franchi pro capite per anno



BENEFICI della trasformazione del sistema energetico per raggiungere la neutralità climatica **entro il 2050**



Purtroppo non esiste uno studio completo sui benefici per la Svizzera

Benefici globali e locali dovuti alla prevenzione dei danni da

- Desertificazione in alcune aree e aumento delle inondazioni in altre
- Diffusione di malattie come la malaria riduzione dell'agricoltura e dei raccolti
- Fenomeni meteorologici estremi più frequenti
-

Benefici locali dovuti a

- Miglioramento delle condizioni di salute
- Miglioramento della dieta e dell'attività fisica
- Miglioramento della qualità del suolo e dell'acqua
-



Le news....


NZZ am Sonntag

So teuer wird die Energiewende

Bis 2050 muss die Schweiz klimaneutral werden. Der Umbau des Energiesystems ist eine Jahrhundertaufgabe. Was er kostet, haben Forscher jetzt berechnet.

Andreas Hirstein

06.03.2021, 17.15 Uhr

 Hören  Merken  Drucken  Teilen



RSI NEWS

NEWS SPORT CULTURA SCIENZA MUSICA METEO CHI SIAMO EVENTI

COVID-19 Ticino, Grigioni e Insubria Svizzera Mondo Economia Ambiente Vita quotidiana Oltre la News Dossier Gallery

SVIZZERA

Impatto zero per 330 franchi a testa

L'Istituto Paul Scherrer ritiene possibile rispettare l'obiettivo fissato nel 2019 dal Consiglio federale, ma i costi sarebbero importanti

Ultima modifica: 14 marzo 2021 18:39

 Ascolta  Stampa  Condividi  a A

Non dimentichiamoci dei benefici...

ETH zürich

ENERGYBLOG



CARBON REMOVAL · CONSUMER BEHAVIOR · ECONOMICS & POLICY · ENERGY SUPPLY · SOCIETY

Let's pay more attention to the co-benefits of Switzerland's decarbonization targets

DOI: 10.1080/14693062.2020.1724070

“As we have argued, there are also benefits of reaching a net-zero target. These benefits relate to the reduction in so-called “**social costs**”; i.e., costs borne by the society and not necessarily by the party responsible for the cost.”

Benefici: almeno **una parte dei costi** sociali determinati dall'inquinamento dell'aria nel settore trasporti (**472 franchi pro capite; (ARE 2017)**) + **altri benefici** purtroppo non quantificati

CLIMATE POLICY
2020, VOL. 20, NO. 3, 292–316
<https://doi.org/10.1080/14693062.2020.1724070>

Taylor & Francis
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OPEN ACCESS

Climate policy co-benefits: a review

Mikael Karlsson , Eva Alfredsson and Nils Westling

School of Architecture and the Built Environment, Royal Institute of Technology Stockholm, Sweden

ABSTRACT

Concern over mitigation costs impedes the adoption of the climate policies needed to achieve agreed global warming targets. While costs are important to consider, so are benefits. However, the evidence for climate policy co-benefits, that is, the benefits in addition to avoided climate change costs, is commonly overlooked in policy-making. In many areas, the research is limited and not comprehensively synthesised. This article counters that problem and reviews 239 peer-reviewed articles, selected from 1,749 hits from a literature search covering ‘co-benefits’ and related terms. Aiming to aid policy-makers and to identify research gaps, we structure, describe, analyse and synthesize the rapidly expanding knowledge on climate policy co-benefits. Improved air quality is the co-benefit category dominating the literature, but studies covering a broad geographic range also focus on diet, physical activity, soil and water quality, biodiversity, economic performance, and energy security. In these areas, co-benefits are shown to be of substantial economic value, regarding air quality often of the same order of magnitude as mitigation costs, in some instances even larger. However, the share of studies quantifying or monetizing co-benefits is limited, and the empirical evidence is small, in particular for areas besides air quality and health. Furthermore, the knowledge is seldom used in policy-making, meaning that decision-making is often biased and overly concerned with costs, leading to suboptimal climate policies and goal failures. Evidently, more research is needed, as well as improved decision-making. Understanding and acting on climate policy co-benefits can promote policies that better mitigate climate change and improve overall welfare.

ARTICLE HISTORY

Received 13 August 2019
Accepted 23 January 2020

KEYWORDS

Co-benefit; ancillary benefit;
cost-benefit analysis;
decision-making; synergy;
climate change mitigation

Benefici diretti e indiretti sono molto importanti

In particolare i benefici dovuti al solo miglioramento della qualità dell'aria possono, in alcune situazioni, già superare i costi

Conclusioni: politica energetica e climatica

- Adottare l'approccio determinato ed incisivo mostrato per l'emergenza COVID-19 anche per **l'emergenza climatica** e per **l'emergenza sanitaria** determinata dall'inquinamento dell'aria
- Abbiamo bisogno di un mix di strumenti di politica energetica e climatica
- **Non dobbiamo solo parlare di costi ma anche di benefici!**



Extra slides





Deaths from fossil fuel emissions higher than previously thought

Fossil fuel air pollution responsible for more than 8 million people worldwide in 2018

By [Leah Burrows](#) | [Press contact](#)
February 9, 2021



More than 8 million people died in 2018 from fossil fuel pollution, significantly higher than previous research suggested, according to new research from Harvard University, in collaboration with the University of Birmingham, the University of Leicester and University College London. Researchers estimated that exposure to particulate matter from fossil fuel emissions accounted for 18 percent of total global deaths in 2018 — a little less than 1 out of 5.

Regions with the highest concentrations of fossil fuel-related air pollution — including Eastern North America, Europe, and South-East Asia — have the highest rates of mortality, according to the study published in the journal [Environmental Research](#).





RESEARCH ARTICLE

10.1029/2018EF000922

Special Section:
Resilient Decision-Making
for a Riskier World

Key Points:

- The global economic gains from complying with the Paris Climate Accord are shown to be substantial across 139 countries
- With the comparative case of RCP8.5 (4°C), the global gains from complying with the 2°C target (RCP4.5) are US\$17,489 billion per year
- The relative damages from not complying with the 2°C target to Sub-Sahara Africa, India, and Southeast Asia are especially severe

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T. Kompas,
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Citation:
Kompas, T., Pham, V. H., & Che, T. N. (2018). The effects of climate change on GDP by country and the global economic gains from complying with the Paris Climate Accord. *Earth's Future*, 6, 1153–1173. <https://doi.org/10.1029/2018EF000922>

The Effects of Climate Change on GDP by Country and the Global Economic Gains From Complying With the Paris Climate Accord

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¹Centre of Excellence for Biosecurity Risk Analysis, School of Biosciences and School of Ecosystem and Forest Sciences, University of Melbourne, Parkville, Victoria, Australia, ²Crawford School of Public Policy, Australian National University, Canberra, ACT, Australia, ³Black Mountain Science and Innovation Park, CSIRO Land and Water, Canberra, ACT, Australia

Abstract Computable general equilibrium (CGE) models are a standard tool for policy analysis and forecasts of economic growth. Unfortunately, due to computational constraints, many CGE models are dimensionally small, aggregating countries into an often limited set of regions or using assumptions such as static price-level expectations, where next period's price is conditional only on current or past prices. This is a concern for climate change modeling, since the effects of global warming by country, in a fully disaggregated and global trade model, are needed, and the known future effects of global warming should be included in forward-looking forecasts for prices and profitability. This work extends a large dimensional intertemporal CGE trade model to account for the various effects of global warming (e.g., loss in agricultural productivity, sea level rise, and health effects) on Gross Domestic Product (GDP) growth and levels for 139 countries, by decade and over the long term, where producers look forward and adjust price expectations and capital stocks to account for future climate effects. The potential economic gains from complying with the Paris Accord are also estimated, showing that even with a limited set of possible damages from global warming, these gains are substantial. For example, with the comparative case of Representative Concentration Pathway 8.5 (4°C), the global gains from complying with the 2°C target (Representative Concentration Pathway 4.5) are approximately US\$17,489 billion per year in the long run (year 2100). The relative damages from not complying to Sub-Sahara Africa, India, and Southeast Asia, across all temperature ranges, are especially severe.

The results clearly show that the effects of global warming vary by time, region, and economic sectors but tend to increase over time and become much worse in relatively poor African and Asian nations, where the loss in GDP here and in all countries near the equator is most severe (see Table 1 and Figure 1). But, indeed, over the medium term, despite some minor gains in a few European countries, the losses from global warming (at 3°C) dominate a major part of the world (Figure 1).

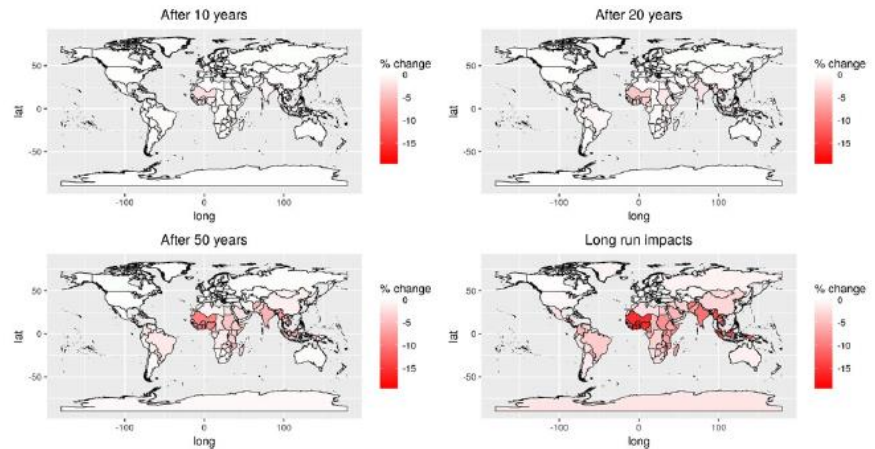
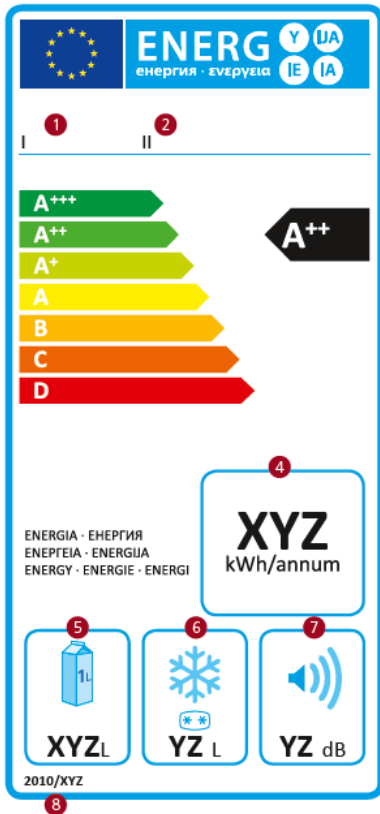


Figure 1. Dynamic impacts of global warming (3°C) on the world GDP (% change/year).

Paper 1



Informazioni Sufficienti ?
Nessuna informazione sui costi

Empower the Consumer! Energy-related Financial Literacy and its Implications for Economic Decision Making

Julia Blasch, Nina Boogen, Claudio Damiano, Massimo Filippini

Open Access Article

Abstract:

Untapped energy savings potential in the residential sector might lead to substantial welfare losses. While several studies have focused on the role of behavioral biases in explaining the lack of adoption of energy-efficient durable goods, little is known about the role of limited energy-specific knowledge and financial literacy. In this paper, we propose an integrated concept of 'energy-related financial literacy', which combines both energy cost-specific knowledge and skills needed to process this information. Using data from a large household survey in three European countries, we explore the determinants of different measures of literacy and, most importantly, we provide empirical evidence on the association between limited knowledge and skills to perform an intertemporal optimization and the adoption of energy-efficient light bulbs. Our findings support the promotion of energy-specific financial education programs and tools to increase the adoption of energy-efficient durable goods.

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Published in Volume 10, Number 2 of The Quarterly Journal of the IAEE's Energy Economics Education Foundation.

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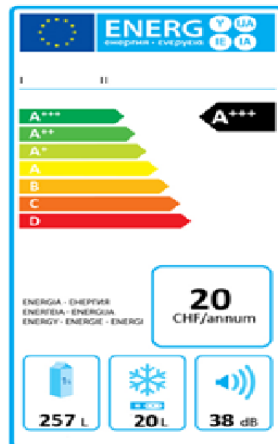
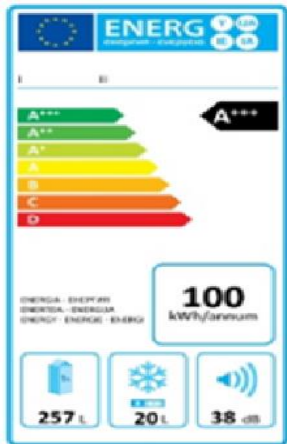
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Paper 2

Informazione sui costi d'utilizzo al momento dell'acquisto



Impatto positivo importante

Resource and Energy Economics xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Resource and Energy Economics

journal homepage: www.elsevier.com/locate/ree

Boundedly rational consumers, energy and investment literacy, and the display of information on household appliances[☆]

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ABSTRACT

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D80
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Q48

Keywords:
Energy-efficiency
Bounded rationality
Energy-using durables
Energy label
Energy literacy
Online randomized controlled trial

It is an ongoing debate how to increase the adoption of energy-efficient light bulbs and household appliances in the presence of the so-called 'energy efficiency gap'. One measure to support consumers' decision-making towards the purchase of more efficient appliances is the display of energy-related information in the form of energy-efficiency labels on electric consumer products. Another measure is to educate consumers in order to increase their level of energy and investment literacy. Thus, two questions arise when it comes to the display of energy-related information on appliances: (1) What kind of information should be displayed to enable consumers to make rational and efficient choices? (2) What abilities and prior knowledge do consumers need to possess to be able to process this information? In this paper, using a series of (recursive) bivariate probit models and three samples of 583, 877 and 1375 households from three major Swiss urban areas, we show how displaying information on the future energy consumption of electrical appliances in monetary terms (CHF), rather than in physical units (kWh), increases the probability that an individual makes a calculation and identifies the appliance with the lowest lifetime cost. In addition, our econometric results suggest that individuals with a higher level of energy and, in particular, investment literacy are more likely to perform an optimization rather than relying on a decision-making heuristic. These individuals are also more likely to identify the most (cost-)efficient appliance.

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