

# ENERGISE

EUROPEAN NETWORK FOR RESEARCH, GOOD PRACTICE  
AND INNOVATION FOR SUSTAINABLE ENERGY 

**Project acronym:** ENERGISE  
**Title:** European Network for Research, Good Practice and Innovation for Sustainable Energy  
**Grant Agreement number:** 727642

## COUNTRY REPORT:

### ITALY

#### EXTRACTED FROM D2.5: PRODUCTION OF 30 NATIONAL SUMMARY BRIEFS

**Deliverable 2.5 description:** 30 national summary briefs of national energy supply and demand.

**Lead parties for deliverable:** AAU

**Deliverable 2.5 authors:** Charlotte Jensen, Inge Rørpke (AAU), Gary Goggins, Frances Fahy, Eimear Heaslip (NUIG), Marko Hajdinjak, Desislava Asenova (ARC Fund), Mathias Claeys Bouuaert, Tomislav Tkalec, Lidija Živčič, Renda Bellmalle, Kristjan Čoklč, Camille Gomes (FOCUS), Edina Vadovics, Kristóf Vadovics, Jozsef Slezak, Gergő Horváth, Szandra Szomor (GDI), Marfuga Iskandarova, Audley Genus (KU), Eoin Grealis, Annika Musch, Henrike Rau (LMU), Eva Heiskanen, Senja Laakso, Jari Kolehmainen, Eeva-Lotta Apajalathi (UH), Julia Backhaus (UM), Laure Dobigny, Marlyne Sahakian (UNIGE).

**Cite as:** Jensen et al. (2018) *30 national summary briefs of national energy supply and demand*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.5.



This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 727642.



| ENERGISE partners  | Logo  |
|--|---|
| National University of Ireland, Galway (NUIG),<br>University Road, Galway, Ireland   |    |
| Aalborg Universitet (AAU),<br>Fredrik Bajers Vej 5, Aalborg 9220, Denmark  |    |
| Kingston University Higher Education Corporation (Kingston),<br>River House High Street 53-57,<br>Kingston Upon Thames KT1 1LQ, United Kingdom |    |
| Universiteit Maastricht (UM),<br>Minderbroedersberg 4-6, Maastricht 6200 MD, Netherlands   |    |
| Université de Genève (UNIGE),<br>24 rue du Général-Dufour, 1211 Genève 4, Switzerland  |   |
| GreenDependent Institute (GDI),<br>Eva utca 4, Godollo 2100, Hungary   |  |
| Ludwig-Maximilians-Universitaet Muenchen (LMU Muenchen),<br>Geschwister-Scholl-Platz 1, Muenchen 80539, Germany                                |  |
| Focus Drustvo Za Sonaraven Razvoj (FOCUS),<br>Maurerjeva Ulica 7, Ljubljana 1000, Slovenia   |  |
| Applied Research and Communications Fund (ARC Fund),<br>Alexander Zhendov Street 5, Sofia 1113, Bulgaria                                       |  |
| Helsingin Yliopisto (UH),<br>Yliopistonkatu 4, Helsingin Yliopisto 00014, Finland  |  |

## LEGAL NOTICE

The information in this document is provided as is and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of the following information.

© ENERGISE 2018. Reproduction is authorised provided the source is acknowledged.

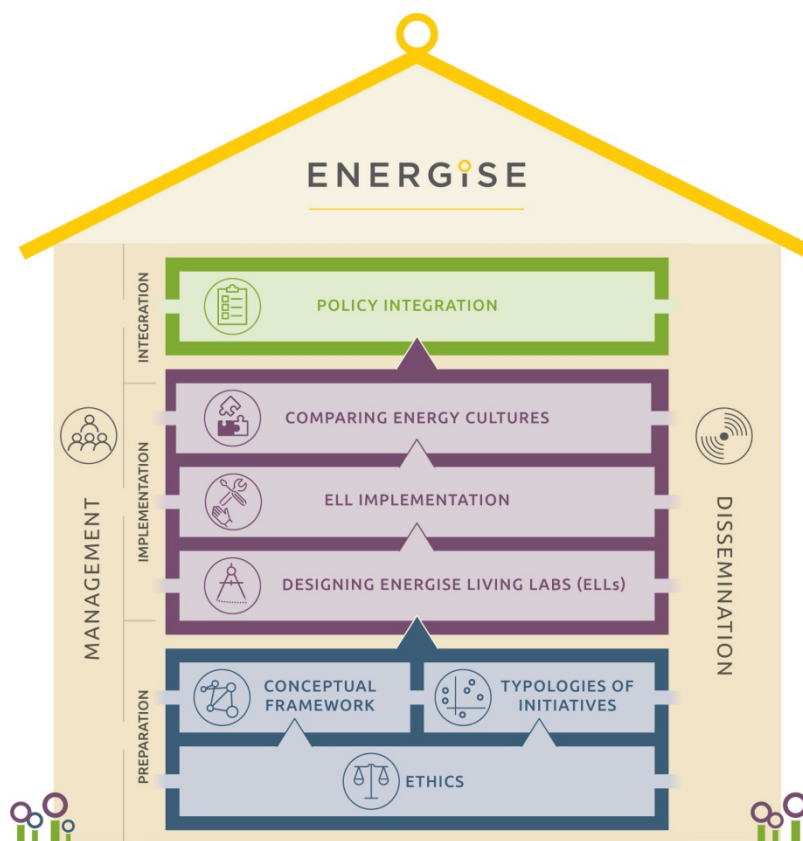
## DISCLAIMER

ENERGISE is a Horizon 2020 project funded by the European Commission. The views and opinions expressed in this publication are the sole responsibility of the author(s) and do not necessarily reflect the views of the European Commission. Neither the INEA nor the European Commission is responsible for any use that may be made of the information contained therein.

## ENERGISE PROJECT

ENERGISE is an innovative pan-European research initiative to achieve a greater scientific understanding of the social and cultural influences on energy consumption. Funded under the EU Horizon 2020 programme for three years (2016-2019), ENERGISE develops, tests and assesses options for a bottom-up transformation of energy use in households and communities across Europe. ENERGISE's primary objectives are to:

- **Develop an innovative framework** to evaluate energy initiatives, taking into account existing social practices and cultures that affect energy consumption.
- **Assess and compare the impact** of European energy consumption reduction initiatives.
- **Advance the use of Living Lab approaches** for researching and transforming energy-related practice cultures.
- **Produce new research-led insights** into the role of household routines and changes to those routines towards more sustainable energy.
- **Encourage positive interaction** between actors from society, the policy arena and industry.
- **Effectively transfer** project outputs towards the implementation of the European Energy Union.



## INTRODUCTION

This document is one of 30 national briefs, demonstrating key aspects of national energy supply and demand dynamics. Each brief is comprised of five sections:

**Section 1** summarises the energy profile of the country. The section provides basic quantitative information of demand demographics and usage profiles, market trends and energy supply profiles, as well as qualitative reflections on current national energy policy. ***For all the briefs, the quantitative information is derived from ec.europa.eu/eurostat (2015 data), eea.europa.eu (2015 data), and climate-zone.com, unless otherwise stated.***<sup>1</sup> The qualitative reflections are based on a literature reviews and desk-research. References for the literature review and the desk-research are provided in footnotes or in section five.

**Section 2** summarises the nationally based sustainable energy consumption initiatives (SECI) that have been identified as part of ENERGISE WP2 framework (Jensen, 2017). Each SECI has been coded according to the Problem Framing Typology developed in ENERGISE WP2 (Jensen et al, 2017b).

**Section 3** provides a *good practice* example of a national SECI that corresponds to category 3: “Changes in Everyday Life” or 4: “Changes in Complex Interactions” in the Problem Framing Typology. Please refer to Jensen (2017) and Jensen et al (2017b) for more information on the way the data for the good practice SECIs has been researched and documented.

**Section 4** provides a brief summary of major nationally specific trends and their implication for energy consumption policies.

**Section 5** provides an overview of sources used for qualitative assessments, and can be used as inspiration for further reading.

The national briefs provide contextual socio-material information for the further work to be carried out in Work Package 4, Work Package 5 and Work Package 6 in ENERGISE.

### 1.1 WP2: TYPOLOGIES OF ENERGY INITIATIVES

ENERGISE WP2 is a systematic criteria-guided review and classification of existing sustainable energy consumption initiatives from 30 European countries (EU-28, Switzerland, and Norway), which provides a comprehensive European database of energy initiatives involving households, and related typologies of sustainable energy consumption initiatives. This extensive synthesizing work guides the selection of Living Lab design elements for ENERGISE and future energy consumption research, policy and practice.

---

<sup>1</sup> Some piecharts will be empty, as no information is available.

This is done in order to

- Construct innovative typologies of sustainable energy consumption initiatives that can inform further research and action.
- Identify key success factors and related indicators, focusing on individual-level, collective, organizational, institutional and societal aspects of energy consumption, which will inform subsequent WP 3 (Designing Living Labs), WP 4 (ENERGISE Living Labs) and WP 5 (Capturing Energy Cultures).
- Progress the goals of the European Energy Union by creating a publicly archived open access dataset of sustainable energy initiatives across 30 countries in Europe.

Suggested further reading:

Jensen (2017) *Identification of key success factors and related indicators*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.2.

Jensen et al. (2017a) *Establishment of a comprehensive open access dataset of sustainable energy consumption programmes and Interventions*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.3.

Jensen et al. (2017b) *Constructions of typologies of sustainable energy consumption initiatives (SECIs)*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.4.

Sources of quantitative statistics (unless otherwise stated):

Climate data:

<http://www.climate-zone.com/continent/europe/>

Demography data:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/Population\\_structure\\_and\\_ageing](http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing)

[http://ec.europa.eu/eurostat/statistics-explained/index.php/Educational\\_attainment\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Educational_attainment_statistics)

Dwelling type data:

[http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Distribution\\_of\\_population\\_by\\_dwelling\\_type\\_2015\\_\(%25\\_of\\_population\)\\_YB\\_17.png](http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Distribution_of_population_by_dwelling_type_2015_(%25_of_population)_YB_17.png)

Energy demand and supply quantitative data:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy\\_consumption\\_in\\_households](http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_consumption_in_households)

Final energy consumption of households per capita data: <https://www.eea.europa.eu/airs/2017/resource-efficiency-and-low-carbon-economy/household-energy-consumption>

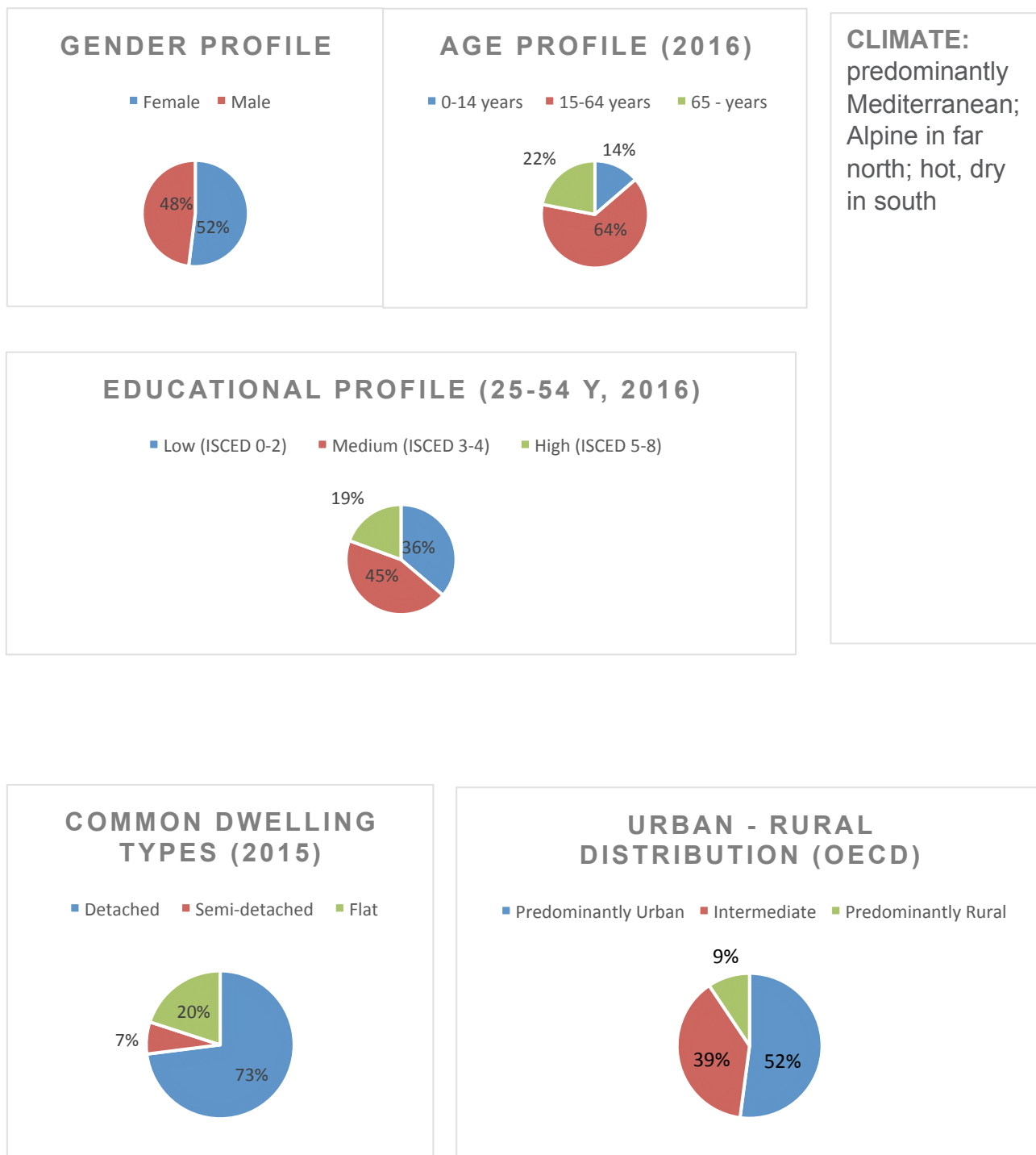
MWh conversion data:

<https://www.unitjuggler.com/convert-energy-from-toe-to-MWh.html?val=893.9>

# ITALY

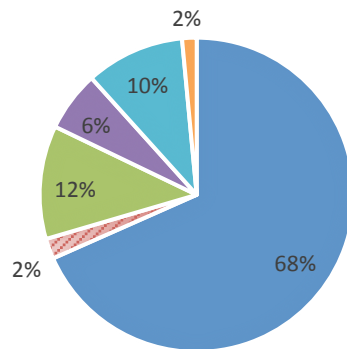
Authors: Renda Bellmallem, Tomislav Tkalec, Lidija Živčič

## DEMOGRAPHY, ENERGY CONSUMPTION AND ENERGY SUPPLY



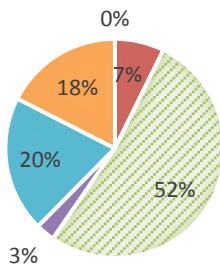
### RESIDENTIAL FINAL ENERGY CONSUMPTION BY TYPE OF END-USE (2015)

■ Space heating ■ Space cooling ■ Water heating ■ Cooking ■ Lighting and appliances ■ Other



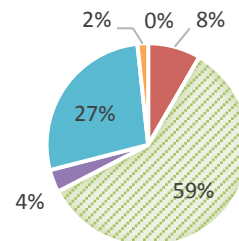
### SHARE OF FUELS IN THE FINAL ENERGY CONSUMPTION IN THE RESIDENTIAL SECTOR (2015)

■ Solid fuels ■ Petroleum products  
 ■ Gas ■ Derived heat  
 ■ Renewable energies ■ Electrical energy



### SHARE OF FUELS IN FINAL ENERGY CONSUMPTION - RESIDENTIAL SPACE HEATING (2015)

■ Solid fuels ■ Petroleum products  
 ■ Gas ■ Derived heat  
 ■ Renewable energies and waste ■ Electricity



### FINAL ENERGY CONSUMPTION FOR HOUSEHOLDS, PR CAPITA (2015)

6.223 MWh



## ENERGY SYSTEM AND ENERGY POLICY TRENDS

### Energy system

Italy is a highly import-dependent country for its energy supply, which exposes it to energy security risks. In 2016, 76% of the energy consumed in the country came from abroad, mostly net electricity, oil and gas. Italy's fossil fuel reserves are limited. Oil is the main energy imported. However, the balance of trade in petroleum products means that Italy is an exporter (due to the production of Italian refineries). At the rate of current production (5.3 Mt in 2011), the Italian oil reserves would be exhausted in 2025. The same is true for gas, which is the second most imported energy in Italy. Regarding coal, the country has very low reserves, so it's also mainly importing it.

Renewable energies were quickly developed in Italy (solar, geothermal, wind, biomass). In total, renewable energies produced 40.1% of Italian electricity in 2015, compared with 16.1% in 2005. Energy renewable energy is a priority of the Italian government, which sees a possibility to reduce its imports and energy dependence. In a few years, Italian solar energy has risen to second place on the European podium and fifth place in world production. Italy has significant hydroelectric potential, particularly in the Alps, but it is already almost fully exploited. Italy has been a pioneer in the development of hydroelectricity, which supplies 15.3% of its electricity in 2016, and geothermal energy.

The transmission of high voltage electricity is provided by Terna, a company listed on the Italian Stock Exchange, which emerged in 1999 from the splitting of Enel's transmission business. Enel (Ente Nazionale per Energia Elettrica) was, until its privatization in 1999 (privatization driven by the European Commission), the Italian national electricity company. It remains the main producer of electricity in the country. It has also become a multi-service Italian group (electricity, water, gas), while being one of the heavyweights of electricity production worldwide. With Enel, ENI is the most important Italian energy player. ENI (Ente Nazionale Idrocarburi) is a hydrocarbon company, privatized in 1998 (previously public). It is active in the petroleum, natural gas, petrochemical, power generation and engineering. ENI is the first Italian company by market capitalization and the fifth largest oil group in the world.

### Particular socio-material aspects that influence energy consumption

Italian energy production is experiencing regional contrasts between north and south, especially with regard to solar energy issues. A law that requires owners of new homes to be equipped with solar panels is one of the elements that make Italy one of the worlds most endowed with solar energy.

A substantial part of the housing stock is low energy efficient. For that reason there are several programs for energy refurbishment of buildings. Because of the warm climate, a lot of energy is used for cooling in the summer.

### Current Trends in Energy Policy

The government energy plan announced in November 2017 calls for the closure of existing coal plants by 2025. Fossil fuels are used mainly in transportation, heating and industry. Italy has a tendency to become a southern European gas hub with proposals for new gas pipeline and LNG terminals projects.

Regarding nuclear power, Italy renounced the use of civilian nuclear energy in 1987 (following the Chernobyl disaster) after a referendum approved by 62% of the population. The nuclear power plants then in operation were gradually stopped. In May 2008, the government of Silvio Berlusconi announces a return to nuclear energy in order to solve the country's energy dependence. An agreement was signed in February 2009 to create a company half owned by Électricité de France (EDF) and ENEL. Rome's goal was to produce 25% of its electricity needs by 2030 through nuclear power. But the emotion raised by the Fukushima disaster of March 2011 forced the government to abandon this project, which met very strong oppositions. On the other hand, if it does not produce it, Italy imports nuclear energy.

The publication of the National Energy Strategy in 2013 sent a strong signal to stakeholders as to the government's medium- and long-term objectives for the energy sector. It established clear goals: reduce energy costs, meet environmental targets, strengthen security of energy supply and foster sustainable economic growth.

Italy has experienced impressive growth in the renewable energy sector and has been successful in integrating large volumes of variable renewable generation. Containing costs is a priority, and policies need to focus on bringing deployment costs towards international benchmarks.

### **Trends in national campaigns**

The government has introduced tax benefits for the implementation of energy change by individuals. These tax advantages are complex and have been reformed five times since 2005. The encouragement to use renewable energy sources is essentially based on the Verdi Certificate (green certificates), the energy account, the thermal account, the contributions of municipalities, regions and the state.














For any owner, it is possible to benefit in addition to a tax deduction of up to 65%, relief for the purchase of home appliances and furniture for the home, a bonus for those wishing to do work of restructuring by putting in place systems that use "green" energy (replacing doors and windows, water heater installations, solar panels, soil insulation, etc.). There is also a 50% tax deduction for the renovation of premises.














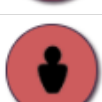
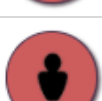
Enel is a pioneer in the field of "smart meters". Enel first installed communicating meters at 27 million subscribers between 2000 and 2005. The installation of 16 million new meters, which can be managed remotely, began in 2017, with the aim of becoming a leader in the Internet of Things and better managing the intermittent flows provided by solar and wind energy. Enel is the largest geothermal energy producer in the world. Furthermore, ENEL has allocated 300 million Euros to deploy 12,000 charging stations for electric cars.














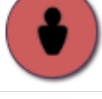

Campaigns from non-governmental stakeholders are focusing on smart meters, renewable energy, energy efficiency, energy poverty and more.

## OVERVIEW OF NATIONAL SECIS

Below please find a list of Italian SECIs that have been researched and documented through WP2 of ENERGISE. The SECIs are researched, selected and documented based on a set of requirements and research interests (please see Jensen 2017 for details). *The list should not be regarded as exhaustive or representative of all kinds of energy initiatives carried out in the country.*

|   |   |                                   |
|---|---|-----------------------------------|
| European Citizens Climate Cup (ECCC)  |    | Changes in Individuals' Behaviour |
| POWERHOUSE NEARLY ZERO CHALLENGE (POWER HOUSE NZC)  |    | Changes in Technology             |
| USMARTCONSUMER  |    | Changes in Individuals' Behaviour |
| ELIH MED - A EURO-MEDITERRANEAN PROGRAM TO FIGHT ENERGY POVERTY   |    | Changes in Technology             |
| FINANCIAL AND SUPPORT INSTRUMENTS FOR FUEL POVERTY IN SOCIAL HOUSING IN EUROPE (FINSH) FRANCE, UNITED KINGDOM, GERMANY, ITALY, POLAND |   | Changes in Individuals' Behaviour |
| CLEAR Consumers to Learn about, Engage with and Adopt Renewable energy technologies   |  | Changes in Individuals' Behaviour |
| About EnergizAIR<br>The renewable energy weather forecast - Europe  |  | Changes in Technology             |
| EnerSHIFT : Energy Social Housing Innovative Financing Tender   |  | Changes in Technology             |
| SMARTER TOGETHER  |  | Changes in Complex Interactions   |
| STEP_BY_STEP  |  | Changes in Individuals' Behaviour |
| 2gether4vulnerability   |  | Changes in Complex Interactions   |
| 4RinEU : Robust and Reliable technology concepts and business models for triggering deep Renovation of Residential buildings in EU    |  | Changes in Complex Interactions   |
| MOBISTYLE : MOTivating end-users Behavioral change by combined ICT based tools and modular Information services on                    |  | Changes in Complex Interactions   |

|  |   |
|--|---|
| energy use, indoor environment, health and lifestyle   |   |
| IN-BEE : Assessing the intangibles: the socioeconomic benefits of improving energy efficiency  |  Changes in Individuals' Behaviour   |
| Energy, Education, Governance and Schools. A European school panel for involving local communities in energy efficiency programs (EGS) |  Changes in Complex Interactions     |
| TOPTEN ACT : Enabling consumer action towards top energy-efficient products  |  Changes in Individuals' Behaviour   |
| Rescoop  |  Changes in Technology               |
| enCOMPASS : Collaborative Recommendations and Adaptive Control for Personalised Energy Saving  |  Changes in Individuals' Behaviour   |
| Smart-up project   |  Changes in Individuals' Behaviour   |
| DOMINO - Connecting Europe, Saving Energy  |  Changes in Individuals' Behaviour  |
| Energy-Conscious HOuseholds in ACTION (ECHO ACTION)  |  Changes in Complex Interactions   |
| Sustainable Energy Communities in Historic URBan Areas (SECHURBA)  |  Changes in Individuals' Behaviour |
| FIESTA   |  Changes in Technology             |
| Promoting best practices to support energy efficient consumer behaviour on European islands (PROMISE)                                  |  Changes in Technology             |
| European Young Energy Manager Championship (EYEMAN CHAMPIONSHIP)   |  Changes in Individuals' Behaviour |
| Instigating Simple Energy Efficient Behavioural Practices in Schools (FLICK THE SWITCH)  |  Changes in Individuals' Behaviour |
| Persuasive force of children through education (FEEDU)   |  Changes in Individuals' Behaviour |
| Common appliance policy – All for one, One for all – Energy Labels (COMEON LABELS)   |  Changes in Individuals' Behaviour |

|   |   |                                     |
|---|---|-------------------------------------|
| Eco n' Home or how to reduce energy consumption in Household (ECO N' HOME)  |    | Changes in Individuals' Behaviour   |
| European Network of Information Centres promoting Energy Sustainability and CO2 reduction among local COMMunities (ENESCOM) |    | Changes in Individuals' Behaviour   |
| European Solar Days II (ESD II)   |    | Changes in Technology               |
| FRESH   |    | Changes in Technology               |
| TRENDY TRAVEL; Emotions for sustainable transport (TRENDY TRAVEL)   |    | Changes in Everyday Life Situations |
| Promotion of energy efficient appliances (PROMOTION 3E)   |    | Changes in Individuals' Behaviour   |
| SPIRIT - Energising Faith Communities (SPIRIT)  |   | Changes in Individuals' Behaviour   |
| Pattern of Energy Efficiency in the Schools (P.E.E.S.)  |  | Changes in Everyday Life Situations |
| Integration of Active Learning and Energy Monitoring with School Curriculum (ACTIVE LEARNING)                               |  | Changes in Individuals' Behaviour   |
| Residential Monitoring to Decrease Energy Use and Carbon Emissions in Europe (REMODECE)                                     |  | Changes in Individuals' Behaviour   |
| The Energy Path: an e-learning platform for education of the new generations in the sustainable energy field (ENERGY PATH)  |  | Changes in Individuals' Behaviour   |
| European fuel Poverty and Energy Efficiency (EPEE)  |  | Changes in Technology               |
| EPORE - Energy Poverty Reduction in Eastern Europe  |  | Changes in Individuals' Behaviour   |
| Initiative State General of Energy Efficiency   |  | Changes in Individuals' Behaviour   |
| Energia positiva  |  | Changes in Technology               |

## ‘GOOD PRACTICE’ EXAMPLE OF ITALIAN SECI

**MOBISTYLE:** MOtivating end-users Behavioral change by combined ICT based tools and modular Information services on energy use, indoor environment, health and lifestyle



### Brief Description

The overall aim of MOBISTYLE is to raise consumer awareness and awareness of ownership, thus empowering consumers and providing confidence of choosing the right thing, by providing attractive tailor-made combined knowledge services on energy use, indoor environment, health and lifestyle, by ICT-based solutions. This awareness will support and motivate end-users to well informed pro-active behaviour towards energy use, energy efficiency and health.

### Brief Contextualization

Most of today's buildings are equipped with sophisticated building automation systems and sensors measuring large amounts of different building performance data types (mostly related to building's energy performance or thermal comfort). This data is commonly used for energy management of large buildings. In addition, the number of wearables monitoring personal activities are arising. The data from these sensors can be used for the purpose of this project. However, this data (from buildings and wearables) is often not available or understandable to the building users, especially residents. Experience shows that promoting the importance of a building's energy efficiency as such is not an attractive driving factor for changing everyday habits and lifestyle of the building users. However, changing the user's behaviour towards more energy efficient building usage could contribute towards achieving one of the main targets of European Union: reducing energy consumption and eliminating energy wastage. Combining information on energy use with other relevant information such as the indoor environmental quality, personal health and eventually combined with other attractive life style information can be used to catch the interest of consumers and even more importantly change their behaviour and maintain their new habits and interest in the long term.

### Aims and objectives

The overall aim of MOBISTYLE is to raise consumer awareness and motivate behavioural change by providing attractive personalized combined knowledge services on energy use, indoor environment, health and lifestyle, by ICT-based solutions. Providing more understandable information on energy, health and lifestyle will motivate end-users to change their behaviour towards optimized energy use and provide confidence in choosing the right thing. It will offer consumers more and lasting incentives than only information on energy use. The objectives are:

- To present **understandable information** on: energy, indoor environment, health
- To motivate behavioural **change** of consumers/energy end-users by combined and personalized modular information on energy use, health and lifestyle.

- To develop **easy to use, desirable ICT-based tools** which will make energy monitoring a well-accepted and attractive 'daily activity'.
- To motivate a **prolonged change of consumers habits**' by modular personalised information on energy, health and lifestyle.
- To **foster new business models** and applications for future development

### Methods for Intervention

MOBISTYLE methodology will elaborate an approach leading to an efficient and long-lasting change of user behaviour and consequently towards more energy efficient building usage. This will be reached by combining information services on energy, indoor environment, health and lifestyle, which can catch the interest of consumers and even more importantly maintain their new habits and interest lasting in the long term. Tailor made tools and information services will be developed for the different energy end-users types where the end-user will have self-control on which information he/she wants to obtain, how long and during what time and which type of data will be offered. By providing attractive combined information, the end-users will be encouraged to become curious about their energy usage, indoor environment and health and become confident in making the right choices leading to energy savings. The business and exploitation models are a key output of MOBISTYLE to continue the activities after the project duration. In order to ensure the continuation of MOBISTYLE after the project duration and to maximize the impact an open on-line accessible MOBISTYLE Open Users Platform will be created, supported by a business plan for the further exploitation. This platform will have the following functionalities: Share and store all relevant methodologies, tools and online services; Creation of a database on monitoring data, as a bases for the information services.

### Steps of implementation

- 1: Mapping of data supply and communication needs for different types of end-users
- 2: Development of methodologies
- 3: Development of practical ICT-based tools
- 4: Development of modular information services and business applications
- 5: Demonstration and validation

5 selected demonstration cases will be used to present real life situation in five different climatic regions (geo-clusters) covering different building types, different types of end-users and different scales (building, district).

### Results/outcomes

MOBISTYLE methodology will elaborate an approach leading to an efficient and long-lasting change of user behaviour and consequently towards more energy efficient building usage. This will be reached by combining information services on energy, indoor environment, health and lifestyle, which can catch the interest of consumers and even more importantly maintain their new habits and interest lasting in the long term. Tailor

made tools and information services will be developed for the different energy end-users types where the end-user will have self-control on which information he/she wants to obtain, how long and during what time and which type of data will be offered. By providing attractive combined information, the end-users will be encouraged to become curious about their energy usage, indoor environment and health and become confident in making the right choices leading to energy savings. Gamification will be introduced as a solution that will encourage occupants to be better in comparison to the other users (mutual-control) and in relation to past achievements (self-control).

### **The role of the households**

PL and DK cases are residential (city and neighbourhood)

<https://www.mobistyle-project.eu/en/mobistyle/demonstration>

### **Location**

Partner countries: Netherlands, Slovenia, Denmark, Italy, United Kingdom, Poland.

### **Textual and communicative aspects of initiative**

Energy or environment as such are not attractive driving factors for changing user behaviour. Promoting the importance of a building's energy efficiency as such is not an attractive driving factor for changing everyday habits and lifestyle of the building users. Combining information on energy use with other relevant information such as the indoor environmental quality, personal health and eventually combined with other attractive life style information can be used to catch the interest of consumers and even more importantly change their behaviour and maintain their new habits and interest in the long term.

### **The physical/technological aspects of the initiative**

Using ICT tailor made tools where the user can compare him or herself to the past and to other users, and can choose which information one wants. Adapted to physical circumstances, based on pilot projects.



## CONCLUDING REMARKS AND POLICY IMPLICATIONS

Italy is a highly import-dependent country, with over three quarters of the energy consumed in the country came from abroad, mostly net electricity, oil and gas. Due to this, renewables are a priority of the Italian government as they can help to reduce energy costs, meet environmental targets and strengthen security of energy supply, which are the key goals of Italian energy policy. Italy has experienced impressive growth in the renewable energy sector and has been successful in integrating large volumes of variable renewable generation. In total, renewables produced 40.1% of Italian electricity in 2015.

The government has introduced tax benefits for the implementation of energy change by individuals. The encouragement to use renewable energy sources is essentially based on the green certificates. In the renewables aspect, SECIs are not as abundant as the generally favourable policy towards renewables would suggest. The renewables oriented SECIs are not very common, but there is a cluster of them, mainly focused on awareness raising. Some of them promote community renewables and some foster investments in production from renewable energy sources.

Although energy efficiency is not specifically exposed in the energy policy, the largest part of identified SECIs addresses energy efficiency awareness raising, be it on personal or household level. There are enough community oriented SECIs, organising competition of households for energy savings, engaging local actors and families in energy planning, working with communities in historic areas. Several are focused on energy labelling for appliances. E-learning and ICT tools are used by some SECIs. Some SECIs focus on targeted audiences: young managers, island communities, faith communities. The next visible cluster of activities is focused on energy poverty, from audits and advising to financial support. Another visible cluster is working with schools and children to mobilise local communities, families and wider audiences. The building retrofit SECIs are not very common, but there are a few on nearly-zero energy homes promotion and developing models to trigger deep renovation. This is, however, answering one of the aspects of energy use that is specific for Italy, namely that substantial part of the housing stock is poor in energy efficiency aspect. The transport SECIs are rare; in fact, there is only one identified.

The majority of identified SECIs focus on changes in individuals' behaviour (24), then some on changes in technology (11), while focus on changes in complex interactions and changes in everyday life situations is scarce (5 and 2 respectively). Majority of SECIs (41) are run at a cross-national level, only 3 are focused on national level. The described SECI, Mobistyle, is informing about and motivating change by providing attractive personalized combined knowledge services on energy use, indoor environment, health and lifestyle, by ICT-based solutions. The interesting aspect of this SECI is that it combines information on energy, indoor environment, health and lifestyle, which promises to maintain their new habits and interest on the long run. Building of comprehensive / holistic understanding of how energy use is related to other aspects of our lives is an added value of this SECI, as well as an interesting lesson to inform policy.

## REFERENCES

Lyon, Carole, « L'Italie a-t-elle besoin de plus de pipelines ? », *Courrier International*, December 2017: URL: <https://www.courrierinternational.com/article/energie-litalie-t-elle-besoin-de-plus-de-pipelines> [Viewed on May 9, 2018].

« Le mix énergétique italien en question », *Connaissances des énergies*, June 2011: URL: <https://www.connaissancedesenergies.org/le-mix-energetique-italien-en-question>

« Italie: une nouvelle stratégie énergétique sans charbon », *Connaissances des énergies*, November 2017. URL: <https://www.connaissancedesenergies.org/italie-une-nouvelle-strategie-energetique-sans-charbon-171115> [Viewed on May 9, 2018].

« L'Italie a lancé le projet Energie à partir d'agrumes », *ENERGYMED*, June 2015. <http://www.energymed.eu/2015/06/01/litalie-a-lance-le-projet-energie-a-partir-dagrumes/> [Viewed on May 9, 2018].

« LE MIRACLE DE L'ÉNERGIE SOLAIRE ITALIENNE », *ENERGEEK*, November 2017. URL: <http://lenergeek.com/2017/11/27/energie-solaire-italienne/> [Viewed on May 9, 2018].

Beaudonnet, François, « Italie, championne du monde de l'énergie solaire », *France Info*, November 2017. URL: <https://blog.francetvinfo.fr/bureau-rome/2017/11/21/video-italie-championne-du-monde-de-lenergie-solaire.html> [Viewed on May 9, 2018].

Web sites:

ENEL: <https://www.enel.it/en>

TERNA: <http://www.terna.it/>

ENI: [https://www.eni.com/en\\_IT/home.page](https://www.eni.com/en_IT/home.page)