

ENERGISE

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

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COUNTRY REPORT:

BULGARIA

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

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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).

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

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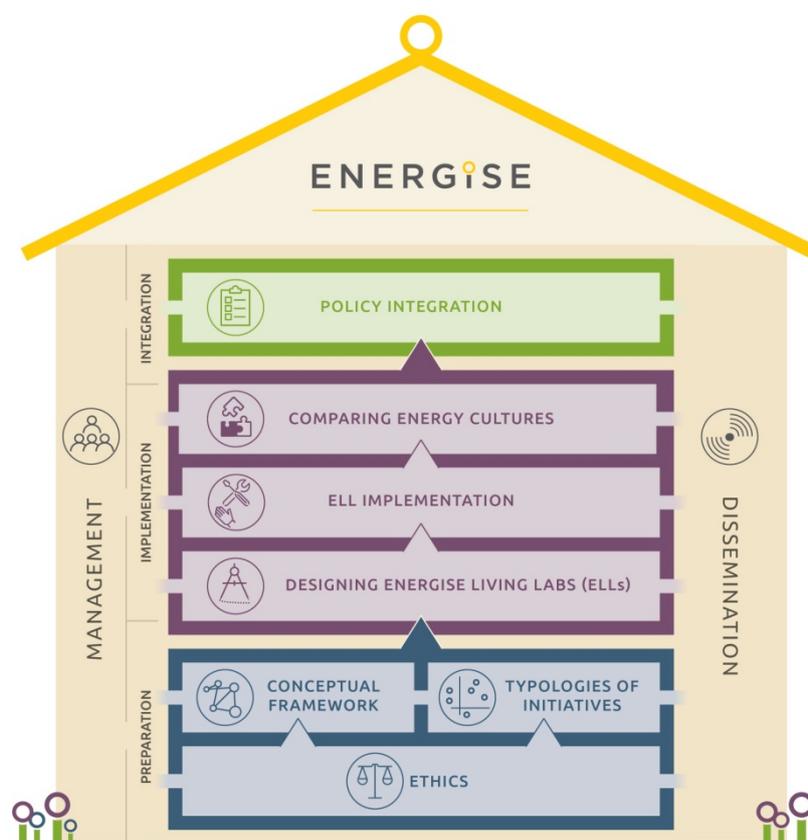
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ENERGISE PROJECT

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.***¹ 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.

¹ 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/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

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>

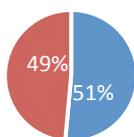
BULGARIA

Authors: Marko Hajdinjak, Desislava Asenova

DEMOGRAPHY, ENERGY CONSUMPTION AND ENERGY SUPPLY

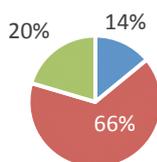
GENDER PROFILE

Female Male



AGE PROFILE (2016)

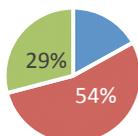
0-14 years 15-64 years 65 - years



CLIMATE:
temperate;
cold, damp
winters; hot,
dry summers

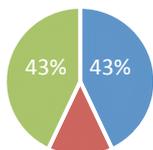
EDUCATIONAL PROFILE (25-54 Y, 2016)

Low (ISCED 0-2) Medium (ISCED 3-4) High (ISCED 5-8)



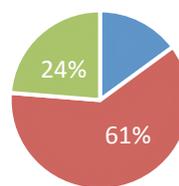
COMMON DWELLING TYPES (2015)

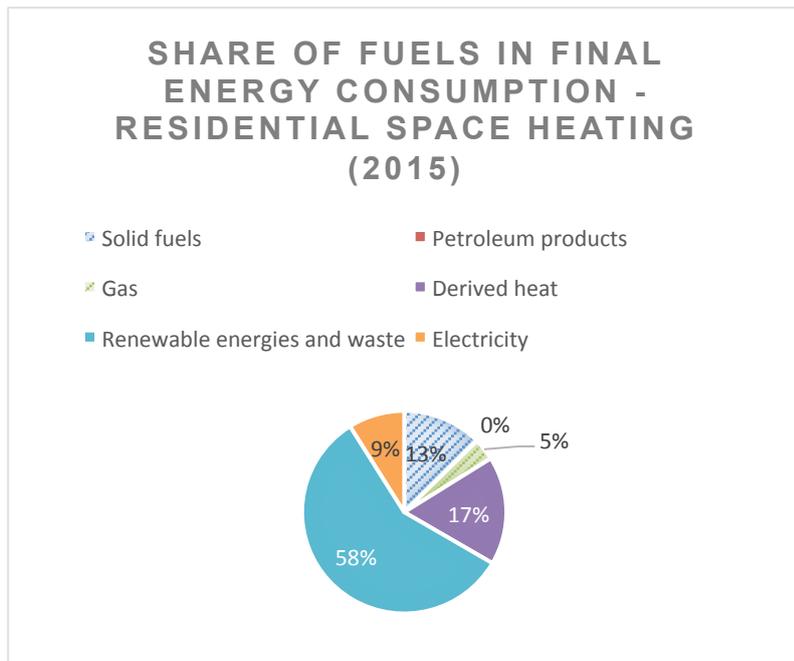
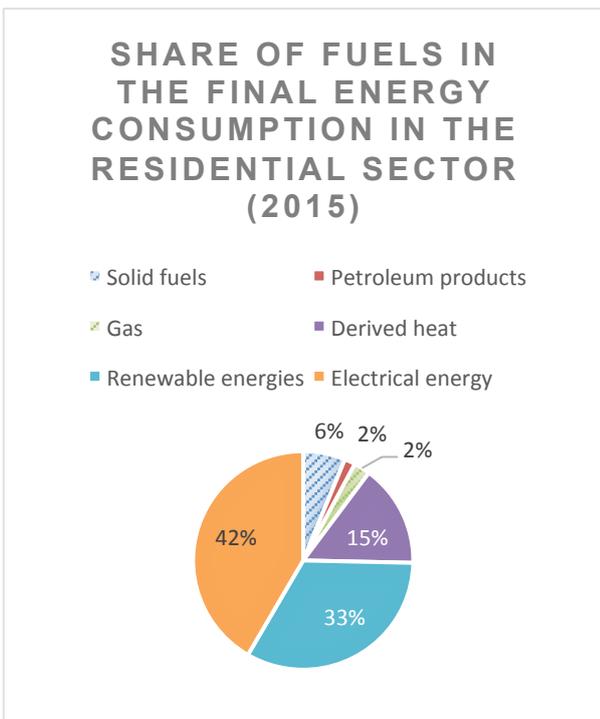
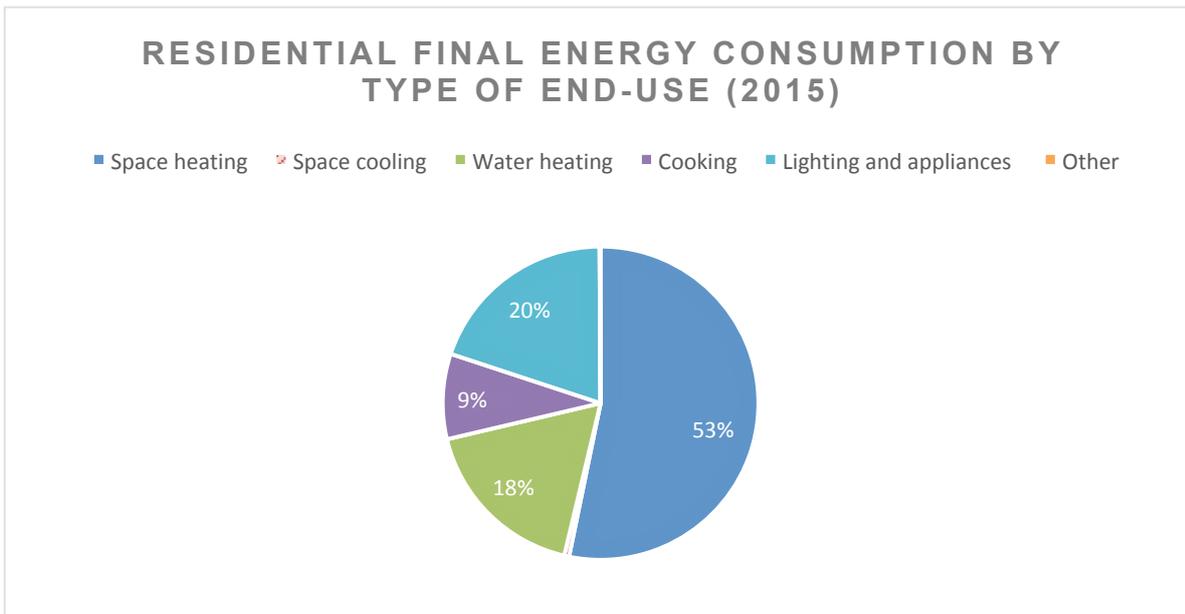
Detached Semi-detached Flat



URBAN - RURAL DISTRIBUTION (OECD)

Predominantly Urban Intermediate Predominantly Rural





FINAL ENERGY CONSUMPTION FOR HOUSEHOLDS, PR CAPITA (2015)

3.556 MWh

ENERGY SYSTEM AND ENERGY POLICY TRENDS

Energy system

The energy sector of Bulgaria is diverse and well-developed, and Bulgaria is one of the main exporters of electricity in Southeast Europe. The domestic electricity market is highly regulated with only one licensed supplier in each geographical region – CEZ Group in Western Bulgaria, ENERGO-PRO in North-East Bulgaria and EVN in the South. The three distribution system operators are internationally-owned. CEZ Group and ENERGO-PRO are Czech companies and EVN is an Austrian company. In early 2018, CEZ announced that it was selling its Bulgarian assets to a little-known and relatively small private Bulgarian company Inercom, causing considerable controversy and concerns about Inercom's ability to finance and operate energy distribution to over 3 million customers.

The Bulgarian wholesale electricity market is dominated by the state-owned Bulgarian Energy Holding (BEH) and its subsidiaries: the National Electricity Company, Electricity System Operator, Kozloduy Nuclear Power Plant and Maritsa East 2 (the largest thermal power plant in the country). BEH together with the National Electricity Company hold generation assets representing 45% of the installed capacity. The National Electricity Company is the single buyer from the energy producers on the high voltage grid and is the sole electricity supplier at regulated prices for end users. It is also responsible for purchasing electricity from combined heat and power plants (CHP plants), renewables and industrial producers at regulated prices. Electricity System Operator (ESO) is the owner and operator of the country's high and medium voltage electricity transmission grid, which in practice means that all electricity producers and consumers use ESO's transmission system.

The retail electricity market is highly concentrated with a low level of competition and fixed energy prices, determined by the State Energy and Water Regulatory Commission. Energy generation is dominated by nuclear energy (Kozloduy NPP provides more than one third of the total annual electricity output) and solid fuels (about one half of electricity is generated through burning of coal). Renewable energy sources have in recent years become increasingly important, and now represent 20% of Bulgaria's electricity production.²

Liberalisation of the electricity market has been proceeding at a very slow pace since 2007 (after entering the EU) and Bulgaria remains one of the last countries in the EU without a fully liberalised market. In 2018, there are still two types of electricity prices in use: flexible prices on the liberalised market and fixed prices on the regulated market, which are determined by the Energy and Water Regulatory Commission. In theory all Bulgarian companies and households have the right to purchase electricity from the liberalised market, but in reality it is very difficult for consumers to buy electricity on the free market. The incentives to do so are also quite limited, as the prices on the regulated market are lower. Full market liberalisation remains a hot social and political issue, as the retail-market and end-user price deregulation would not only increase suppliers' competition and give consumers greater choice, but could also lead to greater price volatility, possibly provoking protests and strikes against price increase.³

The gas market depends on a single source of gas supplied through a single route – Russia. The market experiences some issues with establishing connection between domestic gas transmission system and the transit system as well as with delays in developing interconnections with neighbouring countries.

² Export.gov (2017). *Bulgaria – Power Generation*. Available at: <https://www.export.gov/article?id=Bulgaria-Power-Generation-Oil-and-Gas-Renewable-Sources-of-Energy-and-Energy-Efficiency>;

BNT (2018). *Power Supply Company CEZ Sold its Business to Inercom Bulgaria*. Available at: <https://www.euscoop.com/en/2018/2/26/cez-sold-suspicious>

The National Electricity Company (2018). *Official Website*. Available at: <http://www.nek.bg/index.php/bg/za-nas>

³ The World Bank (2016). *Bulgaria Power Sector: Making the Transition to Financial Recovery and Market Liberalization. Summary Report*. Available at: https://www.me.government.bg/files/useruploads/files/wb_ras_i_summary_report_en.pdf

About 60% of Bulgarian gas market is controlled by a single company – Overgas Inc, AD. The largest natural gas importer in Bulgaria is Bulgargaz EAD, which is part of BEH. According to statistics, natural gas prices for household consumers in Bulgaria in the first half of 2017 were among the lowest in the EU – around 0.03 euro per kWh.⁴

The district heating networks exist in 12 Bulgarian cities, serving in total about 600,000 households. All district heating companies are local monopolies. Most use natural gas as fuel, but some are still using coal.

Particular socio-material aspects that influence energy consumption

Households are the third largest sector in terms of final energy consumption (2,261,000 toe in 2016), after transport and industry, and ahead of services and agriculture. The distribution of electricity consumption of Bulgarian households depends mainly on the heating source they are using – electricity, natural gas, coal, wood or other fuels. In 2015, the electricity consumption of Bulgarian households was distributed as follows: 46% was used for water heating; 20% for lightning and small appliances; 16% for cooling (refrigerator use); 8% for cooking; and 10% was used for other purposes.⁵

Various sources studying energy efficiency behaviour of Bulgarian households show that energy poverty is a serious issue in the country. According to statistics for 2013, 46.6% of the total population of Bulgaria cannot maintain adequate thermal comfort in their households. Energy poverty is defined as “a situation in which a household must allocate more than 10 % of its income in order to achieve a satisfactory level of heating in their home”.⁶ According to the data of the EU Energy Poverty Observatory, Bulgarian households are among the most vulnerable in this regard in the EU. The rising electricity and district heating prices in the last years have forced many households towards using coal and wood for heating, which further worsens air and living quality. The electricity prices for households in Bulgaria have increased from 8.13 euro cents per kWh in 2010, to 9.55 euro cents in 2017.⁷ Although the prices are still the lowest in the whole EU, around 444,000 households are claimed to be highly vulnerable to increases in electricity prices, while another 149,000 households are income-poor and could quickly become energy-vulnerable in case energy prices increase further.⁸

It is estimated that with only 5% of Bulgarian homes being built after 2000, most Bulgarian homes do not meet contemporary requirements for energy efficiency. Furthermore, energy comfort of Bulgarian households is threatened by the trend of energy prices rising at a faster pace than household incomes. A widespread practice of under heating in order to reduce energy consumption and energy bills at the expense of energy comfort is also observed. Measures such as providing households with new energy efficient windows, wall insulation, energy-saving appliances should be taken in order to increase energy efficiency in the country.

⁴ European Commission (2014). *Bulgaria 2014 Country Report*. Available at: https://ec.europa.eu/energy/sites/ener/files/documents/2014_countryreports_bulgaria.pdf;
Eurostat (2018). *Natural gas price statistics*. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Natural_gas_price_statistics#Natural_gas_prices_for_household_consumers

⁵ REACH Project (2015). *Ръководство за енергийни одитори на домакинства*. Available at: <http://reach-energy.eu/wordpress/wp-content/uploads/2015/01/D3.8-Training-module-for-other-schools-EAP.pdf>;
National Statistical Institute of Bulgaria (2016). *Final Energy Consumption by sectors*. Available at: <http://www.nsi.bg/en/content/12362/final-energy-consumption-sectors>

⁶ Center for the Study of Democracy (2017). *Пътна карта за развитието на българската електроенергетика до 2050 г.: основни жалони*. Available at: <http://www.csd.bg/artShowbg.php?id=18059>;
Kulinska, E. (2017). 'Defining Energy Poverty in Implementing Energy Efficiency Policy in Bulgaria.' *Economic Alternatives*, Issue 4, pp. 671-684. Available at: http://www.unwe.bg/uploads/Alternatives/11_EAlternativi_english_4_2017.pdf

⁷ Center for the Study of Democracy (2017).
Statista (2018). *Electricity prices for households in Bulgaria from 2010 to 2017, semi-annually (in euro cents per kilowatt-hour)*. Available at: <https://www.statista.com/statistics/418072/electricity-prices-for-households-in-bulgaria/>

⁸ Export.gov (2017). *Bulgaria – Power Generation*.

Current Trends in Energy Policy

According to the last version of the Bulgaria's energy strategy, main efforts in the field of developing the energy sector are directed towards energy efficiency, energy self-sufficient buildings, electric road vehicles, renewable energy and building of Smart Grids. The smart grids are expected to improve the quality of services and contribute to more flexible energy demand.⁹ The main financial source for replacement of ordinary power transmission networks with smart grids will be EU funds.¹⁰

Energy efficiency could be considered as an integral part of Bulgaria's energy policy. The Energy Architecture Performance Index Report for 2017 notes that Bulgaria has improved its energy efficiency in the last few years.¹¹ However, the rising levels of households' "energy poverty" is among the biggest challenges for the sustainable energy efficiency policy.¹²

In order to comply with the EU Directive 2012/27/EU that aims to establish a common framework to promote energy efficiency within the EU, Bulgaria has developed National Energy Efficiency Action Plan 2014-2020. The national 2020 energy savings target at final energy consumption level is 716 ktoe/year. In order to achieve this target Bulgaria has introduced measures such as: i) energy taxes or carbon dioxide taxes that aim to reduce final energy consumption; ii) financing schemes and instruments or fiscal incentives that lead to the application of energy-efficient technology or techniques and have the effect of reducing end-use energy consumption; iii) standards and norms that aim at improving the energy efficiency of products and services; iv) training and education in the field of energy efficiency. The plan also introduces financial mechanisms to promote measures for energy efficiency improvement that include national funds and programmes and operational programmes such as: Energy Efficiency and Renewable Sources Fund; Operational Programme "Innovation and Competitiveness 2014-2020; National programme for energy efficiency of multi-family buildings; National Trust Ecofund – Investment programme for climate and others.¹³

Trends in national campaigns

National energy campaigns in Bulgaria are mainly focused on cutting down household energy consumption, stimulating energy savings, reducing greenhouse gas emissions, promoting green transport, and introducing more energy-efficient habits among consumers. They are organised by varied range of actors including government, municipalities, NGOs, communities and business. Many of them are implemented as part of EU funded projects. The largest initiative in the field of energy efficiency is the National Programme for Energy Efficiency of Residential Buildings, which provides grants for renovation of multifamily residential buildings and thus contributes to improving the energy efficiency of multi-household residential buildings. The programme targets over 2,000 buildings in Bulgaria, which equals over 100,000 households.¹⁴

⁹ Ministry of Economy, Energy and Tourism (2011). *Energy Strategy of the Republic of Bulgaria till 2020: For Reliable, Efficient and Cleaner Energy*. Available at: https://www.me.government.bg/files/useruploads/files/epsp/23_energy_strategy2020%D0%95ng_.pdf

¹⁰ Export.gov (2017). *Bulgaria – Power Generation*.

¹¹ World Economic Forum (2017). *Global Energy Architecture Performance Index Report 2017*. Available at: http://www3.weforum.org/docs/WEF_Energy_Architecture_Performance_Index_2017.pdf

¹² Kulinska, E. (2017). 'Defining Energy Poverty.'

¹³ Ministry of Energy (2017). *National Energy Efficiency Action Plan 2014-2020*. Updated 2017. Available at: <http://www.seea.government.bg/documents/TR%A%20BG%20NEEAP%202017%20EN.pdf>

¹⁴ Ministry of Regional Development and Public Works (2015). *Energy Efficiency of Multi-Family Residential Buildings National Programme*. Available at: <http://www.mrrb.government.bg/en/energy-efficiency/energy-efficiency-of-multi-family-residential-buildings-national-programme/>

OVERVIEW OF NATIONAL SECIS

Below please find a list of Bulgarian 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.

FIESTA - Burgas		Changes in Technology
FIESTA - Vratsa		Changes in Technology
FIESTA - Pazardzhik		Changes in Technology
European Citizens Climate Cup (ECCC)		Changes in Individuals' Behaviour
POWERHOUSE NEARLY ZERO CHALLENGE (POWER HOUSE NZC)		Changes in Technology
DESIREE GAS (Demand Side Residential Energy Efficiency Through Gas Distribution Companies In Bulgaria)		Changes in Technology
Solar roof		Changes in Technology
3e-HOUSES		Changes in Individuals' Behaviour
STACCATO project		Changes in Technology
Aha!Car platform		Changes in Complex Interactions
National Programme for Energy Efficiency of Residential Buildings		Changes in Technology
Residential Energy Efficiency Credit Line (REECL)		Changes in Complex Interactions

Thermal insulation of a residential building through Energy Efficiency and Renewable Sources Fund (EERSF)		Changes in Technology
REACH		Changes in Complex Interactions
ACHIEVE		Changes in Individuals' Behaviour
EnerGbg		Changes in Individuals' Behaviour
Warmth for the Children		Changes in Technology
SHELTER		Changes in Technology
DOMINO		Changes in Individuals' Behaviour
DEHEMS		Changes in Individuals' Behaviour
Energy Neighbourhoods 2 (EN2)		Changes in Individuals' Behaviour
Union of Homeowners Associations		Changes in Individuals' Behaviour
REMODECE		Changes in Individuals' Behaviour
BAMBINI		Changes in Everyday Life Situations
ENERLIN		Changes in Technology
European Dimensions of District Heating in Sofia		Changes in Individuals' Behaviour
FRESH		Changes in Complex Interactions

To save our common home - the Earth		Changes in Everyday Life Situations
Children and energy		Changes in Everyday Life Situations
iBROAD : Individual Building (Renovation) Roadmaps		Changes in Technology
SAVES2 : Students Achieving Valuable Energy Savings 2		Changes in Individuals' Behaviour
IN-BEE : Assessing the intangibles: the socioeconomic benefits of improving energy efficiency		Changes in Individuals' Behaviour
START2ACT		Changes in Everyday Life Situations
PRO.MOTION - Creating liveable neighbourhoods while lowering transport energy consumption		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
Energy-Conscious HOUSEholds in ACTION (ECHO ACTION)		Changes in Complex Interactions
Sustainable Energy Communities in Historic URBan Areas (SECHURBA)		Changes in Individuals' Behaviour
Energy Self Supply in Rural Communities (ENSRC)		Changes in Technology
European Young Energy Manager Championship (EYEMAN CHAMPIONSHIP)		Changes in Individuals' Behaviour
More biking in small and medium sized towns of Central and Eastern Europe by 2020 (MOBILE2020)		Changes in Everyday Life Situations
TRENDY TRAVEL - Emotions for sustainable transport		Changes in Everyday Life Situations
From Estonia till Croatia: Intelligent Energy Saving Measures for Municipal housing in Central and Eastern European Countries (INTENSE)		Changes in Individuals' Behaviour

<p>Creating Actions among Energy Conscious Children (KIDS4FUTURE)</p>	 <p>Changes in Individuals' Behaviour</p>
<p>Integration of Active Learning and Energy Monitoring with School Curriculum (ACTIVE LEARNING)</p>	 <p>Changes in Individuals' Behaviour</p>
<p>EPORE - Energy Poverty Reduction in Eastern Europe</p>	 <p>Changes in Individuals' Behaviour</p>

‘GOOD PRACTICE’ EXAMPLE OF BULGARIAN SECI

Children and Energy



Description

“Children and Energy” was an educational and awareness campaign organized by the largest electricity distribution company on the Bulgarian market – CEZ. It targeted children from grades 3 to 4 (9-10 years old) from 10 Bulgarian cities, but indirectly also their parents. Children learned what electricity is, how it is brought to their homes and how to use it in efficient and sustainable way.

Contextualization

CEZ Bulgaria EAD was founded in 2005, when the international energy company CEZ Group entered the Bulgarian electricity market, purchasing from the Bulgarian state several electricity distribution companies supplying electricity to customers in the North-West Bulgaria, including the capital Sofia. Becoming the largest electricity distributor in the country, CEZ Bulgaria had to face considerable public distrust (a foreign-based electricity distributor was a novelty for the country) and opposition to its periodic demands for the increase in electricity prices. One of the measures CEZ undertook as a response to this situation was its Social Responsibility Programme (SRP). SRP includes varied activities – from supporting arts and culture, organisation of sport activities, initiatives aimed at protection of nature and environment, to educational campaigns for consuming less energy.

The international CEZ Group has a relatively long history (over two decades) of engaging in comprehensive information and education programmes for energy efficiency aimed at young people. Learning events such as debates with students, seminars for teachers, school clubs and competitions in energy saving are among the most popular methods used to teach children and indirectly also their families to reduce their energy consumption. Another crucial issue that needs to be mentioned in order to fully understand the importance of this initiative is the energy poverty. As already discussed in Section 2, Bulgaria has the largest share of households living in energy poverty or being at risk of energy poverty in the EU. Many Bulgarian families try to cut their electricity bills at the expense of their comfort and health. Teaching children how to use less energy without jeopardising their comfort is therefore an important tool for mitigating the risk of energy poverty.

Aims and objectives

The main aim of the initiative was to inform children and through them influence and change the way families use electricity. Children learned how electricity is produced, they were acquainted with the principles of energy efficiency, and were introduced to several practical ways for consuming less electricity at home. The underlying objective was to change the energy behaviour of parents as well, as children would inevitably share what they have learned with their families.

Methods for intervention

At the first stage of the initiative, a booklet was produced. Its title was “About children and energy” and its purpose was to inform elementary school children (third and fourth grades) how they can save energy at home. Information in the booklet was presented in the form of curious facts, tasks and crossword puzzles. The booklet was disseminated during specially organised classes in selected schools in 10 Bulgarian towns in North-West Bulgaria (the region where CEZ is the sole electricity provider). CEZ employees (experts on energy efficiency) visited schools, delivering lectures and answering children’s questions. The information was presented in a way that kept children engaged and interested, and was easily understandable for them. Numerous illustrations were used for visualising the information. Classes were divided into two modules – ‘Discussions with students on energy efficiency and reasonable use of electricity’ and ‘Lessons on safe use of electricity.’

Steps of implementation

The process of implementation – from the first idea for the concept of the lesson to a successful conclusion – lasted less than a year. The initiative can be divided into the following steps:

- The initial idea and further elaboration of the concept.
- Drafting the content of the lesson and arranging it in a way that would be engaging and understandable for children.
- Development, design and printing of the booklet “About children and energy.”
- A lesson on energy efficiency, conducted in class by a qualified expert from CEZ and in presence of the class teacher.
- Giving the booklet and other informational materials to children.

Results/outcomes

Lessons were conducted in all third and fourth grades in selected schools in 10 towns located in North-West Bulgaria. 1500 copies of the booklet “About children and energy” were printed and distributed to children attending the lessons. No follow-up survey or measurements were conducted to establish the actual effect of the campaign and there are no means available to verify whether the initiative resulted in actual change in energy-consuming practices and a decrease in the energy consumption.

The role of the households

Households were engaged indirectly, as the main role was played by the children, attending the special energy efficiency class in their schools. The rationale was that the children would share what they have learned in school with their parents.

Location

20 schools in 10 towns located in North-West Bulgaria.

Was/is the initiative successful?

The most important outcome of the initiative and the reason to evaluate it as successful was that it provided an opportunity to children not just to learn how to save energy at their homes, but also to voice their concerns about environment and strengthen their skills to effectively participate in energy related decision-making processes in their families,

neighbourhoods and schools. The lessons on energy efficiency also represented a step towards integration of sustainable energy education in the Bulgarian school life.

Textual and communicative aspects of initiative

Households with children are a special group of energy consumers that are in general rather conservative in their energy behaviour and less inclined to take steps towards cutting their electricity consumption due to concerns that such actions might jeopardise the well-being of the family, and in particular the children. At the same time, households with children are average to high electricity consumers. Their energy consumption practices are largely defined by the most important priority of the parents – comfort, health and development of children. Low energy literacy and engagement, unpredictable daily routines, and lack of time and resources to consider more sustainable and efficient market opportunities and technological solutions also deter families from active and meaningful control of their energy consumption. One potentially very effective way to reach such households and create preconditions for behaviour change is to engage them through children.

Shared understandings related to initiative

The initiative corresponded well with some of the goals outlined in the Bulgarian Energy Efficiency Act. Among Energy Efficiency Improvement Activities and Measures described in Article 29 is also “raising awareness among households.” Article 25 speaks about measures to be implemented as a priority in households affected by energy poverty. The initiative was supported by the Bulgarian Ministry of Education and Science.

CONCLUDING REMARKS AND POLICY IMPLICATIONS

Of 45 sustainable energy consumption initiatives (SECI) examined and described in the frame of ENERGISE project, 14 have been classified as ‘Changes in Technology,’ 19 as ‘Changes in Individual Behaviour,’ 6 as ‘Changes in Everyday Life Situations’ and 6 as ‘Changes in Complex Interactions.’ The objectives of the largest group of initiatives implemented in Bulgaria are therefore to influence attitudes and choices related to energy efficiency and potentially change the energy consuming behaviour of individual households or household members, while the second largest group of initiatives does not even try to change consumption patterns of households, but rather aims at achieving energy savings through introduction of energy efficient technical measures. Only a minority of initiatives target more complex solutions that necessitate active involvement of a community of people who do not necessarily know each other and are willing to act and interact for the common good, and not only to reduce the energy costs of their own household.

Another curious feature of Bulgarian SECI is that most of them (32) are implemented as part of the international projects – mostly EU funded. Only a few of the initiatives are true grass-root projects developed and implemented by the household residents themselves. An interesting observation from the analysis on international projects is that Bulgarian householders are often very eager and active participants in top-down initiatives (in many

projects, especially the ones involving a competitive dimension of energy saving, Bulgaria archived higher than average levels of participation and some of the best results), but are very reserved when it comes to self-organisation and cooperation with their neighbours and co-citizens. Additional reason why Bulgarian households rarely take measures aimed at increasing energy efficiency is the widespread perception that ordinary citizens cannot change anything as the energy sector is completely controlled by the state and energy monopolies. Substantial legislative barriers and regulatory burdens further discourage Bulgarian households from taking action – a case in point is the SECI ‘Solar Roof.’ Households from a 15-storey apartment building in Sofia united to install 120 solar panels on the roof of the building. While the purchasing and installing the panels took two weeks, obtaining the considerable number of different permits took almost two years.

Finally, there is the crucial issue of low incomes and widespread (risk of) energy poverty. The main priority for most households is therefore not cleaner energy and protection of environment, but lower energy expenses for the households. It is not surprising that a considerable number of initiatives aims at lowering the energy expenses of households, mostly through measures like retrofitting and thermal insulation of multi-storey residential buildings (typically through grants provided by the Bulgarian state and EU funds). The strong focus on technological solutions and retrofitting is also a consequence of the old age and poor state of repair of the Bulgarian building stock, which mostly dates from the socialist period, when energy was cheap and plentiful. Technological measures also dominate the national energy policy and strategic documents like Energy Efficiency Act and National Energy Efficiency Action Plan 2014-2020. One of the few non-technical measures is education in the field of energy efficiency – an objective that corresponds well with the SECI described in Section 3 (Children and Energy). This initiative recognised that children have the right to voice their opinions regarding issues that concern their well-being, health and comfort. Engaging them in the period when their personalities, values and views are most actively and intensively formed can unlock their full potential to participate in the family decision-making processes and can lead to genuine and lasting changes in the way households consume energy. If shown and taught how to use energy in a sustainable and responsible way, these children will mostly likely grow up into ecologically aware energy consumers.

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