

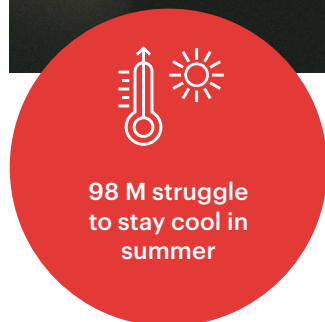
# Power to the people:

## Upholding the **right to clean, affordable energy** for all in the EU

To meet their basic needs, EU citizens need access to environmentally sustainable, affordable and reliable energy services. 'Domestic energy poverty' describes circumstances in which the combination of poor-quality housing, high energy prices and low levels of income puts people at risk of negative health and social impacts.



41 M cannot keep homes warm in winter



98 M struggle to stay cool in summer



New insights into the prevalence of energy poverty across the EU highlight the need for an integrated policy approach that considers both summer and winter. The expected impacts of climate change, including more frequent and severe extreme weather events, increase the urgency for action.



To uphold the principle that access to clean, affordable domestic energy services is a right, the Right to Energy Coalition calls for strategic action to tackle the root causes of energy poverty, thereby eliminating its symptoms and consequences.

# New composite indicator on domestic energy poverty delivers key insights

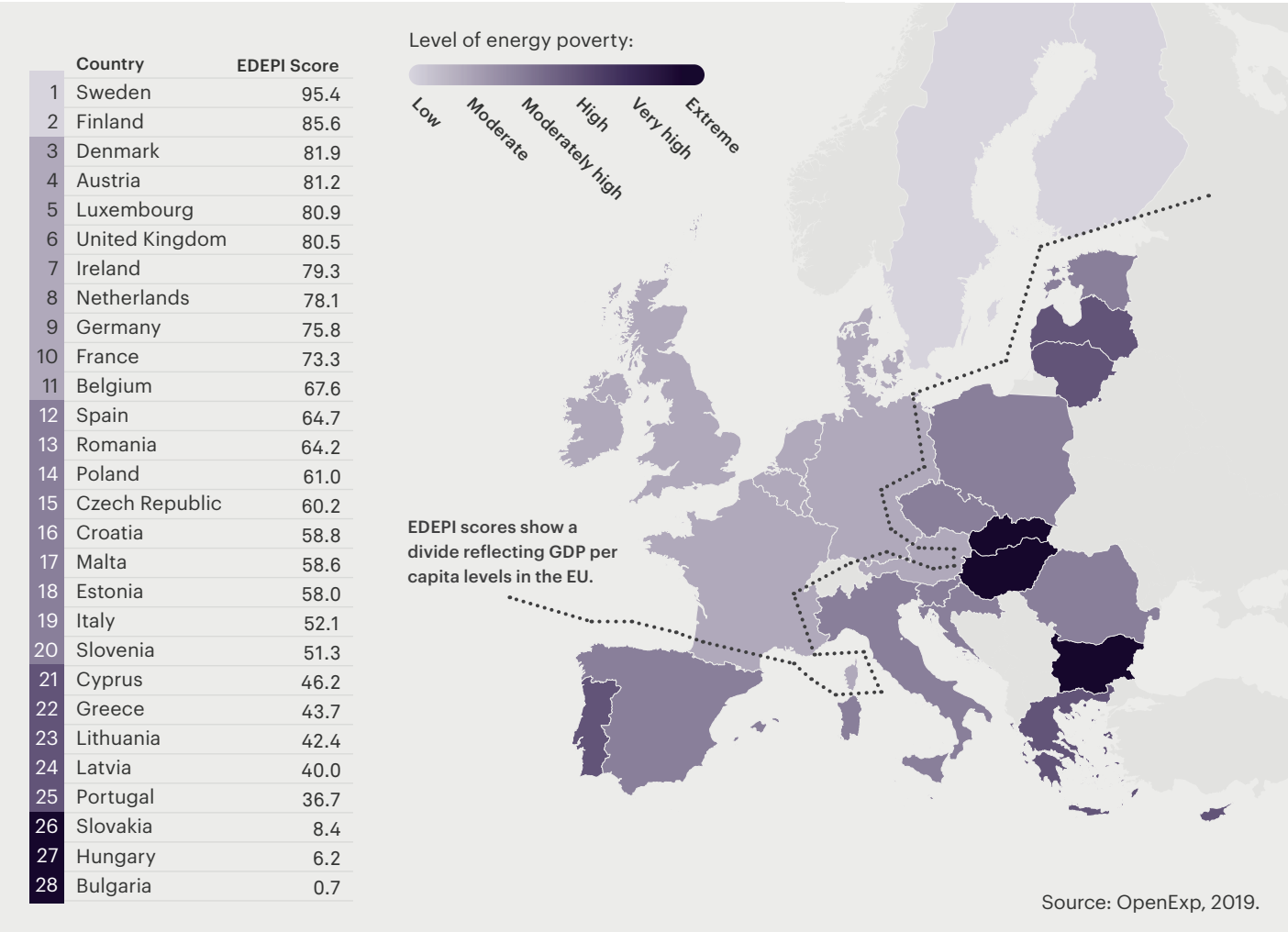
Ground-breaking research by **OpenExp** tackles the challenge of cross-country analysis of the progress being made to alleviate energy poverty in Europe. **The European Domestic Energy Poverty Index (EDEPI)** is a composite indicator that computes, for low-income households,<sup>1</sup> into a single figure such progress across four common metrics used to assess the causes and symptoms of energy poverty.<sup>1</sup>

The EDEPI demonstrates a strong divide in the distribution of energy poverty in the EU, reflecting differences in geography, climate, income levels and policy action. Importantly, the EDEPI shows that current estimates on EU energy poverty too narrowly

focus on winter conditions.<sup>2</sup> Rates of energy poverty are lower in cold, north-western regions where gross domestic product (GDP) per capita is above the EU average and building energy codes have been in place for decades.

In fact, the data show that a much higher number of people cannot stay sufficiently cool in summer, and may experience compromised health and well-being. They are concentrated in south, south-eastern and Baltic regions—where GDP per capita often falls below the EU average. In some of these countries, the quality of housing is so low that people experience thermal discomfort in both winter and summer, and/or have high energy expenditures all year.

Fig. 1: EDEPI scores show the majority of EU countries have ‘moderately high’ to ‘extreme’ levels of energy poverty among low-income households



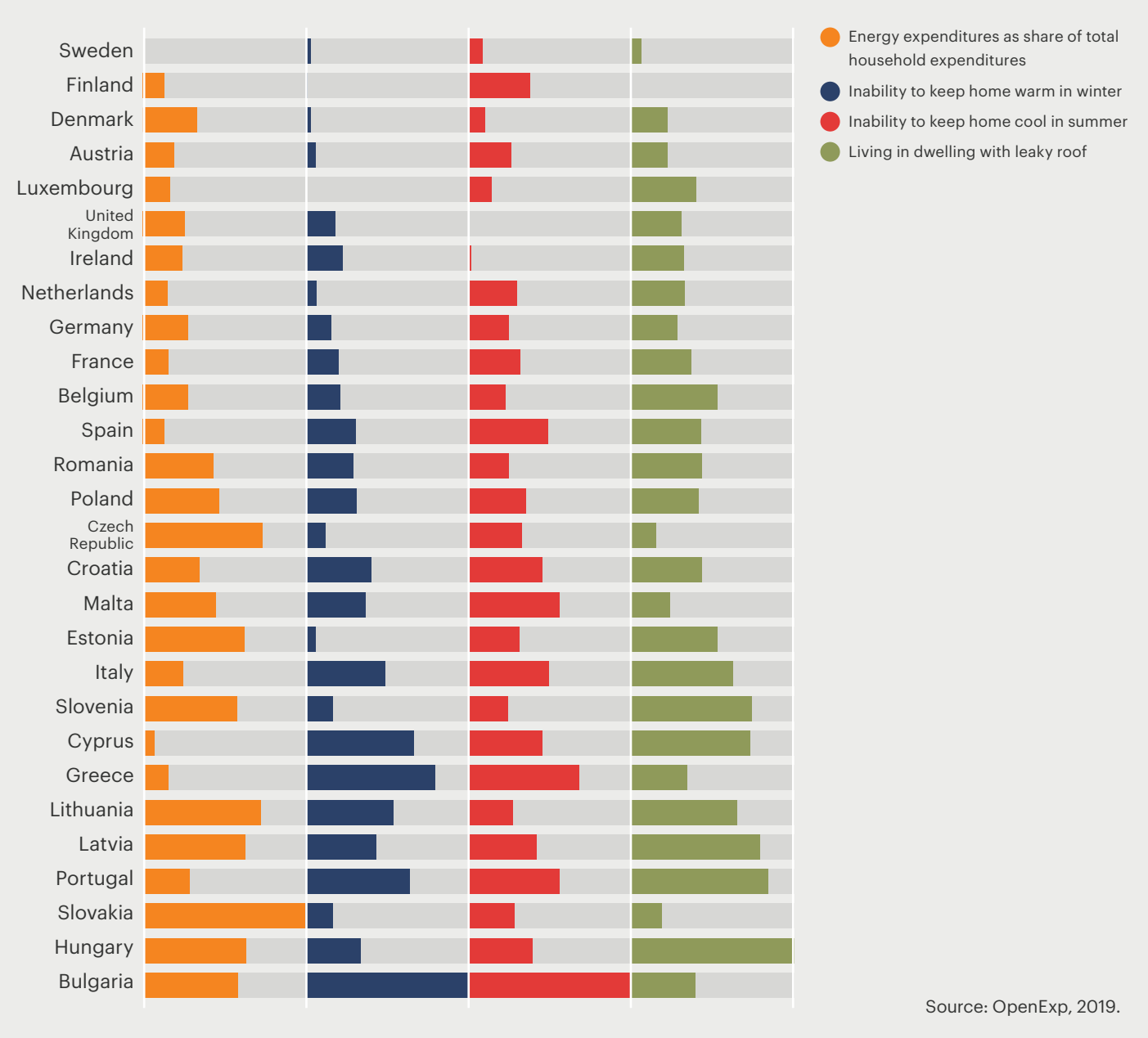
<sup>1</sup>‘Low-income’ refers to first income quintile households. The index is computed as a geometric mean. Results shown in this brief consider equal weight of ‘one’ for each metric. On the OpenExp online platform, users can change the weights to view policy implications for different weights: [www.openexp.eu/eepe](http://www.openexp.eu/eepe)

## Key findings

The OpenExp research reveals new insights about how four factors contribute to overall rates of energy poverty in each EU country: level of discomfort in winter or summer, quality of dwellings, and share of energy expenditures out of disposable income. Within a score of 100, the EDEPI makes it possible, for the first time, to rank and compare domestic energy poverty in EU countries.

The EDEPI ranking does not suggest numbers or shares of people within countries who are affected by energy poverty. Rather, it shows where the four factors are more or less prevalent, thereby indicating where effective policies are in place to avert energy poverty or where more action is needed, specific to each factor.

Fig. 2: Contribution of each factor to domestic energy poverty, by country



OpenExp is a global network of independent experts focused on finding solutions that support the UN Sustainable Development Goals. OpenExp works closely with and for policy makers, business leaders, civil society and the scientific community, prompting all actors to think ‘out of the box’.

Two characteristics underpin the mission of OpenExp: a collaborative approach and a commitment to open access. Equal sharing of intellectual resources is vital to ensuring all players have the means to shape the future. ([www.openexp.eu](http://www.openexp.eu))

# Energy poverty hits home, in every season

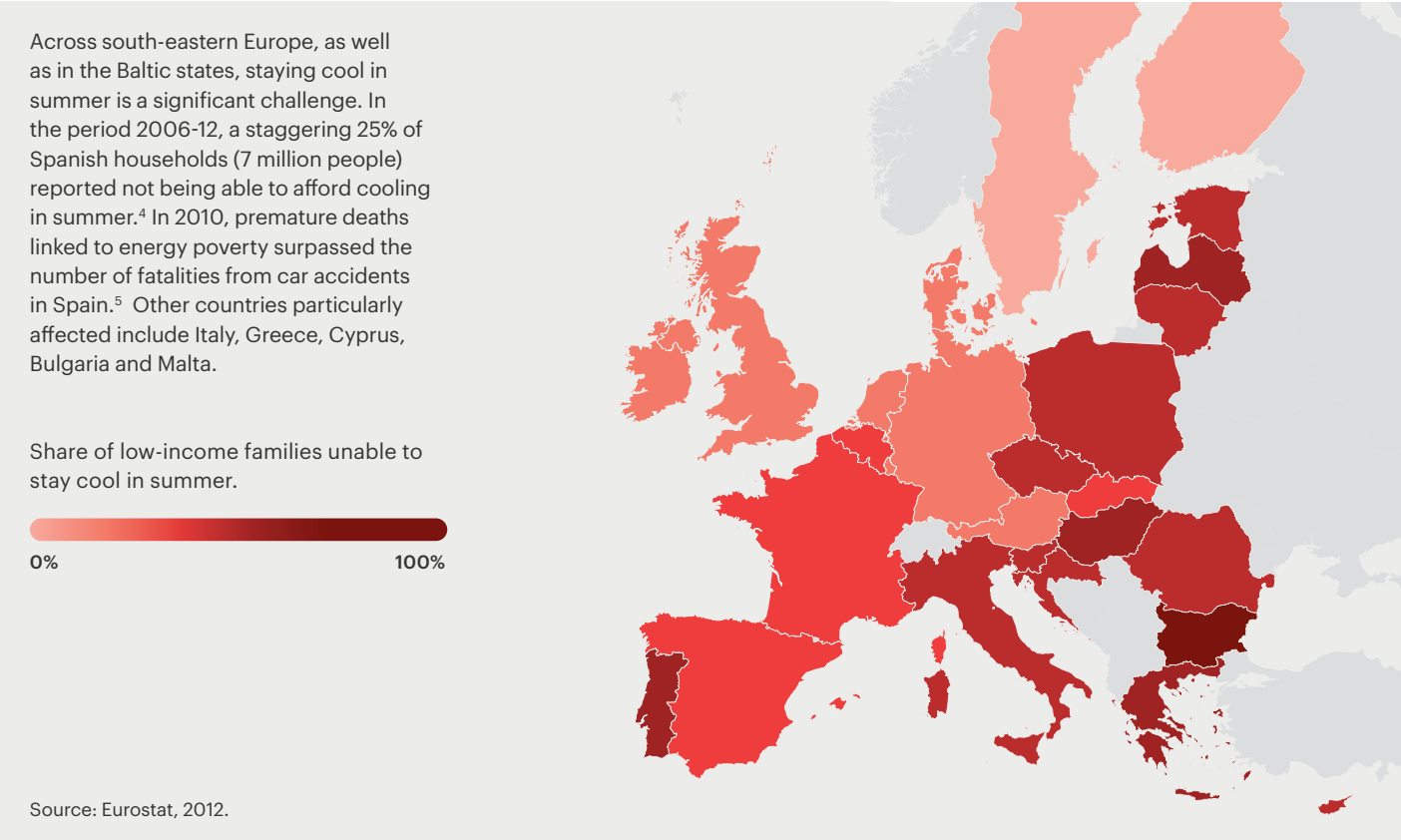
Staying healthy and well depends to a large degree on being able to achieve a balance between the human body’s metabolism and the surrounding environment — i.e. maintaining thermal equilibrium. In Europe’s diverse climates, this often requires a heating or cooling system, which in turn requires energy to operate. When energy is unaffordable, occupants may face physical, psychological and social impacts.

Whether people live in single-family homes or large apartment blocks, feeling too cold or too warm (often or always) is the overarching symptom of domestic energy poverty.

- Several interrelated factors are said to be causes.
- The quality of the dwelling, the efficiency of appliances and the occupant behaviour influence thermal comfort and the amount of energy needed to achieve it.
  - The combination of high consumption and high energy prices leads to high energy bills.
  - When the household has a low income, the cumulative burden of these factors puts extra pressure on the overall budget.

Alternatively, a household may feel they have to restrict their energy use to stay within budget. This is where consequences arise. Being chronically hot or chronically cold—or living with other characteristics of low-quality housing (e.g. mould)—can lead to mild to severe health impacts. In extreme cases, energy poverty is linked to early death.

Fig. 3: Exposing the impacts of summer heat



## Measuring energy poverty

The 2019 recast of the Internal Market in Electricity Directive recognises the overarching cause of domestic energy poverty as:

*the inability to afford energy services "due to a combination of low income, high energy expenditures and poor energy efficiency of dwellings."*<sup>3</sup>

# Understanding the causes of energy poverty in the EU

Quality of dwellings, economics and policy have important effects on energy affordability. Extremes of cold in the north or heat in the south drive up use of energy for home comfort. Yet the pressure this puts on households reveals a clear divide within Europe.

In general, energy expenditure’s share of household expenses is lower in the north where income levels are above the EU average and effective building energy codes moderate the effect of outdoor temperatures. In southern countries and in the Baltic region, low-

quality buildings and less robust economies amplify the pressure created by energy bills.

Households in some countries are hit hard by climate conditions in both seasons. In Bulgaria, for example, where winters are cold and summers are hot, many people cannot afford sufficient heating and cooling. Portugal has milder temperatures, but as few homes are properly insulated, people face the same struggle.

Fig. 4: How energy expenditures and income influence domestic energy poverty

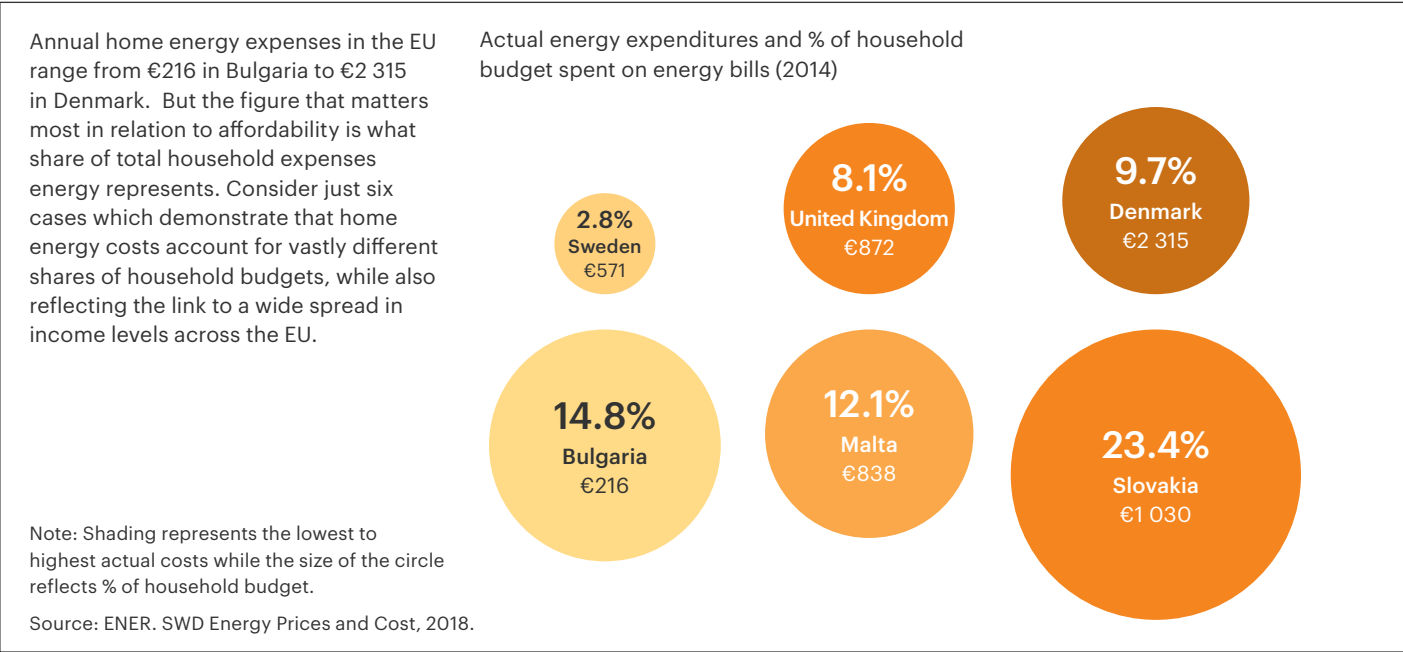
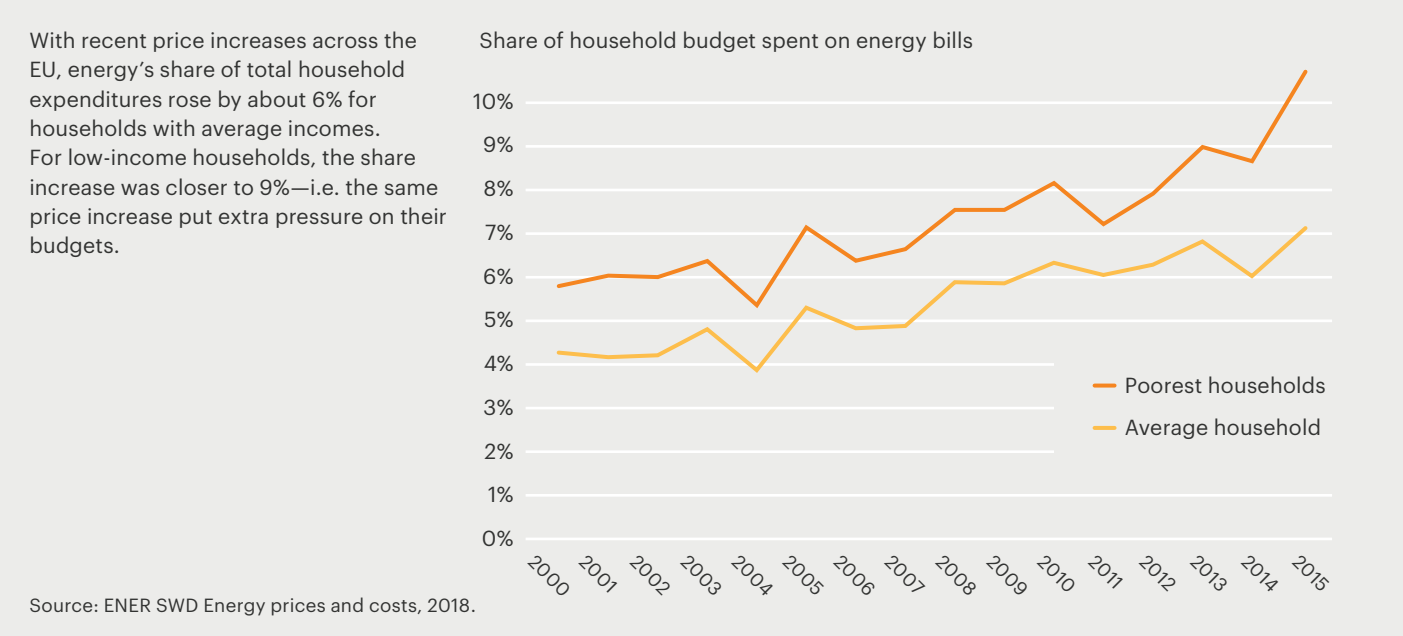


Fig. 5: Rising energy prices are a heavier burden for low-income households



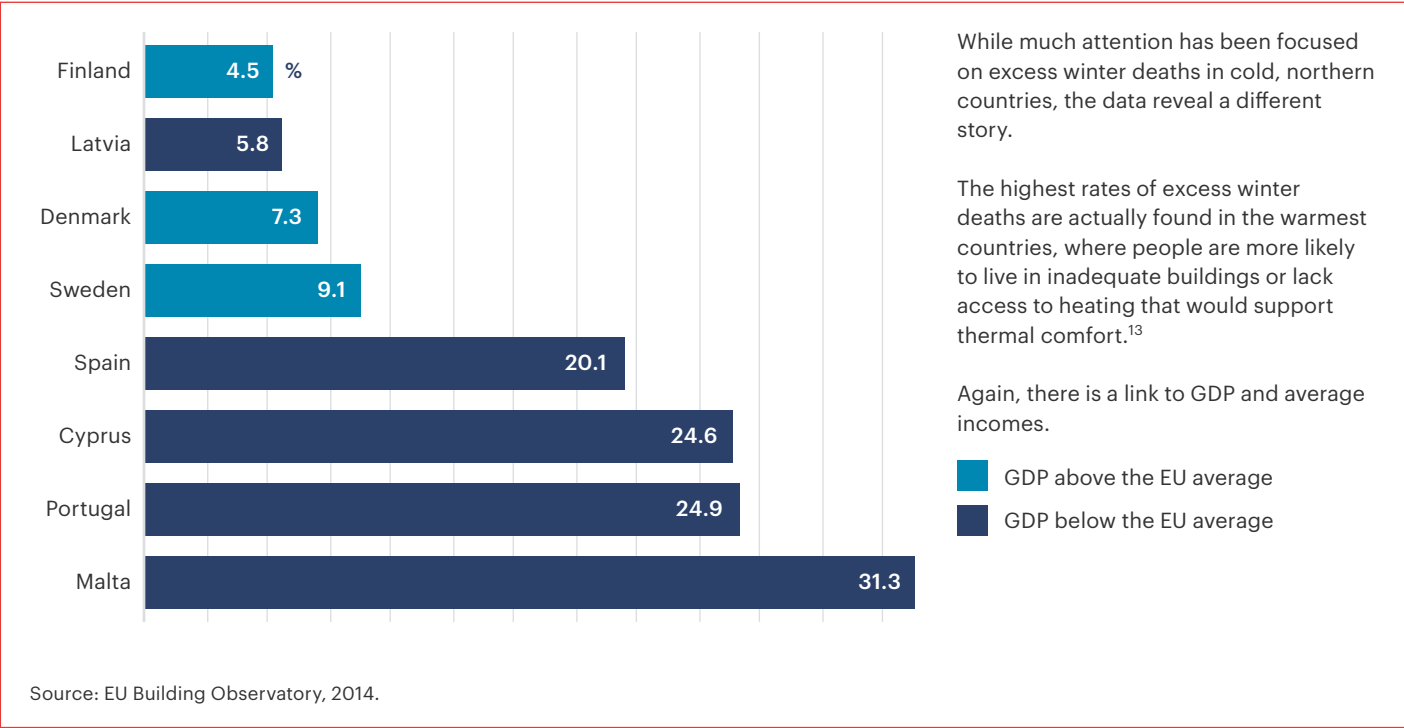


Consequences of homes lacking thermal comfort: poor health, early death

The World Health Organization (WHO) estimates that inadequate housing in Europe is linked to 100 000 premature deaths annually.<sup>6</sup> Chronic exposure to cold, damp and mould can compromise the mental and physical health of residents, including in interconnected ways.

- **Higher levels of stress and anxiety** associated with poor-quality living conditions, rental instability, housing unaffordability, social deprivation and inability to pay energy bills.<sup>7,8</sup> Additionally, worry about the health impacts of living in cold conditions can lead to hypertension and mild physical symptoms can become compounded, ultimately escalating to serious conditions.
- **Poor health from an early age.** Young children living in cold, damp homes are more than twice as likely to have problems with chest, breathing or bronchitis,<sup>9</sup> and are 40% more likely to suffer from asthma.<sup>10</sup> Among children and young adults, the risk of severe illness or disability is 25% higher than for peers living in adequate housing.<sup>11</sup>
- **Illness and early death among the elderly.** Traditionally, more people die in winter than in summer in Europe. Inadequate housing is linked to 40% of these excess winter deaths and countries with the poorest housing conditions have higher rates of excess winter mortality.<sup>12</sup> Recently, excess mortality in summer is of increasing concern: as higher temperatures are expected to become more frequent with global climate change, the scale of people in the EU affected by summer energy poverty is projected to rise dramatically.

Fig. 6: Excess winter deaths concentrated in EU’s warmest countries



EDEPI insights

In Bulgaria, very high numbers of people experience energy poverty in both winter (64%) and summer (71%), with energy bills accounting for 14% of household budget.



Spain shows higher levels of winter energy poverty than Poland. Despite the milder climate, lower levels of insulation and higher energy prices put Spanish citizens at greater risk.

In Finland, summer energy poverty is more prevalent, reflecting strong buildings policy to ensure homes can withstand winter cold. With summer temperatures on the rise, people need more energy for cooling.



Source: OpenExp, 2019.



67 million  
people live in poor-quality dwellings

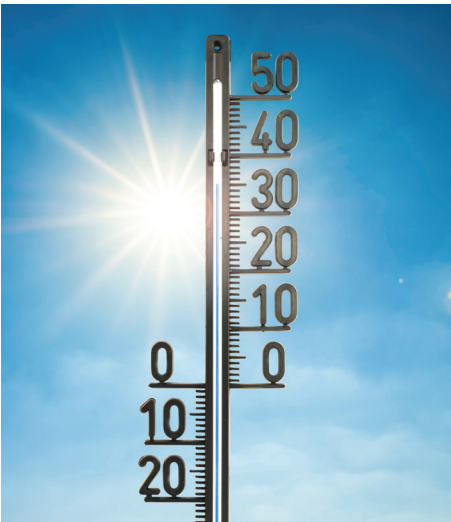
Source: Eurostat, 2017.

# Moving towards new norms: climate change and energy poverty

With anticipated effects of global climate change, the EU is expected to experience more frequent incidents of extreme temperature and weather events.

Many of these events are likely to drive up energy consumption, in turn driving up household energy expenditures. The knock-on effect is a higher risk that people will be unable to afford energy for heating or cooling during the most difficult periods.

Additionally, high energy demand during extreme weather increases the risk of blackouts, leaving households further exposed.



## Milder winters, but with more cold snaps



With climate change, winters are getting gradually milder in Europe. A warming Arctic Ocean, however, has been shown to periodically counteract this trend by sending cold air towards the continent, causing severe cold snaps.

Winter 2018 was a case in point: in late February, parts of Europe were colder than the Arctic. England and Wales experienced their coldest weather in 27 years, Munich hit -17°C, and a rare snow storm blasted Rome. In France, cold temperatures pushed up demand for heating energy, in turn driving up prices on wholesale markets, which traded at the highest level in the past decade.<sup>14, 15</sup> Often, this eventually leads to higher prices for consumers.

In the UK, National Energy Action (NEA)<sup>16</sup> collected data about the cold snap that lasted from 22 February to 03 March 2018, which delivered the worst weather seen

since 2010. Roads and schools closed, health and social services faced unprecedented pressures, and on a single day (Saturday, 03 March) the UK's largest home energy supplier received 136 000 boiler breakdown reports. Throughout this period, thousands of homes suffered power cuts and millions more found they could not afford the energy costs associated with trying to stay warm. Many felt they had no choice but to self-disconnect their energy services.

During that 10-day period, an extra 1 724 early deaths occurred in England alone, linked to the following conditions: 570 due to respiratory conditions; 690 to cardiovascular diseases; up to 520 vulnerable people perishing in their own homes; and the rest from other causes such as influenza, falls in the home or hypothermia (in a small number of cases). Extending the timeframe to the full first quarter of the year, the number of early deaths skyrockets to 15 544.<sup>16</sup>

# Scorching summers ahead

In Europe, heat waves can be the deadliest extreme weather event. In August 2003, a 10-day heat wave linked to climate change caused up to 70 000 extra or early deaths, including 14 802 in France alone.<sup>17</sup> With climate change, such heat waves are expected to become more frequent: by the second half of this century, they could occur as often as every two years.<sup>18</sup> Across Europe, the number of days on which people rely on home energy systems

for cooling (i.e. 'cooling days') increased dramatically over the period 1981–2014.<sup>19</sup> Studies show such events are most dangerous to vulnerable people, including young children and the elderly.<sup>20</sup> For geographical and socio-economic reasons, southern Europe is particularly at risk, with the situation amplified by poor-quality homes that trap heat in. Somewhat surprisingly, Baltic states and Finland also

fall into the high-risk category. In Bulgaria, more than half of the population report not being able to keep dwellings cool in summer.

This is nothing less than a looming public health crisis. Yet summer domestic energy poverty receives little attention, and very few data are available on its consequences.

## Climate change and the need for cooling: avoiding a mix that could amplify the problem

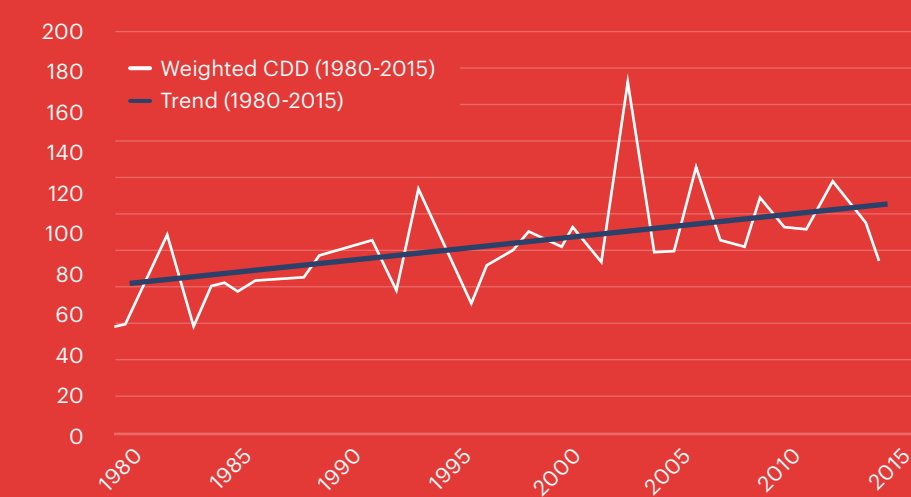
With global temperatures expected to rise, so is the number of EU citizens experiencing indoor discomfort in summer.<sup>21</sup> Relying on air-conditioning is not the solution.

At the household level, it would drive up energy bills, placing a different kind of pressure on overheated homes.

Across the EU, it would drive up peak energy demand in summer, requiring additional investment in power plants or for more electricity generation. Where countries still rely on fossil fuels for electricity generation, it would also increase greenhouse gas emissions, worsening the effect of climate change.

Two approaches are needed to avert this scenario: reducing the need for cooling and transforming buildings to become producers of energy. Many 'passive' measures can be implemented to reduce cooling demand. Outdoor shading and window protection can reduce heat gain from the sun. Wall and attic insulation, usually associated with winter warmth, also keeps homes cooler in summer. Integrating such measures reduces the need for active

Fig. 7: Evolution of cooling degree days in Europe, 1980-2015



Note: CDD = cooling degree days.  
Source: Adapted from JRC, KNMI-ECA&D (E-OBS version 11) and Eurostat GEOSTAT 2011 dataset.

cooling technologies (such as air conditioners) that require electricity. In parallel, adding technologies such as solar panels, solar water heaters and electric heat pumps can enable buildings to produce more energy than they consume per year.

OpenExp argues that making the EU building stock, on the whole, energy positive is the most effective means of

ensuring affordable energy services for all Europeans. Associated up-front costs would deliver long-term societal benefits in reduced energy demand and environmental impacts, while also lowering household energy bills and improving health and well-being.



# Access to affordable energy services is a right

People’s health and well-being can be best protected by bringing affordable energy services into a single, comprehensive policy package that links strategies for energy efficiency, renewable energy, access to housing services, access to affordable transportation services, and environmental sustainability. All of these elements need to be considered in relation to implementing the new European Clean Energy Package and the European Pillar of Social Rights.

Achieving affordable energy services for all requires a shift in thinking such that low-income households are put front and centre when designing energy policy.

Energy is recognised as an essential service in the European Pillar of Social Rights.<sup>22</sup> In fact, access to energy underpins access to other services including water, sanitation, financial services, digital communications and transportation. The Pillar stipulates that support for access to such services shall be available for those in need. Across all areas, data indicate that low-income families are

the most affected by lack of access to such services. Clearly, EU policy makers have an obligation to take action.

**Buildings and better energy systems**  
National implementation of long-term renovation strategies designed to decarbonise the EU building stock is a key opportunity to make buildings

energy-positive or, where appropriate, communities or clusters of buildings. The technical possibility for dwellings to produce more energy than they consume—thereby reducing domestic energy bills to €0 or enabling income through power generation—would ensure thermal comfort for low-income households while protecting occupants from energy price fluctuations.

Energy-positive dwellings could also serve as a flexible resource for the energy grid: such systems could cool, heat and power homes while also supporting the charging of electric vehicles. Currently, this type of home system is out of reach for low-income households.

Additionally, the new Renewable Energy Directive will require Member States to help vulnerable and energy-poor households tap into opportunities to participate in self-consumption (e.g. onsite energy generation) and in renewable energy communities.

**The European Pillar of Social Rights** identifies key aims of the EU as, among others, promoting the well-being of its peoples and working for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment.

The Pillar commits the Union to:

- combatting social exclusion and discrimination,
- promoting social justice and protection,
- ensuring equality between women and men,
- building solidarity between generations, and
- protecting the rights of children.

# Policy action advancing, but more is needed

An important outcome of the OpenExp work on the EU Energy Poverty Index is the juxtaposition of recent advances in policy action in some areas against the revelation of gaping holes in data, which undermine progress on other fronts.

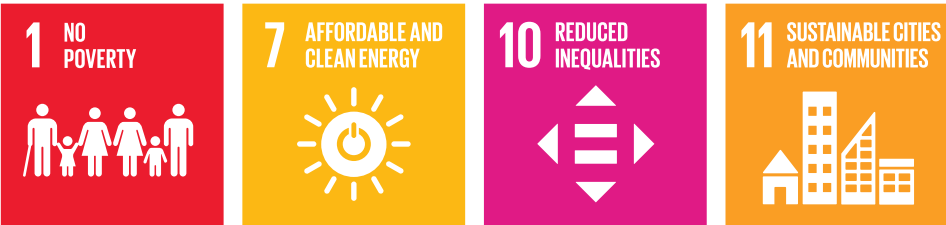
The Clean Energy for All Europeans Package sets addressing the lack of energy affordability as a key objective, and recent recasts of EU directives include requirements to address domestic energy poverty. The EDEPI examines where current policy applies or new policy is needed.

EU policy instrument	Aspect of domestic energy poverty tackled	New provisions
Internal Market in Electricity Directive	Planning policies and measures to alleviate domestic energy poverty.  Ensuring access to energy for vulnerable consumers in critical times.	Definition of energy poverty, recognising its three causes: low income, high energy expenditures, poor energy efficiency.  Improvement of dataset comparability across the EU.
Energy Performance of Buildings Directive	Improving energy performance of buildings.	2050 decarbonisation objective for EU buildings, including planned measures to tackle domestic energy poverty in renovation strategies.
Energy Efficiency Directive	Mandatory efforts to target households in domestic energy poverty.	More explicit requirements to tackle domestic energy poverty in the annual savings objective (Article 7).
Governance Regulation	Knowledge of the prevalence of energy poverty.	Mandatory monitoring of domestic energy poverty in the NECPs* and national action plans in case of a ‘significant’ prevalence of energy poverty.
Renewable Energy Directive	Citizen empowerment and acknowledgment of the role of renewable energy communities in assisting vulnerable and energy-poor households.	New rights for communities to set up local energy projects, and to facilitate participation by households in energy poverty.

Note: NECPs = National Energy and Climate Plans.

## Affordable energy helps meet EU commitments to UN Sustainable Development Goals

The EU as a whole and EU Member States have pledged commitment to the UN Sustainable Development Goals (SDGs). Of the 17 SDGs, energy poverty can be directly or indirectly linked to four. According to OpenExp, coordinated effort on energy poverty could contribute to meeting SDGs in at least 25 EU countries.



# Policy action to enforce the right to energy in the EU

Based on research carried out by OpenExp, the Right to Energy Coalition (R2E) offers recommendations for the policy community. These recommendations emphasise the need for strategic, coordinated action, acknowledging the ways in which responsibility should be shared across all levels of government.

Three overarching and interrelated principles should underpin all policy action: affordable energy services as a basic human right; an energy transition for the EU that takes into account the impacts of climate change; and mandatory action on the part of Member States. Specifically, an effective policy framework should:

## Establish a more effective EU policy framework to eradicate domestic energy poverty

- Uphold Principles 19 and 20 of the European Pillar of Social Rights, which identify access to affordable energy services, along with good-quality shelter and housing, as basic human rights. The next European Commission should incorporate the EDEPI to measure progress by all Member States and propose an action plan based on the findings.
- Require data set comparability, based on the accepted European indicators of energy poverty, to enable monitoring.
- Acknowledge domestic energy poverty as having both energy and social dimensions, thus requiring coordination of policies and programmes among relevant government ministries or departments. Public funding, including EU funding, should support projects that recognise these interlinkages and thus avoid unintended consequences that isolated or poorly integrated actions may have for low-income households.
- Ban disconnections to ensure the right to energy for all is enforced and thereby protect vulnerable citizens.
- Support energy communities that allow citizens to set up solidarity initiatives in which revenue from renewable energy is directed towards vulnerable and low-income households.
- Collect energy poverty data annually, covering both winter and summer seasons. Accurate data is vitally important to drive both policy development and practical action. This would allow the European Energy Poverty Observatory to consider summer energy poverty as a primary indicator to monitor domestic energy poverty. Initiating the collection and development of indicators and data on transport energy poverty is also necessary to better understand its extent, as well as its causes, symptoms and consequences.

## Align policy and action at national level

- Initiate ambitious retrofit programmes for low-income households, prioritising energy-poor consumers. These actions should be pursued in line with relevant EU Directives, including as part of long-term renovation strategies to support national implementation of the Energy Performance of Buildings Directive and of activities to realise annual savings obligations set out in the Energy Efficiency Directive. Additionally, as per the Governance regulation, national energy and climate plans should clearly state national energy poverty reduction targets.
- Acknowledge and support the role of energy communities in meeting Member State strategies to achieve energy efficiency and renewable energy targets. Policies and programmes should ensure that energy-poor households can participate in renewable energy communities. Additionally, policy frameworks should encourage investment in energy communities designed to improve energy efficiency and reduce energy consumption.
- Revise tariff design to ensure low-income households pay the lowest price per unit of energy and that infrastructure costs are transferred proportionately, according to consumption level. Current energy tariff design typically penalises low-income families: the price per unit of energy is higher for those who consume the least. Additionally, they bear an unfair share of the costs of infrastructure upgrades and modernisation. Member States should ensure the price per unit of energy is lower for low-income households. This would also create more financial incentive for the largest consumers to save energy.

### Domestic energy poverty

#### Symptoms

Summer and winter thermal discomfort

Morbidity or premature deaths; debt; trade-offs on basic needs

#### Consequences

### Energy affordability

#### Causes

- Low quality of buildings
- Energy expenditures
- Low income

#### Causes

- Availability of public transport
- Fuel expenditures
- Low income

### Transport energy poverty

#### Symptoms

Limited travels to meet basic socio-economic needs

Socio-economic exclusion; debt; trade-offs on basic needs

#### Consequences

## Aiming for affordability across all energy needs

OpenExp presents the case to include all energy needs of EU citizens, for household use and for transportation, in the bid to achieve affordability. Only by addressing the causes can the symptoms and consequences be eliminated.

## The role of EU financing

Truly eradicating domestic energy poverty in the EU will require massive investment to ensure the housing stock becomes energy positive. Public funds will play an important role in making sure new buildings designed to such standards remain affordable and to support the cost of transforming existing dwellings to be energy-positive.

Establishing policy frameworks that encourage financing of renovation costs is crucial. This could be achieved by accessing the Structural and Cohesion Funds of the EU's Multi-annual Financial Framework (MFF) and by prioritising investments to tackle domestic energy poverty in the European Fund for Strategic Investments (EFSI) and the European Investment Advisory Hub.

References

<sup>1</sup> Saheb, Y et al. (2019), *European Energy Poverty Index: Assessing Europe’s Energy Inequality*, OpenExp, Paris.

<sup>2</sup> <https://renovate-europe.eu/wp-content/uploads/2017/03/REC-Briefing-note-v4-1-2017.pdf>

<sup>3</sup> Saheb, Y et al. (2019), *European Energy Poverty Index: Assessing Europe’s Energy Inequality*, OpenExp, Paris.

<sup>4</sup> [www.wwf.gr/crisis-watch/crisis-watch/energy-climate/10-energy-climate/energy-poverty-rises-in-spain](http://www.wwf.gr/crisis-watch/crisis-watch/energy-climate/10-energy-climate/energy-poverty-rises-in-spain)

<sup>5</sup> [www.typicallyspanish.com/news-spain/national/Energy\\_poverty\\_an\\_invisible\\_tragedy\\_which\\_causes\\_7\\_000\\_deaths\\_in\\_Spain\\_every\\_year.shtml](http://www.typicallyspanish.com/news-spain/national/Energy_poverty_an_invisible_tragedy_which_causes_7_000_deaths_in_Spain_every_year.shtml)

<sup>6</sup> Braubach, M et al (2011), *Environmental burden of disease associated with inadequate housing*, World Health Organization Regional Office of Europe, [www.euro.who.int/\\_data/assets/pdf\\_file/0017/145511/e95004sum.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0017/145511/e95004sum.pdf?ua=1)

<sup>7</sup> Gilbertson J, M Grimsley, and G Green (2012), "Psychosocial routes from housing investment to health: Evidence from England’s home energy efficiency scheme". *Energy Policy*. 2012;49:122–133. doi: 10.1016/j.enpol.2012.01.053.

<sup>8</sup> De Carlo Santiago, C, ME Wadsworth and J Stump (2009), “Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families”, *J. Econ. Psychol.* 2011; 32:218–230. doi: 10.1016/j.joep.2009.10.008

<sup>9</sup> Barnes, M et al. (2016), "The Dynamics of Bad Housing: The Impact of Bad Housing on the Living Standards of Children", *NatCen*. [www.eagacharitabletrust.org/app/ uploads/2016/03/natcendynamicsfullreport.pdf](http://www.eagacharitabletrust.org/app/uploads/2016/03/natcendynamicsfullreport.pdf)

<sup>10</sup> VELUX (2017), *Healthy Homes Barometer (2017), Buildings and their impact on the health of Europeans*, VELUX. [https://velcdn.azureedge.net/-/media/com/health/healthy-home-barometer/507505-01\\_barometer\\_2017.pdf](https://velcdn.azureedge.net/-/media/com/health/healthy-home-barometer/507505-01_barometer_2017.pdf)

<sup>11</sup> Harker, L (2006), *Chance of a Lifetime: The Impact of Bad Housing on Children’s Lives, Shelter*. [https://england.shelter.org.uk/\\_data/assets/pdf\\_file/0016/39202/Chance\\_of\\_a\\_Lifetime.pdf](https://england.shelter.org.uk/_data/assets/pdf_file/0016/39202/Chance_of_a_Lifetime.pdf)

<sup>12</sup> Healy, JD, (2003), “Excess Winter Mortality in Europe: A Cross Country Analysis Identifying Key Risk Factors.” *Journal of Epidemiology & Community Health*, BMJ Publishing Group Ltd, 1 Oct. 2003, [jech.bmj.com/ content/57/10/78](http://jech.bmj.com/content/57/10/78)

<sup>13</sup> EU Buildings database.

<sup>14</sup> [www.bloomberg.com/news/articles/2018-03-12/late-cold-snap-in-europe-causes-another-energy-market-surge/](http://www.bloomberg.com/news/articles/2018-03-12/late-cold-snap-in-europe-causes-another-energy-market-surge/)

<sup>15</sup> [www.washingtonpost.com/news/capital-weather-gang/wp/2018/02/23/europe-braces-for-beast-from-the-east-cold-snap-potentially-the-most-severe-in-5-years/?utm\\_term=.4dfe33119b3d](http://www.washingtonpost.com/news/capital-weather-gang/wp/2018/02/23/europe-braces-for-beast-from-the-east-cold-snap-potentially-the-most-severe-in-5-years/?utm_term=.4dfe33119b3d)

<sup>16</sup> National Energy Action (UK): <https://spark.adobe.com/video/7diMNaCLfOPaG>

<sup>17</sup> Robine, J-M, SLK Cheung, S Le Roy, H Van Oyen, C Griffiths, P-M Michel, FR Herrmann (2008). “Solongo”. *Comptes Rendus Biologies*. 331 (2): 171–178.

<sup>18</sup> EEA, 2018 [www.eea.europa.eu/data-and-maps/indicators/global-and-european-temperature-8/assessment](http://www.eea.europa.eu/data-and-maps/indicators/global-and-european-temperature-8/assessment)

<sup>19</sup> JRC, KNMI-ECA&D (E-OBS version 11) and Eurostat GEOSTAT 2011 dataset

<sup>20</sup> [www.theguardian.com/cities/2018/aug/13/heat-next-big-inequality-issue-heatwaves-world](http://www.theguardian.com/cities/2018/aug/13/heat-next-big-inequality-issue-heatwaves-world)

<sup>21</sup> EEA (European Environment Agency) (2016), *Climate change, impacts and vulnerability in Europe*, EU/EEA, Brussels. [www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016](http://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016)

<sup>22</sup> European Commission (2017), *European Pillar of Social Rights: Booklet*, European Commission, Brussels, [https://ec.europa.eu/commission/sites/beta-political/files/social-summit-european-pillar-social-rights-booklet\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/social-summit-european-pillar-social-rights-booklet_en.pdf)

<sup>23</sup> [www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Publication/ACER\\_Market\\_Monitoring\\_Report\\_2015.pdf](http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf)

<sup>24</sup> SEAI (Sustainable Energy Authority of Ireland) (2016), *Warmth and Wellbeing Scheme*, [www.seai.ie/grants/home-energy-grants/free-upgrades-for-eligible-homes/warmth-and-wellbeing/](http://www.seai.ie/grants/home-energy-grants/free-upgrades-for-eligible-homes/warmth-and-wellbeing/)

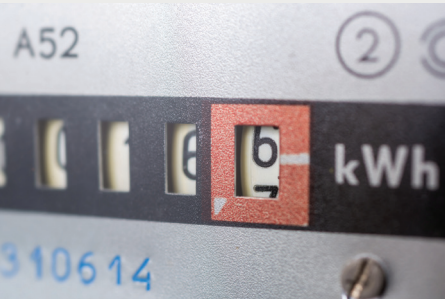
<sup>25</sup> [www.reuters.com/article/us-bulgaria-government/bulgarian-government-resigns-amid-growing-protests-idUSBRE91J09J20130220](http://www.reuters.com/article/us-bulgaria-government/bulgarian-government-resigns-amid-growing-protests-idUSBRE91J09J20130220)

<sup>26</sup> [www.miteco.gob.es/es/ministerio/servicios/participacion-publica/Estrategia-nacional-contra-pobreza-energetica.aspx](http://www.miteco.gob.es/es/ministerio/servicios/participacion-publica/Estrategia-nacional-contra-pobreza-energetica.aspx)

<sup>27</sup> [www.fuelpovertyaction.org.uk/home-alternative/about-us/](http://www.fuelpovertyaction.org.uk/home-alternative/about-us/)

Actions underway across the EU

In Belgium, Brussels regulates disconnections



In the EU, 7 million people per year receive disconnection notices,<sup>23</sup> an extreme measure that violates the right to energy. In Brussels, strong policy protects vulnerable households: in case of non-payment of energy bills, disconnection is illegal unless approved by an independent judge. Typically, this requirement creates an extended delay during which both parties can work on a solution. Other procedures aim to prevent the risk of disconnection. Households that cannot

pay their energy bills can request a status opening the right to a social tariff. These policies have proven effective: Belgium has one of the lowest disconnection rates in EU.<sup>23</sup>

Irish government pilots deep retrofit programme



In Ireland, the Warmth and Wellbeing Scheme is offering deep retrofits (valued at up to €20 000) to bring old dwellings closer to current standards through attic and wall insulation, new boilers, and draught-proofing. A key element is that physicians with patients who are chronically ill from being chronically cold can prescribe the retrofit.<sup>24</sup>

Grassroots movements demand clean, affordable energy



Since the 2008 financial crisis, dramatic increases in energy poverty have prompted citizen-led demands for more affordable energy. Often, advocates link the issue to climate movements, calling for solutions that integrate clean energy and environmental protection. In Bulgaria, following sharp price increases in 2013,<sup>25</sup> massive demonstrations toppled the government and led to immediate measures and long-term structural change.

In Spain, the anti-austerity movement put energy poverty in the spotlight: the new socialist government, elected in 2018, is working on a national strategy to eradicate it.<sup>26</sup> In the UK, organisations such as Fuel Poverty Action are demanding sustainable and just solutions to energy poverty, including for those in social housing.<sup>27</sup>





The Right to Energy Coalition (R2E) is a network uniting European trade unions and organisations representing anti-poverty, health and environmental initiatives, social housing providers, energy cooperatives and others engaged in the effort to end energy poverty. Formed in 2017, the Coalition believes energy poverty, which affects millions in Europe, is a political issue calling for a political response. The Coalition collaborates to influence policy at the EU level, including ensuring measures to alleviate energy poverty are embedded in the 2030 EU energy package. Coalition members coordinate with partners at national and European levels.

[www.righttoenergy.org](http://www.righttoenergy.org)