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Territorial Impact Assessment

Energy Poverty

Disclaimer

This report was produced by the European Committee of the Regions secretariat to support the own-initiative opinion of the Committee of the Regions on *Multilevel governance and cross-sectoral cooperation to fight energy poverty (ENVE-VI/038)*, whose Rapporteur is Kata Tüttő (HU/PES), Representative of the Local Government of Budapest's District 12.

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This territorial impact assesement report is the outcome of an expert workshop held by the European Committee of the Regions in Brussels on 2 May 2019 and supported by the ESPON EGTC.

The ESPON TIA Tool is designed to support the quantitative assessment of potential territorial impacts according to the Better Regulation guidelines. It is an interactive web application that can be used to help policy makers and practitioners with identifying, ex-ante, potential territorial impacts of new EU Legislation, Policies and Directives (LPDs). This report documents the results of the territorial impact assessment expert workshop regarding a new energy legislative framework, the Clean Energy package, as it relates to energy poverty. It is for information purposes only. This report and the maps represent the views and experience of the workshop participants. It is meant to be used for decision support only and does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee or of the other institutions involved.

Authors

Igor Caldeira (CoR)

Erich Dallhammer, Bernd Schuh, Chien-Hui Hsiung (ÖIR GmbH)

Participants in the TIA workshop

Aniol Esquerra Alsius	Ecoserveis (Spain)
Annette Jantzen	National Energy Ombudsmen Network
Audrey Dobbins	University of Stuttgart (Germany)
Barbara Steenbergen	International Union of Tenants
Bernd Schuh	OïR
Bihary Gabor	Expert
Biljana Kulišić	Energy Institute Hrvoje Pozar (Croatia)
Clémence Hutin	Friends of the Earth
Daniela Torres	ICLEI-Local Governments for Sustainability
Edit Lakatos	Housing Europe
Erich Dallhammer	OïR
Igor Caldeira	CoR/COTER
Ilaria D'Auria	International Union of Tenants
Irene Bertana	COFACE – FAMILIES EUROPE
João Pedro Gouveia	NOVA University of Lisbon (Portugal)
Kata Tüttő	Rapporteur
Luciano Lavecchia	Banca d'Italia
Lucie Middlemiss	University of Leeds
Maïlys Kahn	CoR/ENVE
Marina Varvesi	AISFOR (Italy)
Silvia Vivarelli	EC/Executive Agency for SMEs
Slavica Robić	DOOR (Croatia)

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Acronyms and legend

CoR	European Committee of the Regions
EP	European Parliament
ESPON	European Territorial Observatory Network
LRA	Local and Regional Authority
MS	Member State(s)
NUTS	Nomenclature des unités territoriales statistiques Common classification of territorial units for statistical purposes
OIR	Austrian Institute for Spatial Planning (ÖIR)
TIA	Territorial Impact Assessment

Effects of the directives – colour code

- Positive effects
- Minor positive effects
- Neutral
- Minor negative effects
- Negative effects

Legend – direction of effects

Increase

Decrease

Table of contents

List of Figures

List of Maps

Introduction

Energy poor households experience inadequate levels of essential energy services (adequate warmth, cooling, lighting and energy to power appliances) to guarantee a decent standard of living and health, due to a combination of high energy expenditure, low household incomes, inefficient buildings and appliances, and specific household energy needs and capabilities. It is estimated that more than 40 million households in the European Union are experiencing energy poverty[1].

Energy poverty has an indirect effect on many policy areas – including health, social, environment and productivity. Addressing it could bring multiple benefits, including less money spent by governments on health, reduced air pollution, better comfort and wellbeing, improved household budgets and increased economic activity.

Awareness of energy poverty is growing rapidly across Europe and the issue is being increasingly incorporated into the activities of the European Union, as evidenced by **the European Commission's flagship legislative proposal 'Clean Energy for All Europeans announced on 30 November 2016[2]**. Finalising these changes will mark a significant step towards the creation of the Energy Union and delivering on the EU's Paris Agreement commitments.

It empowers European consumers to become fully active players in the energy transition and fixes two new targets for the EU for 2030 – a binding renewable energy target of at least 32% and an energy efficiency target of at least 32.5% – with a possible upward revision in 2023. For the electricity market, it confirms the 2030 interconnection target of 15%, following on from the 10% target for 2020. These ambitious targets will stimulate Europe's industrial competitiveness, boost growth and jobs, reduce energy bills and improve air quality, but should also help tackle energy poverty.

The package includes **8 legislative acts**:

- Energy Performance in Buildings Directive
- Renewable Energy Directive
- Energy Efficiency Directive

[1] Number estimated taking into account that in January 2018 the population of the European Union (EU) was estimated at nearly 513 million (https://ec.europa.eu/eurostat/documents/2995521/9063738/3-10072018-BP-EN.pdf/ccdfc838-d909-4fd8-b3f9-db0d65ea457f). According to the latest data from Eurostat 8% of the EU population cannot afford to heat their home sufficiently: https://ec.europa.eu/info/news/can-you-afford-heat-your-home-2019-jan-31_en.

[2] https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans.

- Governance Regulation
- Electricity Directive
- Electricity Regulation
- Risk-Preparedness Regulation
- Regulation for the Agency for the Cooperation of Energy Regulators (ACER)

Highlighting the objectives of putting energy efficiency first, achieving global leadership in renewable energies and providing a fair deal for consumers, the impact assessment of the proposals estimated that they would generate 900 000 jobs and an increase of up to 1% in GDP over the next decade.

The Clean Energy package recognised the importance of tackling energy poverty and added explicit references to it in many Directives. In the meantime, the European Commission has launched the Energy Poverty Observatory, which is creating a wide overview of energy poverty issues at a national scale, and the Covenant of Mayors for Climate and Energy has launched the third pillar on energy poverty. Energy poverty is a complex issue, as it combines technical, economic and social aspects. Detecting it requires a joint analysis of different kinds of information. Tackling energy poverty requires mixed policies, where energy policies and social benefits have to be combined.

With energy poverty being quite a diverse issue across EU regions, a standardised approach cannot work everywhere: it has to be tackled locally, although there are many opportunities for learning across European nations on this topic. LRAs are in the frontline of this complex fight. Unlocking energy poverty policies can benefit LRAs' performances not only in terms of energy efficiency, but also in GHG emission reductions and social protection. It can, moreover, be the first step to getting all citizens on board in energy and climate action.

The CoR's political priorities for the period 2015-2020 clearly refer to the importance of bringing **Europe closer to citizens** and **building trust** in the EU. The ENVE Commission Work Programme for 2018 considers **the implementation of the Paris agreement** and the **energy union** as two of its main priorities. Energy poverty is closely related to these topics: it is a key societal challenge with both social and environmental consequences. The social impact of energy policy is an important aspect to be considered in current and future EU energy and climate policy, as tackling energy poverty is part of ensuring a socially inclusive, just and fair transition.

This workshop served to **support the own-initiative opinion of the Committee of the Regions** on *Multilevel governance and cross-sectoral cooperation to fight energy poverty* (ENVE-VI/038), whose Rapporteur is **Kata Tüttő (HU/PES)**, Representative of the Local Government of Budapest's District 12.

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1 Methodology: ESPON Quick Check

The idea of the territorial impact assessment (TIA) is to show the regional differentiation in the impact of EU policies. The ESPON TIA Tool[3] is an interactive web application that can be used to help policy makers and practitioners with identifying, ex-ante, potential territorial impacts of new EU Legislation, Policies and Directives (LPDs). The 'ESPON TIA Quick Check' approach combines a workshop setting for identifying systemic relations between a policy and its territorial consequences with a set of indicators describing the sensitivity of European regions.

It helps to steer an expert discussion about the potential territorial effects of an EU policy proposal by checking all relevant indicators in a workshop setting. The results of the guided expert discussion are judgements about the potential territorial impact of a given EU policy taking on board different fields (economy, society, environment, governance) for a range of indicators. These results are fed into the ESPON TIA Quick Check web tool.

Figure 1: Workshop discussion

Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019, OIR

The web tool translates the combination of the expert judgments on exposure with the different sensitivity of regions into maps showing the potential territorial impact of EU policy at NUTS 3 level. These maps serve as a starting point for further discussion of different impacts of a concrete EU policy

[3] https://www.espon.eu/main/Menu_ToolsandMaps/TIA/.

on different regions. The experts participating in the workshop thus provide an important input into this quick check on the potential territorial effects of a given EU policy proposal.

The workshop on the policy framework concerning energy poverty was held Brussels on 2 May 2019 and brought together a number experts representing various organisations.

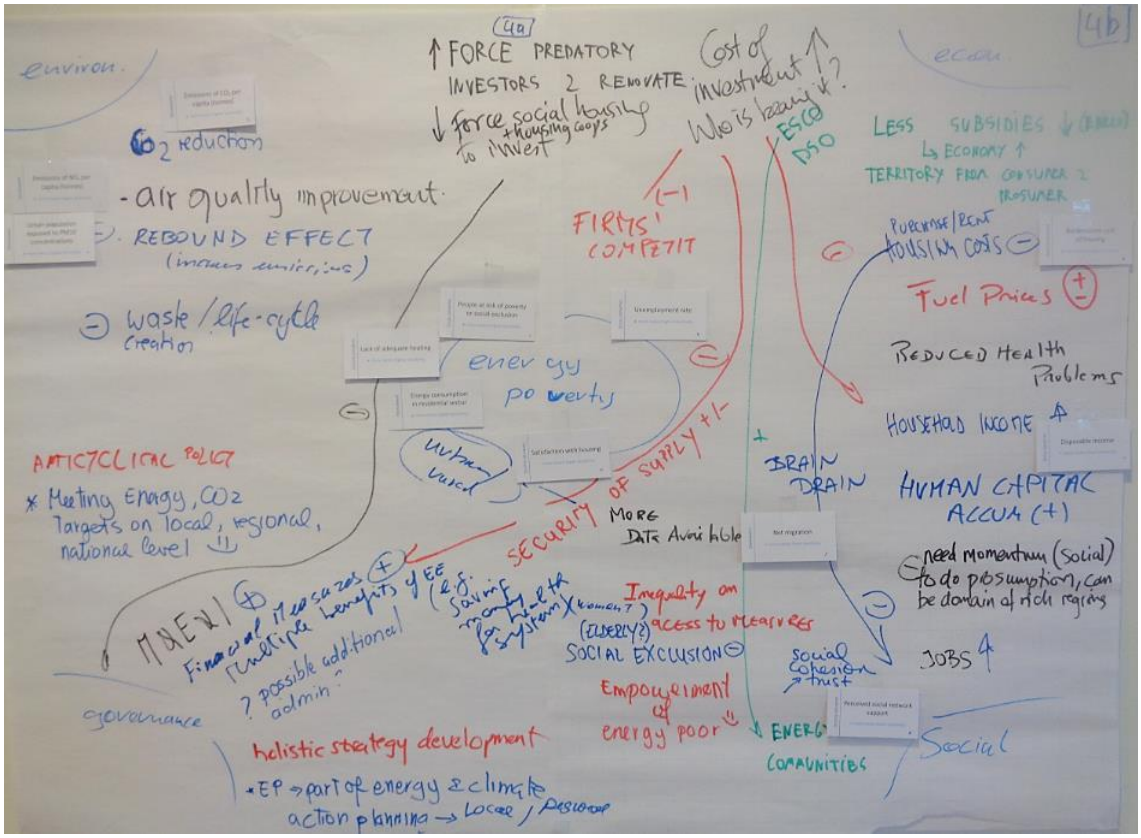
Two moderators from the OIR, provided by ESPON, prepared and guided the workshop and handled the ESPON TIA tool.

1.1 Identifying the potential territorial effects considering economy, society, environment and governance aspects – drafting a conceptual model

In the first stage of the TIA workshop the experts discussed the potential effects of the Clean Energy package.

This discussion revealed possible territorial impacts of potential effects of the Clean Energy package based on indicators relating to the economy, society, the environment and governance. The participants identified potential linkages between the development of the Clean Energy package and the effect on territories including interdependencies and feed-back loops between different effects (see figure below).

Figure 2: Workshop findings: Systemic picture



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019, OIR

1.2 Picturing the potential territorial effects through indicators

In order to assess the potential effects pictured in the conceptual model, suitable indicators need to be selected related to the parameters that the experts discussed in the fields of the economy, environment, society and governance. The availability of data for all NUTS 3 regions is posing certain limitations to the indicators that can be used. From the available indicators that the ESPON TIA Quick Check web tool offers the experts chose the following to describe the identified effects.

Picturing potential territorial impacts considering society related indicators

- Lack of adequate heating
- Burdensome cost of housing
- Satisfaction with housing
- Unemployment rate
- Disposable income
- People at risk of poverty or social exclusion
- Perceived social network support

Picturing potential territorial impacts considering environment related indicators

- Energy consumption use in residential building sector
- Emissions of CO2 per capita (tonnes)
- Emissions of NOx per capita (kilotonnes)
- Urban population exposed to PM10 concentrations

In addition, the experts agreed that the following indicators, which are not part of the ESPON TIA Quick Check web tool, are also relevant in describing the identified effects:

- Unemployment in 'retro-fitting'
- Employment in 'sub-sectors' (NACE 3- and 4-digit)
- Health: mental health and cold/heat related illness
- Health care accessibility
- Expenditure on energy
- Energy consumption by end use and income per year
- Energy intensity per m^2

1.3 Judging the intensity of the potential effects

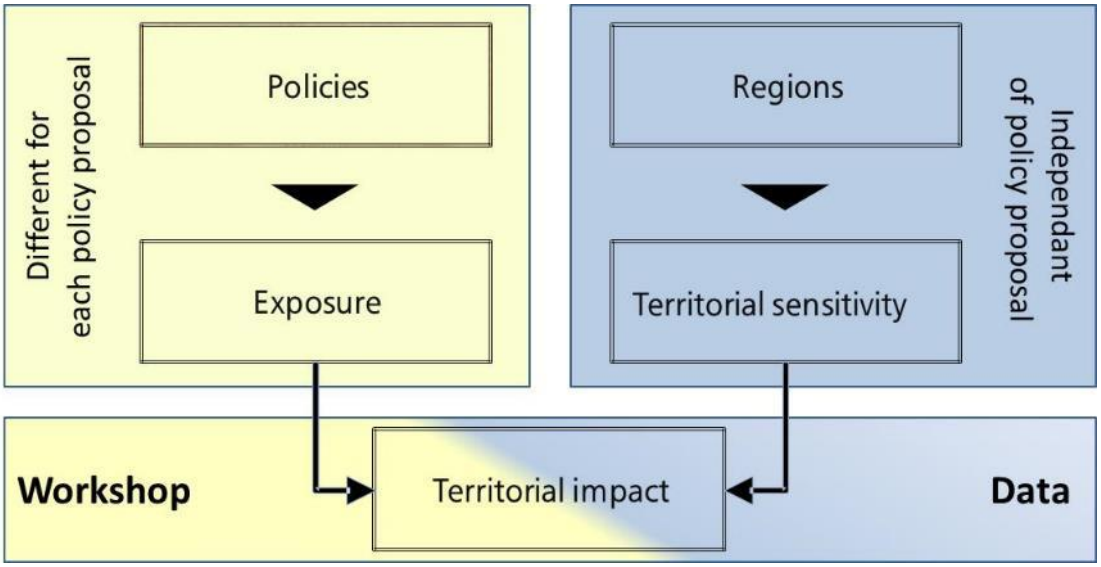
The workshop participants were asked to estimate the potential effects deriving from the Clean Energy package as related to energy poverty. They judged the potential effect on the territorial welfare along the following scores:

- ++ strong advantageous effect on territorial welfare (strong increase)
- + weak advantageous effect on territorial welfare (increase)
- o no effect/unknown effect/effect cannot be specified
- - weak disadvantageous effect on territorial welfare (decrease)
- -- strong disadvantageous effect on territorial welfare (strong decrease)

1.4 Calculating the potential 'regional impact' – Combining the expert judgement with the regional sensitivity

The ESPON TIA Quick Check combines the expert judgement on the potential effect deriving from the impact of the potential effects of the Clean Energy package related to energy poverty (**exposure**) with indicators picturing the sensitivity of regions resulting in maps showing a territorially differentiated impact. This approach is based on the **vulnerability concept** developed by the Intergovernmental Panel on Climate Change (IPCC). Here, the effects deriving from a particular policy measure (exposure) are combined with the characteristics of a region (**territorial sensitivity**) to produce potential territorial impacts (see following figure).

Figure 3: Exposure x territorial sensitivity = territorial impact



Source: OIR, 2015.

- 'Territorial Sensitivity' describes the baseline situation of the region according to its ability to cope with external effects. It is a characteristic of a region that can be described by various indicators independently of the topic analysed.
- 'Exposure' describes the intensity of the potential effect caused by the Clean Energy package as related to energy poverty on a specific indicator. Exposure illustrates the experts' judgement, i.e. the main findings of the expert discussion at the TIA workshop.

1.5 Mapping the potential territorial impact

The result of the territorial impact assessment is presented in maps. The maps displayed below show potential territorial impacts based on a combination of the expert judgement on exposure with the territorial sensitivity of a region, described by an indicator at NUTS 3 level. Whereas the expert judgement is a qualitative judgement (i.e. strong advantageous effect on territorial welfare/weak advantageous effect/no effect/weak disadvantageous effect/strong disadvantageous effect), the sensitivity is a quantitative indicator.

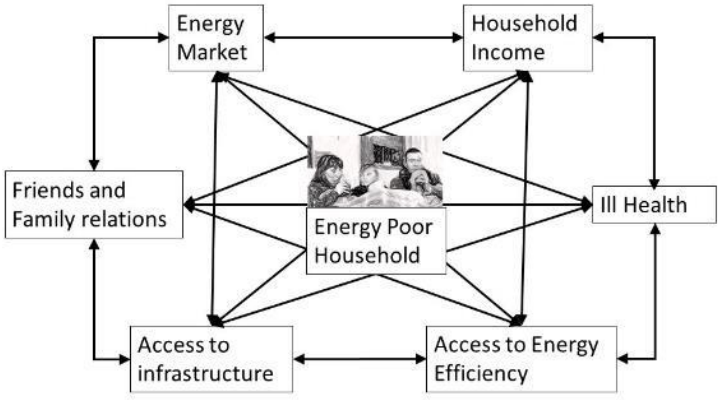
2 Preliminary Discussion

2.1 The need for a holistic approach

Kata Tüttő, rapporteur of the European Committee of the Regions for energy poverty, began the workshop by setting out the aim of the opinion. It linked, she explained, two topics that are normally discussed without ever being discussed together: the economic and environmental problem of energy production and consumption and the social issue deriving from the importance of energy for social well-being. Energy poverty is thus a reality that requires a holistic approach that must examine issues such as access to electricity and heating, the affordability of electricity and heating and even transport, employment and social welfare.

Following up on this introduction, Dr Lucie Middlemiss, associate professor at the University of Leeds, gave a presentation that began with a definition of energy poverty as 'the inability of households to access adequate energy services, including home heating, electrical appliance use and mobility' (Simcock et al., 2016)[4]. Reinforcing the previous statement by Ms Tüttő, energy poverty required a systemic perspective, as depicted in the image below.

Figure 4: Energy poverty – a systemic perspective

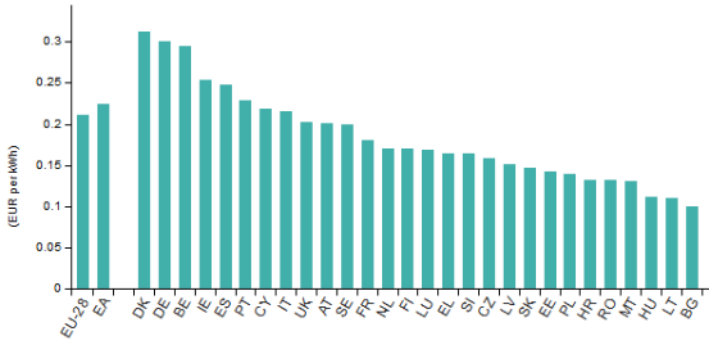


Source: Dr Lucie Middlemiss, Territorial impact assessment expert workshop, Brussels, 2 May 2019

In terms of the market, the cost of energy is one of the most relevant issues and can vary greatly across the European Union. As can be seen in the graphic below, although the most affluent countries will mostly also have higher household energy costs, there are notable exceptions such as the relatively high costs in Portugal or the comparatively low costs in Luxemburg, Finland and the Netherlands.

[4] https://doi.org/10.1016/j.enpol.2016.03.019.

Figure 5: Electricity prices for household consumers (2 500 kWh < annual consumption < 5 000 kWh, taxes included), second semester 2018



Source: Eurostat (online data codes: nrg_pc_204)

In this connection, important factors here are energy tariffs and their causes (the type of energies used in each national market or the level of taxation, the presence of different tariffs for different household meter types, the role of energy debt in restricting access to tariffs and the support of renewables via energy bills). Another straightforward factor to take into account is income – its level and its stability – since an unstable income can drag with it snowball effects such as energy debt in the household, reduction in consumption and disconnection from the network. Also affecting how much of household income is invested in energy consumption is the energy efficiency of both buildings and home appliances: vulnerable consumers might be in a position to gain more from the benefits of any energy retrofit, but they are also more likely to be budget constrained.

Besides the issues connected to energy consumption, social and psychological factors are also decisive in assessing the risk of energy poverty. The presence of a strong family or friendship support network tends to reduce the risk of individuals falling into such a situation, as is also the case when social service agencies are present and effective. Health is also a decisive factor. Physical or mental disabilities may be causes and sometimes consequences of situations of material and, consequently, energy poverty.

Following the introductory remarks, the experts discussed what were the main topics to be studied, allowing further choices to be made of the most relevant statistical indicators for assessing territorial sensitivity to energy poverty.

2.2 Housing conditions

Quality of buildings scored highest with most of the participants. Given that housing quality (especially, insulation) affects energy consumption, it is a core element in this topic. Variable energy standards (and/or the lack of them) for housing across the Union constitute an ample field for analysis and policy action.

Two other questions were raised connected to housing. A first issue of concern is social housing, where families with a lower income will normally be found. The quality of construction here is also sub-optimal. As a result, such households face converging negative conditions leading to energy poverty.

Another source of concern for the experts was the situation of renters. National and regional legislation influences the rental market and the allocation of obligations in the financing of renovation. The existence of energy performance certificates would help to make the hidden costs of energy consumption more visible to renters. In this way they could help to improve the functioning of the rental market, introducing elements of competition leading to higher quality standards.

On the other hand, the high costs of renovation to improve energy performance may lead to gentrification and thus the exclusion of some social groups from the benefits coming from such renovation. The majority of experts attached high importance to the need to have a long term vision for housing renovation. Such a vision must combine climate change strategies with the energy poverty dimension and, in addition, a change in the energy mixes present in each region and country to allow the balancing of affordability and climate friendliness.

Energy Service Companies (ESCOs) could have a role to play in bearing the costs of energy efficiency investments through Energy Performance Contracts (EPCs), e.g. in social housing "(as in one of projects managed by the Executive Agency for Small and Medium-sized Enterprises, ENERSHIFT[5]). One-stop shops to provide information/advice on energy efficiency (but also renewable energies) to energy poor/vulnerable households can be very helpful (e.g. the Energy Info Points in Barcelona started with the SMART-UP[6] project or the Municipal Energy Helpdesks in the FIESTA[7] project).

2.3 Information and consumer empowerment

There was also a consensus on the need to promote better conceptual definitions of energy vulnerability and energy poverty, specifically to determine which are the most vulnerable social groups/consumers. In this connection, we must add the concept of vulnerable consumers to the concept of energy poverty that we presented above. This encompasses not just a broader group of those in energy poverty or at risk of it, but also specific consumers (social welfare recipients and people with disabilities and other health issues) that may face challenges purchasing energy (see Dobbins, Fuso Nerini, Deane and Pye[8], 2019). More accessible information is especially needed for such fragile groups. Support for energy poor and vulnerable consumers could therefore be achieved by better collaboration with social services.

[5] https://enershift.eu/en/il-progetto/.
[6] https://www.smartup-project.eu/.
[7] http://www.fiesta-audit.eu/en/.
[8] https://doi.org/10.1038/s41560-018-0316-8.

The energy performance certificates mentioned earlier would also empower consumers in making their own choices concerning not just housing, but also the acquisition of appliances. 'Energy literacy' for consumption, or the ability of consumers to make an informed choice when choosing an energy supplier, would further feed the empowerment of society as a whole, but mostly vulnerable consumers.

The experts also reflected on the possibility of consumers converting themselves into producers. Prosumerism can differ in nature, depending on the local context. In rural areas and as part of a well-developed bioeconomy, farmers can use resources for energy production. In an urban context, building owners or even renters can make use of photovoltaic production. In either case, proper financing channels and fair, stable pricing and regulatory policies can enrich the European energy mix, help fight climate change and reduce consumer vulnerability and energy poverty.

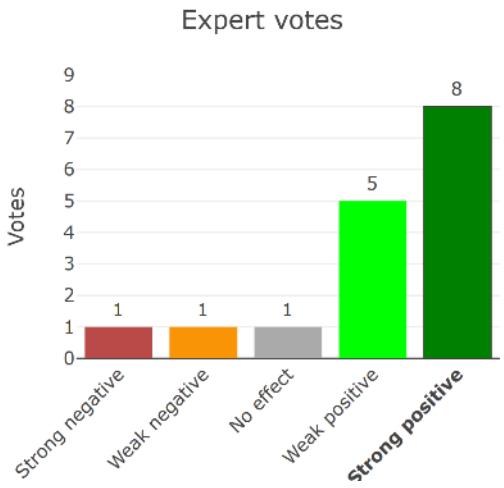
As well as increasing their energy efficiency and improving their living standards, the energy poor would need to have the possibility to produce and use renewable energy to decrease their energy costs. There is a role for local energy communities to contribute to alleviating energy poverty by empowering citizens to save energy and to become prosumers, and through solidarity initiatives that use revenue generated from renewable energy and energy savings to support vulnerable or low income households.

3 Expected societal effects

3.1 Lack of adequate heating

The majority of the experts agreed that the Clean Energy package would have a positive effect on people who are not able to keep their homes warm enough. Eight experts judged the effect as strongly positive and five as weakly positive. On the other hand, one expert voted for weakly negative and one for strongly negative. One expert did not consider this indicator relevant.

Figure 6: Result of the expert judgement: People affected by lack of adequate heating

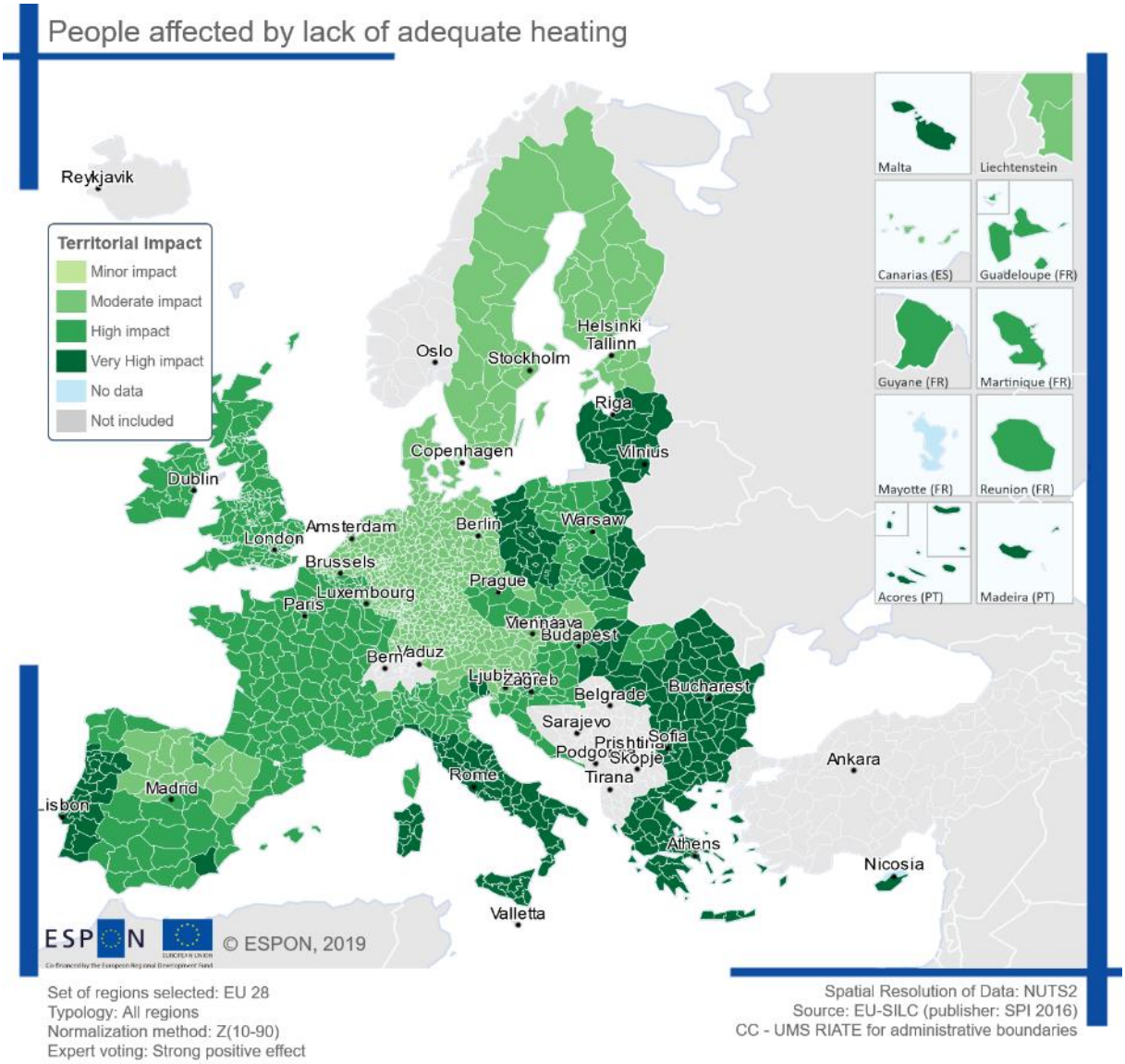


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The indicator pictures the sensitivity of a region according to the percentage of people who answered in an interview that they were in a state of enforced inability to keep their home warm enough. Regions with a higher share of people suffering from lack of adequate heating are expected to be more sensitive towards the Clean Energy package. Sensitivity is thus proportional to the percentage of people suffering from lack of adequate heating. Since for some Member States the data is only available at NUTS 0 (AT, DE, FR, HR, PT and UK) or NUTS 1 level (BE, EL, HU, NL and PL), territorial differences cannot be shown for these countries.

The following map shows the potential territorial impact of the Clean Energy package on lack of adequate heating. It combines the expert judgement of a strongly positive effect with the given sensitivity of regions. 21% of the regions could experience a very highly positive impact and 35% a highly positive impact. Portugal, Italy, Greece and eastern Europe in particular are affected highly positively. 44% of the regions would experience a moderately positive impact.

Map 1: People affected by lack of adequate heating – expert judgement: strongly positive effect



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

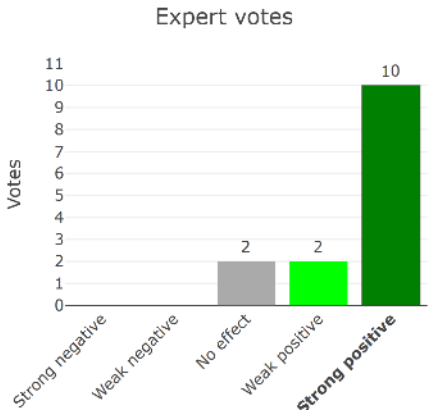
3.2 Satisfaction with housing

It can be expected that people affected by energy poverty will not be satisfied with their housing. The experts agreed that the Clean Energy package would have a positive effect on people's satisfaction with housing as building quality could be improved. Ten experts judged the effect as strongly positive and two as weakly positive. Two experts did not see this indicator as relevant.

The indicator pictures the sensitivity of a region according to the degree of satisfaction with housing. People were asked how satisfied they were with their dwelling in terms of meeting the household needs/opinion on the price, space, neighbourhood, distance to work, quality and other aspects. Regions with a higher degree of dissatisfaction with housing are expected to be more sensitive towards the Clean Energy package. Sensitivity is thus indirectly proportional to the degree of satisfaction with

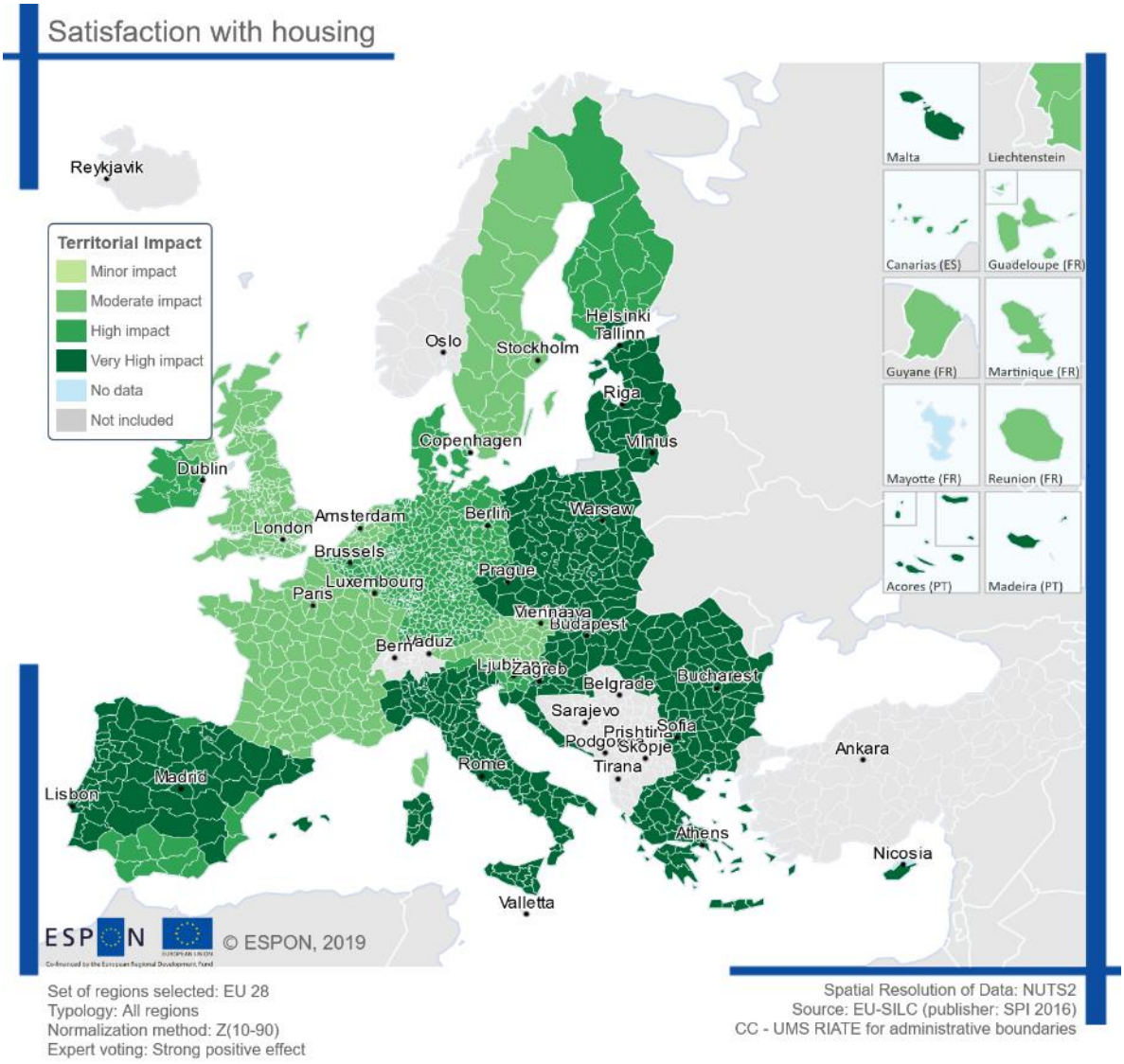
housing. Since for some Member States the data is only available at NUTS 0 level (AT, BE, DE, EL, FR, HR, HU, NL, PL, PT and UK), territorial differences cannot be shown for these countries.

Figure 7: Result of the expert judgement: satisfaction with housing affected by the Clean Energy package concerning energy poverty



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 2: Satisfaction with housing affected by the Clean Energy package concerning energy poverty – expert judgement: strongly positive effect



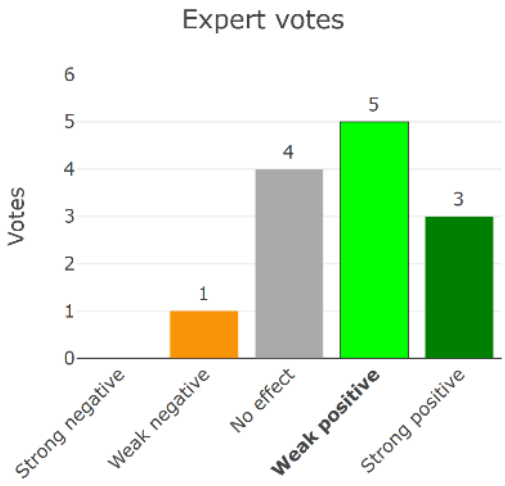
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The map shows the potential territorial impact of the Clean Energy package on satisfaction with housing. It combines the expert judgement of a strongly positive effect with the given sensitivity of regions. 34% of the regions could experience a highly positive impact and 38% a moderately positive impact. Regions facing the highest impact are in Portugal, Spain and Italy as well as in eastern and south-eastern Europe. In these regions, it is expected that the standard of housing could be improved. The other regions (28%) would get a minor positive impact. The map shows that many that have low satisfaction with housing also have a high share of people suffering from lack of adequate heating.

3.3 Unemployment rate

In many cases unemployed people cannot afford their basic energy needs. Consequently, most of the experts assumed that the Clean Energy package could have a positive effect on regions with a high unemployment rate. Three experts expected a strongly positive effect and five a weakly positive effect. One expert judged it as weakly negative and four experts did not consider this indicator relevant.

Figure 8: Result of the expert judgement: unemployment rate affected by the Clean Energy package concerning energy poverty



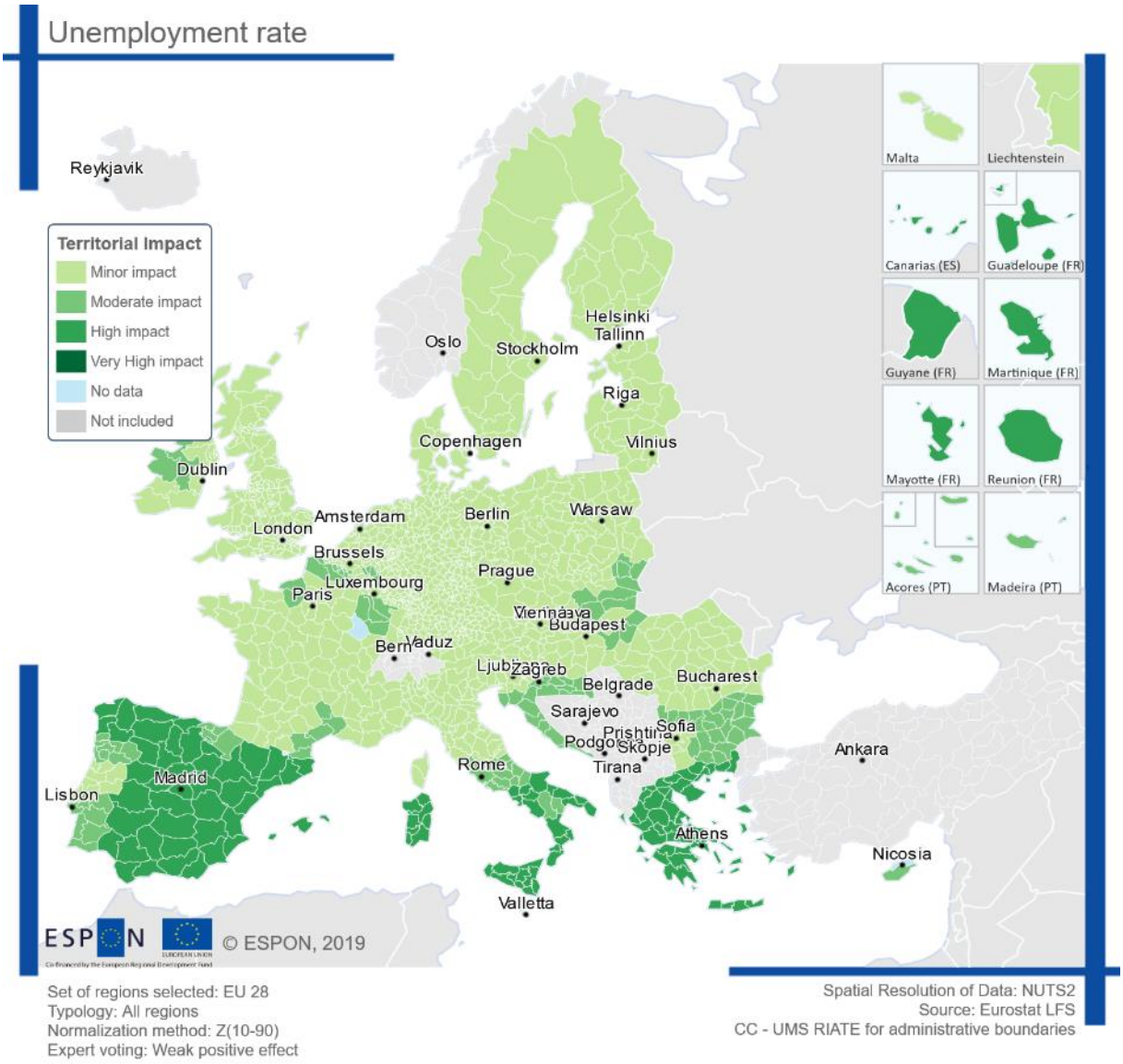
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The 'unemployment rate' indicator shows the sensitivity of a region according to the unemployment rate. It is calculated by dividing the number of unemployed people by the number of those economically active. Regions experiencing higher levels of unemployment are likely to benefit more from a reduction in unemployment and are more harmed by increases. Sensitivity is thus directly proportional to the unemployment rate.

The following map shows the potential territorial impact of the Clean Energy package on the unemployment rate. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions. 11% of the regions would get a highly positive impact. These regions can be found

in Spain, Greece and the southern half of Italy (including the islands of Sardinia and Sicily). 9% of the regions are expected to experience a moderately positive impact and 80% a minor positive impact.

Map 3: Unemployment rate affected by the Clean Energy package concerning energy poverty – expert judgement: weakly positive effect

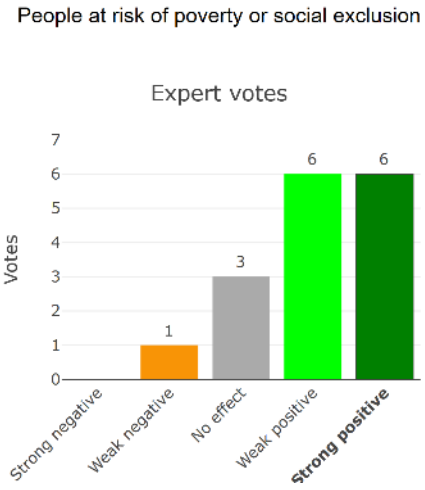


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

3.4 People at risk of poverty or social exclusion

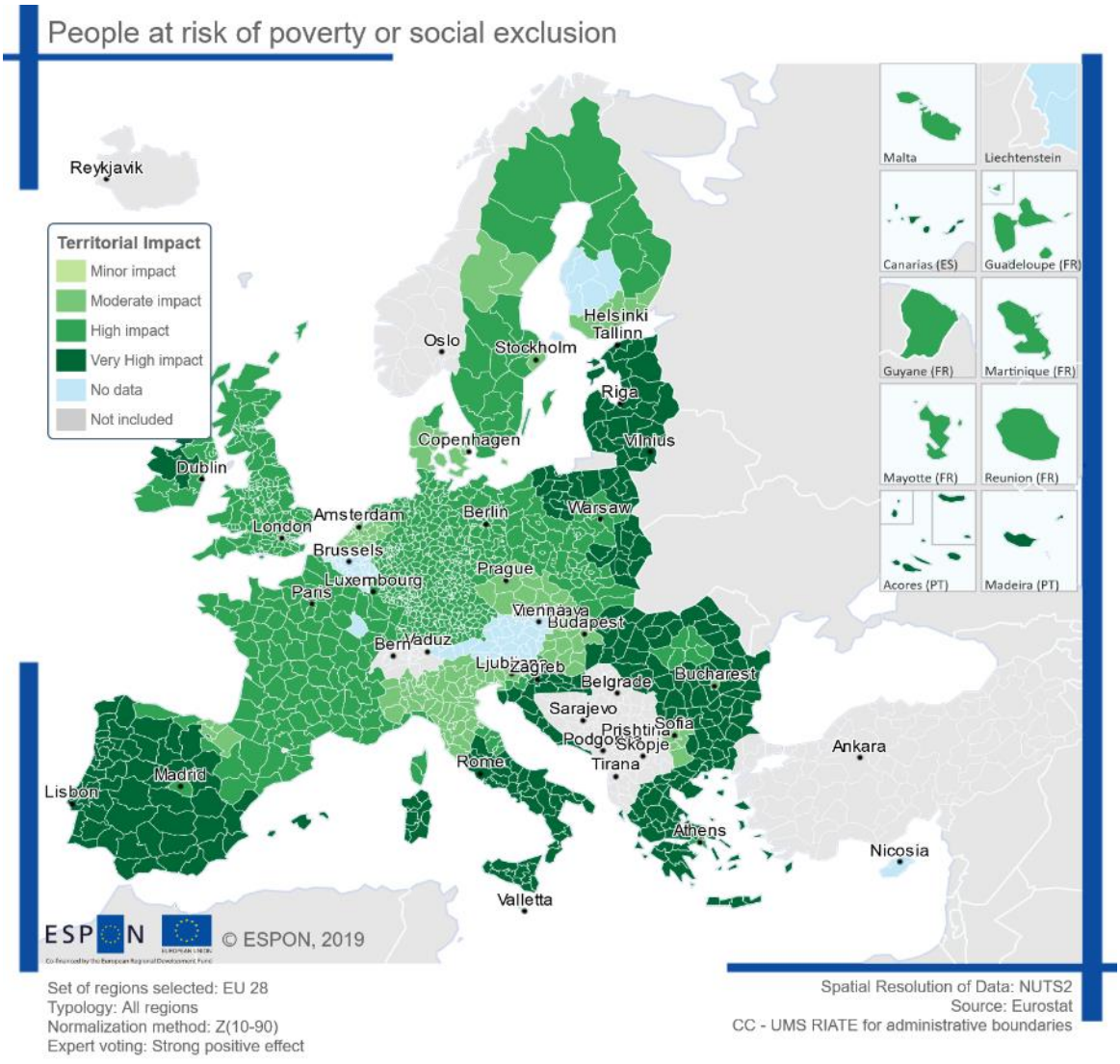
People at risk of poverty or social exclusion are another population group that are not able to cover basic energy needs. The majority of the experts agreed that the Clean Energy package would have a positive effect on regions with a high percentage of people at risk of poverty or social exclusion. Six experts voted for a strongly positive effect and as six for weakly positive. One expert judged it as weakly negative and three experts did not consider this indicator relevant.

Figure 9: Result of the expert judgement: people at risk of poverty or social exclusion affected by the Clean Energy package concerning energy poverty



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 4: People at risk of poverty or social exclusion affected by the Clean Energy package concerning energy poverty – expert judgement: strongly positive effect

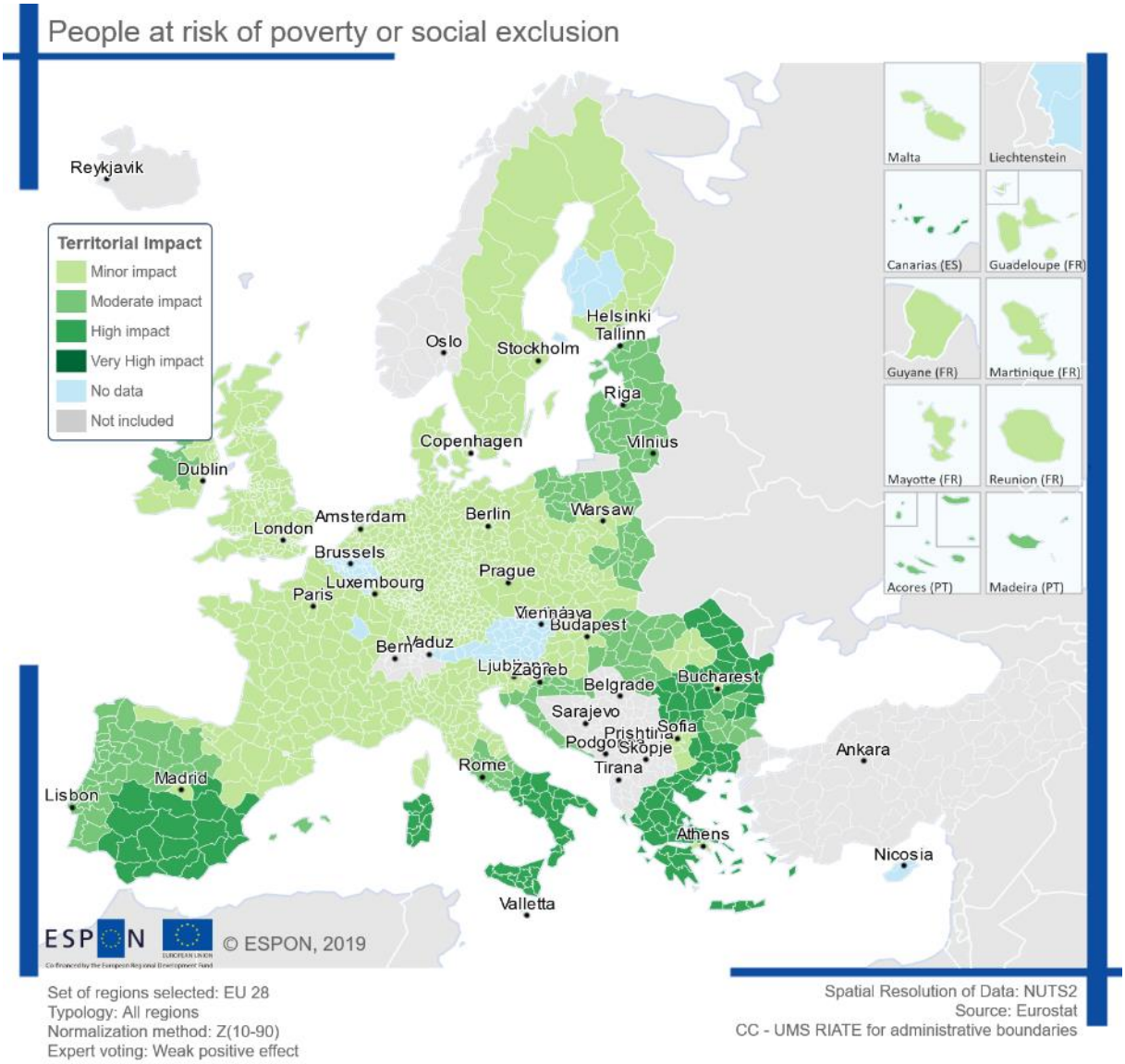


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The indicator picturing the sensitivity of a region according to people at risk of poverty or social exclusion shows the at-risk-of-poverty rate of people out of the total population. Regions which display a higher at-risk-of-poverty rate are likely to experience more acute poverty. Sensitivity towards measures influencing poverty is directly proportional to the at-risk-of-poverty rate.

Map 4, above, shows the potential territorial impact from the Clean Energy package on people at risk of poverty or social exclusion. The first map combines the expert judgement of a strongly positive effect with the given sensitivity of regions. 24% of the regions would get a very highly positive impact. These regions can be found in Portugal, Spain, Ireland and the southern half of Italy (including the islands of Sardinia and Sicily) as well as in many regions in eastern and south-eastern Europe.

Map 5: People at risk of poverty or social exclusion affected by the Clean Energy package concerning energy poverty – expert judgement: weakly positive effect



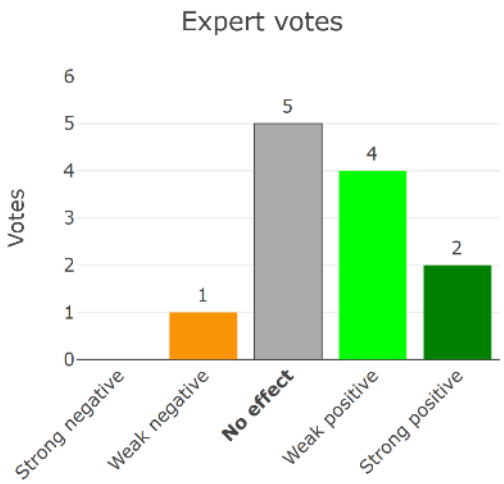
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 5 shows the potential impact of the Clean Energy package on people at risk of poverty or social exclusion, based on a weakly positive effect. 12% of the regions are expected to have a highly positive impact and 12% a moderately positive impact. These regions facing the highest impact are located in the southern half of Spain and Italy (including Sardinia and Sicily) as well as in south-eastern Europe. Most of the regions (76%) would get a minor positive impact.

3.5 Disposable income

Where the Clean Energy package helps to promote renewable energy and energy efficiency in the housing of people affected by energy poverty, these could save on heating costs. Their financial burden would therefore be decreased. However, the majority of the experts did not see a relevant effect.

Figure 10: Result of the expert judgement: disposable income affected by the Clean Energy package concerning energy poverty

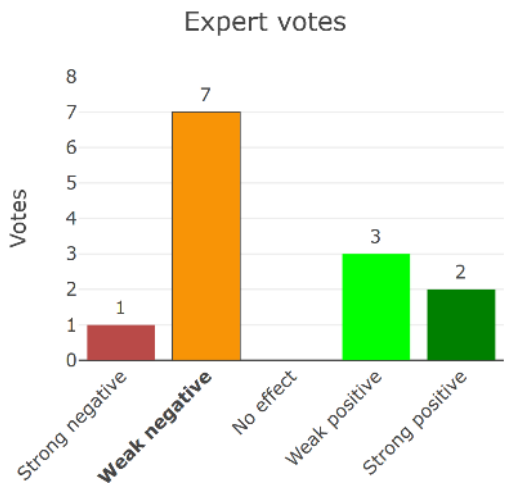


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

3.6 Burdensome cost of housing

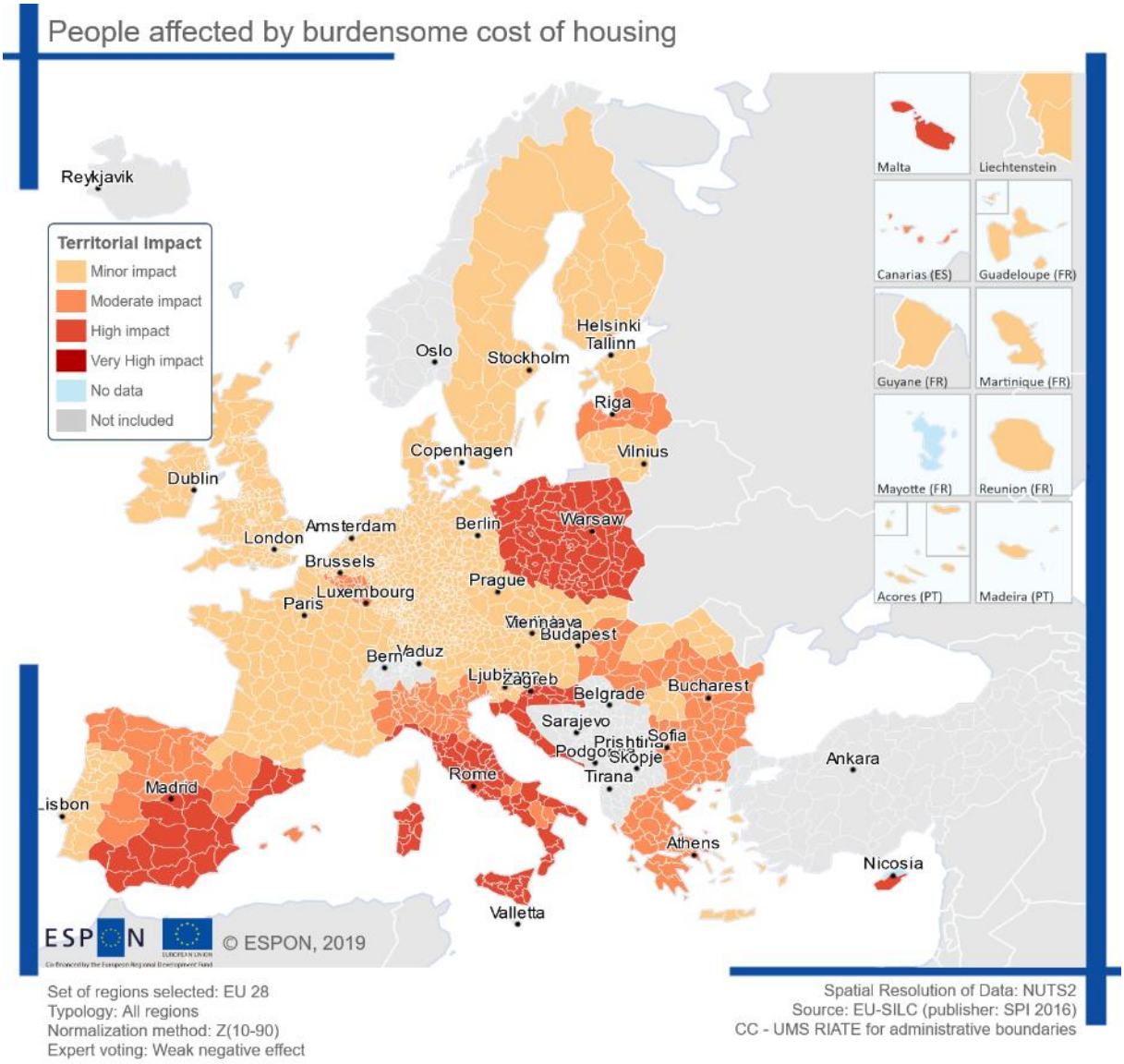
As mentioned earlier, the Clean Energy package aims to promote renewable energy and energy efficiency, so there could be energy cost savings, especially for people affected by energy poverty. Two experts considered this effect to be strongly positive and three weakly positive. However, the majority of the experts expected the opposite effect. Housing costs would not decrease due to investment in renewable energy and energy efficiency. In fact, it could even increase due to such investment. As a result, seven experts voted for a weakly negative effect and one expert for strongly negative.

Figure 11: Result of the expert judgement: People affected by burdensome cost of housing



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 6: People affected by burdensome cost of housing – expert judgement: weakly negative effect



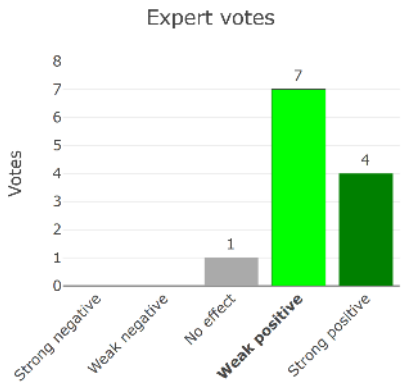
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The indicator pictures the sensitivity of a region according to the percentage of people who answered in an interview that they live in a dwelling where housing costs (mortgage repayment or rent, insurance and service charges) are a financial burden. Regions with a higher share of people suffering from a burdensome cost of housing are expected to be more sensitive towards the Clean Energy package. Sensitivity is thus proportional to the percentage of people suffering from a burdensome cost of housing. Since for some Member States the data is only available at NUTS 0 (AT, DE, FR, HR, PT and UK) or NUTS 1 level (BE, EL, HU, NL and PL), territorial differences cannot be shown for these countries. The map above shows the potential territorial impact of the Clean Energy package on the burdensome cost of housing. It combines the expert judgement of a weakly negative effect with the given sensitivity of regions. 14% of the regions could experience a highly negative impact. These regions are located in Spain, Italy, Croatia and Poland and Cyprus. Regions facing a moderately negative impact (16%) can also be found in these Member States as well as in Belgium, Luxemburg, Latvia, Hungary, Romania, Bulgaria and Greece. The majority of the regions (71%) would get a minor negative impact.

3.7 Perceived social network support

In regions with lower perceived social network support the willingness of people to get involved is also lower. The Clean Energy package facilitates participation in energy communities. The experts therefore agreed that the package could stimulate the establishment of local energy communities, especially in regions having a lower perceived social network support. Four experts voted the effect strongly positive and seven weakly positive. One expert did not see a relevant effect.

Figure 12: Result of the expert judgement: perceived social network support affected by the Clean Energy package concerning energy poverty

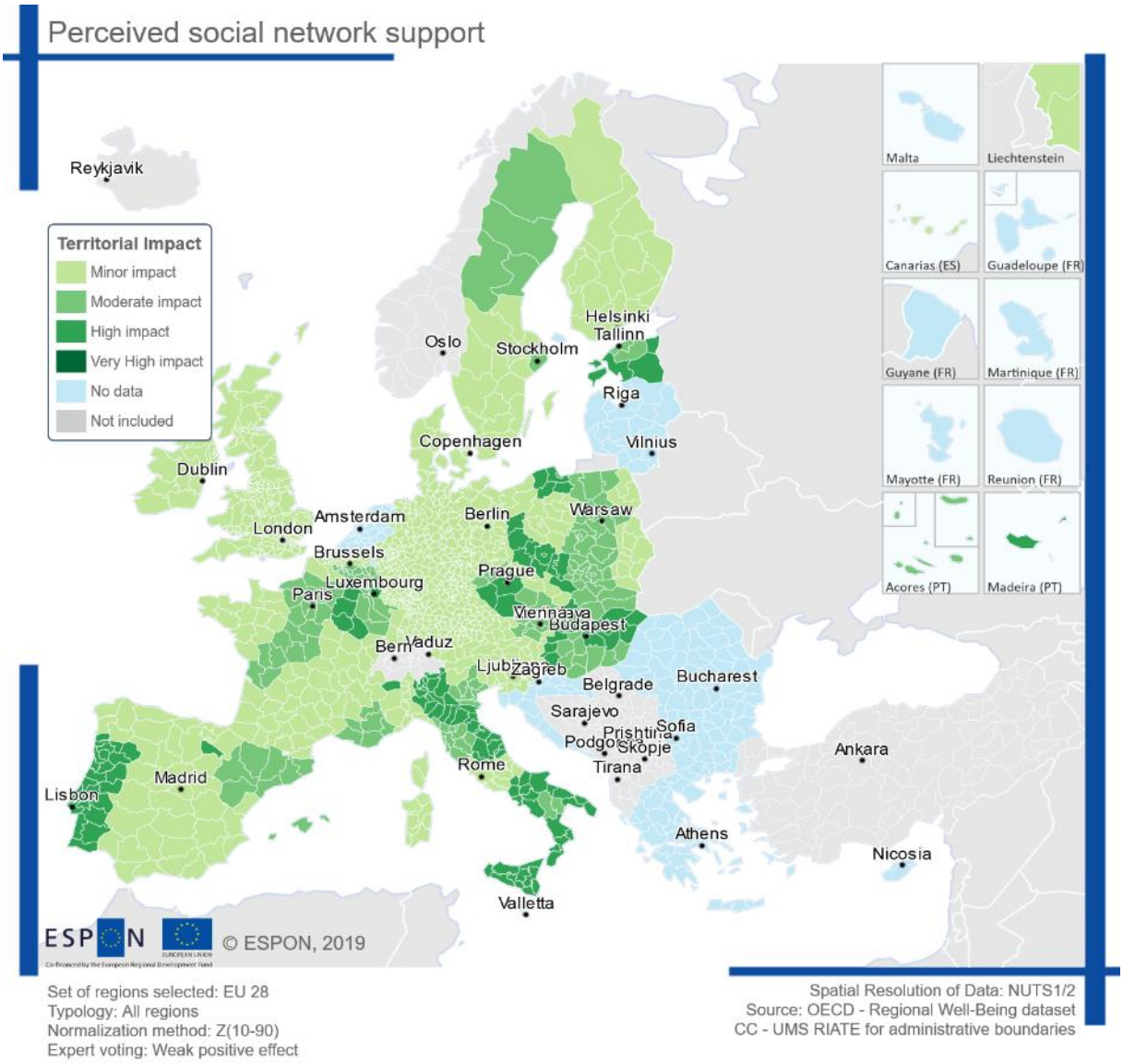


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The indicator pictures the sensitivity of a region according to the percentage of people who replied "Yes" with respect to the following question: If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them or not? Regions with lower perceived social

network support are expected to be more sensitive towards the Clean Energy package. Sensitivity is thus inversely proportional to the level of perceived social network support.

Map 7: Perceived social network support affected by the Clean Energy package concerning energy poverty – expert judgement: weakly positive effect



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

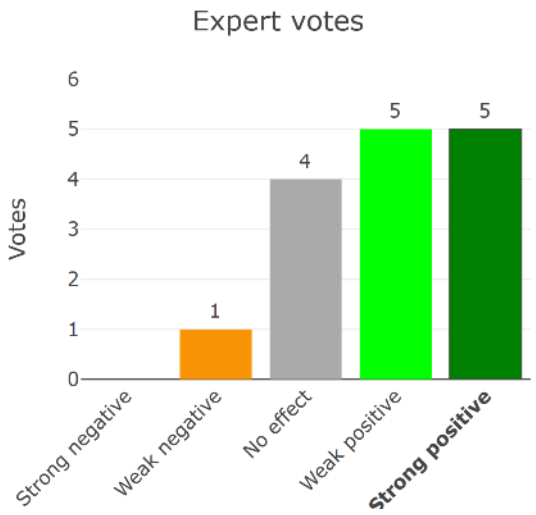
The map above shows the potential territorial impact of the Clean Energy package on the perceived social network support. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions. 11% of the regions could experience a highly positive impact. These areas can be found in Portugal, Luxembourg, Italy, Estonia, Poland and in a few regions in France, the Czech Republic, Slovakia and Hungary. A possible effect of people getting involved in energy communities is that this could increase perceived social network support in these regions. 13% of the regions are expected to experience a moderately positive impact and the majority (76%) a minor positive impact.

4 Expected environmental effects

4.1 Energy consumption use in the residential building sector

Households with a high energy consumption would have a higher risk of suffering from energy poverty. The majority of the experts therefore agreed that the Clean Energy package would have a positive impact on regions where the energy consumption use in residential building sector is high. Five experts voted for a strongly positive effect and five for weakly positive. One expert considered the effect as weakly negative. Four experts did not consider this indicator relevant.

Figure 13: Result of the expert judgement: energy consumption use in residential building sector affected by the Clean Energy package concerning energy poverty



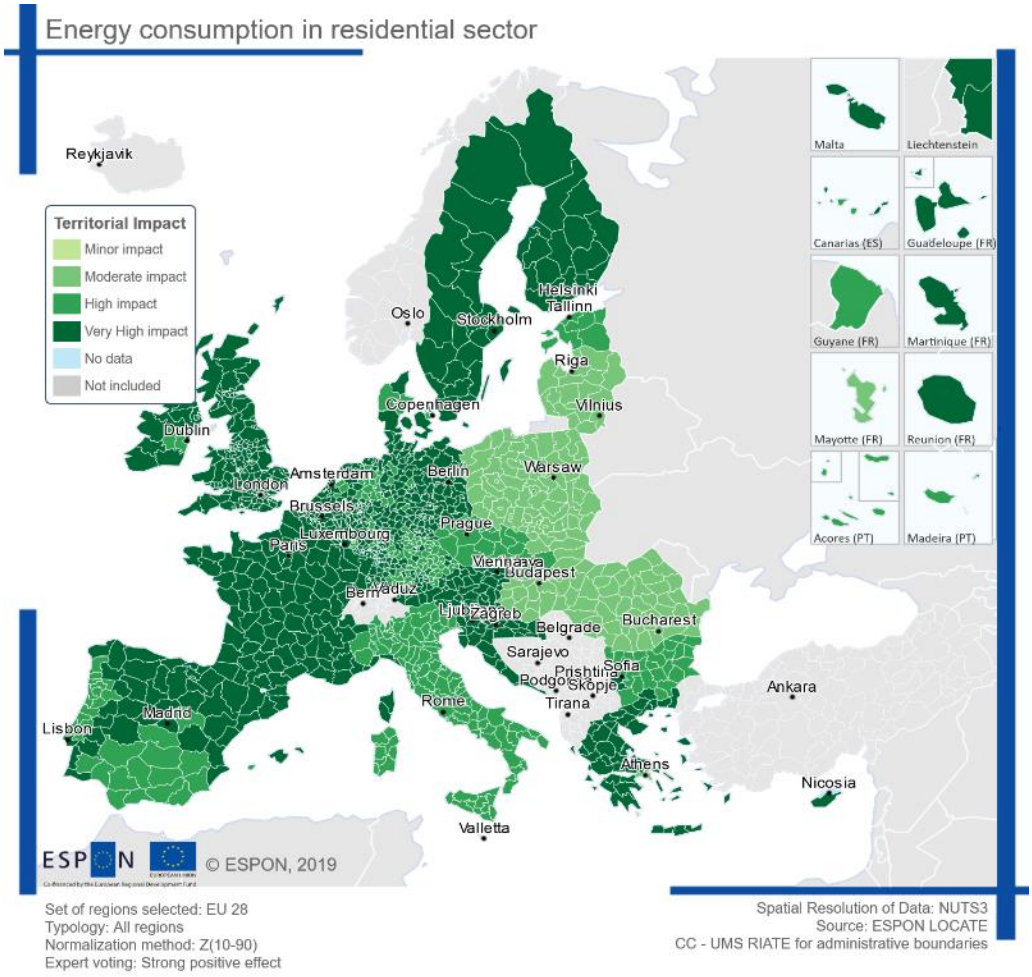
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

This indicator depicts the electricity demand for appliances and lighting in the residential sector in MWh/capita. Regions with a higher energy consumption in the residential sector are expected to be influenced more by the Clean Energy package. Sensitivity is thus directly proportional to the energy consumption in the residential sector.

The following maps show the potential territorial impact from the Clean Energy package on the energy consumption use in the residential building sector. The first map combines the expert judgement of a strongly positive effect with the given sensitivity of regions. More than half of the regions (67%) could experience a very highly positive impact and 21% a highly positive impact. 12% of the regions would

get a moderately positive impact. These regions are located in eastern Europe, namely Latvia, Lithuania, Poland, Slovakia, Hungary and Romania.

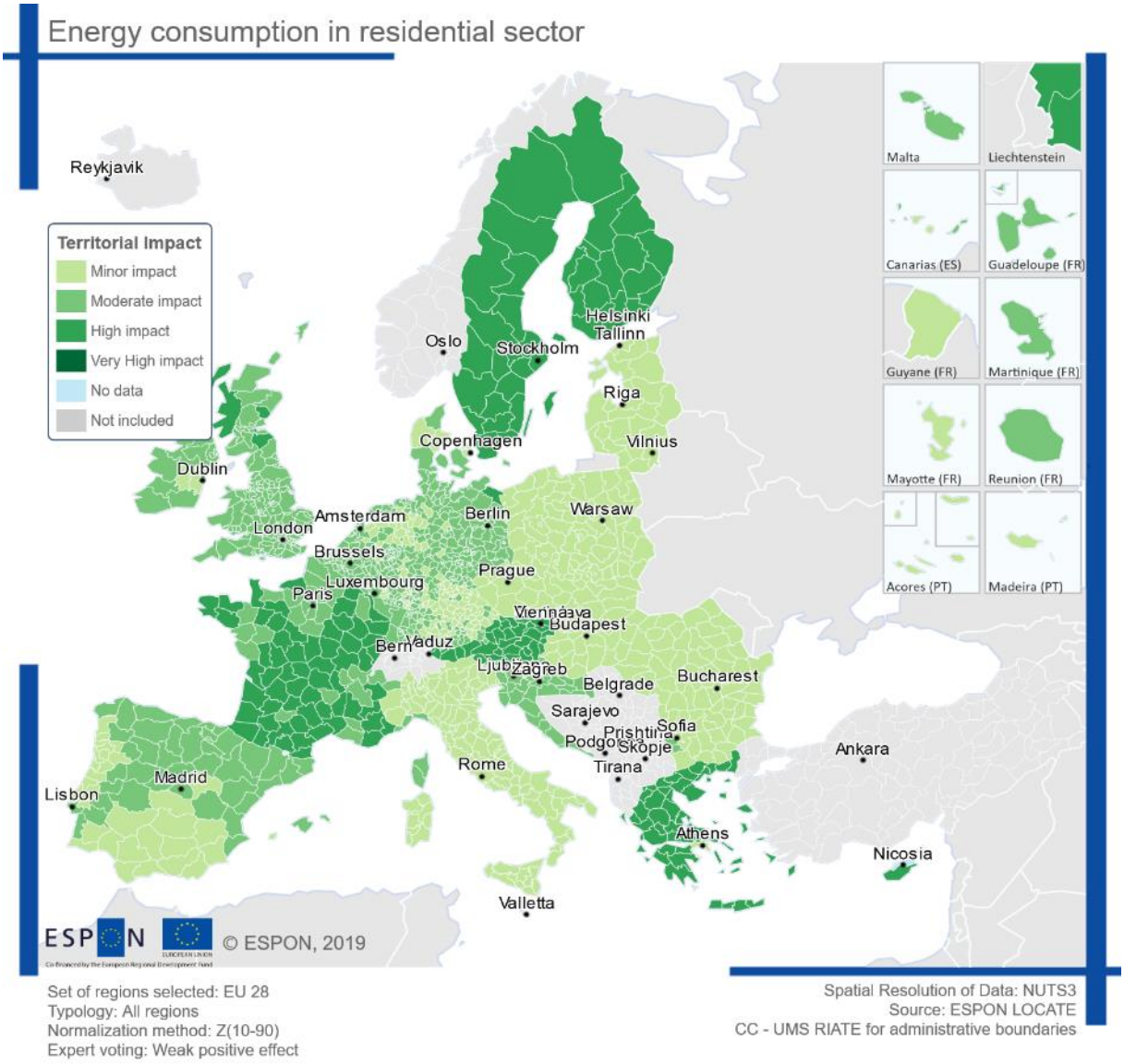
Map 8: Energy consumption use in residential building sector affected by the Clean Energy package concerning energy poverty – expert judgement: strongly positive effect



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The second map shows the potential impact of the Clean Energy package on the energy consumption use in the residential building sector, based on a weakly positive effect. 14% of the regions could get a highly positive impact. These regions are located in Sweden, Finland, Austria, France and Greece and parts of the U.K., Belgium and Germany. The other regions would experience a moderately positive impact (52%) and a minor positive impact (34%).

Map 9: Energy consumption use in residential building sector affected by the Clean Energy package concerning energy poverty – expert judgement: weakly positive effect

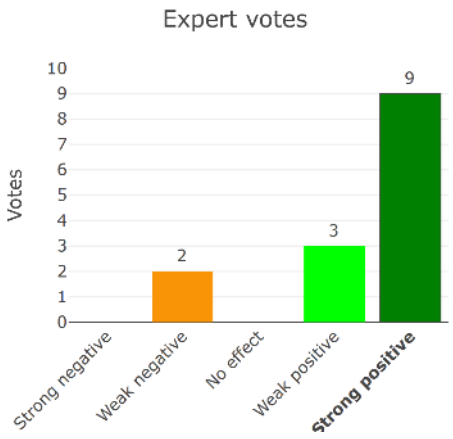


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

4.2 Emissions of CO2 per capita (tonnes)

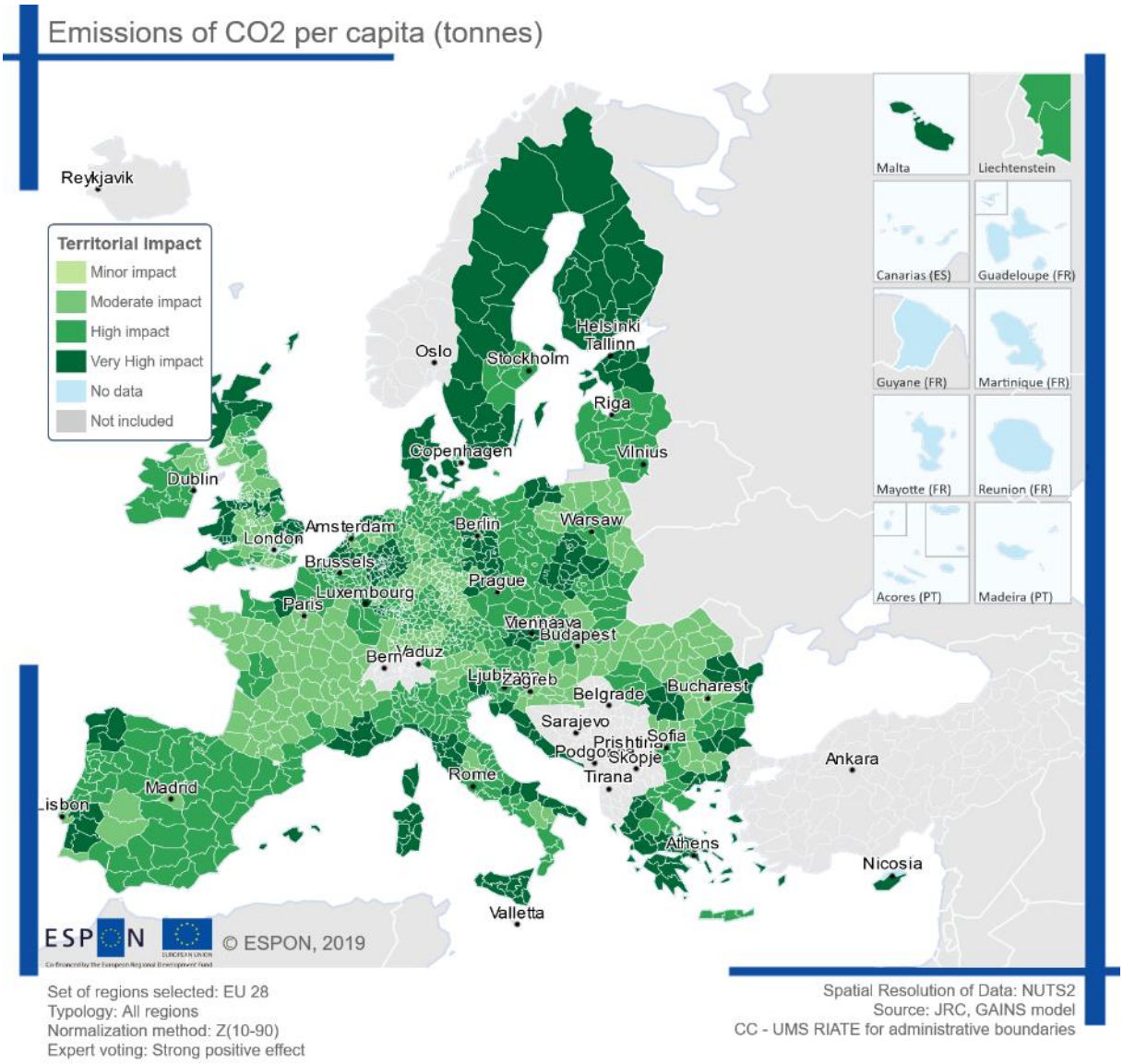
Given that one aim of the Clean Energy package is to promote energy efficiency, this could reduce consumption of fossil energy sources. Emission of pollutants could be minimised and an improvement in air quality achieved. In the residential sector, fossil fuels are often used for heating. The majority of the experts agreed that the Clean Energy package could reduce CO2 emissions. Nine experts expected a strongly positive effect and three a weakly positive effect. Two experts voted for weakly negative.

Figure 14: Result of the expert judgement: emissions of CO2 per capita (tonnes) affected by the Clean Energy package concerning energy poverty



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 10: Emissions of CO2 per capita (tonnes) affected by the Clean Energy package concerning energy poverty – expert judgement: strongly positive effect



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The 'emissions of CO2 per capita' indicator shows the sensitivity of a region according to the emissions of CO2 in tonnes per capita and is measured in tons per year. Regions showing higher concentrations of CO2 per capita are expected to be more sensitive.

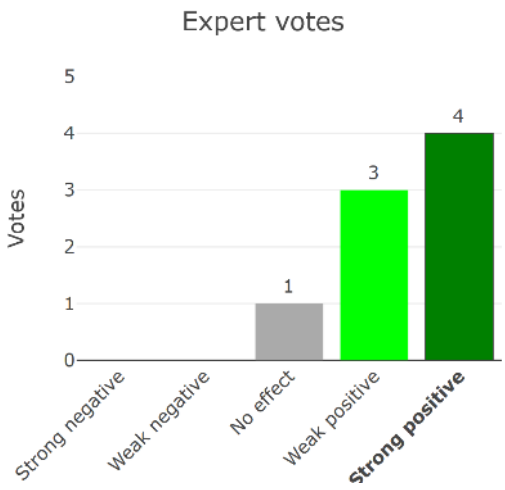
The map above shows the potential territorial impact from the Clean Energy package based on the emissions of CO2 per capita. It combines the expert judgement of a strongly positive effect with the given sensitivity of regions. 27% of the regions could experience a very highly positive impact. 44% would get a highly positive impact and 29% a moderately positive impact.

Many of the regions that would experience the highest impact in terms of reduction of CO2 emissions are port regions or industrial regions. Sparsely populated regions with high CO2 emissions per capita in Sweden and Finland also show high impacts due to the low population size, which results in a high level of CO2 per capita.

4.3 Emissions of NOx per capita (kilotonnes)

Another relevant indicator measuring the effects of the Clean Energy package on air quality is the emissions of NOx per capita. This air pollutant is also generated by the combustion of fossil fuels. Four experts voted for strongly positive and three for weakly positive. One expert did not consider this indicator relevant.

Figure 15: Result of the expert judgement: emissions of NOx per capita (kilotonnes) affected by the Clean Energy package concerning energy poverty



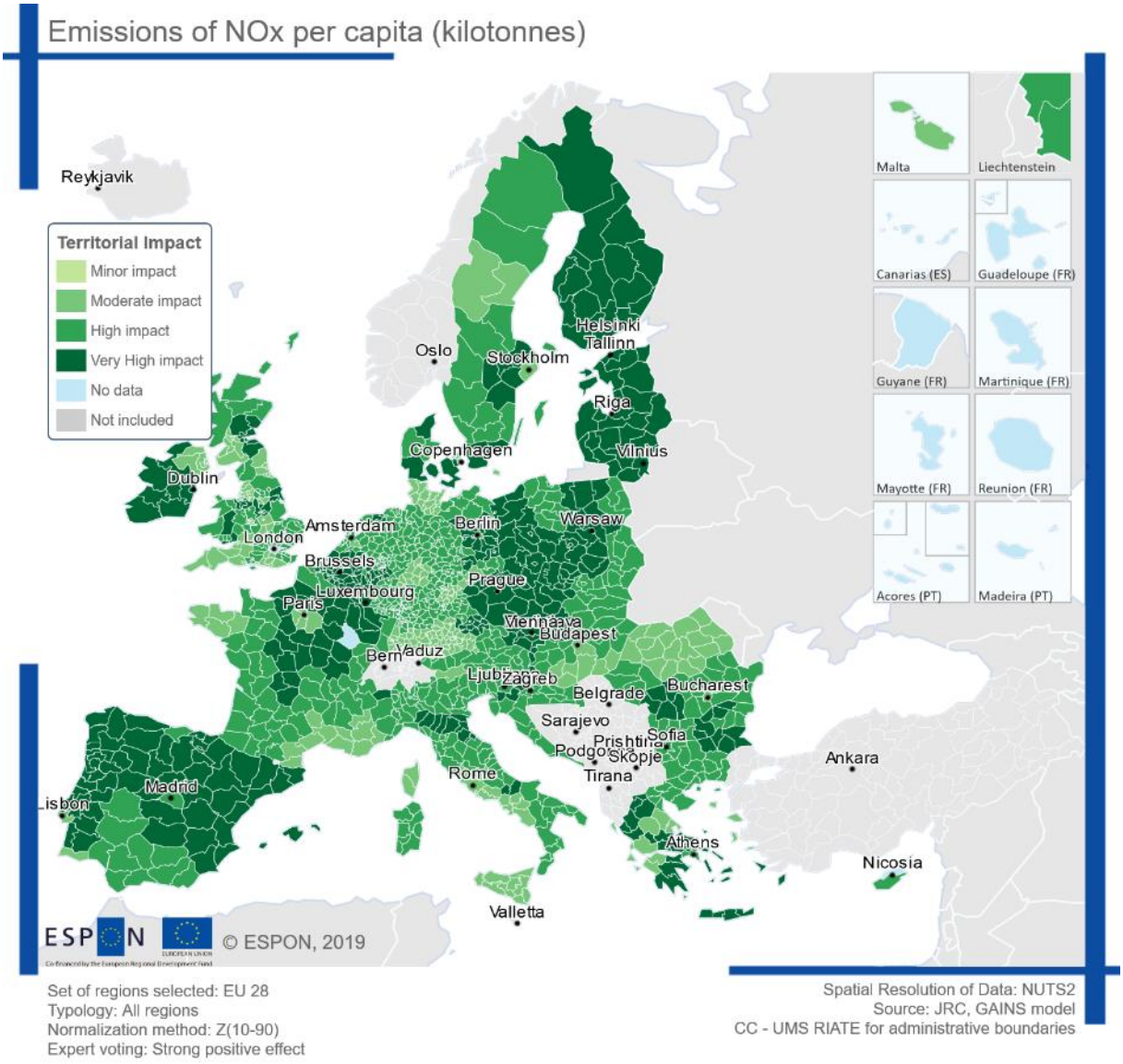
Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

The indicator showing the sensitivity of a region according to the emissions of NOx per capita is measured in kilotons per year. Regions showing higher tons of NOx per capita are expected to be more sensitive.

The following map shows the potential territorial impact of the Clean Energy package on the emissions of NOx per capita (kilotonnes). It combines the expert judgement of a strongly positive effect with the

given sensitivity of regions. 30% of the regions could experience a very highly positive impact. These regions are distributed quite equally throughout Europe, though several countries in particular are affected positively. Half of the regions (49%) would still experience a highly positive impact and 21% a moderately positive impact.

Map 11: Emissions of NOx per capita (kilotonnes) affected by the Clean Energy package concerning energy poverty – expert judgement: strongly positive effect

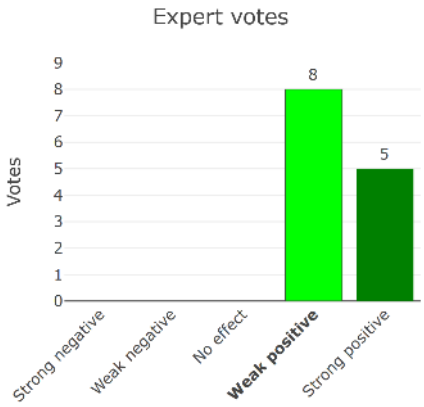


Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

4.4 Urban population exposed to PM10 concentrations

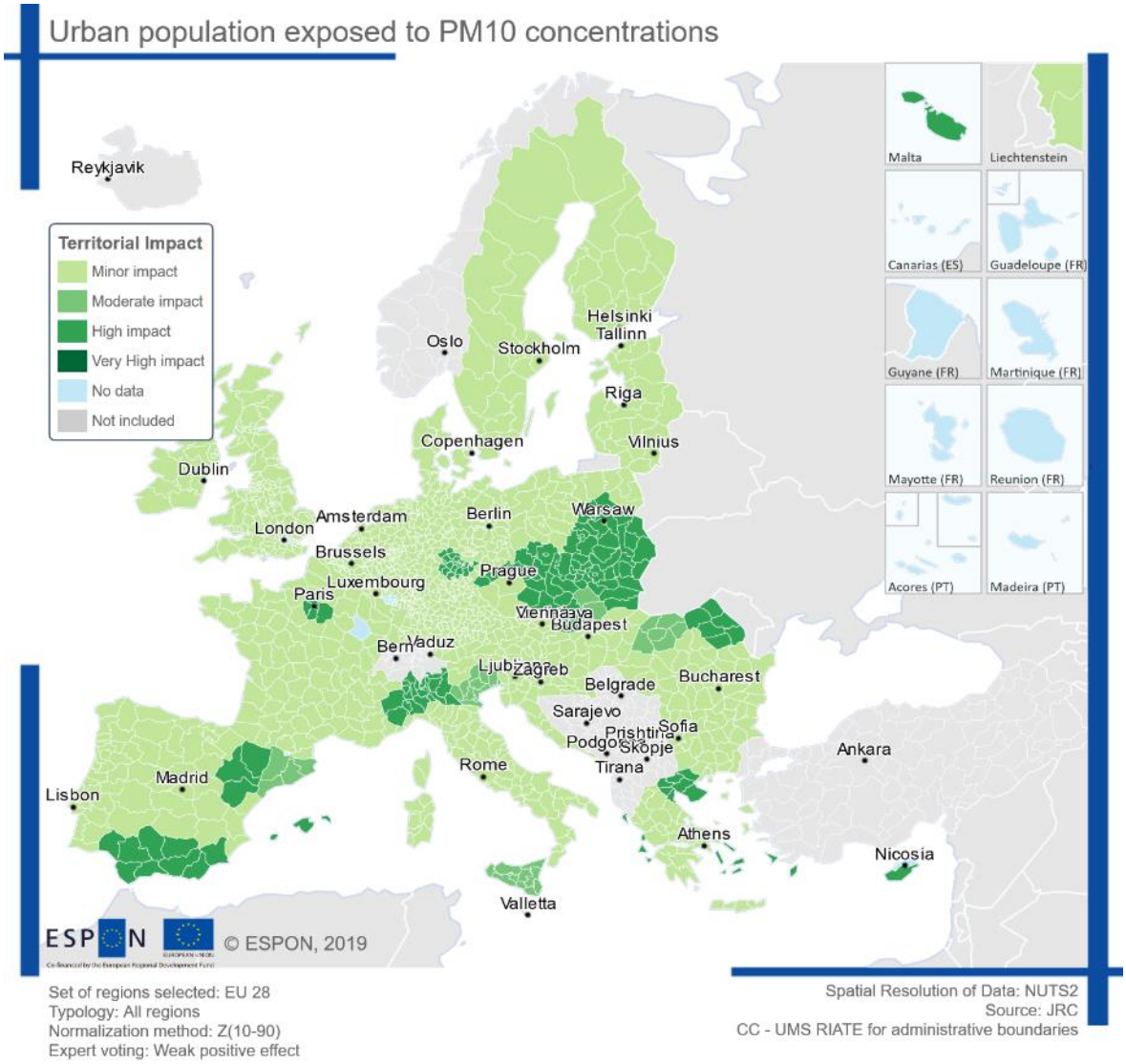
As already described above, the Clean Energy package could contribute to reducing emissions of air pollutants. All experts agreed that the substitution of fossil fuels with renewable energy would minimise the concentration of air pollutants such as PM10. Five experts judged this as strongly positive and nine as weakly positive.

Figure 16: Result of the expert judgement: urban population exposed to PM10 concentrations affected by the Clean Energy package concerning energy poverty



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

Map 12: Urban population exposed to PM10 concentrations affected by the Clean Energy package concerning energy poverty – expert judgement: weakly positive effect



Source: Territorial impact assessment expert workshop, Brussels, 2 May 2019

This indicator depicts the percentage of the urban population exposed to PM10 concentrations exceeding the daily limit value (50 µg/m3) on more than 35 days in a year. Regions showing greater

concentration of air pollution are expected to benefit more from the Clean Energy package. For this, particulate matter (PM10) was used as an indicator of pollution in general. Sensitivity is thus directly proportional to the percentage of urban population exposed to PM10 concentrations exceeding the daily limit value.

The map above shows the potential territorial impact of the Clean Energy package on the urban population exposed to PM10 concentrations. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions. 11% of the regions are expected to get a highly positive impact and 2% a moderately positive impact. These regions can be found in parts of Spain, Italy, the Czech Republic, Slovakia, Poland, Romania and Greece as well as in the metropolitan area of Paris, and central Germany. The majority of the regions (86%) would get a minor positive impact.

Experts' policy recommendations

Following the preliminary debate and the discussion about statistical indicators and territorial sensitivity, the experts drew up a number of policy recommendations, which we now summarise.

- The European Union should promote a harmonised framework to measure energy poverty and the co-funding of energy efficiency initiatives. This would allow the bypassing of financial constraints for households, local and regional authorities and financial institutions when financing the renovation of houses.

- Member States should explain their reasons whenever they do not address the issue of energy poverty in the integrated national energy and climate plans.

- Better information sharing requires improvement in data collection at NUTS 2 and 3 level of possible energy indicators – such as energy intensity per built square metre or average expenditure in energy, as well as of health indicators on diseases and deaths related to heat or cold. This could attract more attention from European, national, local, and regional authorities. It would also contribute to better identifying vulnerable regions and social groups, aided by a better definition of energy poverty.

- A proper link between energy poverty initiatives and climate initiatives would also bring down some political barriers. The approach must be changed from a negative one (victim approach, guilt approach) to a positive, non-zero-sum one. Regions in particular, through Community-led Local Development (CLLD) and using resources from the ESF or the ERDF, could play a role in financing such a change.

- The multiple benefits of energy efficiency (e.g. on health, employment and energy security) should be taken into account. Increasing the energy efficiency of buildings is crucial to addressing energy poverty. In time, a change of approach in the housing market, from property-based to service-oriented, could also drive developments to this end.

- Energy efficiency and renewable energies should be financed through general taxation rather than through energy bills, since these affect consumers indiscriminately and, consequently, reduce the amount of revenue that can be raised for public funds. They put vulnerable

consumers at an even greater disadvantage as a result (vulnerable consumers pay for measures through bills but are less likely to benefit from them).

- Aside from taxation, market mechanisms can also be used when fighting energy poverty. Greater transparency in energy prices and in the energy efficiency of houses would allow positive spillovers in home-buying behaviours and on mortgage loans. More efficient houses means fewer costs in the long run, and they thus improve the financial standing of house owners.

- Renewable energy production by energy poor people, becoming prosumers, could also help address the phenomenon. Nevertheless, investing in energy efficiency and in renewable energy can be challenging for energy poor people. Renewable energy cooperatives/communities as well as Energy Service Companies (through Energy Performance Contracts) could play a role in financing investments in energy efficiency and renewable energies for energy poor/vulnerable households, as well as one-stop shops to provide support and advice encouraging sustainable energy.

Workshop agenda

Territorial impact assessment

Energy Poverty

European Committee of the Regions, Rue Belliard 101, Brussels, Room JDE53

2 May 2019

10:30 **Welcome**

Rapporteur Kata Tüttő (HU/PES)

Short introduction of the experts

10:45 **Introduction to the topic**

Lucie Middlemiss, University of Leeds

11:00 **Explanation of the ESPON Quick Scan TIA tool**

11:15 **Interactive discussion on the topic**

- Developing a common understanding of the policy vision regarding energy poverty in Europe

12:30 Lunch break

13:45 **Interactive discussion**

- Dealing with cause/effect chains of energy poverty in Europe
- Estimating the intensity of regional exposure

15:15 **Interactive discussion** (Discussion on the findings, results and hypothesis)

16:15 **Policy recommendations**

17:00 End of the workshop