# ENERGY & CLIMATE CHANGE IN RURAL, MOUNTAINOUS & REMOTE AREAS

## Summary of responses to the public consultation organised as part of RUMRA Intergroup

This consultation overview collects the findings of the public consultation launched by the RUMRA Working Group on Climate Change and Energy in May 2015. Twenty stakeholders, including associations, contributed to the consultation, with the aim of examining the current energy situation in rural, mountainous and remote (r.m.r.) areas, and to identify potential solutions to the existing challenges. The results of this consultation will feed into the RUMRA call for a White Paper, which will be developed by the end of 2015. Below follows a short summary of the current energy situation, main challenges and solutions, and policy action recommended by the respondents.

### Current situation

The view of the current energy situation in r.m.r. areas expressed by the stakeholders varied, not least depending on the region they represented. On the topic of energy sources, the stakeholders noted the lack of gas grid, but also the dominance of heating oil, gas and renewable energy in particular. Regarding energy efficiency, while most of the respondents, especially those representing mountainous areas, stated that energy efficiency is very important for their area, and highlighted some successful projects, they also noted that there is an insufficient level of support in rural areas for rolling out energy efficiency projects.

### Challenges and Solutions

The main challenges identified by the stakeholders varied somewhat depending on the region, but overall challenges included:

* The lack of a diversified energy mix, with an over-reliance on sub-optimal electricity grids or polluting fuels like heating oil, and a lack of connection to main gas supplies.
* Threats to security of supply, for example in the form of frequent blackouts (this led some respondents to question the EC’s call for full electric coverage of heating systems in rural areas, in favour of more decentralised technologies).
* Air pollution.
* Lack of adequate benefits for rural/remote areas, and lack of financial support for increased energy efficiency or for switching to cleaner fuels.
* Lack of innovative investments in rural energy infrastructures.
* Lack of energy efficiency and the spread of fuel poverty.
* The increasing impact of global warming on rural agricultural production and on business.

### Policy Actions

All respondents unanimously agreed that the policies currently in place fail to address rural areas in a sufficient way. Stakeholders recommended a series of changes to current EU energy policy, for example, including:

* Increased promotion of small-scale community solutions in the area of heating and cooling, and consideration of the scale of projects in rural areas when designing policy and EU grants.
* Creation of stronger links between air quality, climate change, environmental protection and sustainable rural development, and rural area, which will require tailor-made approaches to cut GHG emissions, based on realistic and cost-efficient measures, for example by promoting cleaner fuels like LPG.
* Promotion of investment in low-carbon space heating to provide consumers with lower-carbon alternatives to the current range of heating oil technologies.

## SUMMARY OF RESPONSES TO THE PUBLIC CONSULTATION ORGANISED AS PART OF RUMRA INTERGROUP

**Introduction**

In May 2015, the RUMRA Working Group on Climate Change and Energy launched a public consultation aimed at learning stakeholders’ perceptions of the current energy situation in rural, mountainous and remote areas.. This consultation was aimed at identifying measures and solutions for creating a comprehensive energy policy that could generate a positive impact on rural energy consumers. The results of this consultation will feed into the RUMRA call for a White Paper, which will be developed by the end of 2015.

**General overview of the results**

Twenty stakeholder-respondents contributed to the consultation of which 45 percent were representatives of regional authorities and another 10 percent were trade associations. Most of the responses came from organisations and associations representing stakeholders, industry, or areas across Europe. The second biggest contribution came from Denmark (25 percent) and Italy (15 percent). Other respondents include such countries as the Netherlands, France, Slovakia, Greece and Spain. 50 percent of respondents represented rural areas, while another 20 percent represented mountainous areas.

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**Energy situation in rural, mountainous and remote areas**

Respondents highlighted that a variety of energy sources is available in their respective areas. Most of them pointed to three main sources of energy: heating oil, gas, and renewable energy, however, other energy sources such as coal, wood and electricity were also listed.

* **Which energy sources are most commonly used in your areas by local industries?**

Most of respondents indicated heating oil as the main energy used by local industries. Gas and electricity came in, respectively, in second and third place. Other sources found in rural areas are renewable energy, wood, coal.

**Main energy challenges in** **rural, mountainous and remote areas**

Respondents highlighted that the main challenges in rural areas are related to the fact that the **energy mix is not diversified.** For instance, in France the electricity grid is by law extended to all areas, but the grid is fragile. Lack of access to gas grids and security of supply are other issues mentioned by respondents, who quoted the statistics of the Council of European Energy regulators suggesting that blackouts are 2-4 times more frequent in rural areas than in urban areas. They mentioned that because of that the call for full electric coverage of heating system can be problematic in rural areas. Three of the respondents mentioned propane, LPG, and such technologies as heat pumps and thermo-solar solution as viable alternatives to electric heating in rural areas. Danish respondents mentioned dependence on polluting fuels as their main challenge. They also pointed out decentralisation of the district heating, lack of awareness of community options for renewable energy, and the fact that rural consumers are less privileged as the main challenges in rural Denmark. Of interest is also that in Denmark, urbanisation results in falling property value, which in turn leads to decreased financing options for energy efficiency and renewable energy. There is also an issue with the insecurity of locally-sourced biomass. More than 25% of respondents mentioned heating oil as the main challenge for rural areas. This seems to be a cross-regional challenge, as it was mentioned as an issue in several countries including France and Denmark, among others.

Air pollution is yet another challenging issue for rural areas. According to the EEA study “In Europe, about one third of the PM10 concentration and half of the PM2.5 concentration measured at regional 'background' stations (sampling stations located in rural areas, away from traffic or other direct sources of pollution) consist of inorganic chemical substances, such as ammonium (NH4+), nitrate (NO3) and sulphate (SO4). This means that rural citizens often breathe air that does not meet the European standards.

Italian respondents listed the lack of small local plants and the creation of adequate benefits for rural/ remote areas, for instance using public resources or private initiatives, as the biggest challenges. In addition, they noted a lack of innovative investments to help in the roll out cleaner energy technologies used for industrial processes (for instance for food processing, which is very popular in rural areas). They also listed the lack of investments in services as big challenges for the rural dwellers.

In Spain, the main issue was the electrification of the grid, and a lack of integration of renewable energy projects into planning. Energy efficiency (insulation) was also a challenge for rural areas.

For Danish regions, the biggest challenge was related to infrastructure costs and the fact that investments in rural areas have a low return. Furthermore, the cost of infrastructure is quite high, hence those areas are a low priority for national energy policy, while the incentive to invest in those areas is also low.

For mountainous areas the biggest challenges are energy efficiency, becoming autonomous through renewable energy, developing production capacity and electricity networks (question of remoteness), ensuring availability of relevant skills (transfer of skills is needed).

* **What are the main climate change and air quality challenges in rural areas?**

More than one third of EU households located in areas not served by the natural gas grid rely on diesel or solid fuels for heating and cooking. Dependence on high-polluting fossil fuels has been mentioned several times by the respondents. The lack of connection to main gas has been mentioned as one of the main obstacles towards rolling out renewable district heating.

Rural areas can generally be referred to as off-grid Europe (OGE). In 2010 this segment of the EU energy mix produced 820 million tonnes of CO2, hence significantly contributing to climate change. The comparatively high share of carbon intensive energies suggests that there is considerable room for improvement regarding the OGE fuel mix. More specifically, associations believed that the GHG performance of the entire system could be significantly enhanced through a more widespread uptake of gaseous fuels, such as LPG or other clean energy sources.

Regarding rural air quality challenges, inefficient stoves burning solid fuels, as well as biomasses, are a significant source of indoor air pollution. This is an extremely serious problem in rural areas because solid fuels and biomasses combined represent 49% of the energy consumption of EU households not served by the natural gas grid.

Other issues mentioned by respondents were fuel poverty, air quality, the impact of human activities on land use, the increasing impact of global warming on rural agricultural production, and on business. In mountainous areas the impact of climate change is particularly visible and has a direct impact on tourism. In those areas, encouraging actions related to climate resilience will be even more difficult and expensive. All housing policies and programming of Territorial Management Plans, as well as the logistics and transport network should be therefore reviewed to match this challenge.

In mountainous areas, the policy is also not adequate. For instance, mountainous areas are providing water, but are not benefiting from a high quality level of water. The mobilisation capacity and resources are not the same for cities and mountainous areas. Thus, solutions should be more adapted to the type of territories.

* **Is energy efficiency well supported in your area?**

The opinions on energy efficiency were divided and varied based on the region. Most of the respondents stated that the energy efficiency is indeed is very important for their regions. Only one of the responding regions underlined an existing energy efficiency strategy. Energy efficiency in rural areas is important in view of the contribution it brings to energy savings and consequently to saving CO2 emissions.

Representatives of the mountainous areas indicated that they have always had an interest in energy efficiency. They stressed that the primary objectives must therefore remain reducing energy, electricity, and heat consumption and using energy resources more efficiently, for public, private and business purposes. The autonomous province of Trento – an Italian province entirely situated in a mountainous region – offers a striking example. Between 2000 and 2008, multi-sector policies on energy savings were instituted, focusing on residential buildings and on the establishment of an “Energy District”, between Trento and Rovereto, in which businesses and research institutes were brought together to foster the development of a new kind of construction.

While most of the respondents stated that energy efficiency is very important for their area, most of them noted that there is an insufficient level of support in rural areas for rolling out energy efficiency projects. The Danish Zeeland region stated that in rural regions, consumers are unable to get loans for larger energy efficiency projects or measures due to the falling property value. Respondents highlighted that the economic impact of those projects is low hence lack of support. Other challenges related to energy efficiency included lack of information and bad planning of calls for proposals.

* **Is security of supply still a problem in rural areas?**

The opinions on security of supply were divided. Some of the respondents stated that while security of supply is not an issue as such, blackouts are still an existing problem in rural areas, especially after heavy storms. A representative of the European Parliament noted that security of supply is one of the main challenges for rural areas, impacting the day-to-day lives of families and functioning of businesses. In Greece, security of supply still remains a big challenge, especially in summertime, because of an increased number of tourists.

For mountainous areas, blackouts are mostly caused by the heavy storms. There is also an ongoing problem with how fast they are addressed, as responses to this problem are much faster in urban areas.

* **Please detail the biggest energy issues that the agricultural business faces in your area?**

Respondents highlighted several challenges related to the agricultural sector: the dependence on high-polluting fuels such as heating oil and coal, the high cost of transport fuel , especially diesel (for agricultural machineries), lack of transparent rules related to biomass, as well the cost of energy supply. In the Netherlands, the main problem was the cost of natural gas and low price of electricity, which does not encourage an update of energy efficiency measures.

* **Is fuel poverty an issue in rural areas?**

Studies have shown that average living standard, as expressed as GDP per head, is generally lower in rural than in urban areas. Rural poverty in Europe seems to become an increasingly serious issue and fuel poverty is its direct consequence. For this reason, it can be argued that rural households may suffer more often than their urban counterparts from insufficient heating, and they may also have more difficulty making investments to switch to cleaner fuels or improve the energy performance of their buildings.

According to some of the respondents, for the EU to reach its climate targets, it is fundamental that more tailor-made financial support for increased energy efficiency or for switching to cleaner fuels is given to rural households. It considers that stimulus to switch to cleaner fuels given by the EAFRD to economic actors is not effective enough. While the Cohesion Policy has been effective in helping urban communities to make their heating systems more environmentally sustainable, a tailor-made approach is necessary in order to achieve the same success in rural areas.

**Policy Actions**

* **Do you think current policy covers rural energy in a sufficient way? Why?**

All respondents unanimously agreed that the policies currently in place do not address rural areas in a sufficient way. More should be done to promote and standardize small-scale community solutions in the area of heating and cooling. The scale of projects in rural areas is not taken into account when designing policy and the EU grants.

The mobilisation capacity and resources are not the same for cities and mountainous areas. The solutions should me more adapted to the territories. For instance in Slovakia, the gap between rural and urban areas in terms of policy response is growing.

Stakeholders also mentioned a lack of policies covering indoor air quality, despite the fact that air pollution poses a great challenge to rural areas.

* **Do you think that current policy addresses the impact of CO2 and other air pollution on rural areas in a sufficient way? Why?**

All respondents agreed that the current policies, whether European, national or local are currently addressing the impact of climate change sufficiently. Respondents suggested creating more links between air quality, climate change, environmental protection and sustainable rural development.

Respondents agreed that The EU adopts the same approach for policies on urban and rural air pollution, although the issues affecting the areas are very different. In particular, EU policies ignore the problem of indoor air pollution, which, according to the WHO, caused 117,000 premature deaths in the European region in 2012. These deaths are caused by inefficient burning of solid fuels, which are predominantly used in rural areas, mainly for heating and cooking purposes. Respondents highlighted the need for policies efficiently promoting cleaner fuels could have a significant impact in reducing that number.

Regarding outdoor air pollution, the Ambient Air Quality Directive prescribes that air pollution sampling points in rural backgrounds must be installed every 100.000 km2 (the EU has a 4.3 million km2 total area and 14 EU countries’ surface is smaller than 100.000 km2). This raises serious doubts about the significance of the available data and therefore makes a valid assessment of the adequacy of outdoor air pollution policies extremely difficult.

As per the impact of CO2, given their specificities, rural areas would need a tailor-made approach to cut GHG emissions, based on realistic and cost-efficient measures. The promotion of cleaner fuels, such as LPG, which produces 49% less CO2 than coal and 17% less than heating oil, could provide the EU a significant help in achieving its climate targets. In fact, studies show that a rural energy mix with an increased role for LPG (from 8.8 million ToE to 14.1 million ToE) could bring the CO2 emissions down by 184 million tonnes per year.

* **Which policy actions would you suggest to improve energy and climate change situation in rural areas?**

Respondents stated that the policy focus should be on meeting decarbonisation targets while taking the cost into consideration. Investment in low-carbon space heating and electricity generation technologies, such as micro CHP, fuel cells, renewable, hybrids and LPG driven heat pumps, is underway which will provide consumers with low carbon alternatives to the current range of heating oil technologies. Deployed at scale, these technologies could offer consumers in off gas grid rural areas easily adoptable, low-carbon solutions, which utilise an existing/established fuel supply infrastructure. This approach will bring an immediate benefit to the rural fuel poor without the need for major disruption or infrastructure investment, reducing carbon emissions and building rural community engagement in the drive for energy efficiency.

The respondents called for an early start to deploying the array of available high-efficiency heating systems incentivised through a combination of policy instruments such as financial incentives and finance mechanisms; specifically within the UK the inclusion of GAHP in the RHI and a removal of the 12,000 units review point for support of Micro-CHP within the Feed in Tariff.

Biopropane was mentioned as an off-grid low carbon fuel. Biopropane is identical to conventional propane but is created from renewable feedstock. Biopropane can be used in the same appliances and for the same uses as propane, without specific blending requirements. It can also be easily stored in suitable containers for homes and businesses.

Furthermore, replacing existing fossil fuels with biopropane will result in significant carbon savings and respondents would like to see support for biopropane to reflect this contribution to carbon reduction across European policy.

National energy corporation called for the carbon budgets to be set to provide a viewpoint for industry regarding the future balance of fuels and services required. Provided the ambitions are realistic, this can support planning and investment approaches in rural areas. The important aspect is that policy makers should not try and pick winners, but leave property owners to decide how to best meeting any targets or regulations.

With regard to buildings and technologies, respondents said that a clear path must be set for future changes in building regulations with respect to replacement of heating systems. At present, condensing boilers must be fitted. In future it may be possible to set a new minimum standard (for example, requiring controls, or a minimum efficiency for heating equipment or installations). Provided sufficient notice is given, such a change would drive forward investment in more efficient heating systems whilst reducing costs to the economy as more cost-effective solutions would come to the fore. This is likely to be more cost effective overall as it does not involve attempting to pick winners.

Spreading concrete policy actions in the area of energy savings was another call made by respondents. Policy should encourage the use at the local level of naturally-available energy sources can only happen by sharing information with professionals and citizens via information and technical assistance centres. These kinds of centres already exist in some municipalities. This principle should be extended, with local centres in town halls providing first response to the needs of citizens.