



ECO  
SOCIAL  
FORUM

SUSTAINABILITY  
**CHECK**  
OF EUROPEAN REGIONS

**FOCUS ENERGY**

## Sustainability Check of European Regions – Focus Energy

We frequently find rankings of the EU member states. But how do individual European regions perform in comparison? In 2013 the Ecosocial Forum carefully examined Europe's regions. It subjected them to a sustainability check in the areas of economy, environment and social affairs in order to render the strengths of the regions visible, as well as draw attention to areas where regions still have to catch up. In 2014 the focus has been placed on energy, an area of particular importance right now in Europe in times of many tensions at the international level and considering the ever advancing climate change.

This Energy Check is a measurement tool to further develop the programme of the Ecosocial Market Economy and to review progress. The central objective of the Ecosocial Market Economy is to attain economic, social and environmental sustainability. On the basis of the guiding principle “quality of life for everyone – today and tomorrow” ten fields of action were defined in the Ecosocial Market Economy programme. The Ecosocial Forum proposes concrete measures in its programme which should help to achieve qualitative growth with minimal resource use and improve our quality of life.

Until now there has been no measurement tool which is able to examine the success of the proposed measures. With this Sustainability Check regional advancements can now be examined in the field of energy. To this end and on behalf of the Ecosocial Forum, the Sustainable Europe Research Institute (SERI) has developed an index based on a set of indicators which represents the entire spectrum of the energy sector.

The European Sustainability Check distinguishes itself from other comparable studies in its focus on the regional level. The regions correspond to NUTS level II, which are equivalent to Austria's nine federal states. A total of 240 European regions have been included in the study.

The energy index is divided into three dimensions: energy supply, burdens and environmental friendliness. Each of these three areas are based on three to four indicators. Each indicator has the same weighting. The European Median, which is set at a value of 100, is the benchmark in the calculations of the total energy index. For the purpose of clarity the units ascertained in all other cases are illustrated.

### Ecosocial Forum – from think-tank to do-tank

Every good idea requires a platform. The Ecosocial Forum is a think-tank for the idea of the Ecosocial Market Economy, which works for its political implementation regardless of political party boundaries. A think-tank is a thought factory which drafts concepts on a scientific basis, delivers answers to current socio-political and economic policy issues and then puts them on the agenda of decision-makers.

The Ecosocial Forum goes one step further. It is not only active as a thought factory but also as an implementation factory, in other words a do-tank. A do-tank actively accompanies future relevant changes.

For further information go to [www.eco-social.eu](http://www.eco-social.eu)

### Ecosocial Market Economy – Better Quality of Life for Everyone

A better quality of life for everyone. Today and tomorrow. This is the goal of the Ecosocial Market Economy. It is a question of striking a balance between the environment, social needs and the economy. We are still a long way off such a balance. We are living at the expense of the next generations, or in other words: we are paying with the credit card of our children and grandchildren. Whether it is a question of the financial crisis with its economic and social outcomes or of climate – our way of living is not acceptable for our grandchildren. The market economy has brought us prosperity. It can do a lot, but not everything. It can and should improve the economy's capability to create value and promote innovative entrepreneurship. But the market requires clear rules to ensure fair play.

Ecosocial economic activity means responsible economic activity. In concrete terms it is a question of replacing fossil energy step by step with renewable energy, strengthening individual responsibility and entrepreneurship, making the taxation system reward success more and take the environment into account, creating fair conditions for international investments, developing public transport, promoting forward-looking research activity and much more. The criterion and benchmark for each decision is its suitability for our grandchildren.

The Ecosocial Market Economy is built on three pillars:

- an effective, innovative market economy
- social justice and
- environmental responsibility

A flourishing economy is the premise for prosperity, social balance is necessary for social consensus and environmental sustainability for the survival of civilization per se.

## Overall Index Results

It is most notably the northern countries of Europe that perform particularly well in the overall energy index. Sweden and Finland house the most regions with the highest scores. They are followed by the Baltic states, Denmark and Austria. Most of the regions in Portugal, Italy, Spain, Bulgaria, Poland and Hungary also lie above the European average. Luxembourg and Belgian's regions, as well as a number of regions in the United Kingdom, however, tend to show a poor rating.

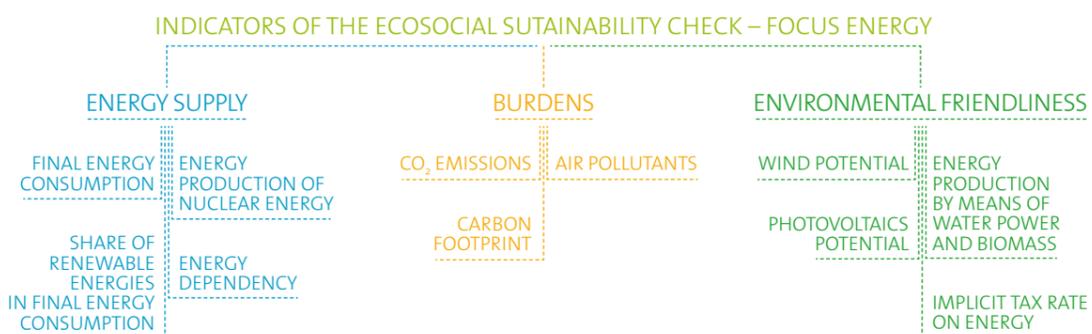
At the top of the overall ranking is the region of Övre Norrland in Sweden with a total score of 197. With seven regions in the top 10, Sweden is the country with the highest average performance overall. The Finnish region Pohjois- ja Itä-Suomi ranks second with 194 points and Länsi-Suomi comes 9th with 142 points. Besides Scandinavian countries only Latvia is represented in the best ten (with a score of 138).

Austria's federal states perform relatively well in European comparison. All the federal states attain scores between 110 and 120 and thus, overall, deliver a good and homogeneous performance across all regions. The best performing state is Vorarlberg with a total score of 119 points and 16th place in the ranking, followed by Tyrol in 18th place and Salzburg in 20th place. The federal states of Burgenland, Vienna and Carinthia are also among the best 25 regions of Europe. The states of Styria (113 points and 31st place), Lower Austria (111 points and 36th place), as well as Upper Austria (110 points and 41st place), which are housing large parts of Austria's industry also perform relatively well in comparison to all the regions examined.

Overall Austria's federal states are positioned in the top third of the European comparison. Responsible for the good outcome are the high share (and high potential) of renewable energy and Austria's rejection of atomic energy.

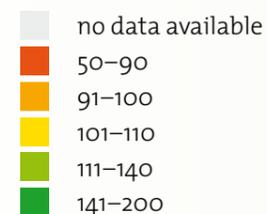
The energy index clearly illustrates that the differences between the regions in some countries are very small, yet in others they are very large. In Sweden and Finland, in particular, there are great differences between their regions and the results of the overall energy index reveal large variations. This is above all due to the fact that the extent of renewable energy already in existence in Scandinavian countries as well as the wind potential boast substantially higher or better values than in other European regions and countries. Nevertheless, there are also drastic differences within these countries and some regions exhibit merely a fraction of the potential that the more successful regions have.

### Thematic areas and indicators of the Sustainability Check of European Regions: Focus Energy

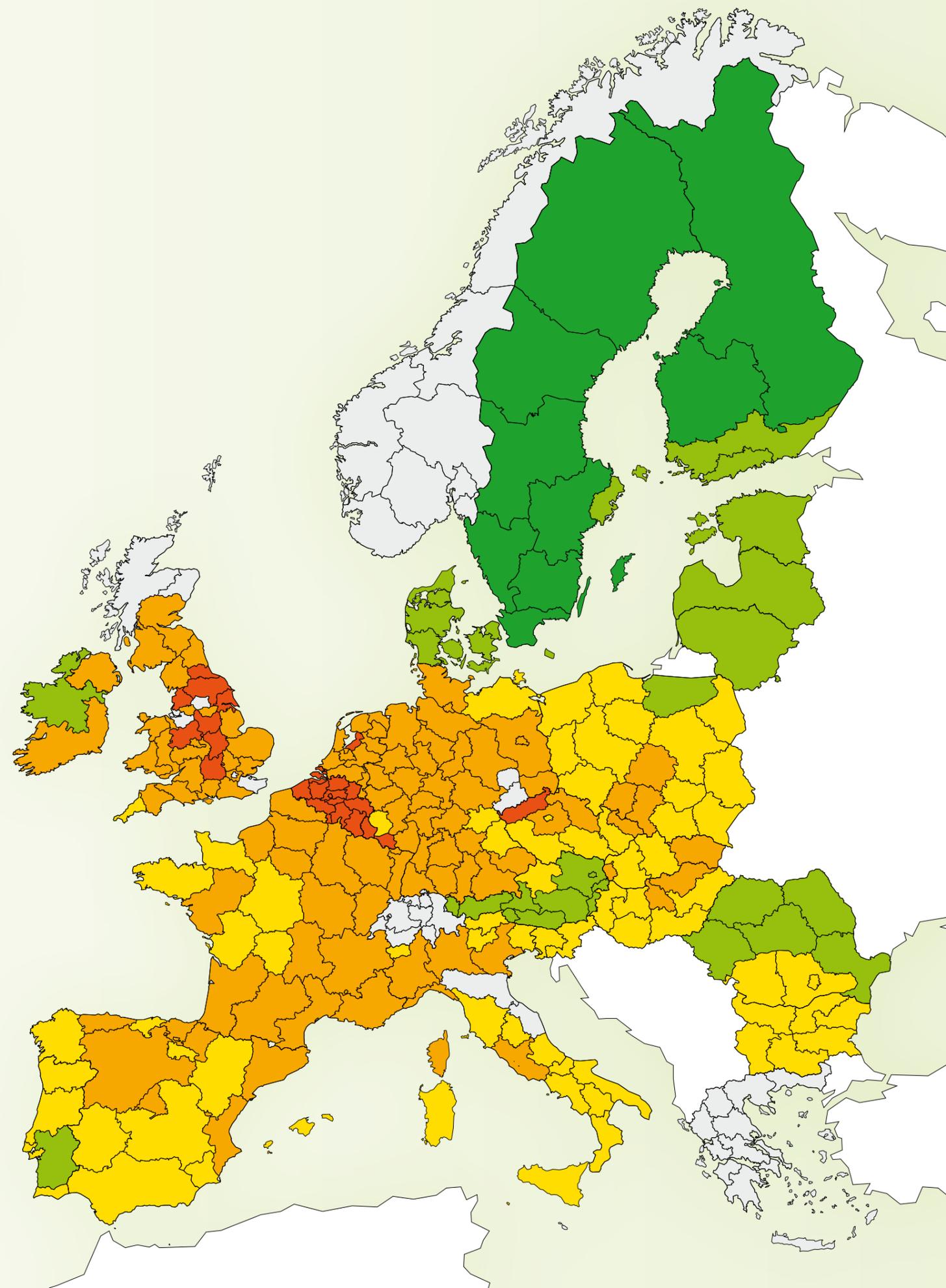
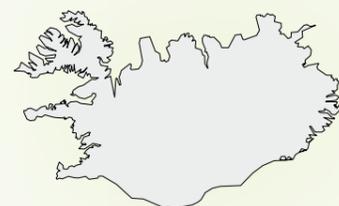


## European Radar – Energy Check

Aggregated score of all indicators in the Radar



Median of all regions = 100



### Top 10 regions

1. Övre Norrland (Sweden)
2. Pohjois- ja Itä-Suomi (Finland)
3. Mellersta Norrland (Sweden)
4. Norra Mellansverige (Sweden)
5. Småland med öarna (Sweden)
6. Östra Mellansverige (Sweden)
7. Västsverige (Sweden)
8. Sydsverige (Sweden)
9. Länsi-Suomi (Finland)
10. Latvija (Latvia)

## Energy supply

The area energy supply comprises four indicators, which together allow a comprehensive evaluation of the supply situation in a region. These four subsections are (1) final energy consumption per capita, (2) share of renewable consumption in final energy consumption, (3) energy production of nuclear energy per capita and (4) energy dependency.

The economic growth of recent decades has always been accompanied by an increase in energy consumption. If we want to deal with ecological challenges (climate change, resource scarcity) in the future, energy consumption must be completely decoupled from economic growth. Relative decoupling is not sufficient as this can also be achieved when energy consumption grows (as long as it does not grow as strongly as the economy).

Reducing final energy consumption is therefore an important energy policy objective and also a component of the energy index. In this regard, the regions in Romania, Malta and Bulgaria have relatively low per capita values, whereas the economically stronger regions perform worse in this area.

In addition, the increased use of renewable energy constitutes an important contribution to creating a sustainable energy system and reducing CO<sub>2</sub> emissions. It also has a positive effect on supply security as the dependency on external fossil energy sources can be reduced. The highest shares in renewable energy are found in Norway, followed by Sweden. But also in Finland, Latvia and Austria, the use of renewable energy not only has a long tradition but it has also been gradually expanded.

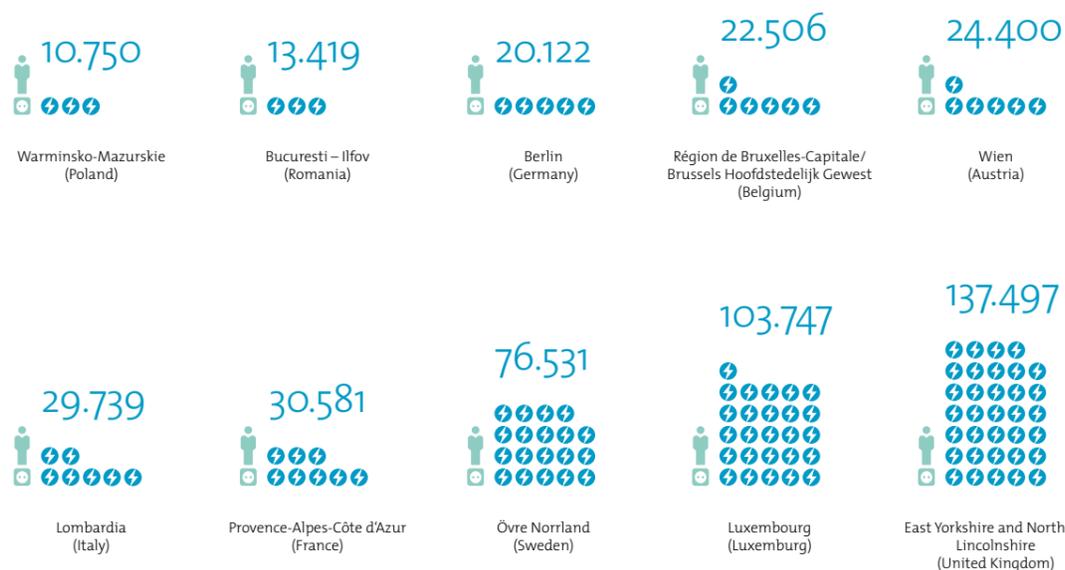
On the other hand, some states in Europe rely on atomic energy in their bid to reduce their

greenhouse gas emissions without any consideration of its direct and indirect damage to the environment. The European Union is divided into two camps on the issue of atomic energy, with Austria, Ireland and Luxembourg being amongst the most committed atomic energy opponents.

Finally, the dependency on energy has also been assessed, which shows how much an economy depends on imports to cover its domestic energy needs. Here Norway and Denmark, as oil exporting countries, naturally score particularly well. But also Iceland, Estonia and Romania make it into the top 5 in this discipline.

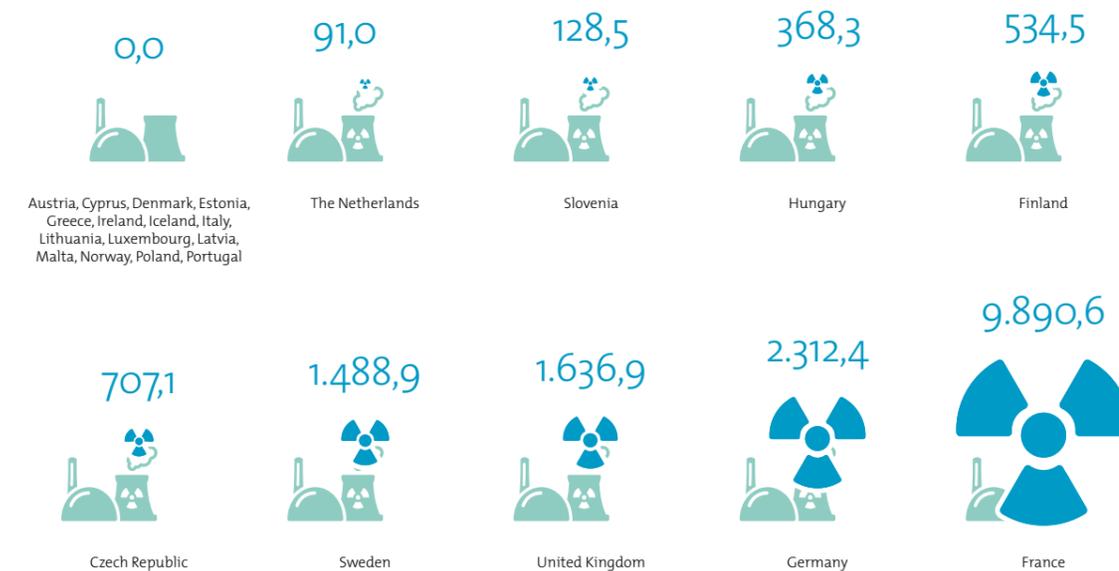
### Final energy consumption

in kWh per capita



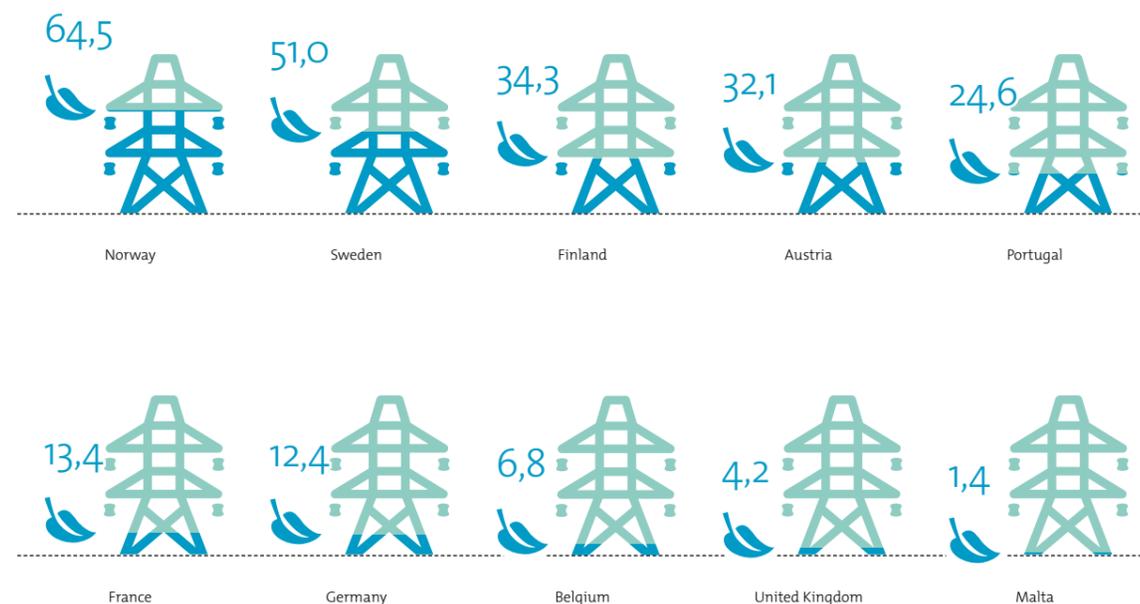
### Energy production of nuclear energy\*

in kg oil equivalent per capita



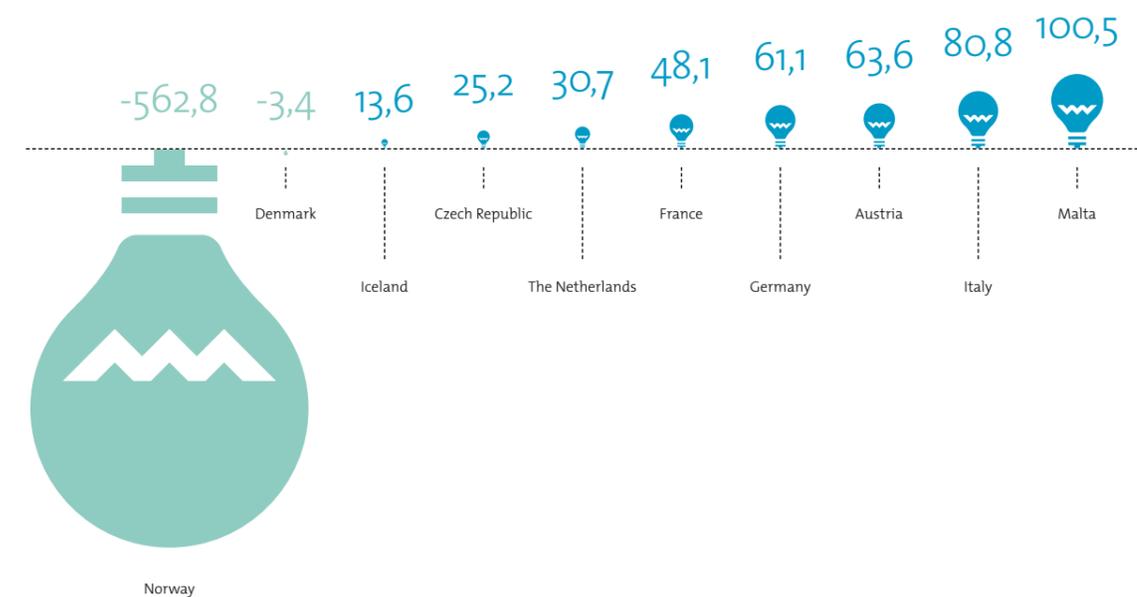
### Share of renewable energies in final energy consumption\*

in per cent



### Energy dependency\*

in per cent



\*) Only national data are available.

## Burdens

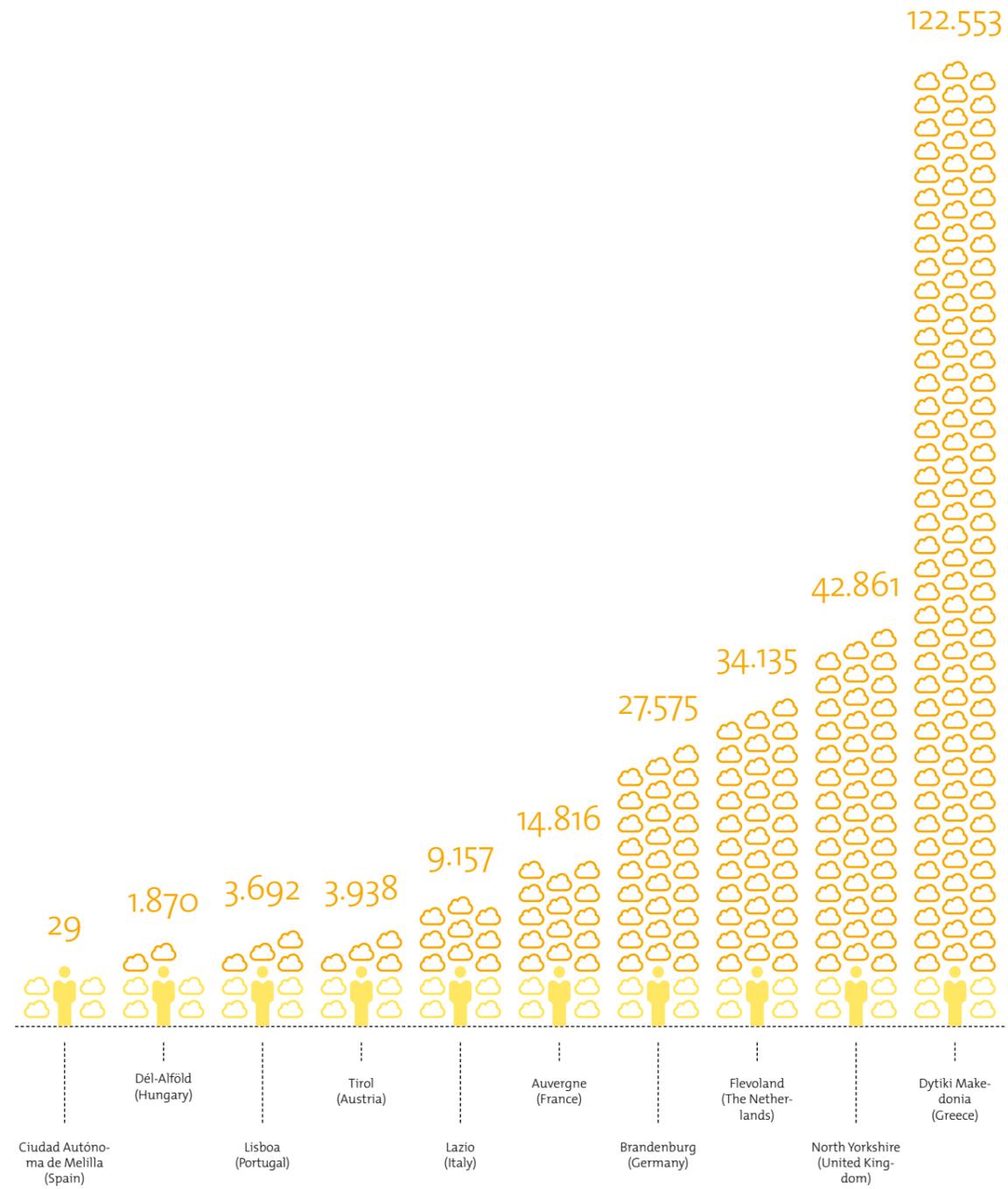
The sphere burdens is made up of three indicators: (1) CO<sub>2</sub> emissions per capita, (2) carbon footprint per capita, (3) air pollutants. These indicators show clearly how consistently the individual regions can push forward a change in energy policy and how quickly this can also improve the quality of life for inhabitants.

A massive reduction in greenhouse gas emissions is crucial in leading the regions of Europe along a sustainable development path and fulfilling the climate goal commitments of the EU. Alongside the reduction of EU-wide greenhouse gas emissions by 20% until 2020, necessary in the medium term, a general longer term target has also got to be pursued: namely to limit the growth in global temperature to less than 2°C. The regions of Lithuania, Romania, Sweden and Norway stand out particularly positively in this regard.

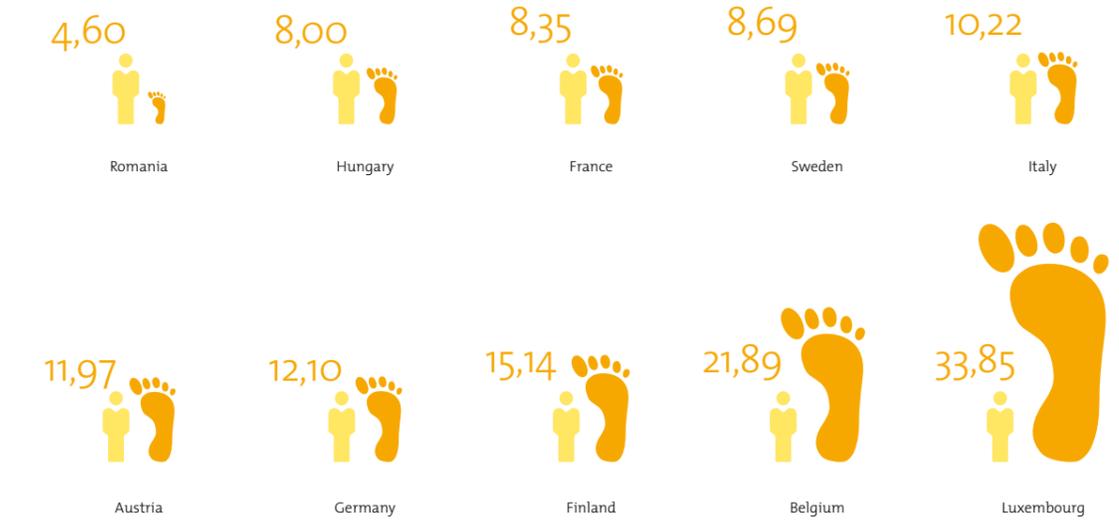
In addition, the carbon footprint was ascertained, which also takes imported CO<sub>2</sub> emissions into consideration. The regions of Latvia, Lithuania and Romania boast here particularly low values per capita.

In the case of air pollutants, however, the situation looks quite different. Here the regions of Norway and Switzerland are the absolute top performers. The values of the most common air pollutants like nitrogen oxide (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), carbon monoxide (CO) and volatile organic compounds were collated.

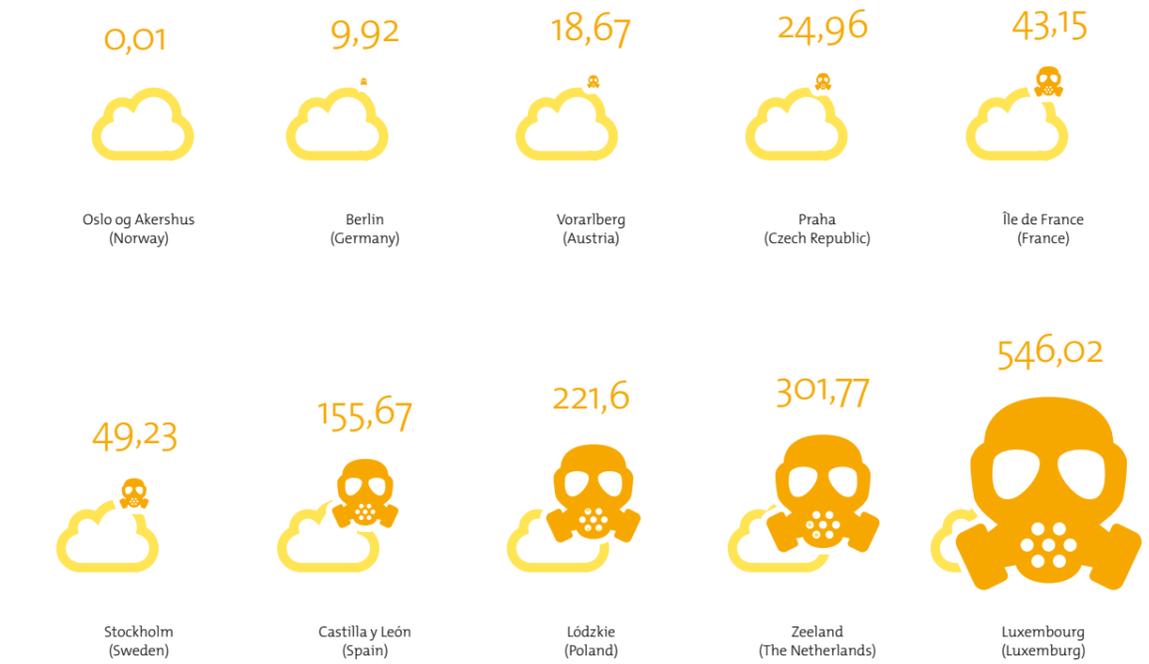
**CO<sub>2</sub> emissions**  
in kg per capita



**Carbon footprint\***  
in tons per capita



**Air pollutants**  
NO<sub>x</sub>, SO<sub>x</sub>, CO, NMVOCs in tons per capita



\*) Only national data are available.

## Environmental friendliness

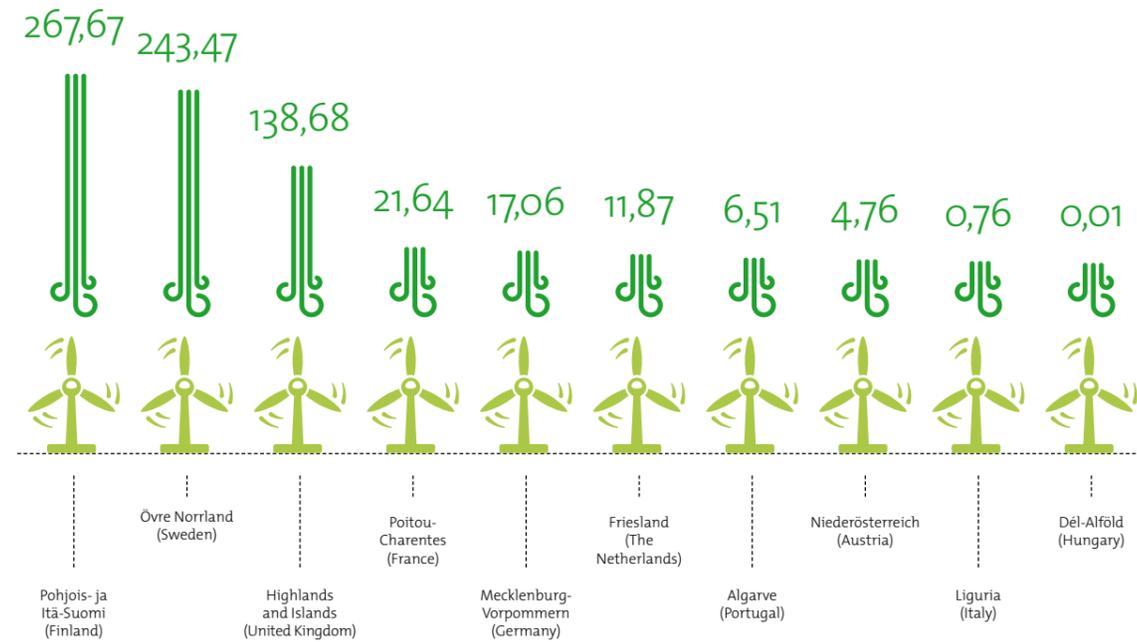
The area of environmental friendliness in energy production or in the taxation of energy comprises four parts: (1) wind potential, (2) photovoltaics potential, (3) energy production by means of hydropower and biomass per capita and (4) implicit tax rate on energy.

Regarding the exploitable potential of wind and solar power, the northern and southern peripheral regions of Europe have particularly good chances of being able to push forward a change in energy policy on this basis. In the case of wind potential, the regions of Finland, Sweden and Great Britain stand out above all, whereas with regard to photovoltaics potential, Spain and Portugal, but also two regions in France, are in the top 10.

The regions of the Scandinavian countries, together with Iceland, are at the forefront of energy production from water power and biomass. This picture is also underlined by the relatively high implicit tax rate on energy in these countries/regions, whereby the highest tax rates are found in Denmark, Great Britain and Italy. Austria lies midway in the ranking.

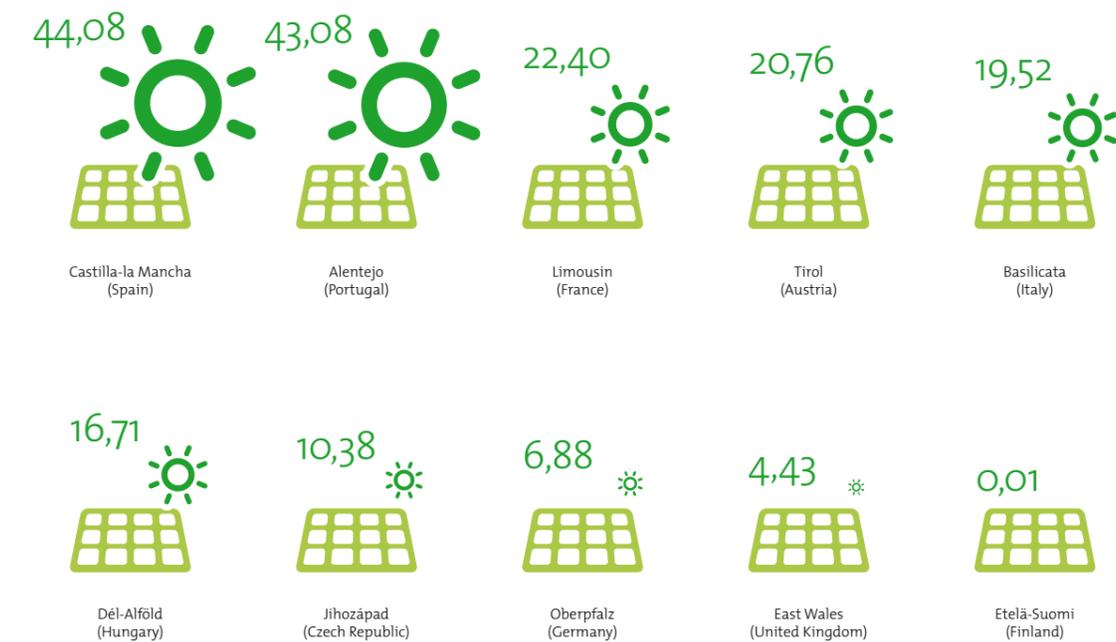
### Wind potential

in GWh per year and per capita at an assumed price level of 10 c/kWh



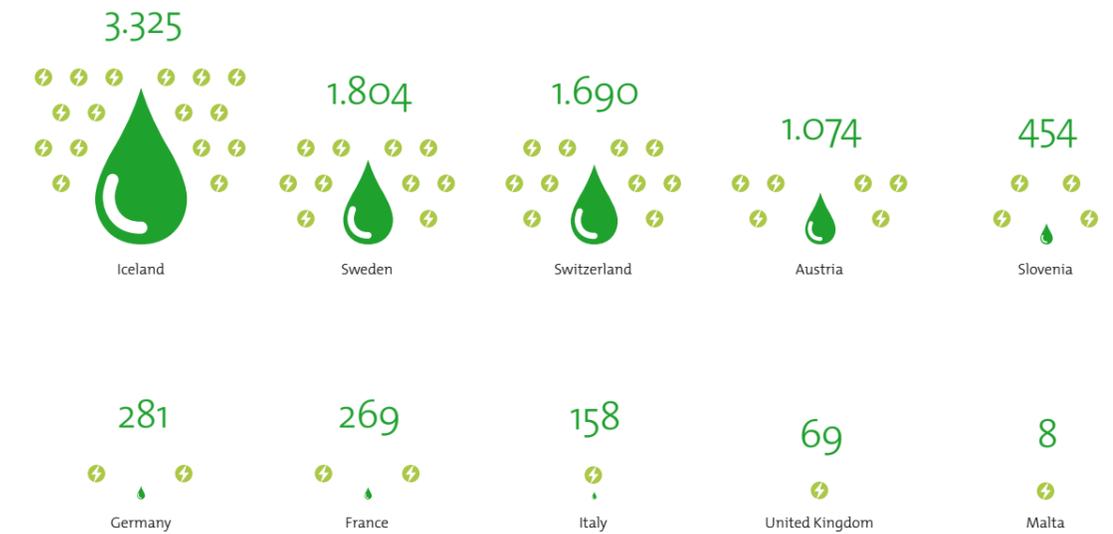
### Photovoltaics potential

GWh per year and per capita at an assumed price level of 12 c/kWh



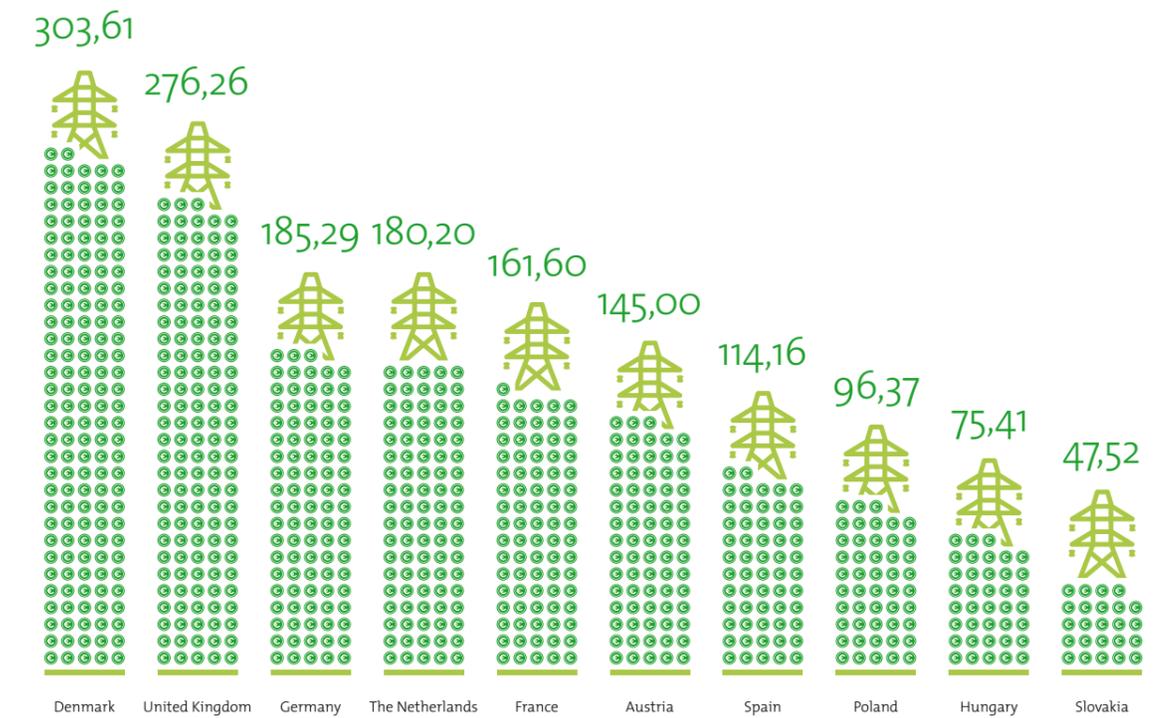
### Energy production by means of hydropower and biomass\*

in kg oil equivalent per capita



### Implicit tax rate on energy\*

in EUR per ton oil equivalent



\*) Only national data are available.

## Imprint

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