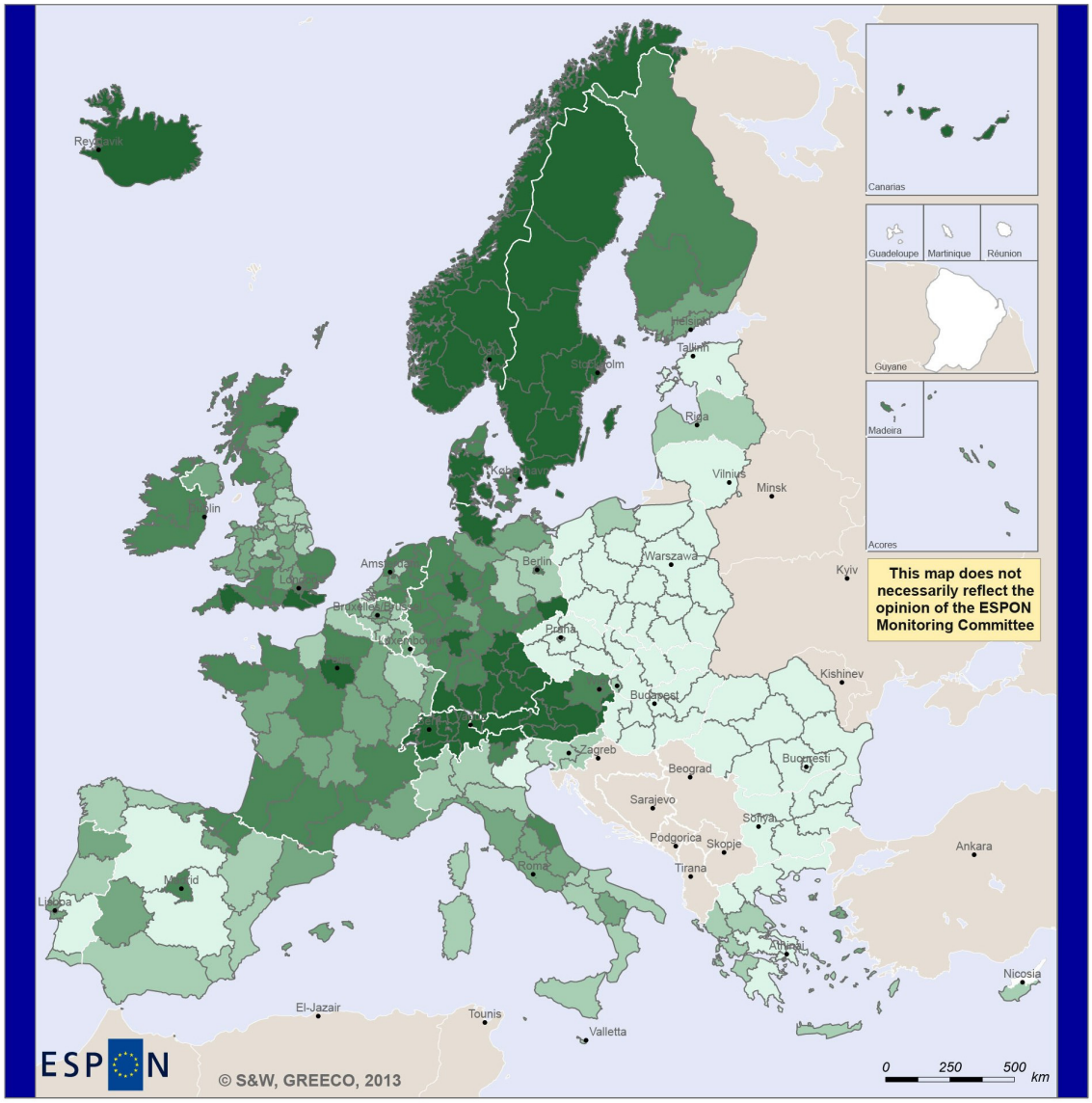
Map of the Month

Regional Green Economic Performance, 2010



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Source: ESPON Database, GREECO,Spiekermann and Wegener Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013*
© EuroGeographics Association for administrative boundaries

Regional green economic performance

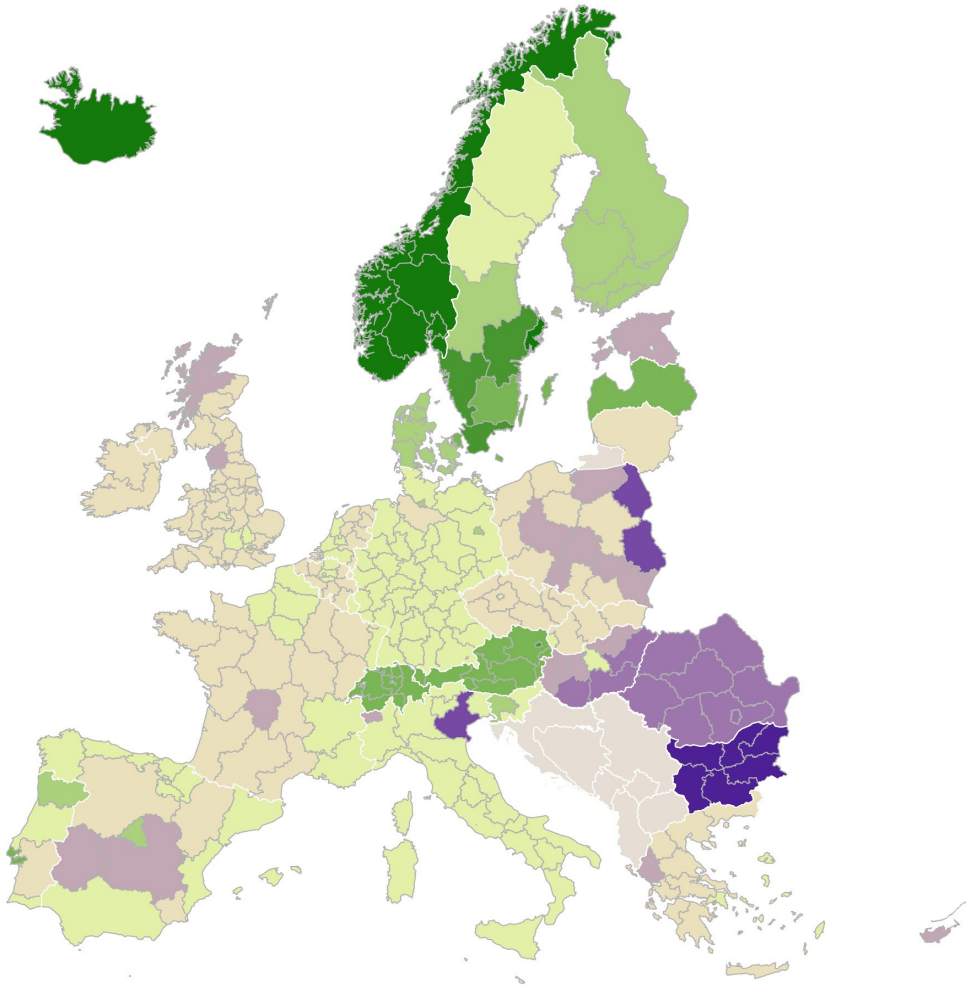
(Aggregate typology, 20% - quantiles, EU27 plus Iceland, Liechtenstein, Norway and Switzerland)

- Clearly below average green economic performance (24.1 - 42.3)
- Below average green economic performance (42.4 - 51.4)
- Around average green economic performance (51.5 - 56.5)
- Above average green economic performance (56.6 - 62.3)
- Clearly above average green economic performance (62.4 - 84.0)
- No data

* Renewable energy production, 2010
Land take per GDP unit, 2009
Green products and services offered, 2013
Green patents, 2001-2010
GVA per energy unit, 2010
GDP per CO_2 unit, 2010
Environmental and natural assets (EEA), 2010
Emission of air pollutants, 2010
Life expectancy, 2010
Exposure to air pollution, 2009

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Territorial Sphere
Standardised Regional Green Economic Performance, 2010



ESPON © S&W, GREECO, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

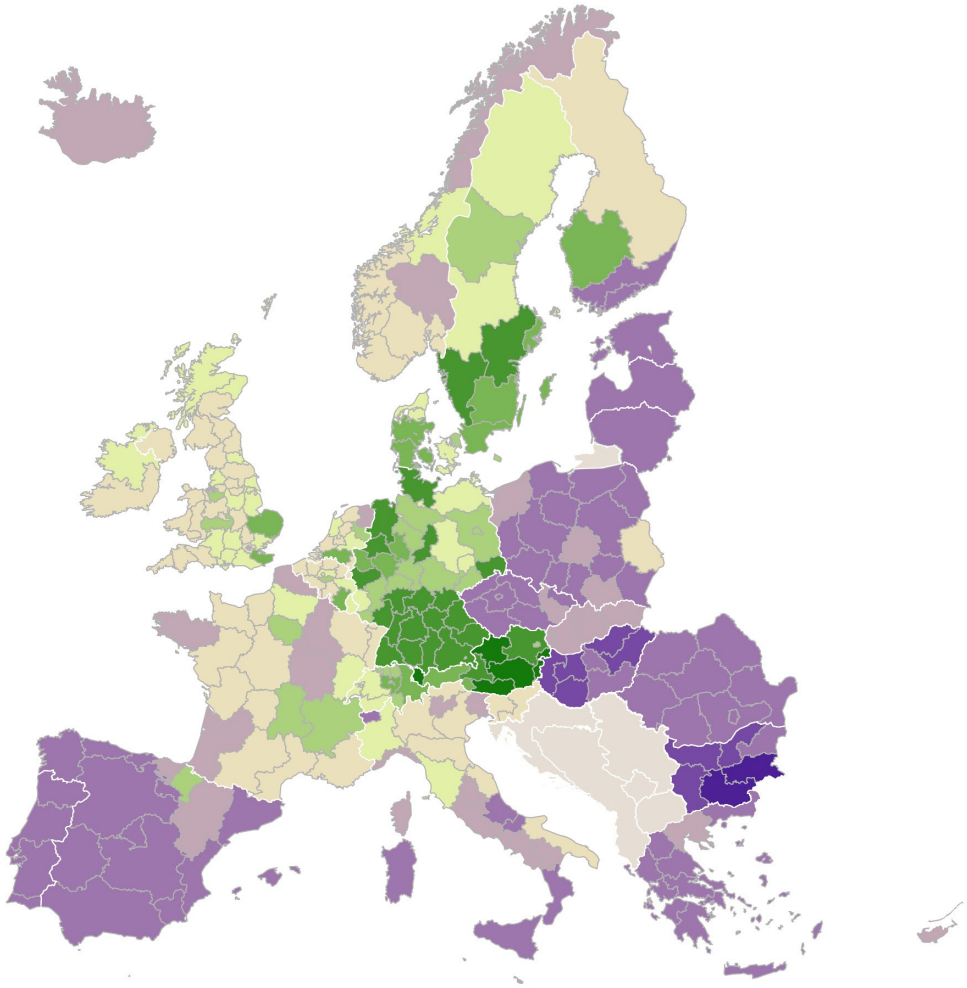
Regional level: NUTS 2
Source: Spiekermann and Wegener
Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013
© EuroGeographics Association for administrative boundaries

Regional green economic performance by core sphere index (0-100)

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100
- No data

This figure does not necessarily reflect the opinion of the ESPON Monitoring Committee

Economic Sphere
Standardised Regional Green Economic Performance, 2010



ESPON © S&W, GREECO, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

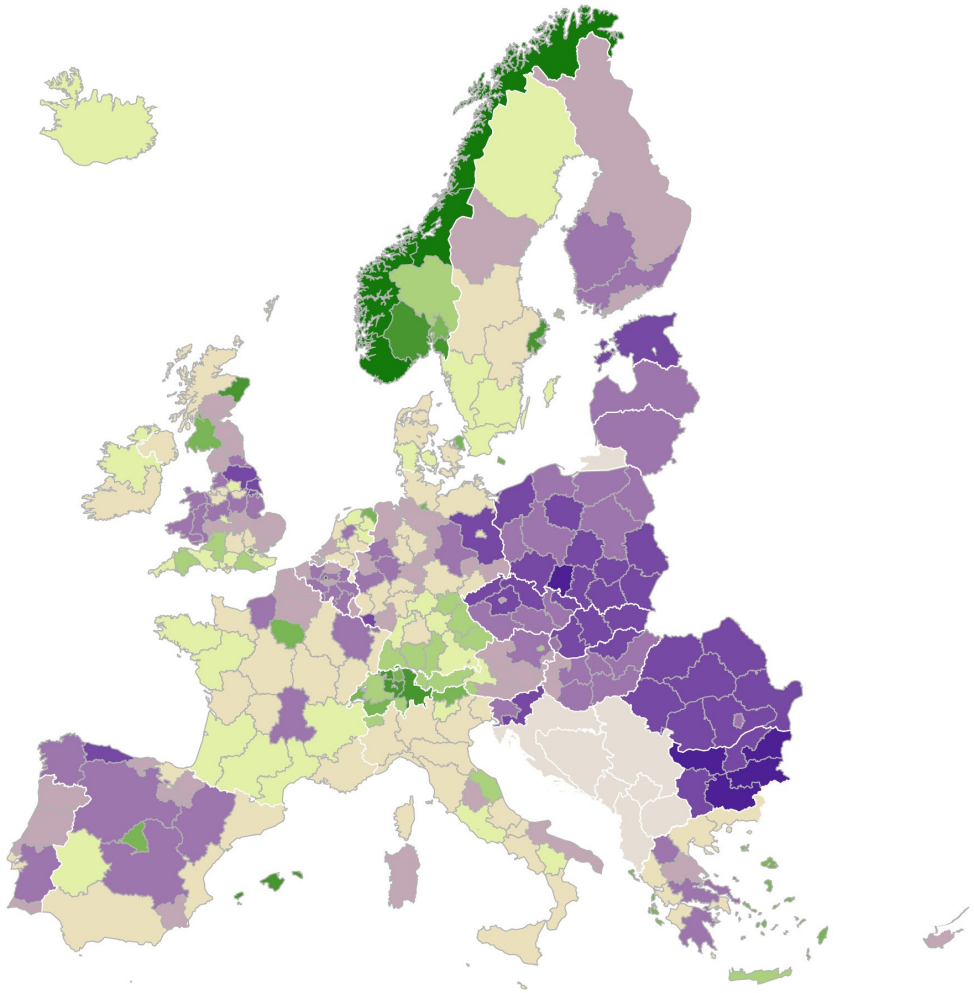
Regional level: NUTS 2
Source: Spiekermann and Wegener
Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013
© EuroGeographics Association for administrative boundaries

Regional green economic performance by core sphere index (0-100)

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100
- No data

This figure does not necessarily reflect the opinion of the ESPON Monitoring Committee

Econosphere
Standardised Regional Green Economic Performance, 2010



ESPON © S&W, GREECO, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

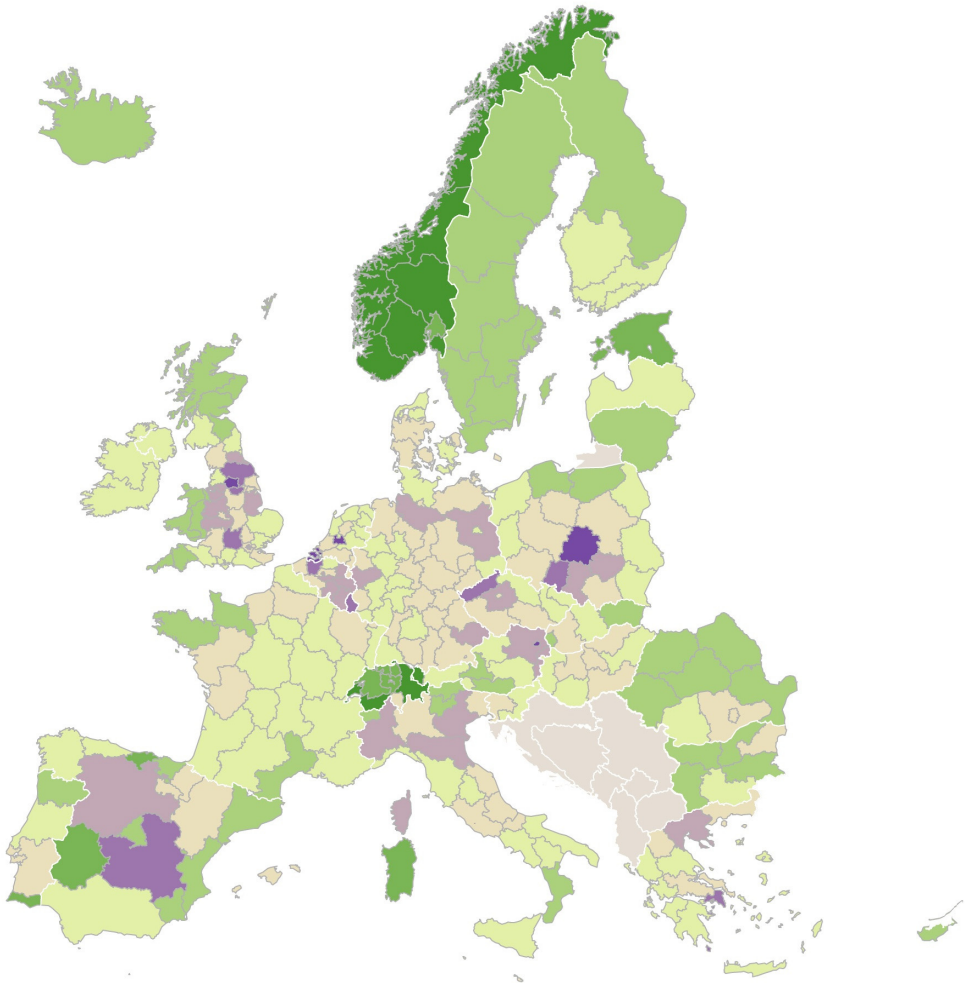
Regional level: NUTS 2
Source: Spiekermann and Wegener
Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013
© EuroGeographics Association for administrative boundaries

Regional green economic performance by core sphere index (0-100)

0 - 10	50 - 60
10 - 20	60 - 70
20 - 30	70 - 80
30 - 40	80 - 90
40 - 50	90 - 100
No data	

This figure does not necessarily reflect the opinion of the ESPON Monitoring Committee

Environmental Sphere
Standardised Regional Green Economic Performance, 2010



ESPON © S&W, GREECO, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

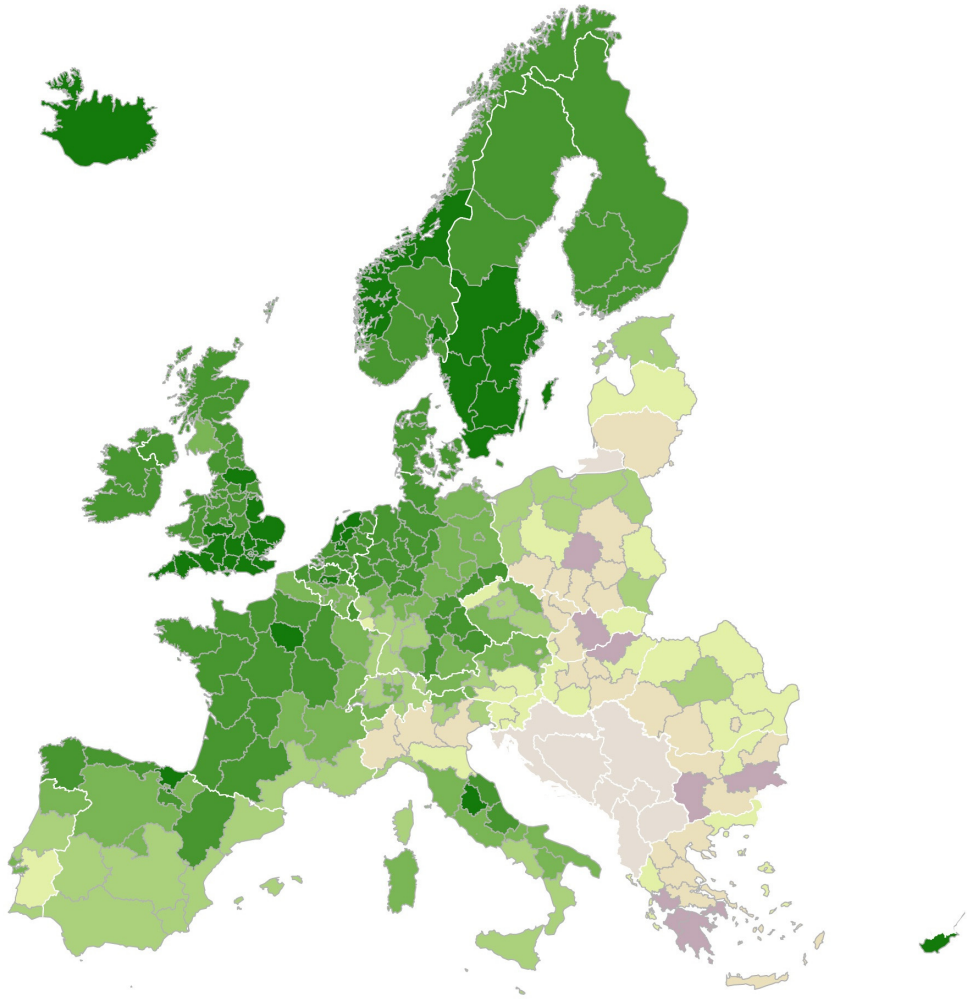
Regional level: NUTS 2
Source: Spiekermann and Wegener
Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013
© EuroGeographics Association for administrative boundaries

Regional green economic performance by core sphere index (0-100)

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100
- No data

This figure does not necessarily reflect the opinion of the ESPON Monitoring Committee

Social Sphere
Standardised Regional Green Economic Performance, 2010



ESPON © S&W, GREECO, 2013

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Source: Spiekermann and Wegener
Urban and Regional Research (S&W), 2013
Origin of data: GREECO database, 2013
© EuroGeographics Association for administrative boundaries

Regional green economic performance by core sphere index (0-100)

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100
- No data

This figure does not necessarily reflect the opinion of the ESPON Monitoring Committee

Policy context

"How far have different parts of Europe already progressed towards a green economy?" This is the question that this Map of the Month on the regional green economic performance, showing aggregated performance in different spheres, attempts to answer.

Greening the economy is high on the political agenda in stimulating the European economy. Territorial cohesion suggests the need to pay attention to territorial impacts, territorial differences and performances when designing and implementing sector policies. In line with this, the European Commission has the ambition to mainstream green economy objectives into all policy areas including Cohesion Policy as well as Common Agricultural Policy, energy infrastructure and trans-European networks and climate change adaptation policies.

The Europe 2020 Strategy indicates that moving towards a greener economy allows for addressing environmental challenges, social inequalities as well as to create economic growth and jobs. Also other international organisations, like the UN, stress that a green economy is able to deliver progress in the social, ecological and economic dimensions simultaneously (Division for Sustainable Development (UN DESA, 2012, p. 60).

The ESPON research on regional green economic performance aims to provide evidence on how the regions in Europe are doing from a green economic perspective. It focuses on the five core spheres of the green economy. For each sphere two headline indicators were selected as representatives in the analysis. The five core spheres are:

- *Territorial sphere:* Looking at combined result of high renewable energies and high land productivity, this sphere takes into account that territorial balance and cohesion are considered requisites for a genuine socio-economic development taking place, as recognised by the Treaty of Lisbon and the Europe 2020 Strategy;
- *Economic sphere:* Looking at the provision of green products and services by SMEs and the number of green patents per billion GDP, covering one of the three traditional spheres defining sustainable development;
- *Econosphere:* Looking at high economic output per energy unit used and per CO_2 unit emitted, taking account of the extent to which decoupling of economic growth from energy consumption and resource depletion, as materials and space, is taking place;
- *Environmental sphere:* Looking at high levels of environmental and natural assets combined with low emission levels, representing the second traditional sphere defining sustainable development;
- *Social sphere:* Looking at low exposure to air pollution and relatively high life expectancy, being the third traditional sphere of sustainable development.

Headline indicators for regional green economic performance of core spheres of green economy

Green economy spheres	Headline indicator
Territorial sphere	Renewable energy production
	Land take per GDP unit
Economic sphere	Green products and services offered
	Green patents
Econosphere	GVA per energy unit
	GDP per CO_2 unit
Environmental sphere	Environmental and natural assets (EEA)
	Emission of air pollutants
Social sphere	Life expectancy
	Exposure to air pollution

Observations

Countries with above average green economic performance are mainly the Nordic countries, Switzerland, Austria and Ireland. Furthermore single regions located in the Netherlands, Italy, Germany, UK, France and Spain, including Paris and Madrid are performing well. On the other hand, most Eastern European regions often have a low green economic performance because the performance in several of the five different spheres is below average. Going into further detail, urban regions tend to be stronger in the green economic performance than rural regions, although the differences are relatively small.

Cities and regions hold significant assets that are key building blocks in green economy development. A differentiated picture becomes apparent when looking at the regional green economic performance of regions within each of the five spheres:

- The *territorial sphere* sees Nordic and Alpine regions performing best, a combined result of high renewable energies and high land productivity. German and Italian regions do follow next. Low performance in the territorial sphere is mainly to be found in Eastern Europe, in particular in Bulgaria and Romania, and in some central parts of Spain.
- The *economic sphere* identifies considerable differences in Europe. Southern Germany, Denmark and some individual regions in Spain (Navarra), Belgium, the Netherlands, Northern Germany, Austria, Sweden and Finland are doing best. In those parts of Europe, the development of green technologies plays a larger role in the regional economy than elsewhere. At the same time, green products and services are offered in those countries by a higher share of small and medium enterprises than in other. Then, a large gap exists to most other regions in which the performance is rather low.
- In the *econosphere* high differences of performance between regions within countries can be identified. Norway, some UK regions, Stockholm, Madrid and Paris, some other individual regions in Sweden, Spain and France as well as regions in Southern Germany, Switzerland and Austria, Italy and Denmark are performing best, i.e. as they have a high economic output per energy unit used. Most regions in Eastern Europe and Finland but also some other parts of Sweden, Spain and the UK, France, Northern and Eastern Germany as well as Belgium are at the other end of the spectrum.
- The performance in the *environmental sphere* shows Nordic and Alpine regions stand out positively which is an outcome of high environmental and natural assets combined with low emission levels. The situation is similar good in several coastal regions, the Baltic States and some regions in South-Eastern Europe and Spain. Some urban agglomerations, in particular in the UK, Belgium, Northern Italy, Poland and Greece identify the lowest values, but there are also some more rural regions in Spain and Germany with similar performance.
- In the *social sphere*, most regions in a broad belt along the Atlantic from Portugal to the Nordic countries are doing fine based on low exposure to air pollution and relatively high life expectancy. However, many Southern European regions suffer from high exposure to air pollution, and many Eastern European regions from very low life expectancy.

Points for Policy consideration

The main findings concerning green economic performance can be summarised as follows:

- The degree of green economic performance is related to the economic development of a region, with lagging regions performing lower in green economic aspects and prosperous regions displaying a higher degree of performance.
    - It seems that it requires a certain degree of economic output to be able to put also an emphasis on green issues.
    - Likewise, it seems that investments in greening the regional economy will also help in improvements in overall economic performance of lagging regions.

- Actors in cities and regions are key players in a green economy transition, setting the context to inspire and guide new inclusive green businesses. By doing so, account can be taken of the green economic capacity to strengthen local potentials for greener and more resilient economic solutions.
- Regional and local authorities have the potential and the necessary leverage to make a significant contribution to the achievement of the green economy through the definition of territorial actions under their competence.
- Local networks and local initiatives can support a transition of both the supply and demand side of the green economy by supplying information and providing education support to SME's as well as concrete practical tools for engaging in greening initiatives.
- The regulatory framework is a key driver for green growth. The differences and potentials of territories should be reflected by policy-makers across Europe and across territorial levels in the implementation of policies contributing to a green economy. Territories are diversely endowed to start and consolidate transitions to a greener economy and thus greening strategies should be place-based.
- A clear orientation and guidance through policy is needed for the transformation of the economy to a green economy, and here the EU and its Member States and regions could lead the way and set a positive example.

It is worth stressing that, in any case, a single region cannot achieve the needed changes on its own, but Europe as a whole, with its experience, track-record and economic power has a realistic chance to lead this transition towards a greener, more resource-efficient economy.

Concept/method/measurement

The aggregation of the performance of the five spheres to one single regional green economic performance index is presented in the map "Regional Green Economic Performance". As there is no evaluation of the importance of the different spheres for green economic performance available, the weights assigned are equal, i.e. each sphere contributes 20% to the overall performance of a region. The map classes are composed of five quantiles.

The indicators used for the aggregation procedure on the regional green economic performance are the headline indicators for the five green economy spheres previously mentioned. The aggregation of single indicators into more comprehensive indices is done via techniques of multicriteria analysis. The territorial reference system is NUTS 2 (NUTS 2010 version).

The indicators are first transformed from their raw values into standardised green performance values which range from 0 to 100, subsequently, indicators are aggregated to indices for the five core spheres and for the overall regional green economic performance typology.

More information

- This Map of the Month is a result of the ESPON Applied Research "GREECO - Territorial Potentials for a Greener Economy"
- The ESPON Evidence Brief 10: "Understanding Green Economy" provides additional information on this topic.
- Contact at the ESPON Coordination Unit: Ann-Gritt NEUSE (ann-gritt.neuse@espon.eu)

Interested in ESPON?

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory. ESPON shall support Cohesion Policy development with European wide, comparable information, evidence, analyses and scenarios on framework conditions for the development of regions, cities and larger territories.

The Managing Authority responsible for the ESPON 2013 Programme is the Ministry of Sustainable Development and Infrastructures, Development of Spatial Planning and Development of Luxembourg. More information: www.espon.eu

Press contact. Pierina.petruzzi@espon.eu, phone: +352 42 59 91 4707