

# GREECO

## Territorial Potentials for a Greener Economy

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Vol. 1.1 Executive Summary



This report presents the **final** results of an Applied Research Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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## List of abbreviations

CAP	Common Agricultural Policy
CO2	Carbon dioxide
CSF	Common Strategic Framework
DMC	Domestic Material Consumption
EC	European Commission
EEA	European Environment Agency
EGSS	Environmental Goods and Services Sector
ESDP	European Spatial Development Perspective
ETS	Emissions Trading System
EU	European Union
GHG	Greenhouse Gas
GDP	Gross Domestic Product
IGETP	Index of Green Economy Theoretical Potentials
IPCC	Intergovernmental Panel on Climate Change
NUTS	Nomenclature of Territorial Units for Statistics / Nomenclature of

	Units for Territorial Statistics
OECD	Organisation for Economic Co-operation and Development
RES	Renewable Energy Sources
R&D	Research and development
SEAP	Sustainable Energy Action Plan
SME	Small and medium sized businesses
UN	United Nations
UNEP	United Nations Environment Programme

# Vol. 1.1 Executive Summary

## 1. Project objectives

In recent years, a number of international and EU-led initiatives have advocated a transition to more sustainable consumption and production pathways, a more equitable society, a healthier and more resilient environment and a **green economy** (EEA, 2013b; OECD, 2009; UNEP, 2011). In particular, the European Union's ten-year growth *Strategy for Smart, Sustainable and Inclusive Growth* (here forth referred to as **Europe 2020 Strategy**) delivered – through a number of articulated 'Flagship Initiatives' – a set of ambitious goals to progress in the direction of smarter, more sustainable and more inclusive growth for the EU. In particular, the **Sustainable Growth** priority of Europe 2020 Strategy aims at promoting “a more resource efficient, greener and competitive economy” (EC, 2010).

Contributing to achieve the goals set by the Europe 2020 Strategy has thus become a major objective of all the EU policy initiatives approved since 2010, including the **Territorial and Cohesion policies**. In line with this goal, the **Territorial Agenda of the European Union**, which is one of the two main policy instruments guiding territorial cohesion at the EU level, has already been reviewed against Europe 2020 Strategy (EU, 2011). The **EU Cohesion Policy 2014-2020**, which is the other pillar supporting the territorial implementation of Europe 2020, will concentrate resources on key growth sectors including, inter alia, the **low-carbon economy** (energy efficiency and renewables), under separate obligations to dedicate ERDF resources.

In the last few years the ambitious Europe 2020 Strategy and related policies have been greatly challenged by the **economic crisis** that followed the financial shock that convulsed stock markets worldwide in the summer of 2008. However, the economic crisis, which had a very different impact across the EU, can also be “an opportunity for a transition towards a more sustainable and resource efficient economic structures if appropriate actions are taken”, as stressed by the Territorial Agenda 2020 (EU, 2011, p. 5).

In this context, the **green economy** has gained momentum as a policy concept that could contribute to overcome the economic crisis through a *new* economic growth model where, on the one hand, the different dimensions of progress and human well-being are accounted for and, on the other hand, the territorially-bound and sector-specific potentials of the 'green' economic activities are exploited as far as possible.

The underlying **hypothesis** of this view is that, in order to achieve more and better jobs – needed for a successful implementation of Europe 2020 Strategy –, the economic activities labelled as 'green' should play a greater role in the economy at different scales. According to this principle, **whereas the green economy could make a great contribution to achieve the goals of the Europe 2020 Strategy at the regional and local levels, regions and cities can both benefit and be benefited by the shift to a greener economy.**

Against this background, the GREECO project has attempted to shed light on the conceptual and operational dimensions of the green economy – seen from a territorial perspective –, in order to identify key economic areas where policy support through territorial and cohesion policies could contribute to spark economic recovery, create new employment opportunities and strengthen

environmental sustainability at the regional and local levels. The **specific objectives** of the project have been:

- to provide an operational definition of the green economy from the territorial perspective;
- to provide explicit considerations in relation to which territorial dimensions are most relevant in pursuing of the green economy;
- to produce new metrics and territorial evidence at the regional level on the extent to which the green economy has progressed so far across Europe;
- to identify good practices of transition to green economy within a number of economic sectors and case studies;
- to analyse the key drivers and enabling conditions that operate at regional and local levels for the transition to a greener economy;
- to characterise the combined effect of such drivers and enabling conditions, yielding different types of territorial potentials for a green economy;
- to identify the role of regions and cities in driving a green economy development and base policy recommendations on them.

## 2. Conceptual framework

The green economy is a policy-oriented concept that can be broadly characterised as the *operationalization* or *vehicle* of sustainable development. This idea is implicit in virtually all the definitions of the green economy concept provided by relevant international organizations:

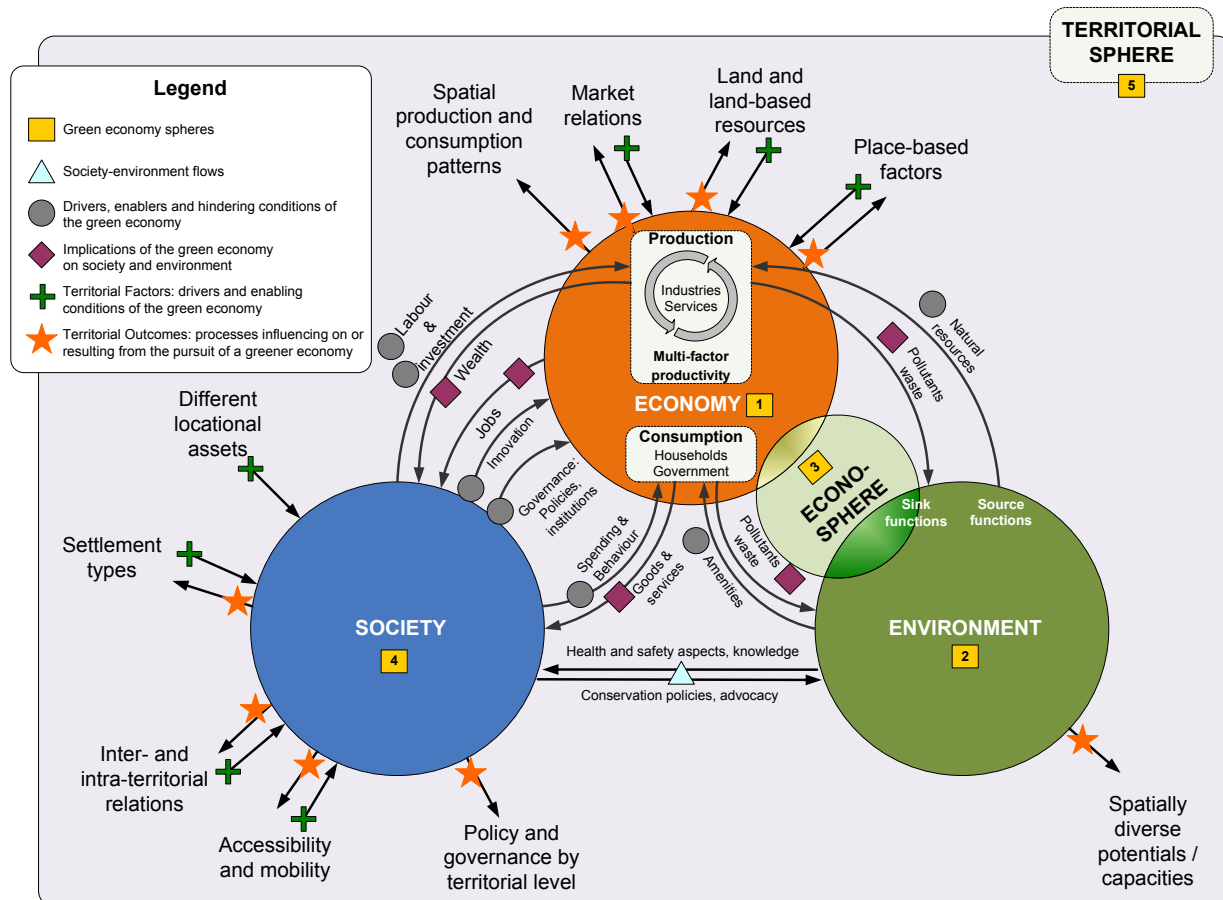
- The **EU** defines the green economy as “an economy that can secure growth and development, while at the same time improving human well-being, providing decent jobs, reducing inequalities, tackling poverty and preserving the natural capital upon which we all depend” (EC, 2011, p. 5).
- The **EEA** defines the green economy as one “in which environmental, economic and social policies and innovations enable society to use resources efficiently, thereby enhancing human well-being in an inclusive manner, while maintaining the natural systems that sustain us” (EEA, 2010, p. 5).
- The final Report of the **Rio+20 Conference** characterises the green economy as “one of the important tools available for achieving sustainable development”. According to this consensus document, a green economy should “contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth’s ecosystems” (UN, 2012, p. 10).
- Other international organizations, such as the **OECD**, the **World Bank** and the **Global Green Growth Institute** refer to ‘green growth’, putting a smaller emphasis on the social dimension than on the economic and environmental ones. The OECD, for instance, defines green growth as one that fosters “economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies” (OECD, 2011a, p. 146).

Broadly speaking, all these definitions are interchangeable to a certain degree, given that all of them ultimately build on the three traditional spheres included in the definition of **Sustainable Development**, namely ‘environmental’, ‘social’ and ‘economic’ spheres. In the GREECO project it has been proposed to enlarge these three traditional spheres to include two additional dimensions where sustainability may be tested from a systemic perspective. The first one is the **econosphere**,

where the key structural elements of economic transformation are shaped against the environmental background. The econosphere takes account of the extent to which **decoupling** of economic growth and social well-being from energy consumption and resource depletion is actually taking place. The second one is the **territorial sphere**. Its inclusion rests on the idea that territorial equilibrium and cohesion are a requisite for a *genuine* socio-economic development to take place, as stated by the Treaty of Lisbon (Art. 3.TEU) and the Europe 2020 Strategy. Indeed, the green economy, as the *operationalization* of sustainability, should contribute to strengthen the territorial balance too. The following simplified definition of the green economy presents all these ideas in a structured way:

*The green economy can be defined as the socio-economic development that takes place vis-à-vis a more sustainable use of natural resources, preservation of environmental capital and fewer environmental risks, while at the same time enhancing regional competitiveness and territorial cohesion over the long term.*

Against this theoretical backdrop, the conceptual framework of GREECO project has taken account of all the green economic dimensions included in the definition. A graphical representation of these conceptual elements is showed in Figure 1 below:



**Figure 1:** GREECO conceptual framework

The implications and interactions of the different green economy spheres and concepts showed in Figure 1 are at the centre of the **research approach** of the GREECO project. The focus has been on the nexus between the territorial, social, ecological, economic and the econosphere. The project has



explored what the green economy and the shift to it looks like from the top-down perspective of **9 specific economic sectors** and **10 different case study regions**. Alongside the abovementioned sector-specific assessments and case study analyses – characterised as *bottom-up* research activities in GREECO –, other cross-cutting research tasks have been developed as well – labelled as *top-down* research activities –. These include, first and foremost, the formulation of a **territorial concept** and its associated dimensions, which unveiled the territorial dimensions that are most relevant in pursuing of the green economy, and how these dimensions operate. A second complementary research activity dug into the spatial distribution of the **regional green economic performance** through the assessment of the territorial distribution of the green economy –related dimensions and its associated indicators. This task answered the question on how far NUTS-2 regions have already progressed towards a green economy in different parts of Europe. Last but not least, GREECO project was also successful in delivering a comprehensive assessment of the driving forces and enabling conditions for a greener economy at the regional and local levels, providing a comprehensive characterisation of such factors at NUTS-2 level. Such factors are the key driving forces shaping **territorial potentials** for a greener economy. All these research tasks allowed for the articulation and delivery of strong **policy messages and recommendations** to different types of territories.

### 3. Metrics and indicators

The comprehensive review of green economy metrics and indicators performed under GREECO project shows that existing approaches for the assessment of the green economy could be grouped in two broad categories:

The first category includes those approaches that rely on a **one-dimensional measure** as a weighted average of sub-indices representing all the balances (economic, environmental and social). These weights are difficult to obtain and cannot be expected to be stable. This makes it difficult to compare over time and between countries or regions. More importantly, the weights used to compute these indexes are in effect relative measures of how much progress in one sub-index is needed to offset decline in another. For example, a regional development index based on this methodology would implicitly establish a measure of progress where environmental losses or even growing poverty rates would be considered ‘absolute progress’ if the regional GDP growth rate was sufficiently high. This approach is, indeed, highly deprecated, as empirical evidence shows that environmental, economic and social capitals are not interchangeable.

Thus, the most recent attempts to characterise multi-dimensional concepts, such as the green economy transformation, rely on a second category of indices based on **multidimensional measurement frameworks** built on ‘dashboards’ of indicators. This is the approach followed by most of the organizations actively measuring progress to a greener economy, such as the EU – through the Europe 2020 Strategy and related Flagship initiatives<sup>1</sup> –, the EEA – through its subset of environmental indicators for ecosystem resilience and resource efficiency (EEA, 2012, 2013a) –, the OECD – through its green economy measurement framework (OECD, 2011b) – or the UNEP – through its Green Economy Initiative and related projects (UNEP, 2012, 2014) –.

Thus, GREECO has used a **multidimensional framework to characterise green economy challenges, potentials and performance**. Ideally, this implies that each region can be compared to other regions by a selection of indicators relevant to the region in question and to the regions it

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<sup>1</sup> Europe 2020 indicators by Eurostat:

[http://epp.eurostat.ec.europa.eu/portal/page/portal/europe\\_2020\\_indicators/headline\\_indicators](http://epp.eurostat.ec.europa.eu/portal/page/portal/europe_2020_indicators/headline_indicators)

compares to. Regrettably, though, for most of the processes the collection and processing of primary data does not allow for comparative analysis at a regional level. Even at the national level data availability of relevant indicators is extremely limited. The GREECO project has, however, attempted to develop datasets for regional comparative analysis. These include indicators of very different natures, including a number of **new or modified indicators**, as showed in the following table:

Green economy sphere	Indicator	NUTS level	Reference period
<b>Economic</b>	Gross domestic product, deflated to 2005 price level	0-3	2000-10
	Gross domestic product in purchasing power standards	0-3	2000-10
	Location quotients by broad branches of production	0-3	2010
	Gross value added, deflated to 2005 price level	0-3	2000-10
<b>Ecosphere</b>	Predicted air emissions and emission densities	2	2010
	Final energy consumption, production	0-2	2000-10
	Final energy consumption, residential	0-2	2000-10
	Final energy consumption, total	0-2	2000-10
	Final energy consumption, transport	0-2	2000-10
	Economic photovoltaic energy potential	2	2009
	Economic onshore wind energy potential	2	2009
	Technical bioenergy potential from crop residues	2	2013
	Technical bioenergy potential from manure residues	2	2013
	Technical bioenergy potential of forestry residues	2	2013
	Combined onshore wind, photo voltaic and biomass energy potentials	2	2013
	Estimated annual CO2 emissions savings potential for the building sector in 2050	2	2050
<b>Environmental</b>	Natura 2000 and nationally designated nature areas	2	2010
	Percentage of Natura 2000 area	2	2009
<b>Territorial</b>	Number of greentech clusters per million inhabitants	2	2013
	Weighted share of municipalities that have signed the Covenant of Majors and have also submitted an Action Plan	2	2013
	Accumulated patents in selected environmental technologies per million inhabitants	2	2005-10
	Share of patents in selected environmental technologies over total number of patents	2	2005-10
<b>Multi-dimensional (aggregated indexes)</b>	Regional green economic performance aggregated index	2	2013
	Regional green economic aggregated index of theoretical potentials	2	2013

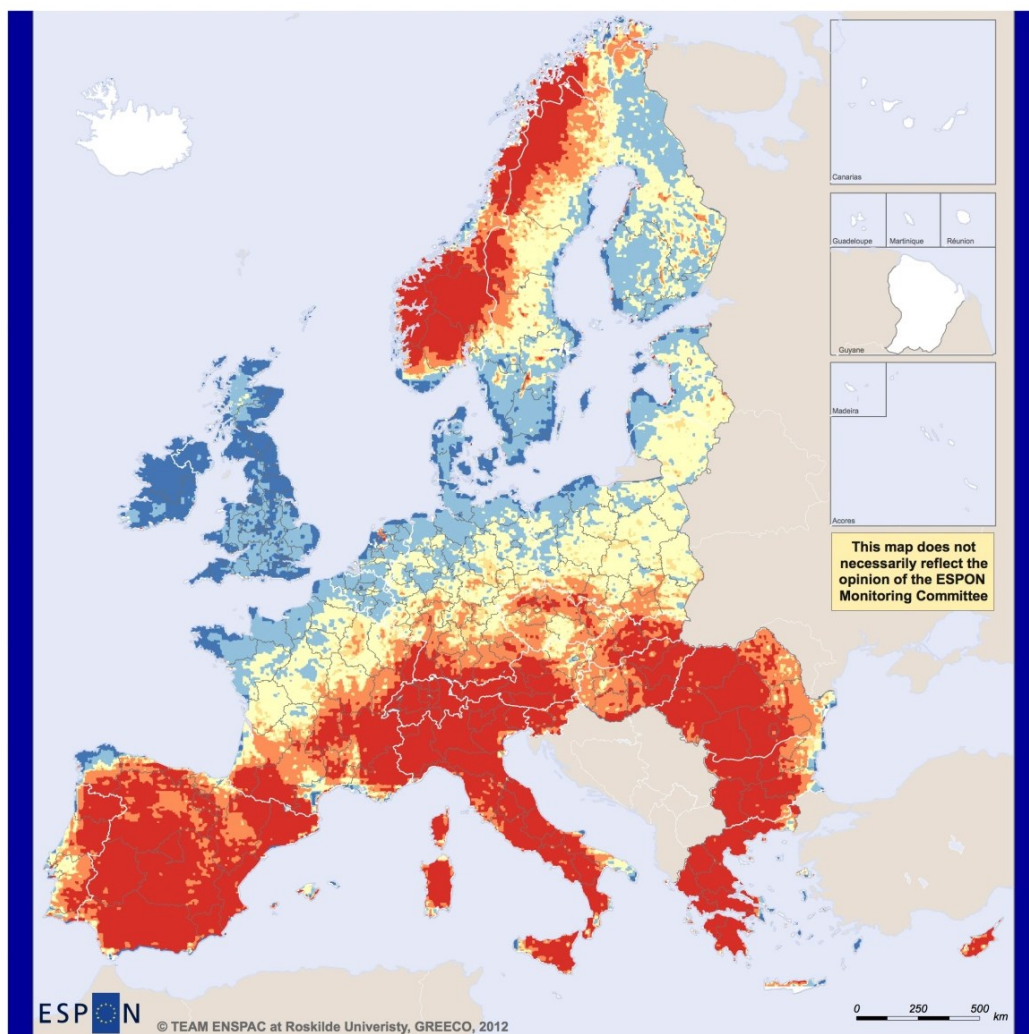
**Table 1:** New indicators produced in GREECO project

#### 4. Illustrative results

The GREECO project has faced a number of research challenges related to the (i) conceptual, (ii) operational, and (iii) territorial uncertainties related to a policy-oriented concept such as the green economy. These constraints made the project group to implement innovative research approaches that led to a number of research outputs tackling the abovementioned challenges. An example of such research outputs are shown on the following pages:

In order to achieve a better understanding of the geographic variations in the potentials for emission

reduction, the regional (NUTS-2) potentials for generation of non-fossil electricity have been studied for on-shore wind energy and PV electricity. An example of the maps produced for wind energy is shown below:

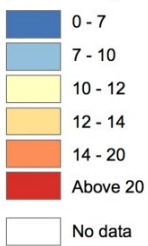


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EUROPEAN UNION  
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Regional level: Grid  
Source: ESPON Database, ESPON GREECO Project, Roskilde University, 2013  
Origin of data: European Environmental Agency, 2009 and International Energy Agency, 2012  
© EuroGeographics Association for administrative boundaries

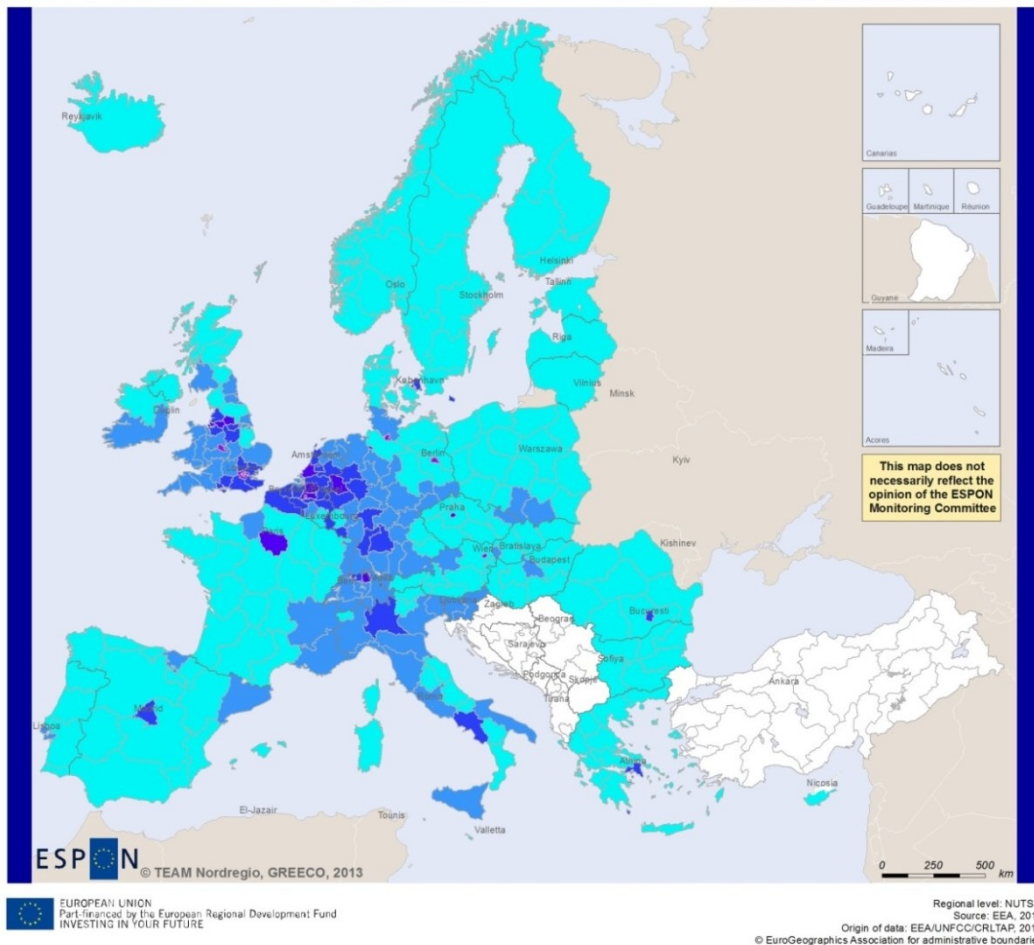
**On-shore wind costs, 2009-2012**  
(euros/kWh)



Notes:  
The map presents the levelised cost of electricity generated by onshore wind turbines of the most efficient type expected to be installed in the period 2015-20 (3.5MW wind turbines).  
The wind data are collected from European wind speed measurement stations used in an assessment of the European wind power potential by the European Environmental Agency (2009) and adjusted to the wind energy potential expected at 100 m above ground depending on land cover class and landscape roughness. The cost data are from the International Energy Agency (2012).  
The levels of remuneration in the form of feed-in tariffs and other financial arrangements differ widely by country but 8 and 10 c/kWh could be useful reference levels for the 2015-20 period

**Map 1:** On-shore wind costs, 2009-12

If the EU is to achieve its energy consumption and emissions reduction goals that have set then even more overall construction jobs will be needed to retrofit the huge stock of relatively inefficient buildings. Most parts of these jobs will be concentrated in urban centres with the highest number of existing buildings, and especially in those centres that are expecting to grow. Current annual rates of energy consumption and CO2 emissions for the residential sector have been carried forward to 2050. This provides a baseline or 'no action' level of consumption/emissions, to which an 89.5% policy target can be applied to infer a potential for reduction in emissions. Based on these perspectives, a prioritized order of focus for regions to improve their resource performance of existing buildings could be designed, according to the result shown on the map below.



**Tons of CO2 Emissions per year per km2**



Regional values are calculated by allocating current national estimates of per capita emissions rates from non-industrial heat production to projected population development for 2050. National data is disaggregated using 2008 data on population density. Emissions data comes from The European Pollutant Release and Transfer Register (E-PRTR) while population projection data comes from Eurostat [proj\_10c2150p]. Next, a universal 89.5% reduction in CO2 emissions (in order to achieve the EU's policy target) is calculated against the 2050 baseline per capita emissions rates (continuation of 2008 per capita emissions rates). The difference between the baseline rate and the policy-aware rate is then multiplied by 2050 projected population and divided by the area of the region.

**Map 2:** Green building potential of NUTS2 regions according to expected emissions reductions if EU policy target is met in all regions

## 5. Policy implications

To systematise all the policy implications emerged in GREECO within the various research activities of the project is a challenging task precisely because of the diverse contexts and economic profiles, the differences of natural characteristics and assets, the multitude of institutional settings and the varying capacities for supporting and financing the greening of the economy of Europe's regions and cities. However, there are a number of key messages that transcend these differences and therefore can be considered as instrumental for transitioning to a greener economy across all territorial and economic settings:

- Many have advocated for advancing green investments as a way-out from the crisis. Even though some important steps have already been taken in such direction at the EU, national, regional and local levels, these have not been enough to counteract downward pressures on other final demand components. This implies that **investments in green solutions cannot restore the economic balances in Europe on their own. But they can nonetheless be an important part of an economic strategy for its restoration.** In particular, **the investment in green transformations can have considerable impact on employment and income generation at the regional and local levels.**
- However, **an economy with high rates of green growth is not necessarily a green(er) economy.** This applies to regional as well as national economies and relates to two major characteristics of economic transformations: On the one hand, the 'rebound effect' or 'Jevons' paradox' may potentially neutralise the theoretical savings of innovations targeting resource or energy efficiency in some sectors. On the other hand, the production of green products or services might largely rely on conventional solutions or technologies at various steps in the value-chain. This can also be linked to potential 'territorial externalities' both within and outside Europe, considering that production processes of most industrial products are distributed across different geographies and thus the impacts of unsustainable consumption or production patterns could be verified in very distant places.
- **'Decoupling' or 'delinking' economic growth from energy use and resource depletion is the most relevant dimension** from which green transitions should be assessed from a systemic perspective. Economic decoupling should also be the ultimate goal of policies seeking to strengthen such transitions. However, **the progress in resource efficient innovations has to be accompanied by other measures to guide consumption in other directions** than more unsustainable resource use in order to avoid the rebound effects and territorial externalities. Such measures can include, e.g., carbon taxes, quotas, or technical standards based on life-cycle assessments of products and services.
- **A systemic and transitional approach to the issue of the green economy also requires the merging of a territorial dimension** into conventional economic thinking. The GREECO project has shown that similar concurrent factors can lead regions to different situations and prospects in terms of green economy transitioning. This depends on a number of territorially-bound drivers and hinderers not only including physical and social assets but combinations of other place-specific factors that may be hidden to conventional sector-oriented economic analyses.
- The prospects of the next two decades suggest that **accelerated progress in resource efficiency is increasingly important for economic prosperity at all territorial levels.** European industries are highly disadvantaged in comparison to North American and Chinese producers that face 2 to 3 times lower the energy prices found in Europe. This could accelerate the delocalization of many European firms. Thus, **governments in regions**

**hosting large energy intensive industries and those where industries plan to downsize already face large challenges to deal with these prospects.** In such regions, alternative industrial development becomes more urgent and retraining and other supporting measures in large scale can be required. Only those European producers that achieve a radically higher efficiency in energy use will be able to compete without support.

- In general terms, the discrepancy between the national and the regional or municipal values of the indicators of green economic potentials is considerable. This is for instance the case of carbon-budgets, suggesting that **the methodology used for allocating the general EU carbon-budget might underestimate the potentials for green transformation in many regions.** This is mainly due to the fact that the allocation of the non-ETS budget follows the variation in per capita GDP, but does not take the potentials for emission reduction into account.
- Thus, **the potentials for moving forwards in economic greening differ widely between regions** – even within the same country –. This is because regions are to varying degrees specialised in particular industries and endowed differently with natural resources and environmental qualities. **The transformation of the economy to a green economy thus requires that each region realises the potentials and handles the challenges that are specific to that region.** This is no different to any other strategic policy design at the regional level, and it should accordingly make use of the same analytical methods and instruments available, such as the ones made available by the ESPON Programme (ESPON, 2010).
- But at the same time the territorial evidence collected in the GREECO project shows that **the factors driving, hindering or enabling green economic transformations are not concentrated within any specific category of regions.** Regions seem to be, if not equally, at least similarly endowed to start – or consolidate – place-based transitions to a greener economy, regardless of their present level of development and other structural characteristics.
- Along these lines, the importance of natural assets varies depending on the green economy sector, whereas **the capacity to capitalise on the natural assets is strongly linked to non-physical factors** such as the governance and strategic framework in a specific region. Moreover, **a lack of natural resources can even be a trigger for greening and innovation** as the need for sustainable management of scarce natural assets becomes critical.
- All the evidence collected in the GREECO project shows that **the quality of governance and institutions are instrumental for transitioning to a green economy.** While national targets give the initial momentum and national policies create the overall framework of operation, regions and municipalities are instrumental in translating this vision into regional and local realities.
- **Institutional strength** is also an important factor contributing to the green economy. The diversity of regional institutions, the synergies among them and between them and the private sector, as well as the quality of the human resources within institutions are strong factors for enabling the transition to the green economy.
- The territorial evidence collected in GREECO has demonstrated unequivocally that **the strategic vision of a region is a major driver for greening the regional economy.** This is especially the case if the strategic vision has been achieved with the **participation** of a wide group of regional stakeholders – public, private, non-governmental sector and academia –. The approach guarantees a shared understanding both of the benefits and challenges of greening the whole economy or a specific sector.
- Along these lines, **long-term policy orientation and political stability** are important for

ensuring the continuity of strategic choices such as adopted targets, financial commitments for greening the economy or simply having an overall *mindset* which is propitious to greening the economy. This is very much a challenge at the end of political cycles, such as EU programming periods.

- **Setting ambitious targets is crucial** for greening both the economy as a whole, as well as specific economic sectors. One possible strategy for regions is to align themselves with national, EU compliant targets and ensure compliance. This should be a good option for late starters. However, these targets might not be sufficient for ambitious and/or early movers that have already reached far in their green economy development and therefore need more ambitious goals.
- Additionally, regions and municipalities have a powerful leverage through **spatial planning**, permitting and enforcement of legislation. **Integrated urban and transport planning** making it easier to design and implement smart transport combinations and energy supply systems are key policy instruments that can be applied at the local scale to boost the transformation. **Green public procurement** is another efficient policy which can be implemented on the regional and local levels.
- **A lack of financial support is seen among the limiting factors for a greener growth** in virtually all the case studies and economic sector analysed in GREECO. Thus, most private and institutional actors stressed the importance of financial mechanisms and emphasise the need for increased public support. Financial support can take the forms of a feed-in tariff for the renewables sector; enhanced financing of R&D and technological cooperation in the region; grant support for innovative companies and projects, etc. However, this was not entirely ratified by the statistical models developed in the GREECO project, most probably due to the limited availability of relevant data.
- Public funding comes (and should come) from national sources or from **Structural and Cohesion policies**. Such policies are already strong drivers for greening the economy, especially in less developed regions, through concentration of funding in key sectors. There are ongoing comprehensive efforts on mainstreaming the environment and climate change into the planned investments through the new EU Cohesion Policy 2014-2020. The statistical models developed in the GREECO project suggest that at the NUTS-2 level **the returns of investments supporting green economy transitions could be higher within poorer regions** than within the more developed and transition regions.
- **Environmental awareness is important for greening the economic sectors** through different mechanisms, such as consumption choices and increased political expectations that are eventually translated into strategies, policies, financing and actions. Awareness may be supported through long and persistent efforts on behalf of the regional and municipal administration which control a number of communication tools, as well as through consistent involvement of stakeholders into creating a future vision.
- **The lack of data at the regional and local levels is actually a major limitation for effective policy design**. Developing a statistical framework with collection of primary data would allow for monitoring the green transformation of the fixed capital stock and the related consumption of resources, sinks and space. In particular, **harmonised regional CO2 emissions and energy production and consumption statistics would be a priceless tool** to local government as well as national and regional formulation of policy strategies and Operational Programmes.
- Several pieces of territorial evidence collected on this project suggest that **investing in greening the economy creates favourable conditions for the implementation of a number of win-win policy strategies** within regions. In the worst possible scenario, these

could contribute to improve environmental conditions alone and, in the best and most probable scenario, they could improve collective quality of life, economic wealth and wellbeing in many not only mutually compatible, but also synergic respects.

- To summarise, according to the territorial evidence collected in the GREECO project it could be concluded that those **transformative and comprehensive policy approaches** targeting the simultaneous enhancement and improvement of the green economy drivers characterised in the GREECO project, and in particular **enhancing the quality of government** and **supporting the eco-innovation capacity of regions**, appear to be **no-regret alternatives** that may contribute to spark or consolidate green economy transitions from multiple, complementary and mutually-reinforcing perspectives.

## 6. Research implications

The GREECO project has been a preliminary and highly exploratory attempt to shed some light on the rather complex process of green economic transformation at the regional and local levels. As such, the GREECO project has managed to reach a series of innovative research outputs that, in turn, have led to a number of research implications for further research that are listed in the following points:

- The GREECO project has mapped as many indicators of green economic performance and potentials as possible to assist regions in designing their own transformations to a green economy. **The experimental aggregation of these indicators into synthetic indexes of green economic performance and green economic potentials has confirmed the well-known problems of expressing a diversity of properties in a single figure.** Aggregated indexes are not capable of indicating whether and at which pace the economy transforms towards a green economy and which are the factors contributing the most to such transitions. These challenges require a multidimensional statistical framework. Applying such a framework at the NUTS-2 or NUTS-3 level, however, requires that **primary data are produced at a density that enables regional level statistics** and this is only the case for a few of the indicators collected.
- The territory is seen in the GREECO project as being dynamic as territorial change creates new spatial realities which are fed back into the political and decision making processes. While the policy and governance approaches at the territorial levels are aiming at formulating and implementing formalised public policies, programmes and projects with implications for the development, the consumer relations are much more informal – to some extent even unpredictable – and closely connected to the concept of **‘soft location factors’** that has increasingly been emphasized as an issue that needs to be included as factor of importance in the development process and, as such, further analysed by future research initiatives.
- Similarly, the analysis of the specific **contextual features** that make certain factors drive the green economic activity deserves additional attention. In particular, it would be of high policy and research relevance to better understand the specific mechanisms that make regional economies reach those **‘tipping points’** where the territorial assets become triggers for greening and innovation of the entire economy. Although a few processes have already been briefly characterised in the GREECO project for specific spatial contexts and economic sectors, generalising those findings to other economic sectors and territories would require additional research.
- The GREECO project has shown how the **mutual and external influence** of different categories of green economy factors on green economic transitions may lead to very different



outputs. This relates both to the potential **trade-offs** among green economy factors, as well as to the **spatial externalities** of certain factors, such as local consumption patterns on other, sometimes distant, regions. Further analysing these mechanisms would allow a better characterisation of those drivers that could have contradictory implications for the different spheres of the green economy or cause externalities on other territories. It would thus allow policy-makers to avoid zero-sum options and to pour more resources into *genuine* win-win policy alternatives – both from the economic and territorial perspectives –. In particular, conflicting territorial interests, such those potentially emerging between tourism and the production of some types of renewable energy, deserve additional attention.

- Similarly, digging into the potential synergies and opportunities that specific EU environmental policies could create within diverse territories from a green economy perspective would be of high policy relevance. In particular, it is expected that the EU territorial strategies linked to the major environmental challenges such as climate change will have a great – and positive – impact at the regional and local levels also in terms of job creation. Such implications have not yet been fully analysed from a territorial perspective. More specifically, **adaptation to climate change** is a policy area where a number of uncertainties still remain in terms of how and to what extent existing policies and strategies could – and should – take account of and be shaped under local conditions. Thus, additional research on the most effective and efficient policies and strategies for climate change adaptation at the regional and local levels, against the green economy background and in the broader framework of Europe 2020 Strategy, could provide regions and cities with valuable tools to make the most of such policies.

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