

# Untapped and bountiful in Southern Europe

## Renewable Energy to help overcome Mediterranean economic challenges

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**Greenpeace Media Briefing**  
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Four new reports commissioned by Greenpeace Croatia, Greece, Italy and Spain, in partnership with independent research institutes, show how governments in each region could accelerate their energy revolutions by enabling massive small-scale investments into renewable energy and energy-efficient solutions.

### Introduction

Despite the fact that in the sunniest region of Europe there is a vast potential of energy from the sun and wind, renewable energy is a resource that is being ignored. In a time when Southern European countries are struggling with debt and stagnating economies, clean renewable energy solutions can be implemented immediately. New studies from Croatia, Greece, Italy and Spain show that renewable energy can be locally produced and owned, can create thousands of jobs, help develop green economies and inspire more environmentally sound tourism.

To take advantage of the domestic renewable energy potential in the region, EU and national policies need to guarantee a stable investment environment for renewable energy generation. They must enable decentralised, community- and citizen-owned renewable electricity projects. An energy transition based on renewable investments is possible and economically feasible. Furthermore, it enables citizens to get involved with their energy development and invest in local projects. Varied small to medium actors would benefit from an energy transition towards more renewable energy and greater efficiency. By adopting the mass instalment of solar and wind power plants, the benefits from renewable energy production would be transmitted to households, hotels, schools and farms.

### Overview of reports outcomes<sup>1</sup>

#### Croatia

The study *Croatian transition to 100% renewable energy*<sup>2</sup> shows the multiple positive effects of adopting clean energy solutions in hotels, vacation camps, schools and farms across the country. This scenario for a 100% renewable energy system calculates production from wind, solar and hydro power plants, but includes also biomass, landfill gas and geothermal plants. The scenario foresees larger usage of electrical vehicles in the transport sector.

#### **Key findings:**

- Solar power will become the cheapest power source in Croatia in the coming years, with the biggest potential and opportunity for massive upscale of investments
- Energy savings of €4 to €5 billion a year in energy imports alone could be achieved through a transition to 100% renewable energy

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1 All numbers presented in this briefing are coming from specific national reports.

2 Green Energy Cooperative (ZEZ, by its initials in Croatian), Zagreb, Croatia; Summary in English available at <http://goo.gl/7FcKcv>.

- Proposed projects would create up to 3,600 jobs in power plant construction and 8,000 permanent jobs in operation and maintenance annually by 2050. This does not include all indirect jobs connected to the energy transition, including smart grids, electric vehicles, hydrogen, energy storage, etc.
- Installing PV on all schools would mean €60 million of investment, which would produce annual savings of over €7 million.

After years of climate destructive energy policies, when the Croatian government gave political support to new coal power plants as well as oil and gas drilling projects in the Adriatic Sea, it's time for policy changes. On November 8th, Croatian citizens elected a new parliament, which will have the opportunity to set a new direction for climate and energy policy in Croatia.

## Greece

The report *Transforming the Greek building sector with the help of the sun*<sup>3</sup> proves that smarter use of existing resources can finance big climate and energy ambitions, even in a troubled economy and under creditors' supervision. Indeed, the study takes into consideration prevailing economic circumstances in Greece, and comes up with concrete and realistic policy proposals to kickstart a massive energy efficiency program involving one million buildings between 2016-2025. Available resources include the European Structural and Investment Funds, carbon emission credits, bank lending and a smarter use of the current property tax. Implementing the proposed program will put a stop to escalating energy poverty, help modernize the economy and create tens of thousands of new jobs. It also has the potential to reduce Greece's CO<sub>2</sub> emissions by almost 10%. The proposed program aims to retrofit 700,000 buildings by 2025 and suggests two alternative scenarios in which the public utility (PPC) can help another 300,000 poor households get free solar power.

### Key findings:

- The proposed energy efficiency program will save an estimated 1534 kilotonnes of oil from the total economy
- Efficiency upgrades to 700,000 buildings will annually save an estimated €1,000 per household. The two PV scenarios translate to a yearly household saving of €380 and €95 respectively. On aggregate, the complete proposed program will save €5.7-6 billion in energy expenses from households and businesses
- Greece can reduce oil imports by 10.5 million barrels per year, saving more than half a billion euros on imports annually
- The annual average emissions reduction will be 7-8.8 mt CO<sub>2</sub> (depending on the PV scenario), which would result in a total of 7.7-9.7% CO<sub>2</sub> emissions
- It will create an annual average of 29,500 or 35,000 jobs (depending on the PV scenario)
- The proposed €11.5 billion investments between 2016-2025 represent around 1.5% of what the European Commission has identified as needed in energy efficiency investments in Europe until 2020, thus there is a correlation between the size of the proposed program and Greece's contribution to EU's GDP.

## Italy

The study *100% renewable: a new future for Italian small islands*<sup>4</sup> has developed a scientific model which can be superimposed on similar islands across the globe; islands that are not connected to the national grid and produce energy with big fossil fuel generators. Italian small islands not connected to the country's grid -- where electricity is produced via inefficiently used, expensive oil/diesel systems -- are good examples of the past century's oil-based energy systems. The study gives an overview of the present energy situation of the islands and presents a three-step scenario for achieving fossil-free energy systems. Three islands in the Sicilian channel (Lampedusa, Pantelleria, Favignana) are presented as case studies in order to analyze specific paths that could lead to a fossil-free energy systems. Findings show that Italian islands, and potentially islands all around the world, have the potential to go 100% renewable and can do it very quickly. If this happens, Italian islands could become a perfect proving-grounds for innovation in renewables and energy efficiency.

### Key findings:

- The cost of the incentives for the production of energy on small islands is more than €70 million per year and is part of the energy bills of Italian citizens. The cost of producing one kWh with diesel on the small islands not connected to the mainland is six times higher than the average electricity cost in Italy

3 FACE<sup>3</sup>TS, Agiou Isidorou, Athens, Greece; Summary in English available at <http://goo.gl/fe6SL0>, full report in Greek available at <http://goo.gl/GdrXYP>.

4 Exalto Energy & Innovation, Rome, Italy; Summary in English available at <http://goo.gl/0pvpkq>, Full report in Italian available at <http://goo.gl/C2sLUE>.

- There are 20 small islands in Italy which are not connected to the national grid, and all of them are producing almost all their energy from diesel. In 2014, Italy satisfied 37% of their electricity demand with renewable energy. With high solar and wind potential on the islands the share of renewables on islands could be even greater
- Following the study's model, islands all around the world could calculate their own pathway to 100% renewable energy.

A new energy law is being prepared by the Italian government regarding energy production on islands that are off the national grid. This law should encourage concrete incentives for renewables and energy efficiency in order to destroy the fossil fuel monopoly which is currently a costly burden that all Italian citizens are paying.

## Spain

The study *Energy [R]evolution for the Canary Islands*<sup>5</sup> shows that 100% renewable energy can deliver 24/7 energy services to very distant communities and that the Canaries' energy system has a high potential for change. The costs of electricity generation on the Canary Islands are among the highest in the European electricity markets due to a high dependence on oil. To keep energy costs lower on the Canary Islands, these extra costs are shared by all Spanish energy users. These costs can be drastically reduced with a greater integration of renewable energy, and thus contribute to a reduction in electricity bills throughout the Spain.

### **Key findings:**

- With an additional investment into renewable energy and energy savings of €0.3 billion a year, annual savings of €1.1 billion would be achieved. This will lead to a total savings of €42 billion in fossil fuels, and a reduction of €0.09/kWh in generation costs. It would also lead to a 37% reduction in demand compared to current consumption, due to the implementation of efficiency policies
- Switching all energy and transport to renewables would nearly cancel out the islands' greenhouse gas emissions, achieving 99.7% reduction in emissions from 14 million tonnes CO<sub>2</sub> /year to 0.02 million tonnes CO<sub>2</sub> /year by 2050, excluding extra-insular.

## What needs to happen now

It is time for European governments to move beyond an energy market that favours polluting and expensive conventional power generation like coal, nuclear power, and offshore oil drilling. The market is currently dominated by a small number of sellers, reducing competition and potentially leading to higher prices for consumers. European energy markets must embrace renewable energy and empower consumers to get involved in the production of energy at local level.

To facilitate the energy transformation, governments must liaise with local energy producers and provide them advice on the tariffs and financial liabilities that come with access to supply markets, energy storage and demand response. In addition, dedicated programs to reduce energy bills through energy efficiency measures and renewables should be put in place for low income households.

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5 German Aerospace Center (DLR, by its initials in German) Institute of Technical Thermodynamics' Systems Analysis and Technology Assessment Department, Stuttgart, Germany. Executive summary in English available at <http://goo.gl/oFDdDi>.