Climate change and the transition to a low carbon economy. The role and potential of RES in the European South

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Climate change is the world’s biggest challenge

2°C target

Set by the UNFCCC to prevent:

• Rise in global temperatures by 3-5°C
• Rise in sea levels
• Disruption to weather patterns
• Ocean acidification

The impacts of climate change in Greece:

• An extra 5-15 days per year with temperatures rising above 35 °C in islands.
• Climate change related costs will raise up to 701 billion by 2100.

The solution: a low-carbon development path

- **Low carbon**: reduces carbon emissions and pollution
- **Socially inclusive**: prevents loss of ecosystem services
- **Resource efficient**: saves energy and resources

**HOW**

Private + Public Investments + Policy and Regulatory Reforms
Renewable Energy Sources (RES): a key driver of the transition

Wind

Solar

Hydro

Biomass

Geothermal
EU climate and energy policies: 2020 to 2030

<table>
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<tr>
<th>EU 2020 package</th>
<th>EU 2030 framework</th>
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<tbody>
<tr>
<td>• 20% reduction in GHG emissions by 2020 compared to 1990 levels</td>
<td>• 40% reduction in GHG emissions by 2030 compared to 1990 levels</td>
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<tr>
<td>• 20% increase in RES by 2020</td>
<td>• 27% increase in RES by 2030</td>
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<td>• 20% increase in energy efficiency</td>
<td>• 30% increase in energy efficiency</td>
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<td>• National Energy Plans on how these objectives will be met</td>
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NEW
RES in Europe – 20% by 2020 will be met

RES in gross energy consumption in
2012

16.30%
13.50%
14.10%
12.40%
13.80%
51%

Germany
Greece
Sweden
Bulgaria
Italy
EU

RES in electricity consumption in
2012

27.60%
23.50%
17%
16.50%
23.60%
60%

Germany
Greece
Sweden
Italy
Bulgaria
EU

Eurostat data, April 2014
South Europe matters
High RES potential

- 30-50% better solar irradiation than Germany & substantial wind potential.
- Old power plants.
- Deutsche Bank: only 40% of cost-effective hydro potential in the region has been developed (the rest 60% is waiting).
- Huge opportunity for energy efficiency.
- Strategically positioned.

The best energy after all is the one that’s never consumed!
It’s already happening

- **Romania**: 600 MW from 240 turbines, largest wind farm in Europe (Fântânele-Cogealac Plant)

- **Bulgaria**: No1 in the world in PV power per capita installation (16.3% RES in energy mix)

- **Albania**: almost 100% electricity from hydro-traditional practice
RES advantages I

• Contribute to **climate change mitigation**.

• **Boost employment**: EU 2011 directly/indirectly **1.2 million** people employed. **By 2020, 2.7 million** people could be employed.

• **Offer energy security**: indigenous/infinite sources (Ukraine).

• **Make sense financially**: EU energy imports=1 bn/day, almost 400bn just in 2013. Fossil fuel imports cost Greece €17.6 bn in 2011, compared to €5.41bn in 2000. **€700 million in islands not-connected to the grid.**
How to promote RES:

• **Supply side**: extensive investment in **flexible and smarter distribution grids** to enable decentralised generation and balance intermittency.

• **Demand side**: Information + consultation + ownership. Production and consumption through **cooperatives**. The rise of the **prosumer**.
This is possible!

Renewables in the hands of the people
Ownership of renewables installed capacity in Germany, 2010

Source: www.unendlich-viel-energie.de

- The Big Four energy suppliers: 6.5%
- Other energy suppliers: 7%
- Industry: 9%
- Investment funds and banks: 11%
- Project firms: 14%
- Other: 1.5%
- Private individuals: 51%
- Farmers: 11%

Total installed capacity 2010: 53 GW
Barriers to RES deployment

- Inadequate strategy and legislation
- Unsustainable support schemes
- Administrative
- Spatial/Environmental
- Financing

Fieldwork in Crete: confirmed the above + lack of proper consultation + conflict over land use
Need for sound governance

- **Effective**: key investments are driven out of fossil fuels and into low-carbon technology.
- **Coherent**: ensures complementary policy approaches.
- **Comprehensive**: ensures an equitable and efficient response across the entire economy and avoids undue burdens on single sectors or regions.
- **Legitimate**.
- **Transparent**: power is shared in a meaningful way between various stakeholders.
What does this mean for South Europe?

• More cooperation and market integration to share costs (e.g. infrastructure).

• Overcome political challenges through RES cooperative transnationalism.

• Shift: gas and oil ➔ direct use of low-cost, mature RES (hydro, solar, wind, biomass) and energy efficiency to show that the region is more than a gas/oil corridor.
RES needed NOW more than ever

Vulnerable countries in South Europe rich in RES can buy:

• Security
• Economic growth
• Health and
• Employment

at a **price that is lower** than what they are expected to pay for a carbon intensive development path.
Thank you for your attention!

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