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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 ° in islands.
- Climate change related costs will raise up to 701 billion by 2100.

Source : 1. **WWF Greece**, "Greece's future: the impacts of climate change in Greece in the near future", Athens, 2009. 2. **Bank of Greece**, "The economic, social and environmental implications of climate change in Greece", Athens, 2011

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**

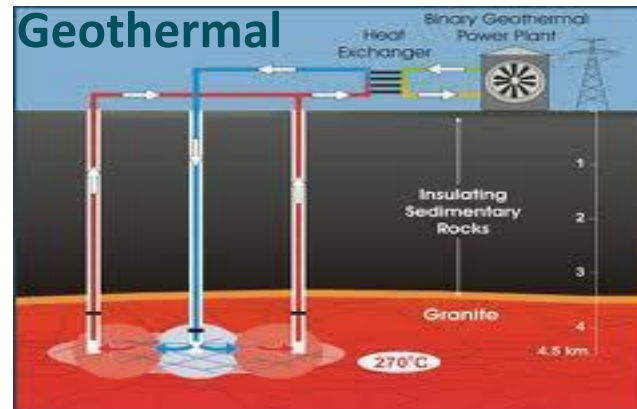
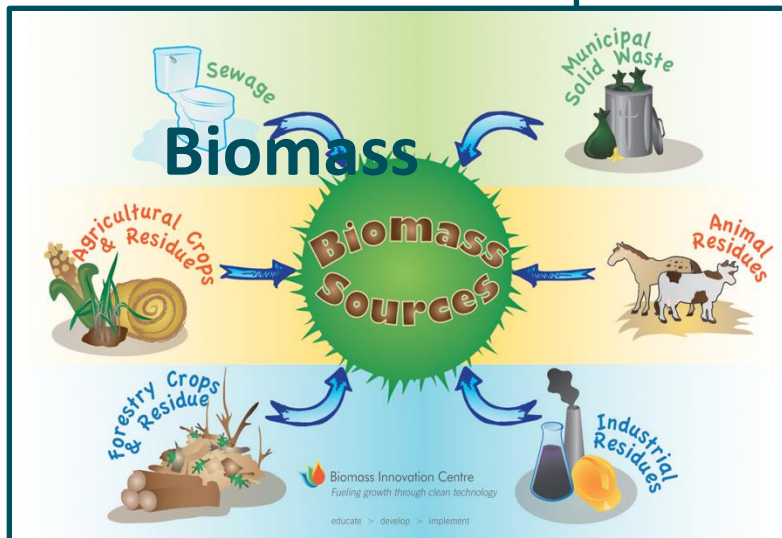
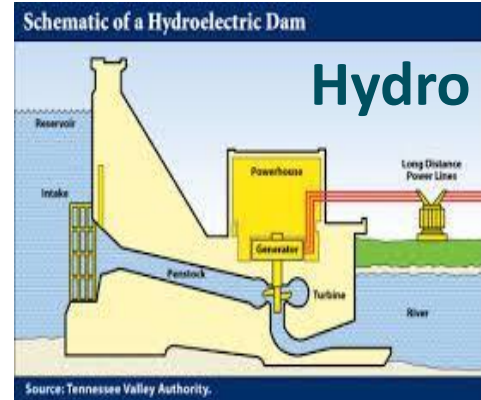


Renewable Energy Sources (RES): a key driver of the transition

Wind



Solar



EU climate and energy policies: 2020 to 2030

EU 2020 package

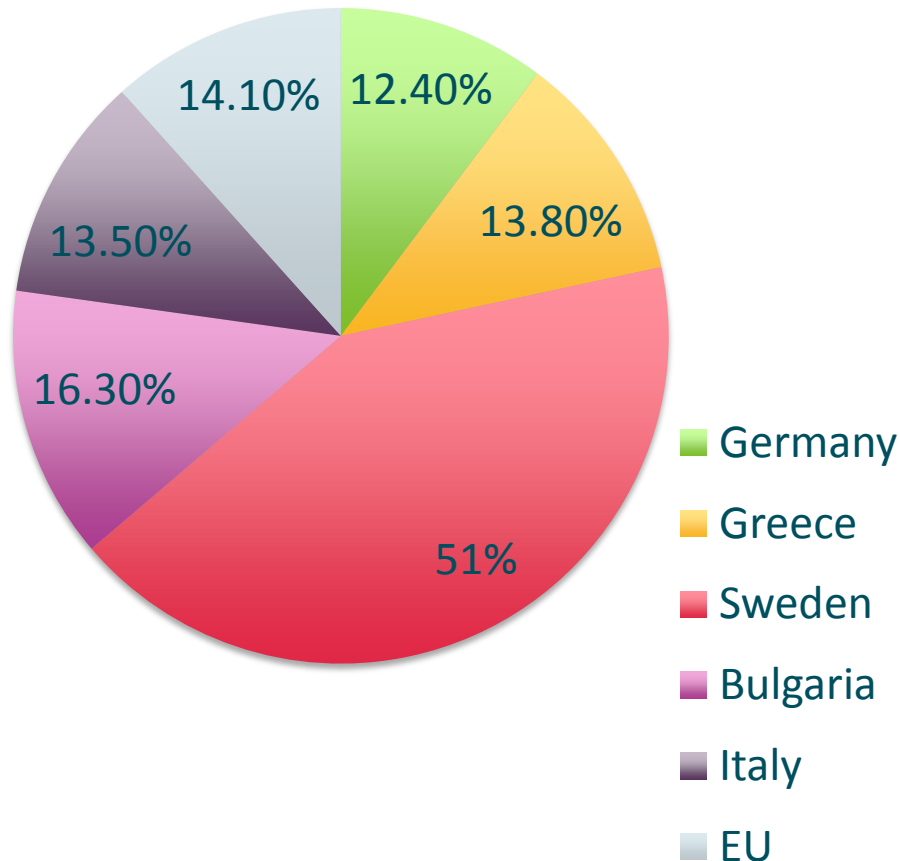
- 20% reduction in GHG emissions by 2020 compared to 1990 levels
- 20% increase in RES by 2020
- 20% increase in energy efficiency

EU 2030 framework

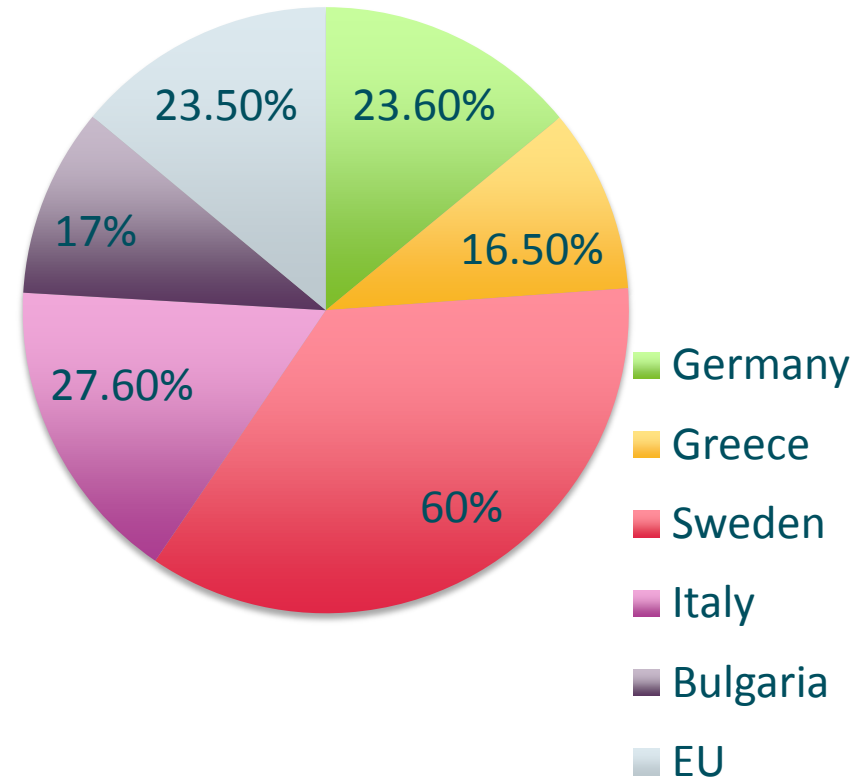
- 40% reduction in GHG emissions by 2030 compared to 1990 levels
- 27% increase in RES by 2030
- 30% increase in energy efficiency
- **National Energy Plans on how these objectives will be met** **NEW**

RES in Europe – 20% by 2020 will be met

RES in gross energy consumption in
2012




RES in electricity consumption in
2012



South Europe matters



High RES potential



The best energy
after all is the
one that's never
consumed!

- **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.

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 :

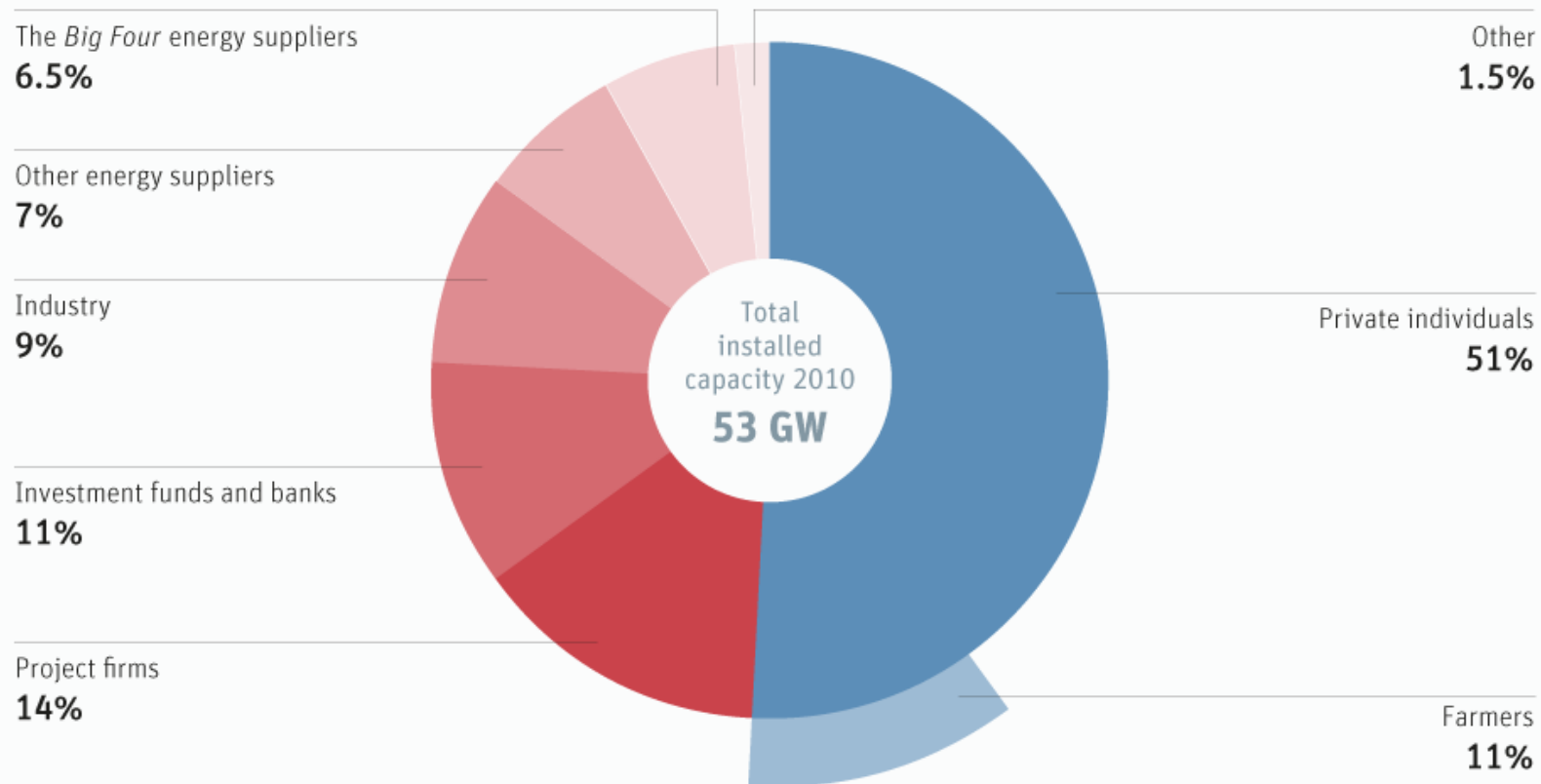
- **Supply side**: extensive investment in **flexible and smarter distribution grids** to enable **decentralised generation** and **balance** intermittency.
- **Demand side**: Information + consultation + **ownership**. Production and consumption through **cooperatives**. The rise of the *prosumer*.

This is possible!

Renewables in the hands of the people

Ownership of renewables installed capacity in Germany, 2010

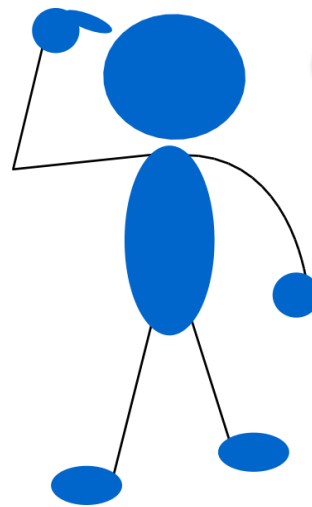
Source: www.unendlich-viel-energie.de



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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