MODULE 3 - Clean energy

RES EU strategies and Best practices

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EU Objectives

According to the Energy Union the six main aims of the EU's energy policy are to:

1. Ensure the functioning of the internal energy market and the interconnection of energy networks;
2. Ensure security of energy supply in the EU;
3. Promote energy efficiency and energy saving;
4. Decarbonise the economy and move towards a low-carbon economy in line with the Paris Agreement;
5. **Promote the development of new and renewable forms of energy to better align and integrate climate change goals into the new market design;**
6. Promote research, innovation and competitiveness.

Article **194 TFEU** makes some areas of energy policy a **shared competence**, signalling a move towards a common energy policy. Nevertheless, **each Member State maintains its right to 'determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply'**
(Article 194(2))

http://www.europarl.europa.eu/factsheets/en/sheet/68/energy-policy-general-principles

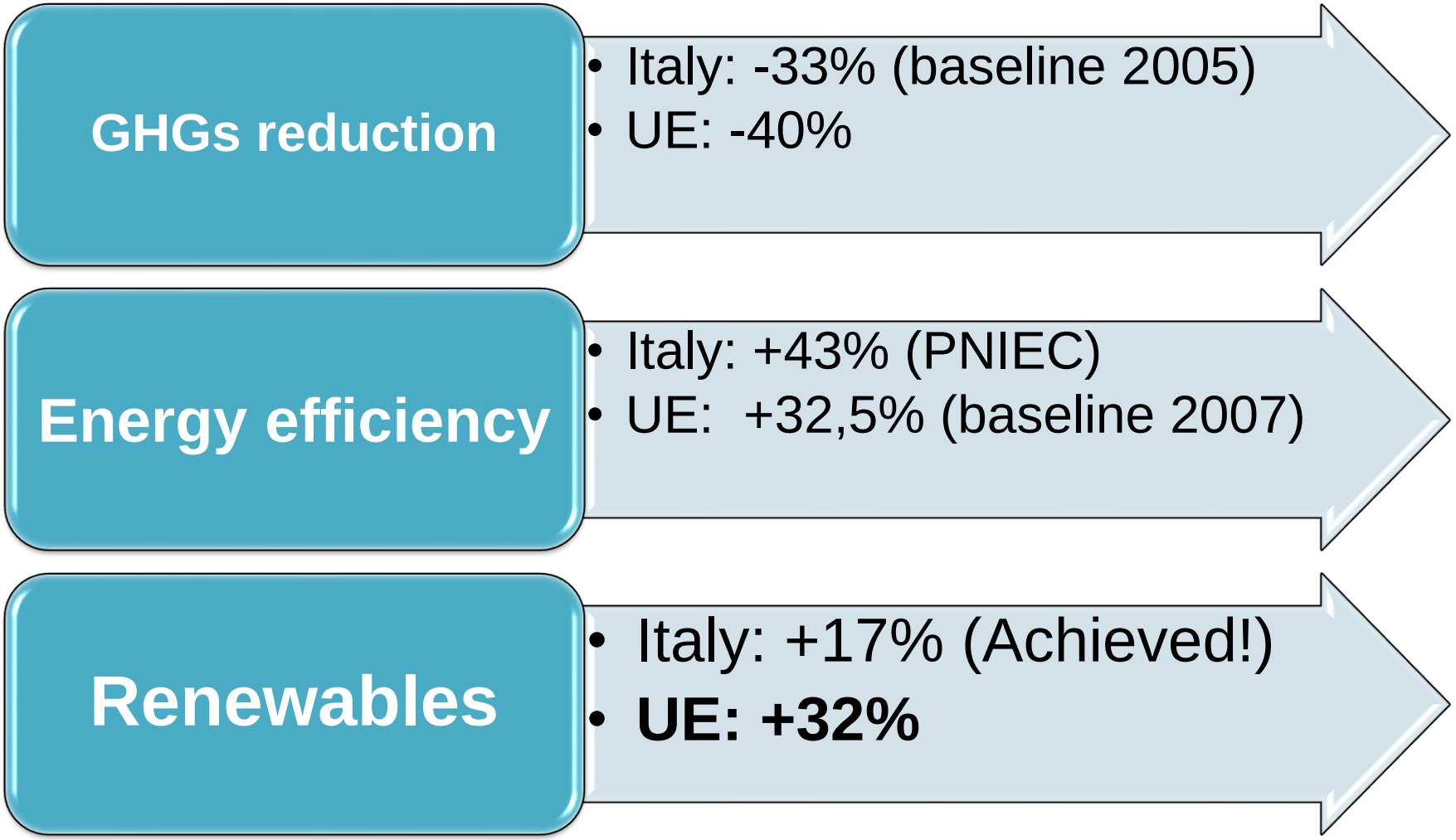
Achievements

The current policy agenda is driven by the **comprehensive integrated climate and energy policy adopted by the European Council** on 24 October 2014, which sets out to achieve the following by **2030**:

- A **reduction of at least 40% in greenhouse gas emissions** compared to 1990 levels;
- **An increase to 27% of the share of renewable energies in energy consumption;**
- An **improvement of 20% in energy efficiency**, with a view to achieving 30%;
- The **interconnection of at least 15% of the EU's electricity systems.**

http://www.europarl.europa.eu/factsheets/en/sheet/68/energy-policy-general-principles

Italian Goals for 2030



State of ART
some numbers

For the **electricity sector**, in 2017 approximately **35% of the national gross production came from RES**:
the renewable source that made the most important contribution to actual electricity production in 2017 is **the hydro one** (35% of the total electricity production from RES), followed by **the solar source** (23%), **bioenergy** (19%), **wind power** (17%) and **geothermal** (6%).

State of ART: Some numbers

In the **thermal sector**, slightly less than **20% of total energy consumption comes from renewable sources**.

In particular, in 2017 approximately 11.2 Mtoe of energy was consumed by RES:

- of which approximately 10.3 Mtoe directly through individual **boilers, stoves, fireplaces, solar panels, heat pumps, plants for exploiting geothermal heat**
- and about 0.9 Mtep in the form of **derived heat consumption** (for example through district heating systems powered by biomass).

State of ART
some numbers

The renewable source most used in 2017 for thermal consumption is solid biomass (about 7.9 Mtoe), used mainly in the domestic sector in the form of firewood and pellets.
Heat pumps (2.65 Mtoe) are also of great importance, while the contributions of bioliquids, biogas, geothermal and solar sources are still limited.
As regards the **transport sector,** around 1.2 million tonnes of biofuels (energy content equal to 1.06 Mtoe) were released for consumption, largely consisting of **biodiesel.**

Roadmap to 2050

According to the context, in view of 2030 and the roadmap to 2050, Italy is making an effort to equip itself with **planning tools aimed at identifying objectives, policies and measures consistent with the European framework and functional to improving environmental sustainability, security and accessibility of energy costs.**

From SEN to PNEC

With the Ministerial Decree, on 10 November 2017 the new **National Energy Strategy (SEN**) was adopted, constituting not a point of arrival, but a starting point for the preparation of the **Integrated Plan for Energy and Climate (PNEC).**

Integrated approach aims to ensure also environmental and socio-economic sustainability.

https://www.mise.gov.it/images/stories/documenti/BROCHURE_ENG_SEN.PDF

Plan for Energy & Climate: Main elements

On the one side, the evolution of energy system and its related targets will be pursued while preserving environmental assets like air quality, landscapes and land use.

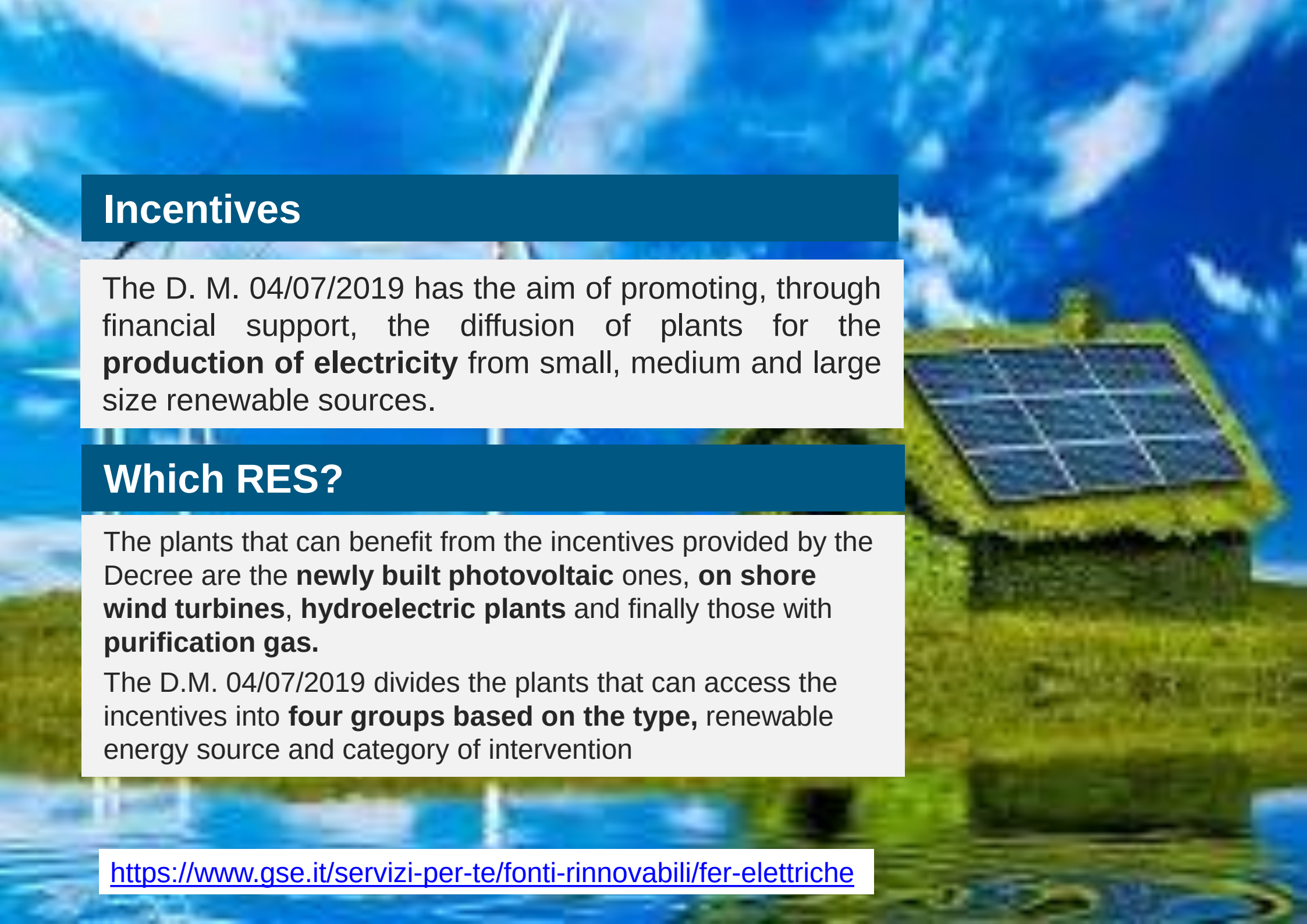
On the other side, citizens and businesses will be firstly involved in the transition process, promoting self-consumption and energy communities, while monitoring energy bills and competitiveness of enterprises

- Accelerating the GHGs emissions reduction, in line with the long term objective of a deep de- carbonization by 2050, also trough the phasing out of coal in power generation
- **Promote the diffusion and integration of renewable energies, while minimising environmental impacts (for example priority will be given to PV plants on buildings to preserve the soil, heat pumps to avoid particulate emissions, advanced biofuels to use residues and waste)**
- Energy efficiency will be crucial to contribute to environmental protection goals and to reduce foreign fossil fuel dependency, while sustaining economic growth. Energy savings are mostly expected in the civil and transport sectors, where electrification will also reduce air pollution

Azzero CO2
Il clima nelle nostre mani

Italian Incentives

The D. M. 04/07/2019



Incentives

The D. M. 04/07/2019 has the aim of promoting, through financial support, the diffusion of plants for the **production of electricity** from small, medium and large size renewable sources.

Which RES?

The plants that can benefit from the incentives provided by the Decree are the **newly built photovoltaic** ones, **on shore wind turbines**, **hydroelectric plants** and finally those with **purification gas.**

The D.M. 04/07/2019 divides the plants that can access the incentives into **four groups based on the type,** renewable energy source and category of intervention

https://www.gse.it/servizi-per-te/fonti-rinnovabili/fer-elettriche

Incentives: the Four Group

- **Group A:** includes plants:

newly built on-shore wind farms, full reconstruction, reactivation or upgrading **newly constructed photovoltaics**

- **Group A-2:**

includes **newly constructed photovoltaic systems**, whose modules are installed to replace roofs of buildings and rural buildings on which the complete removal of eternit or asbestos is carried out

- **Group B:** includes plants:

newly built hydroelectric plants, full reconstruction (excluding aqueduct plants), reactivation or upgrading with residual gases from the new construction, reactivation or upgrading purification processes

- **Group C:** includes plants subject to total or partial renovation:

on-shore wind turbines, hydropower with residual gas from the purification processes

https://www.gse.it/servizi-per-te/fonti-rinnovabili/fer-elettriche/incentivi-dm-04-07-2019

Best practices

Italy is one of the countries ahead in the world in this perspective and with the greatest opportunities, thanks to **widespread and different renewable resources**, from north to south, which can be enhanced and integrated in a local development perspective.

The Legambiente Report : In almost **8.000 Italian Municipalities, were installed RES, while ten years ago there were 356**

- At least one **photovoltaic system** is installed in each Italian municipality,
- **6,822 solar thermal** ones,
- **1,489 mini hydroelectric** ones (in particular in the central north)
- **1,025 wind turbines** (especially in the center south),
- **4,130 those of bioenergy**
- **595 those of geothermals**

http://www.comunirinnovabili.it/

Best practice: Cooperativa Radiotaxi 3570

In the world of **electric mobility**, the initiative brought by the Radiotaxi 3570 Cooperative in Rome is interesting thanks to the collaboration with two leading companies in the car production market.

In recent years, in fact, many taxi drivers have chosen to buy a **hybrid car** thanks to a partnership with Toyota, covering today about 80% of the cars belonging to the 3700 members.
Since the average route in a working day reaches about 120/130 km, having opted for a hybrid car has allowed an economic saving of about 30% in the purchase of fuel.

Best practice: Cooperativa Radiotaxi 3570

From the launch of the project to today, **more than one million kilometers** have been covered by the **electric taxis** of the RadioTaxi 3570 Cooperative.

The positive effects on the environment generated by the amount of green energy produced and used in this period of time have been significant, which has made it possible to avoid: **153 t di CO2**

Best practice: Cooperativa Radiotaxi 3570

Cars with an autonomy of 190 km effective can be recharged at the mobile fast charging unit: **100 kW of energy from renewable sources, capable of supplying 30% to 80% of the energy in only 15 minutes.**

At the Cooperative headquarters there are 5 columns powered by the 120 kW **photovoltaic system,** built in 2012 on the shelters of the internal parking.

This system allows the coverage of the car recharge service but also to cover over **80% of the electrical needs of the administrative offices,** technical laboratory and multimedia room of the cooperative's headquarters!

Thank you!

Il clima nelle nostre mani

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