



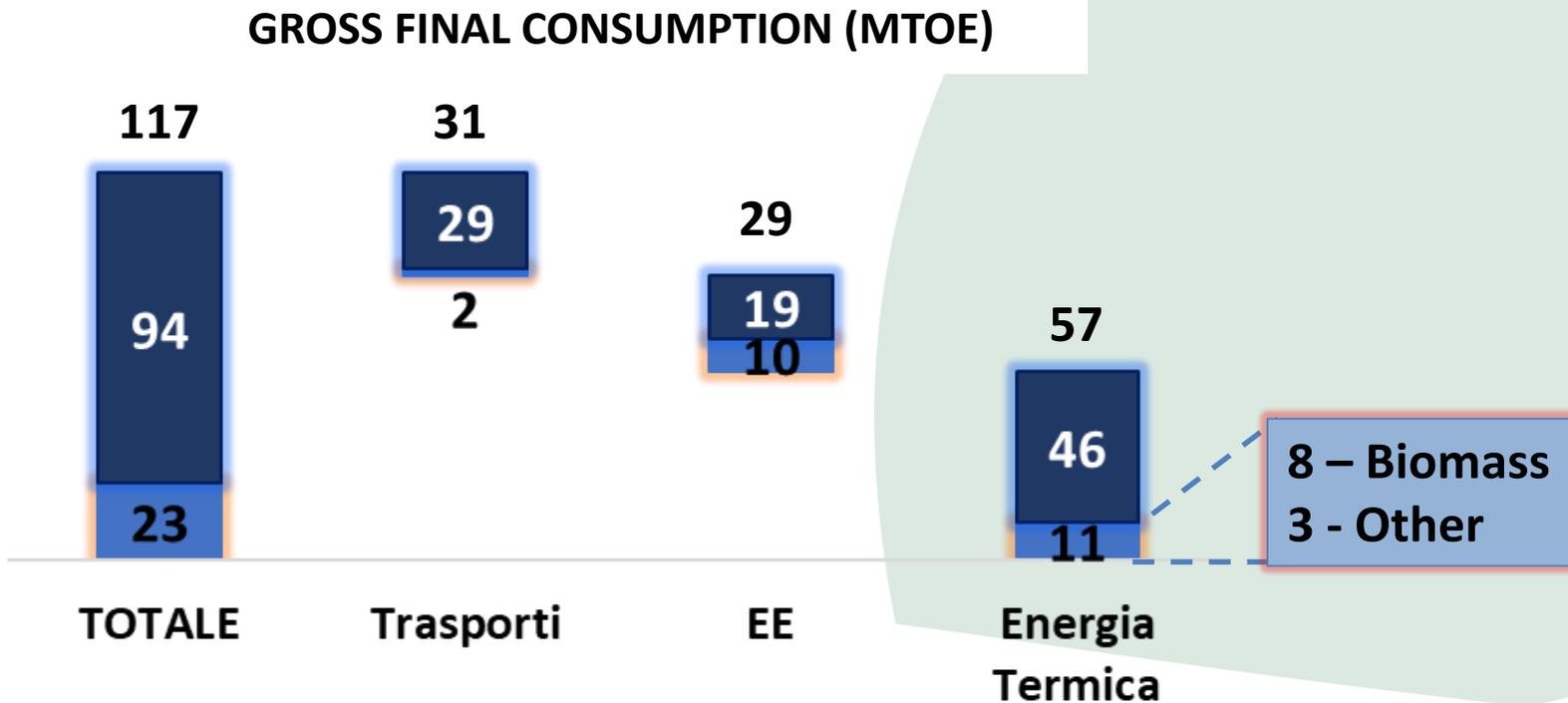
Energy Efficiency and the future strategies of the energy industry

Rome, December 12th 2019

Efficiency and decarbonisation scenario

- The main objectives set by the EU for 2030 required reducing polluting emissions by 40% compared to 1990 and bringing the share of renewables to at least 30%.
- To achieve targets and drive the Italian energy system towards a decarbonisation, the PNIEC envisaged a reduction in final of approximately 12.6 MTOE by 2030, (of which 5.7 MTOE to be realized in the residential and tertiary sector)
- According to estimates by researchers at *Eurac Research*, today the Italian energy system costs about **60.6 billion euros a year**; over half of this expenditure is used to purchase fossil fuels from abroad (mainly natural gas and oil).
- According to the Eurac Research model, the various PNIEC interventions will increase the total annual cost of the Italian energy system by around **5.4%**.
- At the Paris climate conference (COP21), Italy signed even more stringent emissions targets to keep the average global temperature increase below 1.5 ° C.
- The European *Green New Deal* presented in these days sets the goal of eliminating net emissions (i.e. achieving 80% renewable penetration) with intermediate objectives, and the deployment of various measures (and financing)

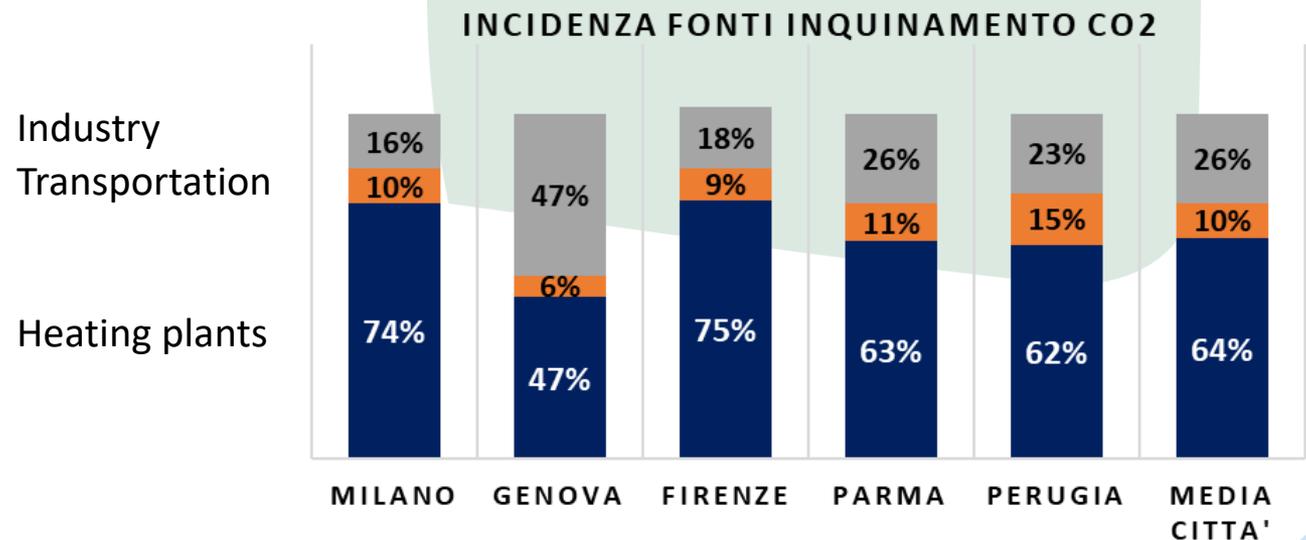
Thermal Energy in Italy is still anchored to an emission production model



- Thermal energy accounts for almost 50% of GFCs
- Only 5% of the Thermal Energy belongs to *non-emissive* sources

This is clearly reflected in the pollution caused by heating

<i>Emissioni PM10 (tonn)</i>	2005	2015	Var%
Industria	12.773	5.541	-57%
Riscaldamento	14.405	21.762	51%
Trasporto su strada	12.943	6.729	-48%
Altri trasporti	3.586	1.365	-62%
Agricoltura	1.249	888	-29%
Altro (rifiuti)	447	427	-4%
ITALIA	45.403	36.712	-19%



Where do the reasons lie ?

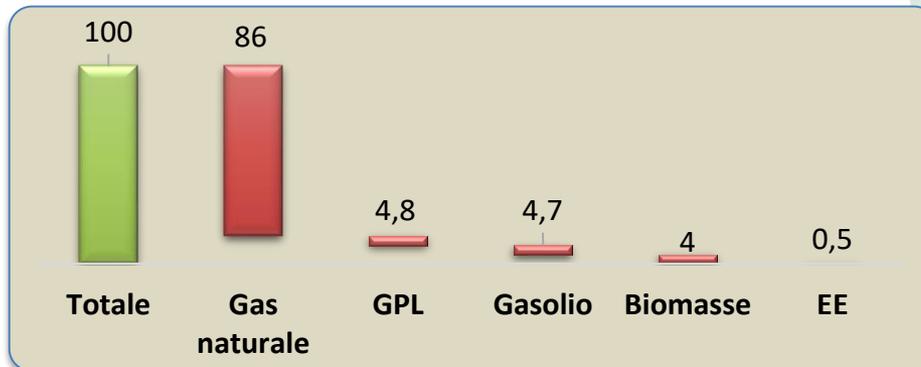
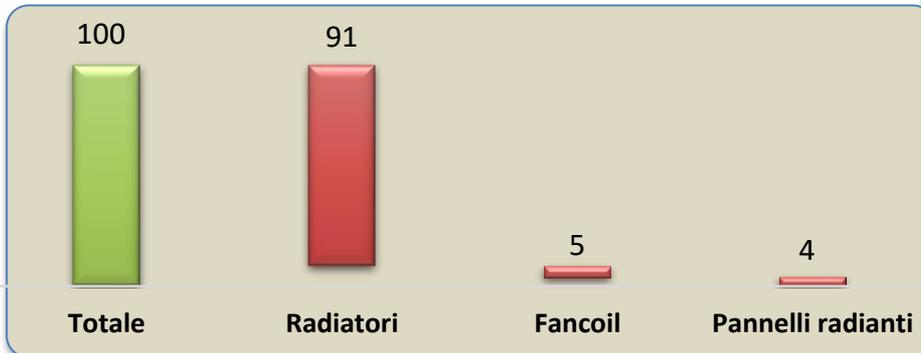
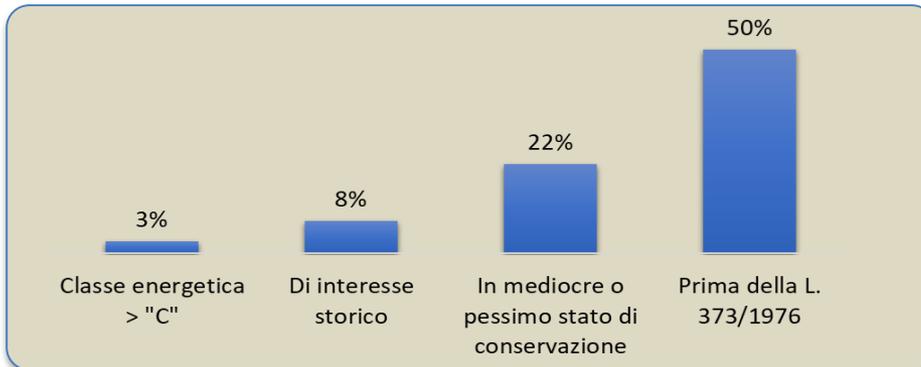
Old building heritage

- 14 million homes (46% of the total) are located in 1.2 million condominiums
- 82% built before the entry into force of Law 10/91
- In northern Italy the energy class is 60% F or G

Traditional systems sized for high operating temperatures

Poor deployment of adequate technologies (= level of innovation)

Almost exclusive use of fossil fuel sources



A new Thermal Energy production model

- As happened with photovoltaics and mobility, today there are reliable solutions to *decarbonise* heating, with enormous economic and environmental advantages (e.g. zero emissions in the city)
- This passes primarily through the use of natural sources (*low enthalpy* hydrothermal / geothermal energy) through the deployment of **high temperature heat pumps**
- According to a study by the Milan Polytechnic⁽¹⁾ the transition to a new model of sustainable heating extended to 25% of the properties would bring - on an annual basis
 - reduction in operating expenses of € 4.5 billion
 - lower CO2 emissions into the atmosphere by 13 million tons / year
- The intelligent consumer will "gain" with his active behavior in the use of energy
- A coherent regulatory framework aligned with national targets and enabling a "meritocratic" distribution (not increase!) of resources among available technological solutions seems a common sense consideration



TEON s.r.l.
Sede legale
Via S.M. Pelletier, 4
20900 Monza (MB)

MILANO
Via V. Fara, 20
20124 Milano (MI)
T. +39 02 4948 4500

TORINO
Strada Cuornè 51/3/b
10072 Mappano – Caselle
Torinese (TO)

www.teon.it
info@teon.it