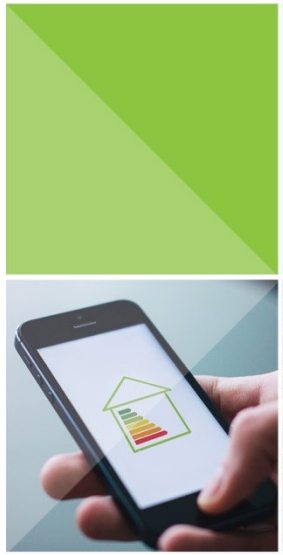




Italy
draft national energy and climate plan

Brussels, 29-30 January 2019

PREPARATION OF THE DRAFT PLAN

MAIN ELEMENTS AND KEY LESSONS LEARNED FROM THE PROCESS TO DATE, INCLUDING ON THE ROLE OF REGIONAL COOPERATION

Main elements

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

Lesson learned

+ *The comprehensive plan on energy transition gave us the opportunity to develop a crosscutting approach, based on integrated analysis and targets, with a coherent view throughout all the different aspects of energy and environment*
– *At this early stage an highly detailed definition of all policies and technology options, their funding and their impacts, to achieve long term targets may be tricky, suggesting possible in progress adjustments*

Overview of key objectives, targets and contributions related to EU 2030 targets (Article 4)

	2016	2030	UNITS
Binding national 2030 target for non-ETS GHG emissions under ESR compared to 2005	- 18	- 33	%
(Estimated) Annual national limits 2021-30	261 (year 2021)	221	Mt CO_2eq
LULUCF commitment	No debit rule (accounted emissions from land use shall be entirely compensated by an equivalent removal of CO_2 from the atmosphere)		
Planned share of energy from renewable sources in gross final consumption of energy in 2030	17	30	%
Levels of indicative renewables trajectory in the years 2022, 2025 and 2027	17	21, 24, 26	%
National contribution for energy efficiency: - Primary energy consumption in 2030 - Final energy consumption in 2030	 148 116	 125* 104	Mtoe
Level of electricity interconnectivity by 2030	8	10	%

* *Corresponding to a 43% reduction of 2030 primary energy consumptions foreseen by PRIMES 2007 scenario.*

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Decarbonisation / GHG and renewable energy

	2016	2030	UNITS
Planned share of energy from renewable sources in gross final consumption of energy in 2030	17.4	30	%
Estimated share of renewable sources in the heating and cooling sector (end point of estimated trajectory for RES-H/C)	18.9	33.1	%
Estimated share of renewable sources in the electricity sector (end point of estimated trajectory for RES-E)	34.0	55.4	%
Estimated share of renewable sources in the transport sector (end point of estimated trajectory for RES-T)	6.5	21.6	%
(Other national GHG objectives and targets consistent with the Paris Agreement and the existing long-term strategies)	n.a.	n.a.	
(Other sector targets and adaptation goals, if available)*	*	*	

ADDITIONAL COMMENTS:

** In 2015 Ministry of Environment approved the National Adaptation Strategy. The National Plan on Adaptation has recently gone through a public consultation. Targets and goals on adaptation will be set directly by Regions at local level, based on the principles and guidelines included in the Strategy and the Plan.*

Energy efficiency

	2016	2030	UNITS
National contribution for energy efficiency: - Primary energy consumption in 2030 - Final energy consumption in 2030	148.0 115.9	125.0* 103.8	Mtoe
Cumulative amount of energy savings to be achieved over the period 2021-2030 under Article 7(1)(b) on energy saving obligations of Directive 2012/27/EU	n.a.	51.4	Mtoe
Indicative milestones of the long-term strategy for the renovation of the national building stock (if available)	n.a.	5.7**	Mtoe
Total floor area to be renovated or equivalent annual energy savings to achieved under Article 5 of Directive 2012/27/EU	1.4	6.2***	Mm^2

ADDITIONAL COMMENTS (IF ANY):

The main contributions on energy efficiency are expected from civil sector (residential and services) and transport, also through the electrification of final consumptions.

** Corresponding to a 43% reduction of 2030 primary energy consumptions foreseen by PRIMES 2007 scenario.*
*** Annual savings foreseen for 2030 due to building renovation. For 2040 foreseen annual savings will increase up to 11.4 Mtoe, approximately.*
**** Corresponding to an annual increase of 3% of the total floor area of central government buildings.*

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Interconnections / market integration / energy poverty

	2016	2030	UNITS
Level of electricity interconnectivity by 2030	8*	10*	%
Cross border interconnection capacities for electricity	9285	14375	MW
Usage rates - Cross border interconnection capacities for electricity	Import 74** Export 11	n.a.	%
The cross border wholesale price differential: yearly average of absolute hourly price differentials of €/MWh	>2	n.a.	€/MWh
The electricity demand and possible import need: nominal transmission capacity / peak load 2030	27	35	%
The electricity supply and the export potential: nominal transmission capacity / installed renewable generation capacity 2030	28	25	%
Market integration			
Energy poverty	8.6	7	%***

ADDITIONAL COMMENTS ON INTERCONNECTIVITY:

The very high capacity of non programmable energy sources foreseen for 2030 makes it very difficult to reach the target (calculated as ratio between Net Transfer Capacity and total generation capacity).

* *Excluding interconnections with Montenegro and Tunisia.*

** *Calculated as ratio between total import (export) and the yearly average of hourly net transfer capacities.*

*** *% of families suffering from energy poverty.*

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Security of supply, R&I and competitiveness

SECURITY OF SUPPLY (non-quantitative objectives)

National objectives with regards to security of supply.

- The energy dependence will decrease significantly, going from 77.5% in 2016 to 63.5% in 2030; this is the combined effect of policies on energy efficiency and renewables.
- Security and flexibility of the electricity system. Considering that the planned 2030 electricity system will mostly rely on gas and RES, with growing distributed generation, it is planned to introduce new architectures and management methods (eg including renewables, storage and demand) and to remove the obstacles that slow down the interventions on the networks.
- For natural gas diversification of the supply sources, (eg. LNG) and improvement of the flexibility of the national infrastructures (eg. by increasing the gas storage capacity).
- Given the time needed for the progressive transition to a lower fossil-fuelled energy system, the role of a national environmentally and technologically advanced, efficient and competitive downstream oil industry is still important. It will ensure the reliability, sustainability and security of supply through, for example, biorefineries processing advanced feedstock, for a transition to advanced biofuels and new products with high environmental compatibility.

Security of supply, R&I and competitiveness

(non-quantitative objectives)

RESEARCH, INNOVATION AND COMPETITIVENESS

National objectives and funding targets for public and private research and innovation relating to the Energy Union.

- Italy is part of the EU SET-Plan and is a promoter of Mission Innovation launched at COP21 to boost frontier projects for clean energy technologies and committed to double public funds for R&D for clean energy (from 222 Million Euro in 2013 to 444 Million Euro in 2021)
- Development of advanced clean energy materials enabling high performance and low costs for PV, energy storage, efficiency in buildings and industrial processes, components of electric power transmission lines.
- Development of management models of electricity system and grids that favor the integration of renewable and non-programmable generation, self-production, storage, energy communities and aggregators.
- Application of advanced information technologies, internet of things, peer to peer to the electricity system, to improve grid security and resilience.
- Development of models and tools to increase the penetration of the electric mobility in the transport sector and improve its integration and interaction with the electricity system.
- Upgrade of electricity grids, smart grids. Evolution of distribution grids, with focus both on hardware components (eg to make networks bi-directional) and software (eg to enable demand response management initiatives).

COOPERATION & GOOD PRACTICES

IN WHAT AREAS WOULD YOU LIKE TO SEE FURTHER COOPERATIVE WORK WITH OTHER MEMBER STATES/THE COMMISSION?

An important topic on which address specific cooperative work is the implementation of the planned development of cross-country infrastructures. Moreover, the sharing of scenarios on electricity market among countries will help to evaluate their consequences on international trade of electricity. The Commission could play a stronger role to promote such exchanges.

WHAT ELEMENT(S) OF YOUR DRAFT PLAN WOULD YOU RECOMMEND AS 'GOOD PRACTICE' FOR OTHER MEMBER STATES?

- ***The Governance set up**: In order to ensure an holistic approach an intergovernmental "steering committee" composed by Ministry of Economic Development, Ministry of Environment, and Ministry of Transport has been set up.*
- ***Involvement of the public and stakeholders:** Public consultation has an important role in Italy. The Italian NECP will be subject to the Strategic Environmental Assessment (SEA) procedure and in this framework the Environmental report elaborated on the NECP will be open for a wide consultation.*
- ***Development of strong analytical base and projection**: Due to the cross cutting nature of the Plan a "Modelling and Scenarios" technical working group composed by public institutes dealing with climate, energy and economic issues has been established. A link among models and tools has been implemented in order to elaborate a coordinated Energy, GHGs, and Economy analysis.*

PLANNED NEXT STEPS FOR THE FINALISATION OF THE PLAN

REGIONAL COOPERATION

Besides the on going cooperation for the implementation of the planned interconnections (gas and electricity), the cooperation with neighbouring countries will be important for the implementation of the Plan and will be part of our work for 2019.

PUBLIC CONSULTATION

In 2019 will be organized: 1) wide public consultation, including local authorities, through the institutional NECP web site platform 2) public auditions with Italian Parliament 3) thematic meeting with energy and climate stakeholders 4) public consultation on the Environmental Repot of the NECP elaborated in the framework of the Strategic Environmental Assessment (SEA).

POLITICAL ENDORSEMENT

The dialogue with the Parliament will benefit from the work currently performed by the Commission X of the Chamber of Deputies, aimed to understand how the following target can be met: delivery to the market of sustainable technologies, improvement of energy efficiency, ensure energy security and flexibility and reduce energy costs. A dialogue with regions and municipalities will start in order to share targets and some measures.

OTHER NEXT STEPS

Continuous dialogue with the Commission

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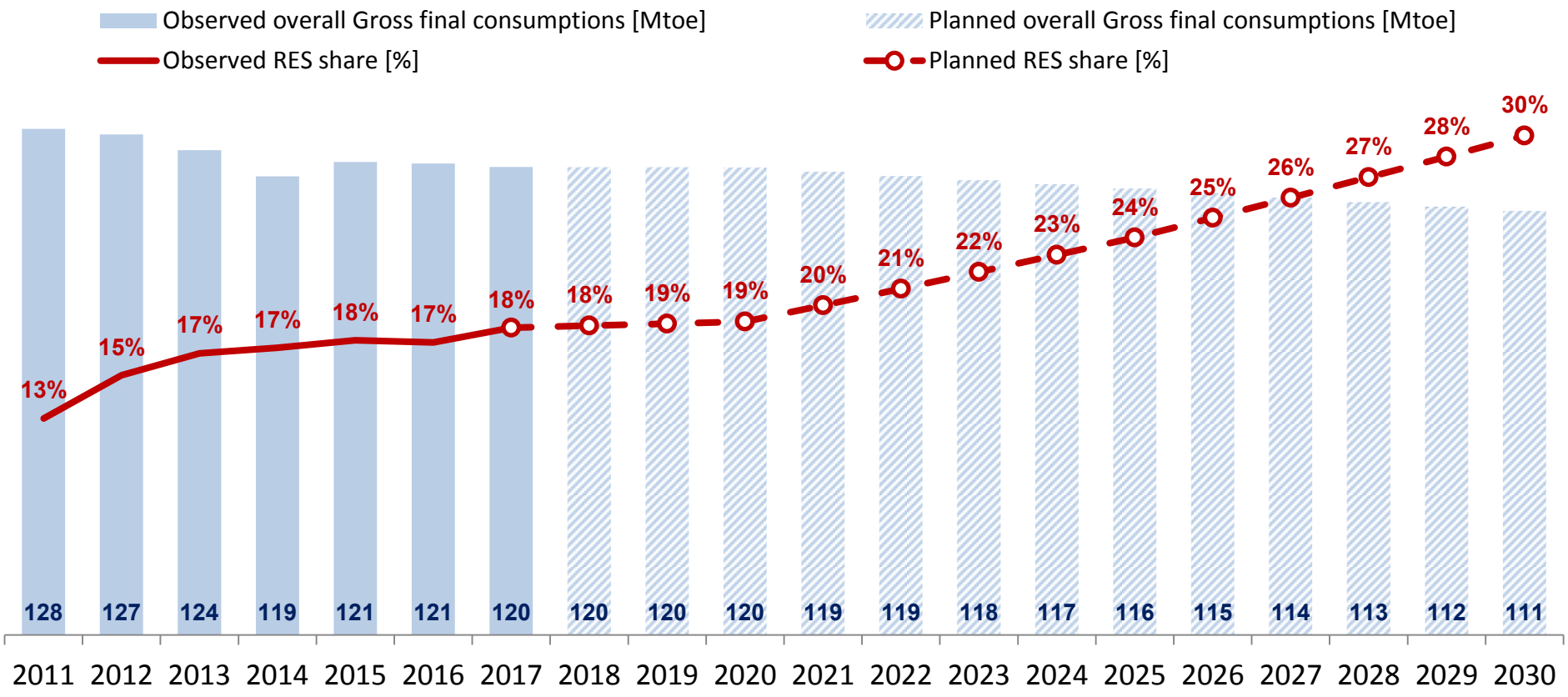
Back-up

Decarbonisation / GHG and renewable energy

Trajectory of overall RES share towards 2030 planned national contribution to EU target



- RES share acceleration starting from 2020, along with implementation of planned policies

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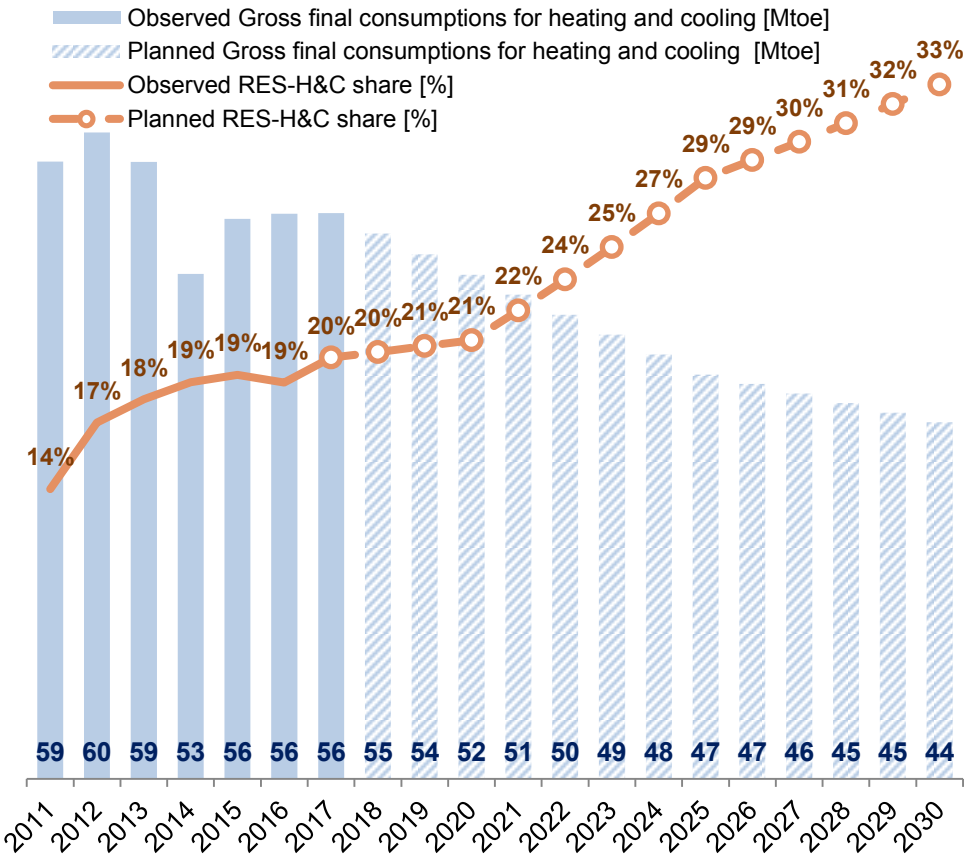
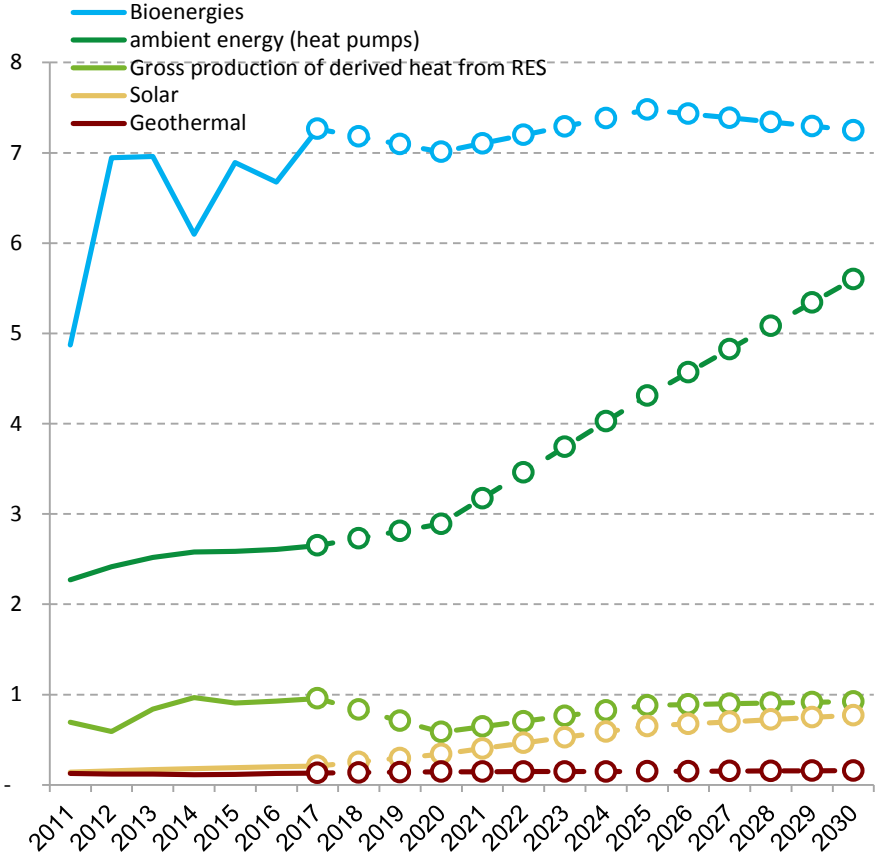
Decarbonisation / GHG and renewable energy

RES trajectories in Heating and cooling sector until 2030 [Mtoe]





- Stable contribution of biomass (air quality constraints)
- Sharp increase of ambient energy use, up to around 5,5 Mtoe

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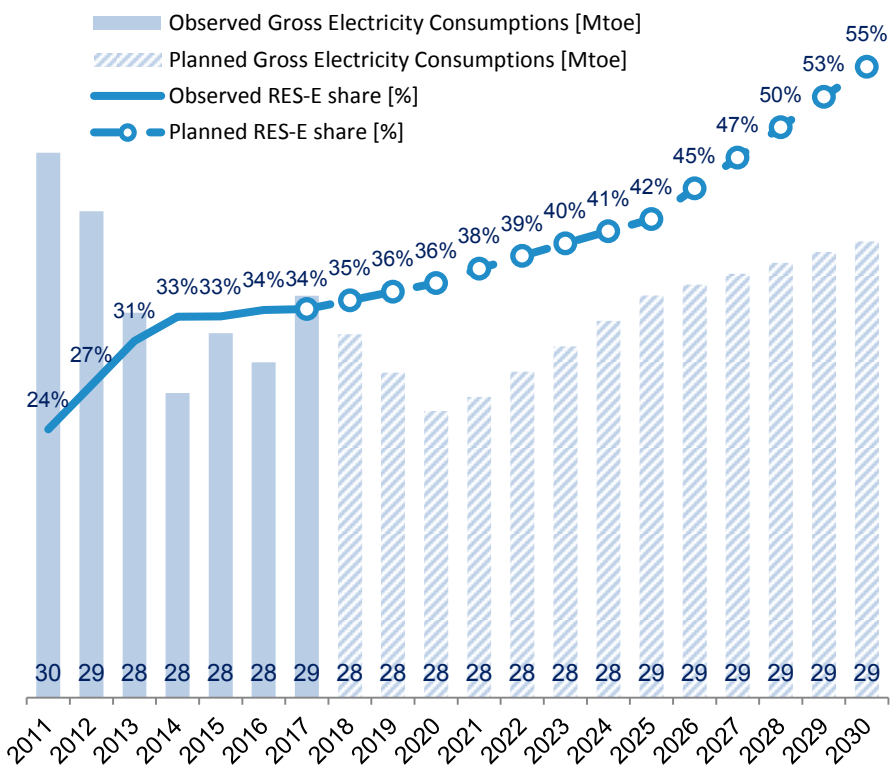
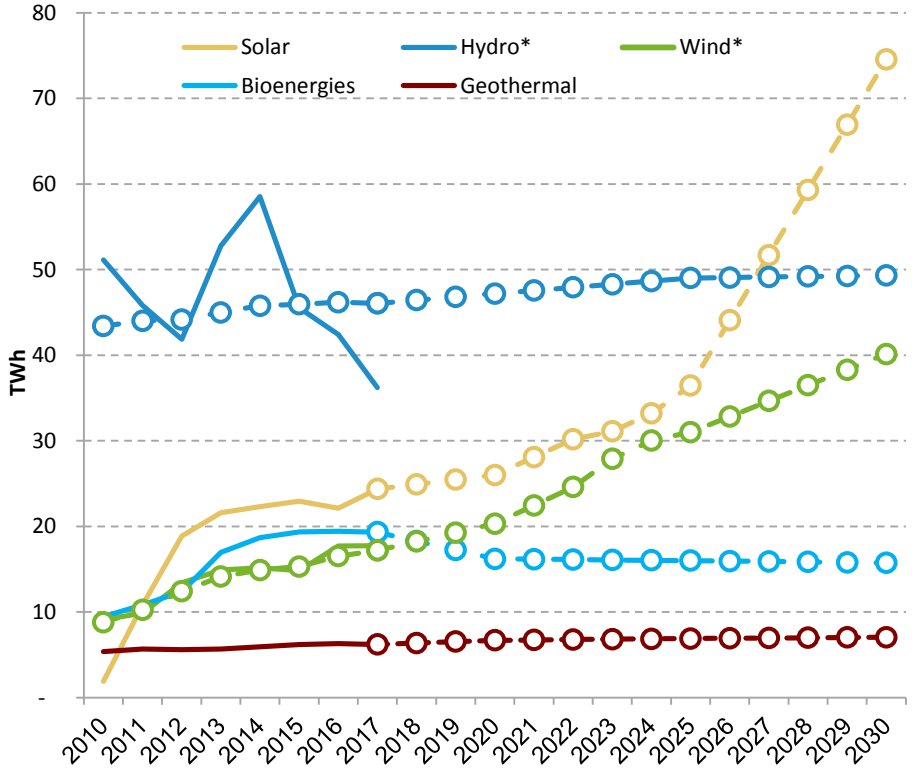
Decarbonisation / GHG and renewable energy

RES trajectories in electricity sector until 2030





*normalized (dotted line), actual production (continuous line)

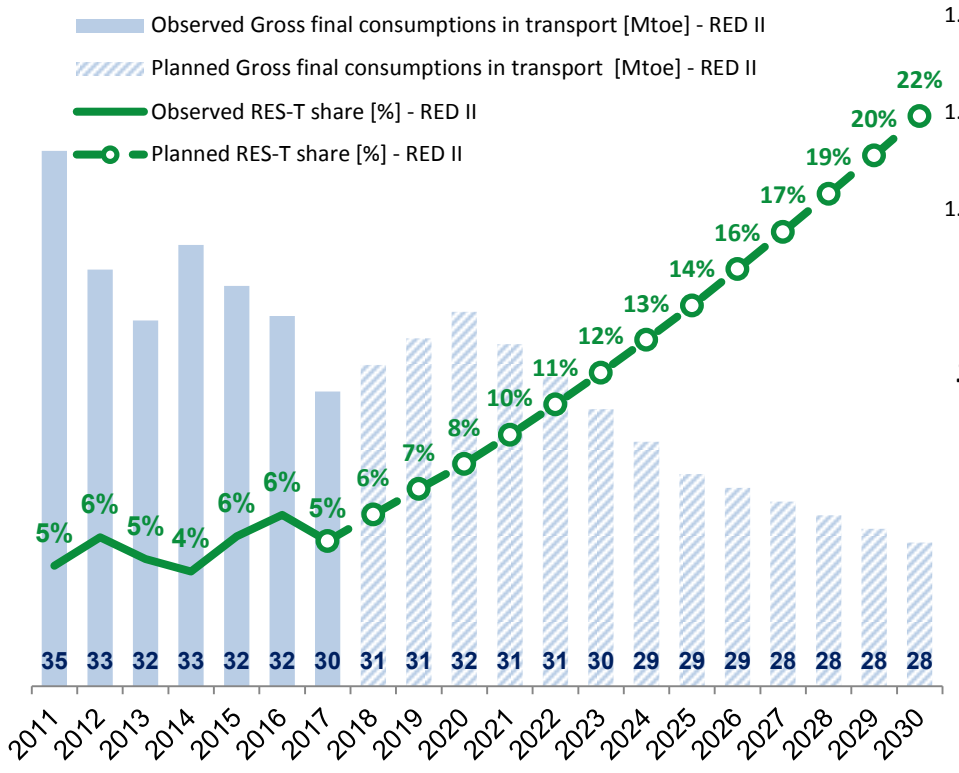
–**RES capacity is expected to grow up to 93 GW in 2030, with almost 40 additional GW with respect to 2017**. The main contribution will be given by solar PV, with almost +30 GW, followed by wind, with almost +9 GW

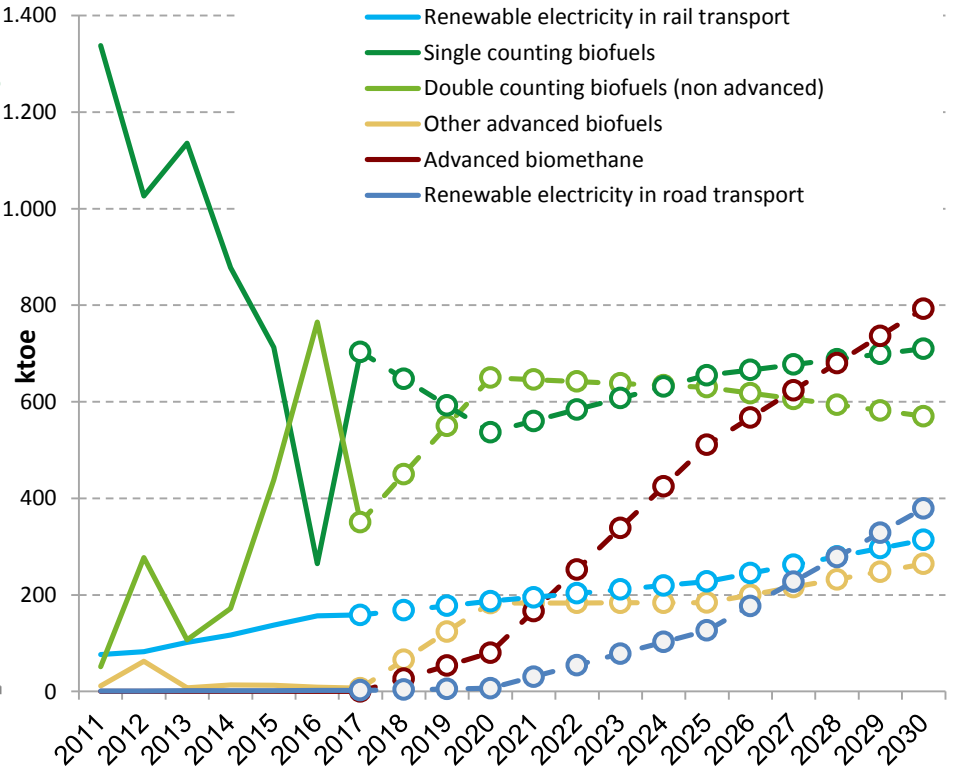
–RES energy is expected to grow up to about 187 TWh, starting from 113 TWh in 2017. Again, **the highest increase will be due to solar energy (+50 TWh), followed by wind energy (+23 TWh)**

European Commission

Decarbonisation / GHG and renewable energy

RES trajectories in transport until 2030



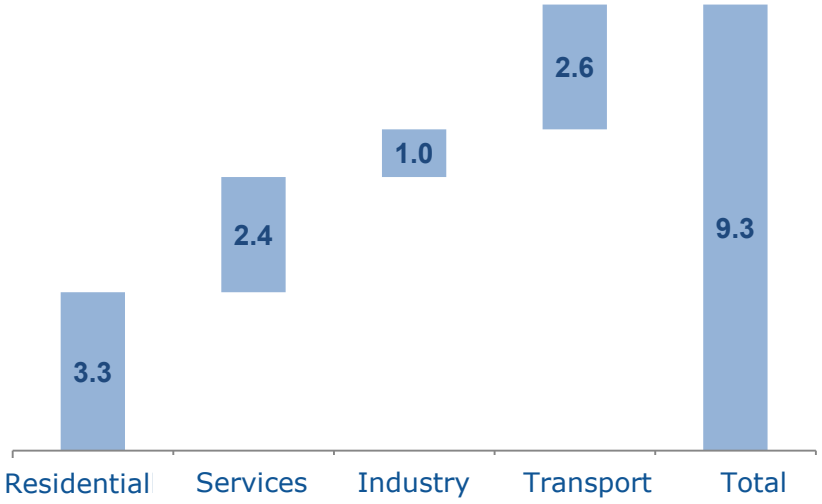


- Obligation higher than RED II art 25 in order to ensure the achievement of overall RES share of 30%;
- Advanced biofuels will reach around 8% (more than twice the RED II target) thank to the contribution of biomethane (planned to cover 75% of advanced biofuels);
- Strong growth of RES electricity consumed by road vehicles (up to 380 ktoe).

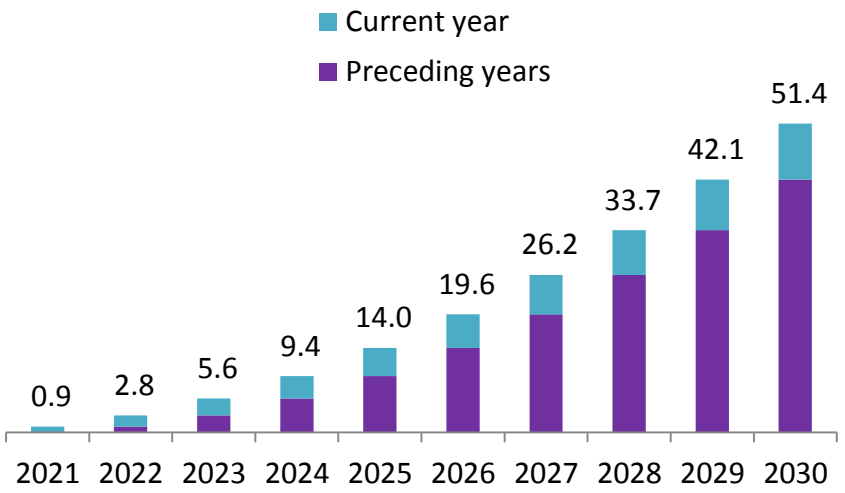
European Commission

Energy efficiency

2030 savings with active policies (Article 7) by economic sector (Mtoe)



Cumulative 2021-2030 savings with active policies (Article 7) (Mtoe)



- *The main contributions on energy efficiency are expected from civil sector, with 2030 savings equal to 5.7 Mtoe, related to the residential sector (3.3 Mtoe) and Services (2.4 Mtoe). Moreover, a relevant contribution is expected in transport (2.6 Mtoe)*
- *Cumulative savings in the period 2021-2030 sum up to 51.4 Mtoe*