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# **Synergy of RES and EE measures**

## **- Role of RES in EED art 7 target delivery: Case Croatia -**

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# NECP targets for 2030

<b>ETS emissions reduction compared to 2005</b>	At least 43 %
<b>Non-ETS emissions reduction compared to 2005</b>	At least 7 %
<b>RES share in gross final energy consumption</b>	36.4 %
<b>RES share – electricity</b>	63.8 %
<b>RES share – heating and cooling</b>	36.6 %
<b>RES share in transport</b>	13,2 %
<b>Primary energy consumption</b>	344.4 PJ
<b>Final energy consumption</b>	286.9 PJ

# Art. 7 EED target and measures

Art. 7 EED target 2030		[PJ]
Cumulative savings	50% EEOS + 50% Alternative measures	54,0
Annual savings		1,0

Nr.	Measure
ENU-1	Energy Efficiency Obligation Scheme
ENU-3	Energy renovation of Multi-app buildings
ENU-4	Energy renovation of single-family houses
ENU-5	Energy renovation of public buildings
ENU-7	Energy Management System in public sector
ENU-8	Energy renovation of public lighting
TR-9	Financial incentives for energy efficient vehicles
TR-11	Stimulating integrated and intelligent transport
TR-12	Eco-driving trainings
UET-3	EE measures in households in energy poverty

- EEOS established in 2019 through Law on Energy Efficiency
- Energy suppliers are obliged to achieve energy savings in final energy consumption through one of the following possibilities:
  - Investing in measures for improvement in EE in end-use sectors, **including small-scale RES and co-generation** for self-supply and smart-metering
  - Purchase of energy savings from third parties
  - Payment of the fee in EE Fund
- First reporting period for suppliers is March 2020, hence results still not known
- Energy saving calculation methodology for typical EE measures prescribed in Regulation of M&V of energy savings
  - Methodology used for calculation of energy savings for alternative measures as well

- Energy renovation of buildings is dominant alternative measures (in both periods)
- Definition of energy renovation of a building (as per Law on Energy efficiency):
  - implementation of measures for improvement of EE of a building, which include thermal insulation of building envelope, improvement of HVAC, DHW and lighting systems, building automatization and **introduction of RES**
- Energy renovation programmes in period 2014-2020
  - Public buildings – ESCO and grant programmes – all included RES measures – higher RES share was one of evaluation criteria
  - Multi-apartment buildings – RES measures eligible only in combination with building envelope measures
  - Single-family houses – individual RES measures eligible for grants (high share of fuel wood in heating -> switch to biomass)

- Regulation on M&V of energy savings prescribes methods for calculation of energy savings for following RES measures:
  - Photovoltaic systems
    - FES = electricity produced and consumed in a building
  - Solar thermal systems
    - FES = heat produced by solar thermal system
  - Heat pumps
    - FES = based on difference between SPF of heat pump and efficiency of existing system
  - Biomass boilers included in the methodology for general measure of boiler replacement
    - FES = based on difference between efficiencies of new and existing system

- RES measures part of national system for M&V of energy savings (SMiV)
- Just for period 2014-2016, SMiV contains:
  - > 50 photovoltaic systems
  - > 400 solar thermal systems
  - > 50 heat pumps
  - > 300 biomass boilers
- Data for 2017-2019 still not final yet, but due to heavy implementation of energy renovation programmes in this period, these number will increase significantly

- RES for both heat and electricity (self-supply) are treated as EE measures ever since 2008 (adoption of first Law on end-use efficiency and 1<sup>st</sup> NEEAP)
  - RES production for self-supply that eliminates use of grid-bound energy and fossil fuels is treated as energy saving
- Especially in programmes for energy renovation of buildings, RES are not only eligible but additionally supported through evaluation system
- This additionally contributes to the achievement of nZEB standard in energy renovation and decarbonisation of building stock in line with EPBD



# Thank you for the attention!

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