

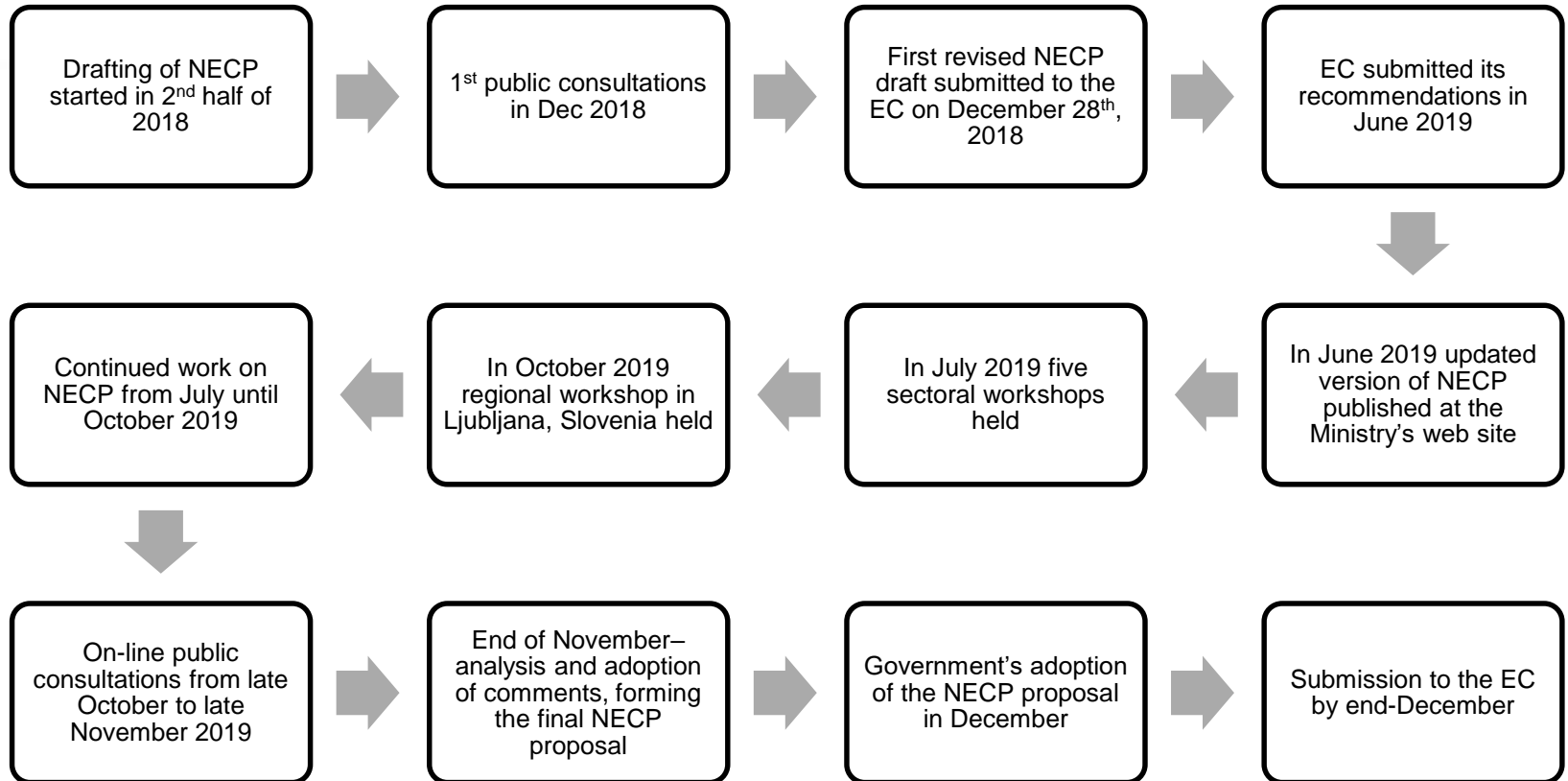
Evaluation of EE policy measures in National Energy and Climate Plan

- Case Croatia -

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NECP development process (2018-2019)



- Covering five dimensions of the Energy Union:
 - Energy security (diversification, imports, flexibility)
 - The internal energy market (interconnections, transmission infrastructure, market integration, energy poverty)
 - Energy efficiency
 - Decarbonisation (GHG emissions and removals, renewable energy)
 - Research, innovation and competitiveness

- **Impact assessment** of the planned policies and measures
 - On energy system and GHG emissions and removals
 - Macroeconomic impacts

- National plans covering the first period from 2021 to 2030 should pay particular attention to the **2030 targets** for **greenhouse gas emission reductions, renewable energy, energy efficiency** and **electricity interconnections**

NECP goals

- Set for all five dimensions
- Main goals are:

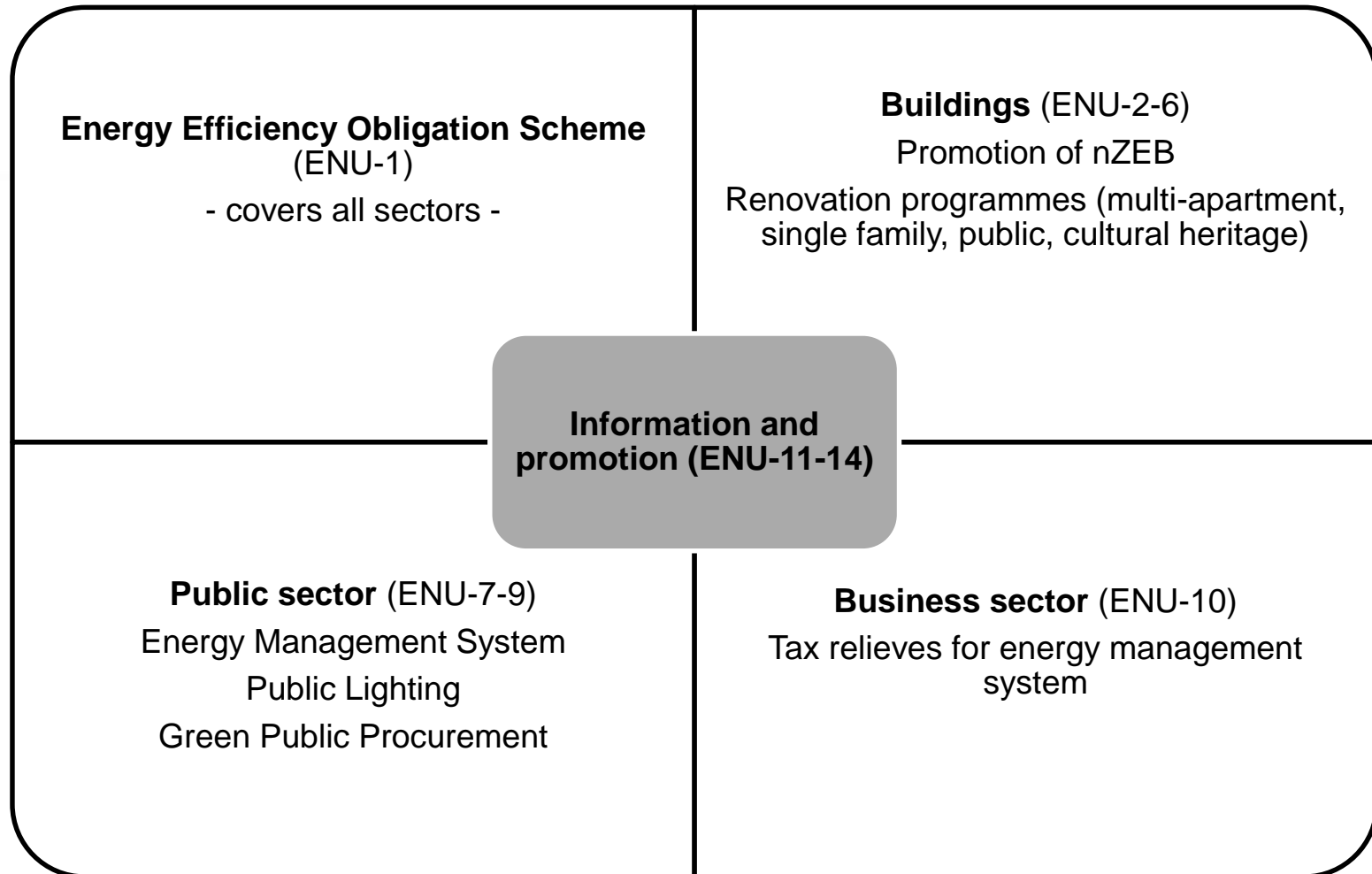
ETS emissions reduction compared to 2005*	At least 43 %
Non-ETS emissions reduction compared to 2005	At least 7 %
RES share in gross final energy consumption	36,4 %
RES share in transport	13,2 %
Primary energy consumption	344,4 PJ
Final energy consumption	286,9 PJ

* For the entire emission trading sector

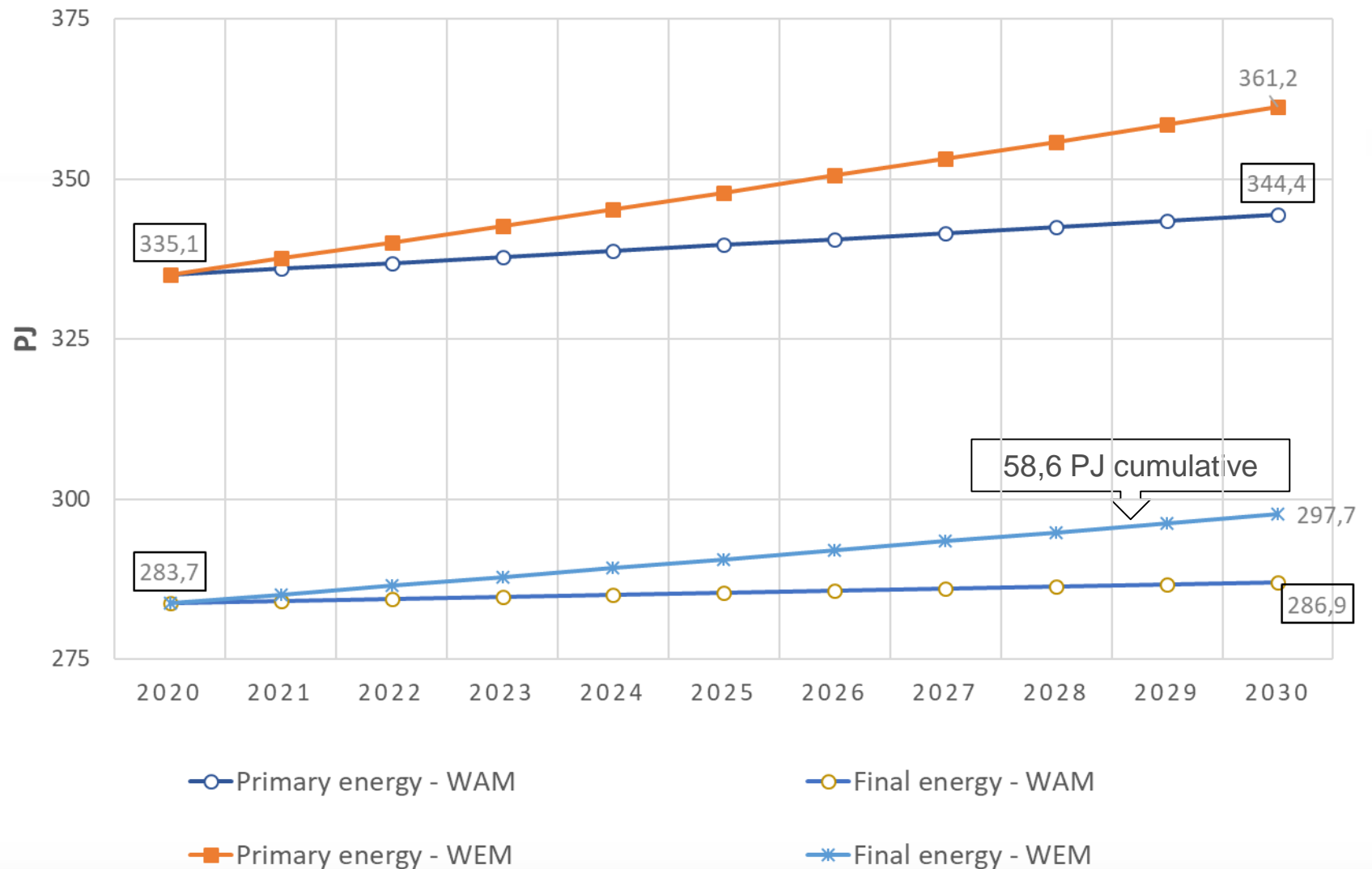
- 86 measures proposed
 - 34 decarbonisation – emissions
 - 12 decarbonisation – transport
 - 4 decarbonisation – renewable energy sources
 - **17 energy efficiency (14 in end-use sectors)**
 - 9 energy security
 - 5 internal energy market
 - 6 research, innovation and competitiveness

- The most important areas are:
 - In power sector: renewables (no financial support, just ETS)
 - **In buildings: NZEB renovation and construction**
 - In transport: biofuels and e-vehicles

EE measures (without transport)



Energy consumption WEM and WAM



Evaluation of individual EE measures

Art. 7 EED target 2030	[PJ]
Cumulative savings	54,0
Annual savings	1,0

Nr.	Measure	Evaluation method/principle	Results
ENU-1	EEOS	50% of Art.7 target to be achieved by EEOS	27,0 PJ cumulative 0,500 PJ annually
ENU-3	Multi-app buildings	Deemed savings: 520.000 m2 annually	0,148 PJ annually
ENU-4	Single-family houses	Deemed savings: 350.000 m2 annually	0,191 PJ annually
ENU-5	Public buildings	Deemed savings: 350.000 m2 annually	0,169 PJ annually
ENU-7	EMS in public sector	Engineering estimates	0,100 PJ annually
ENU-8	Public lighting	Deemed savings: 770.000 lamps	0,090 PJ annually

Evaluation of individual EE measures - example

Shares in total building stock	Construction period	Office	Education	Hospitals	Sports	residential	Other non-residential
Continental	< 1970	0,12	0,16	0,10	0,00	0,02	0,01
	1971-2005.	0,07	0,15	0,06	0,01	0,04	0,01
	> 2005.						
Coastal	< 1970	0,04	0,06	0,03	0,00	0,01	0,00
	1971-2005.	0,02	0,05	0,02	0,01	0,01	0,00
	> 2005.						
UFES [kWh/m ²]	Construction period	Office	Education	Hospitals	Sports	residential	Other non-residential
Continental	< 1970	188,19	154,85	234,59	124,6	126,26	197,15
	1971-2005.	141,1	133,66	122,91	50,26	66,61	113,45
	> 2005.						
Coastal	< 1970	108,15	68,33	66,98	126,86	73,16	100,66
	1971-2005.	80,75	58,89	21,4	87,65	58,94	47,69
	> 2005.						
FES [kWh]	Construction period	Uredske	Obrazovne	Bolnice	Sportske dvorane	Stambene	Ostale nestambene
Continental	< 1970	7.614.729,99	8.432.115,96	8.527.531,57	50.849,40	949.591,58	602.917,94
	1971-2005.	3.398.018,03	7.144.686,05	2.656.103,71	201.027,31	904.742,19	360.759,98
	> 2005.						
Coastal	< 1970	1.340.937,99	1.393.859,11	759.649,67	32.221,27	306.675,44	132.187,01
	1971-2005.	529.510,70	988.222,46	180.905,82	163.992,25	219.776,25	26.073,31
	> 2005.						
Annual FES [GWh / PJ]		46,92 / 0,169					
CUM 21-30 FES [PJ]		9,295					

Thank you for the attention!

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