



REPUBLIC OF CROATIA

MINISTRY OF ENVIRONMENT  
AND ENERGY

# Renewable energies in the National Energy and Climate Plan

**The goal of 90% renewables by 2050?**

*Zagreb, 16 October 2019*

# ENERGY POLICY

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EU LEGISLATION

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graph TD; A[EU LEGISLATION] --- B[NECP]; B --- C[NATIONAL LEGISLATION]; C --- D[ENERGY STRATEGY];
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The diagram illustrates the hierarchy of energy policy. It consists of four horizontal bars, each representing a different level of policy. The top bar is blue and labeled 'EU LEGISLATION'. Below it is a green bar labeled 'NECP'. The third bar is light green and labeled 'NATIONAL LEGISLATION'. The bottom bar is orange and labeled 'ENERGY STRATEGY'. Each bar is connected to a larger, empty rectangular box of the same color, suggesting a flow or relationship between these levels.

NECP

NATIONAL LEGISLATION

ENERGY STRATEGY

# EU LEGISLATION

- **Energy Union** was presented in 2015
- **Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action** was adopted in December 2018
- **Integrated National Energy and Climate Plans (NECPs)** – Part II of Regulation
- Clean Energy Package will play an important role in the energy sector in the next ten years

# 5 DIMENSIONS OF THE ENERGY UNION



**Decarbonisation**



**Energy Efficiency**



**Energy Security**



**Internal Energy Market**



**Research, Innovation & Competitiveness**

# NATIONAL LEGISLATION

- Current strategy was adopted in 2009 and covers the period until 2020
- It was adopted before Croatia joined the EU
- In 2018, Minister Ćorić initiated the development of the new energy strategy
- Analytical parts were made in 2018 and 2019:
  - „Green Book”
  - „White Book”

# NEW LEGISLATION

- 1 January 2016, new Act on Renewable Energy Sources and High-efficiency Cogeneration (OG 100/15)
- December 2018, amendments to the Act on Renewable Energy Sources and High-efficiency Cogeneration (OG 111/18)
- 1 January 2019, new Regulation on promotion of electricity generation from renewable energy sources and high-efficiency cogeneration (OG 116/18)

# GENERAL GOALS

## Growing, flexible & sustainable energy production

- Reduce dependency on energy imports by halting the decline in domestic production
- Invest in energy production from the potentials available to the Republic of Croatia
- Ensure an adequate energy mix with lower CO2 emissions

## Integrated energy infrastructure

- Develop infrastructure and alternative energy supply routes

## Improving energy efficiency

- Develop measures to increase energy efficiency

# THE MAIN GOALS OF THE DEVELOPMENT OF FUTURE ENERGY SYSTEMS

## Security of supply

- Increasing security of supply through domestic production and alternative supply routes

## Energy efficiency first!

- Energy savings are the most convenient method for cutting consumer costs and reducing greenhouse gas emissions

## Electrification & Clean Production

- Decarbonising power generation, while at the same time electrifying our energy use



# ANALYTICAL BACKGROUNDS

**S0 – Scenario with existing measures**

**S1 - Accelerated energy transition scenario**

**S2 – Moderate energy transition scenario**

## Basic assumptions

- Achieving EU and Paris Agreement goals for climate and energy
- Improving energy efficiency of the entire chain of production, transmission / distribution and energy consumption
- Considering ecosystem sustainability, the development of circular economy, increasing competitiveness and the development of industries that directly contribute to the achievement of low-carbon development goals

# NATIONAL ENERGY AND CLIMATE PLANS

- **Draft NECP was submitted to EC by 31 December 2018**
- **Document was prepared in both Croatian and English**

- **EN version**

<https://mzoe.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/First%20Draft%20of%20the%20Integrated%20Energy%20and%20Climate%20Plan%20for%20the%20Period%20from%202021%20to%202030.pdf>

# RENEWABLE ENERGY TARGETS

	2016 *	2030	UNITS
Planned share of energy from renewable sources in gross final consumption of energy in 2030		<b>36.4</b>	<b>%</b>
Estimated share of renewable sources in the heating and cooling sector (end point of estimated trajectory for RES-H/C)		<b>35.3</b>	<b>%</b>
Estimated share of renewable sources in the electricity sector (end point of estimated trajectory for RES-E)		<b>63.8</b>	<b>%</b>
Estimated share of renewable sources in the transport sector (end point of estimated trajectory for RES-T)		<b>13,2</b>	<b>%</b>
Other national GHG objectives and targets consistent with the Paris Agreement and the existing long-term strategies		<b>/</b>	
Other sector targets and adaptation goals, if available		<b>/</b>	

# **SECURITY OF SUPPLY, R&I AND COMPETITIVENESS**

## **SECURITY OF SUPPLY**

- Diversify gas delivery routes and increase gas storage capacity
- Construct pumped-storage hydroelectric power plants
- Explore hydrocarbon deposits in Slavonia and the Dinarides and gas deposits in Southern Adriatic

## **RESEARCH, INNOVATION AND COMPETITIVENESS**

- National research related targets provided in S3 strategy are given for the entire scientific and research community, gap between R&D sector and business sector, business sector internationalization, etc.
- NECP is the first document that will provide specific goals for RIC relevant for the Energy Union

# ELIGIBLE ELECTRICITY PRODUCER (with PPA)

## RES power plants which are connected to the grid – September 2019

<i>Power plant type</i>	<i>Number of plants</i>	<i>Installed capacity (kW)</i>
<i>Wind parks</i>	21	555.800,00
<i>Solar plants</i>	1.230	53.434,25
<i>Small hydro power plants</i>	13	5.785,00
<i>Biomass power plants</i>	33	70.714,00
<i>Biogas power plants</i>	39	42.722,00
<i>Cogeneration</i>	6	113.293,00
<i>Landfill and water treatment gas power plants</i>	1	2.500,00
<i>Geothermal power plants</i>	1	10.000,00
<b>Total</b>	<b>1.344</b>	<b>854.248,35</b>

Source: HROTE (CROATIAN ENERGY MARKET OPERATOR Ltd.)

# PROJECTS IN PROGRESS

Projects in progress – contracts with CROATIAN ENERGY MARKET OPERATOR Ltd. (HROTE), but not yet connected to the grid – September 2019

<i>Power plant type</i>	<i>Number of projects</i>	<i>Planned capacity [kW]</i>
<i>Wind parks</i>	5	162.000,00
<i>Solar plants</i>	2	32,00
<i>Small hydro power plants</i>	3	934,00
<i>Biomass power plants</i>	18	39.394,00
<i>Biogas power plants</i>	7	9.200,00
<b>Total</b>	<b>35</b>	<b>211.560,00</b>

Source : HROTE

# CONCLUSION

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- Croatia will invest significant efforts into further development of renewable energy sources over the next ten years
- Majority of RES will be PV and wind
- We also intend to develop geothermal energy and bioenergy
- Bioenergy will be linked to other sectors such as agriculture

## CONCLUSION II

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- Transport sector needs additional boost throughout the EU (R&D, support of new technologies, etc.)
- Biofuels will be important to reach the goal in transport
- Electrification will also be important
- The remaining part will have to be boosted by new technologies such as HYDROGEN



# CONCLUSION III

- RES are an important part of decarbonisation and the new „Green Deal”
- Goal of 90% of RES in the EU by 2050 is ambitious
- It needs to be supported by new technologies
- It will not be achievable without significant investment into the Research and Innovation sector
- EU financing is an important segment for reaching this goal



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**THANK YOU  
FOR YOUR ATTENTION!**

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