Overview of energy sector in Croatia

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• Basic Croatian energy strategy objectives
• Structure of energy legislative framework
• Competent authorities
• Electrical system and electricity sector
• Gas system
• Croatian oil pipeline & storage company
• Heating
• Energy efficiency
• Renewable energy sources
BASIC CROATIAN ENERGY STRATEGY OBJECTIVES

- National Energy Strategy is adopted by the Croatian Parliament on October, 16th 2009.

- The Croatian Energy Strategy has three basic energy objectives:
  - Security of energy supply;
  - Competitiveness of energy sector;
  - Sustainable development.
STRUCTURE OF ENERGY LEGISLATIVE FRAMEWORK

Transposition of the 3rd Package

- ELECTRICITY MARKET ACT (2013)
- GAS MARKET ACT (2013)
- ACT ON REGULATION OF ENERGY ACTIVITIES (2012)
- THERMAL ENERGY MARKET ACT (2013)
- OIL AND OIL DERIVATIVES MARKET ACT
- ENERGY EFFICIENCY ACT (2014)
- RENEWABLE ENERGY ACT (IN PREPARATION)
ELECTRICITY SECTOR

Electricity Production in Croatia (GWh)

<table>
<thead>
<tr>
<th>Year</th>
<th>Power plants</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydro</td>
<td>Thermal</td>
</tr>
<tr>
<td>2010</td>
<td>8309</td>
<td>4787</td>
</tr>
<tr>
<td>2011</td>
<td>4581</td>
<td>5179</td>
</tr>
<tr>
<td>2012</td>
<td>4772</td>
<td>4699</td>
</tr>
</tbody>
</table>

Production Capacity in Croatia (MW) , 2012

<table>
<thead>
<tr>
<th>Power plants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydro</td>
<td>2112</td>
</tr>
<tr>
<td>Thermal</td>
<td>1811</td>
</tr>
<tr>
<td>FEED-IN</td>
<td>133</td>
</tr>
<tr>
<td>Industrial</td>
<td>212</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4268</td>
</tr>
</tbody>
</table>
# GAS TRANSPORT SYSTEM DEVELOPMENT

## Technical data - 2002
- 1,641 km of high-pressure pipelines
- 137 MRSs
- Transmission - 2.95 bcm of gas
- max. capacity 560.000 m³/h

## Technical data - 2007
- 2,085 km of high-pressure pipelines
- 9 entry points
- 151 exit points
- DC - new SCADA, CS system
- Transmission - 3.1 bcm of gas

## Technical data - 2014
- 2,775 km of high-pressure pipelines
- 10 entry points
- 172 exit points
- 2 interconnections
- Transmission – 4,5 bcm of gas
- max. capacity 1,200,000 m³/h

![Max. system capacity](chart.png)
The underground gas storage Okoli makes a part of the company Podzemno skladište plina, Ltd. which is owned by PLINACRO that took over management and organisation of natural gas storage activities.

The designed capacity of underground gas storage is 553 million m³.

Maximum injection capacity is 3.8 million m³/day and the maximum withdrawal capacity is 5.8 million m³/day.

There are 36 companies for distribution of natural gas in the Republic of Croatia.

Total gas distribution network in Croatia is 18.386 km long.
For gas supply - registered 56 companies one of which:
- one company registered in supply activities on the wholesale market,
- 35 companies registered for the supply of public services, and perform other supplies on the open market gas.

New projects - for development of strategic gas infrastructure in order to assure the diversification sources of gas and assure stability of supply in the Republic of Croatia, it is envisaged to introduce more flexible sources

Ionian Adriatic Pipeline (IAP)
- natural gas pipeline from Fier in Albania though Montenegro to Split in Croatia (with branch to Bosnia and Herzegovina).
- In Albania, IAP would be connected with the planned Trans Adriatic Pipeline (TAP).

LNG terminal on Krk island
- LNG terminal is a project to build a terminal for receiving special ships for the transportation of liquefied natural gas (LNG), transferring LNG from ships to land tanks, regasification of LNG to obtain natural Gas (NG) and finally the delivery of natural gas in the main gas pipeline network for consumers in the Republic of Croatia and other European countries.
CROATIAN OIL PIPELINE & STORAGE COMPANY

- Strategic pipeline for oil supply of South East and Central European countries and refineries (in operation from 1979)

- Refineries on the route: Rijeka and Sisak (Croatia), Pančevo and Novi Sad (Serbia), Bosanski Brod (B&H), Szazhalombatta (Hungary), Slovnaft (Slovakia), Kralupy & Lilvinov (Czech)

- Installed capacity of 20 million tons of crude oil transport per year

- Pipeline length of 622 km

- Subsea pipeline Omišalj-Urinj, linking the Omišalj Terminal and INA-Refinery Rijeka

- Storage capacity of 1.54 million m³ for oil; 100,000 m³ for oil products

- 5 terminals
HEATING SYSTEM

• Construction and development of central heating systems and thermal energy generation in cogeneration plants in a highly efficient manner, as well as their maintenance and use, are of interest for the Republic of Croatia.

• Heating systems are considered an essential element of energy efficiency and of interest to the achievement of the objectives of energy efficiency in Croatia.
• 13 companies in 18 towns

• Space heating and sanitary hot water

• 143,000 customers, 96 % households category

• Heat is produced in cogeneration plants in the cities of Zagreb, Osijek and Sisak

• In other 15 cities heating plants, block and boiler houses

• 420 km of district heating network
ENERGY EFFICIENCY

• Energy consumption in the EU in 2020 should not exceed 1.474 Mtoe of primary energy, i.e. 1,078 Mtoe of final energy (reduction equivalent 20%)

• Croatian goal: Total energy efficiency should be increased by:
  - 19.77 PJ by 2016 and 22.76 PJ by 2020

• Croatia also needs to achieve the cumulative target of 54.25 PJ total savings by 2020

• Croatia decided to achieve this target through a combination of alternative measures and mandatory schemes. Mandatory schemes are yet to be determined, and through alternative measures it is planned to save 32,094 PJ or 60% of total cumulative mandatory target

• For this purpose, 10 of the existing measures have been taken from the 3rd NAPEnU and repeated with more stringent calculations required by Art. 7
ENERGY EFFICIENCY

• National Coordinating Authority for Energy Efficiency:
  
  – Introduces and continuously upgrades functionality of the system of measurement and verification of energy savings (SMIV)
  
  – Conducts training of all users of SMIV (the first set of regional workshops is planned by the end of the year)
  
  – Develops a central web portal that will integrate all the available information on energy efficiency for all the sectors and citizens - expected in early 2015
  
  – Distributes A Guide through Energy Efficiency Activities
  
  – Promotes energy service contracts as required by the Directive (EED 2012/27 / EU)

• Croatia will finally have a transparent way to check the savings achieved. Through SMIV, it will be able to follow in a single spot the measures that have been implemented, their energy savings, but also the costs of implementing the measures. It will also be evident to which extent the plans at the local and state level have been achieved

• With such an operating system Croatia can provide a good example to most of the EU countries that have not completely resolved the problem of systematic monitoring of the implementation of energy efficiency policies!
The national target for RES = 20% renewable energy sources in gross final consumption by 2020

In 2013, the Government adopted a National Action Plan for renewable energy sources by 2020 (NAP) which revised targets according to the technology in line with market changes and changes in the decline in energy consumption

According to EUROSTAT’s data, in 2012, the share of RES in gross final consumption amounted to 16.8%
THANK YOU FOR YOUR ATTENTION