

Improving statistics on final energy consumption for energy planning in Croatia

**12th Energy Statistics Workshop
Energy Community Secretariat
22 November 2016**

Content



1. Final energy consumption surveys 2012-2014
2. Improvement of energy statistics and energy balances
3. The use of the final energy consumption statistics in Croatia
4. Planning the new activities in energy statistics



FINAL ENERGY CONSUMPTION SURVEYS 2012-2014

Final energy consumption surveys (IPA 2009 PROJECTS)



1. Technical assistance in Business statistics (2012 – 2014)
Energy Survey in Household Sector
2. Technical assistance in Business statistics and Quality Documentation (2012 – 2014)
Energy Survey in Service Sector (Pilot project)
3. Technical assistance in development of business statistics and upgrading of data collection system (2014 -2015)
Energy Survey in Transport Sector (Pilot project)

Purpose of IPA 2009 projects:

- To achieve required compliance level with the EU *Acquis communautaire* in Business Statistics/Energy Statistics;
- To improve the Data Collection System;
- To meet the requirements related to the EU's Energy Efficiency Directive, calculation of energy efficiency indicators and the monitoring of the results achieved in applying measures for energy efficiency.

Survey: HOUSEHOLDS (1)



- Developed methodology and methodological notes for the survey
- Structure of the questionnaire: general information, energy in use in the households, appliances in use for heating, cooking, hot water production, non-thermal energy use, lighting, cooling, economic activities, monthly/annual income, costs for energy.
Size: 60 questions;

Survey: HOUSEHOLDS (2)



- **Data collection:**
 - CAPI - Computer Assisted Personal Interviewers, Blaise software applied
- **Interviewer Manual**, Interviewers trained;
- Informative letter for households and announcements in mass media;
- Mechanisms for data control, inputations, corrections and consolidation;
- Designed **energy data base**.

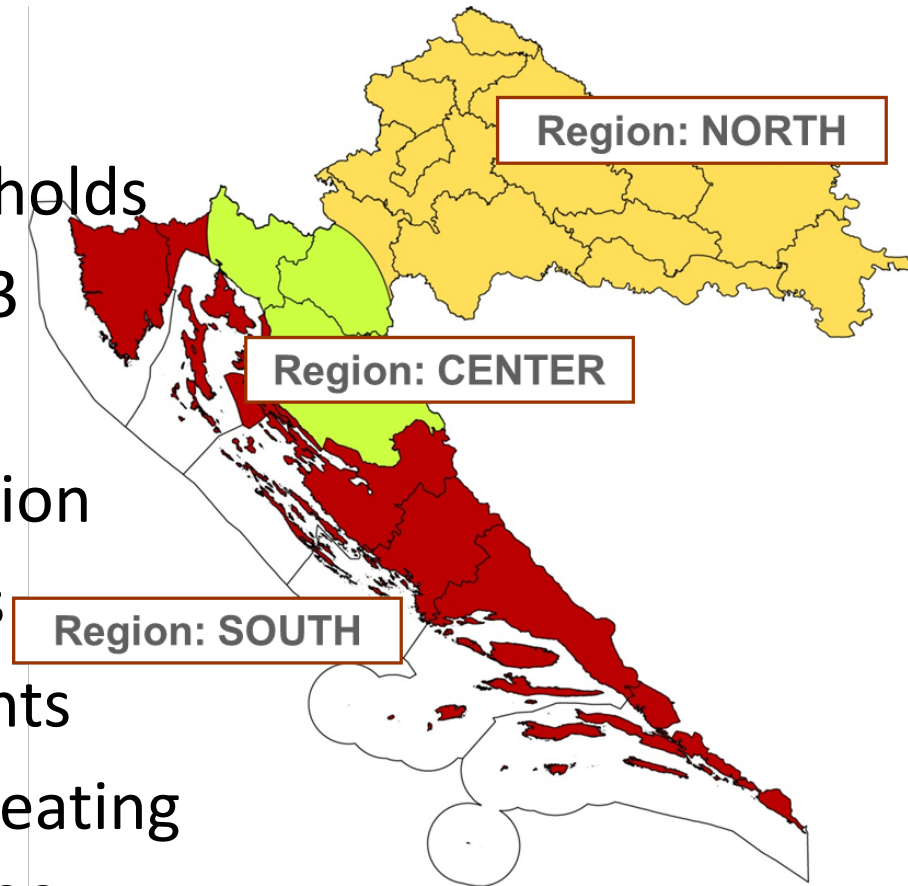


Survey: HOUSEHOLDS (3)



Other parameters:

- **Sample size:** 10.000 households
- **Successful interviews:** 5013
- **Clusters:**
 - south/central/north region
 - urban/rural settlements
 - family houses/apartments
 - central heating /room heating
- **Number of interviewers:** 100
- **Duration of interviewing:** 3 months



Survey: HOUSEHOLDS (4)



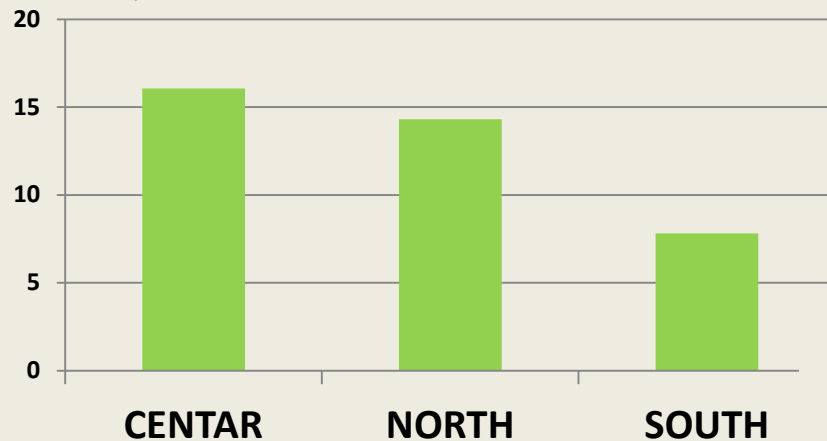
- Quality Report;
- Energy consumption norms;
- Final energy consumption disaggregated on end – use consumptions: HEATING, HOT WATER, COOKING, LIGHTING, NON – THERMAL CONSUMPTION, COOLING
- **Two models applied for end-use consumption assessments:** „detailed comprehensive end-use model” for specific groups of households and „one by one” model

Results: HOUSEHOLDS (6)

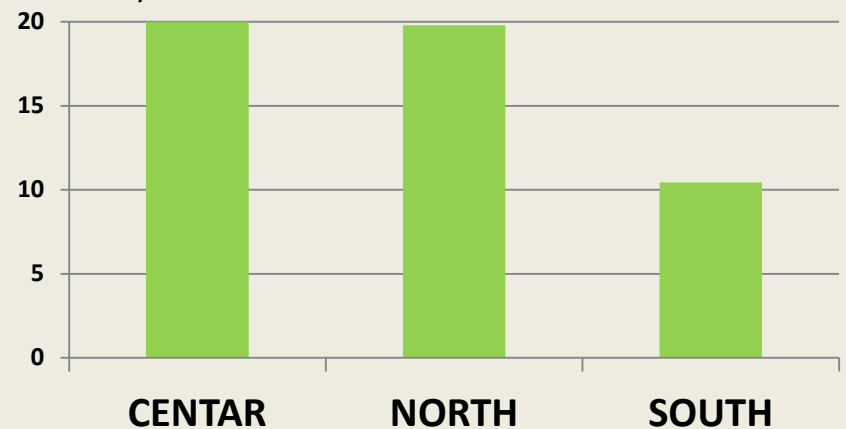


ENERGY CONSUMPTION NORMS FOR HEATING – FUEL WOOD

Fuel wood consumption, room heating -
m³/household



Fuel wood consumption , central heating -
m³/household

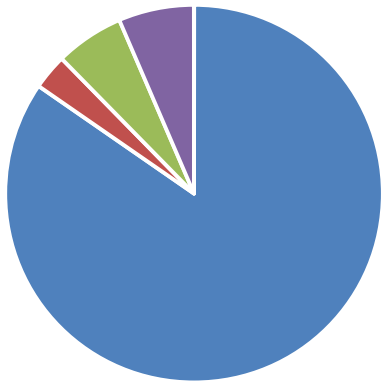


Results: HOUSEHOLDS (7)



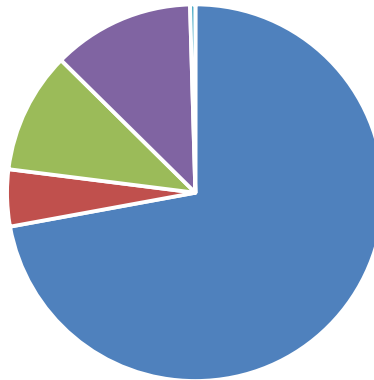
FINAL ENERGY CONSUMPTION STRUCTURE

CENTAR



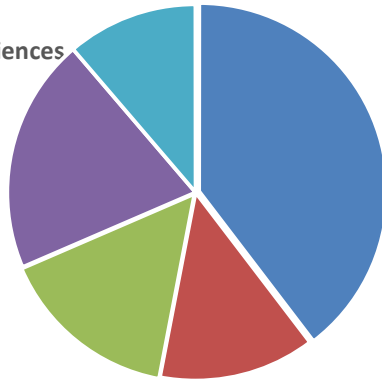
- Space heating
- Cooking
- Hot water
- Lighting & Appliances
- Air conditioners

NORTH



- Space heating
- Cooking
- Hot water
- Lighting & Appliances
- Air conditioners

SOUTH



- Space heating
- Cooking
- Hot water
- Lighting & Appliances
- Air conditioners



Survey: SERVICES (1)



- **Questionnaire:**
 - Questionnaire size: 40 questions
 - Different questions for six subsectors in services: health service, education, public service and administration; wholesale and retail, tourism and catering and others.
- **Survey:**
 - e-mail survey and conventional postal mail survey;
 - conducted in period: 11/2013 – 03/2014

Survey: SERVICE (2)

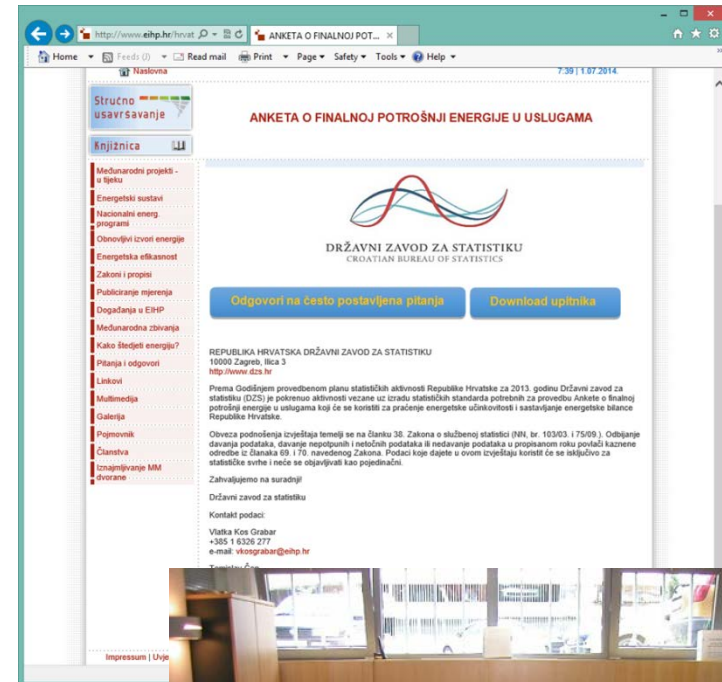


- **Sample design: large – small enterprises:**
 - Large enterprises: > 47 employees
 - Small enterprises: <=47 employees
- **Sample size:** 22.000 enterprises, target: 6000 successful
- **Sample source:** Statistical Business Register (total number of service business enterprises was 169.000)
- **Response rate:**
 - Large enterprises: 50 %
 - Small enterprises: 15 %

Survey: SERVICE (3)



- IT support developed for manipulating with sending and receiving answers, quality control of data;
- Data base designed;
- Telephone line opened for communication with respondents and web page with instructions for filling the questionnaires.



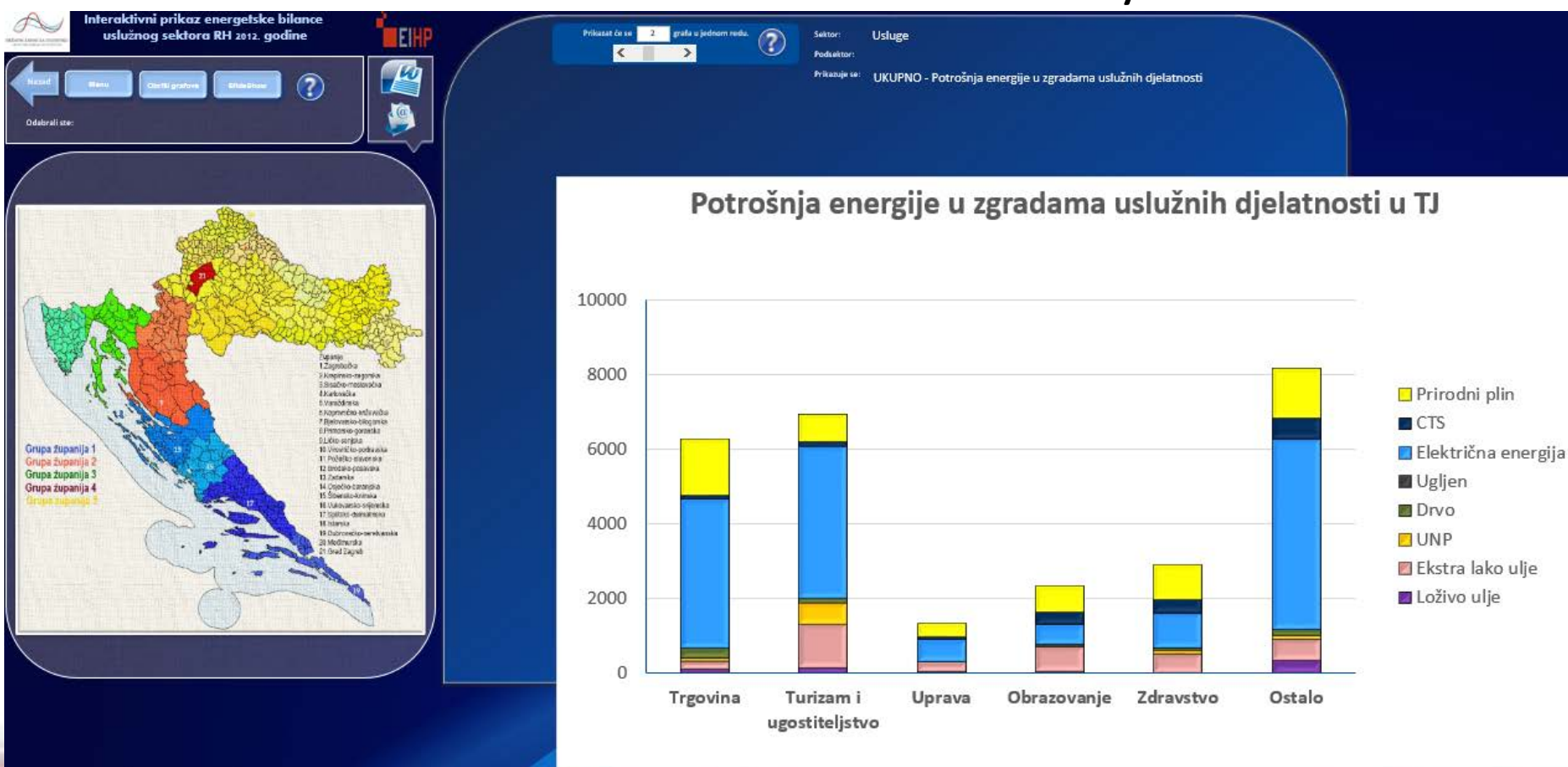
Results: SERVICE (4)



- Quality Report;
- Main results of survey: final energy consumption in service sector estimated for different service sector categories (NACE Rev.2) at national and county levels
- Model for end-use consumption assessments
- Initiated cooperation between NBS and main electricity/natural gas distribution companies on exchange of data on electricity/gas on energy customers

Results: SERVICE (5)

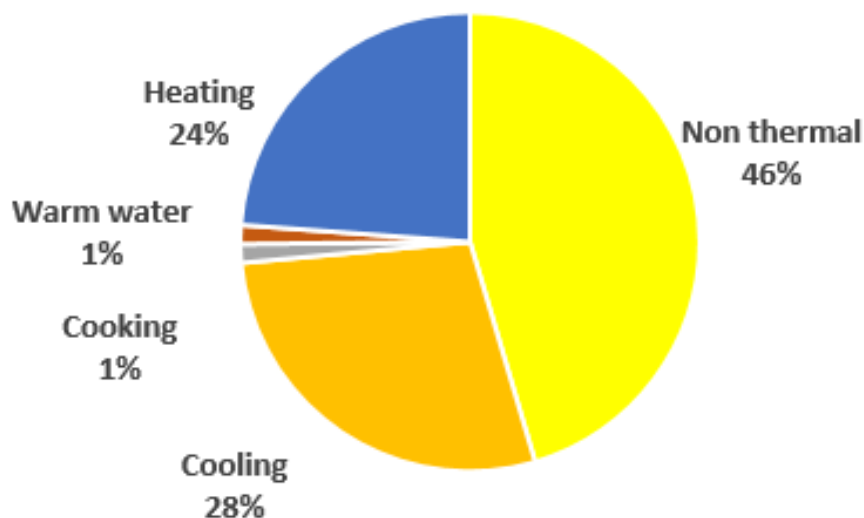
- Data base: Interactive overview of survey results



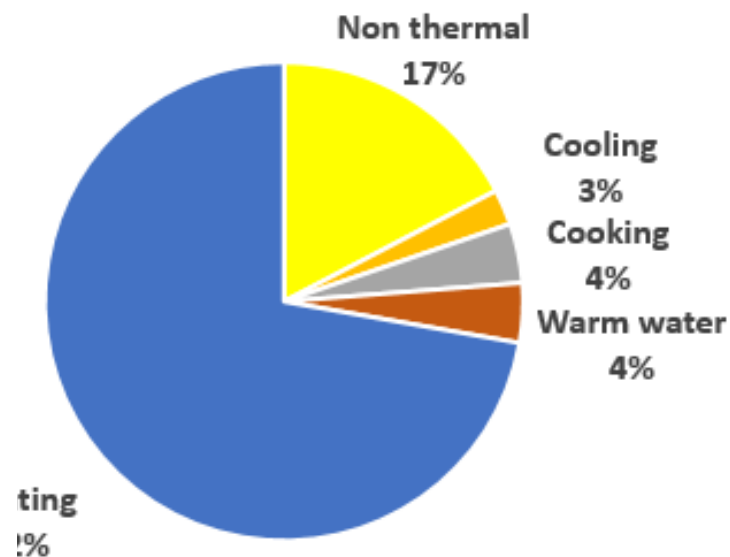
Results: SERVICE (6)

- End – use energy consumption in service sector
- Example: Health service sector & Education

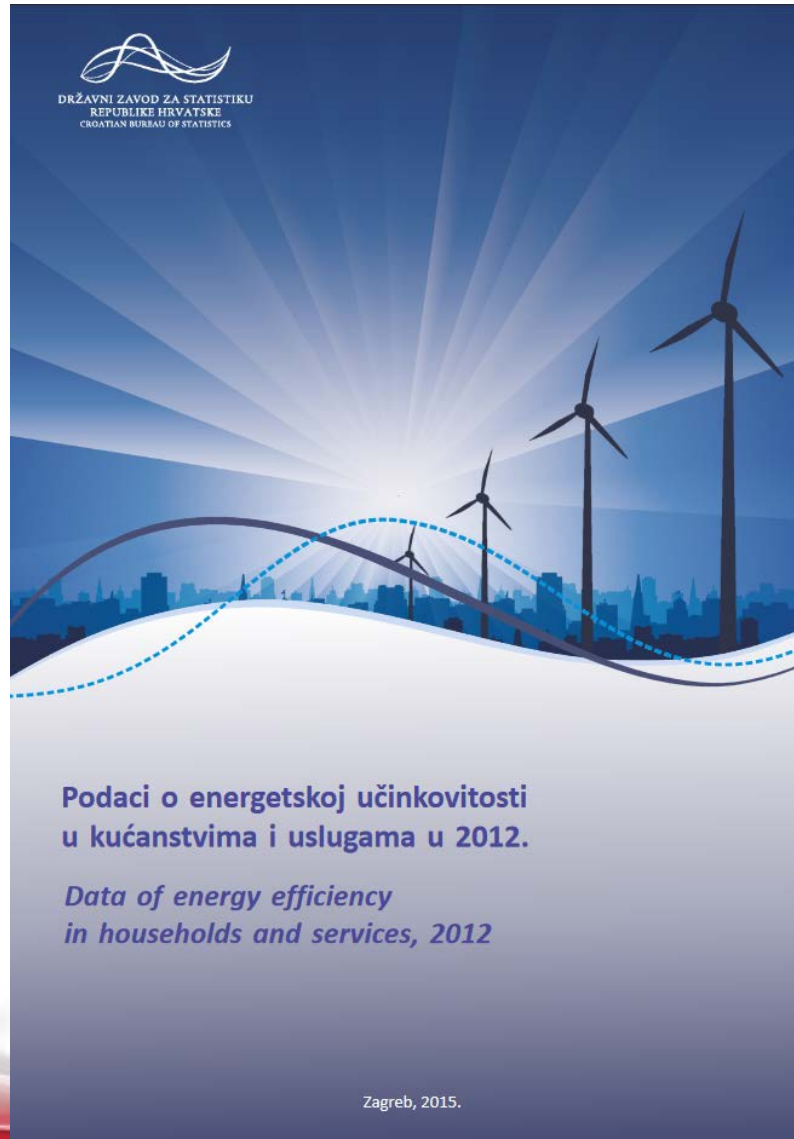
TRADE SECTOR



EDUCATION



Results: Households and Services (7)



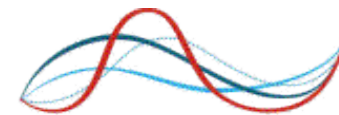
Survey: TRANSPORT (1)



- The main aim of survey: establish new and improve existing surveys in transport sector; transport accounts for 31,8 % in total final energy consumption in Croatia
- The new model of energy consumption in transport sector was established using combined data sources (new surveys; administrative sources; existing statistical surveys).

Results: TRANSPORT (2)

Conducted pilot surveys



CROATIAN BUREAU
OF STATISTICS

- **Survey on load factor of passenger cars**

To determine annual fuel consumption and passenger kilometers of personal cars and motorcycles in Croatia;
Established cooperation with Vehicle Centre Croatia-VCC.

- **Survey on freight transport (tonne-km) of N1 category of vehicles**

- **Survey on fuel consumption of foreign passenger cars and busses**

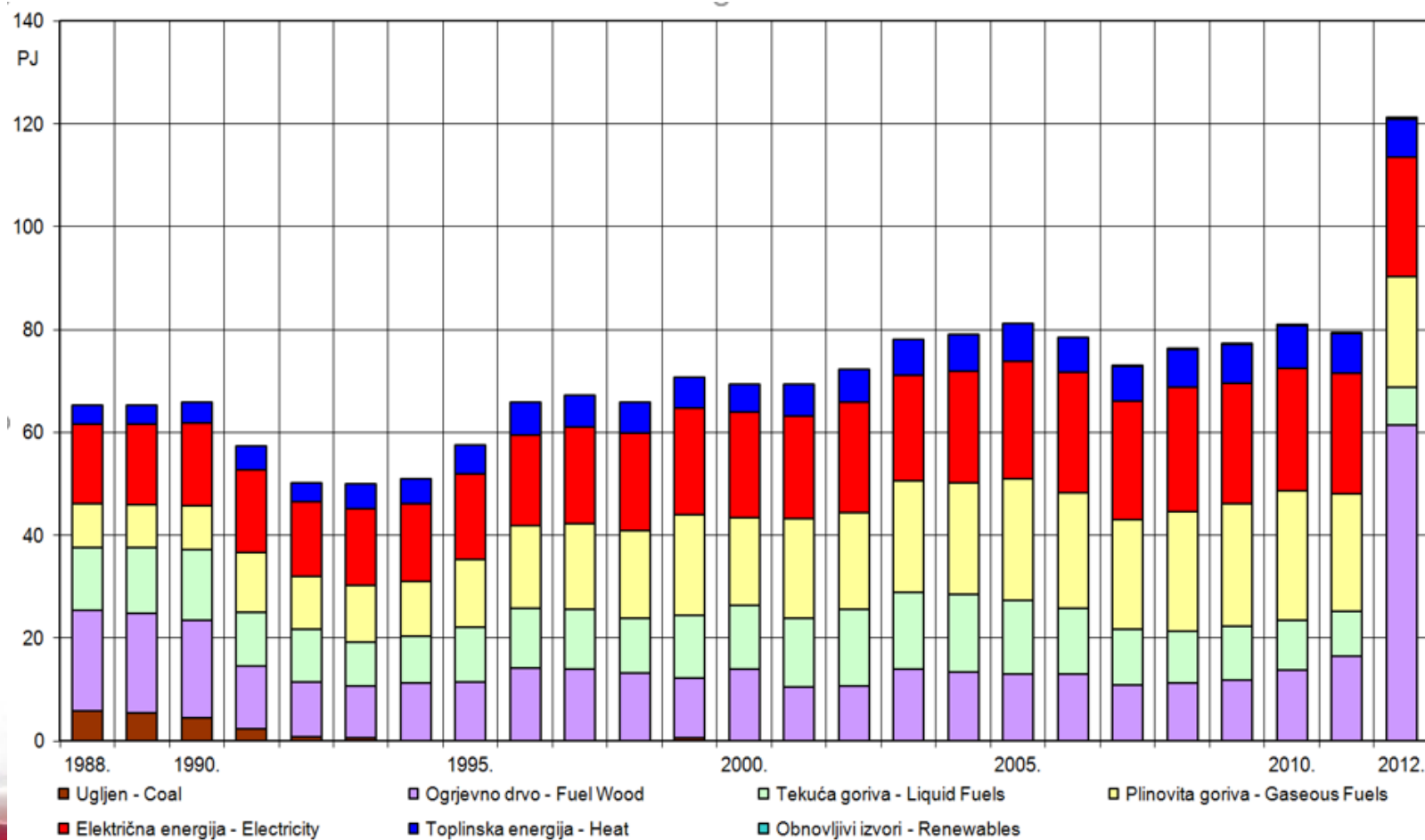
Established cooperation with Croatian National Bank –
extended existing survey on tourists expenditures in
Croatia



ENERGY STATISTICS AND ENERGY BALANCES IMPROVEMENT IN 2015

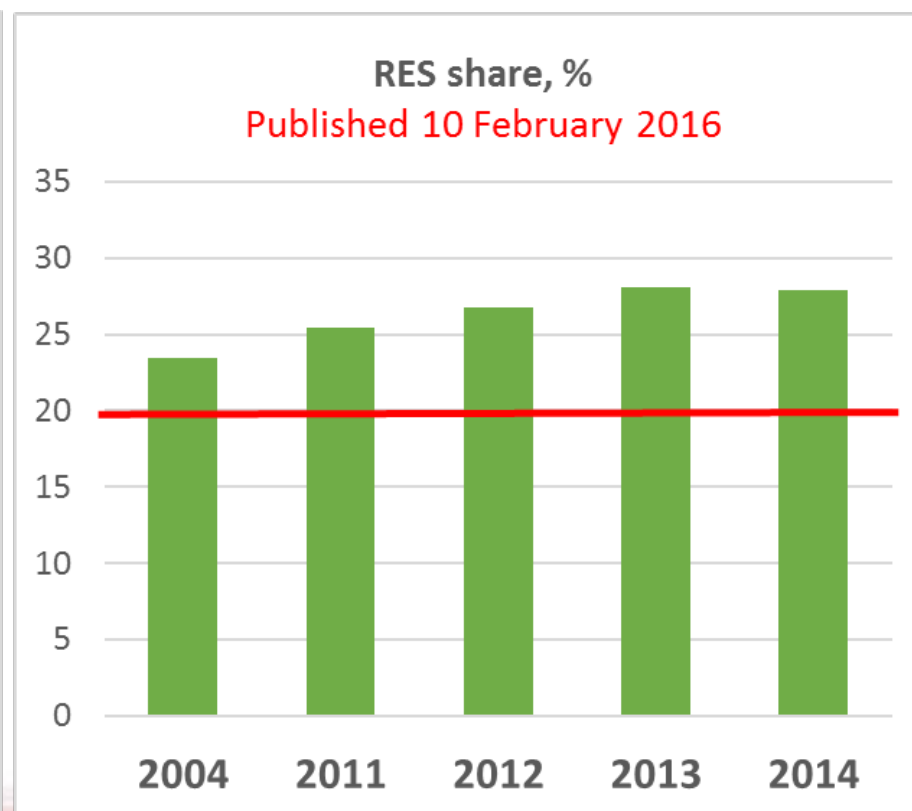
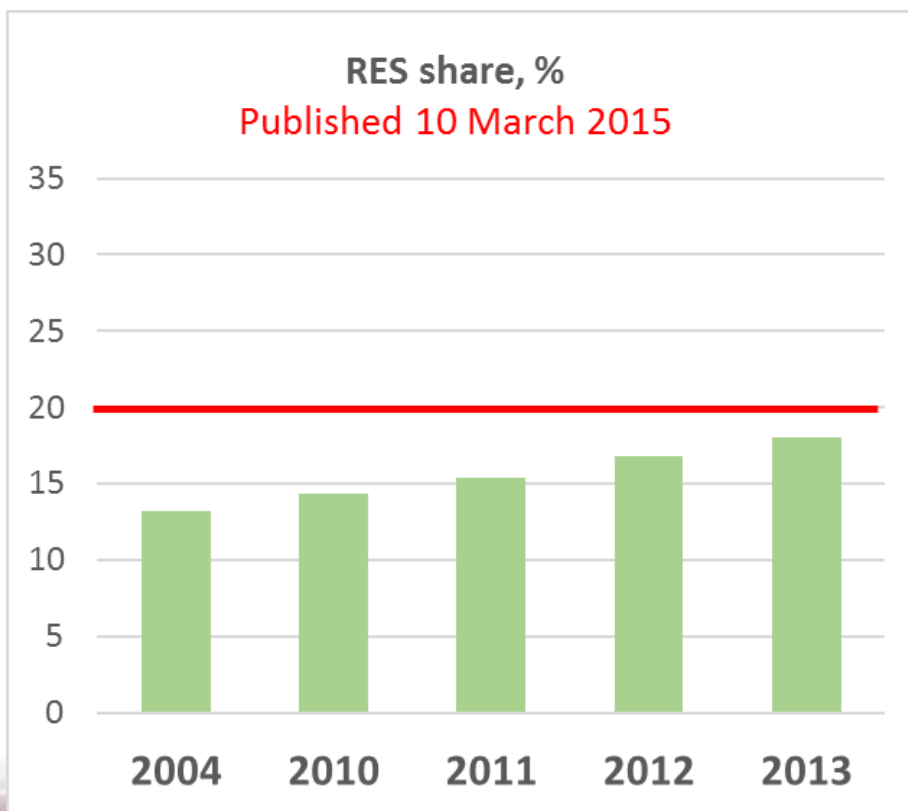
Improved energy balance

- Final energy consumption in households, PJ



Share from RES

- source **eurostat** 



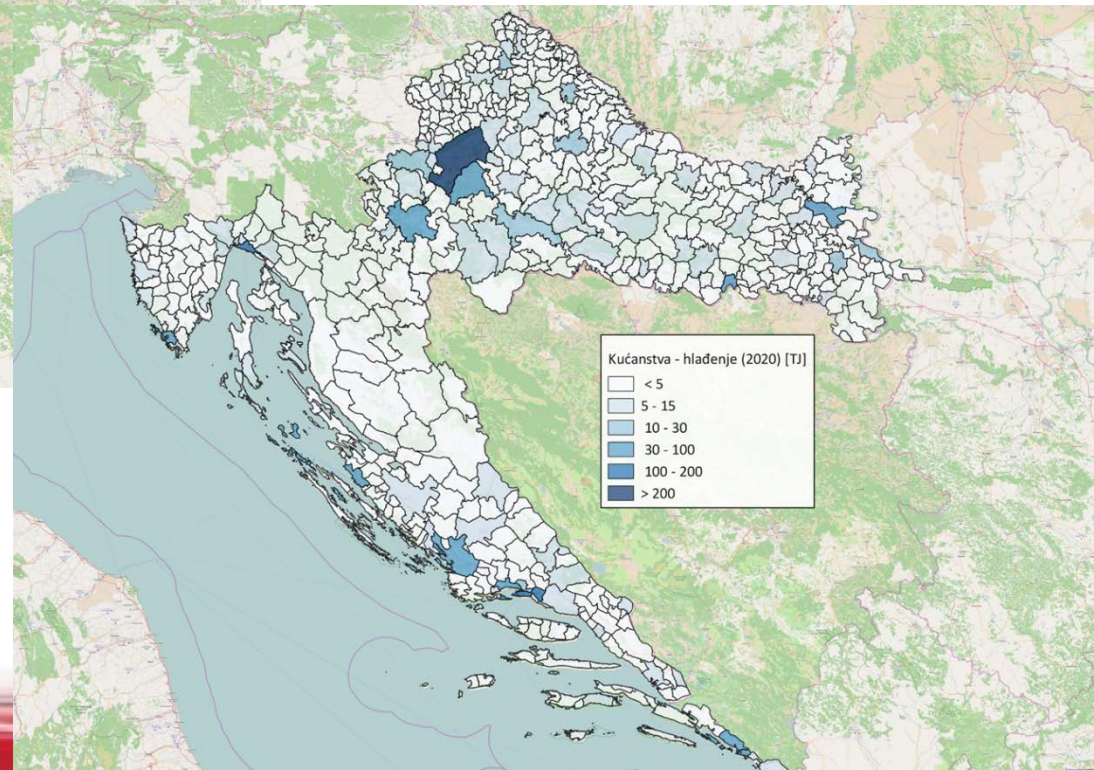
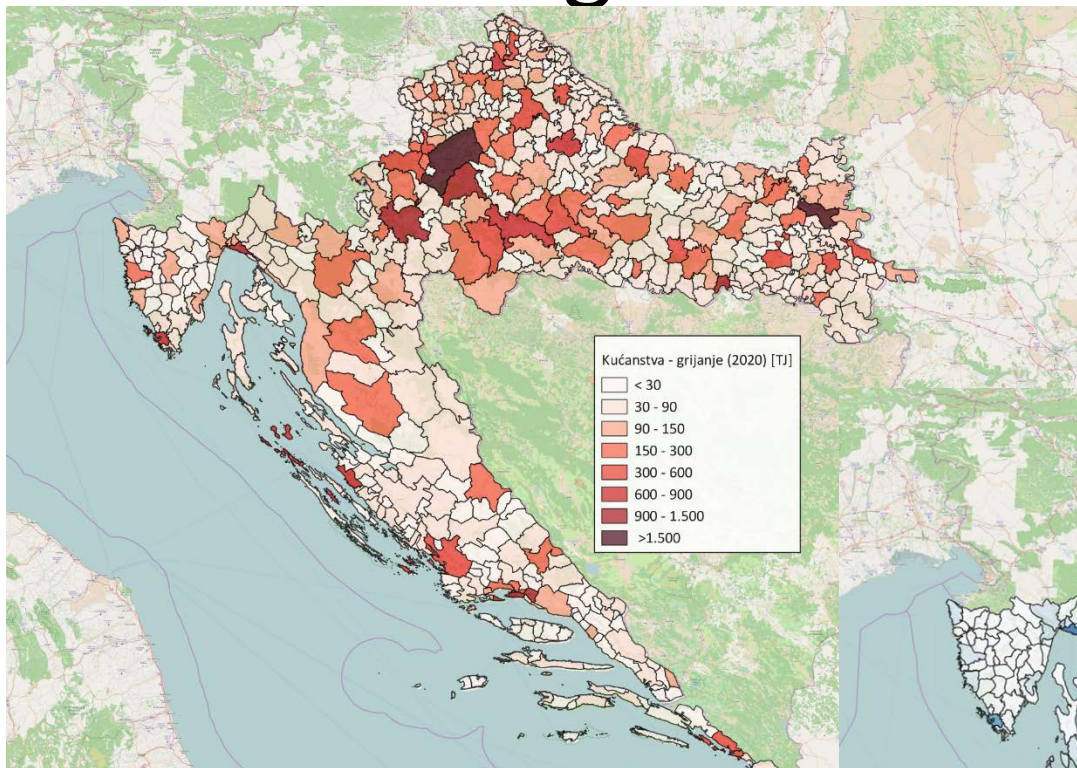


THE USE OF FINAL ENERGY CONSUMPTION STATISTICS

Analysis of demand for heating and cooling until 2030



- *Program for the use of heating and cooling for energy efficiency potential improvement in period 2016 - 2030*



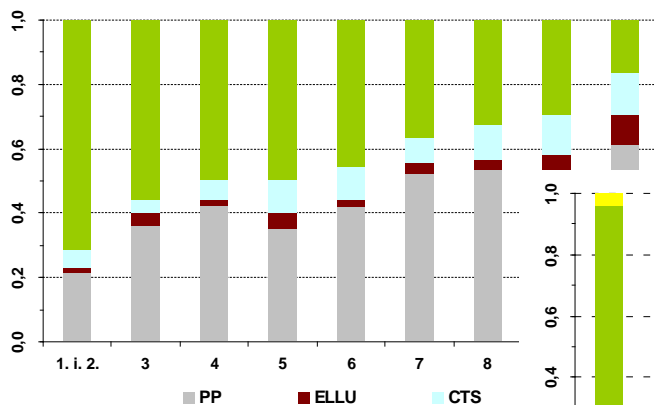
Analysis of fuel poverty



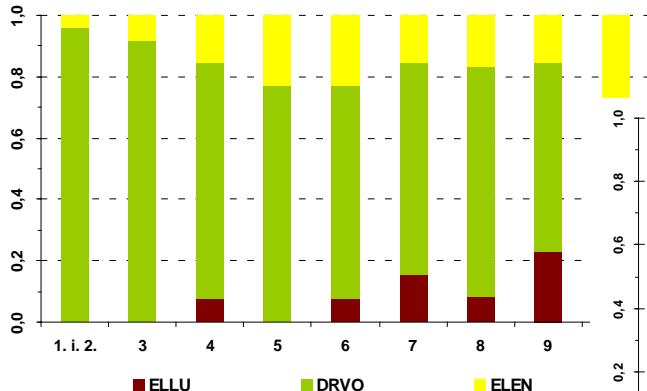
- Use of energy for heating by income classes

Region: NORTH

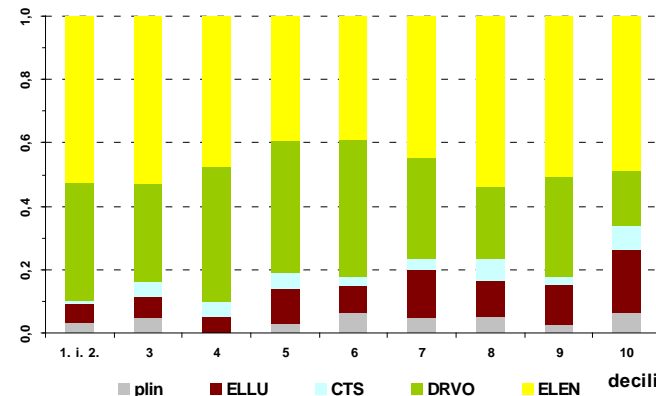
Income classes: 10 income classes (10 % of the total number) listed by income, from the poorest to the wealthiest



Region: CENTER



Region: SOUTH



In addition:

Except income, energy consumption also depends on:

- energy availability
- climatic and weather circumstances



PLANNING THE NEW ACTIVITIES IN ENERGY STATISTICS

Planning the new cycles of FEC surveys

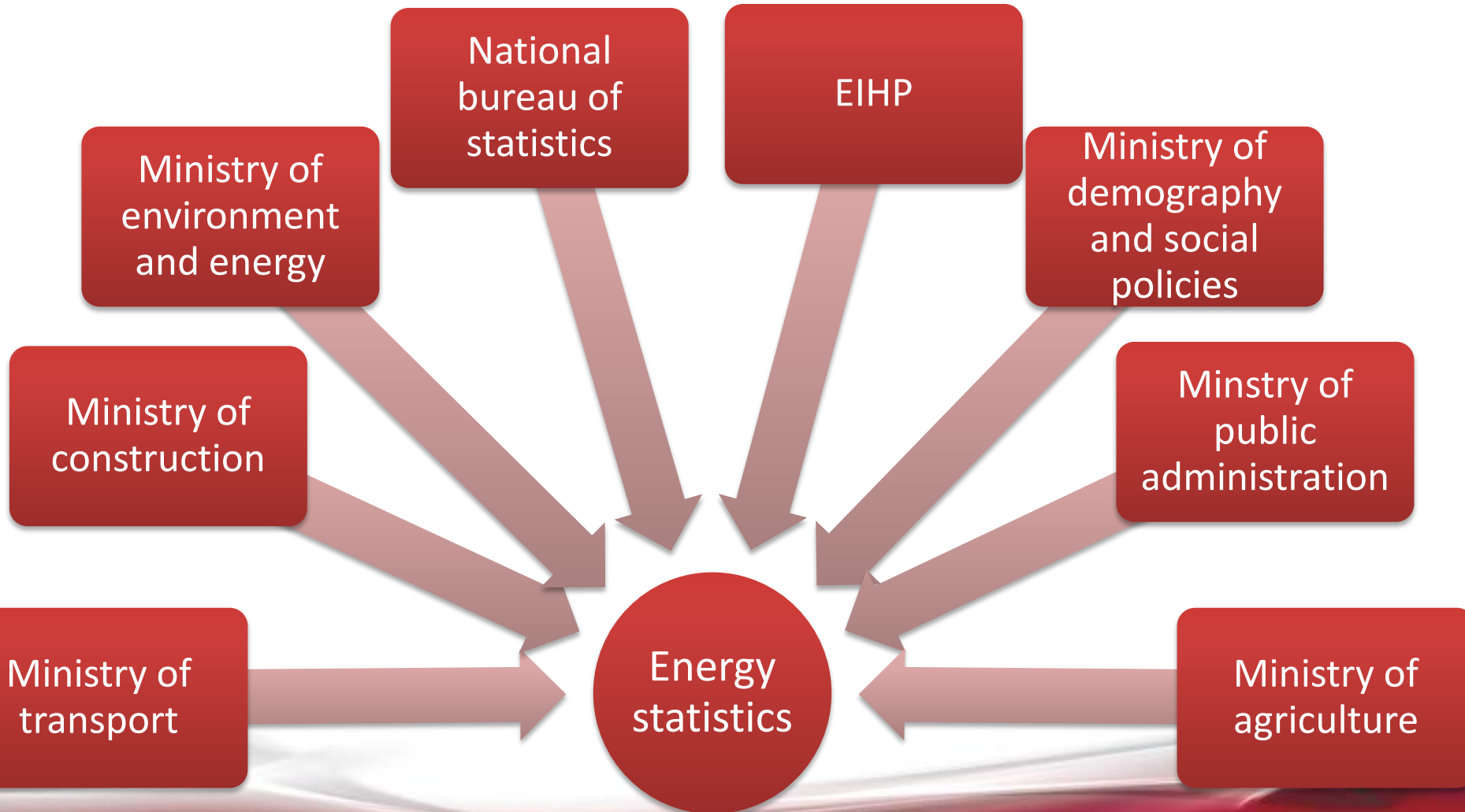


2016-2017 New survey on FEC in
agriculture

2017 Preparation of the second surveys in HH,
SS and TS and new survey in construction

2018 – 2020: Conduction of the
second cycle of FEC surveys

Planning the new institutional organisation for energy statistics



THANK YOU FOR ATTENTION!



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