Improving statistics on final energy consumption for energy planning in Croatia

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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)

   Energy Survey in Household Sector

   Energy Survey in Service Sector (Pilot project)

   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, imputations, 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
- NORTH
- 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
Results: Households and Services (7)

Podaci o energetskoj učinkovitosti u kućanstvima i uslugama u 2012.

Data of energy efficiency in households and services, 2012

Zagreb, 2015.
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

- 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

RES share, %
Published 10 March 2015

RES share, %
Published 10 February 2016
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

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

Region: NORTH

Region: CENTER

Region: SOUTH

In addition:
Except income, energy consumption also depends on:
– energy availability
– climatic and weather circumstances

Source: National Statistics Burro.
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

- Ministry of transport
- Ministry of construction
- Ministry of environment and energy
- Ministry of demography and social policies
- Ministry of public administration
- Ministry of agriculture
- National bureau of statistics
- EIHP

Energy statistics
THANK YOU FOR ATTENTION!

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