

## WASTE MANAGEMENT STATISTICS IN THE CZECH REPUBLIC

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## Institutional conditions: Waste management legislation

- 1991: initial act in the field of waste
- 1997: new waste act
  - two categories: hazardous and other waste
  - restricted operation of hazardous waste
- 2001: current act on waste
  - + Decree of the Ministry of the Environment (MoE) on details of waste management
  - compatibility with waste management legislation of the EU
- 2015-2016: new act on waste
  - comment procedure going on



## Institutional conditions: Waste statistics

- Legal Basis
  - EU Regulation on Waste Statistics and Waste Framework Directive
  - State Statistical Service Act
    - guarantee of individual information protection
  - Annual Program of statistical surveys
    - duty to respond
- Regular waste generation survey since 1992
- CZSO environmental department
  - Established in 1993
  - Personnel capacity aprox. 8-9 employees
  - 2 full-time positions performing survey in the field of waste management statistics (excluding processing staff)



#### Waste statistics evolution (1/2)

- 80's: 2 stand-alone surveys of waste landfills and waste production (1980 and 1987)
- 1992 1997 regular survey:
  - Only hazardous and special waste waste covered
  - In 1995 the survey was expanded by the ID of the organization to which the given waste was transferred
- 1998 survey:
  - new waste list
  - new codes for the disposal and use
  - "other waste" category
  - more extensive set of respondents



#### Waste statistics evolution (2/2)

- 1999-2008 survey:
  - data on waste generated by enterprises
    - (broke down by hazardous and other waste)
  - waste generated by municipalities
    - (including separately collected categories)
  - waste management
    - (recovery, disposal, etc.)
- 2009: "rotary" survey model
- 2012: introduction of secondary raw materials indicators
  - reflects the latest political and economic conditions
  - exceptional attention at the EU level "circular economy"



#### **Report on waste: Data production cycle**



	0	surovinách	ČSU ČV 46/15 ze dne 13.10.2014
		Surovinaci	IKF 411015
		za rok 2015	
Výkazj	je součástí Programu statisti ve znění pozdějších předpi Ochrana dů	ckých zjišťování na rok 2015. Podle zákona č. 89/1995 sů, je zpravodajská jednotka povinna poskytnout všech věrnosti údajů je zaručena zákonem. Děkujeme za spol	Sb., o státní statistické službě, ny požadované údaje. lupráci.
	na adresu Krajská sprá	Vyplněný výkaz doručte do 3. 3. 2016 iva ČSÚ v Ústí nad Labem, Špálova 2684/1, 400 1 nebo elektronicky tlačítkem "Odeslat výkaz".	1 Ústí nad Labem
	Formuláře výkazů, elektronick	ký sběr dat, registry, číselníky a aktuální statistické informace r	a: www.vykazy.cz
0 0 2 Název a sídk	ICO     Adres       5     4     8     1     9       0 (adresa) zpravodajské jedr	sa: Krajská správa ČSÚ v Ústí nad Labem, Špálova ; notky:	2684, 400 11 Ŭstí nad Labem
Věsto Nová F	Role, Chodovská 236/6, 362	25 Nová Role	
	Jméno a příjmení	Helena Šmídová	
Výkaz	Telefon	353176311	
Výkaz wnlnil:	-		
Výkaz vyplnil:	Fax E-mail	helenasmidova@seznam.cz	Datum 24.02.2016
Výkaz vyplnil: V	Fax E-mail yplňuje-li výkaz za zpravoda	helenasmidova@seznam.cz jskou jednotku jiný subjekt (účetní firma ap.), uvede zde	Datum 24.02.2016 svoje kontaktní spojení.
Výkaz vyplniši ICO - identiší Vyplnění zál V případě n v pořadí. U p číslem oddíh aplikace Dan U oddíhů 020 Společné vy Všechny vý čieněri z evi K o m e n tář	Fax E-mail ypřihuje-li výkaz za zpravoda haví výkazu: kační čislo, pokud je méně n haví oddílů: dostatečného počtu řádků apřiového počtu řádků se velokate se velokate se postavěné na dostate se postavětená sa asoutatémí tš	helenasmidova@seznam.cz ješkou jednotku jiný subjekt (účetní firma ap.), uvede zde než osmimístné, doplní se zleva nuly u oddílů 020 a 021 u vyplinteiného formuláře v PDF firulje přísušný počet bianco oddílů, které budete pro til activatí vejko strana (cel). V případě vyplňování ta activatí vejkov strana (cel). V případě vyplňování ta activatí vejkov jevede IČO zpravodajské jednotky. eločíselné, tj. bez desetinných míst. Pokud požadova vých akolnosí (v případě, že vymezený prostor při vyplňování pá b).	Datum 24.02.2016 e svoje kontaktní spojení. <sup>2</sup> zvolte pod číslem oddílu další vyplnění pořebovat. V rámečku p vykazu prosřednictvím interneto uné údaje nelze zjistit v potřební e vykazovaných datech, lseté vyplýva

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#### **Report on waste**

#### **Registers and classifications**

- Business Register (CZSO)
- Register of municipalities (CZSO)
- CZ-NACE (CZSO)
- CZ-NUTS (CZSO)
- List of waste (MoE decree)
  - waste codes + hazardous and non-hazardous
- List of recovery/disposal (EU Regulation) and other treatment operations (MoE decree)
- List of waste treatment facilities (MoE evidence)



#### Waste generation and treatment by businesses: Basic sampling set of respondents

- CZ NACE codes with No of employees greater than a threshold
- **Core** respondents (*annual* reporting)
  - the most significant respondents with the highest amount of waste generation and treatment + extra facilities significant for different reasons

= Total of 300 companies generating approx. 75 % of waste

- Annex respondents (one [out of 3] parts once every 3 years)
  - all the rest divided into thirds (Part I, Part II, Part III)
  - e.g. Part I reports data and data for Part II and Part III is imputed from previous years

Number of employees	NACE Rev. 2
> 0	37, 38, 39, 46.77
> = 5	46.75
> = 20	41-43, 74.2, 81.2, 81.3
> = 25	01-36, 45.1, 45.2, 47, 49.1-49.4, 55, 56, 59, 61.1-61.2, 96.01-96.03
> = 50	86, 87.1-87.3



#### Waste generation and treatment by businesses: Rotary model details

		2004	2006	2008	2010	2012	2014
Registered businesses	units	1 269 221	1 256 771	1 345 589	1 399 983	1 513 556	1 446 293
Selected businesses	units	18 106	16 896	16 369	8 812	7 392	8 272
Businesses response	units	15 865	14 104	13 673	6 833	7 255	6 839
Businesses response	%	87,6	83,5	83,5	77,5	98,1	82,7
- Pros:			_	Cons:			

- Reduction of respondent number by almost a half
- Data meets requirements of Regulation on waste statistics

- Limited range of data
- Data is only good for tracking development trends
- Detailed regional breakdown (e.g. NUTS III) impossible

## Waste generation and treatment by municipalities: Basic sampling set of respondents

- Random selection procedure stratified according to NUTS2 regions and number of inhabitants
  - In 2014: 1501 from total number of 6 253
  - Exhaustive survey of municipalities with over 10 thous, inhabitants

Number of inhabitans	Number of municipalities		Response in %	
	selected	response		
under 200	121	113	93,39	
201 to 999	489	478	97,75	
1 000 to 9 999	760	753	99,08	
10 000+	131	131	100,00	
CR total	1501	1475	98,27	

		2004	2006	2008	2010	2012	2014
Registered municipalities	units	6 249	6 249	6 249	6 250	6 251	6 253
Selected municipalities	units	981	979	994	982	1 503	1 501
Municipalities response	units	923	915	947	957	1 429	1 475
Municipalities response	%	94,1	93,5	95,3	97,5	95,1	98,3



#### **Data verification**

- Respondent unit ID:
  - formal requirements (e.g. No of company ID symbols)
  - accuracy (e.g. Business Register presence)
- Classifications and code lists:
  - logical control of impermissible codes with regard to classifications and code lists
- Completeness:
  - filling in of the required lines
  - balancing and check sums
- Empirical checks:
  - relation to the legal standards
  - methodological instructions
  - experience with collection



#### For more technical details...

ČESKÝ STATISTICKÝ ÚŘAD		
QUALITY REPORT ON WASTE STATISTICS REFERENCE YEAR 2012	Waste Management Statistics in the Czech Republic Egor Sidorov <sup>1,2</sup> , Iva Ritschelova <sup>1,3</sup> , Jiri Hrebicek <sup>4</sup> <sup>1</sup> Cach Statistical Office, Na padessem 31, 100 82 Pages 10, Cach Republic <sup>2</sup> Jan Evangelista Pudynes University, Faculty of Environment Ralova vyinsi 3132-7, 400 94 Uni and Leben, Cach Republic <sup>3</sup> Tachinal Linkves, Cach Republic <sup>4</sup> Tachinal Linkves, Cach Republic <sup>4</sup> Masargit University, Institute of Elostististics and Analyse Rolatista, 3 (1137 Bino, Cach Republic egor. sideorovBiylep.cs, 149, situatibe Elovadesso.cs, hybricoleBib.muni.cs	Odg 53           Annual report on waste         Registered CSS 0 2 104 from 14 7, 201 itG 411012           The report is a part of the Programme of Statistical Surveys 2012. According to Act No 8911995 Coll on the State State as amended, a reporting unit is obliged to provide all the data required. Individual data protection is guaranteed Thank you for your co-operation.           Filled-in report kindly deliver until 4. 3. 2013 to the CZSO Nationwide Data Processing Department Usti nad Labern, post office box 31, Špálova 2684, 400 11 Usti nad Labern           Banks, electronic data collection, register, romenduares and update statistical information at WWW CZBO CZ
REGULATION (EC) No 2150/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON WASTE STATISTICS	Abstract. History of statistics in the field of watte management in the Casch Republic is relatively long. At present the watte management survey is focused among others at the generation of watte by enterprises and municipalities, methods of watts use and disposal, and other methods of watte management. The main objective of the paper is to introduce the system development and the processing methods. The paper deals not solely with the determination of the set of sponting units and its charges over years, yet also with sciencology of data processing, system of chacks, corrections, and with a determined of counter and induction of the respondent pool (from 11 shounds to 10 through of the system of the respondent pool (from 11 shounds to 10 through of the respondent and the spondent pool (from 11 shounds to 10 through of the processing paper is focused at balancing the purpose of watte man- agement data with respective administrative burden evidence to their production.	Identification number         Name and domicile (address) of the reporting unit:         Name and domicile (address) of the reporting unit:         Report filled-in br.         Report filled-in br.         Telephone number (including area code)         Date         Email         If another entity fills out the report for a reporting unit (accounting company, etc.) it will mention here how to con         How to fill out head of the report:
CZECH REPUBLIC, 2014	Agrovers: water, secondary new matemain, stanistics, data processing, Clack Requisit <b>J Introduction</b> As a part of the State Statistical Service of the Clack Republic (CZ) the Clack Statis- tical Office (CZSO) aims at acquisition of data and consequent production of statisti- cal information on environmental state of the country among others [1]. Environ- mental policies both at international and national level lead to the stable demand for high quality environmentally related statistics [1]. [5]. Water management statistics belongs among inditional statistical outputs of the CSO. Forming an important input for production of the core indicators of environ- mental and resource efficiency wates tatistics is highly demanded by the variety of stakeholders that use them both for design and consequent evaluation of environ- adh, p. 1, 2011 * Springer-Vening Berlin Heidelberg 2011	How to fill out head of the section: At sections 020 and 021 fill out in the frame under the number of the section the number of the pag (page) and total number of pages (tot p.) I.e. when using one blank of section you fill out "pag 1", "totp.:1". If the number of atems is higher than the number of lines of the relevant blank form. The section, you will use mother blank from of the section. In the frame under the number of the section you will mention the number of another page and total number of filled-out gages for the enterprise (e.g. on the section dpage at the total number 5 of used pages of the section you will out "page: 2, totp.:5"). At the sections 020 and 021 at the inserted sheets you will mention above the head of the table th identification number of the reporting unit. Common explanations: All data reported must be in whole numbers, i.e. without decimal positions. If it is not possible to fir out the data required in the necessary breakdown from the register, a qualified estimation will be mentioned. C or m entary: reporting unit will mention above the reparts that exceed that required is not explanations: All data reported that result from organization changes or other conditions (if the space provided is not enough i will continue on a separate sheet).



#### Outputs: Primary users

- The European Commission
- State administration:
  - the Parliament, MoE?, Ministry of Industry, Regional Authorities
- International organizations:
  - OECD, EUROSTAT, UN, WB, EEA
- Academia
- National and regional media
- General public



#### Administrative Data of the MoE

- MoE has its own administrative information system
- Known issues:
  - Administrative burden (80 thous. of respondents (MoE) vs. 10 thous. (CZSO))
  - Double counting
    - No company register
    - Reporting units are local units of companies and municipalities
  - "Waste generation" and "waste treatment" are not strictly separated from each other (i.e. no separate classification system)
  - Collection, processing and dissemination is not in line with international statistical classifications (e.g. NACE, NUTS, etc.) and with international legislation (definitions and terms)
  - No binding deadlines for collection, processing and dissemination
  - "Non-waste" (secondary raw materials) is not covered by the law



#### Waste management data for the Czech Republic: National Level – CZSO vs. MoE





#### Waste management data for the Czech Republic: Regional Level - CZSO





#### Waste management data for the Czech Republic: Regional Level - MoE





#### Waste management data – Slovak case: Regional Level







# Thank you for attention!

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