

TAIEX-ECRAN
Capacity Building workshop
on compliance with environmental legislation

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IED – Monitoring and reporting

Ministry of Environmental and Nature Protection

Brigitte Mrvelj Čečatka, senior environmental protection inspector

Jelena Manenica, senior environmental protection inspector

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Content

- **Monitoring from IED installations**
- **Reporting on pollutant release, transfer and depositing into the environment and on waste**

Legal base

- Directive 2010/75/EU on industrial emissions (IED) → main EU instrument regulating pollutant emissions from industrial installations
- integrated approach → permits must take into account the whole environmental performance of installation covering emissions to air, water and land, generation of waste, use of raw materials, energy efficiency, noise, prevention of accidents, restoration of the site upon closure.
- permit conditions - Art. 14., including emission limit values for polluting substances, must be based on the Best Available Techniques (BAT)




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Legal base

Article 14

Permit conditions

1. Member States shall ensure that the permit includes all measures necessary for compliance with the requirements of Articles 11 and 18.

Those measures shall include at least the following:

(a) emission limit values for polluting substances listed in Annex II, and for other polluting substances, which are likely to be emitted from the installation concerned in significant quantities, having regard to their nature and their potential to transfer pollution from one medium to another;

(b) appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;

(c) suitable emission monitoring requirements specifying:

- **(i) measurement methodology, frequency and evaluation procedure; and**
- **(ii) where Article 15(3)(b) is applied, that results of emission monitoring are available for the same periods of time and reference conditions as for the emission levels associated with the best available techniques;**


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Legal base

Permit should include appropriate requirements to protect the environment and monitoring requirements:

Article 16

Monitoring requirements

1. *The monitoring requirements referred to in Article 14(1)(c) shall, where applicable, be based on the conclusions on monitoring as described in the BAT conclusions.*
2. *The frequency of the periodic monitoring referred to in Article 14(1)(e) shall be determined by the competent authority in a permit for each individual installation or in general binding rules.*

Croatia – monitoring measures prescribed in Book of requirements/part of each EP



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Legal base

Regulation on environmental permit (Official gazette 8/14):

- **BAT conclusions** represent basis for determine requirements of environmental permit
- If BAT conclusions are not available then **chapters from BREFs** are used
- **Regulations (National)** are applied if provisions prescribe stringent requirements than BAT conclusions

Measures for monitoring of emissions, methodology of measurements, frequency measurement and evaluation of results from permit are based on BAT conclusions for monitoring



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Monitoring Example – Gas treatment Installation

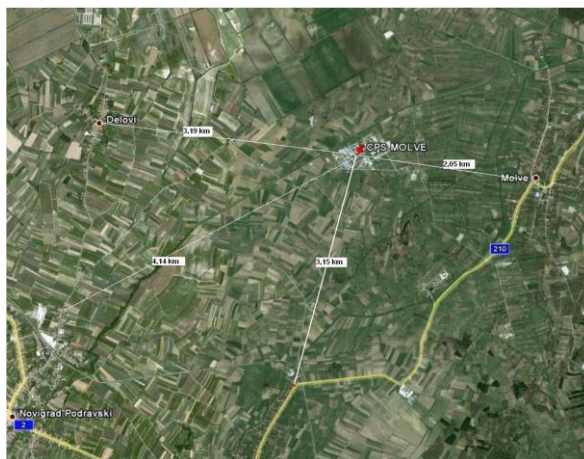


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Monitoring Example – Gas treatment Installation



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Technology

- Activity 1. - 1.2 of Regulation – Energy - Mineral oil refineries and gas
- 3 parallel gas treatment plants
- Capacity 8 mil. m3 gas/day – raw natural gas
- Products:
 - sales gas which is predominantly methane
 - C₂+ ethane and heavier hydrocarbons
- Technology:
 - separation (salt water from gas)
 - mercury removal (mercury adsorption – sulfur impregnated activated carbon) < 10 mg Hg
 - separation of acid gas (CO₂ and H₂S) – adsorption –aMDEA (metildietanolamina) Benfield strippers
 - gas dehydration – molecular sieves in three vessel system
 - liquefied super cooling – separation is done by condensing C₂+ at very low temp
 - acid gases treatment – Lo-Cat absorber
 - auxiliary processes

Legal base - Regulation on Environmental permit

1. Energy industries
 - 1.1. Combustion of fuels in installations with a total rated thermal input of 50 MW or more
 - 1.2. Refining of mineral oil and gas**
 - 1.3. Production of coke
 - 1.4. Gasification or liquefaction of:
 - (a) coal;
 - (b) other fuels in installations with a total rated thermal input of 20 MW or more.
2. Production and processing of metals
 - 2.1. Metal ore (including sulphide ore) roasting or sintering
 - 2.2. Production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tones per hour
 - 2.3. Processing of ferrous metals:
 - (a) operation of hot-rolling mills with a capacity exceeding 20 tons of crude steel per hour;
 - (b) operation of smitheries with hammers the energy of which exceeds 50 kilojoule per hammer, where the calorific power used exceeds 20 MW;
 - (c) application of protective fused metal coats with an input exceeding 2 tonnes of crude steel per hour.
 - 2.4. Operation of ferrous metal foundries with a production capacity exceeding 20 tonnes per day

Environmental Permit

- **Environmental Permit - Issued 11th April 2014 - issued for a period of 5 years**
- **Compliance with BAT (best available techniques) for all installation until 1st July 2013, exception if negotiated in pre-accession**

Integrated approach

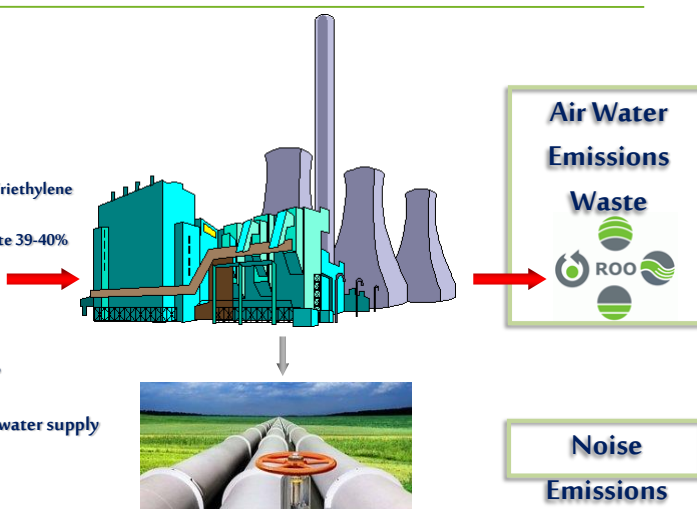
Raw material:

Natural gas

Auxiliaries:

Potassium carbonate Triethylene glycol
Sodium hydrogen sulfite 39-40%
Lo-Cat chemical
MDEA
aMDEA
Chlorinated acid 35%
sodium hydroxide 50%

Water: well+ public water supply



Elements of Environmental Permit

Integrated Environmental Conditions – Environmental Permit:

1. Environmental conditions
 - 1.1 Activities
 - 1.2 Processes
 - 1.3 Operating techniques - BAT
 - 1.4. Waste management
 - 1.5 Energy consumption and efficiency
 - 1.6 Accident prevention
 - 1.7 Monitoring (air, water, noise)
 - 1.8 Installation dismantling
2. ELVs
 - 2.1 Air
 - 2.2 Water and soil
 - 2.3 Noise
3. Condition outside of Installation
4. Improvement program
5. Safety work conditions – not specified
6. Data preservation obligation
7. Reporting to the public
8. Environmental fees



BREF/BAT

Kodna oznaka	BREF	RDNRT
REF	Reference Document on Best Available Techniques for Mineral Oil and Gas Refineries, IPPC, European Commission, February 2003	RDNRT za rafinerije mineralnih ulja i plinova, veljača 2003.
ICS	Reference Document on the application of Best Available Techniques to Industrial Cooling Systems, IPPC, European Commission, December 2001	RDNRT za industrijske rashladne sustave, prosinac 2001.
LCP	Reference Document on Best Available Techniques for Large Combustion Plants, IPPC, European Commission, July 2006	RDNRT za velika ložišta, srpanj 2006.
CWW	Reference Document on Best Available Techniques in Common Waste Water and Waste Gas Treatment/Management Systems in the Chemical Sector, IPPC, European Commission, February 2003	RDNRT za sustave pročišćavanja otpadnih voda i obradu otpadnih plinova/sustave upravljanja u kemijskom sektoru, veljača 2003.
MON	Reference Document on the General Principles of Monitoring, IPPC, European Commission, July 2003	RDNRT za opća načela monitoringa, srpanj 2003.

SO₂ emission reduction - REF BAT 23 for process/activity for Waste Gas Treatments

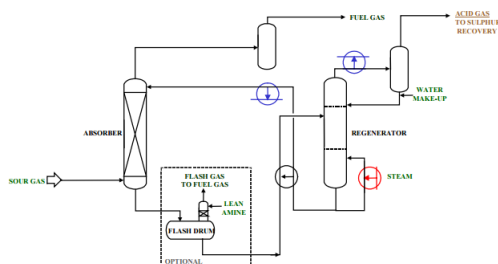


Figure 4.10: Simplified process flow diagram of an amine treating unit

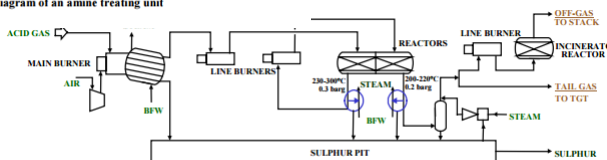


Figure 4.11: Simplified process flow diagram of a sulphur recovery unit (CLAUS) unit



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NO_x emission reduction

REF BAT Generic (whole refinery)

- 4.10.4.4 Diluent injection

Achieved environmental benefits Control of NO_x in gas turbine combustors may be carried out by using steam/water injection, which can achieve reduction performances of 80 - 90 %. (1.1.2016.)

- Monitoring NO_x emission – ELV

LCP BAT

7.5.4 Install electro turbine and use gas turbine combustors only as a alternative (failure)

CWW BAT – section is mentioned



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Environmental Permit - Croatia

- Operating techniques refers to Bref Document Chapter – hinders inspection
- Recognition of techniques on site require advanced knowledge of the plant – inspection is not a part of permitting
- extensive preparation for inspection



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Monitoring – air emissions

No	Source of emission to air	Pollutant	ELV mg/m3
Z1,Z2,Z3	Hot water boilers 3x6,5 MW	NO _x	300
		CO	100
		Bacharach smoke test	0
Z4, Z7	Gas heater 1,17 MW Gas heater 2,85 MW	NO _x	200
		CO	100
		Bacharach smoke test	0
Z5, Z6	Glycol regenerator combustion device 2x0,073 MW		< 0,1 MW /No monitoring
Z9,Z10	Gas combustion plant 2x 2,5 MW	NO _x	100 1.1.2016.
		CO	100 1.1.2016.
Z11,Z12,Z13	Hot water boilers 3x13,04 MW	NO _x	200 1.1.2016.
		CO	100
		Bacharach smoke test	0
Z14,Z15,Z16	Gas turbine generator (Cogeneration plants) 3x3,3 MW	particles	5 1.1.2016.
		NO _x	75 1.1.2016.
		SO ₂	35 1.1.2016.
		CO	100
		Bacharach smoke test	3 (<60000 m ³ /h) till end of 2015.
Z17	Gas turbine generator (Cogeneration plants) 3x3,5 MW	particles	5
		NO _x	75
		SO ₂	35
		CO	100
Z18	Regenerative thermal oxidizer	SO ₂	400-2000
		H ₂ S	<10
		NO _x	350 at 1800 g/h
		mercaptan	<100

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Monitoring – air emissions

- **Monitoring condition – based on BAT conclusions and national regulation - discontinuous monitoring**

monitoring frequency; monitoring location and point of source; sampling referent methods; referent measurements methods; tolerance; calibration according the norms; persons certified by MENP;

MON BAT 5.1. Direct measurements

Monitoring – water emissions

- **EP (water condition) allows:**
 - wells 1.150.000 m3/year at max 148 l/s
 - Sampling and analysis before discharging to water stream
 - injection of formation water not subject to analysis
 - Water emission (sanitary, technological, cooling) up to 712 m3/day

BAT

- CWW (February 2003.)
- National water protection regulation
- National mining regulation

Parameters	ELV
pH	6,5 – 9,0
temp	30° C
sediment	0,5 ml/lh
Suspended solids	35 mg/l
BPK ₅	25 mgO ₂ /l
KPK _{C₂}	125 mgO ₂ /l
total organic carbon	10 mg/l
nonvolatile lipophilics substances	20 mg/l
total hydrocarbons	10 mg/l
phenols	0,1 mg/l
Hg	0,01 mg/l
total chlorine	0,5 mg/l
total phosphorus	2 mg/l
total nitrogen	15 mg/l

Monitoring- Noise and Other

ELV Noise - Housing area 60 dB(day) 50 dB (night),
Industrial area 80 dB

Noise measurement by certified person and to reporting obligation to Ministry of Health

Other

- water stream Komarica monitoring before and after discharge
- H₂S; SO₂ and mercaptan quality monitoring at 5 points outside Installation
- mercury monitoring at 4 points outside Installation
- Radioactivity monitoring at 3 Installation points
- Mercury monitoring in local grown and bred food; workers urine; organs of pheasant, rabbit and earthworms; blood and milk of local cow, urine
- Soil monitoring on heavy metals
- Forest ecosystem monitoring

Waste management

EP conditions:

- Waste management in accordance with ISO 14001:2004 Environmental management systems
- Management plan for wastes containing mercury and used active carbon
- Records on generation and waste flow
- Report EPR
- Keeping records for 5 years



Reporting

- ☐ Air emissions to EPR
- ☐ Water emission to EPR
- ☐ Waste water discharge to HRVATSKE VODE
- ☐ Waste water analysis to HRVATSKE VODE
- ☐ Waste management records to EPR
- ☐ Waste management plan CAENP
- ☐ All reports must be available to inspection
- ☐ Operator should record all complaints and procedure upon complaints



Legal base

IED ensures - public right to participate in the decision-making process, and to be informed of its consequences, having access to permit applications, permits and the results of the monitoring of releases:

Article 24

Access to information and public participation in the permit procedure



3. The competent authority shall also make available to the public, including via the Internet:

...(b) the results of emission monitoring as required under the permit conditions and held by the competent authority.

Pollutant Release and Transfer Register

In addition - through the **European Pollutant Release and Transfer Register (E-PRTR) emission data** reported by Member States are made accessible in a public register, which is intended to provide environmental information especially on major industrial activities



Croatia - Environmental Pollution Register (EPR)

Electronic software (application) - keep and maintain Croatian Agency for Environment and Nature

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Environmental Pollution Register (EPR)

Legal base:

- Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC – **binding entirely and directly applicable in all Member States**
- Ordinance on the Environmental Pollution Register (Official Gazette 87/15, 35/08) and new from 2015 (OG 87/15)

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Reporting

Who is obliged to report?

- facility/organisational unit performing 1 or more activities (Annex I) or produce waste

410 economic activities (industrial and non-industrial activities, **more than E-PRTR**) within the following 11 sectors:

- energy (01,02,03)
- production and processing of metals (04)
- mineral industry (05)
- chemical industry (06)
- waste and waste water management (07)
- paper and wood production and processing (08)
- intensive livestock production and aquaculture (09)
- animal and vegetable products from the food and beverage sector (10) and
- other activities (11).



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Reporting

1. Choose sector - subsector - activity (only 1, dominant influence on environment)

2. Determine following:

- Number of releases/sources
- Pollutants into air, water and land (according to Annex II)
- Calculate or estimate if pollutants exceed thresholds (prescribed in Annex II)

! VOC and greenhousegas emissions (ETS) – other Registers!

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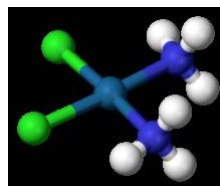
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Environmental Pollution Register (EPR)

- amounts (kg/year) of pollutant emitted to air, water and soil as well as produced, collected and treated waste (t) – **thresholds in Annex II are lower than in E-PRTR Regulation**

- Information is provided on a list of **132 key pollutants** falling under the following 5 groups:

- General indicators
- Inorganic substances (SO₂, NO₂, CO, CO₂..)
- Organic substances (CH₄, HCFC..)
- Metals (Al, Cr, Pb..)
- Particulates (PM₁₀)



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Environmental Pollution Register (EPR)

How pollutants to each component are reported?

- **Emissions to air** – indicative list of pollutants (64) with reference to activity (EPR Guideline – A part Emissions to air)
- **Emissions to water** – determined by analysis of waste water according to water permit
- **Emissions to land** – only substances from waste treated by D2/D3 operations (61 pollutants)
- **Waste** – according to waste categories (Waste catalogue), complied with EU Waste statistics regulation

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Environmental Pollution Register (EPR)

A facility has to report data **until 31 March** if it:

- falls under at least **one of the economic activities** listed in Annex I and **release at least one of the pollutants** (Annex II)
- releases **pollutants which in total amount in reported year exceed threshold** (Annex II) specified for each media - air, water/sea and soil
- generates/transfers waste off-site in amount **more than 0,5t/year (hazardous) and 20t/year (non-hazardous)**

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Reporting - forms

Data are reported on forms:



- general (PI-1 for operator, PI-2 for each unit, E-PRTR)
- thematic:
 - for air (PI-Z-1 emissions to air from production process without fuel combustion, PI-Z-2 production process including fuel combustion and PI-Z-3 fuel combustion process for gain energy),
 - for water (PI-V , KI-V),
 - for land (PI-T-D2, PI-T-D3),
 - for waste producer/holder (PL-PPO),
 - for waste collector/carrier (PL-SPO)
 - for waste recovery/disposal operator (PL-OPKO) and
 - for municipal waste collector/carrier (PL-SKO)

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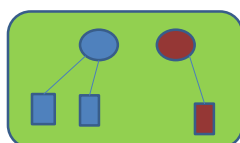
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Reporting

Definition of organizational unit:

- operator determines itself taking into account technological and non-technological functions
- must have geographical location/coordinates

CASE (operator, unit, location):



On one location are 2 operators with more organizational units, join heating (plant) – who is reporting on emissions to air?

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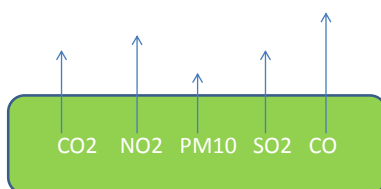
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Reporting - air

CASE (one unit, air, pollutants)

THRESHOLD



Report and what if total amount of each pollutant into air do not exceed threshold (for unit/location)?

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Reporting - data

Reported data:

- have to include **method/norm for determent** amount of emitted pollutant
- must be based on **best available information** (monitoring, calculation including emissions factors/mass balance, permits..)
- must be **credible**: measurements – calculation - estimation

Reporting - methods

Methods according to EPR:

1 Results of measurements of emissions

2a Calculation based on mass balance (e.g. SO₂ emissions from fuel consumption and amount of Sulphur)

2b Calculation based on emission factors (e.g. when the process varies throughout the year)

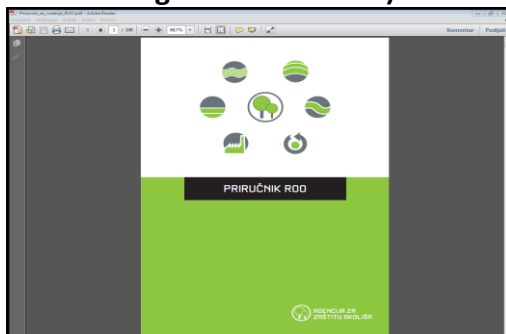
(International guidelines for calculation of emissions to air like EMEP/EEA air pollutant emission inventory guidebook 2013 and 2006 IPPC Guideline)

2c Calculation – others

3 Estimation

Reporting - air

- Determine sources – pollutants – methods
- Help: EPR Guideline – A Part (contains list of activities and expected air pollutants from that activities, detailed methods for determining emissions to air)



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Reporting - air

CASE – production of brick (capacity 170 000 t/year), used 7 000 000 m³ of natural gas, pollutants (NO₂, CO, CO₂ and PM 10)

- measurements: $c(\text{NO}_2) = 130 \text{ mg/m}^3$ waste gas and $c(\text{CO}) = 30 \text{ mg/m}^3$ waste gas

Emissions of NO₂:

$$E = \frac{B \times c \times f_{op}}{1000000} \quad (20)$$

gdje je:

E	– ispuštanja onečišćujuće tvari kg / god
B	– količina potrošenoga prirodnog plina od 7 000 000 m^3 / god
c	– srednja vrijednost izmjerenih koncentracija NO ₂ u otpadnome plinu od 130 $\text{mg}_n / \text{m}^3_{op}$
f_{op}	– faktor otpadnih plinova za plinovita goriva prema tablici 4-2 od 10 $\text{m}^3_{op} / \text{m}^3_g$

$$E = \frac{7000000 \times 130 \times 10}{1000000} = 9100 \text{ kgNO}_2 / \text{god}$$

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Reporting - air

Emissions of CO:

- same formula

$$E = \frac{B \times c \times f_{op}}{1000000} \quad (20)$$

gdje je:

E	– ispuštanja onečišćujuće tvari kg / god
B	– količina potrošenoga prirodnog plina od 7 000 000 m^3 / god
c	– srednja vrijednost izmjerenih koncentracija NO_x u otpadnome plinu od 130 mg_m / m^3_g
f_{op}	– faktor otpadnih plinova za plinovita goriva prema tablici 4-2 od 10 m^3_g / m^3_g

$$E = \frac{7000000 \times 30 \times 10}{1000000} = 2100 \text{ kg CO/god}$$

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Reporting - air

Emissions of CO2:

- calculation is always according to emissions factors (Part A of EPR Guideline)

$$Ei = \frac{EFi \times A}{1000} \quad (2)$$

gdje je:

$$A = \frac{B \times Hd}{1000000} \quad (5)$$

Ei	– godišnja ispuštanja CO_2 kg / god
EFi	– faktor emisije CO_2 od 50 000 g/GJ prirodnoga plina
A	– GJ utrošenog prirodnoga plina
B	– količina potrošenoga prirodnoga plina od 7 000 000 m^3_g / god
Hd	– donja ogrjevna vrijednost prirodnoga plina od 33 338 kJ / m^3_g – tablica 2-1 i Prilog 6 Pravilnika o ROO

$$A = \frac{7000000 \times 33338}{1000000} = 233366 \text{ GJ utrošenoga prirodnoga plina}$$

$$Ei = \frac{50000 \times 233366}{1000} = 11668300 \text{ kg } CO_2 / god$$

ETS – CO2 data from Report for monitoring greenhouse gas emissions!

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Reporting - air

Emissions of PM10:

- Calculation is according to emissions factors (Part A of EPR Guideline)

gdje je:

$$Ei = \frac{EFi \times A}{1000}$$

(2)

Ei

- godišnja ispuštanja PM_{10} u kg / god

EFi

- faktor emisije PM_{10} od 435 g / t proizvedenoga opekarskoga proizvoda

A

- proizvedena količina opekarskoga proizvoda od $170\,000 \text{ t / god}$

$$Ei = \frac{435 \times 170\,000}{1000} = 73\,950 \text{ kg } PM_{10} / god$$

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Reporting - air

Finally – Form for air :

4. Podaci o vrsti i količini ispuštanja					
Šifra	Onečišćujuća tvar	Metoda određivanja		Količina ispuštanja (kg/god)	
		Osnova	Norma / Metodologija	Ukupna	Uslijed izvanrednih događaja
1210121	Oksidi dušika izraženi kao dušikov dioksid (NO ₂)	1_1_	HRN EN 14792:2005	9 100	0
1210131	Ugljikov monoksid (CO)	1_1_	EN 15058:2004	2 100	0
1210141	Ugljikov dioksid (CO ₂)	1_2b_		11 668 300	0
1510111	Čestice (PM ₁₀)	1_2b_		73 950	0
1_1_1_1_1_		1_1_			

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Reporting - waste

Not reported – waste which is not covered by Waste Act:

- radioactive waste
- waste water
- gaseous substances
- carcasses of dead animals
- feces
- natural non-hazardous agricultural material
- GMO waste
- waste from excavation, search, treatment and storage of mineral resources
- explosives which are not for further use.

Reporting - waste

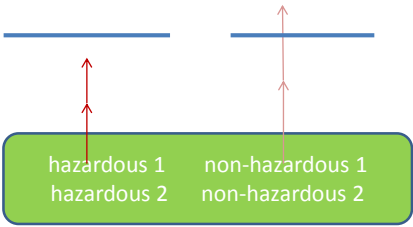
- Method for determine amount of waste (t) – only **measurement (weighing)**
- Waste reported from produced – must be clearly stated waste managed on location from transferred waste
- Exported waste – must be stated data of person for recovery/disposal

Reporting - waste

CASE - waste used again on location in production process - to be reported or not?

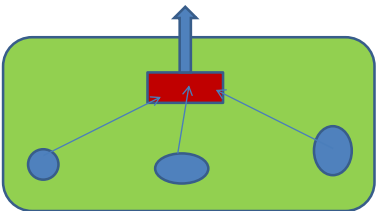
CASE – more waste categories, total amount (not) exceed treshold – what to report?

TRESHOLD

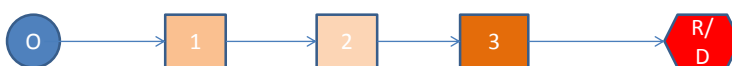


Reporting - waste

CASE (more operators, one location/waste storage) – how to report?



Reporting - waste



CASE – one producer, more collectors – who is reporting?

Reporting - EPRTR

E-PRTR Regulation art.5:

- operator of facility performing one or more activities from **Annex I** above capacity threshold – **65 relevant activities**
- Reporting releases to air, water and land of pollutant from **Annex II** for which threshold is exceeded
- Report off-site transfers of hazardous waste exceeding **2 t** or **2.000 t non-hazardous waste**
- Report off-site transfers of any pollutant in waste water exceeding threshold value from Annex II

Releases from Annex II include all releases from all sources included in Annex I on location

Reporting EPTRR

E-PRTR izvješćivanje

Izveštje: Pregled podataka za E-PRTR izvješće
Podaci za godinu: 2015

Osnovni podaci o postrojenju

1. Naziv matične tvrtke:	Zagrebački holding d.o.o.
2. Naziv organizacijske jedinice:	Postrojnica 2005 - Odtagališta
3. ID organizacijske jedinice:	HR010212555
4. Ulica i broj:	Jakuševac 10
5. Grad/načelo:	Zagreb
6. Poštanski broj:	10000
7. Geografska dužina:	45.7623858786403
8. Geografska širina:	16.028382754152
9. Vodno područje:	HR01 - Vodno područje rijeke Dunav
10. Koda prema NACE klasifikaciji:	36.21
11. Glavna gospodarska djelatnost:	Obrada i zbrinjavanje neopasnog otpada
12. Obvajan proizvodnje:	npr
13. Ukupni broj IPPC postrojenja:	1
14. Broj radnih sati godišnje:	7512
15. Broj zaposlenika:	33
16. Internet adresa tvrtke ili organizacijske jedinice:	www.zgos.hr

Djelatnosti postrojenja

17. Npr. Arsen i spojevi (kao As)	2	Ukupno (kg/godi)	6.04	Izračun (kg/godi)	Motp	Metoda
Onočišćavata tvar (br., CAS, naziv)						
Prag ispuštanja u vode (kg/godi)						

17. Npr. Arsen i spojevi (kao As)

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Reporting – EPR

Registar onečišćavanja okoliša

Prijava

Korisničko ime:

Lozinka:

Prijavi se

Ukoliko nemate korisnički račun prijaviti se možete [OVDJE](#).

Obveznici koji su poslali prijavu imaju mogućnost samostalno provjeriti dodijeljeno korisničko ime [OVDJE](#).

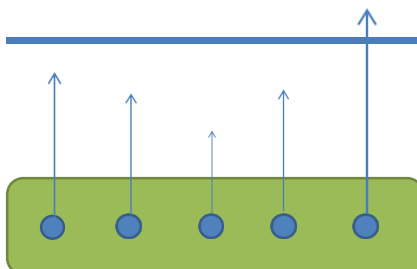
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AND NATURE PROTECTION

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Reporting – general unit form (air sources)

CASE – one source exceeds threshold – how many sources air emissions do you report in general form?

- TRESHOLD



form PI-2

Registar organizacijskih jedinica
Oznaka: PJ-2

Podaci za 2014. godinu

Podaci o organizacijskoj jedinici, ispuštanju i prijenosu onečišćavajućih tvari na lokaciji

Podaci o organizaciji									
1.	Ime (skraćeno naziv) (SABIT)								
1.1	OB								
1.2	OB								
1.3	OB								
1.4	OB								
1.5	OB								
1.6	OB								
1.7	OB								
1.8	OB								
1.9	OB								
1.10	OB								
1.11	OB								
1.12	OB								
1.13	OB								
1.14	OB								
1.15	OB								
1.16	OB								
1.17	OB								
1.18	OB								
1.19	OB								
1.20	OB								
1.21	OB								
1.22	OB								
1.23	OB								
1.24	OB								
1.25	OB								
1.26	OB								
1.27	OB								
1.28	OB								
1.29	OB								
1.30	OB								
1.31	OB								
1.32	OB								
1.33	OB								
1.34	OB								
1.35	OB								
1.36	OB								
1.37	OB								
1.38	OB								
1.39	OB								
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1.45	OB								
1.46	OB								
1.47	OB								
1.48	OB								
1.49	OB								
1.50	OB								
1.51	OB								
1.52	OB								
1.53	OB								
1.54	OB								
1.55	OB								
1.56	OB								
1.57	OB								
1.58	OB								
1.59	OB								
1.60	OB								
1.61	OB								
1.62	OB								
1.63	OB								
1.64	OB								
1.65	OB								
1.66	OB								
1.67	OB								
1.68	OB								
1.69	OB								
1.70	OB								

[illegible]

General information on unit - Form PI-2 (1)

1. Podaci o operateru																					
1.1.	Matični broj subjekta (MBS):										0	8	0	0	0	0	6	0	4		
1.1.0.	OIB:										2	7	7	5	9	5	6	0	6	2	5
1.2.	Matični broj poslovnog subjekta:														3	5	8	6	2	4	3
1.3.	Tvrtka ili naziv:										INA-Industrija nafte, d.d.										
2. Podaci o organizacijskoj jedinici na lokaciji																					
2.1.	Šifra organizacijske jedinice na lokaciji:										92061										
2.2.	Naziv organizacijske jedinice na lokaciji:										CPS I, II, III										
2.3. Adresa organizacijske jedinice na lokaciji:																					
2.3.1.	Ulica i broj:										Virje bb										
2.3.2.	Poštanski broj i naziv naselja/grada:										48326 Virje										
2.3.3.	Županija:										Koprivničko-križevačka										
2.4.	Gauss-Krügerove koordinate centroida organizacijske jedinice na lokaciji:																				
											Y:	5655128	X:	5109121							
2.5.	Djelatnost uslijed koje dolazi do emisije u okoliš (NKD razred):										06.20 Vađenje prirodnog plina										
2.6.1.	Djelatnost prema prilogu 1:										01 05 04 Plinske turbine										
2.6.2.	Proizvodni kapacitet:										2360665 m3/danu										
2.6.3.	Djelatnost PRTR Protokola:										(1a) - Rafinerije mineralnih ulja i plina										


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General information on organizational unit - Form PI-2 (2)

2.7. Podaci o vodopravnoj dozvoli za ispuštanje otpadnih voda:			
2.7.1.	Za predmetnu lokaciju potrebna je dozvola:		Da
2.7.2.	Ishodena dozvola:		Da
2.7.2.1.	Oznaka dozvole, Klasa:	UP/I-351-03/12-02/104 Urbroj:	517-06-2-2-14-24
2.7.2.2.	Datum izdavanja dozvole:		11.04.2014
2.7.2.3.	Datum važenja dozvole:		11.04.2019
2.7.2.4.	Naziv tijela koje je izdalo dozvolu: RH, Ministarstvo zaštite okoliša i prirode		
2.8.	Broj zaposlenih:		113
2.9. Podaci o osobi odgovornoj za ROO na razini organizacijske jedinice na lokaciji			
2.9.1.	Ime i prezime: Marina Franković		
2.9.2.	Funkcija: Vodeći spec. za zaštitu i sigurnost		
2.9.3.	Telefon/Fax: 048 872 244 / 048 892 156		
2.9.4.	E-mail: marina.frankovic@ina.hr		


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General information on organizational unit -
Form PI-2 (3)

3. Podaci o ispuštima u zrak					
Broj ispusta iz proizvodnih procesa bez izgaranja goriva; iz procesa koji uključuju izgaranje goriva kod kojih se produkti izgaranja koriste izravno u proizvodnom procesu; iz procesa obrade otpada (Z-1)	Broj ispusta iz proizvodnih procesa koji uključuju izgaranje goriva bez izravnog kontakta produkata izgaranja sa sirovinom (Z-2)	Broj ispusta iz procesa izgaranja goriva za dobivanje toplinske i/ili električne energije (Z-3)			
3	2	8			
4. Podaci o ispuštima otpadnih voda					
4.1. Broj ispusta otpadnih voda sa lokacije:		1			
4.2. Broj ispusta otpadnih voda sa lokacije u sustav odvodnje u vlasništvu druge pravne osobe:		0			
5. Podaci o ispuštima u tlo					
5.1. Broj lokacija na koje se otpad unosi u tlo radi zbrinjavanja otpada (D2):		0			
5.2. Broj lokacija na koje se otpad dubinski utiskuje u tlo (D3):		0			
6. Podaci o vrstama otpada					
Proizvedeni		Skupljeni	Obradeni		
Opasni	Neopasni	Opasni	Neopasni	Opasni	Neopasni
10	15				

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General information on organizational unit -
Form PI-2 (4)

No	Source of emission to air	Pollutant	ELV mg/m3
Z1,22,Z3	hot water boilers 3x6,5 MW	NOx	300
		CO	100
		Bacharach smoke test	0
Z4, Z7	gas heater 1,17 MW gas heater 2,85 MW	NOx	200
		CO	100
		Bacharach smoke test	0
Z5, Z6	glycol regenerator combustion device 2x0,073 MW		< 0,1 MW /No monitoring
Z9,Z10	gas combustion plant 2x 2,5 MW	NOx	100 1.1.2016.
		CO	100 1.1.2016.
		NOx	200 1.1.2016.
Z11,Z12,Z13	hot water boilers 3x13,04 MW	CO	100
		Bacharach smoke test	0
Z14,Z15,Z16	Gas turbine generator (Cogeneration plants) 3x3,3 MW	particles	5 1.1.2016.
		NOx	75 1.1.2016.
		SO ₂	35 1.1.2016.
		CO	100
		Bacharach smoke test	3 (<60000 m ³ /h) till end of 2015.
Z17	Gas turbine generator (Cogeneration plants) 3x3,5 MW	particles	5
		NOx	75
		SO ₂	35
		CO	100
Z18	Regenerative thermal oxidizer	SO ₂	400-2000
		H ₂ S	<10
		NOx	350 at 1800 g/h
		mercaptan	<100

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General information on organizational unit -
form PI-2 (5)

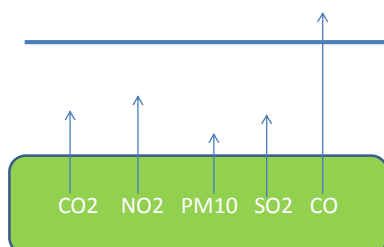
8. Podaci o ispuštanjima onečišćujućih tvari					
8.1. Ispuštanja u zrak					
Šifra	CAS broj	Onečišćujuća tvar	Prag (kg/god)	Prelazi	Neprelazi
201	05.09.7446	Oksidi sumpora izraženi kao sumporov dioksid (SO ₂)	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>
202	10102-44-0	Oksidi dušika izraženi kao dušikov dioksid (NO ₂)	30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
203	630-08-0	Uglikov monoksid (CO)	30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
204	124-38-9	Uglikov dioksid (CO ₂)	30.000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
501		Čestice (PM 10)	1.000	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8.2. Ispuštanja u vode/more					
Šifra	CAS broj	Onečišćujuća tvar	Prag (kg/god)	Prelazi	Neprelazi
101		Ukupna suspendirana tvar	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
102		Kemijska potrošnja kisika-dikromatom (kao O ₂) (KPKCr)	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
103		Biokemijska potrošnja kisika nakon n dana (BPKn)	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
104		Ukupni organski ugljik (TOC) (kao ukupni C ili COD/3)	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
217		Ukupni dušik	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
224		Ukupni fosfor	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
355	108-95-2	Fenoli (kao ukupni C)	20	<input type="checkbox"/>	<input checked="" type="checkbox"/>
377		Ukupna ulja i masti	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
378		Mineralna ulja	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
407		Živa i spojevi (kao Hg)	NO	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.3. Ispuštanja u tlo					

Air emission from production process without
fuel combustion - form PI-Z-1 (1)

1.6.	Šifra ispusta unutar organizacijske jedinice na lokaciji:	47
1.7.	Vrsta ispusta:	RTO jedinica, HADEN
1.8.	Gauss-Krügerove koordinate ispusta:	Y: 5655528 X: 5109185
1.9.	Visina ispusta (m):	30
2. Podaci o proizvodnom procesu ili procesu obrade otpada		
2.1. Podaci o procesima pri kojima dolazi do ispuštanja		
Šifra djelatnosti	Naziv djelatnosti	Postupak
05 03 04	Uklanjanje ugljikovog dioksida (CO ₂) iz prirodnog plina	
2.2. Podaci o glavnim proizvodima		
Šifra proizvoda	Naziv proizvoda	Količina (t/god)
11 10 20 08 00	Prirodni plin iz pl. ležišta (m ³ /god)	826233920
11 10 10 02 00	Kondenzat zemnog plina	26292
11 10 10 02 00	Ukapljeni zemni plin C2+ (NGL)	52862
2.3. Podaci o vrsti i potrošnji goriva kod procesa koji uključuju izgaranje goriva		

Reporting – air emission

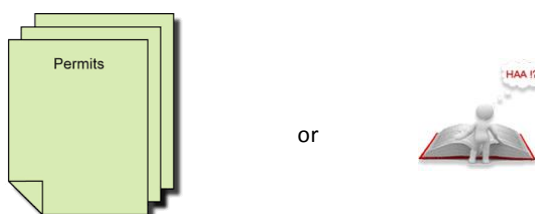
THRESHOLD



CASE – Report all releases if total amount of one pollutant into air exceeds threshold from unit?

Reporting – air emission methodology

- Release data to air for the facility holding Environmental Permitt (EP).



CASE – is the Analytical Method set by EP mandatory for Reporting EPR?

Reporting – soil emission

D₃ waste disposal - Deep injection, e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories



CASE - Report soil emission if pollutant releases exceed threshold? Borehole is subject to waste management permit?

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Environmental Pollution Register (EPR)

- Data reported by individual facilities **on-line (>95%) via ICA Accounts** to the relevant competent authorities - **administrative body in a counties (21)**
- Since 2007 the EPR contains data reported annually by **ca 5300 facilities**
- The counties authorities compile, check the quality, together with Environmental Protection Inspection, and **verify on-line reported data by 15th May**
- All counties submit then data to CAEN for compilation and further dissemination



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AGENCIJA ZA
ZAŠTITU OKOLIŠA

4.5.2016.

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Data quality

Quality assurance system:

- activities for checking completeness, consistency and credibility of data
- recognizing and correct errors
- documenting and archiving data



General activities: checking measurement, calculations..

Specific activities: technical checking of sources, equipment..

Data quality

• Completeness:

- Are all pollutants reported (e.g. check measurements, products of production process..)
- Compare data with data from other documents (e.g. water permit, waste permit..)
- Compare data with previous years



Data quality



- **Consistency:**
 - Are same methods, calculations used as previous years,
 - Check if there are derogations in reported data **compared with previous years**
 - **Compliance of data** related to time of production, operation time of equipment, used fuel...

Data quality



- **Credibility :**
 - **Clear and detail specification** of used methods/norms,
 - In calculations are **representative formulas and emission factors** used
 - Compliance of reported data with **internal operator quality system**

National reporting


- Croatia through CAENP reported for the first time - **2014 reporting year**
- Data / **Report** submitted (**Annex III of E-PRTR Regulation**)
- **detailed feedback** concerning the quality of the E-PRTR data - **checks covered** an evaluation of the number of facilities and release reports, amounts of releases and transfers reported, confidentiality claims, accidental releases, etc.
- In case errors are found - possibility to correct the data reported

4.5.2016.



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EPR data

- Provide governments, competent authorities, policymakers and scientists with a coherent and wide industrial release and transfers database
- Used by Fund for Environmental Protection and Energy Efficiency to calculate and charge fee for release of CO₂ , SO₂ and NO₂  FOND ZA ZAŠTITU OKOLIŠA I ENERGETSKU UČINKOVITOST
- Used for preparation of the Annual Report on the monitoring of air pollutants from stationary sources in Croatia (in accordance with the national regulations)
- Used for making a series of other reports under international treaties and EU directives - Annual report on greenhouse gas inventory , United Nations Framework Convention on Climate Change UNFCCC , Convention on Transboundary Air Pollution (CLRTAP) and accompanying protocols , Basel Convention on the control of Transboundary Movements of Hazardous Wastes and Convention on the protection and Sustainable Use of the Danube River (ICPDR)
- Used for other reporting obligations to EU e.g. Eionet Reporting obligations WISE - SoE Reporting- Emissions..

4.5.2016.



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Croatian National Portal of the Environmental Pollution Register

Hrvatski nacionalni portal Registra onečišćavanja

R Detalji na razini organizacijske jedinice

Prethodna godina 2012

Naziv: INA-Industrija nafte, d.d.

operator:

Organizacijska jedinica: RDR 1 11 111

Sadržaj:

- Detalji
- Ispuštanje onečišćujućih tvari
- Prijenos onečišćujućih tvari
- Prijenos otpada
- Tajnost

Ispuštanje u zrak

Naziv onečišćujuće tvari	Ukupno	Usljed iznenadnih događaja	Usljed iznenadnih događaja (%)	Metoda određivanja
Ugljikov dioksid (CO ₂)	495.599 t	0	0 %	Izračun
Oksidi dušika izraženi kao dušikov dioksid (NO ₂)	136 t	0	0 %	Mjerenje

Ispuštanje u vodu i/ili more

Nema prijavljenih podataka

Ispuštanje u tlo

Nema prijavljenih podataka

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EPR – public access

- **Indirect access via Annual reports on EPR, form „Request for information“** according to Act on right to access information (OG 25/13), phone or e- mail (info@azo.hr and roo@azo.hr), **EPR help desk** (<http://helpdesk.azo.hr/>)

Registar onečišćavanja okoliša (ROO)

Registar onečišćavanja okoliša je sklop podataka o izvornima, vrsti, količini, načinu i mjestu ispuštanja, prijenosu i odlaganju onečišćujućih tvari i otpada u okoliš.

Baza ROO

Hrvatski nacionalni portal Registra onečišćavanja okoliša (HNOPOO)

Prejavitelj ROO

Odobrenje obvezništva prijave podataka u ROO-u godiš

Korisnička pomoć za prijave podataka

Obveznik obaveza prijave podataka da se na informacije vezane za ispuštanje otpada prijave podataka u ROO-u obaveza odlaganja otpada (podaci dostupni javnosti su dostupni na aplikaciji ROO).

Informacije o prijavi podataka u skladu s prijavom podataka

Informacije o prijavi podataka u skladu s prijavom podataka

Informacije o prijavi podataka u skladu s prijavom podataka

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4.5.2016.

EPR - problems

Problems appearing in practice:

- Reporting of incorrect and/or incomplete data
- Delays in submission/reporting of data
- Verification of incorrect/incomplete data by competent authorities
- Delay in verification of data
- coordination of all parties, expert and IT support of system

Aplikacija Industrija help desk



- **twinning project for 2016** „Improvement of Environment Pollutant Register in Croatia and its integration into Croatian Environmental Information System CEIS”

Thank you for attention

BRIGITTE MRVELJ ČEČATKA

Ministry of environmental and nature protection
Directorate for inspection
Radnička cesta 80, 10 000 Zagreb
Tel. +385 1 3717 903
Email: brigitte.mrveljcecatka@mzoip.hr
Fax. +385 1 3717 212

JELENA MANENICA

Ministry of environmental and nature protection
Directorate for inspection
Radnička cesta 80, 10 000 Zagreb
Tel. +385 1 3717 909
Email: jelena.manenica@mzoip.hr
Fax. +385 1 3717 212