

## Workshop on ODS and F- gases

# F- gases and ODS legislation Implementation in Slovenia

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## Slovenia

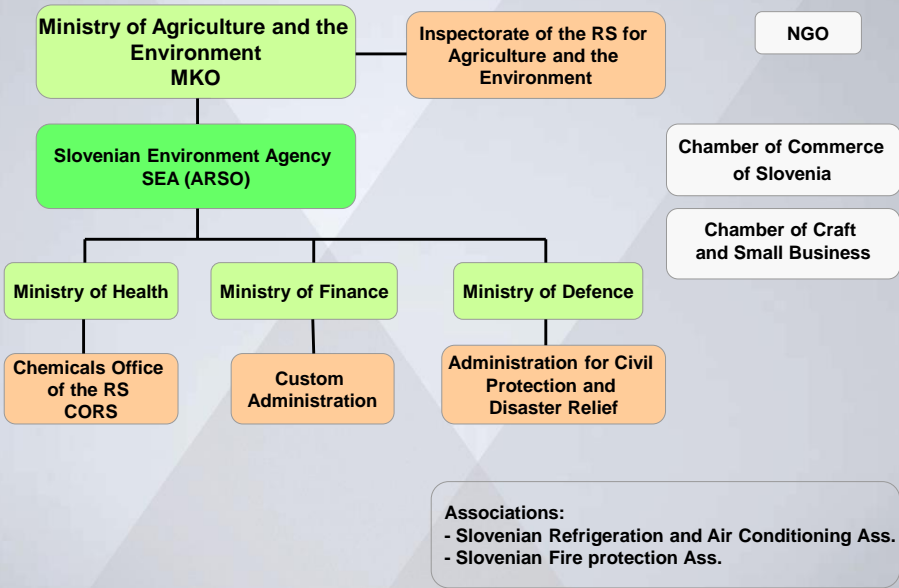


Slovenia

- Surface: 20,273 km<sup>2</sup>
- Population: 2,055 million
- Administrative Division: 12 statistical regions and 210 municipalities



Organizational aspect of implementation...



## At the beginning ...

### ...ODS documents and legislation:

- Operational Programme of the Republic of Slovenia for the phase out of chlorofluorocarbons (CFCs) (2003)
- Operational Programme of the Republic of Slovenia for the phasing out of halons (2003)
- Rules on the management of waste ozone-depleting substances (Ur.l.RS, 42/03)
- Decree on the handling of substances that deplete the ozone layer (Ur.l.RS, 101/04)

### ...ODS legislation was extended to F- gases:

- Decree on the use of ozone-depleting substances and fluorinated greenhouse (OJ of the RS No. 78/08)
- Rules on professional training of personnel of equipment containing ODSs or F gases (OJ of the RS No. 17/2009)

## Legal basis (1)

- Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases (and 10 implementing regulations )

Decree on the implementation of the Regulation (penalties) - Article 13



- Regulation (EC) 1005/2009 on substances that deplete the ozone layer

Decree on the implementation of the Regulation (penalties) - Article 29



- provisions are directly applicable in all Member States
- some elements needed implementation through national legislation

## Legal Basis (2) ...

**Regulation (EC)  
No. 1005/2009**

**Regulation (EC)  
No. 842/2006**

**Decree on the use of ozone depleting substances and  
fluorinated greenhouse gases (May 2010 – Decree)**

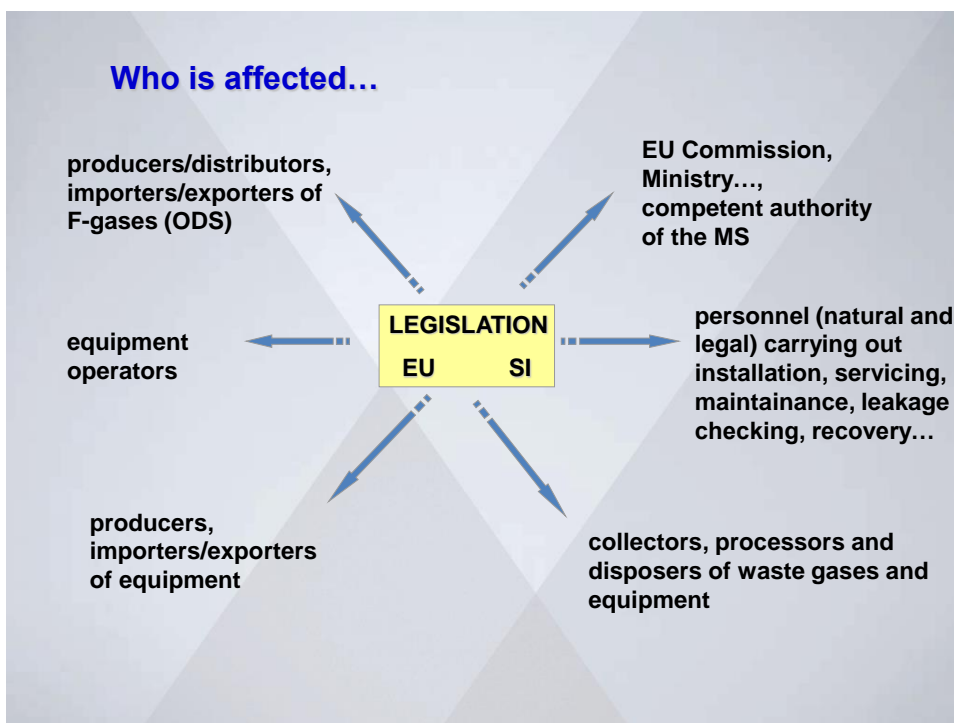
- stationary refrigeration, air conditioning and heat pump equipment;
  - equipment containing solvents;
  - installed fire protection systems and fire extinguishers;
  - high-voltage switchgears;
  - air-conditioning systems in motor vehicles.
- maintaining and installing equipment;
  - leakage and recovery;
  - reclamation and disposal of equipment;
  - training for personnel provided;
  - conditions and methods of certifying personnel and companies.

## Who is responsible ...

... for the implementation of the ODS and F gas legislation (EU and SI)?

- **Ministry of Agriculture and for the Environment is responsible for the implementation**
- **Slovenian Environment Agency is the competent authority that actually implements the requirements of legislation**
- **Inspectorate of the RS for Agriculture and the Environment - Inspectors responsible for environmental protection controlled the implementation**

## Who is affected...



## Additional actions...(1)

**Slovenia decided to establish some additional actions which are stricter than the requirements of the EU legislation...**

- Equipment operator must register stationary equipment (3 kg or more) of ODSs ( since 2004) or F-gases (since 2008).

[Web application](#) for on-line registration of equipment - each operator has a user name and password to enter (since 1 January 2014).

## **Additional actions...(2)**

- Operator of stationary equipment ( $\geq 3\text{kg}$ ), certified company and certified personnel (MAC, SF6 equipment,...) must submit an annual report on charging (separately for the first installation and for maintenance) and recovery for the previous year to agency.

[Web application](#) for on-line reporting (since 1 January 2014).

## **Additional actions...(3)**

- **Certification:**
  - certificates for personnel in MAC sector: examination in air conditioning systems in motor vehicles (not attestation),
  - certificates validity: 5 years

... certified personnel should undergo periodic training every five years to upgrade the knowledge and to prolong the validity of certificates...

- **Distributors may supply F-gases (ODS) only to final users:**
  - operators
  - manufacturers of equipment
  - certified personnel and companies

## Additional actions...(4)

### ➤ Environmental tax (ENVT) on F- gases:

- Decree on environmental tax on carbon dioxide emissions (OJ RS, 47/13)

#### Who pays?

Person (legal or natural person) is liable for payment of ENTV because of using FGG for the first time for production of equipment in SI or because of the filling such equipment or because of maintenance of such equipment.

The height of tax depends on kind of use:

- filling of new equipment at its production
- filling of stationary equipment, at first installation
- maintaining of equipment – 100%

in height of 5 % of product of quantity of individual FGG and its GWP

Price for 1kg of emitted CO<sub>2</sub> is 0,0144 €. The price for FGG is now 20% of this price → 0,00288 €.

[ENVT](#)

## Obligations...

### Equipment operators:

- registration of equipment ( $\geq 3\text{kg}$ ),
- keep records on the equipment ( $\geq 3\text{kg}$ ),
- leakage checking obligation,
- recovery obligation,
- keep records of recovery, recycling, delivery for reclamation or disposal,
- annual reporting,
- use of services of certified personnel

### Certified companies:

- only certified person could install, maintain, provide leakage checking...
- fulfil records on the equipment,
- issue a certificate of performed leakage checking and recovery,
- keep records of recovery, recycling, delivery for reclamation or disposal,
- annual reporting.



## Training and Certification System ...

**Member states are obligated to establish training and certification system of personnel and companies involved in handling of ODS and fluorinated gases - this is a central aspect to reduce emissions**

Slovenia started in 2010 with training and certification as required in Art. 5 of the F-Gas Regulation and Art. 23 of ODS Regulation.

**Minimum requirements and conditions for mutual recognition laid down in the implementing Commission Regulations**

## Training and Examination ...

**Ministry - Slovenian Environment Agency - is responsible for:**

1. selection of persons who implement training programmes and examinations (open call for cooperation);
2. selection of examiners to work in the Examining Board (open call for cooperation);
3. issuing certificates to personnel (and companies);
4. maintaining records;
5. establishing records as public records in accordance with the Slovenian Environmental Protection Act;
6. certifying catalogues of required skills and knowledge for each training and examination programme.

**Minister:**

- authorises representatives of the Ministry to work as a President of the Examining Board ...



### Training and Examination Body (open call for cooperation)

A person performing a training programme and responsible for organisation of examination for personnel shall fulfil the following conditions:

- be organised as a company, chamber, institution or branch of a foreign company ;
- have premises for the training and examination at disposal;
- have demonstration equipment for training and examination at disposal ;
- have references for training in one of the programmes or in the field of maintenance of other electrical or electronic equipment;
- have references for examining knowledge after the completion of a training programme;
- for every training programme have either employed or by way of a cooperation agreement engaged at least four persons who are in possession of references in the field of education, training or equipment planning for the training programme he/she performs.

*...examiners should meet the same conditions – 35 examiners*

### Training and Examination bodies – Personnel ...

Quite well covered



We selected:  
 programme A: 3  
 programme B: 1  
 programme C: 1  
 programme D: 2  
 programme E: 4

*... they signed a contract with the Ministry...*

## Training and Certification System – Personnel

Personnel carrying out leak checking, gas recovery, plant installation, maintenance or servicing of equipment that contains or is designed to contain ODS or F-gases shall have an appropriate qualification.

- Slovenia has one personnel Certification Body for issuing certificates – **Ministry for Agriculture and the Environment** (before 2012 this was Ministry of the Environment and Spatial Planning)
- Certification Body is regulated by Decree

## Training and Examinations

... candidate shall attend the relevant training programme before examination (duration depends of the programme – catalogue)

...certificate of completion of training for the relevant programme

... examination

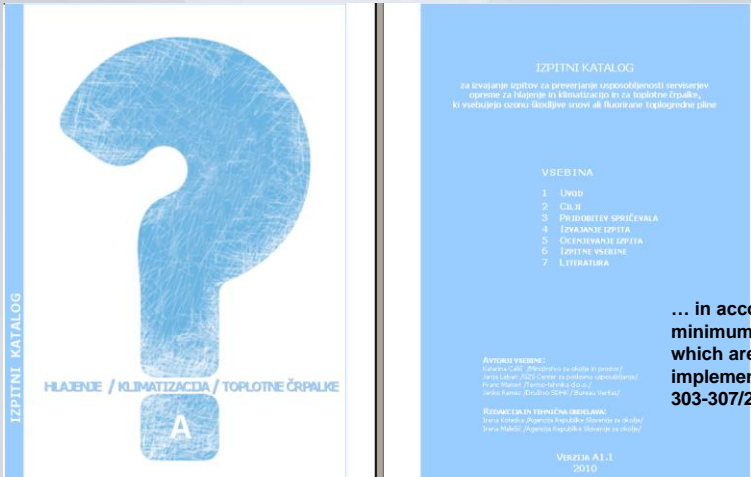
...personnel certificate

...register of certified personnel is a public record ...

... authorised person ...



Catalogues of Required Skills and Knowledge for Different Training Programmes (A, C, D, E) ...



... in accordance with the minimum requirements which are laid down in implementing Com Reg 303-307/2008

- Content of the examination
- Scope and procedure of examination of knowledge
- Criteria for evaluating the examination ...

Catalogues ...

6 IZPITNE VSEBINE	
Obvezne vsebine vsakega izpita so:	
IZPITNE VSEBINE za teoretični del izpita	Število izpitnih vprašanj / kategorijo
Znanja / Izpitne teme	A I A II A III A IV
Kjer je v stolpcih številka 3, je obvezno izbrati 1 ali več vprašanj. Skupno število vprašanj za posamezno kategorijo naj ne presega: <ul style="list-style-type: none"><li>o kategorija AI in AII: 45 vprašanj</li><li>o kategorija AIII: 18 vprašanj</li><li>o kategorija AIV: 21 vprašanj</li></ul>	
Osnove termodinamike (1*)	12 12 - 3
1.01 Poznavanje osnovnih erot po standardu ISO za temperaturo, tlak, maso, gostoto, energijo	3 3 - 3
1.02 Razumevanje osnove teorije o sistemih za hlajenje: osnove termodinamike (ključni zrazi, parametri in procesi, kot so pregrete, praznili tlak (High Side), toplota ob kompresiji, entalpija, hladilni učinek, sesalni tlak (Low Side), podhladitev), lastnosti in termodinamične preobrazbe hladilnih sredstev, vključno s prepoznavanjem zeotropnih zmesi v tekočem stanju	3 3 - -
1.03 Uporaba ustreznih tabel in diagramov ter njihova razlaga v kontekstu posrednega preverjanja uhajanj (vključno s preverjanjem dobrega celovanja sistema): logaritemski p/h diagram, tabele nasičenosti hladilnega sredstva, diagram enojnega hladilnega cikla s kompresijo pare.	3 3 - -
1.04 Opis funkcije glavnih sestavnih delov v sistemu (kompresor, uparjalnik, kondenzator, termostatski ekspanzijski ventil) in termodinamične preobrazbe hladilnega sredstva.	3 3 - -
1.05 Poznavanje osnovnega delovanja naslednjih sestavnih delov, ki se uporabljajo v sistemu za hlajenje, ter njihove vloge in pomena za prepročevanje in prepoznavanje uhajanja hladilnega sredstva: (a) ventili (krogasti ventili, membrane, sedežni ventili, varnostni ventili), (b) regulatorji temperature in tlaka, (c) kontrolna okenca in indikatorji vlage, (d) kontrole za odleditev, (e) sistemski varovalci, (f) merilne naprave, kot je večnamenski termometer, (g)	- - - -

Examinations shall be planned and structured in a manner which ensures that the minimum skills and knowledge are covered.

A program

## Training and Examination - required conditions ...

**Candidates who wish to attend examination shall meet the following conditions:**

**Age:** at least 18 years

**Education completed:**

- at least secondary technical vocational education, or
- other secondary vocational education and one year of professional experience in the field of maintenance of equipment, for which shall be trained and examined, or
- other professional education and one year of experience in the field of maintenance of equipment, for which shall be trained and examined, or
- high professional education; and
- required training programme.

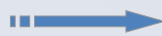
## Examination ...

The examination should verify the professional competence of the personnel. Examination is organised by the training body.

[...test example...](#)

**The examination consists of:**

- theoretical part (written test)
- practical part



further specified in catalogues

**Successful completion of the theoretical part is a condition for the practical part.**

**Evaluation criteria depend upon the programme**

A - theoretical part: 60 % or more

50 - 59 %



practical part



oral examination



- practical part - all tasks at least 50 %

[... evaluation sheet for practical tasks ...](#)

## Examination - Evaluation Body ...

...an Evaluation Body is designated  
by the Training Body...



an Examining Board → ... performed examination ...

It shall be composed of three members:

- President;
- Examiner of the Training Body who organised the examination;
- Examiner of other Training Body .

The Examining Board shall be independent and impartial in carrying out its activities.

## Examination ...

- the examination provider shall publish examination dates;
- the examination provider prepares examination questions for the theoretical part and tasks for the practical part;
- the President of the Examining Board shall review questions;
- Examiners evaluate candidates;
- President of the Examining Board invigilates the examination and fulfils record for each candidate.

Duration of the examination – Programme A:

- theoretical part: 90 min (Cat.AI);
- practical part: max. 4 hours (2,5 hours)

[...record for each candidate...](#)

[...record of the examination...](#)



## Examination - Final Evaluation...

**Candidate:**

- passed the examination – “SUCCESSFUL”
- failed the examination – “UNSUCCESSFUL”

...retake the examination...

**The cost of:**

- training  ...the price of the training shall be determined by each provider
- +
- examination  ...the price of examination is determined by the Ministry

... is covered by  
candidates directly  
to the provider...

...price list...

## Personnel Certificates...

...on the basis of the examination records the Agency issues certificates...

**validity of 5 years**

... certified personnel should undergo periodic training every five years to upgrade the knowledge and to prolong the validity of certificates...

## Statistics...

... the current status:

Programme A: 777 AI + 1 AIV  
 Programme C: 3  
 Programme D: 35 + 1  
 Programme E: 822 + 3

**... our assessment:**

**Programme A:** 600  
**Programme C:** 20  
**Programme D:** 40  
**Programme E:** 2000

## Certificate- example

## Certification of Companies (1)

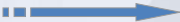
A legal person or a sole trader carrying out installation and maintenance or servicing of refrigeration, air-conditioning and/or heat pump equipment or fire protection equipment shall hold a company certificate.

- Slovenia has one Certification Body for companies, i.e. Slovenian Environment Agency;
- the Slovenian certification body is regulated by Decree.

To obtain a certificate of entry into the records of companies, a company should submit an application to the Agency, from which it must be evident the following:

- its registered activity is maintenance of equipment;
- it fulfils technical conditions for handling ODS and F-gases;
- it employs one or more authorised persons for relevant sector.

## Certification of Companies (2)

Company certificate  validity is not limited

Companies must notify the Agency:

- if they do not meet the conditions anymore or any changes,
- and when an authorised persons prolong validity of the certificates.

... current status:

- 442 companies in SRAC sector
- 1 in fire protection sector

... our assessment:

- 300 companies in SRAC sector
- 5 in fire protection sector

...register of certified companies is a public record ...



## Training and Certification System in Slovenia ...

Slovenia is a small country and the existing training, examination and certification system is quite good:

- appropriate and transparent and allows controls;
- we are aware of certain problems which will be solved by changing existing legislation.

## Slovenian Environment Agency - [a website ...](#)



REPUBLIKA SLOVENIJA  
MINISTRSTVO ZA KMETIJSTVO IN OKOLJE  
AGENCIJA REPUBLIKE SLOVENIJE ZA OKOLJE



	VREME	VODE	VARSTVO OKOLJA	NARAVA	PODNEBNE SPREMEMBE	POTRESI	ZRAK
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Ozon in F-plini

Aktualno

Predstavitev

Upravni postopki

Predpisi

Obrazci z navodili

Naprave

Okoljevarstvena dovoljenja

Pooblaščenici

Okoliške dajatve

Ozon in F-plini

Uvod

Področja uporabe

Nacionalne emisije

Trgovanje z emisijami TGP

Tekoča goriva za motorna vozila

Poročanje

Vprašanja in odgovori

Virtualna knjižnica

Zanimivosti

Povezave

Ozon in F-plini

Na tej spletni strani so strnjene informacije dveh izmed specifičnih vsebinskih področij delovanja Sektorja za kakovost zraka, in sicer ravnanja:

- s snovmi, ki tanjšajo ozonski plašč (ozonu škodljive snovi - vplivajo na debelino ozonske plasti v stratosferi) in
- z določenimi fluoriranimi toplogrednimi plini/F-plini (iz vrst HFC, PFC ter SF6).

V teh področjih se ukvarjamo predvsem z naslednjimi nalogami:

- vodenje upravnih postopkov: vpis v evidenco pooblaščenih podjetij za vzdrževanje in namestitve nepremične opreme za hlajenje in klimatizacijo in toplotnih črpalk ali za vzdrževanje in namestitve vgrajenih gasilnih sistemov s plini in gasilnih aparatov
- obveščanje in izobraževanje uporabnikov
- zbiranje letnih poročil in obdelava podatkov za poročanje Slovenije v institucije EU
- aktivno sodelovanje pri sprejemanju in implementaciji novih predpisov
- spodbujanje uporabnikov z namenom uporabe alternativnih snovi in drugih tehnologij.

Področje ozonu škodljivih snovi in določenih fluoriranih toplogrednih plinov ureja:

- Evropska zakonodaja: velja neposredno v vseh državah članicah in je v celoti obvezujoča. Osnovni uredbi sta Uredba (ES) 1005/2009 o snoveh, ki tanjšajo ozonski plašč in Uredba (ES) 842/2006 o določenih fluoriranih toplogrednih plinih
- Slovenska zakonodaja: Uredba o uporabi ozonu škodljivih snovi in fluoriranih toplogrednih plinov (Ur.LRS, 41/2011)

O dejavnostih lahko izveste več v podrejenih rubrikah:

- Aktualno

- Predpisi

- Obrazci z navodili > Ozon in F plini

- Pooblaščenici > Klimatizacija, hlajenje, gašenje

- Okoliške dajatve > F plini

- Poročanje > Ozon in F plini

### Slovenian contact point ...

- Irena Koteska
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