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REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

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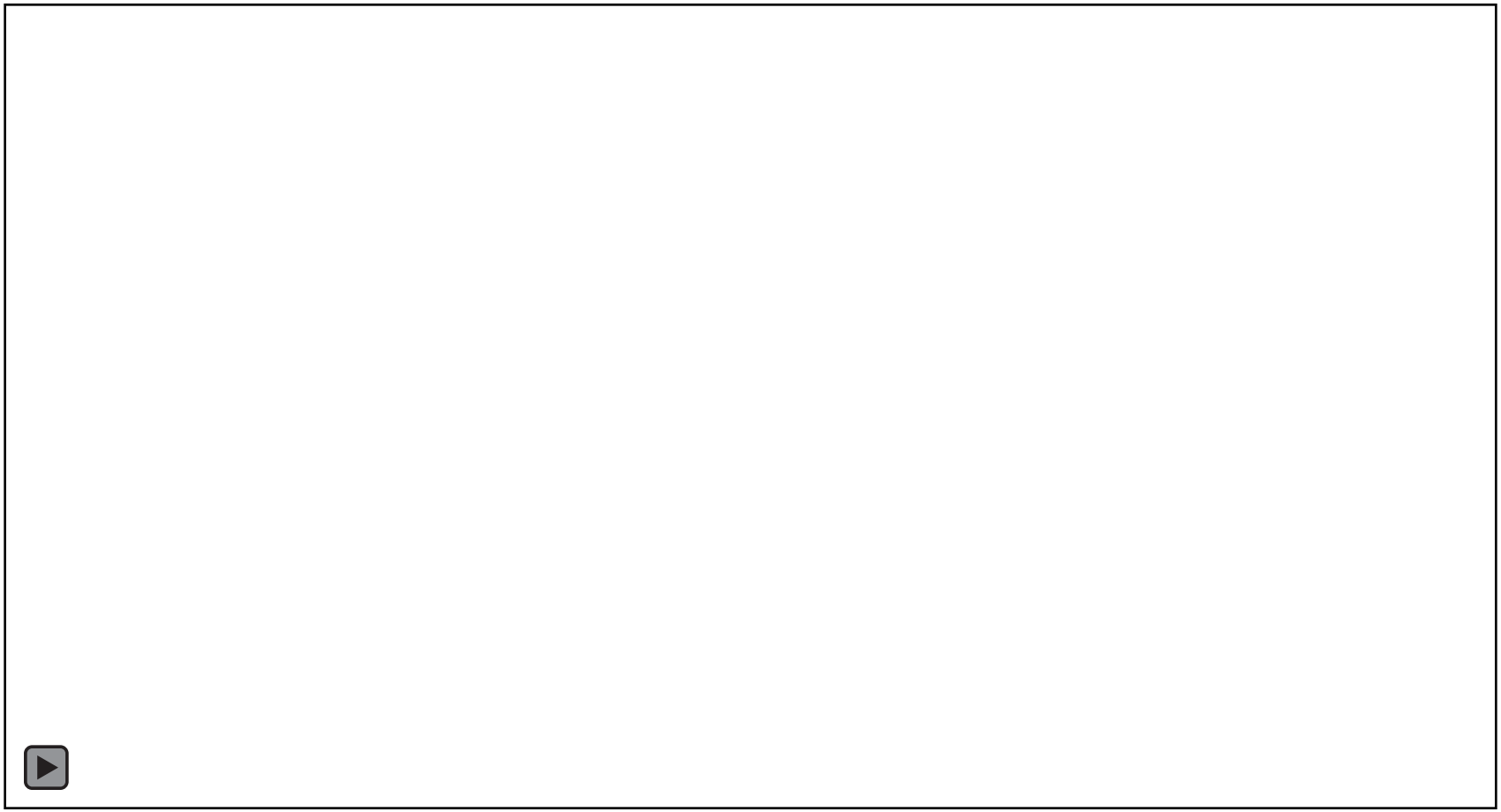
EU GLOBAL CONTEXT AND EU POLICY IN THE EMISSION TRADING SYSTEM

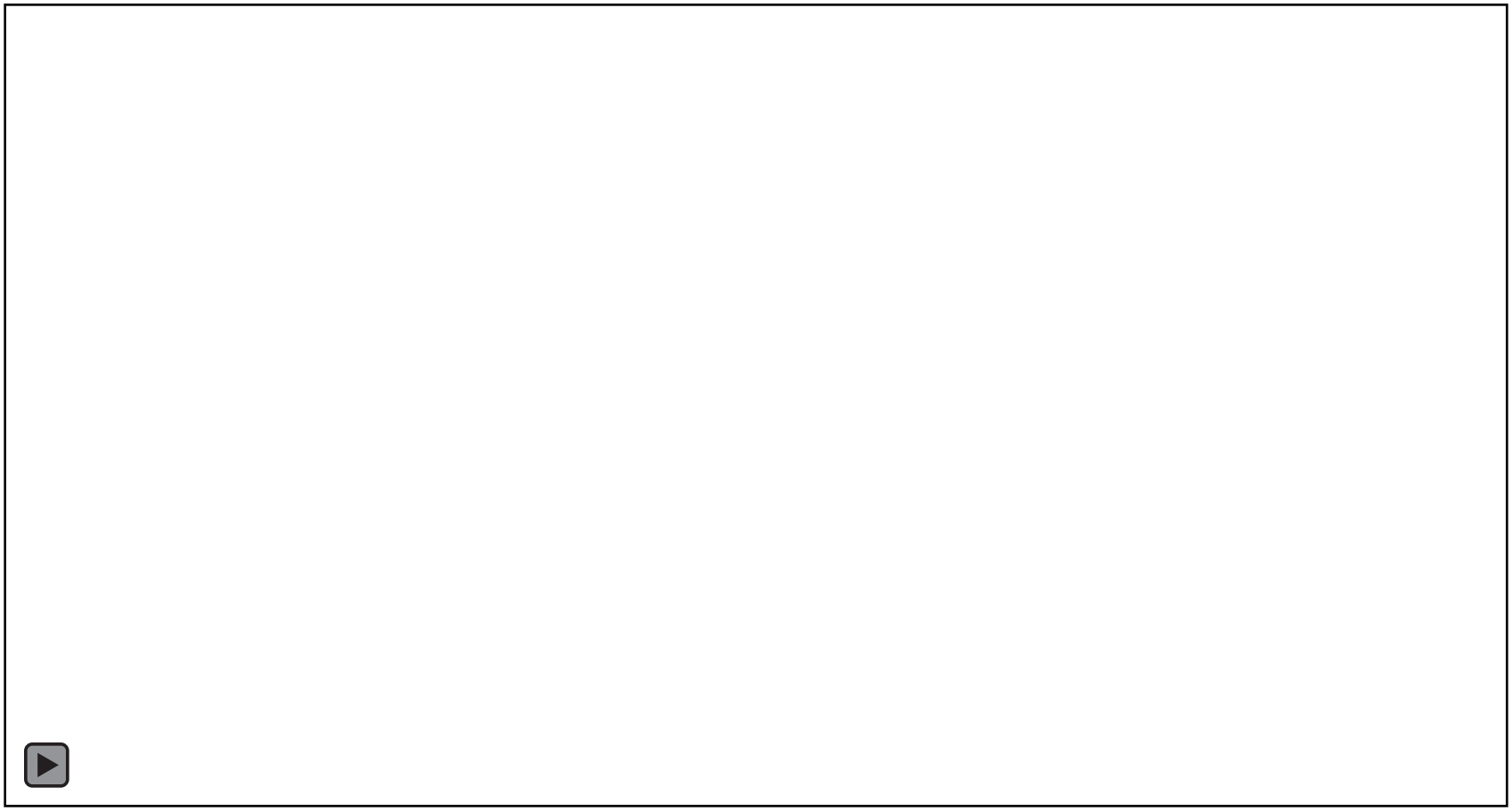
CONTENT

- The Paris Agreement
- EU: 2020 climate and energy package
- EU: 2030 climate and energy package
- Path towards a low-carbon economy in 2050
- The role of the ETS in EU policy

TEMPERATURE CHANGE (1)

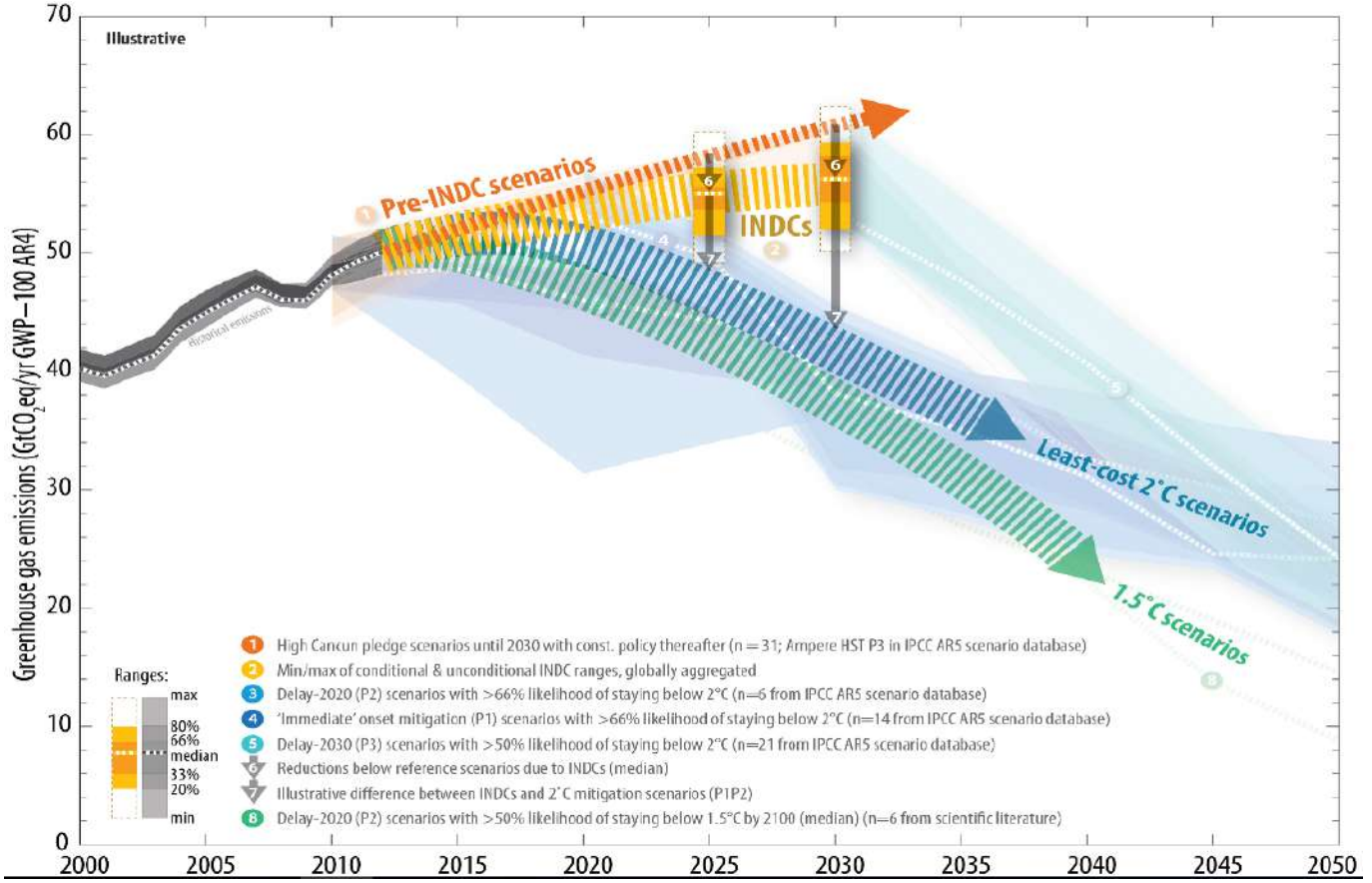


TEMPERATURE CHANGE (2)

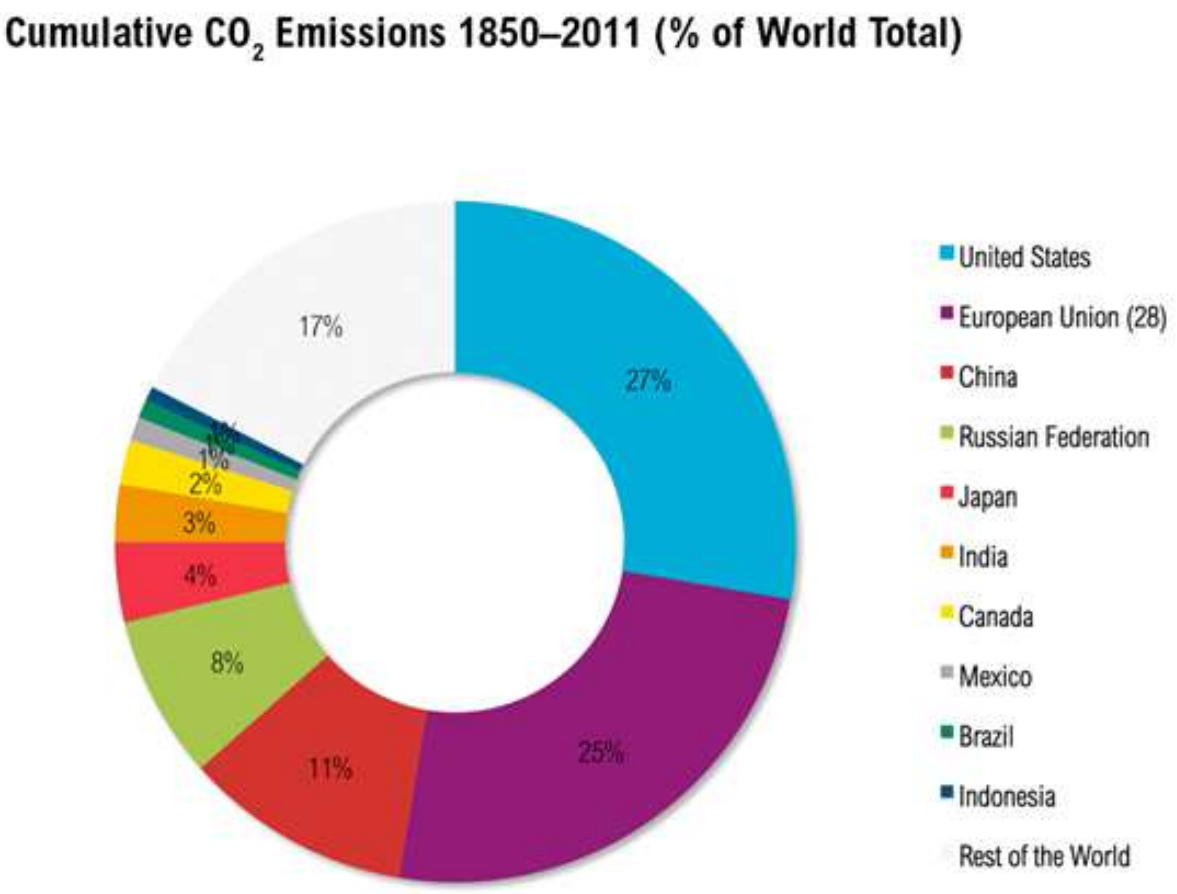


THE PARIS AGREEMENT COP21

Global scenarios 2°C and Intended Nationally Determined Contributions (INDC)



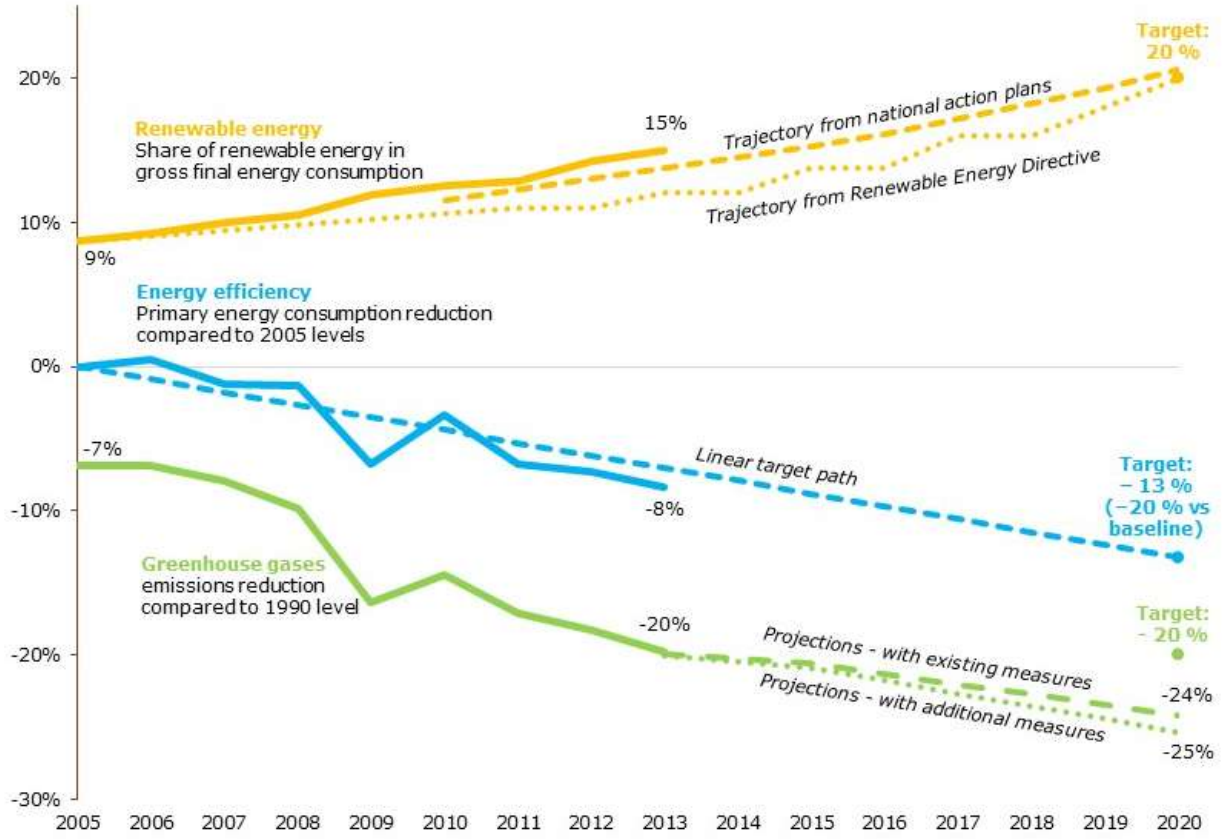
WHO IS THE MOST RESPONSIBLE?



EUROPE'S GROWTH STRATEGY UNTIL 2020

- **Limitation of Greenhouse Gas Emission**
  - one of the 5 key strategy goals
- **EU: 2020 climate and energy package**
  - 20% compared to the 1990 level
  - the interdependence of climate and energy policy
  - renewable energy sources, energy efficiency
- **Benefits**
  - energy security
  - employment
  - green growth progress
  - competitiveness of Europe

EU28, UNTIL 2020

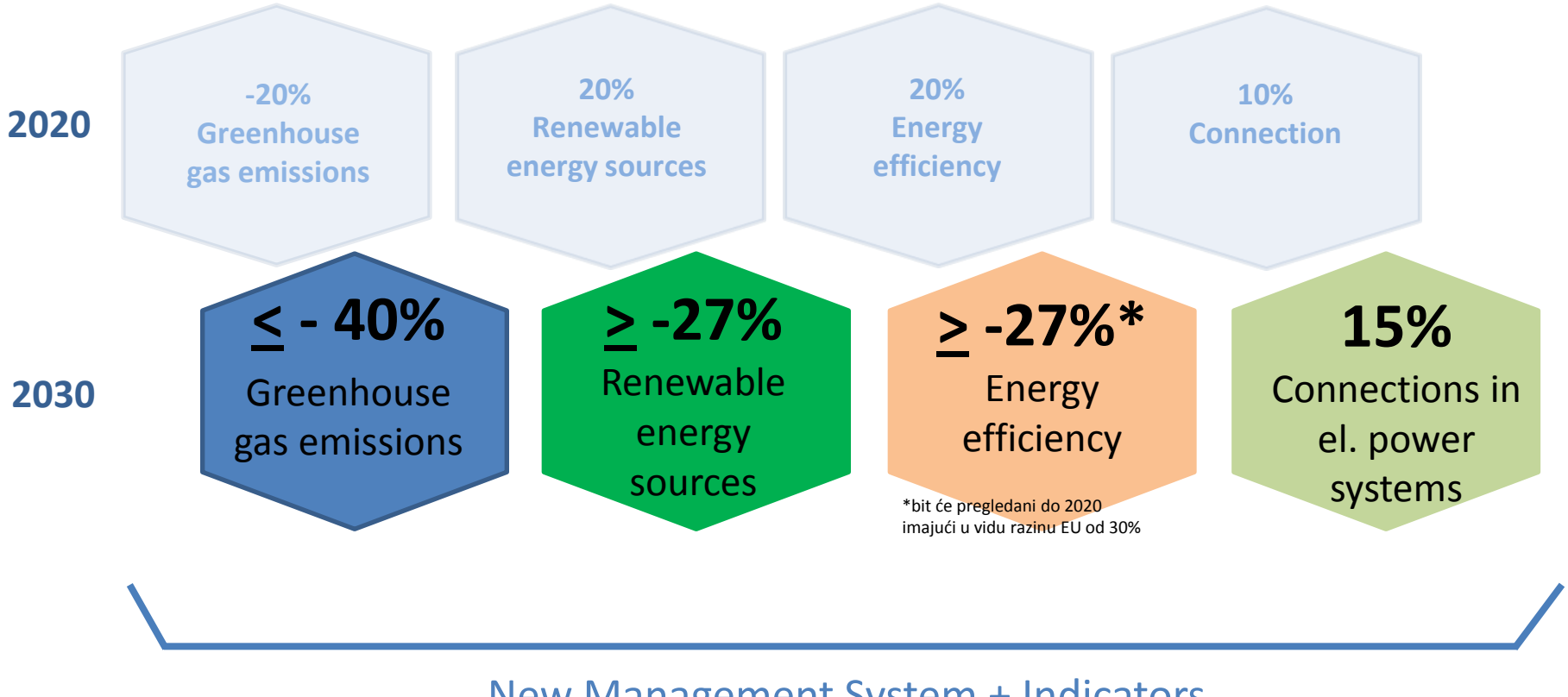


Source: EEA, 2015d; EEA, 2015c, Eurostat, 2015d, 2015g

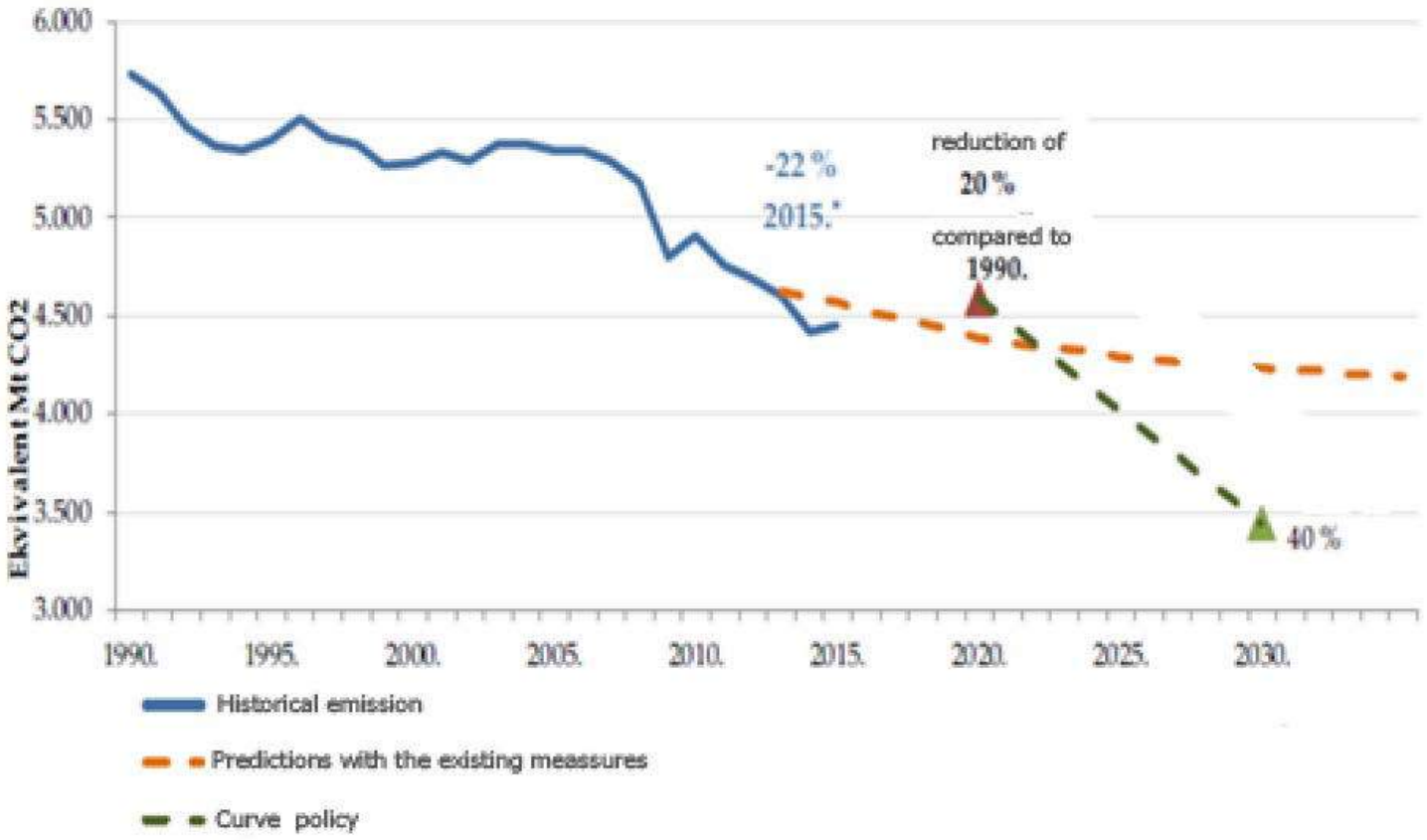
EU: 2030 CLIMATE AND ENERGY PACKAGE

- **Climate and energy package**
  - adopted in 2014
  - based on the EU: 2020 climate and energy package
  - by 2030, reducing greenhouse gas emissions by 40% compared to the 1990 level
- **Aligned with other strategic documents**
  - guidelines for a competitive low-carbon economy in 2050
  - energy policy guidelines in 2050
  - guidelines for transport

EU OBJECTIVE FOR 2020 AND 2030



EU DO 2030.



Goal EU-a za 2020.	
vs 1990.	vs 2005.
-20%	-14%

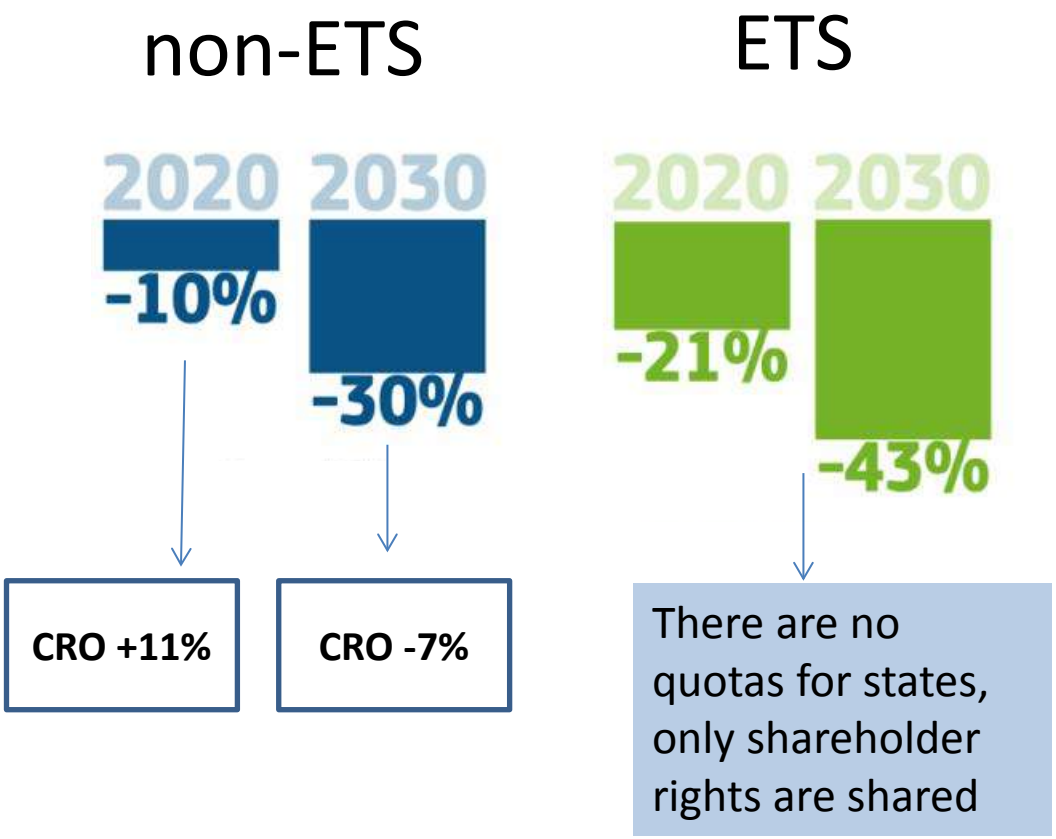
Goal EU-a za 2030.
vs 1990.
-40%

Curent state in EU-a	
2015.*/2014.	2015.*/1990.
0,7%	-22%

ROLE OF ETS IN EU POLICIES

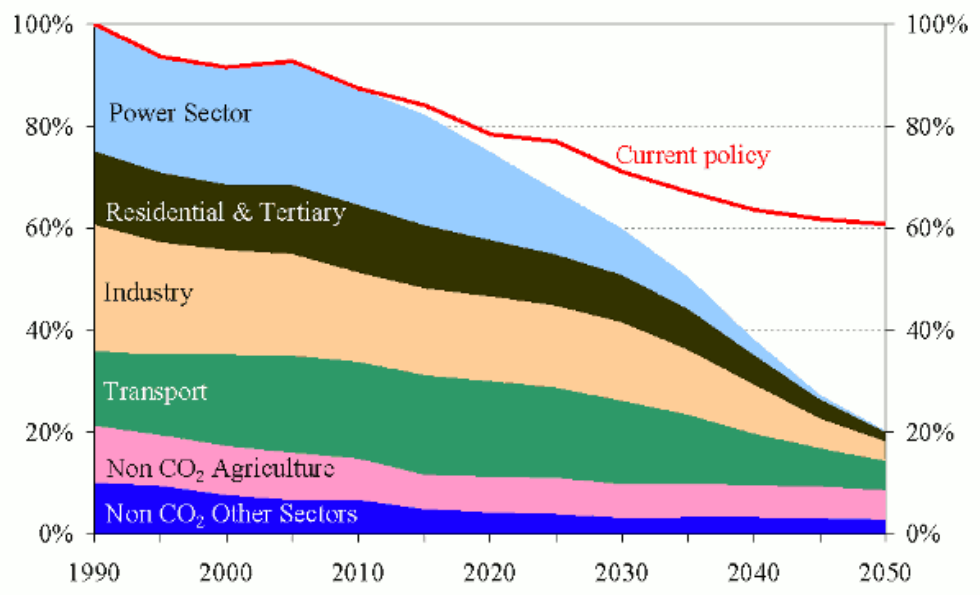
- **The two main Emission Reduction Policy Instruments**
  - EU ETS
  - the Member States' contribution to reducing emissions that are not covered by the EU ETS
- **EU ETS - a leading instrument**
  - covers almost half of the EU's emissions (about 45%)
  - includes the energy and industry sector as well as air transport

OBJECTIVES FOR EMISSION REDUCTION (COMPARED WITH 2005)



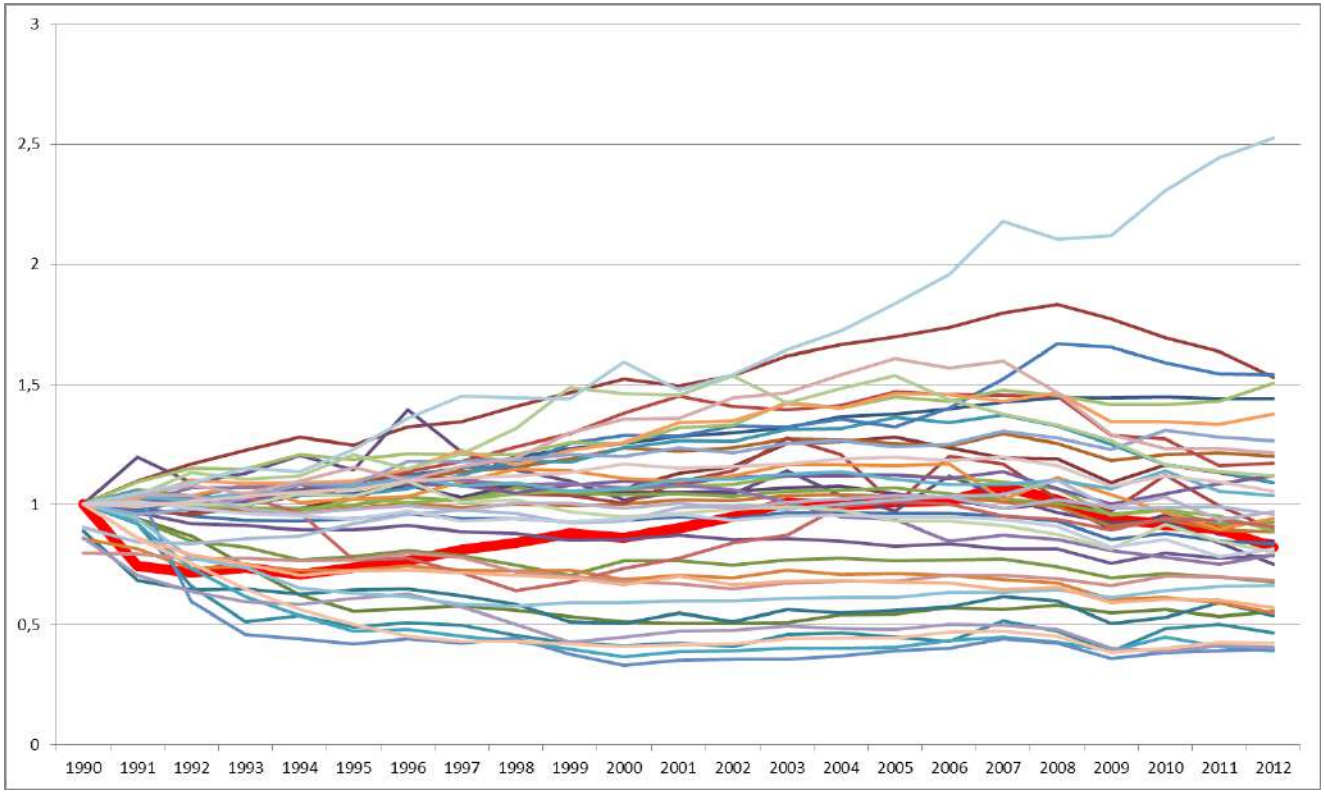
PATH TO LOW CARBON ECONOMY

- **Low-carbon economy in 2050**
  - by 2050, reduce greenhouse gas emissions by 80% compared to the 1990 level
  - 40% by 2030, 60% by 2040



REPUBLIC OF CROATIA ?

- Emissions from 1990 to 2012, Member States of Annex 1 of the Kyoto Protocol, Croatia (marked red)



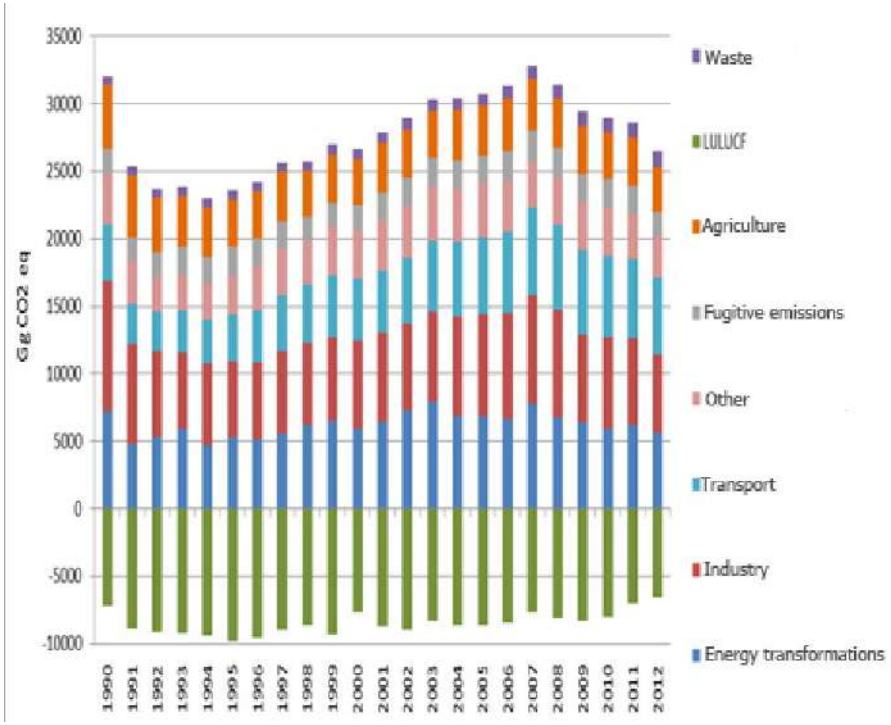
SECTORS

Non-ETS sectors

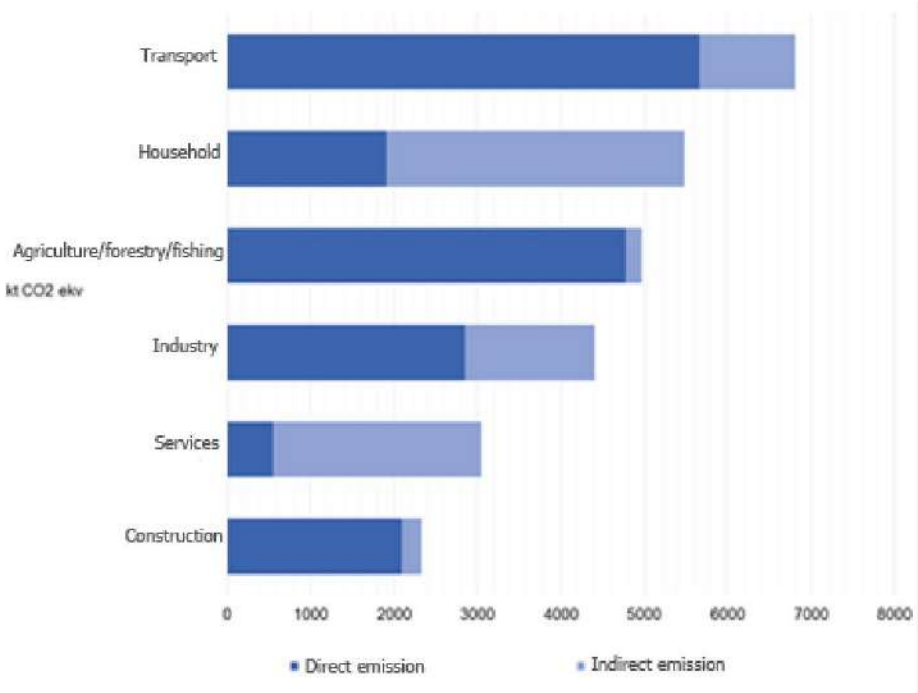
ETS sectors

GREENHOUSE GAS EMISSIONS FOR THE PERIOD 1990 – 2012

Emissions by Sector



Carbon footprint, 2012



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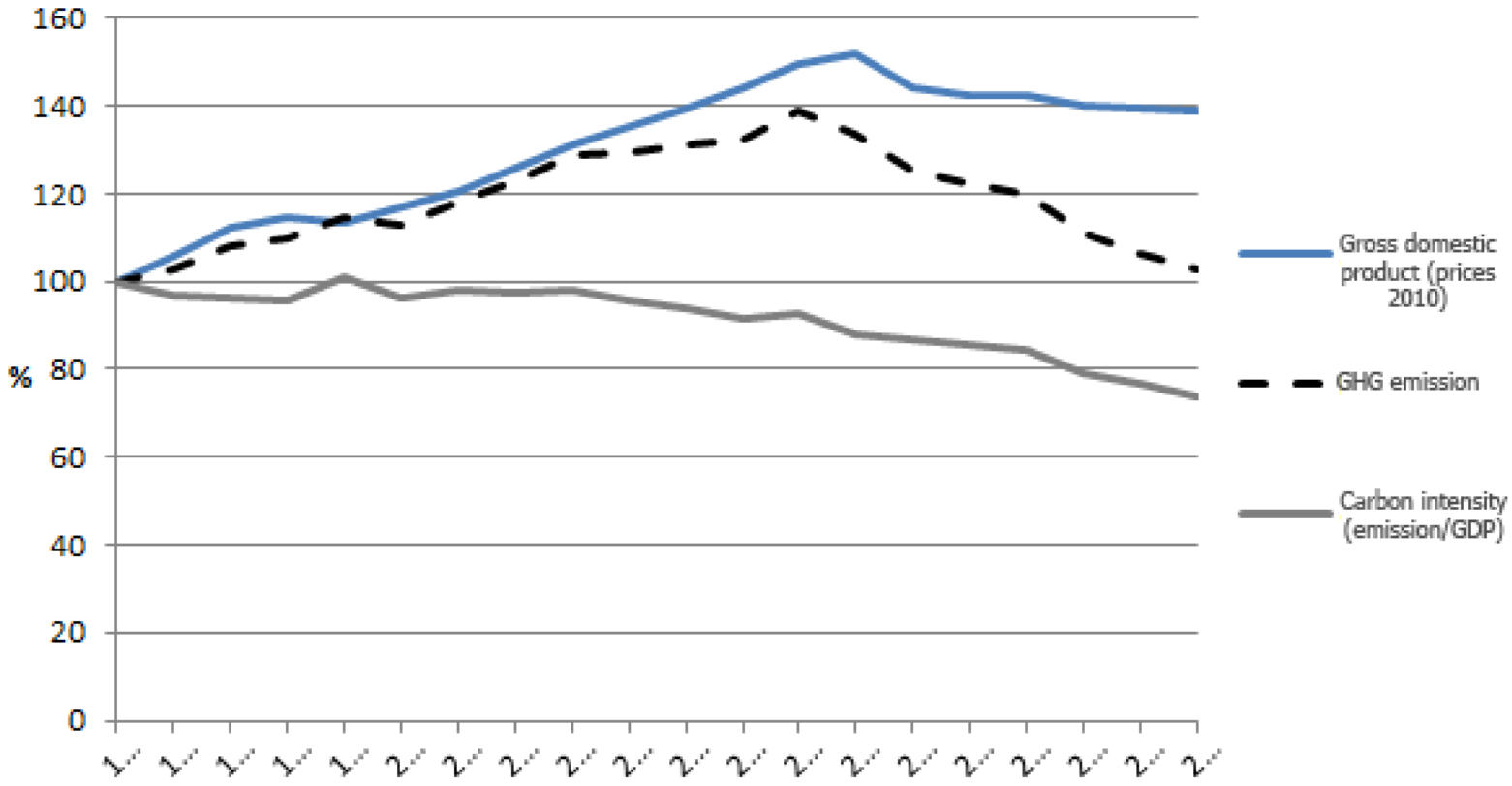


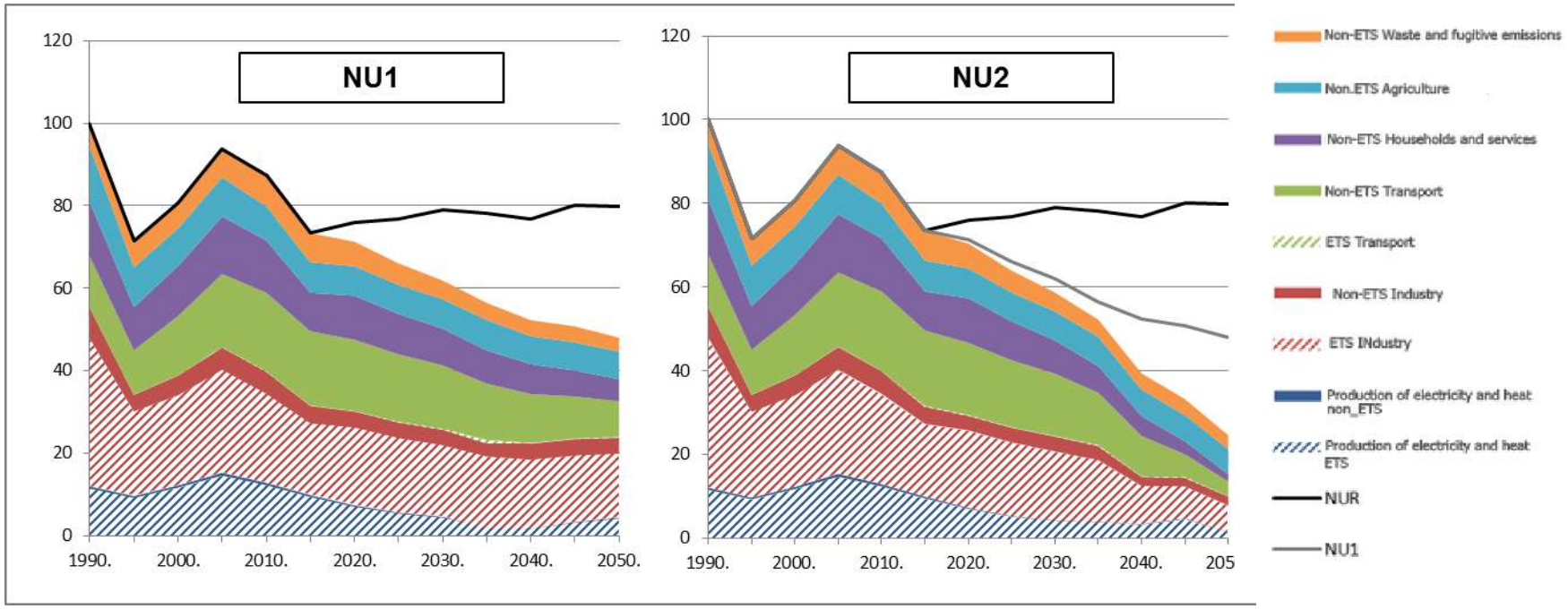
REPUBLIC OF CROATIA - RECENT STEPS

Law on Strategic Planning and Governance System for Development of Republic of Croatia	Adopted in December 2017
National Development Strategy of Republic of Croatia Until 2030	To be adopted until 2020
Low Carbon Development Strategy of the Republic of Croatia Until 2030 with a view to 2050	Draft in 2017, adoption postponed after Energy Strategy
National Climate Adaptation Strategy of the Republic of Croatia	Finalized public consultation and SEIA in 2017
Energy Strategy of Croatia until 2030	Under development, to be adopted in 2019
Integrated National Energy and Climate Plan	To be drafted until the end of 2018, adopted until the end of 2019

LOW-CARBON STRATEGY- SCENARIOS

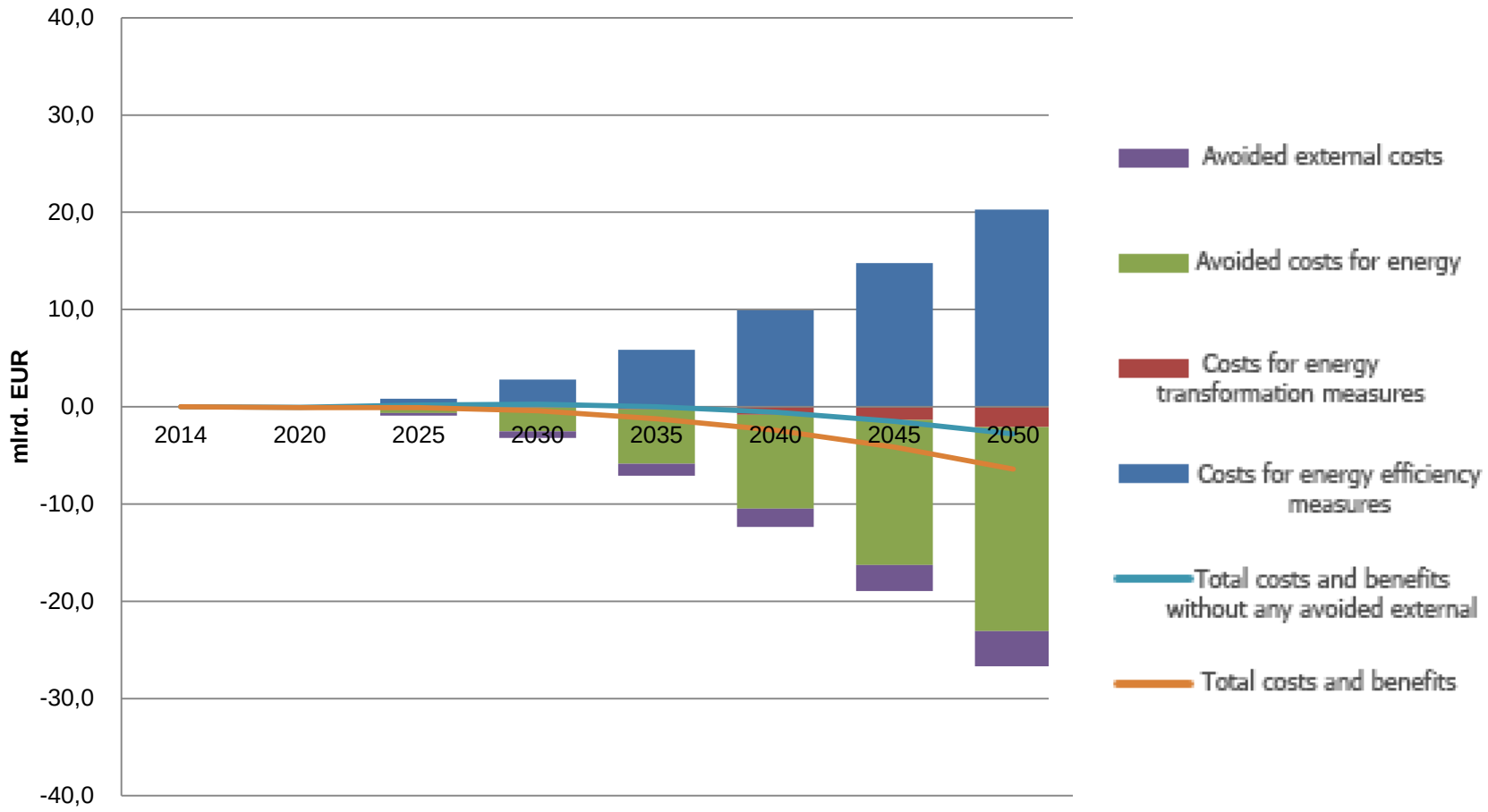
COLLECTIVE SCREENING OF THE SCENARIOS- SECTORAL EMISSION

(index compared to 1990)

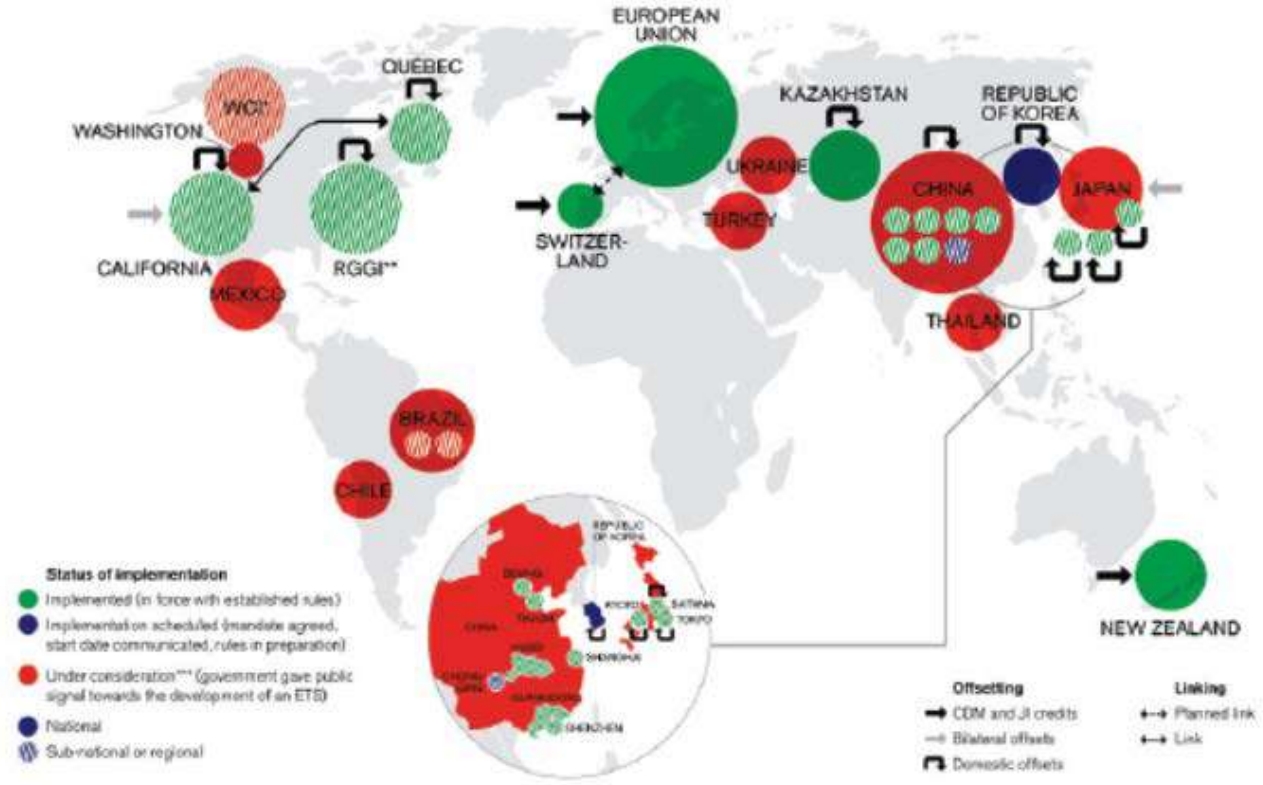


Source: Project drafting of framework for the development of low-carbon strategy of the Republic of Croatia to 2030 with a view to 2050, MZOE, EKONERG, 2016.

COSTS AND BENEFITS OF NU1 IN RELATION TO NUR



MARKETS IN THE WORLD



Source: Adapted from World Bank. 2014. State and Trends of Carbon Pricing 2014. World Bank: Washington DC.

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FUNCTIONING OF GHG EMISSION TRADING SYSTEM AND EU EMISSION MARKET

CONTENT

- **Emission trading system**
- **Essential elements of emission trading system**
- **Market structure**
- **Primary market**
- **Secondary market**

HISTORICAL DEVELOPMENT (1)

Key features	Phase 1 (2005–2007)	Phase 2 (2008–2012)	Phase 3 (2013–2020)
Geography	EU27	EU27 + Norway, Iceland, Liechtenstein	EU27 + Norway, Iceland, Liechtenstein Croatia from 1.1.2013 (aviation from 1.1.2014)
Sectors	Power stations and other combustion plants ≥20MW Oil refineries Coke ovens Iron and steel plants Cement clinker Glass Lime Bricks Ceramics Pulp Paper and board	Same as phase 1 plus Aviation (from 2012)	Same as phase 1 plus Aluminium Petrochemicals Aviationfrom 1.1.2014 (aviation from 1.1.2014) Ammonia Nitric, adipic and glyoxylic acid production CO_2 capture, transport in pipelines and geological storage of CO_2 Aviation

HISTORICAL DEVELOPMENT (2)

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HISTORICAL DEVELOPMENT (3)

GHGs	CO_2	CO_2, N_2O emissions via opt-in	CO_2, N_2O, PFC from aluminium production
Cap	2058 million tCO_2	1859 million tCO_2	2084 million tCO_2 in 2013, decreasing in a linear way by 38 million tCO_2 per year
Eligible trading units	EUAs	EUAs, CERs, ERUs ***Not eligible***: Credits from forestry, and large hydropower projects.	EUAs, CERs, ERUs ***Not eligible***: CERs and ERUs from forestry, HFC, N_2O or large hydropower projects. Note: CERs from projects registered after 2012 must be from Least Developed Countries

EMISSION TRADING SYSTEM

- It should be made possible to achieve the emission reduction at a lower cost due to emission interaction

- Subject of trading
  - CO_2, SO_2, NO_x
- Carbon Trading – CO_2
- Other greenhouse gases - reduced to CO_2 potential (CO_2eq)
- Carbon Market

ESSENTIAL ELEMENTS OF EMISSION TRADING SYSTEM

- **Cause a shortage of emission units**
  - influence through a given limitation, motivation for reduction
- **Sufficient number of participants**
  - forming of market price
- **Existence of supply and demand**
  - liquidity
- **Monitoring and recording of all participants' emissions**
  - technical implementation, system integrity
- **Penalties for participants who do not meet the obligation**
  - ensuring the implementation of the system

EU ETS MARKET STRUCTURE

- **Primary market**
  - basic GHG emission units
  - units generated by compensation (*offset*)
- **Secondary market**
  - free trading units from the primary market
- **Derivative market**
  - special financial instruments

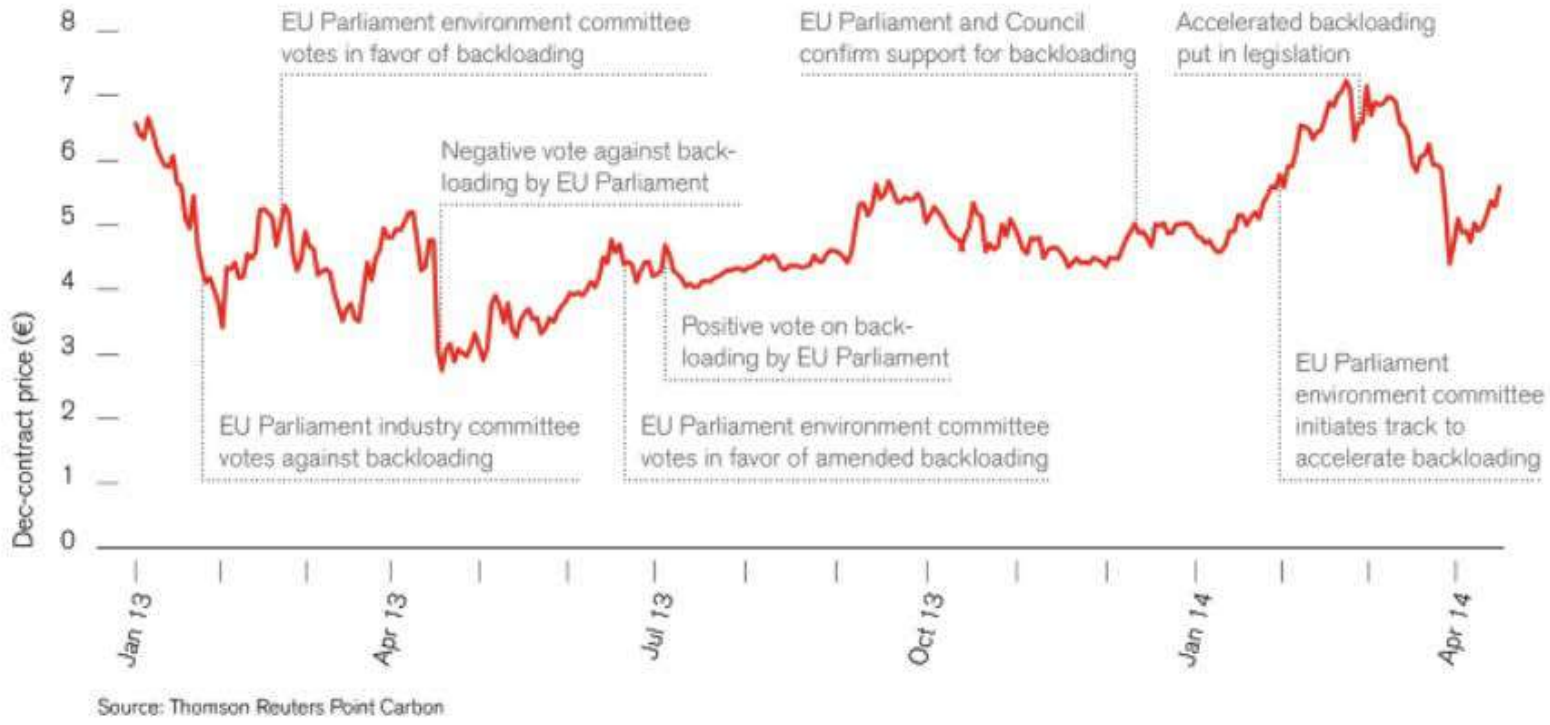
PRIMARY MARKET

- **The means/place of placement of GHG emission units on the market**
- **Basic allocation options :**
  - binding price
  - auction - the bids determine the price
- **EU ETS - combination of allocation options :**
  - free allocation
  - auction

SECONDARY MARKET

- **Types of transactions**
  - direct purchase for quick delivery (*spot*)
  - transactions for long-term planning and risk management (*forward contract*)
- **Means and place of transactions**
  - Regulated, multilateral stock exchange - direct and standardized transactions
  - bilateral transactions (with or without a mediator, *over-the-counter OTC*) adjusted for clients
- **Availability of information**
  - on bids, quantity in deals and transactions, prices

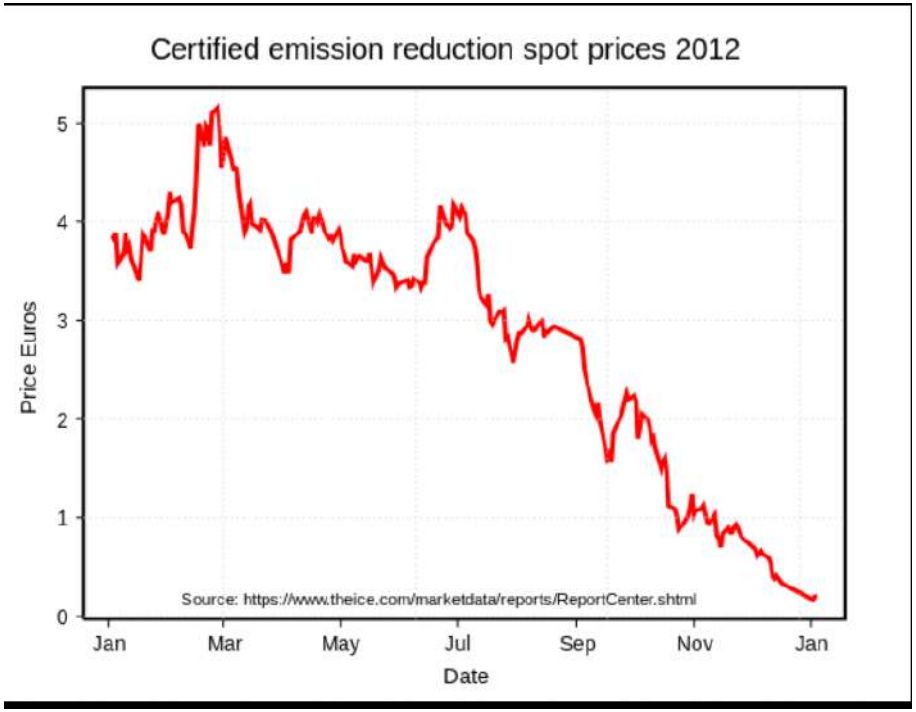
PRICE CHANGE

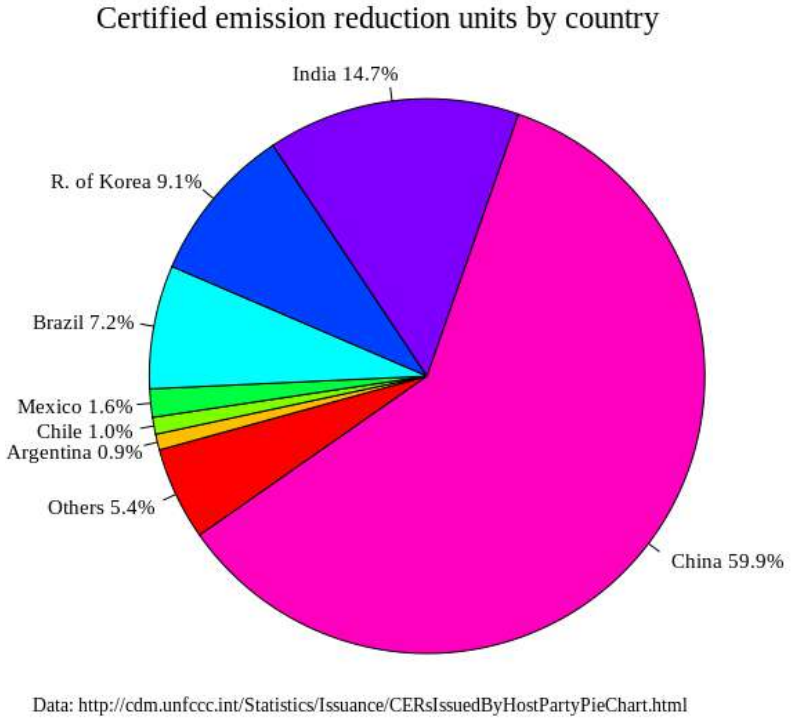


Source: World Bank (2014). State and trends of carbon pricing. World Bank: Washington DC.

CER, ERU- CERTIFIED EMISSION UNITS FROM DEVELOPMENT PROJECTS (CDM)

They can be used up to 2020





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EMISSION ALLOCATION QUOTA AT EU LEVEL

CONTENT

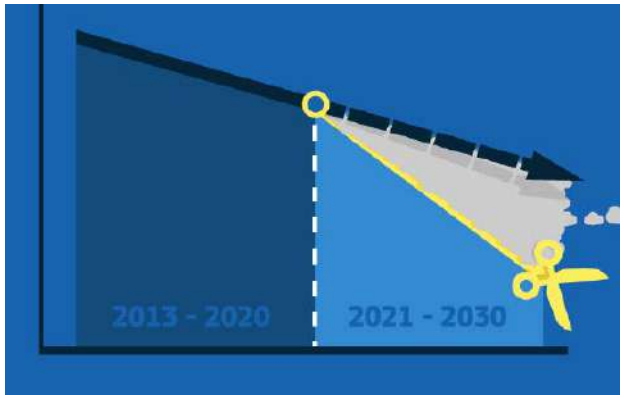
- **Quota in EU ETS**
- **Quota for stationary facilities**
- **Quota for airplanes**

QUOTA IN THE EU ETS

- **Quota**
  - the total amount of greenhouse gas emissions is limited by the number of emission units
  - separately for stationary facilities and airplanes
- **Quota for facilities 2013-2020**
  - for 2013: 2.084.301.856 units
  - decreases by 1.74% per year
- **Quota for airplanes 2013-2020**
  - per year 210.349.264 + 116.524 (Croatia)
  - the same for all the years

QUOTA FOR FACILITIES

- **Determined on the basis of emission reduction target**
  - eg. 21% by 2020 compared to 2005 emissions
- **Reduction rate for the period 2013-2020**
  - 1.74%
- **Reduction rate for the period 2021-2030**
  - 2.2% - higher rate due to greater restrictions



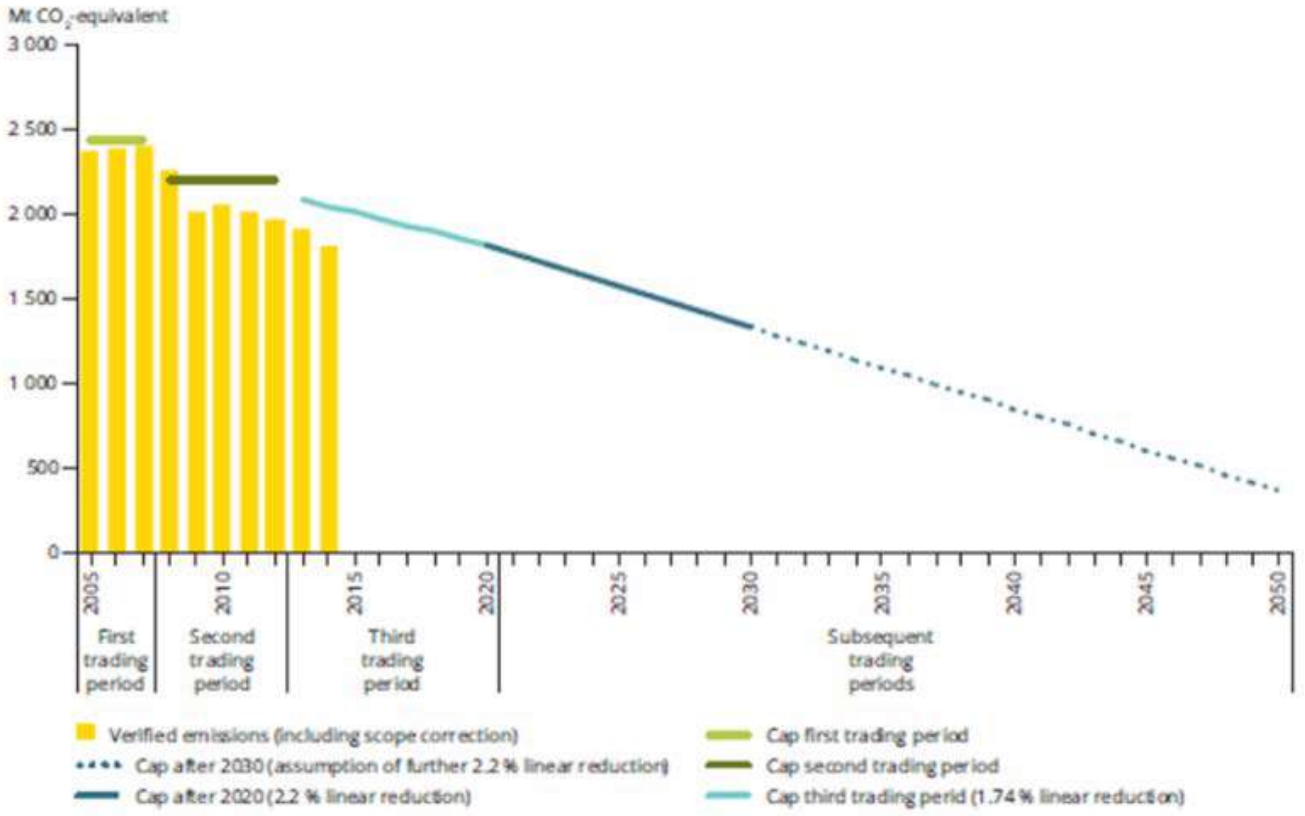
ALLOCATION OF QUOTAS FOR FACILITIES

- **Free allocation**
  - the quantity determined on the basis of historical data in the period from year 2005 to 2010
  - application of benchmark for products
  - baseline report
  - status of "carbon leakage" - affects the amount of free allocation
- **Auction**
  - placement of remaining units - difference to the amount of annual quota (about 50%)
  - Revenues from the auction are attributed to the Member States
- **Croatia**
  - plan for using auction funds in the period 2017 to 2020
  - 825 million kuna

QUOTA FOR AIRPLANES

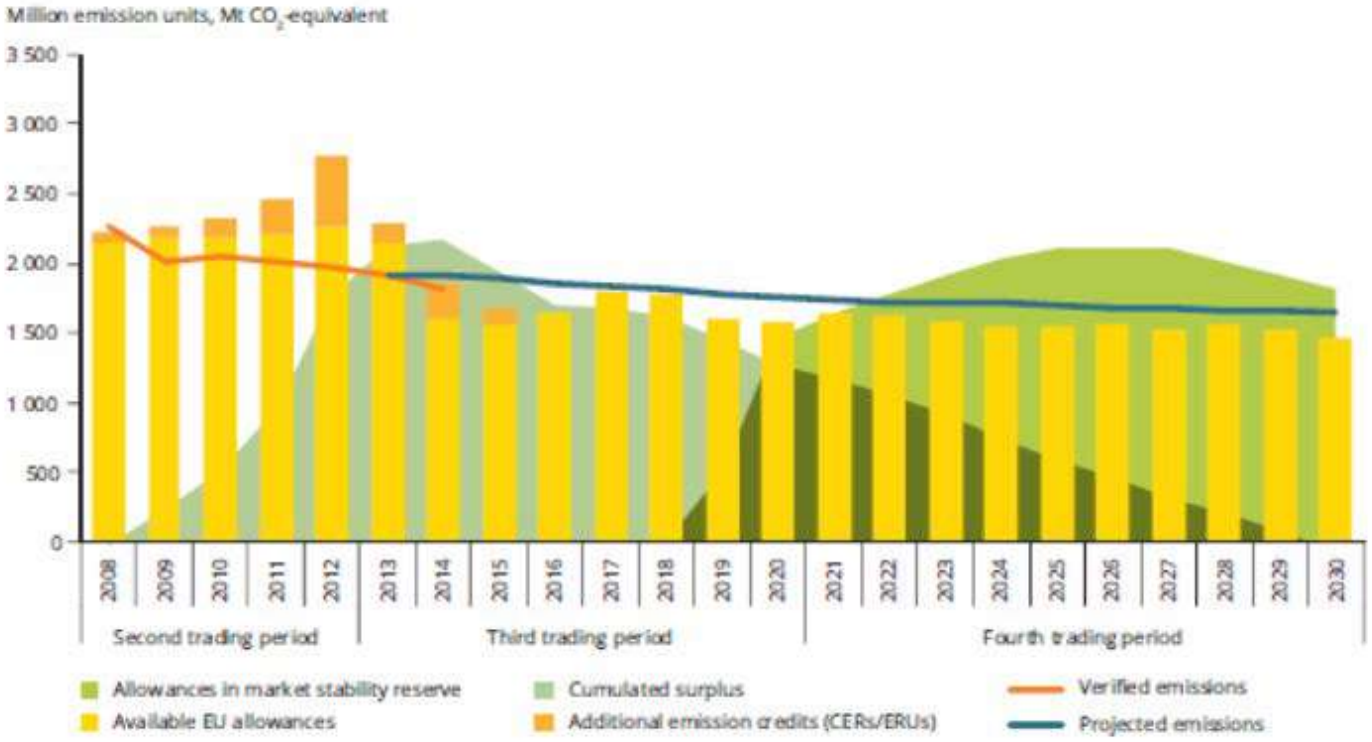
- **The same for all the years in the period 2013 - 2020**
- **Determined on the basis of emissions in the reference period**
  - 2004 – 2006
  - reduced by 5% in accordance with Article 3c of Directive 2003/87/EC
  - a correction has been made to include Croatia from 2014
- **Quota allocation**
  - 82 % free
  - 15 % through auction
  - 3 % in a reserve for subsequent distribution to growing operators and to new participants

CHANGE OF THE UPPER LIMIT FROM 2005 TO 2050



Source: EEA, 2015d.

REVIEW OF AVAILABLE UNITS AND REVIEW OF DEMAND

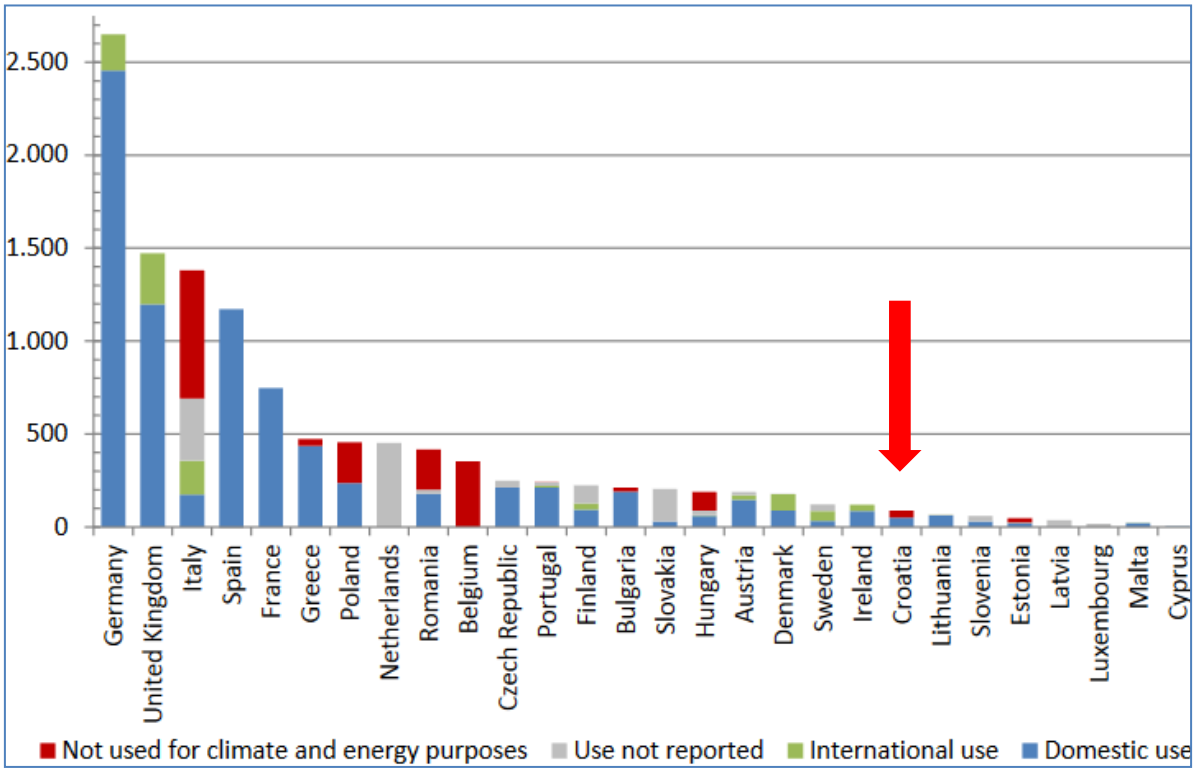


Notes: Cumulated surplus is the build-up of unused allowances each year. CERs and ERUs are types of carbon credits that participants are allocated after emission reductions are achieved by investing in low-carbon technologies in developing countries. The projected emissions are reported by country. CER, certified emission reduction unit; ERU, emission reduction unit.

Source: EEA, 2015d.

USE OF AUCTION FUNDS

- **Period from 2013 to 2015 (in thousands of EUR)**



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RECOMMENDATIONS FROM THE EUROPEAN COURT OF AUDITORS ON INSPECTION IN ETS

CONTENT

- **Basic information about the European Court of Auditors**
- **Report description**
- **Relevant report findings**

EUROPEAN COURT OF AUDITORS

- **Founded in 1977**
- **An independent EU external auditor**
- **No legal authority**
- **Function**
  - checks the validity of the collection and use of EU funding
  - contributes to better management of EU finances
- **Three types of revision**
  - financial audit – reports
  - compliance audits – transactions
  - business efficiency audits - achievement of goals, economics

REVIEW/AUDIT OF THE ETS

- **ERS report from 2015 for the period 2008-2012**
  - ETS performance review
- **The main goal of the audit is to determine:**
  - „Is the ETS properly managed by EC and the member states ”
- **Inferior audit goal is to determine:**
  - „Is there a suitable framework for protecting the integration of ETS”
  - „Whether the ETS is being implemented correctly”
- **Audit at EC and Member State level**
  - 7 members (Germany, France, Italy, Poland, UK, Greece, Spain)
- **Parts of the report are related to inspection and implementation control**

ERS REPORT

- Title: "Integrity and implementation of EU ETS„
- https://www.eca.europa.eu/Lists/ECADocuments/SR15_06/SR15_06_EN.pdf

FINDINGS RELATED TO INSPECTION (1)

- **It is not prescribed what the competent authorities should supervise**
  - neither with the ETS Directive, nor with the monitoring and reporting regulations
  - EC: Provides flexibility at the state level (when and by whom, combined with other obligations)
- **There is no request for site inspections**
  - in order to control the implementation of the emission monitoring plan
  - to check the reliability of the verified emission reports
- **Not one recorded case of the verifier/auditor rotation**
  - rotation would improve control

FINDINGS RELATED TO INSPECTION (2)

- **In some countries (France, Poland) there were cases of conflict of interest**
  - the same verifiers developed a monitoring plan and conducted verification
  - the verifiers participated in the inspection of the facility on behalf of the competent body
- **No centralized statistics on inspections in ETS were found in the Member states, except in the UK**

- **States should implement an effective framework for control**
  - this framework includes the inspection

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PREVIOUS EXPERIENCE WITH FINANCIAL AND TAX FRAUDS IN THE EU ETS

CONTENT

- **Misuse in Emission Trading System**
- **TAX fraud**
- **GHG emission units theft**
- **Measures against misuse**
- **The role of the institutions**

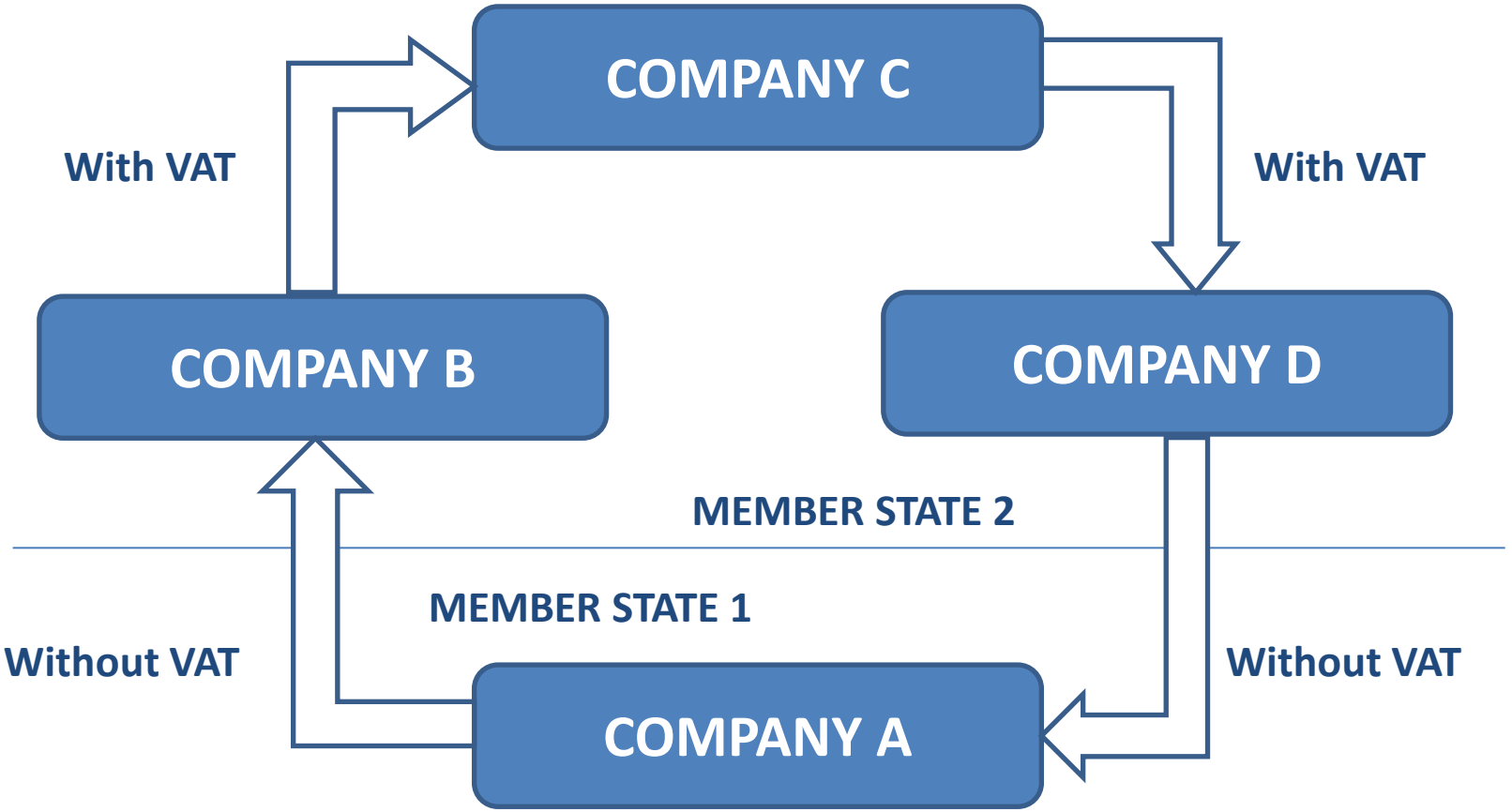
MISUSE IN ETS

- **The market has become attractive for attempts of misuse**
  - primarily due to the non-material nature of the emission unit
- **TAX fraud**
  - purchase of units in the countries without VAT and selling in countries with VAT, but without paying taxes
- **Emission units theft (*phishing*)**
  - guiding the registry user to a fake web site
  - unauthorized download of the account password
  - transfer of emission units to another account

VAT FRAUD

- **„Roundabout" – how it happens**
  - by buying (importing) units in country A without VAT
  - selling in country B with VAT
  - disappearance prior to the payment of VAT to country B
- **Organized fraud**
  - group of companies
- **Noted at the end of 2008**
  - BlueNext stock exchange, Paris
  - suspiciously large quantities in the market of current bargaining (*spot*)
  - peak in June 2009

BUYING AND SELLING CHAIN

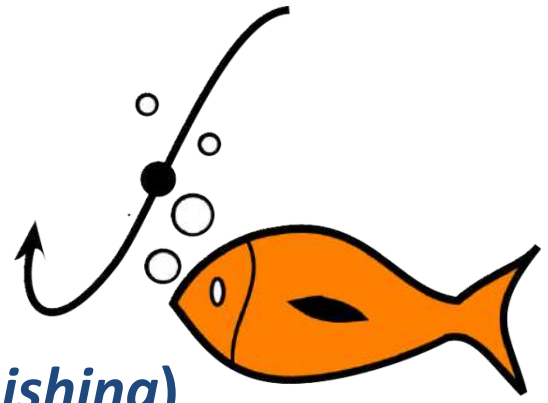


HARMFUL EFFECTS OF TAX FRAUD

- **The estimated loss of taxpayers founds**
  - about 5 billion euros due to unpaid VAT
- **Traffic ten times higher at the peak**
  - the effect of distortion on the price signal on the market
  - the threat to market efficiency and the ability to provide incentives to reduce emissions
- **Solution in France**
  - domestic sales of emission units is proclaimed by the transaction of financial products
  - VAT payment on domestic transactions is abolished

GHG EMISSION UNITS THEFT

- **Downloading the user account**
  - previously known in banking
- **Offender/perpetrator**
  - is represented as the actual account user
  - takes control of the account
  - initiate transactions
- **Unauthorized access to the account (*phishing*)**
  - usernames, passwords, account number
  - prompting the user to enter the data on the fake web page



CASES OF THEFT

- **False presenting as Registry Administrators**
  - sending e-mails with instructions to reveal passwords on a fake website
  - transfer of emission units to other accounts
- **Germany**
  - January 2010
- **Romania, Italy**
  - November 2010
- **Austria, Czech Republic, Greece**
  - January 2011

HARMFUL EFFECTS OF EMISSION UNITS THEFT

- **Financial damage**
  - January 2010 - 250,000 units
  - November 2010 - 1,800,000 units
  - January 2011 - 2,000,000 units
  - total damage was not significant, large part was returned
  - the damage was caused to a small number of participants
- **Damage from impaired confidence in the system**
  - a certain part of stolen units remained in circulation - legal consequences

MEASURES AGAINST MISUSE

- **Change in financial market regulations**
  - 2012 – 2014
  - market derivatives (futures, forwards, options) - the subject of regulation of financial markets (MiFID)
  - current transactions (*spot*) - were originally not included
  - MiFID II – entered into force in 2014, in use from 2018
- **Security Measures in the EU Registry - implemented since 2013**
  - preventive measures
  - measures for quick response in case of misuse
  - measures to avoid market disturbances in case of misuse

THE ROLE OF FINANCIAL AND TAX BODIES

- **Financial bodies**
  - CRO: Anti-Money Laundering Office, MFIN- Ministry of finance (suspicious transactions)
- **TAX bodies**
  - legal regulation of treatment of emission units
- **Police role– Europol, INTERPOL**
  - investigative actions - detecting the identity of the perpetrator
  - Europol – eg. authorized to access data in the Union Registry

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MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

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EXAMPLES OF FREQUENTLY IDENTIFIED NON-COMPLIANCE

CONTENT

- **Classification of ETS cases**
  - misstatement
  - non-conformity
  - non-compliance
  - recommendations for improvement
- **Inspection cases**
- **Examples of non-conformity for operators**
- **Examples of non-conformity for verifiers**
- **Examples of non-compliance**

CLASSIFICATION OF ETS CASES

- **Cases from the verifier perspective**

MISSTATEMENT

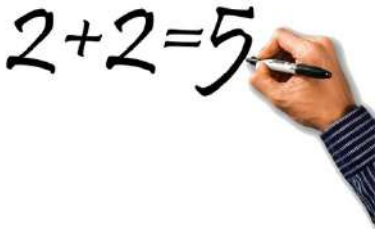
NON-COMPLIANCE

NON-CONFORMITY

RECOMMENDATION FOR IMPROVEMENT

MISSTATEMENT

- **Misstatement**
  - error, omission or misrepresentation
  - in the emissions report data
- **Materiality**
  - material and non-material
  - comparison with the prescribed levels of materiality
    - 5% of annual emissions for A and B category, operators $\leq$ 500 kt CO_2
    - 2% of annual emissions for C category, operators > 500 kt CO_2
  - material inaccuracies/misstatements must be removed
- **Example:**
  - 0,5 TJ = 500 MJ



NON-CONFORMITY - BY REGULATION 600/2012

- **Non-conformity – facility operator**
  - action (and inaction) by the operator contrary to the requirements of the permit and the approved monitoring plan
- **Non-contormity – airplanes operator**
  - action (and inaction) by the operator contrary to the requirements of the permit and the approved monitoring plan
- **Non-contormity - verifier**
  - action (and inaction) by the verifier contrary to the requirements of Regulation 600/2012 - for the purposes of accreditation

NON-COMPLIANCE

- **Non-compliance**
  - action (and inaction) by the operator contrary to the requirements of Regulation 601/2012
- **At the state level**
  - in the part that is provided by Regulation 601/2012
  - action (and inaction) contrary to the specific requirements of national legal regulations

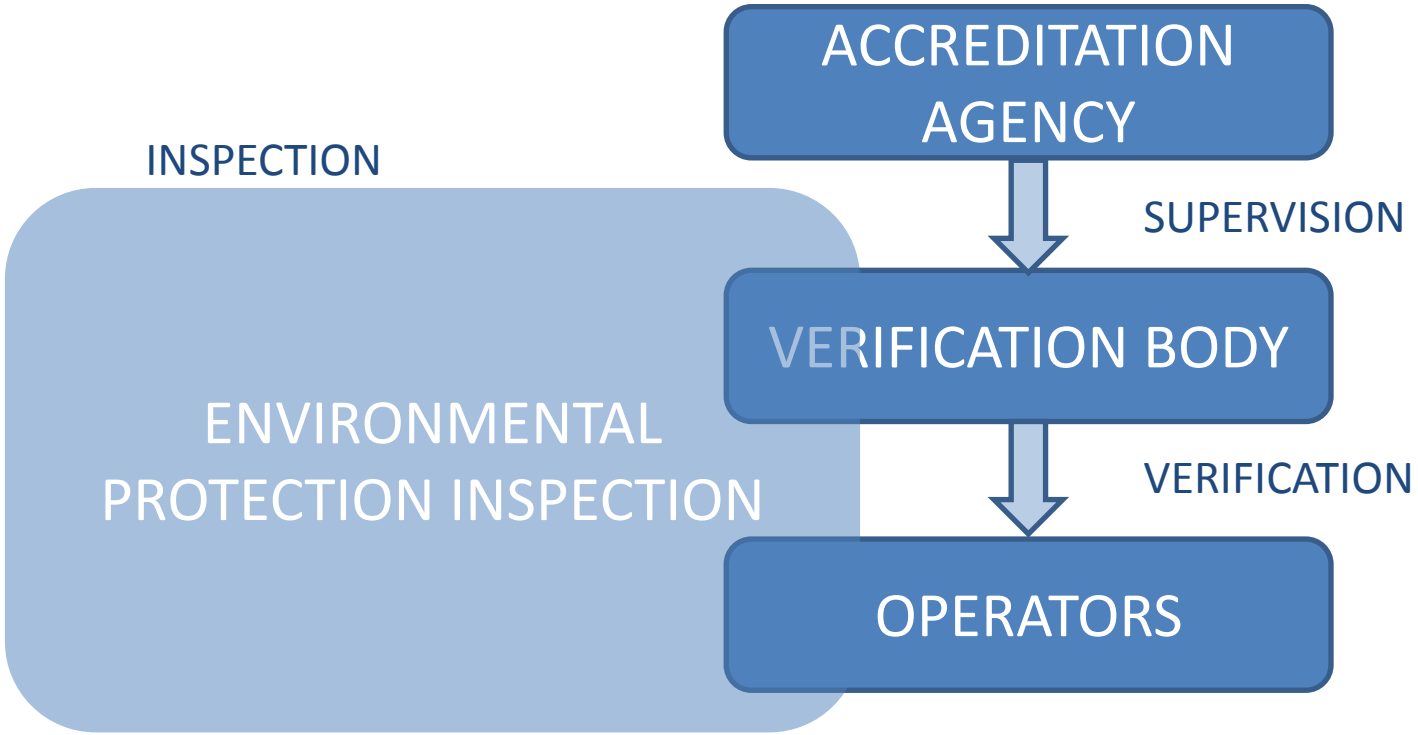
RECOMMENDATIONS FOR IMPROVEMENT

- **Recommendation for improvement**
  - „mildest" of the above mentioned cases
- **Verifier suggestion to improve the monitoring system**
  - without giving any instructions on how to improve
- **Example**
  - emission calculation can be carried out in a simpler way, reducing the possibility of error

IMPLEMENTATION OF REGULATIONS - INSPECTION

- **Determination**
  - illegality
  - shortcomings
  - irregularities
- **Non-compliance with the Air Protection Act (and the Environmental Protection Act) and the EU Regulations**
  - partly overlapping with the operator control by the verifier
  - partly overlapping with the verifier control by the accreditation body

IMPLEMENTATION OF REGULATIONS - INSPECTION



EXAMPLES OF NON-CONFORMITY – OPERATOR (1)

- Emissions for source streams that are not defined in the monitoring plan are expressed in the emission reports
- For the source stream an approved methodology for de-minimis category is used, and to the emission the main source stream
- Analysis of the fuel properties have not been implemented in a number defined in the monitoring plan

- The source stream did not reach the level of accuracy from the monitoring plan

EXAMPLES OF NON-CONFORMITY – OPERATOR (2)

- In order to determine the amount of fuel, supplier data is used instead of flow metering data
- Stocks at the beginning and at the end of the year have not been evaluated in accordance with the approved procedure

- Calibration of the measuring instrument was not carried out with the required frequency approved in the monitoring plan
- The results from the laboratory, that is not accredited for this procedure, are used to determine the emission factor

EXAMPLES OF NON-CONFORMITY – OPERATOR (3)

- In the monitoring plan is specified that the data on emissions is checked by another person, but control is not implemented
- No correction of the measuring instrument was performed in accordance with the calibration finding, although it is defined in the monitoring plan
- In the monitoring plan it is defined that aircraft operator will use method A for emission monitoring, but actually method B is used

EXAMPLES OF NON-CONFORMITY – VERIFIER (1)

- **No data is collected from the operator to determine the engagement needed for verification**

- **No operator is required to submit a record of all changes to the monitoring plan during the reporting period, including a correspondence with the competent body before verification**
- **The prescribed elements in the internal documentation are left out**
- **Data in the uncertainty analysis is not verified**

EXAMPLES OF NON-CONFORMITY – VERIFIER (2)

- **When visiting the facility, facility limits or complete streams of sources are not checked**
- **The operator was not informed in time of the need to correct inaccuracies or eliminate the non-compliance**
- **The estimation of the materiality of inaccuracy is not carried out aggregated for all inaccuracies, but only individually**
- **No complete independent internal audit has been carried out or audit is not properly documented**

EXAMPLES OF NON-CONFORMITY – VERIFIER (3)

- **Internal verification documentation is not complete or does not provide sufficient information to support the opinion**
- **The finding in the verification report does not correspond to the established inaccuracies/misstatements, non-conformities or non-compliance**
- **A verification report was issued although it was not possible to collect the necessary evidence**

- **The report failed to specify whether there are remaining questions from the previous reporting period**

EXAMPLES OF NON-COMPLIANCE (1)

- **The competent authority was not notified of the provisional modification of the monitoring plan**
- **The operator did not adjust the sampling plan due to the difference in fuel heterogeneity with respect to the starting plan**
- **Individual samples are not representative for the whole batch**

- **The operator did not collect the necessary evidence to demonstrate the technical ability of the non-accredited laboratory**

EXAMPLES OF NON-COMPLIANCE (2)

- **The monitoring plan has not been updated to reflect the actual situation in the facility**
- **The operator in the uncertainty analysis did not prove that they did not exceed the prescribed level of uncertainty**
- **The method for estimating the results in the case of missing data does not give a conservative estimate of emissions**

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RISK ANALYSIS FOR SUPERVISION PRIORITY DETERMINATION

CONTENT

- Inspection plan
- Selection of taxpayers for inspection
- Risk evaluation
- Influence on the occurrence of irregularities
- Sources of information on irregularities
- Recommendations

INSPECTION PLAN

- **Annual, possibly perennial**
- **IED, Seveso**
  - application for each facility - inspection at least once in 3 years
  - for ETS the frequency of inspection is not prescribed
- **Parameters for defining the number of inspections**
  - are there any national legislation requirements (in Croatia is not)
  - available resources - number of inspectors and budget
  - whether any irregularities have been established which could best be resolved by the inspection
  - possible synergy with other areas (IED, Seveso)

SELECTION OF TAXPAYERS FOR INSPECTION

- **Risk assessment method**
- **Long term goal**
  - carry out inspections for all taxpayers at least once
  - with riskier taxpayers more than once
- **Risk assessment approach can be individual in the certain states**
  - depending on the specifics
  - the result is a ranking of priorities based on the risk of the irregularity occurrence
- **After setting the priorities**
  - various approaches to selecting the taxpayer for supervision
  - the number of inspections within the procedure for approval of the emission monitoring plan can not be foreseen

RISK ASSESSMENT

- **Example: Seveso Directive**
  - irregularities and incidents can endanger human lives
- **ETS**
  - there is no immediate danger to human health
  - irregularities lead to incorrect quantification of emissions
  - influence on the financial status of the taxpayer
- **Risks in a wider context**
  - loss of trust in market participants
  - disruption of environmental protection integrity
  - loss of the system credibility

INFLUENCE ON THE OCCURRENCE OF IRREGULARITIES

- **Examples:**
  - complexity of production activity
  - the size of the facility
  - changes in capacity and activity levels
  - inclusion of all necessary sources of emission and source streams
  - correctness of the budget methodology and data validation
  - argumentation of values for budget uncertainty
  - number of emission points
  - malfunctions of the measuring instruments
  - implementation of the procedure
  - compliance with sampling and analysis procedures, calibration and maintenance of measuring instruments

SOURCES OF INFORMATION ON IRREGULARITIES

- **Checking the emissions report completeness and the completeness of verification report**
  - observing the problems with the operator and the verification body
- **Improvements report**
  - measures and deadlines for eliminating non-conformity
- **Communication of the Accreditation Agency with the Ministry**
  - detecting the problems with verification bodies - potentially with the operator for which the verification procedure was carried out
- **Previous results of the performed supervision on the operator and on the verification body**
- **Questionnaire on the Directive 2003/87/EC application**
- **IRAM Easy Tools**

RECOMMENDATIONS

- **Use of information on irregularities**
  - to determine priorities when selecting the subject of supervision
  - for the preparation of the implementation of the inspection supervision at the location of the ETS obligator (focus on certain elements for which the need for verification has previously been established, whether it is regular or extraordinary supervision)
- **The use of risk-based approaches**
  - during the supervision planning and preparation phase

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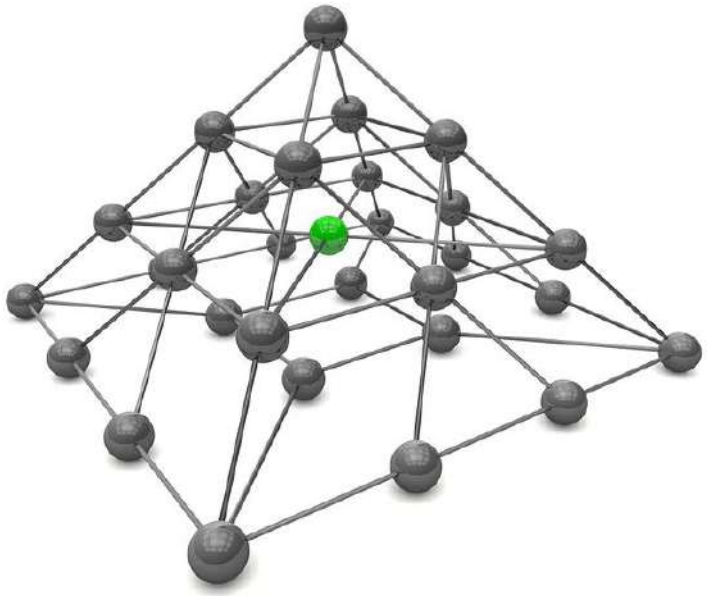
DATA FLOW CONTROL IN STE (SOURCE FLOW TEST AND RANDOM SAMPLE TEST)

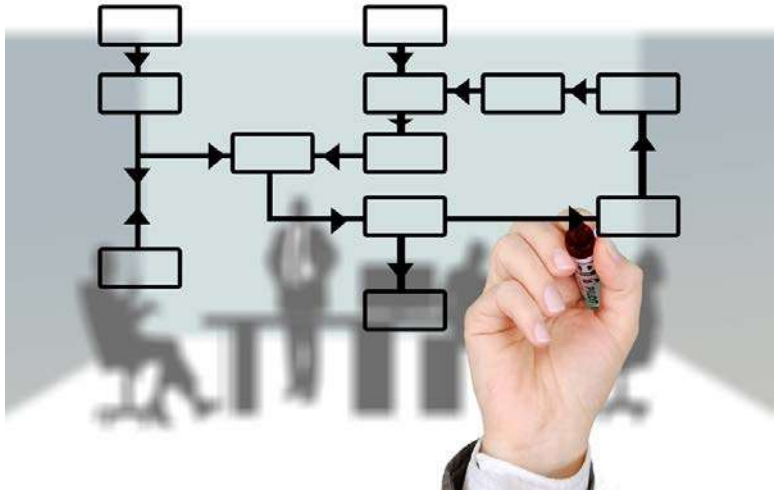
CONTENT

- **Data flow activities**
- **Source flow test**
- **Random sample test**
- **Recommendations**



DATA FLOW ACTIVITIES

- **The data flow has to be well designed**
  - preventing the missing data or double counting
  - written procedures for data flow activities
  - instructions: who takes the data, from there, what it does with the data
- **Simple description**
- **Data flow diagram**
- **Task list**
- **Written procedures**
- **Checklists**



DATA FLOW DIAGRAM- SOURCE FLOW TEST (1)

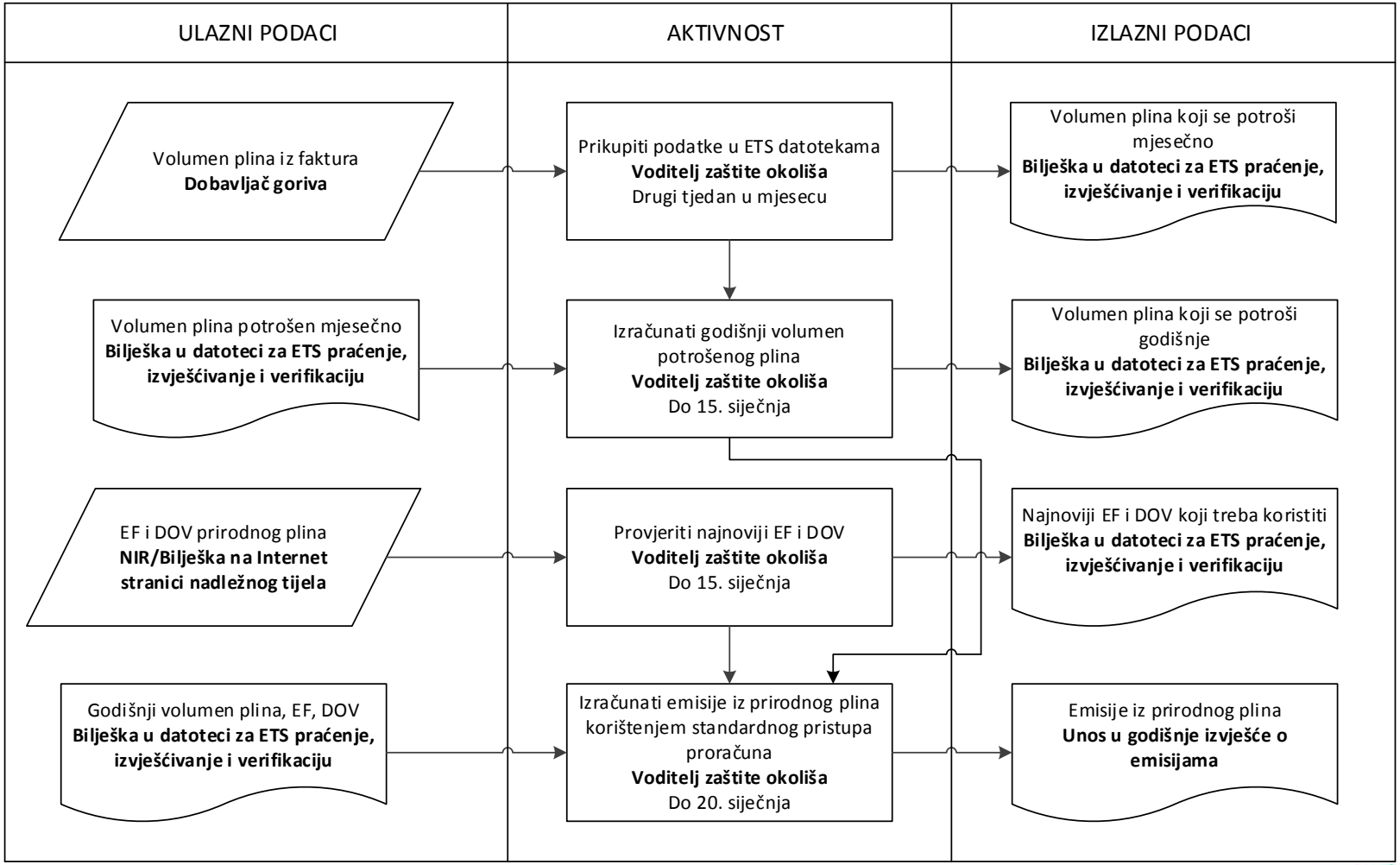
- **Example**
  - category A facility
  - natural gas is the only source stream
  - the standard approach to the calculaton is used
  - activity data (AD) (volume of purchased gas) - from monthly invoices
  - net heating value (NCV) and the emission factor (EF) - from the National Inventory Report, the oxidation factor (OF) is 1

    E = PA * DOV * EF * OF
- **Concept development**
  - logic flow, time-frame of data collection, processing steps - shown at main axis
  - with each step the responsibilities are mentioned

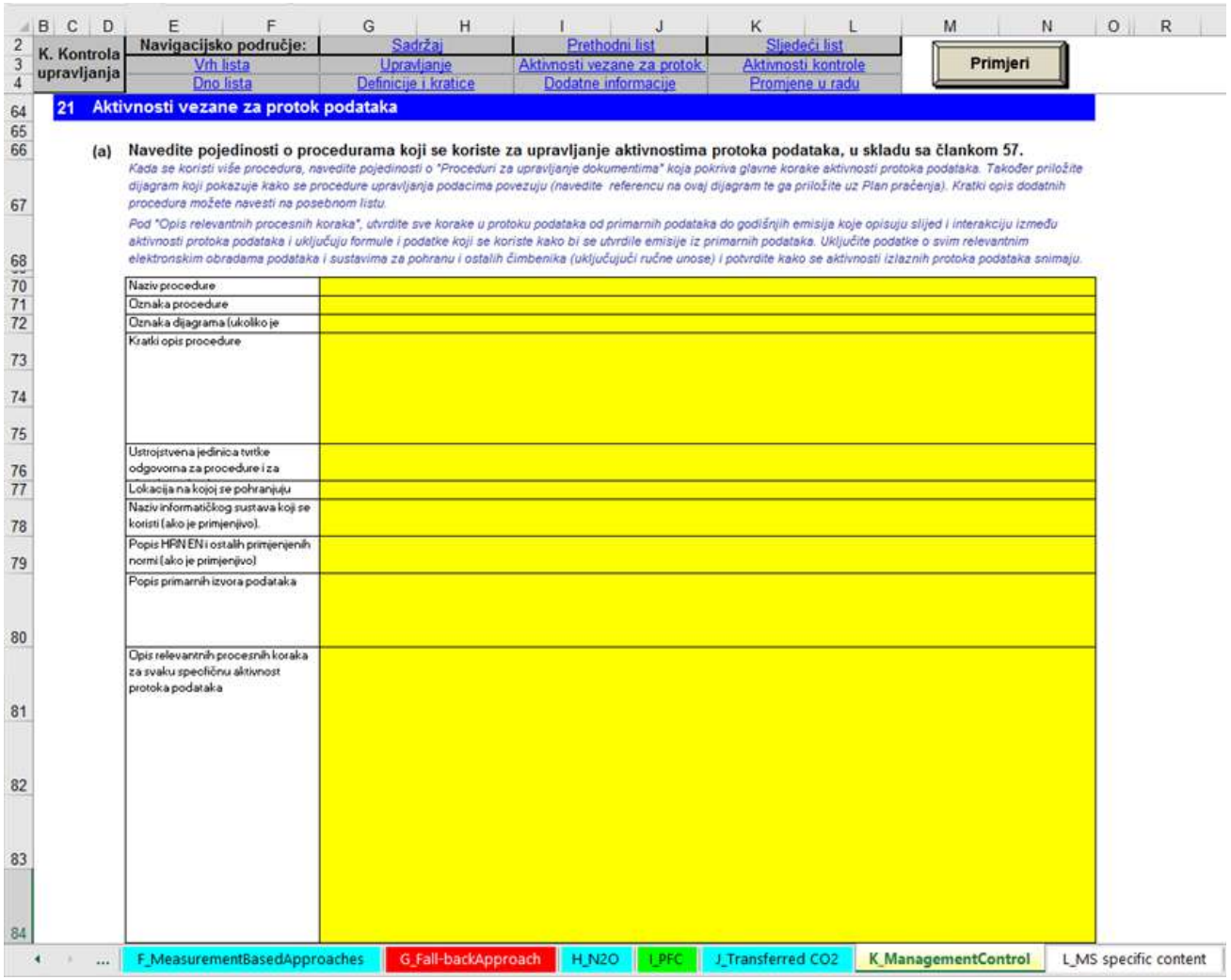
DATA FLOW DIAGRAM- SOURCE FLOW TEST (2)

- **Activity at the center, the input data for each process on the left, the output data of each step to the right side**
- **Description of activities**
  - what to do (name of process step)
  - who is responsible (department or position)
  - when it needs to be done (up to a certain time, or regularly - interval)
- **Description of input data**
  - which data
  - where is the data (reading from an instrument or document, from an IT system, ...)
- **Description of output data**
  - which data
  - where are they stored (electronic and/or printed copies, how can they be found)

DATA FLOW DIAGRAM- SOURCE FLOW TEST (3)



LIST K OF EMISSION MONITORING PLAN



K. Kontrola upravljanja	Navigacijsko područje:	Sadržaj	Prethodni list	Sljedeći list	Primjeri
	Vrh lista	Upravljanje	Aktivnosti vezane za protok	Aktivnosti kontrole	
	Dno lista	Definicije i kratice	Dodatne informacije	Promjene u radu	

21 Aktivnosti vezane za protok podataka

(a) Navedite pojedinosti o procedurama koji se koriste za upravljanje aktivnostima protoka podataka, u skladu sa člankom 57.

Kada se koristi više procedura, navedite pojedinosti o "Proceduri za upravljanje dokumentima" koja pokriva glavne korake aktivnosti protoka podataka. Također priložite dijagram koji pokazuje kako se procedure upravljanja podacima povezuju (navedite referencu na ovaj dijagram te ga priložite uz Plan praćenja). Kratki opis dodatnih procedura možete navesti na posebnom listu.

Pod "Opis relevantnih procesnih koraka", utvrdite sve korake u protoku podataka od primarnih podataka do godišnjih emisija koje opisuju slijed i interakciju između aktivnosti protoka podataka i uključuju formule i podatke koji se koriste kako bi se utvrdile emisije iz primarnih podataka. Uključite podatke o svim relevantnim elektronskim obradama podataka i sustavima za pohranu i ostalih čimbenika (uključujući ručne unose) i potvrdite kako se aktivnosti izlaznih protoka podataka snimaju.

Naziv procedure	
Oznaka procedure	
Oznaka dijagrama (ukoliko je	
Kratki opis procedure	
Ustrojstvena jedinica tvrtke odgovorna za procedure i za	
Lokacija na kojoj se pohranjuju	
Naziv informatičkog sustava koji se koristi (ako je primjenjivo).	
Popis HRN EN i ostalih primjenjenih normi (ako je primjenjivo)	
Popis primarnih izvora podataka	
Opis relevantnih procesnih koraka za svaku specifičnu aktivnost protoka podataka	

F_MeasurementBasedApproaches | G_Fall-backApproach | H_N2O | I_PFC | J_Transferred CO2 | K_ManagementControl | L_MS specific content

OTHER DATA FLOW ACTIVITIES

- **Task list**
  - who should do what, when and how
- **Written procedures**
  - description of activities
- **Checklists and events that encourage activity**
  - conducting regular and random checks
    - monthly check of source stream completeness
    - the completeness of the samples and the results of analysis for each batch of fuel
    - for each measuring instrument - when it needs to be moderate, whether the calibration is planned, if the replacement parts needed in the storage
  - checks and deadlines must be included in the relevant task lists
  - events that encourage activity - a link to supervisory procedures

RANDOM SAMPLE TEST (1)

- **Advantages, disadvantages, limits**
  - a reliable basis for evaluation
  - types of restrictions - time and money

- **An example of a <u>simple</u> random sample**
  - the facility has 10 source streams - which streams to select for the test?
  - each source stream has the same probability of being selected for the test
  - Criteria - emissions, the complexity of the data flow, external service providers (laboratories, fuel suppliers, ...), methodology (calculation - the standard approach or mass balance, metering methods, replacement approach), number of measuring instruments included in the determination of emissions, the number of laboratory analyzes, ...

RANDOM SAMPLE TEST (2)

- **An example of a simple random sample – extension**
- **Activity data**
  - Invoice - From 12 monthly invoices one is checked from the first half and the second from the second half of the year
  - reading from a measuring instrument (flow meter, scale, ...) - large amount of annual data - checking all data for one day in a year
- **EF i NHV**
  - samples, laboratory analyzes
  - an example of a fuel oil analysis check - the minimum frequency of the analysis is 4 times a year - this is the one-quarter analysis
  - a sample of analysis for refinery gas - the minimum frequency of analysis at level 3 for the calculation factor is every day - checking for a given number of days (eg 2 or 3) each month during the year

RECOMMENDATIONS

- **When carrying out inspection, it is recommended :**
  - select one source stream and pass the complete procedure for determining emissions from that source stream with the aircraft operator/facility operator to determine that tracking and reporting policies are properly applied
  - carry out a random sample test and for a particular data used in the emissions report to trace the data to its own source (measurement, account, laboratory analysis, professional literature, regulations, external sources, ...) - combination with source flow check

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THE VERIFICATION OF THE DATA USED FOR ALLOCAITON OF QUANTITY OF FREE GHG EMISSION UNITS

CONTENT

- **Rules for allocation of free GHG emission units**
- **The verification of the data used for determination of free GHG emission units quantity**
- **Recommendations**

RULES FOR ALLOCATION OF FREE GHG EMISSION UNITS

- **Ordinance on the allocation of free GHG emission units to industrial facilities and on monitoring, reporting and report verification of emissions from facilities and from airplanes in the period from January 1, 2013 (OG 70/2015)**
  - includes the correct way to allocate free GHG emission units
  - most industrial facilities have the right for free allocation of GHG units
  - industrial facilities have an interest in getting more free GHG emission units
- **The methodology for determining the allocation of free emission units**
  - reports on the starting data and metodology reports (NIMs)
  - request to change the amount of free allocated emission units (NEC form)

THE VERIFICATION OF THE DATA USED FOR DETERMINATION OF FREE GHG EMISSION UNITS QUANTITY

- **Experience from member states**
  - certain states have conducted the verification of the data used for determination of free GHG emission units quantity
  - the number of operators involved in the ETS is much higher than in the Republic of Croatia
- **The question is whether such practice is needed in the Republic of Croatia?**
  - goal - the equal status of all participants
  - importance of control
  - financial implication - value of allocated emission units
  - available resources - number of inspectors, time

RECOMMENDATIONS

- **It is recommended to include the verification of data used for determination of free GHG emission units quantity, in accordance with the existing practice of the Member States, within the environmental inspection**
  - the importance of the procedure for allocating free GHG emission units
  - the financial value of allocated GHG emission units

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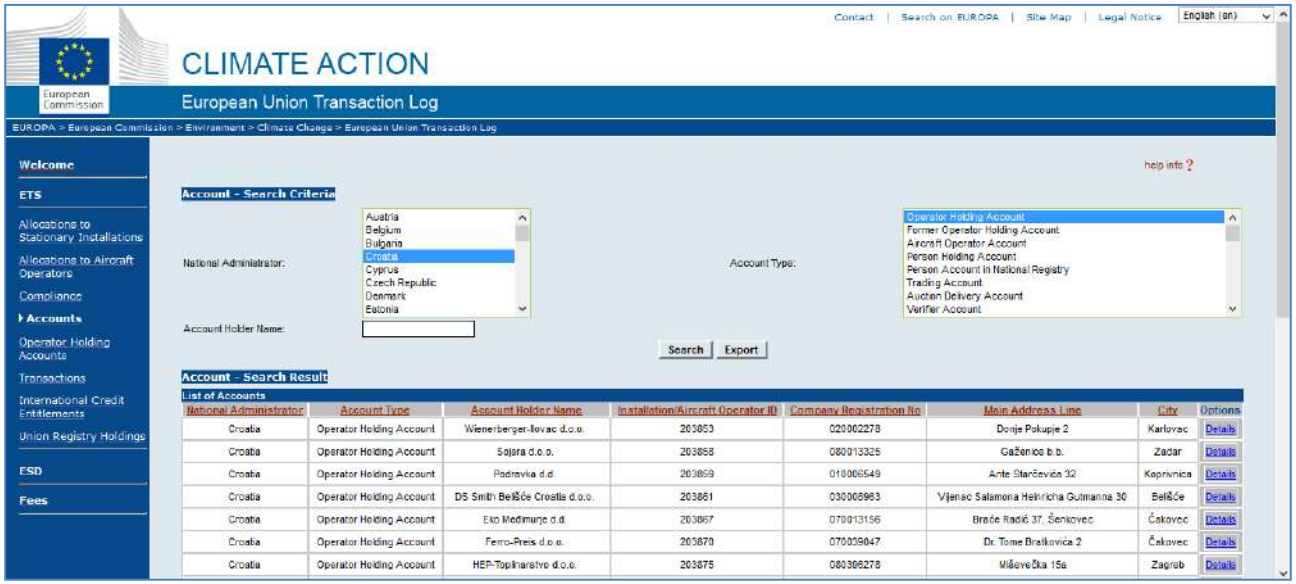
USE OF DATA FROM EU DATASET- EUTL

CONTENT

- **European Union Registry**
- **EUTL**
- **relevant data from EUTL**

RECOMMENDATION

- **Use the EUTL dataset**
  - European Union Transaction Log
  - contains information on the operators' fulfillment of the obligations

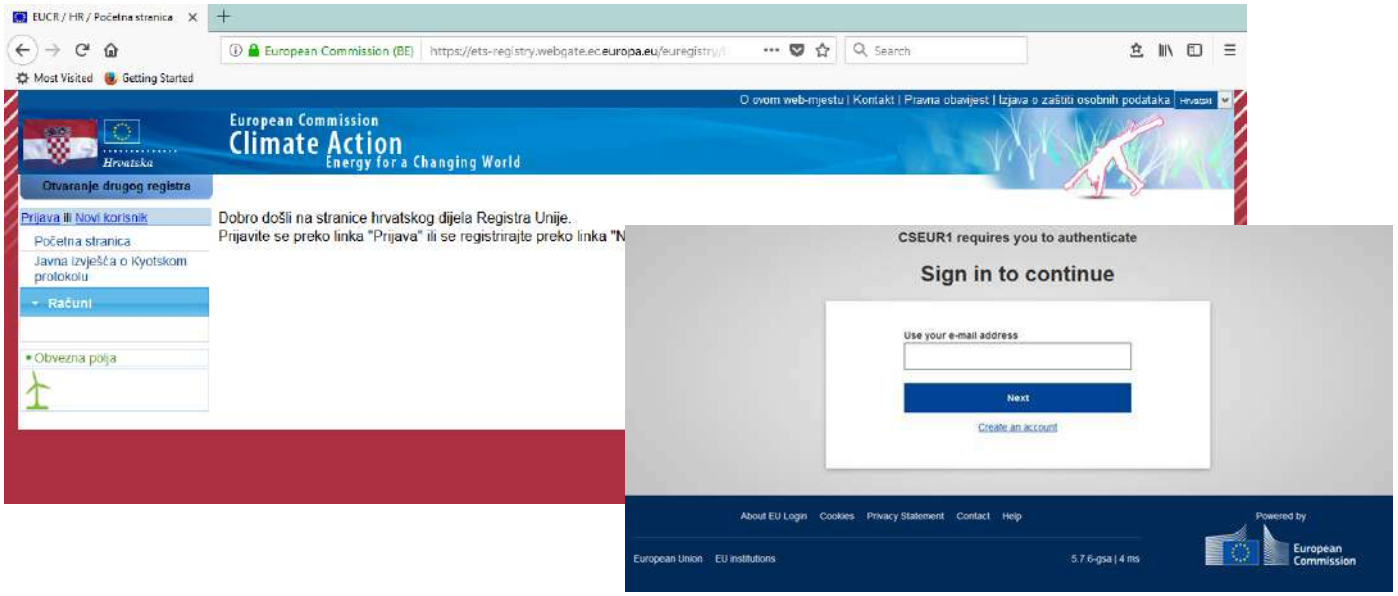


EUROPEAN UNION REGISTRY

- **System for GHG emission unit register**
  - provides the possesion of GHG emission units on the users account
  - Allows the transactions in order to change ownership of the GHG emission units
- **since 2012 - unique at EU level**
  - before that - national registers

EUROPEAN UNION REGISTRY- CROATIA

- **Croatian part in the European Union Registry**
- **access based on username and password**
  - users account in the registry
  - authentication through the European system -EU Login (before ECAS)



EUTL - EUROPEAN UNION TRANSACTION LOG

- **established by the Commission Regulation (EC) no. 389/2013**
  - standard electronic database for ETS transactions
  - under the authority of the central administrator - EC
- **function**
  - automatically checks, registers and authorizes transactions
  - ensures that transactions are conducted in accordance with regulations
  - http://ec.europa.eu/environment/ets/welcome.do?languageCode=en
- **national legislation**
  - transaction log of the European Union
  - article 3. st. 1 Ordinance on the use of the European Union Register

RELEVANT DATA FROM EUTL

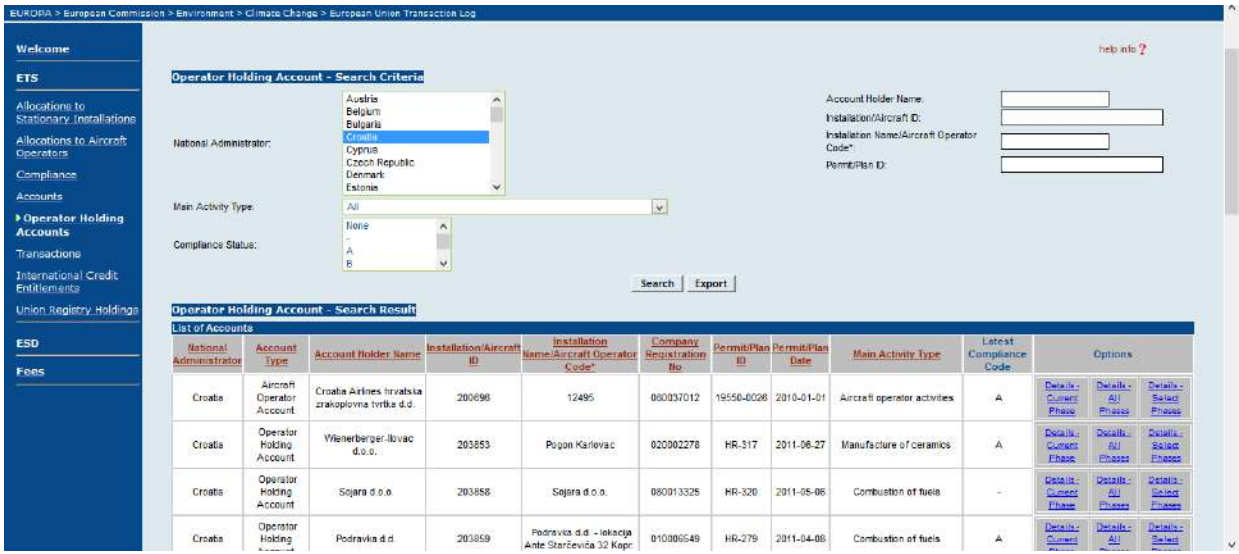
- **Obligation fulfillment status (*Compliance*)**
  - data on verified GHG emissions
  - data on the obligation status and account status
  - http://ec.europa.eu/environment/ets/allocationComplianceMgt.do?languageCode=en
- **Operator Holding Accounts**
  - data on the ETS payers accounts
  - review of the obligation fulfilment for one period or more
  - http://ec.europa.eu/environment/ets/oha.do?languageCode=en

OBLIGATION FULFILLMENT STATUS

- **steps**
  - National Administrator: **Croatia**
  - EU ETS phase: eg. **Phase 3 (2013-2020)**
  - Initiate **Search**
  - select year: eg. **2014**

OBLIGATION FULFILLMENT STATUS

- **steps**
  - National Administrator: **Croatia**
  - (Permit/Plan ID: eg. **HR-150** - such operator does not exist)
  - initiate **Search**



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REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE

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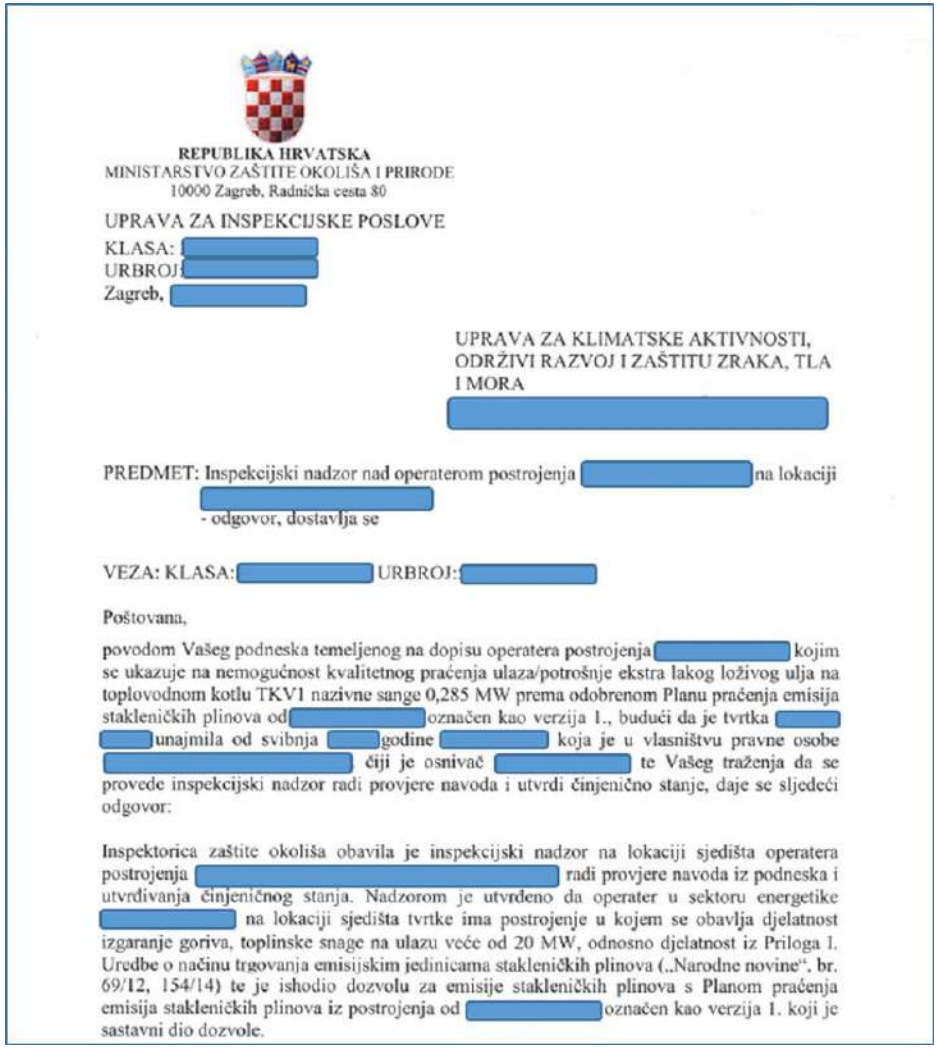
EXAMPLES FROM PRACTICE

CONTENT

- **Examples from practice - environmental inspection findings**
- **Inspector's recommendations**

EXAMPLES FROM PRACTICE (1)



REPUBLIKA HRVATSKA
MINISTARSTVO ZAŠTITE OKOLIŠA I PRIRODE
10000 Zagreb, Radnička cesta 80

UPRAVA ZA INSPEKCIJSKE POSLOVE
KLASA: [redacted]
URBROJ: [redacted]
Zagreb, [redacted]

UPRAVA ZA KLIMATSKE AKTIVNOSTI, ODRŽIVI RAZVOJ I ZAŠTITU ZRAKA, TLA I MORA
[redacted]

PREDMET: Inspekcijski nadzor nad operaterom postrojenja [redacted] na lokaciji [redacted]
- odgovor, dostavlja se

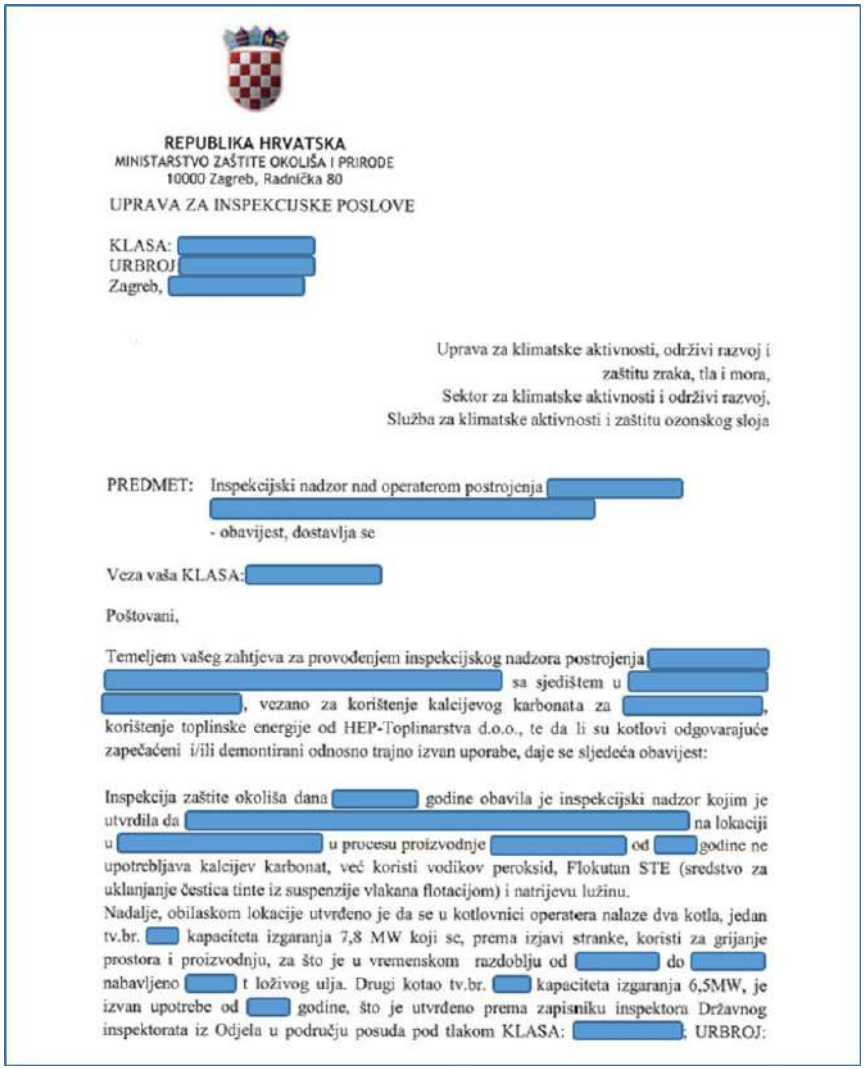
VEZA: KLASA: [redacted] URBROJ: [redacted]

Poštovana,

povodom Vašeg podneska temeljenog na dopisu operatera postrojenja [redacted] kojim se ukazuje na nemogućnost kvalitetnog praćenja ulaza/potrošnje ekstra lakog loživog ulja na toplovodnom kotlu TKV1 nazivne sange 0,285 MW prema odobrenom Planu praćenja emisija stakleničkih plinova od [redacted] označen kao verzija 1., budući da je tvrtka [redacted] unajmila od svibnja [redacted] godine [redacted] koja je u vlasništvu pravne osobe [redacted] čiji je osnivač [redacted] te Vašeg traženja da se provede inspekcijski nadzor radi provjere navoda i utvrdi činjenično stanje, daje se sljedeći odgovor:

Inspektorica zaštite okoliša obavila je inspekcijski nadzor na lokaciji sjedišta operatera postrojenja [redacted] radi provjere navoda iz podneska i utvrđivanja činjeničnog stanja. Nadzorom je utvrđeno da operater u sektoru energetike [redacted] na lokaciji sjedišta tvrtke ima postrojenje u kojem se obavlja djelatnost izgaranje goriva, toplinske snage na ulazu veće od 20 MW, odnosno djelatnost iz Priloga I. Uredbe o načinu trgovanja emisijskim jedinicama stakleničkih plinova („Narodne novine", br. 69/12, 154/14) te je ishodio dozvolu za emisije stakleničkih plinova s Planom praćenja emisija stakleničkih plinova iz postrojenja od [redacted] označen kao verzija 1. koji je sastavni dio dozvole.

EXAMPLES FROM PRACTICE (2)



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MINISTARSTVO ZAŠTITE OKOLIŠA I PRIRODE
10000 Zagreb, Radnička 80
UPRAVA ZA INSPEKCIJSKE POSLOVE

KLASA:
URBROJ
Zagreb,

Uprava za klimatske aktivnosti, održivi razvoj i
zaštitu zraka, tla i mora,
Sektor za klimatske aktivnosti i održivi razvoj,
Služba za klimatske aktivnosti i zaštitu ozonskog sloja

PREDMET: Inspekcijski nadzor nad operaterom postrojenja
- obavijest, dostavlja se

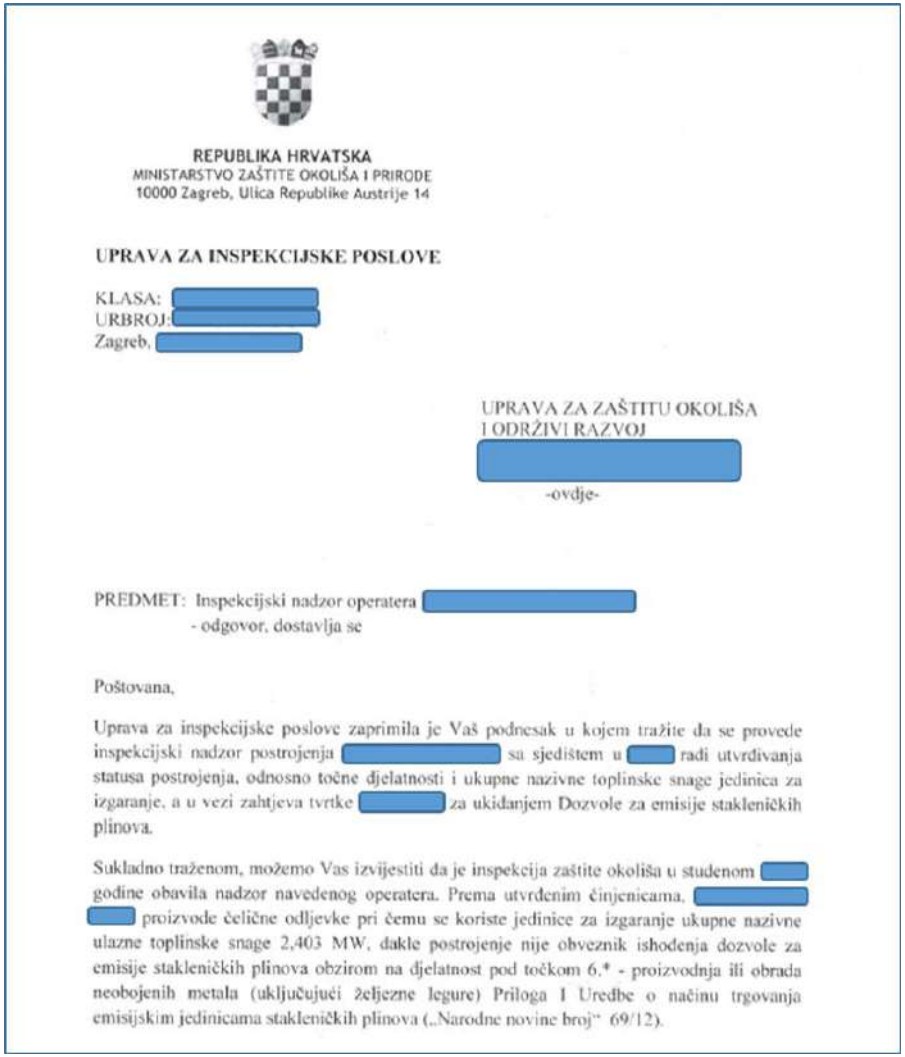
Veza vaša KLASA:

Poštovani,

Temeljem vašeg zahtjeva za provođenjem inspekcijskog nadzora postrojenja sa sjedištem u , vezano za korištenje kalcijevog karbonata za , korištenje toplinske energije od HEP-Toplinarstva d.o.o., te da li su kotlovi odgovarajuće zapečaćeni i/ili demontirani odnosno trajno izvan uporabe, daje se sljedeća obavijest:

Inspekcija zaštite okoliša dana godine obavila je inspekcijski nadzor kojim je utvrdila da na lokaciji u u procesu proizvodnje od godine ne upotrebljava kalcijev karbonat, već koristi vodikov peroksid, Flokutan STE (sredstvo za uklanjanje čestica tinte iz suspenzije vlakana flotacijom) i natrijevu lužinu.
Nadalje, obilaskom lokacije utvrđeno je da se u kotlovnici operatera nalaze dva kotla, jedan tv.br. kapaciteta izgaranja 7,8 MW koji se, prema izjavi stranke, koristi za grijanje prostora i proizvodnju, za što je u vremenskom razdoblju od do nabavljeno t loživog ulja. Drugi kotao tv.br. kapaciteta izgaranja 6,5MW, je izvan upotrebe od godine, što je utvrđeno prema zapisniku inspektora Državnog inspektorata iz Odjela u području posuda pod tlakom KLASA: ; URBROJ:

EXAMPLES FROM PRACTICE (3)



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MINISTARSTVO ZAŠTITE OKOLIŠA I PRIRODE
10000 Zagreb, Ulica Republike Austrije 14

UPRAVA ZA INSPEKCIJSKE POSLOVE

KLASA: [redacted]
URBROJ: [redacted]
Zagreb, [redacted]

UPRAVA ZA ZAŠTITU OKOLIŠA
I ODRŽIVI RAZVOJ
[redacted]
-ovdje-

PREDMET: Inspekcijski nadzor operatera [redacted]
- odgovor, dostavlja se

Poštovana,

Uprava za inspekcijske poslove zaprimila je Vaš podnesak u kojem tražite da se provede inspekcijski nadzor postrojenja [redacted] sa sjedištem u [redacted] radi utvrđivanja statusa postrojenja, odnosno točne djelatnosti i ukupne nazivne toplinske snage jedinica za izgaranje, a u vezi zahtjeva tvrtke [redacted] za ukidanjem Dozvole za emisije stakleničkih plinova.

Sukladno traženom, možemo Vas izvijestiti da je inspekcija zaštite okoliša u studenom [redacted] godine obavila nadzor navedenog operatera. Prema utvrđenim činjenicama, [redacted] [redacted] proizvode čelične odljevke pri čemu se koriste jedinice za izgaranje ukupne nazivne ulazne toplinske snage 2,403 MW, dakle postrojenje nije obveznik ishođenja dozvole za emisije stakleničkih plinova obzirom na djelatnost pod točkom 6.* - proizvodnja ili obrada neobojenih metala (uključujući željezne legure) Priloga I Uredbe o načinu trgovanja emisijskim jedinicama stakleničkih plinova („Narodne novine broj" 69/12).

INSPECTOR RECOMMENDATIONS

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REVIEW OF THE TRAINING HELD AND PRESENTATION OF CONCLUSIONS

CONTENT

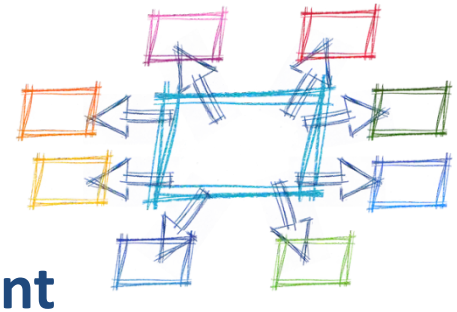
- Inspection in emissions trading system ETS
- What is controled in emissions trading system ETS
- Categories of enviromental inspection supervision
- Implementation of supervision
- Information exchange
- Training

NEED FOR INSPECTION IN ETS

- **Some participants asked the question:**
  - Is there a need for enviromental inspection in ETS?

- **Possible reasons against inspections**
  - ETS is detailed and strictly controlled
  - operators pay high penalties if they do not enforce regulations
  - the verifiers are supervised by the accreditation body
- **Possible reasons for inspections**
  - system is controlled by people - mistakes are possible
  - the accreditation body is unable to perform 100% verification
  - obligations under European regulations; Commission Regulation (EU) No. 600/2012
  - it is always possible to improve the existing system

VERIFICATION OF THE IMPLEMENTATION OF REGULATIONS



- **Regulations**
  - how to control the implementation?
  - design of the control strategy
- **Control strategy of the regulation enforcement**
  - tools to ease the implementation - instructions, guidance, professional help, …
  - penalties in case the regulations are not enforced
  - control measures to determine the status of implementation (yes/no)
- **The competent authority is responsible for the control**
  - in the EU: not necessarily an inspection body
  - in the Republic of Croatia: Ministry of Environmental Protection and Energy; two administrations in the same institution - the competent authority for ETS and the inspection body

WHAT IS MEANT BY "INSPECTION" IN THE ETS

- **Activities carried out by the competent authority**
  - not carried out by verification bodies or accreditation bodies
- **Goal:**
  - to determine whether the ETS obliged payers comply with the regulations
- **Inspections' main tool**
  - tour (visit) to the location of the industrial facilities/ aircraft operators

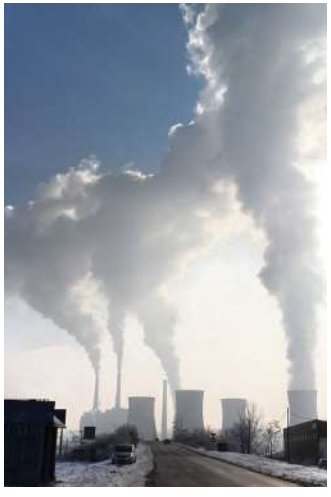
MAIN SUBJECT OF THE CONTROL IN THE IMPLEMENTATION OF THE REGULATIONS

- **Meeting the requirements of the monitoring and reporting**
  Commission Regulation (EU) No. 601/2012
- **In particular: the emission monitoring plan**
  - whether it is made in accordance with the Regulation
  - whether it is made in accordance with the actual state

- **Is the monitoring in accordance with the emission monitoring plan**
  - the only permissible method of monitoring emissions
- **Data for free emission allocation can be the subject of control**
  - the data is collected in advance, controlling their correctness
  - this obligation is not prescribed in the Republic of Croatia

SYNERGY EFFECTS

- **The inspectors experience in working in the industry sector before the ETS**
- **Industrial Pollution Directive**
  - most facilities are covered by both directives
  - technical knowledge of technology and process
  - knowledge of the operator's attitude towards obligations
- **SEVESO directive**
  - fewer facilities
  - the rest is the same as in the previous case
- **Inspection plan**
  - need for coordination
  - different tasks and frequency of inspection supervision



CATEGORIES OF INSPECTION SUPERVISION IN ETS

- **Inspection supervision within the process of approval of the emission monitoring plan**
  - first approval or the approval of the changes in emission monitoring plan
- **Regular inspection**
  - validation of the emission monitoring plan (real state)
- **Unannounced inspection**
  - based on certain suspicion in the application of regulations
- **Inspection supervision as part of the procedure for determining emissions by the competent authority**
  - conservative emission estimates

METHODOLOGY OF INSPECTION SUPERVISION

- **Methodology requirements**
  - clear structure
  - consistency
  - repeatability
  - adequate flexibility beacuse of the differences in facilities
- **Written procedures for planning and implementation of supervision**
- **Checklist templates**
- **Monitoring and auditing system**

PREPARATION OF THE SUPERVISION

- **Assignment of supervision to inspectors**
  - according to the sector
- **Contact with the operator (for the announced review)**
  - date of supervision
  - search for relevant documentation (which is not available)
  - available to the competent body: emission monitoring plan and accompanying documents, reports, data for free allocation, …
- **Documentation study (in office)**
- **Preparing the agenda**
  - the agenda can be sent to the operator
- **Minutes of meeting preparation (optional)**

IMPLEMENTATION OF THE SUPERVISION – LOCATION TOUR

- **Common points: introduction and discussion**
- **Selecting themes in accordance with recognized risks**
- **"passing through" the data test**
  - from beginning to end - a way of checking the whole procedure, if possible
- **Location tour**
  - obligatory part of the supervision
- **Data and document verification**
  - selecting a representative sample for complex cases
- **Concluding discussion**
  - an opportunity for information exchange and a better understanding

SUPERVISION - REPORTING

- **The common parts of the report**
  - introduction - the basis for the implementation of supervision
  - a brief description of the facility/operator of the aircraft
  - checklist
  - actions after the completed inspection (irregularities, measures, recommendations)
  - operator comments
- **Discussion of findings within the inspection body**
  - more opinions, comparison with similar cases
- **Enabling comments by the operator**
  - on the spot or giving commentary on the report
- **If it is related to the verifier - the verifier, the accreditation body**

EXCHANGE OF INFORMATION BETWEEN AUTHORIZED BODIES

- **Possible competences of local authorities (EU practice):**
  - approval of emission monitoring plan and issuing the permit
  - control of verified emissions reports
  - free allocation
  - inspection
- **Practice in the Republic of Croatia**
  - responsibility for ETS centralized - MZOE (CAEN- Croatian agency for Enviroment and Nature), local authorities have no jurisdiction
- **Accreditation bodies**
  - National
  - other EU member states

INSPECTOR REQUIREMENTS

- **Ranging from technical to legal knowledge, social skills**
- **Inspection teams**
  - members are trained for supervision implementation
- **Additional knowledge**
  - cooperation with other inspections
  - in the Republic of Croatia: Agreement on Cooperation of Inspection Services in the Environment, 2008
  - examples of EU practice: engagement of experts from private sector
  - in Croatia: such engagement is not intended
- **Gaining knowledge**
  - Training
  - knowledge exchange between inspectors

END OF TRAINING

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