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LIFE IP PrepAIR

Po Regions Engaged to Policies of Air

EU Clean Air Forum

Bratislava, 28-29 Novembre 2019

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Air quality in the Po valley: a vast area problem

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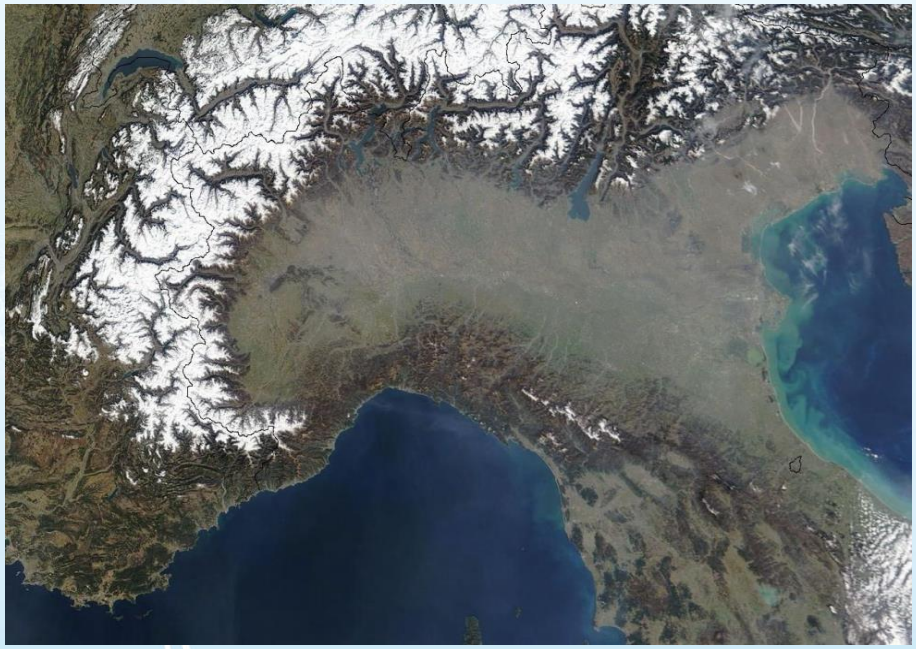
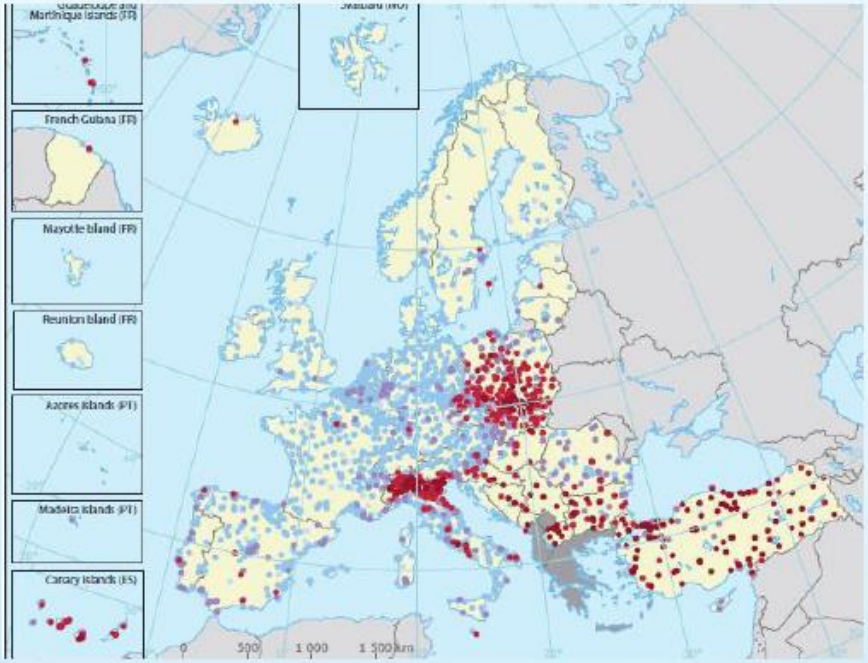
- Po valley is an highly developed area with more than 23 million inhabitants and producing more than 50% of Italian GDP
- The Po Valley represents a significant nonattainment area for PM, NO2 and O3 EU air quality limit values;
- Meteorological conditions and the transport and dispersion of pollutants are strongly influenced by the morphological characteristics of the Po Valley and the northern Adriatic Basin. The transport of pollutants is limited by the Alps, the Apennines and the Dinaric Alps.
- Air Pollution homogeneously spread on the whole basin and needs to be tackled by coordinated interventions at all scales (national, inter-regional, regional and local level)



Satellite Image of Northern Italy in the winter season (source: MODIS radiometer, NASA)



European Environmental Agency, Air Quality in Europe – 2019 Report

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Why an integrated project: scope and expected impacts

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- Air quality in the Po Valley is influenced by the meteorological and morphologic conditions that prevent pollutants dispersion in the winter periods, causing exceedances of limit values → **Regional Air Quality Plans**: All the Regions have implemented air quality plans over the past decade, but these plans have not been fully succeeded in reducing levels of PM, NO2 and O3 within the EU standards. Coordinated and large-scale actions should be undertaken in the Po valley to further reduce the levels of background air pollution
- Since 2005 **Po Valley Agreements on air quality** → In 2013 establishment of common actions on the most emitting sources: **transport, biomass for domestic heating, energy efficiency, agriculture,** with the involvement of the Ministry for Environment and other competent Ministries

PREPAIR will

- act on multiple sectors/policies and on multiple pollutants (PM, NO2, O3, NH3, VOC)
- help the full implementation of AQPs and of measures of the Po Valley Agreement *on a larger territorial scale* → **environmental concrete actions by Regions and Cities**
- establish a permanent data sharing infrastructure for monitoring and assessing air quality and measures implementation in the project area→ **technical actions by EAs**
- allow to assess and reduce pollutants transportation across the Northern Adriatic See

and wants to

- strengthen the synergies among Regions and Environment Agencies on air quality issues and policies
- establish a ***Permanent government platform*** composed by:
  - Representatives of the Regions involved in air quality issue
  - Representatives of the Authorities in charge of complementary funds
  - Stakeholders

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Main data

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Integrated project financed under the thematic priority area Air of the Programme Life for Environment

Budget: 16.805.939 €

EU co-financing: 9.974.624 €

Beneficiary coordinator: Region Emilia-Romagna, Directorate General for Territorial and Environmental Care

17 Associated Beneficiaries

From: 1/2/2017 to 31/01/2024 (7 years– 3 phases)

Grant Agreement signed in December 2016

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Project area and beneficiaries

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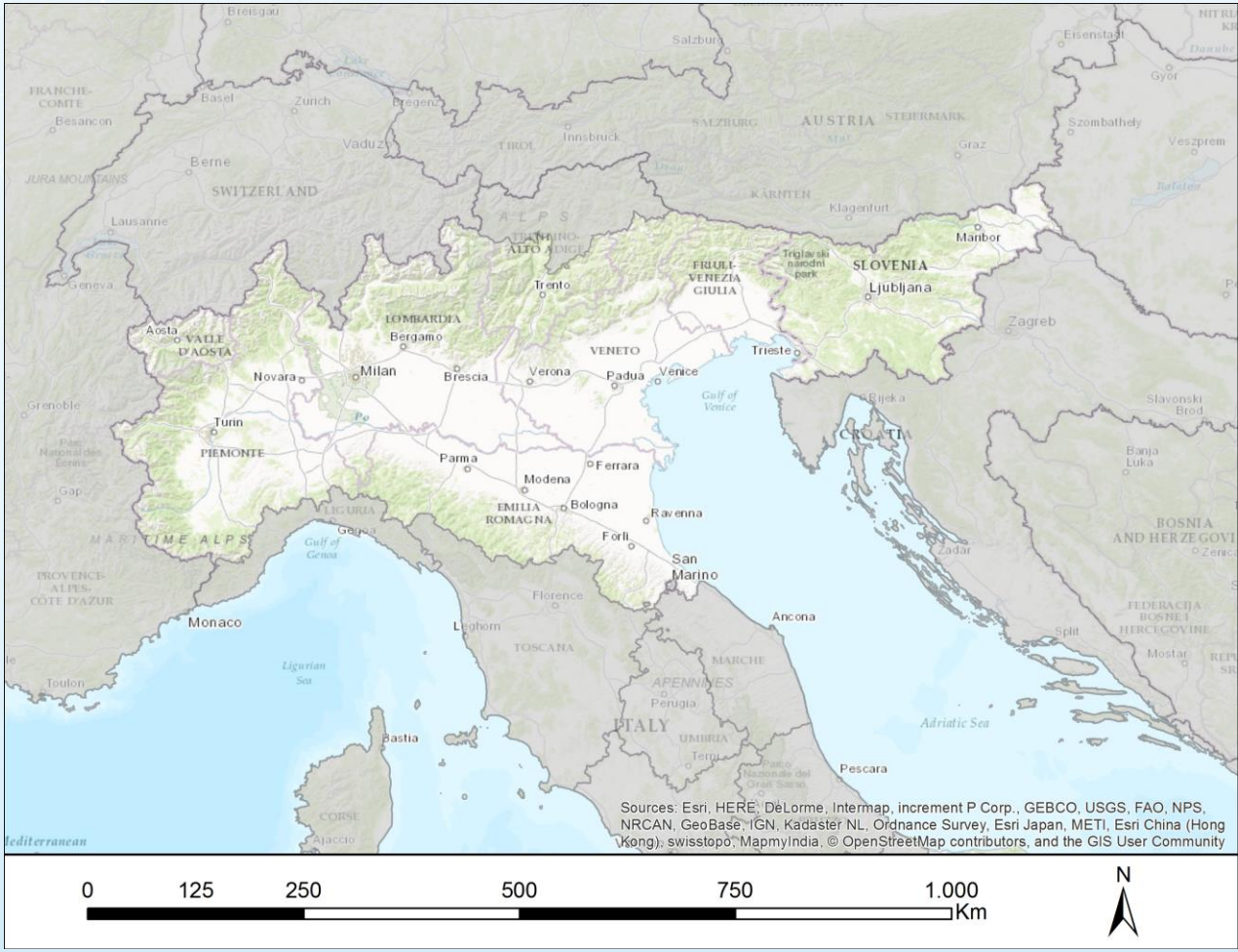
6 Regions
Region Emilia-Romagna; Region Lombardy, Region Piedmont, Region Veneto; Autonomous Province of Trento; Region Friuli Venezia Giulia;

7 Environment Agencies
ARPAE Emilia-Romagna; ARPA Lombardy; ARPA Piedmont; ARPA Veneto; ARPA Valle d'Aosta; ARPA Friuli Venezia Giulia; Slovenian Environment Agency

3 Municipalities
Bologna; Turin; Milan

2 Private non-commercial agencies
Art-ER; FLA



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Initial conference,
Bologna June 8 and 9, 2017

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1° Midterm conference
Milan 11 june 2019

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The project structure

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PROJECT MANAGEMENT AND MONITORING OF PROJECT PROGRESS (F) - *3 actions*
Administrative and financial management of the project, Independent Auditing, Establishing the governance permanent platform

PREPARATORY ACTIONS (A) – 4 actions

- emission data set
- system for the environmental accountability of the measures of AQ Plans
- preliminary assessment of AQ Plans
- network of special stations for the monitoring of the Plan's environmental effects

CONCRETE IMPLEMENTATION ACTIONS (C) – 17 actions

Environmental Actions in the fields of:
- agriculture
- biomass
- transports
- energy efficiency

Technical Actions regarding data sharing infrastructures, emission data warehouse and implementation of the integrated assessment model (RIAT+)

MONITORING ACTIONS (D) – 6 actions

- collection and update of data (measures, emissions, traffic flows, biomass consumption)
- regular assessment of air quality
- monitoring and estimations of actions

COMMUNICATION AND DISSEMINATION ACTIONS (E) – *5 actions*
- Promotion and dissemination of the project's actions results at local, national and international level
- Specific communication actions on particular IP/AQPs issues: domestic use of biomass, electric mobility, school targeted educational paths on air quality

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Fields of action / thematic pillars

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BIOMASS

- specific education and qualification actions for freelances on the design, maintenance and control of domestic wood-burning plants
- awareness-raising activities for citizens on good practices.
- Optimization of the local supply chain of biomass.

AGRICULTURE

- development of a common evaluation tool for the reduction of emissions in the farms
- dissemination of good practices on the use of fertilizers through also a system of assistance to farmers in order to optimize its spreading by using low-emissions techniques.

TRANSPORTS

Developing common tools for the support of the public, electric and cycling mobility and for a rational management of the transport of goods, also by adopting pilot and demonstrative actions.

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Fields of action / thematic pillars

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ENERGY EFFICIENCY

- provide guidelines for small and medium enterprises
- develop an integrated approach to all actors involved in the chain of condos
- realize local info-points in support of public bodies for promoting the green public procurement.

EMISSIONS EVALUATION AND MONITORING

- realization of a permanent platform for data sharing
- monitoring and evaluation of air quality in the Po basin, including the effects of the cross-border pollution between Italy and Slovenia.

COMMUNICATION AND NETWORKING

Specific communication actions addressed to public operators, privates and local communities are foreseen. Networking is particularly important for sharing and capitalizing other projects' results, for avoiding overlapping and for strengthening the synergies between different initiatives.

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Complementary funds

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- Complementary actions amount at more than 850 M€
- The proportion between IP itself measures and complementary measures is 1:50
- Complementary funding from EAFRD, ERDF, regional and national funds
- PREPAIR will realize actions that are actually synergic to complementary ones
- The implementation of complementary actions will be monitored during the IP through a continuous exchange of data with the Managing Authorities of complementary funds

RURAL DEVELOPMENT PLANS

REGIONAL DEVELOPMENT PROGRAMMES

PON METRO

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PILLAR | Biomass

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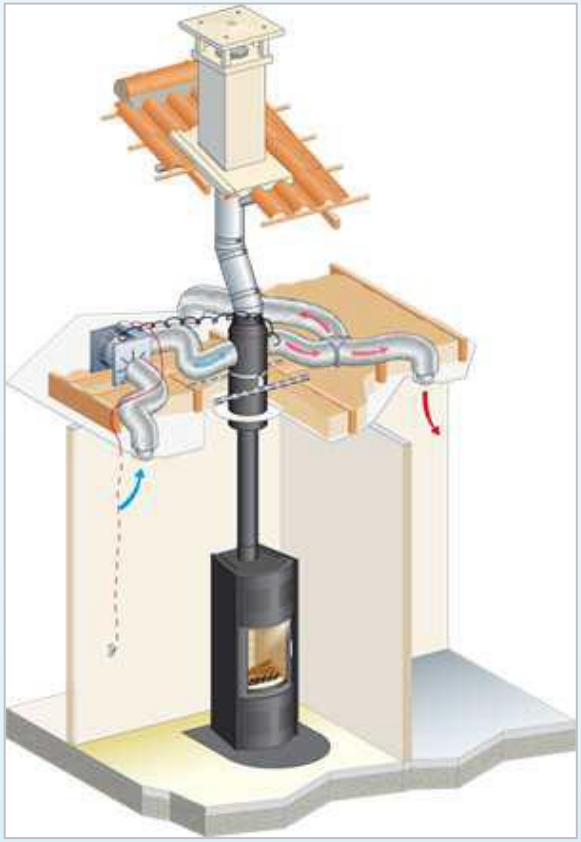
Technical and specialist training for installers and designers of domestic biomass systems

Aims of the action

1. **Qualification of the technical competences** of installers, maintenance engineers and designers of civil and residential biomass systems
2. **Promote the sustainability** of domestic biomass burning for a cleaner and safer use, through the important role of technicians in providing information to the end users.

- Organization of **training courses** in the Po Basin Regions involved in the action



Expected results:

Dissemination of importance of domestic biomass burning for air quality protection

Dissemination of a culture of proper design, construction and maintenance of domestic biomass burning facilities to reduce emissions of pollutants

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Technical and specialist training for installers and designers of domestic biomass systems

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First results:

1. **A shared training format** for the course
2. **1st experimental edition of the training course** organized in Trento in the end of 2018
3. **1st edition of the training course** organized in Veneto (Padua)
4. **2nd edition of the training course** organized in Veneto (Padua) -> to be concluded within the 2019

Next steps:

- **Second and third editions of the training course** (to be held between Sep. 2019-Oct. 2020)
- **Training courses organized in the other partner Regions**

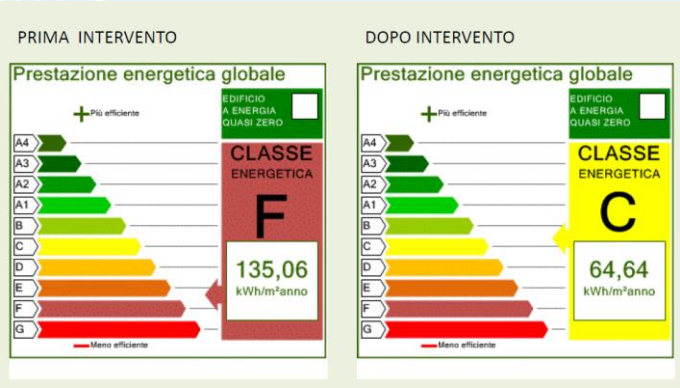
PILLAR | Energy efficiency

Private buildings

Multy property buildings – Training course

- 3 editions courses

- 100 trained people:
  15 condominum managers
  50 technicians
  20 craftmen
  15 others (category delegates, bank officers,…)

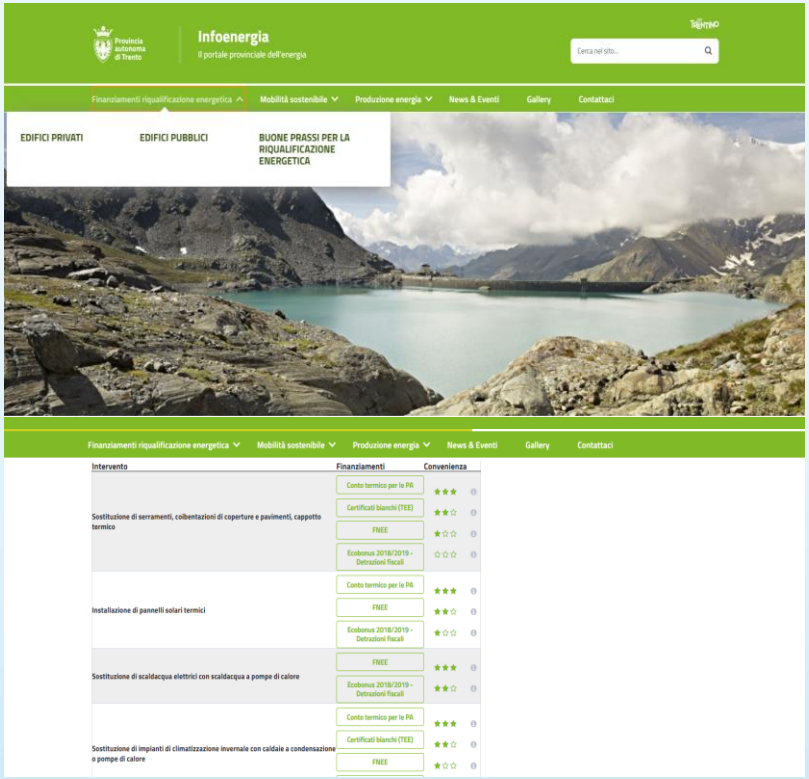


LA FACCIATA OGGI

LA FACCIATA DOMANI - 2

Public buildings

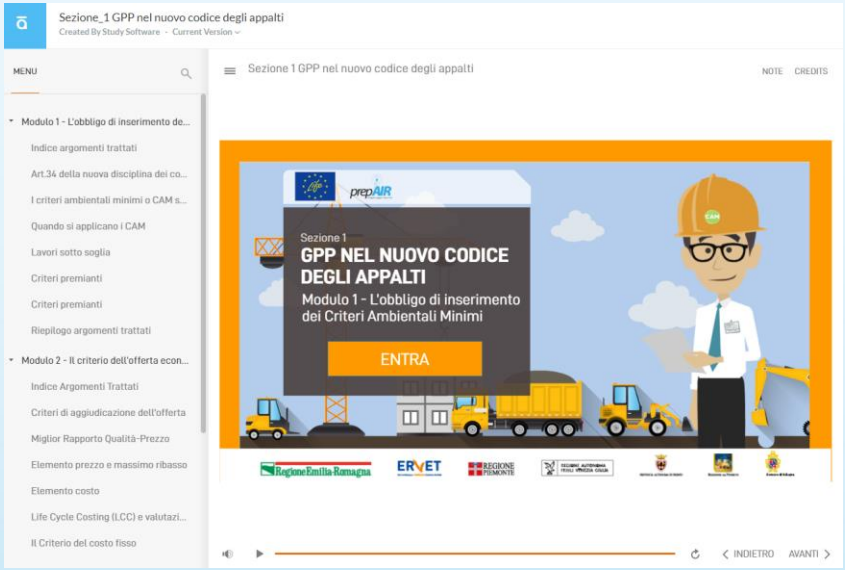
Support to local authorities for energy saving initiatives:
local info-point



Public buildings

Spreading of GPP

- Handbooks
- e-learning modules
- workshops



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PILLAR | Agricolture

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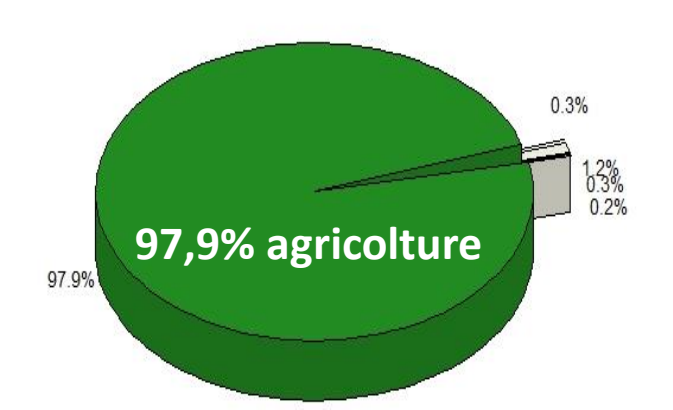
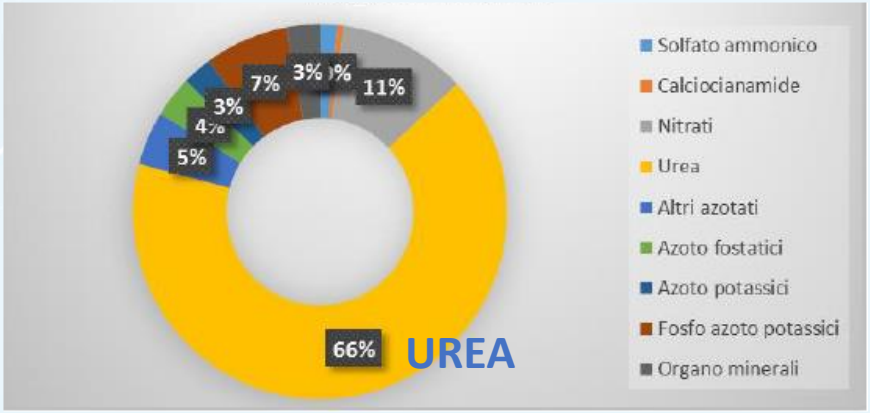
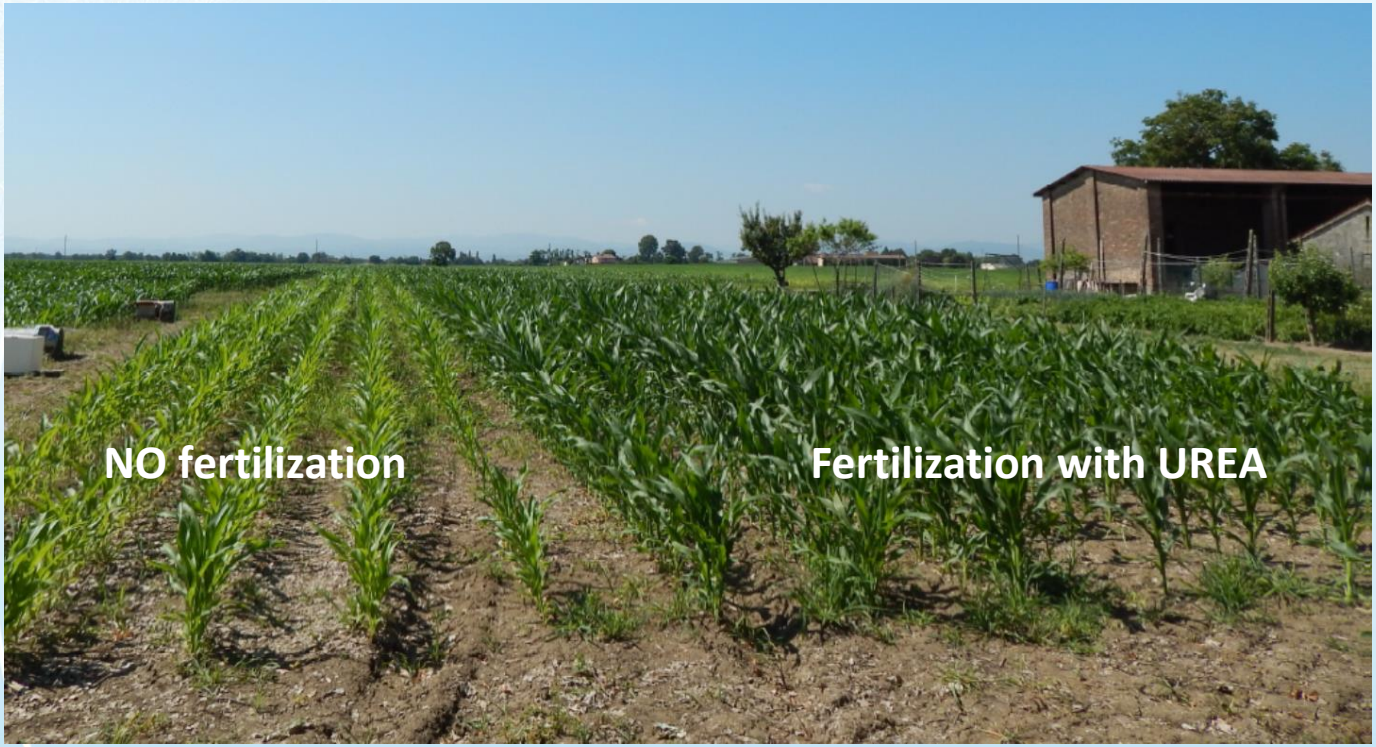
NH3 emissions



Fertilizers distributed in the Po basin





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Evaluation of NH3 emissions

Wind Tunnel Test

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Evaluation of NH3 emissions after Good Agricoltural Practices

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Evaluation of NH3 emissions
from pig and poultry farms

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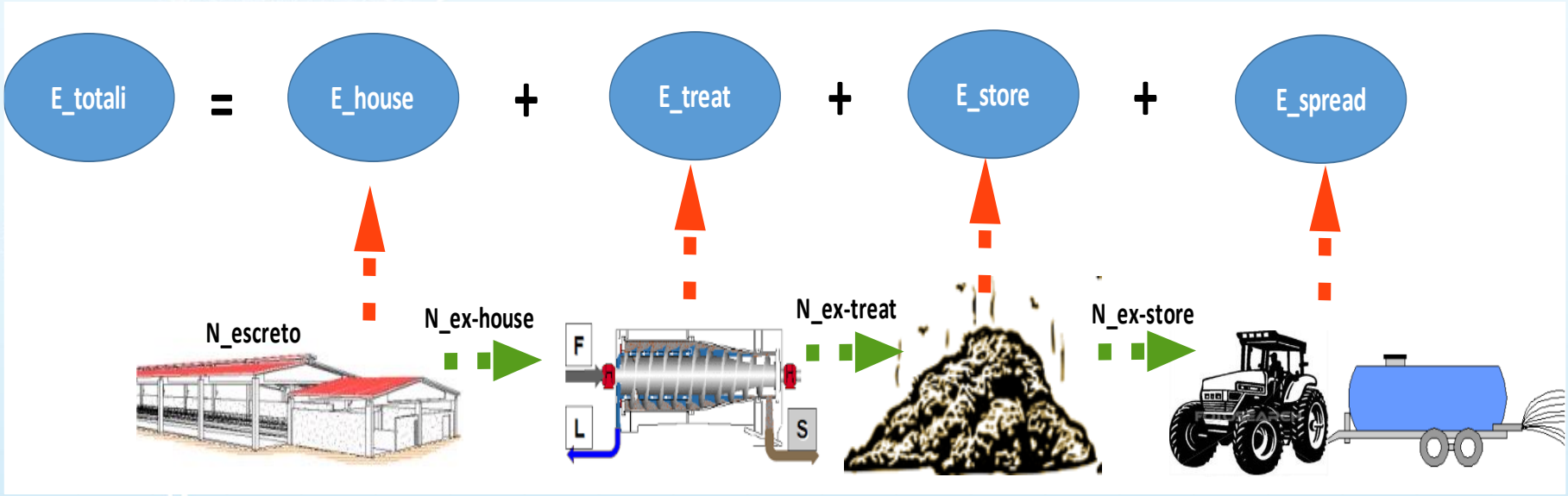
BAT-TOOL

Po basin common model
for the evaluation of gaseous emissions



- BAT Conclusions Official Journal of the European Union L 43 21/02/2017
- Options for Ammonia Mitigation Guidance UNECE

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Evaluation of NH3 emissions from pig and poultry farms

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BAT-TOOL

http://www.crpa.it/battool

AMMONIA EMISSIONS AND FARMS – PREPAIR LAUNCHES AN INNOVATIVE TOOL FOR ESTIMATING EMISSIONS BASED ON THE TECHNIQUES USED IN INTENSIVE FARMING

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PILLAR | Transport

Promotion of Cycling Mobility
Training of public officers and advisors

«*This task aims at raising the awareness and provide technical information through training for policy makers or advisors and police officers from local government with courses in classroom and on field*»

All slides and materials are available for participants on www.lifeprepair.eu

Videoslides are available on LIFE PREPAIR Youtube channel:
https://www.youtube.com/channel/UCjCd06j3xkiUrvgxnhj1HxQ

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Promotion of Cycling Mobility
On-field lessons

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Participants are engaged
in a on-field bike trip guided by experts
to practically see on the road
points of strenght and
criticalities, main elements and possible solutions of
urban cycling mobility

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Promotion of Cycling Mobility

On-field lessons

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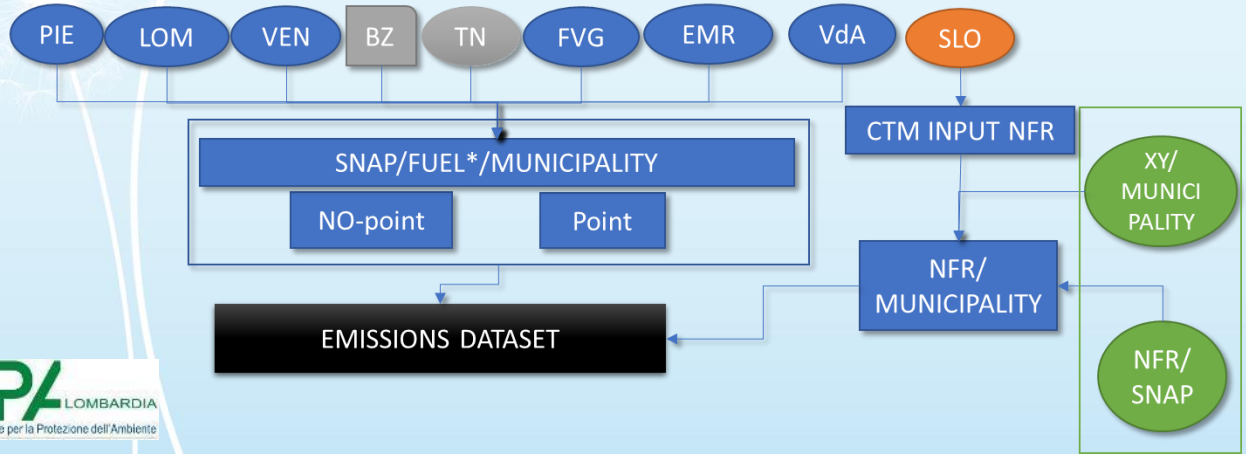
Workshop realized so far:

- Pavia,
- Mantova,
- Brescia,
- Varese,
- Bergamo,
- Rimini,
- Lecco,
- Parma,
- Bologna,
- Monza,
- Como

Emission share on the domain

Main emission sectors are here highlighted:

	Po-basin			Po-basin and Slovenia		
Emission share on base year 2013	**NH3**	**NOx**	**PM10**	**NH3**	**NOx**	**PM10**
1-Combustion in energy and transformation industries	0%	6%	1%	0%	8%	1%
2-Non-industrial combustion plants	0%	9%	56%	0%	9%	59%
3-Combustion in manufacturing industry	0%	15%	4%	0%	14%	4%
4-Production processes	0%	3%	3%	0%	3%	3%
5-Extraction and distribution of fossil fuels and geothermal energy	0%	0%	0%	0%	0%	0%
6-Solvent and other product use	0%	0%	5%	0%	0%	4%
7-Road transport	1%	50%	20%	1%	51%	18%
8-Other mobile sources and machinery	0%	13%	4%	0%	12%	3%
9-Waste treatment and disposal	1%	1%	0%	1%	1%	0%
10-Agriculture	97%	1%	4%	97%	1%	6%
11-Other sources and sinks	0%	0%	3%	0%	0%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**



From: **A common emission dataset for the Po Basin Area** *Angelino E., Marongiu A. 1° MIDTERM CONFERENCE 'THE PO BASIN TOGETHER FOR THE QUALITY OF AIR MILAN' 11/08/2019*

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Emission density PM10 - 2013

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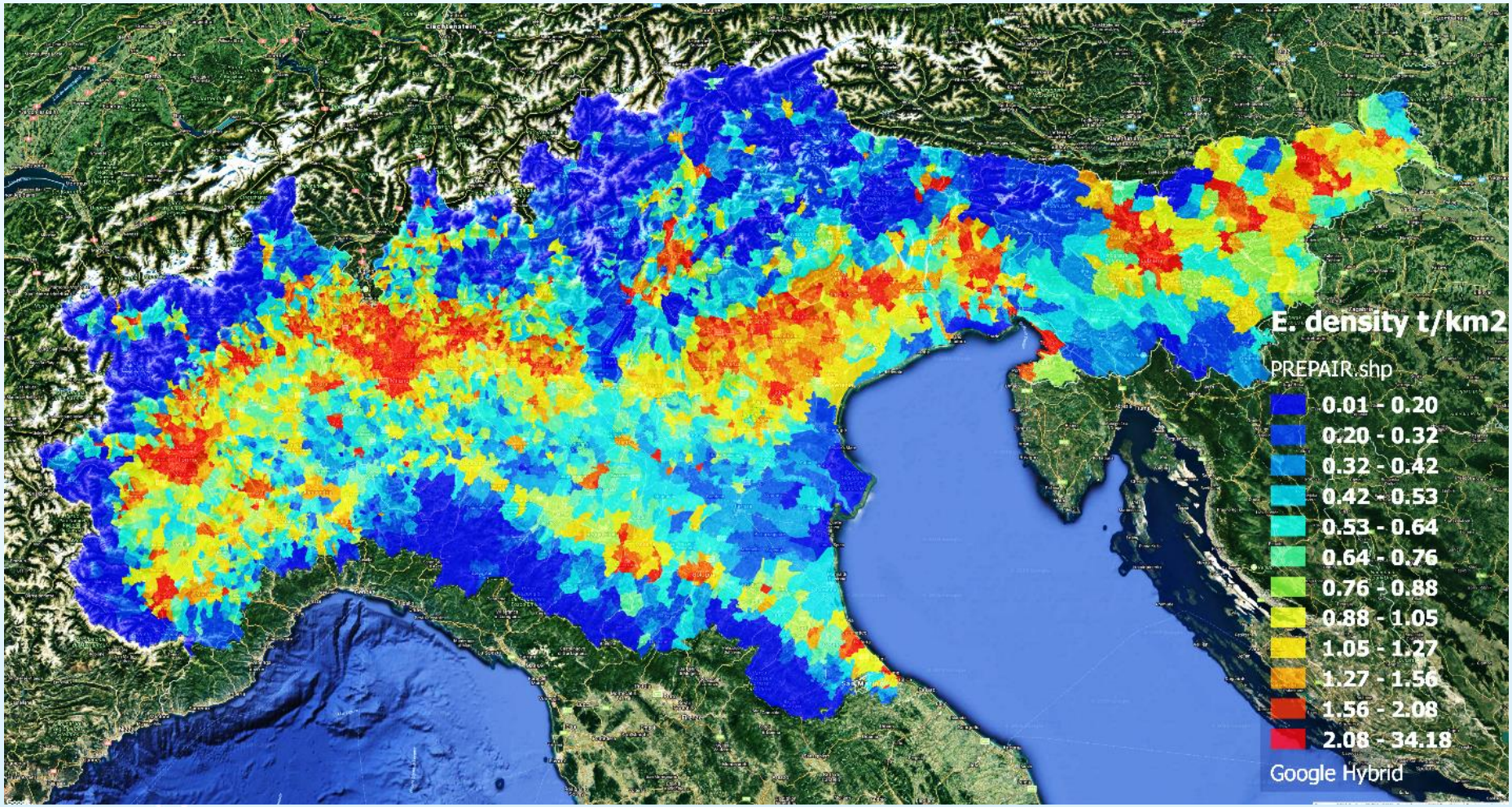

Per capita emission of PM10: **3 kg/inh/year** (Po-basin), **3.4 kg/inh/year** (Po-basin and Slovenia), **4.3 kg/inh/year** (EU-28)

ARPA LOMBARDIA
Agenzia Regionale per la Protezione dell'Ambiente

From: **A common emission dataset for the Po Basin Area** *Angelino E., Marongiu A.*
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Emission density NOx - 2013

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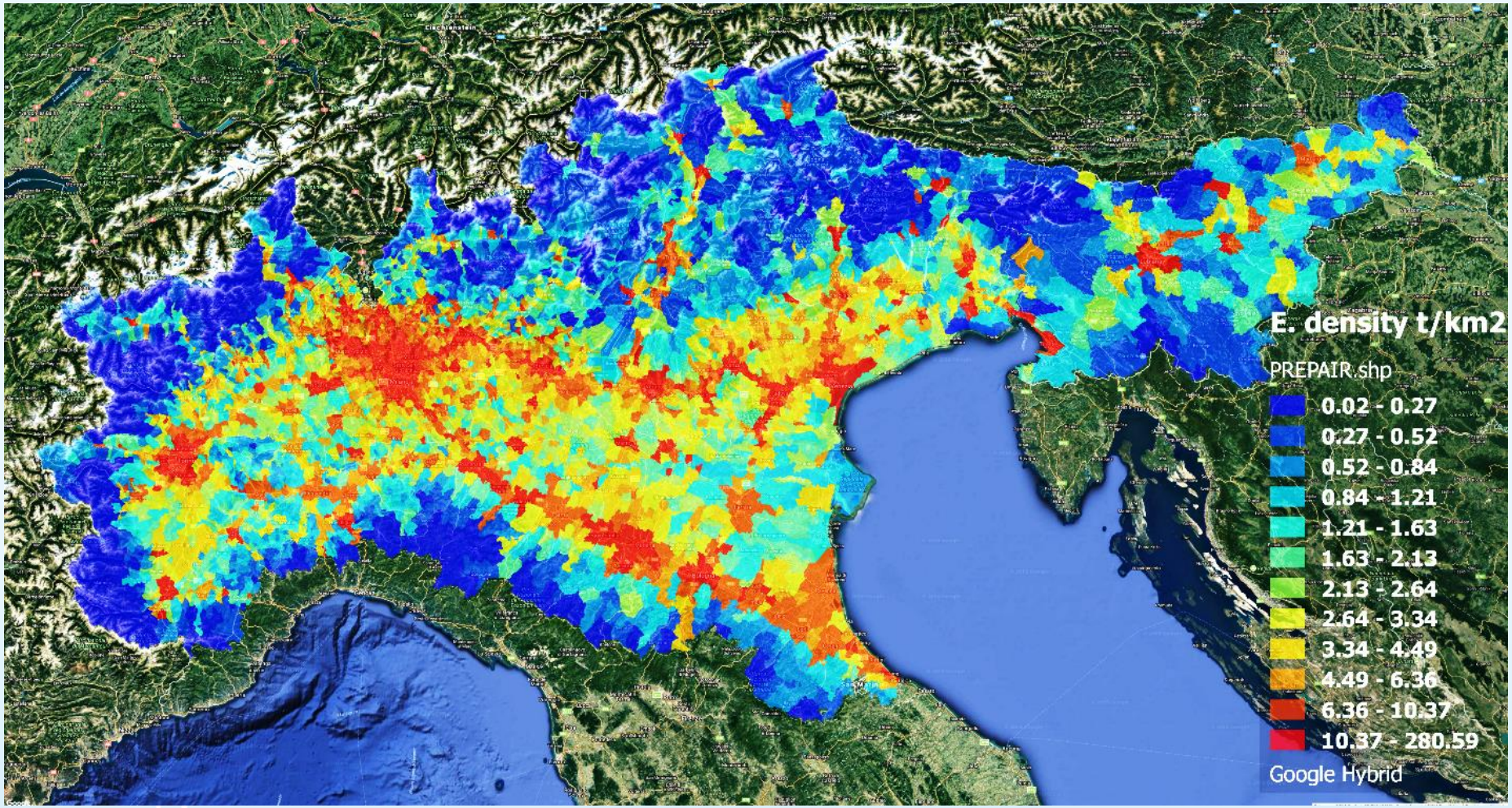

Per capita emission of Nox: **15 kg/inh/year** (Po-basin and Po-basin with Slovenia), **16.6 kg/inh/year** (EU-28)

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From: **A common emission dataset for the Po Basin Area** *Angelino E., Marongiu A.*
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Data Sharing

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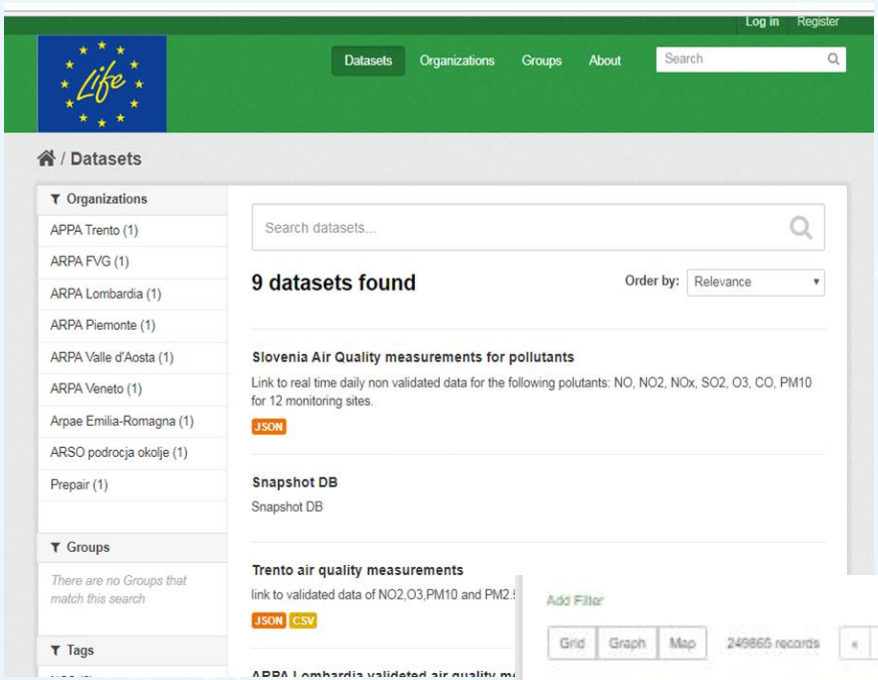

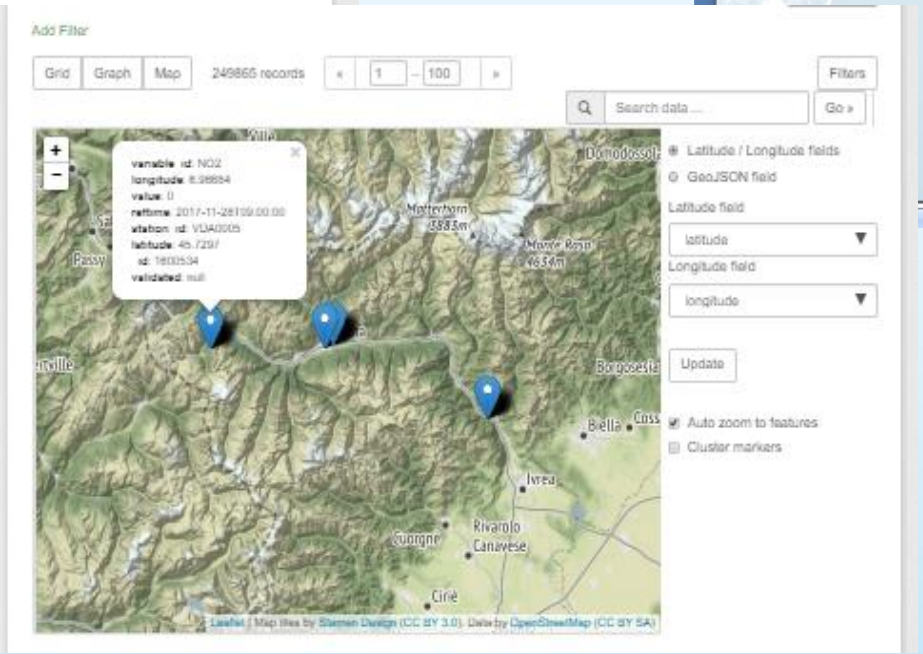

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The Integrated Assessment model RIAT+

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INPUT

Measures DB
GAINs tecnology & AQ plans, Prepair actions, Po Valley agreement, etc....

Measure DB

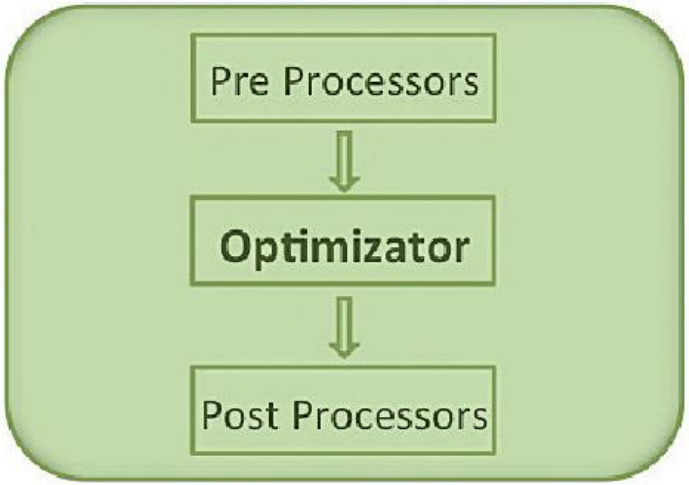
Mapping
GAINS/Emission Activities

Emission data
- areal, point sources and gridded -

Emission Inventory

S/R Function
Artificial Neural Network or model

Source Receptor Function



RIAT + CORE SYSTEM

OUTPUT

Optimized application rate per Technologies
Tables

Costs per Technologies and Macrosector
Maps and Tables

Emissions and AQI
Maps and tables

Run Results

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PILLAR | Communication

Valuta l'Aria Survey

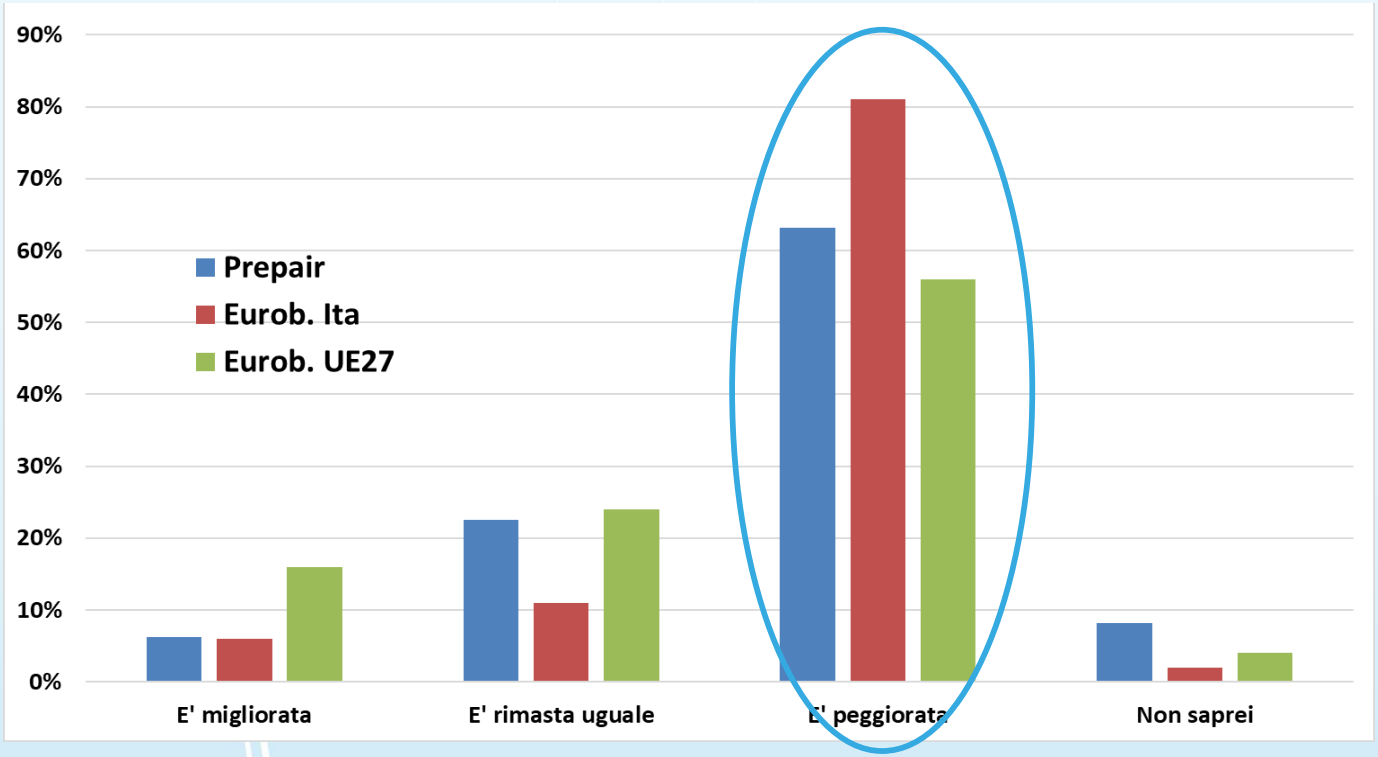
- Realized November 2018 to January 2019
- More than 7000 participants
- A new edition of the survey will be realized in 2023 to evaluate the evolution of perception

1st Survey on Air quality perception by Citizen in the Po Basin

Results available here: https://bit.ly/2OeK3X4

Perception

Perception of the air quality trend over the last 10 years
Comparison between the Po Basin and Eurobarometer



The perception of Citizens do not generally correspond to the data. Most of the european citizen **perceive the air quality as worsening** in the last decade.

The residents of the Po basin are slightly more pessimistic than European average but substantially more optimistic than the Italian citizens as a whole.

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PILLAR | Communication

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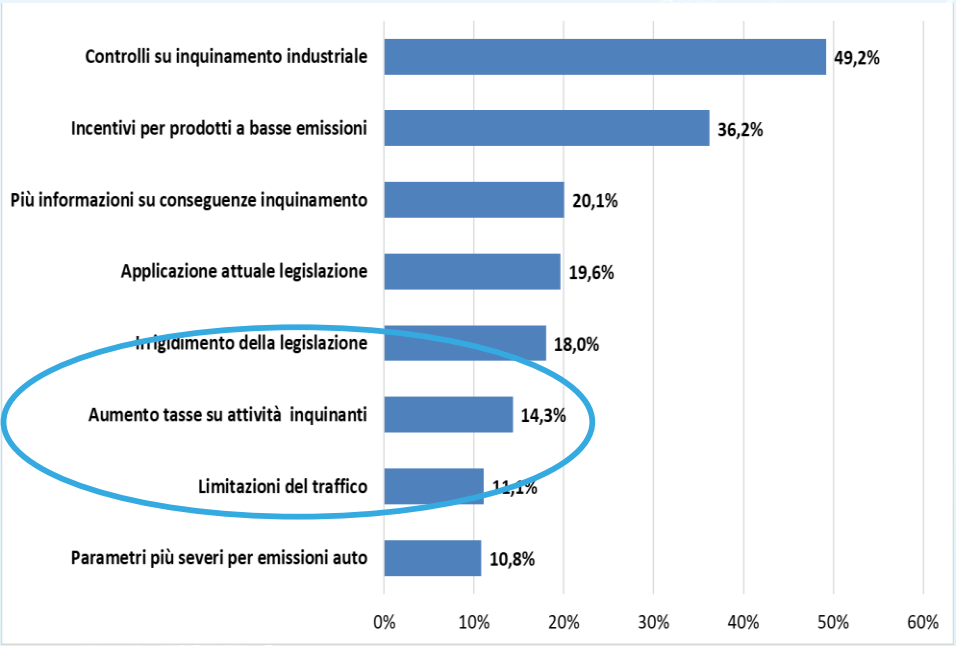
Global VS Local

Actions considered most effective to solve the air quality problems



But everyone is convinced that Transportation is the first source of pollution…

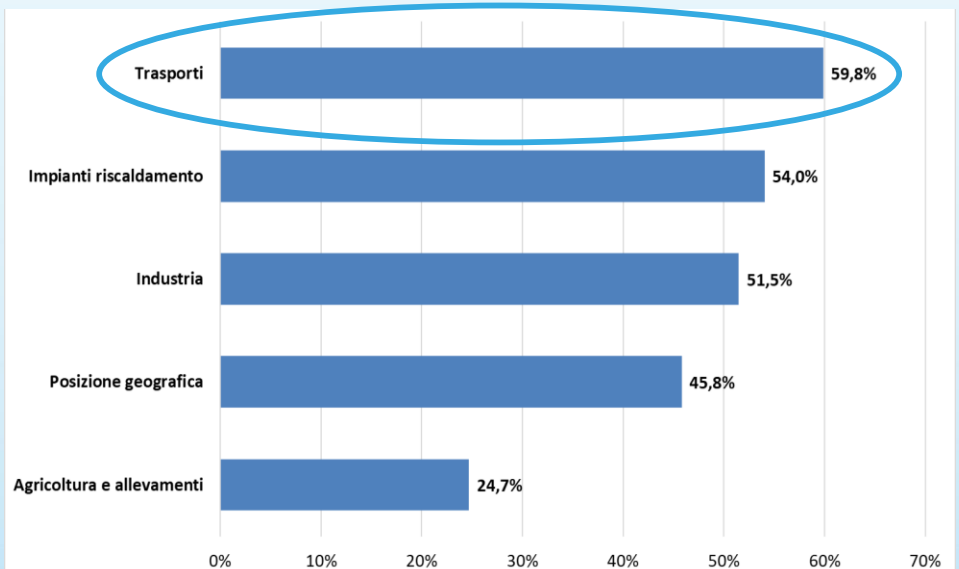
"involve us directly only once you have done everything possible on the other fronts"

Which is the most effective means to tackle the issue of air pollution?

- Industrial pollution controls 50%
- incentives for low-emission products (36.2%).

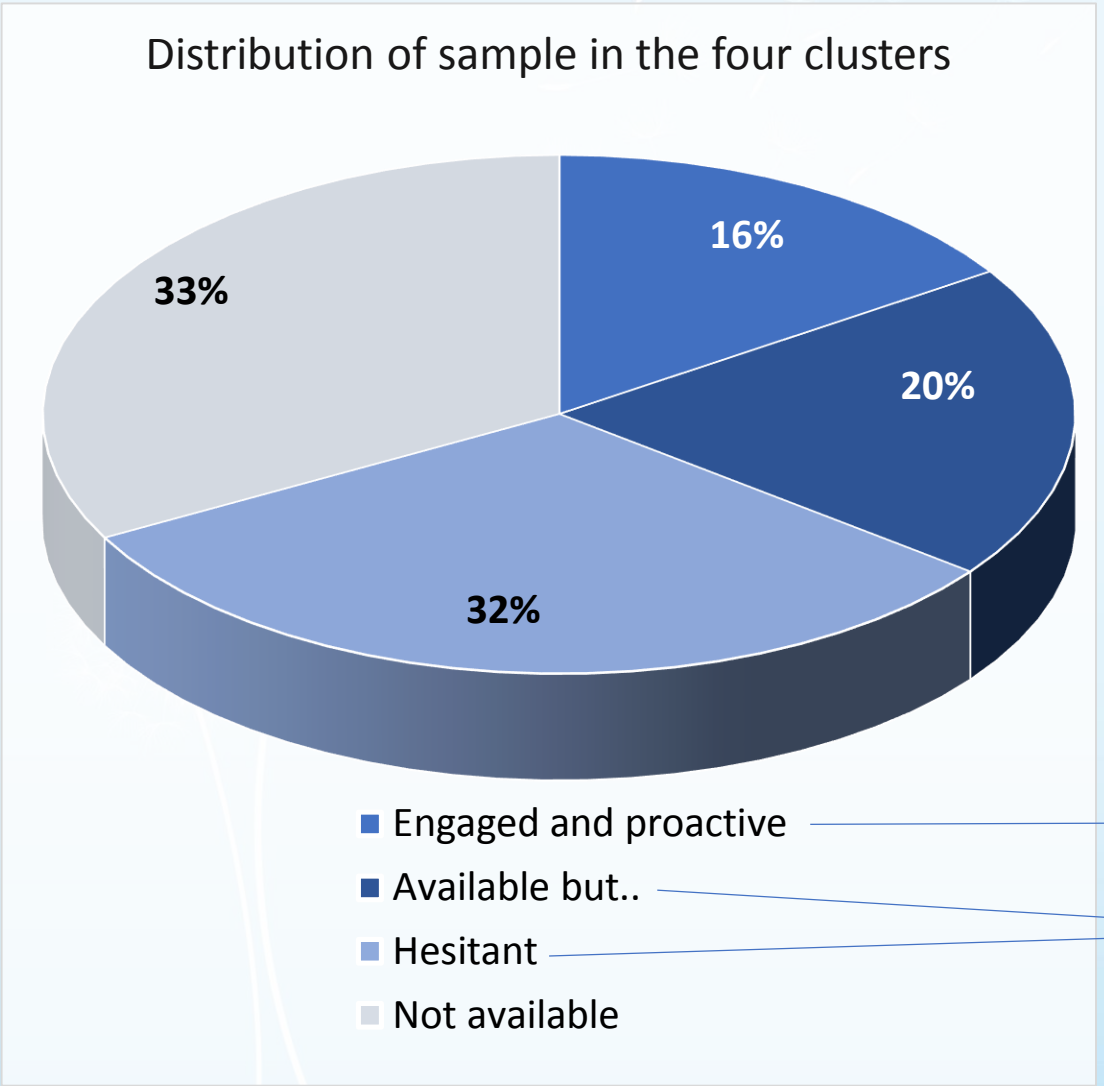
Least effective: traffic restrictions and new parameters for the emissions of new cars….

Main sources of air pollution



PILLAR | Communication

Profile of the respondents



The multivariate analysis highlighted 4 clusters of citizens divided on the basis of **proactivity / availability** to implement virtuous behaviors to improve air quality.

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PILLAR | Communication

Prepair Communication Campaign

- Launch: soon (January 2020)

- Target and message will be elaborated taking into account the results of **Valuta l'aria Survey**

An alliance between citizens and institution to improve air quality!

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Communication on correct use of wood and pellet for domestic heating

https://youtu.be/WV0yVjadb_U

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Awareness raising on electric mobilities
(electric mobility days)

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PILLAR | Communication

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Training courses for teachers and specific educational path on Air quality in schools

https://youtu.be/9VComYsWabY

With the contribution of the LIFE Programme of the European Union

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Thank you!

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www.lifeprepair.eu
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facebook.com/lifeprepair

https://www.linkedin.com/company/life-prepair

https://www.youtube.com/channel/UCjCd06j3xkiUrvgxnhj1HxQ

www.lifeprepair.eu – info@lifeprepair.eu

Regione Emilia-Romagna
Regione del Veneto
Regione Lombardia
Regione Piemonte
Regione Autonoma Friuli Venezia Giulia
Provincia Autonoma di Trento
arpae agenzia prevenzione ambiente energia emilia-romagna
arpav Agenzia Regionale per la Prevenzione e Protezione Ambientale del Veneto
Arpa Piemonte Agenzia Regionale per la Protezione Ambientale
ARPA Lombardia Agenzia Regionale per la Protezione dell'Ambiente
ARPA Valle d'Aosta
arpa FVG Agenzia Regionale per la Protezione dell'Ambiente del Friuli Venezia Giulia
ARSO Environment Slovenian Environment Agency
Comune di Bologna
Comune di Milano
Città di Torino
ART-ER Attrattività Ricerca Territorio
FLA Fondazione Lombardia per l'Ambiente