LIFE IP PREPAIR

Po Regions Engaged to Policies of Air

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The Po Valley represents a significant nonattainment area for PM, NO2 and O3 air quality limit values.

Hundreds of thousands tons of NOx, PM, NH3 per year are emitted in the atmosphere by a wide variety of pollution sources mainly related to traffic, domestic heating, industry and energy production, fertilizers, breeding and other farming activities.

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. Pollutants are transported across the Adriatic Sea, which influences the atmospheric circulation and the photochemical processes.
**Why an integrated project: scope and expected impacts**

- 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 AQP’s 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 Sea

### 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
Main data

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
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: ERVET; FLA
General objectives

PREPAIR aims to implement actions in the territory of the Po Valley and Slovenia in order to improve air quality and comply with Dir. 2008/50/EC and the European strategy ‘Clean Air for Europe’. PREPAIR will also contribute to achieving compliance with the National Emission Ceilings Reduction Commitments.

The general objectives are to:

• Implement measures included in the Air Quality Plans and in the Po Valley Agreement, creating the information needed for a preliminary assessment of their impact on air quality and acting on background levels in a synergic way
• Increase know-how and reinforce capacity building within public authorities and private operators
• Strengthen coordination among Po Basin authorities in the field of air quality
• Establish a permanent networking structure that involves the environmental agencies of the Po Valley and of the eastern border regions and Northern Adriatic basin, such as Slovenia
• Produce homogeneous assessment reports on the effectiveness of PREPAIR concrete actions on air quality in the Po Valley and the Northern Adriatic basin
• Assess the effectiveness and resources needed for measures to improve air quality
• Create a community that recognizes the risks for human health and for the environment posed by air pollution
• Create a network of national, regional and local governments, socioeconomic actors, research centers and other stakeholders
**Expected Results (summary)**

PREPAIR focuses on four main areas – biomass burning, energy efficiency, transport and agriculture – in line with the Po Basin Agreement and the AQPs. Specific goals are to:

- Establish permanent infrastructure for sharing air quality and emissions data, including an accessible common database of observed and modelling air quality data
- Create a network of bike stations of the main cities of the Po Basin and train public officers and advisors, with the aim of raising awareness and providing technical information to the local authorities
- Promote electric mobility and sustainable driving and create a common App to promote public transport use at the Po Basin level
- Develop innovative processes for the optimization of freight transport and carry out demonstration actions aimed at improving short-range freight transport
- Increase awareness on the correct use of biomass and encourage the substitution of domestic heating biomass stoves with high-efficiency and low-emission ones
- Carry out training initiatives for the correct maintenance of biomass heating plants and study wood biomass consumption in order to improve the logistics of its supply in northern Italy
- Produce guidelines for the use of fertilizers with a high content of urea and tools for the adoption of the best available technologies applicable to livestock rearing
- Provide training on the efficient use of energy in industrial systems and address operators at the basin level on energy savings in the civil sector
- Produce operative tools and initiatives for increasing the capacity of local administrations on GPP and energy efficiency in public buildings
The project structure

**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
Fields of action/thematic pillars

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.
**Fields of action/thematic pillars**

**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.
Complementary funds

- 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
**THEMATIC PILLAR ENERGY EFFICIENCY**  
**ACTIONS C15-16-17**

### ACTION FOCUS & PARTNERS INVOLVED

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<td>C16 Energy Efficiency of residential multi-property buildings</td>
<td>Trento</td>
<td>Piedmont, Veneto, RER, FVG</td>
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<tr>
<td>C17 Energy Efficiency of Public Buildings + GPP</td>
<td>RER</td>
<td>Piedmont, Veneto, Tn, FVG, Municipality of Bologna</td>
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ACTION C15 - Training and support services to industries aimed at improving energy efficiency

Action:
• Provides companies, included SMEs (Small Medium Enterprises), with the tools needed to achieve targets on energy efficiency and for an efficient energy use, as set by the "IED" 2010/75/EU on industrial emissions.
• Courses and workshops for firms
• Provides assistance to the implementation of the actions identified in the “Energy Check Up” and consequent follow up of the firm

Coordinator: Emilia-Romagna
Area of implementation: Emilia-Romagna, Piedmont, Veneto, Province of Trento, Friuli Venezia Giulia
Other participants: Emilia-Romagna, Piedmont, Veneto, Province of Trento, Friuli Venezia Giulia

Deliverables:
• Thematic guidelines (like "mini Brefs") concerning methods of assessment of the efficiency level and consequent possible measures;
• Course materials and final report on training experience;
• Video to disseminate results.

Timetable:
The action will last from March 2018 to December 2020

BUDGET: Total budget of the action is 482.111,00 Euro (divided in personnel, travel and subsistence, external assistance, consumables and other costs)
Energy efficiency - Problems

• About 50% of the building stock has very low energy performance, average consumption of about 160 kilowatt hours per square meter compared to 75 of a new building.
• Their energy redevelopment, with targeted interventions on the envelope and on the plants, would allow a reduction in energy consumption of over 50% with positive repercussions for both the environment and for users who would see the costs of their energy bills decrease.

Percentage distribution of buildings by year of construction
**ACTION C16 – Near Zero Energy Buildings**

**Action:**
- Training format for professional expertises for an holistic approach to building work, specifically oriented to multi-family houses (condominiums)
- 4 editions (year II, III, IV, V Project) – 120 participants (at least)
- 1 conference (E2)
- 1 video (E2)
- 1 site visit (E2)

**Coordinator:** Trento Province

**Area of implementation:**
- Emilia-Romagna, Veneto, Trento Province, Friuli Venezia Giulia, Piedmont

**Deliverables:**
- training format 30/04/2018
- Reports for each training session
- Final Report 31/03/2022

**Timetable:**
The action will last from June 2017 to March 2022

**BUDGET:** Total budget of the action is 360.816,00 Euro (divided in personnel, travel and subsistence, external assistance, consumables and other costs)
Course topics

- Basic modules:
- Management area
- Legal area
- Economic-fiscal area
- Technological area
- Advanced module:
- Creation of a community of practice working on one or more practical cases
ACTION C17 – Support to local authorities for energy saving initiatives in public buildings and for the enhancement of GPP

Action:
aims to strengthen the capacity building among public officers in local governments, increasing skills in particular on energy savings and GPP (Green Public Procurement), with:
• technical support and information on access to finance and investment opportunities for energy saving initiatives through the opening of dedicated regional information office (management of financial instruments and public-private partnerships and contracts....)
• workshops for diffusion the GPP approach between local bodies and enterprises and training activities for personnel of local bodies, also using e-learning tools.

Coordinator: Emilia-Romagna
Area of implementation:
Emilia-Romagna, Veneto, Trento Province, Friuli Venezia Giulia, Piedmont, Municipality of Bologna
Other participants:
ERVET

Deliverables:
• Regional information offices (energy saving) foundation
• Materials for workshops and focus groups (energy saving and GPP)
• One new e-learning GPP module, on specific CAM (Minimum Environmental Criteria) that have effects on air quality

Timetable:
The action will last from July 2017 to March 2022

BUDGET: Total budget of the action is 759,787 Euro (divided in personnel, travel and subsistence, external assistance, equipment, consumables and other costs)
Support to local authorities for energy saving in public buildings: regional information point and focus group

**Structure of information point:**
- Emilia-Romagna and Piedmont Regions will activate it in virtual form by creating a web page within the region’s computer platform. Instead, the Province of Trento will make a specific site.
- Will be managed remotely by an operator.
- The local authorities will interact with the information point telematics mode in order to collect and catalog questions and answers.

**Layout information point:**
- Regulations energy efficiency:
  - Community
  - National
  - Regional
- Structural funds:
  - Community
  - National
  - Regional
- Thematic pillar:
  - Renewable energy (description, financing programs)
  - Energy saving (description, financing programs)

**Focus group**
- The Municipality of Bologna will organize special moments for the municipal energy technicians.
- The themes to be dealt with will be evaluated according to the needs of the local authorities also deduced from the requests received at the info-point.
**Domestic Heating Impact - 50% of PM10 emissions (95% woody biomass)**

Almost 20 million tons of biomass consumed in Italy by the residential sector for energy purposes.

<table>
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<th>Fuel</th>
<th>Emission factor PM10</th>
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<tr>
<td>Wood</td>
<td>76 – 860 g/Gj</td>
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<tr>
<td>Methane</td>
<td>0,2 g/Gj</td>
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**Problems: wood combustion**
### THEMATIC PILLAR BIOMASS
### ACTIONS C6-C7-C8 -E3

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<td>Technical and specialist training for installers and designers of domestic biomass systems</td>
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<td><strong>E3</strong></td>
<td>Communication on the use of biomass</td>
<td>Lombardy</td>
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**ACTION C6 - Technical and specialist training for installers and designers of domestic biomass systems**

**Action:**
The aim of the action is the qualification of the competences of installers, maintenance engineers and designers of civil and residential biomass systems, offering specific trainings aimed at developing:

- awareness of the impact of biomass plants on air quality;
- technical and professional competences related to criteria and tools to choose, design, install and maintain systems and components, conducting tests and preparing the documentation required;
- recognize the importance of their role as promoters of a culture of environmental sustainability towards the end user and develop communication and interpersonal skills to interact effectively and provide adequate information.

**Coordinator:** Trento  
**Area of implementation:** Trento, Emilia-Romagna, Veneto, Friuli Venezia Giulia  
**Other participants:** Trento, Emilia-Romagna, Veneto, Friuli Venezia Giulia.  
Lombardy and Piedmont involved in project meetings and sharing of information.  
FLA for dissemination of results and stakeholder involvement  

**Deliverables:**
- Training of about 80 qualified professionals in each partner region;
- Dissemination of the relevance of biomass combustion in terms of air quality; dissemination of a culture of proper design, construction and maintenance of domestic biomass systems;
- Awareness of end-users about proper use and maintenance of the facilities, in particular with respect to measures to guarantee lower emissions of pollutants.
**ACTION C7 - Enhancement of the role of "qualified chimney sweep" for the control and maintenance of biomass domestic systems**

**Coordinator:** Trento

**Area of implementation:**
Trento, Emilia-Romagna, Veneto, Friuli Venezia Giulia

**Other participants:**
Trento, Emilia-Romagna, Veneto, Friuli Venezia Giulia. Lombardy and Piedmont involved in project meetings and sharing of information.

FLA for dissemination of results and stakeholder involvement

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**Action:**

- defining, for each territory taking part in this action, an overall and comprehensive regulatory framework in regards to management, maintenance and security of the heating systems and the current supply and demand of chimney sweeps;
- defining the qualification requirements of a chimney sweep and ensuring appropriate training programs to bring new people to the profession and to update those who already work in the field;
- enhancing the chimney sweep as a professional figure and supporting, through dissemination and communication, the public visibility of its work.

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**Deliverables**

- Final report of the survey about the quantification of demand-offer of chimney sweeps (31/07/2018);
- final report of the survey about the current regulatory framework of heating systems (31/07/2018);
- report about the qualification profile of chimney sweeps (31/10/2018);
- report containing the training format (31/01/2019);
- assessment questionnaire regarding each edition of the trainings, completed by the participants (Phase 2 – Phase 3) (31/07/2022);
- final report of the training experience (30/09/2022);
- legislative proposal to formally recognize the chimney sweeps as a qualified professional figure (30/09/2022).
**ACTION C8 – Analysis of the logistics of consumption and supply of woody biomass**

**Coordinator**: FLA

**Area of implementation**
Emilia-Romagna, Lombardy, Veneto, Piedmont, Friuli Venezia Giulia, Province of Trento

**Other participants**
- Emilia-Romagna, Lombardy, Veneto, Piedmont, Friuli Venezia Giulia, Province of Trento
- ARSO for data sharing

**Action:**
It is addressed to optimize the local supply chain management and production of biomass for energy use, through the implementation of suitable management plans for agro-forestry residues, the application of a traceability protocol, the stakeholders engagement and the comparison of good practices. It’s complementary to D3 which estimates residential wood consumption in the Po Valley.

**Deliverables**
- Final report of the survey about the quantification of demand-offer of chimney sweeps (31/07/2018);
- Final report of the survey about the current regulatory framework of heating systems (31/07/2018);
- Report about the qualification profile of chimney sweeps (31/10/2018);
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- Legislative proposal to formally recognize the chimney sweeps as a qualified professional figure (30/09/2022).
Thank you!

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