



Convergence with EU Air Protection Policies

Short Guide for ENP Partners and Russia

air



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Convergence with EU Air Protection Policies – Short Guide for ENP Partners and Russia

Short Guide: EU Air Policy

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1 Introduction

The European Neighbourhood Policy (ENP) was created in 2003/2004 and is now well established as the principal vehicle for cooperation with the neighbour countries. It is a collective EU response to the aspirations of its Eastern and Southern neighbours to jointly promote prosperity, stability and security in our region.

The recent historic enlargement of the EU in 2004 and 2007 contributed to the creation of a large zone of democracy and prosperity in Europe. The political, economic, social and environmental gaps between the Union and its neighbours to the East-Belarus, Ukraine, Moldova and the Southern Caucasus, and to the South, in the Mediterranean region, are worryingly large and in certain cases increasing. The EU wants to prevent the emergence of new dividing lines between the enlarged EU and its neighbours.

The European Neighbourhood Policy represents a new approach in the EU's relations with its neighbours. This "partnership for reform" is offered by the EU to 16 partner countries to the South and to the East of the EU¹. It goes beyond classical co-operation: it consists of intensified political dialogue and deeper economic relations, based on shared values and common interest in tackling common problems. The ENP is not about membership of the EU – if an accession perspective were to be offered at some point in the future to any of the countries covered by the ENP, this would be a separate process.

The necessary legal and institutional framework for intensified cooperation with ENP partners are Partnership and Cooperation Agreements or Association Agreements. The tools, however, to deliver concrete results are jointly agreed, tailor-made ENP Action Plans² with short and medium term priorities (3–5 years). They cover a wide range of issues: political dialogue and macro-economic reforms, trade, co-operation in Justice, Liberty and Security, various sector-policies (transport, energy, environment and climate change, research, information society, social policy and employment) as well as a deep human dimension – people to people contacts, education, health, civil society. The ENP Action Plans also provide a means of technical and financial support in the partner's own reform efforts and modernisation.

The European Neighbourhood and Partnership Instrument (ENPI), as a "policy driven" financial instrument, will support in the period 2007–2013 the implementation of the ENP Action Plans, and, in the case of Russian Federation, which is not covered by the ENP³, the road-maps for the four common spaces. In that context, it goes further than promoting sustainable development and fighting poverty to encompass, for example, considerable support for measures leading to progressive participation in the EU's internal market. Legislative and regulatory convergence and institution building is supported through mechanisms such as the exchange of experience, long term twinning arrangements with Member States or participation in Community programmes and agencies. The ENPI replaces MEDA and TACIS and other existing geographical and thematic instruments.

The Commission has set up a web-site explaining the ENP and its processes and containing key ENP documents such as the Strategy Papers, the Action Plans and Progress Reports. Please refer to: http://ec.europa.eu/world/enp/index_en.htm.

ENP partner countries are expected to benefit considerably from full implementation of the ENP Action Plans, including from enhanced convergence with the EU approaches. For benefits resulting from enhanced environment protection, including convergence, please refer to Chapter 3.

¹ Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, the Occupied Palestinian Territory, Syria, Tunisia, Ukraine.

² With exception of Algeria, Belarus, Libya and Syria ENP Action Plans have been agreed with all the countries mentioned.

³ The EU and Russia are linked by the Strategic Partnership.

In order to help partner countries to realise these benefits, the European Commission has decided to provide information on EU environment policy and legislation in key policy areas. To this end, the European Commission has initiated the production of **six short guides** on the following topics:

- **Water quality**, with a focus on the Water Framework Directive and related developments, such as the Flood Directive or the Groundwater Directive;
- **Waste management**, with a focus on the Waste Framework Directive;
- **Air quality**, with a focus on the Framework and Daughter Directives;
- Environmental **Impact Assessment**, Strategic Environmental Assessment, Access to Information, Participation in Decision-Making, and Reporting;
- **Nature protection**, with a focus on the Habitats and Birds Directives (e.g. cross-border co-operation) and the Natura 2000 network (e.g. ways to establish measures or monitoring);
- **Industrial pollution**, including the Integrated Pollution Prevention and Control Directive.

Where relevant the guides address the seven Thematic Strategies under the 6th Environment Action Programme (EAP).⁴ The Thematic Strategies constitute the framework for action at EU level in each of the concerned priorities and cover the following fields: soil and the marine environment (in the priority area of biodiversity), air, pesticides and urban environment (in the priority area of environment, health and quality of life) and natural resources and waste recycling (in the priority area of natural resources and waste).⁵

Climate change issues are becoming an increasingly important component of the EU's environmental cooperation with partner countries, which bilateral dialogues will increasingly address. Documents on this crucial topic of common interest will be issued separately from this series of guides.

The **purpose** of this policy guide on air is to provide information on EU policy and legislation by describing the policy background and explaining how progress can be achieved through the prioritisation and sequencing of activities. The guide shows how gradual or partial convergence with the EU environment policy and legislation can assist the ENP partner countries and Russia in addressing environmental concerns.

The policy guide sets out the key principles and concepts of the relevant pieces of legislation and outlines the main policy instruments used within the EU. This includes summarising the main provisions of the legislation. The guide also addresses the current general policy situation of Eastern and Mediterranean ENP partners and looks at potential challenges to convergence. Finally, it identifies useful steps to be taken to promote convergence. Since the individual situation in partner countries varies considerably, the guides take a general approach and references to specific countries are not made. The relevance of full or partial convergence is also to be seen in this light.

⁴ For the 6th EAP please refer to: <http://ec.europa.eu/environment/newprg/index.htm>.

⁵ For the seven Thematic Strategies please refer to: http://ec.europa.eu/environment/newprg/strategies_en.htm.

2 In a Nutshell

The problems that this policy aims to address

- Air pollution damages human health and natural ecosystems. It also contributes to general environmental concerns of climate change, loss of biodiversity and depletion of natural resources and assets.
- Air pollution is most prominent close to the source but due to long-range transport it is also a transboundary problem; it requires co-ordination among Member States through the development of national emissions ceilings and through long-term international commitments (such as the Convention on Long-Range Transboundary Air Pollution (the LRTAP Convention) of which the European Community has been a party since 1982).
- Air pollution of anthropogenic origin has multiple sources:
 - Mobile sources, e.g. motor vehicles; and
 - Stationary sources, e.g. combustion plants.

How the policy addresses these problems

The EU's air protection legislation aims to:

- Set minimum quality objectives for ambient air and triggers action where those objectives are not met,
- Monitor and control specified air pollutant emissions from their sources,
- Harmonise measuring strategies, measuring methods, calibration and quality assessment methods among Member States, and
- Provide updated information to the public, and ensures its participation in the development of abatement measures.

Benefits to be expected

Benefits expected from converging national air protection legislation to EU's air protection legislation:

- Reduction of concentrations of pollutants to below limit values and through this greater protection of human health, vegetation, ecosystems and biosphere in general,
- Increased use of clean technology in new equipment and replacement of outdated technology,
- Improved fuel quality,
- Greater promotion and integration of environmental protection requirements into transport and energy sectors,
- Improved information transmission, compatibility, comparability and transparency regarding air quality monitoring and air pollution emissions among Member States, and hence a better knowledge base for future policies and more efficient and less costly abatement efforts,
- Increased awareness among the general public of the meaning and risks of air pollution.

3 Expected Benefits of Convergence

Convergence toward EU air quality legislation has the potential to bring a number of benefits to the EU's European Neighbourhood Policy (ENP) partner countries. The adoption of the approaches found in the EU legislation may contribute to more sustainable air quality management and to the reduction of ambient air pollution.

Convergence of the **Air Quality Framework Directive, its Daughter Directives and the new Directive on ambient air quality and cleaner air for Europe of 2008** could serve as a model for the ENP partner countries for the assessment and management of ambient air quality. The zoning approach established in the Air Quality Framework Directive could help save human and financial resources. The daughter directives set air quality standards for the protection of human health, ecosystems and vegetation. The standards are particularly relevant as countries could avoid new or continued damage to human health and sensitive ecosystems. The Directives also define a framework for taking the abatement action where needed. In this respect, the adoption of EU air quality standards would be a step toward the reform of the requirements for permits for industrial installations (as required by the IPPC directive, see the Policy Guide on IPPC Directive for more information).

The provisions of the **Exchange of Information Decision** are highly relevant for public information regarding the ambient air quality situation, and for the preparation of effective air pollution abatement plans and programmes. In the EU, this piece of legislation ensures a collection of baseline data on ambient air quality and an improvement in their compatibility, comparability and transparency. In the ENP partner countries, the convergence toward the Exchange of Information Decision can contribute to appropriate data collection (long-term trends, compatibility, and comparability) and transparency as well as awareness-raising concerning ambient air quality situation and its effects on human health.

Emissions of acidifying and eutrophying substances and ozone precursors are a significant problem, particularly in large cities of the EU's Eastern ENP Partner Countries and in Russia. In addition, airborne fine particulate matter causes major damage to human health. The provision found in the **Directive on National Emission Ceilings (NEC)** that calls for a national programme for the progressive reduction of national emissions is highly relevant for the control of ambient air pollution from various sources in these countries. Convergence with this Directive is attractive due to the Directive's flexibility concerning which measures must be taken in order to comply with national emissions ceilings. This flexibility allows for the simultaneous pursuance of national priorities and the management of major air pollution problems. Since only one of the EU's Eastern ENP Partner Countries has signed and others are potential parties to the Gothenburg Protocol (1999) under the LRTAP Convention, the convergence toward the NEC Directive could be used as an instrument to achieve international agreements.

Similar to the NEC Directive, the **Large Combustion Plant Directive**, which focuses on large (more than 50 MW thermal input) plants, is highly relevant for the control of emissions from stationary sources. An approach that sets different emission limit values for "existing" and "new" installations could be of great interest for the EU's ENP partner countries, where a large part of the installations are outdated. This approach would encourage a gradual update of old – "existing" – installations, as well as only grant licences to those new installations which abide by the specific emission limit values set for new installations.

The **Directive on Emissions from Light-duty Vehicles** and the **Directive Relating to the Quality of Petrol and Diesel Fuel** are highly relevant for the control of emissions from mobile sources. The convergence toward Euro-standards for motor vehicle emissions entails the possibility of introducing fiscal incentives that could contribute considerably to the reduction of emissions through the use of particulate filters or catalytic converters. This is of particular importance in the EU's Eastern ENP Partner Countries and Russia, where a large and increasing number of old cars are used. The provisions relating to the quality of petrol and diesel fuel are already partially implemented in the EU's Eastern ENP Partner Countries and Russia; the convergence toward the Directive relating to the quality of petrol and diesel fuel could contribute to further improvement of fuel quality used through introduction of monitoring system.

Box 1: Effectiveness of European air quality policies and measures in EU Member States

The survey conducted in 2004 on the effectiveness of European air quality policies and measures indicated the positive impacts of these policies. Most respondents believe that EU legislation has had a significant impact on improving air quality, inter alia by reducing emissions and their effects in all EU Member States. All types of measures applied by EU air quality legislation were designated as effective and cost-effective. While the effects of product standards, like Euro-standards for cars, heavy-duty vehicles and quality of fuels have been praised, it was indicated that it is too early to analyse the effectiveness of the National Emission Ceilings Directive. The Air Quality Framework Directive and in particular its first and third Daughter Directives were indicated as very important for controlling PM₁₀, NO₂ and ozone respectively. An additional benefit of the ambient air quality legislation was the increased general awareness of air pollution and its negative effects. It was also acknowledged that the whole procedure of harmonisation was very useful and that without the EU legislation it would have taken a long time to develop and implement similar legislation in these countries.

Source: Goldenman and Levina (2004).

4 Overview of EU Air Policy

Air pollution damages human health and the environment. Since the late 1970s the European Union has recognised air pollution as one of Europe's main political concerns. The Community is acting at many levels to reduce exposure to air pollution: through legislation, through work on a wider international level in order to reduce cross-border pollution (e.g. the LRTAP Convention, 1979, to which the European Community is a party since 1982), through collaboration with sectors responsible for air pollution and with national, regional authorities and NGOs, and through research. The European Union policy on air quality aims to develop and implement appropriate instruments to improve air quality.

Despite significant improvements, serious air pollution impacts persist. Against this backdrop, the Community's Sixth Environmental Action Programme (6th EAP, 2002–2012), called for the development of a Thematic Strategy on Air Pollution with the objective to attain "*levels of air quality that do not give rise to significant negative impacts on, and risks to human health and the environment*". In order to provide technical analysis and policy development in the air quality sector, the Clean Air for Europe Programme (CAFE) was launched by the European Commission in 2001 with the general aim to "*develop a long-term, strategic and integrated policy to protect against the effects of air pollution on human health and the environment*". Following its communication on CAFE Programme, the Commission has examined whether current legislation is sufficient to achieve the 6th EAP objectives by 2020. This analysis looked at future emissions and impacts on health and the environment and has used the best available scientific and health information. It showed that significant negative impacts will persist even with effective implementation of current legislation. Thereby the CAFE programme supported the development and implementation of the Thematic Strategy on Air Pollution (2005). Accordingly, the Thematic Strategy on Air Pollution establishes interim objectives for air pollution in the EU and proposes appropriate measures for achieving them. It recommends that current legislation be modernised, be better focused on the most serious pollutants and that more is done to integrate environmental concerns into other policies and programmes. Both documents build on the experience gained from the current legislation and form the framework for the new EU legislation on air, which is to come into effect in 2008.

The European Union air-quality policy actions focus on:

1. Establishing minimum quality standards for ambient air;
2. Tackling the problems of acid rain and ground level ozone;
3. Controlling emissions from stationary and mobile sources;
4. Improving fuel quality;
5. Promoting and integrating environmental protection requirements into the transport and energy sectors; and
6. Ensuring that the public is appropriately informed and can participate in the development of pollution abatement measures

On the basis of the EU air quality policy actions, 10 directives were selected for further review. They are grouped into 5 areas representing (see Box 2 below): the central legislation on ambient air quality assessment and management with its daughter directives, the national emission ceiling directive and the directives addressing emissions from stationary and mobile sources. There is also another EU legislation of particular importance to air quality improvement, e.g. IPPC Directive, Waste Incineration Directive, VOC Solvents Directive⁶ and the Directive on Petrol Vapour Recovery (Stage I)⁷. The information on IPPC Directive and Waste Incineration Directive can be found in other Policy Guides, see the Policy Guide on IPPC Directive and the Policy Guide on Waste Policy.

⁶ Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.

⁷ Directive 94/63/EC of 20 December 1994 on the control of volatile organic compound (VOC) emissions resulting from the storage of petrol and its distribution from terminals to service stations.

Box 2: Selected directives in the air-quality policy sector

Ambient air quality assessment and management:

The Framework Legislation:

The Air Quality Framework Directive 96/62/EC on ambient air quality assessment and management.

Ambient air quality standards (limit values and guidelines):

Daughter Directives:

The first Daughter Directive 1999/30/EC relating to limit values for sulphur dioxide (SO₂), nitrogen dioxide (NO₂), oxides of nitrogen (NO_x), particulate matter (PM₁₀) and lead (Pb) in ambient air.

The second Daughter Directive 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air.

The third Daughter Directive 2002/3/EC relating to ozone in ambient air.

The fourth Daughter Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.

Decision 97/101/EC on the exchange of information and data from networks and stations measuring ambient air quality within Member States.

National emission ceilings:

Directive 2001/81/EC on national emission ceilings for certain atmospheric pollutants (the NEC Directive).

Emissions standards for stationary sources:

Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants (the LCP Directive).

Emissions standards for mobile sources:

Directive 98/69/EC relating to measures to be taken against air pollution by emissions from motor vehicles and amending Directive 70/220/EEC.

Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending the Directive 93/12/EEC on diesel fuels.

The selected directives are described in detail in Chapters 4.2–4.6 below. The directives are presented, focusing on the aim of a directive, its main principles and instruments as well as the benefits seen from the implementation of the directive.

4.1 Overarching Principles of Air Quality Management in the EU

The European Community air quality legislation designates a number of overarching principles for current air quality management (see Table 1). For example, the Air Quality Framework Directive and its Daughter Directives as well as the new ambient air quality Directive, which will come into effect in 2008, are founded on the “**effects-based approach**,” meaning that the ambient air quality standards for pollutants are set according to their scientifically-observed or estimated effect on human health and/or on the environment and are not based on the technological or economic feasibility of achieving the standards. In contrast, the directives that set emissions standards and limit values for products (e.g. in fuel) are based on “**technologically and economically feasible standards**”. In addition, the Framework, its Daughter Directives and also the directives regulating emissions from stationary sources (in particular the Directive concerning Integrated Pollution Prevention and Control (IPPC), the Directive on Large Combustion Plants (LCP) and the Directive on National Emission Ceilings (NEC)) share the principle of “**integrated approach**”. An integrated approach means that measures taken to reduce air pollution at one point or in one area should not lead to an increase in air pollution elsewhere, or to an increase in pollution of another environmental medium. Various Directives that deal with air emissions also include the “**polluter pays principle**”, meaning that the potential polluter should in general bear the costs of pollution prevention and control measures as well as of remediation. In the context of air quality management, this means that potential emitters of air pollutants should bear the full costs of carrying out their activities in an environmentally sound manner, i.e. taking air quality issues into account.

Table 1: Principles for current air quality management

Principles	Relevant Directives in EU Air Quality Policy Sector
<p>For ambient air quality standards (limit values and guide values): Effects-based approach. Ambient air quality standards (limit values and guide values) for pollutants are set according to their scientifically-observed or estimated effects on human health and/or on the environment and are not based on the technological or economic feasibility of achieving them.</p>	<p>The Air Quality Framework Directive and its Daughter Directives.</p>
<p>For product control, material handling, and emissions standards: Technologically and economically feasible standards.</p>	<p>Directives setting emissions standards and limit values for products (e.g. in fuel). In particular the group of directives on product control and material handling.</p>
<p>Polluter Pays Principle. The potential polluter should in general bear the costs of pollution prevention and control measures as well as remediation. In the context of air quality management, this means that potential emitters of air pollutants should bear the full costs of carrying out their activities in an environmentally sound manner i.e. taking air quality (and other issues) into account.</p>	<p>Directives that deal with air emissions.</p>
<p>Integrated approach. Measures taken to reduce air pollution at one point or in one area should not lead to an increase in air pollution elsewhere, or to an increase in pollution of another environmental medium (based on principles of Integrated Pollution Prevention and Control (IPPC).</p>	<p>The Air Quality Framework Directive and its Daughter Directives. Also directives regulating emissions from stationary sources, in particular the IPPC Directive, the LCP Directive. The NEC Directive.</p>
<p>Cost-effective measures. Under the National Emission Ceilings Directive the emission ceilings for the Member States are based on the principle of achieving the environmental objectives through cost-effective measures, i.e. at the least cost for the European Community.</p>	<p>In particular the National Emission Ceilings Directive.</p>
<p>International approach. The international, trans-boundary, nature of air pollution is recognised in two respects. Firstly, Member States are not expected to achieve independently satisfactory air quality with respect to pollutants originating outside their territory. Secondly, Member States are required to take into account the effects of their own emissions on other countries even when those emissions have no significant adverse effects within their own frontiers. Member States with a common border are expected to consult each other, when necessary, regarding air quality.</p>	<p>In particular directives regulating emissions from stationary sources and setting national emission ceilings. Also the Air Quality Framework Directive and its Daughter Directives.</p>
<p>Communication and information. Member States are required to inform the Commission about air quality issues in their territory and (in more recent legislation) to inform the public.</p>	<p>Almost all the directives concerned, in particular the group of directives concerning "Monitoring and information exchange".</p>
<p>Public participation. Member States are required to provide up-to-date information to the public and appropriate organisations on ambient air concentrations of certain pollutants. Plans or programmes setting out pollution abatement measures for the zones or agglomerations concerned must also be made available to the public.</p>	<p>Almost all the Directives concerned, in particular the Air Quality Framework Directive and its Daughter Directives.</p>

Source: Adapted from European Commission (2003a).

4.2 Ambient air quality assessment and management and standards

4.2.1 The Air Quality Framework Directive 96/62/EC and its Daughter Directives

The Air Quality Framework Directive and the four Daughter Directives define the legislative basis for assessment and management of air quality in Member States. The Framework Directive gives general requirements and the Daughter Directives specify the requirements for the various pollutants in more detail. An important goal of the directives is that air quality be assessed and managed in a comparable way and on the basis of the same criteria in all Member States.

The general aims of the Framework Directive are to:

- establish basic principles to **define and set objectives** for ambient air quality in the EU in order to avoid, prevent or reduce harmful effects on human health and the environment;
- **assess** ambient air quality in the Member States using common methods and criteria;
- **manage air quality**, i.e. maintain ambient air quality where it is good and improve it where it is unsatisfactory; and
- produce adequate **information** on ambient air quality and ensure its availability to the public, notably by means of alert thresholds.

The Framework Directive was followed by four Daughter Directives, which set the numerical limit values, or, in the case of ozone, arsenic, cadmium, nickel and benzo(a)pyrene, target values for each of the identified pollutants:

- The first Daughter Directive 1999/30/EC relating to limit values for sulphur dioxide (SO₂), nitrogen dioxide (NO₂), oxides of nitrogen (NO_x), particulate matter (PM₁₀) and lead (Pb) in ambient air.
- The second Daughter Directive 2000/69/EC relating to limit values for benzene and carbon monoxide (CO) in ambient air.
- The third Daughter Directive 2002/3/EC relating to ozone (O₃) in ambient air.
- The fourth Daughter Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.

The implementation by Member States of the Daughter Directives should be co-ordinated with the implementation of the Framework Directive. The Directives set the standards to be achieved but leave to the national authorities of the different Member States the choice of form and methods.

1. Objectives for Ambient Air Quality

The Daughter Directives set limit values or target values as standards for the relevant pollutants for the protection of human health, vegetation or ecosystems that have to be met by a certain date (see Box 3). The first Daughter Directive is designed to protect human health, vegetation and ecosystems, while the second and fourth Directives exclusively address human health. The third Daughter Directive aims to protect human health and vegetation and sets long term objectives. Member States may set more stringent standards than those laid out by the Directives as well as regulate other pollutants not covered by those Directives.

Box 3: Definitions of standards in the Framework Directive and its Daughter Directives

The **Air Quality Framework Directive** introduces the definitions for:

“Limit value” shall mean a level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health and/or the environment as a whole, to be attained within a given period and not to be exceeded once attained.

“Alert threshold” shall mean a level beyond which there is a risk to human health from brief exposure and at which immediate steps shall be taken by the Member States as laid down in Directive 96/62/EC.

“Margin of tolerance” shall mean the percentage of the limit value by which this value may be exceeded subject to the conditions laid down in Directive 96/62/EC.

The **Third Daughter Directive** provides the following definitions:

“Target value” means a level fixed with the aim, in the long term, of avoiding harmful effects on human health and/or the environment as a whole, to be attained where possible over a given period.

“Long-term objective” means an ozone concentration in the ambient air below which, according to current scientific knowledge, direct adverse effects on human health and/or the environment as a whole are unlikely. This objective is to be attained in the long term, save where not achievable through proportionate measures, with the aim of providing effective protection of human health and the environment.

“Alert threshold” means a level beyond which there is a risk to human health from brief exposure for the general population and at which immediate steps shall be taken by the Member States as laid down in Articles 6 and 7.

“Information threshold” means a level beyond which there is a risk to human health from brief exposure for particularly sensitive sections of the population and at which up-to-date information is necessary.

The **Fourth Daughter Directive** provides the following definitions:

“Target value” means a concentration in the ambient air fixed with the aim of avoiding, preventing or reducing harmful effects on human health and the environment as a whole, to be attained where possible over a given period.

2. Assessment of Ambient Air Quality

The Air Quality Framework Directive requires Member States to carry out a **preliminary assessment** of ambient air quality throughout their territories in order to obtain initial data on the levels of specified pollutants in the air. To this end, the methods and criteria set out in the Daughter Directives may be used or methods for which Member States can demonstrate that they give equivalent results. Member States have to prepare a list of zones and agglomerations which is to be reviewed at least every five years. Member States shall determine the assessment requirements in individual zones (see Box 4) and design measurement network in each zone depending on the level of the pollutants. Zones or agglomerations are primary units for air quality management.

Box 4: Definitions for zones and agglomerations introduced by the Air Quality Framework Directive

“Zone” shall mean part of their territory delimited by the Member States.

“Agglomeration” shall mean a zone with a population concentration in excess of 250 000 inhabitants or, where the population concentration is 250 000 inhabitants or less, a population density per km² which for the Member States justifies the need for ambient air quality to be assessed and managed.

Member States have to **monitor** ambient air quality relating to the levels of pollution within the zones, for which different monitoring methods may be used, e.g. measuring, mathematical modelling, or a combination of the two. The high quality of measurement is mandatory in zones where the pollution level exceeds the limit values. Where the pollution level is below the limit values, the sole use of modelling or objective estimation techniques is sufficient.

The Daughter Directives prescribe reference methods for the sampling, measurement and analysis of relevant substances; and criteria for determining the location of sampling points for the measurement of relevant substances in ambient air and a minimum number of sampling points for fixed measurements of concentrations of each relevant pollutant. Member States may use the reference methods or other methods if they demonstrate that they give equivalent results.

3. Management of Ambient Air Quality

For those zones where monitoring shows that limit values plus margin of tolerance are exceeded, Member States are required to draw up and implement **plans or programmes** to ensure that the limit values are complied with within the specified time limit. In zones where the level of more than one pollutant is higher than the limit values, Member States shall provide an **integrated plan** covering all the pollutants concerned. Member States shall prepare **action plans** indicating the measures to be taken in the **short term** to reduce pollution, in the event there is a risk of the limit values and/or alert thresholds being exceeded. In zones where levels of pollutants are lower than air quality limit values, Member States have to **maintain** or **improve** those levels.

Such plans or programmes may, depending on the individual case, provide for measures to reduce pollution emissions, i.e. to control and, where necessary, suspend polluting activities (for example, motor vehicle traffic) to control pollution levels during short-term events when limit values or alert thresholds for pollutants are in danger of being exceeded; to regulate either emission levels or the type of installations allowed; to use economic incentives, such as differential taxation or subsidies, to encourage reductions in emissions, for example through fuel substitution; or to close installations that cannot meet the emission standards necessary to comply with ambient air quality limits.

4. Information on Ambient Air Quality

Furthermore, Member States have to **inform the public** of cases where the air quality **alert thresholds are exceeded** by means of television, radio and newspaper; or **consult** with the relevant Member State **on transboundary pollution**, if the air pollution originates in another Member State. Plans or programmes setting out the relevant pollution abatement measures must also be made available to the public.

4.2.2 Exchange of Information Decision (97/101/EC)

With the Exchange of Information Decision (97/101/EC) the European Union has established a Community-wide procedure for exchanging information and data on ambient air quality in the EU. The Decision introduces a reciprocal exchange of information and data relating to:

- networks and stations set up in the Member States to measure air pollution; and
- air quality measurements taken by those stations.

European Environment Agency handles the data-flow on the behalf of the Commission. The information exchange relates to the pollutants listed in Annex I of the Air Quality Framework Directive and to other polluting substances (see Annex I of the Decision).

Exchange includes information on the:

- characteristics of the measurement stations (e.g. location, responsible body, etc.);
- measurement equipment/techniques (e.g. type, method, frequency, etc.);
- operational procedures followed in those stations (e.g. data validation and quality assurance procedures); and
- structure and organisation of the network to which they belong (e.g. geographical extent and organisation of the network).

Information has to be provided for all measurement stations that are used for the purpose of the assessment under the Daughter Directives. Member States are encouraged however to share information from other measurements as well.

4.3 National emission ceilings

4.3.1 The National Emission Ceilings Directive 2001/81/EC

The National Emission Ceilings (NEC) Directive aims to limit emissions of acidifying and eutrophying pollutants and ozone precursors in order to improve the protection of human health and the environment and to achieve the prescribed ambient air quality standards. To achieve its aim and objectives, the NEC Directive (Annex I) sets upper limits to be achieved by 2010 for each Member State for the total emissions, i.e. "national emission ceiling", of the four pollutants responsible for acidification, soil eutrophication and ground-level ozone pollution (SO₂, NO_x, VOCs and NH₃). Member States have to implement appropriate measures to comply with the national emission ceilings. However, the Directive leaves it largely to Member States to decide which measures to take. This Directive covers emissions in the territory of Member States from all sources of pollutants which arise as a result of human activities, except for emissions from international maritime traffic and the emissions beyond take off and landing cycles of aircraft.

The pollutants concerned in the NEC Directive are transported in large quantities across national boundaries. Due to the transboundary character of acidification and ozone pollution, co-ordinated Community action is required since individual action by Member States is not sufficient to tackle the problem.

In order to achieve the aims and objectives of the directive, Member States are obliged to:

1. **Update annually their national emission inventories and emission projections for 2010** with the use of EMEP/Corinair Emission Inventory Guidebook. The inventories shall be prepared using methodologies agreed upon by the LRTAP Convention. Member States shall report each year to the European Commission and the European Environment Agency (EEA) the national emission inventories and the emission projections for 2010. The emission projections should have a quantitative socio-economic underpinning.
2. Draw up a **national programme for the progressive reduction of the national emissions** in order to demonstrate how they are going to meet the national emission ceilings by 2010. A national programme shall include information regarding adopted and planned policies and measures, and quantified estimates of their effects on the emissions in 2010. The first national programmes have been drawn in 2002. The second national programmes – by the end of 2006. (Examples of the measures taken by Member States under the NEC Directive are provided in Box 5).

Box 5: Measures indicated in the National Programmes of the NEC Directive

EU Directives that directly or indirectly abate the NEC Directive pollutants – VOCs, NO_x, SO₂ and NH₃ – represent a significant proportion of the policies and measures implemented by Member States. Directives addressing road transport vehicle emissions (EURO 1–5) are a major instrument for reducing NO_x and VOC emissions and measures to address petrol and diesel quality and sulphur content directly lead to a reduction in SO₂. The IPPC Directive is important to achieve the NEC Directive's ceilings as it addresses all four pollutants. The EU's 1999 solvents directive is the most commonly reported directive as a key VOC measure. Another key directive influencing the NEC Directive is the LCP Directive, reported by Member States as a measure for reducing NO_x and SO₂.

National policies and measures focussed on reducing energy consumption and converting to renewable energy sources have an indirect effect on the NEC Directive's pollutants. For example, Sweden's energy tax helps to abate NO_x and SO₂ from power generation by acting as an incentive to reduce energy use and increase efficiency, in turn reducing gaseous emissions.

Source: ETC/ACC 2004.

The NEC Directive is used as the EU instrument for the implementation of the “multi-pollutant” protocol under the LRTAP Convention, the so-called 1999 Gothenburg Protocol. The European Community and its Member States have all signed the Protocol. Many but not yet all EU Member States together with Switzerland, Norway and the United States are the parties to this Protocol. In addition Moldova and Lichtenstein have signed but not yet ratified the protocol. The emission ceilings in the protocol are equal or less ambitious than those in the NEC Directive. In 2007, the review of the Gothenburg Protocol was performed. The review concludes that in the last 25 years, air pollution in Europe has been substantially reduced; however, current reduction plans are insufficient to fully protect human health and ecosystems.

4.4 Emissions standards for stationary sources

4.4.1 The Large Combustion Plants Directive 2001/80/EC

The Large Combustion Plants (LCP) Directive aims to gradually reduce the annual emissions of SO₂ and NO_x from existing plants and sets emission limit values for SO₂, NO_x and dust for both existing and new plants. Control of SO₂, dust and NO_x emissions from large combustion plants plays an important role in the Community’s efforts to combat acidification, eutrophication and ground-level ozone as part of the overall strategy to reduce air pollution and to achieve the ambient air quality standards set by the Air Quality Framework Directive and its Daughter Directives.

The LCP Directive applies to large combustion plants with a thermal input of 50 megawatts (MW) or more, irrespective of the type of fuel that is used. The directive regards large combustion plants as falling into one of three categories depending on when they were first licensed:

- **“Existing” plants** – those first licensed before 1 July 1987;
- **“New” plants** – those first licensed between 1 July 1987 and 27 November 2002; and
- **“New-new” plants** – those first licensed after 27 November 2002.

The LCP Directive entered into force in 2001 and takes into account recent advances in combustion and abatement technologies and introduces revised limits for emissions of SO₂, NO_x, and dust. The LCP Directive tightened the Community requirements for air pollution control for “new” combustion plants; and established new requirements for “existing” plants licensed before 1 July 1987.

The Directive obliges Member States to take appropriate measures to meet the emission limit values for “new” and “new-new” plants as laid down in part A and B accordingly of Annexes III to VII. In regard to the “existing plants”, the LCP Directive gives Member States two options to comply. The first requires each plant to comply with specified emission limit values for SO₂, NO_x and dust established for “new” plants. The second allows a national emission reduction plan to be implemented. Such a plan should reduce the total annual emissions of SO₂, NO_x and dust to the levels that would have been achieved by applying the emission limit values to the existing plants in operation in the year 2000, on the basis of each plant’s operational performance averaged over the last five years of operation up to and including 2000. The implementation of a national emission reduction plan has to take into account obligations under other Community legislation, notably the IPPC Directive, the NEC Directive, and the Air Quality Framework Directive. The Commission considers that it is possible to adopt a **“combined approach”** for the implementation of the LCP Directive for “existing” plants, which may consist of: applying a national emission reduction plan for some plants and an emission limit value approach for others for all the compliance periods (2008–2015, 2016–2017, and 2018 onwards); or adopting a national emission reduction plan for a/some compliance period(s) and complying with emission limit values for the rest of the compliance periods; or mixing options above.

Box 6: Examples of instruments used to reduce emissions in selected Member States

Several countries (e.g. **Austria and the Netherlands**) used voluntary agreements (contracts) with industry and found them to be very effective. Though such agreements are not legally binding, companies followed them, and in many cases these agreements had much stronger effects than laws (agreements might include emission limits or measures that need to be introduced by specific industries).

In 1990, **Italy** passed a law linking EU legislation and setting more stringent national standards for SO₂, NO_x and PM. Before this legislation, heavy oil and coal were used for heating and power plants; after 1990 there was a major switch to methane. The law gave responsibility to mayors to decide which fuel to allow. Many cities decided not to permit the use of coal (since installations need to obtain a permit if they want to use coal). Now coal may not be used at all in heating.

Local authorities have also played a key role in promoting district heating in the **Helsinki Area**, which has had beneficial effects on air quality. Use of co-generation has now spread throughout **Finland**. Coal-burning plants have also been replaced with plants using natural gas.

Source: Goldenman and Levina (2004).

4.5 Emissions standards for mobile sources

4.5.1 Directives on Emission from Light-duty Vehicles

The pollutant emissions from road vehicles are regulated separately for light-duty vehicles (cars and light vans) and for heavy-duty vehicles (trucks and buses). For **light-duty vehicles**, the emission standard currently in force is Euro 4, as defined by Directive 98/69/EC, which is one of the Directives amending Directive 70/220/EEC. Following the CAFE Programme and the resulting Thematic Strategy on Air Pollution, new Euro 5 and Euro 6 standards have been set by Regulation (EC No 715/2007), which sets new standards for cars and light vans regarding emissions from particulate matter and NO_x.

Particulate matter standards (Euro 5) will enter into force in September 2009, requiring all new model diesel vehicles to have particulate filters, while existing models have until 2011 to comply. The main effect of Euro 5 is to reduce the emission of particulate matter from diesel cars from 25 mg/km to 5 mg/km. With respect to NO_x, diesel cars have until 2014 to comply with the new standards (Euro 6). Euro 6 will mainly reduce the emissions of NO_x from diesel cars further, from 180 mg/km to 80 mg/km.

For vehicles in use there is legislation on periodic inspections at which the state of maintenance of the vehicle is checked (Directive 96/96/EC).

Motor vehicle emissions have originally been regulated by Directive 70/220/EEC (light-duty vehicles) and 88/77/EC (heavy-duty vehicles) and amendments to those directives. A whole series of amendments have been issued to stepwise tighten the limit values. The Auto-Oil Programme focused on the emissions of carbon monoxide (CO), Volatile Organic Compounds (VOC), nitrogen oxides (NO_x), and particles (PM). It resulted in the Euro 3 and Euro 4 stages for light-duty vehicles as laid down in Directive 98/69/EC and in the Euro III and IV standards for heavy duty vehicles (Directive 1999/96/EC, now repealed). European Union emission standards for passenger cars are summarised in Table 2.

Member States were given the right to introduce tax incentives for early introduction of 2005 – compliant vehicles, i.e. which “comply in advance with the mandatory limit values”. Member States may also apply tax incentives for vehicles fulfilling more stringent standards, which satisfy at the same time the limit values of the Directive.

Table 2: EU emission standards for passenger cars (category M₁)

Emission standard (Date of implementation) Relevant Directive	Carbon monoxide (CO) [mg/km]		Oxides of nitrogen (NO _x) [mg/km]		Hydrocarbons (HC) [mg/km]		Particulate matters (PM) [mg/km]	
	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol	Diesel
	Euro 1 (1992) for passenger cars – 91/441/EEC (for passenger cars and light trucks – 93/59/EEC)	2720- 3160*	2720- 3160*	–	–	–	–	–
Euro 2 (1996) for passenger cars – 94/12/EC & 96/69/EC	2200	1000	–	–	–	–	–	80- 100*
Euro 3 (2000) for any vehicle – 98/69/EC	2300	640	150	500	200	–	–	50
Euro 4 (2005) for any vehicle – 98/69/EC & 2002/80/EC	1000	500	80	250	100	–	–	25
Euro 5 (2009) for cars and light vans – Regulation (EC No 715/2007)	1000	500	60	180	100	–	5	5
Euro 6 (2014) for cars and light vans – Regulation (EC No 715/2007)	1000	500	60	80	100	–	5	5

* Indirect injection (IDI) and direct injection (DI) engines respectively.
Source: Adapted from: <http://www.dieselnet.com/standards/eu/ld.php>.

4.5.2 The Directive Relating to the Quality of Petrol and Diesel Fuels (98/70/EC)

On 31 January 2007 the European Commission proposed new standards for transport fuels that will reduce their contribution to climate change and air pollution, including through greater use of bio-fuels (COM(2007) 18). The proposed changes to Directive 98/70/EC underscore the Commission's commitment to ensure that the EU combats climate change and air pollution effectively. The new standards will not only make petrol, diesel and gasoil 'cleaner' but will also allow the introduction of vehicles and machinery that pollute less. A key measure is that, to encourage the development of lower-carbon fuels and bio-fuels, suppliers will have to reduce the greenhouse gas emissions caused by the production, transport and use of their fuels by 10% between 2011 and 2020. This will cut emissions by a cumulative total of 500 million tonnes of carbon dioxide by 2020. A new petrol blend will be established allowing higher content of the bio-fuel ethanol, and sulphur levels in diesel and gasoil will be cut to reduce emissions of dangerous dust particles.

Directive 98/70/EC as amended by Directive 2003/17/EC contains the environmental fuel quality specifications for petrol and diesel fuels in the Community with the main focus on sulphur and for petrol on lead and aromatics. The environmental specifications on permitted contents of lead, sulphur, benzene and polycyclic aromatic hydrocarbons in fuels are becoming mandatory successively, the most important stages set for the years 2000, 2005, 2008 and 2009. These substances are particularly important from a health and environmental point of view.

Since 1 January 2005 the limit on the sulphur content of petrol and diesel is 50 ppm and Member States are required to start phasing in ultra-low sulphur fuel with maximum 10 ppm sulphur content. A complete switch to ultra-low sulphur fuel with a maximum 10 ppm is required by 2009. Since 1 January 2002 all petrol sold in the EU is unleaded.

Member States may conditionally impose more stringent standards on fuels marketed on their territory in order to protect public health or the environment in specific ecologically or environmentally sensitive areas, provided the measures are restricted to those areas. Such standards have to be approved by the Commission.

In order to ensure compliance with the fuel quality standards required under this Directive, Member States should introduce monitoring systems based on common procedures for sampling and testing. Member States shall collect information on fuel quality and communicate to the Commission according to a common format. Member States must monitor compliance with the environmental requirements for fuels, using the analytical methods defined by the Directive.

4.6 Further recent developments in EU air quality policy

The following are the most important recent developments in the EU air quality policy.

4.6.1 Proposal for a Directive on ambient air quality and cleaner air for Europe (COM(2005) 447)

This proposal accompanies the thematic strategy of the Sixth Environmental Action Programme on air pollution and aims, in particular, to simplify and clarify the legislation concerning air quality. Under this proposal, the Air Quality Framework Directive and three of its Daughter Directives (1999/30/EC, 2000/69/EC and 2002/3/EC), as well as Decision 97/101/EC on exchanges of information on air pollution are merged into one act. Existing limit values will be maintained; however, the new Directive will regulate human exposure to fine particulate matter (PM_{2.5}), which is most hazardous to human health. It introduces a new limit values for PM_{2.5}, and a requirement for compliance of the national PM_{2.5} average concentration from urban background locations with a PM_{2.5} exposure concentration obligation. It will complement the existing limit values for PM₁₀ and will become binding by 2015. The proposal also simplifies the reporting requirements by creating a basis for the introduction of an electronic reporting system. Furthermore, this proposal strengthens the requirements for planning by Member States in order to enforce compliance with the limit values. Air quality plans are required whenever limit values are not respected so that 'the periods of non-compliance are kept as short as possible'. In the case of exceedance of the target value for ozone, Member States must prepare a programme pursuant to the NEC Directive, 2001/81/EC, and if appropriate an air quality plan.

The new Directive confirms the intent under current legislation to allow the subtraction, under certain conditions, of natural contributions to exceedances of limit values for given pollutants. This may be done where Member States demonstrate that the exceedance in whole or in part is due to natural contributions. Similarly Member States may take into account as regards exceedances of PM₁₀ limit values whether the exceedance is due to winter-sanding or –salting of roads.

4.6.2 Proposal for a Directive on industrial emissions (COM(2007) 844)

While industrial emissions have decreased over the past years, they continue to have a significant impact on the environment and need to be reduced further. Member States' projected air emissions will greatly exceed the 2020 targets of the Thematic Strategy on Air Pollution unless timely action is taken. All sources of pollution need to be reduced. Based on the Commission assessments, achieving the objectives set will only be possible with the full application of Best Available Techniques (BATs) by industry. In order to enhance the application of BATs, amongst other objectives, a proposal for a new Directive on industrial emissions was prepared in 2007.

The proposal for a new Directive on industrial emissions seeks to create a 'single clear and coherent legislation' by combining IPPC Directive, the Large Combustion Plants Directive, the Waste Incineration Directive, the Solvents Emissions Directive and three Directives on Titanium Dioxide. By streamlining industrial emissions legislation, the proposal reduces the administrative burden through combined requirements on granting permits and streamlined reporting. It strengthens the application of BATs across the EU, particularly by restricting divergence from BATs to specific cases and placing greater emphasis on justifying the conditions laid down in the permits. The proposal also tightens minimum emission limits in certain industrial sectors across the EU – particularly for large combustion plants where progress to reduce pollution is insufficient for achieving the objectives of the Commission's Thematic Strategy on Air Pollution. Stricter emission limit values for LCPs will apply from 2016 onwards. It introduces minimum standards for environmental inspections of industrial installations and allows for more effective permit reviews, and reporting of compliance and soil protection. Incentives for the development and promotion of environmentally-friendly technologies are also included. The proposal also extends the scope of legislation to cover other polluting activities, such as medium sized combustion plants (between 20 and 50 MW), production of wood-based panels and preservation of wood. The proposal also clarifies the scope of certain activities already covered by existing legislation, such as waste treatment and food production. Additionally, new provisions will be added and current provisions will be simplified to enhance implementation and monitoring at a national level.



5 Current Situation with Respect to the Air Policy Sector in ENP Partner Countries and Russia

5.1 EU's Eastern ENP Partner Countries and Russia

The ENP Action Plans of the EU's Eastern ENP partner countries foresee the development or adoption of (framework) legislation and the development of programmes and plans for air quality – and in some cases for industrial pollution – as one of the key environmental concerns in all of these countries.

5.1.1 Main Environmental Pressures

In general, the ambient air quality in these countries has improved in recent decades as a consequence of the sharp decrease in air emissions due to the dramatic fall in industrial production following the collapse of the Soviet Union. The energy and heat generation sector is by far the biggest stationary air pollution source in many of the countries. This pollution is often due to the poor condition of power infrastructure. Additionally, the rapid increase in transport, together with the general use of low quality fuels, are offsetting the decrease in emissions from less industrial production. Ageing vehicles exacerbate emission problems. Air pollution is considered most severe in large and industrial cities.

5.2 Mediterranean ENP Partner Countries

Not all the ENP Action Plans of the Mediterranean ENP partner countries foresee protection of air quality as one of their aims and concerns. Nevertheless some countries foresee the establishment of a national environmental monitoring network; plan to integrate environmental considerations into other policy sectors, such as industry, energy and transport, and promote sustainable development policies; plan to improve co-operation between different Ministries; and plan to implement national strategies on cleaner production and air quality.

5.2.1 Main environmental pressures

Although air quality is identified as an increasingly serious problem for most of the Mediterranean ENP partner countries, it is not considered to be on the same level as more pressing issues such as water scarcity, water pollution or waste management. Natural air pollution specific to this region (e.g. sand and dust storms) may add to specific anthropogenic air components.

In general, air pollution affects these countries' major cities and stems from transport rather than industrial emissions. Pollution from vehicles is especially an issue due to the widespread use of diesel fuel, high levels of car ownership, continued use of leaded petrol and the lack of regular emission inspections. The situation is further exacerbated by high levels of air emissions from the energy sector. In addition, air pollution from certain waste management practices (e.g. uncontrolled incineration of solid waste and agricultural biomass waste) is a problem in some countries.

6 Conclusions for ENP Partner Countries and Russia: Steps Towards Convergence

EU funding for ENP

From the beginning of the new Financial Framework 2007–2013, the EU is providing financial support for the ENP through a dedicated **European Neighbourhood and Partnership Instrument (ENPI)**. It targets various areas of co-operation including sustainable development and the environment, supporting jointly agreed reform priorities in the ENP Action Plans. The ENPI will target sustainable development and convergence with EU policies and legislation, and bring a radical improvement in capacity to support cross-border cooperation along the EU's external borders – thus giving substance to the aim of avoiding the creation of new dividing lines and promoting harmonious territorial development across the EU external border. The ENPI replaces MEDA (for the Southern Mediterranean neighbours) and TACIS (for the Eastern neighbours and the Russian Federation).

Guided by the agreed priorities in the ENP Action Plans, the ENPI provides for assistance under national, regional, cross-border and interregional programmes. There are also a certain number of thematic programmes with global scope from which the ENPI countries can benefit. This includes a thematic programme for environment and sustainable management of natural resources including energy.

The ENPI budget is fixed at around € 12 billion for the period 2007–2013. In real terms it means an increase of 32% as compared with the previous financial framework.

As a means of delivering technical assistance under the ENP, the **Technical Assistance and Information Exchange (TAIEX) instrument** and long-term **twinning** arrangements have been made available to the ENP partner countries:

- **TAIEX** provides technical support and training in areas related to the implementation of the ENP Action Plans, including with regard to the convergence, application and enforcement of legislation. It is largely demand driven and channels requests for assistance and contributes to the delivery of appropriate tailor-made expertise to address problems at short notice⁸.
- **Twinning** aims to help beneficiary countries in the development of modern and efficient administrations. It can also facilitate gradual convergence to EU legislation where relevant and appropriate.

While convergence with EU air legislation can potentially generate large contributions to solve the air pollution problems in the ENP partner countries, it will also require considerable financial, technical, administrative and institutional efforts. It is therefore necessary to assess realistically what is achievable on the basis of the existing air quality management system and the institutional set-up in each country. It is recommended to involve all **actors** and **stakeholders** contributing to policy development, as well as those **affected** by the changes. Consultation processes should involve central government ministries, regional and local governments, representatives from industry, transport and energy sectors, NGOs and the general public.

Strategic planning is necessary in order to define the aims of convergence, identify priorities and barriers, and select options. Action taken may include the following steps:

⁸ <http://taieux.ec.europa.eu/>

1. Create the necessary conditions for strategic planning

- General **administrative and institutional reform, as well as capacity building**, will be necessary in many ENP partner countries, so as to develop human resources and make sufficient financial resources available for re-organisation and training both at central and lower administrative levels. The Air Quality Framework Directive gives significant competencies to regional and local authorities, i.e. local municipalities, communities. However, in particular for the EU's Eastern ENP partner countries, **a process of capacity building has to be started at the highest level** to reinforce the central agencies, with their widely developed regional/local offices.
- The role of **regional and local government** in the context of air quality management is important. Certainly, some air quality issues are most easily and efficiently detected and resolved at local level. EC legislation does not stipulate the division of powers and responsibilities between national, regional and local administration. However, it is logical for some functions (for example, setting technical standards) to be undertaken at national level and others (for example, inspection of small air pollution sources) to be undertaken at local level. A range of tasks between these two extremes could be undertaken either nationally or locally.
- A **clear definition of responsibilities** and assignment of competencies to the different public authorities, which is currently lacking in many ENP partner countries, will be required, as well as improvements in accountability and transparency. Institutional reform should aim to achieve a better **co-ordination and co-operation between different authorities**. For instance, it may be necessary in some countries to separate responsibilities for environmental enforcement (inspection and monitoring) from those of policy-making functions, in order to avoid conflicts of interest and to ensure effective **enforcement and control**. This separation could also, for example, be put in place where local government has responsibility for certain air quality regulation tasks and also for operating communal facilities such as district heating schemes or waste incineration facilities.
- Furthermore, not only the lack of experience, but also the lack of **sufficient information** is an obstacle to the convergence process. The necessary institutional improvements include creating the preconditions for **public participation** by improving environmental awareness and information, as well as establishing public information and consultation processes. This step may be achieved by implementing the Air Quality Framework Directive and its Daughter Directives, since one of their general aims is to produce adequate information on ambient air quality and ensure its availability to the public, notably by means of alert thresholds.

2. Develop a strategy for convergence

- **Set convergence priorities and targets.** It should be assessed the extent to which ENP partner country can realistically align its regulatory framework with the EU Directives, and in which areas convergence can bring the greatest benefits. This assessment should lead to a prioritisation of tasks that may be based on the following considerations:
 1. **Address urgent priorities first.** The Air Quality Framework Directive should be put in place early in the implementation plan due to its significant potential impact on public health. The Framework Directive, together with its Daughter Directives, sets air quality monitoring system and air quality standards, which are important for the collection of reliable data on the air quality situation in the countries and which require informing the public if concentrations are reached that endanger public health.
 2. **Legislative considerations.** Within the air quality sector, implementation of the Air Quality Framework Directive must be given a high priority, as this provides the structure and foundation for daughter legislation. Implementation of the Air Quality Framework Directive should be considered in conjunction with relevant aspects of legislation such as IPPC, waste and reporting directives as appropriate, in particular when developing plans and programmes under the air quality framework Directive. To ensure measures outlined in the plans are effectively implemented, those plans, depending on their context, have to be adopted at the appropriate level.
 3. **Cost-effectiveness.** Legislation intended to implement measures which have the ability or potential to achieve the greatest environmental benefits per unit of cost or expenditure, should usually be given a higher priority than legislation with lower anticipated cost-benefit ratios. However, legislation which is likely to require major investments in new facilities should not be ignored or postponed, as planning activities for their development, financing, and construction, and preparation of the public and industry for the eventual introduction of this legislation, will be required.

Furthermore, it is usually more cost-effective to move directly to the more stringent standards, applying these to new installations, thus scheduling the implementation of the directives as a higher priority. Nevertheless, it is not possible to give general recommendations, and this has to be considered on case by case basis. Proper understanding of relevant sources, integrated approach and assessment/modelling of impacts of the planned measures should however always be pursued to ensure cost-effectiveness. Trade-offs need to be avoided to maximum extent when pursuing convergence in different but interlinked policy areas such transport, air quality, and climate change.

4. Economic considerations. The costs of many of the directives regulating emissions from stationary sources fall almost exclusively on industry or on the public at large, rather than on the government. In these cases, it is beneficial to implement such directives in a phased manner, with their provisions applying to all new facilities from day one, but applying to existing facilities beginning on a fixed date in the future. Phasing in the implementation greatly reduces negative economic impacts, as many existing facilities will be upgraded for purely economic reasons during the intervening period (e.g. the LCPs Directive).

In the case of the directives on emissions from mobile sources, vehicle manufacturers need a period of several years to adapt their products to the new regulations if they are to compete successfully with manufacturers whose vehicles already comply. Older vehicles are replaced by new models as part of normal economic activity, with the result that the whole vehicle fleet will over a period of time be upgraded, without high costs falling on existing vehicle owners.

5. Environmental considerations. The Air Quality Framework Directive requires the measurement of the ambient air quality in specified areas (including “agglomerations”, i.e. urban areas). These areas should be given the highest priority because in general it is within such areas that air quality problems are likely to be the greatest. The designation of such areas should be based on ambient air quality assessment. To avoid the waste of resources and the production of potentially misleading erroneous data, monitoring should not be carried out before quality assurance procedures have been designed and put in place. All data used for assessment purposes must be quality assured, because of the high potential expenditure which may hinge on such results.

Planning should be carried out as a first priority in any areas where air quality needs to be improved, i.e. where prescribed limit values are exceeded. If there are many such areas, prioritisation could be carried out on the basis of the number of people exposed in each area and the magnitude of the difference between the limit value and the actual ambient level in that area. In such cases horizontal approaches at higher governance level (i.e. national/regional) should also be pursued as effective mean to address probable similarities and common response.

The **setting of technical standards** (e.g. for emissions monitoring or fuel quality measurements) and the formulation of the corresponding quality assurance procedures should be carried out before such standards are published or imposed on sources or other entities which need to be regulated. International standards should be referred to and used wherever possible so as to save time and resources. Technical standards should be well publicised among stakeholders, so that all of them are aware of the future regulatory climate in which they will operate. For example, those sources operating without a permit should be made aware at the earliest possible opportunity of the standards with which they will be expected to comply in due course.

In cases when a significant number of sources, which are being operated without **permits** or without satisfactory permits, should be brought under the control of the appropriate authority, some degree of prioritisation may be necessary in this process. Large sources that are thought both to exceed emissions standards and to cause breaches of ambient air quality standards in highly populated or environmentally sensitive areas should clearly be given the highest priority.

- **Legal gap analysis.** This would involve selecting the legal form of convergence that best fits with the existing legal framework – for instance, whether a new air quality management law needs to be developed, or whether it is sufficient to amend the existing law or issue additional regulations.
- **Institutional gap analysis and implementation gap analysis.** In addition to the legal gap analysis, it may be helpful to compare the existing institutional structure and implementation of existing air quality legislation to the structure and implementation required under convergence, in order to identify the actual changes and improvements that will need to be achieved.
- **Linking processes and creating synergies.** If convergence with different EU Directives is anticipated, it may be useful to link the different processes, since institutional and administrative requirements may be similar for different directives.

3. Develop a financing strategy

The costs of implementing convergence legislation should be estimated at an early stage, and a **financing strategy** should be prepared. The development of an efficient monitoring system and the update or installation of pollution abatement techniques should be prioritised. In this context, it may be helpful to review existing policies for charging and pricing, and to assess whether they may be amended or new systems should be introduced, in order to raise the necessary funds. The important role of investment by industry should be taken into account.

The main costs imposed by the legislation in the air quality sector will be those incurred by:

1. Establishing and maintaining a network of air quality monitoring stations and associated quality assurance equipment, and reporting the monitoring results. These costs will be borne by central government.
2. Preparing emissions inventories of greenhouse gases and pollutants that significantly affect air quality. These costs will be borne by central government.
3. Preparing plans and programmes to achieve compliance with ambient air quality limits. These costs will be borne by central government.
4. Compliance with emission limits and technical requirements required under the directives, or by the implementation of plans and programmes designed to improve ambient air quality. These costs will be borne by the polluters themselves (industry, householders, motorists etc).

Whilst the costs of 1–3 will be considerable, the costs of 4 will be many times higher.

Financing investments will be a particular challenge, since in many cases financial resources are scarce and the balance of political priorities is not in favour of expenditure on environmental protection. Charging systems and the cost-recovery principle inherent in EU legislation may be a way to raise funds. Such systems, however, need to be designed carefully. The implementation may meet resistance if services that were previously cost-free suddenly require payment.

4. Develop an implementation plan

- Using the strategic and financial planning as a basis, an implementation plan should be developed detailing the steps necessary to implement convergence according to the priorities and objectives identified in the earlier planning phases. A timeframe with short, medium and long term actions should be established. The implementation plan should allow all the actors and stakeholders sufficient time to adjust to the changes and make the necessary investments.

7 References and Further Reading

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