

Bulgaria Air Quality Policies

This document is based on research that UNEP conducted in 2015, in response to Resolution 7 of the UNEA 1. It describes country-level policies that impact air quality. Triple question marks (???) indicate that information for the section couldn't be found.

Please review the information, and provide feedback. A Word version of the template can be provided upon request. Corrections and comments can be emailed to Vered.Ehsani@unep.org and George.Mwaniki@unep.org.

Bulgaria Air Quality Policy Matrix		
Goals	Status	Current Policies & Programmes
GENERAL OVERVIEW	<p>Overall situation with respect to air quality in the country, including key air quality challenges:</p> <ul style="list-style-type: none"> • Bulgaria has the highest rate of premature deaths due to air pollution in Europe. • In 2010, 11,787 people in Bulgaria died prematurely from PM2.5 and ozone exposure. • Furthermore, there were 2.1 million lost working days in 2010 (Ref: http://www.iiasa.ac.at/web/home/research/researchPrograms/MitigationofAirPollutionandGreenhousegases/TSAP_CBA_corresponding_to_IASA11_v2.pdf) • Measurements show that citizens all over are exposed to poor air quality, with concentrations for PM2.5 and PM10 being above the EU and WHO recommended standards. • WHO estimates that indoor air pollution causes 3500 premature deaths annually¹ <p>Air quality monitoring system:</p> <ul style="list-style-type: none"> • Air quality is measured by a sophisticated 	<p>National Ambient air quality standards:</p> <ul style="list-style-type: none"> • Complete harmonization of European and Bulgarian air quality legislation was achieved by late 2007. <p>National Air Quality Policy:</p> <ul style="list-style-type: none"> • The EU air quality policy has a long term goal of achieving levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment." • European Union air quality policy aims to; <ul style="list-style-type: none"> - Develop and implement appropriate instruments to improve air quality. - Control of emissions from mobile sources, through fuel quality improvement, - Promoting and integrating environmental protection requirements into the transport and energy sector are part of these aims. <p>Air Quality legislation / programmes:</p> <ul style="list-style-type: none"> • The Bulgarian legislation on air pollution is in fully compliance with the EU requirements • The control of air pollutants and the management of air quality is for the most part the same as the EU's practice. <p>Other:</p> <ul style="list-style-type: none"> • Bulgaria enacted the Renewable and Alternative Energy Sources and Biofuels Act (2007), which was aimed at diversifying energy supply, environmental protection, set terms for

¹ WHO, 'WHO | Country Profiles of Environmental Burden of Disease', WHO, 2008
http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/#T.

	<p>national air quality monitoring network.</p>	<p>sustainable local and regional development, and to increase the capacity of SMEs and renewable energy sources producers, as well as other market actors.</p> <ul style="list-style-type: none"> ● In this law energy/electricity suppliers are required to purchase all renewable electricity that has a certificate of origin. The public utility company and the end suppliers, respectively, shall purchase the entire quantity of energy generated from renewable and alternative energy sources, except for the power generated by hydroelectric power plants with installed capacity of over 10 MW, at preferential prices. ● In addition, installation of a RES for the generation of electricity with a capacity of up to 5 MW, or for thermal energy production, requires no license. ● Feed-in tariffs for various renewable energy sources are also in place, ranging from roughly 80 €/MWh for large wind power, to 400 €/MWh for PV installations under 5 kW. ● Long-term purchase contracts are set to replace this feed-in tariff structure for electricity producers.
<p>REDUCE EMISSIONS FROM INDUSTRIES</p>	<p>Industries that have the potential to impact air quality:</p> <ul style="list-style-type: none"> ● Industrial emissions, especially thermal power plants are the most important source of air pollutants in Bulgaria ● Air pollution from industrial installations emanates from the following: power generation, food processing, beverages, tobacco; machinery and equipment, base metals, chemical products, coke, refined petroleum, nuclear fuel among others <p>GDP of country: USD 53.7B in 2013</p> <p>Industries' share of GDP: 30%</p> <p>Electricity sources:</p> <ul style="list-style-type: none"> ● 45.7% of the installed electricity generating capacity (10.01million KW in 2010) is generated from fossil fuel, 19% from nuclear, 21.8% from hydroelectric plants and the rest 4.8% is generated from other renewable sources <p>Others</p>	<p>Emission regulations for industries:</p> <ul style="list-style-type: none"> ● Industrial emissions within the European Union are regulated under the Industrial Emissions Directive (IED), which was issued on 21 December 2007 ● The directive's aim was to achieve significant benefits to the environment and human health by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques. ● The IED entered into force on 6 January 2011 and has to be transposed into national legislation by Member States by 7 January 2013. ● European legislation establishes air quality objectives (limit and target values) for the different pollutants. Limit values are concentrations that must not be exceeded in a given period of time. <p>Small installation's emissions regulated: (Yes/No) yes</p> <p>Renewable energy investment promoted:</p> <p>Energy efficiency incentives: (ex: Subsidies, labelling, rebates etc) ???</p> <p>Incentives for clean production and installation of pollution prevention technologies: ???</p> <p>Actions to ensure compliance with regulations: (monitoring, enforcement, fines etc) ???</p> <ul style="list-style-type: none"> ● Other actions at national, sub-national and / or local level to reduce industrial emissions: (can include incentives to move industries to less populated areas here) ???

	<ul style="list-style-type: none"> ● Bulgaria PM10 and PM2.5 concentration has been on an increasing trend since 2002, making Bulgaria the country with the highest PM10 concentration in European Union. ● Bulgaria's energy intensity is the highest among the Eastern European countries. 	
REDUCE EMISSIONS FROM TRANSPORT	<p>Key transport-related air quality challenges: <i>(ex: vehicle growth, old fleet, dirty fuel, poor public transport etc)</i></p> <ul style="list-style-type: none"> ● Bulgaria has a large and a well-developed modern transport system comprising of busses, trains, metros, trams and taxis. ● Use of private cars is discouraged as demonstrated by the low fuel cost which stood at USD 1.19 per litre in 2015². ● Private car ownership is high, with 393 cars per 1000 individuals in 2010³ ● Between 2008 and 2012, private car ownership grew by 19%, which was also the highest growth rate in the number of passenger cars in the European Union within the same period 	<p>Vehicle emission limit: <i>(Euro rating)</i></p> <ul style="list-style-type: none"> ● Emissions standards for vehicles correspond to Euro 6 for LDV vi HDV standards. ● European Union emission regulations for new light duty vehicles (passenger cars and light commercial vehicles) are specified in Regulation 715/2007 (Euro 5/6) [2899]. ● Emission standards for light-duty vehicles are applicable to all vehicles not exceeding 2610 kg (Euro 5/6). ● EU regulations introduce different emission limits for <i>compression ignition</i> (diesel) and <i>positive ignition</i> (gasoline, NG, LPG, ethanol,...) vehicles. Diesels have more stringent CO standards but are allowed higher NOx. Positive ignition vehicles were exempted from PM standards through the Euro 4 stage. Euro 5/6 regulations introduce PM mass emission standards, equal to those for diesels, for positive ignition vehicles with direct injection engines. <p>Fuel Sulphur content: <i>(in ppm)</i></p> <ul style="list-style-type: none"> ● The 2000/2005 emission standards were accompanied by an introduction of more stringent fuel regulations that require “Sulphur-free” diesel and gasoline fuels (≤ 10 ppm S) must be mandatory from 2009. ● Maximum allowable sulphur level in petrol and diesel fuels is 10ppm <p>Fuel Lead content: All vehicles use lead free gasoline</p> <p>Restriction on used car importation: ???</p> <p>Actions to expand, improve and promote public transport and mass transit: ???</p> <p>Actions to promote non-motorized transport: <i>(ex: include sidewalks and bike lanes in new road projects, car-free areas etc) ???</i></p>
REDUCE EMISSIONS	<p>Outdoor, open burning: <i>(ex: is it commonly done? burning what kinds of wastes? etc)</i></p>	<p>Legal framework: <i>(ex: is burning banned?) ???</i></p>

² ‘Gasoline Prices around the World, 28-Sep-2015 | GlobalPetrolPrices.com’ <http://www.globalpetrolprices.com/gasoline_prices/> [accessed 5 October 2015].

³ World Bank, *Worldwide Total Motor Vehicles (per 1,000 People)*, 2011 <<http://chartsbin.com/view/1114>> [accessed 30 June 2015].

FROM OPEN BURNING: OUTDOOR		Actions to prevent open burning of municipal waste and / or agricultural waste: ???
REDUCE EMISSIONS FROM OPEN BURNING: INDOOR	<p>Dominant fuels used for cooking and space heating:</p> <ul style="list-style-type: none"> ● Household heating is a major, and difficult to regulate, source of emissions of PM10. ● Main issues are obsolescence and low efficiency of combustion in heating units and to some extent behavioural traits of households. <p>Impact:</p> <ul style="list-style-type: none"> ● WHO estimates that indoor air pollution causes <100 premature deaths annually⁴ 	<p>Indoor air pollution regulated: (Yes / No) ???</p> <p>Promotion of non-grid / grid electrification: ???</p> <p>Promotion of cleaner cooking fuels and clean cook stoves: ???</p> <p>Other actions to reduce indoor biomass burning, or to reduce its emissions: ???</p>

⁴ WHO, 'WHO | Country Profiles of Environmental Burden of Disease', WHO, 2008
<http://www.who.int/quantifying_ehimpacts/national/countryprofile/en/#T>.