

## Eastern Europe & the Caucasus Sub-Region

### Actions taken by governments to improve air quality

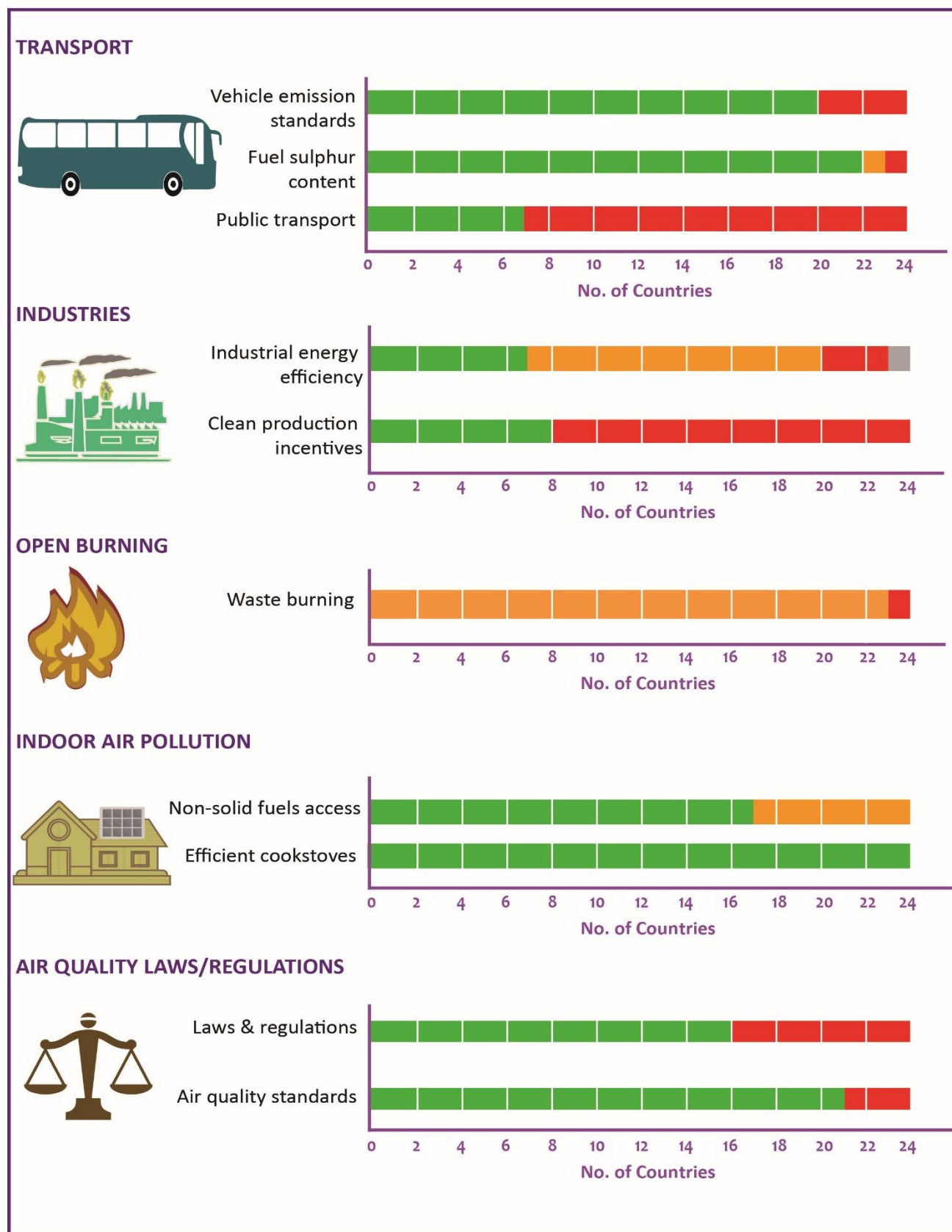
#### 1.0 Introduction:

In June 2014 the United Nations Environment Assembly (UNEA) adopted resolution 1/7 *Strengthening the Role of the United Nations Environment Programme in Promoting Air Quality*. As requested in paragraph 4 and 7 of the resolution, which requested UNEP to develop a report detailing actions taken by governments to promote air quality, this report details some of the major actions being undertaken by governments in the Eastern Europe and Caucasus sub-region to improve air quality.

This report summarises ten actions being undertaken in the sub-region to improve air quality. In selecting these ten actions, consideration was given to their replicability, global appropriateness to address particular air pollution challenges and potential impact. For more details, please refer to the methodology document.

These actions are: *For Industrial activities*: 1) Establishing incentives that promote investments in renewable energy, pollution control technologies, energy efficiency and clean production mechanism; and 2) Increasing industrial energy efficiency. *For road transport*: 3) Reducing fuel sulphur content; 4) Tightening vehicle emission standards to at least Euro 4 or its equivalent; and 5) Increasing investments in public and non-motorized transport systems. *For open waste burning*: 6) Reducing open burning of both agricultural and municipal waste through provision of legislation, monitoring, enforcement and municipal waste management systems. *For Indoor air pollution*: 7) Improving access to clean cooking and heating fuels; and 8) Improving access to clean and efficient cook/space heating stoves. *For general legislative efforts*: 9) Establishing and continuously tightening ambient air quality standards to meet WHO recommendations; and 10) Establishing laws and regulations to support efforts to meet ambient air quality standards, and strengthen monitoring and enforcement. Figure 1 provides a summary of these actions for the sub-region.

## EASTERN EUROPE & THE CAUCASUS POLICIES AND ACTIONS TO IMPROVE AIR QUALITY



**Figure 1:** A summary of actions, programmes, policies, laws and regulations undertaken by governments in the sub-region to improve air quality (green = progressing to best practice; red = action still required).

## 2.0 Regional Overview

The Eastern Europe and Caucasus sub-region comprises of; Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey and Ukraine. In this sub-region air quality is a major environmental issue of concern, causing approximately 256,000 premature deaths annually. Out of this approximately 88,000 deaths are as a result of indoor air pollution and approximately 168,000 are as a result of ambient air pollution.

Although six out of the twenty-four countries in the sub-region generate more than 30% of their electricity from renewable energy sources, coal fired power plants still remain an important source of electricity, and are major drivers of ambient air pollution. Governments have instituted several incentives, such as feed-in tariffs, to encourage power production from renewable sources, and for all the nations with these incentives, at least 10% of the power is generated from renewable sources. They have also provided incentives to upgrade pollution control equipment.

Another contributing factor to the high emissions levels from the industrial sector is the use of older technology for industrial processes /production which is also indicated by the relatively high energy intensity of the industrial sector in Eastern Europe and the Caucasus. Industrial energy efficiency<sup>1</sup> is relatively low with only seven out of the twenty-four countries having a GDP per unit of energy used greater than 9 USD. This is indicative of older, less efficient technology still in use in industrial production. Improvement in industrial energy efficiency offers one of the ways that countries in this sub-region can reduce their energy demand and consequently reduce air pollution from energy generating facilities. For instance, it's estimated that energy efficiency measures can provide up to 20% of energy saving in Georgia. Equally, many countries would benefit from energy efficiency measures.

Another major source of air pollution in the sub-region is the use of biomass for domestic space heating. Although the efficiency of wood burning space heating stoves and boilers has significantly improved over the years, wood burning represents the highest polluting form of heating in the sub-region, contributing to both indoor and outdoor air pollution. In an effort to reduce the overreliance on solid fuels for domestic space heating, governments have put into place several

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<sup>1</sup> Estimated as unit of energy use at constant 2011 purchase Power Parity (PPP) \$ per kg of oil equivalent

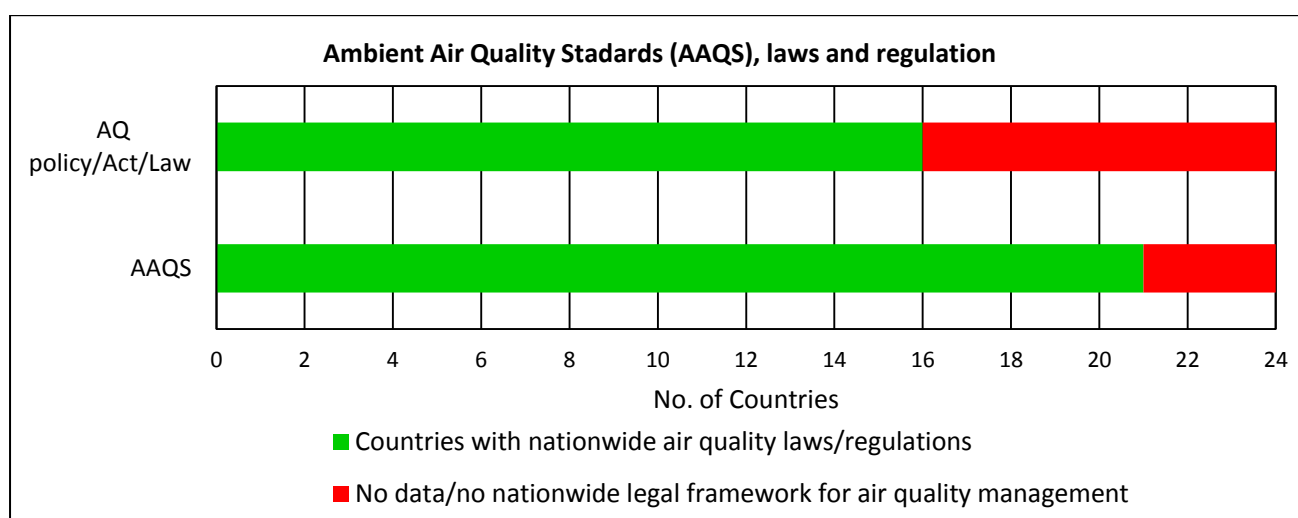
policies, regulations and actions aimed at reducing the use of these fuels. Some of these policies have led to increased electricity access, with all the countries having an electricity access rate of close to 100%. In addition, governments have also put in place policies and actions aimed at increasing the percentage of the population with access to non-solid fuels which currently is above 85% for two-thirds of the countries in the sub-region.

Progress has been made in different areas in different countries, and there are several positive case studies to be found across the sub-region. There are however specific areas in each country that can be improved, while standards need to be established and continuously tightened, public transport expanded, the use of best practice increased etc. In addition, for policies and legislation to lower air pollution, countries must also improve implementation and enforcement, without which actions to improve air quality will not achieve their potential impact.

### 3.0 Actions taken to improve air quality

#### 3.1 National standards

Based on the UNEP Air Quality Policy Catalogue, twenty-one out of twenty-four countries in Eastern Europe and the Caucasus have ambient air quality standards, although most of these standards do not include PM<sub>2.5</sub> as a regulated pollutant. Out of these twenty-one countries, sixteen have accompanying air quality policies, laws and / or Acts. Figure 2 below shows the number of countries in the sub-region that have enacted and promulgated air quality laws and regulations.



***Figure 2:** Number of countries in the sub-region that have enacted some form of air quality laws and regulations, and also the number of countries that have enacted and promulgated Ambient Air Quality Standards (AAQS).*

The EU member states (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) are all required to meet standards that are contained in the Clean Air for Europe (CAFE) Directive (EP & CEU, 2008) and the Fourth Daughter Directive (EP & CEU, 2004). These Directives also include rules on how Member States should monitor, assess and manage ambient air quality. The Clean Air For Europe (CAFE) Directive is the principal legal instrument at European Union level relating to air pollutants, and thus seeks to protect the environment and human health. It sets out assessment and measurement standards, and reduction targets for the atmospheric concentration of particulate matter.

A review of the EU air quality policy was conducted in 2011-2013. This review led to the adoption of a Clean Air Policy Package in December 2013. The package consists of: a new Clean Air Programme for Europe with new air quality objectives for the period up to 2030; a revised National Emission Ceilings Directive with stricter national emission ceilings for the six main pollutants; and a proposal for a new Directive to reduce pollution from medium-sized combustion installations.

Nine of the non-EU countries have established air quality policies or regulations at both national and sub-national levels. In most of these countries, sub-national laws and regulations are a reflection of the national laws and regulations. However in a few areas, mainly large cities, the local air pollution regulations are stricter than the national regulations. This is the case in Moscow, where air emission laws are more stringent than the national requirements. In addition, Moscow supports industries that are upgrading their equipment or implementing innovations to reduce emissions.

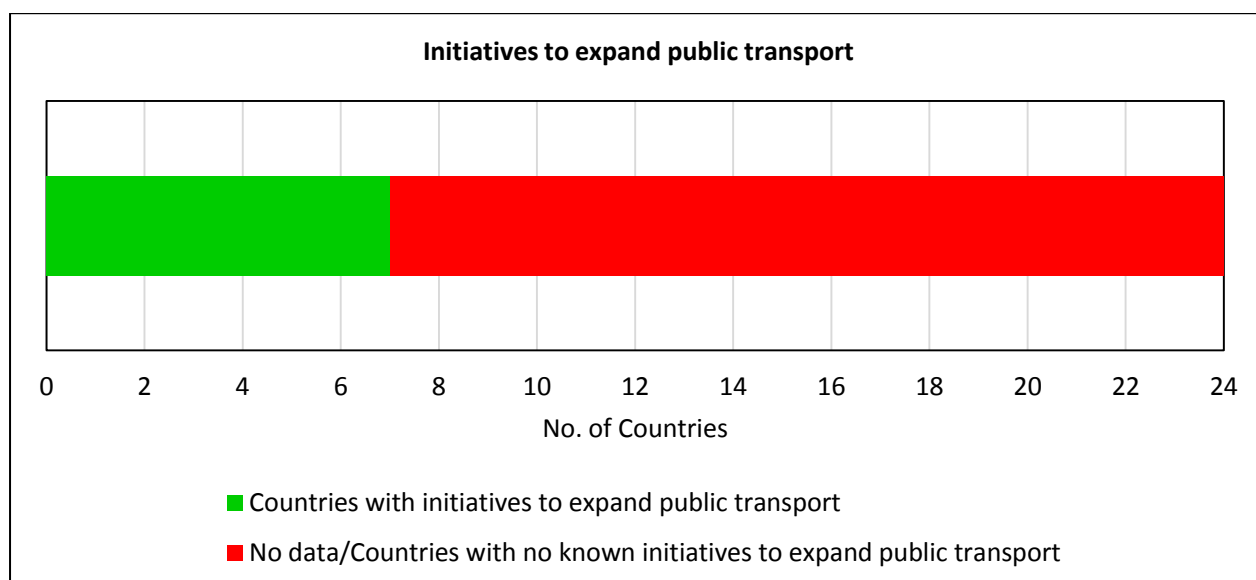
In some of these non-EU countries, air pollution prevention laws and regulations have been enacted to be in line with respective EU directives and various international conventions.

### **3.2 Transport sector**

The transport sector is one of the most important source of air pollution in Eastern Europe and the Caucasus, and especially so in urban areas. Given the increased congestion experienced in many

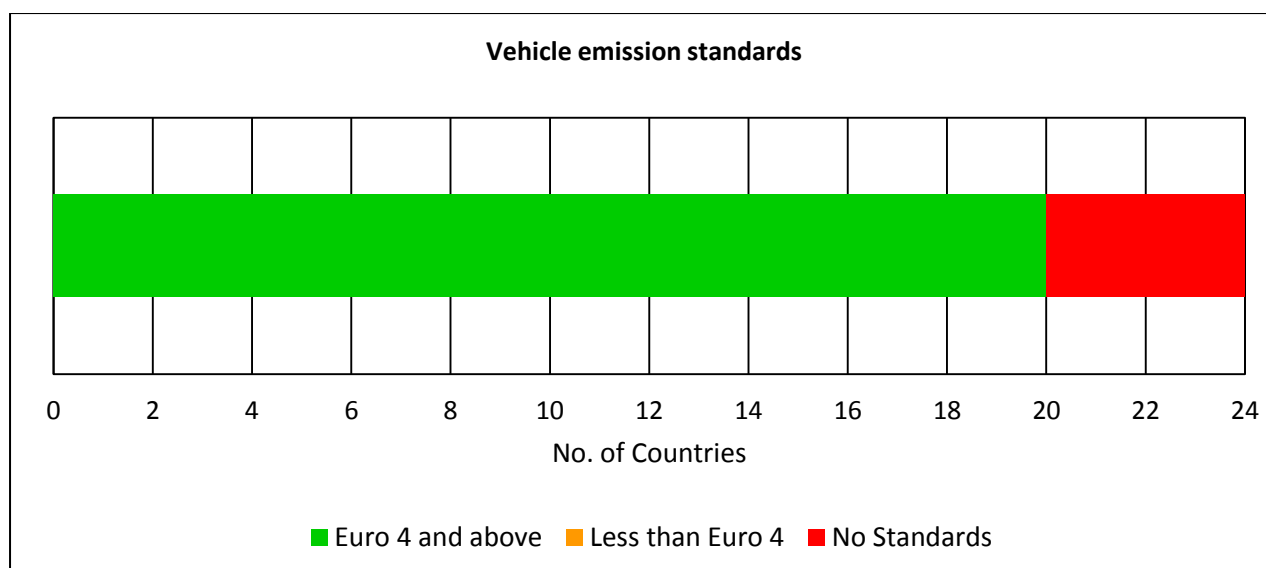
urban areas, maintaining and increasing the modal share of public and non-motorised transport is essential to increasing mobility while decreasing transport emissions.

Seven countries are investing in expansion of public transport systems. In Azerbaijan for instance, the government has taken several steps toward improving public transport, including the replacement of medium-sized buses with large ones and the application of intelligent transport management system. In Georgia the government has initiated a discount system to encourage increased use of public transport; it has also purchased 1,000 new buses for the city of Tbilisi. In Turkey, plans exist to increase the number of cities serviced by trams. The construction of bicycle paths is being co-financed by the Ministry of Environment and Urbanization, especially within the major cities. Figure 3 below shows the number of countries in the sub-region that have made investments to significantly expand public transport.



**Figure 3:** Number of countries in the sub-region that have initiated programmes and initiatives to significantly expand public transport.

Some of the other actions undertaken by governments to reduce emissions from the transport sector include setting vehicle emission standards. Twenty out of twenty-four countries in the sub-region have vehicle emission standards that are at least Euro 4 or higher (see Figure 4). For the EU member states (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia), vehicle emissions standards are at Euro 6 for light duty vehicles and Euro 4 for heavy duty vehicles.



**Figure 4:** The number of countries in the sub-region that regulate vehicle emissions to Euro standards or its equivalent.

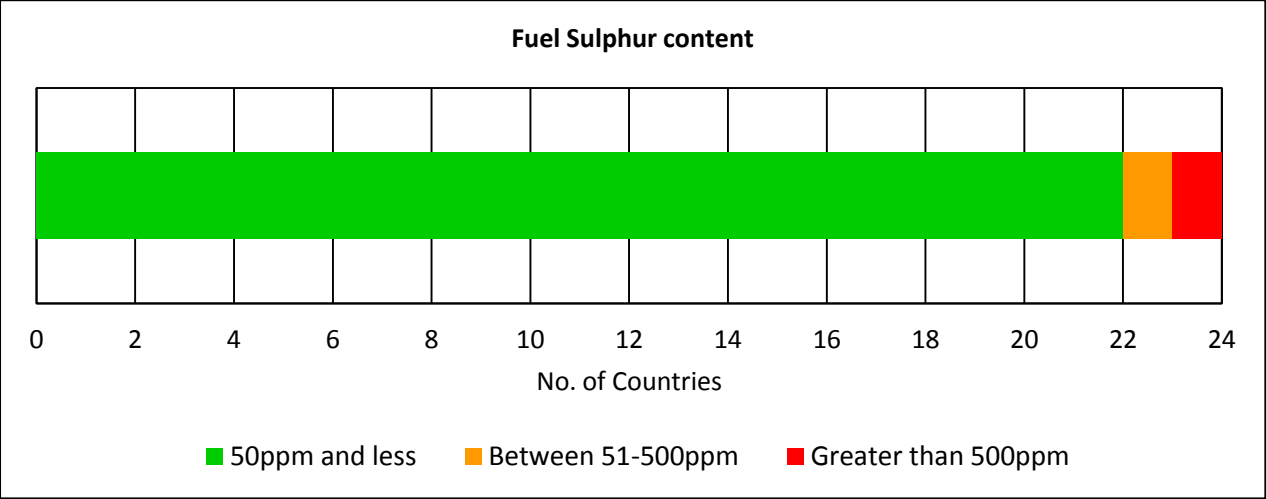
In some countries, differentiated tax regimes encourage a move toward cleaner, more efficient vehicles. In Albania, vehicles importations are not restricted in terms of age or emission requirements; however, an import tax is assessed based on vehicle age and engine size, favouring newer, small petrol vehicles. In 2010, Moldova abolished customs taxes for vehicles less than seven years old that were imported from neighbouring countries. Currently an age limit of ten years is applied for all imported automobiles.

In Russia, vehicle emissions are restricted through an age-based taxation system, where a 30% tax increase is charged on imported vehicles that are older than one year. There is a 35% tax increase for imported vehicles that are between 3 to 5 years old, and for vehicles older than 5 year, the tax is between €2.5 and €5.8 per cm<sup>3</sup> of engine volume.

Governments have also initiated tax incentives to encourage the use of electric vehicles. In Turkey, electric vehicles attract less tax compared to other conventional vehicles, while in Georgia electric vehicles are exempted from import duty. In the Czech Republic, households with electric vehicle get favourable electricity tariff. Estonia is the first country in the world to introduce a nationwide, publicly serviced charging system for charging batteries of electric vehicles.

Fuels and vehicles work as a system; in order to benefit from improved vehicle standards, low sulphur fuels are needed as these allow the advanced pollution control devices to work optimally. Twenty-two countries out of the twenty-four in the sub-region have low sulphur fuels with sulphur content below 50ppm (Figure 5). For EU member states, the maximum allowable sulphur level in

petrol and diesel fuels has been 10ppm since 2009. Some non-EU member states also have ultra-low sulphur fuels, such as Moldova, where all major fuel distributors sell diesel and petrol fuel with a maximum sulphur content of 10ppm, even though national fuel quality legislation allows a much higher sulphur content.



**Figure 5:** Number of countries in the sub-region that regulate fuel quality. Fuels Sulphur content is used as a proxy of fuel quality.

3.3 Open burning of Wastes

Open burning of municipal waste is practiced in one out of the twenty-four country. Most governments in this sub-region have implemented waste collection and disposal systems, thus reducing the need for open burning of municipal waste. Although most of the municipal waste is collected and disposed of by the authorities, agricultural waste management remains a challenge, and open burning of this waste occurs in all the countries. The cross-boundary transport of

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