



Ninth Environment for Europe Ministerial Conference

Nicosia, 5–7 October 2022

**Final Report on the Implementation of the Batumi Action for
Cleaner Air (2016–2021)**



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Item 2 of the provisional agenda

**From Dobris to Nicosia: 30 years of environmental
cooperation in the pan-European region**

Final Report on the Implementation of the Batumi Action for Cleaner Air (2016–2021)

Note by the United Nations Economic Commission for Europe Committee on Environmental Policy and the Bureau of the Executive Body for the Convention on Long range Transboundary Air Pollution

Summary

At the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016), ministers endorsed the Batumi Action for Cleaner Air, welcomed the initiatives launched by interested countries and other stakeholders aimed at improving air quality, and invited countries and other actors to implement the Batumi Action.^a They also requested the Committee on Environmental Policy to convene a mid-term review of the implementation of the Conference’s main outcomes, including the Batumi Action, in 2018.^b

At its twenty-third session (Geneva, 14–17 November 2017), the Committee on Environmental Policy invited stakeholders to report on progress achieved in implementing the commitments under the Batumi Action for Cleaner Air,^c on the basis of a survey template prepared by the United Nations Economic Commission for Europe secretariat in consultation with the Bureaux of the Committee and of the Convention on Long-range Transboundary Air Pollution. At its twenty-fourth session (Geneva, 29–31 January 2019), the Committee welcomed the document “Implementation of the Batumi Action for Cleaner Air: fostering progress towards improved air quality” (ECE/CEP/2019/6) and the progress achieved in implementing voluntary commitments by the member States and organizations participating in the Batumi Action for Cleaner Air. The Committee also called upon the member States and other stakeholders to continue active participation in the Batumi Action.^d

At its twenty-seventh session (Geneva (hybrid), 3–5 November 2021), the Committee on Environmental Policy took note of the draft list of documents to be prepared for the Ninth Environment for Europe Ministerial Conference.^e The list includes the final report on the implementation of the Batumi Action.

The online reporting tool “EfE Final report of the Batumi Action for Cleaner Air (BACA)” was launched by the ECE secretariat on 28 February 2022. A consultant was contracted by ECE to assist the ECE secretariat in preparing the report.



At its special session (Geneva (hybrid), 9–12 May 2022), the Committee on Environmental Policy expressed its appreciation to the ECE secretariat and the ECE consultant for the preparation of the draft Final report on the implementation of the Batumi Action for Cleaner Air and asked the Bureau, with support from the ECE secretariat and in cooperation with relevant stakeholders, to finalize the report on the implementation of the Batumi Action for Cleaner Air and issue it as an official document for the Nicosia Conference.^f

The document aims to facilitate the ministerial discussion by providing background information to support delegations in preparing for the Conference, in particular for the discussion under agenda item 2.

^a ECE/BATUMI.CONF/2016/2/Add.1, para. 7.

^b Ibid., para. 16.

^c ECE/CEP/2017/5, para. 38

^d ECE/CEP/2019/2, para. 25.

^e ECE/CEP/2021/2, para. 32 (c).

^f ECE/CEP/S/2022/2, para. 34.

I. Introduction

1. At the Eighth Environment for Europe Ministerial Conference (Batumi, 8–10 June 2016) the Batumi Action for Cleaner Air was launched and a set of voluntary commitments made by countries to improve air quality and protect human health and ecosystems. More specifically, the objectives of the Batumi Action for Cleaner Air are to:

- (a) Provide Governments and other stakeholders with a list of possible concrete actions to address local, national and regional air pollution problems for their consideration;
- (b) Inspire action on air pollution issues not currently being addressed;
- (c) Aid the further implementation of the commitments under the ECE Convention on Long-range Transboundary Air Pollution (Air Convention) and its protocols;
- (d) Invite stakeholders (international organizations, donors and non-governmental organizations (NGOs)) to support actions that improve air quality, in particular capacity-building and technical assistance actions;
- (e) Invite Governments to voluntarily commit to implementing specific actions and to share their successes and further challenges at future meetings of the United Nations Economic Commission for Europe (ECE) Committee on Environmental Policy.

2. Voluntary commitments of the Batumi Action for Cleaner Air cover all key aspects of air quality management, from air quality monitoring and assessment, through emission reduction policies and capacity-building, to information-sharing and awareness-raising. The Batumi Action for Cleaner Air activities are taken at the city, national and regional levels. The time frame for the Batumi Action for Cleaner Air was 2016–2021.

3. Twenty-seven countries¹ and four organizations² have committed to 110 actions in the framework of the Batumi Action for Cleaner Air.

4. Registered actions to which countries and organizations have committed in the framework of the Batumi Action are available on the ECE website.³ In addition, a compilation of the actions presented at the Batumi Ministerial Conference is available in an information document submitted to the Conference.⁴

5. The online reporting tool “Efe Final report of the Batumi Action for Cleaner Air (BACA)” was launched on 28 February 2022.

6. The present report synthesizes the responses received from 20 countries⁵ and 2 organizations⁶, as well as information collected during the mid-term review conducted in 2018 for countries⁷ where data could not be collected. It reflects the progress made on 88 (80 per cent) of the 110 commitments made under the Batumi Action for Cleaner Air initiative (see table below).

¹ Armenia, Austria, Azerbaijan, Belarus, Belgium, Canada, Croatia, Czechia, Estonia, France, Georgia, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, the Republic of Moldova, Romania, Slovenia, Spain, Sweden, Switzerland, the United States of America and Uzbekistan.

² The United Nations Economic Commission for Europe (ECE), the Nordic Council of Ministers, the Regional Environmental Centre for Central and Eastern Europe and the World Health Organization (WHO).

³ See <https://unece.org/baca>.

⁴ See Batumi Action for Cleaner Air: a compilation of actions by countries and organizations (ECE/BATUMI.CONF/2016/INF/39), available under “Documents and materials”, “INF documents”, at www.unece.org/environmental-policy/environment-for-europe/efe-conferences/batumi-conference/welcome.html.

⁵ Austria, Azerbaijan, Canada, Croatia, Czechia, Estonia, Georgia, Germany, Hungary, Italy, Latvia, Lithuania, Poland, the Republic of Moldova, Romania, Spain, Sweden, Switzerland, the United States of America and Uzbekistan.

⁶ ECE and the Nordic Council of Ministers.

⁷ Belarus, France, the Netherlands and Portugal.

Number of commitments made/reported by Batumi Action for Cleaner Air participants

Albania	0	Czechia	1/1	Italy	1/1	Norway	0	Switzerland	5/5
Andorra	0	Denmark	0	Kazakhstan	0	Poland	5/5	Tajikistan	0
Armenia	1/0	Estonia	4/4	Kyrgyzstan	0	Portugal	1/0	Türkiye	0
Austria	2/2	Finland	0	Latvia	2/2	Rep. of Moldova	3/3	Turkmenistan	0
Azerbaijan	1/1	France	5/5	Liechtenstein	0	Romania	3/3	Ukraine	0
Belarus						Russian Federation	0	United Kingdom	0
	5/0	Georgia	7/7	Lithuania	2/2	San Marino	0	United States	6/6
Belgium	5/0	Germany	1/1	Luxembourg	0				
Bosnia and Herzegovina	0	Greece	0	Malta	0	Serbia	0	Uzbekistan	4/4
Bulgaria	0	Hungary	4/4	Monaco	0	Slovakia	0	Nordic Council of Ministers	1/1
Canada	17/17	Iceland	0	Montenegro	0	Slovenia	3/0	REC CEE	4/0
Croatia	5/5	Ireland	0	Netherlands	2/2	Spain	1/1	ECE	2/2
Cyprus	0	Israel	0	North Macedonia	0	Sweden	4/4	WHO	3/0

Abbreviations: REC CEE, Regional Environmental Centre for Central and Eastern Europe; WHO, World Health Organization.

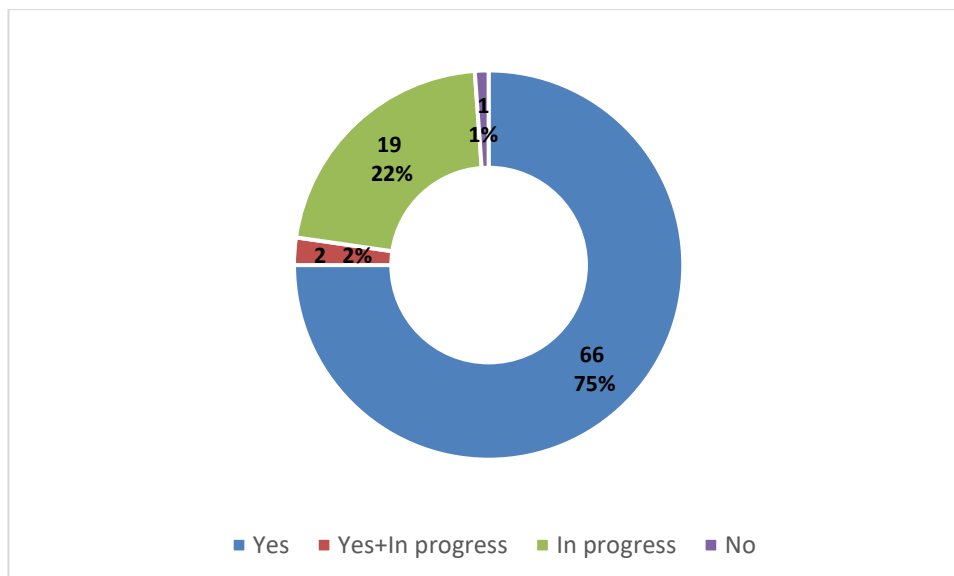
7. The report also identifies trends and future steps to be taken by stakeholders. Examples are provided to illustrate progress, achievements, challenges and future steps. The document also summarizes the views expressed by countries on the usefulness of the Batumi Action for Cleaner Air.

II. Progress made in the implementation of commitments in the framework of the Batumi Action for Cleaner Air

8. Overall, progress on 88 commitments was reported within the final and mid-term⁸ surveys, indicating significant overall progress in the implementation of the Batumi Action for Cleaner Air (see figure below). Of those 88 commitments, 66 have been completed, 2 were reported as being both “in progress” and “implemented”, 19 are in progress and only 1 has not been implemented. For 22 commitments, no information has been submitted.

⁸ From the mid-term survey, only commitments that were reported as “implemented” have been taken into account.

Progress in implementation of Batumi Action for Cleaner Air commitments



A. Establishment of systematic, comparable and transparent monitoring activities and emissions inventories

9. Ten countries⁹ and one organization¹⁰ made 15 commitments to establish or improve systematic, comparable and transparent monitoring activities and emissions inventories.

Monitoring activities

10. Canada highlighted the National Air Pollution Surveillance programme, which is operational in every Canadian province and territory. In particular, currently, there are 286 sites in 203 communities. Also, it was reported that air quality standards for sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) for the years 2020 and 2025 were established in 2017, and for 2025, a more stringent standard for ozone (O₃) was set in 2019.

11. France established a national platform for forecasting air quality, on the website of which it is now possible to view three-day forecasts.¹¹ The Hungarian Meteorological Service developed an air quality modelling and forecasting system. Results of the modelling are available on the web page.¹² Also, the modelling tool is used to estimate the effect of emission reduction measures during the planning of activities.

12. Georgia switched to the European Union air quality standards (limit and target values, upper and lower assessment thresholds, information and alert thresholds, etc.) from 1 August 2018, on the basis of which air quality is assessed, and related policies and measures are developed and implemented. The country has significantly improved its air quality monitoring system by increasing the number of automatic monitoring stations from one to eight and establishing passive sampling in 25 municipalities. Furthermore, the monitoring network was enhanced by three pieces of gravimetric air quality monitoring equipment that allowed for the initiation of monitoring of heavy metals (lead (Pb), arsenic (As), cadmium (Cd) and nickel (Ni)) and benz(a)pyrene in line with European Union methodology. In addition, in order to improve the air quality monitoring system, several important activities were conducted, such as: establishment of air quality modelling; improvement of quality assurance/quality control; setting up air quality monitoring criteria based on the relevant

⁹ Azerbaijan, Canada, France, Georgia, Hungary, Latvia, Lithuania, the Republic of Moldova, Romania and Uzbekistan.

¹⁰ WHO.

¹¹ Available at www2.prevaire.org.

¹² See <https://legszenyetzettseg.met.hu/en/modelling/map>.

European Union directives; and development of an air quality monitoring network development plan. Air quality data are available on the Georgian Air Quality Portal.¹³

13. Azerbaijan and Uzbekistan reported on enhancement of their ambient air quality monitoring networks. In particular, Azerbaijan purchased six automatic stationary monitoring stations and one modern mobile laboratory. Uzbekistan installed two automatic monitoring stations in Tashkent and developed an electronic system for collecting, analysing and storing information about the state of the environment and sources of pollution.

14. Latvia finalized the modernization of its national air pollution monitoring network. Three new air quality stations have been installed and five existing ones upgraded. Moreover, a new data collection system has been introduced and real time data made available to the public via the Air Quality Index.¹⁴ Pollutant measurement programmes have been improved as planned and expanded to include automatic hourly carbon monoxide measurements on all traffic stations and the benzene, toluene and xylene (aromatic hydrocarbons) range expanded to include ethylbenzene and o-, m- and p-xylenes in urban stations. In addition, automatic and high-volume samplers have been installed in Rucava (Latvia) to measure heavy metals, polycyclic aromatic hydrocarbons, cations, anions and organic carbon/elemental carbon.

15. Romania extended its air quality monitoring network by 18 new sampling points for continuous measurement of the following pollutants: nitrogen dioxide (NO₂) and nitrogen oxides (NO_x) in one zone; ozone (O₃) in six zones; volatile organic compounds (benzene, toluene, ethylbenzene, xylene) in four zones; particulate matter (PM₁₀) in five zones; and fine particulate matter (PM_{2.5}) in two zones.

Emissions inventories

16. The latest Air Pollutant Emission Inventory Report¹⁵ of Canada was developed and published at the national, provincial and territorial levels and covers the period 1990–2020 and emissions of 17 air pollutants.

17. France reported on the development and annual update of its national air pollutants emission inventories (publicly available online).¹⁶

18. Georgia established an electronic reporting system¹⁷ for the annual inventory of emissions from stationary sources. The system – operational since 2017 – significantly reduced time for reporting and analysis and increased the amount and quality of received data. Information about point sources and their emissions is openly available online.¹⁸ In addition, the country improved its emission inventory covering full time series (from 1990 to 2020) and using the latest version of the EMEP/EEA Guidebook (2019). Emission projection for the years 2020, 2025, and 2030 have also been developed.

19. Lithuania developed a plan for improvement of the national air pollutant emission inventory for the period 2015–2022. Several activities were carried out to identify and obtain more detailed activity data, which improved the emission inventory process through a switch to tier 2 methodologies.

20. In 2017, the Republic of Moldova established a pollutant release and transfer register. Since then, the number of registered and reporting operators has more than doubled, from 75 in 2017 to 192 in 2020.

21. Romania improved its national emissions inventory based on modern methodology¹⁹ by estimating emissions using tier 2 methodologies for certain key sectors and taking into

¹³ See <http://air.gov.ge>.

¹⁴ See <https://aqicn.org/map/latvia/>.

¹⁵ See www.canada.ca/en/environment-climate-change/services/air-pollution/publications/emissions-inventory-report-2022.html.

¹⁶ See www.citepa.org/fr/activites/inventaires-des-emissions/secten.

¹⁷ See <http://emoe.gov.ge>.

¹⁸ See <http://map.emoe.gov.ge/>.

¹⁹ The latest version of the EMEP/EEA Guidebook (2019), available at <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>.

account recommendations provided through a European Commission review of the country's emission inventories.

B. Establishment of national action programmes that reduce air pollution

22. Fifty-three commitments are dedicated to pollution reduction activities and measures.

Multisectoral strategies and policies

23. Czechia reported having achieved its national emission reduction commitment for 2020 in line with the amended Gothenburg protocol and, for most of the pollutants, even achieved emission reduction significantly beyond its national emission reduction commitment. Furthermore, synergies with the climate policies were mentioned that have an impact on the significant reduction of SO₂, due to a decrease in coal consumption.

24. Croatia, Estonia, France, Hungary, Italy, Latvia, the Netherlands, Poland, Romania, Switzerland and the United States of America adopted national plans, programmes and strategies for the reduction of air pollution, including measures to reduce emissions in several key sectors such as transport, agriculture, energy and heating.

25. Georgia established limits of sulfur in certain liquid fuels based on the European Union Sulfur Directive,²⁰ which regulates fuels used in the transport, industry, household, energy and other sectors.

Transport

26. Croatia, Georgia and Hungary developed new taxation systems to support renovation of car fleets and promotion of cleaner vehicles, including electric/hybrid vehicles. The increase of electric vehicle share through the enhancement of charging infrastructure, awareness-raising and establishment of an incentivizing legislative framework has been supported by France, Georgia, Hungary and Lithuania. Renovation of car fleets and promotion of cleaner vehicles were also noted by Azerbaijan.

27. France and Hungary introduced "air quality certificates" or "green licence plates" that make it possible to identify vehicles according to their emission level and can be used by local authorities to modulate their vehicle traffic and parking policies. France established several low-emission zones with restrictions on high-emission vehicles. To reduce emissions from the transport sector, France implemented a national subsidy programme for replacement of old vehicles with new, cleaner ones.

28. Georgia, Hungary and Poland reported on the continuation of their bus replacement programmes. In particular, the municipal authorities of Tbilisi replaced the entire bus fleet, which was old and in poor technical condition, with 680 new Euro 5 and Euro 6 buses and 1,000 new minibuses.

29. Improvement of fuel quality standards was highlighted by Canada, Georgia and the United States of America. Georgia improved its petrol and diesel quality significantly, reaching Euro 5 standards for petrol in 2017 and Euro 4 standards for diesel fuel in 2019, with prescribed further improvement to Euro 5 standards from 1 January 2023. Canada switched to ultra-low sulfur content (12 parts per million (ppm)) petrol from 2020 and updated regulations on sulfur content in diesel fuel in 2017. The United States of America improved petrol quality in parallel with implementation of new vehicle emission standards. Since January 1 2022, Uzbekistan established Euro 4 emission standards for vehicles of categories "M" (vehicles carrying passengers) and "N" (vehicles carrying goods (e.g., trucks)), equipped with gas, petrol or diesel engines.

²⁰ Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels, *Official Journal of the European Union*, L 132 (2016), pp. 58–78.

30. Georgia and Lithuania emphasized progress in road infrastructure for public transport. Specifically, in Tbilisi, bus lanes were installed in numerous main streets. Lithuania established 20 sustainable city mobility plans. Development of the underground train system is another important achievement that was realized in Tbilisi, with a new underground train station and 40 new cars. While Lithuania reported the acquisition of 10 latest-generation diesel trains and 13 electric trains.

31. Hungary and Lithuania reported on the development of walking and cycling infrastructure and the building of byroads.

32. Georgia re-established mandatory periodic technical inspection to reduce emissions from road transport. Lithuania introduced an electronic taxation system for commercial vehicles and a new parking scheme to discourage unnecessary use of commercial and private cars.

Industry

33. Canada and the Republic of Moldova reported on activities to reduce emissions of volatile organic compounds (VOCs). In particular, the Republic of Moldova adopted legal acts to regulate VOCs contained in paints, varnishes and vehicle refinishing materials, as well as regulations on reductions of VOC emissions from storage and distribution of petrol. Canada took measures to reduce VOC emissions from petroleum refineries, asphalt and vehicle refinishing products.

34. Canada and the United States of America established requirements addressing fugitive emissions from leaking equipment in the oil and natural gas sector.

35. In 2020, Canada updated emission regulations for off-road and stationary diesel engines. A Code of practice to reduce emissions of fine particulate matter (PM_{2.5}) from the aluminium sector²¹ has been developed in Canada.

Residential heating

36. Hungary launched a building energy efficiency programme with a significant budget. This programme should reduce PM₁₀ emissions from combustion processes in the residential sector. Canada and the United States of America took steps to improve the quality of residential wood-burning appliances. From 15 May 2015, the United States of America adopted step 1 emission standards for all residential wood-burning appliances manufactured and sold in the United States of America. In May 2020, the United States Environmental Protection Agency finalized standards to limit the amount of PM that new wood heaters manufactured and sold in the future can emit. Canada provides guidance on best practices of using these appliances through the Code of practice for residential wood-burning appliances.²²

C. Improvement of public awareness

37. Dissemination of information and awareness-raising among the general public and targeted groups are crucial to the successful implementation of specific emission reduction measures and air quality policy in general. Thus, continued information dissemination about air quality and related improvement measures is necessary. Under the Batumi Action for Cleaner Air initiative, 13 commitments were made by nine countries²³ and two organizations.²⁴

38. Hungary and Switzerland reported on awareness-raising campaigns on air quality issues. Hungary is running a campaign called “Heat wise!”. A special web page²⁵ was developed that provides useful information about various aspects in different forms (posters,

²¹ See <https://publications.gc.ca/site/eng/9.806321/publication.html>.

²² See https://ccme.ca/en/res/code_wood_burning_e.pdf.

²³ Belarus, Georgia, Hungary, the Netherlands, Poland, Portugal, Slovenia, Spain and Switzerland.

²⁴ ECE and the Regional Environmental Centre for Central and Eastern Europe.

²⁵ See www.futsokosankampany.hu/.

leaflets, videos, television, radio, press and printed advertisements have been used to widely disseminate important information during the campaign). Switzerland implemented national communication efforts²⁶ and prepared and disseminated a video²⁷ on the nitrogen cycle.

39. Georgia, Poland, Spain and Uzbekistan have developed ambient air quality portals²⁸ that provide up-to-date and historic air quality data, emission inventories, air quality plans, ongoing emission reduction measures, health recommendations for each air quality index and recommendations on air protection for the general public.

40. The ECE secretariat reported on actions to raise public awareness on the Convention and the overall visibility of air pollution issues throughout the ECE region, in particular through outreach in a number of international forums and various communications activities.

D. Capacity-building and technical support

41. Six²⁹ countries and four³⁰ organizations made 13 commitments to increase capacity and provide technical support in the field of air protection.

42. Austria reported on progress in strengthening the administrative capacity of national authorities responsible for air pollutants emission and greenhouse gas inventories through training and workshops establishing/strengthening the National Inventory System Austria and improving the air emissions and greenhouse gas inventory in line with the relevant Conventions.³¹ In addition, Austria emphasized its support for Armenia and Azerbaijan in the conceptual development of modernized air quality monitoring systems. Azerbaijan highlighted capacity-building activities in several areas such as: initial air quality assessment; internal audit; emissions inventory; COPERT software; air quality index; appointment and characterization of the territory of air quality monitoring points; and use of OPSIS³² devices.

43. Germany and ECE highlighted capacity-building and technical assistance activities in the Eastern Europe, the Caucasus and Central Asia region aimed at the ratification and implementation of the Gothenburg Protocol, the development and implementation of air quality management policies, measures and legislation, the establishment of an integrated permits system, the improvement of the quality of emission inventories, the development of emission projection and the promotion of best available techniques. Switzerland also supported the ratification of the Air Convention protocols in the Caucasus and Central Asia through the development of various action plans, the organization of workshops and other activities.

44. Since 2017, Sweden has been supporting countries of South-Eastern Europe in various areas of air quality assessment and management. Sweden provided support to: harmonize legislation with the European Union acquis; develop air quality monitoring, emissions inventories and reporting systems; and analyse data and implement pollution reduction measures.

45. The United States of America reported close cooperation with the United Nations Environment Programme (UNEP) to provide technical and policy advice as UNEP expands its air quality programme. Under this cooperation, air quality capacity-building work was carried out in Ethiopia and a low-cost air quality sensor developed by UNEP was tested.

²⁶ See www.bafu.admin.ch/bafu/fr/home/documentation/magazine/magazine2021-1-un-danger-invisible.html.

²⁷ See www.youtube.com/watch?v=9Y1nyJPHujc.

²⁸ See, respectively, <http://air.gov.ge>, <https://powietrze.gios.gov.pl/pjp/home>, www.ica.miteco.es and <https://monitoring.meteo.uz>.

²⁹ Austria, Germany, Sweden, Switzerland, the United States of America and Uzbekistan.

³⁰ ECE, the Nordic Council of Ministers, the Regional Environmental Centre for Central and Eastern Europe and WHO.

³¹ The ECE Convention on Long-range Transboundary Air Pollution and the United Nations Framework Convention on Climate Change.

³² See www.opsis.se/en/.

46. The Nordic Council of Ministers provided support to Belarus and the Russian Federation in the fields of emission inventories, gridded emissions, modelling and projection, mostly focused on PM_{2.5} and black carbon (BC) emissions.

E. Policy

47. Seventeen out of one hundred and twenty commitments refer to actions in the policy sphere.

48. Canada reviewed its air quality standards for the main pollutants and established more stringent norms and targets.³³

49. Croatia, Estonia and Switzerland reported on ratification of all or some of the latest three protocols of the Air Convention³⁴ aimed at reducing emissions of the major air pollutants such as: SO₂, NO_x, ammonia (NH₃), VOCs, PM_{2.5}, heavy metals (HMs) and persistent organic pollutants (POPs).

50. Sweden organized and hosted the Saltsjöbaden VI workshop “Clean Air for a Sustainable Future – Goals and Challenges” (Gothenburg, Sweden, 19–21 March 1918), focused to discussing and suggesting ways forward for further international collaboration in abating air pollution.

51. Uzbekistan amended its Law on the Protection of Atmospheric Air. Amendments were made to 13 articles and 4 new articles were added with the aim of improving the regulatory framework in the field of air quality management that will lead to cleaner air in the country.

III. Challenges and lessons learned

52. The biggest challenge in the field of ambient air quality monitoring is high investment in and the operational cost of, modern air quality monitoring networks. In this regard, significant donor support was emphasized, in parallel with spending from the State budget.

53. Lack of human resources in general and skilled professionals in particular have been stressed by many participating countries and organizations. This issue is relevant in various areas of ambient air quality management, such as: maintenance of monitoring stations; development of emission inventory and reporting; air quality modelling; quality assurance/quality control; and introduction of best available techniques. Capacity-building activities is the only way to increase qualification of staff.

54. Some countries mentioned difficulties associated with the promotion of electric vehicles, in particular, issues related to: vehicles registration; high prices for electric cars; lack of charging stations; low market penetration rate; and an insufficiently advanced market. To overcome these barriers, the creation of a favourable legal environment, the development of a charging network and the provision of subsidies and other incentives were highlighted.

55. Several countries and one organization encountered problems with emission inventory. Lack of activity data (especially historic data), changes and gaps in inventory methodologies, absence of country-specific emission factors and improvement of the spatial resolution of the emission database were identified as major challenges for developing a high-quality emission inventory.

56. Many countries reported on the high cost of, and insufficient financial resources for, implementing emission reduction measures and ensuring compliance with regulations. Long-term planning, finding flexible and reliable funding sources, and involving science, society, and business appear to be the best ways to address financial issues.

³³ See www.canada.ca/en/environment-climate-change/services/environmental-indicators/air-quality.html.

³⁴ The Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, the Protocol on Persistent Organic Pollutants and the Protocol on Heavy Metals.

57. Many countries and one organization faced difficulties caused by poor coordination between stakeholders. Complicated communication or even miscommunication between ministries, agencies and other institutions creates challenges in different fields of air quality management, but mainly during the implementation of action plans and the development of an emission inventory. The importance of identifying appropriate partners and maintaining continued successful cooperation was highlighted.

58. Some countries and organizations mentioned several other general difficulties, such as: the coronavirus disease (COVID-19) pandemic, language barriers, challenges of the reduction of ammonia emissions from the agriculture sector and the lack of mitigation techniques.

IV. Future steps and follow-up

59. Countries and organizations outlined concrete steps to continue to implement and follow up on their actions under the Batumi Action for Cleaner Air.

60. For example, Canada, Georgia, Hungary, Italy and Lithuania plan to continue their efforts to reduce emissions in the transport sector by restricting vehicle emission standards, improving fuel quality, strengthening fuel quality control, developing and modernizing public transport, and promoting electric mobility.

61. Some activities have huge potential for reducing emissions in the agricultural sector. Hungary, Italy and Switzerland will continue to implement further emission mitigation measures in the agricultural sector through national/regional plans or targeted measures.

62. The household sector is the key source for some pollutants in certain countries. Steps will be taken by Hungary, Italy and Poland to increase the energy efficiency of buildings, as well as to switch to cleaner heat sources with low or zero emissions and to replace wood-burning facilities with new, cleaner and more energy efficient ones.

63. Georgia, Hungary and Romania have concrete plans to further extend their ambient air quality monitoring networks, improve data quality and enhance their assessment systems. In particular, Georgia, with the support of the Government of Sweden and the European Union, will add 8 new automatic monitoring stations in 2022, and 10 more in 2023. Hungary will continue to improve its modelling system through the perfection of input data and the establishment of an air quality forecast capacity. Romania will optimize its monitoring network to reach the data quality objectives set at the European level and to meet the reporting obligations.

64. Georgia, Latvia and Romania reported on additional steps to improve the accuracy of emission inventories and projections, as well as to develop gridded emission reports and improve data collection systems.

65. Georgia, the Republic of Moldova, Switzerland and ECE will continue awareness-raising activities, such as dissemination of information through air quality portals and national pollutant release and transfer registers, as well as participation in various forums. Romania and Switzerland plan to strengthen cooperation with different institutions and communicate more actively with stakeholders.

66. Germany, Latvia, Lithuania, Sweden and ECE will take additional steps towards capacity-building in different directions and countries. Latvia and Lithuania are striving to build domestic capacity, mainly in emission inventories. Germany and ECE are focusing on capacity-building in the Eastern Europe, the Caucasus and Central Asia region on air quality management policies and measures (including best available techniques) and air pollutant emission inventories and projections. While Sweden will continue to support air quality management activities in the Western Balkan countries.

67. The Republic of Moldova plans to coordinate air quality management and climate change adaptation activities, together with improvement of the legal framework and the establishment of an enforcement system for existing requirements in the VOC sector. Romania will continue work on approval of the national programme to control air pollution.

V. Usefulness of the Batumi Action for Cleaner Air

68. All 18 countries³⁵ and two organizations³⁶ that responded to the question about the usefulness of the Batumi Action for Cleaner Air considered this voluntary instrument useful and most of them (13 out of 20) found the Batumi Action for Cleaner Air to be very useful. Some of the participating countries considered the Batumi Action for Cleaner Air to be a valuable tool for the adoption and implementation of activities aimed at improving ambient air quality. Other countries found that the Batumi Action for Cleaner Air is a good instrument for sharing best practices and examples of successful projects.

69. ECE and a number of countries concluded that the Batumi Action for Cleaner Air is a useful tool for raising awareness about air quality issues at different levels and within target groups. One country found that the Batumi Action for Cleaner Air can be used to introduce best available techniques that will be useful for the implementation of requirements under various multilateral environmental agreements.

VI. Key findings

70. The high implementation rate of the 110 commitments made by twenty-seven countries and four organizations under the Batumi Action for Cleaner Air shows that this unique voluntary initiative is a valuable tool for improving air quality all over the world.

71. Despite its voluntary form, at the national level, the Batumi Action for Cleaner Air is considered as an international obligation that can be used as an instrument for political justification to promote and implement several critical activities in the field of air quality management. In addition, it is helpful for countries and organizations to manage and implement activities covered by the Batumi Action for Cleaner Air in a more systematic way.

72. Since it is a voluntary tool, it is ideally suited to national circumstances and responds to specific local needs and priorities. Most likely, this is a decisive factor in the success of the Batumi Action for Cleaner Air.

73. The Batumi Action for Cleaner Air is a beneficial instrument in terms of being more vocal on air quality issues and addressing them by raising awareness among the public and decision-makers.

74. For countries with a well-developed air quality management system, the Batumi Action for Cleaner Air can be a catalyst for the development and implementation of extraordinary actions in all directions, from monitoring and assessment to emission reduction measures.

75. The Batumi Action for Cleaner Air is an excellent tool for developing, lobbying for and implementing various activities that are feasible for countries where, at this stage, regulations to reduce air pollution are yet to be fully introduced, and where, due to the political or socioeconomic situation, it is challenging to take on the mandatory obligations.

76. It is highly recommended to continue the Batumi Action for Cleaner Air initiative not only in the ECE region, but also beyond. This can be useful not only for specific countries, but also for entire regions.

³⁵ Austria, Azerbaijan, Canada, Croatia, Czechia, Estonia, Georgia, Germany, Hungary, Italy, Latvia, Lithuania, Poland, the Republic of Moldova, Romania, Sweden, Switzerland and Uzbekistan.

³⁶ ECE and the Nordic Council of Ministers.