CONGRESS OF LOCAL AND REGIONAL AUTHORITIES

The Congress
Le Congrès

COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

43rd SESSION

Report
CG(2022)43-20final
26 October 2022

Original: English

Human Rights Handbook for local and regional authorities Environment and sustainable development

Committee on the Honouring of Obligations and Commitments by Member States of the European Charter of Local Self-Government (Monitoring Committee)

Rapporteur:[1] Harald BERGMANN, The Netherlands (L, ILDG)

Summary

This resolution builds on the activities of the Congress with a view to assisting local and regional authorities in promotion and application of human rights in grass-roots' policies on the basis of examples of good practice of implementation of human rights at local and regional level in member States of the Council of Europe.

The Human Rights Handbook for Local and Regional Authorities contains a wide range of good practices in the promotion and protection of human rights in European cities and regions.

This third volume of the Handbook focuses on the rights related to a healthy, clean and sustainable environment as a precondition for the enjoyment of any type of rights. It highlights various projects and initiatives led by local and regional authorities promoting a human-rights-based approach to the protection of the environment. This Handbook follows two previous publications on non-discrimination and social rights respectively.

1L: Chamber of Local Authorities / R: Chamber of Regions
EPP/CCE: European People's Party Group in the Congress
SOC/G/PD: Group of Socialists, Greens and Progressive Democrats
ILDG: Independent Liberal and Democratic Group
ECR: European Conservatives and Reformists Group
NR: Members not belonging to a political group of the Congress

RESOLUTION 490(2022)[2]

1. The Congress of Local and Regional Authorities of the Council of Europe refers to:

a. the Declaration by the Committee of Ministers on the occasion of the 70th anniversary of the Council of Europe, adopted on 17 May 2019, in Helsinki, reaffirming that the Committee of Ministers, the Parliamentary Assembly, and the Congress of Local and Regional Authorities carry out monitoring functions and act as guardians of human rights and democracy in their areas of competence;

b. Recommendation CM/Rec(2022)20 of the Committee of Ministers to member States on human rights and the protection of the environment, adopted on 27 September 2022;

c. final Declaration by the Presidency of the Committee of Ministers on Environmental Protection and Human Rights, adopted on 27 February 2020;

d. Congress priorities for 2021-2026, in particular on environmental issues and climate action in cities and regions and on reducing inequalities;

e. Congress Resolution 427 (2018) "Promoting human rights at local and regional level";

f. Congress Resolution 365 (2014) on the "Best practices of implementation of human rights at local and regional level in member States of the Council of Europe and other States";

g. Congress Resolution 296 (2010) Revised and Recommendation 280 (2010) Revised on the "Role of local and regional authorities in the implementation of human rights";

h. the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development, particularly Goal 3 for good health and well-being, Goal 6 for clean water and sanitation, Goal 7 for affordable and clean energy, Goal 11 for sustainable cities and communities, Goal 13 for climate action, Goal 14 for life below water, Goal 15 for life on land and Goal 17 for partnerships for the goals;

i. United Nations General Assembly Resolution 76/300 "The human right to a clean, healthy and sustainable environment", adopted on 28 July 2022;

j. the third volume of the Human Rights Handbook for local and regional authorities.

2. The Congress:

a. emphasises that environmental degradation and climate change pose pressing and serious threats to survival of humankind, and a safe and healthy environment is a precondition for the enjoyment of human rights;

b. acknowledges that adopting climate change mitigation and adaptation policies and measures that comply with human rights principles is a shared responsibility of all levels of government for the benefit of present and future generations;

c. stresses the crucial role of subnational authorities and their contribution to preserving the environment and combating climate change from the standpoint of their obligations to protect Human Rights.

3. The Congress, determined to assist local and regional authorities and their administrations in protecting environment and human rights and responding to the threats posed by climate change and unsustainable development:

a. endorses the third volume of the Human Rights Handbook on environment and sustainable development as part of its global effort to promote a human rights-based approach to grassroots' policy making and contribute to localising the Sustainable Development Goals;

2 Debated and adopted by the Congress on 26 October 2022, 2nd Sitting (see Document CG(2022)43-20, explanatory memorandum), rapporteur: Harald BERGMANN, The Netherlands (L, ILDG).

b. invites local and regional authorities and their administrations in the Council of Europe member States and the States with which the Organisation carries out co-operation activities to disseminate, promote and use this Handbook in their local and regional policies;

c. decides to examine which type of international instrument would help to enhance national authorities' commitment to raise subnational authorities' awareness about their role in addressing climate change and its impacts, protecting environmental rights and promoting sustainable development.

d. asks its Monitoring Committee, in co-operation with other Congress bodies and relevant bodies of the Council of Europe, to prepare the fourth volume of the Human Rights Handbook for local and regional authorities on Artificial Intelligence.

APPENDIX - Human Rights Handbook Environment and sustainable development Volume III

CONTENTS

CHAPTER ONE: WHY A HUMAN RIGHTS HANDBOOK ON THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT?

WHY DEFEND THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT?

Following the publication of the first and second volumes of the Human Rights Handbook on non-discrimination and social rights respectively, the Congress of Local and Regional Authorities is continuing its efforts to assist local and regional authorities and their public administrations at local and regional level with the task of adopting a human-rights-based approach in their policy making. Addressed in volume I, the right to non-discrimination belongs in the "first generation" of human rights, civil and political rights. To complement this, in volume II on social rights, "second-generation" rights were covered. In the present edition, volume III, our focus shifts anew to cover rights related to a healthy, clean and sustainable environment. This category of rights is a particular one, as it includes and encompasses first- and second-generation rights, but also goes beyond them and beyond the framework of individual rights to focus on collective concepts, such as community, people and the environment. This third generation of rights has been expressed in many progressive documents of international law, including the 1972 Stockholm Declaration of the United Nations Conference on the Human Environment or the 1992 Rio Declaration on Environment and Development, and they include rights related to the environment and sustainability, but also collective rights, communication rights, participatory rights to cultural heritage, and such. This Handbook will focus on rights related to the environment and sustainability, as a safe and healthy environment is a precondition for the enjoyment of any type of rights.

The environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn[3]

FAKE NEWS

Climate change is a natural phenomenon. The situation is not as terrible as some want us to think. After the cold winters we have had over the past years, how can they speak of global warming?

FACT

This argument reflects a lack of understanding of what the climate problem is and how it develops. Human activities since the industrial revolution have disrupted our ecosystem. For example, there is scientific consensus on the fact that GHGs are in the atmosphere, that they remain there for a long time and cause significant warming.

The proof of climate change is not necessarily found locally, but when we look at the number of abnormal situations that have occurred (fires, floods) on a global scale, this is really something that we have not seen before with the same strength. When we look at how things are evolving globally, we are faced with phenomena that leave no room for procrastination: we know that, for the past 50 to 60 years, warming has been very strong, stronger than natural fluctuations.

The alarming developments of recent years, such as the deterioration of the environment, climate change, air and water pollution and loss of biodiversity have a profound effect on the enjoyment of human rights.[4] The UN Human Rights Committee has explicitly warned that "[e]nvironmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life".[5] Human beings are dependent on a healthy and safe environment for our survival. Without it, we would not even be able to fulfil our basic needs. This points to a clear interdependence of human life and nature and therefore a strong linkage and interconnection between the environment and our human rights. This interdependence has always existed but was intensified in recent decades in our globalised communities, where environmental pollution and industrialisation of the food production blur the delimitations between animal and human life.

It is important to bear in mind that this interdependence is twofold: as the Council of Europe Commissioner for Human Rights has put it, "living in an unhealthy environment may result in violations of human rights, but conversely, human rights are also the key to rolling back environmental degradation and protecting against its negative effects. […] It would be impossible to protect the environment without relying on human rights such as the freedoms of expression, association or assembly, the right to an effective remedy, or the right to education – to name just a few of the so-

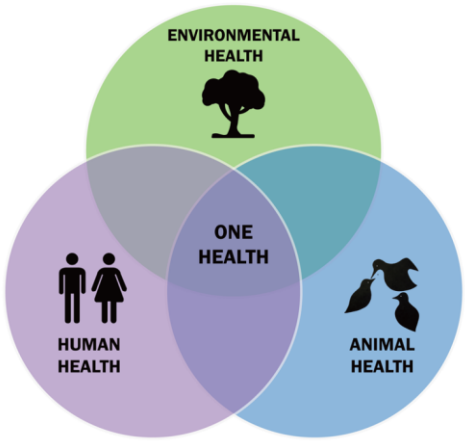
3. International Court of Justice, Gabčíkovo-Nagymaris Project, judgment of 25 September 1997, Reports 1997, paragraph 53.
4. https://www.coe.int/en/web/human-rights-rule-of-law/human-rights-environment.
5 https://tbinternet.ohchr.org/Treaties/CCPR/Shared%20Documents/1_Global/CCPR_C_GC_36_8785_E.pdf.

called 'enabling' rights."[6] There exists therefore an internationally recognised need to ensure that climate change mitigation measures adopted at all levels of government comply with human rights principles. This is why adopting a human-rights-based approach is crucial in the field of climate protection and sustainability.

Did you know? -The "One Health" approach

To address this **interdependence** between humans, animals and the environment, as we all share the same ecosystem, the "**One Health approach**" has been developed to reflect the need for collaborative, multi-sectoral and multidisciplinary efforts to attain health for humans, animals and the environment at the same time (*World Health Organisation*).

The COVID-19 pandemic has reinforced the relevance of the One Health approach, demonstrating the risk of emergence of infectious diseases capable of jumping the species barrier (*see publication by Ruckert et.al).*



Sources: https://www.who.int/news-room/q-a-detail/one-health; Ruckert, A. et al., "What role for One Health in the COVID-19 pandemic?" *Canadian Journal of Public Health 111,* pp. 641-644, 2020.

Moreover, adopting a human rights approach to the protection of the environment and sustainable development and delivering a resilient and sustainable ecosystem is our shared responsibility for future generations. The continued exhaustion of natural resources, climate change and the extinction of species will likely be a significant burden for future generations. Therefore, the protection of the environment as well as sustainable development are often associated with the concepts of intergenerational equity, ensuring fairness and justice from one generation to the next.

Beyond these theoretical considerations, we also witness practical impacts of a deteriorating environment upon human rights protection on a daily basis. For example, air pollution causes almost half a million premature deaths each year in the European Union alone, and it contributes to respiratory diseases like asthma and allergies in children, as shown by research carried out in European nurseries and schools.[7] Availability of water is another serious concern, further aggravated by climate change, urbanisation and pollution: cities such as Barcelona or London suffer from water scarcity, while southern countries such as Greece and Portugal experience severe droughts and forest fires. According to the Commissioner for Human Rights Ms Dunja Mijatović, all these severe effects on human rights caused by environmental degradation are much more adversely and disproportionately felt by disadvantaged communities,[8] raising also questions of social equality. Thus, we witness violations of human rights to life, health, private life and home, which may only improve if we focus on protecting the environment and adopting an eco-centric (nature-centred) approach in our human rights promotion efforts.

The purpose of this handbook is thus to present and streamline the successful efforts to promote a human-rights-based approach to the protection of the environment as a responsibility of local and regional policy makers in Council of Europe member states.

In the next chapters, we look at successful examples of the human rights approach implemented by local and regional authorities of the Council of Europe member states with regard to the protection of the environment and the promotion of sustainable development.

As the "right to a healthy environment" per se is not uniformly codified in all Council of Europe member states, different legal systems recognise and follow different standards and rules. Therefore, the collection of best practices could not be divided per category of rights, such as in the second volume of the Handbook series dedicated to social rights. We needed to think outside the box to come up with a categorisation that would allow us to include the largest possible number of environmental practices

6 https://rm.coe.int/third-party-intervention-by-the-council-of-europe-commissioner-for-hum/1680a26105.
7 https://www.coe.int/en/web/commissioner/-/living-in-a-clean-environment-a-neglected-human-rights-concern-for-all-of-us.
8 https://www.coe.int/en/web/commissioner/-/living-in-a-clean-environment-a-neglected-human-rights-concern-for-all-of-us.

from different fields. We thus decided to categorise the practices according to the following sectors/areas of activity:

1. transport and mobility
2. infrastructure and housing
3. employment, inclusion and sustainable economy
4. education and awareness-raising
5. services and procurement
6. local strategies for sustainable development/climate.

This collection of best practices will allow the readers of this handbook to have a glimpse into ways to make our societies healthier, greener, more sustainable, more inclusive, better informed, more prosperous and resilient.

At the same time, many of the practices address the challenge of protecting the environment with an intersectional focus, and without neglecting equality, fairness, and the citizens most in need. As elaborated in the introductory chapter, environmental degradation and climate change affects more severely the least privileged, most marginalised groups of our communities. Access to information on best environmentally conscious practices, for the whole spectrum of the population, is key. Many practices at local and regional level aim at including all parts of the population in the fight against climate change, for example through the creation of “green jobs” that serve the climate while limiting unemployment and promoting inclusiveness.

WHY IS THE PROTECTION OF THE ENVIRONMENT RELEVANT TO LOCAL AND REGIONAL AUTHORITIES?

Global challenges such as the deterioration of the environment and climate change require a global approach for their solution, involving everyone. This includes every level of governance, from the individual citizen all the way to the international level of state co-operation. Crucial actors in the fight against climate change and for the protection of the environment are local and regional policy makers. Local and regional authorities have an essential role to play in these efforts, as they are the closest to citizens and are best able to respond to local problems. Local and regional authorities also have expressly attributed competences in this area, which means they can take specific steps and measures to protect the environment, for example, by preventing air pollution at local level, improving waste management and transport systems, or promoting a circular economy and a more inclusive, green community. Such localisation efforts are crucial and they “refer to the process of defining, implementing, and monitoring strategies at the local level for achieving global, national and subnational development goals and targets. Global climate change is translated into localised phenomena in response to local geography and other environmental, economic and socio-political factors”.[9]

Localisation = the process of defining, implementing and monitoring strategies at the local level for achieving global, national and subnational development goals and targets[10]

Local and regional authorities, given their proximity to the daily life of citizens, have a crucial role to play in the protection of the environment and the promotion of sustainable development. Based on their numerous competences and through a variety of activities and projects in different fields such as transport and mobility, waste management, infrastructure and city planning, services and procurement, as well as education and awareness-raising, they can contribute to creating healthier, prosperous, inclusive, sustainable and resilient communities.

There exist already several important environment, climate and sustainability initiatives that target specifically the local level of governance.

At the international level, the Global Covenant of Mayors for Climate and Energy formally brings together the European Union’s Covenant of Mayors and the Compact of Mayors – the world’s two primary initiatives of cities and local governments – to advance city-level transition to a low emission and climate-resilient economy, and to demonstrate the global impact of local action. The Covenant provides a robust agenda for change by supporting ambitious, locally relevant solutions in sectors where cities can have the most significant impact. These cities register, implement, and monitor their strategic action plans and make information on their efforts and results publicly available.[11]

9 https://rm.coe.int/protection-environnementale-en/16809fb087.
10 https://rm.coe.int/protection-environnementale-en/16809fb087.
11 https://www.globalcovenantofmayors.org/what-is-our-mission/.

Prior to this, the EU's Covenant of Mayors for Climate and Energy initiated at EU level and later spreading beyond the EU's borders, brought together thousands of local governments voluntarily committed to implementing EU climate and energy objectives. The initiative now gathers over 9 000 local and regional authorities across 57 countries drawing on the strengths of a worldwide multi-stakeholder movement and the technical and methodological support offered by dedicated offices.[12]

A further initiative at EU level is the Green City Accord put in place in 2019 by the European Commission and implemented together with Eurocities, in order to mobilise cities to take environmental action in five specific areas by 2030. By signing the initiative, cities are committing to improving air and water quality, protecting biodiversity, reducing noise pollution and promoting the circular economy. The cities will report on their actions on a regular basis; the idea is to also spread good practices throughout the network.[13]

Lastly, it is worth mentioning the Council of Europe Committee of Ministers Recommendation No. R (96) 12 on the distribution of powers and responsibilities between central authorities and local and regional authorities with regard to the environment. Dating back to 1996, this recommendation already included tangible responsibilities and powers for local and regional authorities concerning environmental protection, such as authorising local and regional authorities to include environmental criteria in their tender specifications, drawing up strategies for preventing and fighting air and watercourse pollution, sustainable separate collection of household waste, developing urban transport networks or promoting and protecting the creation of green areas within urban environments.[14]

The Council of Europe's Steering Committee for Human rights (CDDH) published a *Manual on Human Rights and the Environment* (2006). It was republished in 2012 and the CDDH is currently working on updating the manual, as well as on the possibility of elaborating a draft non-binding instrument in this field.

DID YOU KNOW? THE UN SUSTAINABLE DEVELOPMENT GOALS AND THEIR APPLICATION AT THE LOCAL AND REGIONAL LEVEL

The Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". They were set by the UN General Assembly in 2015 and are to be achieved by 2030 (so-called "2030 Agenda"). The 17 SDGs are: (1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry, Innovation and Infrastructure, (10) Reducing Inequality, (11) Sustainable Cities and Communities, (12) Responsible Consumption and Production, (13) Climate Action, (14) Life Below Water, (15) Life On Land, (16) Peace, Justice, and Strong Institutions, (17) Partnerships for the Goals.

All SDGs have targets that are directly or indirectly related to the daily work of local and regional governments. Local and regional authorities should not be mere implementers of the agenda. They are policy makers, catalysts of change and the level of government best placed to link the global goals with local communities and territorial realities. It has thus been affirmed by the UN's global consultations, that "localising" the UN SDGs is a powerful driver of sustainable inclusive territories that can unite efforts and improve efficiency and delivery of the SDGs at national and international level. Localising the SDGs relates both:

1. to how local and regional authorities can support the achievement of the 2030 Agenda through bottom-up action;
2. to how the SDGs can provide a framework for local development policy.[15] Among other initiatives, a "Toolbox for localising the SDGs" has been launched in partnership with the United Nations Development Programme (UNDP) and United Nations Human Settlements Programme (UN-Habitat).

12 https://www.covenantofmayors.eu/about/covenant-initiative/origins-and-development.html.
13 https://ec.europa.eu/environment/topics/urban-environment/green-city-accord_en.
14 https://rm.coe.int/native/09000016804e0374.
15 https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=754&menu=3170.

COMMON LEGAL FRAMEWORK ON THE PROTECTION OF THE ENVIRONMENT

The deterioration of the environment and climate change have accelerated the urgency for the emergence of a new generation of human rights: the right to a clean and safe environment. The need for a paradigm shift from environmental protection as a simple policy measure to a self-standing human right to the environment has emerged and many national, regional, and international efforts have been intensified towards this end.

At this stage, there is no unified definition of such a human right and different countries have varying levels of protection. Nonetheless, the intensified efforts for the recognition of a self-standing right to a healthy, clean, sustainable, and safe environment have led to important steps and initiatives at all levels.

Aim: a healthy environment not just as a simple policy measure, but as a self-standing right

Regarding the system of the Council of Europe, the European Convention of Human Rights and its protocols, as well as the European Social Charter do not expressly guarantee the right to a healthy environment. Even though the European Convention on Human Rights does not enshrine a right to a healthy environment as such, the European Court of Human Rights has been called upon to develop its case law in environmental matters.

The exercise of certain rights enshrined in the European Convention of Human Rights may be undermined by the existence of harm to the environment and exposure to environmental risks. Rights such as the respect for private life or for home were applied by the Court to the nuisance of urban development or to industrial pollution that affected personal health or well-being. What is more, the Court recently received its first cases on climate change mitigation.[16] What is more, the Parliamentary Assembly of the Council of Europe is already working towards a green protocol or convention.[17] The joint declaration of Georgia, Greece and Germany, Presidencies of the Committee of Ministers, calling for the elaboration of a legal instrument on environment and human rights,[18] should also be highlighted.

FAKE NEWS

Rights to environment are not subject to trial in a court of law.

FACT

The European Court of Human Rights has already ruled on hundreds of environment-related cases. The court's case law provides for an indirect protection of the right to environment by sanctioning environmental violations which are also infringing human rights recognised in the European Convention on Human Rights.

16 https://www.coe.int/en/web/portal/-/human-rights-and-climate-change-what-role-for-the-european-convention-on-human-rights-.
17 Work of PACE (updated December 2020): https://rm.coe.int/pace-environment-and-human-rights/1680a09269.
18 https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=09000016809e59f9.

DID YOU KNOW? LEGAL FRAMEWORK ON HUMAN RIGHTS AND THE ENVIRONMENT

INTERNATIONAL FRAMEWORK

- **The 1972 Stockholm Declaration** (Declaration of the United Nations Conference on the Human Environment, adopted on 16 June 1972 in Stockholm) includes as a very first principle the human-centric nature of the responsibility to protect the environment. It poses the concept that "[m]an bears […] a solemn responsibility to protect and improve the environment for present and future generations".
- **The 1981 African Charter on Human and Peoples' Rights, also known as the Banjul Charter** (adopted in Nairobi (Kenya) on 7 June 1981), provides that "[a]ll peoples shall have the right to a general satisfactory environment favourable to their development" (article 24).
- **The 1985 Vienna Convention for the Protection of the Ozone Layer**, in which states agree to co-operate in scientific assessments of the ozone problem, exchange information, and adopt measures to prevent activities which harm the ozone layer. It was complemented by the **Montreal Protocol** (1987).
- **The 1992 Convention on Biological Diversity** (adopted in Rio de Janeiro (Brazil) on 5 June 1992) is conceived as a practical tool that recognises that biological diversity is not only about plants and animals, but also about people. It takes into account economic interests as well as equity and focuses on the process of sustainable development.
- **The 1992 Rio Declaration on Environment and Development** was adopted on 16 June 1992 at the United Nations Conference on Environment and Development. While no provision explicitly addresses human rights, some principles ensure the right to equitable development, the need for public access to environmental information and the right to a life in harmony with nature.
- **The 1994 UN Framework Convention on Climate Change**, ratified by 197 countries, with the aim of protecting the climate system from "dangerous" human interference is currently operationalised by the **Kyoto Protocol** which sets binding targets for emission reduction in industrialised countries.
- **The 1998 Aarhus Convention** (UN Economic Commission for Europe (UNECE), adopted on 25 June 1998 in Aarhus, Denmark) relates to public access to information, public participation in decision making and access to justice in environmental matters.
- **The 2011** "**Analytical study on the relationship between climate change and human rights**" (presented at the UN General Assembly Human Rights Council on 16 December 2011) is a report of the UN High Commissioner for Human Rights stating that measures to address climate change should be informed and strengthened by international human rights standards and principles.
- **The 2016 Paris Agreement** contains the first mention of human rights in a climate change/global environmental treaty. Every five years, each country has to submit an updated national climate action plan (Nationally Determined Contribution).
- **The 2018 UN Framework Principles on Human Rights and the Environment** set out obligations of states under human rights law relating to "the enjoyment of a safe, clean, healthy and sustainable environment".

EUROPEAN FRAMEWORK

Although the European Convention on Human Rights and the European Social Charter are not designed to provide general protection of the environment as such, certain entities and legal instruments have been invoked to help make progress on environmental issues.

- **The European Court of Human Rights** has so far ruled on 300 environment-related cases, applying concepts such as the right to life, free speech and family life to a wide range of issues including pollution, man-made and natural disasters, and access to environmental rights. The Court's case law provides for an indirect protection of a right to environment by sanctioning only environmental violations which, at the same time, are also infringing other human rights recognised in the Convention.
- **The Revised European Social Charter** "indirectly offers a certain degree of protection with regard to environmental matters."[19] Article 11 of the Revised Charter recognises that "[e]veryone has the right to benefit from any measures enabling them to enjoy the highest possible standard of health attainable". The right to health has been interpreted as including

19. https://www.echr.coe.int/librarydocs/dh_dev_manual_environment_eng.pdf.

the right to a healthy environment, as it also includes the state's obligations to reduce and eliminate environmental pollution.

- **The Council of Europe's 1993 Lugano Convention** is a Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (also referred to as Convention No. 150). This aims at providing for means of prevention and reinstatement, and states that the damage can occur not only regarding the environment itself, but also with persons (loss of life or personal injury).
- **The Bern Convention on the Conservation of European Wildlife and Natural Habitats** (adopted in 1979 in Bern, Switzerland) is the first international treaty to protect both species and habitat, bringing countries together to decide on common actions towards nature conservation and natural heritage.
- **The European Landscape Convention** (also known as the Florence Convention, adopted in 2000 in Florence, Italy) is the first international treaty to be exclusively devoted to all aspects of European landscape, covering natural, rural urban and peri-urban areas, and putting people at the heart of landscape policies.
- **The European and Mediterranean Major Hazards Agreement** (set up by the Committee of Ministers of the Council of Europe in 1987) is a platform for co-operation in the field of major natural and technological disasters, covering disaster risk reduction, in particular, knowledge, prevention, preparedness, risk management and post-crisis analysis.
- **The 1998 Strasbourg Convention on the Protection of the Environment through Criminal Law** (adopted on 4 November 1998 in Strasbourg, France) proposes a model of harmonisation and co-operation, setting a common criminal policy aimed at the protection of the environment.

HOW CAN LOCAL AND REGIONAL AUTHORITIES PROTECT THE ENVIRONMENT AND PROMOTE SUSTAINABLE DEVELOPMENT?

Environment stands for the totality of all the external conditions affecting the life, development, and survival of an organism. In other words, it includes the naturally produced physical surroundings on which humanity is entirely dependent in all its activities.[20]

Sustainable development has been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It refers to the many processes and pathways to achieve sustainability, which in turn is a paradigm for thinking about the future in which environmental, societal and economic considerations are balanced in the pursuit of an improved quality of life.[21]

Life and well-being on our planet is contingent on humanity's collective capacity to guarantee both human rights and a healthy environment to future generations.[22]

Municipalities and regions have already been very active in this fields, in particular in the areas of energy performance and efficiency, environmental management and waste collection, green urban areas and sustainable land use, water consumption, eco-innovation and sustainable employment, biodiversity, local transport and many more. Sustainable and green procurement is also an area of action of local and regional governments, which entails making sure that products bought and services offered achieve not only value for money, but generate benefits for the environment, society and the economy. Lastly, "green blue urban grids" reduce the effects of climate change and the energy and food shortages in urban areas. This type of urban planning offers more room for the development of biodiversity and a healthier, more attractive living environment[23] and make cities more sustainable, resilient and climate proof.[24]

In Estonia, for example, the local community sector has started developing a green municipality model to transform their activities to a sustainable basis. The City of Rotterdam (The Netherlands) has introduced electric garbage trucks to perform waste collection while emitting less.[25] The City of

20. https://stats.oecd.org/glossary/detail.asp?ID=813#:~:text=The%20environment%20is%20the%20totality,dependent%20in%20all%20its%20activities.
21. https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd#:~:text=Sustainable%20development%20is%20the%20overarching,to%20meet%20their%20own%20needs.%E2%80%9D.
22. Council of Europe Committee of Ministers' declaration, 27 February 2020.
23. https://climate-adapt.eea.europa.eu/metadata/portals/urban-green-blue-grid-adaptation-measures-catalogue#:~:text=Green%20blue%20urban%20grids%20reduce,food%20shortages%20in%20urban%20areas.&text=It%20also%20features%20Green%2Dblue,to%20various%20goals%20and%20parameters.
24. https://www.urbangreenbluegrids.com/about/introduction-to-green-blue-urban-grids/.
25. https://eurocities.eu/stories/looking-to-the-future-with-electric-garbage-trucks/.

Gothenburg in Germany is putting in place a new programme to make the city greener by using a "digital twin" virtual simulation tool on the impact that green solutions would have on people and local communities. The city sees "green" issues as social issues because it requires that all people and local companies are on board to make it work. Utrecht (The Netherlands) has accelerated investments in the city's "Healthy Urban Living for All" strategy linking up investing in a healthy urban environment and social infrastructure, while at the same time saving jobs and helping people go back to work. The Kinn municipality (Norway), jointly with municipal and regional enterprises and a start-up company, has installed a super charger for electric boats available to citizens, businesses, transport companies and commercial vessels. With just over 20 minutes to charge a battery from 20 to 80% capacity, the solution is of interest to larger harbours in Bergen and Oslo (Norway). Middelburg (The Netherlands) has applied an adaptation proposal for its buildings utilising wind energy, new designs, and blue-green infrastructure possibilities. "Retro-fitting urban areas to be greener and more adaptive is an essential part of establishing climate-proof cities, new urban extensions and greenfield developments", according to its Mayor.[26]

DID YOU KNOW? EUROPEAN GREEN CAPITAL AWARD

The European Green Capital Award is the result of an initiative taken by 15 European cities (Tallinn, Helsinki, Riga, Vilnius, Berlin, Warsaw, Madrid, Ljubljana, Prague, Vienna, Kiel, Kotka, Dartford, Tartu and Glasgow) and the Association of Estonian cities on 15 May 2006 in Tallinn, Estonia. The initiative was launched by the European Commission in 2008.

From 2010, one European city is selected each year as the European Green Capital of the year. The award is given to a city that:

- has a consistent record of achieving high environmental standards;
- is committed to ongoing and ambitious goals for further environmental improvement and sustainable development;
- can act as a role model to inspire other cities and promote best practices to all other European cities.

The winning cities to date include: Stockholm in 2010, Hamburg in 2011, Vitoria-Gastiez in 2012, Nantes in 2013, Copenhagen in 2014, Bristol in 2015, Ljubljana in 2016, Essen in 2017, Nijmegen in 2018, Oslo in 2019, Lisbon in 2020 and Lahti in 2021. All are recognised for their consistent record of achieving high environmental standards and commitment to ambitious goals.

Source: https://ec.europa.eu/environment/europeangreencapital/.

KEY CHALLENGES

Beyond the legal challenges of codification and the different understandings of human rights related to the environment and sustainable development, local and regional authorities face further challenges regarding the implementation of a human rights approach to environmental protection, some of which are listed below.

1. ACCESS TO EXPERTISE AND KNOW-HOW, FINANCIAL AUTONOMY: subnational levels of government often have difficulty obtaining the necessary information, know-how and funding to streamline climate and sustainability efforts into their policymaking. Therefore, the exchange of best practices, the open communication among cities and the creation of replicable initiatives are crucial.

2. LINKS BETWEEN DIFFERENT LEVELS OF GOVERNMENT AND TRANSPARENCY: it is important to make sure that the actions and efforts of cities and regions are recognised and are considered at national level where equally ambitious climate targets are set by authorities. Similarly, local and regional actors should have the capacity and competences to contribute to national and European climate and sustainability targets.

3. CHALLENGES RELATED TO THE INCLUSION OF ALL PARTS OF SOCIETY: as explained above, environmental degradation has a disproportionate effect on the poor and the most vulnerable and it amplifies inequalities, violence and discrimination. The great challenge for local and regional

26. https://www.coe.int/en/web/human-rights-rule-of-law/speech-by-h.-bergmann.

policymakers is to draft policies that address and engage with the most underprivileged and marginalised citizens, also when it comes to environmental conscience.

4. INDIVIDUAL RESPONSIBILITY: finally, a big challenge is addressing individual responsibility; alongside local authorities' action, citizens' participation is essential. Active engagement and commitment from civil society is needed to make the intergenerational urgency of the environmental and climate matters understood and applied by all.

Remember: Human rights protection and the promotion of democracy can contribute in a meaningful way to saving the environment, improving access to information, public participation in decision making and access to justice!

CHAPTER TWO: MOBILITY AND TRANSPORT

DEFINITION

Mobility is one of the greatest environmental challenges that we are facing today. To uphold our societies and economies, people require intricate transportation networks: cars, buses, trains and so on. These and other means of transport leave their mark on the environment. Around one quarter of global CO_2 emissions come from transport of people and goods. Today, creating sustainable transport solutions is key to creating a more environment-conscious future. Cities and regions are today at the forefront of this challenge, but it is also a great opportunity to develop low-carbon cities and regions.

Ever more, cities are taking on this challenge and creating solutions to mitigate climate change and creating climate-safe cities. In this section we include all efforts and initiatives of local and regional authorities to update their public transportation system to reduce pollution, as well as all the efforts to provide mobility alternatives to high-emission vehicles, such as locally funded bicycles.

DID YOU KNOW?

Fine particulate matter air pollution is the largest environmental risk to health worldwide. Ambient and household air pollution have a wide range of health effects: respiratory illness, heart diseases, strokes, lung cancer or the onset of asthma for children. In 2020, air pollution was responsible for over 6 million deaths worldwide. The means of transport that we use today are important contributors to the pollution of the air of our cities.

1. A WORLD-CLASS TRANSPORT SYSTEM – BURGAS (BULGARIA)[27]

Population: 202 766

Burgas is a transport pioneer in South-East Europe. Launched in 2009, the 'Burgas Integrated Urban Transport Project' consists of several components and covers various areas of urban transport. Burgas's ambition is expected to completely transform the existing transport system, and significantly improve the transport services offered.

The city has put in place a concrete mid-term investment plan to modernise its public transport system and increase its energy efficiency through a variety of methods. This integrated transport system is complemented by other measures aimed at promoting alternative transport modes and decreasing greenhouse gas (GHG) emissions from transport: a bike sharing system, new cycling routes (over 30 km) and walking routes, improvements in pedestrian crossings and a new parking management system. Once all these project elements are in place, the city will launch an extensive public awareness campaign to promote both the new bus network and other friendly transport modes. The integrated transport project will improve the attractiveness of public transport through increased accessibility and passenger capacity, and through reduced travel time. It will also support metropolitan functions in Burgas and significantly contribute to reducing CO_2 emissions and air pollution. So far, the results show that over 1 500 tonnes of GHG emissions per year are saved and that public transport use has been increased: in 2013, 33.6 million trips per day were made by public transport.

Contact
Ruska Boyadzhieva, Expert Project Manager, City of Burgas (Bulgaria)
r.boyadzhieva@burgas.bg

2. ART AND PUBLIC TRANSPORT SERVICE, DUBULTI ART STATION – JŪRMALA MUNICIPALITY (LATVIA)

Population: 49 687

In 2015, the lending co-operation agreement between Jūrmala City Council and the state joint stock company "Latvijas dzelzceļš" (Latvian Railway) and the co-operation agreement with the "Culture Forum" foundation were concluded in order to establish a venue for contemporary art

27. https://nws.eurocities.eu/MediaShell/media/Burgas_public%20transport%20vision.pdf.

activities in Dubulti railway station. Currently, Dubulti art station performs two functions: it gives access to contemporary art for its citizens and visitors, and it provides public transport services. Thus, not only does it implement the EU initiative, New European Bauhaus – preservation of existing buildings and provision of new additional functions – but it is also a step towards urban environment preservation and sustainable and green thinking development.

One of the oldest railway connections in Latvia, Riga–Tukums was opened in 1877; the same year Dubulti railway station was established. Dubulti station has been operating for 144 years and even today, is one of the main railway stations in Jūrmala. Riga–Dubulti was the first electrified train line in Latvia, opened in 1950. The current station building was built in 1977. It is a modernist style building which, with its laconicism and spaciousness, is suitable for contemporary art exhibitions.

As the digital age reduces the need for onsite services, many railway stations are starting to lose their importance and buildings may be left unmanaged in the near future. In order to maintain the basic function of the station and preserve the existing building, an art gallery has been created at Dubulti railway station, where passengers can buy their tickets and enjoy the exhibition while waiting for their train. Dubulti art station is an excellent example of how to develop the European Green Deal and to promote environment-friendly public transport – adapting existing buildings to new and innovative functions and giving them a new life, instead of constructing new buildings.

Dubulti art station is the only contemporary art gallery in Europe located in a working railway station. Thanks to art exhibitions and other events held here, the station has become an extraordinary place of public life and cultural events in Jūrmala with an international resonance. Exhibitions have included the international contemporary art exhibition “Transfers/Between Memory and Imagination”, virtual reality artist Gints Gabrāns’ virtual reality exhibition “Grand Final Opening” and, within the framework of the international Riga biennale RIBOCCO1, the interactive exhibition “The Sensorium: A Laboratory for the Deceleration of the Body and a New Politics of the Senses” (curated by Solvej Helweg Ovesen). Dubulti art station also hosts annual readings of contemporary prose. During these events every visitor of the railway station can get involved in creating common prose works. Every year, Dubulti art station hosts an average of three or four art exhibitions with a wide range of thematic events and creative workshops for children and adults.

Contact
Ieva Šponberga, Head of Tourism and Business Development Unit, Jurmala City Council (Latvia)
+37/126 39 93 42
ieva.sponberga@jurmala.lv

3. SUSTAINABLE URBAN MOBILITY PLAN AND CITIZEN INVOLVEMENT – KRUŠEVAC (SERBIA)[28]

Population: 127 429

Kruševac is the first city in Serbia to adopt a sustainable urban mobility plan (SUMP) 2017- 30, based on EU methodology, with various local stakeholders being involved. The involvement of citizens from the beginning of the planning process has been very important, because in this way the city receives quality ideas, which are not necessarily expensive to implement, and which can significantly improve the citizens’ quality of life: the main goal of the SUMP.

The document drafting followed the EU methodology (the SUMP) and various stakeholders were involved, through work in working groups, workshops, surveys and other promotional events. The catalyst for the SUMP development process was European Mobility Week (#MobilityWeek) in 2015, when the event was fully celebrated for the first time (promotion of permanent measures, activities during all seven days and celebration of the Car Free Day). During the entire event, the city centre was closed to motor traffic every evening. Based on very positive reactions, this traffic regime was applied and extended to each following year of the event, and in 2019, the city centre was closed to motor traffic every evening from mid-April to mid-October. In this way citizens, but also decision makers and planners, are able to see what the city centre looks like when it is closed to vehicles, and how the same area can be used in a different way. In the same year, a survey was conducted among the citizens, asking “How do you imagine the city centre in 2021?” and 11 different options were offered: from turning it into a pedestrian zone to keeping everything as it is. Considering that in 2021 Kruševac marked 650 years since its founding, the reconstruction of the central city square was planned. The results of the survey were published on the city’s website. Following this, a public competition was

28. https://krusevac.ls.gov.rs/wp-content/uploads/2020/09/poum_krusevac.pdf.

announced, and then the project documentation was prepared. Completion of the works is expected soon. Differing from the previous appearance of the city centre, there will now be more space for pedestrians and cyclists, the existing pedestrian zone will be expanded and connected to the square, sidewalks have been widened and tactile paths have been installed. Bicycle paths have been built, and street parking spaces are being abolished. A public garage has been built.

Contact
Jelena Nikolić, Regional expert for sustainable urban mobility (Standing Conference of Towns and Municipalities SKGO), Advisor for sustainable urban mobility and energy efficiency, City of Kruševac (Serbia)
jelena.nikolic@krusevac.rs

4. "I DRIVE GREEN" – KRISTIANSAND MUNICIPALITY (NORWAY)

Population: 111 634

"I Drive Green" is an annual awareness-raising campaign carried out by Kristiansand municipality on behalf of the transport authority in the Kristiansand urban area. Since its beginnings in 2010, some 14 000 people have participated. The purpose is to reduce GHG emissions, improve public health and limit local pollution.

The campaign consists of a competition where individuals register green travels, and a business competition in which large and small private and public companies compete to be best in terms of green travelling. The municipality collaborates with a variety of ambassadors from the sporting world and public life to create awareness and to mobilise as many participants as possible. Points are awarded, as follows, per trip taken walking, cycling or using public transport as well as per car-free day or flight-free month:

- 1 point: a journey on foot, by bicycle or bus/train (for example, travel from home to the store or to work);
- 2 points: a return trip on foot, by bicycle or by bus/train (for example, travel from home to work and back);
- 3 points: car-free day (regardless of the day of the week), which means you neither drive a car yourself nor are a passenger in a car or taxi;
- 15 points: flight-free month.

Points are registered in a dedicated "green app" or on a website.[29] A "sustainability meter" calculates how likely participants are to be sustainable week by week (12 points per week). To remain sustainable throughout the campaign period, one must earn at least 180 points. A sustainability curve changes from day to day, according to how many points a participant registers. Winners are chosen in different categories at the end of the campaign.

Contact
Aenne Ramm, Mobility advisor, Kristiansand Municipality (Norway)
+47/458 37 091
aenne.ramm@kristiansand.kommune.no

5. PROMOTION OF NON-MOTORISED TRANSPORT – ZARAGOZA (SPAIN)[30]

Population: 666 880

Cities all over Europe are now taking serious steps to promote cycling through a combination of measures to make it more convenient, attractive, and safe to choose the bicycle. Zaragoza shows impressive progress to date from an initial low level. This progress was achieved via a number of initiatives, such as increasing cycle tracks or launching a service for rental bicycles.

To promote non-motorised means of transport such as the bicycle, it is not enough to recommend its use. It is also necessary to build the necessary infrastructures and adopt other measures that can be welcomed by the citizen. Everybody must be able to use it for travelling in the city without risk and without becoming an obstacle to pedestrians. Therefore, a range of measures for promoting and raising public awareness have been developed, in parallel with the implementation of infrastructure, to

29. https://jegkjorergront.no/Kampanje/Sporsmal-og-svar.
30. https://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2011/04/MDR0763Rp00013_Good-Practice_Final2.pdf.

integrate and promote the bicycle as a means of transport in the city. Two of these measures are the following.

- Cycle tracks have increased from 13 780 km in 2003 to 104 145 km in 2011 including the construction of independent cycle lanes. Separation of the cycle lanes is done using polythene pieces that make it easier to merge between road and cycle path as well as providing the correct street drainage.
- A public system of rental bikes has been launched. This now acts as an alternative means of transport for the people of Zaragoza. The Bizi service was launched on 28 May 2008. Currently, 130 stations have been built with 1 300 bikes.

According to European Commission data from 2014, some 41.5% of citizens in Zaragoza use a bicycle: 9.8% use it nearly every day, 9.5% at least once per week, 7.4% at weekends.

Contact
Jesus Giménez Pérez, Municipality of Zaragoza (Spain)
+34/976 72 42 00
dpto-ecologiaurbana@zaragoza.es

DON'T FORGET!

Not everyone can ride a bike and public transport is not always accessible for all. We need to make sure that buses, tramways, subways are accessible to the widest public possible, including disabled people. It is also important to make these spaces safe for women.

6. SMART MOBILITY – VIENNA (AUSTRIA)

Population: 1 897 000

Mobility and transport are of central importance for the people of Vienna. They essentially determine the quality of life of the citizens and are an important driver for a successful business location. The Smart City Wien enables comfortable, safe, barrier-free and affordable mobility for everyone, even those without a car. Motorised individual transport has the highest share of GHG emissions, causes further high environmental pollution (consumption of raw materials, air pollutants, noise) and takes up a lot of space in public areas. Therefore, mobility and transport must be comprehensively developed in the sense of the Smart City. The prerequisites for this are compact urban development and the expansion of efficient public transport in order to meet the mobility requirements of a growing metropolitan region. Vienna's transport policy is committed to "smart mobility".

The goal is to ensure that the Viennese get around quickly, safely and comfortably and that traffic is designed in a way that is compatible with the city and environment friendly. Traffic that is not necessary must be avoided. In the future, 80 % of all journeys should be made by environmental means (public transport, cycling or walking). S-Bahn, U-Bahn, tram and bus are the backbone of climate-friendly mobility in Vienna. Some 2.6 million passengers are counted daily. Public transport is supplemented by a range of minibuses, call taxis and micro-public transport. Therefore, public transport must be a priority in transport policy.

Functioning transport infrastructure is also a central prerequisite for economic development. In response to the coronavirus crisis, Vienna is focusing on smart and employment-intensive investments in transport infrastructure. The following levers are particularly employment- and value-creation-intensive:

- cross-city transport with high-speed trams;
- extension and acceleration of tram lines in urban areas;
- promotion of trams also in inner cities to implement the Clean Vehicle Directive, and the upgrading of streets;
- expansion and creation of e-city bikes also in suburban areas, densification of the network;
- targeted incentives for car-sharing providers (business area requirement by tender);
- City Bike Wien – modernisation and expansion into the outer districts.

The overall goal is to halve the number of car commuters by 2030 through, among other things, the long-term reduction of parking facilities for cars in public spaces, as well as Vienna's participation in the construction of Park & Ride facilities in Lower Austria. For more information, visit https://www.wien.gv.at/regierungsabkommen2020/smart-city-wien/smarte-mobilitat/.

Contact
Ulli Sima, Executive City Councillor for Innovation, Urban Planning and Mobility, City of Vienna (Austria)
ulli.sima@wien.gv.at

7. JOINT LOCAL TRANSPORT PLAN – BRISTOL (UNITED KINGDOM)

Population: 535 907
Clean air is a key priority for all cities across Europe. However, achieving clean air is a difficult task for cities due to the high levels of interaction with every other aspect of urban living. Bristol offers examples of how to improve the quality of local ambient air. Bristol's Air Quality Management Plan is now part of the Joint Local Transport Plan and covers the whole of Bristol City. Bristol has delivered a substantial programme of regulation, investment, highway management and promotional work to reduce pollution from transport in the city.

To date Bristol has improved traffic management and reduced emissions in the Air Quality Management Areas. It has reduced congestion, improved accessibility, as well as sustainability and quality of life. In terms of public information and engagement, Bristol is committed to public engagement on environmental issues and disseminates information on air quality through a variety of channels. The City regularly engages with citizens when changes are proposed to air quality action plans or when the Air Quality Management Area boundary is changed via a new consultation website called Citizen Space.

Contact
Cllr Kye Dudd, Cabinet member for Transport and Connectivity, City of Bristol (United Kingdom)
+44/11 79 03 67 01

8. MADRID ON THE MOVE – MADRID (SPAIN)

Population: 6 668 865

Madrid, which aims to reduce its GHG emissions by 65% by 2030, compared to 1990 levels, and to achieve climate neutrality by 2050, is one of the leading cities in Europe for the green transition. This ambition includes plans to transform the whole of Madrid into a Low Emission Zone, and promote micro and shared mobility.

Through the city's environmental sustainability strategy, "Madrid 360", which includes over 200 measures to improve air quality, as well as measures aimed at climate mitigation and adaptation, the city is more than doing its part to localise the European Green Deal. Examples are the historical expansion of BiciMad – public systems for the rental of electric bicycles, and the first free electric bus lines in the city: the Zero Lines (zero emission, zero costs for users), which have been running for almost a year in the centre of the capital. Such developments, together with the new pedestrian and cycling infrastructure, and the low emission zone, mean that the city is on track to meets its climate targets, while promoting sustainable mobility and public transport.

Contact
Francisco de Borja Carabante Muntada, Councillor, Delegate to the Area of Environment and Mobility, City of Madrid (Spain)
ag.ambientemovilidad@madrid.es

9. ENERGY-EFFICIENT BUSES – EDINBURGH (UNITED KINGDOM)[31]

Population: 537 000

As part of an ongoing strategy to reduce pollution in Edinburgh and its surrounding districts, Lothian Buses has invested substantially in measures to decrease the environmental impact of its fleet, helping to meet the City of Edinburgh Council's commitment to cut carbon emissions by 42%. Lothian Buses worked with Volvo over four years to bring hybrid bus technology to

31. https://nws.eurocities.eu/MediaShell/media/March15_Cities%20in%20action_Auld%20but%20not%20Reekie_Edinburgh.pdf.

Scotland. Hybrid buses are powered by a combination of battery and diesel, which means their engines run more efficiently, smoothly, and quietly than those of traditional buses.

The first 15 hybrid buses in Edinburgh went into service in 2011 on one of the city's busiest commuter routes. These buses operate with 35% lower fuel consumption, equating to a carbon reduction of 600 tonnes per year on this route alone. By the end of 2014, Lothian Buses had 65 hybrid buses in service, operating across Edinburgh's highest pollution areas, with 20 new double-decker hybrid buses on order.

Contact
Claire McVicar, Environmental officer, Lothian Buses
cmcvicar@lothianbuses.co.uk

RECOMMENDATIONS

- **CHOOSE** a green transport company for the public transport offer in your municipality or region (that is, a company that uses electric or hybrid buses).
- **PROMOTE** the use of bicycles by adding safe cycle lanes or creating a bike-sharing system.
- **IMPROVE** public transport attractiveness, notably through increased accessibility and passenger capacity.
- **ENCOURAGE** shared mobility such as carpooling when public transportation is not possible.
- **CREATE** incentives to promote the use of sustainable means of transportation, such as individual competitions and regards (as Norway has done).
- **LIMIT** the use of motorised vehicles within city centres during weekends.
- **PROMOTE** walking by introducing a rewards system involving local/small businesses which offer discounts based on a certain amount of walking achieved.

CHAPTER THREE: INFRASTRUCTURE AND HOUSING

DEFINITION

Infrastructure is the double-edged sword of the fight for the preservation of the environment. On the one hand, it is used to efficiently move people and commodities. However, it is most often used to control nature and extract resources. The way in which we shape the spaces we live in, by constructing buildings and other man-made constructions, has an indelible impact on our natural environments. This is the reason why, in order to understand climate change, we also need to understand the role of infrastructure and housing on the environment. As the global population grows, the quantity and the scale of infrastructure is drastically growing as well. We need sustainable solutions to create spaces in which people and nature can co-habit in a sustainable manner.

This subsection discusses all initiatives related to the rebuilding and restructuring of public buildings, streets and general infrastructure to make it "greener", more energy-efficient, more sustainable and resilient in the long term.

REMEMBER

Social and racial inequalities have to be taken into account to understand and address energy use. Studies have shown that lowest income neighbourhoods have a much higher energy use per square meter, notably because of poorly insulated housing.

1. LOW CARBON DISTRICT – WARSAW (POLAND)[32]

Population: 1 765 000

Warsaw has plans for a low-carbon district, inspired by existing models such as Hammarby in Stockholm.[33] This will showcase energy-efficient planning, buildings, transport, waste management, water and wastewater management, and is the first of its kind in Poland.

The project features solutions on behalf of energy efficiency, the natural environment and low GHG emissions. It concerns the field's city planning, energy networks, building constructions, transport systems, waste, water and wastewater management. Successful low carbon district (blue-green grids) projects in other countries have encouraged stakeholders in Warsaw to develop a similar project. The city intends to finance the project with municipal and external funding and hopes to benefit from European co-financing. The project is in its early stages and full implementation is expected to take around 10 years. With energy standards updated frequently, it will be a challenge for Warsaw to meet the latest requirements when the project is finalised in 10 to 15 years' time.

Contact
Marcin Wróblewski, Chief Specialist, Infrastructure Department, City of Warsaw Municipality (Poland)
mwroblewski@um.warszawa.pl

2. SUSTAINABLE AND ENERGY-EFFICIENT LIVING IN MULTI-APARTMENT HOUSES - VALMIERA (LATVIA)

Population: 24 868

Valmiera is one of the most active Latvian municipalities promoting energy-efficiency improvements in residential buildings. Most of its 167 multi-apartment houses were built between the Soviet years and the 1990s. Despite this, 50% of these buildings have undergone a complete facade renovation, significantly improving their energy performance and restoring the buildings' engineering structures, so they can be in operation safely for longer.

Renovation of multi-apartment houses is a significant challenge in Latvia. Most of these houses are jointly owned by the apartment owners. Therefore, apartment owners need to agree on support for jointly performed renovation measures. Despite this, by 2009, when significant support from the

32. https://nws.eurocities.eu/MediaShell/media/Sep_Cities%20in%20action_Sustainable%20buildings_Warsaw.pdf.
33. https://www.urbangreenbluegrids.com/projects/hammarby-sjostad-stockholm-sweden/.

European Union's Structural Funds became available for improving the energy performance of the multi-apartment houses, the apartment owners had already renovated 10 buildings in Valmiera.
The municipal co-financing support has dramatically facilitated the renovation of buildings since 2013. It has also actively addressed and convinced city residents to launch energy-efficiency projects for residential houses, with 50% co-financing by EU funds.

Contact
Liga Biezina, Environmental communication specialist, Branding and Public Relations Department, Valmiera City Council (Latvia)
liga.biezina@valmiera.lv

3. SYSTEM FOR ADAPTIVE MANAGEMENT OF TRAFFIC LIGHTS IN FAVOUR OF CITIZENS – BELGRADE (SERBIA)

Population: 1 374 000

The City of Belgrade is in the process of realising a three-year project, "Procurement of equipment, design and establishment of a system for adaptive management of traffic lights in Belgrade",[34] through the modernisation of the light signalling system at 322 intersections on the street network of the city. Through the introduction of the zonal system of adaptive traffic management, numerous improvements in the functioning of the traffic system are expected, as well as benefits for citizens in environmental and safety areas. The project is currently being implemented at 95 intersections.

The system for the adaptive control of traffic lights in Belgrade uses the latest technology in this area. SX traffic light controllers stand out. They support 1 Watt technology of traffic light lanterns, which represents the greatest possible energy savings. A high number of intersections, some 274, will be under the control of the central system. In short time intervals, based on changes in traffic load registered through detector loops, the operation of traffic light controllers at intersections is optimised and aims to shorten travel times and reduce traffic jams. Local detector work will be applied at 48 intersections, where the service of certain approaches to intersections will be determined depending on the registration of vehicles through detector loops at the approaches to individual intersections. One characteristic of this system is that it gives priority to public transport vehicles. Each tram will be equipped with a Stream onboard unit (OBU) unit, which uses GPS to determine the position and a mobile network to send data to the central system. These data, processed in the central system, are then transmitted to the traffic light controllers which influence the green light to give priority to trams.

Via the introduction of the zonal system of adaptive traffic management, the most significant advantages will be reflected in: efficient use of existing capacities; increasing the reliability of the management system; promoting the use of public transport by shortening travel times by giving priority to public transport vehicles (or certain categories of vehicles); higher energy efficiency due to reduced electricity consumption; positive impact on the environment through the reduction of noise and exhaust emissions by forming traffic flows with minimal stops and shortening the time spent on the network; raising the level of safety of citizens by giving priority to vehicles of emergency services; improving network parameters of traffic flow: reducing travel time, minimising stops, reducing exhaust emissions and utility noise, reducing costs and transport users and service providers in Belgrade. The impact on citizens is reflected in: reduction of travel time for all motorised movements, so that citizens save time (10 to 15%); use of pedestrian announcement buttons, optimising pedestrian waiting time at traffic lights; giving priority to emergency vehicles, significantly increasing the level of general safety of all citizens, because it reduces the response time of emergency services; reduction of harmful gas emissions from traffic, affecting the environmental aspect for all citizens.

Contact
Ognjen Todorović, Head of the Department for Urban Mobility, City of Belgrade (Serbia)
ognjen.todorovic@beograd.gov.rs

DID YOU KNOW?

Housing underproduction can lead to more air pollution linked to mobility. The further houses are located from the workplace, the greater the use of cars to commute.

34. https://www.beograduzivo.rs/info/saobracaj/da-li-znate-gde-su-u-beogradu-pametni-semafori-i-kako-se-aktiviraju-njihovi-senzori/.

4. PRESERVATION AND DEVELOPMENT OF CULTURAL HERITAGE ALONG THE RIVER DAUGAVA – JEKABPILS (LATVIA)

Population: 40 790 (inhabitants of the newly formed Jēkabpils municipality as of 1 July 2021)

The municipalities of Jēkabpils, Koknese and Ogre, which lie along the river Daugava, set up a project with the aim of preserving, protecting and developing, in a sustainable way, their most important cultural and natural heritage monuments: Krustpils Castle in Jēkabpils city, the ruins of the medieval Koknese Castle and the Ogre sanatorium. These cities have made a lot of progress in achieving impressive results, preserving historical values and enhancing the quality of tourism while protecting the environment.

The results of this project were the sustainable and environment-friendly restoration of three historical heritage sites:

1. renovation of Krustpils Castle, specifically the main building and facade, as well as the courtyard, and reconstruction of the fountain and garden;
2. conservation and improvement works of the state cultural monument, the Koknese Castle ruins;
3. restoration of the roof structure of the Ogre sanatorium and A. Cīrulis's mural paintings, and creation of the infrastructure of the Ogres Zilie Kalni nature park.

Of particular note, Krustpils Castle experienced the most extensive restoration of its history. Eighteenth century murals have been restored and an exhibition on the city's history has been set up in seven rooms. On the second floor of the building, the historic premises have been renovated to accommodate cultural events. The castle garden has also been restored, with a fountain in its historic location. Jēkabpils municipality invested in renovating the hunting hall and wardrobe, as well as in furniture for educational classes.

Investments in the facilities ensure that the socio-economic benefits outweigh the costs of maintaining the facility, as the planned activities promote the long-term preservation of cultural and natural heritage sites and their sustainable development and attendance. The project supports various sectors of the economy, thus ensuring local business development, an increase in municipal revenues and an increase in the number of visitors to the sites and destinations. Following the project, the quality of the environment and life of the inhabitants, as well as the visitors' experience, were significantly improved.

Contact
Inese Vītola, Project Manager, Jēkabpils municipality (Latvia)
+371/65 20 74 23
inese.vitola@jekabpils.lv

5. "ZOOM IN ON YOUR ROOF": RAISING AWARENESS OF LOFT INSULATION – ANTWERP (BELGIUM)[35]

Population: 1 042 000

"Zoom in on your roof" used a thermographic satellite map of the city to highlight the importance of household energy efficiency and roof insulation to Antwerp's residents. Launched in 2009, residents are able to "zoom in" on their own roofs. Different colours on the map indicate the insulation quality of the roofs, with blue and green meaning the most efficient, and orange and red, the least. To complement the map, which is available on an interactive website, the city hosts demonstrations, offers personalised advice on financing available to homeowners, and provides a set of tools to support residents in achieving better household energy efficiency. The demonstrations also ensure that the project reaches as many citizens as possible, including those without internet access.

Raising awareness of roof insulation is just the first step. The city and regional governments have teamed up to offer grants to homeowners wishing to install new insulation. A total of €10/m^2 of insulation is available, with €6 coming from the regional government and €4 from the city. Extra incentives are available to those fitting organic insulation. A federal tax reduction of 30% also applies, to ease the financial burden. The city also advises on green loans, which are designed to finance energy saving investments in homes. For Antwerp's residents, these are available at up to €10 000 per housing unit or €50 000 for owners of multiple units. For residents wishing to become more eco-

35. https://nws.eurocities.eu/MediaShell/media/Cities%20in%20action-%20zoom%20in%20on%20your%20roof.pdf.pdf.

friendly, these loans offer an attractive deal, with low, or even non-existent interest rates and a payback period of 60 months. By May 2012, 1 500 green loans had been awarded.

Studies have revealed that the "zoom in on your roof" campaign is popular among Antwerp's residents. The project has led to a significant increase in requests for insulation grants, scans and energy loans and the thermographic map is an excellent tool to support and complement Antwerp's environmental policy at a city level. A total of 423 603m^2 of roof area has been insulated, putting the city on the right footing to secure warmer homes for all residents by 2020. The city chose to repeat the project in 2013-14, addressing technical improvements such as improved resolution. Now other cities in Belgium, as well as five in France and one in Germany, are following Antwerp's lead – a sign that in some parts of Europe, coal deliveries will be down in December.

Contact
Luc Redig, Project co-ordinator, City of Antwerp (Belgium)
luc.redig@stad.antwerpen.be

DID YOU KNOW?

In 2019, the main use of energy by households was towards heating. It represented 64% of their final energy consumption. This is where we should cut our energy spending.

6. VENTSPILS MUSIC SCHOOL WITH CONCERT HALL – VENTSPILS (LATVIA)

Population of the city: 37 0571

As the result of the project, "Construction of a low energy consumption building of Ventspils Music School with Concert Hall", within the framework of the open tender of projects financed through the emission auctioning instrument, the city has acquired a unique building. Students and teaching staff of Ventspils Music School now work in a state-of-the-art building that was designed and constructed with the educational process in mind. The school is complemented by the acoustic Concert Hall, "Latvija".

Aside from the educational and artistic value that the project offers, the building features 13 low energy consumption solutions, making it one of the most environment-friendly buildings in Latvia.

1. Highly efficient energy recovery within ventilation systems: up to 85% of the energy used for heating the air is recovered.
2. Decentralised ventilation system: irregularly used rooms are fitted with mechanical ventilation equipment that reacts to CO_2 levels inside the room and provides heating and cooling.
3. Hybrid ventilation: large hall, small hall and lobby use natural ventilation to replace mechanical ventilation during periods of low intensity use. Natural air flows are supplied through geothermal channels where the air is heated during winter months and cooled in summer. This solution allows for the reduction of the energy consumption both for heating and air conditioning.
4. Highly efficient thermal insulation solutions: external walls, roof and floors of the building have been built observing principles of a passive building. Thermal bridges inside the building have been avoided as much as possible. External walls are built using massive construction materials, ensuring use of thermal inertia.
5. High performance windows: three-layer windows guarantee minimal heat losses.
6. Roof windows offer natural light in the main hall, limiting electricity consumption during daytime.
7. Intelligent control system provides for precise and logical control of the building as well as fast adjustment to the users' needs.
8. Climate and time information systems: information displays show data on temperature, CO_2 levels, humidity and time.
9. Blinds control system: working together with the climate and lights control systems, this system controls lights and microclimate inside the building depending on outside daylight and position of the sun relative to the horizon.
10. Digital Addressable Lighting Interface (DALI) lights control system offers options for automatic and manual control of internal and external lighting of the building.
11. Climate control system: two displays in the lobby show real-time information about energy-efficiency parameters, energy consumption, climatic conditions inside and outside the building.
12. Energy consumption registration systems: remote reading of water and electricity consumption.

13. Heat pumps system: geothermal energy supplied through heat pumps is one of the principal sources of energy for heating and cooling systems of the building.

Contact
Raido Blumbergs, Head of Investment Division, Institution of Ventspils City Council "Komunālā pārvalde" (Latvia)
+371/63 62 42 69
kom.parvalde@ventspils.lv

7. ENERGY-EFFICIENT HERITAGE HOUSING – TAMPERE (FINLAND)[36]

Population: 343 625

Tampere supports actions to make its heritage housing more energy efficient while assisting young people to gain the technical skills needed to carry out these works. Through showing the residents that these buildings can be made more energy efficient, it creates employment for these trained young people and means that older residents can remain in their homes longer.

Finnish national regulation states that any large refurbishments of a house must be accompanied by making it more energy efficient. This creates difficulties for elderly people who live in Tampere's heritage housing. To continue living independently in these houses they often need to make them more accessible and easier to maintain, for example increasing the size of a bathroom or toilet. However, these additional energy-efficiency measures are difficult to fulfil because of the shortage of skilled labour and because modern materials are not always compatible with heritage houses. It is also difficult to get information on how to make these old buildings more energy efficient while preserving their value. In addition to these issues faced by the elderly, all residents of heritage housing experience high energy costs and energy-inefficient buildings negatively affect the environment. Younger Tampere residents prefer to live in newer houses; yet building new homes creates more waste than refurbishing old ones.

Initially, a "Tampere Region Building Heritage" project was set up. It brought together organisations, schools, training centres, professionals and enterprises to find new ideas on how to repair the heritage buildings, while preserving their value. The project was managed by Ekokumppanit Oy (EcoFellows Ltd), a non-profit enterprise co-owned by the City of Tampere. The project activities included: exhibitions and workshops to encourage people to maintain the heritage buildings; showing a range of solutions and raising awareness on the value of the old houses; running an online database on different methods for making heritage housing more energy efficient, and teaching people to carry out some small-scale repairs by themselves, such as sealing the windows.

In 2013, some 1 262 people attended various meetings and events and the online database had around 1 000 visits per month. As a result of this programme residents of the heritage houses are better informed about how to carry out repairs and are able to find skilled labourers. This empowers them to remain in their homes instead of moving to care homes, improving their quality of life and saving on government institutional care costs.

Contact
Housing Department, City of Tampere (Finland)
+358/356 56 11
asuntotoimi@tampere.fi

8. ENERGY-EFFICIENT LIGHTING REPLACEMENT ON JOMAS STREET – JŪRMALA (LATVIA)

Population: 49 687

From 2019 to 2021, Jūrmala City Council implemented the Interreg Baltic Sea Region programme 2014-20 project, LUCIA. LUCIA brought together 11 partners from seven Baltic Sea Region countries. LUCIA helped municipalities in the Baltic Sea Region to unlock the enormous potential of energy-efficient urban lighting solutions. LUCIA partners installed modern LED lighting in six Baltic Sea Region cities to provide a tangible experience of its potential. The six LUCIA pilot sites were located in: Albertslund (Denmark), Hamburg (Germany), Jūrmala (Latvia), Porvoo (Finland), St Petersburg (Russia), Tallinn (Estonia). In Jūrmala, the illumination on roughly 1 km of the central pedestrian street, Jomas Street, was renovated. About 100 luminaires were replaced and smart motion sensors were installed in September 2021.

36. https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf.

Jomas Street, the central pedestrian street in Jūrmala, is a favourite meeting point, walking and recreation area for residents and guests. The street welcomes around 3 million people per year, offering a multitude of cafes and restaurants, as well as other services. Characteristics of the (pilot site) area include:

- approximately 1.1 km of pedestrian route;
- the pedestrian route on Jomas Street is located in the city centre, close to Majori train station;
- Jomas street festival is organised each year in honour of the pedestrian street;
- the pedestrian street is used by tourists and residents of Jūrmala city as many cafes, restaurants and hotels are located on Jomas Street.

Currently, there are 109 lampposts (3Na light bulbs x 70W) with ineffective and old lighting on the pedestrian street. Therefore, the aims of the pilot site project are:

- to make Jomas street more attractive for residents and tourists;
- to implement intelligent lighting;
- to increase energy efficiency by replacing old lighting.

Jomas Street has been selected as the demonstration site because of its significance in the development of Jūrmala's image. Improvements to the street lighting will benefit not only residents, but also tourists. Jomas Street is one of the oldest and central streets of Jūrmala with restaurants, summer terraces, hotels and cafes with live music. Some 109 lampposts will be replaced with energy-efficient LED lights, as well as lighting controls installed with motion sensors. The motion sensors will control the intensity of the lighting according to the movement and flow of pedestrians and will ensure electricity saving when pedestrians are not visiting Jomas Street. Jūrmala City Council will continue to own the investments for at least five years after the project end date, as Jūrmala City Council is the owner of the land and existing infrastructure in the planned project pilot site – Jomas Street. All lighting infrastructure is being maintained and managed by the municipal lighting company, Jūrmalas gaisma Ltd. Therefore, sustainability after completion of the pilot project, onsite, will be ensured.

Contact
Ieva Šponberga, Head of Tourism and Business Development Unit, Jūrmala City Council
+371/26 39 93 42
ieva.sponberga@jurmala.lv
More information about the project is available on the project homepage: https://lucia-project.eu/

9. SMART AND SUSTAINABLE BUILDINGS – VALENCIA (SPAIN)[37]

Population: 834 000

As part of the "Smart City Valencia" projects, the city is proposing a project aimed at a more modern and efficient management of up to 194 buildings and municipal facilities. In all these municipal spaces, the installation of internal and external environmental sensors is intended, which would allow atmospheric and light pollution, temperature, humidity, etc. to be monitored. Moreover, energy and water consumption sensors are to be installed, in order to ensure energy efficiency and economic savings.

Concretely, this initiative will involve sports facilities, municipal museums and markets, as well as school buildings. Some 58 sports facilities are to be involved, resulting in better management: maintenance, court and activity bookings, occupancy sensors to monitor access, thereby improving services offered and resulting in greater accessibility and comfort for the users. For 22 museums and monuments, the project intends to deploy an online ticket sales platform and a dynamic content display system, as well as options related to geolocation and augmented reality. In the case of 16 municipal markets, it is expected to be able to offer new services online by means of a platform from which customers, sellers and managers alike will benefit. Last but not least, 98 publicly-funded schools will benefit from an environmental awareness platform for the educational community, which will include online and app services (through the city app). In addition, other private schools that wish to join the initiative may be included.

Contact
Sandra Gómez López, Councillor for Urban Planning, City of Valencia (Spain)
+34/962 08 41 47
Contacta.vlci@valencia.es

37. Connecta VLCi: 194 smart buildings and municipal facilities (valencia.es).

10. MAPPING THE TREES – BILA TSERKVA (UKRAINE)[38]

Population: 209 238

The municipality of Bila Tserkva is dedicating efforts to create a safe, green and comfortable habitat for its citizens, but also to involve citizens in getting to know the green surroundings and infrastructure of the city. One of these efforts is the creation of an innovative interactive map of green areas in the city – "Smart Green Bila Tserkva". This map is available on both personal computers and as a smartphone app.

On the map, users can see the "passport" of a tree: species, age, condition, and a photo. It allows the easy addition of any tree to the register, and it helps develop current and long-term landscaping plans. Local authorities actively involve citizens in landscaping activities to jointly make the community more comfortable for everyone.

Contact

Smart green БЦ, Bila Tserkva city, Sheptyrkogo st. 2
+380/456 39 94 82
djkg@bc-rada.gov.ua

11. ONE TREE ONE BIRTH – MONACO CITY (MONACO)

Population: 38 350

Launched in 2008 at the initiative of the Municipal Council, this reforestation programme symbolises the environmental policy of the Monaco Town Hall. This project is part of the United Nations Environment Programme (UNEP) and the "Plant for the Planet" campaign sponsored by HSH Prince Albert II to plant a billion trees.

The principle is simple: for every birth registered in the Principality, the Monaco Town Hall commits to planting a tree near Monaco (Cap d'Ail, La Turbie, etc.). Every year, as many trees as children born during the previous year are planted, in collaboration with the France National Forestry Office and neighbouring municipalities.

In 2020, the operation counted more than 12 000 trees planted by the Town Hall.

Contact
Jérôme Bonnin, Editor, Service of the Communal Domain - Commerce, Halls and Markets, City of Monaco
jbonnin@mairie.mc

RECOMMENDATIONS

- **PROMOTE** energy efficiency in housing but also in public buildings through renovation and better insulation.
- **CHOOSE** contractors using sustainable materials, such as carbon-neutral cement, and constructing sustainable buildings reusing materials from older buildings.
- **INCREASE** the amount of greenery in your municipality or region by planting trees, creating or expanding park surfaces.
- **PROMOTE** rooftop gardens, accessible to people living in the building, not only for ordinary plants but as bee gardens, or food gardens to promote homegrown and local foods.
- **DEVELOP** accessible food-growing facilities that use reusable energy sources, such as LED lights powered from solar panels.
- **RENOVATE** buildings that include more greenery, such as buildings that have plants on their exterior walls, or city centres that have more greenery.
- **ENCOURAGE** pedestrian-friendly roads – more trees and fewer cars make it much more agreeable for both environment and for mental health.

38. Green Initiatives at Local Level: Best Practice from Ukraine - News & Events (coe.int).

CHAPTER FOUR: EMPLOYMENT, INCLUSION AND A SUSTAINABLE ECONOMY

DEFINITION

Having a green economy can create better jobs, promoting social inclusion and lifting people out of poverty. A green economy is defined as a "low carbon, resource efficient and socially inclusive economy"[39]. Both employment and social inclusion ought to be comprehensively linked to any sustainable development strategy. Employment is not only a societal challenge, but also an environmental challenge. Creating a sustainable economy means creating job opportunities for building a better and more sustainable future, inclusive of all people. Sustainable economies are place based, and also rely on public–private partnerships where the common goal is to create economic opportunities for all, with shared prosperity.

All practices under this section pertain to the creation of employment opportunities and, more generally, climate initiatives which include all members of society, including those who are the least privileged, and for example, green jobs.

DID YOU KNOW?

The concept of green growth

Green growth means fostering economic growth and development, while continuing to safeguard resources and environmental services for our well-being. Through green policies, we can have more and better jobs, which are respectful of the environment.

Although jobs may be lost in some sectors, new opportunities will more than make up for this. For example, for every job eliminated in energy-intensive and polluting industries, jobs will be created in emerging green sectors, like renewable energies.

1. EMPLOYMENT–ENVIRONMENT ALLIANCE (ALLIANCE EMPLOI–ENVIRONNEMENT) – BRUSSELS (BELGIUM)[40]

Population: 174 383

Improving the environment can be a source of job creation. It is towards this goal that the Brussels Government set up the Alliance Emploi–Environnement (Employment–Environment Alliance) (AEE) in 2010, a participatory and integrated approach designed to promote the improvement of the environment as a driver for economic growth and job creation for Brussels inhabitants.

The AEE has supported the development of 200 initiatives in four promising economic sectors: sustainable construction (since 2011), water (since 2012), sustainable food, and resources and waste (since 2013). The total budget set aside to implement the AEE amounted to €23 million for the four years of its implementation (2011-14). The sustainable construction, water, resources, and waste and sustainable food strands have benefited respectively from around 60, 20, 10 and 10% of this budget. The AEE pursues three objectives:

- to develop jobs for Brussels inhabitants, including for less-qualified people;
- to revitalise the Brussels economy by stimulating certain promising sectors in terms of economic activity and employment, and by supporting their development to make the transition to more sustainability and competitiveness; and
- to improve the environmental balance of the Brussels Region.

39. Green Economy | UNEP – UN Environment Programme.
40. https://www.environment.brussels/state-environment/report-2011-2014/environment-sustainable-city/focus-alliance-emploi-environnement.

An assessment of the AEE, carried out at the end of 2014/start of 2015, highlighted the relevance of the objectives pursued and the usefulness of the dynamic which had been initiated, as well as the general willingness of different actors to continue this initiative, albeit with some improvements.

Contact
Bruxelles Environnement, Avenue du Port 86C/3000, 1000 Bruxelles
+32/(0)27 75 75 75

2. INCLUSIVE LOCAL WASTE MANAGEMENT PLAN – ČAJETINA (SERBIA)

Population: 14 745

Open dialogue on the approaches to local waste management gives the opportunity to include and involve the multiple voices of residents and tourists. The municipality of Čajetina prepared a local waste management plan for the period 2019-28[41] with the main goal of creating permanent and sustainable conditions for providing a quality environment for the citizens and all its visitors. The plan brings significant changes to the concept of disposal of all types of waste generated in the urban, rural, tourist and transit part of the municipality. This plan took into account all the specificities of the municipality of Čajetina and the suggestions received in an open dialogue with a large number of interested groups, residents and tourists.

The waste management plan of the municipality of Čajetina is focused on waste prevention, safe management of all types of waste and reuse of waste as a resource. The changes it brings relate to the development of the communal infrastructure, procurement of communal equipment, the development of technological procedures in the disposal of all types of waste, consideration of the habits of all participants in the generation and disposal of waste, as well as the distribution of responsibilities of all stakeholders, especially in connection with increasing personal responsibility and responsibility of legal entities. In drafting the plan, the team in charge identified and consulted the opinions of all stakeholders. This included different categories of the population: pensioners, citizens of the local community, citizens' associations, representatives of the women's association, of hotels and restaurants on Zlatibor Mountain, representatives of local communities, representatives of meat processors and meat products, children of primary and secondary education, as well as parents of children of school and preschool age. Each workshop brought new insights into what citizens think about the existing waste management system, as well as their views on the primary selection of municipal waste at the point of origin. All collected data represented a serious basis for the development of a plan. Rural local communities have been very active in discussions on how to collect waste from their territories, which has contributed to the plan providing for two different ways of collecting waste and primary waste selection at the place of origin, one in rural areas and the other in urban environments. The draft was presented to representatives of local communities, the tourism industry, public sector employees, school-aged children, as well as employees of the public utility company, Zlatibor, which covers most activities. After the adoption of the local waste management plan, a brochure[42] was prepared summarising basic information on the content of this strategic document, which is distributed to all utility users, with new plans in the field of waste management.

Contact
Vera Blagojević, Head of Communal Service, JKP "Zlatibor", Čajetina (Serbia)
vera.blagojevic1983@gmail.com

3. CITTASLOW[43] NEIGHBOURHOOD PROGRAMME - IZMIR (TURKEY)

Population: 3 024 000

Developed with the Izmir Metropolitan Municipality and the International Cittaslow Association, the objective of the Cittaslow Neighbourhood Programme is to decentralise basic goods and services in the metropolitan cities and make the neighbourhoods more sustainable and self-sufficient. The programme aims to create Cittaslows in the metropolis where people can enjoy living, meet with each other, participate in cultural and sports activities, and live a healthy and secure life. The Covid-19 pandemic has demonstrated the inadequacy of many systems and structures. This pandemic has shed light on the centrality of urban life and design, the necessity of travelling great distances to survive in daily life, the scarcity of green spaces and of public spaces with a people-centred design. The Cittaslow Neighbourhood Programme will

41. http://www.cajetina.org.rs/sr/vest/predstavljen_lokalni_plan_za_upravljanjem_otpadom.
42. http://kjpzlatibor.rs/wp-content/uploads/2019/06/Cajetina-brosura-SKGO.pdf.
43. https://www.cittaslow.org/.

start with three pilot neighbourhoods in Izmir. Izmir Metropolitan Municipality is working with local universities, civil society and residents.

The Cittaslow Neighbourhood Programme has the following five primary objectives.

- Civic engagement: it is aimed that the residents of the neighbourhood not only participate in the decision-making processes, but also in the urban design. It is necessary to ensure the participation of every citizen without discrimination in cultural, artistic and sports activities.
- Interaction: public spaces will be redesigned for the residents of the neighbourhood to meet and organise activities.
- Health and safety: neighbourhoods will be made safer in line with the security perception of the residents, and standards will be raised in healthcare with holistic and preventive health practices.
- The identity of the city: the urban identity of the city will be strengthened, in order to increase social cohesion and spread social awareness. Through open workshops with local products and where traditional craftsmen will be based, the neighbourhood spirit and traditions will be passed on to new generations.
- Multifunctionality: single-functional neighbourhoods will be transformed into neighbourhoods that have tradesmen, employment opportunities, cultural, artistic and sports functions, and basic goods and services for people.

Contact
Mert Türkben, İzmir Metropolitan Municipality (Turkey)
+90/53 17 79 34 10
mertturkben@izmir.bel.tr

4. CLIMATE ALLIANCE BETWEEN THE BADEN-WÜRTTEMBERG REGION AND COMPANIES TOWARDS A GREEN AND SUSTAINABLE ECONOMY – BADEN-WÜRTTEMBERG (GERMANY)

Population: 11 070 000

Climate protection is a central, global challenge of the 21st century. The economy has a special role and responsibility. As one of Europe's leading economic regions, Baden-Württemberg wants to play a pioneering role in climate protection with the Baden-Württemberg Climate Alliance, a partnership between the state and companies. For example, on 14 October 2020, the State Parliament of Baden-Württemberg passed the "Act on the further development of climate protection in Baden-Württemberg", an amendment to the Climate Protection Act, which provides for the Ministry of the Environment to sign climate protection agreements on a voluntary basis with companies, which can thus document their climate protection efforts.

These climate protection agreements are part of the Baden-Württemberg Climate Alliance. In addition, companies are supported and accompanied on their way to extensive climate neutrality through the accompanying climate protection strategy, "Companies make climate protection".

As many companies in Baden-Württemberg as possible should implement corporate climate protection in a systematic and structured manner and significantly reduce GHGs. All corporate target groups (beginners, committed companies and pioneers) are offered new, tailored support, communication and networking concepts. In this way, sustainable and climate-neutral economic growth is supported while, at the same time, productivity and competitiveness is secured. Further information can be found at www.klimabuendnis-bw.de.

Contact
Stefan Böhm LL.M., Deputy Head of Unit, European Union and Petitions, Regional Parliament of Baden-Württemberg, Konrad-Adenauer-Straße 3, 70173 Stuttgart
+49/(0)711 20 63-357
stefan.boehm@landtag-bw.de

5. CITIZENS INVEST IN RENEWABLE ENERGY – EINDHOVEN (NETHERLANDS)

Population: 355 889

The City of Eindhoven is leading the way towards a more sustainable future, aiming to become energy neutral by 2045. To achieve this ambitious goal the city facilitates, motivates and inspires citizens to invest in local renewable energy production. Eindhoven encourages the participation of its citizens in renewable energy citizen co-operatives, such as the regional co-operative

MorgenGroeneEnergie (Green Energy Tomorrow). MorgenGroeneEnergie was founded in 2011 in the neighbouring City of Nuenen by two citizens. In two years, it has expanded to more than 500 members and extended to several neighbouring cities (including Eindhoven). Its members produce the energy they consume through small- scale renewable energy plants. The co-operative's profits or margins are used to keep the members' energy bills down and fund new renewable projects. The members jointly decide about new projects and investments.

The City of Eindhoven works closely with the MorgenGroeneEnergie co-operative to enable its citizens to take an active role in the production and supply of their energy. The residents of the Blixembosch neighbourhood in the centre of Eindhoven were the first to benefit from a new tax rule, providing tax deductions for co-operatively produced renewable energy in the consumers' neighbourhood. The City of Eindhoven provided the roof of the Blixemboschs community centre, and the MorgenGroeneEnergie built a solar park on it. The project was financed by the residents of Blixembosch and surrounding neighbourhoods. Each resident had the possibility to buy one or more of the 228 solar panels installed on the centre's roof, and in this way to produce the energy it consumes. Eindhoven aims to see more roof solar parks in the city, and it tries to motivate the residents of other neighbourhoods to invest in similar projects.

The local government can effectively facilitate and enable citizens' investments in renewable energy production. It can decrease the costs and risks of investment by offering public roofs for the installation of renewable energy systems. It can increase citizens' awareness on what a renewable energy co-operative is and how it operates, through its website, information events and pilot projects. It can also spread the experience gained by pilot projects through the production of manuals.

Contact
Janneke Karthaus, Heat Transition at Endhoven Municipality
j.karthaus@eindhoven.nl
MorgenGroeneEnergie: https://www.morgengroeneenergie.nl/

6. INCLUSIVE EMPLOYMENT THROUGH SUSTAINABLE PUBLIC PROCUREMENT – RENNES (FRANCE)[44]

Population: 354 000

Rennes Métropole is using social clauses in public procurement for its waste management activities to tackle long-term unemployment among low-skilled people. This approach establishes partnerships with social enterprises and leads to programmes with social added value. The city administration decided to set up a dedicated team, the "guichet unique des clauses sociales", that works across all the city departments as a single contact point and which assists in adding social clauses to the city's procurement activities. It has led to a gradual shift in how various departments in the city think about procurement. As a result, the city now has a strong internal partnership especially between the waste, public spaces and social departments that have developed a range of socially beneficial projects in waste management and in the upkeep of green spaces.

One example of a project coming from social clauses in public procurement policy is a tender in waste recycling carried out by a social enterprise called La Feuille d'Erable. The company is responsible for the collection and recycling of city waste. As part of the tender, La Feuille d'Erable also runs a "back to work" programme. People who face barriers to employment are hired for six to 24 months and receive additional training, career guidance and job search assistance. La Feuille d'Erable receives a state subsidy to cover additional costs related to the training and places a higher ratio of managerial staff on the "back to work" programme.

The social clauses in Rennes Métropole's public procurement contribute to supporting local social enterprises that assist 500 to 1 000 people annually in returning to the labour market. La Feuille d'Erable employs approximately 50 people through the "back to work" programme each year. Working for Feuille d'Erable, the beneficiaries develop new transferable skills, for example truck driving with onboard computing, waste sorting or customer service skills. As a result, around 60% of the beneficiaries each year are able to return to work or enter further training. The examples of permanent jobs that people find include truck driving, preparing shipments from warehouses, or in industry production chains.

Contact

44. https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf.

Nathalie Wright, Social and Solidarity Economy (SSE) Officer at the Department of Economy, Employment and Innovation, Rennes Métropole (France)
n.wright@agglo-rennesmetropole.fr
https://www.feuille-erable.fr/

7. GREENING THE COUNCIL AND BOOSTING EMPLOYABILITY – GLASGOW (UNITED KINGDOM)

Population: 1 673 000

Glasgow gives employment opportunities in the green sector to people with a low employability profile through a traineeship scheme with the city council. The scheme is also beneficial to the council as it is cost neutral and the savings from the reductions of the council's carbon emissions offset the costs of employment. The green wardens scheme is a traineeship programme within the council's Carbon Management Team (CMT). It aims to build up the skills and expertise of people who have been long-term unemployed; early school leavers, young people not in education, training or employment (NEETs), and people recently discharged from the Armed Forces, who need support in transitioning into employment outside of the military. It also provides the council with a motivated staff for its carbon-reduction projects.

The programme employs people as green wardens to work across various greening and sustainability projects in the core council services and arm's length external organisations (ALEOs). The scheme employs individuals on fixed-term contracts for up to one year, which is seen as a stepping stone to further employment. The green economy is continuously growing and Glasgow already has the highest concentration of renewable energy jobs in Scotland. The scheme is an investment in the future as it supports unemployed people to take advantage of new employment opportunities.

Glasgow city council also pays the green wardens a living wage. This is a forward-thinking trend in the UK. A growing number of local authorities pay more than the minimum wage, which is currently not high enough to cover living expenses. The council instead uses the living wage as a minimum benchmark, which is calculated according to the basic cost of living in the UK. This ensures quality employment. The wardens complete a two-week introductory training programme, which includes an induction to council activities and its carbon-reduction targets. Participants are also trained in using the council's energy management software, energy and waste surveying, and audit report writing. A dedicated management structure was also set up, including a human resource manager to oversee the programme and ensure people's individual needs are addressed. The manager's role involves recruiting the green wardens, training them, co-ordinating their support requests and deployment in an effective way, meeting regularly with the wardens, reviewing their work, and tracking the savings.

Contact
Andrew Mouat, Principal Officer Carbon Management, Glasgow City Council (United Kingdom)
andrew.mouat@glasgow.gov.uk

8. "#MERTZIG4ALL-GEMEINWOHL" (*L'ÉCONOMIE DU BIEN COMMUN*) – MERTZIG (LUXEMBOURG)

Population: 2 293

An interesting example of a holistic sustainable economy model comes from the municipality of Mertzig in Luxembourg. The project "#Mertzig4all-Gemeinwohl" (L'économie du bien commun) is based on an economic model by Austrian scientist Christian Felber. Mertzig is the first municipality in Luxembourg to engage in putting this model into practice. This "economy for the common good" model encompasses a variety of actions, all of them having a policy of values at their centre: human dignity, equal treatment, solidarity, social justice and cohesion, ecological sustainability, democratic co-determination. Some of the areas of action of this policy include: environmental protection in the supply chains, ecological responsibility of financial policy, promotion of ecological behaviour, environmental sustainability in the community, and responsibility for environmental impacts.

The municipality engages in a variety of measures to ensure that the economic model leads not only to prosperity, but also to longevity of the community, with social and sustainable goals at the forefront. Among other, Mertzig's authorities have elaborated ecological procurement guidelines to be published on their website. They prioritise procuring products that are eco-labelled or certified, also for the use in the municipal school canteen. The municipality also takes ecological criteria into account in the financing and budgeting process, with 66% of current investments including ecological and sustainability considerations. Moreover, the municipality is eager to promote and advocate for

ecological taxes, charges and fees so that they serve as a steering instrument for promoting environmentally conscious behaviour by citizens and businesses. A variety of other initiatives outlined in the report of Mertzig4all focus on the municipality employees. For example, by giving incentives for an increased use of bicycles, the municipality attempts to make the employees' commute to work greener. Through various other efforts, the project tries to instil a general ecologically responsible culture when it comes to diet and nutrition, waste management, protection of biodiversity and minimising negative effects on the climate. The initiatives are outlined in detail in the municipality's report (in French or German) here: https://www.mertzig.lu/mertzig4all/gemeinwohl/

Contact
Aender Schroeder, Communal Secretary, Mertzig Municipality (Luxembourg)
aender.schroeder@mertzig.lu
+352/83 82 44-311

RECOMMENDATIONS

- **CHOOSE** local companies to provide public services in your municipality or region.
- **IMPROVE** the waste management system in your municipality or region, for example by encouraging recycling and producing clear instructions for citizens to correctly sort their waste.
- **COLLABORATE** with local companies and accompany them on their way to sustainability.
- **ENCOURAGE** citizen participation in project design and implementation, for example through public consultation or deliberative democracy methods in the first stages of project planning.
- **FOSTER** job creation in the green sector.
- **EMPLOY** people in precarious situations in sustainable local businesses – for example set up a glass recycling centre, employing only homeless people/people in precarious situations.

CHAPTER FIVE: AWARENESS RAISING AND EDUCATION

DEFINITION

Awareness rising on the environment and climate change is critical to create a space where everyone can be and feel involved in this issue. It refers to all efforts of local and regional authorities to engage with civil society and individuals on climate goals, to educate the public about the global threats to the environment and possible mitigation strategies, as well as broader awareness-raising campaigns which have been brought together under this section.

Enhancing environmental awareness is key not only for future generations, but also for the present ones that can act on it and make a change. Educating people on the importance and urgency of the protection of the environment is the only way to create a global and co-ordinated response. In this section, we have gathered some good practice examples to increase education on this issue.

Finally, the importance of awareness raising via all platforms that local and regional authorities have at their disposal should not be underestimated. Through outreach activities, cities can create informed communities which are aware of the threats for our environment and knowledgeable of possible mitigation actions they can undertake individually. At the same time, this section aims to address efforts of local and regional policymakers to engage with civil society and citizens and create environmentally responsible citizens.

Individual responsibility in the fight against climate change is also something that should be highlighted in local authorities' efforts. Local authorities alone cannot solve all the issues. Due to their proximity to citizens, local authorities are uniquely placed to engage with them, cultivate individual responsibility, an eco-centric, intergenerational approach and climate education, thus sharing efforts to protect the environment.

REMEMBER

Many guidelines have been published to help cities and regions fight against climate change. For example, the Guide to Climate Change Adaptation in Cities. It gives guidelines for cities, especially in developing countries, to mitigate the impact of climate change and to achieve sustainable development.

1. PLAYGROUNDS: A CLASSROOM ON BIODIVERSITY – COPENHAGEN (DENMARK) [45]

Population: 602 481

In 2011, Copenhagen prepared a strategy for biodiversity entitled "Room for Nature – A Strategy for Biodiversity". Part of that overarching strategy was to man playgrounds located in disadvantaged neighbourhoods with education-awareness personnel that would teach and guide children, parents and visitors on biodiversity protection.

Copenhagen has a number of manned playgrounds where education-awareness staff are present during the day. Five of these playgrounds are participating in the nature detectives project and offering nature guidance and teaching materials to children and their parents, as well as to institutions. At the playgrounds, children can learn about nature and explore their surroundings. The playgrounds are, for example, located in disadvantaged neighbourhoods where many citizens have a limited knowledge about nature and rarely move in places other than their own neighbourhood. The project has enjoyed great interest, and local anchoring and commitment is vital for the survival of the project.

Contact
Jesper Christensen, Children and Youth Mayor, City council of Copenhagen (Denmark)
+45/33 66 33 66
https://international.kk.dk/

2. LIFE-LONG LEARNING PROGRAMME ON SUSTAINABLE LIVING AS A PLATFORM FOR ENVIRONMENTAL AWARENESS RAISING – VALMIERA (LATVIA)

Population: 24 868

Since autumn 2018, the Valmiera Integrated Library, together with Valmiera municipality, has been organising an informal education course entitled "Balanced life: environment, human, society", which has become a platform for sustainability education, debates and issues,

45. https://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2012/07/Section-4-Nature-and-biodiversity_Copenhagen.pdf.

initiatives and contacts. It is one of Valmiera's local reactions to the global sustainability spotlights.

The course covers various topics related to a sustainable lifestyle, enabling its members to participate, educate and inspire in a free and easy way for changing their habits.
The course is a licensed non-formal education programme in 2021/22, taking place for the third season. Each season, the practice has five lessons once a month on Saturdays taking place. Each particular field's experts conduct the lessons. The topics vary according to local issues while maintaining the overall course framework on sustainability, environment and human health, mental health, preservation of the environment and nature, interrelations, and impact on the lives of each individual. In the first two seasons of the course, there were more than 135 participants, many of them enjoying the additional value of having live discussions and meeting other like-minded participants.

Contact
Chirstine Keane, Deputy Director of Valmiera Integrated Library
+371/64 25 08 30
kristine.kine@vcb.valmiera.lv

3. GREEN THURSDAYS – MONACO CITY (MONACO)

Population: 38 350

For the public, the Monaco Town Hall has organised a series of conferences and debates over the last three years on the major themes of the environment and sustainable development: Green Thursdays. On one Thursday per month, representatives of Monégasque institutions and associations involved in environmental issues were invited to talk about the environmental actions implemented in the Principality. This initiative was launched by a municipal deputy within the environmental policy framework carried out within the Monaco Town Hall.

By presenting different topics, such as mobility and public transport, waste collection and urban pollution, eco-responsible shopping, energy efficiency and renewable energy, the Green Thursday meetings have sought to improve individual and collective awareness of sustainable development and the environment. At the same time, the city council regularly organises workshops to raise public awareness, particularly on the importance of sorting, reducing food waste, etc., as well as poster campaigns (digital) in the city with positive messages and poster campaigns in school canteens to raise awareness of food waste among youths.

For the municipal staff, referents have been appointed in each department. They are responsible for relaying information, raising awareness and ensuring good practices. In order to meet the objectives set by the National Pact for Energy Transition (PNTE), all single-use plastics have been eliminated at the town hall and at municipal events, thanks in particular to the use of eco-friendly glasses.

This initiative ended in 2020. These three years of exchanges have made it possible to bring together numerous institutional or associative interlocutors with the local population and municipal staff. The main themes emerging from these Green Thursday exchanges were food waste and waste management, in particular single-use plastic. As a result, these have since been abolished within the institution.

This experience has also led to the creation of a municipal dynamic both internally, with the establishment of a referral committee that meets regularly, and externally, with several initiatives designed for the public, as well as awareness workshops and communication on this subject through various media (social networks, public displays, communal review) and in collaboration with Monaco's institutional or associative partners.

Contact
Jérôme Bonnin, Editor, Service of the Communal Domain – Commerce, Halls and Markets, City of Monaco
jbonnin@mairie.mc

FAKE NEWS

Recycling is not cost or energy efficient.

FACT

The benefits of recycling to the planet are clear. Recycling aluminium cans saves 95% of the energy needed to make new cans from raw materials. Recycling steel and tin cans saves 60 to 74%; recycling paper saves about 60%; and recycling plastic and glass saves about one third of the energy compared to making those products from virgin materials.

Recycling is also a dynamic industry with competition and ongoing innovation. In many cases, recycling can actually be a net positive financial benefit. And it creates jobs: more jobs at higher income levels are created by recycling than compared to landfilling or incinerating waste.

Sources: Brian Clark Howard, 5 recycling myths busted (nationalgeographic.com); Job creations from recycling — European Environment Agency (europa.eu).

5. CLIMATE LECTURES AND CONTEST IN DISTRICT SCHOOLS – ERZSÉBETVÁROS DISTRICT, BUDAPEST (HUNGARY)

Population: 49 700

Erzsébetváros will achieve significant results in reducing emissions and adapting to climate change by 2030 by bringing together locals, workers and visitors. Part of the district's mitigation actions includes a series of lectures and contests on climate in the district's schools.

The first part of the action is a series of climate protection information lectures organised for kindergarten and schoolteachers and educators in Erzsébetváros, who are the primary mediators of knowledge towards children, so their preparation is especially important. The second part of the action comprises school competitions and quizzes in the schools of Erzsébetváros (at least 10 schools). The management of competitions will be the responsibility of professionals and the educators trained in the first part. The district aims to reduce emissions from the energy supply and operation of buildings, improving the energy efficiency of the building stock in all sectors, expanding the use of renewable energy sources, and reducing vulnerability as well as emissions from transport by promoting environment-friendly modes of transport and reducing car traffic. The district will increase the adaptability of vulnerable social groups to heatwaves and reduce the vulnerability of local transport, technical and environmental infrastructure elements.

Contact
Csaba Tóth, Head of Climate Protection and Sustainability Cabinet, Erzsébetváros District, Budapest (Hungary)
+36/1462-32 51
toth.csaba@erzsebetvaros.hu

6. LECTURES, WORKSHOPS AND CAPACITY BUILDING ON THE SUSTAINABLE DEVELOPMENT GOALS – BONN (GERMANY)[46]

Population: 327 258

The City of Bonn has developed a variety of projects to increase visibility and awareness of the SDGs. Among others, it offers training to city staff and a series of lectures and workshops open to its citizens as part of its adult education offer, and it developed the "SDG Days" campaign. School kids are also involved in climate education, thanks to the "climate permit" (*Klimaführerschein*).

The capacity-building programme run by Bonn is addressed to all staff by conducting regular workshops on different aspects of SDGs and the link to municipal tasks. This training programme also strengthens interdepartmental exchange. Interestingly, Bonn also initiated a tender process of ethically produced work wear for its workers in the department for parks and gardens.[47]

Bonn also continuously offers lectures and workshops on the SDGs through its Adult Education Centre, addressing a different SDG every six months. Launched in 2018 on the theme "17 days for the 17

46. www.eurocities.eu | EUROCITIES report on SDGs.
47. Schritt-fuer-Schritt-Zur-fairen-oeffentlichen-Beschaffung.pdf (femnet.de).

goals", the "SDG Days" campaign integrates many initiatives and organisations and presents examples of SDG implementation in Bonn. With numerous events such as bicycle tours to sustainable projects, SDG poetry slams and pub quizzes, it aims to increase support for the implementation process. The "Bonn Climate Ambassadors" Foundation offers climate education courses to primary school children, allowing them to obtain their "climate permit". By the end of May 2018, more than 8 000 children had become climate ambassadors.[48]

Contact
Bundesstadt Bonn, Berliner Platz 2, 53103 Bonn
+49/22 87 70
Nachhaltiges Bonn. | Bundesstadt Bonn

7. ENVIRONMENTAL EDUCATION, PEDAGOGICAL RESOURCES – EUROMÉTROPOLE DE STRASBOURG (FRANCE)[49]

Population: 284 677

The Strasbourg Eurometropolis encourages environmental education as a tool to raise the individual awareness of citizens and their active mobilisation. The city provides facilitators, teachers, parents and project managers with tools, advice and information to help them carry out environmental education and awareness projects.

Faced with climatic, environmental, social and economic challenges, the Strasbourg Eurometropolis is committed to integrating the principles of sustainable development into all of its policies. One of the major objectives is to reduce the ecological footprint of the metropolitan territory by bringing together the initiatives of all its actors. Environmental education is one of the main tools in the service of this ambition.

The Strasbourg Eurometropolis offers three types of activities:
- the loan of tools and support for the implementation of environmental awareness educational programmes;
- free site visits: wastewater treatment plant, sorting centre and green waste recovery centre, etc. which give many opportunities to educate and raise awareness on the environment, in a concrete and original way;
- partnerships with local associations to encourage and support initiatives in the field of environmental education.

A catalogue of educational resources is available on the city website to discover the list of educational tools available. The city lends educational tools free of charge, designed in partnership with the national education system, and aimed at raising awareness among young children about respect for the environment. A facilitator can accompany the teachers, prior to the activities, to provide them with general knowledge related to the chosen theme as well as to train them in the use of the educational material.

The city website also provides a list of associations which offer activities to address various themes (biodiversity, water, energy, climate, waste, eco-citizenship) for all types of public: schoolchildren, young people, general public.

Contact
Ms Anne-Laure HECKEL, Environmental Education Communication Unit, 1 parc de l'Etoile, 67076 Strasbourg Cedex
+33/(0)3 68 98 69 74
anne-laure.heckel@strasbourg.eu

RECOMMENDATIONS

- **CULTIVATE** individual responsibility towards the fight against climate change, by encouraging small daily habit changes at the individual level.

48. Die SDGs in Bonn. | Bundesstadt Bonn.
49. https://www.strasbourg.eu/education-environnement.

- **ENGAGE** in dialogue with the national government and other local and regional authorities to create a global education scheme to raise awareness on climate change and the need to protect the environment.
- **FOSTER** intergenerational dialogue and awareness raising on how to make cities and regions more environment friendly.
- **PROMOTE** different educational tools and non-conventional mechanisms to generate interest on the issue of climate change and the environment.
- **ENSURE** that awareness raising and education on the environment are accessible to everyone, including minorities and isolated individuals.
- **ENCOURAGE** citizens to reduce their consumption of meat, starting at school with more vegetarian options for lunch.

DID YOU KNOW?

Livestock supply chains account for 14.5% of global GHG emissions. Around 70% of global freshwater withdrawal is used by agriculture. Feeding livestock requires 6 billion tonnes of food annually, including one third of global cereal production. Even locally bred livestock require the importation of crops, such as soy, which usually come from Latin America. Almost 90% of deforestation worldwide is due to agricultural expansion. Reducing our consumption of meat would have a major impact on the environment.

Source: Food and Agriculture Organisation of the United Nations (FAO).

CHAPTER SIX: SERVICES AND PROCUREMENT

DEFINITION

This category includes all practices related to the "greening" of local and regional services, from waste collection to green clauses in public procurement. Public procurement can be a key tool in driving the development of innovative goods and services. By working together, and pooling their resources, cities, central purchasing bodies, and other major public procurers can maximise their market power and sustainability impact.

Each time a person chooses to purchase environment-friendly goods, services and works, they make an important contribution to creating a more sustainable economy. But individuals are not the only party that can influence the economy. The government, as a very large purchasing entity, can minimise the environmental impacts of some procurement activities by influencing supply market practices. For example, by focusing on managing unnecessary consumption to reduce waste or engaging with suppliers who are committed to a better environmental performance.

DID YOU KNOW?

Concept of circular economy

The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as much as possible. Its purpose is to extend the lifecycle of products (Circular economy: definition, importance and benefits, News, European Parliament (europa.eu)).

1. CIRCULAR ECONOMY: PROCUREMENT OF REUSED, RECYCLED OR REUSABLE CONSTRUCTION MATERIALS – VIENNA (AUSTRIA)[50]

Population: 1 897 000

Reduce, reuse and recycle to build! During building reconstruction or demolition, too many materials are still thrown away and disposed of before the end of their useful lifecycle. Under the Big Buyers Initiative,[51] the City of Vienna implemented this pilot project with the aim of improving circularity in the construction sector by promoting procurement of reused, recycled or reusable construction materials and dismantling works.

The project specifically envisaged using recycled concrete and insulation material in new buildings to prove how the city could influence the market towards more circular solutions in the construction sector. As the offer of secondary/recycled material is limited at the moment, it is important that the city acts as a promoter of innovative solutions through the way it launches its calls. In the spring of 2020, Vienna started developing a tender for the new construction project that includes a list of criteria describing the perfect product. The results from this first pilot project, which will be completed in the summer of 2023, will be used to argue that a more circular approach to the construction sector is a more sustainable one. The pilot project has already inspired an additional project tackling a different phase of the construction chain, refurbishment, proving that circularity can and should be applied to all stages of a building's lifecycle. The WieNeu+ project will oversee the refurbishment of an entire neighbourhood in Vienna, and in this case, it is intended to implement circularity aspects in as many retro-fitting actions as possible. As an additional step, the city will organise citizens' outreach via a reused container pop-up office where information and photos from the pilot projects will be used to explain to citizens how the refurbishment will work and look using secondary materials, and the advantages of this approach.

Contact
Simon Clement, ICLEI, Local Governments for Sustainability
+49/76 13 68 92 44
simon.clement@iclei.org

2. RESOURCE BANK – BÆRUM MUNICIPALITY (NORWAY)

Population: 128 233

50. https://eurocities.eu/stories/reduce-reuse-and-recycle-to-build/.
51. https://sustainable-procurement.org/big-buyers/.

Bærum resource bank sets out to contribute to as much reuse, recycling and utilisation of surplus masses from construction sites and infrastructure projects in the municipality as possible. It seeks to solve surplus mass management and disposal issues in a sustainable way through an overview of available surplus masses and an assessment of useful options for their secondary use.

The recreational area Kadettangen in Sandvika is an excellent example of how surplus material from a road project can be converted into an asset in a site development project. The resource bank now also offers real-time environmental data readings through sensors for environmental parameters such as the emission of harmful substances to air and water.

Contact
Svein Finnanger, Head of Municipal Environmental Services, Bærum Municipality (Norway)
svein.finnanger@baerum.kommune.no
+47/67 50 40 50; +47/95 99 09 76

3. AIRTEXT AIR QUALITY FORECASTING SERVICE – RIGA (LATVIA)

Population: 614 618

Although air pollution levels are low in most modern European cities, information on expected air pollution levels is very useful. Among other benefits, people can prepare for the following day to reduce air pollution effects on their health. With the help of the British and Latvian environmental consulting companies CERC and EL&LE and the European Union Copernicus Atmosphere Monitoring Service (CAMS), Riga has launched the air quality forecasting service, airTEXT.

Riga airTEXT is a service, which is free of charge, providing the public with air quality alerts via text messages and e-mails, as well as weather, UV, pollen and air temperature forecasts for the next three days, available on the Riga airTEXT website and mobile app. On the Riga airTEXT website (http://www.rigaairtext.lv/), which is available in Latvian and English, residents can see the information on air quality, find information about air quality alerts and subscribe for alerts via text message or e-mail. The information on air quality is pinned down to street level, while the information on UV, pollen and air temperature reflects the conditions in local city areas. Riga airTEXT service is the first implementation of the ADMS-Forecast system, which includes the CAMS global UV radiation index forecast and regional pollen forecast. The mobile app is available in Latvian for iPhone and Android smartphones. In collaboration with the Asthma Association and the media services, the City of Riga uses this tool to improve the daily lives of its inhabitants and assess the need for further action.

Contact
Jānis Kleperis, Housing and Environment Department, Riga City Council
+371/26 43 65 13
Janis.Kleperis@riga.lv

4. EXERGI'S GOAL IS TO BE CLIMATE POSITIVE – STOCKHOLM (SWEDEN)

Population: 975 551

Stockholm's local energy company, Stockholm Exergi, owned by the City of Stockholm and Fortum, aims to be climate positive by 2025. To achieve this, the company works with several projects, two of them are carbon dioxide removal and reducing the amount of plastic in waste. Stockholm Exergi is developing a plant for bio-CCS and, in the spring of 2021, it inaugurated a plant which sorts plastic out of waste.

As part of its research and development activities, Stockholm Exergi is working on how bio-CSS can make a substantive contribution to supporting national and international climate goals. Bio-CCS is one possible way of slowing global warming and ultimately rebalancing the climate sustainably. Stockholm Exergi's calculations show that there is potential to capture 800 000 tonnes of carbon dioxide per year at a bio-cogeneration plant in Stockholm. Stockholm Exergi's plans for a bio-CCS plant at the biofuel-fired combined heat and power plant in Stockholm are becoming increasingly well defined. In December 2019, they inaugurated their research facility, and expanded it in the autumn of 2020. The goal is that the research facility, together with an ongoing integration study, will provide sufficiently robust results to form the basis for Stockholm Exergi to invest in a large-scale facility.

In April 2021, Stockholm Exergi together with Sörab, a regional waste management company owned by several municipalities in the Stockholm region, inaugurated a waste sorting plant north of Stockholm. The re-sorting of waste is a concrete measure carried out by Stockholm Exergi to reduce carbon dioxide emissions and increase material recycling – both, important measures to strengthen the circular economy. Sorting the plastic from waste that households and businesses have missed can represent an additional 75% of plastic content removed before incineration which will reduce carbon dioxide emissions. Metal and food waste are also sorted. The facility is one complement to the important efforts already made by households and businesses.

Contact
Olga Axelsson, Head of sustainable city development at Stockholm Exergi
kundservice@stockholmexergi.se
https://www.stockholmexergi.se/

5. PROCUREMENT IN CLEAN CONSTRUCTION[52] – OSLO MUNICIPALITY (NORWAY)

Population: 1 056 180

Oslo is Norway's second largest public buyer with a substantial part of procurement in construction. The municipality uses its procurement power to accelerate the green shift, to sustain its ambitious climate goals and to promote a circular economy. Oslo's public procurement strategy requires that suppliers must contribute to recycling, reduce waste, develop more environment-friendly solutions, and reduce energy consumption. Moreover, Oslo collaborates with a group of European public authorities promoting responsible supply chains and reducing GHG emissions through, for example, fossil- and emission-free buildings and construction sites.

The Oslo City Government will introduce requirements for fossil-free building and construction sites and, gradually, requirements for zero-emission building and construction sites in new zoning plans, in dialogue with the pollution control authorities. The City of Oslo already requires fossil-free/zero-emission construction in its own projects. However, four out of five building sites are owned by the state or private sector. Preliminary estimates suggest that the City Government's proposed requirements could cover approximately 40 to 80% of building activity by as early as 2024 and increase further up to 2030. Consequently, this instrument will significantly reduce emissions from building and construction sites within just a few years. This is a vigorous response to new data on emissions from this sector, showing more emissions from building sites than previously estimated.

From 2020, the city also requires fossil-free transport of bulk materials to and from building sites in its own projects. The share of projects with fossil-free transport of bulk materials where the City of Oslo is the buyer is thus expected to increase from virtually zero to 100% in the four-year planning period.

Contact
Kamzy Gunaratham, Deputy Mayor, Oslo Municipality (Norway)
+47/91 56 01 16
kamzy.gunaratnam@oslobystyre.no

6. ZERO-WASTE MONACO – MONACO CITY (MONACO)

Population: 38 350

The City of Monaco is committed to fighting all types of waste through a multi-faceted strategy, ranging from the distribution of pocket ashtrays to strategies regarding food waste or efforts to give a second life to a variety of objects through the project "Monaco s'engage contre le gaspillage" (MEG).

In 2010, the Town Hall and the Société Monégasque d'Assainissement (SMA) entered into a partnership to distribute beach ashtrays during the summer season. In 2012, the Principality's Tourism and Convention Authority joined the operation. Initially, the objective was to reduce the number of cigarette butts on the sand and preserve the quality of the beach. Approximately 8 500 ashtrays are distributed each summer on Larvotto beach. Since 2017, pocket ashtrays have also been distributed in various information points of the Tourism Department. In 2021, this operation took on a new

52. https://www.c40knowledgehub.org/s/article/How-Oslo-is-driving-a-transition-to-clean-construction?language=en_US.

dimension with the distribution of pocket ashtrays throughout the city and a public awareness campaign on the negative effects of cigarette butts on the environment.

Following a first round of meetings in 2013, Monaco started the operation, “Food waste: let's take action!”, followed in June 2014, by the presentation of a concrete action programme. A charter was set up and offered for signature to the general public, and a booklet (comic strip) was created to raise awareness among children. In 2015, awareness raising continued with the “Chefs’ Challenge”. Using their inspiration, two great chefs cooked with foodstuffs recovered from the Principality’s shops and the market gardeners of the Condamine Market (foodstuffs destined to be thrown away but still consumable). The aim of this event was to demonstrate that cooking with foodstuffs that are close to their expiry date and consuming slightly wilted or damaged fruit and vegetables is safe for your health and allows you to create delicious dishes. Moreover, with the support of Monaco’s restaurant owners, “The little box” (La petite boîte) was announced. These small boxes are containers given to restaurant customers, allowing them to take away unfinished dishes and bottles. More than 50 establishments have confirmed their commitment since 2016. Since the start of the operation, almost 20 000 little boxes have been distributed free of charge.

Lastly, the MEG initiative organises the collection of different categories of objects announced in advance (toys, books, electronic equipment, blankets, schoolbooks, etc.), in order to recover objects that are not or no longer in use, and to offer them a second life if possible. The goal is therefore to reduce waste in all its forms while promoting the circular economy. The collected items are then redistributed to one or several associations. A dedicated website has also been created (www.contrelegaspillage.mc).

Contact
Jérôme Bonnin, Editor, Service of the Communal Domain – Commerce, Halls and Markets, City of Monaco
jbonnin@mairie.mc

7. CONSTRUCTION PARTNERS’ DIALOGUE – MALMÖ (SWEDEN)[53]

Population: 344 166

For larger area developments in Malmö a “construction dialogue” between the city and developers usually takes place. All participating building companies and all relevant municipal departments meet regularly to discuss and develop common standards and targets for the area to be developed. This process can either start ahead of the official planning process or once the detailed plan has been developed. It usually lasts for several years.

The dialogue between construction partners is a successful model in Malmö and is increasingly requested, as it facilitates the work of all involved parties. For the municipality it means that stricter than legally binding targets on, for example, energy performance of buildings might be agreed upon. Furthermore, the municipal departments can agree on a common standpoint and identify priorities. For the developers it means shorter handling times for building permits, for example. In addition, there is a mutual learning process of advanced developers and newcomers. A common marketing strategy for the area is usually developed jointly and communicates the area efficiently.

Contact
Roland Zinkernagel, Environment Department, City of Malmö (Sweden)
roland.zinkernagel@malmo.se

8. ZERO-WASTE TOWN – CAPANNORI (ITALY)[54]

Population: 46 000

Capannori, a town located in the north of Italy, has one of the highest municipal recycling rates in Europe. This zero-waste town is an example of strong policy decisions and community participation in achieving groundbreaking results. This model can be easily replicated elsewhere in Italy since 98% of Italian municipalities have fewer than 50 000 inhabitants, accounting for 66% of the total population.

53. https://nws.eurocities.eu/MediaShell/media/Malmo%20construction%20dialogue.pdf.
54. Italy Subnational Best Practices, Climate Scorecard.

A zero-waste strategy was signed in 2007 and since then waste per capita has dropped by 40%, from 1.92kg to 1.18kg per person per year. In 2014, only 18% of waste produced was landfilled. Capannori adopted a number of strategies that led to this drastic waste reduction. First of all, the municipality created a door-to-door collection system designed to engage and educate residents on source separation practices. A reuse centre was opened, where items such as clothes, footwear, toys, electric appliances, and furniture can be repaired and sold to those in need. In 2012, some 93 tonnes of objects were dropped at the centre. Moreover, a grocery store opened in 2009 that sells over 250 locally sourced food and drink products in bulk. The municipality provides small businesses with tax incentives to stock products that can be refilled into customers' own containers. What is more, the municipality encourages individual responsibility and participation by promoting activities such as household composting or by taking a collaborative approach with community meetings to disseminate information, provide feedback, and distribute free waste-separation kits.

Contact
Gian Luca Bucci, Office of the Environment, Energy and Toponymy, City of Capannori (Italy)
+39/05 83 42 82 07
g.bucci@comune.capannori.lu.it

9. REPARATHON – MONACO CITY (MONACO)

Population: 38 350

On 27 November 2021, the Monaco Town Hall, in partnership with the energy transition pact of the Principality of Monaco, organised its first "Reparathon". The goal is to connect people and associations who know how to repair objects with individuals who need to have them repaired.

After a first call on social networks (Facebook, Instagram, LinkedIn) to people with repair or sewing skills, the Monaco Town Hall launched a second call to the population, encouraging those needing help with repairing objects to contact them. Then the City Hall matched the demands with the skills and defined a schedule.

Out of 33 repair requests, 24 were accepted by the repairers. Three people also presented themselves spontaneously and were able to have their object repaired.

The first Reparathon event generated a lot of positive feedback among the population and will be repeated at regular intervals. As an extension to this event, a digital directory of the city's repairers and designers will be created to allow the population to have the choice between repairing or refurbishing the objects.

Contact
Jérôme Bonnin, Editor, Service of the Communal Domain – Commerce, Halls and Markets, City of Monaco
jbonnin@mairie.mc

RECOMMENDATIONS

- **ENCOURAGE** sustainable waste management by investing in recycling bins around the city and creating anti-littering campaigns.
- **INVEST** in sustainability-driven small businesses, for example by creating a competition for young entrepreneurs and funding the best idea.
- **ADVOCATE** for more green policies at national level.
- **PROMOTE** circular economy schemes – local businesses selling products that will last a lifetime (for example, metal reusable bottles), and food stores selling loose items.
- **DRIVE INNOVATION** amongst suppliers of services at the local level, by giving economic incentives to the creation of environmentally conscious initiatives.

CHAPTER SEVEN: LOCAL STRATEGIES FOR SUSTAINABLE DEVELOPMENT/CLIMATE DEFINITION

Developing local strategies for the protection of the environment and the fight against climate change is key to having an effective response to these issues. There is still a long road to the effective implementation of a bottom-up approach for sustainable development, working hand in hand with local and regional authorities to protect the environment together.

However, in many national strategy documents, subnational (local and regional) levels are addressed only in general terms, without including specific and measurable targets and deliverables for local and regional authorities. Thus, this final section reflects the efforts at local and regional levels to set up specific strategies, with concrete climate and sustainability objectives, tailor-made to the local and regional realities.

DID YOU KNOW?

The UN-Habitat's City Prosperity Initiative (CPI) is a global initiative to identify opportunities and areas of intervention for cities to become more prosperous. It has a holistic approach and is also a tool to measure sustainable urban development, and to build city visions and long-term plans to increase sustainable practices and infrastructures in cities.

Source: City Prosperity Initiative, UN-Habitat (unhabitat.org).

1. A SYSTEMATIC APPROACH TO SUSTAINABILITY MONITORING – RIGA (LATVIA)

Population: 614 618

The most important precondition for reaching the goals set in the Sustainable Development Strategy of Riga by 2030 is balanced development which promotes the involvement of residents of Riga and experts in the development and successful implementation of the strategy, as well as the monitoring of progress towards the SDGs. The City of Riga promotes and supports planning that ensures sustainable and balanced development of the territory, considering the broader interests of society. The planning process directly affects the quality of the urban environment and the quality of life. It is in the scope of the municipality's duties to ensure a balanced development of the urban environment as well as to ensure the involvement of society in the city's development process.

To follow the sustainable development implementation in Riga, to determine potential gaps and challenges, and to use this knowledge for the improvement of the planning process, continuous monitoring and reporting is essential. The City of Riga has a 14-year-long history of monitoring the implementation of the Sustainable Development Strategy and the development programme at the local level.

Sustainable development monitoring is an annual city-level process that brings together 29 institutions and structural units of Riga City Council, more than 2 000 residents from 58 neighbourhoods of the City of Riga, and five external experts in economy, social welfare, urban environment, non-governmental organisations (NGOs), and governance. An existing monitoring process includes data collection, internal and external assessment, and reporting. As a part of the United Nations SDGs awareness-raising process, since 2020 the monitoring report includes a new section with a focus on the SDGs implementation in the City of Riga.

To provide the public with up-to-date information on the development of the City of Riga and to stimulate public participation in the sustainable development strategy implementation process, every year after the monitoring progress report is approved by Riga City Council, it is published on the strategy monitoring system website (https://sus.lv/).

Contact
Jurijs Grizāns, City Development Department, Riga City Council (Latvia)
+371/67 01 35 95
jurijs.grizans@riga.lv

2. CLIMATE BUDGETING[55] – OSLO (NORWAY)

Population: 1 056 180

Climate budgeting is a new governing tool making it easier to get from planning to action, to find measures in line with the city's climate ambitions and to make the city's climate activities transparent and inclusive. In such a system, emission cuts are budgeted and reported in a similar way to how financial spending is planned and reported. Responsibilities are well defined and funding for all measures is secured. Regular reporting makes it easy to measure if an activity complies with the targets or not, giving opportunities for adjustment. A climate budget thus also gives all stakeholders insight into how the city works to fulfil its climate targets.

The City of Oslo was likely the first city in the world to develop such a system. Starting in 2016, the city has regularly improved the system, which has now been copied by several cities around the world. In co-operation with other Norwegian cities and municipalities, a system has also been developed which is designed for smaller cities and municipalities, accessible for all at the KS website, the Norwegian Association of Local and Regional Authorities.

The climate budget shows that the targets can only be met by implementing a wide range of measures. This requires the participation of the city's inhabitants and businesses, and an active and successful collaboration between regional and governmental authorities and across the City of Oslo's own organisation. For the city authorities it is also important to ensure that the climate measures do not contribute to social differences. Thus, both climate and distributional effects should be considered in all relevant decisions. The city's climate budget for 2021 may be found here: https://www.klimaoslo.no/wp-content/uploads/sites/88/2021/02/Climate-Budget-2021-Oslo.pdf.

Contact
Heidi Sørensen, Director of the City of Oslo Climate Agency
+47/21 80 21 80
heidi.sorensen@oslobystyre.no
https://www.klimaoslo.no/

3. THE REYKJAVIK GREEN DEAL: ON THE CARBON NEUTRAL CITY AND PUBLIC HEALTH – REYKJAVIK (ICELAND)[56]

Population: 122 853

Reykjavik has set a goal of being carbon neutral by 2040. The next decade will be a decade of action – and an important trial for every country and every city worldwide in the fight against climate change and ecological degradation. If the goals of the Paris Agreement are to be achieved, emissions in Reykjavik must be halved by 2030 and then halved again in the following decade. Carbon capture also must be realised.

In December 2020, the City of Reykjavik issued the Reykjavik Green Deal as its roadmap to economic recovery after Covid-19. The Green Deal focuses on all three dimensions of sustainability: economic, environmental, and social. Investment in green infrastructure and social development where no one is left behind is central to the plans. We have also issued an update on our Climate Action Plan, initially launched in 2015. The Climate Action Plan can be divided into six main objectives that focus on projects that further both the climate and public health: facilitating complete energy exchange; increasing health-promoting modes of transport; eco-friendly city planning; introducing a circular economy; using low carbon building materials and design; and effective carbon capture. Reykjavik City Council is convinced that a focus on climate means a focus on the health of citizens and their quality of life, as well as on green economic growth and welfare***.***

Contact
Magnús Yngvi Jósefsson, Research Programme Manager, Department of Services and Innovation, City of Reykjavik (Iceland)
Magnus.Yngvi.Josefsson@reykjavik.is

55. https://webgate.ec.europa.eu/greencitytool/resources/docs/best_practices/Oslo_Climate_Budget_A01.pdf.
56. https://www.thelancet.com/pdfs/journals/lanplh/PIIS2542-5196(21)00009-7.pdf.

4. GREEN STRATEGY FOR ARENDAL – ARENDAL MUNICIPALITY (NORWAY)

Population: 44 576

Arendal is amongst the first Norwegian municipalities which set out to contribute to Agenda 2030 and has, since 2008, implemented CO_2 mitigation measures. Emissions were reduced by 80% between 2007 and 2017 and Arendal has, in particular, taken urgent action to combat climate change and its impacts.

A Green Strategy for Arendal, Arendal's new climate and energy plan, is expected to transform Arendal into "a nationally leading and internationally recognised climate and environmental city and a learning partner for other local authorities". Through the strategy the local authority will stimulate businesses to transition to environment-friendly operations.

Contact
Arendal Municipality
+47/37 01 30 00
https://www.arendal.kommune.no/english/contact/

5. SUSTAINABILITY STRATEGY – BADEN-WÜRTTEMBERG (GERMANY)

Population: 11 070 000

The sustainability strategy launched in 2007 is intended to stimulate and support the implementation of sustainability in the region of Baden-Württemberg. It is a platform for the federal state, municipalities, businesses, and society and is regularly developed. The most urgent topics are the current thematic priorities: climate and energy, education for sustainable development, sustainable consumption and sustainable lifestyles, and sustainable and climate-neutral businesses. In addition, the role model function of the administration and the anchoring of instruments for perpetuating sustainable development at the regional level play a central role.

Baden-Württemberg prepares sustainability and indicator reports at regular intervals in order to monitor and promote sustainable development in the region. This makes sustainability concrete, measurable and verifiable. The regional government's advisory board for sustainable development was also set up, which advises the federal state's prime minister on all sustainability-related topics and initiates sustainability dialogues with experts and citizens. As many social groups as possible discuss the questions of a sustainable way of life. Further information can be found at www.nachhaltigkeitsstrategie.de.

Contact
Stefan Böhm LL.M., Deputy Head of Unit, European Union and Petitions, Regional Parliament of Baden-Württemberg
Konrad-Adenauer-Straße 3, 70173 Stuttgart
+49/(0)711 20 63-357
stefan.boehm@landtag-bw.de

6. CLIMATE AND ENVIRONMENT PLAN, GREEN ENERGY – BERLEVÅG MUNICIPALITY (NORWAY)

Population: 1 057

Berlevåg has integrated the SDGs into its master plan with a special focus on climate and the environment. The municipality takes an active role in the "green shift" with a vision to be green and promote sustainable solutions in a circular economy. Several initiatives are under way.

Berlevåg has come a long way in developing green energy through a project using "off grid" wind power for producing hydrogen power, a future-oriented energy carrier which can replace fossil fuels. The municipality is furthermore involved in various regional and national projects for transitioning to green energy, including the promotion of hydrogen fuel in aircrafts and ferries as well as helping the regional authority to explore how hydrogen as an energy carrier can be utilised by the whole region.

Contact
Berlevåg Municipality
+47/78 78 20 00
postmottak@berlevag.kommune.no

7. THE ENERGY CITY ASSOCIATION (ASSOCIATION CITÉ DE L'ÉNERGIE)[57] – MULTIPLE CITIES IN SWITZERLAND[58]

The Energy City Association sees itself as a competence centre for local energy and climate policy in Switzerland. For more than 30 years, it has brought together Swiss municipalities, from large cities to small mountain villages, who share the conviction that the challenges in the field of energy and climate can be largely mastered through local and continuous commitment.

With its Energy City Programme, the association supports municipalities that want to become exemplary, sustainable and innovative players in the fields of energy, climate, transport and the environment. It represents the interests of municipalities in energy and climate policy, provides them with optimal framework conditions, develops up-to-date tools and implementation aids and offers them a comprehensive network. In addition to the Energy City Programme, the Energy City Association also awards exemplary schools as Energy Schools. It is also the official certification body for the federal government's Sites 2000 watts programme.

Association members are mainly cities and municipalities, but also other public enterprises, natural persons, and legal entities. At the beginning of 2021, the Energy City Association had about 660 member municipalities and regions. More than 60% of the Swiss population lives in one of the 460 Energy Cities.

The association aims to develop a sustainable energy and climate policy at the municipal level. It defends the energy policy interests of Swiss cities and municipalities on a national and international level. It advocates for the economical and rational use of existing energy resources and promotes the development of renewable energies.

Contact
Maren Kornmann, Secrétariat-Association Cité de l'énergie, Switzerland
maren.kornmann@enco-ag.ch
+41/061 965 99 00

8. SUSTAINABLE ENERGY ACTION PLAN (SEAP) – AMAROUSSION (GREECE)[59]

Population: 120 000

Amaroussion is one of the leading cities in Greece when it comes to energy sustainability. It was the first city in Greece to introduce an integrated public transport system, and one of the first to introduce green criteria in its procurement (for example, purchasing energy-efficient light bulbs and electric appliances). It also works consistently towards improving the energy performance of municipal buildings and becoming a role model for its citizens. The city joined the Covenant of Mayors in 2011 and submitted its Sustainable Energy Action Plan (SEAP) one year later. The SEAP was the fruit of close collaboration between various municipal departments, and it covered several areas, for example, urban planning, building, transport, procurement, waste management and education.

To ensure the smooth and successful implementation of its SEAP the city established an inter-departmental SEAP Committee. The SEAP Committee consists of representatives of the following municipal divisions and departments:

- Technical Services and Works Department (buildings, public lighting, transport infrastructure, energy production, etc.);
- Urban Planning Department (urban and mobility planning);
- Environment and Quality of Life Department;
- Resource Planning and Evaluation Office (external funding of SEAP activities);
- Direction of Financial Services (internal funding and financial management of SEAP-related projects);
- Procurement Department (energy-efficient procurement);
- Consultation and Education Committee (educational and awareness-raising activities);
- Quality Management and Internal Procedures Office (quality management of SEAP projects and activities);
- International Relations Office (adopting EU energy policies, fostering shared experience and co-operation with other cities).

57. https://www.energiestadt.ch/fr/page-daccueil-2.html.
58. https://www.energiestadt.ch/fr/cites-de-lenergie-membres-29.html.
59. https://nws.eurocities.eu/MediaShell/media/Amaroussion%20SEAP%20Committee.pdf.

The city aims to cut its CO_2 emissions by 20% by 2020. The biggest part of the savings will come from the building sector (77%). The SEAP Committee plays an instrumental role in meeting these targets. Some of the projects implemented under its supervision include:

- energy audits and energy certificates for all municipal buildings; energy-efficient retro-fitting of four buildings through the EU Structural Funds;
- replacement of light bulbs in municipal buildings with more energy-efficient ones;
- improvements in the design of open spaces to enhance the microclimate and thermal comfort conditions.

Contact
Amitsis Dimitris, Head of Development of National Resources, Municipality of Amaroussion (Greece)
amidim@maroussi.gr

9. LOCAL ACTION FOR GREENER ENERGY – GDYNIA (POLAND)[60]

Population: 245 867

Recently distinguished as the most energy-efficient city in Poland, Gdynia has been looking at how it can improve people's quality of life, while at the same time cutting municipal spending. The city has worked on solutions including refurbished buses, better performing streetlamps, using waste to produce energy and creating a digital city hall for clean easy access to local services.

Waste-to-energy plant: Gdynia's waste-to-energy plant uses local technology to minimise pollution and lower energy costs. The plant has been so successful that the municipality now plans to expand it in order to produce biofuel from biodegradable waste. In the long term, half of the local bus fleet would run on this type of gas, ensuring low ticket prices and cleaner air in the city.

Sustainable transport: it has already been demonstrated that public transport is an area where small investments can have large benefits for residents: the past two years have seen Gdynia's energy-efficient trolleybuses decrease municipal power consumption by 20%. While the local public transport company wants to adapt to clean and silent electric vehicles, new trolleys generally come with a high price tag. European funds have helped the city retrofit its old diesel buses into efficient trolleybuses for only a quarter of the cost of a new vehicle.

Energy-efficient streetlamps: Gdynia's energy bills have also been reduced through the replacement of half of the city's street lamps with more energy-efficient alternatives. This has allowed the city to greatly decrease costs and re-invest its public lighting system. While people feel safer due to an increase of more than 50% in the number of lampposts, low consumption lamps and smart control systems now ensure that no energy is wasted.

Congestion avoidance scheme: the use of synchronised green lights at peak hours results in shorter travel times, better air quality and more relaxed residents. The Polish municipality has taken this into account when developing its metropolitan congestion avoidance scheme. Congestion-detecting cameras have been installed at key junctions in the city and its surroundings; whenever they detect queues, the traffic management system adapts the rhythm of green lights throughout the area to increase traffic fluidity. Gdynia also engages its car and public transport users in improving their daily commute by providing real-time information about traffic conditions and by presenting alternative routes in the city's key areas to pedestrians and cyclists.

Contact
Hanna Gorecka-Banasik, City of Gdynia (Poland)
h.gorecka-banasik@gdynia.pl

RECOMMENDATIONS

- **SHARE** knowledge and expertise between cities and regions, urban and rural areas, but also within your communities.
- **ENGAGE** with civil society and partner up with NGOs who have extensive experience in environmental issues.

60. https://nws.eurocities.eu/MediaShell/media/CoM_CS_Gdynia_final.pdf.

- **ENHANCE** grassroots authorities' climate actions and strengthen multi-level governance and citizens participation while meeting human rights commitments.
- **INVITE** national authorities to raise awareness and involve local and regional authorities in their efforts to develop climate change policies with a human rights component.
- **FOCUS** on multi-level co-operation that can strengthen subnational authorities' capacities to tackle climate issues and take the climate and sustainability dimension into account in their local policymaking.
- **IDENTIFY** and build on synergies and links with other local, regional or national authorities and their climate and development strategies.

REFERENCES AND FURTHER READING

- A European Green Deal, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.
- Council of Europe, The environment, https://www.coe.int/en/web/compass/environment.
- Council of Europe, Human rights and the environment, a priority for the Council of Europe, https://www.coe.int/en/web/human-rights-rule-of-law/human-rights-environment.
- Déjeant-Pons M., Pallemaert M., *Human rights and the environment: Compendium of instruments and other international texts on individual and collective rights relating to the environment in the international and European framework*, Council of Europe with the collaboration of the Ministry of Social Affairs, Public Health and Environment of Belgium, November 2002, https://rm.coe.int/1680489692.
- Eurocities, A better quality of life for all Eurocities' strategic framework 2020-2030, https://eurocities.eu/about-us/a-better-quality-of-life-for-all-eurocities-strategic-framework/.
- Eurocities, Climate change and energy transition, https://eurocities.eu/goals/climate-change-and-energy-transition/.
- EU Covenant of Mayors, https://www.covenantofmayors.eu/en/.
- European Green Capital: https://ec.europa.eu/environment/europeangreencapital/about-the-award/policy-guidance/best-practice-publications/
- Global Covenant of Mayors, https://www.globalcovenantofmayors.org/.
- Knox J. H., "The Paris Agreement as a Human Rights Treaty", June 2018, *Human Rights and 21st Century Challenges: Poverty, Conflict, and the Environment*, Akande et al. eds., Oxford University Press, available at: https://ssrn.com/abstract=3192106
- Localising the 2030 Agenda, SDGs and local authorities, https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=754&menu=3170.
- Mayer B., "Human Rights in the Paris Agreement", Climate Law 6, 2016, 109-117.
- The Siena Declaration of Solidarity at the Launch of the Ecological Law and Governance Association, October 2017, https://elgaworld.org/siena-declaration.
- Third party intervention by the Council of Europe Commissioner for Human Rights under Article 36, paragraph 3, of the European Convention on Human Rights Application No. 39371/20, Strasbourg, 5 May 2021, https://rm.coe.int/third-party-intervention-by-the-council-of-europe-commissioner-for-hum/1680a26105.
- UNFCCC, The Paris Agreement, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
- UN Office of the High Commissioner for Human Rights (OHCHR), Human Rights and the Environment.
- UN, *Roadmap for localizing the SDGs: Implementation and monitoring at subnational level*, Local 2030 – Localizing the SDGs.
- UN Sustainable Development Goals (SDGs), https://sdgs.un.org/goals.