



## CONNECTING AND COLLABORATING FOR CLIMATE: THE BEACON PROJECT



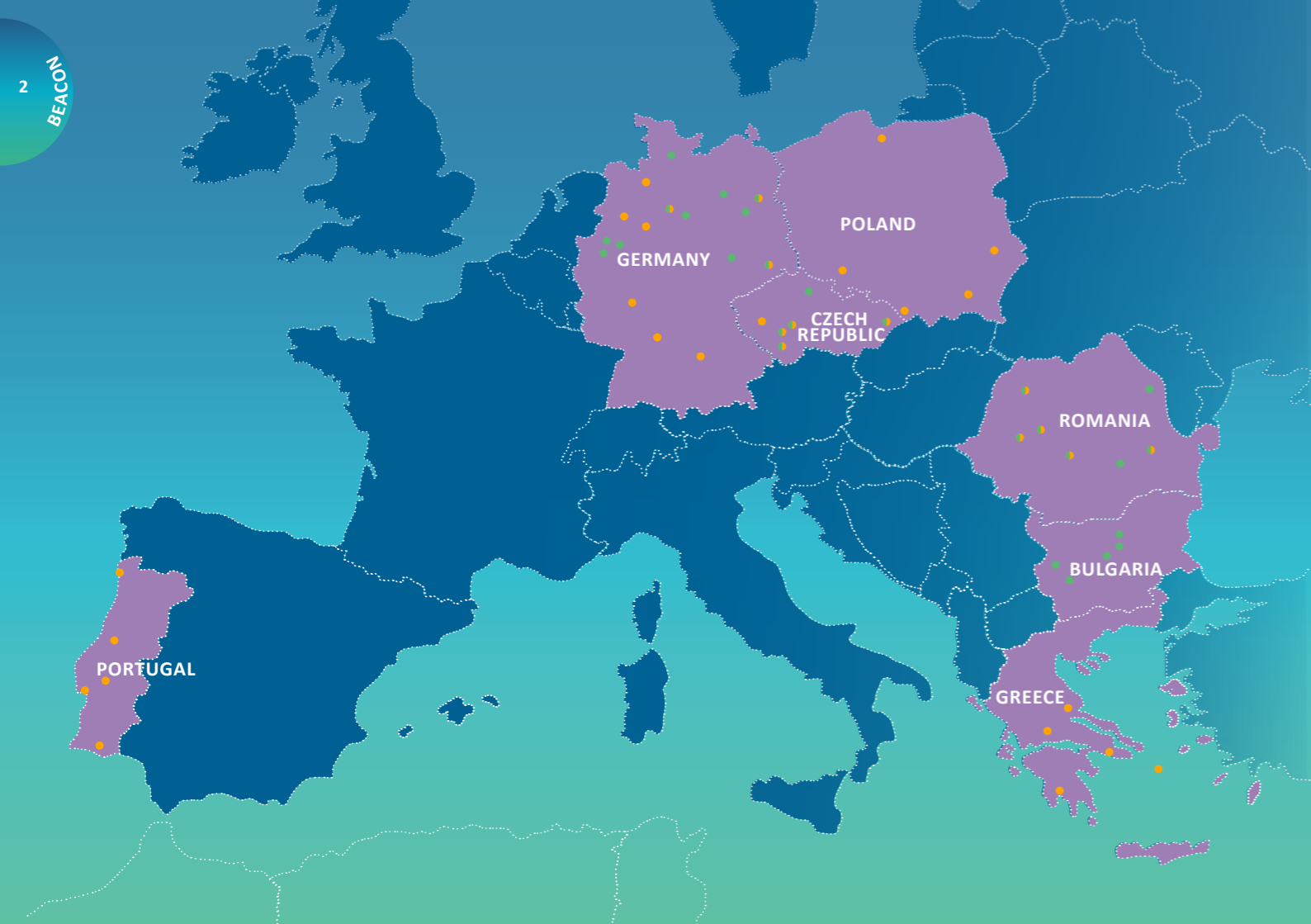
On behalf of:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety



European  
Climate Initiative  
EUKI



# TABLE OF CONTENTS

Background	4
Bridging European and Local Climate Action (BEACON)	6
European Climate Initiative (EUKI)	8
Connecting and Collaborating on National Climate Policies	10
Connecting and Collaborating Among Municipalities	14
Czech Republic	16
Germany	19
Greece	24
Poland	27
Portugal	30
Romania	33
Connecting and Collaborating Among Schools	40
Meet the Team	42



At the UN Climate Change Conference in 2015, then French President François Hollande, French Foreign Affairs Minister Laurent Fabius and UN Secretary-General Ban Ki-Moon applaud the conclusion of negotiations on the Paris Agreement.



The realisation of the **global and EU-wide commitments** depends, to a large extent, on **national governments** creating and implementing effective policies and framework conditions.



An increasingly large role will be played by **municipalities and local governments**. These stakeholders can be pioneers and drivers of profound decarbonisation and social transformation processes as their actions have considerable potential for increasing energy efficiency and reducing greenhouse gas emissions.



**Schools and other educational institutions** can play a key role by reducing their energy consumption and educating future generations for a climate friendly world.

## BACKGROUND

To successfully implement the Paris Agreement and European climate and energy targets for 2030 and beyond, climate action needs to be enhanced on all levels of governance.

Good examples of successful climate protection measures that tackle obstacles to climate action ambitions already exist across Europe on both national and local levels. There are communities and actors leading the way to becoming carbon neutral and more climate friendly. In addition to environmental and climate protection reasons, these stakeholders have recognised other **benefits of climate action** such as increasing the well-being of the population, promoting innovation, and stimulating the local economy.

Local initiatives such as renewable energy projects and the development of climate action plans can be facilitated with targeted, **needs-based support** and can have a lasting impact through the exchange and capacity building of multipliers and by connecting with relevant national stakeholders.

## BRIDGING EUROPEAN AND LOCAL CLIMATE ACTION (BEACON)

The Bridging European and Local Climate Action (BEACON) project promotes climate action and facilitates exchange between and among national governments, municipalities, and schools in Europe.

The aim of the project is to **strengthen bilateral and multilateral cooperation** and create common ambition to realise the Paris Agreement. Through joint learning, networking, and tailored advisory services, policymakers, municipal actors, and educators gain technical and process-related skills that help them develop, refine, and **implement measures for reducing greenhouse gas emissions**.

Good practices in local climate action will be identified and shared in a network of 34 municipalities from the Czech Republic, Romania, Greece, Poland, Portugal, and Germany. At home, each municipality receives needs-based technical support and on-the-job coaching that can be applied and implemented in everyday work. Workshops at the regional level bring participating municipalities together to exchange information on topics of joint interest. The work with municipalities also includes the support of five municipal climate partnerships.

*“In highlighting successful climate action measures and the associated benefits, we create understanding, acceptance, and support for climate protection.”*

Moritz Schäfer,  
BEACON Project Manager (Navigant)



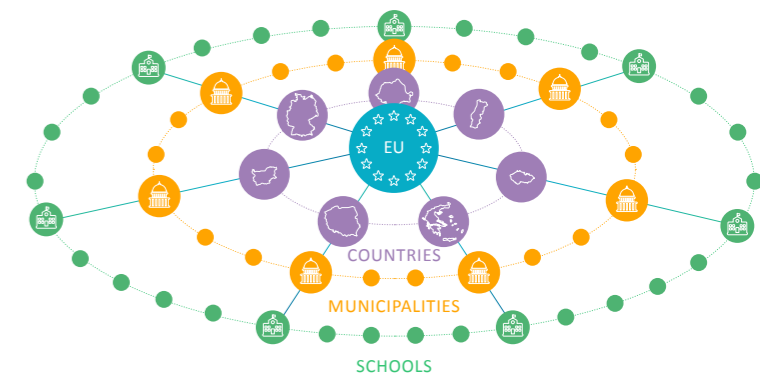
[www.euki.de/euki-projects/beacon](http://www.euki.de/euki-projects/beacon)

## BEACON Bridging European & Local Climate Action

To increase awareness about climate change and action on the individual level, 57 schools in Bulgaria, the Czech Republic, Romania, and Germany are involved in the project. From developing incentive models for energy savings with government and school officials to measuring temperature and CO<sub>2</sub> concentrations with teachers and pupils, a wide range of activities targeting a variety of stakeholders take place in schools. The project team and participants also analyse climate action in school curricula and existing educational programs, create energy savings action plans in schools, and conduct workshops and trainings. Study tours also facilitate exchange between teachers and administrators in Germany and the partner countries.

At the national level, emissions reductions and corresponding good practices in national climate protection policies and instruments from across the EU are analysed in detail and shared with relevant national stakeholders. The focus of this work includes the buildings, transport, small industry, and agriculture sectors. Workshops with national, regional, and local actors will be organised in selected partner countries to work jointly on specific challenges.

By bringing diverse actors together, BEACON contributes to European integration, reducing greenhouse gas emissions, building capacity for local climate action, and raising awareness for climate action.



The BEACON project is financed by the European Climate Initiative (EUKI). EUKI is a financing instrument by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). Led by Navigant, the project team is a consortium of 11 organisations from across Europe. The work in municipalities and schools is led by adelphi and the Independent Institute for Environmental Issues (UfU), respectively, and supported by partner organisations in each of the target countries.




**Duration:** April 2018-March 2021

**Countries:** Bulgaria, Germany, Greece, Poland, Portugal, Romania, Czech Republic

# ACCELERATING CLIMATE ACTION, STRENGTHENING EUROPE: THE EUROPEAN CLIMATE INITIATIVE (EUKI)

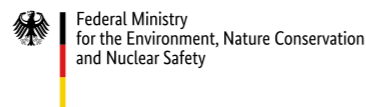
Close cross-border cooperation is a key success factor in the realisation of the Paris Agreement in Europe. In 2017, the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU) launched the European Climate Initiative (EUKI) to finance projects aimed at promoting closer European cooperation in climate action.

The initiative is working towards several goals:

-  Creating awareness and pooling knowledge
-  Establishing networks and exchanging successful models
-  Developing capacity and building a bridge for EU funding

EUKI finances a variety of innovative, cross-border projects all over Europe to help achieve the objectives of the Paris Agreement. For example, EUKI actors support governments in creating long-term climate strategies, disseminating approaches for the agricultural use of rewetted peatlands, and advocating an end to coal heating in private households. In total, the EUKI finances projects in eight core areas.

On behalf of:



of the Federal Republic of Germany



Stefan Bundscherer, Head of the EUKI financing instrument, at the annual EUKI networking conference

*“The Federal Government launched a European Climate Initiative because we do not just want to take steps here at home but also want to look at how our neighbours and other Member States of the European Union are getting on with achieving their targets.”*

German Chancellor Angela Merkel

Non-governmental organisations, municipalities, and other public authorities; non-profit enterprises; and scientific and educational institutions based in the EU are eligible for funding. Organisations can participate in the EUKI tender procedures or in the annual EU-wide call for project ideas.

Since 2017, EUKI has promoted more than 60 projects in 24 EU countries. Over 140 organisations are involved in EUKI projects, forming a strong network for climate action in Europe. Within its EUKI Academy, the initiative offers trainings on challenges and opportunities of climate action as well as on methodological skills.

BEACON is financed through EUKI and a committed partner in the EUKI community.



School children plant trees and vegetables whilst learning about the effects of eating habits on climate change



EUKI fosters the exchange of climate-friendly land use practices and brings together scientists and practitioners

## CONNECTING AND COLLABORATING ON NATIONAL CLIMATE POLICIES

Policy instruments that are already successful in one country can potentially be transferred to other countries.

Whether social, economic, or environmental, successful national climate policy or instrument design face many constraints within the national context. In many cases, however, it would be effective for countries to **learn from one another and exchange on experiences**. By doing so, policy instruments that are already successful in one country could be transferred to others and facilitate additional emissions reductions.

Exchange at transnational and European levels is a critical part of BEACON and contributes to the overarching aim of facilitating European integration via bilateral and multilateral dialogue. Our work in this area involved policies and instruments outside the EU Emissions Trading System (ETS) in the **transport, buildings, small industry, and agriculture sectors** as they are responsible for 60% of EU-wide emissions and decarbonising these sectors is challenging. These sectors fall under the EU's Effort Sharing Regulation (ESD) and are subject to binding national targets to reduce greenhouse gas emissions.

The key question guiding our analysis was: *What are the sector-specific policy instruments from European countries that Germany and other EU Member States can learn from and use to improve their climate policy, particularly in Effort Sharing Decision sectors?*

The initial study included an analysis of **greenhouse gas emissions reductions and ESD target achievement** in all EU Member States and sector-specific developments. Based on this research, country-sector combinations were selected where substantial emissions reductions were achieved between 2005 and 2015.

The results of this analysis were captured in a policy paper. Based on this research, specific policy instruments were selected for in-depth analysis.


**Eighteen individual climate-related policies** and instruments as well as **three climate change laws** from eight European countries were outlined in detailed factsheets authored by Navigant and adelphi. Rather than pick winners, the policy instruments were evaluated using a common framework with a focus on effectiveness and transferability.


From the bonus-malus vehicle incentive system in France to the Green in Savings Program in the Czech Republic, the factsheets cover a range of countries and sectors from which policymakers can learn. The climate protection laws of the UK, France, and Sweden were also analysed.


From the analysis and subsequent **workshops with national stakeholders**, it is clear that the exchange of successful policy instruments in other European countries can make a considerable contribution and provide concrete impetus for national energy and climate action plans. While achieving emissions reductions in the transport, buildings, small industrial installations, and agriculture sectors is difficult, countries across Europe are using a range of policy tools to make progress against their greenhouse gas emissions reduction targets.




Industry

 **Tax reduction for energy savings:** Through the corporate energy tax deduction, companies in Belgium can apply their investment in energy efficiency measures to the profit tax. In place since 2015, the one-time tax deduction amounts to 13.5% and gives industrial companies incentives to invest in energy efficiency measures.

 **Energy Efficiency Obligation:** To achieve Art. 7 target of the EU Energy Efficiency Directive, Denmark has used energy efficiency commitments with companies. Targets for energy efficiency improvements are set for and distributed among electricity, gas, oil, and district heating companies. The companies then carry out energy efficiency measures at the end customer or through a third party. The savings achieved are credited against the target.

 **Climate Change Agreements:** The Climate Change Agreements (CCA) and the Climate Change Levy (CCL) are important levers to reach UK climate targets through industrial energy efficiency and clean energy. The CCL is an energy tax on the commercial consumption of electricity from fossil fuels. In sector- or company-specific agreements, companies from energy-intensive sectors voluntarily commit themselves to energy efficiency or CO<sub>2</sub> reduction targets and receive tax credits on the CCL in return.

 **CO<sub>2</sub> Tax:** Introduced in 1991, the Swedish carbon tax is the country's central climate policy instrument and the world's strongest CO<sub>2</sub> price signal. The tax covers energy emissions not covered by the EU ETS in the industrial, building (heat), and transport sectors and has been a highly effective instrument in reducing emissions.

Workshop in Berlin, 10 October 2018





## Transport

**🇳🇴 Incentives for e-mobility:** Thanks to a range of policy measures and incentives, Norway has the world's highest market penetration of electric vehicles. These include the exemption from a 25% VAT on the purchase or lease of electric vehicles as well as the exemption from registration taxes. Other incentives include lower company car and vehicle taxes, exemption from urban parking fees and tolls, and the free use of ferries.

**🇸🇪 Company car taxation:** To reduce fuel consumption and emissions, the Swedish government has implemented various incentives to promote the registration of low-emission company cars, which make up a large percentage of cars on Swedish roads. For example, the taxable benefit of hybrid or electric cars is 60% or 80%, respectively, lower compared to more emissions-intensive vehicles.

**🇫🇷 Bonus-malus scheme:** Since 2008, the bonus-malus system in France has provided direct financial incentives for vehicle buyers to opt for less CO<sub>2</sub>-intensive vehicles. Buyers of electric and hybrid cars receive a bonus, while buyers of new cars with high CO<sub>2</sub> emissions are required to pay a penalty.

**🇨🇭 Modal shift:** Switzerland has a comprehensive package of measures to shift freight traffic from roadways to railways, including an expansion and modernisation of the railways, a ban on night driving for lorries, and a charge on heavy goods vehicles. Support from Germany and Italy in constructed transshipment terminals has also helped reduce the number of trucks on Swiss roadways.



## Agriculture

**🇩🇰 Action Plan Aquatic Environment:** Three Action Plans for the Aquatic Environment (APAEs) were implemented in Denmark in the period between 1990 and 2010. They contained a range of measures and have successfully introduced regulation to improve the use of manure and implement more stringent regulations on the use of nitrogen-based fertiliser, thereby reducing CO<sub>2</sub> emissions.

**🇫🇷 Biomethane support:** The French Energy Methanisation Autonomy Azote (EMAA) plan provides a legal framework for agricultural methanation in France, in addition to a number of supportive measures that produce biogas and biomethane waste. The plan facilitates investment grants for research and technical equipment as well as minimum prices for bioenergy products.

**🇬🇧 GHG Action Plan:** In 2011, the UK agricultural sector adopted the Greenhouse Gas Action Plan for Agriculture (GHGAP). It provides farmers with advice, training, and information and leads to measures that promote better efficiency and modern farming practices, thereby reducing emissions.

**🇳🇱 Agro covenant:** The Agro covenant is a voluntary public-private agreement between the government of the Netherlands and a variety of agricultural sector organisations on various targets as well as measures and instruments for reducing emissions and increasing energy efficiency. If the sector's greenhouse gas reduction targets are not achieved, regulatory measures are taken.



## Buildings

**🇱🇻 Latvian Baltic Energy Efficiency Facility (LABEEF):** LABEEF is a company that supports energy service companies (ESCOs) in the long-term financing of renovations of multifamily buildings through energy performance contracting. The contract between the ESCOs and the building owners is forfeited by a third party. Thus, the execution risk stays with the ESCO while the financing risk is transferred to LABEEF. LABEEF enables large financial institutions to audit this financial product (due diligence).

**🇫🇷 Energy transition tax benefit:** The energy transition tax credit in France allows 30% of housing expenditure for energy-efficient refurbishment to be deducted from income tax. The maximum tax deduction is up to €8,000 for an individual and €16,000 for a multi-person household within 5 years. The tax creates incentives for building owners to implement energy efficiency measures in their homes.

**🇸🇪 Innovation cluster:** In Sweden's building sector, networks of industry/market actors and the state promote innovative energy-savings solutions through technology-oriented demand bundling (innovation clusters) in order to bring them to the market faster. The clusters use demonstration projects to showcase actual savings.



**🇩🇰 Energy Performance Certificate Database:** In 1997, Denmark was one of the first European countries to introduce a central building energy performance certificate database. It now includes the entire energy performance certificates of about one-third of all Danish dwellings on a publicly available website. It allows relevant stakeholders to access and use a wealth of information to raise awareness of energy savings and improve decision-making.

**🇨🇪 New Green in Savings:** The Green in Savings programmes consist of a financial scheme to support renovation, efficient heating systems, and nearly zero energy buildings, which have significantly contributed to the Czech climate achievements in the residential buildings sector. The programme obtains most of its financial resources through EU ETS auction revenues.

**🇸🇰 Slovak Sustainable Energy Financing Facility (SlovSEFF) Programme:** The EBRD launched this programme in 2007 to encourage sustainable energy investments in companies and housing associations by providing loans and incentive payments in the case of successful completion and verification of a project. Integral to the project design is a supplemental grant funding for technical assistance.



To download the studies visit: [www.euki.de/en/news/successful-climate-protection-policies-in-europe/](http://www.euki.de/en/news/successful-climate-protection-policies-in-europe/)

## CONNECTING AND COLLABORATING AMONG MUNICIPALITIES

To exchange information and best practices and build capacity on the local level, 25 municipalities from the Czech Republic, Poland, Romania, Greece, and Portugal, as well as nine German municipalities have been selected to participate in the project. Each municipality in the target countries receives hands-on, needs-based technical support and on-the-job coaching on a wide range of climate action topics. In addition, at the transnational and regional levels, workshops and city partnerships bring participating municipalities together to exchange best practices and experiences.

The various dialogue and consulting formats provide the municipalities with specialist knowledge and know-how:

- In **transnational workshops**, good practices of municipal climate protection are discussed. Through an open dialogue about obstacles and opportunities, new impulses for the implementation of climate protection measures on the ground are created.
- The **individual consultation services** provided to each of the 25 European municipalities consist of hands-on, needs-based technical support and on-the-job coaching on a wide range of climate action topics and enable a deepening and operationalisation of this knowledge.
- Valuable experiences, proven strategies, and examples from Germany are made available through the **translation and country-specific adaptation of existing guidelines**.



Partnership Workshop in Agios Dimitrios, November 2019

*“I believe that the partnership meetings with Bottrop generate new impetus to the climate change initiatives for both of our cities.”*

Maria Androutsou, Mayor of Agios Dimitrios, Greece

- Participants in the **five municipal climate partnerships** have the opportunity to exchange expertise and develop joint projects with expert support through one-to-one advice.
- **Two municipal conferences** are held to present initial project results and serve as a source of inspiration and a platform for trans-European networking in a collegial atmosphere.



## 34 MUNICIPALITIES

The following pages present each of the participating municipalities and include information about their climate action priorities, the related topics they can share experience in, and the topics that they would like to learn about. The icons below and in each of the municipality portraits correspond to these elements.



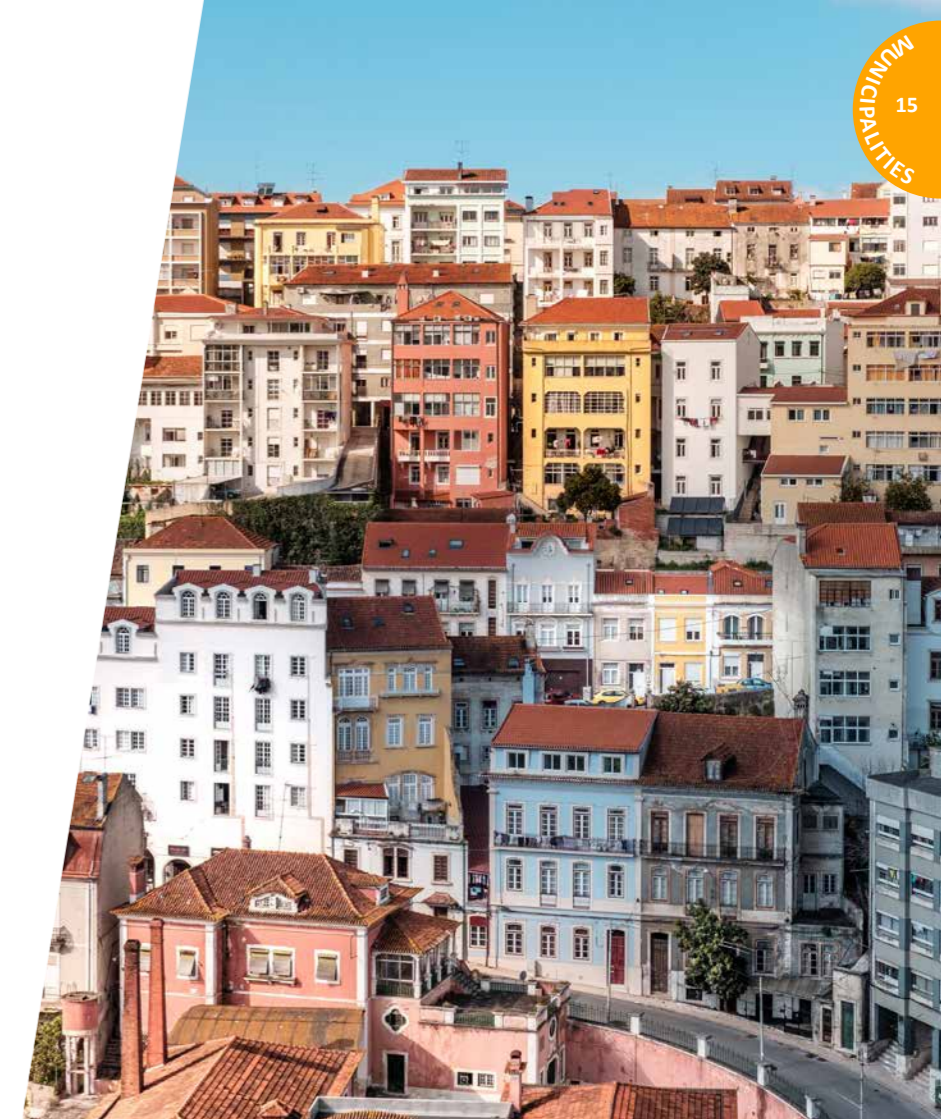
Priorities



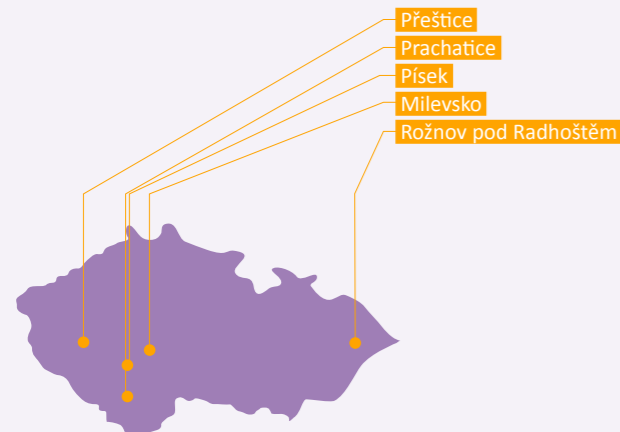
We can share experience in...



We would like to learn about...



# CZECH REPUBLIC



Townhall of Milevsko

## MILEVSKO

CZECH REPUBLIC

**Contact:** Vít Král, kral@zivemilevsko.cz

**Population:** 8,500

- ★ Sustainable mobility • Raising public awareness for climate action • Becoming a smart city • Implementing a Sustainable Urban Mobility Plan (SUMP) • Water management
- 🔄 Waste, water, and soil management • Carbon-negative technologies and nutrient recovery • City e-bike programme
- ❓ Motivating citizens to become engaged in climate action • Modernising and increasing the efficiency of the street lighting system • Introducing an energy management system to provide an overview of energy consumption and costs • Developing a waste management system

## PÍSEK

CZECH REPUBLIC

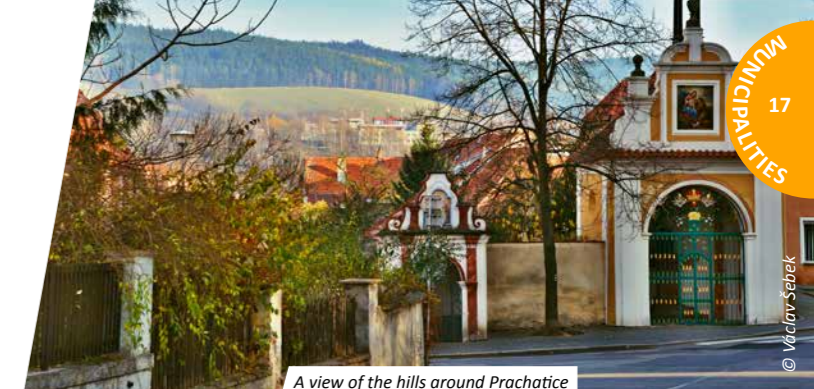
**Contact:** Edita Kučerová, edita.kucerova@mupisek.cz

**Population:** 30,119

- ★ Sustainable mobility and development • Monitoring energy consumption and air quality • Reducing the energy intensity of public buildings • Renovating energy infrastructure, e.g., heat distribution network • Transitioning from fossil fuels to biofuels in the energy mix
- 🔄 Energy performance contracting • Developing an energy web portal (<http://portal-pisek.enesa.cz>) and a transportation web portal (<http://parkovani.pisek.eu>) • Developing and implementing a municipal thermal energy policy
- ❓ Developing a general energy concept • Increasing the energy literacy of residents • Sustainable mobility • Improving the indoor climate of municipal buildings • Raising awareness for and improving understanding of renewable energy sources among the general public



Aerial view of Písek



A view of the hills around Prachalice

## PRACHATICE

CZECH REPUBLIC

**Contact:** Marie Peřínková, mperinkova@mupt.cz

**Population:** 10,852

- ★ Saving energy • Managing waste efficiently and sustainably • Improving air quality • Ecological education in schools • Sustainable transportation • Creating a city energy strategy • Developing a waste management strategy for residential neighbourhoods
- 🔄 Waste management • Raising public awareness of climate action and waste management
- ❓ Engaging citizens in energy-saving measures • Decreasing waste production and using waste to produce energy • Encouraging cycling and pedestrian transport in the city • Obtaining an overview of energy consumption and costs

## PŘEŠTICE

CZECH REPUBLIC

**Contact:** Marek Krivda, krivda@prestice-mesto.cz

**Population:** 7,114

- ★ Reducing energy consumption in municipal buildings • Increasing the share of renewables in the municipal heat supply • Sustainable mobility • Environmental education
- 🔄 Modernising the municipal district heating system and reducing natural gas consumption by maximising the efficiency of residual heat produced by biogas cogeneration units
- ❓ Effectively communicating municipal climate action projects to citizens • Using sorted waste in municipal district heating • Saving energy and improving the air quality in schools



Roznov pod Radhoštěm, in the heart of Beskydy mountain range

© Roznov pod Radhoštěm municipality

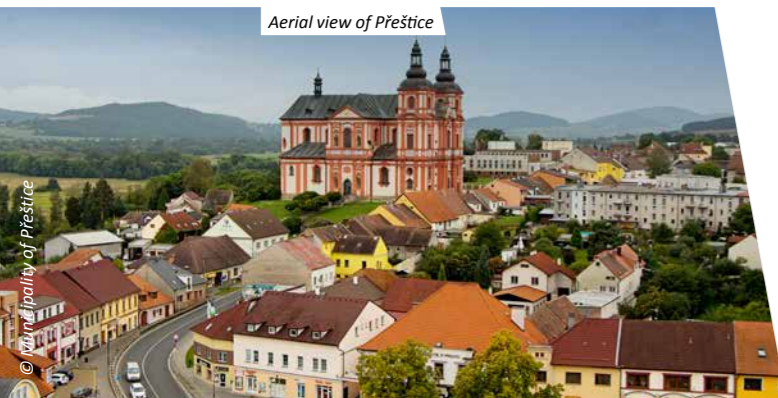
## ROŽNOV POD RADHOŠTĚM

CZECH REPUBLIC

**Contact:** Jan Cieslar, jan.cieslar@roznov.cz

**Population:** 16,469

- ★ Sustainable mobility • Rainwater retention and water management • Monitoring energy consumption and air quality • Increasing energy efficiency in buildings and of the heat supply
- 🔄 Renovating buildings • Increasing the efficiency of the public lighting system • Energy management systems • Implementing eco-school programmes • Building bike paths and promoting sustainable tourism
- ❓ Sustainable public transport • Implementing energy-saving projects • Increasing share of renewables in the city's energy mix • Using waste for energy production • Developing and implementing a plan for sustainable mobility • Further modernisation of street lighting

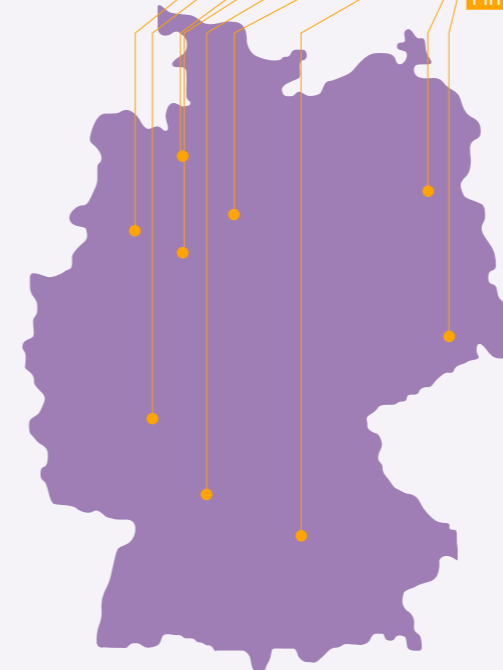


Aerial view of Přeštice

© Municipality of Přeštice

## GERMANY

- Bottrop
- Rosbach vor der Höhe
- Ritterhude
- Arnsberg
- Schwäbisch Hall
- Bielefeld
- Donauwörth
- Eberswalde
- Pirna



Old town with view of the church bell tower

19 MUNICIPALITIES

© Wolfgang Detempe, City of Arnsberg

## ARNSBERG

GERMANY

**Contact:** Sebastian Marcel Witte, s.witte@arnsberg.de

**Population:** 75,000

- ★ Achieving climate neutrality by 2050 • Integrating climate change mitigation and adaptation • Increasing the share of renewables in the energy mix
- 🔄 Education for sustainable development • Sustainable urban development • Improving energy efficiency in private households • Adapting to climate change, especially regarding forests, river landscapes, and tributaries • Implementing a sustainability strategy • Organising a sustainability festival
- ❓ Sustainable mobility • Holistic approaches to achieving CO<sub>2</sub> neutrality • Smart and resilient cities • Eco-friendly mobility

## BIELEFELD

GERMANY

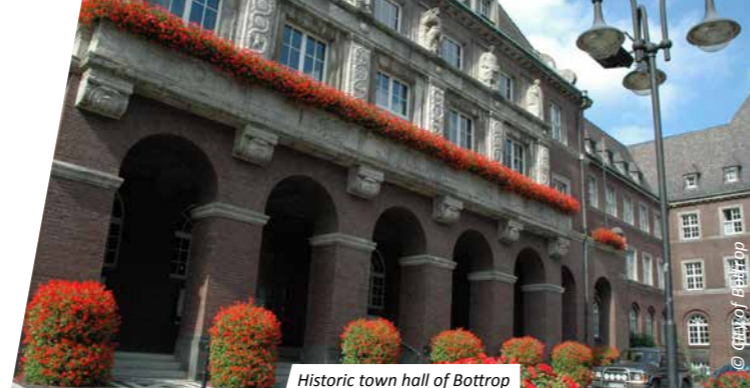
**Contact:** Olaf Lewald, olaf.lewald@bielefeld.de

**Population:** 340,000

- ★ Change of mobility behaviour: reducing private motorised traffic to 25% and increasing sustainable mobility (e.g., cycling, public transport) to 75% of modal split by 2030 • Zero Emission Zone in city centre • Effectively engaging stakeholders on climate action

- 🔄 Integrating action planning and networking at the local and transnational levels • Redesigning central traffic routes to reduce emissions from cars • Developing air quality plans • Building bicycle-friendly infrastructure

- ❓ Climate policy and a future-oriented investment policy • Stakeholder engagement approaches • E-mobility and autonomous driving • Increasing citizen engagement on climate action • Using urban space intelligently and sustainably



Historic town hall of Bottrop

## BOTTROP

GERMANY

**Contact:** Tilman Christian, tilman.christian@bottrop.de

**Population:** 116,800

- ★ Climate-friendly urban redevelopment • Increasing the share of renewables in the energy mix

- 🔄 Smart air quality control • Cross-financing projects with a range of stakeholders • Energy monitoring systems • Green procurement

- ❓ Implementing Sustainable Development Goals (SDGs) and linking measures to climate action goals • Implementing green urban infrastructure and augmenting existing green spaces • Energy efficiency in new building construction and renovation • Addressing structural and social changes along with climate action • Developing a mobility concept

## DONAUWÖRTH

GERMANY

**Contact:** Andreas Reiner, andreas.reiner@donauwoerth.de

**Population:** 20,400

- ★ Implementing renewable energy and energy efficiency projects • Sustainable urban mobility via electric vehicles, public transport, and cycling lanes

- 🔄 Addressing barriers to implementation of climate action measures • Rapidly implementing and demonstrating success in climate protection measures

- ❓ Improving communication with citizens on climate action • Creatively communicating the benefits and need for climate action with innovative channels beyond traditional newspaper and radio outlets • Strategies for gaining cross-department support • Reducing car traffic • Introducing cycling lanes in hilly terrain • Connecting with local businesses and industries • Creating local e-mobility infrastructure



Aerial view of Donauwörth



City centre of Eberswalde – Sustainable city development between forests and water

## EBERSWALDE

GERMANY

**Contact:** Severine Wolff, s.wolff@eberswalde.de

**Population:** 41,380

- ★ Managing the transition towards a sustainable mobility system in the city • 2020 climate action plan

- 🔄 Incorporating energy efficiency into various aspects of the public administration (e.g., management, procurement) • Increasing sustainability and energy efficiency in public and private buildings, planning, and residential areas • Creating climate-resilient urban structures • Implementing sustainable mobility measures regarding e-mobility, cycling, and public transport

- ❓ Motivating citizens to engage on climate action • Promoting the city's own climate action activities • Undertaking energetic refurbishment in historic buildings

## PIRNA

GERMANY

**Contact:** Thomas Freitag, thomas.freitag@pirna.de

**Population:** 39,250

- ★ Transforming the district heating system to be CO<sub>2</sub> neutral • Climate-friendly mobility • Communicating climate action with citizens • Collaborating with local companies to implement climate action measures
- 🔄 Municipal energy management • Sustainable mobility (i.e., charging stations, public transport, cycling)
- ❓ Cooperating with schools to save energy • Green heat production • E-mobility in public transport and public car-pooling • Raising awareness about climate change among community members • Setting and implementing energy efficiency standards in existing building stock and new building plans • Obtaining funding for climate action measures



© Jens Dörflinger, City of Pirna



© Marcus Lorenzcat, Municipality of Ritterhude

## RITTERHUDE

GERMANY

**Contact:** Ulrich Müller, um@local-ritterhude.de

**Population:** 14,598

- ★ Setting up an energy-related district revitalisation concept • Raising awareness among homeowners to invest in energy refurbishment measures
- 🔄 Renewables and public buildings (solar panels and combined heat and power plant) • Citizen participation in investments for PV plants on public buildings
- ❓ Effective communication and citizen mobilisation strategies

## ROSBACH VOR DER HÖHE

GERMANY

**Contact:** Monika Jost, jost@rosbach-hessen.de

**Population:** 13,300

- ★ Becoming a Master Plan city for climate protection • Raising awareness among citizens for climate action • Developing and communicating recommendations for sustainable living
- 🔄 Implementing mobility action days together with a partner city • Energy management for municipal buildings • Modernising street lighting • Citizen solar energy systems on municipal buildings • Bike and ride systems at railway stations • Upgrading to a more sustainable municipal vehicle fleet • Sustainable land-use planning and housing construction
- ❓ Securing funding for projects • Motivating citizens to take climate action • Effective climate mitigation measures • Integrating climate mitigation into the curricula of local schools



© City of Rosbach vor der Höhe



© Nico Kurth, City of Schwäbisch Hall

## SCHWÄBISCH HALL

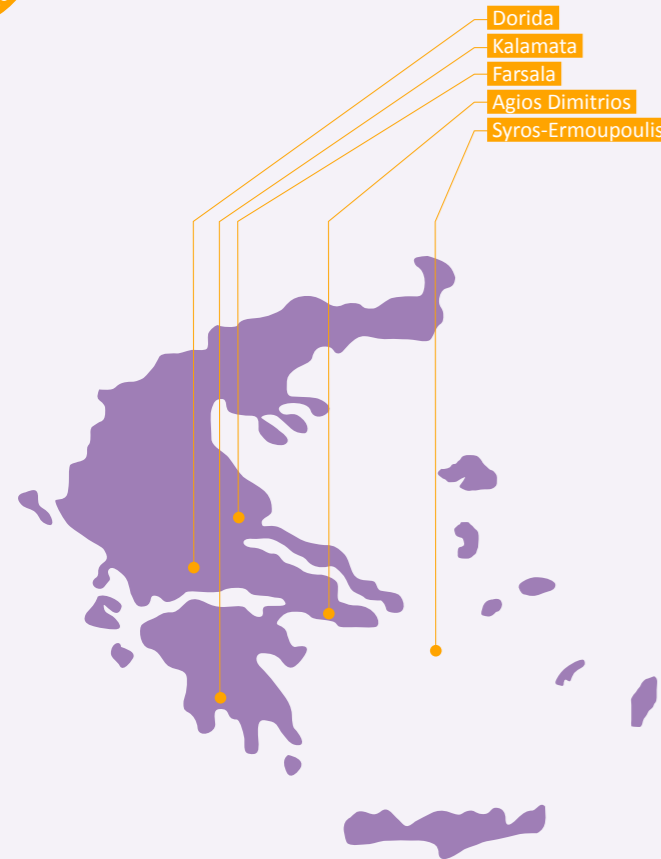
GERMANY

**Contact:** Heiner Schwarz-Leuser, heiner.schwarz-leuser@schwaebischhall.de

**Population:** 40,600

- ★ Achieving 100% renewables in electricity and heating by 2030
- 🔄 Reaching 100% renewables in electricity (2018) • Developing an extensive district heating network with combined heat and power generation and renewable energy technologies • Municipal energy management • Energy savings contracting in selected municipal buildings • Conversion of street lighting to LED • Citizen-related climate change mitigation projects, e.g., the campaign Klimaschutzbotschafter (climate ambassador) • Certification process for European Energy Award • Cooperating in climate change mitigation policy with various partners in Namibia
- ❓ Motivating pupils to initiate their own climate change mitigation activities in schools • Sustainable mobility in rural areas • Securing European funding

# GREECE



- Dorida
- Kalamata
- Farsala
- Agios Dimitrios
- Syros-Ermoupolis



An urban green place for leisure and culture activities in downtown Agios Dimitrios

© Municipality of Agios Dimitrios

## AGIOS DIMITRIOS

GREECE

**Contact:** Ilias Savvakis, isavvakis@dad.gr

**Population:** 70,970

- ★ Refurbishing public buildings • Smart metering • Sustainable urban mobility • Sustainable urban development
- 🔄 Reporting on sustainable development (e.g., Global Reporting Initiative, SDGs, UN Global Compact) • Mapping stakeholders • Energy retrofitting and energy management
- ❓ Securing EU funding for climate action projects • Protecting and promoting the city's natural streams • Utilising crowd-funding for climate action implementation • Energy communities • Stakeholder engagement, especially in schools • Capturing data on energy savings and greenhouse gas emissions

## DORIDA

GREECE

**Contact:** Epaminondas Trivillos, ntrivillos@gmail.com

**Population:** 13,627

- ★ EU funding opportunities • Protecting the natural environment
- 🔄 Reducing energy consumption by replacing street lighting lamps • Mapping municipal needs in terms of energy efficiency improvements
- ❓ Reducing the energy footprint of the municipality • Implementing a Sustainable Energy Action Plan (SEAP) • Energy efficiency in public and private buildings, public lighting, and water pumping stations • Sustainable tourism • Co-benefits of climate action measures, e.g., local economy, public health • Raising awareness for and improving understanding of climate action measures among citizens



Lidoriki, capital of the municipality of Dorida. View of Mornos Lake

© Municipality of Dorida



Homeric Hero Achilles and his mother Thetis – Bioclimatic regeneration of public space

© Nikolas Tzaroulis

## FARSALA

GREECE

**Contact:** Ilectra Theloura, itheloura@hotmail.com

**Population:** 18,545

- ★ Confronting climate change confrontation • Contributing to the achievement of national and European objectives for environmental protection • Creating a realistic local climate action plan
- 🔄 Energy saving in municipal buildings • Bioclimatic regeneration in public spaces
- ❓ Energy communities • Securing EU funding • Raising awareness for and improving understanding of climate action measures among citizens • Targeting the public through education and visible climate action measures • Improving the municipality's knowledge of financial tools and opportunities • Smart energy systems • Nexus of urban sustainability and cultural heritage • Sustainable mobility

## KALAMATA

GREECE

**Contact:** Vassilis Dionysopoulos, vdionyso@kalamata.gr

**Population:** 69,849

- ★ Development of partnerships with other institutions to combat climate change • Reducing energy consumption of municipal infrastructure • Installing more PV systems on buildings and exploring the use of other forms of renewable energy • Strengthening existing recycling networks • Developing a strategy to expand the use of smart city technologies

- 🔄 Energy management of buildings • Urban redevelopment and bicycle paths • Effective management of green spaces and water • Recycling • Utilising information and communication technology (ICT) in climate action measures

- ❓ Best practices from EU institutions • Securing funding for project implementation • Using smart city technologies and the Internet of Things to manage city infrastructure • Increasing public awareness of sustainable mobility and sustainable tourism • Integrated solutions for public buildings, renewables, and sustainable mobility

View of Kalamata from the foot of Mount Taygetus



St. Nicholas' Cathedral and the Vaporia neighborhood in Syros

## SYROS-ERMOUPOULIS

GREECE

**Contact:** Michail Zouloufos, michalis.zouloufos@gmail.com

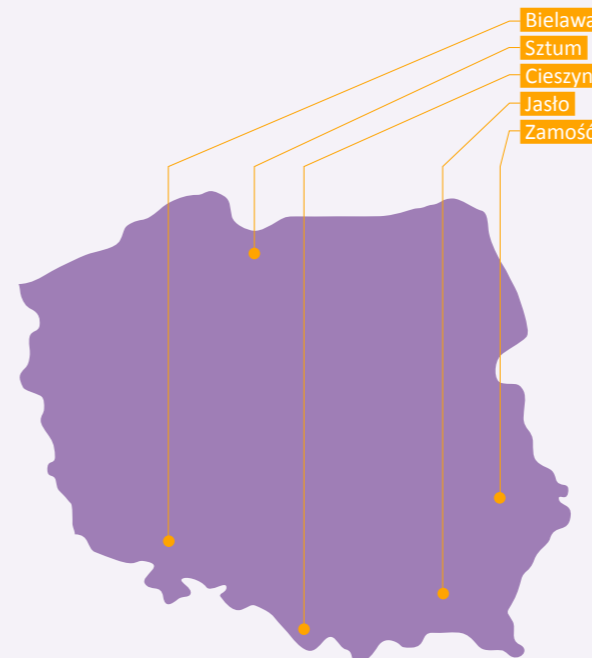
**Population:** 22,000

- ★ Creating a realistic local climate action plan • Reducing total energy costs and the energy consumption of public buildings • Reducing environmental footprint of water desalination units and of sanitary landfill operation • Sustainable tourism • Sustainable agricultural / farming activities

- 🔄 Waste and water management • Incorporating consideration of citizens' quality of life in climate action measures • Urban planning • Year-long tourism policies and activities • Collaboration with universities and the industry to write up project proposals

- ❓ Energy communities • Municipal energy management • Securing EU funding • Increase environmental interventions • Possible change of legal framework

## POLAND



Bielawa  
Sztum  
Cieszyn  
Jaslo  
Zamosc



Bielawa – model ecological city in the Sowie Mountains

## BIELAWA

POLAND

**Contact:** Ewa Wnuk, wnuk@um.bielawa.pl

**Population:** 30,000

- ★ Bielawa as a model eco-town • Improving the quality of citizens' lives and the city's attractiveness for tourists • Improving air quality • Increasing the share of renewables in the energy mix

- 🔄 Ecological education • Thermal retrofitting of public buildings • Natural resources management

- ❓ Reducing energy consumption • Involving citizens in climate action • Building bike lanes and making cycling an attractive mode of transportation • Inspiring climate action projects

## CIESZYN

POLAND

**Contact:** Małgorzata Wegierek, ochrona@um.cieszyn.pl

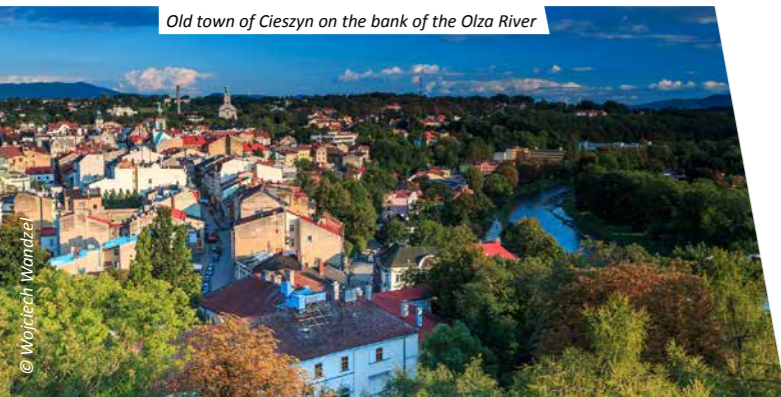
**Population:** 32,924

★ Improving the air quality by changing the local energy mix and introducing energy-saving transport measures • Reducing energy consumption and costs • Increasing the use of renewable energy sources • Improving the attractiveness of the city for tourists

🔄 Smart city lighting • Thermal retrofitting of public buildings • Creating a local energy market (Cieszynski Energy Cluster) • Developing a low-carbon economy plan • Using a subsidy programme to replace the heat source in residential buildings

❓ Developing a local strategy for e-mobility • Energy management in buildings • Increasing awareness among and engagement of citizens on climate action

Old town of Cieszyn on the bank of the Olza River



Panoramic view of Jasło

## JASŁO

POLAND

**Contact:** Agnieszka Piecuch-Mularska, a.piecuch-mularska@um.jaslo.pl

**Population:** 35,700

★ Improving air quality • Sustainable and efficient use of energy • Reducing final energy consumption and greenhouse gas emissions • Increasing the share of renewables in the energy mix

🔄 Implementing projects with national and European funding • Developing a Low Emission Economy Action Plan (LEEAP) • Monitoring and reducing energy consumption • Installing solar panels on public and private buildings

❓ Effectively utilising renewable energy sources • Creating a sustainable (public) transport system • Proven measures for rational waste management • Creating urban green areas • Sustainable water management • Engaging civil society in climate action measures • Developing a climate strategy and managing human resources within the municipality to implement it

## SZTUM

POLAND

**Contact:** Michał Mroczkowski, michal.mroczkowski@sztum.pl

**Population:** 18,000

★ Improving air quality • Tackling energy poverty • Energy efficiency in buildings • Saving energy in schools and other public buildings

🔄 Smart city lighting • Increasing the portion of renewable energy in the energy mix • Securing European funding at the regional level for renewable energy and energy efficiency projects • Developing a local energy cluster and connecting the municipality with local businesses and other municipalities

❓ Energy cooperatives • Building a local energy market • Energy management in buildings • Efficiently managing water resources • Increasing awareness among and engagement of citizens on climate action • Improving cycling infrastructure

Panoramic view of Sztum



City hall on the Great Market of Zamość

## ZAMOŚĆ

POLAND

**Contact:** Bogusław Klimczuk, klimczuk@wp.pl

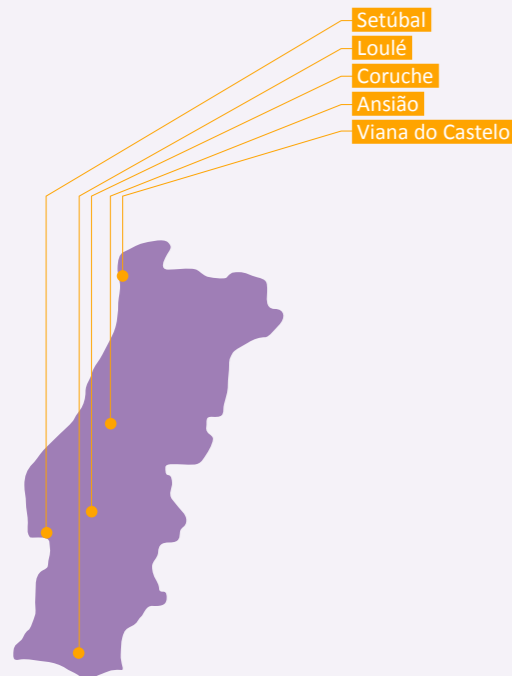
**Population:** 65,000

★ Climate action education • Improving air quality

🔄 Thermal retrofitting of public buildings • Sustainable public transport • Raising EU funds to finance energy efficiency and other climate measures • Creating a local energy market (Zamoyski Energy Cluster) • Designing urban green spaces

❓ Innovative solutions for improving air quality, decreasing CO<sub>2</sub> emissions and other pollutants, developing a sustainable urban transport system • Increasing awareness among and engagement of citizens on climate action • Improving the energy infrastructure • Sustainable and efficient waste management • Engaging educational institutions on climate action • Ecological education in schools

# PORTUGAL



Setúbal  
Loulé  
Coruche  
Ansião  
Viana do Castelo



Past and present holding hands to a brighter future. Using wind power before it was cool.

© Municipality of Ansião

## ANSIÃO

PORTUGAL

**Contact:** Maria da Graça Campos Pinto, [graca.pinto@cm-ansiao.pt](mailto:graca.pinto@cm-ansiao.pt)

**Population:** 13,128

- Reducing the energy consumption of municipal buildings • Real-time monitoring of the energy consumption in municipal buildings and incentivising behavioural and routine changes • Implementing a grid of electric charging stations in the main populated areas • Replacing the municipal vehicle fleet with electric cars in fixed routes • Introducing autonomous vehicles to support waste collection in industrial zones • Organic waste management and composting
- Integrating citizens' daily lives with nature • Developing a municipal strategy to involve the population with the forest and fields, creating new attractions • Promoting trail running by allying sports with nature
- Implementing environmental mitigation measures in low demographic density and dispersed population clusters • Raising awareness about utilising endogenous resources from a sustainable perspective

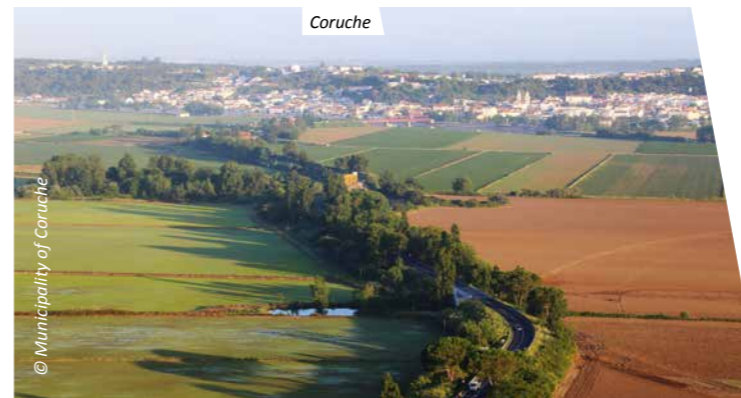
## CORUCHE

PORTUGAL

**Contact:** Rosa Lopes, [rosa.lopes@cm-coruche.pt](mailto:rosa.lopes@cm-coruche.pt)

**Population:** 19,944

- Implementing and monitoring the Sustainable Energy Action Plan – reduction of at least 20% of emissions by 2020 • Reducing the greenhouse gas emissions produced by coal ovens • Implementing and monitoring the Municipal Strategy and the Intermunicipal Plan for Mitigation and Adaptation to Climate Change
- Water efficiency projects: efficient water management in green space irrigation – reuse of water from washing pool filters for irrigation • Energy efficiency: change public illumination to LED technology (investment of €792,796) • Energy efficiency: improving energy efficiency of public buildings (swimming pools, sports pavilion, and museum) • Promoting low carbon strategies and sustainable multimodal mobility (investment of €985,000)



Coruche

© Municipality of Coruche



Loulé by night

© Municipality of Loulé

## LOULÉ

PORTUGAL

**Contact:** Lídia Terra, [lidia.terra@cm-loule.pt](mailto:lidia.terra@cm-loule.pt) /

Inês Rafael, [ines.rafael@cm-loule.pt](mailto:ines.rafael@cm-loule.pt)

**Population:** 70,622

- Developing a Sustainable Energy and Climate Action Plan • Monitoring SDGs • Strengthening technical capacity within the municipal administration • Reinforcing internal governance and communicating between municipal services
- Developing and implementing a Municipal Strategy for Adaptation to Climate Change (MSACC) and Municipal Plan for Adaptation to Climate Change • Promoting the Local Council, involving local stakeholders in MSACC implementation • Monitoring municipal climate action, including the development of the Municipal Observatory for Environment and Territory • Awareness and environmental education
- Improving energy efficiency in schools and public buildings • Realising the energy transition on the municipal level • Measures to improve urban environmental sustainability • Territorial decarbonisation

## SETÚBAL

PORTUGAL

**Contact:** Rute Vieira, rute.vieira@mun-setubal.pt

**Population:** 121,185

- ★ Pursuing more ambitious recycling goals • Creating a more circular economy producing less waste and using it in other processes • Engaging local industry to contribute to ambitious climate action and decarbonisation
- 🔄 Energetic efficiency in public buildings with LED technology • Environmental education in schools and with several campaigns • Waste management
- ❓ Improving the capacity of municipal technicians on climate change mitigation • Supporting the implementation of local renewable energy projects • Developing and monitoring the implementation of SDGs in the region • Building good practices in urban metabolism to decrease ecological footprint

The Bay of Setúbal



Viana do Castelo, Land of Sustainable Opportunity: Sea, River and Mountain

## VIANA DO CASTELO

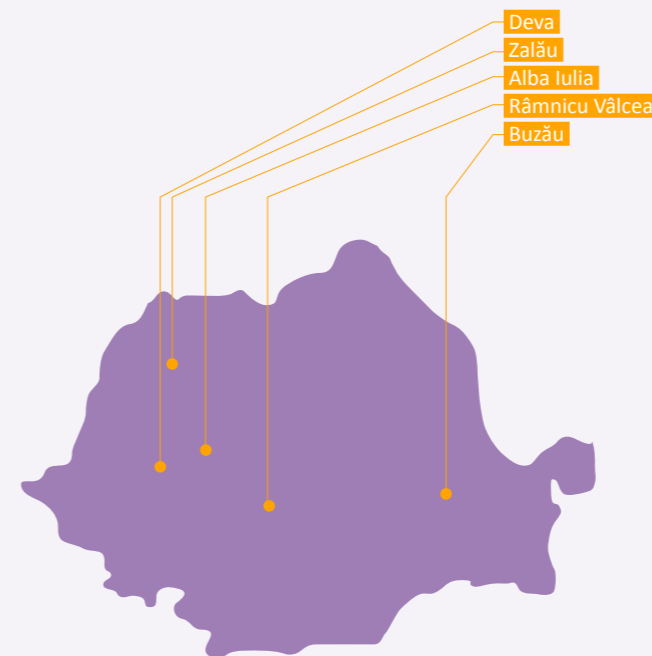
PORTUGAL

**Contact:** Elizabeth Pimentel de Matos, elizabeth@cm-viana-castelo.pt

**Population:** 88,725

- ★ Implementing local renewable energy projects • Creating a biomass/biogas plant to reduce emissions and produce renewable energy
- 🔄 Energy efficiency: Covenant of Mayors; public lighting; solar collectors and PV panels in swimming pools, pavilions, and schools • Energy production: wind farm and windfloat off-shore; biogas production at landfill site • Electric mobility: renewal of the car fleet for electric cars and bike; Mobi-E network/loading system • Climate change in local planning: public green spaces to reduce potable water; creating a monitoring committee for local strategies on adaptation and mitigation; environmental education to change consumer behaviour; project on fire prevention and fighting
- ❓ Monitoring progress against sustainable energy and climate goals • Biomass and composting

## ROMANIA



Alba Iulia, the first Romanian city to test 100 solutions of a smart city

## ALBA IULIA

ROMANIA

**Contact:** Gabriel Pleșa, gabiplesa\_viva@yahoo.com

**Population:** 63,000

- ★ Decarbonising energy consumption in the main sectors, with priority given to public buildings • Increasing the amount of renewables in the local energy mix • Implementing a sustainable urban mobility strategy for a better standard of living for its citizens • Introducing and promoting smart solutions for citizens
- 🔄 Using renewables in the energy supply of public buildings • Integrating small-scale, smart solutions at city level in the mobility and energy sectors
- ❓ Integrated energy management solutions for public buildings • Innovative financing solutions for sustainable energy projects • Creating a high level of awareness and involvement among citizens in the sustainable development of the city • Waste management

## BUZĂU

ROMANIA

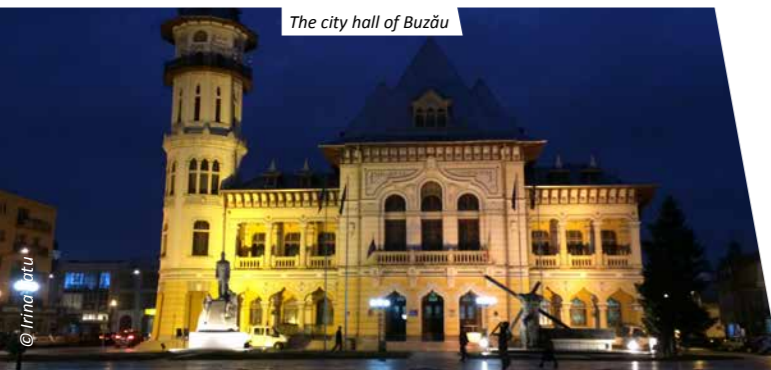
**Contact:** George Florea, floreageorge1@yahoo.com

**Population:** 115,494

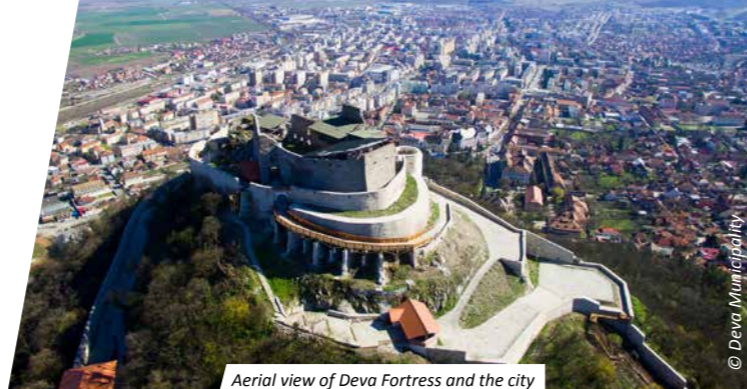
- Implementing the Europe 2020 Strategy for smart, sustainable, and inclusive growth • Reducing CO<sub>2</sub> emissions by 20% by 2020 compared to 2015 levels • Increasing the energy efficiency of public and private buildings

- Writing and implementing projects on energy efficiency funded through European structural funds; currently five projects with a value of €4.2 million ongoing • Renovating public transport stations and creating pedestrian areas • Waste management

- Instruments for data collection regarding the consumption of electricity, natural gas, and heat supply • Measures to reduce the energy consumption in public and private buildings • Reducing CO<sub>2</sub> emissions from public transport • Increasing the efficiency of the public lighting system



The city hall of Buzău



Aerial view of Deva Fortress and the city

## DEVA

ROMANIA

**Contact:** Mariana Miha, mariana.miha@primariadeva.ro

**Population:** 69,000

- Sustainable urban mobility, promoting public transport via electric buses and bike lanes • Retrofitting municipal buildings to reduce their energy consumption • Supporting owners and building associations in increasing the energy efficiency in residential buildings • Developing/extending urban green spaces • Monitoring energy consumption in municipal buildings

- Creating and implementing projects financed from European structural funds • Implementing energy efficiency measures in public and residential buildings • Monitoring energy consumption in municipal buildings

- Communicating with citizens about climate actions and sustainable energy • Sustainable urban mobility • Green public procurement • Managing and creating synergies between urban planning documents

## RÂMNICU VÂLCEA

ROMANIA

**Contact:** Mirela Turcu, mirela.turcu@primariavl.ro

**Population:** 118,398

- Developing and implementing green projects aimed at reducing urban pollution • Improving the energy efficiency of buildings • Increasing the share of renewables in the energy mix • Efficient and sustainable waste management

- Energy efficiency of buildings • Improving the energy efficiency of the public lighting system • Sustainable mobility

- Innovative social and economic climate change mitigation measures • Solutions and tips for raising awareness and involving citizens in climate action • Obtaining support for the local administration's climate action measures • Identifying financing sources for climate action measures • Improving communication and coordination among the departments of local government



Zăvoi city park – rehabilitation example of urban green spaces through European funds



Zalău – Energy efficient building renovation & examples of sustainable mobility measures

## ZALĂU

ROMANIA

**Contact:** Rodica Ciurte, ciurterodica@zalausj.ro

**Population:** 69,535

- Reducing energy consumption in public buildings and public services • Sustainable mobility and the use of electric buses in the public transport system • Renewable energy production and use

- Securing structural funds for energy efficiency investments • Renovating residential and municipal buildings, especially schools • Improving the efficiency of the public lighting system

- Technical solutions to reduce energy consumption in public buildings and services • Tools for sustainable energy management • Solutions for adapting to climate changes • Managing and creating synergies between urban planning documents • Facilitating reduced energy consumption of private buildings • Incorporating climate actions into a general urban plan and in other urban planning documents

# CONNECTING AND COLLABORATING AMONG SCHOOLS

BEACON’s work in schools aims to understand the local educational context in the target countries, jointly develop and modify energy-saving models in schools, develop capacity and raise awareness for climate action among teachers and pupils, and share diverse experiences and best practices with other schools and policymakers. The project involves 45 schools from the Czech Republic, Romania, and Bulgaria as well as twelve from Germany.

The diverse range of activities is characterised by a participatory and holistic approach as all stakeholders in schools play a role in creating an open, comfortable, and energy efficient environment in which to learn.

## Project activities include:

- Analysing of **climate action in lessons plans and curricula** to identify potential gaps in learning goals and outcomes related to climate action
- **Workshops on climate change** with a range of stakeholders from schools and government to develop a joint understanding of the local context
- **Continuing education for teachers and administrators** to increase capacity to improve climate action education
- **Climate action days** for pupils to engage and motivate students



BEACON aims to promote behavioural change and achieve energy savings.



- Providing of **measuring equipment** to use in the classroom to facilitate and create hands-on learning experiences on energy
- Developing an **incentive system for realising energy savings** in schools to create a lasting model that can be scaled to other schools within the respective country
- Implementing of **concrete energy savings measures** to realise energy savings goals and plans
- **Study tours** from target countries to Germany to incorporate best practices and experiences from German schools

BEACON aims to promote behavioural change and achieve energy savings through these activities. Our work in schools should empower stakeholders to take practical measures to make a difference in the fight against climate change in their schools and communities.

UfU staff explains quick response thermometer at a teacher training in Bulgaria



# Bulgaria



15

- Veliko Tarnovo**
  - Vasil Drumev High School of Mathematics and Informatics
  - St. Patriarch Evtimii Elementary School
  - PR Slaveykov Primary School
- Kilifarevo**
  - Neofit Rilski Primary School
- Pavel Banya**
  - Nikola Y. Vaptsarov Primary School
  - Hristo Botev High School
  - Vocational High School of Restaurant and Hospitality
  - General Skobelev Primary School
- Sofia**
  - 56 Konstantin Irechek Secondary School
  - 79 Indira Gandhi Secondary School
  - 40 Louis Pasteur Secondary School
  - 90 Gen. Jose de San Martin Secondary School
- Samokov**
  - Nikola Velchev Sports School
  - Otets Paisiy Secondary School
  - Hristo Maximov Primary School

Teachers from Pavel Banya and trainers from UfU during the teacher training in Sofia



Pupils from 56 Konstantin Irechek Secondary School, Sofia



Students from Scoala Gimnaziala Ion Agarbiceanu in Alba Iulia discuss why climate change is important.



Pupils from Goethe Kolleg in Bucharest

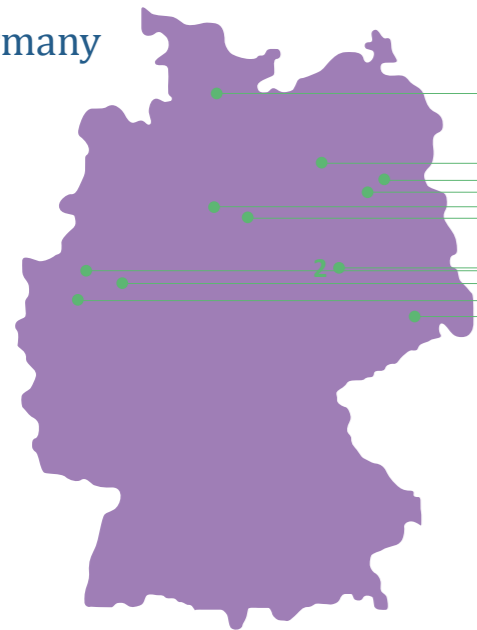
# Romania

- Scoala Gimnaziala Simion Barnutiu
- Scoala Gimnaziala Episcop Iacov Antonovici
- Scoala Gimnaziala Manolache Costache Epureanu
- Liceul Tehnologic Petru Rares
- Scoala Gimnaziala Mihai Eminescu
- Scoala Gimnaziala Ion Agarbiceanu
- Scola Gimnaziala Nr. 7
- Liceul Teoretic Alexandru Marghiloman
- Colegiul Tehnic Energetic Dragomir Hurmuzescu
- Colegiul Tehnic Transilvania
- Colegiul Tehnic Lazar Edeleanu
- Scoala Gimnaziala Anton Pann
- Colegiul National Mircea Cel Batran
- Scoala Gimnaziala Nr. 56
- DSBU
- Colegul National Kretelescu
- Goethe Kolleg
- Scoala Gimnaziala Nr. 20
- Scoala Gimnaziala Liviu Rebreanu
- Scoala Gimnaziala Cezar Bolliac

20



## Germany



12

Norderstedt	Lise-Meitner-Gymnasium
Hohennauen	Kleine Grundschule Hohennauen
Eberswalde	Grundschule Finow
Potsdam	Grundschule am Humboldt-Ring
Hannover	Grundschule Beuthener Straße
Braunschweig	Realschule Nibelungen
Halle	St. Franziskus Grundschule
	Neues Städtisches Gymnasium
Bottrop	Josef-Albers-Gymnasium
Arnsberg	Städtisches Gymnasium Laurentianum
Düsseldorf	Martin-Luther-Grundschule
Pirna	Grundschule Graupa



Martin-Luther-Grundschule pupils create posters for climate action



Teachers at kickoff meeting for schools partnerships in Hannover



Measuring instruments are provided to participating schools

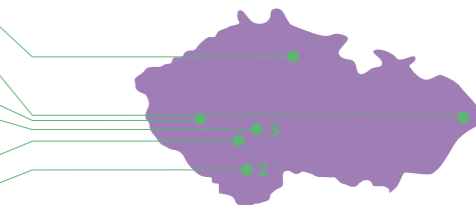


Czech teachers participate in introductory workshop with UfU staff

## Czech Republic

10

ZŠ Kněžice	Kněžice
ZŠ 5. Května	Rožnov pod
Radhoštěm	
ZŠ Pod Skalkou	
ZŠ Josefa Hlávky	Přeštice
1. ZŠ T.G. Masaryka	Milevsko
2. ZŠ Komenského	
Gymnázium Milevsko	
ZŠ a MŠ Josefa Kajetána Tyla	Písek
ZŠ Národní	Prachatice
ZŠ Zlatá stezka	



# MEET THE TEAM

- Navigant
- adelphi
- Independent Institute for Environmental Issues (UfU)
- The Association of Municipalities Polish Network (PNEC)
- SEVEN, The Energy Efficiency Center
- National Trust Ecofund Bulgaria (NTEF)
- Energy Cities Romania (OER)
- ENVIRON Association
- Centre for Renewable Energy Sources and Saving (CRES)
- FCIências.ID – University of Lisbon
- Energy Cities



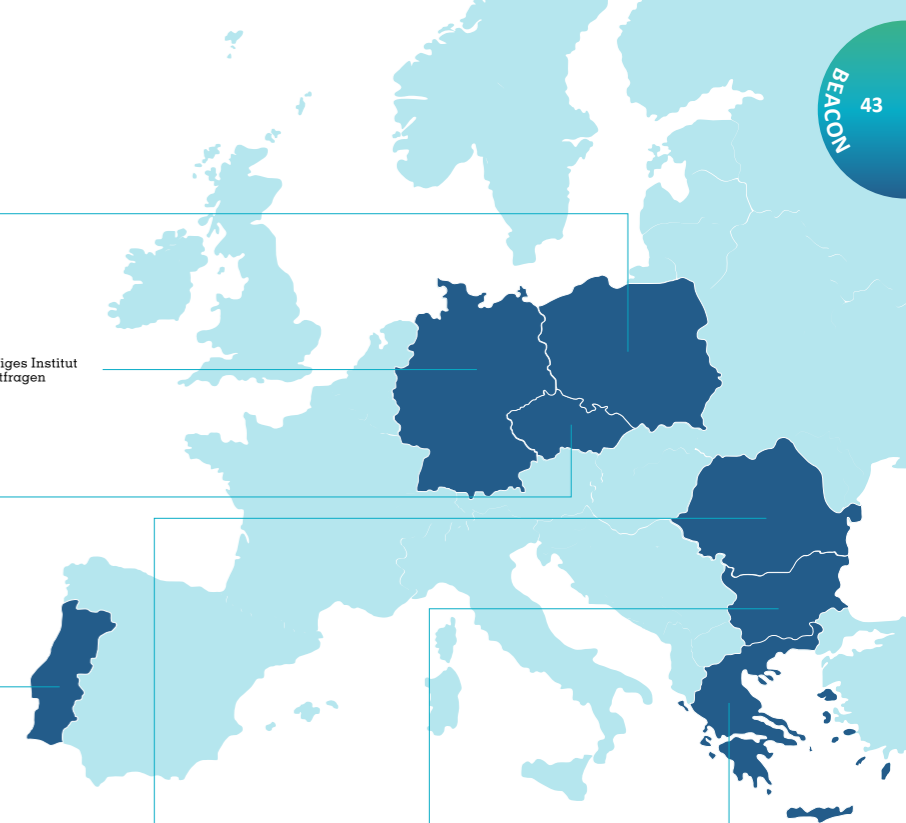
NAVIGANT



SEVEN



Network partner:



CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING



Visit the BEACON page on the EUKI website:  
**[www.euki.de/euki-projects/beacon](http://www.euki.de/euki-projects/beacon)**



Follow us on Twitter:  
**@EUKI\_Climate**



Email us at:  
**BEACON\_HelpDesk@navigant.com**

*Editor: Kristen Brand, Navigant | Designer: Enrica Hölzinger*

On behalf of:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety



European  
**Climate Initiative**  
EUKI