

10. Green Growth and Eco-innovation

Refer to Section 2.10 of the Guidance Note

10A. Present Situation

Please complete the following table providing the most recent data available:

Table 1: Benchmarking Data - Green Growth and Eco-innovation

Indicator		Unit	Year of Data
Number of electric (green) vehicles owned by the municipality	2	Number	2019
Share of electric vehicles owned by the municipality (as a percentage of all cars owned by the municipality)	18.18	%	2019
Number of charging outlets available for cars owned privately in the public space	44	Number	2019
Number of procurement contracts that include green issues	37	Number	2019
Percentage of all procurement contracts that include green criteria	100	%	2019
Share of the city budget dedicated to support environmental R&D by public and private entities	0	%	2019
Number of jobs created in green economic activities including: i) Jobs created by municipality initiatives in the private and public sector; and ii) Jobs in the municipality	Jobs created by municipality initiatives in the private and public sector	2,284	2019
	Jobs in the municipality	2	2019
Number of initiatives for promoting and enabling sharing, reuse and repair such as, repair cafés, etc. initiated or facilitated by the municipality	0		2019

Describe the present situation in relation to green growth and eco-innovation, including any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors which may have influenced this indicator. Where available, information/data should be provided from previous years (5-10) to show trends.

Make reference to the below (note that the numbers listed below correspond to Figure 2.2 of the Guidance Note):

1. Innovations that address material/resource use, (substitution, minimisation of material use, closing loops, etc.) and reduce environmental impacts, i.e. measures to improve resource efficiency;
2. Awareness raising and training to encourage the development and up-take of environmentally friendly technologies, particularly through training in industrial and business settings; new business

models (sharing schemes), including actions inspired by circular economy thinking;

3. Efforts to promote green skills or green jobs;
4. Efforts to promote Green Public Procurement (GPP) and other green policy measures;
5. Social innovation/stakeholder participation, including for example community programmes, that shows entrepreneurship and new ways of organisation that promote sustainable development and protect the environment locally and globally;
6. Efforts to drive innovation that address societal and particularly environmental challenges through creating the right enabling conditions, like putting in place advanced infrastructure (IT or more traditional) or investing in and partnering with innovators, platforms, clusters and hubs;
7. What efforts does the municipality make to stimulate sharing, reuse and repair different categories of goods;
8. Describe how green growth and eco-innovation improve the liveability of the city in the area of various aspects such as health and safety.

(max.800 words and five graphics, images or tables)

1.

The city of Pécs as a stakeholder board member, and its city operator company BLOKOM, as a consortium member, are involved in a circular economy H2020 project, called REPAiR . Its objective is to provide local and regional authorities with an innovative transdisciplinary open source geodesign decision support environment (GDSE) developed and implemented in living labs in six metropolitan areas. The GDSE allows creating integrated, place-based eco-innovative spatial development strategies aiming at a quantitative reduction of waste flows in the strategic interface of peri-urban areas. Local stakeholders, including NGOs, companies, university and environmental offices participate in living lab sessions.

2.

The Municipality is building a new Market Hall and district markets are also being developed with the main goal of facilitating the supply of fresh food from small farmers in Baranya to consumers in Pécs, in line with local economic development goals, and improving the quality of short supply chain (SSC) in Pécs. An important point in the development of SSC was the Municipality creating the Patrónus Cooperative, in cooperation with the company providing public catering in Pécs, which brings together local producers and has the main task of organising local sales and use of the raw materials produced and channelling them into public catering.



Figure 1: Visualisation of the new Pécs Market Hall



Figure 2: Renovated market building in Hajnóczy street

3.

Through the energy refurbishment projects within the institution and the implementation of the Green City development projects, the Municipality has indirectly created a total of 126 green jobs in the private sector.

As of January 2019, the Municipality is participating in project LIFE17 IPE/HU/000017 titled "Improving air quality at eight Hungarian regions through the implementation of air quality plan measures" that is directly evaluated by Brussels. A total of 10 Hungarian cities, the National Weather Service of Hungary (OMSz), the Herman Ottó Institute and VITO, a Belgian research institute are participating in the application. By implementing the project elements, Pécs intends to reduce the

residential transport-related and heating-related emissions by means of raising awareness and shaping the habits of residents.

4.

A separate section of the public procurement contracts of the city stipulates the environmental conditions, which obliges the Contractor to make every effort to protect the environment both inside and outside the work area and to reduce harm caused by pollution, noise and others during their activities. Furthermore, the Contractor is obliged to comply with the requirements of environmental legislation, in particular with regard to the limit values at work.

Preparation of the City's Environmental Programme, which determines the green policies for Pécs for the next 5 years, is currently ongoing.

5.

In cooperation with the Municipality, the Eco-City Eco-Region Foundation has made efforts to spread the message of sustainable development and environmental consciousness among the general public with 91,076 participants at 152 events since 2011, to establish the traditions of major environmental days.

6.

The Municipality, in cooperation with the National Weather Service of Hungary (OMSZ), creates an emission database within the "HUNGAIRY" Life project, and carries out 3 comprehensive pilot actions:

1. Creating and operating a solar cadastre
2. Creating and operating a green cadastre
3. SMART transport planning application

A detailed description of the Life project is elaborated in the Air Quality indicator document.

7.

In 2019, the community bike sharing system of Pécs was launched under the name "Pécsike", which is described in more detail in Chapter 10.C.2.

8.

The Municipality of Pécs is committed to improving the air quality of the city as soon as possible. This is why the electric bus replacement programme and the Pécsike bike rental system were launched, and dozens of electric charging stations were installed along the main traffic routes of the city. These measures can greatly contribute to the improvement of air quality due to zero local emissions. Furthermore, the Municipality is participating in the HUNGAIRY project for this purpose. For more information on the above, see the indicator on Air Quality.

Currently, a biological mosquito monitoring programme is being run under the leadership of the municipal company BOKOM, which aims at minimising chemical control and thereby reducing the number of aerial and ground fog-forming interventions. As a result, the impact of noise and odour on the people of Pécs is reduced.

10B. Past Performance

Describe the measures implemented over the last five to ten years concerning green growth and eco-innovation. Please comment on which measures have been most effective.

Make reference to:

1. Initiatives aimed at increasing green growth and eco-innovation, e.g. projects under Cohesion Policy funds, Horizon 2020, COSME, LIFE, Eco-innovation Action Plan (EcoAP), Green Public Procurement (GPP), as well as national policy initiatives;
2. How European and national policies have been transferred into policy action at city level;
3. The publication of reports, such as green accounts, that make clear the timely implementation of planned initiatives and the focus group they were written for;
4. Describe the actions the city took in order to develop the urban tissue/infrastructures in an innovative/sustainable way including actions inspired by circular economy thinking;
5. Name/describe what you consider to be the flagship of eco-innovation in your city.

(max. 1,000 words and five graphics, images or tables)

1.

In 2011, at the request of the Municipality, a study was carried out to discuss the recovery plans for Tüskésrét, the tailings pond in the heart of the city, a remainder from the coal-fired power plant in Pécs, within an Interreg project. The purpose of the study was that both the power plant and the city shared the interest in jointly settling the future of this environmentally challenging area. The study resulted in the creation of a lake surrounded by a sports complex and a playground significant in the whole city, to the great satisfaction of Pécs citizens. The Municipality intends to keep placing great emphasis on the further development of the area, as the implementation of such developments can lead to significant environmental, environmental health and well-being improving, welfare, economic, and job-creating developments and investments.



Figure 3: The renewed Tüskésrét

The renovation of the Pécs Zoo was completed in 2016, which brought along the renovation of the existing animal units and the completion of the insulation under every runway, thus reducing

(practically eliminating) soil contamination which used to cause a major problem. The project was realised within an ecotourism development project, therefore the site was connected into the cycling tourism network in the E-W direction towards the Orfű-Pécs cycling path and the Mecsextrem park, new thematic botanical paths have been established (introducing flora, a geological study path and geocaching points have been established, etc.), as well as a system of boards describing natural habitats and geological formations have been installed.

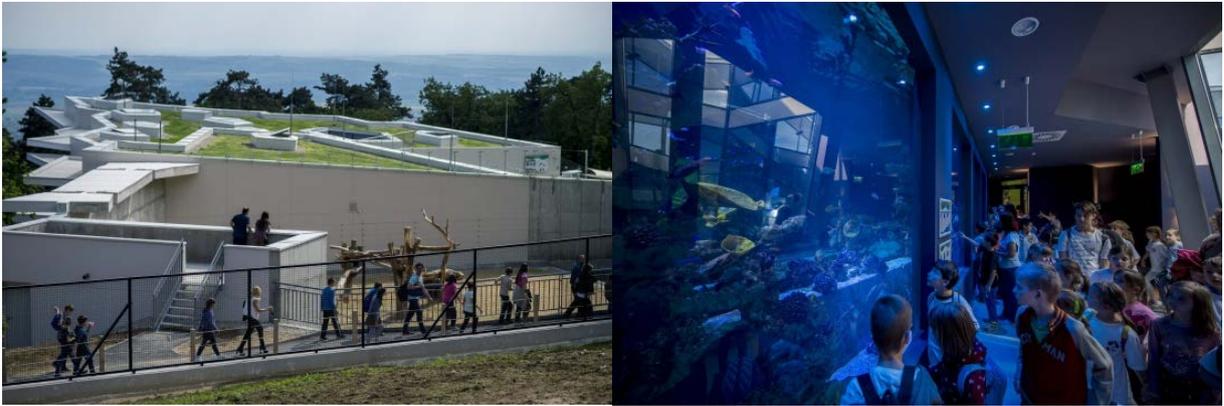


Figure 4: The renewed Zoo

2.

To establish the eco-innovative environment in June 2013 Pécs has joined the initiative of the Covenant of Mayors, and the SEAP was elaborated in 2015. Further to this Regional Innovation Strategy was also created for the periods 2004-2010, and 2014-2020, respectively a Smart Specialisation Strategy (S3) was made also for the period 2014-2020.

3.

The city has not yet introduced the green accounts reporting system, due to lack of manpower.

4.

In 2012, the Municipality created the Patrónus company to incorporate healthy, local produce into the local consumption chain and channel the products of local primary producers into public catering. The company was transformed into a social cooperative of producers in 2017. They have been joined by the Municipality, which helps them to reach the market with its own resources. This makes it easier for producers to sell their products in weekly farmer's and handicraft markets organised by themselves, in the markets run by the Municipality and in the Market Hall.

The EUR 68 million Mecsek-Dráva Regional Waste Management program led by Pécs, is realised with the collaboration of more than 300 communities. The investment helps divert more than two-thirds of solid wastes from landfilling and implies eco-innovative waste management practices unique in Hungary.

5.

It is difficult to highlight just one of the projects implemented in recent years, but perhaps the most innovative development in Pécs was the biogas plant built by the water utility company of the city. The Pécs wastewater treatment plant has a biogas plant applying co-fermentation technology, which makes it capable of treating 100% of the sewage sludge from the treatment plant and receiving other

high organic material content wastes from the city and the region. Electricity production (2018): 5,034,403 kWh / year, which represents 94.3% of the annual energy demand of the treatment plant. Biogas engines also produce heat. The waste heat from gas engines is used not only for heating the digester but also for producing domestic hot water for the supporting building.



Figure 5: The biogas power plant in Pécs

10C. Future Plans

Describe the future short and long term objectives to promote green growth and eco-innovation and the proposed approach (strategy) for their achievement. Emphasise to what extent plans are supported by commitments, budget allocations, and monitoring and performance evaluation schemes.

Make reference to:

1. Plans to establish eco-innovation clusters, strategies and initiatives to attract public-private-partnerships for further developing eco-innovation and sustainable employment;
2. Future targets of how eco-innovations can be applied by the city, e.g. make reference to share of hybrid or fully electric cars in total stock of the public fleet, or plans to support the infrastructure development for electric cars in public areas (i.e. increase the number of charging points for electric cars in public car parks), sharing economy schemes (i.e. bike sharing), use of public procurement for innovation;
3. Participation at green business networks or partnerships and covenants and co-operation with knowledge institutions, such as universities;
4. Programmes to reach the population promoting green economy thinking;
5. Programmes to reach the industries promoting green economy thinking;
6. Identify one key future plan which is considered as the flagship of eco-innovation in your 'City of the Future'.

(max. 800 words and five graphics, images or tables)

1.

In 2011, the Municipality became a member of the Blue Economy Innovation Cluster. The members of the cluster also include the University of Pécs and several companies. Within the framework of the Cluster, we completed an energy survey of obsolete buildings of the Pécs institutional system, as well as the socialist blockhouses in Pécs, which had not participated in the blockhouse programme. Unfortunately, the budget of the Municipality did not allow for energy refurbishment of the obsolete blockhouses, but this year, the Green City created an “Application Fund” of a non-refundable support of HUF 50 million for local residents for energy saving refurbishment of blockhouses. It is the declared intention of the Municipality to continue this programme in the future and to multiply the available budget. This is also important because the above application does not result only in residential energy savings, but also creates local construction work for local entrepreneurs.

2.

The two electric cars ordered this year will arrive in the municipal fleet in 2020, and the municipal companies will also have their current fleet replaced with electric vehicles by 2030. Currently, there are 44 electric charging stations available for electric cars in public and private areas open to public traffic. If it is required by the number of electric cars in the city, the Municipality will install further charging stations along the main traffic routes in the city.

10 electric buses are currently being manufactured for the Municipality that will be used in public transport. The long-term goal of the Municipality is to replace the entire public transport bus fleet with an electric fleet by 2030.



Figure 6: New electric bus in Pécs

The community bicycle network called Pécsike was launched in the summer of 2019. The goal of the Municipality is to expand the bicycle network and extend it over the whole city based on future needs. Currently, 70 bikes are available for users of the system at 7 charging stations, which the Municipality plans to develop in the next two phases. A total of 690 bicycles at 69 charging stations are planned to be available for Pécs citizens, thus the community bicycle network will cover the whole city.



Figure 7: One of the charging stations of Pécsike

3.

The University of Pécs, the Hungarian Innovation and Efficiency company, the Municipality of Pécs, the Diocese of Pécs, the Baranya County Council, the Pécs-Baranya Chamber of Commerce and Industry, the Leówey Klára Secondary School of Pécs and the Director and Patron of the Virtual Power Plant Programme (VPPP) have signed a joint declaration of intent focusing on openness and commitment to energy consciousness, energy efficiency and green energy development. The signatories have agreed to set up and operate the Baranya Virtual Power Plant Programme (BAVPPP).

4.

We are present in all educational institutions as part of the “Lépj!” (Step forward) educational programme of the Eco-City Eco-Region Foundation. Together, the Municipality will continue to place great emphasis on environmental education of future generations, and within the Hungairy Life project, the Municipality is planning an awareness-raising programme for the entire urban population for improving air quality. The Municipality plans to extend the Patrónus programme over the entire city.

5.

The Municipality plans to establish the “Green Enterprise of Pécs” award, which will be given to Pécs companies that can meet the system of green criteria to be developed by the Municipality in the future. The criteria will include the way in which the economic operators apply environmental principles in their investments, purchases and operations (waste reduction, selective collection, energy and water saving operation, preference of public transport and purchasing local products, planting of vegetation, etc.); the Pécs-Baranya Chamber of Commerce and Industry is open for this joint project.

6.

The next objective of the VPPP is to **make Pécs a zero-emission city together**, so the extent of output and processing should be the same. In terms of energy production, we intend to base this on alternative energy use (primarily solar in Pécs, but may also include energy recovery of non-recoverable waste). Energy savings could be achieved through a housing modernisation programme, an institution modernisation programme, raising awareness of being energy conscious, the

development of cycling and walking infrastructure, electric vehicles and low energy use by economic operators.

On the receiving side, the Municipality launched a major tree planting and green area increase programme 8 years ago, and the Municipality intends to intensify this activity in the future. The goal is to plant 150,000 community trees in the city in ten years, and the Municipality plans to manage the forests above the city. In the future, they will fulfil community and ecological functions. Logging is restricted by a strict municipal decree requiring the restoration of the total biological activity value.

10D. References

List supporting documentation, adding links where possible. Further detail may be requested during the pre-selection phase. Documentation should not be forwarded at this stage.

(max. 400 words)

1. REPAIR project: <http://www.bk.tudelft.nl/en/current/latest-news/article/detail/urbanism-leidt-h2020-project-circulaire-economie/>
2. Eco-City Eco-Region Programme - <http://www.okovaros-okoregio.hu/index.php/hu/letolt/category/1-pecsi-zold-informaciok?download=1:okovaros-okoregio-program-2012pdf>
3. Sustainable Energy Action Plan of Pécs - <http://www.pvfzrt.hu/hu/tanulmany/10/seap-pecs-megyei-joqu-varos-fenntarthato-energia-akcioterve>
4. Mecsek-Dráva Regional Waste Management Programme - <http://www.mecsekdrava.hu>
5. Pécs Urban Development Concept 2014-2030 - <http://www.pvfzrt.hu/hu/tanulmany/15/pecs-mjv-varosfejlesztesi-koncepcio-2014-2030>
6. Building the new central Market Hall - EU financing reference: TOP-6.1.3-15-PC1-2016-00002 <http://www.pvfzrt.hu/hu/projekt/105/uj-pecsi-vasarcsarnok-megepitese>

Word Count Check

Please complete the below word count check for Indicator 10: Green Growth and Eco-innovation, Sections 10A, 10B and 10C.

As per the Guidance Note (Annex 2 of the Rules of Contest), the word count includes text in graphics/tables and the body of text. The word count excludes text in the original application form, captions and text in Table 1: Benchmarking Data - Green Growth and Eco-innovation.

Section	Number of words in graphics/tables	Number of words in body of text	Total number of words in graphics/tables and body of text	Max. words
10A	0	691	691	800
10B	0	578	578	1,000
10C	0	775	775	800
10D	0	48	48	400