Article

Activities Undertaken in the Member Cities of the Polish National Cittaslow Network in the Area of “Energy and Environmental Policy”

Wioletta Wierzbicka

Faculty of Economic Sciences, University of Warmia and Mazury in Olsztyn, M. Oczapowskiego 4, 10-719 Olsztyn, Poland; wioletta.wierzbicka@uwm.edu.pl

Abstract: Cittaslow is a network of small cities which have adopted the assumptions of the “slow city” model and strive towards the improvement of the quality of life for their residents. This is a network of cities which put pro-social and pro-environmental measures in the first place, while ensuring that the unique character of every city is preserved. A city which wishes to join the Cittaslow network must go through the so-called certification process and satisfy a number of criteria classified in seven macro-areas, including the “energy and environmental policy” area. Significantly, after becoming a member of the network, the city is obligated to carry out activities that will enable it to meet the membership criteria to a higher degree, and in particular to satisfy the criteria it has previously failed to meet. Considering the above, the aim of this study has been to evaluate the activities initiated and implemented by the member cities of the Polish Cittaslow network in the sphere of the “energy and environmental policy”. A comparative analysis was made of the results of certification before entering the network and the results of recertification that each city underwent after five years of its membership. The study shows that, even in the first five years following their access to the network, the cities were able to implement many projects dedicated to the protection of environmental, reduced consumption of electricity and use of alternative energy sources as well as improvement in the ecological awareness of city inhabitants. This is reflected by a higher degree to which these cities meet the certification criteria in this field, from 71% to 75%.

Keywords: Cittaslow network; sustainable development; energy and environmental policy; renewable energy sources

1. Introduction

The international Cittaslow movement was started in 1999, in several Italian cities whose mayors set up the association “Cittaslow—International network of cities where living is good”. Currently, the Cittaslow association gathers 281 cities from 32 countries. The Polish National Cittaslow Network operates under the international network of slow cities. It has 35 members and is the second largest (after the Italian network) national Cittaslow network in the world [1].

The concept of Cittaslow is based on the philosophy of slowness and defies the excessively fast pace of life observed in the modern world [2–7]. The idea of the international Cittaslow movement “is to promote the culture of good, slow life in small towns, as an alternative to the big city rush and progressing globalization. Cities associated in the network strive for sustainable development, which is based on a properly planned urban policy ensuring appropriate relations between economic growth, environmental protection and improvement of the quality of life for residents” [8] (p. 270).

The idea of Cittaslow is a new, alternative approach to the development of small towns that focuses on local, endogenous resources, and the unique cultural and historical attributes of a town [3,9,10]. “Slow cities are places that pay attention to local history and
use the distinct local context to develop faster but in a more sustainable way. The “slow city” model focuses on local distinctiveness and explicitly connects the three E’s (economy, environment and equity) to sustainable urban development” [3] (p. 322). In other words, Cittaslow is a concept of urban development, which, in times of homogeneity, promotes diversity and valuable local values as well as a slow, harmonious and good life [4,11–16].

The idea of Cittaslow became a response to the need for a change resulting from the incompatibility of the existing development models focused mainly on economic growth, without taking into account environmental issues and the quality of life of the inhabitants [17]. Slow cities promise to preserve local identity by protecting the local heritage, increasing the standard of living while slowing down its pace. They also promise to respect the principles of sustainable development [18]. Slow cities “agree to pursue these goals, and to share good ideas, experiences and knowledge with other members of the national and international Cittaslow networks” [19] (p. 135) [20] (pp. 116–117).

The concept of Cittaslow, through care for the environment as well as focusing on the endogenous assets of a city, promoting locality, authenticity, tradition, local products and activation of city inhabitants, fully agrees with the principles of sustainable development [21,22]. The sustainable development of a city, which is not an entirely self-sufficient unit, but which also takes advantage of the resources of suburban communities, needs to be understood as an even and simultaneous development of all spheres of activity of its residents. These spheres comprise both the social, economic and environmental dimensions [23].

The slow pace of life guided by the cities of the Cittaslow network is not in opposition to development, technological progress or innovation. On the contrary, the development of slow cities should be based on new technologies and modern forms of management. Slow cities should be creative and open to innovation. In their development processes, they should use intelligent solutions, both in terms of social and economic functions, as well as the organization of the cities themselves—modern administration, modern services for residents and tourists. Cittaslow cities should support local producers and the development of local manufacturing. The implementation of investments aimed at improving the quality of life and the development of entrepreneurship should take place in cities as quickly as possible, but with care for the environment [21].

Small and medium-sized cities with a population of less than 50,000 may become members of the Cittaslow network. However, in some cases, larger cities can also join the network. By definition, it is an association of small cities, and such small urban centers actually prevail in the network. Cities are initially admitted to the international network, but once the required minimum number of cities in a given country, they form a national network [19,24–26]. Cities which intend to access the Cittaslow network must satisfy a number of formal requirements, such as submitting an application to join the network, obtaining the consent of the Minister for Foreign Affairs, adopting a resolution of the City Council on joining the network, and paying a one-off certification fee. Cities must also undergo the so-called certification process (self-assessment), which proceeds according to strictly defined criteria. While preparing for certification, cities participate in numerous workshops and are provided the care of the so-called “guardian city”, which already is a member of the Cittaslow network [21,27].

In the certification process, cities must meet over 50% of the criteria, arranged in seven macro-areas, which are [28] (pp. 25–27):

- “Energy and environmental policy;
- Infrastructure policies;
- Quality of urban life policies;
- Agricultural, touristic and artisan policies;
- Policies for hospitality, awareness and training;
- Social cohesion;
- Partnerships”.


At present, the certification form contains 72 criteria, both quantitative and qualitative ones, including 31 obligatory criteria and five prospective ones [28]. Each criterion has an assigned weight and maximum score that a city can earn for satisfying it. In compliance with the Regulation of the Polish National Cittaslow Network [29], the self-assessment prepared by a city is verified by the Certification Commission, which is composed of representatives of the national network. The criteria assessed under the area of “energy and environmental policy” are presented in Table 1.

| Criteria | (Including Obligatory Criteria Marked with *) |
|----------|---------------------------------------------|
| Air quality conservation * |
| Water quality conservation * |
| Drinking water consumption of residents |
| Urban solid separate waste collection * |
| Industrial and domestic composting |
| Purification of sewage disposal * |
| Energy saving in buildings and public systems |
| Public energy production from renewable sources |
| Reduction of visual pollution, traffic noise |
| Reduction of public light pollution * |
| Electrical energy consumption of resident families |
| Conservation of biodiversity |

Source: Adapted from Ref. [8] (p. 284).

Having entered the network, the city is obligated to initiate activities and engage in projects that will allow the city to maintain or upgrade its fulfilment of the certification criteria, and in particular to meet the criteria it has not satisfied previously. In order to verify the city’s activity in this scope, the city is re-evaluated during so-called recertification, which takes place five years after it joined the network. Both certification and recertification can be therefore viewed as some form of a diagnosis of the city and as a way to recognize its material and social endogenous potential [14,30]. Furthermore, the criteria listed in the form set directions for the development of cities [31–33]. The Cittaslow member cities need to take certain measures in the areas submitted to evaluation, including their “energy and environmental policy”, so as to improve the degree of fulfilment of the mentioned criteria. Many authors emphasize that the process of certification and recertification of cities is an important attribute of the Cittaslow network, which contributes to its success [2,34,35].

Thus, it is unsurprising that membership in the Cittaslow network is perceived by cities as an opportunity to develop and to improve the standard of living of their citizens. Among possible outcomes of a city’s access to the Cittaslow network, the following are distinguished [14,36,37]:

- benefits arising from cooperation of cities within the network;
- determination of directions in the city’s sustainable development on the basis of certification obligatory criteria;
- promotion of a city;
- building awareness among residents of the city’s resources and strengths;
- co-funding of projects from the EU funds;
- higher revenues from tourism.

The above considerations prove that cities count on achieving benefits in different spheres: economic, social, ecological, spatial or image-related ones. As for the environmen-
tal (natural) sphere, which this study is dedicated to, a chance to achieve the following effects is often emphasized [25,30,38]:

- improved quality of the natural environment (water, air, land resources);
- higher ecological awareness of the residents;
- sustainable development of a city, e.g., sustainable tourism and agriculture;
- increased biodiversity and productivity of ecosystems;
- decreased consumption of electricity;
- increased use of alternative energy sources;
- improved ecological safety of the city.

To summarize, the objective of the international Cittaslow association is to promote and disseminate the idea of “good living” by applying in small cities specific solutions in the fields of ecological policy, infrastructure, urban space, hospitality, social cohesion and partnership [29]. Protection of the natural environment is one of the most important requirements set for slow cities. Particular emphasis is laid on verifying the quality of soils, water and air, but also ways of collecting and disposing of waste. The network member cities are forbidden to use genetically modified organisms (GMO) in farming. They should also ensure that noise, electromagnetic field and light intensity are maintained on an adequate level. They are expected to elaborate energy-saving plans, including the use of alternative energy sources. Residents of slow cities need to segregate waste [21]. Cities must be committed to the conservation of the unique nature of their environment and reduce its pollution, promote the use of renewable energy sources, also in public transport and promote eco-friendly architecture in new developments. Slow cities are obliged to comply with the quality management standards developed by the International Organization for Standardization—ISO 9000 and the environmental management standards and monitoring its quality—ISO 14000 [2,39].

In general, the measures implemented in the cities within the “energy and environmental policy” sphere should lead to a decreasing emission of pollutants to the natural environment, and to the optimization of energy consumption, for example by using renewable energy sources. This is particularly important because cities are nowadays the major consumers of electricity [40–42]. Energy is an essential component in the functioning of any city and plays a significant role in maintaining its “metabolism”. Energy supports economic activity and provides city inhabitants with an adequate quality of life [43,44]. Unfortunately, in order to fulfill the environmental targets, set by the European Union, cities will have to become “smarter” in optimizing energy consumption [45]. The transformation of an energy mix has to be achieved primarily in urban areas, with active participation of city dwellers [46,47]. In slow cities, this condition has been somewhat embedded in the qualification criteria. The Cittaslow member cities must take adequately targeted activities in the scope of “energy and environmental policy”. They need to focus their development policies on the areas that will play key roles in the recertification process. Failing to satisfy the set criteria would mean that the membership of a given city in the network could not be extended. It is worth mentioning here that the literature comprises numerous references documenting that many cities, especially large ones, participate actively in the transformation of the energy mix in Europe. The contribution of medium and small cities in this regard has been far less thoroughly analysed [46].

In the light of the above considerations, the research objective has been to evaluate the activities undertaken by the Polish Cittaslow network cities in the area of “energy and environmental policy”. An attempt was made to answer the question whether and by what extent the degree of fulfillment of the certification criteria in this area has increased, as well as to demonstrate what activities the slow cities have most often implemented in this context. The increase in the degree of fulfillment of the above-mentioned criteria will prove that, in the member cities of the Polish network, real actions are taken in this area. Results of this study will also attest to the fact that the membership in Cittaslow network is a source of benefits for cities. Significantly, there are few studies concerning the effects of the membership in the Cittaslow network. Moreover, there are no studies on the results of
certification and recertification of cities belonging to the Cittaslow network. Therefore, this study will partially fill the gap in this respect.

2. Materials and Methods

The research on the evaluation of activities undertaken by slow cities in the area of “energy and environmental policy” was carried out for cities belonging to the Polish National Cittaslow Network. The Polish network was established on 13 April 2007. The founding cities were four cities located in the Warmińsko-Mazurskie Voivodeship: Biskupiec, Bisztynek, Lidzbark Warmiński and Reszel. As of October 2021, the Polish Cittaslow Network associates 35 cities, of which 26 are situated in the Warmińsko-Mazurskie Voivodeship. Other members are two cities in the Opolskie Voivodeship, and one city in each Lubelskie, Łódzkie, Mazowieckie, Pomorskie, Śląskie, Wielkopolskie and Zachodniopomorskie Voivodeships (Table 2). The Polish network has two “supporting members”—the Marshal’s Office of the Warmińsko-Mazurskie Voivodeship in Olsztyn (since the establishment of the Polish network) and the Olsztyn County (since 2019), and one “friend of Cittaslow”, the company Grupa Meblowa Szynaka (since 2019).

Table 2. Member cities of the Polish National Cittaslow Network.

| Year of Admission | City                       | Voivodeship                  | Type of Municipality | Population (31 December 2020) |
|-------------------|----------------------------|------------------------------|----------------------|-------------------------------|
| 2007              | Biskupiec                  | Warmińsko-Mazurskie          | r-u                  | 10,628                        |
|                   | Bisztynek                  | Warmińsko-Mazurskie          | r-u                  | 2328                          |
|                   | Lidzbark Warmiński         | Warmińsko-Mazurskie          | u                    | 15,489                        |
|                   | Reszel                     | Warmińsko-Mazurskie          | r-u                  | 4535                          |
| 2010              | Murowana Goślina           | Wielkopolskie                | r-u                  | 10,410                        |
|                   | Nowe Miasto Lubawskie      | Warmińsko-Mazurskie          | u                    | 10,709                        |
| 2012              | Lubawa                     | Warmińsko-Mazurskie          | u                    | 10,374                        |
|                   | Olsztynek                  | Warmińsko-Mazurskie          | r-u                  | 7491                          |
|                   | Ryn                        | Warmińsko-Mazurskie          | r-u                  | 2827                          |
| 2013              | Barczewo                   | Warmińsko-Mazurskie          | r-u                  | 7509                          |
|                   | Dobre Miasto               | Warmiński-Mazurskie          | r-u                  | 10,010                        |
|                   | Goldap                     | Warmiński-Mazurskie          | r-u                  | 13,600                        |
| 2014              | Górowo Iławeckie           | Warmińsko-Mazurskie          | u                    | 3887                          |
|                   | Kalety                     | Śląskie                      | u                    | 8548                          |
|                   | Nidzica                    | Warmińsko-Mazurskie          | r-u                  | 13,547                        |
|                   | Nowy Dwór Gdański         | Pomorskie                    | r-u                  | 9862                          |
|                   | Pasym                      | Warmińsko-Mazurskie          | r-u                  | 2498                          |
|                   | Rejowiec Fabryczny         | Lubelskie                    | u                    | 4328                          |
| 2015              | Bartoszyce                 | Warmińsko-Mazurskie          | u                    | 22,984                        |
|                   | Działdowo                  | Warmińsko-Mazurskie          | u                    | 21,145                        |
|                   | Lidzbark                   | Warmińsko-Mazurskie          | r-u                  | 7635                          |
|                   | Orneta                     | Warmińsko-Mazurskie          | r-u                  | 8648                          |
|                   | Prudnik                    | Opolskie                     | r-u                  | 20,671                        |
| 2016              | Głubczyce                  | Opolskie                     | r-u                  | 12,441                        |
|                   | Jeziorany                  | Warmińskiego-Mazurskie       | r-u                  | 3135                          |
|                   | Sepopol                    | Warmińsko-Mazurskie          | r-u                  | 1883                          |
| 2017              | Rzgów                      | Łódzkie                      | r-u                  | 3382                          |
|                   | Sianów                     | Zachodniopomorskie           | r-u                  | 6560                          |
Table 2. Cont.

| Year of Admission | City       | Voivodeship            | Type of Municipality | Population (31 December 2020) |
|-------------------|------------|------------------------|----------------------|-------------------------------|
| 2019              | Braniewo   | Warmińsko-Mazurskie    | u                    | 16,974                        |
|                   | Sierpc     | Mazowieckie            | u                    | 17,788                        |
|                   | Wydminy    | Warmińsko-Mazurskie    | r                    | 6176                          |
| 2020              | Morąg      | Warmińsko-Mazurskie    | r-u                  | 13,459                        |
|                   | Olecko     | Warmińsko-Mazurskie    | r-u                  | 16,364                        |
|                   | Szczytno   | Warmińsko-Mazurskie    | u                    | 22,813                        |
| 2021              | Węgorzewo  | Warmińsko-Mazurskie    | r-u                  | 11,144                        |

1 a city in a rural-urban commune (r-u), an urban commune (u), a rural commune (r). Source: own research based on [48].

The member cities vary, both in size and in the environmental and cultural resources. Each city is characterized by different, valuable attributes. It has a different history, tradition as well as a different socio-economic potential [10,49–52]. Hence, each city has different development opportunities. Therefore, the scope and nature of activities undertaken in cities in order to meet the certification criteria may be different.

To evaluate the mentioned measures taken by the Polish National Cittaslow Network member cities in the area of the “energy and environmental policy”, a comparative analysis approach was employed. The results of certification prior to a city’s access to the network were compared to the outcome of recertification carried out after 5 years of the city’s membership in the network.

Successful conclusion of the certification procedure attests to the city satisfying specific criteria, which means it can be admitted to the Cittaslow network. When the recertification procedure is completed successfully, this in turn confirms that the standards mentioned have been maintained or even improved. Hence, the comparison of both certification and recertification results enabled the author to answer the question whether and to what extent the cities raised the degree to which they originally satisfied the criteria gathered in the category “energy and environmental policy”. Any improvement in the degree of meeting these criteria will prove that the Cittaslow member cities have implemented appropriate activities in this area over the five years of their membership.

To ensure that correct conclusions be drawn, the results of certification and recertification were presented for the 26 member cities of the Polish National Cittaslow Network which have already passed through both processes (Table 3).

Table 3. The Polish Cittaslow network member cities which have passed the recertification process.

| Year of Certification | Cities                                                                 | Year of Recertification |
|-----------------------|------------------------------------------------------------------------|--------------------------|
| 2007                  | Reszel, Biskupiec, Bisztynek, Lidzbark Warmiński                       | 2015                     |
| 2010                  | Nowe Miasto Lubawskie, Murowana Goślina                                | 2015                     |
| 2012                  | Lubawa, Olsztyniec, Ryn                                                | 2017                     |
| 2013                  | Barczewo, Dobre Miasto, Goldap                                         | 2018                     |
| 2014                  | Górowo Iławeckie, Kalety, Nidzica, Nowy Dwór Gdański, Pasy, Rejowiec Fabryczy | 2019                     |
| 2015                  | Bartoszyce, Prudnik, Działdowo, Lidzbark, Ornet                         | 2020                     |
| 2016                  | Głubczyce, Jeziorny, Sępól                                              | 2021                     |

Source: own research based on information made available by the Cittaslow Office.
The degree to which the cities satisfied the certification and recertification criteria was discussed in the scope of the “energy and environmental policy”, in reference to the other six areas, and for all criteria overall. The arithmetic mean of the results achieved by the individual cities served as an indicator of the fulfilment of accession criteria by the Cittaslow member cities. The article also presents examples of the activities pursued in the selected member cities of the Polish Cittaslow network in this area. Special attention was drawn to the activities which are intended to reduce the consumption of electricity and to increase the use of alternative sources of energy.

The work also presents selected effects of activities undertaken by cities in the field of “energy and environmental policy”. Statistical data describing these selected effects were obtained from the Local Data Bank of Poland’s Central Statistical Office and the reporting platform of the Marshal’s Office of the Warmińsko-Mazurskie Voivodeship in Olsztyn.

3. Results

The comparative analysis of the certification and recertification results achieved by the analyzed cities proves that the degree to which they met the criteria set in the area “energy and environmental policy” rose from 71% to 75%. The extent to which the mentioned criteria were met against the background of the fulfilment of all the criteria as well as the criteria in the other six areas is illustrated by the diagram in Figure 1.

The degree of the fulfilment of the criteria listed in the certification and recertification forms within the area “energy and environmental policy” increased by four percentage points. This means that the first five years of a city’s membership in the network was a time when the analyzed cities implemented many measures and investments in this area and thus were able to improve their competitiveness. The implemented measures resulted in the degree of fulfillment within this area reaching the same level as in the case of the area of “infrastructural policies” and only slightly lower than in the “policies for hospitality, awareness and training” area. Significantly, an increase in the degree of the fulfilment of the accession criteria within the “energy and environmental policy” category was not really high. The cities attained much higher degrees of the fulfilment of criteria in some other macro-areas.

![Figure 1. Degree of the fulfilment of certification and recertification criteria by the Polish slow cities. Source: own research based on certification and recertification forms, made available by the Cittaslow Office.](image-url)
the changes which have occurred in the slow cities in this area, it seems this is the sphere where much remains to be done. The degree of the fulfilment of the criteria grouped in this category assessed during the recertification process was just 47%. A common problem is that the Cittaslow cities rarely start cooperation with others, especially across the state borders, under projects promoting the philosophy of slow life. A possible reason is that the Polish National Cittaslow Network cities are now at the stage of commencing cooperation and building trust. The cities are just learning networked collaboration and most develop external cooperation within the national network [21]. The fact that the chosen directions for creating collaborative connections are most often dictated by the proximity of the involved partners is not without relevance [53–55], the same as the so-called proximity paradox, observed in dispersed networks, like the Cittaslow network [56,57].

The highest indicator score during recertification was noted in the area called “policies for hospitality, awareness and training”, where it reached 76%. In this area, the cities increased the degree of the fulfilment of the criteria by as much as 10 percentage points. Some examples of the activities undertaken by the cities in this area are: introducing high standards of hospitality, creating slow tourist trails, promoting an active lifestyle among city residents, numerous pro-health initiatives, and educational sessions dedicated to the concept of Cittaslow in order to raise the awareness of the city residents. The lowest indicator of the fulfilment of criteria obtained during recertification was noted in the area of “social cohesion”. The degree to which the cities satisfied these criteria was just 45%. The cities should undertake activities focusing on the elimination of poverty, improvement of the situation of children, adolescents and people with disabilities, as well as integration and activization of all city dwellers in order to increase this indicator.

As underlined earlier, the observed increase in the degree of fulfilment of the certification criteria in the area of “energy and environmental policy” proves that the cities have undertaken specific measures in this area. Examples of such activities in the selected member cities of the Polish Cittaslow Network are given in Table 4.

The measures taken in the selected slow cities confirm that the Cittaslow member cities consider environmental protection to be an important issue. Many activities are pursued in these cities which aim at maintaining an adequate quality of the local environment, and at making the residents, especially the youngest generation, aware of the importance of nature in the life of their community. In slow cities, activities are undertaken in the field of rational waste management, as well as activities aimed at the development of municipal infrastructure, e.g., increasing the number of sewage treatment plants and equipping residents with a sewage network. Slow cities also take measures to decrease energy consumption, while increasing the share of low-emission and renewable sources of energy. Examples are thermal insulation of buildings, including public ones, or installation of new and ecological sources of heat. Cities strive to improve their energy efficiency, which is important both from the point of view of energy savings and combating climate change. They try to transform the local energy sector in such a way that the local community pays less for energy and to achieve the desired environmental effects in the city.

In most cities of the Polish Cittaslow network, the first positive effects of the actions taken are already visible. This can be confirmed by, for example, data on electricity consumption per one recipient or the percentage of people using the sewage system in the total population in the city (Table 5).
Table 4. Examples of measures implemented in the area “energy and environmental policy” in the
selected member cities of the Polish National Cittaslow Network.

| City          | Measures Taken in the Area “Energy and Environmental Policy”                                                                                                                                                                                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jeziorany     | The city was granted co-financing to a project concerning the use of renewable energy sources in four public buildings housing the Complex of Schools in Jeziorany. Photovoltaic panels were mounted on the roofs of the buildings, and the next heat pumps will be installed. |
| Głubczyce     | 13 new wind turbines were constructed in the Głubczyce municipality. Two other turbines have been issued a positive environmental decision.                                                                                                                     |
| Sepopol       | All mercury street lights have been replaced with sodium ones. The number of lights has been reduced to save energy. To maintain air quality, measures have been taken to reduce atmospheric emission from heating sources. A biomass boiler, solar collectors and a hydroelectric power plant on the Guber River have been built. |
| Działdowo     | Air pollution monitoring devices have been installed in six sites in the city. Measures were taken to mount photovoltaic panels on roofs of the public schools and municipal nursery school.                                                                     |
| Orneta        | Measures were taken to save thermal energy. The buildings of schools, city council, nursery schools, municipal civic centre, library and other buildings owned by the municipality underwent thermal insulation. The thermal modernization included insulation of the roofs and external walls, the fitting of new window and door woodwork, renovation of roofs and chimneys, replacement of the old electric wiring, modernization of heat exchangers and indoors central heating installations. |
| Prudnik       | Thermal modernization was carried out in the following buildings: 2 gyms, social care house, cinema with a library, 2 nursery schools, and the City Council office building. The city is implementing the policy of reducing public light pollution, whereby old street mercury and sodium lights are replaced with LED (light-efficient) lights. |
| Lidzbark      | Under the programme for the removal of asbestos containing products, the municipality has been co-financing for several years tasks related to the removal of all such products, supported by funds from the Provincial Fund for Environmental Protection and Water Management in Olsztyn. The municipal budget provides grants to replace coal-fired furnaces for pro-ecological solutions for heating residential buildings in the city and municipality of Lidzbark. |
| Kalęty        | Solar collectors have been installed on the roof of the City Council office building to produce hot water and electricity. The office building then became self-sufficient. In total, 179 solar panel systems and 210 photovoltaic microinstallations have been installed on roofs of single-family buildings for production of hot water and electricity from RES to be used by the households. |
| Pasym         | Solar collectors have been installed on roofs of residential buildings in the city. Educational sessions with city residents were carried out regarding possibilities of obtaining grants from the Provincial Fund for Environmental Protection and Water Management in Olsztyn. A growing number of city inhabitants obtain energy for heating their houses from geothermal sources. |
| Nowy Dwór Gdański | Wind farms have been built in the municipality. Some sports facilities had solar collectors fitted. A low-carbon economy plan has been developed. In line with this plan, measures are being implemented to reduce emission of greenhouse gases, to increase the contribution of RES and to reduce the consumption of final energy by increasing the energy efficiency of buildings. |
| Olsztynek     | Solar collectors have been installed on roofs of the Grunwald Housing Coop buildings. There are plans to set up photovoltaic farms in the municipality. Solar street lights have been installed in the city since 2015. The city residents use solar panels to produce hot water for household use. |
| Reszel        | A 2 MW power plant composed of photovoltaic cells has been built in the municipality; it is also planned to launch three wind turbines, each with a capacity of 2 MW. There are plans to use geothermal energy to heat school buildings using heat pumps.                                                |

Source: own research based on recertification forms, made available by the Cittaslow Office.
Table 5. The effects of activities undertaken by Polish slow cities in the area of “energy and environmental policy”.

| City                | The Rate of Changes in Electricity Consumption per 1 Recipient (in %) | Average Reduction of PM10 Dust Emissions in 2018–2020 (in kg/Year) | The Rate of Increase in the Mass of Waste Collected Selectively in 2017–2020 (in %) | Change in the Percentage of People Using Sewage Systems in the Total Population (in Percentage Points) |
|---------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Barczewo            | −23.5                                                         | 363.8                                                          | 127.2                                                                           | 0.5                                                                              |
| Bartoszyce          | −0.7                                                          | 4197.6                                                         | 119.9                                                                           | 0.0                                                                              |
| Biskupiec           | −27.9                                                         | 14,097.9                                                       | 81.5                                                                           | 0.2                                                                              |
| Bisztynek           | −15.3                                                         | 0.1                                                            | 402.1                                                                           | 12.7                                                                             |
| Dobre Miasto        | −11.6                                                         | 0.2                                                            | 124.7                                                                           | 1.1                                                                              |
| Działdowo           | 1.2                                                           | 14,556.4                                                       | 29.5                                                                           | 0.2                                                                              |
| Głubczyce           | 2.9                                                           | no data                                                        | 32.6                                                                           | 0.0                                                                              |
| Goldap              | −5.8                                                          | 2997.3                                                         | 573.0                                                                           | 0.3                                                                              |
| Górowo Iławeckie    | 5.9                                                           | 80.9                                                           | 138.0                                                                           | 1.7                                                                              |
| Jeziornany          | 5.0                                                           | no data                                                        | 97.4                                                                           | 0.0                                                                              |
| Katedy              | 4.3                                                           | no data                                                        | 148.2                                                                           | 15.4                                                                             |
| Lidzbark            | 0.8                                                           | 3459.9                                                         | 35.8                                                                           | −0.4                                                                             |
| Lidzbark Warmiński  | −15.9                                                         | 2119.7                                                         | 103.3                                                                           | 5.3                                                                              |
| Lubawa              | −6.5                                                          | 5520.0                                                         | 38.1                                                                           | 5.1                                                                              |
| Murowana Goślina    | −6.3                                                          | no data                                                        | 22.7                                                                           | 0.7                                                                              |
| Nidzica             | −10.7                                                         | 408.2                                                          | 50.9                                                                           | 0.0                                                                              |
| Nowe Miasto Lubawskie | −4.6                                                        | 1302.5                                                         | 393.8                                                                           | 33.0                                                                             |
| Nowy Dwór Gdańsk    | −0.9                                                          | no data                                                        | 39.8                                                                           | 0.3                                                                              |
| Olsztyniec          | −4.9                                                          | 0.46                                                           | 156.8                                                                           | 0.5                                                                              |
| Orneta              | 3.8                                                           | no data                                                        | 138.1                                                                           | −0.7                                                                             |
| Pasym               | −11.5                                                         | 532.1                                                          | 137.0                                                                           | 0.4                                                                              |
| Prudnik             | 4.3                                                           | no data                                                        | 55.4                                                                           | 3.3                                                                              |
| Rejowiec Fabryczny  | −2.4                                                          | no data                                                        | 59.2                                                                           | 3.3                                                                              |
| Reszel              | −20.0                                                         | 1255.8                                                         | 83.2                                                                           | 0.0                                                                              |
| Ryn                 | −4.9                                                          | no data                                                        | 207.2                                                                           | 0.0                                                                              |
| Sępopol             | −4.6                                                          | 48.4                                                           | 10.2                                                                           | 0.0                                                                              |
| Arithmetic mean     | −5.8                                                          | 2996.5                                                         | 131.0                                                                           | 3.2                                                                              |

Source: own research based on [48,58].

During the first five years of membership in the network, 18 out of 26 cities saw a decrease in electricity consumption per 1 recipient. The largest decrease was recorded in Biskupiec—by almost 28%, the smallest in Bartoszyce—by less than 1%. The average rate of decrease in electricity consumption for all the examined cities was 5.8%. During the first five years of membership in the network, most cities also saw an improvement in the accessibility of residents to the sewage system. The percentage of people using the sewage system in the total population increased the most in Nowe Miasto Lubawskie—by 33 percentage points (from 48.1% to 81.1%). However, it is still too low. In many other network cities, which also recorded an increase in this share, the situation is also not satisfactory. According to the data from 2020, the average percentage of people using the sewage system in the examined cities was 91.1%, and only in two cities was it 100%.

As part of rational waste management, the mass of waste collected selectively increased in all slow cities. The largest increase in this respect was recorded in Biskupiec—over 400%. The smallest increase in this respect was recorded in Sępopol, only by 10.2%. The average rate of increase in the mass of waste collected in a selective manner in all examined cities
was 131%. The presented data concern the years 2017–2020 because, for the previous years, the data were published only for poviat.

In the years 2018–2020 (data for previous years are not available at this aggregation level), PM10 dust emission in the cities belonging to the Polish Cittaslow network decreased. The highest reduction of this dust emission was recorded in the urban commune of Działdowo and the rural-urban commune of Biskupiec—by an average of 14,000 kg/year. In many cities belonging to the network, the reduction of this dust emission was small and, in most of them, air cleanliness indicators are still exceeded. Cities therefore still have a lot to do in this regard.

Significantly, the activities presented in Table 4 demonstrate that the cities increasingly tend to use alternative energy resources. They use solar collectors, build wind farms, and mount photovoltaic panels on roofs of buildings. The growing interest in ecological photovoltaic solutions is obviously stimulated by their eco-friendly attributes, namely they do not cause air pollution or other adverse consequences. In addition, they do not generate noise and solar energy is directly converted to electricity [59,60]. It is worth adding that replacing conventional sources of energy with renewable energy sources has now gained a global dimension. Moreover, a dynamic growth in the share of energy from photovoltaic installations in the energy mix of many countries, including Poland, is currently observed [61–64].

Unfortunately, despite the growing interest in the installation of photovoltaic panels, the development strategies of most Polish slow cities lack clear information about the need to modernize obsolete power lines and improve the conditions of energy transmission. Admittedly, these strategies emphasize the need to create conditions for the expansion of renewable energy installations. However, there is no specific information about what types of activities will be implemented in this area. This is also confirmed by the research of other authors, which shows that “although most development strategies of Polish slow cities contain a declaration of implementing renewable energy, it does not provide specific information on how the efforts to achieve sustainable development will be implemented” [65] (p. 11).

4. Discussion

There is general consent in the literature that the area of “energy and environmental policy” is a very important area of the city’s functioning, and that the criteria that must be met by slow cities in this area are fully concordant with the concept of sustainable development [3,4,11,16,21,23,39,66,67]. These criteria encourage cities to implement projects in the following areas: reducing their carbon footprints, using renewable energy sources, recycling and organizing campaigns to promote energy saving. They promote protection of the quality of air, soil and water or safe disposal of waste and suggest having an appropriate policy devoted to these problems. Thus, the Cittaslow certification and recertification criteria in this area are a type of a roadmap for local governments that intend to achieve sustainable development of their cities [68,69].

Authors of a number of research papers highlight the fact that the Cittaslow network cities are sustainable cities, characterized by coherent relations between the urban and natural environments, where socio-economic interests are entwined with the care for the environment. They also emphasize the important role played in such cities by social and ecological movements, which focus on the preservation of their city’s unique character, protection of its natural environment or promotion of local products. Much emphasis is placed in these cities on conducting an appropriate environmental and energy policy [16,22,51,69,70].

Studies dealing with the Cittaslow network confirm that membership in this network encourages or sometimes obliges cities to carry out projects, activities and initiatives which aim at reducing environmental pollution, developing alternative sources of energy, promoting eco-friendly attitudes, maintaining adequate quality of air, soil and water, or ensuring proper waste management [3,16,20,71]. Some authors even emphasize that the
most important criteria for the certification of cities are the ones concerning environmental policy. For this reason, the authorities of the member cities take care of environmental protection and take appropriate action in this respect (cf. the case study of the city of Akaya in Turkey) [72]. Other researchers underline that the integration of the development of a city with the principles of Cittaslow enables the local authorities to focus on such important questions as protection of nature and promotion of ecological attitudes, conservation of the city’s historic heritage, promotion of so-called culture of hospitality, or elimination of architectural barriers. Cities functioning in concordance with the assumptions of the “slow city” concept develop in line with the principles of sustainable development, take care of their natural resources and do not carry out activities which could unduly degrade them (the case study of Lidzbark Warmiński in Poland) [23].

There are articles available in the literature in which the authors attempt to evaluate the effects achieved by Cittaslow cities in selected areas in which cities function [5,73,74] or just in selected slow cities [7,23,75–77]. In contrast, there is a scarcity of papers dedicated to effects achieved in all cities that belong to the national Cittaslow network in a given country [37]. Furthermore, there is a lack of research on the results of certification and recertification of member cities of a given national Cittaslow network (either the Polish one or those in other countries). This manuscript fills in the gap in our knowledge as it presents a certain type of analysis of effects obtained by member cities of the Polish National Cittaslow Network in the area of “energy and environmental policy” during the first five years of their membership in this network. However, this study needs to be continued and expanded by including results of subsequent recertifications. Some of the Polish slow cities have been in the network for over 10 years, which means they have already passed through a second recertification process. It would be extremely interesting to find out if and how much the fulfilment of the criteria improved after the following five years of their membership.

5. Conclusions

The concept of a “slow city” is a new development concept, promoting a good and harmonious life, as an alternative to urban rush and progressing globalization. This is a model of urban development, focused on sustainable development, based on local resources.

The implementation of the “slow city” model in Poland began in 2007, when the Polish National Cittaslow Network was established. The Polish network now associates 35 small cities and is the second largest national network in the world. Cities see their membership in the network as a chance for better development and raising the standard of living for their citizens. Importantly, the membership in the Cittaslow network stimulates cities to act and it sets directions for development. It obligates a city to satisfy the criteria designed to measure the quality of living in this city and to constantly increase the degree of fulfilment of these parameters. The criteria are grouped in seven macro-areas and are evaluated in the course of certification and recertification of a city.

One of the areas submitted to evaluation in the course of certification is the “energy and environmental policy”. The study has demonstrated that slow cities were able to implement many projects in this area during the first five years of their membership in the network, which enabled them to raise the degree of fulfillment of the certification criteria from 71% to 75%. Among the completed projects, the largest number were those involving the replacement of old heating systems in buildings (e.g., coal-fired furnaces) with new and ecological sources of heat energy (e.g., heat pumps). The cities also often carried out projects where the purchase of new sources of heat, using gas, oil or renewable energy sources, was co-financed. Another solution was to grant subsidies to those residents who decided to exchange an old furnace to a more modern one, or to have their houses connected to a district heat network. Many slow cities implemented a system for the ongoing monitoring of pollution, and developed a low-carbon economy plan. Many carried out thermal insulation of public buildings in order to diminish their demand for energy, and launched systems for monitoring energy consumption in the city. The analyzed cities also implemented
numerous projects in order to generate energy from renewable sources. Importantly, the projects executed in every one of the analyzed slow cities contribute to an increase in the share of RES in the total energy balance of a given city, the region and the country.

The conducted analysis confirmed that, in most of the examined cities, the first positive effects of activities undertaken in the area of “energy and environmental policy” are already visible. However, the ongoing changes are insufficient for many of them. The authorities of individual cities, of course taking into account local conditions and the financial resources, should strive to take additional actions, not only those resulting from the certification criteria. They should introduce even more pro-ecological solutions and create appropriate infrastructure protecting the environment against degradation. Cities’ authorities should increase the use of renewable energy sources as part of public investments, but also develop an appropriate system of incentives for residents implementing pro-ecological solutions. A good way to reduce pollution in cities could be the development of e-mobility based on environmentally friendly energy sources. These tasks are not easy and, moreover, they are expensive. Therefore, an important support in this respect would be provided by the authorities of the national network and other member cities as part of network cooperation. Development and implementation of a joint project of energy transformation of cities belonging to the Cittaslow network could bring benefits to all its Beneficiaries.

The conducted research shows that the highest increase in the degree of meeting the certification criteria was recorded in the areas of “partnerships” and “policies for hospitality, awareness and training”. The lowest growth was recorded in the areas of “social cohesion” and “infrastructure policies”. The results of the research can therefore be used by the authorities of the Polish Cittaslow network in order to properly direct the network development policy. Importantly, this policy should take into account the period of the cities’ membership in the network. In some areas, the effects may only become apparent in the long run. Network authorities should also pay attention to the fact that, in the process of adapting the “slow city” model, it may evolve towards a hybrid model, e.g., “smart slow city” [78]. From this perspective, innovative technological and product solutions should be used for the development of slow cities, e.g., in the area of energy and environmental policy. Such activities could contribute to increasing the scale of the effects achieved, which are still insufficient. It is also worth emphasizing that the positive effects of membership in the Cittaslow network, confirmed in the article, may be a stimulus for other Polish cities to undertake network cooperation.

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