ENVIRONMENTAL FUND IN ROMANIA: HOW PUBLIC MONEY ARE SPEND FOR A "GREEN" NATIONAL TRANSPORT?

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Abstract

Air pollution is a problem, both nationally and globally. Among the main causes of air pollution are the pollution caused by transport in general, respectively by road transport in particular. Under these conditions, the mass use of ecological means of transport becomes a national desideratum. The paper is an analysis of public programs conducted in Romania to support the development of a green transport system, available to the private sector and the public sector. The analysis includes seven programs financed from the Environmental Fund. These are grouped into three categories: programs for the renewal of vehicles in circulation, programs for the development of a green supply infrastructure and programs for the replacement of road transport with rail transport. The expected results consist in identifying the performing / non-performing programs and the factors that determine them.

Keywords: *public expenses, environment fund, environmental costs, ecological transport*

JEL classification: *H23, H61, R11*

1. Introduction

Governments are under growing pressure to develop solutions to decrease environmental damage while reducing impact to economic growth as a result of environmental concerns. Regulations, information programs, innovation policies, environmental subsidies, and environmental levies are among the options available to governments. Precaution, prevention, and correction of pollution at the source are the guiding concepts of environmental

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policy. Multiannual environmental action plans lay the groundwork for future environmental policy action in all areas, including actions for reducing air pollution.

The discharge of contaminants into the air that are harmful to human health is referred to as air pollution. Pollutants in the air come from a variety of man-made and natural sources. Air pollution is created by the burning of fossil fuels in power plants, transportation, industry, and homes; industrial processes and solvent use; waste treatment; and natural causes such as volcanic eruptions, windblown dust, sea-salt spray, and plant emissions of volatile organic compounds. [European Environment Agency, 2019] Cities often surpass European air quality regulations for PM2.5 levels, according to the European Environment Agency's 2019 Air Quality Report. PM2.5 concentrations in cities across the EU-28 surpass the EU limit threshold, exposing 8% of the population. Furthermore, PM2.5 values exceeding the WHO Air Quality Guidelines value are present in 77 percent of the EU-28 urban population. [European Environment Agency, 2019]

Greenhouse gas emissions are unquestionably a major contributor to air pollution. Between 2010 and 2014, EU greenhouse gas emissions decreased gradually, but then reversed course and began to rise somewhat again. GHG emissions in the EU fell by 19% in 2017 compared to 1990 levels. In the EU, transportation accounts for 23,8 percent of GHG emissions. According to preliminary estimates, the EU's transportation emissions climbed by 0.8 percent in 2019, after increasing by 0.9 percent in 2018. [European Environment Agency, 2019] Road transport accounts for the majority of overall transportation emissions, accounting for roughly 71 percent in 2018. According to projections based on existing policy initiatives in EU Member States, transportation emissions will grow by 32% by 2030 when compared to 1990 levels.

Given the worrying figures presented above, the existence of polluted air and Romania's obligation to comply with European recommendations, then effective national measures are absolutely necessary for the development of green, environmentally friendly and clean transport (electric scooters, electric vehicles, electric motorcycles, electric trucks, etc.). In the case of Romania, the task of implementing national programs rests with the Administration of the Environmental Fund. In conjunction with the Ministry of Environment, the Administration of Environmental Fund (AEF) acts as a specialized body of the central public administration with legal personality. The Environmental Fund is a public fund, its revenues are public revenues.

The research objective of this paper is to analysis the measures taken by the Romanian authorities to implement green transport at national level. The added value of this study is that it provides an in-depth analysis of key public programs funded by Romanian authorities for environment protection. There is a lack of environmental programs' analysis in the literature even if the environment problem is an actual and global concerning. This aspect emphasizes the novelty of our analysis. The current study provides direction and guidance to researchers interested in the field of public programs for environment protection. This study makes a practical contribution by sharing relevant conclusions with the community (citizens and government) and determining the future direction of research in environment protection to aid policy decision making and the formulation of potential reforms.

The paper starts with several introductory aspects regarding the air pollution problem and the contribution of transports to it, then continues with a detailed presentation of the "Green Transport" programs grouped into three categories (programs for the renewal of the national car fleet, programs for the development of green charging stations, programs for the reduction of road transport) and an analysis of the numerical data related to them. In the end, a series of conclusions about the programs' efficiency are drawn.

The research methods used in the paper are observation, analysis, rationing, synthesis, correlation. The research methodology steps are the following: (a) data collection from authorities, (b) data centralization for each analyzed environment program, (c) data analysis and (d) data interpretation. Microsoft Excel functions were used for analysis and graphics. Program finance guides, AEF press releases, AEF's president dispositions, and any data published by AEF on its own web page were among the sources of documents used in the research. All data, information, instructions, press releases and other relevant documents related to the analyzed programs are published on the website of the Environmental Fund Authority.

2. Analysis of public programs designed to reduce air pollution in Romania

2.1. Analysis of public programs for the renewal of private and public car fleet

2.1.1. National car park renewal incentive program [Rabla Classic]

The Rabla Program is the oldest and most successful program implemented by the Environmental Fund Administration. The longevity of the program (over 15 years) is clear proof of its applicability, but also of the

improvement of its application rules over the years. The Rabla Program attempts to improve environmental quality by replacing the country's car fleet. The need for the program arises for at least three reasons: 1. emissions from old vehicles massively pollute the air; 2. spills of hazardous substances (e.g., oil, antifreeze, brake fluid) from old vehicles pollute the soil and water; 3. the need to reduce the amount of waste from vehicles removed from circulation (e.g., abandoned cars on the streets, fields, at the edge of forests, etc.). The Rabla program aims to provide non-reimbursable funding from the Environmental Fund, granted in the form of the scrapping premium, for the purchase of new, less polluting vehicles, in exchange for handing over the scrapped used vehicles. [EFA, Financing Guide, 2020, art. 3] The Rabla program was launched in 2005, and in the period 2005-2012 459,775 used cars were scrapped and 225,869 new cars were purchased, according to the Press Release of the Environment Fund Administration of 15.05.2013. The Rabla program is a multi-annual program and is applied at the national level.

According to the legislation, the new vehicle means any car, light van or special / light truck, motorcycle, which has never been registered. The vehicle newly purchased through the program can have a thermal propulsion system (with internal combustion engine) or hybrid. The used vehicle refers to any car, minibus, light van or light truck / light truck, which cumulatively meets the following conditions: it is registered in Romania; it is older than 8 years.

In 2020, the amount of the scrapping premium was 6,500 lei, except for motorcycles, for which the scrapping premium is 3,500 lei. The scrapping premium is granted according to the amount of CO2 emissions / km generated by the propulsion system of the new vehicle. An ecobonus may be added to the scrapping premium, under the following conditions: a) when purchasing a new motor vehicle, except motorcycles, equipped with a propulsion system that generates a maximum emission quantity of 96 g CO2 / km NEDC in mixed operation or equipped with LPG / CNG engine, an eco-bonus worth 1,000 lei is granted for 2020; b) if the amount of CO2 emissions according to the WLTP standard is entered in the COC, for the new vehicle except motorcycles, whose propulsion system generates a maximum of 105 g CO2 / km NEDC in mixed operation, or equipped with LPG / CNG, an eco-bonus worth 1,000 lei is granted, for the year 2020; c) when purchasing a new vehicle, except for motorcycles, equipped with a hybrid propulsion system, an ecobonus in the amount of 2,500 lei is granted. [EFA, Financing Guide, 2020, art. 6]

If the owner is accepted into the program and wishes to purchase a new electric or hybrid plug-in vehicle through the Rabla Plus Program, the eco-

bonus can only be combined with the scrapping premium. According to the Financing Guide, the owner benefits from the scrapping premium when purchasing a new car in exchange for handing over a scrapped car for scrapping. The legislation also stipulates that the owner can purchase several new vehicles in exchange for handing over an equivalent number of used vehicles for scrapping, thus benefiting from several scrapping premiums. The scrapping premium is not collected by the beneficiaries but is deducted by the validated manufacturer/car dealers from the sale price, including VAT, of the new vehicle. In the case of legal entities (private sector), the scrapping premium is granted on the basis of the scheme entitled "Minimis Aid for the National Car Fleet Renewal Stimulation Program" (minimis scheme), established in accordance with Regulation (EU) no. 1,407 / 2013. According to this regulation, the total amount of de minimis aid that can be benefited for a period of 3 consecutive years is 200,000 euros.

Throughout the existence of the program, the financing guide has undergone important changes, necessary and adapted to the evolution of the economic context. 2013 was a year of change in the Rabla Program. Since 2013, only one voucher (scrapping premium) was used to purchase a new vehicle, compared to three vouchers used in previous years, and its value was increased to 6,500 lei, compared to 3,800 lei before 2012. Also, since 2013, the distribution of vouchers has not been made equally by counties, but according to the number of cars older than 10 years in the county car fleet. Another novelty of 2013 was the granting of eco-bonuses to stimulate the purchase of environmentally friendly vehicles (Euro 6, hybrid).

The year 2014 brings other major changes in the application rules of the Rabla program. For the first time, the tickets were no longer physically granted to the beneficiaries, but to the car manufacturers / dealers validated in the Program, and the minimum age of the vehicles received in the program was diminished from 10 years to 8 years. [EFA, Press release, 05.03.2014] During 2014 Rabla Program, a number of 2,819 files were submitted by legal entities and public institutions, of which 1,289 files were accepted for 3,641 vehicles. [EFA, Press release, 23.10.2014]

The year 2015 brings an increase of the budget allocated to the Rabla program to the total value of 200 million lei and of the number of tickets for individuals to 20,000 tickets, respectively 5,000 tickets for legal entities and public institutions. In addition, the value of eco-bonuses for eco-friendly vehicles has been increased. During the “Rabla 2015” Program, a number of 2,678 files were submitted by legal entities and public institutions. Following

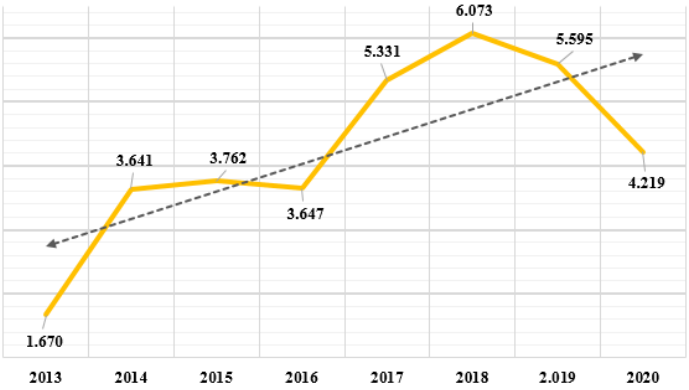
the analysis, 1,460 files were accepted for financing for 3,762 vehicles. [EFA, Press release, 11/18/2015]

After 12 years, 2016 is the first year in the history of the Rabla program when electronic tickets initially allocated to individuals are exhausted in the first weeks after the launch, and the authorities have been overwhelmed by the large number of applications for the Rabla program. In 2016, additional funds were relocated 3 times for this program, so that the number of electronic tickets reached 25,000. [EFA, Press release, 21.11.2016] The great interest of the population is justified by the attractiveness of the sums offered when scrapping a used car. So, if the new car meets both criteria in the financing guide (eco-friendly vis-à-vis CO2 emissions), a person could benefit from both ecobonuses, being able to reach, with the scrapping premium, a financing of 8,750 lei, paid by EFA from the cost of the new car. Moreover, in 2016 the Rabla Plus Program dedicated to electric cars and plug-in hybrid cars was launched, it could be combined with the Classic Rabla Program, offering to citizens (who want to take out an old car and buy a new electric car) a cumulative benefit of approximately 6,000 euros.

In recent years, 2017-2020, the amounts allocated to the annual financing sessions have increased, the cancellation premium has remained the same of 6,500 lei, but the eco-bonuses have seen annual increases. Thus, for example, the eco-bonus for hybrid cars increased in 2020 to 2,500 lei from 1,700 lei in 2019, respectively 1,500 lei in 2018. Given the longevity of this government program, any individual, company, administrative-territorial unit, public institution, that wants to give up an outdated car and buy a new one, can benefit from non-reimbursable funds from the state.

The figures published in the EFA press releases, in the period 2013-2020, refer to the number of files submitted and approved for legal entities, respectively 33,938 new vehicles purchased through the Rabla program. In the chart below, you can see the annual evolution of the number of new vehicles purchased by legal entities through the Rabla program during the analyzed period. The figures indicate an upward trend and significant increases in values. In 2018, the national car fleet was renewed with over 6,000 vehicles belonging to the private and public sector, i.e. by 40% more vehicles than in the 2020 pandemic. It should be noted that the amounts allocated to legal entities in the Rabla Program have a share between 10-21 % in the period 2013-2020.

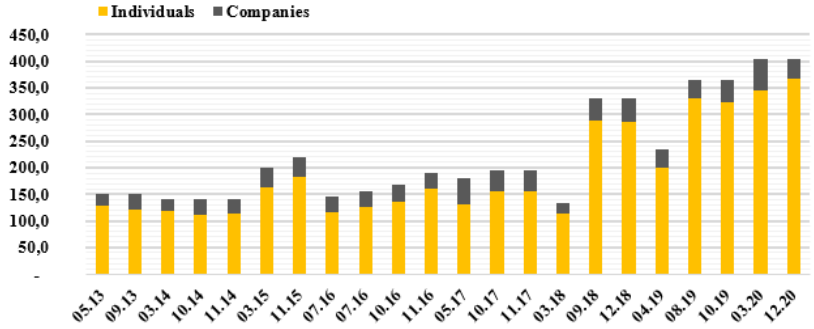
Figure 1: Evolution of the number of new vehicles purchased by legal entities / public institutions through the Rabla Program in the period 2013-2020



Source: Centralized data from EFA press releases from 2013-2020

There is a lack of concrete figures about the number of new vehicles purchased by individuals, about the specific number of end-of-life vehicles, about the number of files in which the scrapping premiums is cumulated with the eco-bonuses or the scrapping premiums is cumulated with the eco-ticket. Regarding individuals, information is published on the amounts allocated for total, annual financing.

Figure 2: Evolution of the amounts allocated within the Rabla Program 2013-2020 (million lei)



Source: Centralized data from the Dispositions of the EFA President from 2013-2020

The amounts allocated within the Rabla Program are established by decision of the EFA president. An analysis of them leads to the following conclusions: the initially allocated budget is supplemented every year, even 3 times until the end of the year; the highest values included in the program are related to the years 2019 and 2020, with 10% higher, in each case, compared to the previous year and more than 2 times higher than in 2013, the share of amounts allocated to individuals varies between 79% in 2017 and 90% in 2020.

Motivated by the success of the Rabla Classic program, the authorities also drew up the Program to stimulate the renewal of the national fleet of tractors and agricultural machines. It was started in 2011, also called Rabla Tractors, but it was a failure due to bureaucracy. 17 companies were accredited to sell equipment through the program, while a significant number of economic agents were declared ineligible. The documentation was very laborious and complicated for an ordinary farmer, and the approvals were far too long. Through the Rabla Tractors program, initiated in 2011, those who owned old tractors or other self-propelled vehicles, such as combine harvesters, could hand them over and receive in return a voucher worth 17,000 lei, but not more than 40% of the purchase price without VAT of a new tractor or new self-propelled agricultural machines. [OMMP No. 1.995 / 2011] There are currently no sessions of the Program to stimulate the renewal of the national fleet of tractors and self-propelled agricultural machines.

2.1.2. Program to reduce greenhouse gas emissions in transport through encouraging the use of clean and energy-efficient road vehicles [Rabla Plus]

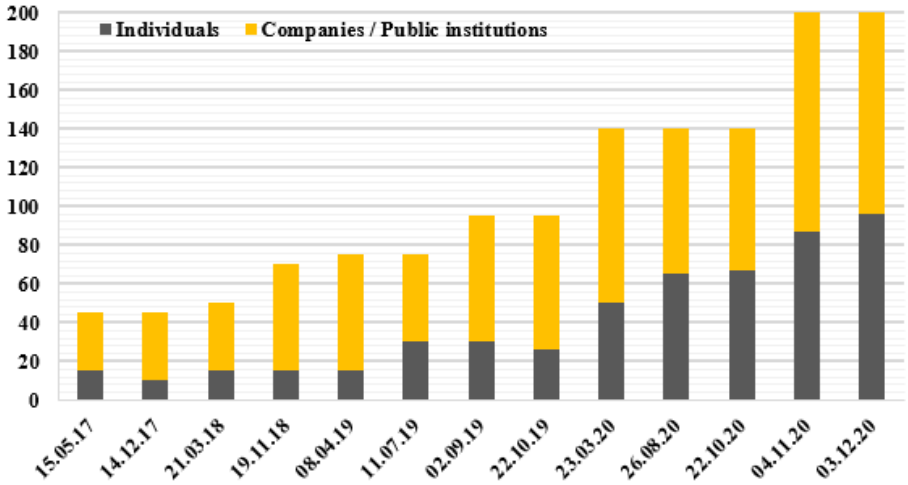
The second program of the Environmental Fund to reduce greenhouse gas emissions in transport was launched in 2016 and promotes clean road transport. The aim of the program is to improve the environment's quality by purchasing new purely electric vehicles or new hybrid plug-in vehicles. [Order No. 323 / 27.02.2020, art. 3] The program is currently running, with a plan until 2024. Individuals, legal entities and public institutions (including educational institutions, medical units, research and development institutes, NGOs), cult units, self-employed persons, etc., can benefit of this program. The conditions are the wish to purchase new electric and hybrid electric vehicles. In 2016, the beneficiaries who purchased an electric or hybrid electric vehicle (plug-in), benefited from EFA from two types of eco-tickets: a) 20,000 lei for the purchase of a new purely electric vehicle; b) 5,000 lei for the purchase of a new hybrid electric vehicle with external power supply.

Starting with 2017 and until 2020, for the Rabla Plus Program, the eco-ticket is in the amount of 45,000 lei for the purchase of a new pure electric vehicle, respectively 20,000 lei for the purchase of a new hybrid electric vehicle with external power supply. [Order No. 323 / 27.02.2020, art. 7] Accessing the Rabla Plus Program is not conditioned by scrapping and deregistering a used vehicle, but the scrapping premium of 6,500 lei offered within the Rabla Classic Program can be combined with one of the eco-tickets provided by the Rabla Plus Program. In 2020, motorcycles were introduced in the program. In the case of purchases of motorcycles with electric propulsion, the value of the eco-ticket is 3,500 lei, to which is added the scrapping premium of 3,500 lei, if they opt for scrapping a motorcycle.

Beneficiaries of the program are not entitled to sell the cars for at least one year. The program financing guide stipulates that the value of the eco-ticket shall not exceed 50% of the selling price of the vehicle / motorcycle. Potential beneficiaries are stimulated by the fact that the eco-ticket is deducted from the sale price, including VAT, of the vehicle, the difference being provided by the applicant from its own financial sources. The program also includes other parties involved, namely manufacturers / dealers of electric / plug-in hybrid vehicles, as well as collectors of used vehicles (approx. 770 collection points nationwide).

The budget allocated to this program varied each year and was allocated to the categories of beneficiaries at the beginning of the program. Regarding the value and evolution of the budget, it can be seen that it has had an upward trend every year, being supplemented periodically. There are three increases of over 40% of the amounts allocated under the Program in November 2018, March and November 2020. If in 2017 the Program starts with a tiny budget of 45 million lei, in 2020 the budget is 4,4 times higher, respectively of 200 million lei.

Figure 3: The evolution of the budget allocated to the Rabla Plus program in the period 2017-2020 (million lei)



Source: Author processing according to the centralized data from the Dispositions of the President of EFA between 2017-2019

From the chart above, you can see a change over the years in the structure of the budget allocated to the Rabla Plus Program, namely the distribution of amounts for individuals and legal entities. If in the first years, 2017-2018, the share of financing allocated to individuals varied between 20-30%, in 2020 it increased to 45-48%. This indicates that the purchase of new vehicles, electric and hybrid plug-in, is becoming attractive to individuals, not just legal entities. The fact that the budget allocated to the program was supplemented during the year shows the attractiveness of the program for the beneficiaries and the increase in the number of applicants, which is desirable.

The performance and efficiency indicator of the program is represented by the number of electric and / or hybrid electric vehicles purchased through the program. From the centralized situation published by EFA and completed by the author for 2020, we can see an annual increase in the number of new electric and hybrid plug-in vehicles financed in the period 2016-2020. It is noted the last two years where the figures indicate majorities of 50-90% of the number of new vehicles included in the program, respectively 2324 in 2020 compared to 1540 in 2019. If we refer to the type of new vehicle purchased through the program,

it is observed that the number of vehicles purely electric outstrips the number of plug-in hybrid vehicles each year. Thus, the interest of applicants for pure electric vehicles is 3 to 6 times higher than that for hybrid-electric vehicles, motivated by the higher value of the eco-ticket for the first category of vehicles. Regarding the budget consumed for financing the 5259 vehicles, of which 1045 hybid plug-ins and 4214 electrics, there is a degree of use of about 50% of the annual budget allocated.

One of the problems identified in quantifying the program's performance indicator is the existence of a mismatch between the number of new electric and hybrid plug-in vehicles reported in EFA press releases and their number in the lists of applicants whose files have been approved, published of EFA. From the centralized data in the period 2016-2020, in no year did the total figures for the two sections coincide (EFA's Press release vs. EFA's requesting lists), and the differences in the number of vehicles in the program are in the order of tens.

Another identified problem is the lack of information on the number of individuals who have benefited from the Rabla Plus Program. The lists of applicants accepted in the program, published by EFA, refer only to economic entities, public institutions and administrative-territorial units that have submitted files. According to the centralized data from the lists of approved applicants published by EFA, in the period 2016-2020 was financed the acquisition of 66 plug-in hybrid vehicles and 161 electric vehicles for territorial administrative units (county councils - Harghita, Buzau, Galati, Constanta, etc; municipalities - Baia Mare, Cluj-Napoca, Constanta, etc; cities - Slanic Moldova, Mioveni, Voluntari, Blaj, etc; communes - Brazi, Agigea, Poarta Alba, Păuca, Ciugud, Baru, Livezile, etc), public institutions (higher education institutions from Craiova, Tg Mures, Iasi, Galati; Ministry of Youth, Ministry of Environment, Ministry of Economy, Senate, ANRE, Romanian Naval Authority, National Research Institute, Bucharest Public Health Directorate, UM 0596, local police from various cities, etc.) and autonomous companies (Romanian Car Registry, Iasi Airport, etc.). Despite all these shortcomings in measuring performance and applicability, the program cannot fail in the next 5 years, but on the contrary the interest of the population will increase, given the current trend "ecological transport" and the novelty of the field.

2.1.3. Program to improve air quality and reduce greenhouse gas emissions in local public passenger transportation by employing fewer polluting vehicles [Non-polluting public transport]

The third program launched by the Romanian authorities (2018) for the renewal of the car fleet targets public transport vehicles in cities. The program strictly targets the county seat municipalities and Bucharest. The objective of the program is to reduce greenhouse gas emissions by putting into service electric buses, hybrid electric buses, CNG-powered buses and trolleybuses. [Order no. 741 / 13.07.2018, art. 2] Specifically, non-reimbursable financing is granted from the Environmental Fund for the purchase of such environmentally friendly vehicles. The financing is supported by the amounts obtained following the auction of greenhouse gas (GHG) emission certificates and is not constituted in state aid. The non-reimbursable amounts are granted in the amount of up to 80% of the purchase price of the bus/trolleybus. The maximum amount financed is established depending on the number of inhabitants: 35,000-200,000 inhabitants' maximum budget 20,000,000 lei; 200,001-400,000 inhabitants' maximum budget 110,000,000 lei; over 400,001 inhabitants - maximum budget 340,000,000 lei. [Order no. 741 / 13.07.2018, art. 8]

The first and only session for submitting the financing files took place between October 3 and November 2, 2018, and the amount allocated was 460,000,000 lei. [Provision no. 344 / 14.09.2018] During this financing session in 2018, 11 financing files were submitted, of which 2 were approved and 9 rejected. Currently, the two approved files are in progress. It is about a project for the acquisition of 100 trolleybuses and 130 hybrid electric buses in Bucharest, worth 340 million lei and about a project for the acquisition of 32 electric buses and 20 hybrid electric buses in Brasov, worth 109.6 million lei. Among the applicants rejected following the verification of the financing files are the following municipalities: Ploiesti, Cluj-Napoca, Braila, Iasi, Constanta, Galati, Timisoara, Pitesti, Satu-Mare. Among the reasons for rejection are the lack of certification of the files' copies with the original by "according to the original" or the non-publication and non-approval of the air quality plan in the localities. If we refer to the number of applicants, there is a low interest of the administrative-territorial units for this program, but the allocated budget is not enough for these few requests either.

2.2. Analysis of public programs for the development of power source infrastructure for the electric vehicles (EVs)

2.2.1. Program regarding greenhouse gas emission reduction in transport, by promoting infrastructure for electric vehicles: recharging stations for plug-in hybrid and electric vehicles [Green charging infrastructure]

This program complements previous programs that stimulate acquisitions of electric vehicles. In this sense, the "Green Charging Infrastructure" Program lays the foundations of the future national network of charging points for electric vehicles in Romania. The program was designed as a multi-annual one, with a target of 6,000 charging points installed in the network, by 2020. [Order no. 1559 / 29.07.2016, art. 2] It should be noted that the program has been implemented in accordance with EU regulations and the European objectives of promoting zero-emission transport. The sources of financing the investments are given the public funds from the Environmental Fund.

The beneficiaries of this program are the administrative-territorial units (over 50,000 inhabitants), the public institutions and economic operators from these localities, the economic operators with access to European and national roads. The categories of expenses that can be financed by this program concern the acquisition of charging stations for plug-in hybrid electric and electric vehicles, the installation of recharging stations and the construction / installation of the information panel. Funding is granted in one session up to 900,000 lei per applicant (approximately 200,000 euros), representing up to 80% of the eligible expenses. The maximum amount financed by EFA is 11,250 lei for a recharging station with normal power; 157,500 lei for a high-power recharging station in direct current; 13,500 lei for a high-power recharging station in alternating current. [Order no. 1559 / 29.07.2016, art. 2] The locations that can be equipped with fast or normal chargers are: public car parks, car parks intended or serving points of public interest (sports facilities, performance halls, public institutions, shopping centers, hotels, train stations, airports, petrol stations), car parks with direct access to motorways, national or European roads.

The Green Charging Infrastructure Program was started at the end of 2016 with an allocated budget of 70 million lei, necessary to cover the cost of investments in 420 charging stations. [EFA, Press release, 10.08.2016] There is a relative interest of potential beneficiaries of the program, argued by the consistency of the lists of rejected and / or contested funding applications. Approximately 50 requests were rejected by EFA for various reasons, of which

7 requests came from local authorities (e.g. Zalău, Bârlad, Baia Mare, Oradea, Sf Gheorghe, Bucharest), along with economic operators (eg gas stations operators). If we refer to the figures, the situation changes and we find that out of 70 million lei made available to the public under this program, the value of signed contracts is about 1.6 million lei, about 2.2%. Of the 10 financing contracts signed in 2017, 6 investments were completed in 2018 and 2019.

Târgoviște City Hall starts the largest approved project in the amount of 630,000 lei, respectively 70% of the maximum value allocated per applicant. A closer look leads to the following observation: the investments started in the development of electric vehicle charging stations in our country have a value representing only 1-15% of the maximum value allocated per applicant. Starting from the figures published by EFA, it is found that this program does not have the expected impact and is not attractive to potential beneficiaries. The disinterest of the applicants can be justified either by the bureaucratic procedure or by the novelty of the field of activity.

2.2.2. Program regarding the reduction of greenhouse gas emissions in transport, by promoting the infrastructure for electric vehicles: charging stations for electric vehicles in the county seat municipalities [Green Charging Infrastructure in Municipalities]

The second initiative, which intends to establish infrastructure for charging electric vehicles, aims to promote green transportation and enhance environmental quality by lowering greenhouse gas emissions. Such a program is considered efficient depending on the number of recharging stations installed and accessible to the public, compared to the number of electric vehicles registered in Romania. The program is multi-annual and takes place at the national level.

The administrative-territorial entities (county homes) and the municipality of Bucharest are eligible applicants, and the total sum allocated to the financing session is 92 million lei. The beneficiary is obliged to keep functional the investment made within the Program for a period of at least 3 years after its completion. The funding is limited to a maximum of 90% of the eligible expenses and is limited to the maximum amounts available to each application. The EFA would finance up to 190,000 lei for the installation of a recharging station, which is equivalent to 90% of the total eligible expenses. [Order no. 760 / 17.07.2018, art. 7] Among the expenses that can be settled through the program are the expenses for the acquisition of electric vehicle charging points, the expenses for construction and assembly works of

recharging stations, the expenses related to electrical installations, the expenses incurred for the construction and installation of the information panel, and so on [Order no. 760 / 17.07.2018, art. 12]

The budget allocated to this program, in the total amount of 92 million lei, was distributed on each municipality - county seat depending on the number of inhabitants. Thus, from the data published by EFA, a quarter of the funding is directed to Bucharest, followed by Iasi 4.2 million lei, Timisoara 3.7 million lei, Cluj-Napoca 3.6 million lei, Constanța 3, 5 million lei, Galați and Craiova 3.4 million lei, Brașov 3.2 million lei. Romania's largest municipalities (listed above, except for the capital) were allocated approximately 27% of the total amount allocated in the program. A simple calculation indicates that the other half of the allocated amount is divided between the other 33 county municipalities. Among the municipalitie with the lowest funds allocated for the program are Miercurea Ciuc 0.47 million lei, Alexandria 0.57 million lei, Slobozia 0.58 million lei, Sfântu Gheorghe, Giurgiu, Deva and Zalău with 0.7 a thousand lei. [Provision no. 349 / 18.09.2018]

The session for submitting applications was opened in October 2018, then extended successively 9 times, until 31.12.2020, by the EFA President Decisions. According to the press release no. 87 / BC / 03.04.2020 EFA, approved 19 financing files for the construction of 142 power supply stations in the municipalities - the county seat, with a number of 302 charging stations. The data published by the end of 2020 show the involvement of 22 cities in the program, about which the information provided by EFA is incomplete and differentiated. The table below shows data on some of the cities that want to develop charging stations for electric cars. The cities of Oradea (16 charging stations) and Pitesti (10 charging stations) stand out. The other cities were oriented for investments in 4-5 charging stations.

Table 1: List of municipalities with projects approved under the Green Charging Infrastructure for Municipalities Program (part 1)

No.	Year of request	Beneficiary	Aproved value (lei)	No of charging stations	No of rechargi ng points
1	2018	Zalău	702.943,03	4	8
2	2018	Piatra Neamț	1.080.768,13	6	12
3	2018	Pitești	1.900.000,00	10	20
4	2018	Râmnicu Vâlcea	1.310.643,05	7	14
5	2018	Târgu Jiu	672.240,70	4	8

6	2019	Oradea	2.497.652,28	16	32
7	2019	Baia Mare	1.195.645,17	9	18
8	2019	Focșani	877.297,34	5	10
9	2019	Satu Mare	950.000,00	5	10
10	2018	Reșița	936.149,17	5	10
11	2019	Giurgiu	760.000,00	4	8
12	2019	Călărași	715.085,28	4	8
		Total	**13.598.424,15**	**79**	**158**

Source: EFA, Press Communication no. 257 / BC / 20.11.2019

For another part of the cities involved in the program, data were published on the amounts proposed for financing and their percentage of the eligible value of the investment, according to the following table. It can be seen that all applicants aim to reach the maximum funding percentage of 90% of eligible expenditure, so that their own contribution from the local budget is as small as possible.

Table 2: List of local authorities with projects approved in the Green Charging Infrastructure Program for municipalities

No.	Year	Beneficiary	Eligible value of project (lei)	Amount proposed for funding (lei)	Percent of funding
1	2018	Slatina	795.310,25	715.779,23	90
2	2019	Galați	3.336.755,54	2.850.000,00	85,41
3	2019	Brașov	3.298.166,28	2.850.000,00	86,41
4	2019	Timișoara	3.291.835,91	2.962.652,32	90
5	2019	Alba Iulia	548.287,30	493.458,57	90
6	2019	Deva	575.536,69	517.983,02	90
7	2019	Suceava	1.450.538,90	1.305.485,01	90
8	2019	Târgu Jiu	878.057,34	760.000,00	86,55
9	2019	Oradea	2.875.823,00	2.497.736,95	86,85
10	2019	Baia Mare	1.671.062,44	1.503.956,19	90

Source: Centralized data from the EFA website, valid on 23.03.2020

Centralizing the approved financing applications and the response financing applications, published by EFA, we can see 28 territorial units interested in this financing program, out of a total of 41 in Romania, respectively only 68% of them are open for construction of charging stations for electric cars. The impediment in submitting the file can be the Romanian bureaucracy, but also the unprepared staff from the town halls. This problem stems from the fact that most local authorities submit to EFA funding files that are incomplete and do not comply with the requirements of the guide, which does not allow their approval in advance, but the extension of deadlines with appeals or completion of files. For example, out of the 28 files participating in the Program, 6 of them still have funding applications rejected, given that the year of submission of the initial file is 2019 (Buzău, Constanța, Iași, Sfântu Gheorghe, Craiova, Sibiu). On the other hand, the authorities whose funding files have been approved had submitted initial files with deficiencies, which were subsequently approved. Given these conditions, how this program can contribute to the expansion of the recharging station network? The Ministry of Environment and the Administration of the Environment Fund have great goals for reducing emissions from transport, but in practice things are moving very hard and slow for this purpose.

2.2.3. State aid scheme for the development of recharging infrastructure for plug-in hybrid and electric vehicles [Recharging infrastructure on motorways, European roads and national roads]

In addition to the desideratum of the previously presented programs, a new initiative of the Environmental Fund Administration is added, respectively the elaboration of a plan to extend charging stations throughout the country. In order to stimulate the economic operators for developing charging stations, a state aid scheme was drawn up in 2020. The main objective of the scheme is to support the development in Romania of a recharging infrastructure, accessible to the general public, both for rechargeable hybrid vehicles and for electric vehicles with batteries. [Annex to Decision no. 03 / 22.05.2020, chap. II, paragraph 1] The scheme focuses primarily on the routes of the trans-European transport network (TEN-T) in Romania (the Orient / Eastern Mediterranean Road Corridor and the Rhine-Danube Corridor, European and national roads and urban agglomerations) and motorways. The other national and regional road networks are secondary in priority. According to the European Observatory on Alternative Fuels, there are currently 379 recharging points in Romania for approximately 3,000 registered electric vehicles.

In terms of money, the funding is maximum of 90% of the total eligible costs related to the construction of charging stations. [Annex to the Decision of the Approval Committee no. 03 / 22.05.2020, chap. VII, para. 1] The duration of the scheme is six years, until 31.12.2025. The maximum amount that can be requested and granted per project is 15,000,000 LEI, or maximum 25% of the budget allocated to a session, any of these thresholds is reached first. The budget allocated to the scheme is 250,000,000 lei.

To access these public funds, eligible economic operators must develop high-power AC / DC stations, charging stations must be located along priority routes (European and national roads), charging stations must be permanently accessible, and non-discriminatory to the public (24 hours / day, 7 days / week). To these are added the conditioning of the existence of a minimum number of parking spaces intended exclusively for charging electric vehicles, the operation of the infrastructure for at least 5 years from the completion of the investment. In addition to the amounts received from the state, the economic operators must have their own contribution of at least 10% of the total eligible expenses as well as the total ineligible expenses related to the project. [Annex to the Decision of the Approval Committee no. 03 / 22.05.2020, chap. VII, para. 3] The category of eligible costs, which may be covered under the scheme, includes costs for the purchase of charging stations for electric vehicles, costs for the commissioning and installation of charging stations, costs for the construction and installation of charging stations recharge.

There is no official information on the actual start-up and opening of the submission sessions.

2.3. Analysis of public programs for stimulating rail transport

Rail transport is a less polluting type of transport compared to road transport. Thus, reducing road transport to the detriment of rail transport will certainly have a positive effect on the environment. RO-LA (Rollenden Landstrassen) is a particular form of combined transport in which road vehicles are transported by rail in trains consisting of specialized wagons. At the same time, drivers of road vehicles can accompany those vehicles during rail transport. The Administration of the Environmental Fund (EFA) has launched in Romania the Program for RO-LA type transports. This program stimulates the transition of freight transport from road to rail, in order to reduce CO2 emissions from transport vehicles.

The RO-LA program is addressed to the railway transport operators, which carry out economic activities on the Romanian territory. The financing

granted by the Environment Fund Administration for this program is the amount of 60% of the value (excluding VAT) of the invoice issued by the railway transport operator to the road transport company for the activities financed under the Program. [EFA, Financing Guide, 3.11.2017, art. 20]

Launched at the end of 2017, the RO-LA program is intended for Romanian railway transport operators that have been operating in Romania for at least 3 years and have wagons for RO-LA type transport. The file submission session took place during May-June 2018, and the amount allocated was 20 million lei. [Provision no. 161 / 03.05.2018, art. 2] According to the data published by EFA, there is only one program in progress, contracted by the National Railway Transport Company CFR Marfa SA in 2018, with a contracted value of 14 million lei. SNTFM CFR Marfă SA owns 160 specialized wagons for the transport of trucks by rail and is the only freight railway operator in Romania that owns such wagons. [CFR Marfa SA, 2018] In July 2018, CFR Marfă SA enthusiastically announced the first RO-LA transport in Romania, respectively a transport consisting in a maximum of 20 specialized wagons on which were loaded 20 Ukrainian road vehicles (trucks) and transported to the border with Bulgaria. 3 years after its launch, the project is on the verge of abandonment, without much official information. Among the causes of failure are:

- the lack of coherence of this modern project, with a European vision
- wagons imported and reconditioned in Romania, which have expired overhaul period and do not meet the conditions for use
- the investments announced by CFR Marfă for organizing this type of activity were canceled (reopening of Siret Station and Dornești-Siret railway, for a faster boarding of trucks arriving from Siret Customs)
- difficulties in the negotiations with the Bulgarian side on the mode of cursive transit of the Romanian-Bulgarian border and customs clearance (boarding priorities for RO-LA transport, customs clearance by train)
- lack of stimulation of road carriers for the choice of RO-LA transport (eg cancellation of pollution and road taxes or restriction of truck traffic on public roads in Romania on weekends)
- the lack of attractiveness of Romania's transit on RO-LA wagons for intra-community road carriers

- the interest of non-EU carriers (Russia, Ukraine, Turkey) for this type of transport is justified only by the decrease of the transit authorization of the EU territory
- too long transit time of Romania (North-South 12-16 hours)
- dissatisfaction of truck drivers who do not receive travel allowance during train transport
- the state company CFR Marfă SA encountered financial difficulties over the years, constantly accumulating debts
- the state company CFR Marfă entered the preventive composition procedure at the beginning of 2020 (pre-insolvency at its own request).

In these conditions and in the absence of a strategy and managerial vision, this modern and ecological transport project is about to fail.

3. Conclusions

From the analysis of the programs that the Environmental Fund Administration has in progress in order to promote ecological, green transport, the following conclusions can be drawn: there is no public information on the amounts spent (payments made), there are no situations about completed projects, figures about the real number of replaced vehicles or completed charging stations, public information in press releases does not match those in the lists of applicants, too many incomplete submitted files, time lost with appeals and corrections of funding files, there are no reports on monitoring and programs are blocked immediately from implementation (e.g. RO-LA), programs fail.

The limited interest in purchasing green vehicles is determined by the following factors: high cost of green vehicles, green vehicles are not accessible to a large category of population, low and medium income, lack of charging stations similar to gas stations fuels, lack of documentation on the operation of green vehicles, reluctance to new. State intervention is necessary until the number of electric vehicles reaches a considerable share in the total number of vehicles in the national park, but also for the development of charging stations accessible to the general public. The Ministry of Environment and the Administration of the Environment Fund have great goals for reducing emissions from transport, but in practice things are moving very hard and slow for this purpose.

Although the analysis on Romanian public programs for green transport offered some interesting results, this work has several limitations. We made

every effort to execute the analysis in the most accurate manner possible, but it is quantitative research made by using manual data collection from official documents. Manual data collection cannot be compared to automatic or computational data download. The limitations of the study are the following: the dataset may be is incomplete as human error, data provided by public authorities are not complete and accurate, environment programs selection for analysis may be improved in the future to allow for a more precise search of content, the data were retrieved from public authorities website and there is no viewpoint from citizens regarding the efficiency of these "green transport" programs, the analysis is limited to Romania, which means that it provides local particularities, the results are limited to 2020, when the data collection was carried out.

These limitations can constitute a start point for future research. More research is required to learn about the various practical contributions of the public environment programs will have on long term. Future research may cover the following years (2021, 2022 etc.) and the new changes in these programs such as to provide an up-to-date evaluation. The study could be repeated in the future with alternative environment programs. The analysis can be extended to European Union countries and identifying similar programs for green transport. However, research is a continuous process. Future studies are thereby needed to track the changes that take place in the environment protection research themes due to the current pandemic context.

4. References

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