Problem solved

The article deals with the problem of construction of charging infrastructure and its charging in urban residential areas for electric cars. The study focuses on the feasibility and overcoming this dilemma through various subsidy incentive mechanisms and the sharing of economic benefits between the government, charging infrastructure operators, real estate agents and electric vehicle users themselves.

Using evolutionary game theory, the authors create a theoretical model based on strategic interactions between various factors in supporting charging devices in urban residential areas.

How game theory was used

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The authors used the evolutionary theory of games, where 4 main players perform. The first player is the government, which provides subsidies for electromobility and the construction of the necessary infrastructure. It also oversees companies and organizes electric car users. The

government, rather than the player, acts as a market regulator by subsidizing all participants.

Other players are real estate agencies and charging infrastructure operators. In this case, real estate agents should be responsible for investing in charging stations and selecting their location where these stations will be installed. Charging infrastructure operators are responsible for the operation and management of these stations. The last player is the users of electric cars, who use the created structure of charging stations, which exists thanks to the first three players.

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One

Test 1

Test5

Test9

Test13

Two

Three

Test2

Test6

Test 10

Test 14

Four

Test3

Test7

Test11

Test15

Five

Test4

Test8

Test 12

Test 16