B2C mode,we believe that this will not only bring consumers a new consumption experience, give more small and medium-sized businesses survival and development opportunities, but also become a useful exploration of C2B mode under the background of industry 4.0 in the future.

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## LCA ANALYSIS OF PRIVATE CAR FUEL IN SHENYANG BASED ON GREET MODEL

*Shi Haoyang, Jia Ziyuan, Liu Jiarui,*
***Northeast University***
*e-mail: 1176439707@qq.com*

**Summary.** *The purpose of this project to life cycle assessment as the guiding ideology, the GREET model is used to analyze the traditional fuel vehicle (E10), natural gas (CNG) car, pure electric vehicle (EV) and hybrid electric vehicle (HEV) fuel the whole life cycle energy consumption and pollutant emissions, the following conclusion: the optimal, pure electric vehicle energy conservation and emissions reduction benefits based on traditional gasoline per hundred kilometers energy saving and emission reduction efficiency are 36.07% and 29.64% respectively; Shenyang can reduce energy consumption by 3.07×109MJ and greenhouse gas emissions by 2.45× 105T per year by using the four selected fuels. Finally, on this basis, put forward several relevant Suggestions for the government and relevant departments to adopt.*

This project GREET2019 version is used in the research process, parameter setting process, first of all, choose the vehicle type selected for basic passenger vehicles (passenger car), the next life cycle stages of parameter setting, according to the thinking of life cycle assessment, this part includes each source of raw materials and fuel, fuel production mode, the mode of transportation, etc.After running the GREET software, a series of data about energy consumption and pollutant emission were obtained. Through the analysis of relevant data, the following conclusions can be drawn:

(1) Energy consumption

①The highest energy consumption of fuel vehicles, pure electric vehicles the least energy consumption, compared to fuel vehicles reduced by 32.6%; Petrol-electric hybrid cars consume 14.1% less energy than petrol-powered ones. The energy consumption of gas-fired vehicles is basically the same as that of oil-fired vehicles. The fossil energy of the four fuel types accounts for 93.4%, 99.3%, 92.4% and 92.6% respectively in total energy consumption. Oil consumption of petrol-fuel vehicles and hybrid electric vehicles accounts for the majority; The proportion of natural gas consumption of gas-fired vehicles is the largest. Pure electric cars consume the most coal.

(2) Pollutant discharge

①The highest CO2 emissions of fuel vehicles, the lowest CO2 emissions of pure electric vehicles, gas vehicles and hybrid electric vehicles in the middle; The greenhouse gas emission reduction effects of hybrid electric vehicles, gas-fired vehicles and pure electric vehicles are 3%, 20.5% and 25.5% respectively. ②The CO2 emissions in PTW stage of fuel vehicles and hybrid electric vehicles account for a high proportion, which is about 4 times that in WTP stage. The CO2 emissions are mainly concentrated in the exhaust emission process of vehicle operation stage, while the $CO_2$ emissions of gas vehicles and pure electric vehicles are mainly concentrated in WTP stage. ③ SOX generated by pure electric vehicles in THE WTP stage is 6 times that of gas vehicles; ④ Acid rain pollutant emissions from fuel vehicles are mainly concentrated in the PTW stage, and the main source of emissions is vehicle exhaust; The emission of pure electric vehicles is mainly concentrated in the WTP stage, and it basically realizes zero emission in PTW stage, which has good environmental benefits for the city.

The whole life cycle analysis and evaluation of shenyang private car fuel based on the GREET model should be based on the energy-saving and emission reduction benefits of different kinds of fuels. The energy saving and emission reduction benefits of various fuels in this project are compared with the energy consumption and emission of traditional gasoline fuel throughout its life cycle. Energy efficiency is defined as the percentage change in the relative energy consumption of a target fuel relative to the benchmark; Emission reduction benefit is defined as the percentage change in the emission of a target fuel relative to the benchmark. When studying the benefit of emission reduction, considering that $CO_2$ emission is far higher than other selected indicators, the benefit of emission reduction here only considers $CO_2$ emission for convenience of calculation. The research conclusions obtained by calculating and analyzing the data are as follows:

(1) From the perspective of energy saving, pure electric vehicles have excellent energy saving benefits, hybrid electric vehicles and gas-fired vehicles have good energy saving benefits, and E10 oil-fueled vehicles have certain energy saving benefits. The main reason for the low energy efficiency of E10 is the high energy consumption in corn ethanol production. The reason for the highest energy efficiency of pure electric vehicles is related to the trend of gradual improvement of power generation structure although thermal power generation is still the main power generation in China.

(2) From the perspective of emission reduction, pure electric vehicles and gas vehicles have good emission reduction benefits, while hybrid electric vehicles and fuel vehicles have certain emission reduction benefits. The emission reduction benefit of pure electric vehicle is attributed to the basic zero emission in the vehicle operation stage. The lower emission reduction benefit of hybrid electric vehicles may be related to the setting of fuel consumption and power mileage ratio, while the lower emission reduction benefit of E10 fuel oil vehicles is related to the $CO_2$ emission in the growth process of corn ethanol and the consumption of fossil fuels in the production process.

(3) The four fuel types all show positive benefits in terms of energy conservation and emission reduction. E10 gas-fired vehicles and CNG gas-fired vehicles have significant benefits in terms of energy conservation and emission reduction, mainly because of their large vehicle base. This also confirms the correctness of China's policy of gradually banning traditional gasoline diesel vehicles and promoting gas-fired vehicles. On the other hand, although the vehicle base of pure electric vehicles and hybrid electric vehicles is relatively small, their energy-saving and emission reduction benefits are equally prominent. This data supports China's policy guidance of gradually changing vehicle structure and promoting new energy vehicles.

Finally, based on the above conclusions, the following Suggestions are proposed:

(1) The energy structure affects the types and emissions of pollutants. China should actively develop new energy generation, improve its energy structure and enhance the environmental protection advantages of electric vehicles.

(2) Traditional gasoline internal combustion engine vehicles should be banned comprehensively, and gas-fired vehicles and electric vehicles should be vigorously promoted.

(3) Gradually change vehicle structure and promote new energy vehicles. The government can introduce corresponding policies from both the demand side and the supply side to encourage the development of new energy vehicles.

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# MEDICAL BIG DATA IN BELARUS

*Kapitonov A.A.[1], Bahretsova M.V.[1], Tsynkevich U.V.[1], Trushel N.A.[2], Kachur S.L.[3]*

***[1]Belarusian State Medical University, Department of Pediatrics***

***[2]Belarusian State Medical University, Department of Normal Anatomy***

***[3]Belarusian State Medical University, Department of Radiology***

*e-mail: [1]Kapitonov@bsmu.by, [2]normanat@bsmu.by, [3]raydiag@bsmu.by*

The COVID-19 pandemic has caused millions of infection cases, which led to great economical and social losses all over the world. Due to high false-negative rate of the Reverse Transcription Polymerase Chain Reaction (RT-PCR) tests [1] and impossibility to use antibody tests for early-stage diagnostics [2], diagnosing based on radiological methods, such as Chest X-Ray (CXR) and Chest Computer Tomography (CCT), became wide-spread [3]. Researchers from different countries claim that CXR may have the same with CCT sensitivity rate, because of the same radiological signs of the COVID-19-associated pneumonia [4, 5]. This makes CXR an essential method: cheap, wide-spread, fast. It is estimated, that increase of images to analyse will be compensated by new AI-driven tools helping to classify CXR's [6]. As the area of computer vision rapidly develops aiming to assist radiologists with managing their workflow, it becomes evident that we don't have enough collected and properly prepared data for the Machine Learning process. Reported results (Table 1) don't cover the full variety of the most frequent possible pathological conditions (Table 2) [7].

Table 1 - Reported classifications

| Classification | Number of articles, reporting usage of this classification |
|---|---|
| Covid pneumonia/ other pneumonia | 3 |
| Covid pneumonia/ other pneumonia/ normal image | 8 |
| Covid pneumonia/ normal image | 7 |
| Covid pneumonia/ bacterial pneumonia/ other viral pneumonia/ normal image | 1 |
| Pneumonia/ normal image | 1 |
| Normal image/ tumor/ pleural effusion/ infectious process/ other | 1 |
| Covid pneumonia/ other | 2 |
| Covid pneumonia/ other pneumonia/ normal image/ other | 1 |