Assessing current and future vehicle operating expense rates

EBP ascertained current operating expense rates for vehicles in Switzerland and produced forecasts for the development of these rates up to 2040. These data provide a basis for updating Swiss Standard SN 641 827 and arriving at more accurate cost-benefit analyses for transportation projects.

Up-to-date operating expense rates for accurate project evaluations

The accuracy of cost-benefit analyses for transportation projects depends on up-to-date vehicle operating expense rates. Having up-to-date expense rates enables us to more accurately represent and forecast changes in vehicle fleets, thereby also helping us to prevent planning mistakes. When making forecasts, it is naturally also crucial to take account of transportation and energy-policy objectives.
That is why we ascertained the current vehicle operating expense rates for a given reference year and mapped their development in light of the latest trends.

Factors influencing operating expense rates

To ascertain the current rates, we considered the following factors that influence vehicle operating expenses: operating expense base values; cost of fuel (energy); and the latest distance-related heavy vehicle fee (HVF) per vehicle kilometer. We then took the following factors into consideration to forecast the development of the vehicle operating expense rates:

Client

Swiss Federal Roads Office (FEDRO) at the request of the Swiss Association of Transportation Experts (VSS)

Facts

Period	2016 - 2018
Project Country	Switzerland

Contact persons

Frank Bruns
frank.bruns@ebp.ch

Dr. Peter de Haan
peter.dehaan@ebp.ch

Silvan Rosser
silvan.rosser@ebp.ch

— The latest price and fleet developments
— Reclassification of passenger vehicles according to vehicle footprint. This can be expected to serve as a parameter in the context of emissions regulations, i. e. to replace classification based on engine size.
— Various engine and fuel types in relation to vehicle expenses and engine prices:
  – Internal combustion engine vehicle (ICEV)
  – Battery electric vehicle (BEV)
  – Fuel cell electric vehicle (FCEV) and plug-in hybrid electric vehicle (PHEV)
— Degrees of vehicle automation (e.g. self-driving vehicles): Increasing vehicle automation is currently under discussion. We arrived at estimates of the changes automation may have on operating expense base values.
— Light vehicles, including two, three and four-wheelers

2010 to 2040: developments expected to balance one another out

Forecast 2040 (not factoring in automation): While the above-mentioned developments are expected to drive changes in vehicle operating expenses, the expense-raising and lowering changes largely balance one another out.
Forecast 2040 (factoring in full automation): While higher vehicle-purchase prices are expected to drive higher mileage-dependent expenses, time-based expenses will fall for passenger and freight vehicles thanks to self-driving vehicles.