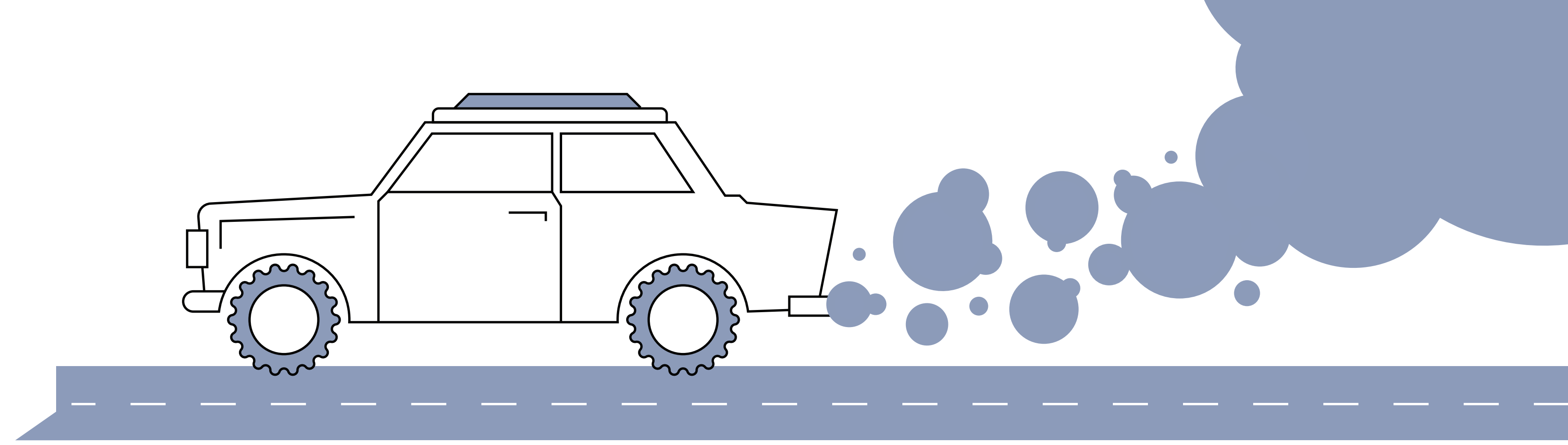


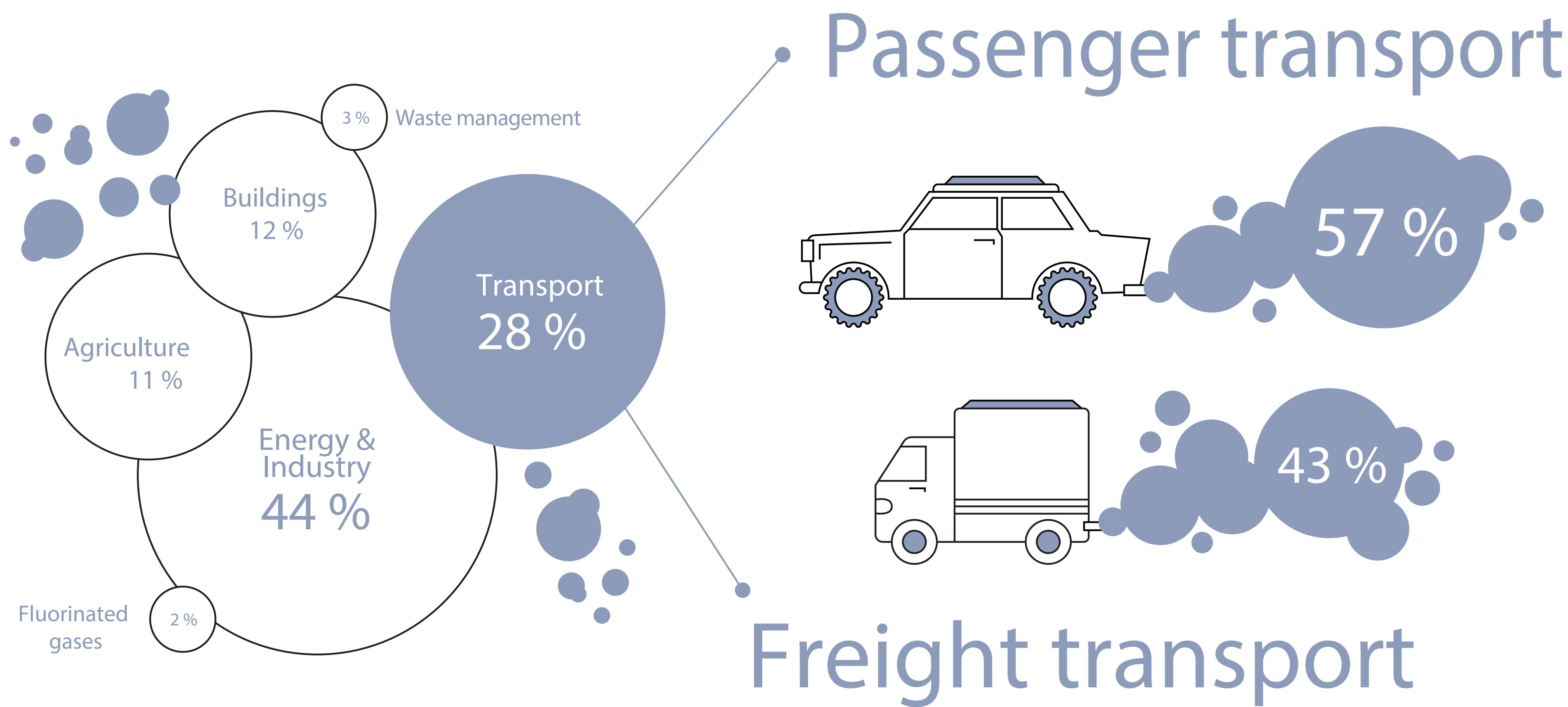
The car



Or: What will we be excited about in the future?

The greenhouse gas emissions of the transport sector in Austria

Pic. 1



While all other sectors¹ are showing a decrease, greenhouse gas emissions in the transport sector are rising mainly due to road traffic.

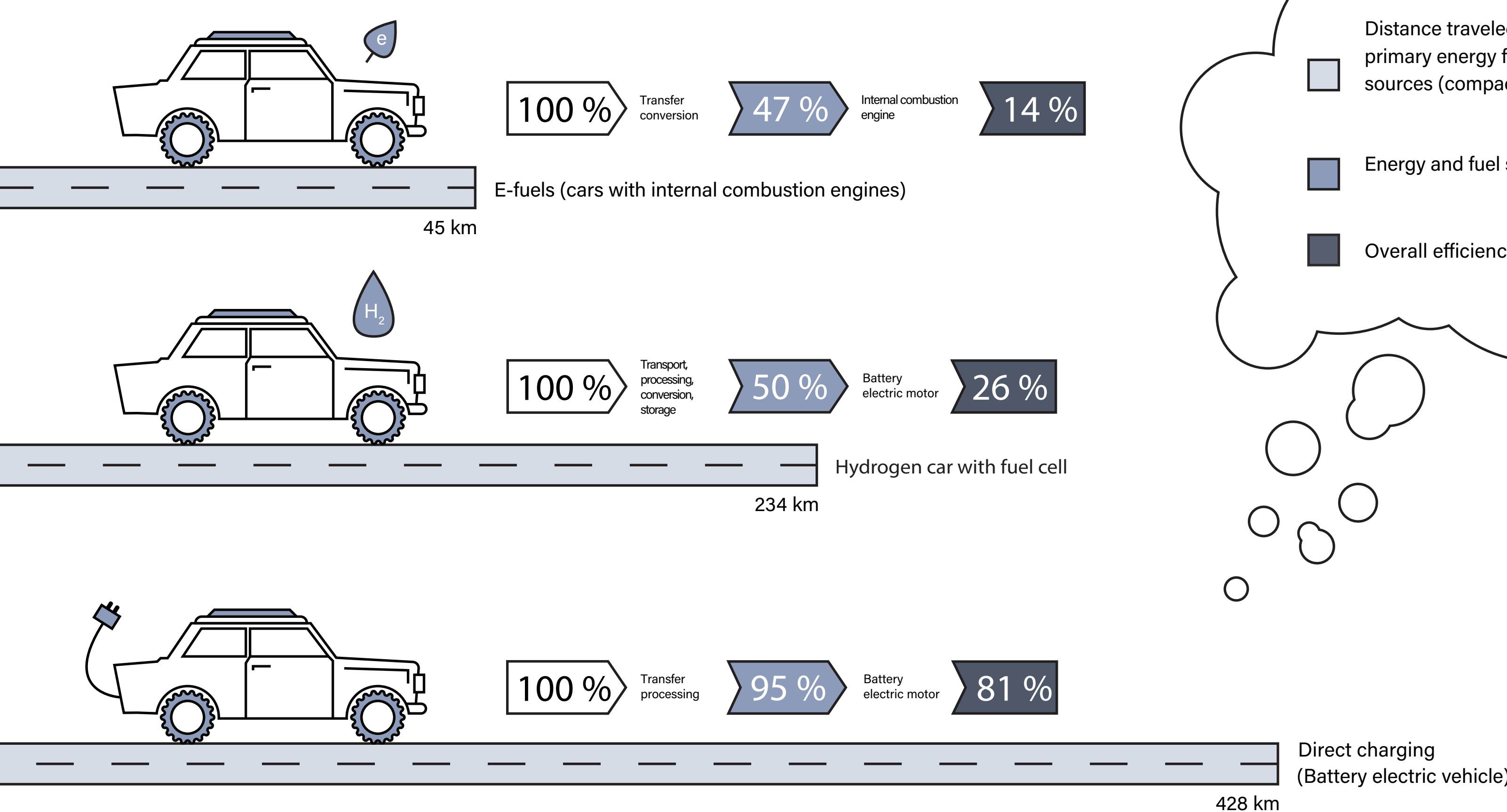
The car is one of the biggest challenges for Austrian climate policy. Road traffic (passenger cars and trucks) causes almost all emissions from the transport sector – almost a third of the national greenhouse gas emissions². Although technology is making progress here, human usage behavior slows down the progress: we have more and bigger cars, we drive longer distances, and more often alone³.

The construction and purchase of larger cars requires additional space, which is not available. In 2022, 43% of new registrations were SUVs⁴. The creation and maintenance of the associated infrastructure, such as roads, is expensive. Noise emissions and exhaust gases reduce the quality of life in the city⁵.

Therefore, the electrification of cars is only part of the solution, but it is not enough. Rather, soft mobility (walking, cycling, and public transport) must become the backbone of our everyday journeys⁶.

Can alternative fuels be the future?

Pic. 2



An electric motor is much more efficient than an internal combustion engine⁷. For those who truly cannot do without a car, a battery-electric car is the best option. Hydrogen, on the other hand, is urgently needed for the decarbonization of the industry. Furthermore, its production is highly energy-intensive, and its climate friendliness depends on the type of electricity generation⁸. The use of so-called e-fuels – hydrogen-based fuel – is even more questionable: due to the aforementioned demand in industry, there will hardly be any hydrogen available for further processing into fuel for individual transportation at reasonable prices^{9, 10}.

Can we rely on technological progress?

Currently, new technologies promise the solution. However, they will not solve some fundamental problems and will come too late. The boomerang effect (also known as the rebound effect) describes the phenomenon where savings from efficiency improvements (e.g., through technological progress) are not or only partially effective.

In the case of the car, more efficient engines, for example, cause the saved energy to be compensated by more horsepower and more kilometers driven. Similarly, with the same energy input, more mass can be moved, meaning heavier cars. In the worst case, increased efficiency can lead to an absolute increase in fuel consumption and greenhouse gas emissions¹¹.

What can we do?

The simple answer is: leave the car at home more often. This saves money and reduces greenhouse gas emissions. Especially short distances can easily be covered on foot, by bike, e-bike, skateboard, scooter, or public transport. Active mobility also keeps us fit. A portion of the reduced space requirements could be allocated for use by emergency services (e.g., rescue and fire departments) and people with mobility impairments to ensure accessibility.

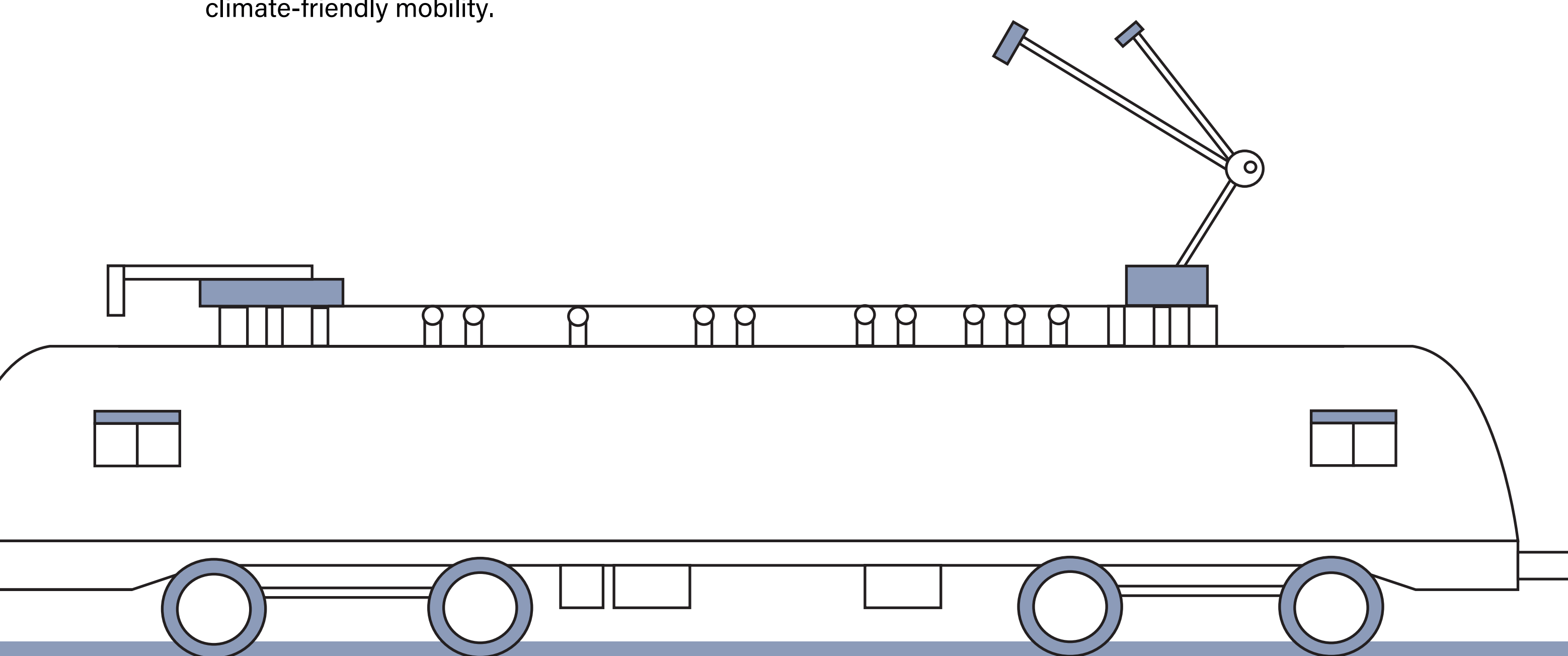
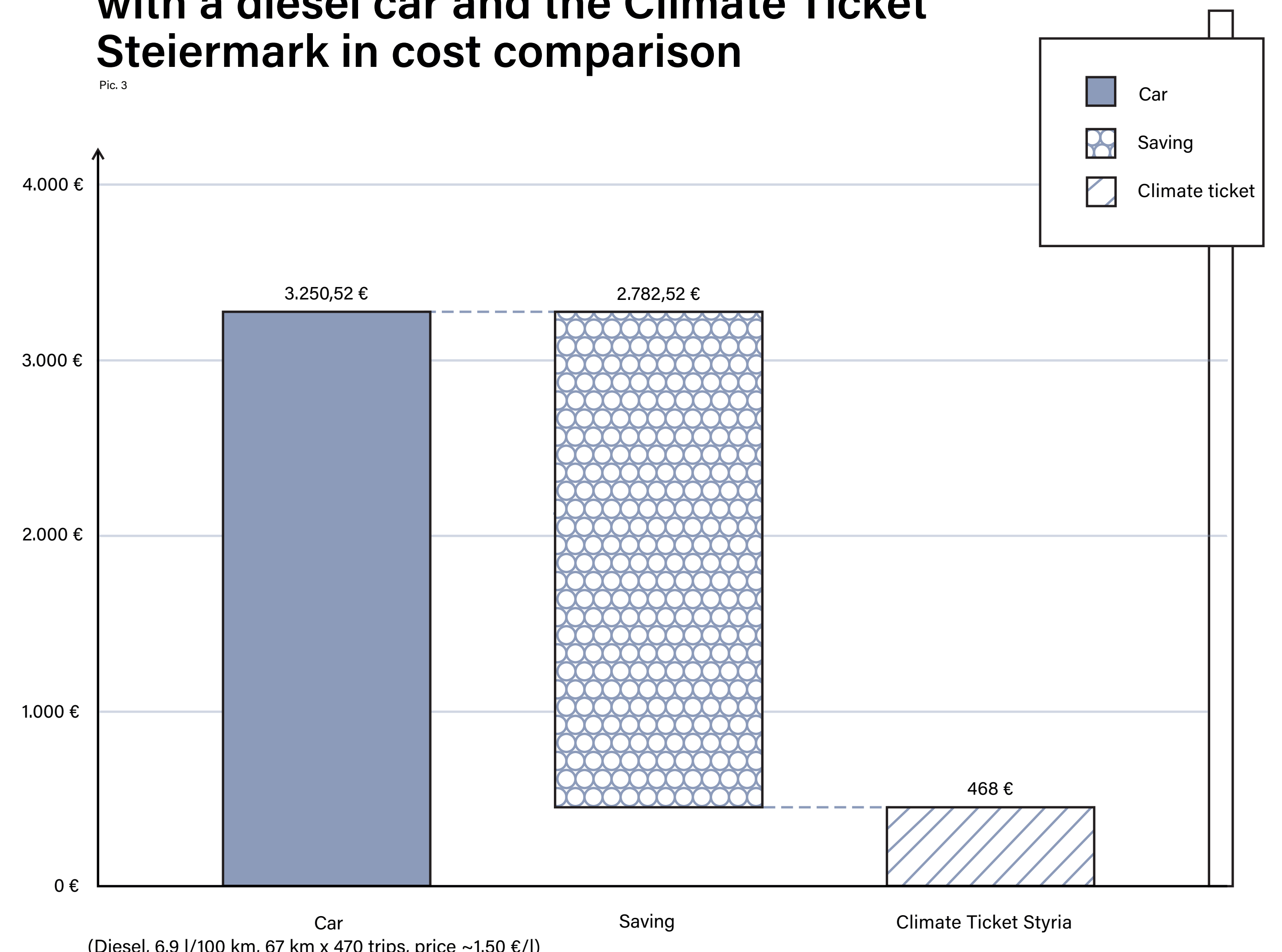
For longer distances, the train is advantageous, especially between city centers. Furthermore, the expansion of the regional bus network with better scheduling is upcoming in many regions of Styria¹². The Climate Ticket offers a significantly cheaper alternative to the car. In the form of a job ticket, companies can further support their employees in adopting climate-friendly mobility.

Setting impulses as a municipality

Municipalities can counter the decline of town centers and improve the quality of life for residents by creating compact spatial structures, thus enabling short distances. This increases the frequency of people, making a location in the town more attractive for businesses¹³. There are already many successful examples, such as Trofaiach near Leoben. The municipality of Werfenweng in Salzburg offers its guests numerous options for car-free mobility.

Commuting between Graz and Leoben with a diesel car and the Climate Ticket Steiermark in cost comparison

Pic. 3



¹ Mit Ausnahme der fluorinierten Gase im Kühlbereich, der Schaumstoffherstellung und Halbleiterherstellung.

² vgl. UBA, 2023a, S. 142f.

³ vgl. VCO, 2019a, S. 12, 16, 23, 32.

⁴ vgl. Agora Energiewende, 2022, S. 9f., 49f.

⁵ vgl. UBA/DE, 2016, S. 4f.

⁶ vgl. Land Steiermark, o. J. a.

⁷ vgl. VCO, 2019b, S. 14f.

⁸ vgl. IPCC, 2022b, S. 1184.

⁹ vgl. UBA, 2019, S. 28f.

¹⁰ vgl. VCO, 2023a, S. 11f.

¹¹ vgl. UBA, 2023a, S. 146f.

¹² vgl. Statistik Austria, 2023d, S. 9.

¹³ vgl. UBA, 2019b, S. 14f.

¹⁴ vgl. UBA, 2023a, S. 142f.

¹⁵ vgl. UBA, 2023a, S. 146f.

¹⁶ vgl. UBA, 2023a, S. 146f.

¹⁷ vgl. UBA, 2023a, S. 146f.

¹⁸ vgl. UBA, 2023a, S. 146f.

¹⁹ vgl. UBA, 2023a, S. 146f.

²⁰ vgl. UBA, 2023a, S. 146f.

²¹ vgl. UBA, 2023a, S. 146f.

²² vgl. UBA, 2023a, S. 146f.

²³ vgl. UBA, 2023a, S. 146f.

²⁴ vgl. UBA, 2023a, S. 146f.

²⁵ vgl. UBA, 2023a, S. 146f.

²⁶ vgl. UBA, 2023a, S. 146f.

²⁷ vgl. UBA, 2023a, S. 146f.

²⁸ vgl. UBA, 2023a, S. 146f.

²⁹ vgl. UBA, 2023a, S. 146f.

³⁰ vgl. UBA, 2023a, S. 146f.

³¹ vgl. UBA, 2023a, S. 146f.

³² vgl. UBA, 2023a, S. 146f.

³³ vgl. UBA, 2023a, S. 146f.

³⁴ vgl. UBA, 2023a, S. 146f.

³⁵ vgl. UBA, 2023a, S. 146f.

³⁶ vgl. UBA, 2023a, S. 146f.

³⁷ vgl. UBA, 2023a, S. 146f.

³⁸ vgl. UBA, 2023a, S. 146f.

³⁹ vgl. UBA, 2023a, S. 146f.

⁴⁰ vgl. UBA, 2023a, S. 146f.

⁴¹ vgl. UBA, 2023a, S. 146f.

⁴² vgl. UBA, 2023a, S. 146f.

⁴³ vgl. UBA, 2023a, S. 146f.

⁴⁴ vgl. UBA, 2023a, S. 146f.

⁴⁵ vgl. UBA, 2023a, S. 146f.

⁴⁶ vgl. UBA, 2023a, S. 146f.

⁴⁷ vgl. UBA, 2023a, S. 146f.

⁴⁸ vgl. UBA, 2023a, S. 146f.

⁴⁹ vgl. UBA, 2023a, S. 146f.

⁵⁰ vgl. UBA, 2023a, S. 146f.

⁵¹ vgl. UBA, 2023a, S. 146f.

⁵² vgl. UBA, 2023a, S. 146f.

⁵³ vgl. UBA, 2023a, S. 146f.

⁵⁴ vgl. UBA, 2023a, S. 146f.

⁵⁵ vgl. UBA, 2023a, S. 146f.

⁵⁶ vgl. UBA, 2023a, S. 146f.

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⁵⁸ vgl. UBA, 2023a, S. 146f.

⁵⁹ vgl. UBA, 2023a, S. 146f.

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⁶³ vgl. UBA, 2023a, S. 146f.

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⁶⁸ vgl. UBA, 2023a, S. 146f.

⁶⁹ vgl. UBA, 2023a, S. 146f.

⁷⁰ vgl. UBA, 2023a, S. 146f.

⁷¹ vgl. UBA, 2023a, S. 146f.

⁷² vgl. UBA, 2023a, S. 146f.

⁷³ vgl. UBA, 2023a, S. 146f.

⁷⁴ vgl. UBA, 2023a, S. 146f.

⁷⁵ vgl. UBA, 2023a, S. 146f.

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⁷⁷ vgl. UBA, 2023a, S. 146f.

⁷⁸ vgl. UBA, 2023a, S. 146f.

⁷⁹ vgl. UBA, 2023a, S. 146f.

⁸⁰ vgl. UBA, 2023a, S. 146f.

⁸¹ vgl. UBA, 2023a, S. 146f.

⁸² vgl. UBA, 2023a, S. 146f.

⁸³ vgl. UBA, 2023a, S. 146f.

⁸⁴ vgl. UBA, 2023a, S. 146f.

⁸⁵ vgl. UBA, 2023a, S. 146f.

⁸⁶ vgl. UBA, 2023a, S. 146f.

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¹²⁴ vgl. UBA, 2023a, S. 146f.

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¹³³ vgl. UBA, 2023a, S. 146f.

¹³⁴ vgl. UBA, 2023a, S. 146f.

¹³⁵ vgl. UBA, 2023a, S. 146f.

¹³⁶ vgl. UBA, 2023a, S. 146f.

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¹⁵¹ vgl. UBA, 2023a, S. 146f.

¹⁵² vgl. UBA, 2023a, S. 146f.