Media Information
21. November 2025

BMW Group achieves more efficient car usage through insights into trips, gamification and CO_2-Aware Charging.

+++ Three BMW Group pilots concluded to encourage efficient car usage +++ Visual rewards for energy-efficient driving and information on trips and real time CO_2 emission of electricity mix, prove effective+++

Rotterdam, Munich. Our initiatives in collaboration with cities include mobility research and piloting solutions, making driving and traffic more efficient, while reducing congestion. Mobility behavior is an important aspect for cities, especially regarding driving and parking vehicles in urban areas. That is why we research how to make the mobility behavior of our customers more city-friendly, tailored to their individual needs. Through strategic collaborations, such as with the city of Rotterdam, both parties gain deep insights into what the city needs, and which solutions work well with drivers. Our research shows that mobility behavior can be effectively influenced by nudging, or in other words, the positive motivation of people.

Through attractive digital experiences, we aim to enhance the driving experience and encourage our customers to use their vehicles more efficiently. Recently, three pilots based on relatively small but positive incentives have been completed. The insights gained are promising.

Highlights.
The research project named "My Travels", conducted throughout the Netherlands in the second half of 2024 with BMW models, provided a report to users about the length of their trips made and offered information on realistic alternatives such as travel by foot, bicycle, or public transport. The results showed that simply gaining insight into one's own travel behavior, including information on the length of trips and alternative travel options, provides incentives to choose an alternative mode of transport instead of the car. This result aligns perfectly with Rotterdam's goal to free up roads for those who truly need to use them.

Additionally, we implemented a pilot with a gamification approach to reduce the footprint of our products in the use phase. Real world data from a representative BMW and MINI fully electric fleet show that driving in the efficient driving mode generally results in an average energy consumption reduction of about 7%. The "MINI Artwork Challenge" pilot's aim was to stimulate drivers to switch to this mode. It was conducted in the first quarter of this year in the latest generation fully electric MINI models Countryman and Cooper, exploring whether gamification can encourage more energy-efficient driving behavior. In this pilot, the virtual artwork – an AI generated image — grew larger the more the user drove in the efficient driving mode. The pilot results show this encouraged participants to increase their share of trips in the efficient driving mode by 60% compared to the baseline phase.

BMW
GROUP

Corporate Communications

Date   21. November 2025

Subject   **BMW Group achieves more efficient car usage**

Page   2

Finally, the research project "COOL" (CO_2 Optimal Charging) was a field experiment that started in April 2025. Its goal was to provide plug-in hybrid and EV drivers with insights into charging behavior and the associated CO_2 emissions. By using a simple and insightful app that shows CO_2 emissions per kWh of the local electricity mix in real time and alerts the user when they drop below a certain value, we support drivers in deciding when to charge their vehicles.

In total, 355 drivers of electric and plug-in hybrid BMW models participated in this project, which brought at least two valuable results. Gamification increased CO_2-improved EV charging by 6% and it suggests that even participants who are already environmentally conscious are still willing to take additional steps to reduce their CO_2 impact by charging their vehicles CO_2 improved.

The city of Rotterdam and BMW Group will use the insights gained to develop more sustainable, user-oriented mobility concepts that improve both individual mobility and the urban mobility ecosystem.

Background and details of "My Travels Distances & Alternatives".
This research project originated from a bachelor thesis supervised by the University of Münster. Erasmus University Rotterdam was involved as the regular research partner of BMW Netherlands in the design and analysis of the feedback survey.

Three hundred participants, drivers of BMW and MINI models across the country, were provided with a test app that offered a clear view of travel habits, at a more detailed level than the "My Trips" feature already known to BMW and MINI customers from the My BMW and MINI app.

The app contains two elements: Distances and Alternatives. The first offered the driver transparency of their car trips. A pie chart allowed app users to see at a glance how many trips they made weekly of up to 1 kilometer, 1-5 kilometers, and 5 kilometers or more. Alternatives provided insight into which realistic alternatives would have been possible for specific trips: by foot, bicycle, or public transport, including any distance and/or time savings.

The research question was: do active app users reduce more trips based on the travel report and recommendations for alternative modes of transport than inactive users?

Results of "My Travels Distances & Alternatives".
Overall, analysis indicated that active users of the app reduced one car trip weekly compared to participants who did not use the app. This means that simply gaining insight into one's own travel behavior and information on alternative travel options provides incentives to leave the car unused once a week, potentially reducing traffic congestion in the city.

BMW
GROUP

Corporate Communications

Date	21. November 2025
Subject	**BMW Group achieves more efficient car usage**
Page	3

Zooming in on weekly trips, the reduction in car usage was even slightly larger: active users made an average of 1.5 fewer trips (of up to five kilometers). In other words, more than one short trip was avoided. No significant decrease in car usage was seen on weekends.

Factors influencing participants' choices related to timing (weekday or weekend), weather conditions, and personal situation (with or without children). This emerged from the comprehensive survey that was part of the research. When asked which types of trips participants were most inclined to swap for alternative transport, the top three were: 1) to a park, restaurant, etc., 2) to the gym, 3) to the supermarket. Picking up and dropping off children remains preferred by car, as indicated by the last place in the ranking.

When asked about the three main reasons to leave the car unused, the top three were: 1) travel duration, 2) convenience and availability of alternative modes of transport, 3) weather conditions.

Background and details of the "MINI Artwork Challenge".
This pilot resulted from a graduation project within the BMW Group's development department, which designs (product) solutions in the field of energy and sustainable/urban mobility, part of the "Connected Company". An overarching goal of many of their projects is to promote efficient driving habits to support potential reductions of CO_2 emissions in the use phase. The "MINI Artwork Challenge" aimed to "achieve a lasting change in driving behavior through artistic incentives."

130 participants took part in the pilot. These drivers were rewarded for using the efficient driving mode of their MINIs. The more frequently this mode was used, the further an AI-generated artwork (consisting of stylized plants or animals) evolved. The image was then displayed on the central screen at the start of each trip.

Results of the "MINI Artwork Challenge".
Real world data from a representative BMW and MINI fully electric fleet show that driving in the efficient driving mode generally results in an average energy consumption reduction of about 7%. The "MINI Artwork Challenge" encouraged participants to increase their share of trips in the efficient driving mode to almost 40%, compared to 25% in the baseline phase. This corresponds to a 60% increase in trips in the efficient driving mode.

Background and details of the "COOL" pilot.
We saw there are still some gaps to address in the field of smart charging. Currently, smart charging enables cost-efficient charging only at home, but optimal charging technologies are not yet widely available in the electric vehicle market. Additionally, there is a lack of awareness about the impact of charging behavior on the CO_2 footprint of an electric car. While price-optimized charging is available for dynamic charging tariffs, it often lacks optimization aimed at reducing CO_2 emissions.

Our idea was to provide clear CO_2 information about the country's electricity mix to users, enabling them to shift their charging to timeslots that are better in terms of CO_2 emissions over a longer cycle. By applying the nudge concept, we aimed to encourage and steer beneficial charging behavior. Ultimately, this approach should contribute to reducing the CO_2 footprint in both public and private spaces.
The research question was: how can nudges effectively influence the timing of electric vehicle charging to align with periods in which the use of renewable energy sources is higher?

The pilot project, conducted from April to July 2025, involved BMW 355 electric vehicle drivers in the Netherlands. A digital charging feature called "COOL" was made available in Dutch and English through the 360° Mobility app on iOS. This simple and insightful app showed the CO_2 emissions per kWh of electricity in real-time and alerting the user when it dropped below a certain value. Charging and vehicle data from all registered participants were collected on BMW Labs. Additionally, qualitative interviews were conducted with 14 participants to gather in-depth insights.

Results of the "COOL" pilot.
A total of 13.153 charging sessions were analyzed, and timeslots with a cleaner energy mix were identified on 67 out of 87 days. Through gamification, we successfully encouraged participants to shift their charging sessions to time slots with a forecasted higher share of renewables in the Dutch energy mix, achieving a 6% increase in such charging sessions compared to the control group. In contrast, providing forecasts and statistics alone had no significant effect. Plug-in hybrid drivers were less likely to change their charging behavior. Customers expressed three things:

-   a preference for easy or automatic integration into their routines.

-   technical alignment with existing energy applications.

-   having a single source of information for optimal timeslots.

The post pilot survey with 90 participants also revealed a valuable insight. When asked if the participant 'would be willing to make an extra effort to charge with reduced CO_2 emissions, such as by setting a charging window in their app', 73% of participants answered "yes". Notably, 62% of these environmentally motivated participants already have a green electricity contract. This indicates that even those who are already committed to sustainable energy use are open to taking additional steps to further reduce their CO_2 impact through charging in low-emission windows.

"Smart City Travel" Pilot as a Forerunner to "My Travels".
In 2022, Rotterdam and BMW launched the Smart City Travel pilot. This project focused on motorists who (regularly) drove from outside toward the inner city of Rotterdam. BMW Group, Rotterdam, and the Erasmus University Rotterdam investigated ways to entice motorists to park their cars at a park-and-ride (P+R) on the outskirts of the city and

BMW
GROUP

Corporate Communications

Date   21. November 2025

Subject   **BMW Group achieves more efficient car usage**

Page   5

continue the last mile of their journeys using public or shared transport. The question was: what is needed to motivate BMW drivers to make this choice in advance and then actually switch modes when an alternative mode is actively offered in the navigation?

Results showed that information about alternative transport should not only arrive in the car after the trip starts, as people are not prepared for it or, for practical reasons (no coat, too many belongings), cannot or do not want to switch. This led to the idea of focusing more on transparency and providing drivers with insight into their trips and offering alternatives as desired (before or after a trip) in an app.

Collaboration with Rotterdam Since 2018.
A safe, healthy, and livable city is high on the agenda of the Rotterdam municipality. This requires a new vision of future mobility, where sustainability, traffic safety, accessibility, and flow play a crucial role. Since 2018, BMW Group and the City of Rotterdam have been working together to realize these shared ambitions and pilot mobility solutions around integrating the car into the ecosystem of a livable city

---

The BMW Group
With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial services. The BMW Group production network comprises over 30 production sites worldwide; the company has a global sales network in more than 140 countries.

In 2024, the BMW Group sold over 2.45 million passenger vehicles and more than 210,000 motorcycles worldwide. The profit before tax in the financial year 2024 was € 11.0 billion on revenues amounting to € 142.4 billion. As of 31 December 2024, the BMW Group had a workforce of 159,104 employees.

The economic success of the BMW Group has always been based on long-term thinking and responsible action. Sustainability is a key element of the BMW Group's corporate strategy and covers all products from the supply chain and production to the end of their useful life.

BMW
GROUP

Corporate Communications

Date 21. November 2025

Subject **BMW Group achieves more efficient car usage**

Page 6

www.bmwgroup.com
LinkedIn: http://www.linkedin.com/company/bmw-group/
YouTube: https://www.youtube.com/bmwgroup
Instagram: https://www.instagram.com/bmwgroup
Facebook: https://www.facebook.com/bmwgroup
X: https://www.x.com/bmwgroup