

Evaluation of bike sharing schemes in Buskerudbyen

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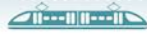
In Buskerudbyen, there have been two different trials with shared e-bikes. Both shared e-bike schemes are popular among users. However, the number of users utilizing the schemes is relatively low. One trial covered both Kongsberg and Lier, where a total of 6,340 trips were completed in 2022, with approximately 125 users accounting for about 5,000 of these trips. Another trial was in Drammen, where a significantly larger number of trips were made, totalling 34,720 in 2022. Despite being used by more people, there is still a relatively small number of users responsible for a large portion of the trips. Additionally, in Drammen, a substantial number of e-scooters are also present. The usage pattern of the e-bike scheme is similar to that of e-scooters in terms of trip length, time, and speed, but e-bikes are used over slightly longer distances, have a slightly higher average speed, and are used throughout a slightly longer season. In both e-bike schemes, a significant portion of the trips are taken in connection with train journeys.

The e-bike service in Kongsberg and Lier is station-based and operated by Brakar. This means that they have designated parking spots where the bikes must be returned. Users are allowed to ride wherever they want, as long as the trip starts and ends within one of the predefined areas. These e-bikes are accessible through the Brakar app. The service is primarily funded by the government, but there is a small user fee for each individual trip.

In Drammen, the e-bike service operates as a free-floating system. Users can start their trips wherever they find an e-bike and end them anywhere within the designated area, with a few defined exceptions. The bikes are accessible through the Bolt app and are commercially operated by Bolt, with pricing similar to e-scooters.

The e-bike schemes are geographically separated, even though Drammen and Lier form a continuous urban area. This separation is due to legal reasons. Technically, one can ride a Brakar e-bike into Drammen, but the trip cannot be concluded there.

The usage of the different e-bike schemes in the Buskerudbyen has many similarities. The trips are, on average, 1.7 kilometres long and largely connected to public transportation hubs at one end of the journey. In Kongsberg and Lier, where station-based bike schemes are implemented, e-bikes are primarily used from the train station to industrial areas that are not well-covered by public transport in the morning, and back to the train station in the afternoon.



In Drammen, the directional balance between trips to and from the train stations is more evenly distributed. This means that e-bikes in Drammen are utilized for both inbound and outbound trips, contrasting Kongsberg and Lier, where inbound commuting dominates.

In the station-based e-bike schemes in Kongsberg and Lier, not all bikes are active every week. On average, the available bikes are used for just over one trip per week. In Drammen, a larger proportion of the available bikes are in use, with the bikes being used for slightly more than one trip per day. A significant portion of e-bike trips in all three municipalities is related to travel to and from work and school.

The e-bike users (respondents in the user survey) have an average age of 39 years and a median age of 38. The oldest respondent is 77, while the youngest is 14, but there could be younger users as well. This suggests that e-bike users are, on average, slightly older than users of shared e-scooters.

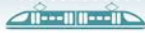
Both the e-bike scheme operated by Brakar and the scheme operated by Bolt have predominantly satisfied users. The technical standard of the bikes is perceived as good, with the bikes offered by Brakar appearing to have a slightly higher standard. Both schemes have a pricing structure with an initial fee and a per-minute charge for continued use. Neither of the operators offers subscription plans. This results in a relatively low price for a one-time trip but is perceived as somewhat too costly for regular use. This observation is supported by looking at the trip frequency among users, with the majority having used the service only once or twice. In interoperating the survey results it is important to be aware that users who have completed more trips are overrepresented among the survey respondents.

There are no significant challenges reported regarding the operation and maintenance of the e-bikes. In Drammen, the operator has chosen to close the service during winter, while in Kongsberg and Lier, the service has been operational throughout winter. However, the usage of the service has been low during the winter season. The reason for the winter closure in Drammen is stated to be the lack of economic sustainability to operate city e-bikes without simultaneously operating e-scooters. As e-scooters, which are more numerous and heavily used, are withdrawn during winter, the decision was made to also remove the e-bikes.

The schemes in Kongsberg and Lier, on one side, and Drammen on the other side, are not directly comparable, despite many similarities. The schemes in Kongsberg and Lier take place in markets with lower demand and are station-based. The scheme in Drammen is commercially viable, given the precondition that it can be combined with e-scooters. Even when excluding project costs, investments in bikes and racks, the schemes in Kongsberg and Lier are very expensive per trip and per person-kilometre. This is mainly due to low usage, not high operational costs. The administrative costs of the schemes appear to be low in all cases.

This study does not provide a clear answer on whether a public or private e-bike scheme is preferable since the scale and context of the studied schemes are different. Both options have advantages and disadvantages. The advantage of a public service lies primarily in predictability and the possibility to integrate the e-bike scheme into broader transportation policy goals. On the other hand, the advantage of a private e-bike service is that it provides a more dynamic response to demand, as in the case of Drammen, without significant costs for the government. However, it is unlikely that there would be any service in Kongsberg or Lier without public support. Free-floating schemes, such as Bolt's offering in Drammen, also seem to reach larger user groups compared to station-based solutions.

Based on the market assessment, it seems reasonable to integrate the schemes in Lier with the offering in Drammen. This would significantly increase the user benefits for Lier's users and to some extent for Drammen's users. However, it would probably require some form of regulation. It is not certain that anyone would be willing to provide e-bikes in Lier on a commercial



basis. At the same time, replacing the commercial offering in Drammen with an offering that requires public subsidies does not seem very sensible.

Integrating private offerings into public transport apps and services is possible, but it would likely require a different business model and possibly some value transfers to the private operators. These transfers could take the form of subsidies, exclusive rights, or other forms of market protection.

The markets in Kongsberg and Lier are significantly smaller than the market in Drammen. Additionally, the station-based services, with only e-bikes, reach a lower proportion of the theoretical total market. Calculating the market potential, the study used the usage of shared micromobility (combined e-bikes and e-scooters) in Drammen as a starting point and projected this usage onto a model of the population, businesses, and area in Kongsberg and Lier. The model estimated around 50,000 trips per year in Kongsberg, approximately ten times the actual number of trips taken. This suggests that the current station-based e-bike solution in Kongsberg and Lier does not fully reach the total market potential.

As they are currently designed, all e-bike services seem to have a positive impact on achieving transport policy goals (e.g., reducing car traffic) while also contributing to improved mobility. However, the schemes in Kongsberg and Lier are of such a small scale that they do not have a significant direct effect. The scheme in Drammen, especially when including e-scooters, appears to be of a size that could have a measurable impact. Nonetheless, all schemes face challenges relating to the transport policy goals, as they are not very attractive during the winter season, and the pricing structure does not encourage regular use. Therefore, it is unlikely that the shared e-bike schemes alone will result in reduced car ownership. They may contribute to a larger multimodal package, but the extent of this contribution has not been established within the scope of this project.