

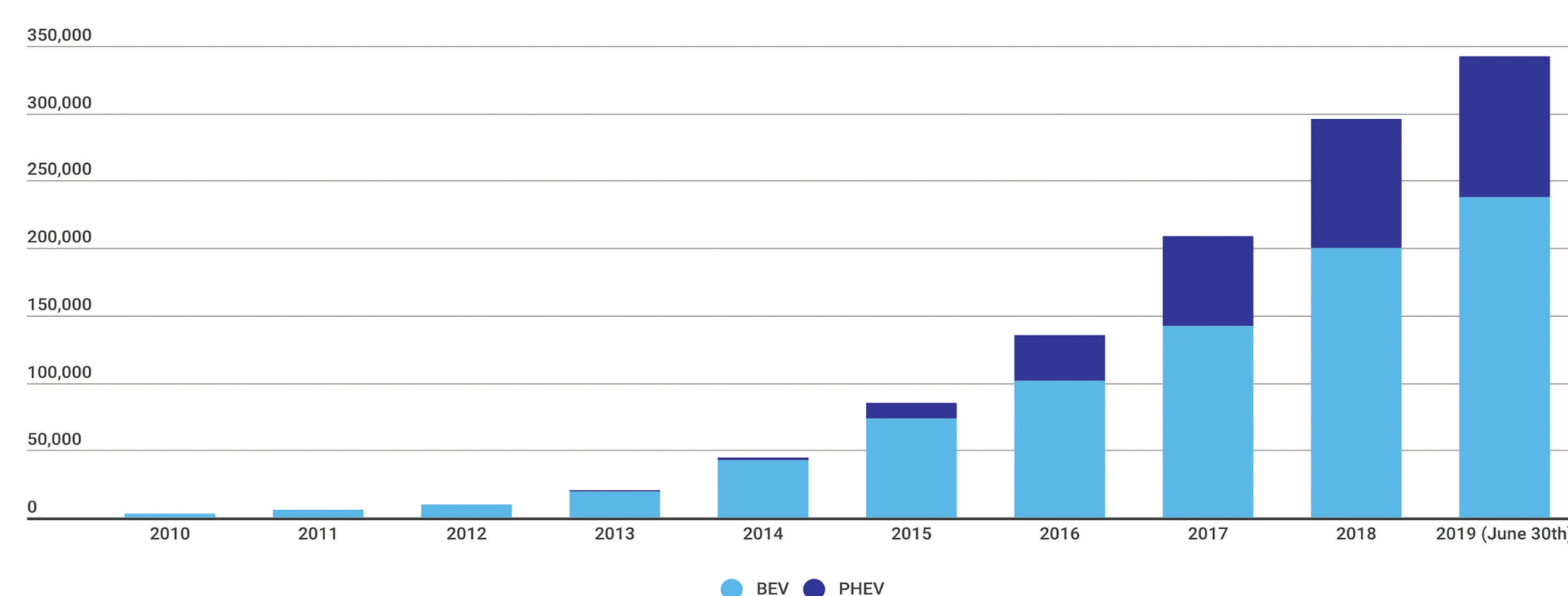
The Future of Transport:

Can Ireland reach 936,000 Electric Vehicles by 2030?

NORWEGIAN MODEL

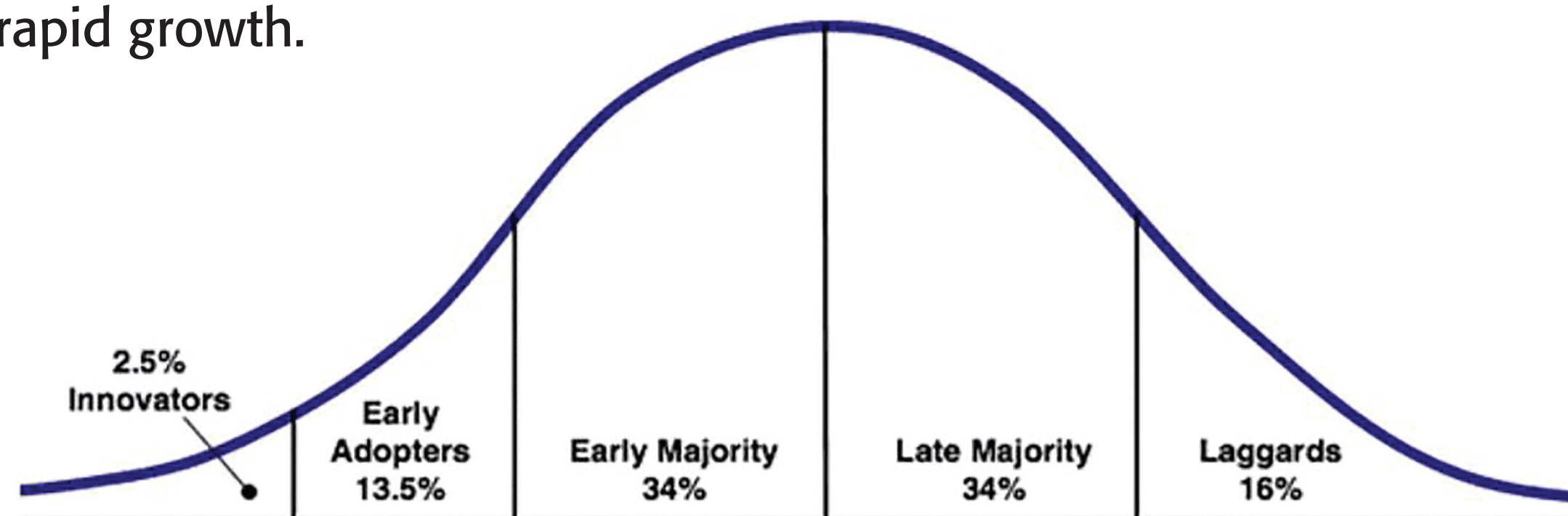
We have based many of our predictions on the Nordic countries, especially Norway, who are leading the world in terms of EV sales and growth. Ireland is currently at the same stage of EV sales that Norway was during 2010. Norway has experienced much greater growth than any other country, so we know that Ireland's rate of growth would be unlikely to exceed Norway's growth pattern.

Electric vehicle fleet in Norway



BASIC PREDICTION MODEL

We based our prediction model around a technology adaption curve. This is a generic curve that shows how technology is adapted. The growth of sales is initially very slow before growing at an extreme rate before slowing down and even declining. We believe that Ireland is currently at the stage of rapid growth.



BASS DIFFUSION MODEL

Prof. Frank Bass created a mathematical model for the rate at which new technology products are adapted over time. Using this model, Ireland will fail to reach their EV target.

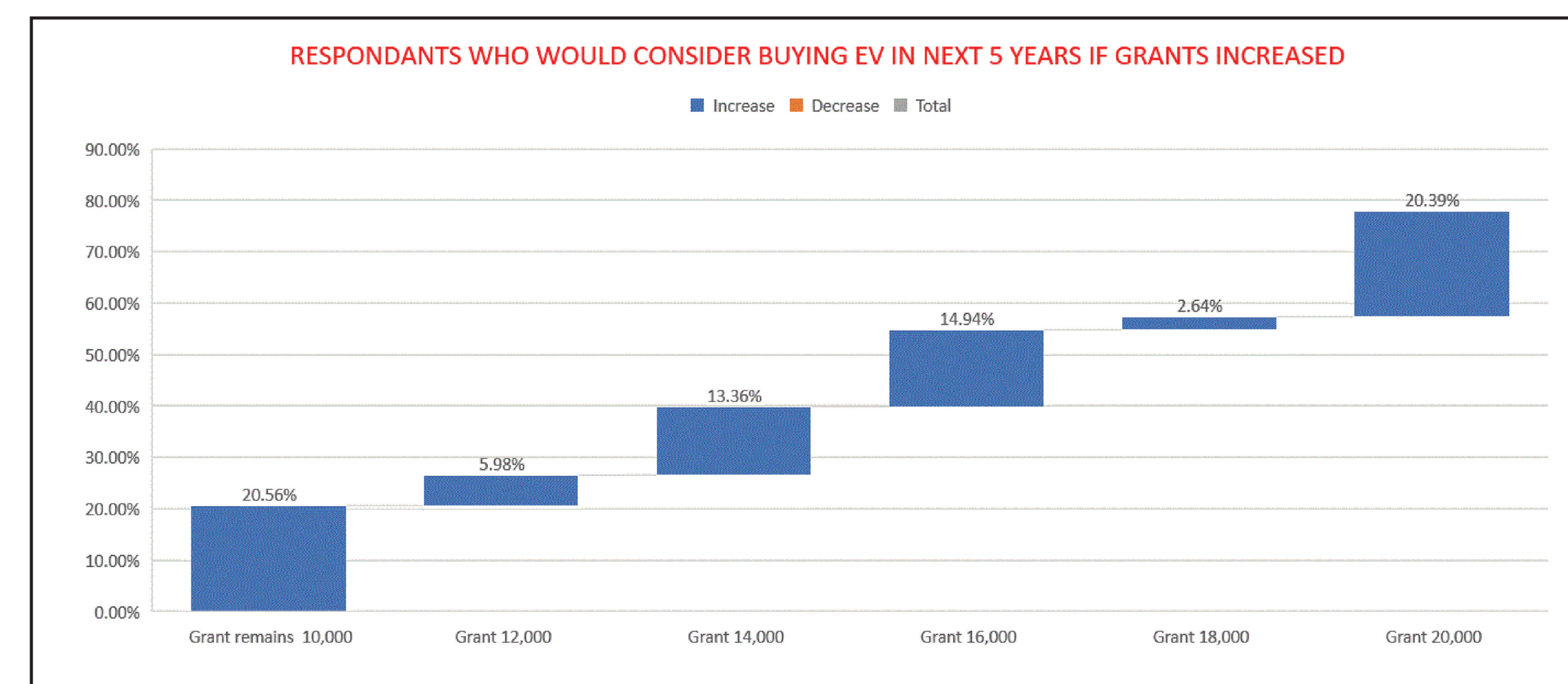
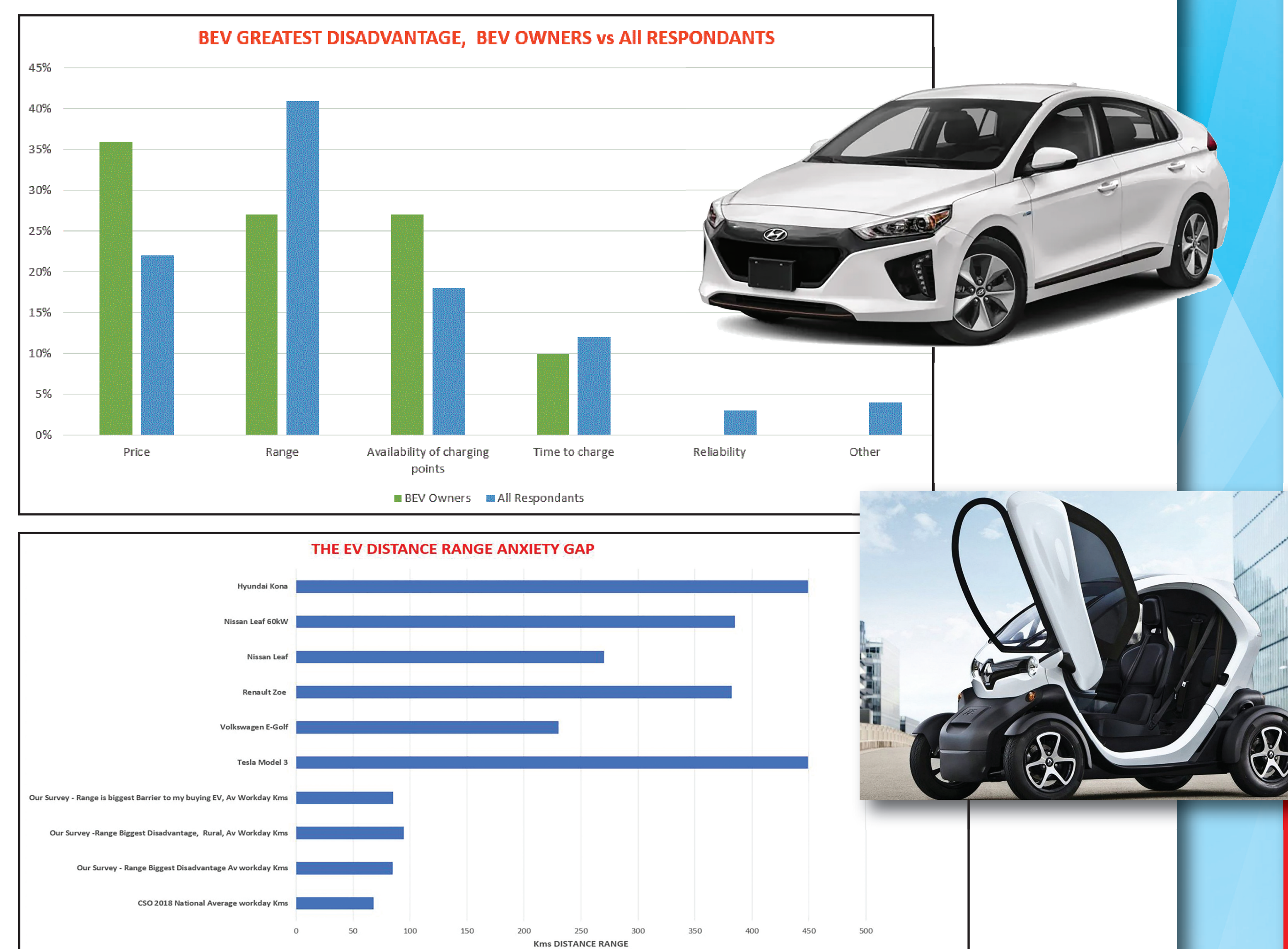
SURVEY:

- We created a survey to assess people's car buying behaviours and their attitudes to buying battery electric vehicles.
- We received 609 responses from adults aged 20 - 70+ years.
- We received answers from all counties and from people living in urban, rural and suburban areas.
- We then compiled all the results from the survey into an excel spreadsheet so that we could filter and analyze results.

AIM OF PROJECT:

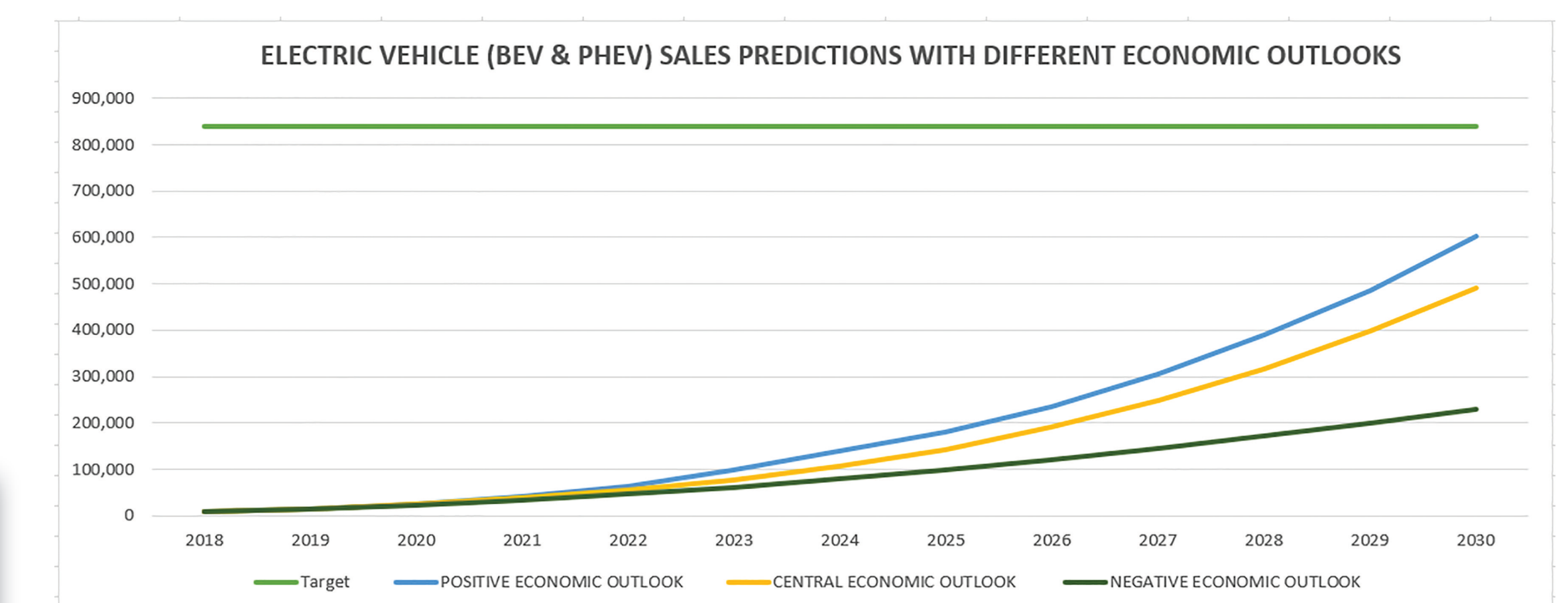
To evaluate the government's goal of having 936,000 Electric Vehicles (EVs) on the road by 2030. We focused mainly on the target of 840,000 passenger EVs, by building a prediction model for the probable rates of passenger EV sales over time.

SURVEY FINDINGS



CONCLUSIONS

- **Realistic outlook** - Ireland will not reach its goal of 840,000 passenger EVs by 2030. Existing EV car sales will not reach the target level at the current rate of growth. We estimate that there will be 490,000 EV cars on the road by 2030.
- **Pessimistic outlook** - Ireland will miss its goal by a greater amount with only 229,000 EV cars on the road. High priced EV cars are not affordable by the majority of people, battery technology may not improve sufficiently and battery production may not be able to keep up with demand.
- **Optimistic outlook** - Ireland will be unable to reach its goals but may do so soon. We predict that there will be 601,000 EV cars on the road by 2030. Battery technology is already advancing rapidly and will continue at a greater rate. The government will increase funding to allow for more EVs to be charged and powered and grants are maintained at the current level.



RECOMMENDATIONS:

- There is insufficient knowledge of incentives to buy an EV car such as : purchase grants, reduced vehicle registration tax, reduced motor tax, reduced tolls and home charging point grants This could be solved with an advertising or education campaign.
- Range Anxiety as seen in our survey could be addressed by an information campaign on the distance range of current EVs.
- The availability of charging stations was seen as another disadvantage of buying an EV in our survey, where 76.7% of people said they would agree to buying an EV if charging stations were as common as petrol stations.
- The gap between what many people in our survey paid for their current car and a new EV is too great. More financial incentives such as scrappage scheme are needed.
- Allow EV cars to use bus lanes and free parking.
- Conduct a larger and more comprehensive survey.