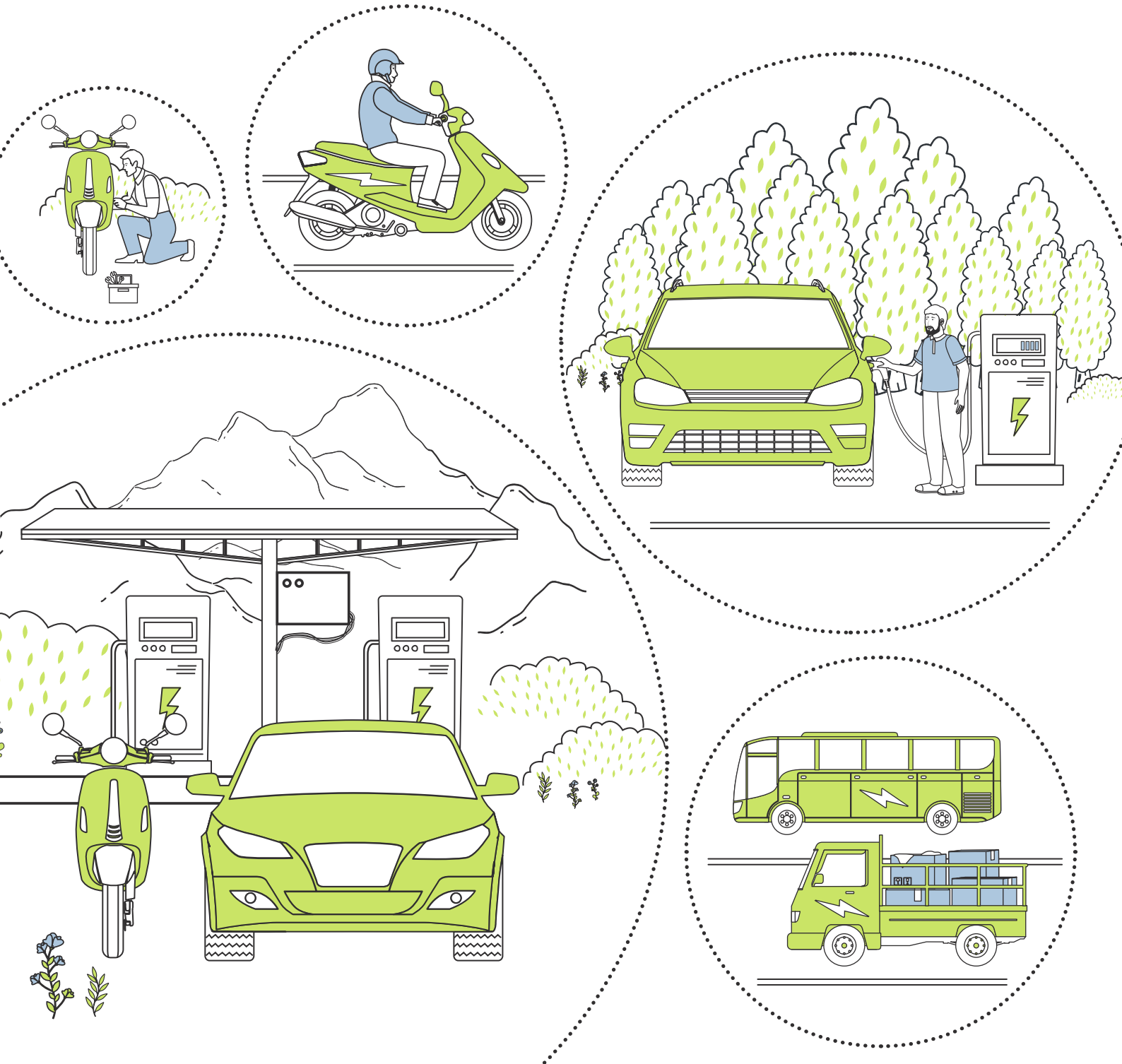
ICLEI Local Governments for Sustainability SOUTH ASIA

HPDT DEPARTMENT OF TRANSPORT

PROMOTING ELECTRIC VEHICLES IN HILLY REGIONS

Awareness Guide



Acknowledgements

We thank the Government of Himachal Pradesh, the Department of Transport, Himachal Road Transport Corporation (HRTC), and Himachal Pradesh State Electricity Board (HPSEBL), Department of Tourism & Civil Aviation for their valuable inputs and guidance in preparing this FAQ. We also acknowledge the contributions of industry partners, local stakeholders, and civil society representatives whose insights have helped make this document relevant and practical for the people of Himachal Pradesh.

Disclaimer

This FAQ is intended to provide general information on electric vehicle adoption in Himachal Pradesh. The facts and guidance shared are based on available data, stakeholder consultations, and secondary research at the time of preparation. While care has been taken to ensure accuracy, the information should be treated as indicative and not as official government notification or legal advice. The authors accept no liability for any direct or indirect consequences arising from the use of this document.

Authors

Vijay Saini, Amar Kulkarni, Manasa Garikaparthi, Varsha Parmar, Arun Thakur and Katya Garg.

Knowledge Partner: Shakti Sustainable Energy Foundation

Contributors: Priti Shukla and Balaji Raparthi

Year of Publishing

October 2025

Contact

ICLEI - Local Governments for Sustainability, South Asia
C-3 Lower Ground Floor, Green Park Extension,
New Delhi - 110016, India
Tel: +91–11–4974 7200; Email: iclei-southasia@iclei.org

Introduction

Electric mobility is emerging as one of the cleaner alternatives for sustainable transportation, with its notable advantages of higher energy conversion efficiency, lower operational costs, and significant environmental benefits that are particularly relevant for ecologically sensitive areas. The transition from conventional internal combustion engine vehicles to electric vehicles (EVs) is encouraged by a combination of technological advances, supportive government policies, and growing consumer demand; yet, the challenging geography and climate of hilly regions introduce unique obstacles. At the same time, the introduction of new technology has raised multiple concerns among users, ranging from everyday usability and long-term performance to the availability of charging stations and the reliability of post-sales servicing. This FAQ document addresses common and technical questions regarding EV adoption in hilly regions, from performance, accessible charging, infrastructural deficiencies and battery performance under adverse conditions to financial viability, government incentive programs, and consumer acceptance.

This document seeks to address common concerns and build confidence among users who may not be familiar with the detailed technical aspects of the EV ecosystem and its associated technologies. It aims to answer everyday questions in the simplest possible language, with this simplification being an intentional choice to make the content accessible to all.

Frequently Asked Questions (FAQs)

Electric Vehicle Performance on Hills

Can electric vehicles climb hills?

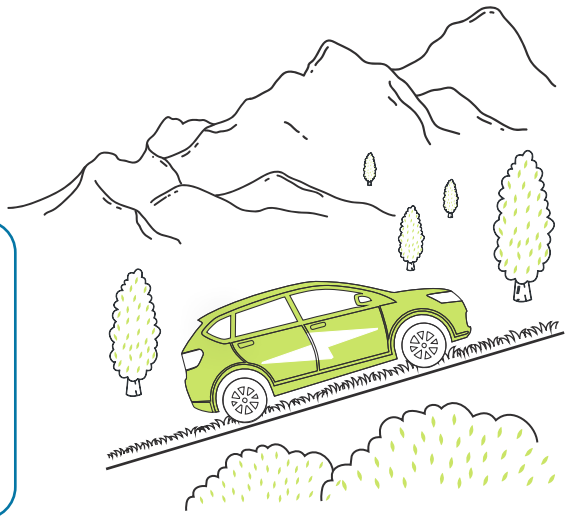
MYTH

Some people still believe that electric vehicles lack the power needed for steep inclines.

FACT

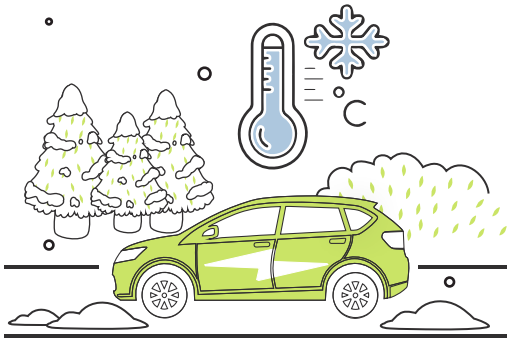
Electric Vehicles (EVs) provide instant power as soon as you press the accelerator. This makes them better on hills. Electric buses are successfully reaching Rohtang, Kufri, and Hatu Peak every day without any problems.

EV ON HILLS



How does EV perform in cold weather?

EV IN COLD WEATHER



MYTH

EVs cannot run properly in cold weather; their batteries will fail in freezing conditions.

FACT

EV batteries have been tested in freezing weather down to -10°C. Electric buses in Manali and Kullu run smoothly in December and January. The technology is ever-evolving, and more improvements in EV batteries are expected soon for smooth operations in extreme climatic conditions.

Where will I charge my electric vehicle in a small town or on the highway?

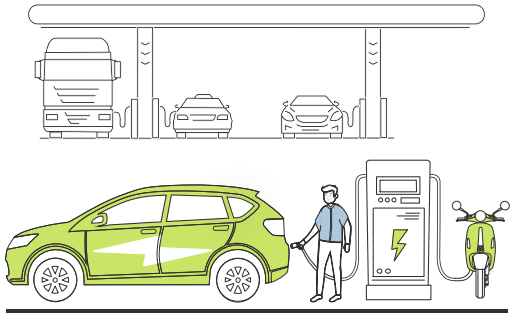
MYTH

In small towns or on highways, there are no charging points available for EVs.

FACT

Charging stations have been set up in locations along National Highways, near petrol pumps operated by IOCL, BPCL, and HPCL, as well as in hotels located in major tourist destinations such as Shimla, Dharamshala, Kullu-Manali, Solan, and Kasauli. Additionally, for everyday charging, simply connect your EV to a standard wall socket at home overnight.

CHARGING STATIONS



Cost and Affordability

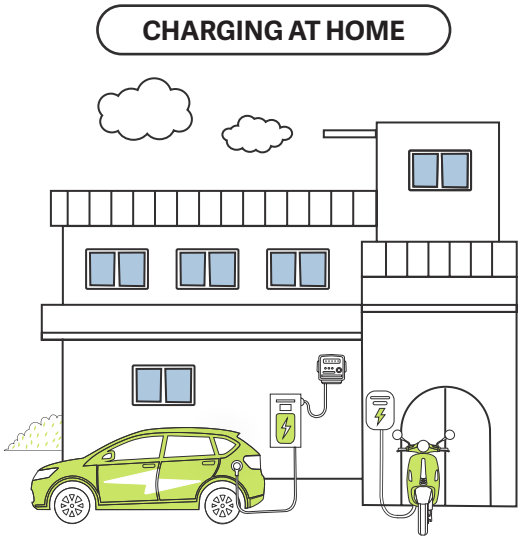
Will my electricity bill rise if I charge an EV?

MYTH

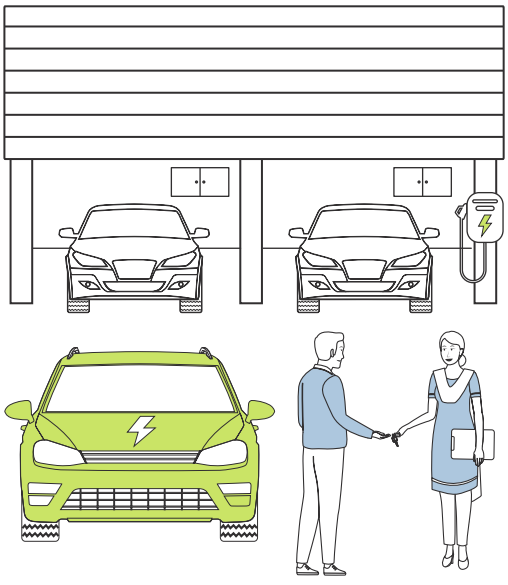
Charging an EV at home will make my electricity bill unaffordable.

FACT

Charging an electric 4-wheeler costs between 0.70 and 1.00 per kilometre if charged at home. In comparison, a petrol car costs between 6.3 and 7.9 per kilometre. You can also charge your electric vehicle overnight when electricity prices are lower.



Why should I buy an expensive EV when ICE vehicles are more affordable and have more models available in the market?

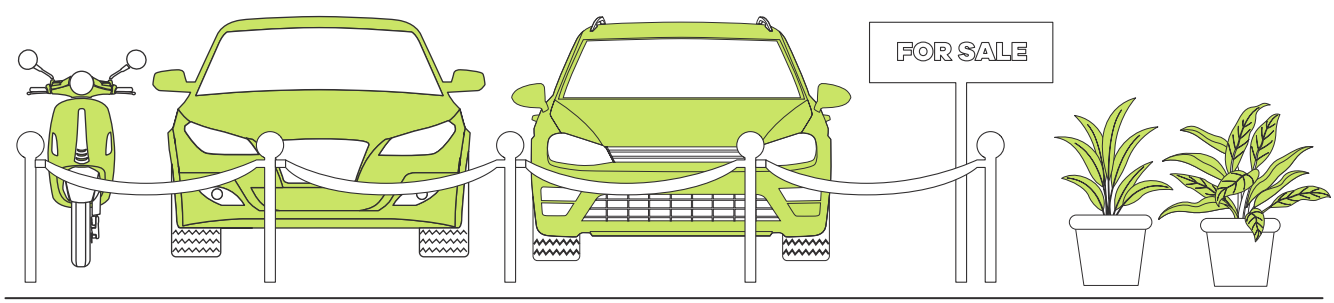


MYTH

EVs are too expensive and not worth buying compared to petrol or diesel vehicles, which are cheaper and have more options.

FACT

Consider the long-term advantages of electric vehicles when making the decision. An EV model is roughly ₹2-3 lakh more expensive than the petrol version, but the additional amount can be recovered in 2-3 years solely through fuel savings. Say farewell to the pain of petrol prices exceeding ₹100 per litre! There is virtually no maintenance cost for an EV. And honestly, driving EVs is more enjoyable; they're quiet, smooth, and provide instant acceleration. The range of models is also expanding rapidly.



Maintenance and Service

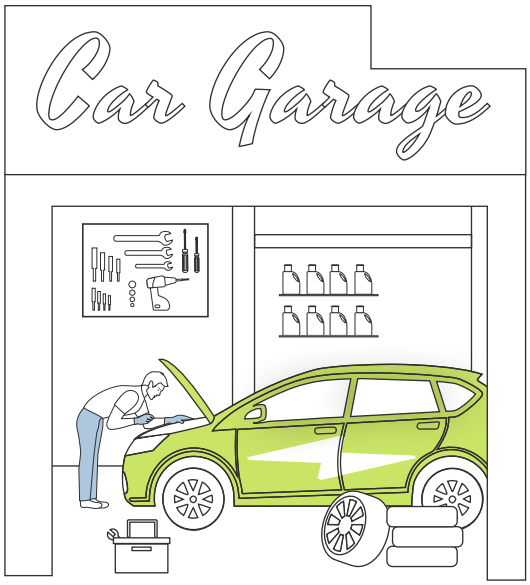
Is EV maintenance a major hassle?

MYTH

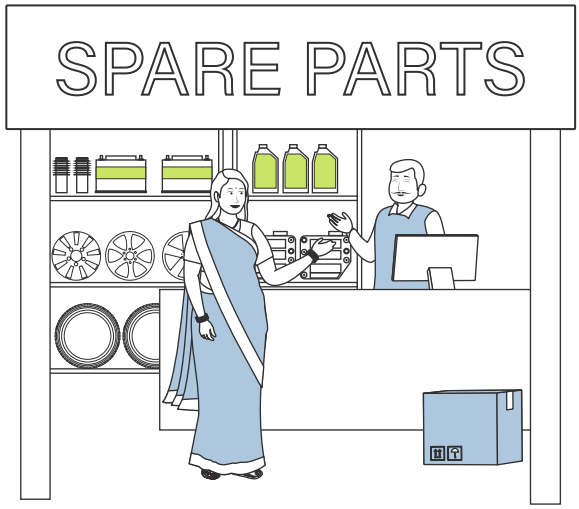
Maintaining an EV is complicated and costly because local mechanics cannot repair them. This is a misconception.

FACT

Electric vehicles do not have a traditional engine, clutch, or transmission, which ensures that there are fewer mechanical problems. Regular maintenance involves checking brake pads and batteries. Moreover, local repair shops are undergoing training through skill development programmes, ensuring servicing will not be an issue.



Are spare parts accessible in small towns?

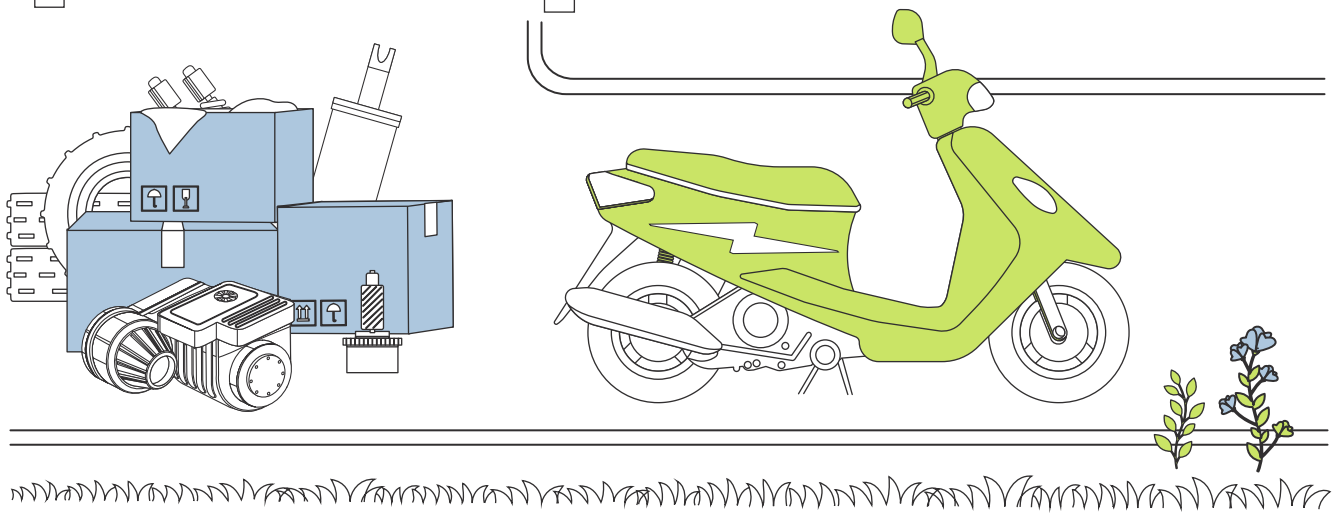


MYTH

EV spare parts are hard to find in small towns, so repairs will be a big problem.

FACT

There's no need to worry. Many parts, such as tyres, brake systems, and headlights, are the same as those in petrol-powered vehicles. The motors and batteries last a long time, and local suppliers and repair shops are also starting to stock these items.



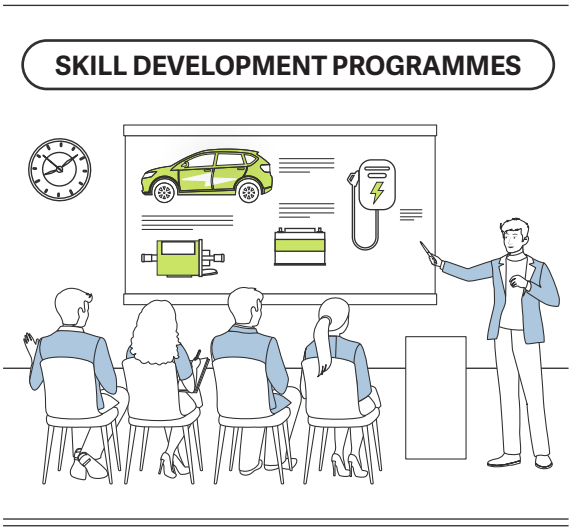
Will EVs replace local mechanics?

MYTH

With EVs, local mechanics will lose their jobs and have no role in the future.

FACT

No, EVs will not replace local mechanics. Rather, it is creating new employment opportunities. Local Industrial Training Institutes and skill development programmes have introduced courses for EV mechanics. Furthermore, new charging stations and service centres will also need personnel and operators.



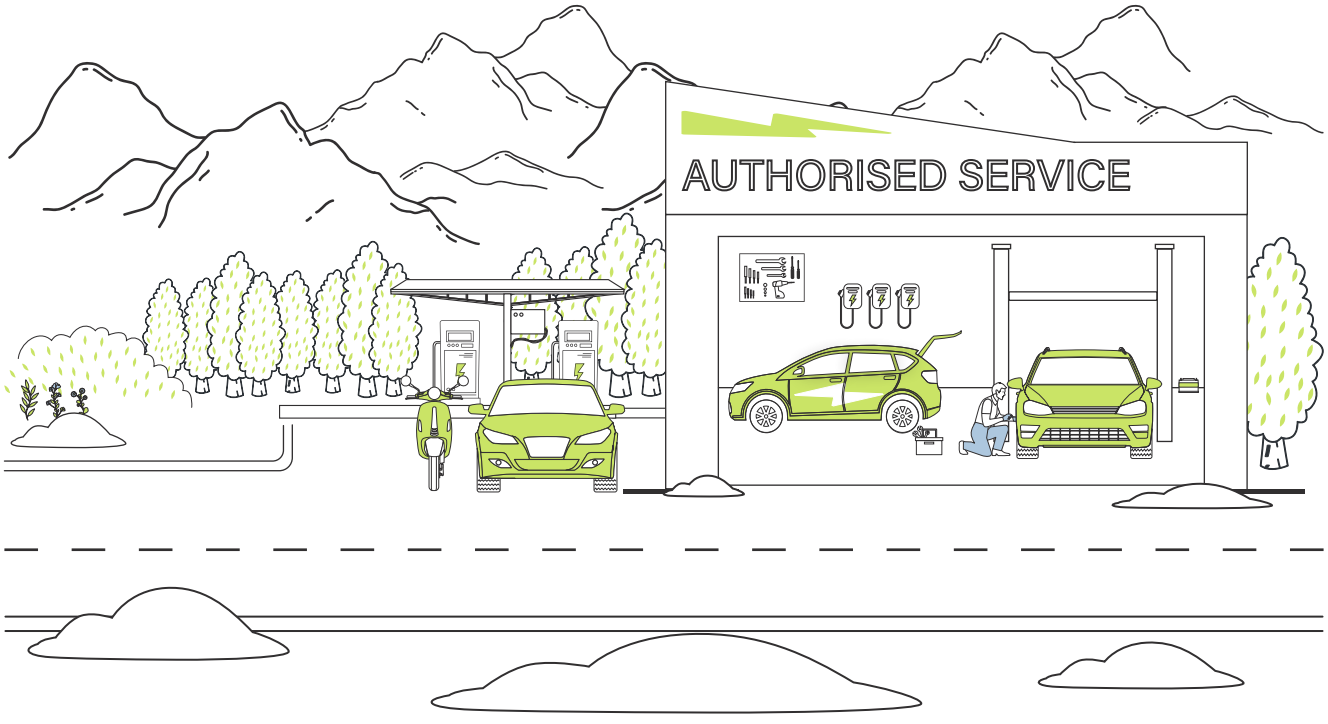
How is the after-sales service of electric vehicles in the hilly states?

MYTH

EVs have no after-sales service or support in hilly regions, so breakdowns will leave you stranded.

FACT

Well-known companies have set up authorised service centres for roadside assistance in major tourist destinations like Shimla, Dharamshala, and other major hill towns. The duration of this assistance ranges from 3 to 5 years and can be extended further at a nominal cost, whereas a few companies are also providing lifetime warranties. Additionally, local mechanics are undergoing training under government skill development programmes. Electric vehicles require significantly less maintenance than petrol cars and mostly involve software updates and basic inspections.



Battery Concerns

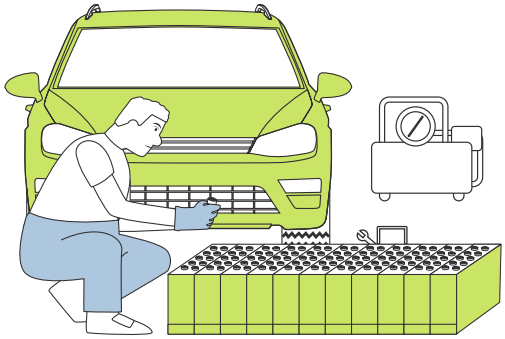
Do EV batteries fail quickly and cost a fortune to replace?

MYTH

EV batteries fail quickly like smartphone batteries and are too expensive to replace.

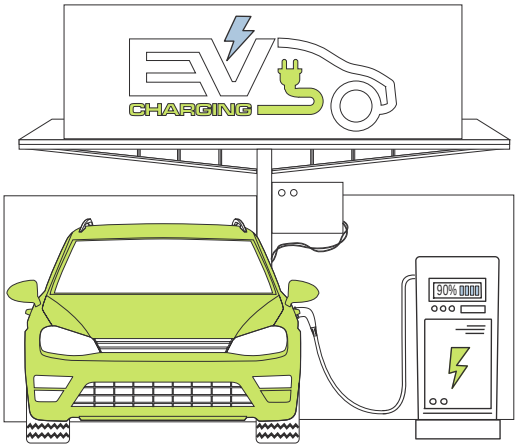
FACT

EV batteries work differently, don't assume that the whole battery gets replaced; only the cells within the battery are replaced. EV batteries typically last 8 to 10 years, or run approximately 150,000 kilometres. Most vehicles also come with a warranty of 5 to 8 years.



BATTERY CELLS REPLACEMENT

How can I increase and maintain the life of my EV vehicle battery?



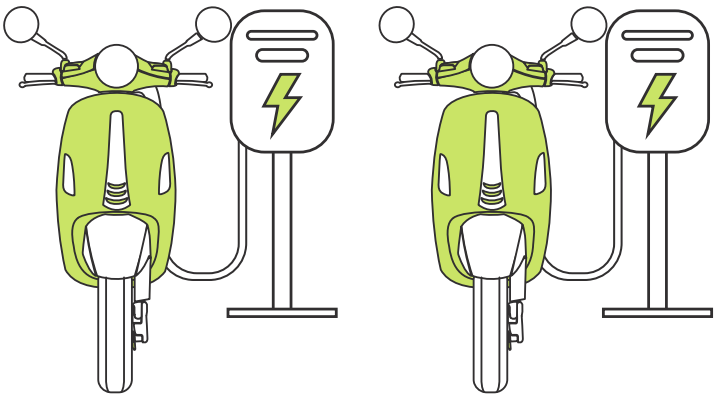
CHARGING 90%

MYTH

EV batteries wear out quickly, and nothing can be done to extend their life.

FACT

Battery life can be maximized with simple practices, avoid charging the battery beyond 90% and discharging it below 10%, as this can damage and shorten the battery's lifespan. Additionally, it is preferable to park the vehicle in shaded spaces and use the eco mode or regenerative braking when possible. If the battery needs replacement, the old one can fetch almost 80% of its total value.



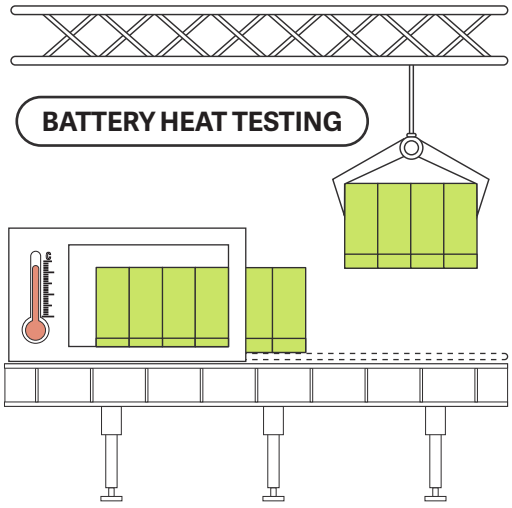
How safe are EV batteries against fire and thermal incidents?

MYTH

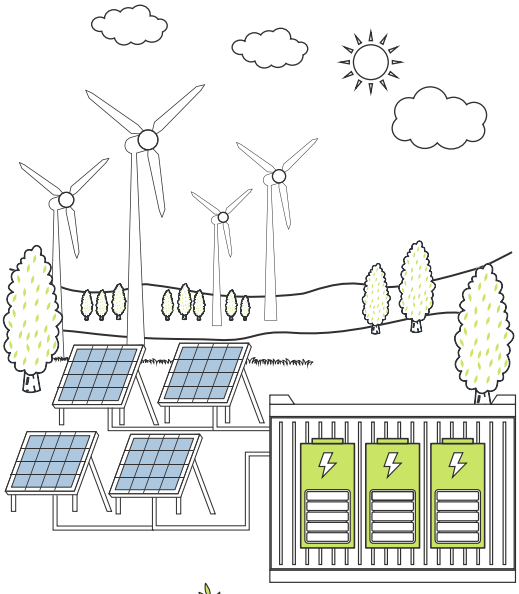
EV batteries catch fire easily and are unsafe to use.

FACT

Every electric vehicle battery undergoes testing for extreme temperatures and impact resistance. Fire incidents are extremely rare, accounting for less than 0.002% of all incidents globally. Moreover, recent regulations permit only certified batteries that are approved by the Bureau of Indian Standards, ensuring they meet specific quality and safety standards for the Indian market.



What happens when the EV batteries get old?

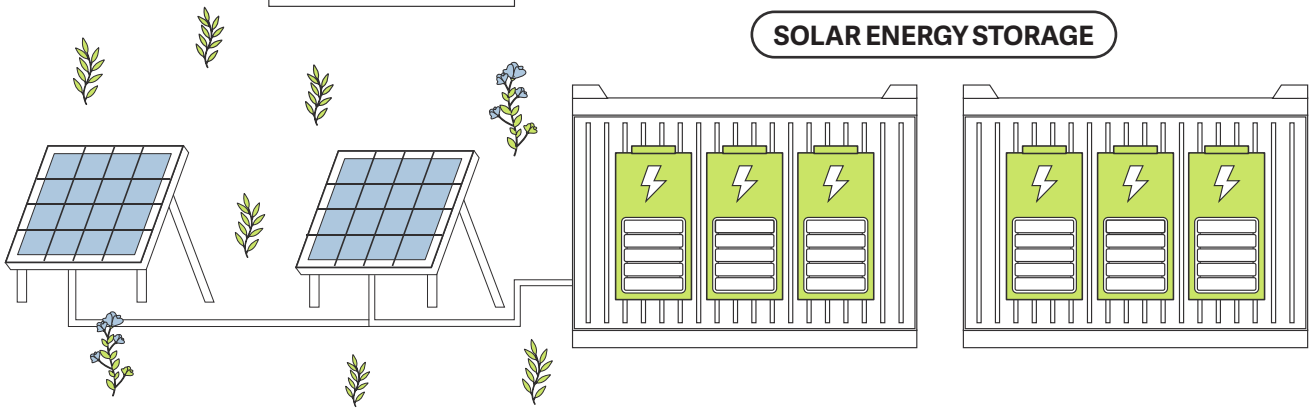


MYTH

Old EV batteries become useless waste and add to pollution.

FACT

Approximately 98% of an EV battery containing lithium, nickel, and cobalt can be recycled. There are various use cases for an EV battery for second-life applications like solar energy storage. In case the battery is not suitable for second-life use applications, there are plenty of recycling facilities in the country, and Himachal is preparing to connect with them as the number of EVs on the road increases.



Range and Charging

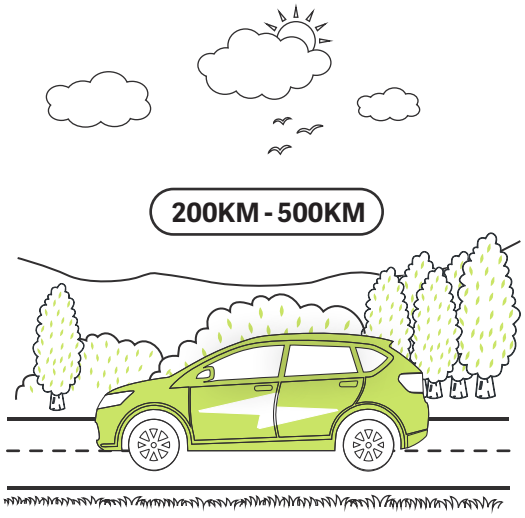
How reliable is an EV's range in daily use?

MYTH

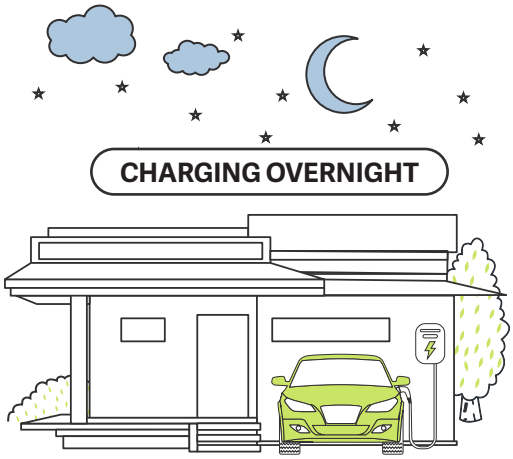
EVs run out of charge suddenly, just like a dead phone, and will leave me stranded.

FACT

It's unlikely that your EV will leave you stranded. Electric vehicles now provide accurate information about the remaining range and can even suggest nearby charging points. Most electric cars currently can travel between 200 and 500 kilometres on a full charge.



Does fully charging an electric vehicle take too long?



MYTH

Charging an EV takes forever, making it impractical for daily use.

FACT

Charging times may vary, depending upon the charger. Rapid chargers can boost your EV to 80% in about 45 minutes. Standard domestic chargers typically take three to four hours to charge a vehicle fully. Charging overnight usually supplies enough power for a full day's use.

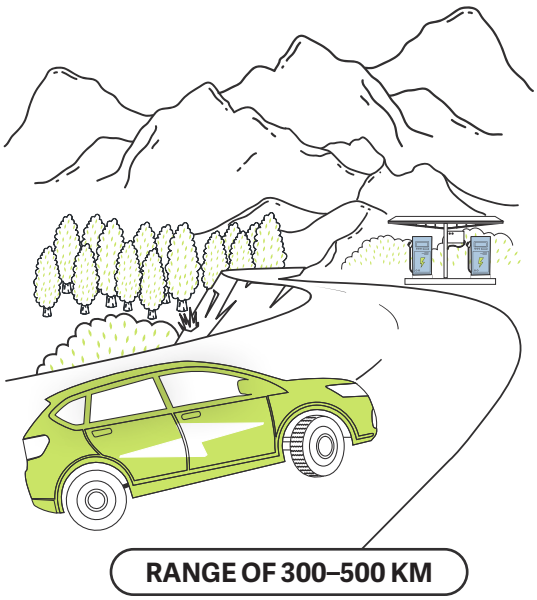
Do EVs have the range to support long hill journeys?

MYTH

EVs cannot handle long-distance hill journeys and will run out of charge midway.

FACT

The latest electric vehicle models have a range of 300–500 km on a single charge. Additionally, the Himachal Pradesh government is actively promoting initiatives like the "Green Corridors" along all key tourist and freight routes to expand EV infrastructure, highway-side amenities, and supermarkets at 41 strategic locations along the corridors and installing charging facilities in these locations.



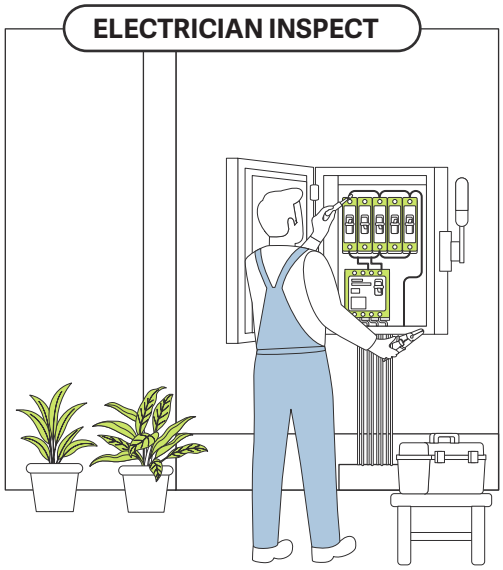
Can I set up an EV charger at home if my old house has an old electrical system?

MYTH

Traditional hill homes with old wiring cannot support EV charging stations.

FACT

Most homes in hilly areas can accommodate an EV charging station with minor modifications. A standard 15-amp socket is sufficient for overnight charging, and for faster charging, consider upgrading to a 32-amp connection. It's recommended to have an electrician inspect the wiring, load capacity, earthing, and weather protection beforehand. Many residents in Shimla and Kullu have successfully made these upgrades without major rewiring.



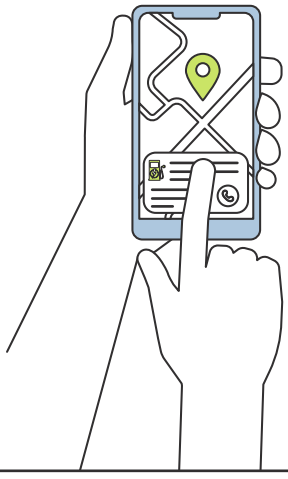
What's the easiest way to find and confirm EV charging stations while travelling in the hills?

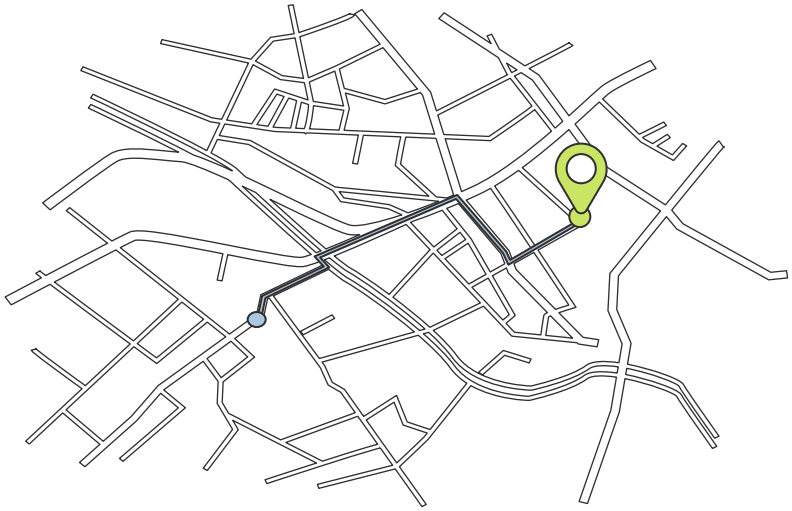
MYTH

It's impossible to find reliable EV charging stations on a road trip, and you won't know if they're working.

FACT

Install apps like PlugShare, ChargeGrid, Static, MyEV Point, IOCL, or Tata Power EZ Charge to check real-time station availability and read user reviews. Additionally, Google Maps services now include information on charging stations. It is a good practice to call ahead at the charging stations before embarking on a long journey to ensure they are operational. Moreover, many hotels and restaurants on mountainous routes are starting to equip themselves with chargers, and it is helpful to inquire when making a reservation. A useful tip is to maintain a backup plan and keep the battery level of the EV above 50% when driving in hilly terrain.





FINDING EV CHARGING STATIONS

Performance and Capability

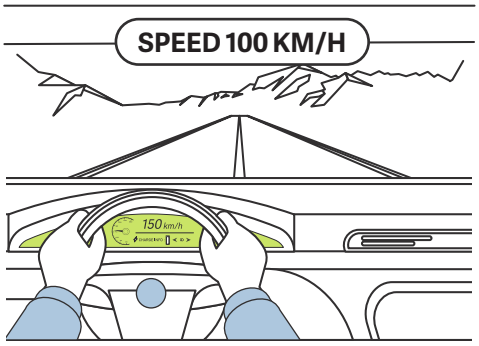
Do EVs have the speed and strength needed for highways?

MYTH

EVs are too slow and underpowered to drive safely on highways.

FACT

They deliver instant torque, enabling quick acceleration. E-scooters can reach speeds of 60–80 km/h, and electric cars can easily attain 100 km/h, surpassing petrol vehicles of a similar size.



Are EVs riskier on narrow hill roads?

MYTH

EVs are unsafe and harder to control on narrow hill roads.

FACT

EVs rather perform better ad they provide an instant torque for a smoother experience on uphill drives, regenerative braking helps with slope control, and the lower centre of gravity improves stability. E-buses in Himachal Pradesh are a good example as they navigate these challenging roads every day.

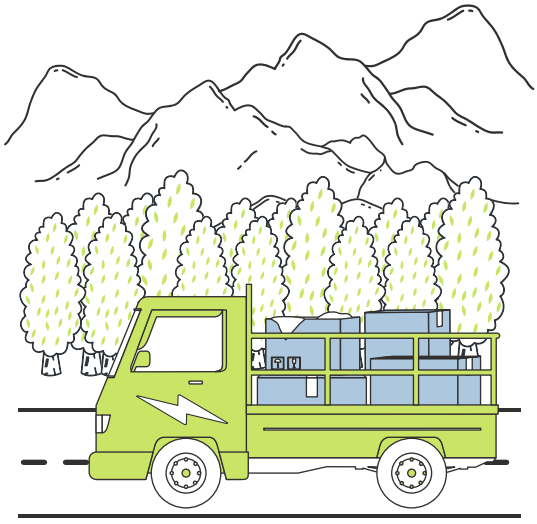
Are electric vehicles capable of carrying heavy loads?

MYTH

EVs are too weak to carry heavy loads like diesel vehicles.

FACT

Yes, the modern electric light commercial vehicles can easily carry between 1,000 and 1,500 kg, making them perfect for transporting heavy loads such as apple crates, cement, and groceries. Initial successful trials have already been carried out in Baddi, Solan, and Shimla. Freight vehicles over 1–2 tonnes are already in production and will soon enter the market, offering practical options for medium-load transport.



Are EV batteries and motors protected against water during monsoons ?

MYTH

EVs will get stuck or stop working if they go through water during rains.

FACT

Electric vehicles are built to be sealed with waterproof motors and batteries rated as IP67 or IP68. This standard marker indicates that they can withstand water exposure to a certain depth. The electric buses in Manali have operated successfully during heavy monsoon rains and on flooded streets.

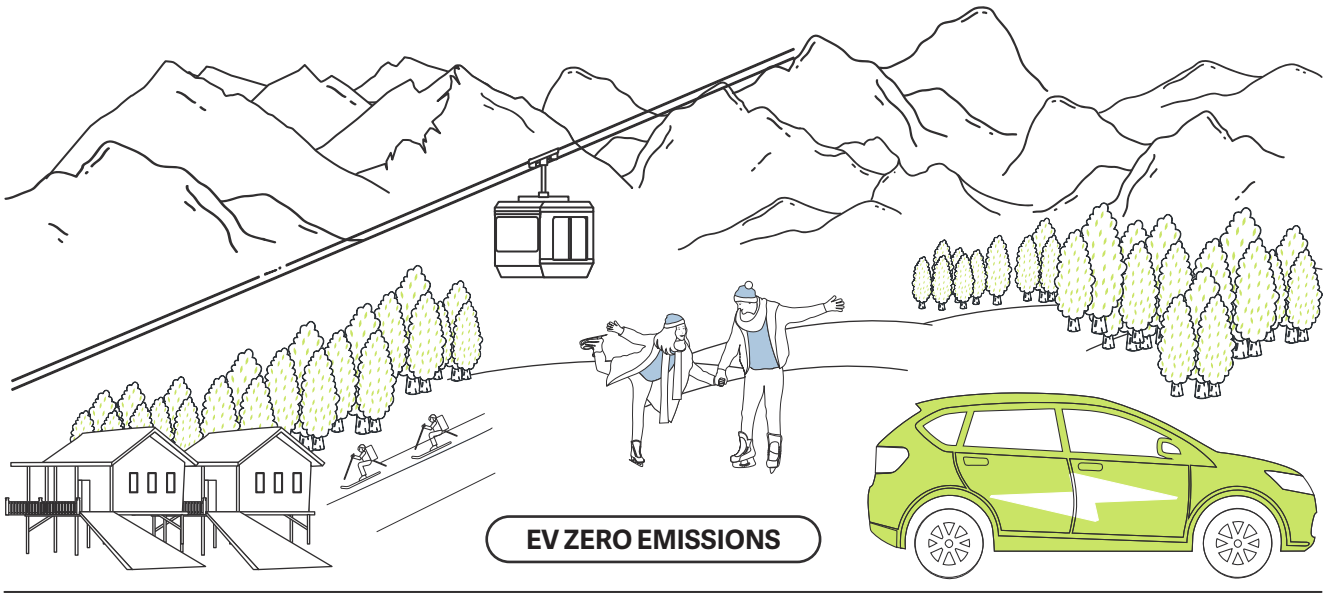
How is driving an EV entirely sustainable? Why is the government interested in EV adoption?

MYTH

EVs aren't truly sustainable since electricity still comes from coal, so they don't really help the environment.

FACT

Hill stations are battling vehicular pollution, especially during peak tourist seasons. Electric vehicles produce zero emissions at the point of use, which is particularly important for tourist destinations like Shimla and Manali that see heavy tourist footfall. Although some of our electricity is generated from coal, electric vehicles remain 60-70% cleaner than petrol-powered cars in comparison. Moreover, Himachal Pradesh has an abundance of hydroelectric power, making EV charging in the region relatively eco-friendly. The government aims to improve air quality, cut oil imports, and build a sustainable industry by promoting electric vehicles in the region.



Suitability and Usage

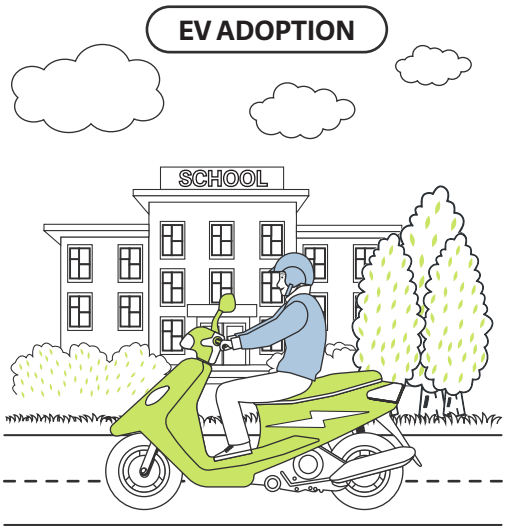
Are EVs meant to be adopted only in cities?

MYTH

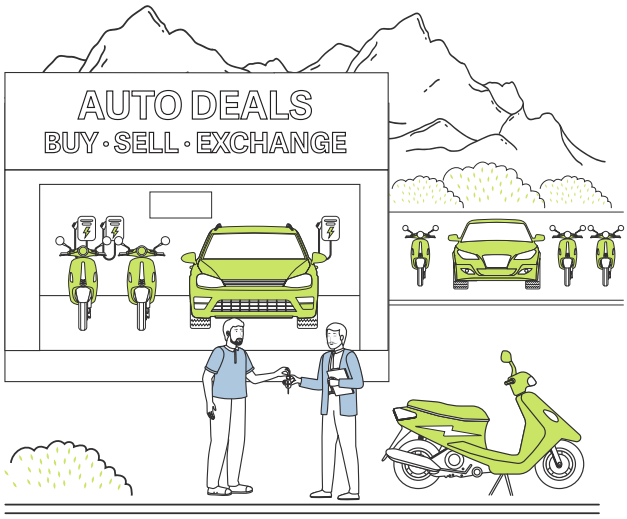
EVs are not practical and cannot work in small towns or villages.

FACT

Electric vehicles are well-suited for use in small towns and villages, particularly for daily trips to the market, school, or running errands. Electric scooters and e-rickshaws are already in operation and running efficiently at Solan, Hamirpur, Bilaspur, Una and Kangra.



Can I sell my EV later at a fair price?



MYTH

EVs will have no resale value and won't attract buyers in the second-hand market.

FACT

The demand for second-hand electric vehicles is quickly rising. Taxi services catering to tourists are already considering purchasing used electric scooters and electric cars for local journeys, and the resale prices remain competitive.

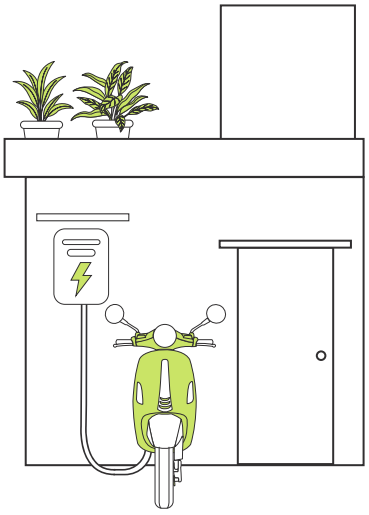
What type of charging setup is needed for electric two-wheelers?

MYTH

Two-wheelers need expensive fast-charging stations, just like electric cars, which makes ownership inconvenient.

FACT

Most electric two-wheelers can be conveniently charged at home using a regular 15A household socket, without the need for costly infrastructure. Charging typically takes 4–6 hours with a standard charger, while some models also support portable or swappable batteries that can be recharged at dedicated kiosks. Fast-charging stations are useful for cars and commercial fleets, but for daily commuting needs, home charging is sufficient and cost-effective for two-wheeler users.



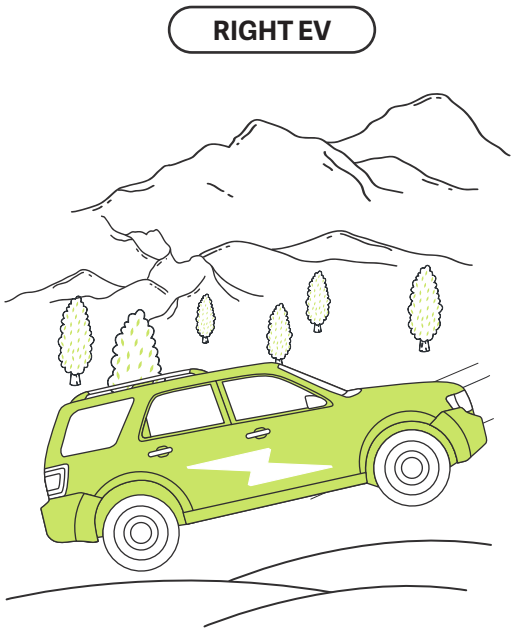
What's the best EV model for hill driving in India?

MYTH

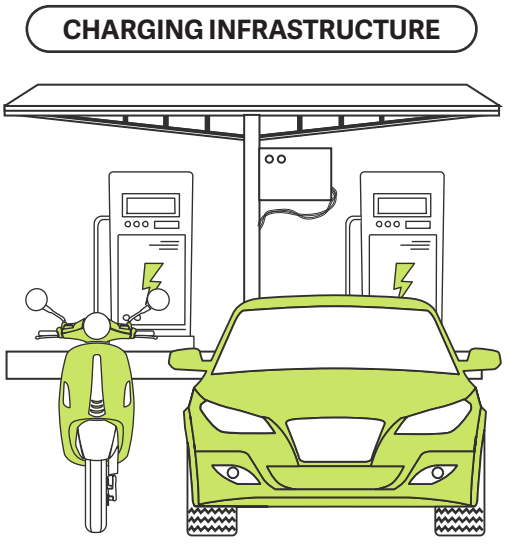
There is no EV model suitable for hill driving in India.

FACT

When driving in hilly regions, it's essential to select electric vehicles with good ground clearance and robust motors. Technology in electric vehicles is advancing rapidly, with new models regularly offering better range, power, and features. It's best to choose the latest model that suits your budget and road conditions. Look for EVs with high torque, strong battery capacity, and good ground clearance, especially for hill driving.



Should I wait for better infrastructure before buying an EV?

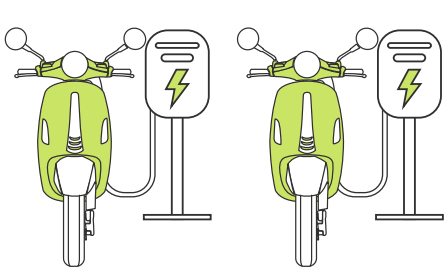


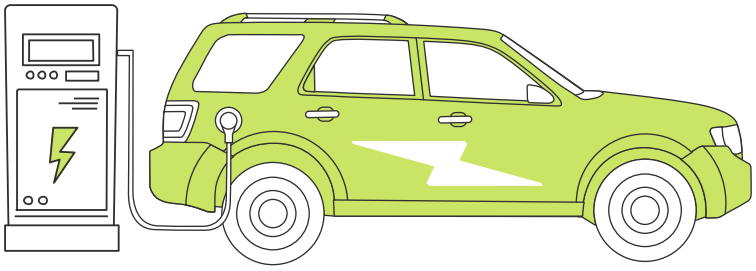
MYTH

It's better to wait until there is perfect charging infrastructure before buying an EV.

FACT

If you're primarily making local journeys, commuting to work, errands at the market, or school drop-offs, there's no need to postpone. The infrastructure is sufficiently developed for everyday use. While the charging infrastructure in Himachal Pradesh is expanding rapidly, it is still advisable to check the availability and locations of functional charging stations in advance, especially when planning a long-distance journey.





Contact us

South Asia Secretariat
C-3 Lower Ground Floor, Green Park Extension
New Delhi 110 016
India

+91-11-4974 7200

Connect with us

iclei-southasia@iclei.org

www.southasia.iclei.org

talkofthecities.iclei.org