

SHIMLA, INDIA



CITY FEATURES



The city of Shimla is a political, administrative, tourism and education hub of the state of Himachal Pradesh in India. It is situated in the north-western ranges of the Himalayan mountains in India and is often referred to as the “Queen of Hills” with an average elevation of 2,207 meters. The city has specific geographical characteristics of hilly terrain with steep slopes and is built over several hills with narrow roads. The tourism sector is one of the major economic sectors of the city. With the high rate of urbanisation and highly dense core area, the development pattern of the city is guided by geographical constraints. The east and west axis act as the main axes of development with expansion in the outskirts of the municipal limits.



Population

169,578
(2011)

Land area

35.34 km²

Average temperature

18.4°C

TRANSPORT FEATURES

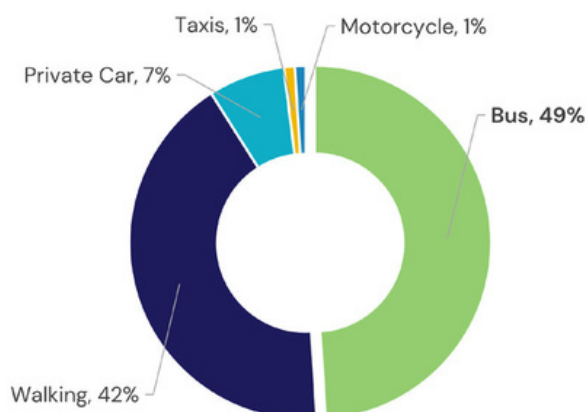
Status quo and urban mobility trends

Sustainable transportation modes, including 49% public transit and 42% walking, make up over 90% of daily trips in the city. There are currently 110 electric buses operating in Himachal Pradesh. The state has installed 23 charging stations for public use, located along the six green corridors, each with a capacity of 60 kW. Additionally, 327 new electric buses are planned to enhance the state's electric mobility infrastructure. Currently, 68 electric buses are operational in Shimla. However, with the rising rate of urbanization, the use of private vehicles is also increasing, resulting in congestion and environmental concerns. The city actively promotes electric mobility in public and private transport to tackle air pollution and encourage sustainable development.

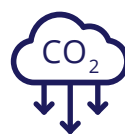


TRANSPORT FEATURES

Modal Split¹



GHG Emission Levels²



Total GHG emissions

222,637 tCO_{2eq}

From road transport

82,375.69 tCO_{2eq}

Air Pollutant Levels³



PM 2.5

24 µg/m3

NO₂

14.6 µg/m3

PM 10

66 µg/m3

SO₂

2.6 µg/m3

Shimla's modal split reflects a high reliance on public and non-motorized transport. Buses dominate with a 49% share, serving as the primary mode for daily commuters. Walking constitutes 42%, highlighting the city's pedestrian-friendly environment and reliance on foot travel due to narrow roads and hilly terrain. Private cars account for only 7%, indicating limited personal vehicle dependency. Taxis and motorcycles each contribute 1%, showing minimal usage for daily commuting.

Bus Trips Features



Number of bus trips

—



Average distance⁴
1 to 5 km



Average time⁴
20 min / 30 min



Average cost per travel by bus⁴
Rs 10



Trips by purpose

Study	32%
Work	30%
Self Business	14%
Recreation	8%
Tourism	5%
Others	11%

Public buses in Shimla cater to approximately 50% of daily commutes, according to the 2012 city mobility plan. Each bus transports 20–30 passengers, primarily low- and middle-income individuals, students, and professionals. Users depend on buses for work, school, and short journeys. Peak hours are between 8:30–10:30 AM, 1:00–2:00 PM, and 5:00–7:00 PM. Standard routes to the Old Bus Stand include Sanjauli, Shoghi, Panthaghati, Summerhill, Totu, Dhalli, and ISBT. Trips are frequent, with multiple stops ensuring accessibility. Buses are the city's backbone, serving all age groups and genders. They continue to be the primary mode of transport due to their affordability and extensive coverage, serving all individuals without private vehicles. The average trip duration varies by route and is influenced by traffic and distance. Buses provide essential urban mobility, efficiently and inclusively connecting key locations. Their extensive network is vital for Shimla's public transport system.

¹ Shimla Comprehensive Mobility Plan 2031, 2012

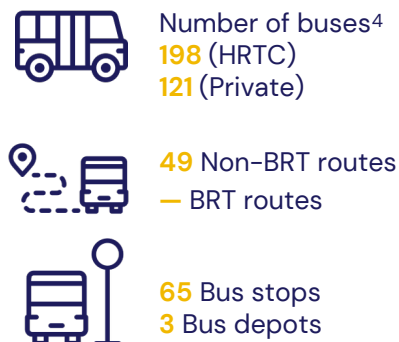
² Ecologistics City Profiles, ICLEI, 2019

³ Himachal Pradesh State Pollution Control Board, 2024

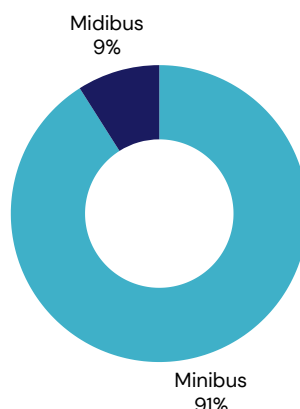
⁴ Primary source. HRTC – Himachal Road Transport Corporation

BUS SYSTEMS OUTLOOK

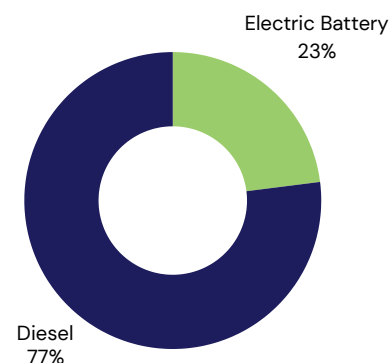
Fleet and Infrastructure



Buses by fleet type



Buses by fuel type



The city's bus fleet consists of 198 HRTC buses and 121 private buses, operating 49 non- BRT routes with 65 bus stops and 3 bus depots. The fleet is composed of 91% midibuses, which are 8 to 10 meters long and have a capacity of 40 to 60 passengers, and 9% minibuses or minibuses, which are 5 to 7 meters long and can accommodate 20 to 30 passengers. Regarding the fuel type, 77% of the bus fleet runs on diesel, while 23% of the fleet consists of electric buses.

Quality of Service

The bus transport system is operated by both government and private operators that cover the municipal and peri-urban areas of Shimla city. Travel by public transport buses is generally convenient during the daytime, though the frequency decreases at night and early morning, making it inconvenient for commuters during these times. Traffic jams further exacerbate delays, adding an average of 15 minutes to each trip. Although bus rides are comfortable for people of all age groups, during peak hours, buses get crowded and uncomfortable.

The buses were designed to ensure safety for women, children, and the elderly while maintaining affordable transport costs. The minimum fare for trips within 3 km is ₹5; beyond that, it is ₹2.19 per km. However, the distances traveled by public buses are between 1 and 5 km on average. Although the government sets the fare, it may still be less affordable for the poorer segments of society.



⁴ HRTC - Himachal Road Transport Corporation

Existing Business Model⁵

A

Model A: Vertically integrated, private operator in BRT/integrated system

B

Model B: Divided responsibilities in BRT/integrated system

C

Model C: Large, more formal, private operator in traditional service

D

Model D: Small, informal, private operator in traditional service

E

Model E: Government-run system

D

The model works under the Regional Transport Office of Shimla to issue route permits to private bus operators. This permit enables the operator to provide bus services on a designated route within the city. The private operator owns, operates, and maintains a small fleet of buses. The Transport Office collects the permit fee from the specific operator for operating the bus service.

E

The buses are owned, operated and maintained by the Himachal Road Transport Corporation (HRTC), a part of the Himachal Pradesh government. HRTC is responsible for procuring and registering all the buses. The operation and maintenance of these buses are managed exclusively by HRTC with support from their regular employees. The Public Works Department in Shimla oversees the construction and maintenance of rain shelters and bus stops. The funds for acquiring buses and infrastructure come from state government grants and budget allocations to HRTC. Additionally, revenue from fares and advertisements is utilized for the operational expenditures of the city's transit system.



E-BUS ADOPTION APPROACH

February 2017

Detailed project report prepared and submitted for approval to procure 50 electric buses

July 2019

30 electric buses received and operation started

2024/25

327 E-buses planned in the state

July 2018

Got approval of 50 electric buses from higher authority

October 2019

20 more electric buses received and operation continued

⁵ Based on Accelerating a market transition in Latin America: New business models for electric bus deployment, P4G, Zebra and Dalberg, 2020

E-Bus Fleet Technical Features



Model/Brand

Type A
(M3/PMI)

Type B
(M3/PMI)



Number of buses with this Technology

20 buses Type A 48 buses Type B



Passenger capacity

Type A
20+D

Type B
30+D



Charging System

Type A
120 Kw

Type B
120 Kw



Battery features

Type A

Type B

Capacity
Range

100 kWh

151.55 kWh

150 km/charge

180 km/charge



Number of chargers available per bus

Type A
9

Type B
9

E-Bus Business Model

HRTC owns and operates electric buses in Shimla. From fare collection and scheduling to routing, as well as providing operational staff and maintaining the electric buses, HRTC is entirely responsible for all aspects. As a government-owned authority, all investments and risks associated with the electric buses fall under HRTC and the Himachal Pradesh State Government. The operation of the buses is funded by fares collected from passengers and other funds available to HRTC from time to time.

Opportunities and Challenges to Scaling E-Bus Fleets



Opportunities

- Almost 50 percent of people are dependent on bus based public transport, so there is an opportunity to improve existing bus operations with improved customer services and peak hour frequency.
- As the operating cost of existing electric buses is less than Internal combustion engine (ICE) buses, there is an opportunity to increase the share of electric buses. The experience related to operations and maintenance of electric buses for the last four years shall be beneficial to embrace electric bus technology on a larger scale.
- The city is putting its efforts to improve, streamline and expand electric bus operations by getting access to funding and technical support from the Central Government.



Challenges

- There is a lack of detailed technical and operational knowledge about e-buses among private operators, which leads to the emergence of risk factors. They still perceive the technology as risky and challenging to operate.
- Land space scarcity for charging station is also a challenge in implementing the Electric bus project in the city
- Cold temperatures in hilly regions reduce battery efficiency, impacting overall range and requiring additional energy for heating. The city's steep terrain further limits battery output.
- Weaker electricity infrastructure in many hilly areas makes it difficult to ensure stable, high-power charging for e-buses.
- Frequent uphill and downhill travel accelerates wear on critical components such as brakes, tires, and suspension, leading to higher maintenance costs.

OVERALL FRAMEWORK

Policy

Himachal Pradesh's Electric Vehicle (EV) Policy 2022 aims for 15% battery electric vehicle (BEV) adoption in new registrations by 2025. Key state-level entities like HRTC, HPSEB, TCPO, Transport Department, and Urban Development Department oversee EV planning, while Municipal Corporations manage city-level implementation. The policy supports EV manufacturing by allocating 100–200 acres for EV parks, providing single-window clearance, road tax waivers, and toll exemptions. Plans include deploying 327 electric buses and replacing 1,500 diesel buses under HRTC with ₹1,000 crore investment. Additionally, 10,000 e-taxis with 40–50% subsidies will promote sustainable mobility.

Financing

Himachal Pradesh finances EV adoption through government incentives, private investments, and PPP models. Purchase incentives and tax waivers include exemptions from commercial permit fees, road tax, and tolls. E-Taxi subsidies provide 50% for 500 taxis and 40% for 10,000 taxis under Rajiv Gandhi Self-Employment Start-up Yojna. E-Bus procurement receives up to ₹50 lakh per bus. EV infrastructure is developed through PPP, with 41 charging sites identified across five corridors, involving Jio BP, EVI Tech, and Electro Wave. Overall, funding sources include state funds, national schemes, private investments, and CSR contributions.

Impact

Himachal Pradesh's EV Policy 2022 targets 15% battery electric vehicle (BEV) registrations by 2025, promoting sustainable mobility. A GHG emissions inventory exists for Shimla, but no baseline assessment has been conducted. Plans to procure 327 e-buses are underway. HRTC ensures inclusivity by hiring women drivers and conductors. Training programs support workers affected by electrification, including mechanics, drivers, and conductors. Private operators provide specialized e-bus training. Sustainable mobility projects involve HRTC, DOT, TCP, Electricity Department (HPSEB) and Municipal Corporation (MC) Shimla, ensuring equitable benefits for women, low-income groups, and people with disabilities.



TUMI E-bus Mission City Network – Profile

SHIMLA, INDIA



Acknowledgements

Author:

Varsha Parmar (ICLEI South Asia)
Arun Thakur (ICLEI South Asia)
Katya Garg (ICLEI South Asia)

Contributors:

Vijay Saini (ICLEI South Asia)
Amar Kulkarni (ICLEI South Asia)

Editors:

Ana Maria Cruz Ochoa (ICLEI World Secretariat)
Tu My Tran (ICLEI World Secretariat)

Design:

Andreina Garcia Grisanti, Olga Tokareva, Laura López
(ICLEI World Secretariat)

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About the TUMI E-Bus Mission

Funded by the German Ministry for Economic Cooperation and Development (BMZ), a core group of organizations supports cities in their transition toward electric bus deployment.

For more information please contact:
tumi-network@iclei.org or visit
<https://sustainablemobility.iclei.org/tumi/>

Contact

ICLEI

Local Governments for Sustainability e.V.
Kaiser-Friedrich-Str. 7
53113 Bonn | Germany
Tel. +49-228 / 97 62 99-00
Fax +49-228 / 97 62 99-01
Website: www.iclei.org
<https://sustainablemobility.iclei.org/>

