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INDUSTRY STATUS REPORT

BASED ON
THE ONLY
COMPREHENSIVE
QUARTERLY
INDUSTRIAL
SURVEY OF NEPAL

Sustainable
Transportation in
Nepal



JANUARY 2026



CONFEDERATION OF NEPALESE INDUSTRIES

INDUSTRY STATUS REPORT (PREVIOUS EDITIONS)



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About Industry Status Report

The Industry Status Report (ISR) provides a comprehensive analysis on the state of various industries in Nepal, leveraging an in-house survey. In Nepal, what explains misdirected policy interventions aimed at private sector growth? The absence of periodically available primary data on Nepali industries is one of the key reasons. Against this backdrop, ISR is produced as an effort to promote evidence-based policy-making. Each quarter, CNI Research Cell conducts an industrial survey and publishes this report to tease out changes across critical variables that either promote or stifle growth in industries.

What does the survey cover?

1 Business Performance: industry capacity utilization, revenue trends, demand in domestic market and market competition, trade	2 Finance: interest rates, the share of the loan, access to finance	3 Skills and Employment: employment, share of employees that received training	4 Industrial Ecosystem: regulation and industry administration, transportation and infrastructure	5 Business Outlook: confidence in the industrial sector, new investment plans.	6 Sustainable Transportation in Nepal
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Industry Status Report (FY 2082/83, Q1 Edition)

The Industry Status Report (FY 2082/83, Q1 Edition) has the benefit of comparing survey data from four consecutive quarters. The current report covers the first quarter of the fiscal year 2082/83. (i.e Shrawan 2082 to Ashwin 2082). The data was gathered from the survey conducted from November 4 to January 4 2025.

Apart from presenting the findings of the survey, each ISR covers one theme in depth. The first edition of Fiscal Year 2081/82 covers Current Economic Scenario and Way Forward. The second edition of Fiscal Year 2081/82 covers Budget Suggestion for Fiscal Year 2082/83. The third edition of Fiscal Year 2081/82 covers Alternative Financing in Nepal. The fourth edition of Fiscal Year 2081/82 covers the Footwear Industry in Nepal. And this first edition of Fiscal Year 2082/83 covers Sustainable Transportation in Nepal.

ISR - KEY STATISTICS (FY 2082/83, Q1 EDITION)



No of industries:

64 ↑ (Q4 62)



Total employees:

18815 ↑ (Q4 17746)



Average employment
per company:

293.98 ↑ (Q4 286.23)



Average operational
capacity utilisation:

63.63% ↓ (Q4 65.32%)



Average share of loan on
working capital:

44.19% ↑ (Q4 41.69%)



Average interest rate on
loans:

7.74% ↓ (Q4 8.55%)



Average revenue growth
rate:

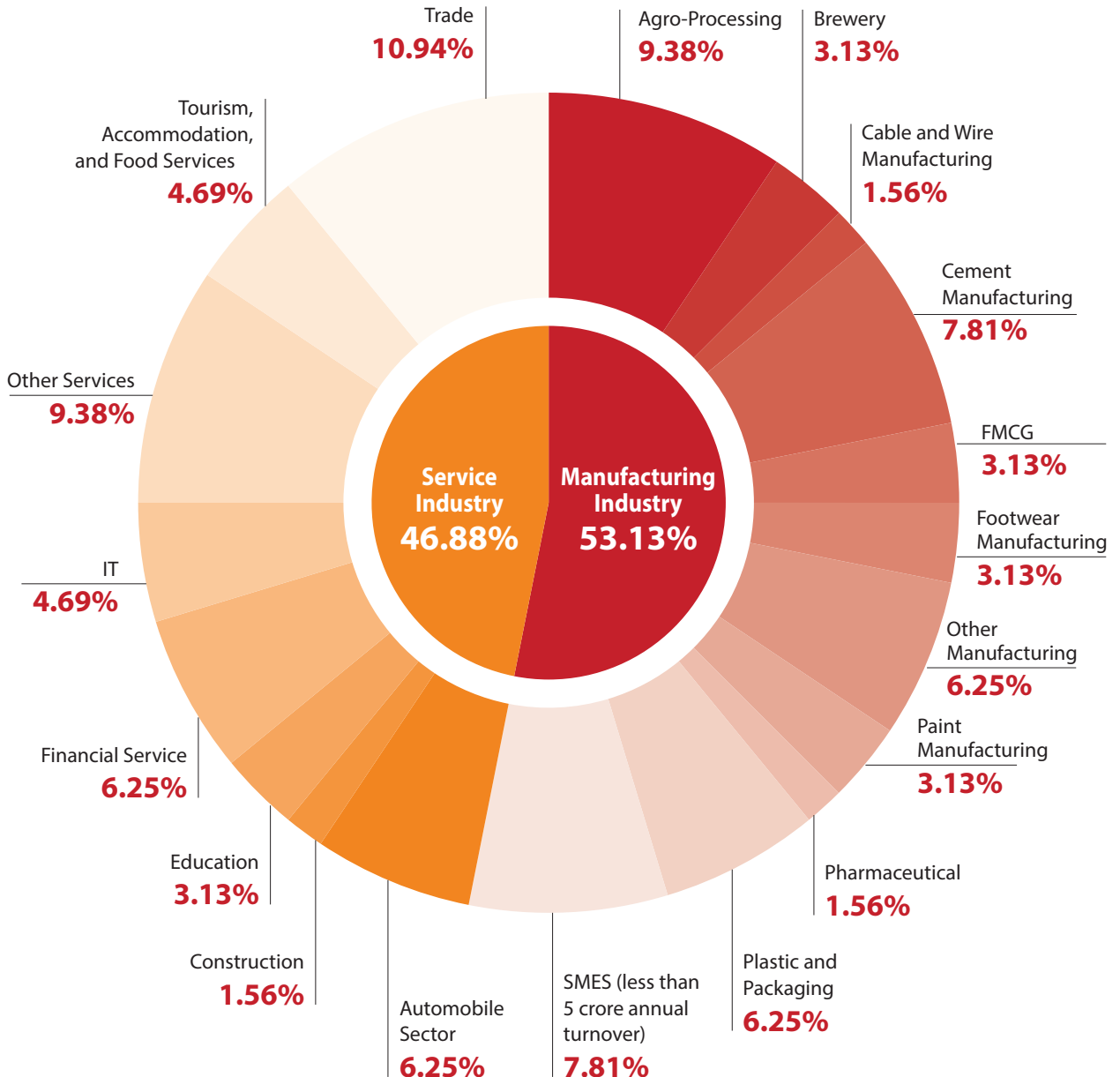
8.61% ↓ (Q4 10.81%)



Average share of imported raw
materials by the manufacturing
industry:

39.48% ↓ (Q4 44.56%)

COMPOSITION OF THE INDUSTRIES SURVEYED



METHODOLOGY

The Industrial Status Report (FY2082/83, Q1 Edition) is based on a quarterly survey of 64 industries.

The respondents are categorised under the Nepal Standard Industrial Classification (NSIC) Code for the purpose of the survey and further aggregated into two distinct industrial sectors: the manufacturing industry, and the service industry. Since most of the agro-based industries in the survey sample were involved in the agro-processing business, they have been subsumed under the manufacturing category.

The sample was drawn from CNI member's network located across Nepal.

Questions are tailored to specific industries. Respondents were asked questions, depending on their respective industries, using a survey platform called KoBoToolbox. The survey questions are available online.

The basic assumption in this report rests on the fact that the respondents have provided correct information.



THE UNIT OF ANALYSIS

The unit of analysis is one industrial establishment.

BUSINESS PERFORMANCE

Periodic performance measurement is a vital part of monitoring the growth and progress of any business. This section summarises the performance of industries within key variables in Q1 2082/83 and compares it with the survey responses from previous quarters.

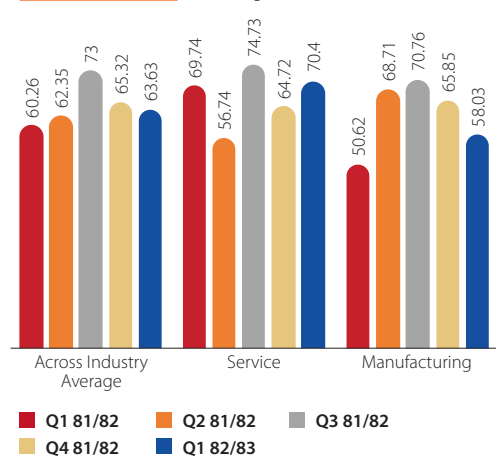
INDUSTRY CAPACITY UTILIZATION: 63.63%

KEY INDUSTRY INSIGHT I

On average, the industries were operating at 63.63% in Q1 82/83 whereas they were operating at 65.32% in Q4 81/82. During Q1 82/83, the service industry was operating at 70.4% which was 64.72% in Q4 81/82.

The capacity utilisation of the manufacturing industry in Q1 2082/83 remained at 58.03% while it was 65.85% in Q4 81/82.

INDUSTRY CAPACITY UTILIZATION (Percentage)

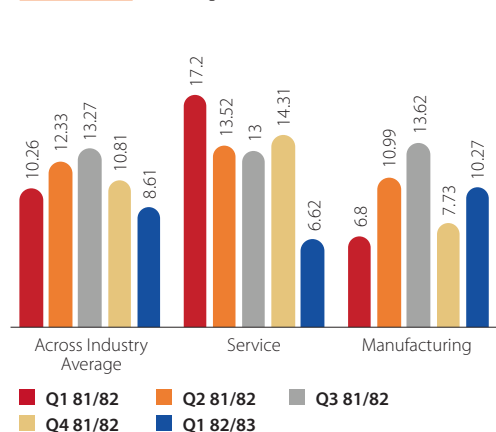


REVENUE TRENDS: REVENUE GROWTH: 8.61%

KEY INDUSTRY INSIGHT II

In Q1 82/83, the across-industry-average revenue growth rate was 8.61%, whereas it was 10.81% in Q4 81/82. The revenue growth in the manufacturing sector in Q1 82/83 experienced a rise by 10.27%. It was 7.73% in Q4 81/82.

REVENUE TRENDS: REVENUE GROWTH (Percentage)



GROWTH IN MARKET DEMAND: 16.34% AND *MARKET COMPETITION 66.67%

(*PERCEPTION-BASED QUESTION)

KEY INDUSTRY INSIGHT III & IV

The survey result shows that the average growth of demand for goods and services was 16.34%. The highest recorded growth rate was an impressive 100%, while the largest decline observed was a significant 49%. The demand of manufacturing industries has increased by 13.34%

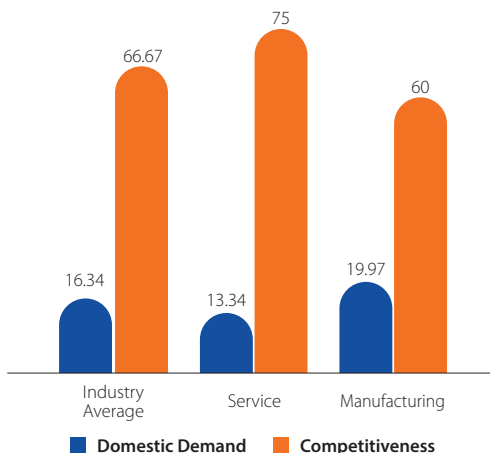
Furthermore, on average 66.67% of the surveyed industries perceived their goods to be competitive in the market in relation to imported goods, which gives optimism to the domestic industries. The confidence among the domestic businesses regarding their competitiveness and sufficient market demand for domestic products is a critical factor for expanding a broader industrial base in Nepal.

SHARE OF RAW MATERIALS IMPORTED: 39.48%

KEY INDUSTRY INSIGHT V

The survey results show that manufacturing industries significantly rely on raw materials sourced from global markets. Out of the total raw material required, on average 39.48% of raw materials was imported from the global market in Q1 82/83. There has been a decline in imports of raw materials as compared to Q4 81/82 which was 44.56%.

DOMESTIC MARKET DEMAND (Percentage)

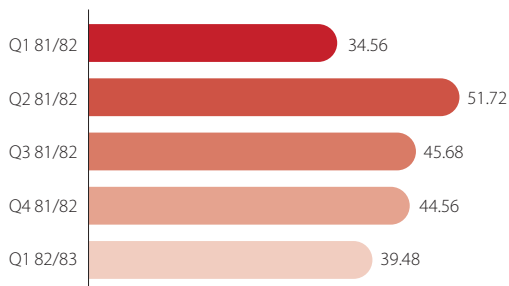


EXPORT: 45.45%

KEY INDUSTRY INSIGHT VI

In Q1 82/83, 45.45% of the respondent manufacturing industries successfully exported their goods. Compared to the previous quarter, which recorded an export rate of 33.33%. The export in this quarter has increased. The average proportion of exports out of their production has decreased from 34.6% in Q4 81/82 to 31.24% in Q1 82/83. These findings suggest that firms are engaging in exporting their products, the overall share of exports is experiencing a rise.

RAW MATERIALS IMPORTED (Percentage)



FINANCE

This section provides insights into the ability of industries to access credit and prevailing interest rates.

SHARE OF LOAN ON WORKING CAPITAL: 44.19%

KEY INDUSTRY INSIGHT VII

The result of the survey shows that in Q1 82/83, 44.19% of working capital was met through credit from banks and financial institutions whereas it was 41.69% in Q4 81/82.

The average rate of interest in working capital loan stands at 7.68% in Q1 82/83 which is a decrease from 8.33% in Q4 81/82.

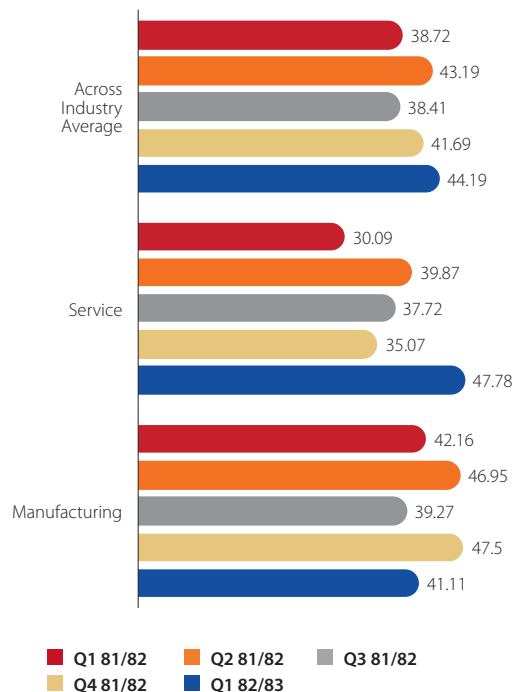
INTEREST RATES: AVERAGE INTEREST RATE 7.74%

KEY INDUSTRY INSIGHT VIII

In Q1 82/83, the average interest rate on loans was 7.74% whereas it was 8.55% in Q4 81/82.

In Q1 2082/83, average interest rates on loans for manufacturing industries was 7.47% while for service industries it was 8.03%.

SHARE OF LOAN ON WORKING CAPITAL (Percentage)



AVERAGE INTEREST RATE

	Q1 81/82	Q2 81/82	Q3 81/82	Q4 81/82	Q1 82/83	WCL Interest
Industry Average	9.86	9.18	9.11	8.55	7.74	7.68
Service	10	9.58	9.05	8.96	8.03	7.91
Manufacturing	9.73	8.75	9.18	8.17	7.47	7.48

SKILLS AND EMPLOYMENT

This section highlights the trends in employment and skills of the employees in the industries.

TOTAL EMPLOYMENT: 18815

KEY INDUSTRY INSIGHT IX

The surveyed industries employed 18815 staff in total. On average, an industry establishment employed 293.98 individuals, with the range being 2-5000. This indicates, on average, CNI member networks comprise large business enterprises.

With 10277 employees, the manufacturing industry is the largest employing sector, followed by the service sector with 8538 employees.

Average employment among sectors: The service sector was at the top with 294.41 jobs while the manufacturing sector was right behind with 293.63 jobs.

New Hiring- 1144

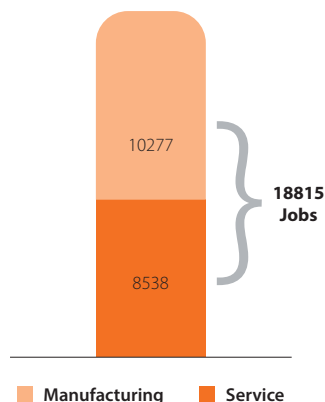
The surveyed industries collectively hired a total of 1144 new staff members, while the number of applicants were 3328. This indicates that, on average, more than 2.9 individuals applied for one announced position.

SKILL GAP AND TRAINING: 27.84 RECEIVED TRAINING

KEY INDUSTRY INSIGHT X

The survey result shows that across sectors 27.84% of the total employees received training during Q1 of FY 82/83. The service industry sector trained around 36.86% of the total workforce, while the manufacturing industry sector provided training to 20.23% of its employees.

TOTAL EMPLOYMENT



SKILL GAP AND TRAINING (Percentage)



INDUSTRIAL ECOSYSTEM

This section focuses on the various aspects of the regulatory environment, transportation and infrastructure that have a direct bearing on the competitiveness of industries.

EXPERIENCE WITH GOVERNMENT ONLINE SERVICE

KEY INDUSTRY INSIGHT XI

Although the government has been prioritising digitization of the economy, the survey results reveal that respondents on average were not delighted with the quality of online services provided by various public entities. When asked to rank the quality of services on a scale of 1 to 10 (with 1 being the lowest and 10 being the highest) 12 respondents ranked the service. The average score of respondents was 4.14. The manufacturing-industry responded with a score of 5.13, while the service industry with an average score of 3.57.

Government online service	
Manufacturing	5.13
Service	3.57
Average Industry	4.14

GOVERNMENT ONLINE SERVICE



CONSTRAINT TO CURRENT OPERATIONS OF BUSINESS

KEY INDUSTRY INSIGHT XII

The surveyed respondents identified that the top three constraints for the business operations in the Q1 of FY 82/83 were, political instability, prevailing tax rates and corruption.

For the manufacturing and service sector the top issue was political instability.

Major Constraints
Political Instability
Prevailing Tax Rates
Corruption

UTILITIES

ELECTRICITY: 6.75 OUT OF 10 FOR QUALITY OF ELECTRICITY SUPPLIED

KEY INDUSTRY INSIGHT XIII

The survey result showed 51.61% of the industries still use generators as the quality of electricity is not reliable. The respondents also mentioned, since the electricity supply provided by NEA is from a common feeder for an area, this reduces the reliability so a separate feeder is essential for commercial purposes. Those manufacturing industries using generators as alternative sources of energy stated there is an additional 13.65% of cost increase due to the use of generators.

In response to the question that was asked to the respondents to rate the quality of electricity provided in the scale of 1 to 10, with one being the worst and 10 being the best, the average response was 6.75.

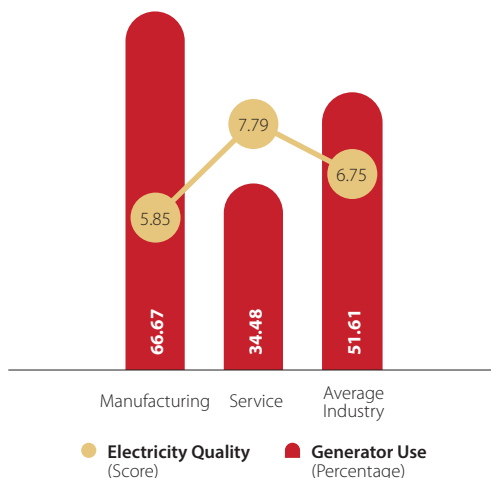
Major Challenges

Out of the 64 respondents, 43 responded to the question, and they had the option to select up to 3 choices from a total of 11 options regarding major challenges of business. Among the responses, excess competition affecting price margins, unauthorized goods in the market and under invoiced by competitors were the most common responses that respondents wanted to solve.

Major Challenges

Excess Competition Affecting Price Margins
Unauthorized goods in the market
Under invoiced by competitors
Low Disposable Income Among Nepali Consumers

ELECTRICITY QUALITY



Transportation and Logistic Hurdles

The respondents identified major challenges of transportation and logistics as administrative hassles on road, quality of roads and frequent road blockage.

Transportation and Logistic Hurdles

Quality of Roads
Trucking Syndicate
Administrative Hassle on Road

Share of Logistic Cost

Among the 64 respondents, 61.54% responded, indicating that the average share of logistics costs in total production costs is 9.76%.

BUSINESS OUTLOOK

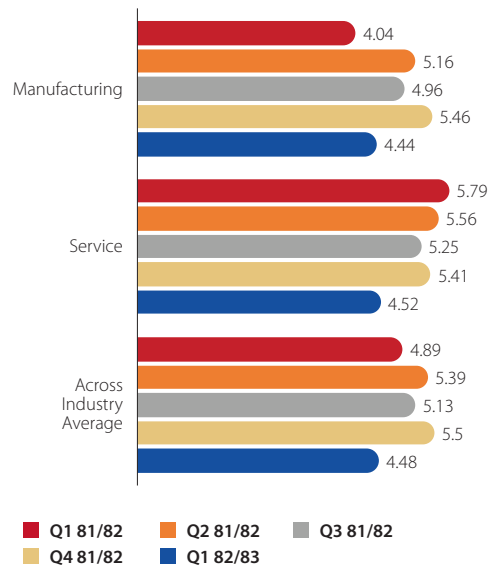
This section presents the confidence level of surveyed industries for their own business and aggregates responses regarding investment plans for the next quarter.

BUSINESS CONFIDENCE: MODERATE

KEY INDUSTRY INSIGHT XIV

On the whole, industrialists are not optimistic that their business is going to perform well for the next 3 months. When asked to rank the favorability (confidence measures) for their business on a scale of 1 to 10 (with 1 being the least favourable and 10 being the most favourable) in terms of revenue and investment opportunities, regulatory environment, access to finance, labour and better utility facilities, the across-industry-average score is 4.48. The manufacturing industry is comparatively less confident as per the survey respondents. This can be a result of the unfavourable macroeconomic situation. Key Indicator XIV does not paint a conducive environment for businesses currently.

FAVORABLE TO BUSINESS

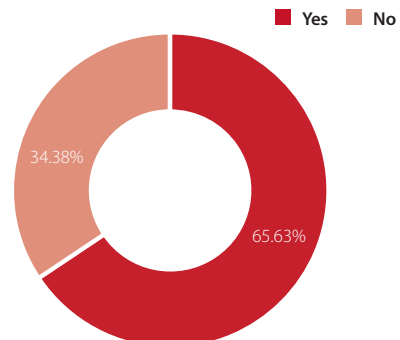


65.63% HAVE NEW INVESTMENT PLANS

KEY INDUSTRY INSIGHT XV

The survey result shows that 65.63% of respondents have new investment plans for the upcoming quarter. Among respondents from the manufacturing sector, 62.86% have a new investment plan. Similarly, among respondents from the service sector 68.97% have planned for new investment. However, 34.38% of respondents said they do not have any plans for new investment in the upcoming quarter.

INVESTMENT PLAN



SUSTAINABLE TRANSPORTATION IN NEPAL

SUSTAINABLE TRANSPORTATION IN NEPAL

INTRODUCTION

Global momentum is building toward sustainable infrastructure and transportation as urbanization and digitalization accelerate, climate risks intensify, and transport's almost 25% share of global emissions threatens to double by 2050 without intervention. Governments enforce stricter emission standards, EV incentives, and low-emission zones, while technologies like electric vehicles, autonomous systems, and electrified public transit drive adoption for efficiency and decarbonization. This transition optimizes resources, fosters innovation in renewables, and builds resilience against extreme weather. Sustainable infrastructure creates jobs, attracts Environmental, Social, and Governance (ESG)-aligned investments, and lowers long-term costs through efficient, resilient systems that prevent disaster losses, yielding up to four dollars in benefits per dollar invested.

Sustainable infrastructure means designing and operating systems such as transport, energy, and logistics in ways that minimize environmental impact, strengthen climate resilience, and support long-term societal and economic well-being. Nepal's commitment to sustainable low-carbon transportation aligns directly with SDG Target 11.2, which calls for "safe, affordable, and sustainable transport systems for all," and SDG Target 13.2, which urges countries to "integrate climate change measures into national policies and planning." In line with these goals, Nepal's Nationally Determined Contribution (NDC)



3.0 (2025) outlines ambitious transport-sector targets: by 2030 and 2035, the country aims to increase battery-electric vehicle (BEV) sales to 90% and 95% of all private passenger vehicles (including two-wheelers), and to 70% and 90% of all public passenger vehicles, respectively. Complementing these short and mid-term goals, Nepal's Long-Term Strategy for Net-Zero Emissions (LT-LEDS) envisions achieving net-zero emissions by 2045 and specifically emphasizes the need for a nationwide shift to zero-emission transport modes, including electric mass transit and clean freight systems

A recent article in The New York Times highlighted Nepal's remarkable progress in electric mobility, noting that approximately 76% of newly imported passenger cars

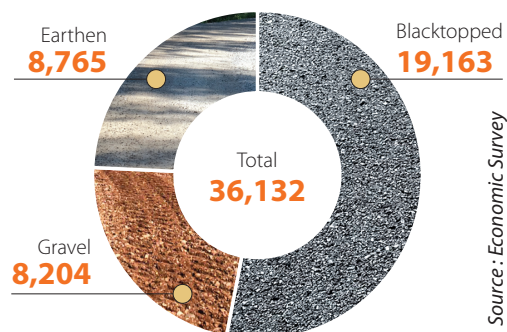
are now electric, making Nepal one of the fastest-growing EV markets in the world. This rapid shift is driven by favorable tax policies and supported by Nepal's abundant hydropower which provides clean, low-cost electricity along with, growing charging infrastructure, and increasing consumer confidence in electric transport. Together, these developments underscore Nepal's accelerating transition away from internal combustion engine (ICE) vehicles toward a cleaner, lower-emission mobility future that directly supports both national climate goals and global sustainability commitments.

Nepal's history of sustainable transportation predates the current electric vehicle (EV) transition, with early experience in electric mobility demonstrated by the electric trolley bus system in Kathmandu (1975–2008). Operating along the 13 km Tripureswor–Suryabinayak corridor, the system carried up to 10,000 passengers movement between Kathmandu and Bhaktapur, highlighting the technical and economic viability of electric transport. Despite its eventual failure due to institutional and maintenance shortcomings, this early initiative laid important groundwork for understanding electric mobility in Nepal. Today, Nepal's transportation landscape is undergoing a significant transformation as the country accelerates the shift from internal combustion engine (ICE) vehicles to electric vehicles (EVs) in response to mounting environmental and energy security concerns, with the current transition driven largely by private adoption.

ROAD INFRASTRUCTURE OF NEPAL

Nepal's road infrastructure has expanded dramatically in the last 30 years, linking remote areas and enabling road-based transport to dominate the national transport

Road infrastructure of Nepal



modal mix. In FY 1974/75, Nepal had only about 3,173 km of roads (of which roughly 1,575 km were black-topped). By 2000, the road network grew to about five times its 1974/75 size 15,308 km. By the end of mid-March 2025, the federal government had constructed a total of 36,132 km of roads. Of this total, blacktopped roads accounted for 53.04%, gravel roads for 22.71%, and earthen roads for 24.36%. (Economic Survey 2024/25)

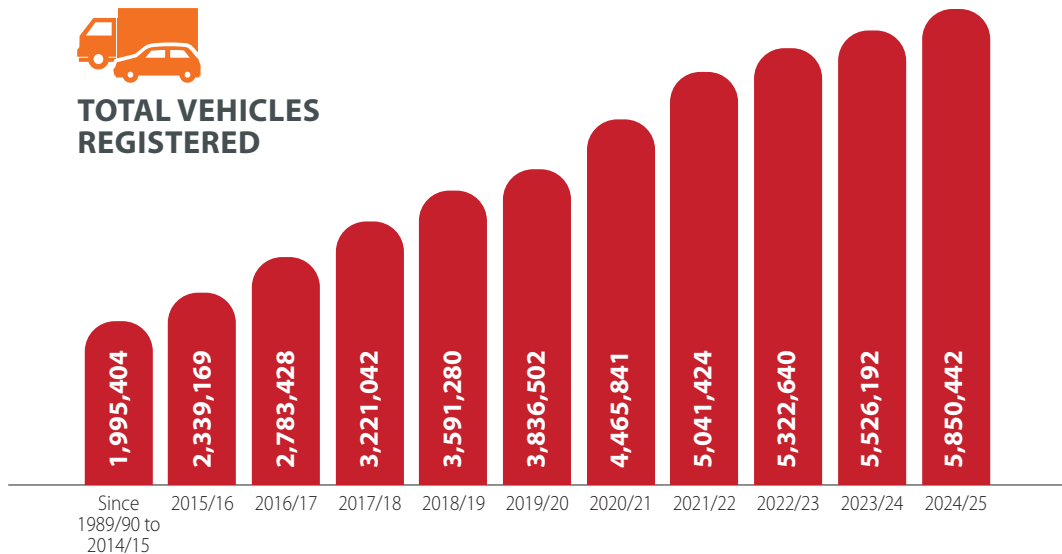
GROWTH OF VEHICLE FLEET : PRIVATE, PUBLIC, AND FREIGHT

Alongside road expansion, Nepal's motor vehicle fleet has grown exponentially over the past three decades. In 1989/90, Nepal still had a relatively small vehicle fleet; for instance, that year only 76,378 vehicles were registered in total across the country.

A review of Nepal's vehicle registration data shows a significant expansion of the national vehicle fleet over time. Between 1989/90 and 2014/15, the total number of registered vehicles reached 1,995,404. In contrast, the cumulative total up to mid-March 2024/25 has risen sharply to 5,850,442 vehicles. This indicates that over 3.85 million additional vehicles were registered after 2014/15, meaning that 65.89% of all vehicles currently



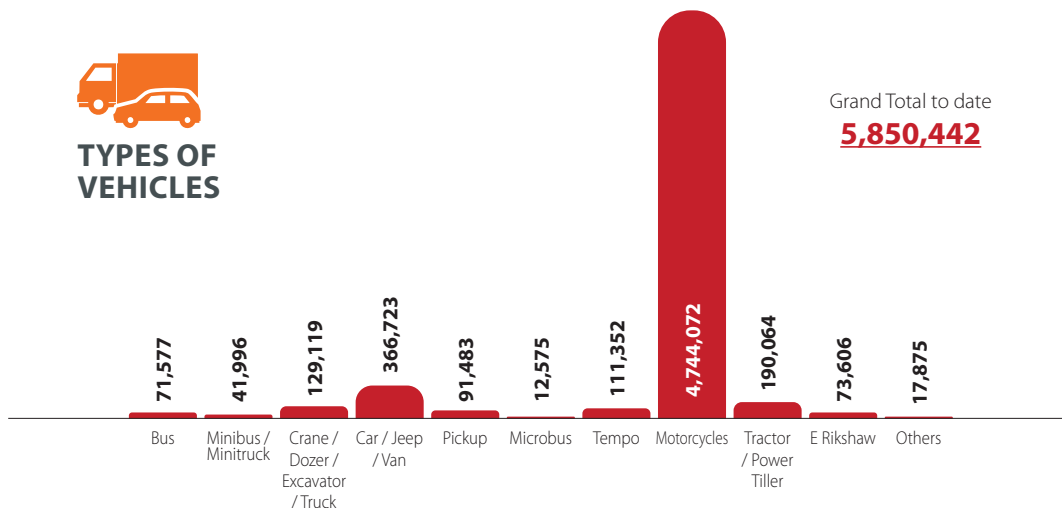
TOTAL VEHICLES REGISTERED



Source: MoPIT



TYPES OF VEHICLES



Source: MoPIT

on the roads were added in the most recent decade.

Motorcycle registrations in Nepal increased sharply from 1.56 million during FY 1989/90–FY 2014/15 to 4.74 million by FY 2024/25, firmly establishing two-wheelers as the dominant mode of personal transportation.

A similar upward trend is observed in four-wheeled private vehicles: registrations of cars, jeeps, and vans rose from 163,667 in FY 1989/90–FY 2014/15 to 366,723 by FY 2024/25. Together, these trends reflect sustained growth in personal vehicle ownership, driven by rising household incomes, improved access to vehicle

financing, and the steady expansion of Nepal's urban middle class.

PETROLEUM PRODUCTS & GOVERNMENT REVENUE

Nepal imports nearly all of its vehicles and petroleums because it lacks a domestic auto and oil industry. As a result, automobiles, auto parts, and transport fuels have become major drivers of both the country's trade deficit and its government revenue. In FY 2081/82, both ICE and EV generated Rs. 43.22 billion about 9.04% of total import revenue due to high import duties that reached up to 80%, plus additional excise taxes and VAT.

Petroleum imports, mainly petrol, diesel, contributed another Rs. 100.63 billion (21.05% of import revenue). Altogether, vehicles and fuel accounted for more than 30% of Nepal's import revenue, creating a fiscal dependence on rising vehicle use even though it worsened pollution and the trade imbalance.

This situation shows the country's long-standing dilemma: reliance on ICE vehicles and imported fuel has been economically and environmentally unsustainable. As vehicle numbers increased, so did pressure to transition toward cleaner, less import-dependent mobility options, a shift Nepal has started pursuing in recent years.

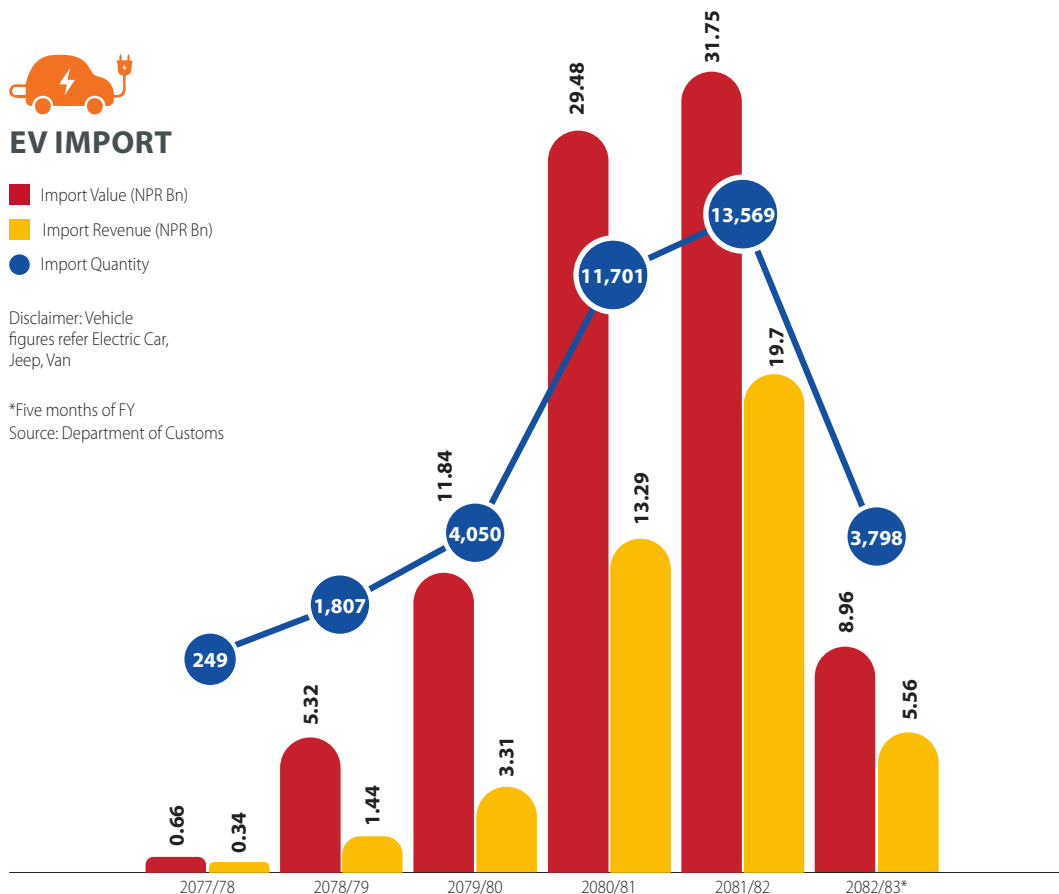


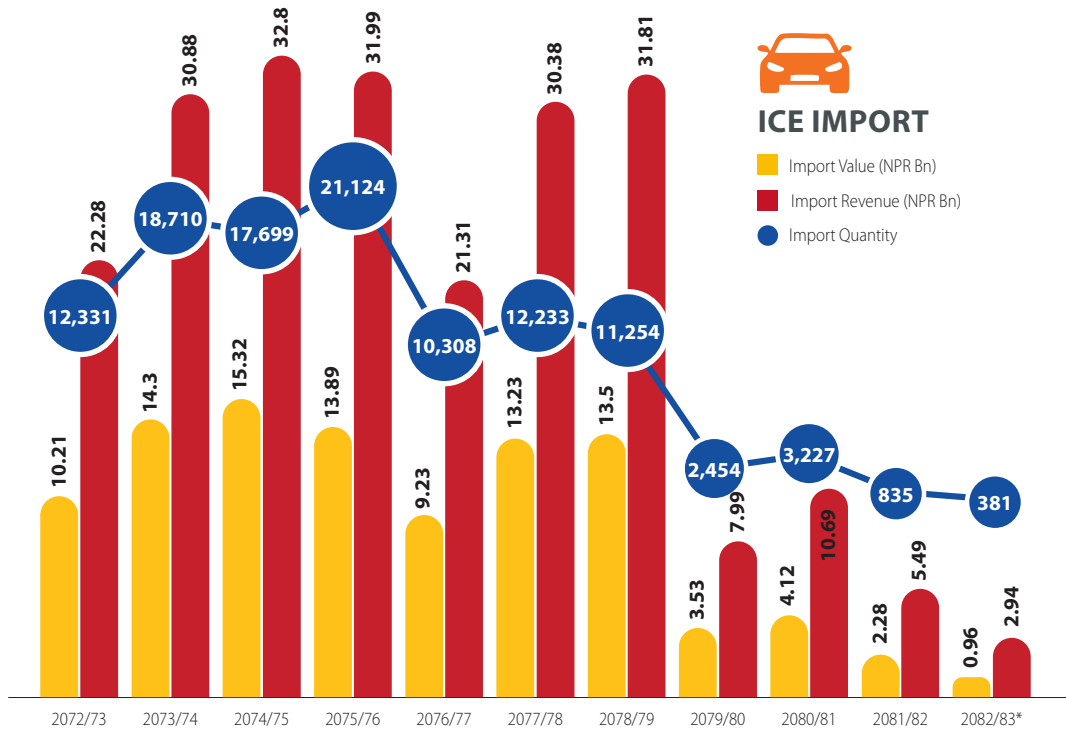
EV IMPORT

- Import Value (NPR Bn)
- Import Revenue (NPR Bn)
- Import Quantity

Disclaimer: Vehicle figures refer Electric Car, Jeep, Van

*Five months of FY
Source: Department of Customs





Disclaimer: Vehicle figures apply to cars, jeeps, and vans powered by diesel, petrol, or hybrid engines.

*Five months of FY

Source: Department of Customs

ENVIRONMENTAL AND HEALTH IMPACTS OF ICE VEHICLES

Vehicular emissions are a major contributor to this pollution. Transport-related emissions, which accounted for 9.3 percent of total greenhouse gas emissions in 1990, rose to 21.4 percent in 2023 and have now reached approximately 25 percent, according to recent studies. Studies indicate that vehicles (especially older diesel and two-stroke engines) account for a significant share of Kathmandu's particulate and Nitrogen Oxides (NOx) emissions

Another reported motor vehicles as the

largest source (around 47%) of PM10 among identified sources in the valley. The prevalence of motorcycles over 80% of Kathmandu's vehicle fleet means a large number of small engines emit pollutants in close proximity to people. The impact of all this on public health is evident in rising respiratory illnesses and lost life years. Kathmandu's residents often complain of eye and throat irritation, respiratory problems, and reduced visibility due to traffic smog. A 2016 ICIMOD study highlighted that even simple maintenance of motorcycles (changing oil, cleaning filters) can substantially reduce their PM2.5 emissions, indicating how poor maintenance exacerbates pollution.



RISE OF ELECTRIC VEHICLES IN NEPAL

EV ADOPTION BOOM: CURRENT STATUS

Nepal has emerged as an unexpected leader in electric vehicle adoption in recent years. Thanks to proactive policies and Nepal's unique energy context, the country has seen a surge in EV sales, especially for private passenger cars. Over the past year, electric vehicles accounted for about 76% of all new passenger car sales in Nepal, and about 50% of light commercial vehicle sales (New York Times, 2025). Nepal's electric car market share now ranks among the highest in the world behind only a few countries like Norway, and far ahead of most Asian nations.

This trend is clearly reflected in import

statistics. In FY 2024/25, EV imports increased by 15.96% compared to the previous fiscal year, with 13,569 EVs imported versus 11,701 units in FY 2023/24. In value terms, EV imports amounted to NPR 31.75 billion, significantly higher than NPR 5.49 billion for ICE vehicles, in FY 2024/25. The fact that EV imports outnumbered ICE imports by a wide margin demonstrates the market shift. Even motorcycles are slowly electrifying with e-scooters and electric bikes entering the market, but the most dramatic change has been in four-wheelers.

This EV boom in Nepal has been policy-driven. It did not happen organically or due to domestic manufacturing; it was the result of deliberate government incentives and tax reforms which made EVs financially attractive almost overnight. Starting around 2019–2020,

Nepal introduced sweeping tax reductions on electric vehicles: customs duty was slashed (as low as 10% depending on EV size), excise duty on EVs was set at a nominal rate (0–10%) compared to up to 200% for petrol/diesel cars. This meant that an electric car in Nepal could cost literally half as much as an equivalent petrol car, flipping the economics in favor of EVs. The current total import tax on EVs with motor power exceeding 300 kW stands at 156.28%, compared to 336.29% on ICE vehicles exceeding 3,000 cc, making EVs significantly more affordable for consumers. Such tax differentials, combined with rising fuel prices, made the total cost of owning an EV far lower than an ICE vehicle. Consumers responded accordingly, leading to the rapid uptake.

Another driving factor was financing and credit policy. Nepal Rastra Bank initially supported EV adoption by allowing banks to finance up to 80% of an electric vehicle's cost which was only 50% for ICE cars, reducing the upfront burden on buyers. This easy financing encouraged many middle class buyers to choose EVs on loan. By 2025, however, with EV imports soaring, the central bank began rolling this back, reducing EV loan financing to 60% and conversely raising the limit for ICE to 60% from 50% to level the field.

From a consumer perspective, EVs are appealing not just due to lower tax-inclusive prices, but also far lower operating costs. Nepal generates its electricity almost entirely from hydropower, so charging an EV is inexpensive (and shielded from global oil price swings). Many Nepalis have also become environmentally conscious about Kathmandu's pollution and see EVs as a contribution to cleaner air. The combination of economic and environmental motivations has created a receptive market.

GOVERNMENT POLICIES AND INCENTIVES FOR EVS

Nepal's government has formulated a series of policies to promote clean vehicles, aligning with its climate commitments and desire to use surplus hydroelectricity. Key policy measures include:

- **Fiscal incentives:** In the budget of FY 2082/83, the government decided to keep taxes on electric vehicles unchanged at very low rates to continue encouraging EV uptake. For charging infrastructure and EV assembly, the government offers 1% import duty on equipment and a full tax exemption on other taxes for those industries. Moreover, industries that manufacture or assemble electric vehicle charging machines will be granted exemption from excise duty along with the 5 years tax exemption from the Income tax.
- **National targets and strategies:** Nepal has incorporated ambitious EV adoption targets in its national plans and international climate commitments. The country's updated Nationally Determined Contribution (NDC) 3.0 aims for 90% of all private passenger vehicles including two wheelers and 70% of public vehicles to be electric by 2030, and 95% of private and 90% of public vehicles by 2035. These targets, among the most aggressive in the world, signal a commitment to almost complete electrification of the transport sector within a decade. In line with this, Nepal's 2079/80 budget announced plans to replace fossil fuel vehicles with EVs by BS 2088, which gave policy backing to phase out ICE vehicles in government vehicles and encourage EVs broadly.
- **Infrastructure development:** As a result,

charging stations have begun appearing along inter-city routes, some turning into highway rest stops with amenities for EV drivers. The government is also investing in grid upgrades to handle growing electricity demand from transport. Given Nepal's power surplus in wet seasons, utilizing it for EV charging is seen as a win-win: absorb excess hydroelectricity that would otherwise be spilled or exported at low rates.

- **Public awareness and pilot programs:**

Government bodies and municipalities have initiated pilot programs like introducing electric public buses (e.g., a few electric buses like Sajha Yatayat, Sundar Yatayar are now operating in Kathmandu with plans for more). The historic electric "Safa tempo" three wheelers in Kathmandu which have run on batteries since the 1990s, were an early example of clean urban transport that policymakers often cite as inspiration for scaling up EVs in public transit. The Kathmandu Valley Air Quality Management Action Plan 2020 also emphasized shifting to alternative fuel transport to cut pollution.

BENEFITS OF EV TRANSITION

The rapid transition to electric vehicles in Nepal offers multiple advantages:

- **Reduced Petroleum Imports:**

Transportation is one of the largest components of Nepal's import bill (fuel and vehicles). By replacing petrol/diesel cars with electric cars, Nepal can cut its petroleum consumption significantly. It's estimated that the growing stock of EVs worldwide displaced over 1 million barrels of oil per day in 2024. For Nepal, a country

that spends around Rs. 193 billion on fuel (diesel and petrol) imports annually, even a partial shift to EVs can save billions of rupees and improve energy security.

- **Improved Air Quality:** EVs produce zero tailpipe emissions, which will directly help reduce urban air pollution. If Kathmandu's vehicle fleet turns majority-electric in coming years, we can expect a drop in PM_{2.5} and NO_x levels, provided that older diesel vehicles are retired. This has huge public health implications, fewer respiratory and cardiac illnesses and a better quality of life in cities. It also reduces the black carbon soot that contributes to regional glacier melt in the Himalayas.

- **Climate Change Mitigation:** Using Nepal's hydropower for transport cuts greenhouse gas emissions. Nepal's Second NDC explicitly ties EV promotion to its low-carbon strategy. Nepal even signed on to a COP26 declaration targeting 100% zero-emission vehicle sales by 2040 (and by 2035 in leading markets). By transitioning to EVs, Nepal avoids the high-emission development path of industrialized nations, serving as a model for sustainable growth.

- **Economic Opportunities:** Nepal's EV shift can create new industries such as EV assembly, battery recycling, and charging services supported by government incentives for local manufacturing. Although the market is small, Nepal hopes to develop as a two wheeler assembly hub. Rising EV use will also increase electricity demand, strengthening NEA's revenues and supporting hydropower growth.

- **Consumer Savings:** Electric vehicles cost much less to operate per kilometer than

petrol vehicles. Electricity rates in Nepal for charging EVs are relatively low, and EVs have fewer maintenance parts. Over the lifetime of the vehicle, this translates to savings for Nepali consumers and businesses on fuel and upkeep money that stays in the local economy rather than going to imported oil.

CHALLENGES AND CONSIDERATIONS

Despite the positive trend, there are challenges in Nepal's EV transition:

- **Fiscal Trade off:** As EVs replace ICE vehicles, the government loses revenue from fuel taxes and high import duties. Lower EV taxes deepen this short term loss. Nepal will need to adjust its tax system to recover revenue without slowing EV adoption, making fiscal stability a key challenge.
- **Policy Stability:** EV promotion has largely been a technocratic policy so far, enjoying cross-party support due to its clear benefits. But there are signs of slight rollback: for instance, the government raised import duties on EVs by about 10% in the FY 2024/25 budget, and as mentioned, the central bank tightened financing. Ensuring a long-term commitment at least until EVs reach cost parity even without incentives is crucial.
- **Charging Infrastructure and Power Supply:** Although progress is being made, Nepal still needs a more extensive network of charging stations to support mass EV usage, especially outside the Kathmandu valley. The government aims to expand charging points in all provinces and along highways. Investment in grid

modernization and possibly energy storage will enhance reliability as electric mobility grows.

- **Electrifying Public and Freight Transport:** Nepal's EV focus has been on private cars, but buses, taxis, and trucks cause most pollution (Buses were estimated to emit more than 90 % of particulate matter among all vehicles). Electric buses are being piloted, with plans for more imports, and electric two-wheelers for public use are emerging. To reach 2030's 70% electric public vehicle target, Nepal needs fleet support subsidies, loans, charging depots, and phasing out diesel buses.
- **Technical Capacity and After sales Service:** As new EV brands enter Nepal, local mechanics may be unfamiliar with their technology. Strengthening technical capacity in EV maintenance, battery handling, and safety is essential. This includes training programs for technicians, ensuring spare parts availability, and establishing proper battery disposal and recycling systems.

COMPARISON WITH NEIGHBORING COUNTRIES' POLICIES

Nepal's approach to promoting cleaner transportation can be better understood in a regional context. South Asian and Southeast Asian countries are also grappling with similar issues such as growing vehicle use, urban pollution, oil import dependence and have set various targets and policies for EV adoption. Below is a comparative snapshot of Nepal and several neighboring countries (India, China, Bangladesh, Sri Lanka, Vietnam, Cambodia) in terms of EV adoption and policies:

COUNTRY	EV SHARE OF NEW SALES	KEY EV PROMOTION POLICIES	TARGETS & PLANS
Nepal	Around 76% of new passenger car sales are EV in 2024	- VAT exemptions for EV charging station assembling and manufacturing industry. - Easy financing: banks allowed up to 60% loan for EV . - Tax breaks (1% duty) for charging infrastructure equipment and 5-year tax holidays for EV assembly industries - Subsidized electricity: low tariffs for EV charging at off-peak hours	2030 NDC Target: 90% of private vehicles and 70% of public vehicles electrified 2035 Target: 95% of private and 90% of public vehicles EV - COP26 ZEV Declaration: Committed to 100% zero-emission new sales by 2040 (and by 2035 for leading market segment)
China	50% of new car sales were electric in 2024 accounting more than 11 million cars sales	- Massive Investment in infrastructure: Added about 850,000 public charging points in 2024 and aim to expand more than 12 million by 2030 - Purchase incentive and Tax exemption: China has extended the New Energy Vehicle (NEV) purchase-tax exemption until the end of 2027, lowering the upfront cost of EVs. - Heavy-duty vehicle (HDV) electrification support: Policy support for HDV charging infrastructure including battery-swap-capable trucks is accelerating EV truck adoption. - The government has enabled development of megawatt-scale chargers, especially for electric buses and trucks (e.g., Sichuan megawatt bus charging demo in 2024). - City level regulation: Multiple cities have implemented ICE 2/3 wheelers restrictions, pushing rapid adoption of electric 2/3Ws with more than 30% of 2/3Ws now electric - Emerging V2G pilot: In 2024, the National Development and Reform Commission (NDRC) selected five early pilot cities for large scale V2G trials, with at least 50 projects.	- EV & NEV Sales Targets: China has already surpassed target of reaching sales share of 45% NEW among new cars by 2027 - Vehicle-to-Grid (V2G) Plans: China has set a national goal for V2G to provide 10 GW of flexible power capacity by 2030. - China's EV push is tied directly to its pledge to reach carbon neutrality by 2060
Vietnam	42% of all new car sales in the first half of 2025 are EV	- Tax policies: Vietnam has reduced import duties, exempted EVs from excise taxes created mandates to support adoption - Affordability Measures for 2-Wheelers: Affordable domestic models like VinFast, Pega with battery leasing options and compatibility with battery swap program - Foreign OEM Expansion: Chinese OEMs such as Yadea establishing manufacturing in Vietnam, boosting local supply.	- Vietnam is part of Southeast Asia's strategy to expand EV production, with: - Policies encouraging local manufacturing over imports. - Southeast Asia-wide growth expected to triple Chinese OEM manufacturing capacity by 2026, with Vietnam included. - Manufacturing expansion: Domestic players like VinFast plan to double domestic EV production in Vietnam.

OTHER GLOBAL PRACTICE

- **India:** India's overall EV share of new vehicles remained at 7.66% in 2024. Key policies include PM E-DRIVE supporting 2.5 million electric 2Ws through subsidies up to INR 5,000/kWh and PM e-Bus Sewa targeting 38,000 electric buses with a budget of INR 34.4 billion (\$394 million). By 2030, EVs are projected to reach 1 in 3 sales when including 2/3-wheelers. Industry activity is growing through domestic manufacturing and partnerships such as JSW–SAIC/MG.
- **United States :** The U.S. sold 1.6 million EVs in 2024, with the sales share growing to more than 10%. Growth in electric car sales slowed down in 2024, increasing by just 10% compared to 40% in 2023. US Clean Vehicle Tax Credit continued to support through instant discounts up to USD 7500 for a new electric car and USD 4000 for a used one at the point of sale. Nearly half of EVs were leased to access incentives. In 2025, Executive Order 14154 signaled intent to scale back EV subsidies and revisit fuel economy rules, creating uncertain future momentum. Even conservative OEM ranges still project EV sales nearly tripling by 2030.
- **Indonesia:** Indonesia expanded EV adoption through a VAT discount (2023–2025) on EV purchases and import duty exemptions for automakers that commit to domestic EV production by 2026. EV car sales increased to 9% in 2024 and are projected to reach 25% by 2030. National goals include 2 million electric cars and 13 million electric motorcycles by 2030, though current projections fall short.
- **Norway:** In 2024, electric vehicles (EVs) accounted for about 88.9% of all new passenger car sales, far ahead of any other country and on target to only adding cars that are electric on the road by 2025. Norway historically exempted EVs from 25% VAT, import taxes, and heavy registration fees, while upstream taxes on petrol/diesel cars remained high significantly lowering EV purchase prices relative to ICE vehicles. EV owners also benefitted from reduced tolls, ferry discounts, preferential parking, and access to bus lanes, further reducing operating costs and inconvenience. Policy stability, long-term targets, and major investment in charging infrastructure reinforced consumer confidence and market transformation.(Source: European Alternative Fuels Observatory – Norway Incentives & Legislation.)
- **Netherlands:** The Dutch government has driven high EV sales by combining strong tax incentives with clear regulatory direction: fully electric vehicles (EVs) have historically been exempt from registration tax (BPM) and annual road tax (MRB), while company car tax benefits make EVs especially attractive for business fleets, lowering both upfront and ongoing costs. Local incentives in many cities such as preferential parking and low-emission zones further boost EV appeal, and heavy investment in nationwide charging infrastructure improves convenience. (Source: European Alternative Fuels Observatory – Netherlands Incentives & Legislation.)
- **Denmark:** Denmark's EV strategy focuses on progressive tax advantages rather than direct purchase subsidies: battery electric vehicles (BEVs) benefit from a reduced registration taxpaying just 40% of the normal rate through 2025 with a DKK 165,000 (~€22,000) basic deduction and lower annual ownership

taxes compared to petrol cars, making EVs relatively cheaper to buy and own. Company car tax rules lower taxable benefits for EV use, employer-paid workplace charging is tax-exempt, and electricity tax reimbursements reduce charging costs, while public charging infrastructure is supported by government funding. (Source: European Alternative Fuels Observatory – Denmark Incentives & Legislation.)

IMPACTS OF THE TRANSITION ON ECONOMY AND ENVIRONMENT

GOVERNMENT REVENUE AND FISCAL IMPACT

One of the immediate impacts of Nepal's shift to EVs is on government finances. Traditionally, heavy taxes on vehicle imports and fuel have been a cash cow for the state (36.09% of customs revenue from vehicles and fuel in FY 2081/82).

However, this challenge is not insurmountable. First, the positive macroeconomic effects of reduced oil imports can outweigh the lost tax revenue over time. Money saved on fuel can circulate in the local economy or be spent on other taxable goods and services. In 2081/82, Nepal spent Rs.171.01 billion on petrol and diesel

imports; if electrification cuts that by say 50% in the future, it significantly improves Nepal's trade balance and currency stability. The government could gradually shift its revenue base by taxing that saved economic output elsewhere. Second, the government is already exploring alternative fiscal tools: for instance, higher annual vehicle taxes or road usage fees for EVs (since they currently may not pay fuel tax) once EV adoption reaches a certain threshold. Also, electricity usage might be taxed or surcharged modestly for charging in the future (though currently the priority is to keep charging cheap to incentivize EVs). Essentially, Nepal might move from "taxing purchase of cars and fuel" to "taxing usage and ownership in other ways", a model being discussed globally as fuel-tax revenues fall in EV-leading countries.

Importantly, the government and development partners see the cost of incentives as an investment in energy security and cleaner air. A World Bank study or Climate Fund analysis could help quantify health cost savings from pollution reduction. Those savings (fewer hospital visits, higher productivity) can be substantial and indirectly benefit the economy and even the government budget (less strain on the public health system). Nepal's long-term healthcare savings and productivity gains from cleaner air and less oil price volatility can offset short-term revenue dips.

EXPERT OPINION

MR. VISHNU KUMAR AGARWAL

**Past President, CNI
Promoter & Managing Director, MAW
Enterprises Pvt. Ltd.**

Sustainable transportation and logistics are fundamental to Nepal's long-term economic and environmental resilience. Electric Vehicles (EVs) hold particular significance for the country for two key reasons: the effective utilization of surplus electricity to replace imported fossil fuels, and Nepal's high vulnerability to climate change, which necessitates a swift transition toward cleaner and low-emission transport solutions. While notable progress has been made in EV adoption, four-wheeler EV manufacturing is not yet established in Nepal, underscoring the importance of strengthening the overall EV ecosystem through phased and pragmatic development rather than premature industrial expectations.

EV adoption in Nepal is rising steadily in the private vehicle segment but remains limited in public transportation specially in buses and transportation segment. This gap is primarily driven by the high initial investment required for electric buses. An EV bus of comparable power and capacity costs more than twice as much as an internal combustion engine (ICE) bus, significantly increasing upfront capital requirements. From a technical perspective, EV buses are not yet fully suitable for all operating conditions in Nepal. More critically, the higher capital cost ultimately translates into increased ticket prices, making electric public transport less affordable for common commuters. This affordability challenge is not unique to Nepal but reflects a broader global trend of relatively low adoption of



Nepal has taken a progressive step by adopting electric mobility early, securing a competitive advantage in sustainable transportation. Increased EV adoption promotes the use of "Swadeshi Energy", and strengthens national energy security. Reducing reliance on fossil fuels through EV promotion and replacement plans accelerates a cleaner, greener, and more resilient future

electric public transportation. However with advanced battery technology and cheaper prices in future, the affordability can improve feasible in years to come.

In terms of consumer perception, Nepali buyers are increasingly aware of the benefits of EVs, including lower operating costs and advanced technological features. To accelerate the transition from ICE vehicles to EVs, it is essential for the government to protect and strengthen the EV ecosystem through consumer-friendly policies that ensure affordability and build long-term buyer confidence.

Concerns regarding potential revenue loss from EV tax subsidies are acknowledged, particularly in the short term. However, the adoption of future-oriented technologies is unavoidable. Modern EVs are technologically advanced, feature-rich, cost-effective to operate, and increasingly available at competitive prices, positioning them as a

viable long-term alternative to conventional vehicles. In the long run, the country is hugely going to benefit on import of fossil fuel saving hard earned foreign currency.

With regard to charging infrastructure, more than 1500 EV charging stations are currently operational across Nepal, with plans for rapid expansion in the near future. Concerns about a “chicken-and-egg” dilemma are mitigated by the fact that EV users can also conveniently charge vehicles at home, reducing reliance on public charging networks.

Battery-related concerns are also being addressed through extended warranties, typically exceeding eight to ten years. Furthermore, EV batteries can be repurposed after their automotive life cycle for applications such as energy storage, and by re-exporting to the principal company for its disposal which is a mandatory rule for import of electric vehicles in Nepal.

ER. KAMAL PANDE**Independent Infrastructure (Transport)
Specialist**

Sustainable transport in Nepal must be understood holistically, encompassing economic, technical, social, and environmental sustainability. Nepal's transport infrastructure should be balanced and equitable, ensuring efficient use of existing resources rather than disproportionate investment in select mobility segments.

Around 35% of total carbon emissions originate from the transport sector, primarily from vehicle emissions, highlighting the importance of assessing transport choices through carbon footprint (CO₂e). Private vehicles, often carrying only a few passengers, occupy significant road space, while public transport capable of moving many more people efficiently remains underutilized, leading to higher emissions per passenger and inefficient urban space use.

Although Nepal's absolute emissions remain low compared to other Asian countries, the annual growth rate of emissions is alarmingly high. At the same time, Nepal benefits from a strong comparative advantage in energy, as the country's electricity is predominantly clean and hydropower-based, unlike neighboring countries that rely heavily on coal. This positions Nepal to decarbonize its transport sector effectively, provided policies are correctly targeted.

Regarding NDC 3.0, focusing excessively on private EVs provides limited climate benefits when low-usage vehicles are prioritized. A private vehicle typically runs around 7,500 km per year, whereas public buses operate 65,000–70,000 km annually, making public transport and freight electrification far more impactful in reducing emissions and



improving energy efficiency.

Nepal faces systemic weaknesses in traffic management, relying heavily on road expansion without effective traffic control or public transport planning. In contrast, countries with safe and reliable public transport enable off-peak and nighttime travel, distributing traffic demand more evenly. Nepal's lack of an evening mobility culture concentrates congestion into peak hours and reduces urban productivity.

For metro rail development in Kathmandu Valley, meticulous, evidence-based

planning is essential. A major challenge is the dense presence of archaeological and cultural heritage sites, which complicates underground construction. Without thorough geological, archaeological, and feasibility studies, metro projects risk heritage damage and high technical and financial risks, making context-specific planning essential.

Regarding ICE-to-EV conversion, ongoing legislative revisions are underway, but concerns remain over safety, infrastructure readiness, road conditions, and the absence of durability testing, technical guidelines, and a designated authority for quality assurance. Without proper regulation, such conversions could compromise road safety and reliability.

Better utilization of existing road infrastructure is a priority over continuous expansion. While accessibility is improving, it has not

been supported by structured development and utilization frameworks, resulting in inefficiencies.

On battery disposal, manufacturer initiatives are positive, and recycling technologies exist internationally, but require significant investment. Government readiness to adopt and support such technologies is essential for building a sustainable EV ecosystem.

Government focus should be on efficient public transport, maintaining consistent and coherent transport policies, reducing excessive dependence on private vehicles, encouraging public fleets, and promoting carpooling at the individual level. A balanced, people-centric, and policy-consistent approach is critical for Nepal's sustainable transport future.

WAY FORWARD

To build on the progress and address remaining gaps, Nepal can consider the following strategies as part of a holistic sustainable transportation roadmap:

- Electrify Public Transportation:
 - Incentives for electric buses, minibuses, and taxis
 - Pilot electric BRT (Bus Rapid Transit) in Kathmandu.
- Promote Electric Two- and Three-Wheelers:
 - Rebates for scrapping old petrol bikes
 - Lower import duties / encourage local assembly of e-scooters
 - Expand e-rickshaws and support drivers with microfinance.
- Charging Infrastructure Expansion:
 - More urban and rural charging stations
 - Incentives for private investors
 - Fast-charging corridors on major highways.
- Grid Readiness and Renewable Integration:
 - Upgrade local power infrastructure
 - Promote off-peak charging
 - Increase hydro and solar power
 - Enable vehicle-to-grid (V2G) in future
- Sustain Policy Consistency:
 - Avoid sudden removal of EV incentives
 - Gradual phase-out of subsidies
 - Set long-term legal targets
- Address Revenue Reforms Proactively:
 - Reasonable EV registration and road usage fees
 - Small levy on charging electricity
 - Use funds for green transport infrastructure
- Integrated Urban Planning:
 - Improve public transit systems
 - Develop sidewalks and bike lanes
 - Create pedestrian-only zones

About CNI

The Confederation of Nepalese Industries (CNI) was established by the captains of Nepal's industrial and corporate sector on April 17, 2002. Its core mandate is to help enhance the business environment for the private sector.

It has a membership base consisting of nearly all of the big corporate houses of Nepal, Nepali blue-chip companies, joint venture companies, etc. spread across a wide and diversified spectrum of industries.

About CRC

CNI Research Cell was established due to a dearth of evidence-based research on Nepali industries, especially based on primary data. CNI aspires to be a trusted development partner of the Government of Nepal. The data and research generated by CRC is transparent, unbiased and will be kept confidential. The team comprises Director Mr. Ravi Kumar Prajapati, Sr. Executive Mr. Chetman Syangtan and Sr. Executive Mr. Prasanna Pokhrel.



CONFEDERATION OF NEPALESE INDUSTRIES