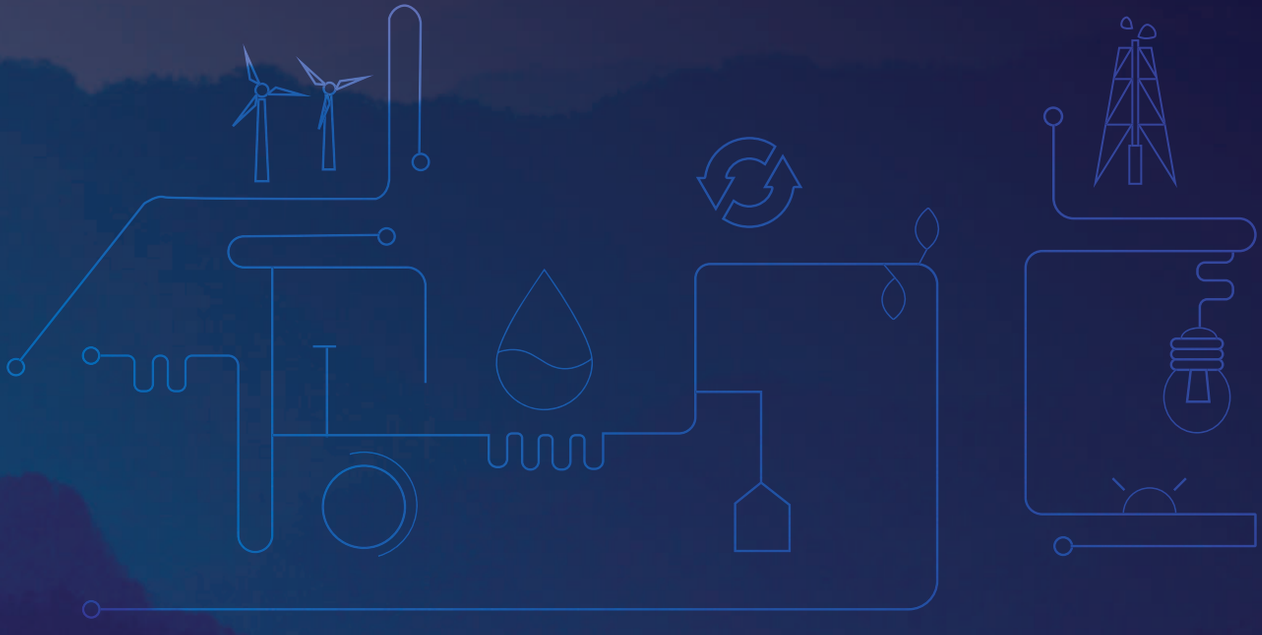
THE GREEN ECONOMY BLUEPRINT:

Strategies for Sustainable Development in Uttarakhand



Better never settles

CUSHMAN & WAKEFIELD

PHDCCI

PHDCCI Celebrating 120 Years

TABLE OF CONTENTS

ONE
Director's Message
Cushman & Wakefield
Page 1

TWO
Director's Message
PHDCCI
Page 2

THREE
Executive Summary
Page 3

FOUR
Uttarakhand's Development Goals & The Need for Green Initiatives
Page 4

FIVE
Green Infrastructure Development in Uttarakhand
- Smart housing and urban development
- Green transportation and logistics
- Sustainable mobility

Page 6

SIX
Renewable Energy and Climate Action
- Renewable energy potential in Uttarakhand
- Driving green financing in renewable energy project

Page 10

SEVEN
Decarbonizing Industries in Uttarakhand: A Path to Green Growth
Page 14

EIGHT
Tourism and Biodiversity
Page 16

NINE
Policy Recommendation and Implementation Roadmap and Conclusion
Page 18

TEN
Annexure
Page 21



Director's Message

Cushman & Wakefield

As we navigate the path towards a more resilient and sustainable future, the importance of **green economic growth** cannot be overstated. Uttarakhand, with its rich natural heritage and strategic potential, stands at the forefront of India's transition to a **sustainable and climate-resilient economy**. This **Green Economy Report 2025** outlines a comprehensive roadmap for achieving sustainable development while preserving the ecological integrity of our region.

The need for **innovative solutions and responsible growth strategies** has never been more pressing. From **renewable energy expansion and sustainable infrastructure development** to **green financing and industrial decarbonization**, this report underscores key initiatives that will drive Uttarakhand's economic progress while minimizing environmental impact. By integrating **smart policies, cutting-edge technologies, and collaborative investments**, we can ensure long-term prosperity without compromising the well-being of future generations.

Uttarakhand is actively advancing green initiatives across solar energy, hydropower, and sustainable development. The **Chief Minister Solar Self-Employment Scheme** has approved 575 MW of solar projects, with 235 MW under development, while the **Uttarakhand Solar Energy Policy** 2023 targets 2,500 MW across utility, domestic, and institutional sectors. Recent approvals include five solar plants (5,265 kW) with a ₹24 crore investment. In hydropower, the **Small Hydro Power Policy** revised in 2024 includes tenders for six projects and 19 more in the pipeline. The state also signed a ₹15,000 crore MoU with JSW Group for a pumped storage project in Almora, leveraging its 25 GW hydropower potential (currently <10% utilized). While data on circular economy investments is limited, initiatives like the **Mukhyamantri Solar Swarojgar Yojana** promote green energy and employment, reinforcing Uttarakhand's commitment to sustainability

Success in this endeavor requires a **collective commitment from policymakers, industry leaders, investors, and communities. Our shared vision must focus on balancing economic ambitions with sustainability imperatives**—adopting green innovations, promoting eco-conscious industries, and fostering a regulatory environment that supports clean growth.

We must seize this opportunity to build a greener, more inclusive, and future-ready economy while actively advancing Uttarakhand's sustainable development goals.

Khurshed Gandhi
Managing Director, Strategic Consulting
Cushman & Wakefield



Director's Message

PHDCCI

Uttarakhand, cuddled in the lap of Great Himalayas, renowned for its awe-inspiring landscapes, rich cultural heritage, and serene environment. Often referred to as **"Devbhumi" or "Land of the Gods,"** this picturesque state offers a unique blend of natural beauty and spiritual significance. Over the years tourism and hospitality sector has seen tremendous growth which has helped state's economy and has been major source of employment generation and livelihood for the people of the state.

This has necessitated state government and central government to focus and invest in improving infrastructure such as **all-weather roads, transportation networks such as airports and heliports and tourism infrastructure** to provide tourists access to the remotest areas of state.

The road ahead will throw many challenges in sustainable infrastructure development in the state as it needs to prioritize **disaster-resilient designs, incorporate local community involvement, promote eco-tourism, focus on renewable energy sources, enhance mountain agriculture practices, and implement strict regulations** to protect the fragile Himalayan ecosystem, all while ensuring equitable access to infrastructure across the state.

PHDCCI jointly with Cushman and Wakefield have come with a knowledge paper to be released in the 3rd Edition of Himalayan Tourism Samman & Conclave 2025 on 21st – 22nd March 2025 at Hotel Madhuban, Dehradun. The paper showcases various initiatives regarding the ongoing and proposed infrastructure connectivity and Tourism Infrastructure projects in the state along with suggestions with a roadmap and simultaneously learn about the new business and investment opportunities for industry, trade and commerce.

PHDCCI has been working as a catalyst for the promotion of Indian industry, trade and entrepreneurship for the past 120 years. It is a forward looking, proactive and dynamic PAN-India apex organization. As a partner in progress with industry and government, PHDCCI works at the grass roots level with strong national and international linkages for propelling progress, harmony and integrated development of the Indian economy. PHDCCI, acting as the "Voice of Industry & Trade" reaching out to more than 1,50,000 large, medium and small industries, has forged ahead leveraging its legacy with the industry knowledge across multiple sectors to take Indian Economy to the next level.

This knowledge paper outlines the investment and business opportunities, as well as the challenges, associated with infrastructure development and tourism in Uttarakhand. It emphasizes the potential for creating green and sustainable infrastructure by considering environmental factors, adopting technological innovations, and adhering to stringent safety standards during the execution of infrastructure projects.

Dr. Ranjeet Mehta
CEO and Secretary General
PHD Chamber of Commerce and Industry

Executive Summary

The Union Budget for 2025 in India is strategically designed to drive economic growth, promote inclusive development, and stimulate private sector investments. With a substantial allocation of INR 11.21 lakh crore towards infrastructure, the sector is poised to act as a catalyst for Viksit Bharat @2047, emphasizing sustainable and economic advancements. The budget places significant emphasis on reducing carbon emissions and expanding renewable energy capacities to align with sustainability goals.

Indian states, including Uttarakhand, are key to achieving the Union Government's growth and sustainability goals. Cities, responsible for over 70% of global carbon emissions (primarily from urban development, construction, and transportation), play a pivotal role in climate change mitigation. With projected population and infrastructure growth, urban emissions are expected to increase significantly, further intensifying cities' vulnerability to climate-related events. These vulnerabilities include extreme weather, flooding, and temperature variations, which strain infrastructure, housing, supply chains, health, and human lives. The Asia-Pacific region's projected addition of 1.2 billion urban residents by 2050 (World Economic Forum) underscores the urgent need for sustainable and resilient urban development. The 2024 Global Risk Report identifies extreme weather as a top global risk. Urban planning, green infrastructure, green buildings, innovative technologies, and low-embodied carbon materials are crucial for building climate-resilient cities.

Uttarakhand was carved out from the mountainous northwestern corner of Uttar Pradesh on November 9, 2000. Spanning an area of 53,485 square kilometers, the state is characterized by its remote and fragile inner mountain region, which is also rich in biodiversity. The growing accessibility and diminishing remoteness have led to the expansion of roads, helipads, new airports, highways, and an influx of tourists. As a result, Uttarakhand is undergoing rapid urbanization and population growth, which, coupled with its unique geographic and socio-economic characteristics, is intensifying its vulnerability to climate change.

Uttarakhand's economy thrives on a mix of natural resources, tourism, and emerging industries, but sustainable development is crucial. The state's GDP heavily relies on tourism and hospitality (55%), followed by industry (30%), with the remainder supported by agriculture, horticulture, and organic farming. Given its fragile ecosystem and increasing climate change risks, sustainable urban development is essential. This requires interventions at the planning stage, needs strong stakeholder engagement and technological advancements to create an ecosystem that supports economic growth while minimizing environmental impacts.

Policymakers, businesses, and investors play a pivotal role in this transformation. Policies that prioritize green infrastructure, green financing mechanisms, disaster preparedness, and integrated multi-modal transport and logistics will strengthen cold chains, boost the economy, and promote renewable energy and sustainable industries. By integrating sustainability, innovation, and resilience, policymakers, businesses, and investors can position Uttarakhand as a model for green and inclusive economic growth.







UTTARAKHAND'S DEVELOPMENT GOALS & THE NEED FOR GREEN INITIATIVES

The **"Uttarakhand Vision 2030"** aligns the state's development goals with the UN Sustainable Development Goals (SDGs). This comprehensive plan focuses on achieving 17 SDGs and 168 sub-goals by the year 2030.

THE KEY FOCUS AREAS ARE:

Human Development: Enhancing education, healthcare, and overall quality of life for residents.

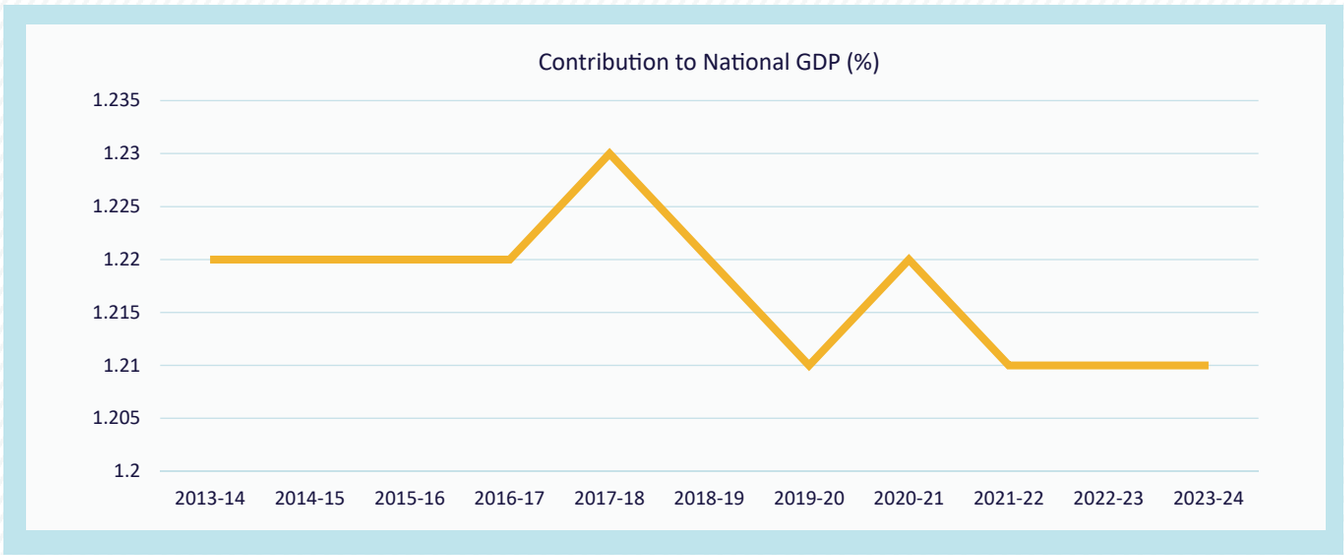
Sustainable Livelihoods: Promoting economic opportunities that are environmentally sustainable and socially inclusive.

Social Development: Strengthening social infrastructure and services to support community well-being.

Environmental Conservation: Protecting natural resources and promoting sustainable practices to maintain ecological balance.

The state has demonstrated significant progress in these areas, securing the top position in NITI Aayog's SDG India Index 2023-24 with a score of 79 out of 100, sharing this rank with Kerala. With a continued focus on these strategic areas, Uttarakhand is expected to foster inclusive and sustainable growth while safeguarding the environment.

Over the past decade, Uttarakhand's contribution to India's Gross Domestic Product (GDP) has remained relatively stable, averaging around 1.22%, as illustrated in the graph below. The state can enhance its Gross State Domestic Product (GSDP) by focusing on key sectors, infrastructure development, and policy reforms



Expansion of industrial hubs, boosting MSMEs, promoting tourism, improving connectivity through infrastructure development, and promoting the services and IT industries will form the backbone of increasing the state's GDP from 1.22% to approximately 1.5% in the next 5–7 years.

While these strategies can significantly boost Uttarakhand's economy, they also pose risks such as deforestation, increased pollution, rapid urbanization leading to higher waste generation, heightened pressure on an already fragile ecosystem, and increased emissions.

Therefore, it is essential to balance growth with sustainability by prioritizing green infrastructure development, enforcing stricter environmental policies, and promoting renewable energy solutions.







GREEN INFRASTRUCTURE DEVELOPMENT IN UTTARAKHAND

Infrastructure development focuses on **sustainable housing and urban development, green transportation and logistics, expressways, and sustainable mobility.** The adoption of green building materials is a crucial step toward sustainable urban development in Uttarakhand. Given the state's fragile Himalayan ecosystem and increasing urbanization, the use of eco-friendly construction materials can help reduce environmental impact, improve energy efficiency, and enhance structural resilience.

SMART HOUSING AND URBAN DEVELOPMENT

Green building materials are sustainably sourced, energy-efficient, and environmentally friendly materials used in construction. These materials aim to reduce the carbon footprint, enhance the thermal efficiency of buildings, minimize waste, and improve structural durability against disasters such as earthquakes and landslides.

A variety of green building materials are available, including fly-ash bricks, autoclaved aerated concrete blocks, recycled steel and aluminum, and naturally sourced materials such as bamboo and certified timber. Additionally, high-performance insulation and roofing materials, such as reflective paints, cool roof tiles, green roofs, living walls, and recycled glass and plastic panels, are now widely used. Research and development are also advancing self-healing concrete for mainstream adoption. The Doon Valley Green Housing Project serves as a model for eco-friendly housing, incorporating bamboo and stone materials. Smart cities across Uttarakhand are already implementing green roofing and energy-efficient construction.

These green building materials offer multiple benefits, including a lower carbon footprint, reduced energy costs, long-term savings, healthier living spaces, and disaster-resistant structures. Additionally, the lifecycle carbon emission savings in green buildings are significantly higher. The table below compares green materials with traditional construction materials.

Material	Carbon Footprint (kg CO_2e per ton)	Reduction Compared to Traditional Material (%)
Fly Ash Bricks	70–100	50–60% lower than clay bricks
AAC (Autoclaved Aerated Concrete) Blocks	100–150	40–50% lower than regular bricks
Recycled Steel	0.5–1.8	90% lower than virgin steel
Bamboo	0–50	80–90% lower than hardwood
Timber (Certified Sustainable Sources)	100–200	40–50% lower than non-sustainable wood
Recycled Concrete	50–150	30–40% lower than regular concrete
Low-VOC Paints	2–5	80% lower than traditional paints
Green Roofs & Living Walls	Negative (absorbs CO_2)	Net carbon reducer

Affordable and eco-friendly housing initiatives are crucial for sustainable urban development, especially in hilly and ecologically sensitive regions like Uttarakhand. These initiatives focus on cost-effective, energy-efficient, and environmentally friendly housing solutions while ensuring accessibility for lower-income groups. Uttarakhand has witnessed rapid urbanization, increasing the demand for affordable housing. Buildings account for nearly 40% of global energy consumption, and eco-friendly designs can significantly reduce this impact. Green construction can lower long-term operational costs by up to 50% through reduced energy and water consumption.

Several affordable housing policies and government initiatives support this transition, including the Pradhan Mantri Awas Yojana and the Uttarakhand Housing & Urban Development Policy 2025, which promotes smart city projects in Haridwar, Dehradun, and Haldwani, as well as public-private partnerships (PPP) for affordable housing. Additionally, green building certifications such as GRIHA and IGBC incentivize sustainable construction through tax rebates and fast-track approvals.

Smart cities play a crucial role in sustainable urbanization. Uttarakhand's Smart Cities Mission focuses on achieving this by integrating green infrastructure, technology, and efficient resource management. Dehradun and Haridwar, the two cities selected under India's Smart Cities Initiative, play a vital role in reducing carbon footprints, improving urban mobility, and enhancing environmental conservation while ensuring economic growth.

SUSTAINABLE MOBILITY

Green transportation and logistics focus on reducing carbon emissions, improving energy efficiency, and promoting eco-friendly mobility solutions. In Uttarakhand, where hilly terrain, tourism growth, and urbanization pose logistical challenges, adopting sustainable transport and logistics solutions is essential for environmental conservation and economic development.



The transportation sector contributes to approximately 14% of global CO_2 emissions, adversely affecting health and causing severe congestion in urban centers like Dehradun. Green transportation helps mitigate these issues while also supporting sustainable tourism.

Key Differences Between Green and Traditional Transportation:

Factor	Green Transportation	Traditional Transportation
Energy Source	Renewable (electricity, solar, hybrid fuels)	Fossil Fuels (petrol, diesel, CNG)
Carbon Emissions	**80-90% lower**	**High CO_2 emissions**
Air Pollution	Minimal (no tailpipe emissions)	High (PM2.5, NOx emissions worsen air quality)
Fuel Efficiency	High (EVs consume less energy per km)	Low (IC engines waste ~70% of fuel as heat)
Operating Cost	Lower (Electricity is cheaper than petrol/diesel)	Higher (Rising fuel costs)
Infrastructure Needs	Charging stations, battery swapping stations	Fuel stations, maintenance hubs
Government Incentives	**Subsidies, tax rebates, and EV policies**	Minimal incentives; rising fuel taxes
Noise Pollution	Very Low (EVs are silent)	High (Diesel engines cause noise pollution)
Long-Term Viability	Sustainable (future-ready)	Unsustainable (dependent on depleting oil reserves)
Impact on Tourism	Eco-friendly image, attracts green-conscious travelers	Contributes to overcrowding & pollution in tourist hubs

Several initiatives in Uttarakhand promote green transportation. The Uttarakhand EV Policy 2019 provides manufacturing incentives, interest subsidies, and electricity duty exemptions, while also promoting the deployment of electric buses and e-rickshaws. Additionally, integrated rail-bus connectivity, smart traffic management, and ropeways contribute to a multi-modal smart transport solution.

Green logistics also help reduce the environmental impact of goods movement. Solar-powered cold storage, green warehouses with energy-efficient systems, reverse logistics, and smart freight systems play a crucial role in optimizing distribution networks.

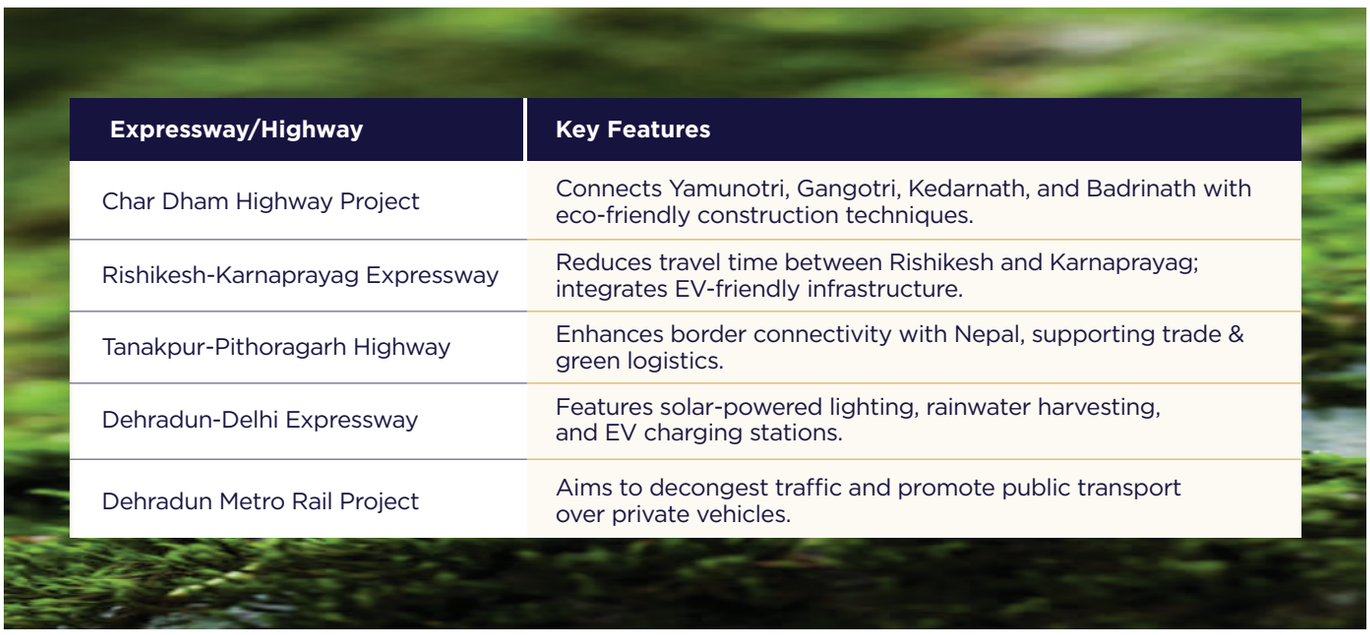
Category	Green Transportation	Traditional Transportation
Public Transport	**Electric buses in Dehradun & Haridwar**	Diesel buses, increasing pollution
Last-Mile Connectivity	Bike-sharing, EV rickshaws	Petrol-based autos, motorbikes
Tourist Mobility	Ropeways (Kedarnath, Nainital)	Diesel taxis & rental cars
Freight & Logistics	Hybrid/Electric trucks, smart logistics hubs	Conventional diesel trucks
Metro & Rail Projects	**Dehradun Metro (proposed), Rishikesh-Karnaprayag Railway**	Diesel-based rail transport

GREEN TRANSPORTATION AND LOGISTICS

Uttarakhand, due to its geography, faces unique mobility challenges. To address these, the state is developing expressways and sustainable transport solutions to ensure efficient, eco-friendly, and resilient mobility.

Major expressway projects in Uttarakhand aim to enhance connectivity across the state through smart infrastructure interventions, including, solar-powered streetlights, charging stations for electric vehicles, rainwater harvesting systems along expressways and encouraging last-mile connectivity with low-emission transport options.

These initiatives contribute to sustainable mobility, reducing carbon emissions while improving transport efficiency and accessibility across the state.



Expressway/Highway	Key Features
Char Dham Highway Project	Connects Yamunotri, Gangotri, Kedarnath, and Badrinath with eco-friendly construction techniques.
Rishikesh-Karnaprayag Expressway	Reduces travel time between Rishikesh and Karnaprayag; integrates EV-friendly infrastructure.
Tanakpur-Pithoragarh Highway	Enhances border connectivity with Nepal, supporting trade & green logistics.
Dehradun-Delhi Expressway	Features solar-powered lighting, rainwater harvesting, and EV charging stations.
Dehradun Metro Rail Project	Aims to decongest traffic and promote public transport over private vehicles.



RENEWABLE ENERGY AND CLIMATE ACTION

Renewable energy potential in Uttarakhand

The state is highly vulnerable to climate change due to rising temperatures, glacial retreat, extreme weather events, and increasing instances of landslides and floods. To combat these challenges, Uttarakhand is focusing on renewable energy adoption, climate resilience strategies, and sustainable development.





Uttarakhand plays a crucial role in India's renewable energy transition and climate action. The state has experienced several climate change challenges, including:

Glacial Melting & GLOFs (Glacial Lake Outburst Floods): The Kedarnath disaster (2013) highlighted the risks associated with glacial retreat.

Increased Rainfall & Flooding: Rising instances of cloudbursts, landslides, and flash floods.

Agricultural Impact: Climate change affects crop yields, soil erosion, and water availability.

Deforestation & Biodiversity Loss: Infrastructure expansion is threatening fragile ecosystems.

By implementing renewable energy initiatives and sustainable policies, Uttarakhand aims to mitigate these risks and build climate resilience while ensuring environmental sustainability.

The key renewable energy sources in Uttarakhand include hydropower, solar power, and wind energy

Hydropower is the largest contributor, accounting for approximately 12% of India's total hydroelectric power. The state's installed hydropower capacity is approximately 5,200 MW, harnessed from major rivers such as the Ganga, Yamuna, and Alaknanda. This significant reliance on hydropower enables Uttarakhand to meet its Renewable Purchase Obligations (RPOs) as mandated by the Government of India.

HYDROPOWER





Due to high solar radiation, Uttarakhand has an estimated **solar power** potential of about 20,000 MW, which remains underutilized (with an installed capacity of approximately 350 MW). This underutilization is due to limited land availability in hilly terrain.

SOLARPOWER

The feasibility of **wind energy** plants in Uttarakhand is yet to be fully explored. However, certain hilly areas have an estimated wind energy potential of around 300 MW.

WIND ENERGY



There are several policies and initiatives supporting renewable energy and climate action in Uttarakhand, such as - The Uttarakhand Renewable Energy Policy 2023, which targets a 50% renewable energy share by 2030 and The Uttarakhand Climate Action Plan (UCAP), which provides an integrated roadmap for carbon neutrality and resilience. However, there are several challenges in implementing renewable energy as a primary source of electricity. Due to the high initial investment, private sector participation is essential. Additionally, setting up large solar and hydro projects in ecologically sensitive zones is difficult. The hilly terrain further limits efficient renewable energy transmission. Lastly, there is a need for education and incentives to promote local adoption.

Uttarakhand has immense potential to become a model for renewable energy and climate resilience by focusing on hydro-solar integration, green mobility, and climate adaptation strategies.

DRIVING GREEN FINANCING IN RENEWABLE ENERGY PROJECTS

Green financing options, including investments, loans, and financial instruments, are essential to supporting environmentally sustainable projects, particularly in renewable energy, climate action, and energy efficiency. Uttarakhand, with its abundant hydropower, solar, and biomass potential, requires robust green financing mechanisms to scale up renewable energy projects while ensuring environmental sustainability.

Green financing models can drive renewable energy growth by enabling large-scale investments in hydro, solar, and wind projects. This, in turn, will help reduce carbon emissions by promoting clean energy adoption over fossil fuel-based power. Additionally, it will create green jobs and boost sustainable industries within the state.

Moreover, green financing plays a crucial role in climate resilience by funding projects that mitigate climate risks, such as glacial melting and floods.

Several instruments are available for green financing, including incentives, green bonds, climate funds, private investments, public-private partnerships (PPPs), corporate green financing, green banking, and sustainable lending.

However, challenges remain. The approval process for these loans is often slow, awareness about these models is limited, and financial institutions hesitate to invest in long-term, large-scale renewable projects due to their perceived risk profile. Addressing these barriers will be critical to unlocking Uttarakhand's full potential in green energy and climate resilience.




CUSHMAN &
WAKEFIELD
PHDCCI
ZOO







DECARBONIZING INDUSTRIES IN UTTARAKHAND: A PATH TO GREEN GROWTH

Uttarakhand, with its growing industrial sector, faces the challenge of balancing economic growth with environmental sustainability. Industries such as manufacturing, cement, steel, textiles, and tourism infrastructure contribute significantly to carbon emissions.

Industry Sector	Key Emission Sources
Cement & Construction	High energy use in kilns & raw material processing.
Steel & Metal Processing	Coal-based furnaces, blast furnaces, and foundries.
Textiles & Handicrafts	Water pollution from dyeing, high energy use in production.
Tourism & Hospitality	Fuel consumption in transport & hotel heating/cooling.
Logistics & Warehousing	Diesel-powered transport & inefficient supply chains.







Decarbonizing industries is crucial for reducing greenhouse gas (GHG) emissions, improving air quality, ensuring compliance with national and global climate commitments (India's Net Zero 2070 Goal), enhancing energy efficiency, reducing operational costs, attracting green investments, and improving global competitiveness.

Several strategies have been proposed for industrial decarbonization, including the transition to renewable energy sources, process optimization, adoption of circular economy principles, use of low-carbon materials, industrial carbon capture, and offsetting. The future success of these technologies and strategies depends on factors such as carbon taxation and incentives, green financing and compliance, research and development in green manufacturing, and sustained investments in these areas.

In January 2023, Luminous Power Technologies announced plans to establish India's first green energy-based solar panel manufacturing facility in Rudrapur, Uttarakhand. This facility aims to utilize renewable energy sources for its operations, underscoring a commitment to sustainable manufacturing practices.

Uttarakhand offers a conducive environment for investments in green manufacturing, supported by strategic initiatives and policies. The Kashipur cluster, spanning over 133 acres, attracts major electronics manufacturing companies, providing infrastructure and support for green manufacturing practices. The state has implemented over 30 investor-friendly policies, reduced more than 2,000 regulatory compliances, and decriminalized outdated clauses to create a favorable investment climate that encourages sustainable industries.

With strong government policies, industry collaboration, and investment in green technology, Uttarakhand has the potential to lead India's green industrial revolution by embracing renewable energy, circular economy principles, and carbon-neutral manufacturing.





TOURISM AND BIODIVERSITY

Uttarakhand, known as the **"Land of the Gods" (Dev Bhoomi)**, is a major tourism hotspot, offering spiritual, adventure, and eco-tourism attractions. The state's rich biodiversity, which includes national parks, forest reserves, and glaciers, makes it a vital ecological region. However, increasing tourist footfall, deforestation, and pollution pose significant threats to biodiversity. Integrating sustainable tourism with biodiversity conservation is essential to balancing economic growth and ecological protection.



Major tourism types & the impact on biodiversity

Tourism Type	Key Attractions in Uttarakhand	Potential Impact on Biodiversity
Spiritual Tourism	Char Dham Yatra (Kedarnath, Badrinath, Yamunotri, Gangotri), Haridwar, Rishikesh	Overcrowding, waste accumulation, water pollution.
Eco-Tourism	Jim Corbett National Park, Rajaji National Park, Valley of Flowers	Habitat disturbance, human-wildlife conflict.
Adventure Tourism	Trekking in Kedarkantha, Roopkund, Auli skiing, Rishikesh river rafting	Soil erosion, deforestation, pollution from adventure camps.
Wildlife Tourism	Nanda Devi Biosphere Reserve, Binsar Wildlife Sanctuary	Poaching risks, noise pollution affecting wildlife behavior.

There are several strategies that can be employed to promote sustainable tourism and biodiversity conservation. Uttarakhand has notable examples of successfully implementing such initiatives.

The Valley of Flowers National Park, a UNESCO World Heritage Site, has strict policies in place to preserve its biodiversity integrity. Similarly, the Jim Corbett National Park Eco-Tourism Initiative has effectively reduced human-wildlife conflict and supported local communities by establishing buffer zones and eco-tourism villages.

Sustainable tourism and biodiversity conservation must go hand in hand to ensure that Uttarakhand's natural beauty, wildlife, and cultural heritage remain intact for future generations.





POLICY RECOMMENDATION AND IMPLEMENTATION ROADMAP

Uttarakhand requires a sustainable development model that balances economic growth, environmental protection, and social well-being. To achieve this, the state needs comprehensive policies, green investments, and strong governance mechanisms.





The policy framework should encompass eco-tourism, wildlife protection, and conservation. It should also promote afforestation programs using indigenous tree species to restore degraded ecosystems. Additionally, the state requires a comprehensive smart cities and sustainable housing policy that promotes green buildings using energy-efficient materials, rainwater harvesting, and solar rooftops. There must be a strong focus on scaling up solar energy adoption in public buildings, industries, and households.

To attract clean energy investments, green financing mechanisms must be implemented. This includes regulating the carbon credit market, enforcing mandatory climate risk assessments for all infrastructure projects, and fostering collaboration between the government, corporate sector, and research institutions to develop eco-engineering solutions, such as bio-shields and slope stabilization projects in landslide-prone areas.

ALIGNMENT WITH NATIONAL POLICIES



India has several national-level policies that serve as the backbone of urban planning and climate resilience:

1. National Action Plan on Climate Change (NAPCC) – Outlines India's climate change strategy.
2. National Mission on Sustainable Habitat & National Mission for Green India – Reinforces commitments to sustainability and climate resilience.
3. Smart Cities Mission – Integrates sustainability into urban development.
4. Atal Mission for Rejuvenation and Urban Transformation (AMRUT) & National Urban Transport Policy – Focus on climate-resilient infrastructure and mobility.

These national policies are adopted at the state level and integrated into local plans to address climate change challenges and environmental degradation while considering Uttarakhand's unique geographical context.

STATE-LEVEL INITIATIVES AND CHALLENGES



In Uttarakhand, the State Action Plan on Climate Change (SAPCC) provides a framework for addressing climate risks and promoting sustainable practices in renewable energy, water management, waste management, and forest conservation.

The state has also collaborated with global organizations such as GIZ and the Asian Development Bank (ADB) to effectively drive sustainable action. However, challenges remain, including financing constraints, capacity building, and geographical limitations.

By fostering local engagement and building stronger partnerships with national and international organizations, Uttarakhand can enhance climate resilience and ensure a sustainable future for its people.

Conclusion

Effective governance is essential to ensuring that urbanization is managed in a way that promotes long-term sustainability, safeguards the environment, and improves the quality of life for Uttarakhand's residents.

Annexure

Sustainable Energy in Himalayas: A Case Study on Solar Power Development in Uttarakhand	https://www.researchgate.net/publication/380067129_Sustainable_Energy_in_Himalayas_A_Case_Study_on_Solar_Power_Development_in_Uttarakhand
Building green and climate resilient healthcare facilities in Uttarakhand: step towards sustainable climate resilient healthcare	https://www.researchgate.net/publication/382294080_Building_green_and_climate-resilient_healthcare_facilities_in_Uttarakhand_A_step_for_a_sustainable_climate_resilient_healthcare
Uttarakhand action plan on climate change	Moef.gov.in
Green Economy Challenges and Feasible Opportunities of the Mountainous state Uttrakhand in India	International Journal of Agriculture, Environment and Biotechnology https://ndpublisher.in/admin/issues/IJAEBv16n2c.pdf
Sustainable Urban Planning and Green Infrastructure: A Symbiotic Relationship	International journal for multidisciplinary research https://www.ijfmr.com/papers/2024/6/33921.pdf
Ghost villages in Uttarakhand: a challenge to sustainable development	Research paper submitted by Renu Verma and Sanjay sharma at KR Mangalam University
Rural Livelihood Transformation in Uttarakhand: An In-depth Analysis of the Livelihood Enhancement in Nainital and Pithoragarh	https://journals.sagepub.com/doi/abs/10.1177/24551333251314633

AUTHORED BY



Khurshed Gandhi
Managing Director
Strategic Consulting
Cushman & Wakefield



Deepali Dhuliya
Director – Integrated ESG & Sustainability Solutions
Strategic Consulting
Cushman & Wakefield



Bahaar Pandey
Associate Director – Integrated ESG & Sustainability Solutions
Strategic Consulting
Cushman & Wakefield

PHDCCI CONTACT DETAILS

Dr. Jatinder Singh
Deputy Secretary General, PHDCCI
jatinder @phdcci.in
+91 9811448084

Ramesh Acharya
Joint Secretary, PHDCCI
ramesh.acharya@phdcci.in
+91 98182 89382

Kabir Roy
Assistant Secretary, PHDCCI
kabir.roy@phdcci.in
+91 70110 27567

About Cushman & Wakefield

Cushman & Wakefield (NYSE: CWK) is a leading global commercial real estate services firm for property owners and occupiers with approximately 52,000 employees in nearly 400 offices and 60 countries. In 2024, the firm reported revenue of $9.4 billion across its core service lines of Services, Leasing, Capital markets, and Valuation and other. Built around the belief that Better never settles, the firm receives numerous industry and business accolades for its award-winning culture. For additional information, **visit www.cushmanwakefield.com.**

About PHDCCI:

PHDCCI has been working as a catalyst for the promotion of Indian industry, trade and entrepreneurship for the past 120 years. It is a forward looking, proactive and dynamic PAN-India apex organization. As a partner in progress with industry and government, PHDCCI works at the grass roots level with strong national and international linkages for propelling progress, harmony and integrated development of the Indian economy.

PHDCCI, acting as the "Voice of Industry & Trade" reaching out to more than 1,50,000 large, medium and small industries, has forged ahead leveraging its legacy with the industry knowledge across multiple sectors to take Indian Economy to the next level.

At the global level, we have been working with the Embassies and High Commissions in India and overseas to bring in the International Best Practices and Business Opportunities.