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# E-MOBILITY

E-BUS | CHARGING INFRASTRUCTURE  
| 4-WHEELER ELECTRIFICATION

Decarbonization of transportation sector  
through electrification



Innovative  
Business  
Models



Access to  
Finance



Public-Private  
Partnerships



Payment  
Security  
Mechanism

# CONTEXT



*Eric Garcetti, U.S. Ambassador to India and Vishal Kapoor, CEO CESL at 'Accelerating Deployment of Electric Buses in India' event*

## India

The Government of India (GoI) has set itself a target of decreasing emissions intensity of its GDP by 45% from 2005 levels by 2030. Considering that the energy consumption of the transportation sector is more than around 40%, it becomes extremely critical to ensure their transition to electrification. Realising this, GoI has launched various schemes in the past, including:



Faster Adoption and Manufacturing of Electric vehicles (FAME)



Production Linked Incentives



National Electric Bus Program (NEBP) and PM's e-Bus Sewa for deployment of 50,000 electric buses

GoI have pledged that by 2030, 30% of all new vehicle sales in India will be electric and the cumulative investment requirement to achieve this target is around \$200 bn. Although India has made significant strides in e-mobility, the following challenges remain:



Nascency of the sector and rapidly evolving technology



Uncertainty around useful life, salvage value and the lack of a secondary market



Limited availability of end-user financing options



Inadequate supporting infrastructure

SAREP, through its initiatives, is working with various public and private entities to support the realization of India's clean energy goals.



Meeting with Mr. Ugyen Dorji, Mayor of Thimphu to explore potential collaboration areas for supporting Bhutan's clean energy initiatives including e-mobility

## South Asia

The South Asian countries, apart from India, have also pledged to transition towards their clean energy initiatives. The major targets announced in e-mobility are as follows:

### Sri Lanka

- GHG emissions reduction by 4.0% in the transport sector through e-mobility and other measures

### Nepal

- 25% of private vehicle sales by 2025 and 90% by 2030
- 20% of 4W passenger vehicle sales by 2025 and 60% by 2030

### Maldives

- Net-zero emissions by 2030

### Bhutan

- 20% passenger cars by 2025 and 50% by 2030
- Buses: 10% by 2025, 50% by 2030
- Medium vehicles/trucks: 5% by 2025, 20% by 2030
- Heavy vehicles/trucks: 0% by 2025, 5% by 2030

### Bangladesh

- Increase the share of EVs to at least 15% of all registered vehicles by 2030



# Key Interventions



## Accelerating e-Bus Deployment

- Procurement bid documents/contracts for NEBP and PM's eBus Sewa in partnership with CESL, MHI and MOHUA
- Innovative business models for scaling up e-Bus deployment
- Design and setting of PSM
- Impact assessment of e-Bus transition for Bhutan
- Facilitating export of make-in-India electric buses in partnership with CESL through development of procurement documents
- Supporting capital raise transactions for public and private entities like TheeGo in Nepal



## Deployment of Electric Vehicle Charging Infrastructure (EVCI)

- Design of innovative business models – 'EV charging as a service' with CESL
- Implementation of 'Managed Services partner' model for enhancing operational efficiencies and delivering customer excellence
- Developing procurement frameworks for setting up charging infrastructure at public places - with Indian Railways and Bhutan
- RE-based charging infrastructure in Andaman & Nicobar island
- Charging Station Assessment Tool (CSAT) to identify priority locations for setting up charging infrastructure



# Key Interventions



## Electrification of Four-Wheeler Fleets

- Developing cost economics, impact assessment and business case for enabling the transition to electric 4 wheelers (e4W) for public entities like IR, MPMKVCL and HAREDA
- Frameworks for onboarding service providers for operating the e4W fleet



## Access to Finance

- Mobilizing investments in e-mobility by setting up investment platform and organising investor summits
- Supporting capital raise transactions worth \$150 million for public and private entities like Alt mobility, Lithium, Ziptrax, TheeGo



## Policy Frameworks and Capacity Building

- Developing Sustainable Transportation policy for Bhutan
- Organizing study trips on e-Mobility for South Asian countries
- Knowledge series for SA utilities on EV integration



# Key Achievements



*'Accelerating Deployment of Electric Buses in India' event in September 2023*



*Demonstration of EV charging station assessment tool to Bhutanese delegation during their visit to India*

1st award of 1390 e-buses under PM's e-Bus Sewa scheme done.  
2nd tender for 3,633 e-buses released

Report on e-Mobility Investment Landscape Report in partnership with Invest India

Investments worth \$6 million mobilized through the e-mobility investment mobilization platform

Use of CSAT to identify priority locations for setting up EV charging infrastructure in Delhi

EV Technical Handbook for EV charging in partnership with PSSC

Exchange visit for Bhutan government officials to understand the EV ecosystem in India

Tender released for export of 100 Make-in-India electric buses to Mauritius

## Launch of joint US-India Payment Security Mechanism (PSM) at COP28

A US-India initiative to combat climate change, PSM was launched in September 2023 to support deployment of 10,000 made-in-India electric buses across Indian cities. Expected to unlock \$10 billion in investment, PSM aims to accelerate new and more sustainable investments by lowering financial risks.

Watch PSM launch video



*COP28 side event emphasizing the India-US partnership in tackling climate change through e-Bus electrification*



**Together, we can embrace PM Modi's vision of the circular economy and give more people access to low-carbon public transport.**

Senator John Kerry, Special Presidential Envoy for Climate Change at the PSM launch event.



**The India- US payment security mechanism for e-buses will serve as an incentive for both Indian and international bus operators to participate in e-bus operations and potentially establish a manufacturing hub in India.**

Bhupender Yadav, Union Minister Environment, Forest and Climate Change & Minister of Labour and Employment at the PSM launch event.



## Partners

### Government of India :

- Ministry of Heavy Industry (MHI)
- Ministry of Housing and Urban Affairs (MoHUA)
- Indian Railways
- Convergence Energy Services Limited (CESL)
- Delhi Transport Corporation (DTC)
- Invest India
- Power Sector Skill Council (PSSC)

### International Partners :

- National Renewable Energy Laboratory (NREL)

### Government of MP :

- Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company Limited (MPMKVVCL)

### Government of Haryana:

- Haryana Renewable Energy Development Agency (HAREDA)

### Royal Government of Bhutan:

- Ministry of Infrastructure and Transport
- Bhutan City Bus Service Office

## About SAREP

The South Asia Regional Energy Partnership (SAREP), a flagship program to advance objectives of the U.S. Government's Clean Asia Enhancing Development and Growth through Energy (Clean EDGE), is a five-year initiative (2021-26) that aims to improve access to affordable, secure, reliable, and sustainable energy across six South Asian countries—Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka—in line with these countries' climate and clean energy priorities.



### Apurva Chaturvedi

Senior Regional Clean Energy Specialist  
USAID/India; COR-SAREP  
achaturvedi@usaid.gov



### Namrata Mukherjee

Chief of Party-SAREP  
nmukherjee@sarep-southasia.org



### Mayank Bhardwaj

Procurement & Private Sector Lead-SAREP  
mbhardwaj@sarep-southasia.org

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