Workshop on

E-MOBILITY IN PUBLIC TRANSPORT

February 17, 2022 | Time: 10:00 AM to 1:00 PM

Vivanta Meghalaya, Shillong

BRIEF REPORT OF THE WORKSHOP

Welcome & Introduction by Ms. Priyami Dutta, Senior Research Associate, AEEE

Ms. Priyami Dutta, representing Alliance for an Energy Efficient Economy, served as the emcee for the workshop and warmly welcomed all dignitaries, guests, partner organizations, and media in attendance. Her opening remarks set the tone for an engaging and informative event.

Welcome Remarks by Mr. B Sahu (Managing Trustee, Barefoot Trust & Consultant)

Mr. Sahu underscored the significant shift in the proliferation of public and private transport in the last decade with visual images comparing the space required to transport 60 people in both buses and private vehicles. Further, he emphasized that the North East region should maintain its position as a carbon sink and take a leading role in reducing reliance on private vehicles. Changing consumer behavior and attitude towards public transportation should be the top priority, along with developing effective means of collaboration among stakeholders. In his closing remarks, he posed an intriguing question of what if we all used public transportation instead of private vehicles to reach our destination. This thought-provoking question highlights the need for a collective effort to reduce our carbon footprint and prioritize sustainable transportation options.

Project Description by Mr. Pramod Kumar Singh (Senior Director Programme, AEEE)

AEEE was founded in 2008 and works closely with the central and state governments. AEEE endeavors to promote the responsible use of energy, focusing on lean, mean and green forms of energy utilization. AEEE works across different demand sectors with a triple-sector approach collaborating with the govt, private, and civil society organizations, to collectively identify solution driven alternatives for a clean energy transition. The key focus is to learn through participation of private sector, partnering with civil society organizations and implementation,

Why are we focusing on E-Vehicles?

India being at the crux of energy transition, taking steps towards decarbonization, particularly in the transportation sector is crucial to combat climate change. Rapid urbanization is resulting in an increasingly deteriorating air quality in India. In hilly states, the scope for widening of roads is limited and as such, increasing vehicular population has led to abnormally high air pollution in the hilly state of Meghalaya. AEEE has collaborated with the governments of Mizoram, Meghalaya and Assam to address this ecological problem. The approach involves pilot demonstration programs to

test the alternatives offered by electric mobility and gauge the reception. In Meghalaya, the focus is on addressing local needs and state socio-economic priorities. The primary objective of this workshop is to find tailored solutions to address local problems resulting from increasing ICE vehicles. By adopting E-vehicles, we can progress toward a more sustainable and cleaner future in the transport sector.

Address by the Guest of Honor: Prof Shukla, Vice-Chancellor, North Eastern Hill University

Prof Shukla believes it is imperative to prioritize sustainability in all aspects of life, including the energy sources used. While mitochondria generate energy for the body, society relies on solar, fossil fuels, and electrical energy to power homes, industries, and transportation. However, data from India indicate that the transportation sector requires the highest amount of energy. This is why the government, both at the state and central levels, prioritizes lower carbon emissions, especially in the transportation sector, with the mass production of public e-vehicles.

NEHU will partner with a different organization in April for a similar program. One of the reasons for the low number of e-vehicles in the North East India region could be a lack of awareness. Meghalaya, also known as the 'Abode of Clouds,' is still relatively pollution-free, but the warning signs cannot be ignored. If action is not taken, the region will soon reach the same pollution levels as Central India.

There are several sources of renewable energy that must be utilized to their advantage. NEHU's energy and engineering departments can collaborate with the government to bring e-vehicles to the region and create an e-vehicle ecosystem there. By doing so, they can contribute to a cleaner, sustainable future for the transportation sector while promoting public awareness and education about the importance of sustainability."

Address by the Chief Guest: Shri Pravin Bakshi (IAS) Commissioner & Secretary, Department of Power, Government of Meghalaya

"The Government of Meghalaya is committed to working with all sectors to promote e-mobility and recognizes the need for tailored solutions and strategies for different states. The Meghalaya E-Vehicles policy 2020 has explored various aspects of energy efficiency, including a target of 15% of vehicles in the state being EVs by 2025. However, building infrastructure to support EV adoption is crucial, and we need to create a skilled workforce to develop and maintain the necessary infrastructure. With the adoption of EVs, we can create more jobs in the state while preparing for the e-vehicle revolution. The challenge is to ensure the proper disposal of batteries in an environmentally friendly manner."

"To support the adoption of EVs, the government plans to replace public buses with e-buses while also introducing them to the tourism sector. Additionally, the government will procure e-buses for schools to reduce private vehicle usage. Start-ups must also be encouraged to create and manage charging stations, and space must be allocated for recycling materials."

"The fossil fuel wars are happening right now, and it is essential to move away from dependence on them. India has the potential to become a leader in this sector by exploring various innovations, including "green hydrogen," which is clean and provides sufficient energy. In line with this goal, the Chief Minister's office has directed the highest officials in the state to start using EVs."

Presentation on "Transforming School Transportation in Meghalaya: The adoption of E-Buses for a Sustainable Future" by Dr. Vikas Nimesh, Senior Research Associate, AEEE

Dr. Vikas Nimesh from AEEE presented on "Transforming School Transportation in Meghalaya: The adoption of E-Buses for a Sustainable Future". One of the key challenges to implementing e-mobility in Meghalaya is the lack of awareness and infrastructure for electric vehicles. The government, private sector, and community must work together to create a skilled workforce and establish charging stations to overcome this challenge.

The benefits of e-buses in schools are numerous. Firstly, e-buses provide a safer and more comfortable ride for students, reducing the risk of accidents and providing a smoother journey on the hilly roads of Meghalaya. Secondly, switching to e-buses can save schools money on fuel costs in the long term, allowing them to allocate those funds to other educational resources and programs. Thirdly, using e-buses in schools can serve as an educational tool for students, teaching them about the benefits of renewable energy and sustainable transportation.

The adoption of e-buses in Meghalaya could also help to address issues of air pollution and improve the overall health and well-being of the community, particularly for children who may be more vulnerable to the negative impacts of pollution. Finally, the transition to e-buses and electric vehicles in Meghalaya could create new job opportunities in the region, particularly in areas such as charging station management and battery recycling, which could help boost the local economy and support the growth of sustainable industries in the state.

In summary, the adoption of e-buses for school transportation in Meghalaya has the potential to bring about numerous benefits, including increased safety, cost savings, educational opportunities, improved air quality, and job creation. However, a concerted effort is required from all stakeholders to overcome the challenges and realize the full potential of e-mobility for a sustainable future.

During the event, participants were encouraged to scan a QR code of the e-Amrit portal to better understand and encourage the use of electric vehicles. By scanning the code, participants were able to see a quantitative representation of the amount of travel and overall carbon emissions that could be avoided by using an electric vehicle. The audience was enthusiastic and eagerly took out their phones to scan the code.

This approach helped to educate the audience about the positive impact that electric vehicles can have on the environment and how they can contribute to reducing carbon emissions. By providing a tangible representation of the benefits of electric vehicles, the event organizers hoped to encourage more people to consider using them as an alternative to traditional vehicles.

Overall, this was a successful initiative that effectively communicated the benefits of electric vehicles to the audience and encouraged them to take action towards a more sustainable future.

Presentation on planning for electric buses: Identification of the right specifications, deployment strategies and business models by Dr. Ravi Gadepalli

Dr. Ravi Gadepalli recently delivered a presentation on “Planning for Electric Buses: Identification of the Right Specifications, Deployment Strategies, and Business Models.” Drawing on his experience working on sustainable transportation projects, Dr. Gadepalli discussed key considerations for implementing electric buses in public transportation systems.

One of the projects that Dr. Gadepalli worked on was related to transportation in Uttarakhand, which provided insights into developing e-bus policies that could be adopted in Meghalaya. He emphasized the importance of identifying routes with the highest footfall and planning finances to introduce e-buses in a way that incentivizes various stakeholders.

Dr. Gadepalli explained that e-buses are cost-effective and eco-friendly, as they need only one battery with lower operational charging costs than e-cars. However, to ensure successful deployment, the right specifications, deployment strategies, and business models must be chosen.

He also discussed how e-buses can offer a superior experience to riders, as they are quieter, more comfortable, and produce zero emissions. By choosing e-buses, public transportation systems can significantly reduce their carbon footprint and contribute to a more sustainable future.

Overall, Dr. Gadepalli’s presentation provided valuable insights into the planning and deployment of electric buses in public transportation systems. By adopting similar strategies and policies, Meghalaya can benefit from a more sustainable and cost-effective transport system that meets the needs of its citizens.

Panel discussion:

1. Shri R Tariang (Dept of Transport) Asst Commissioner, Department of Transport, Government of Meghalaya
2. Dr. Julian Oscar Dhar (Director, Marketing & Development, Martin Luther Christian University)
3. Shri P. S. Sehdave (President, Federation of Shillong Hotels)
4. Dr. Samrat Paul (Asst Professor, Energy Engineering, NEHU)
5. Shri E. B. Blah (President of Tourist Operators Association, Meghalaya)
6. Moderator: Shri Pramod Kumar Singh, Senior Director -Research and Programs, AEEE

Mr. Singh commenced the panel discussion by posing an interesting question on EV adoption, which can be summarized as" EV is not a question of "If we should have it" but a question of How can we have it?"

Building on this introduction, all the panelists presented their valuable insights and suggestions to explore and enhance EV adoption in Meghalaya. The takeaways of each of the panelists are briefed below:

Shri Tariang:

The department of transport has made its best efforts through its policies to introduce EVs through the waiver of road tax for EVs from the date of purchase till 2026. The government will encourage and support the building of charging stations.

Shri E.B. Blah:

Meghalaya has an expanding tourism sector with eco-tourism gaining a lot of priority in North East India. Most of these tourists need transport, and Shillong is the halting hub for 90% of them, which translates into more traffic. The Himalayan region is the main attraction for most tourists who travel for official conferences and meetings from across the country. Since Meghalaya is landlocked, the tourist travel routes require inter-state transportation, and hence the introduction of EVs is a low-hanging fruit. Further, ecologically important spots can use EV as the means of transport. It can also be extended to interstate travelers from the railways station, airport and ISBT of most capital cities in the region. In an earlier effort, the government had asked IIM to discuss Shillong traffic and offer certain solutions. January and February witness less traffic and pollution as schools and colleges are closed and people are on vacation. After that we revert back to the heavy convergence. The traffic in Shillong needs to be organized better in collaboration with schools and colleges, and government departments.

Shri Parambir Sehdeva

Meghalaya is a hilly terrain and will be a victim to the increasing pollution eventually. With the introduction of EVs, we can expect to lower the pollution in the state. Introducing the e-buses will reduce the traffic by increasing the passenger capacity and lead to less pollution. The key pivot for the initiative's success or failure would be installing quick-charge facilities for the EVs used in tourism. The concern arising from the introduction of EV's, although the govt has a policy, is the battery disposal in the most efficient and environmentally friendly manner possible. The possibility of hotels allocating space for setting up charging stations for tourist vehicles. Old Shillong has way too many cars, less parking space, hawkers occupying space on the roads and footpath, government offices giving parking spaces to 'employees' in the office making it difficult to for the public to visit government offices for official work. The public is made to fend for themselves in terms of parking spaces.

Prof Julian O Dhar

Initiatives such as this are most welcome as long as discussions and collaborations emerge and are forged for the long term. Prof Julian spoke of the zero-waste policy in the new college campus and in addition, only EVs are allowed on campus while other vehicles have separate parking outside. For Meghalaya to pursue e-mobility, there has to be substantial case studies on the same to collect the data and document the journey. The new campus needs buses for transportation with the current requirement at 100 buses but the constraint is the cost factor. And therefore, the colleges need more support from the government to deploy the buses. In addition to the vehicles, a few policies are

needed to regulate the traffic and decongest the vehicular presence. It might be difficult to introduce e-buses in the smaller roads of Shillong. Town planning of new Shillong has to be improved – there is still congestion, and roads are mostly fit for one vehicle at a time.

Dr Samrat Paul

EV is not new technology by any means. Dr. Paul mentioned that it could be said that Meghalaya is late in introducing the same in the state. Breaking down the various processes, there are power generation; infrastructure; maintenance; socio-economic development / social acceptance to creating skilled manpower, he mentioned that each process must be efficient and properly thought through and set up. He posed a key question: What can be innovated to influence society after 10 / 15 years?

Highlighting the struggle of the EV paradox, he explained that the cost of coal / diesel to produce energy, loss of energy in the transmission process in North East India which is very high. So we must also explore the possibility and potential of renewable energy in other forms such as wind, biomass, green hydrogen, micro-hydro power are other clean alternatives. Then we can aspire to move towards carbon negative emissions.

EVs' needs batteries that are not lithium based (such as is the case in the batteries used in phones) since they have a short battery life. 50% of the cost of an EV is just the battery and therefore a process for fast charging with slow discharging would be beneficial for the vehicle and longevity of the battery. NEHU has adopted a village where people do not have names but identify each other through signature whistles. Tokyo has different school timings to dispense with the traffic congestion. We must think differently to address traffic and pollution issues and climate change with a long-term vision.

This was followed by a very interactive session where the participants were asked to jot down their responses to two questions:

- What is the Impact of the current transportation situation in Meghalaya?
- What is the anticipated impact of the introduction of EV into Meghalaya?

The workshop concluded with a vote of thanks to all the participants, speakers, panelists, organizers and all associated, directly or indirectly with the event.