

Seminar Presentation

Friday, March 07/2025 (2 PM)

BAHIR DAR INSTITUTE OF TECHNOLOGY

FACULTY OF MECHANICAL AND INDUSTRIAL ENGINEERING

Seminar topic:

Electric Vehicles: Benefits, Challenges, and Potential Solutions for Widespread Adaptation and scope in Ethiopia with technical aspects of SWOT analysis

A b s t r a c t

The electric vehicle (EV) revolution is sweeping the world, and Ethiopia is no exception. Despite the environmental and sustainability narratives surrounding EVs, it is now undeniable that the transition to electric mobility is inevitable. Over the last couple of years, the country has made considerable advancements in shifting towards electric transportation, with the government and private sector collaborating to make EVs more accessible to the public. However, despite this progress, Ethiopia still has one of the lowest EV adoption rates globally.

Moreover, the available information is limited in identifying critical challenges that need to be addressed to achieve significant decarbonization of the passenger vehicle sector. This review focuses on the current advancements, challenges, and opportunities for EV development in Ethiopia and proposes ways to accelerate the transition.

Ethiopia's EV transition still faces significant obstacles that must be overcome. In particular, the absence of clear policies and regulations outlining EV targets, the high purchase price of EVs, an unreliable electricity network, and the scarcity of public charging stations are major impediments to progress in Sub-Saharan Africa. To expedite the transition, it is highly recommended that new regional and national strategies be developed rather than adopting the EV transition models of developed nations.

Short Biography



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<https://scholar.google.co.in/citations?hl=en&user=7iw6xOoAAAAJ>

Dr. Padmanthan Kasinathan is currently working as director, EVNEXUS Private Limited, Chennai, India. **Dr. Padmanthan Kasinathan** graduated from Anna University, Chennai-600025, with a bachelor's degree in electrical and electronics engineering in 2006. He also holds a master's degree in power electronics and drivers and a doctorate in renewable energy from the College of Engineering Guindy at Anna University, Chennai, and Tamilnadu, India, in 2008 and 2018, respectively. He has eighteen years of experience in industries and educational institutions doing research, consulting, teaching, and administration. He has over 45 outstanding research publications. He has completed numerous energy audit projects as well as turnkey solar energy projects ranging from residential to utility-scale (100 MW). His research interest towards in Energy studies, solar PV energy systems, renewable energy systems, disruptive technology, IoT, power electronics, energy economics, energy policy, socio-technical regime, electrical vehicle and energy modeling and forecasting, financing techniques, and business models. He has successfully supervised and guided seven Ph.D. graduates from Anna University Chennai. In the fields of green mobility and renewable energy, he founded EVNEXUS Private Limited and NestLives Private Limited. Furthermore, he is a Global Distinguished Experts Member of the Global Education Policy Network (GEPN), sponsored by Prince Sultan University in Saudi Arabia and The State University of New York at Buffalo in the United States. In 2017, He received recognition from the general public and several awards for his social efforts.