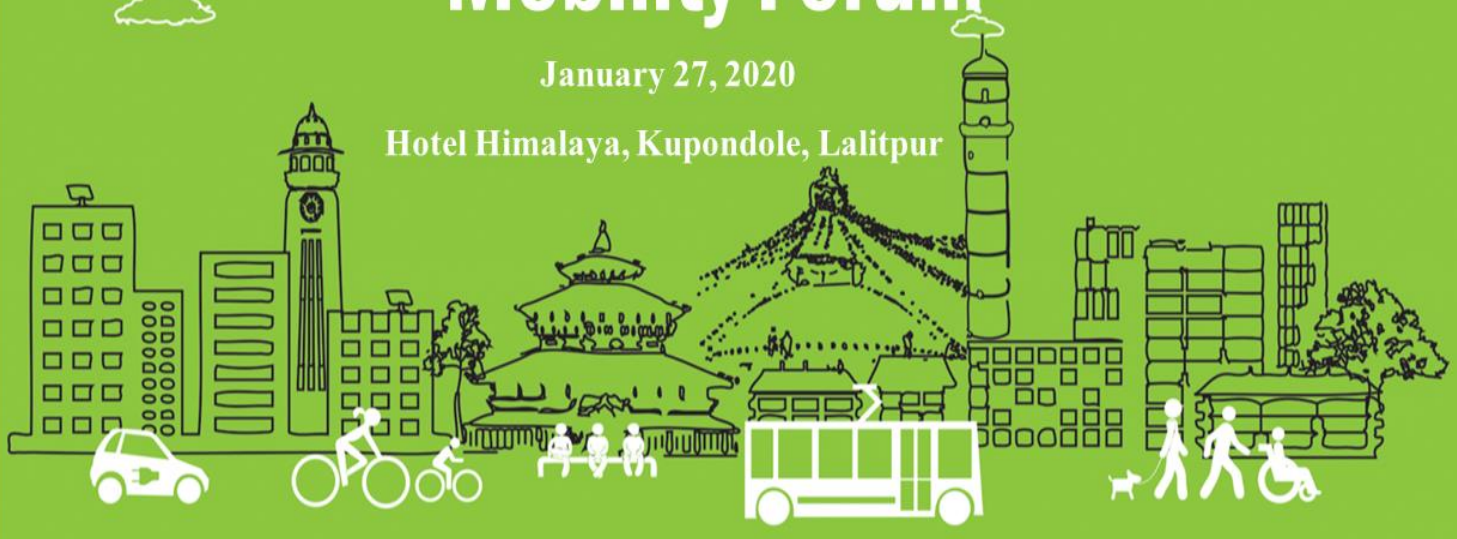
2020

Proceedings

8th Kathmandu Sustainable Urban Mobility Forum

January 27, 2020

Hotel Himalaya, Kupondole, Lalitpur



"Towards Efficient and Zero Emission Transport in Nepal"

Cities for People

Clean Air Network Nepal

environment

GLOBAL FUEL ECONOMY INITIATIVE

FIA FOUNDATION

CLEAN ENERGY NEPAL

Clean Energy Nepal

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1. Background

Rapid urbanization and increasing economic activities in cities have dramatically increased vehicle demands in urban areas of Nepal. Road transport dominates all forms of transport in Nepal. As per Department of Transport Management in 2018 vehicle registration status of Nepal shows that 78% of the total registered vehicles are motorcycles, 6% cars/jeeps/vans, 4% tractors and trucks, 3% pickups, 2% buses, and remaining others (tempo, rickshaw, heavy equipment minibus, and microbus). At an annual growth rate of 14%, vehicle registration in Nepal has increased dramatically from 0.48 million in 2005 to 3.22 million in 2018. The average share of LDVs is 8% of total vehicle registration, and approximately 62% of the registered LDVs are cars followed by jeeps 16%, pickups 14%, vans 8%, and microbuses 1% respectively. The annual car registration is increasing at the rate of 12% in Nepal, and almost 93% of them are petrol-based vehicles, and the rest are diesel vehicles. In Nepal, the unmanaged transport sector and fuel energy-related GHG emissions are the leading causes of deteriorating air quality. Vehicular emission accounted for 38% of total air pollution (JICA, 2017). At the current rate of vehicular registration, the emission from transport in 2050 is projected to be 18.98 million metric tons that will be 35% of the total emissions (ICIMOD, 2017). Carbon emissions must be reduced from the transport sector. Doubling fuel economy will significantly reduce the expected increases in carbon dioxide emissions from transport. In the present context, it has become very essential to develop its fuel economy standards or undertake fiscal policy measures to improve FE and reduce fuel-related CO2 emissions. In this regards, Clean Energy Nepal (CEN) /Clean Air Network Nepal with support from the United Nations Environment Programme (UNEP) organized workshop on Fuel economy policy measures for the efficient vehicles transportation in Nepal as 8th Kathmandu Sustainable Urban Mobility Forum on 27 January 2020.

KSUMF is an annual flagship event of Clean Energy Nepal (CEN) that has been bringing the stakeholders together to initiate policy dialogue and collaboration for sustainable urban mobility and better air quality in the Valley since 2011. For this year, Clean Energy Nepal (CEN)/Clean Air Network Nepal (CANN) in collaboration with United Nations Environment Program (UNEP) conducted the 8th Kathmandu Sustainable Urban Mobility Forum on the theme of ‘Towards efficient and zero emissions transport in Nepal’.

2. Objective

The main objective of the Kathmandu Sustainable Urban Mobility Forum was to initiate policy dialogues, partnership stakeholder collaboration for better air quality and sustainable urban transport with focus on people centric transportation. For this 8th Forum, specific objectives were to:

- Share the baseline fuel economy of Light-Duty Vehicles (LDVs) in Nepal
- Present and discuss possible fuel economy policies for Nepal
- Discuss the role and challenges of electric mobility in sustainable transport in Nepal

3. Program Participants

Around 55 participants from diverse background including government agencies, non-governmental agencies, academia, transport entrepreneurs, transport/urban planner, researchers, campaigners and media attended the program.

Figure 1: Participants at the 8th Kathmandu Sustainable Urban Mobility Forum

4. Proceedings

The program began with the welcome and objective sharing of the program followed by the technical session and panel discussion. In the technical session, the presenters delivered on experiences of fuel economy and fiscal policy measures globally and in South Asia, the findings of the baseline fuel economy of light duty vehicles (LDVs) in Nepal, fiscal policy options using Fuel Economy Policy Implementation Tool (FEPIT) in Nepal. The panel discussion was then held on feasibility of various policies and plans to increase clean mobility options which mainly focused on electric vehicles in the Valley.

Opening and Objective Sharing

The program started with the opening remarks and objective sharing from Ms. Elina Shrestha, Research Associate from Clean Energy Nepal. She said, “May today inspires ideas and discussions around the ways that we can make our city a better place”. Introduction of the participants followed the opening remarks.

Technical Session

Four experts from different institutions presented during techical session. Mr. Bert Fabian, Programme Officer, United Nations Environment Programme, Dr. Thusitha Sugathapala from University of Moratuwa, Sri Lanka, Ms. Mangleswori Dhonju, Program Coordinator, Clean Energy Nepal, Professor Dr. Amrit Man Nakarmi, Centre for Energy Studies, Institute of Engineering presented in this session.

Presentation I: Global Experiences of Fuel Economy and Fiscal Policy Measures

Mr. Bert Fabian, the Programme Officer at United Nations Environment Programme delivered an overview of the global scenario of fuel economy and fiscal policy measures of LDVs. According to him, transport and air pollution is inter-related, and transport accounts for about a third of global CO2 emissions from energy, more than half of global NOx emissions, more than a quarter of all CO emissions, almost a quarter of volatile organic compounds emissions and substantial shares of SO and PM emissions. He stressed on the need to improve fuel economy to reduce CO2 emission, decarbonizing road transport to tackle climate change, fuel economy policy options and eco-labeling schemes adopted by different countries around the globe. "Implementing fuel economy can substantially reduce CO2 emissions, supporting the Paris Agreement and also reduces fossil fuel consumption and national expenditures on fossil fuels" said Mr. Fabian.

Figure 2: Mr. Bert Fabian during his presentation at 8th KSUMF

Presentation II: Regional Experiences of Fuel Economy and Fiscal Policy Measures in South Asia

During the presentation, Dr. Thusita Sugathapala, the Senior Lecturer from the University of Moratuwa, Sri Lanka presented on the regional experiences of fuel economy and fiscal policy measures in South Asia. According to Dr. Sugathapala, "Transport is a complex matter and the growth of transport sector has translated into constant pressure for sustainability of development". Nationally Determined Contributions commitment of Nepal aims to reduce dependency on fossil fuels by 50% by 2050 and achieve 80% electrification through renewable energy sources. He highlighted the NDC commitments of South Asian Countries to reduce GHG target from transport sector.

Figure 3: Dr. Sugathapala sharing the experience of fuel economy in South Asia at 8th KSUMF

Presentation III: The Baseline Fuel Economy of LDVs Study in Nepal

Ms. Mangleswori Dhonju, the Programme Coordinator of Clean Energy Nepal shared the findings of the baseline fuel economy study for Nepal. She stressed that although vehicle registration in Nepal has increased dramatically at an annual growth rate of 14% from 2005 to 2018, 96% of passenger vehicles registered are private vehicles and only 4% as public, which indicates poor public transportation system in the country. Ms. Mangleswori emphasized that the fuel economy of LDVs performance in Nepal has

improved from 6.98 liters of gasoline-equivalent per 100 kilometers (Lge/100 km) in 2005 to 5.81 Lge/100 km in 2016, indicating import of fuel-efficient vehicles in the country. Similarly, decreasing trend of Carbon dioxide (CO_2) emissions at an annual rate of 1.3 percent from 159g/km to 137g/km between the period of 2005 to 2016 was also recorded from the findings. “Even though fuel efficiency and carbon emission in the transport sector of Nepal is improving LDVs account for only 8% of total vehicles registered and 78% of them are motorcycles which are a big challenge” said Ms. Dhonju.

Figure 4: Ms. Mangleswori Dhonju sharing the findings of the baseline fuel economy study

Presentation IV: Fiscal Policy Options Using Fuel Economy Policy Implementation Tool (FEPIT) in Nepal

Professor Dr. Amrit Man Nakarmi , the coordinator of Energy Systems Planning Analysis under the Centre for Energy Studies of Institute of Engineering, Tribhuvan University presented on the fiscal policy options in Nepal using Fuel Economy Implementation Tool (FEPIT). He shared about emission rate from the transport sector in Nepal, the objectives of FEPIT, and the impact of new registration tax on fuel Economy and fiscal policy options. He remarked that import of low CO2 emitting cars in recent years have consequently resulted in cutting down of CO2 emissions. “The Global Fuel Economic Initiative

(GFEI) has set a target to reduce fuel consumption by 50 percent i.e 4.4 Lge/100 km by 2030 but Nepal's current rate of improvement in fuel economy means the country will reach 4.45 Lge/100km by 2030, therefore to achieve GFEI target, Nepal needs to shift to more fuel-efficient vehicles and electric vehicles" said Dr. Nakarmi.

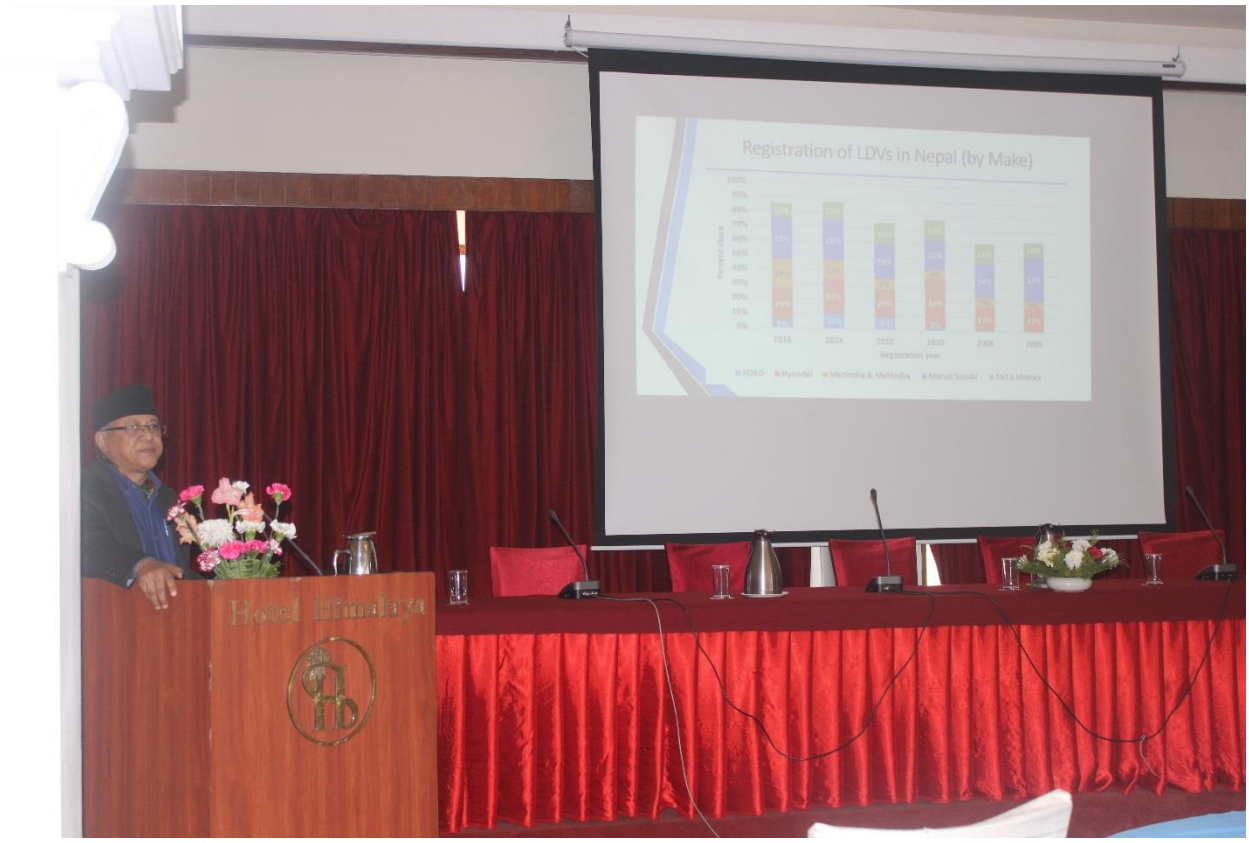

Figure 5: Dr. Amrit Man Nakarmi presenting on Fiscal Policy Options Using Fuel Economy Policy Implementation Tool (FEPIT) in Nepal at 8th KSUMF

Panel Discussion

The technical session was followed by Panel Discussion where Experts discussed the feasibility of various policies and plans to increase clean mobility options mainly focused on electric vehicles in the Valley. The panel comprised of Mr. Maniram Bhusal, the Senior Divisional Engineer at the Ministry of Physical Infrastructure and Transport (MoPIT); Mr. Umesh Raj Shrestha,the Chairman of Electric Vehicle Association of Nepal (EVAN); Indu Bikram Joshi, the Deputy Director General at the Department of Environment; Ms. Sonika Manandhar, the Co-Founder of Aeloi and UN Environment's 2019 Young

Champion of the Earth and Mr. Pradip Amatya, the Environmental Engineer at Lalitpur Metropolitan City, facilitated by Mr. Bhushan Tuladhar, the Chairperson of Clean Energy Nepal.

Mr. Maniram Bhusal, Senior Divisional Engineer at the Ministry of Physical Infrastructure and Transport (MoPIT) emphasized that a committee under MoPIT has drafted a proposal that requires the public officials—joint secretaries and secretaries to use only electric vehicles for their daily commute. The plan is in a bid to reduce expenses over fossil fuel-run vehicles and promote EVs in the country, he said. He also responded concerns on ridesharing service providers like Tootle and Pathao to be illegal because any vehicle that has been registered for private use cannot be used as a means of public transportation as per Section 8 of the Transport Management Act. Therefore, there must be stakeholder consultation for its management.

Mr. Indu Bikram Joshi Deputy Director General from the Department of Environment said that eco-labelling was possible, however the push needed to come from the private sector and that it was also important to gauge the interest of the customers.

Mr. Umesh Raj Shrestha, President of EVAN urged the policymakers to formulate loopholes free policies for efficient and clean transport. He also acknowledged that there were policies to increase electric mobility but that these policies were rarely implemented. He also emphasized the need for different financing strategies for differently sized electric vehicles.

Mr. Pradeep Amatya, Environment Engineer from Lalitpur Metropolitan City talked about the importance of non-motorized transport such as cycling for urban cities like Kathmandu and Lalitpur. He also emphasized the need for stakeholder consultation for development of proper cycling lanes. He also shared that LMC has been started the use of electric vehicles for tourists for sightseeing the Patan Durbar Square, one of the UNESCO World Heritage Site of Kathmandu Valley.

Ms. Sonika Manandhar, Co-founder of Aeloi Technologies Pvt Ltd emphasized the option of utilizing the carbon offsets mechanisms to finance electric vehicles in Nepal. “Nepal is the country which had over 700 Safa Tempos in 1995, despite having such potential we are spending a significant portion of the budget on imports of fossil fuel. Why are we not leveraging on our experience and sources of renewable energy?” stressed Ms. Manandhar.

The discussion brought forward various queries, suggestions and recommendation from the panelists and participants. The following outcomes were generated from the panel discussion.

- For cutting down vehicular emissions, the country needs to invest in the promotion of green vehicles through policy reforms, investment in infrastructure.
- Only a very small percentage of total vehicles registered are public transportation therefore the system and services for efficient and sustainable public transportation should be improved.
- To improve air quality and meet the Paris Climate Agreement we need to shift to zero emissions transport.
- Effective coordination within and between the different tier and sector of governments and other stakeholders with long term vision can considerably mitigate the existing problems.
- Though road development is necessary proper feasibility study of the road condition should be done before directly adding more vehicles. Hence, coordination between development authorities is necessary.
- Charging electric vehicles with cleaner energy is more economically viable in our country than importing fossil fuels therefore the government should prioritize green energy mobility.
- The city government/ planners should have a long term vision in order to develop and implement sustainable urban mobility in accordance.
- The government should identify and focus on key priorities rather than following ambiguous directions and ideas. What should be the main priority for now; electric buses or charging stations?
- Basket funds from the government with minimum interest rate would provide beneficial for private and public transport entrepreneurs.
- Sri Lanka presents a great example in terms of shift towards efficient vehicles and clean transport system and we can adopt and localize the best practices to achieve similar success.
- Efficient Vehicles and Clean transportation should not only be about electric vehicles and infrastructures but also about vehicle fuel standards, type of vehicles imported and non-motorized mobility such as walking and cycling.

Figure 6: Panelists from the left: Mr. Maniram Bhusal, Dr. Indu Bikram Joshi, Mr. Pradeep Amatya, Mr. Bhusan Tuladhar (Moderator), Mr. Umesh Raj Shrestha and Ms. Sonika Manandhar

5. Closing Session

Mr. Bhusan Tuladhar, the Chairperson of Clean Energy Nepal presented the Token of Appreciations to the presenters and panelists and delivered the closing remarks appreciating the time and efforts of presenters, panelists and participants. He urged everyone to take one step towards change for better tomorrow. He emphasized "the need for a well-maintained, and well-run public electric bus services which would help reduce air pollution, greenhouse gas emissions as well as congestion within the Valley", Mr. Tuladhar said in closing remarks.

6. Conclusion and Way forward

The 8th Kathmandu Sustainable Urban Mobility Forum concluded that the efficient and zero emission transport system is an urgent need of Kathmandu Valley. Comprehensive policies, plan and institutional mechanism for the promotion of electric vehicles, standard fuel and vehicles, mass transport system, non-motorized transport system and pedestrian Zone is necessary for sustainable and people centric transport system. Although committee under the Ministry of Physical Infrastructure and Transport has

drafted a proposal that requires the public officials to use only electric vehicles for daily commute in a bid to reduce fossil fuel expenses and promote EVs in the country, it should not be just limited to that. Electric vehicles and infrastructure development for EVs should accelerate so that citizens/public can also enjoy green transportation.

Way Forward

Nepal needs to shift to more fuel-efficient vehicles and electric vehicles not only for environmental benefits but also for financial reasons as the country spends a significant amount of budget on fossil fuel imports. As fuel economy depends solely on the type of vehicles imported and the policy imposed on it the government should therefore take these things into consideration. Electric public vehicles should be promoted rather than two wheelers and import tax subsidy can be reckoned based on the efficiency of vehicles.

Annex I: Program Agenda

Date: Monday, 27 January 2020 (Magh 13, 2076)
Time: 08:00 AM to 2:00 PM
Venue: Hotel Himalaya, Kupondole, Lalitpur

Breakfast/Registration	08:00 – 09:00
Welcome and Introduction, Clean Energy Nepal	09:00 – 09:15
Findings Of The Baseline Fuel Economy Study For Nepal : Mangleswori Dhonju, Program Coordinator, Clean Energy Nepal (CEN)	09:15 – 09:30
Fuel Economy Policy Impact Tool (FEPIT) Analysis And Findings : Prof. Dr. Amrit Man Nakarmi, CES, IoE, Tribhuvan University	09:30 – 09:50
Global Context On Vehicle Fuel Economy And Fiscal Measures Of The Light Duty Vehicle: Mr. Bert Fabian, Programme Officer, United Nations Environment	09:50 – 10:10
Regional Experiences Of Fuel Economy And Fiscal Policy Measures In South Asia: Dr. Thusitha Sugathapala, Senior Lecturer, University Of Moratuwa, Sri-Lanka	10:15 - 10:35
Tea/Coffee Break	10:35 - 10:45
Panel Discussion (Moderated By: **Mr. Bhushan Tuladhar, Board Chair, CEN**) **Panelists:** Mr. Maniram Bhusal, Ministry Of Physical Infrastructure & Transport, (MoPIT) Mr. Indu Bikram Joshi, Department of Environment (DOE) Mr. Pradeep Amatya, Lalitpur Metropolitan City (LMC) Mr. Umesh Raj Shrestha, Electric Vehicle Associations Of Nepal (EVAN) Ms. Sonika Manandhar, Aeloi Technologies Pvt Ltd	10:45 – 12:45
Vote of thanks and closing	12:45: – 01:00
Lunch	01:00 – 02:00

Annex II: Presentations

Please find the presentations in the link below:

https://drive.google.com/drive/folders/1FbbXDD7gGatjsEMUZ5h4CJt1dwdtpZiQ

Annex III: List of Participants

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