Program Summary: Green Hydrogen in Nepal: National Policy Perspective

Date: Friday, 10th December 2021
Venue: Senate Hall, KU
Time: 10:30 – 14:30 (NPT)

Background:

A coordination committee has been formed under the Water and Energy Commission Secretariat to conduct a study on Green Hydrogen as means to balance and supply of hydropower electricity in Nepal. The committee involves members from WECS, MOEWRI, DOED, IOE and KU. The first meeting for the Coordination Committee has been held on 01.05.2021 to formulate the strategy, action plan, and delivery of the study.

The second meeting has been held on 10.12.2021 at Kathmandu University with two different sessions. The first session was an open and general discussion session among the Committee Members, KU high-level officials, and other relevant stakeholders. After the first session followed by a lunch break, a closed coordination meeting was held as per the scheduled plan in which only coordination committee members were involved.

Program Attendees

S. N	Name	Designation	Institution	Contact Email
1.	Prof. Dr. Bhola Thapa	Vice Chancellor	KU	bhola@ku.edu.np
2.	Prof. Dr. Manish Pokharel	Dean, SOE	KU	manish@ku.edu.np
3.	Dr. Bhupendra Bimal Chettri	Professor, DOEE	KU	bhupendra.chhetri@ku.edu.np
4.	Dr. Bim Prasad Shrestha	Professor, DOME	KU	shrestha@ku.edu.np
5.	Dr. Rijan Bahadur Kayastha	Associate Professor, HOD DESE	KU	rijan@ku.edu.np
6.	Dr. Biraj Singh Thapa	Assistant Professor	KU	bst@ku.edu.np
7.	Dr. Bijay Thapa	Program Manager	Energize Nepal	bijay.thapa@ku.edu.np
8.	Mr. Nawaraj Sanjel	Assistant Program Manager	Energize Nepal	sanjelnawaraj@ku.edu.np
9.	Mr. Shishir Koirala	Joint Secretary	WECS	ccrkoirala@hotmail.com
10.	Mr. Nawaraj Dhakal	Deputy Executive Director	AEPC	nawa.dhakal@aepc.gov.np
11.	Mr. Chiranjeewee Chataut	Joint Secretary	MOEWRI	-
12.	Ms. Kiran Gautam	Sr. Divisional Engineer	WECS	kiran.gautam@nepal.gov.np
13.	Abian Marasini	Engineer	WECS	abian.marasini@nepal.gov.np
14.	Srijan Panta		Infinity Partners	srijan@infinitynp.com
15.	Narayan Chaulagain	Advocate	Infinity Partners	narayan@infinftynp.com
16.	Dr. Bhola Nath Ghimire	Professor	IOE, TU	bholag@ioe.edu.np

17.	Mr. Sabin Bhattarai	Research Associate	GHLab, KU	sabin.bhattarai@ku.edu.np
18.	Mr. Samrat KC	Research Fellow	GHLab, KU	14ksamrat@gmail.com
19.	Mr. Abhishek Subedi	MS by Research	GHLab, KU	abhishek.subedi@ku.edu.np
20.	Mr. Bishwash Neupane	Research Assistant	GHLab, KU	bishwash.neupane@ku.edu.np
21.	Mr. Sushobhan Bhattarai	Intern Research Assistant	GHLab, KU	sb02238217@student.ku.edu.np

Meeting Notes:

Agenda	Discussion
A1: 1st Session opening and Introduction	*Dr. Biraj* initiated the first session: General Discussion by welcoming all the delegates and members of the green hydrogen coordination committee. After the brief discussion of the purpose and agenda of the meeting, introduction of all the members and participants were done.
A2: Welcome Notes (Dr. Bhola Thapa)	*Dr. Bhola welcomed* all the delegates and members from the close coordination committee members at KU. He briefly discussed the industry, government, and academia collaboration for the research and development activities. He thanked the WECS Joint Secretary for initiating the green hydrogen-related committee at the governmental level. Dr. Thapa gave the example of the masters and Ph.D. students who are committing their whole life to the research on Green Hydrogen. He emphasized on collaboration of government and industry to work on work on the policy and industrial activities for supporting the research activities and motivate the new researcher. Also, on behalf of Kathmandu University, he assured that the research and development activities will be supported and he will try to talk with the high-level government authorities as well.
A3: Opening Remarks (Prof. Dr. Manish Pokharel)	*Professor. Dr. Pokharel* then gave his opening remarks. He discussed the global carbon emission and the necessity to adopt clean energy technology. Nepal has significantly lower carbon emissions but as it is situated in between China and India, Nepal sooner or later needs to adopt and prioritize the adaptation of the technology to combat climate change. He then thanked the green hydrogen lab team leader and team for initiating the research activities on the hydrogen technology and appreciated WECS members for having their presence at KU for the discussion.
A4: Remarks (Mr. Shishir Koirala)	*Mr. Shishir Koirala* talked about clean energy technologies and welcomed the ongoing research activities at Green Hydrogen Lab and Kathmandu University. He discussed the resource constraints for research investment in Nepal. There has been a gap in the research and implementation of the research findings. A lot of groundbreaking research activities are ongoing at universities but the academicians and universities have not been able to emphasize the importance of research to the politicians. He said that it is the responsibility of bureaucrats and academicians to push the political leaders to the focus on research and development in science and technologies. Nepal imports a huge amount of fuel which has a significant effect on GDP and Nepal needs to look for alternatives. Hydropower has been a major avenue and most recently there has been a lot of talking about the surplus spilled energy. Energy export to other countries is one of the options but it doesn't seem sustainable in long run. In such a scenario, research and development activities on green hydrogen in Nepal are very relevant and he thanked KU for this initiation. He then thanked academicians, of KU and Dr. Biraj, for advocating about the hydrogen topic into the government-

	level discussion so fast and for pushing to form a committee. The committee is in the inception phase and Mr. Koirala emphasized for the quick report completion and submit it to the concerned authority before the momentum is lost. He suggested for mitigating the research constraints and catching the momentum before it is too late.
A5: Technical Presentation (Dr. Biraj Singh Thapa)	*Dr. Biraj* shared the technical presentation on the main agenda. He discussed the global hydrogen policies and strategies, of different countries and the policy gap in Nepal. He gave the example of India and Australia and focused on the urgency for Nepal to work on the policy aspect. He shared the information on research and development activities ongoing at GHLab, in collaboration with European Universities (Germany and Norway). He also presented the possible demonstration project and preliminary studies finding of the different projects. He then opened the floor for the discussion and any questions and suggestions. *Mr. Nawaraj Dhakal***,** discussed the possibilities of identifying the immediate short-term demonstration project and suggestions on what could be the long-term roadmap. He prioritized focusing on what suggestions could be given in the report for the short-term and long-term roadmap. Other participants also discussed about identifying the short-term and long-term demonstration, pilot project, their feasibility and other aspects to integrate hydrogen in national economy and energy mix.
A6: Remarks: KU experience on policy-making (Dr. Bim Prasad Shrestha)	*Dr. Bim* then discussed the support of the R&D projects through the policy level giving an example of Cooking Stove and its application. He said that, for any research project to be successful, the government should support thorough policy levels. Regarding clean energy, he focused on the complete energy cycle: from production, distribution, and end-use match up. There should be policy integration from production to distribution to end uses like a clear strategy of subsidies, licensing, and R&D activities. He suggested from previous experiences and failure, the lesson should be learned, and a way out should be found. The government doesn't have room for failure but the academic institution has room for failure and learns/remedies from failure. Learning from the failure at university (Bio-energy Lab) university need to learn from failures and prepare other research activities accordingly.
A7: Presentation (Advocate Narayan Chaulagain) Infinity and Partners	*Mr. Chaulagain* presented on the policy, plan, and legal perspective: different policies of developing countries, developed countries, and neighboring countries. He presented the policy gaps, how hydrogen could be integrated into the national policy of Nepal with short-term planning, medium-term planning, and long-term planning, and the role of different institutions. He emphasized for the institutional setup for green hydrogen research and development in Nepal. He discussed about the specific need of legislation: supervisor and planning authority, regulatory and compliance authority. Different urgent actions, short term actions, medium term actions, and long-term actions along with the dedicated agencies were presented as possibilities. Mr. Nawaraj Dhakal suggested to break down plans and policies into three main categories. Ms. Kiran Gautam suggested for the identification of legal aspect in term of hydrogen production, storage distribution and end-use.
A8: Open Discussion Sessions	After the completion of the technical presentation on legal perspective, an open discussion session was initiated. Officials from Energize Nepal, and KU put forward their opinion on the industry-academia collaboration, initiation of KU on different research activities with the support from different institutions like NOC, NTNU**,** and others. *Dr. Bijay Thapa,* manager of Energize Nepal, and *Mr. Nawaraj Sanjel*

	talked about the **Nepal Hydrogen Initiative** and support of **Energize Nepal** for the project. *Mr. Chiranjeevi Chataut* from **MOEWRI** thanked KU for organizing the meeting and discussion session and said, Ministry will prioritize the research and development activities regarding new and clean energy technologies.
A9: Session I Closing Remark (Prof. Dr. Bhupendra Bimal Chhetri)	*Dr. Bhupendra* thanked all the delegates from WECS, MOEWRI, and KU officials. He said that the discussion was engaging and very relevant. But he suggested the inclusion of more relevant stakeholders from IPP, NEA, NOC, industries, and others. And also, he prioritized the responsibility of the university. University needs to focus more on research and development activities rather than policy pushing. Giving examples of MIT, Stanford, and other renowned world research institutes, he focused on support from the government for research funding and making institutions independent from political influences. He also prioritized google that relevant stakeholder need to take ownership of the technical feasibility and commercial feasibility done by the university for the commercial production. He wished the best for the project and expected for further collaboration of government academies and industries.
End of Session I	

With the completion of session, I, followed by lunch break and lab visit, the closed coordination committee meeting involving only coordination committee member held. The meeting minute for the close coordination committee will be prepared by the secretary of the coordination committee.

This minute has been forwarded to all the attendees of the program and invited guests. The program schedule is attached with the meeting minutes.