



**SAARC Energy Centre, Islamabad  
Pakistan**

**REPORT ON KNOWLEDGE SHARING  
WEBINARS (FY 2024)**

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## 1 Introduction

The SAARC Energy Centre (SEC) conducted six Knowledge Sharing Webinars as part of its Programme Activities for FY-2024, approved by the Programming Committee (SAARC Secretariat, 6<sup>th</sup>–7<sup>th</sup> March 2024). These webinars provided a platform for experts, policymakers, and researchers to exchange knowledge, strengthen institutional capacities, and explore actionable strategies to help address some of the South Asia's energy challenges and issues. Regional and international experts shared insights, experiences, and best practices across diverse topics, including pump storage hydropower, modern clean cooking technologies, solar irrigation pump, urbanization energy demand nexus, electricity demand stimulation techniques and use of digital technologies for power grid. Brief description of each webinar is provided in the following sections.

## 2 Webinar on “Pumped Storage Hydropower: Opportunities and Challenges in SAARC Region”

The Webinar was conducted on 17<sup>th</sup> Oct 2024, broadcasted from the office of SAARC Energy Centre. Dr. Nawaz Ahmad, Director (SEC) gave his Opening Remarks at start of the Webinar. In his remarks, he mentioned the unique opportunity offered by Pumped Storage Hydropower (PSH) technology for SAARC Region to leverage its vast water resources, complement Solar and Wind power, and ensure reliable energy supplies. He remarked that PSH as part of global transformation of sustainable and renewable energy systems, offers least possible environmental footprint and an increased energy security.



Figure 1: Dr. Nawaz Ahmad, Director (SEC) and Mr. Ahsan Javed, RF (RE) during the Webinar on “Pumped Storage Hydropower: Opportunities and Challenges in SAARC Region”.

During the Webinar, two experts from India and an expert from Italy gave detailed presentations, covering different areas of PSH technology. Each of their presentation was followed by a Q&A session.

Professor Arun Kumar from Hydro and Renewable Energy Department, Indian Institute of Technology Roorkee covered the technological developments of PSH, and historical evolution of its global PSH projects. In his presentation, he mentioned the potential of PSH in SAARC region, and shared data of potential sites for installing PSH projects in

the Member States. He also mentioned the administrative, financial, and technical challenges faced by project developers in implementing PSH projects.

Asst. Professor Himanshu Jain from Hydro and Renewable Energy Department, Indian Institute of Technology Roorkee discussed the pricing mechanisms for PSH projects including long-term

Power Purchase Agreements, Wholesale Energy Markets, and Capacity Based Lease Markets. He also shared business models of PSH in India and its associated investment risks.

Dr. Emanuele Quaranta from Hydropower section of the Clean Energy Technology Observatory, Italy presented the impacts of Hydropower projects on the overall ecosystem. He mentioned that sustainable hydropower needs to achieve a good balance between electricity generation, social benefits and impact on the ecosystem and biodiversity.

The activity brought together regional/international experts and stakeholders to discuss the potential, opportunities, and challenges of this Renewable Energy source. This knowledge sharing activity helped to enhance capacity of the participants, and provided an opportunity to them for networking.

The contents of the Webinar including Concept Paper, Agenda of the event, the Experts' Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/webinar-on-pumped-storage-hydropower-opportunities-and-challenges-in-saarc-region/>

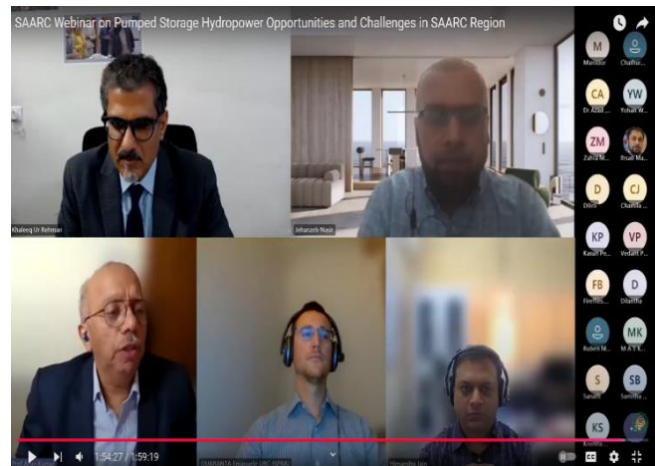


Figure 2: Online experts and participants during the Webinar on “Pumped Storage Hydropower: Opportunities and Challenges in SAARC Region”.

### 3 Webinar on “Modern Clean Cooking Technologies for Rural Households”



Figure 3: Dr. Nawaz Ahmad, Director (SEC) and Mr. Ihsan Ullah Marwat, RF (EE) during the Webinar on “Modern Clean Cooking Technologies for Rural Households”.

SAARC Energy Centre hosted a webinar on 18<sup>th</sup> October, 2024, bringing together experts and stakeholders to discuss innovative solutions aimed at addressing energy access and health issues in rural communities.

Dr. Nawaz Ahmad, Director (SEC) in his Opening Remarks emphasized the critical health, environmental, and energy benefits of adopting modern clean cooking technologies for rural households. He highlighted the potential to improve quality of life, reduce harmful emissions, and promote sustainable development, while welcoming experts to

share insights on feasible solutions for South Asia.

The webinar highlighted the latest advancements in clean cooking technologies, such as improved biomass stoves, electric cookers, and solar PV cooking solutions, which have the potential to reduce indoor air pollution and reliance on traditional fuels. Participants explored the role of government policies, financing mechanisms, and community engagement in scaling up these technologies to enhance the well-being of rural households and contribute to sustainable development.

Delegates from the SAARC Member States and experts from regional/ international organizations including Asian Development Bank (ADB), Modern Energy Cooking Services (MECS) Programme, UK, and Finovista, India participated in this webinar. Following important topics were covered during the webinar:

- Overview of Clean Cooking for Rural Household – Global Perspective
- Modern Clean Cooking Technologies: Challenges and Opportunities
- Empowering Rural Communities: Empowering Rural Communities: Energy Access, Gender and Modern Clean Cooking Solutions

Dr. Rihab Khalid, gave an overview of the clean cooking technologies, in global perspective. She briefed the participants over technological aspects of various clean cooking technologies, role of the Modern Energy Cooking Services (MECS) Program in promoting clean cooking technologies. She elaborated current challenges and future opportunities for adopting clean cooking technologies in SAARC region.

Mr. Vimal Kumar, further elaborated on challenges and opportunities in adoption of modern clean cooking technologies in SAARC nations. He shared India's story in adoption of clean cooking technologies, current status and future plans. He gave a detailed comparison of conventional and modern clean cooking technologies with a techno-economic analysis.

In the end Ms. Lachana Shresthacharya, gave community perspective of clean cooking technologies and its socio-economic impacts. She also elaborated the role of Asian Development Bank in promoting clean cooking technologies in the region. The contents of the Webinar including Concept Paper, Agenda of the event, the Experts' Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/modern-clean-cooking-technologies-for-rural-households/>

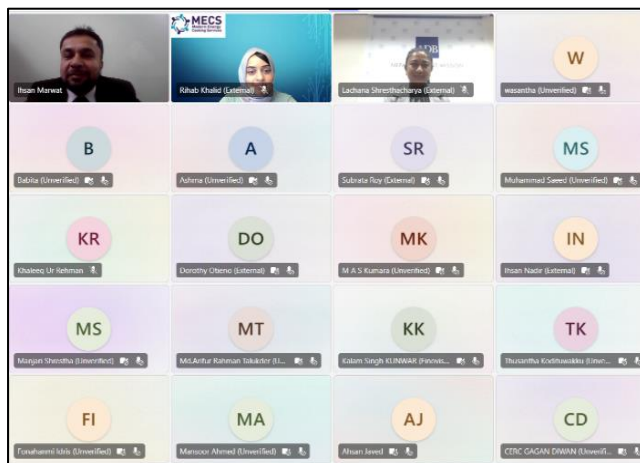


Figure 4: Online experts and participants during the Webinar on “Modern Clean Cooking Technologies for Rural Households”.

#### 4 Webinar on “Challenges and Opportunities of Solar Irrigation Pumps”

SAARC Energy Centre hosted a webinar on “Challenges and Opportunities of Solar Irrigation Pumps” on 21<sup>st</sup> October 2024, bringing together experts and stakeholders from the SAARC region.



Figure 5: Dr. Nawaz Ahmad, Director (SEC) and Mr. Tula Ram Poudel, RF (ET) during the Webinar on “Challenges and Opportunities of Solar Irrigation Pumps”.

Dr. Nawaz Ahmad, Director, SEC delivered the opening remarks, highlighting the transformative potential of solar powered irrigation systems in driving sustainable agricultural practices. He emphasized their role in empowering rural communities while making significant contributions to combating climate change.

The primary objective of the webinar was to raise awareness among the people of South Asia about the use of solar irrigation pumps to sustainably enhance crop productivity. Two experts Mr. Jiwan Kumar Mallik from USA

and Dr. Rhythm Singh from India were invited as speakers in the webinar. The webinar was attended by professionals and practitioners of energy sectors from various organization including public sector institution, electric utilities, academia, private sector, and other stakeholders within and outside the SAARC region.

Dr. Rhythm Singh, Associate Professor, IIT, Roorke, presented insights from the Indian perspective on solar irrigation pumps. His discussion covered a range of topics, including the evolution of solar irrigation policies in India, the Kisan Urja Suraksha Evam Utthaan Mahaabhiyaan (KUSUM) program—a groundbreaking solar irrigation initiative and the challenges encountered during its implementation.

Mr. Jiwan Kumar Mallik, former project manager, UNDP, followed with a global perspective on solar irrigation systems, shedding light on trends and markets for solar irrigation. His presentation included key aspects such as global solar PV capacity additions, the solar pump market’s global dynamics, the water energy food nexus, market share of solar pump by application, and emerging concepts like agro-photovoltaics. He also discussed the unique challenges of irrigation in South Asia, along with few

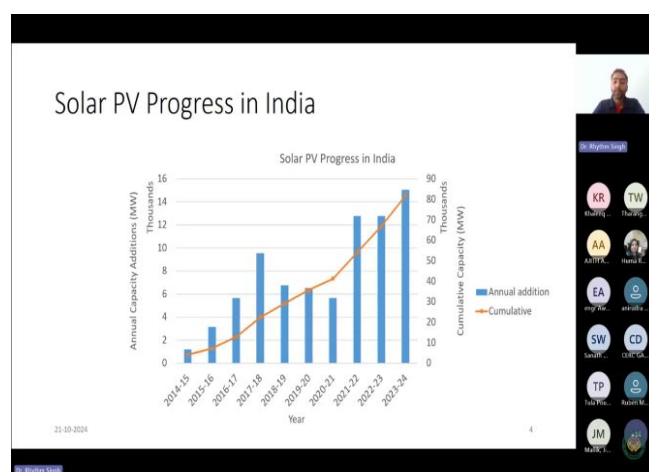


Figure 6: Online experts and participants during the Webinar on “Challenges and Opportunities of Solar Irrigation Pumps”.



policy and regulatory initiatives to promote solar irrigation pumps in the region. He also shared few real-world examples of solar irrigation pump installations and agro-photovoltaics projects.

The contents of the Webinar including Concept Paper, Agenda of the event, the Experts' Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/challenges-and-opportunities-of-solar-irrigation-pumps/>

## 5 Webinar on “Urbanization-Energy demand Nexus: Challenges and Mitigations”

SAARC Energy Centre hosted a webinar on 25<sup>th</sup> October, 2024, bringing together experts and stakeholders to discuss the urban growth patterns in the SAARC Member States, the impact of urbanization on energy demand, and ways to better respond to increasing energy demand.



Figure 7: Dr. Nawaz Ahmad, Director (SEC) and Mr. Ihsan Ullah Marwat, RF (EE) during the Webinar on “Urbanization-Energy Demand Nexus: Challenges and Mitigations”.

Dr. Nawaz Ahmad, Director (SEC) in his Opening Remarks, highlighted the critical energy challenges posed by rapid urbanization in South Asia, including rising energy demand, reliance on fossil fuels, and environmental impacts. He emphasized the need for innovative solutions in energy efficiency, urban planning, and renewable integration to foster sustainable urban growth.

The webinar highlighted the interconnected dynamics of urbanization and resulting increase in energy demand, key challenges, few case studies, technological solutions, and

relevant policy interventions. The experts discussed mitigation strategies given the enhanced collaboration among Member States for efficient energy consumption. They emphasized the importance of deepening their understanding of the complex interplay between urbanization and energy, sparking discussions aimed at generating actionable insights and solutions for more sustainable and resilient urban development. Delegates from the SAARC Member States and regional/ international experts from Australia and Sri Lanka participated in this webinar. Following important topics were covered during the webinar:

- Urbanization and Energy Demand: Strategies for Optimal Response.
- Smart Urbanization: Managing Energy Demand with Efficiency, Mitigation, and Future Trends.

Dr. Abbas Ihsan, focused on addressing the challenges of urban energy demand due to rapid urbanization in South Asia. He discussed smart energy efficiency solutions, mitigation strategies,

and future trends, emphasizing renewable energy integration, smart grids, and energy-efficient technologies to reduce consumption and carbon emissions.

Eng. Merrille Goonetilleke in his presentation focused on the impact of urbanization on energy consumption, emphasizing policy directives for sustainable energy, public awareness, and the adoption of green technologies to tackle urban energy challenges effectively.

The contents of the Webinar including Concept Paper, Agenda of the event, the Experts' Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/urbanization-energy-demand-nexus-challenges-and-mitigations/>

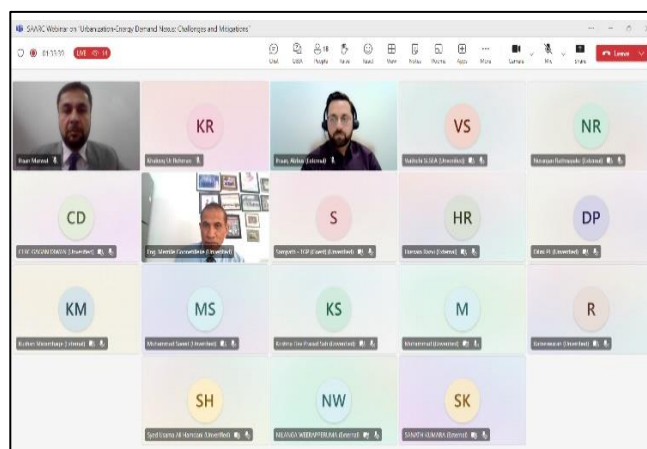


Figure 8: Online experts and participants during the Webinar on “Urbanization-Energy Demand Nexus: Challenges and Mitigations”.

## 6 Webinar on “Demand Stimulation Techniques to Cater Likely Excess Electricity Generation in Nepal”

SAARC Energy Centre (SEC) successfully conducted a webinar on “Demand Stimulation Techniques to Cater Likely Excess Electricity Generation in Nepal” on 28 October 2024.



Figure 9: Dr. Nawaz Ahmad, Director (SEC) and Mr. Tula Ram Poudel, RF (ET) during the Webinar on “Demand Stimulation Techniques to Cater Likely Excess Electricity Generation in Nepal”.

Dr Nawaz Ahmad, Director, SEC delivered the opening remark. Starting with the highlights of SEC’s initiation and efforts to promote various areas of energy in SAARC region. Dr Nawaz introduced the issue of Nepal's likely excess electricity generation and sought the webinar to recommend some optimal demand stimulation strategies. He appreciated the participants and experts for their time and cooperation, and opened the session.

Focus of the webinar was to discuss various options and techniques for electricity demand growth and optimally absorb future excess

electricity generation for a sustainable power sector and socio-economic development in Nepal. Two prominent experts Mr. Alok Kumar from India and Mr. Dinesh Kumar Ghimire from Nepal were invited as expert speakers in the Webinar. Both experts were the former Secretaries in key



Ministries of Energy and Power sectors from respective national Governments. The Webinar was attended by professionals of public sector organizations, electric utilities, academia, private sector, and other stakeholders within and outside SAARC region.

During the session, Mr. Dinesh Kumar Ghimire provided insights covering various topics on Nepal's context: energy mix and power sector scenario, energy development road map and power generation potential, identification of potential economic sectors for electrification, electricity consumption plan and strategy, projected demand in identified economic sectors, and policy and regulatory support. He presented detailed forecasts of demand stimulation across six key economic sectors: agriculture, commercial, industrial, residential, transport, and construction and mining. He also highlighted various policy supports aimed at driving demand growth in these sectors.

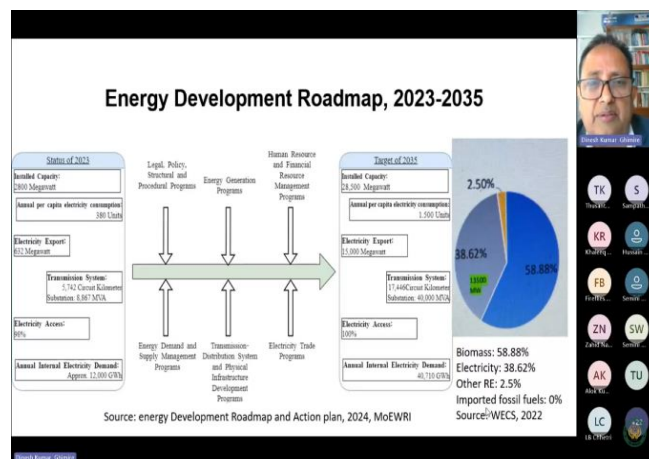


Figure 10: Online experts and participants during the Webinar on “Demand Stimulation Techniques to Cater Likely Excess Electricity Generation in Nepal”.

Similarly, Mr. Alok Kumar provided the insights including the Nepal's standing in relation to SDG's Goal 7 achievement, Nepal Energy Sector Vision 2050, case study from India on network augmentation, commercial aspect related to electricity demand side and demand side management. He recommended Increasing internal consumption of electricity to achieve better development outcomes than focusing on exports. He also emphasized the need for long-term energy sector policies to effectively plan for demand growth and system expansion.

The contents of the Webinar including Concept Paper, Agenda of the event, the Experts' Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/demand-stimulation-techniques-to-cater-likely-excess-electricity-generation-in-nepal/>

## 7 Webinar on “Importance of Digital Technologies in effective Management of Power Grid”

The Webinar was conducted on 30<sup>th</sup> October 2024, broadcasted from the office of SAARC Energy Centre. Dr. Nawaz Ahmad, Director (SEC) gave his Opening Remarks at start of the Webinar. In his remarks, he mentioned that by harnessing the power of Digital Technologies like Internet of Things (IoT), Artificial Intelligence (AI), Blockchain, and data analytics; a more resilient, efficient, and sustainable grid ecosystem can be established in the SAARC region. These technologies provide various benefits such as efficient use of resources and increased production, and real time monitoring of the power sector.

During the Webinar, an expert from India and another from Nepal gave presentations on the Digital Technologies, and its potential in SAARC Member States. Dr. Netra Gyawali, Chief Executive Officer from Rastriya Prasaran Grid Company Limited, Nepal presented traditional challenges faced by transmission companies in management of their assets (electrical towers, conductors, transformers, switches, etc.). He shared that the application of AI in Transmission line asset management (including design, development, and O&M) for optimizing its performance within an Electrical Grid is increasing around the globe. He shared examples of countries where AI has been successfully implemented for monitoring of their electrical grids.



Figure 11: Dr. Nawaz Ahmad, Director (SEC) and Mr. Ahsan Javed, RF (RE) during the Webinar on “Importance of Digital Technologies in effective Management of Power Grid”.

Mr. Praveen Kumar Agarwal, Former Director and CISO from Grid Controller of India briefed the participants about role of Information and Communication technology in the power sector including Generation, Transmission, Distribution and finally at the Consumer level. He shared a case example of Tata Power Delhi Distribution Ltd company, where a pilot digitalization project brought immediate benefits such as higher efficiency and reliability, and lower failure rates of transformers.

The webinar introduced and familiarized regional participants with advance Digital Technologies and the use of Information and Communication Technologies for effective Operations and Management of Power Grid. This knowledge sharing activity helped to enhance capacity of the participants and provided an opportunity to them for networking.

The contents of the Webinar including Concept Paper, Agenda of the event, the Experts’ Profiles, Presentations delivered, and Recording Link of the event were uploaded, and are available on the SEC website.

<https://www.saarcenergy.org/importance-of-digital-technologies-in-effective-management-of-power-grid/>