



SAARC ENERGY CENTRE

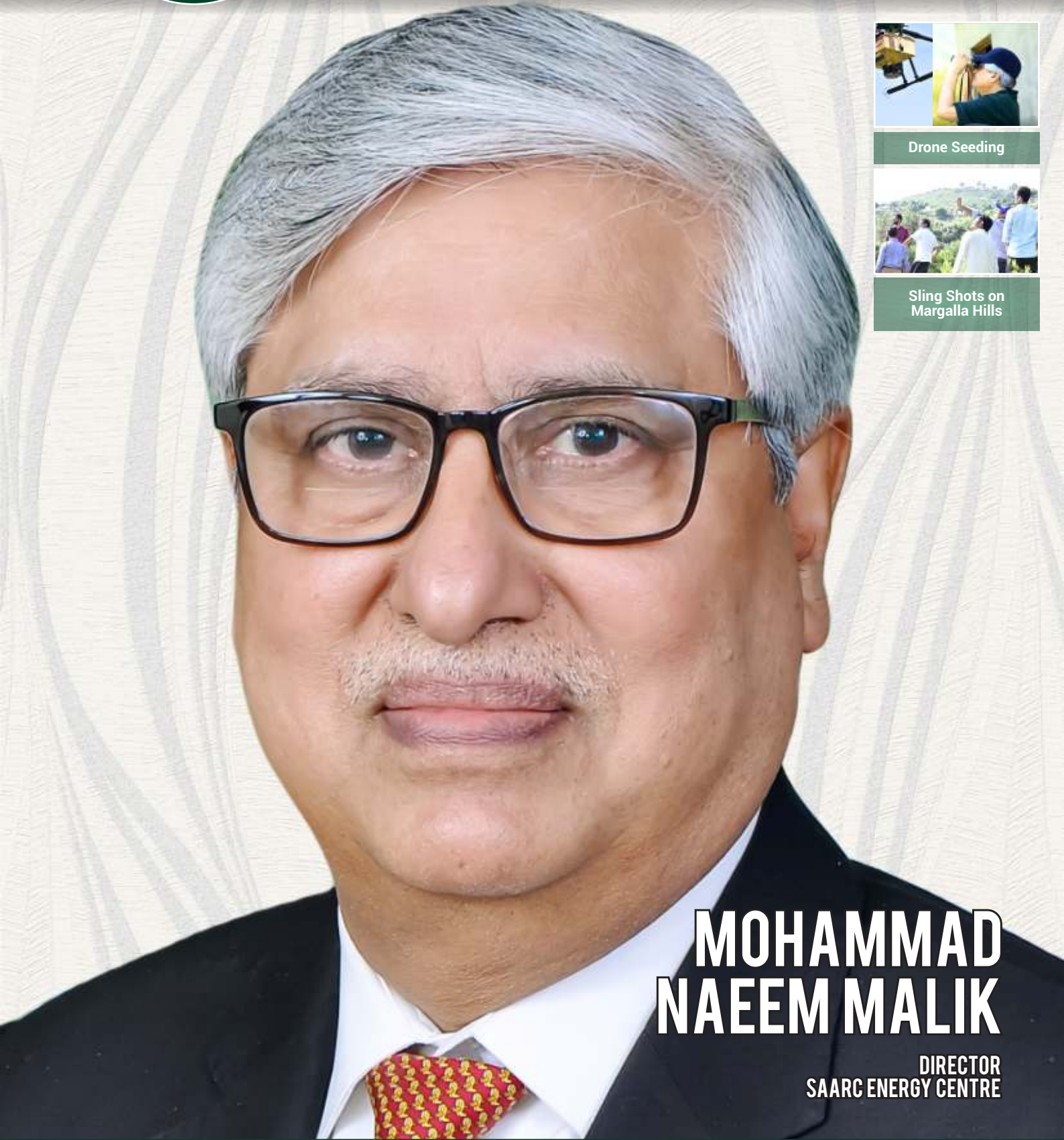
Annual Volume 2020



Drone Seeding



Sling Shots on
Margalla Hills



MOHAMMAD NAEEM MALIK

DIRECTOR
SAARC ENERGY CENTRE



A photograph of a solar panel tilted in a field of green grass and white daisies. The sun is shining brightly in a blue sky with scattered white clouds, creating a lens flare effect. The solar panel is on the right side, showing its blue cells and silver frame. The text is overlaid on the left side of the image.

NEWSLETTER ANNUAL VOLUME 2020

About SAARC Energy Centre

Energy cooperation is a driver for the SAARC process leading to durable peace in the region. SAARC Energy Centre has been created through Dhaka Declaration in 2005, as the Special Purpose Vehicle to realize the vision of SAARC leaders to establish an Energy Ring in South Asia. It started journey from 1st March 2006 in Islamabad. SAARC energy cooperation program provides a major substantive element for economic prosperity of South Asia through meeting the energy demand of

the countries. SAARC Energy Centre is converting energy challenges into opportunities for development.

It is the platform involving officials, experts, academia, environmentalists and NGOs to tap potentials of cooperation in energy sector including development of hydropower, renewable and alternative energy, promoting technology transfer, energy trade, energy conservation and efficiency improvement in the region.

Slogan:

Energy for Peace & Prosperity.

Vision:

Energy security for South Asia through development of indigenous, regional as well as Intra-regional resources by enhancing cooperation and optimal use of resources.

Mission:

Contribute as a regional Centre of Excellence on energy to fulfill the energy needs through sustainable and least cost energy solutions.

Goals:

1. Strengthen South Asia's capacity to collectively address global and regional energy issues.
2. Facilitate energy trade within the SAARC region, through the establishment of a regional interconnections and energy markets.
3. Promote the role of private sector in energy sector (i.e., production, transportation, trade, energy conservation).
4. Enhance regional human capital in energy sector.
5. Promote use of alternative and renewable energies/technologies in the region.
6. Induce the culture of energy conservation in the region.
7. Promote Transfer of Technology (ToT) in the energy sector in South Asia.
8. Contribute in providing regional energy data and information.
9. Undertake programs to achieve the above goals by approaching the Region and beyond.



SAARC ENERGY CENTRE

Annual NEWSLETTER 2020

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Mohammad Naeem Malik

Message from the **DIRECTOR SEC**

Dear Readers,

The global COVID-19 pandemic continues to ravage our world and places the whole world's population under some form of restrictions or lock-down. The response to this unprecedented pandemic has shown us that when it is necessary, we can quickly change how we live, work, consume and cooperate. While the early pandemic response caused a temporary drop in carbon pollution, emissions have since returned to pre-COVID levels and climate destruction has continued apace.

We need to shift to this new world of renewable energy, such as in infrastructure, energy access and efficiency. This is the time to invest in energy sources that don't pollute and cause emissions. In line with the economic and technical evolution, the Centre has paved way for the region to pool its vast knowledge and expertise and also bring latest international skills to capitalize on synergies in the energy sector. SAARC Energy Center always kept itself abreast with the latest technological development and facilitated SAARC Member States in the same spirit.

Due to the COVID-19 pandemic, most of our activities/ programs at SEC are taking place virtually, without physical presence. We took all the possible safety measures at the Centre to protect the health of our employees and stakeholders. I believe we will overcome these challenging days by acting with solidarity, unity, and cooperation. I extend my sincere thanks to SEC team for their efforts in conducting virtual activities in this difficult situation.

My sincere appreciation and thanks to Ms. Mehnaz Khurshid Gardezi, Editor- In -Chief of this issue and all those who contributed towards bringing out this Annual Volume 2020. Thank you.



Webinars



11th February 2020

“Mobilizing International & Regional Finances/Funding for Implementation of RE Projects in SAARC Member States”

Aim of the webinar was to disseminate findings of a study report among SAARC Member States and to seek their inputs. The study titled **“Mobilizing international and regional finances/ funding for implementation of RE projects in SAARC Region”**, explored ways to seek support for implementation of RE projects and suggests techniques for mobilization of financing from regional/ international agencies and private sector.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-to-disseminate-study-on-mobilizing-international-regional-finances-funding-for-implementation-of-re-projects-in-saarc-member-states-on-tuesday-11th-february-2020-from-1030-am-2/>



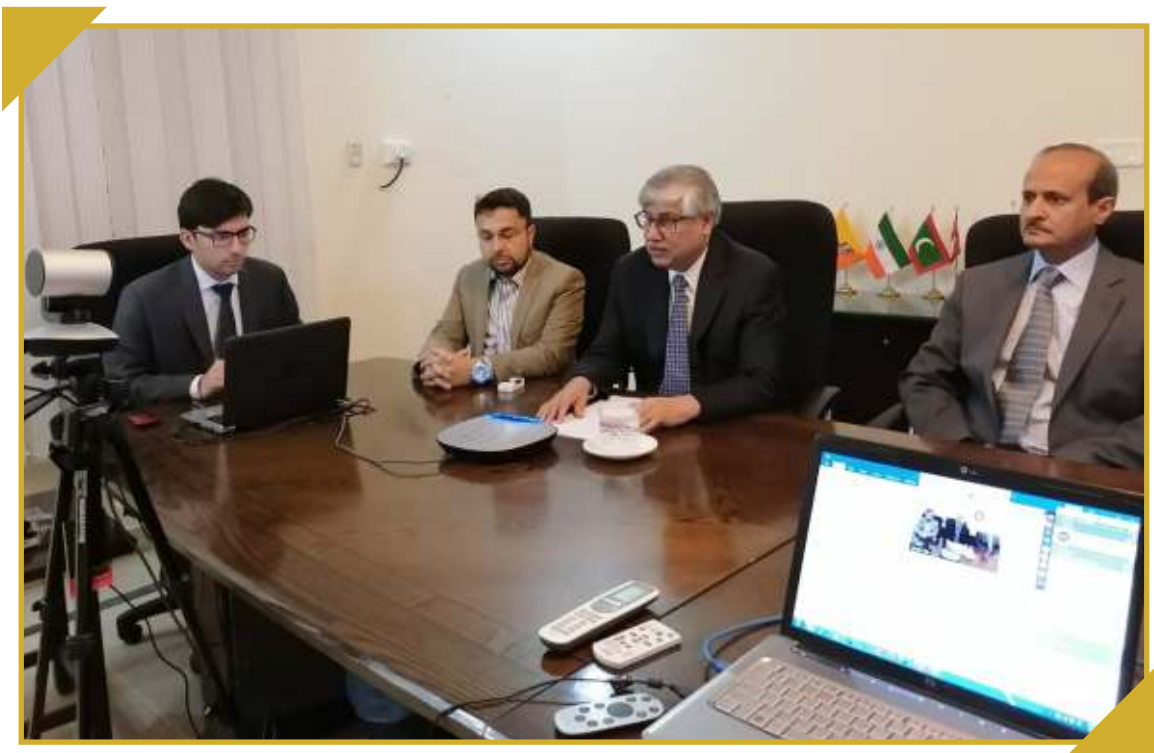
9th March 2020

“Cross Border Electricity Trade in SAARC Countries”

The objective of the webinar was to share the information on the Cross-Border Electricity Trade in South Asia to the participants and sensitize the policy / decision makers on the importance and benefits of such trade.

Following were the important aspects covered during the webinar:

- Current status of CBET in SAARC region
- Policy guidelines currently in place for CBET
- Rationale for CBET and its Benefits
- Initiatives for promoting CBET between SAARC Member States
- European experience of regional markets and interconnections



Webinar details are available at:
<https://www.saarcenergy.org/2969-2/>

17th March, 2020

“Promotion of Light Electric Vehicles in SAARC”

The objective of this webinar was to highlight and promote the numerous benefits that the use of light electric vehicles brings to the common consumer and the governments. The webinar shared specific economic and environmental benefits, relevant case studies and provided participants with information on how to achieve large scale adoption.

Following were the important aspects covered during the webinar:

- Current Status and Future Demand Projections of Light EVs in India
- Policy Guidelines currently in place for Light EVs in India and Pakistan
- Rationale for Light EVs and its Benefits
- Initiatives for Promoting Light EVs
- Charging Strategies for Effective Promotion of Light EVs
- International Experiences in Smart Charging of EVs
- Global Outlook of EVs



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-promotion-of-light-electric-vehicles-in-saarc-tuesday-march-17-2020-1100-am-130-pm-pkt/>

5th May, 2020

“Infrastructure & Enabling Environment for Road Electric Transport in SAARC Member States”

The Study authors from India Smart Grid Forum disseminated the study, its findings and recommendations concerning all the SAARC Member States. Furthermore, prominent EV technology and policy experts from within and outside the SAARC region shared their valuable experiences with the delegates and informed them of the latest trends worldwide. It was suggested to incorporate a feedback session consisting of comments and recommendations from the participants of webinar in the study report, if necessary.

Following important aspects were covered during the webinar:

- Identification of the pre-requisite with respect to electric road transportation
- Analysis of the existing EV costs, charging modes, repair & maintenance, market development and regulations
- Categorization of the critical factors and the challenges
- Comparison of different charging technologies available in terms of technology, availability and cost
- Identification and discussion of the relevant opportunities and challenges
- Estimation of investment / financing requirements and incentives
- Recommendations to the SAARC policy makers, automobile manufactures, energy utility companies, and various market players on EV transformation
- Knowledge sharing by EV experts from outside the region pertaining to their countries
- International Experiences in Smart Charging of EVs
- Global Outlook of EVs



Webinar details are available at:

<https://www.saarcenergy.org/webinar-to-disseminate-the-study-on-infrastructure-enabling-environment-for-road-electric-transport-in-saarc-member-states/>

12th May 2020

“Energy Planning for Cities of SAARC in Future”

The objective of the Webinar was to educate the participants on the energy planning for the future cities in SAARC. Presenters shared their insights on many energy related areas and future planning of the cities. Experts from India Smart Grid Forum presented on smart cities in India, leveraging smart grid assets for smarter Cities and sustainable mobility while PwC, India presented on future of power and utilities companies. The Webinar was attended by officials from relevant government departments of SAARC Member States, research organizations, academia, city planners and entrepreneurs.

Following were the important aspects covered during the Webinar:

- Desired features of Smart Cities
- Smart Cities in India
- Digitalization of Power Sector
- Need for standard framework for Smart Cities
- Planning of Smart Cities in SAARC Countries
- Energy Efficiency and Emission Control
- Smart Mobility, Future of Transport- the Evolving Revolution
- Challenges and Solution for Power Sector



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-energy-planning-for-cities-of-saarc-in-future/>

22nd May 2020

“Energy Saving Potential in Electric Motor Using Variable Frequency Drive”

The webinar was attended by the pioneering technology leaders in electric motor and VFD manufacturers and specialists from Industries/Universities. During the Webinar presentations were made focusing on energy savings potential in electric motor system covering the range of electric motors and VFD products including types, size, selection criteria etc. The basis of energy savings in electric motor installation using VFD and the areas of energy savings potential in existing industrial process were uncovered. The objective of the webinar was to share the information on energy efficiency improvement in electric motor systems using VFD and to sensitize the manufacturers, users and energy officers about benefits of such devices.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-energy-saving-potential-in-electric-motor-using-variable-frequency-drive/>

9th June 2020

“Building to Grid Integration”

During the webinar, experts shared their knowledge about underlying concept of Grid Interactive Buildings; their characteristics; demand management provided by such buildings; benefits arising from interaction between the grid and the buildings; on-going research. A comprehensive discussion on the evolution of grid to accommodate technological changes; aggregator models; data models and data processing required to coordinate the available resources for grid support was also a part of the webinar.

Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-building-to-grid-integration/>



16th June 2020

“Future of Air-Conditioning in Buildings”

During the Webinar future interventions and upcoming technologies in A/C systems were discussed by the presenters. The focus was on Next-Generation A/C Systems, Development of Low-GWP A/C Systems, Advances in A/C System Efficiency, and Expected growth in Air-conditioning demand and Global warming contributions.

Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-future-of-air-conditioning-in-buildings-on-tuesday-16th-june-2020-from-1400-1600-hrs-pkt/>



23rd June, 2020

“Designing Energy Efficient Buildings in SAARC Region”

The proposed webinar was aimed towards enhancing the capacity of the professionals in the SAARC region. This webinar was a knowledge sharing event specifically targeted to measure interventions which can contribute to the increase in energy efficiency of the Residential / Commercial buildings of the SAARC Region.



Webinar details are available at:

<https://www.saarcenergy.org/3164-2/>



2nd July, 2020

“Energy System Optimization Modelling through PLEXOS® for SAARC member states”

The webinar was aimed towards enhancing the capacity of the professionals in the SAARC region. It was a knowledge sharing event specifically targeted to measure interventions which can contribute to the increase in energy system optimization in the SAARC Region. This Webinar covered on the most pressing functionalities and features of the PLEXOS® software. This webinar also provided insights on power system modelling best practices in the rapidly growing global community. Use case and user's application were reviewed for a better understanding of what can be achieved with the PLEXOS® software.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-energy-system-optimization-modelling-through-plexos-for-saarc-member-states/>

7th July, 2020

“Promotion of Light Electric Vehicles in SAARC”

Presenters from the SAARC region shared their insights on the Light Electric Vehicles, especially in the context of SAARC. The objective of this webinar was to highlight and promote the numerous benefits that the use of light electric vehicles brings to the common consumer and the governments. The webinar shared specific economic and environmental benefits, relevant case studies and provided participants with information on how to achieve large scale adoption. Following were the important aspects covered during the webinar:

- Current Status and Future Demand Projections of Light EVs in India
- Policy Guidelines currently in place for Light EVs in India and Pakistan
- Rationale for Light EVs and its Benefits
- Initiatives for Promoting Light EVs
- Charging Strategies for Effective Promotion of Light EVs



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-promotion-of-light-electric-vehicles-in-saarc/>

14th July 2020

“Energy Simulation of Building”

The webinar presenters discussed the use and consumption of electricity in buildings. It was reviewed that how buildings can contribute substantially towards greenhouse gas emissions. The presenter also discussed and stressed on taking efficient measures while constructing residential and commercial buildings in the SARC Member states.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-energy-simulation-of-building/>

21st July 2020

“Use of Sensor and Control Technologies in Buildings”

The webinar was one and half-hour long where experts made presentations on “Sensing and Control for Grid-Interactive Efficient Buildings” and “Sensor based Building Energy Efficiency Assessment through Living Lab Concept”. The presenters also shared their experiences on use of such technologies. The focus of the webinar was to share the information on how sensor and control technologies can be effectively used for efficient energy usage in the buildings. The aim/motive was to sensitize the policy/ decision makers, investor and project developers on such technologies and its benefits.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-use-of-sensor-and-control-technologies-in-buildings/>

28th July 2020

“How Users can Save on Their Electricity Bills”

Focus of the webinar was to make the audience appreciative of the importance of energy conservation and efficient usage of energy, and the resulting economic benefits for the consumers. The topics discussed during the webinar were: energy conservation in industrial and commercial sectors, energy audit process and initiatives taken by K-Electric to promote energy conservation.

The following conclusions were drawn from the discussion of this webinar:

- Energy audits can help the consumers to identify the areas of improvement. Higher efficiency motors, variable frequency drives, LED lighting, efficient cooling and heating solutions and energy management systems can help reduce energy wastage in commercial and industrial sectors.
- Consumers also need to be vigilant about maintaining a higher power factor. Improved power factor can result in multiple benefits for the network such as lower network load and losses, better voltage regulation and system stability as well as result in financial savings for the consumers



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-how-users-can-save-on-their-electricity-bills/>

11th August 2020

“Cross Border Electricity Trade in SAARC Countries”

In this webinar, expert from SARI/EI India shed light on current status and future outlook of CBET with some key enablers in the SAARC region. Expert speaker from GEIDCO shared the experience of electricity trade between China and ASEAN countries.



Webinar details are available at:

<https://www.saarcenergy.org/webinar-on-cross-border-electricity-trade-in-saarc-countries-second-session/>



VIDEO CONFERENCES

“Assessment of Clean Power Generation Technologies Using Low Calorific Value Coal in SAARC Region”

SAARC Energy Centre organized a Video Conference on “Assessment of Clean Power Generation Technologies Using Low Calorific Value Coal in SAARC Region” on 25th August 2020. During the video conference, the Authors of the Study presented the assessment of clean power generation technologies using LCV coal for power generation. They shared best practices, technologies content, findings, and recommendations for the development of such projects in SAARC member states. The objective of the Video Conference was to educate the participants on the use of such technologies in the SAARC region. The session was attended by policy and decision makers, energy experts, academia and others from the region and beyond.

During the Video Conference experts shared suitability, viability, and other aspects of such plans and programs with reference to businesses, government officials, investors, and project developers.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-assessment-of-clean-power-generation-technologies-using-low-calorific-value-coal-in-saarc-region/>

Video Conference Presentation:

Assessment of Clean Power Generation Technologies using Low Calorific Value Coal in SAARC Region.



During the session

“Assessment of Pipelines as Preferred Mode of Movement of Crude / Oil Products Within SAARC Member States”

SAARC Energy Centre organized a Video Conference on “Assessment of Pipelines as Preferred Mode of Movement of Crude / Oil Products Within SAARC Member States” on 31st August 2020.

During the Video Conference, authors of the study presented the regulatory, technical and geographical issues; cost comparison of different transport modes, and other issues associated with the transport of Crude/Oil Products through Pipelines within the region. They shared the best practices, latest trends, and the preferred mode of transportation of crude oil. The objective of the Video Conference was to educate participants in choosing the most efficient mode of transport of crude oil in the SAARC Region.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-assessment-of-pipelines-as-preferred-mode-of-movement-of-crude-oil-products-within-saarc-member-states/>

Video Conference Presentation:

1. Presentation on Assessment of pipelines as the preferred mode for transporting crude/oil products within SAARC member states by CRISIL Research
2. Presentation on Motihari-Amlekhgunj Petroleum Pipeline Project Presented by: Er. Pradip Kumar Yadav



During the Video Conference

“Possible Uses of Crop Residue for Energy Generation Instead of Open Burning”

SAARC Energy Centre (SEC) organized a Video Conference to Disseminate Study on “Possible Uses of Crop Residue for Energy Generation Instead of Open Burning” on 04th September 2020.

Aim of the video conference was to disseminate findings of a study report among SAARC Member States and to seek their feedback. The study titled “Possible Uses of Crop Residue for Energy Generation Instead of Open Burning”, evaluates the potential of crop residue available in SAARC region, for conversion into useful energy and to assess technological options with valid cost benefit analysis.

Major topics were discussed during the video conference included; Overview of agriculture sector, prevalent disposal methods and technologies to generate energy from crop residue, Energy generation potential for Member States, Barriers and challenges for implementation and recommendations. The video conference was attended by officials from relevant government departments of SAARC Member States, research organizations, academia, associated industry and entrepreneurs.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-to-disseminate-study-on-possible-uses-of-crop-residue-for-energy-generation-instead-of-open-burning/>

Video Conference Presentation:

1. Presentation on Overview of the agriculture sector, prevalent disposal methods, and technologies to generate energy from crop residue by Abijeet Lohakery.
2. Presentation on Energy generation potential for the Member States, barriers and challenges for implementation and recommendations by Sandeep Kumar.
3. Presentation on Challenges in Handling and Utilization of Paddy Straw for Energy Generation by VK Jain.

Commercial aspects of gasification (1/4)
Case study of Punjab state of India

Introduction

- The commercial aspects of setting up biomass gasifier power plants in the Indian State of Punjab has been considered for illustration purpose.
- Punjab is one of the highest producers of rice, wheat and sugarcane in the country. The State is heavily dependent on rice-wheat cropping system and produces a huge quantity of crop residue.
- The rice stubble is burnt in the fields in the months of October-November within a period of 2-3 weeks for an economical and quick alternative to prepare the fields for the sowing of wheat. The farmers also complain of very high labor cost to manually remove the straw and stubble from fields.

Methodology: Rice and wheat production for the year 2018-19 in all the districts of Punjab has been considered for the study. The gross residue and surplus residue generation have been computed for all the districts to formulate an implementation plan.

Power generation potential calculation:
Annual power generation potential = (Total Surplus crop residue) x (Collection Efficiency) / (24 x 365 x P)

(P) = Thermal efficiency of gasifier (60% efficiency)

Power Generation Potential of Punjab using only farm residue

Crops	Production (000 Tonnes)	Residue type	RFR	Gross Residue (000 Tonnes)	Surplus Residue (000 Tonnes)	Biomass Consumption ratio (P)	Power Generation Potential (MW)
Wheat	17,830	straw	1.5	26,745	5,884	1.4	360
Rice	19,130	straw	1.5	28,704	8,037	1.2	573
Total	36,960			55,449	13,921		933

SEC and video conference presenters

“Promotion of Net-Metering in SAARC Member States”

SAARC Energy Centre organized a Video Conference on “Promotion of Net-Metering in the SAARC Member States” on 8th September 2020.

During the Video Conference, the experts discussed in detail the Net-metering status, Policy regime, Regulatory mechanism, Technology, Tariff policy, and Financing in the SAARC region. The Video Conference shared with the participants how Net-metering has been successfully incentivized and implemented by various governments in the SAARC region. The Video Conference helped to build awareness among the stakeholders including public decision-makers, private sector, NGOs and individuals, etc. on the benefits of Net-metering.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-promotion-of-net-metering-in-saarc-member-states/>

Video Conference Presentation:

1. Presentation on Policy and Regulatory Journey of Net Metering in Pakistan by Dr. Irfan Yousuf
2. Presentation on Policy, Regulations and Success Factors of Rooftop Solar Program in India by Mr. Yuvaraj Dinesh Babu
3. Presentation on Technical and Commercial Challenges of Net-Metering by Mr. Avishek Malla
4. Presentation on Enabling and Empowering Distribution Companies to Embrace Rooftop Solar by Mr. Abhishek Ranjan
5. Presentation on Solar Market Prospect and Net-Metering Strategy in Afghanistan by Mr. Aman Ghalib



SEC professionals during Video Conference

“Action Plan for Electricity Utilities of SAARC Countries to Introduce EV Charging Infrastructure”

SAARC Energy Centre (SEC) organized a Video Conference to Disseminate “Action Plan for Electric Utilities of SAARC Countries to Introduce EV Charging Infrastructure” on 15th September 2020.

SEC conducted a study in 2019 to coordinate with the selected electric utilities of the member states and facilitate them in formulating action plans for introducing EV charging infrastructure. The aims of Video Conference was to disseminate the findings of that study, to get feedback from member states for value addition, and to build awareness among the Member States for a future transition towards the electric transport system.

The following important aspects were covered during the video conference:

- z The long and medium-term vision and current investment outlook of the selected electric utility companies.
- z The mid to long-term action plan on the introduction of EV public charging infrastructure development.
- z Technology options under consideration.
- z Potential sites for charging infrastructure deployment.
- z Investment outlay for potential deployment.
- z Provision of third-party private investment and operation of charging stations.
- z Business model /mode of payment for using charging infrastructure.
- z Commitment to carry out assessment studies for EV at an organizational level.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-promotion-of-light-electric-vehicles-in-saarc/>

Video Conference Presentation:

Presentation delivered during Video Conference



During the Video Conference

“Roadmap for the Implementation of SAARC Framework Agreement on Energy Cooperation (Electricity)”

SAARC Energy Centre (SEC) organized a Video Conference on “Roadmap for the Implementation of SAARC Framework Agreement on Energy Cooperation (Electricity)” on 22 September, 2020.

Recognizing the importance of electricity in promoting economic growth and improving the quality of life, “SAARC Framework Agreement for Energy Cooperation (Electricity)” was signed in 2014. Adoption of this agreement is a crucial step towards a SAARC Market for Electricity on a regional basis. The key objectives of this agreement are to improve power availability in the entire region and facilitate integrated operation of the regional power grid.

During the video conference, experts from ADB, PricewaterhouseCoopers Pvt. Ltd. India, SARI/EI India and CPPA-G Pakistan discussed the progress achieved on the implementation of the Framework Agreement, ongoing efforts, future outlook and recommendations to further the cause of this agreement.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-roadmap-for-the-implementation-of-saarc-framework-agreement-on-energy-cooperation-electricity/>

Video Conference Presentation:

1. “Roadmap for the Implementation of SAARC Framework Agreement on Energy Cooperation (Electricity)” by Mr. Jiwan Sharma, Asian Development Bank; Mr. Subhrajit Datta Ray and Mr. Sambit Kumar Dash, Pricewaterhouse Coopers Pvt. Ltd. India,
2. “Deepening Power System Integration & Cross Border Electricity Trade in SAARC Region: Current Status & Future Outlook”, by Mr. Rajiv Ratna Panda, USAID South Asia Regional Initiative for Energy Integration (SARI/EI),
3. “Competitive Wholesale Electricity Market in Pakistan”, by Mr. Abrar Hussain, Central Power Purchasing Agency (CPPA-G) Pakistan,



SEC professionals during Video Conference

“Assessment of Industry Readiness for Manufacturing of BEV in SAARC Countries”

SAARC Energy Centre (SEC) organized a Video Conference to Disseminate the Study on “Assessment of Industry Readiness for Manufacturing of Battery Electric Vehicles in SAARC Countries” on 29th September, 2020.

Battery Electric Vehicle (BEV) demand is rising globally. Buyers are mostly attracted to these vehicles based on several factors such as savings on fuel cost, low maintenance and robust performance. In addition, BEVs have a significant positive impact on energy and the environment. BEVs can assist in improving efficiency in electricity systems through storage and demand-response services. The use of BEVs can reduce local air pollution and the country's share in global carbon emissions. It also helps in lower spending on fossil fuels which are, in case of most SAARC Member States, imported from abroad at the expense of precious foreign reserves. In this context SEC under its thematic area of “Programme on Successfully Implement Technology Transfer (POSIT)” conducted a study on “Assessment of Industry Readiness for Manufacturing of Battery Electric Vehicles” in FY-2019.

This video conference was aimed towards getting feedback from member states for value addition in the study report, and to build awareness among the Member States.

Video Conference details are available at:

<https://www.saarcenergy.org/video-conference-on-disseminate-the-study-on-assessment-of-industry-readiness-for-manufacturing-of-battery-ev-in-saarc-countries/>

Video Conference Presentation:

1. “Industry Readiness for Manufacturing of Battery Electric Vehicles in Pakistan”, by Dr Muhammad Shakeel Sadiq Jajja, Associate Professor, Lahore University of Management Sciences (LUMS) Pakistan.
2. “Industry Readiness for Manufacturing of Battery Electric Vehicles in India”, by Dr Haritha Saranga, Professor, Indian Institute of Management Bangalore (IIMB), India.
3. “Present Eco-system of BEV manufacturing: Challenges & Opportunities”, by Pinal Satish Mehta and Pramit Pa, CRISIL Research India.



During video conference



OTHER ACTIVITIES



SEC Professionals during a two-day International Seminar on "Small Hydropower Development & Rural Electrification for South Asian Countries"



SEC Professionals during an event on Gender Resource Group in the Upper Indus Basin Network-Pakistan Chapter (UIBN- PC) and its First General Meeting



SEC Professional, Mr. Ahsan Javed, Research Fellow (Renewable Energy) delivered a presentation during the Workshop on "Harnessing Regional Cooperation in Energy Sector and Energy Trade through Partnership between SAARC and USAID/SARI-EI" held in Colombo, Sri Lanka.



Director SEC met Mr. Masao TAKEKIDA, Chief, Political Section at Embassy of Japan, Islamabad



SEC team on the festive occasion of the Independence Day of the Democratic Socialist Republic of Sri Lanka



SEC professional Mr. Ihsanullah Marwat, during a TV talk show on "Impacts of climate change on Human Health and Economic Growth"



A group of professionals from National Transmission & Despatch Company (NTDC) Pakistan visited SEC and had a photograph with Director.



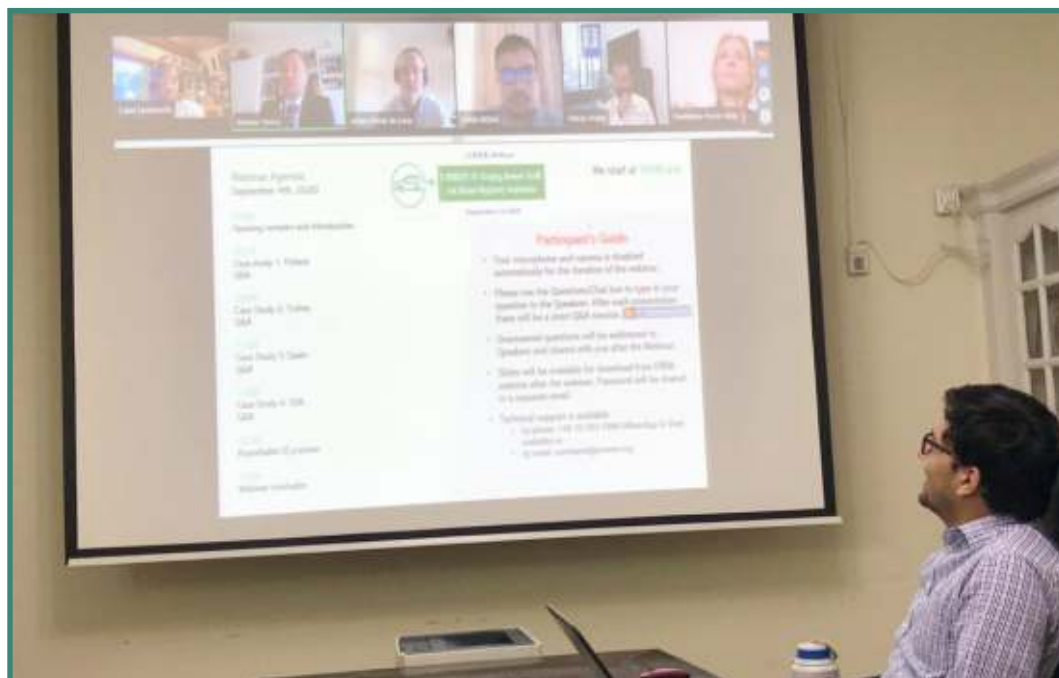
Director SEC with his professional team during discussions on Energy matters on a conference call



Director SEC during a conference call with the Secretary General of SAARC, specialized Bodies and Regional Centres.



SEC team during the celebrations of the 101st Independence Day of Afghanistan



Mr. Ahmad Talha, Research Fellow (Technology Transfer) SEC attended the ERRA 's Webinar on E-Mobility.



Director SEC meets Mr. Zahidullah Jalali, DG SARCO on his farewell call



Mr. Mohammad Naeem Malik, Energy Expert, Government of Balochistan during his courtesy call to Mr. Jam Mir Kamal Khan Alyani , Chief Minister Balochistan



Director SEC during Energy related discussions with the Chief Minister of Balochistan



Director SEC meets Mr. Amin Aslam, Federal Minister of Climate Change to discuss environment related issues



Director SEC presents shield to the Honorable Federal Minister for Energy, Mr. Omer Ayub Khan.



Ribbon cutting ceremony of SEC drone aerial seeding Margalla Hills, Islamabad.



Director monitors aerial seeding



Seeds dispersal though Drone



Making of seed balls



Seed sling shot by Director SEC



SEC team spreading sling shots on Margalla Hills

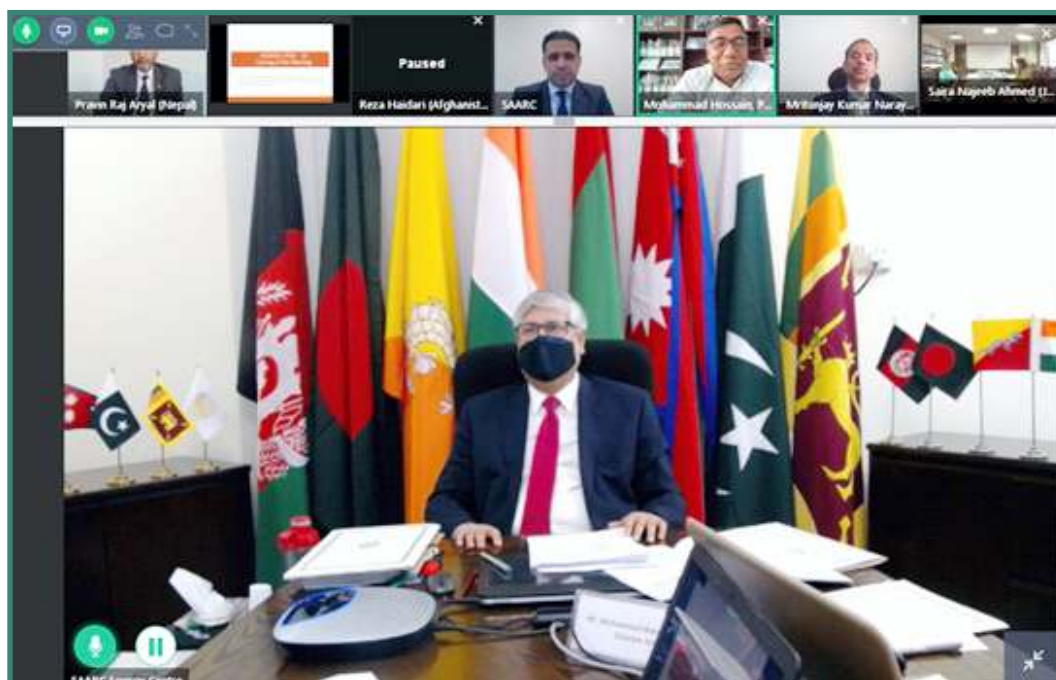


Dr. Shoaib Ahmad, Deputy Director and Mr. Ahmad Talha, Energy Expert SEC participated in the webinar on "Perspectives and Challenges of Regional Electricity Markets: Harnessing Trade and Investment Opportunities" organized by Energy Charter in collaboration with ECO



SEC Professionals during the knowledge sharing session by Mr. Mohammad Raziuddin, former Managing Director OGDCL and Chief Executive Officer & Director at Attock Refinery Ltd.

The 15th Meeting of Governing Board of SEC



Director SEC during Opening of GB Meeting



Governing Board Members during virtual GB Meeting



Celebrations of the Thirty-Sixth Charter Day of SAARC



SEC Cricket Match

Farewell Party



Director SEC presents souvenir to Mr. Bhaskar Pradhan, Programme Leader(Energy Trade)

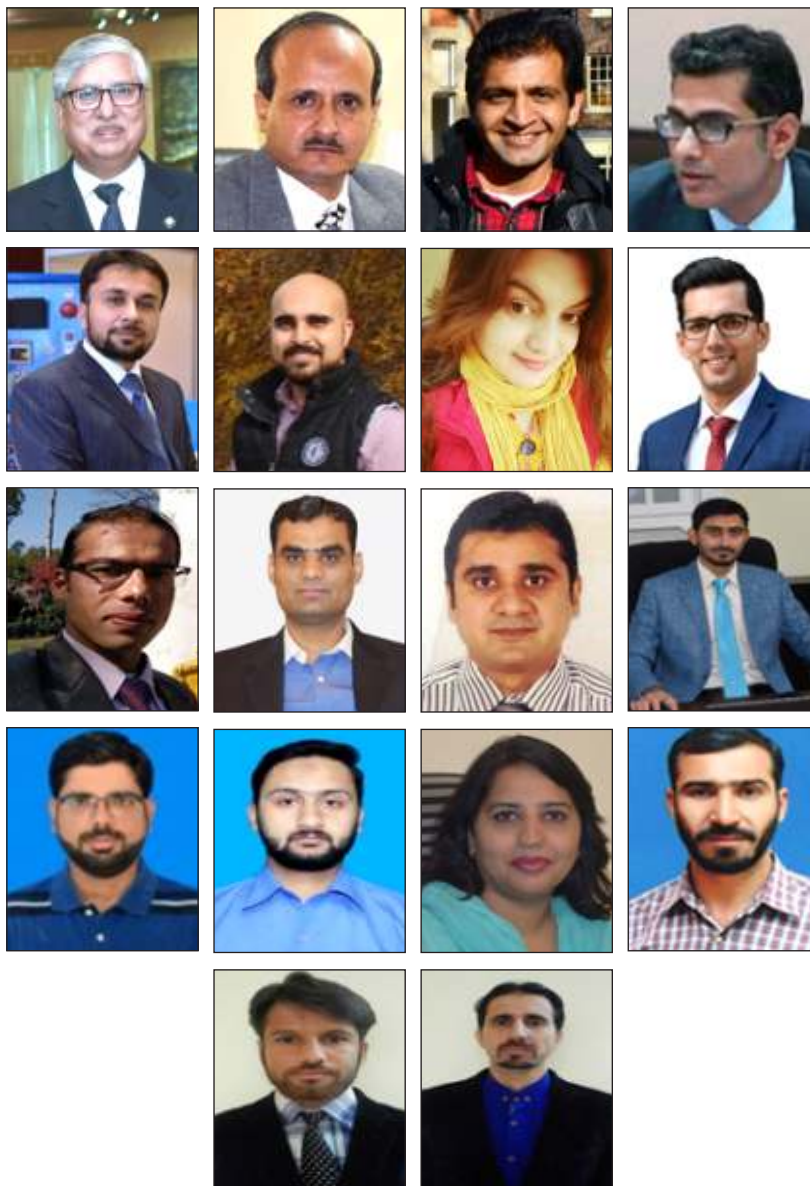




Dinner



SEC Team



Creates Awareness through



Enhances Cooperation through



SAARC Energy Centre

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