



# SAARC ENERGY CENTRE

Annual Volume 2019





# 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 has 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 2019

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**Amjad Hussain B. Sial**  
**Secretary General SAARC**

Home to about one fourth of the global population, South Asia, with tremendous human and natural resources, has great potential for socio-economic development. The region also has abundant energy resources, which are yet to be fully tapped. On the other hand, rapid urbanization and fast economic growth have led to unprecedented surge in the demand for energy, requiring effective collaboration among the Member States in energy generation, its efficient use, transmission, trade and integration of energy strategies.

The process of regional cooperation in energy began with the establishment of a Technical Committee on Energy in 2000. Recognizing that this vital area of cooperation required focused attention, the Council of Ministers established a specialized Working Group on Energy, replacing the erstwhile Technical Committee on Energy. Regional cooperation in energy received impetus with the identification of the concept of a “South Asia Energy Ring” during the Twelfth SAARC Summit in Islamabad in January 2004. In 2005, the leaders decided to establish the SAARC Energy Centre, which has been working as a Centre of Excellence in initiating, coordinating and facilitating regional cooperation in energy.

The SAARC Framework Agreement for Energy Cooperation signed during the Eighteenth SAARC Summit in Kathmandu in November 2014 is a milestone achievement. The Agreement is aimed at facilitating intra-regional trade in electricity.

I wish to avail myself of this opportunity to commend the role being played by the SAARC Energy Centre (SEC) in promoting energy cooperation in the region.

I wish the Centre enormous success in its future endeavours.



**Mohammad Naeem malik**  
**Director**  
**SAARC Engery Centre**

Since its establishment, 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.

The energy needs and priorities of the world have changed with the new economic developments, environmental regulations and political realignments. As the economies develop, we have to adopt more efficient technologies for provision of energy services at affordable prices. In line with the economic evolution, SAARC Energy Center always kept itself abreast with the latest technological development and facilitated Member States in the same spirit.

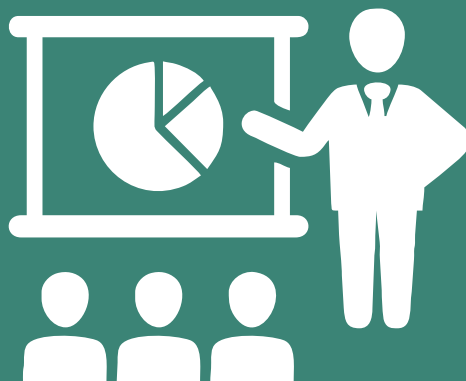
As envisaged by the leaders of this Region SEC activities are focused on decreasing dependence on imported energy especially solid and liquid hydrocarbons.

SEC programs on Promotion of Energy Conservation, mobilizing International and Regional Financing / Funding for Implementation of Renewable Energy Projects in the Member States, SAARC Energy Outlook 2030, Infrastructure needs and importance of enabling environment for road electric transport and trade etc are few examples.

We are also focused on Training and capacity building of Member States. The work programs of the Centre are demand driven and are decided based on the need of the countries. This edition will bring you an idea of latest energy developments and insight in South Asia. We present a brief look at each story as well as the opportunity where SEC took a proactive approach and emerged as a credible Energy Center in the region. We encourage the reader to give input for next year's programs.

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 edition. Thank you.

# SEC TRAINING/ WORKSHOPS





# Training for Professionals of Afghanistan Public Private Partnership Unit and Afghanistan Electricity Regulatory Authority on Power Regulatory System



**Director SEC with the Federal Minister for Energy and Chairman NEPRA during National Anthem of Pakistan**

SEC conducted Training for Professionals of Afghanistan Public Private Partnership Unit and Afghanistan Electricity Regulatory Authority on Power Regulatory System from 16 - 20 September 2019 in Islamabad Pakistan in collaboration with NEPRA Pakistan. This workshop was attended by six Afghan delegates from the Ministry of Energy and Water and Ministry of Finance. During the five-day training, lectures and field visits were conducted. The classroom lectures were conducted at NEPRA Tower while field visits to NPCC, IESCO, PPIB, SkyElectric and CPPA were also conducted.

During the five-days training different aspects of power regulatory system were discussed, starting from the theoretical concept of a regulatory system to a completely decentralized power systems. NEPRA members and officials from the respective departments presented best practices and lessons learnt. During the field visits, each organization gave an overview of their systems and also discussed opportunities for collaboration.

#### **Details are available at:**

<https://www.saarcenergy.org/training-for-professionals-of-afghanistan-public-private-partnership-unit-and-afghanistan-electricity-regulatory-authority-on-power-regulatory-system-held-on-16-20-september-2019-in-islamabad-pakist/>

#### **Following presentations were made during the training programme**

1. Consumer Affairs Department by NEPRA, Pakistan.
2. Determination of Generation Tariff by NEPRA, Pakistan.
3. Performance Standards and Monitoring by NEPRA, Pakistan.
4. Tariff Determination for Transmission & Distribution Companies by NEPRA, Pakistan.
5. Introduction about National Power Control Centre (NPCC) by Mr. Salman Gul.
6. Introduction about Central Power Purchasing Agency (CPPA).



Training for  
**Professionals of Afghanistan Public Private Partnership Unit and Afghanistan  
Electricity Regulatory Authority on Power Regulatory System**



Mr. Mohammad Naeem Malik, Director SEC presenting souvenir to the Federal Minister for Energy, Mr. Omer Ayub Khan



Afghan trainees/delegates with Guests

# Workshop on "Techniques on Energy Conservation and Efficiency in Buildings"

SEC conducted a workshop on "Techniques on Energy Conservation and Efficiency in Buildings" in Sri Lanka from 26 - 28 August, 2019 in Dambulla, Sri Lanka. This workshop was attended by delegates of the SAARC Member States. During the three-day workshop, opportunities for energy savings in residential, public, and commercial buildings were discussed.

## **Details are available at:**

<https://www.saarcenergy.org/workshop-on-techniques-on-energy-conservation-and-efficiency-in-buildings-held-on-26-28-august-2019-in-dambulla-sri-lanka/>

## **Following presentations were made during the workshop**

### **Workshop Presentations (Day 1)**

1. Energy Conservation in buildings: The Role of Policy and Market Forces Mr. Rajkiran V. Bilolikar,
2. Appliances Standardization and Labeling by Mr. Asad Mahmood

### **Workshop Presentations (Day 2)**

1. Barriers in achieving Energy Efficiency and Conservation in SAARC Member States by Suresh Shrestha
2. Energy Conservation through Human Behavior Change by Nimal Perera
3. Importance of Public Awareness in Energy Conservation and Efficiency by Mr. Rajkiran V Bilolikar
4. Environmental Control & Buildings LCA (Life Cycle Assessment) by Nimal Perera
5. Energy Efficiency Strategy for SAARC Member States by Suresh Shrestha

### **Workshop Presentations (Day 3)**

1. **(a)** Energy Buildings Codes & **(b)** Building Energy Simulation by Vishal Garg
2. Applications of Artificial Intelligence in Designing and Operating Buildings for Energy Efficiency by Vishal Garg

### **Country Presentations**

1. Bangladesh Country Presentation
2. Bhutan Country Presentation
3. India Country Presentation
4. Maldives Country Presentation
5. Nepal Country Presentation
6. Pakistan Country Presentation
7. Sri Lanka Country Presentation

## Workshop on "Techniques on Energy Conservation and Efficiency in Buildings"



Director SEC, Mr. Mohammad Naeem Malik presenting souvenir to the Chief Guest , Mr. Bangsa Jayah, Chairman Sri Lanka Sustainable Energy Authority



Group photo of Workshop delegates in Sri Lanka

# Workshop on

## “Participation of Private Sector in Overcoming Energy Poverty in SAARC Member States”

SEC conducted a workshop on Participation of Private Sector in Overcoming Energy Poverty in SAARC Member States in Sri Lanka from 29 - 30 August, 2019 in Dambulla, Sri Lanka. This workshop was attended by delegates of all the SAARC Member States. During this two-day workshop, participants were given detailed understanding of various concepts of private sector finance as well as public-private partnerships to eradicate energy poverty in rural and urban communities. Moreover, energy poor markets and their requirements for private financing, distributed energy solutions for energy poor areas, challenges faced by private sector, government incentives for the private sector, and case studies along with success stories in overcoming energy poverty from South Asian private sector were discussed.

### Details are available at:

<https://www.saarcenergy.org/workshop-on-participation-of-private-sector-in-overcoming-energy-poverty-in-saarc-member-states-held-on-30th-august-2019-in-dambulla-sri-lanka-2/>

### Following presentations were made during the workshop

#### Workshop Presentations (Day 1)

1. Public-Private Partnerships to end Energy Poverty by Mr. Amer Zafar Durrani
2. Understanding Energy Poverty and Challenges/Solutions for Electrification, Clean Cooking and Heating by Mr. Asad Mahmood
3. Energy Poverty – Transition from a Low to a Middle Income Country by Mr. Namiz Musafer
4. Specific Energy Markets And Financing Landscapes For Private Sector by Mr. Amer Zafar Durrani

#### Workshop Presentations (Day 2)

1. Energy Poverty and Sustainable On- And Off-Grid Solutions by Mr. Amer Zafar Durrani
2. Business Models for Improving Energy Access – Case Studies on Biomass and Biogas by Mr. Namiz Musafer
3. Socially Inclusive Electricity Tariffs in South Asia to Reduce Energy Poverty – Subsidy Structuring, Successes and Failures by Dr Tilak Siyambalapitiya
4. Inclusive and Equitable Access to Energy by Mr. Suresh Shrestha
5. The Nexus between Sustainable Power and Growing Local Economies by Mr. Amer Zafar Durrani

#### Country Presentations

1. Afghanistan Delegate Presentation
2. Bhutan Delegate Presentation
3. India Delegate Presentation
4. Maldives Delegate Presentation
5. Nepal Delegate Presentation
6. Pakistan Delegate Presentation
7. Sri Lanka Delegate Presentation



Workshop on  
**“Participation of Private Sector in Overcoming Energy Poverty  
in SAARC Member States”**



Director SEC with the Chief Guest and the Guest of honor during lighting a traditional lamp to commence the workshop

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Group photo of the delegates

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# Workshop on “Development of Roadmap for Implementation of Smart Grid: Concepts, Practices and Technologies in SAARC”

SEC conducted a Dissemination Workshop for the study on, “Development of Roadmap for Implementation of Smart Grid: Concepts, Practices and Technologies in SAARC” held on September 30 – October 1, 2019 in Thimphu, Bhutan. This workshop was attended by delegates of all the SAARC Member States. During the two-day workshop, different aspects of smart grid were discussed in detail. Findings of the study were shared with the delegates from the member states.

## **Details are available at:**

<https://www.saarcenergy.org/dissemination-workshop-for-the-study-on-development-of-roadmap-for-implementation-of-smart-grid-concepts-practices-and-technologies-in-saarc-held-on-30th-september-1st-o/>

## **Following presentations were made during the training programme**

### **Workshop Presentations (Day 1)**

1. SAARC Smart Grid Roadmap by Mr. Suddhasatta Kundu
2. Key Findings & Results of SAARC Study on Smart Grids by Ms Reena Suri
3. Smart Grid Vision for Bhutan: Road map for Smart Energy

### **Workshop Presentations (Day 2)**

1. Way Forward by Ms Reena Suri and Mr Suddhasatta Kundu

### **Country Presentations**

1. Bangladesh Country Presentation
2. Bhutan Country Presentation
3. India Country Presentation
4. Maldives Country Presentation
5. Sri Lanka Country Presentation



**Dr. Tanvir Ahmad, Programme Leader (Technology Transfer) SEC during his address**



Workshop on  
**“Development of Roadmap for Implementation of Smart Grid:  
Concepts, Practices and Technologies in SAARC”**



**Dr. Tanvir Ahmad, SEC Programme Leader (Technology Transfer) presenting a souvenir to the Chief Guest Mr. Sonam Tobjey CEO, Bhutan Power Corporation, Ltd.**



**Group photo of workshop delegates**

# Dissemination workshop on “SAARC Energy Outlook 2030”

SEC conducted a dissemination workshop for the study on SAARC Energy Outlook 2030 on 26th – 27th November 2019 in Kathmandu, Nepal. This workshop was attended by delegates of the SAARC Member States from Afghanistan, Maldives, Nepal and Pakistan. During this workshop, participants were given detailed overview of the study report including existing energy scenarios in SAARC Member States, the future forecast of energy demand and consumption in all SAARC Member States.

The comparison of different energy sources, identification and discussions on relevant opportunities and challenges were recommended by the Policy makers, manufactures, energy utility companies and various energy dependent market players. Moreover, the cross- border electricity trade within and between SAARC and neighbouring countries was discussed.

## Details are available at:

<https://www.saarcenergy.org/dissemination-workshop-for-the-study-on-saarc-energy-outlook-2030-held-on-26th-27th-november-2019-in-kathmandu-nepal/>

## Following presentations were made during the workshop

### Workshop Presentations (Day 1)

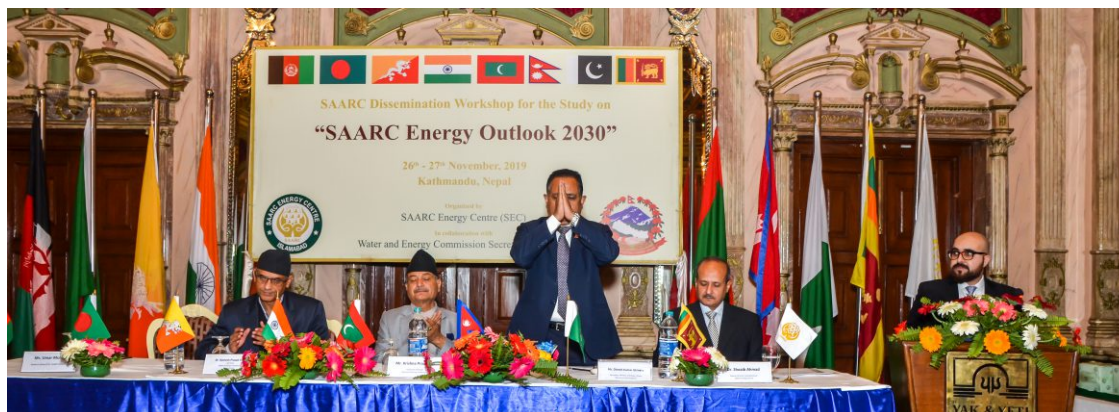
1. SAARC Energy Outlook 2030: Introduction by Team CRISIL
2. Assessment of Conventional Energy Sources in SAARC Member States by Team CRISIL
3. Assessment of Renewable Energy in SAARC Member States by Team CRISIL
4. Use of Solar Energy for Cooking Food in Nepal by Prof. Dr. Jagannath Shrestha

### Workshop Presentations (Day 2)

1. Moving towards a sustainable energy future: Opportunities and Challenges by Team CRISIL
2. Energy Demand Forecast in Nepal by Prof. Dr. Amrit Man Nakarmi
3. Cross Border Energy Trade for SAARC Member States by Team CRISIL

## Country Presentations

1. Afghanistan Delegate Presentation
2. Maldives Delegate Presentation



Opening of the Workshop by the Chair and the Chief Guest



## Dissemination workshop on “SAARC Energy Outlook 2030”



Dr. Shoaib Ahmad, Deputy Director, SEC presenting souvenir to Chief Guest Mr. Krishna Prasad Oli, Hon' Member, National Planning Commission



Group photograph of workshop participants

# Dissemination Workshop on “Promotion of Trans-Border Business of Crude Oil and Petroleum Products in the SAARC Region”

SEC organized a Dissemination Workshop for the Study on “Promotion of Trans-Border Business of Crude Oil and Petroleum Products in the SAARC Region” held on 28th – 29th Nov, 2019 in Kathmandu, Nepal.

This workshop was attended by delegates of the SAARC Member States. During the two-day workshop, different aspects of Promotion of Trans-Border Business of Crude Oil and Petroleum Products in the SAARC Region were discussed in detail. Findings of the study were shared with the delegates from the member states.

## Details are available at:

<https://www.saarcenergy.org/dissemination-workshop-for-the-study-on-saarc-energy-outlook-2030-held-on-26th-27th-november-2019-in-kathmandu-nepal/>

## Following presentations were made during the training programme

### Workshop Presentations (Day 1)

1. SAARC Energy Outlook 2030: Introduction by Team CRISIL
2. Assessment of Conventional Energy Sources in SAARC Member States by Team CRISIL
3. Assessment of Renewable Energy in SAARC Member States by Team CRISIL
4. Use of Solar Energy for Cooking Food in Nepal by Prof. Dr. Jagannath Shrestha

### Workshop Presentations (Day 2)

1. Moving towards a sustainable energy future: Opportunities and Challenges by Team CRISIL
2. Energy Demand Forecast in Nepal by Prof. Dr. Amrit Man Nakarmi
3. Cross Border Energy Trade for SAARC Member States by Team CRISIL

### Country Presentations

1. Afghanistan Delegate Presentation
2. Maldives Delegate Presentation



Dr. Shoiab Ahmed, Deputy Director SEC during his welcome remarks



## Dissemination Workshop on “Promotion of Trans-Border Business of Crude Oil and Petroleum Products in the SAARC Region”



Delegates During Workshop



Dr. Shoiab Ahmed, Deputy Director SEC presenting a souvenir to workshop delegate

# Webinars





# SAARC Webinar on “Sharing Australian Experiences in Solar PV Technology”

SEC organized a Webinar on “Sharing Australian Experiences in Solar PV Technology” on February 26, 2019.

The Webinar highlighted Australian experiences in Solar PV with the SAARC Member States. The experts from Australia shared best practices, case studies and provide participants with information on successful policy interventions and large scale programmes /projects implemented in field of Solar PV by Australian Government.

**Details are available at:**

<https://www.saarcenergy.org/saarc-webinar-on-sharing-australian-experiences-in-solar-pv-technology-on-tuesday-february-26-2019-from-1100-1430-hrs-pakistan-standard-time-pkt/>

**Following presentations were made during the Wabinar**

1. Presentation on “Role of Australian States in Accelerating Solar PV” by Dr. Adrian Panow
2. Presentation on “An Overview on Australia policy journey for Solar PV” by Anna Bruce
3. Presentation on “Solar Installer Accreditation” by Demian Natakhan



Honorable Chairman of the Governing Board of SEC ,Mr.M.G.A.Goonetilleke of Sri Lanka and Director SEC, Mr. Mohammad Naeem Malik during Webinar session.

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# A Webinar on “Promotion of Energy Conservation in Municipalities of SAARC”

SEC organized a Webinar on “Promotion of Energy Conservation in Municipalities of SAARC” on 12th March 2019.

The webinar discussed about Energy consumption in Municipalities & potential areas for energy savings, Role of municipalities in energy conservation – International best practices, Smart Cities of Future, Solar street lighting and Ultra LEDs for buildings. The experts during the course of the webinar had suggested solutions and recommendations for effective implementation energy conservation and efficiency techniques in Municipalities. The webinar was attended by officials from municipalities/ local governments/urban local bodies and relevant Government departments of SAARC Member States. Research organizations, academia, associated industry and entrepreneurs were also present in the webinar.

**Details are available at:**

<https://www.saarcenergy.org/saarc-webinar-on-promotion-of-energy-conservation-in-municipalities-of-saarc-1100-am-230-pm-pkt-on-12-march-2019/>

**Following presentations were made during the Webinar**

1. Presentation on “Energy Efficiency in Municipalities” by Rajkiran
2. Presentation on ” Sustainable Smart Cities of Future” by Shah Zulfiqar
3. Presentation on “City Street Lighting/ Public Lighting” by Bruno Lafitte



**SEC Professionals during Webinar**

# Webinar on “Exploring Financing Opportunities for Clean Energy, Environment and Energy Efficiency Projects”

SEC organized a Webinar on “Exploring Financing Opportunities for Clean Energy, Environment and Energy Efficiency Projects” on 9th April, 2019.

During the Webinar financial instruments, risks and barriers to financing in developing countries were identified and discussed in detail. The delegates described the selection of appropriate financing instrument, role of financial intermediaries and institutions. They explained private public partnerships and presented specific case studies on the use of appropriate financing instrument. Moreover, the webinar also discussed grant-based financing available through multilateral financial institutions and micro financing institutions.

## **Following were the major aspects covered in during the webinar:**

1. Identification of financing risks and barriers in developing countries
2. Specific financing challenges for each renewable energy technology type
3. Detailed overview of financial opportunities/instruments
  - Grants and long-term equity
  - Debt
  - Guarantees and insurance
  - Carbon financing
  - Green bonds
  - Venture capital equity
  - Asset backed securities
  - Results based financing
  - Micro financing
  - Energy efficiency finance
4. Role of financial intermediaries
5. Case Studies

## **Details are available at:**

<https://www.saarcenergy.org/webinar-on-exploring-financing-opportunities-for-clean-energy-environment-and-energy-efficiency-projects-on-tuesday-9th-april-2019-from-1100-1330-pkt-pakistan-standard-time/>

## **Following presentations were made during the Webinar**

1. Presentation on “Financial Instruments for Renewable Energy Projects” by Mr. Sandeep Kumar
2. Presentation on “Renewable Energy Markets – Key to Financing” by Mr. Ammar Zafar Durani
3. Presentation on “Economics and Finance of Rooftop (distributed) PV and other PV” by Mr. Rahul Tongia



**SEC Professionals during Webinar**

# Webinar on “Hybrid Renewable Power Plants: Opportunities and Challenges”

SEC organized a Webinar on “Hybrid Renewable Power Plants: Opportunities and Challenges” on 16th April, 2019.

A hybrid renewable power plant employs multiple RE technologies in same vicinity. Such power generating options may offer multiple benefits in form of better grid integration and less land requirements. Nevertheless, it comes with tradeoffs of limited resource utilization or difficulties in joint operation. This webinar investigated all such matters. The webinar featured presentations by field experts from ADB, Siemens LLC, PWC India, AEDB Pakistan and Sapphire Wind Pakistan. Following were the major aspects covered in the webinar:

1. Economics of hybrid RE power plants
2. Operational and design challenges
3. Contemporary solutions for combined operation of multiple RE assets
4. System level benefits of solar-wind hybrid power plants
5. Best regulatory, fiscal and policy tools for promotion of hybrid RE concept
6. Case studies

#### **Details are available at:**

<https://www.saarcenergy.org/webinar-on-hybrid-renewable-power-plants-opportunities-and-challenges-on-tuesday-16th-april-2019-from-1100-1330-pkt-pakistan-standard-time/>

#### **Following presentations were made during the Webinar**

1. Presentation on” Hybrid Renewable Energy Minigrids Sri Lankan Story in Northern Islands ” by Mr. Ranishka Wimalasena
2. Presentation on” Policy Landscape for SolarWind Hybrid” by Mr. Vibhash Garg
3. Presentation on” Hybrid RePower Plants: Opportunities and Challenges ” by Sapphire
4. Presentation on” Hybrid Grid Solar PV Power Projects ” by Mr. Irfan
5. Presentation on” Hybrid RE Power Plants: A Global Perspective on Technology Trends” by Mr. Gergo Varhegyi



**Director SEC during his opening remarks**



## Webinars on “Solar PV System Design and Simulation Using Appropriate Software”

SEC organized Webinars on “Solar PV System Design and Simulation Using Appropriate Software” on April 23 and April 25, 2019.

The Centre conducted series of two webinars which helped in enhancing the capacity of the PV system design professionals in the SAARC region. These two webinars had introduced the system design and simulation software namely PV\*Sol and HOMER to the participants, and covered sections with basic and intermediate level training on using both the software. The experts had demonstrated the functionality of the powerful software, and gave details on the key parameters of software associated with design and planning of solar PV system. In their presentations, they also covered specific topics such as meteorological data, modeling, assessments, performance evaluation and cost estimation techniques for a project site.

### **Details are available at:**

<https://www.saarcenergy.org/saarc-webinars-on-solar-pv-system-design-and-simulation-using-appropriate-software-on-tuesday-april-23-and-thursday-april-25-from-1000-1130-hrs-pakistan-standard-time-pkt/>

### **Following presentations were made during the Webinar**

1. Presentation on HOMER Energy by Mr. Andy Kruse
2. Presentation on Introduction to the System Planning with PV\*SOL by Valentin Software

### **SEC YouTube Channel Links of the Webinar Recording:**

1. SEC YouTube Webinar Recording Link of Tuesday, April 23, 2019
2. SEC YouTube Webinar Recording Link of Thursday, April 25, 2019



Deputy Director SEC during his address

# Webinar on “Use of Solar Energy in Water Desalination”

SEC organized a Webinar on “Use of Solar Energy in Water Desalination” on 30th April, 2019.

The proposed webinar was an effort to share the available knowledge and experience of the experts from different organizations involved in the thermal desalination of sea water as well as researchers from the research organizations. As solar thermal desalination is in its early stages, with a few projects recently established, therefore the webinar was not only share theoretical knowledge, but was also share the important learning from those recent projects and will aim to share with the SAARC professionals the solutions to commonly encountered problems during those projects. Following were the major aspects to be covered in the webinar (but not limited to):

1. General Problems in Seawater Desalination
2. Solar Energy Utilization and Thermal Desalination Technologies
3. Multi-Stage Flash Distillation (MSF)
4. Multi-Effect Distillation (MED)
5. Vapor Compression Distillation
6. Solar Desalination System Combined with Conventional Technologies
7. Absorption and Adsorption Solar Desalination System
8. Barriers and challenges in solar thermal desalination
9. Costs involved in solar thermal desalination
10. The Benefit Evaluation and Material Selecting
11. Global examples
12. Implementation in SAARC region
13. Commercial viability

**Details are available at:**

<https://www.saarcenergy.org/webinar-on-use-of-solar-energy-in-water-desalination-on-tuesday-30th-april-2019-from-1100-1330-pkt-pakistan-standard-time/>

**Following presentations were made during the Webinar**

1. Presentation on” Solar Desalination in Island States” by Mr.Muhammad Bilal Hussain
2. Presentation on” An overview of Current solar Desalination Technologies” by Mr.Muhammad Umar Mukhtar



**SEC Professionals during Webinar**

# SAARC Webinar on “Waste-to-Energy Municipality-level Demonstration Project in Selected Areas of Member States”

SEC organized a SAARC Webinar on “Waste-to-Energy Municipality-level Demonstration Project in Selected Areas of Member States” on May 7, 2019.

The objective of the webinar was to introduce different Waste to Energy based technologies to the participants. The webinar shared suitability, viability and other aspects of these technologies with reference to businesses, Government officials, investors, and project developers. The experts involved on the Waste-to-Energy projects in the region were engaged during the webinar.

**Details are available at:**

<https://www.saarcenergy.org/saarc-webinar-on-waste-to-energy-municipality-level-demonstration-project-in-selected-areas-of-member-states-on-tuesday-may-7-2019-from-1100-1400-hrs-pkt/>

**Following presentations were made during the Webinar**

1. Presentation on “Decentralized and Integrated Municipal Solid Waste Management” by Mr. Rahul Teku Vaswani
2. Presentation on “Waste to Energy Power Potential & Opportunities in Punjab” by Mr. Amir Shahzad Butt
3. Presentation on “MSW Management in India” by Dr. Gangagni Rao
4. Presentation on “Prospects of Waste to Biogas in Nepal” by Mr. Sunil Prasad Lohani



**SEC Professionals during Webinar**



# Webinar on “Hybrid Renewable Power Plants: Opportunities and Challenges”

SEC organized Webinar on “Hybrid Renewable Power Plants: Opportunities and Challenges” on 8th November, 2019.

A hybrid renewable power plant employs multiple RE technologies in same vicinity. Such power generating options may offer multiple benefits in form of better grid integration and less land requirements. Nevertheless, it comes with tradeoffs of limited resource utilization or difficulties in joint operation. This webinar investigated all such matters. Mr. M. G. A. Goonetilleke, Additional Secretary, Ministry of Power & Renewable Energy, Sri Lanka, graced inaugurated the webinar. As a world renowned expert in the field, he shared his experience with the participants. He also presented the major achievements of SEC during his introductory remarks. Following were the major aspects covered in the webinar:

1. Economics of hybrid RE power plants
2. Operational and design challenges
3. Contemporary solutions for combined operation of multiple RE assets
4. System level benefits of solar-wind hybrid power plants
5. Best regulatory, fiscal and policy tools for promotion of hybrid RE concept
6. Case studies

#### **Details are available at:**

<https://www.saarcenergy.org/webinar-on-hybrid-renewable-power-plants-opportunities-and-challenges/>

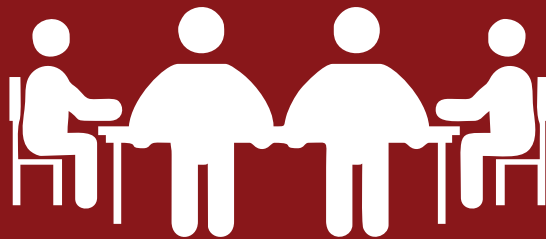
#### **Following presentations were made during the Webinar**

1. Solar PV Power Plants in Hybrid Arrangements at Wind Power Plants by Mr. Kashif Hussain, Assistant Executive, FFC Energy Limited (FFCEL), Pakistan
2. Case Studies: Hybrid Micro Grids as Model of Rural Electrification and it's Financing by Engr Ammar Yasser



Honorable Chairman of the Governing Board of SEC ,Mr.M.G.A.Goonetilleke of Sri Lanka and SEC Professionals during Webinar

# Meetings & Participation



## Meetings & Participation



Mr. Mohammad Naeem Malik, Director SEC met and discussed Energy Conservation and Efficiency with a visiting team of energy experts of the World Bank Group, Pakistan.

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Mr. Mohammad Naeem Malik, Director and a team of professionals represented SEC at 'Policy Advocacy Workshop for Energy Efficiency in Industrial Sector under EU-Switch Asia IREET Project' in Islamabad.

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Delegates of 9th meeting of 'SAARC Working Group on Energy' from SAARC Member States met Mr. Mohammad Naeem Malik, Director SEC.

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## Meetings & Participation



Engr. Mohammad Gul Khulmi, Honorable Minister of the Ministry of Energy and Water, Government of Afghanistan and Eng. Said Farzad Alawi, General Manager, ETC Power, Kabul, Afghanistan signing an agreement for a SAARC project of 20 kW Hybrid Solar PV System.



Delegates of MET Office, UK and ICIMOD Nepal visited SEC office. Possibilities were explored to use MET office in mapping the Wind corridors for Wind Mills and Solar potential areas with availability of Sun light on hourly basis during the year in the SAARC Region.



SAARC Energy Centre has successfully commissioned “20 kW Hybrid Solar PV Demonstration Project” at the VTC Building in Ministry of Energy and Water, Afghanistan.

## Meetings & Participation



Mr. Mohammad Naeem Malik, Director SEC meets JICA Pakistan team. Both sides discussed the possibilities of collaboration on energy and environment .



SEC professionals attended a workshop on Promoting Energy Efficiency and Conservation for Sustainable and Greener Pakistan in Islamabad.



Mr. Ahsan Javed, Research Fellow (Renewable Energy) of SEC at Fourth Meeting of SAARC Council of Experts of Energy Regulators (Electricity) in Maldives.



## Meetings & Participation



Mr. Frank Noij, Project Evaluator, UNESCAP visited Director SEC Mr. Mohammad Naeem Malik and discussed energy related issues.

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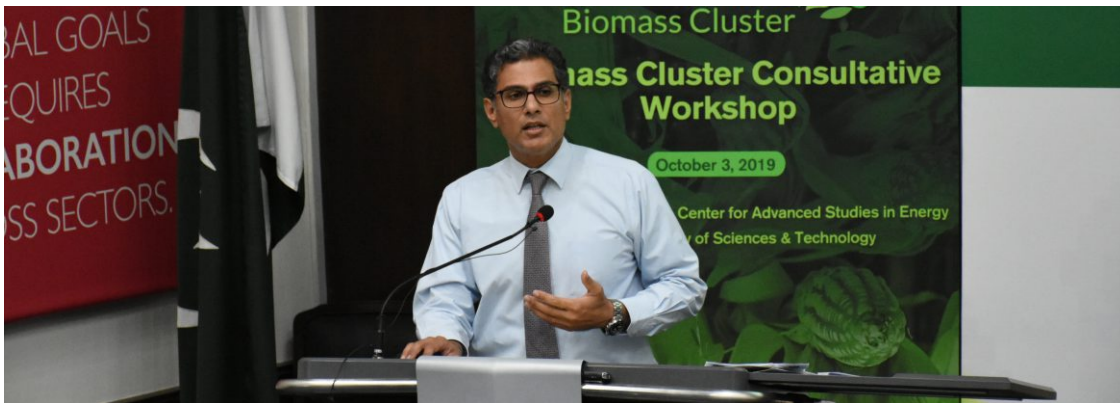


Mr. Mohammad Naeem Malik, Director SEC meets Mr. Amanullah Khan, Assistant Country Director, UNDP Pakistan. Both sides discussed issues related to Energy, Environment and Climate Change

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## Meetings & Participation



Mr. Ahsan Javed, Research Fellow (Renewable Energy) had participated at a Biomass Cluster Workshop organized by NUST and UNIDO on 3rd October, 2019. He gave recommendations for a viable business model intended for a sustainable biomass cluster in Pakistan and briefed the audience on similar regional initiatives and shared the successful stories/business models from the SAARC region.

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SEC Communications Professional Ms. Mehnaz Gardezi at the launching ceremony of "National Action Plan & Investment Prospectus"

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# SEC & Environment



## SEC and Environment

Every year, SAARC Energy Centre (SEC) celebrates the World Environment Day (WED) on June 05 against a UN set theme for encouraging awareness and action for the protection of our planet and its environment. To tackle pollution, SEC is working with local authorities, civil society, institutions, and the public and private schools.

The team of Centre dedicated the whole year 2019, on awareness campaign. Air pollution kills more than 6 million people every year and has become the biggest environmental health risk. Airborne diseases/pollutants are responsible for about one third of deaths from stroke, chronic respiratory disease, and lung cancer, as well as one quarter of deaths from heart attack.

SEC started its formal campaign on World Environment Day by kicking off plantation drive, hoisting informative banners and distributing pamphlets among masses. SEC Director, Mr. Mohammad Naeem Malik maintained an overarching commitment to involve individuals and institutions to preserve environment of Islamabad and beyond. He stressed on the need to join hands to fight the menace of pollution to save environment. As part of the awareness campaign and initiatives, Director SEC met the Heads of Capital Development Authority (CDA) and Metropolitan Corporation Islamabad (MCI) to play their role to ban usage of plastic bags. He also met the Federal Minister of Climate Change to discuss environment related issues and extended full support of the Centre to replace plastic bags with environment friendly materials.

SEC organized awareness sessions at public and private schools where SEC professionals delivered detailed presentations on clean environment. They shared knowledge to children and engaged them in lively discussions. Air pollution sources were shared with students from cooking stoves and kerosene lamps to coal-fired power plants, vehicle emissions, industrial furnaces, wildfires, and sand and dust storms. To create healthy environment among children and schools, SEC organized an Inter-school Football Tournament in Islamabad. Teams from many top schools across the city participated in the tournament.





## SEC & Environment



Director SEC meets Federal Minister of Climate Change to discuss environment related issues and extended full support of the Centre at regional level. He further requested Government of Pakistan to impose ban on use of Plastic Bags.



SEC World Environment Day Brochure @beatairpollution

## SEC & Environment



SEC professionals during an interactive session on environment with students of a public school in Islamabad.

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SEC professional during a session on environment with students of a private school in Islamabad.

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## SEC & Environment



SEC professional to creative awareness on clean environment SEC professionals during his presentation at school

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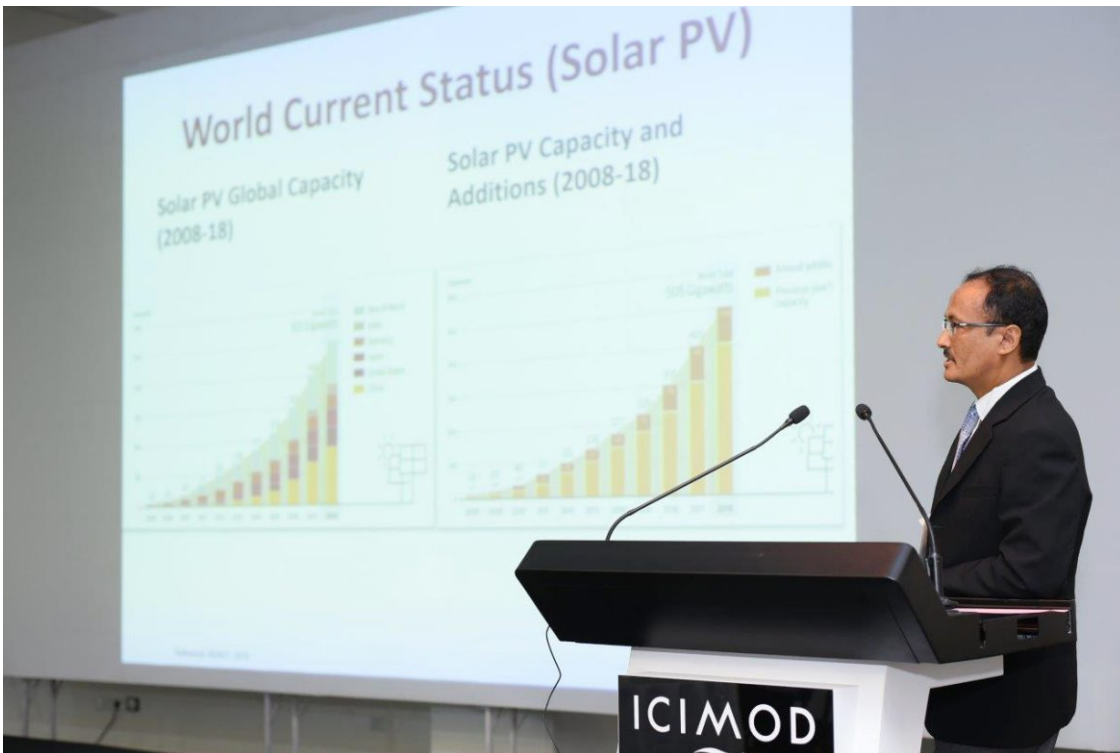
SEC professionals with Students & Teachers after the session

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## SEC & Environment



SEC professionals participating in a TV talk show@WorldPTV on #WorldEnvironmentDay



SEC Professional Mr. Bhaskar Pradhan during his presentation at the Regional Workshop on Climate Services for Water and Hydropower in South Asia



## SEC & Environment



**A student carrying SEC Solar School Bag**

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**SEC Professional experimenting with SEC Smart Portable Irrigation Sytem**

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## SEC & Environment



Mr. Ihsan Ullah Marwat SEC Professional Kicking off second phase of SEC Plantation Drive at Schools



During SEC Inter-School Football Tournament

## Director SEC with High Commissioners/Ambassadors of SAARC Member States



Director SEC presenting a souvenir to H.E. Mr. Ahmed Saleem, High Commissioner of Maldives to the Islamic Republic of Pakistan



Director SEC presenting a souvenir to H.E. Ms. Sewa Lamsal, Ambassador of Nepal to the Islamic Republic of Pakistan



## 14<sup>th</sup> Governing Board Meeting of SEC



During the Governing Board Meeting



14th Governing Board Meeting of SAARC Energy Centre (SEC) in Islamabad on 6-7 November, 2019. Honorable Chairman of the Governing Board of SEC, Mr.M.G.A.Goonetilleke of Sri Lanka with respected Governing Board Members and SEC team



## National Days Celebrations



SEC Celebrated 112th National Day of Bhutan at SEC

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Celebrations of Nepal National / Constitution day at SEC

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## SEC Celebrations of 35<sup>th</sup> SAARC Chartered Day



During the 35th SAARC Charter Day ,Director SEC with Foreign Secretary of Pakistan and High Commissioner and Ambassadors of SAARC Member States



Director SEC during his briefing to the Foreign Secretary, MOFA, Islamabad and other diplomats about SEC initiative & activities on energy and Environment



# SEC Celebrations of 35<sup>th</sup> SAARC Chartered Day



During Cake Cutting Ceremony



SEC team with Dr. Mohammad Faisal, Director General South Asia and SAARC during 35th SAARC Charter Day



# SECTOR ANALYSIS on RENEWABLE ENERGY and ENERGY EFFICIENCY

Creates Awareness through



Enhances Cooperation through



**SAARC Energy Centre**

E-mail: [info@saarcenergy.org](mailto:info@saarcenergy.org) | Web Site: [www.saarcenergy.org](http://www.saarcenergy.org)