



### Rationale for the Initiative

- \* Massive transmission of electricity in the form of DC over lengthy distances by means of submarine cables or overhead transmission line is the high voltage direct current transmission.
- \* For long-distance power transmission, HVDC lines are less expensive, and losses are less as compared to AC transmission
- \* In generating substation, AC power is generated which can be converted into DC by using a rectifier. In HVDC substation or converter substation rectifiers and inverters are placed at both the ends of a line. The rectifier terminal changes the AC to DC, while the inverter terminal converts DC to AC
- \* A lesser number of conductors and insulators are required thereby reducing the cost of the overall system.
- \* Power loss is reduced with DC because fewer numbers of lines are required for power transmission.
- \* Due to the absence of frequency in the HVDC line, losses like skin effect and proximity effect do not occur in the system
- \* Corona loss is less as compared to HVAC transmission lines of similar power.

### Who Are We?

#### About Us

Paramount objective of IEEEEP revolves around dissemination of knowledge. Since its inception in 1969, IEEEEP has been busy in sharing knowledge among the engineering community. IEEEEP, a non-commercial entity, survives on subscriptions from its members and donations from patriotic entrepreneurs dealing with electrical and electronic development and services interventions. IEEEEP is contributing its best efforts for spreading information on engineering education and technology through multiple publications and diversified events; thus playing a commendable role in promoting engineering education and profession in the country.

This particular event is a joint effort by the IEEEEP and the National Transmission & Despatch Company Limited.



IEEEEP



**Institution of Electrical and Electronics  
Engineers Pakistan**

4 Lawrence Road, Lahore 54000

Email: [info@ieeep.org.pk](mailto:info@ieeep.org.pk)

Web: [www.ieeep.org.pk](http://www.ieeep.org.pk)

IEEEEP-CPD Seminar on

## Past, Present & Future of High Voltage Direct Current Transmission

Thursday, 5<sup>th</sup> April 2018



**The Institution of  
Electrical and Electronics  
Engineers Pakistan  
(IEEEEP)**

**Dissemination of  
Technical Knowledge**

**IEEEEP CPD Program 2018**



## Unique Learning Event by IEEE P and NTDC

IEEE P and National Transmission & Despatch Company (NTDCL) have joined hands to organize a 1-day seminar on Past, Present & Future of HVDC Transmission to apprise the professionals with what the latest technology offers with respect to power transmission. This one-day learning initiative is meant to explore, share and debate on new concepts and in the process to communicate to the professionals that innovation is the key to technological development progress and it may reshape the transmission sector in Pakistan.

### Course Resource Persons

#### Presentation 1:

Topic: Introduction to HVDC Technology and its Applications in China

Speaker: Mr.Chang Yong (Senior Engineer/ Doctor of Science)

Company: China Electric Power Equipment & Technology Co. Ltd

#### Presentation 2:

Topic: Discussion on design of + 660kV Matiari-Lahore HVDC Project

Speaker: Ms Quan Bailu (Professor/Senior Engineer/Chief Technical Advisor)

Company: China Electric Power Equipment & Technology Co. Lt

#### Presentation 3:

Topic: Rationale for Prioritizing HVDC over HVAC

Speaker: Dr. Faheem Akhtar (Ph.D.)

Institution: IBA Sukkur

#### Presentation 4:

Topic: HVDC Technology: Its Scope & prevailing Challenges in Pakistan

Speaker: Hassan Jaffar Zaidi

Company : Power Planners International

#### Presentation 5:

Topic: Case for HVDC application with introduction to major components of HVDC

Speaker: Bruno Bisewski (P. Eng., Hatch Technical Team Lead) & Iftikhar Khan (P. Eng., Regional Director North America, Power Delivery)

Company: Hatch Canada

#### Presentation 6:

Topic: Scope and current status of HVDC Matiari-Lahore Transmission Line Project

Speaker: Muhammad Arshad Mirza (Ex-Chief Engineer TSG)

Company: NTDCL

**IEEE P Continuing Professional  
Development (CPD) Program  
under License from Pakistan  
Engineering Council  
(1.0 Credit Hour)**

#### Seminar Venue

WAPDA Auditorium, WAPDA House, The Mall Road, Lahore

#### Contact Person

Engr. Shahid Shafi Sial

Phone: 0335-7402366

Email:Shahid.shafi@ntdcl.co



## Who should join?

Engineers, managers and all professionals who have interest in innovative ideas and concepts pertaining to power development especially the renewable energy dimension and who are prepared to discuss and debate pros and cons of the latest technological developments.

## Programme

Registration	0830 – 0850 Hours
Recitation from the Holy Quran	0900 Hours
National Anthem	0915 Hours
Arrival of the Chief Guest , Engr. Zafar Abbas, MD NTDCL	0920 Hours
Welcome Address by Chairman, LLC Engr. Wajahat Saeed Rana	0930 Hours
Seminar Introduction Engr. Anjum Aziz, CE HVDC	0935 Hours
Address by Guest of Honor Engr. Dr. Rana Abdul Jabbar Khan, President IEEE P	0940 Hours
Address by the Chief Guest	0945Hours
Tea and Networking Break	0945 – 1000 Hours
Technical Presentations	1000 – 1300 Hours
Concluding session & Award of Shields/Certificates	1300 – 1315 Hours
Vote of Thanks	1315 – 1320 Hours
Lunch and Prayers	1320 Hours