

SAARC Training Workshop 'Power System Studies for Synchronization of Multiple Systems'

About Power Planners International

PPI was founded in 2005 and have a team of highly skilled and experienced professionals



UK Office
3- Sylvester Road,
Sudbury Town, Middlesex
HA0 3AQ U.K.
Ph. No. +44-208-9223219
Fax +44-208-9220657

Pakistan Office
66-H/2, Wapda Town, Lahore
Ph. Nos. +92-42-35182835
+92-42-35224247
Fax: +92-42-35183166

Email: info@powerplannersint.com
Website: www.powerplannersint.com

Our Vision & Mission

1. Feasibility studies of new power plants of any nature; Hyde, Thermal, Wind-Farms and other renewable energy sources, and their interconnections with the main electrical grid.
2. Feasibility Studies for cross-border or cross-country interconnections of electrical grids for power exchange.
3. Analytical studies for electric utilities, Independent Power Producers (IPPs), Independent System Operators (ISOs) and industries, that are planning to add new facilities or seek solutions to problems in their existing systems to enhance power quantity and quality to their customers.
4. Preparation of engineering, design and specifications for new power projects.
5. Training and developing the human resource in technical skills for power planning and expansion of energy sources. PPI's engineers possess highly specialized skills, vast and profound experience, and expertise of the advanced and latest state-of-the-art softwares prevailing in the contemporary power systems industry.

Specialized Technical Skills

PPI possesses the technical skills to perform for a grid system of any size, the following:

1. Load flow, optimal power flow, and short circuit analysis. Dynamic and transient stability analysis for all kinds of disturbances in the system.
2. Voltage stability, voltage control, and voltage collapse analysis and remedies by compensating devices like shunt capacitors/reactors banks, SVCs, FACTS, Series Compensators, STATCOMs etc.
3. Small signal stability analysis and remedies by power system stabilizers (PSS) in the system.
4. All sorts of transient analyses including but not limited to, transient overvoltage (TOV), transient recovery voltage (TRV), load rejection, in-rush currents and frequency-scans etc
5. Engineering, design and specifications of substations, overhead lines, cables and FACTS devices (such as SVC) · Load forecast analysis based on historical data, power market surveys, economic growth indices like GDP or GNP, population growth rates etc. using econometric models, time-series models, end-users models etc.

Specialized Technical Skills

- Power quality issues like flicker, harmonics/resonance and voltage-unbalance due to bad loads like arc furnaces in steel mills or non-uniform generations like wind turbines.
- Optimized Generation Planning based on reliability indices of LOLE/LOLP, minimum reserve margins, cost of un-served energy etc. for one integrated system, and for various systems having inter-ties for reserve sharing or fixed bulk transfer of power using multi-area reliability indices.
- Analysis of transfer limits between different grid systems fulfilling the generation and transmission reliability criteria Economic and financial analysis of power projects required for approval by funding agencies or governmental authorities.
- The PPI professionals possess thorough hands-on experience on the latest state of the art tools of power system analysis viz. · PSS/E of PTI, USA (PPI has perpetual license) · PSCAD/EMTDC of EPRI and Manitoba HVDC Research Center · WASP (ENPEP).
- PPI possess perpetual license for the usage of PSS/E of Siemens-PTI

About Hassan Jafar Zaidi CEO of PPI

- CEO has more than **35** years of experience of working, supervising and leading the teams of engineers in WAPDA, Pakistan; and Saudi Electricity Company (SEC or SCECO) in Saudi Arabia in the fields of power system analysis, transmission planning, load-forecasting and generation planning.
- CEO has worked all along his professional life for systems of whole range of principal operating voltages viz. 765 kV, 500 kV, 380 kV, 220 kV, 132 kV, 110 kV, 66kV and 33kV. His major areas of interest have been load flow; short circuit; dynamic and transient stability; voltage stability, voltage control and voltage collapse; small signal stability; modeling and analysis of static & dynamic loads, generators, exciters, governors, stabilizers, SVCs, FACTS, Series Compensators, STATCOMs, HVDC lines and converter stations.

About Hassan Jafar Zaidi CEO of PPI

- CEO has exposure to international technical forums of IEEE and CIGRE, having participated many times in their conferences in Middle East and Europe where he presented papers on advanced fields of power system planning and operation.
- The team comprises of engineers having background experience of 10 to 30 years working in utilities and consultant companies in Pakistan and Middle East in the fields of transmission planning, power system analysis, load forecasting and generation planning for systems of wide range of operating voltages.

Projects completed or in hand

Extra High Voltage Transmission Lines' Projects

1. Interconnection Study of 26 Big Hydropower Projects on Indus and its Tributaries in Northern Areas including Basha, Bunji, Dasu, Thakot, Yulbo, Tungas etc. with main National Grid of Pakistan as JV Partner with PB Power, UK
2. Preparation of Transmission Expansion Plans for NTDC and DISCOs for National Power System Expansion Plan Project as sub-consultant of SNC Lavalin, Canada
3. Interconnection of Thar Coal fired thermal power plants with main National Grid of Pakistan as sub-consultant of SNC Lavalin, Canada
4. Feasibility Study of import of 1000 MW from Iran as sub-consultant of NESPAK
5. Feasibility Study on Interconnection of ECO Countries Power Systems performing detailed Load Flow, Short Circuit and Transient Stability Studies of Power Systems of ten (10) member countries to develop interties of HVAC/HVDC.
6. Harmonic Analysis and Measurement Studies for installation of SVCs at New-KLPT 220 kV, Lahore and Quetta Industrial 220 kV as a JV Partner with NESPAK and PSD, South Africa.

Projects completed or in hand

Power Transmission & Distribution Network Projects

1. Reactive Power Compensation Study for voltage improvement in steady state and transient conditions for the power system of Peshawar Electricity Supply Company (PESCO), and Lahore Electricity supply Company (LESCO) Pakistan.
2. Evaluation of Transmission and Distribution Losses of Sukkur Electric Power Company (SEPCO) , Sukkur (Ongoing)
3. Evaluation of Transmission and Distribution Losses of Hyderabad Electricity Supply Company (HESCO), Hyderabad (Ongoing)
4. Carrying out Load Flow Studies for Peak and Off Peak Conditions of various months in order to evaluate the Transmission and Transformation (T & T) Losses of LESCO and Networks and proposing measures for their improvement.
5. Carrying out Load Flow Studies for Peak and Off Peak Conditions of various months in order to evaluate the Transmission and Transformation (T & T) Losses of GEPCO and Networks and proposing measures for their improvement.
6. Consultancy Services for Reactive Power Compensation Study of Peshawar Electricity Supply Company (PESCO)
7. Consultancy Services for Reactive Power Compensation Study of Lahore Electricity Supply Company (LESCO)
8. Concept study of SCADA for LESCO.

Projects completed or in hand

Energy Policy and Grid Code Development

1. Consultancy for Development of Alternate and Renewable Energy Policy of Pakistan
2. Consultancy for Development of the Grid Code for Wind Power Projects in Pakistan
3. Consultancy for Development of the Grid Code for Solar Power and Distributed Generation in Pakistan

Projects completed or in hand

- **Feasibility Studies for Interconnection of Hydel Power Plants**

1. Interconnection Study of 120 MW Taunsa Hydropower Project by China Water Resources Beifang Investigation Design And Research Co. Ltd. (Ongoing)
2. Interconnection Study of 100 MW Gul Pur Hydropower Project by MIRA Power Limited(Ongoing)
3. Interconnection Studies of 102 MW Batakundi, 188 MW Naran and 300 MW Balakot Hydro Power Projects (Ongoing)
4. Consultancy Services for 150 MW Interconnection Study for Patrind Hydropower Project
5. Interconnection Study For 84 MW New Bong Escape Hydro Electric Power Project
6. Consultancy Services for Feasibility Study of Shogosin & Shushg-Zhendoliai Hydropower Projects
7. Grid Interconnection Studies of about 14 Small Hydel Power Projects on canals and barrages in Punjab such as Ranolia, Riali, Rasul, Panjnad, Marala, Muzaffargarh, BS-Link (Chunian), B-S Link (Basirpur), Abbasia, Pakpattan, TP-Link, Marala-Ravi Link Canal, Sukheki and Chichawatni

Projects completed or in hand

Feasibility Studies for Interconnections of Thermal Power Plants

1. Load Flow & Interconnection Studies for four Coal Fired Thermal Power Projects each of 50 MW of:
 - a. Elektro Power Ltd,
 - b. Noble Power Ltd.
 - c. Saba Power Ltd
 - d. Malakwal Power Ltd
2. Consultancy services for Interconnection of 100 MW Coal Fired Power Plant of Lafarge Cement Plant at Chakwal and study of availability of reliable power supply
3. Interconnection Study of Two 26 MW Bagasse base Thermal Power Projects of JDW at Ghotki and Sadiqabad
4. Interconnection Studies of Bagass based power plants of Sheikho Sugar Mills, Multan and 20 MW Bagasse Power Plant By Shakarganj Energy, Jhang
5. Interconnection Studies of Biomass based power plants of Lumen Energea, Jhang and Masood Textile Mills Limited Faisalabad

Projects completed or in hand

Feasibility Studies for Interconnections of Solar and other Renewables

1. 50 MW Solar Power Plant by DACC in Cholistan, Bahawalpur
2. 10 MW Solar Power Plant by Roshan Power in Kasur
3. 5 MW Solar Power Plant by POF Wah, Wah Cantt.
4. 10 MW Solar Power Plant by TechAccess at Kalar Kahar, Dandot, Chakwal
5. 10 MW Solar Power Plant by Buksh Energy near Marot, Cholistan, Bahawalpur
6. 10 MW Solar Power Plant by Safe Power in QA Solar Park, Cholistan, Bahawalpur
7. 100 MW Solar Power Plant under construction by TBEA, China, at QA Solar Park Cholistan being developed by QA Solar Power Company Ltd. of Punjab Government.
8. Load Flow & Interconnection Studies for four Renewable Energy Projects based on Biomass and Bagass etc. in Jhang and Faisalabad

Projects completed or in hand

Feasibility Studies for Interconnections of Wind Power Plants

Grid Interconnection Studies of many Wind Power Plants with the National Grid of Pakistan including the following:

- 50 MW Zorlu
- 50 MW BEL
- 50 MW Green Power
- 100 MW Wind Farm Project for SZABIST
- 50 MW Master Wind Energy
- 50 MW New Park Wind Energy
- 50 MW Zeni
- 50 MW HAWA
- 100 MW NBT SZABIST
- 50 MW Dewan Energy Ltd.
- 50 MW Sapphire
- 50 MW Yunus (Lucky)
- 50 MW Gul Ahmad
- 50 MW Metro Power Company
- 50 MW Fauji Wind Energy Ltd.-I (BEL)
- 50 MW Fauji Wind Energy Ltd.-II (Green)
- 3x10 MW Akhter, Tapal and Ismail Power
- 100 MW United Energy Pakistan
- 50 MW HYDROCHINA Dawood
- 50 MW Fina Enerji
- 50 MW China SUNEC Energy
- 50 MW Tenaga Power
- 50 MW CWE
- 50 MW Sachal Power
- 50 MW Zephyr
- 9 MW Titan Energy
- 50 MW Wind Eagle-I
- 50 MW Wind Eagle-II
- 2 x 50 MW MEConsult
- 2x250 MW NBT Wind Power Pakistan Ltd.
- 13.5 MW Burj Power

Projects completed or in hand

Training & Capacity Building of Engineers of Electric Utilities by PPI

1. Two weeks training course of Power System Analysis using PSS/E for engineers of Saudi Electricity Company at Jeddah, Saudi Arabia in May-June 2012, jointly by PPI-UK and PB-UK
2. Two weeks of Basic and Three weeks of Advanced course of Power System Analysis using PSS/E for engineers of NTDC, Pakistan in January/February 2012 funded by USAID
3. Three weeks training of Power System Analysis using PSS/E for engineers of NTDC, Pakistan in June 2010 funded by UNDP
4. Two weeks training of Load Flow Analysis and two weeks training of Short Circuit Analysis using PSS/E for engineers of distribution Companies of Pakistan in February and May 2010 under the auspices of Lahore Electric Supply Company (LESCO)