Introducing Smart Grid Concepts to the Power Supply Sector in Pakistan

In a joint effort of the Pakistani and German teams, Siemens PTI has recently completed a study for Engro Fertilizer on the supply reliability situation and on the asset management process in its Daharki (Pakistan) plant. This project complemented earlier projects on, e.g., the overall design and the dynamic performance of the captive generation units in this industrial power supply system. Probabilistic reliability calculations validated that the reliability level throughout the plant is adequate and rather constant. A few individual exceptions are well-known to the operators and covered by explicit processes and measures. Also the asset management process was reviewed from the perspective of the plant’s overall reliability performance, and the development plans existing with Engro Fertilizer were confirmed. For certain individual assets or groups of assets, the investigations indicated the need for faster implementation in order to maintain the required risk levels for the plant’s operation.

On the occasion of the final presentation of this project to Engro Fertilizer in Pakistan, Siemens PTI organized an extensive trip to several other customers and institutions in Pakistan. Several seminars were organized to introduce the latest Smart Grid concepts and technologies to the Pakistani power supply sector, and to support the continuing development of the Pakistani power supply system. In these seminars, Siemens experts focused on viable solutions to various current challenges and trends in the local power supply sector.

- The first seminar in this series was held at the Mehran University of Engineering and Technology (MUET) in Jamshoro. MUET has a proud history and a tradition which spans more than 20 years. Faculty of Electrical, Electronics & Computer Engineering of MUET together with Siemens PTI Pakistan organized this technical seminar on “Strategic Network Planning for Pakistan’s Growing Energy Needs.” It was attended by executive staff of the Hyderabad Electric Supply Company (HESCO), several faculty members, and around 250 researchers and students.

- The second seminar was arranged at the School of Science & Engineering (SSE) of Lahore University of Management Sciences (LUMS) in Lahore. This seminar was organized in collaboration with Faculty of Electrical & Electronics Engineering and the topic was “Smart Grid and Renewable Energy Solutions for Pakistan’s Growing Energy Needs.” Several faculty members and around 40 students attended.

Apart from the various presentations delivered, Siemens and LUMS SSE also principally agreed on the concept of establishing a Smart Grid Laboratory in Lahore that will be open to Siemens experts, National Transmission and Despatch Company (NTDC), distribution company (DISCO) engineers and LUMS SSE students. This lab will serve as a platform for NTDC/DISCOs to bring their challenges, for Siemens to share technological know how, and for LUMS SSE engineers to develop Smart Grid solutions customized to local requirements.

- The third seminar was a two-day event organized at the National Transmission and Despatch Company (NTDC) in Lahore on “Smart Grid Systems and Solutions to Optimize Transmission & Distribution Networks in Pakistan.”
Apart from discussing strategies for network planning, new and economical solutions for substation communications and smart metering systems for Pakistan were explained in detail. The attendees were informed that Siemens, apart from supplying Smart Grid systems and solutions, has also developed a phased consultancy program called Smart Grid Compass to transform the existing power grids into Smart Grids. Siemens offers end-to-end solutions connecting transmission, distribution and industrial/consumer networks.

The seminar was attended by MD PEPCO/NTDC Mr. Rasul Khan Mahsud, CEO LESCO Mr. Sharafat Ali Sial, CEO IESCO Mr. Javed Pervaiz, general managers, chief engineers and officials from NTDC and distribution companies in Pakistan. The attendees highly appreciated Siemens for arranging an informative seminar and showed interest in the implementation of Smart Grid solutions in Pakistan to bridge the gap between supply and demand of electricity in the country.

The high-ranking and numerous participations in these seminars underlined the high interest in the market for advanced solutions to overcome the current, highly stressed power supply situation in Pakistan. Siemens is committed and motivated to support the further development in this regard.

Figure1 - Seminar on “Strategic Network Planning for Pakistan’s Growing Energy Needs” at MUET
Prof. Dr. Bhawani Chowdhry (MUET), Aqeel Ahmed (Siemens Pakistan), Prof. Dr. Aslam Uqaili (MUET), Dr. Michael Schwan (Siemens Germany) and Irfan Ahmad (Siemens Pakistan) at the MUET Auditorium
Figure 2 - Seminar on “Reliable Power Networks for Tomorrow” at LUMS SSE
Mr. Asadullah Shaikh (Siemens Pakistan), Aqeel Ahmed (Siemens Pakistan), Prof. Dr. Shahid Masud (LUMS), Mr. Sheharyar Khan (Siemens Pakistan), Dr. Michael Schwan (Siemens Germany), Irfan Ahmad (Siemens Pakistan), Noman Zafar (LUMS) outside the LUMS SSE Conference Hall.

Figure 3 - Seminar on “Strategic Network Planning - Approach and Tools” at the WAPDA House, Lahore
Mr. Aqeel Ahmed (Siemens Pakistan), Mr. Rasul Khan Mehsud (CEO NTDC), Mr Sharafat Ali Sial (CEO LESCO) and Mr Javed Pervez (CEO IESCO)