

PARTIAL LIST OF SYSTEM PLANNING STUDIES

CLIENT	LOCATION	PROJECT DESCRIPTION	SCOPE OF SERVICES
Ministry of Electricity Water (MEW), Dubai	Dubai, UAE	Power and Water Development including Transmission System Studies for Master Plan of next 25 years for MEW area.	Load Forecast, Generation and Planning, Transmission Planning and System Planning Studies, Preliminary Engineering, Cost Estimate and Financial Analysis.
Project Preparation Unit (PPU), Ministry of Finance and Economic Planning, Government of Sudan (Funded by African Development Bank).	Port Sudan & Suaikin Area, Sudan	Feasibility Study for Development of Power and Water including Generation and Transmission for Port Sudan and Suaikin area	Demand Forecast, Generation Planning, Study on Transmission Systems including upgrading the existing system voltage from 11 KV and 33 KV to 110 KV, Preliminary Engineering, Cost Estimate and Financial Analysis.
Saudi Consolidated Electric Company - Southern Region	Saudi Arabia	132 KV Transmission Line System Planning Study	Load Demand Analysis, General System Planning, Stability & Fault Studies, Computer Simulation of SCECO System.
Saudi Consolidated Electric Company - Central	Riyadh, Saudi Arabia	Medium term Transmission/Generation Planning Study	Generation & Transmission Alternatives, System Studies, Cost Analysis, Conceptual Design of Generation and Transmission Alternatives.
Empresa Nacional de Electricidad, S.A. (ENDE)	Bolivia	Long Range Transmission Planning Study from 1982-2000	Load Flow, Short Circuit, Transient and Dynamic Stability and Over Voltage Studies, Cost Estimates and Cash Flow Projections.
Direccion de la Energia de Buenos Aires La Plata, (DEBA)	Argentina	Long Range Study Planning and Feasibility Studies of Systems covering South East and South Central portion of the province of Buenos Aires.	Interconnection of Several Components of the System, Twenty Years Load Projection (1970-1990), Establishment of Reserve Criteria and Load Flow, System Stability and Short Circuit Studies to determine Generation and Transmission and Distribution Additions in the Twenty Year Period. System Voltages recommended were 220 KV, 132 KV, 63 KV and 33 KV.
Karachi Electric Supply Corporation (KESC)	Karachi	Power Facilities Expansion in the Fourth Five Year Plan.	Recommendations for Addition of Generation and Transmission in the Ten Year Period 1970-1980.
U.S. Agency for International Development (USAID)	Jordan	Power Feasibility Study in North Jordan	Determination of Generation Sites, Unit Sizes and Transmission Expansion for 1967 -1981. Feasibility of a 132 KV Transmission System.

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Jordan Development Board	Jordan	Power Feasibility Re-study for East North Jordan.	Generation and Transmission Additions determined in earlier study were updated on the basis of new Load growth Patterns. Feasibility Study of 132 KV tie between Irbid and Amman.
Empresa Nacional de Luz y Fuerza	Managua, Nicaragua	Long Range Systems Planning and Feasibility Studies.	Generation, Transmission and Distribution Additions to the National Power System in Nicaragua's 10 Year Development Plan. Recommendations included 110 miles of 69 KV transmission lines.
Economic Planning Board	Korea	Long Range System Planning Study.	Determination of Location and Voltage of New Transmission Lines, Substations and Generating Plants for a Ten Fold Increase of Current Load. System Voltages recommended were 345 KV and 154 KV.
Karachi Electric System Corporation (KESC)	Karachi, West Pakistan	System Study	Recommendations of size of New Generating Addition; Addition/Revision to 66 KV Transmission, (Overhead and Underground). Substations and 11 KV Distribution, Load Study, Techno-economic Analysis, Sensitivity Studies. Assistance in establishing Planning and Design Section in KESC, establishment of Standards, and updating certain sections of the Electricity Act.
Water & Power Development Authority (WAPDA)	West Pakistan	Long Range System Planning Study.	System Stability, Load Flows, Preliminary Design, Economic Evaluation Outline Specs, and Cost Estimates for Generation and EHV Transmission Schemes over a 20 year period. System Voltages recommended were 132 KV and 345 KV Act.
Northern California Power Company	California, USA	Long Range System Planning Study.	Transmission System Study, Recommendations of size for Power Generation. Associated Transmission Lines and Substations. Recommended Voltages were 69 KV, 115 KV and 230 KV.

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Department of Navy Pacific Division, U.S. Department of Defense	Philippines	Economic and Operational Study for Electric Power Plant Expansion of Subic Bay Naval Facility.	Economic and Operational Study to determine the current and projected base electric power demand and the permanently installed generating capacity; Load Flow Study to identify the additional power transmission lines required; evaluate type of generator prime mover for recommended mode of operations and to determine the optimum size of the generator to meet the system load requirement.
Ministry of Electricity & Water (MEW), Sultanate of Oman	Oman	Feasibility Study for Manah Power Project including 132 KV Transmission System.	Transmission Grid Study covering Detail System Studies consisting of Load Flow Study, Short Circuit Study, Transient Stability Study, and Load Flow for Contingency Analysis; Line Insulation Study, Corona and Electric Field Analysis, Conductor Size and Equipment Selection.
Ministry of Electricity & Water (MEW), Sultanate of Oman	Oman	3 x 110 MW Rusail Power Station Phase II. 132 KV Transmission Line between Rusail Power Station and Wadi Adai and Wadi Kabir Substation.	System Analysis and Study including Load Flow, Short Circuit Study and Transient Stability Study, Projection Coordination Study and Single Contingency Load Flow Study.
Public Electricity Establishment Govt. of Syrian Arab Republic	Adra, Tartous, Syria	Voltage Dip Studies for 110 kV and 230 kV lines due to Sudden Load Switching in Cement Plants.	Voltage Dip Studies and Preparation of Study Report.
Public Electricity Establishment Govt. of Syrian Arab Republic	Howe, Syria	Voltage Dip Studies for 110 kV and 230 kV lines due to Sudden Load Switching in Fertilizer Plant and Oil Refinery.	Voltage Dip Studies and Preparation of Study Report.
Oswal Chemical & Fertilizers Ltd.	India	Study of the Captive Generators	Transient Stability Study.
Numaligrah Refinery Ltd.	India	Study of the Plant Distribution System	Load Flow, Short Circuit, Transient Stability, Relay Coordination.
Power Finance Corporation	New Delhi, India	Transmission and Distribution System Planning	Technical Assistance for Load Forecasting
CESC Ltd.	Calcutta, India	Review of the Primary Network	Augmentation/Development Scheme



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Narmada Chematur Petrochemicals Ltd.	India	Electrical Network	Performed System Study
ONGC, India	India	Study of the Plant Distribution System	Load Flow, Short Circuit, Transient Stability, Relay Coordination.
Vishakhapatnam Steel Plant	India	Study of the Plant Distribution System	Hot Start Facility and Load Shedding Scheme.

