



Company Profile



WINNER



2001, 2002, 2003
TASMANIAN
EXPORT AWARDS



Telstra &
Tasmanian
Government
Small Business
Awards

Winner of the 2003
Tasmanian
Panasonic Australia
Business Award

Your Partner In Power

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Insurance Company:

MARSH Insurance Australia

INTRODUCTION AND BACKGROUND

ADEA Power Consulting Pty. Ltd. is a private consulting company specializing in providing consultancy services for the power industry, including the power generation transmission and distribution sectors. The strength lies in the team, consisting of qualified engineers and professionals with vast practical experience in the power industry.

Project Experience:

The professional team at ADEA have been involved in a wide range of major projects over many years in Australia, South-East Asia, the Middle East, Africa and Eastern Europe. These projects have ranged from initial engineering studies through to the planning, design and construction supervision of distribution networks and successful commissioning of HV, MV and EHV substations, transmission lines, and associated control, protection and communications systems.

Range of Services:

- *Engineering feasibility studies and investigations*
- *Total project management*
- *Distribution planning and design, rehabilitation and construction supervision*
- *Substation design, installation, testing and commissioning*
- *Transmission line design, site supervision, commissioning*
- *Protection and control system design*
- *Preparations of tender specifications and documentation*
- *Tender evaluation, contract negotiation and administration*
- *Assistance in the procurement of various equipment and goods for power projects*
- *Research and development*

Every service of ADEA is tailored to meet the individual needs of the customer.

ADEA acts as a gateway organization for international companies in Australia, South-East Asia, the Middle East and Eastern Europe.

International recognition and awards:

ADEA has been recognized and prequalified with the following international institutions, organizations and awards:

Tasmanian Export Awards, 2003

2003 Tasmanian Panasonic Business Awards

Tasmanian Export Awards, 2002

Tasmanian Export Awards, 2001

World Bank (DACON registration)

Asian Development Bank (DACON registration)

UNDP (United Nations Development Program),

UNDESA (United Nation, Department of Economic and Social Affairs),

Australian Aid Organization

The Client Base:

- *Transfield Transmission System Pty Ltd, Sydney, Australia*
- *United Group, Sydney, Australia*
- *John Holland Group, Sydney, Australia*
- *Powerlink Queensland, Brisbane, Australia*
- *Hydro Tasmania, Consulting Business Unit, Hobart, Australia*
- *Priority Engineering, Western Australia*
- *EnergyAUSTRALIA, Sydney, Australia*
- *Midland Metals, Singapore*
- *Golda Marketing Service, Singapore*
- *Simplex Engineering, Calcutta, India*
- *APD Engineering, Bombay, India*
- *Sterlite Industries, Bombay, India*
- *Modern Trading Technologies, Damascus, Syria*
- *ABB Calor Emag Schaltanlagen, Germany*
- *ABB Near East Trading Ltd, Amman, Jordan*
- *MITAS, Ankara, Turkey*
- *SARA, Ankara, Turkey*
- *Energoinvest, Sarajevo, Bosnia and Herzegovina*
- *DFE Power Engineering d.o.o, Bosnia and Herzegovina*
- *WED, Abu Dhabi, UAE*
- *KTC, Baghdad, Iraq*
- *Bandara Engineering, Colombo, Sri Lanka*
- *United Nation, UNDP, New York, USA*
- *United Nation, UNDESA, New York, USA*
- *SMEC Australia*

Major International Associations:

- *Changshu Fengfan Power Equipment Company, China*
- *Golda Marketing Services, Singapore*
- *Simplex Engineering, Calcutta, India*
- *Modern Trading Technologies, Damascus, Syria*
- *DFE Power Engineering d.o.o, Bosnia and Herzegovina*
- *ADEA Engineering Solution, Nigeria*

ADEA's approach to business can be summed up in a simple sentence: 'Satisfied customers and motivated employees are the keys to our success.'

Our vision is to be ***Your Partner In Power.***

CAPABILITY STATEMENT

Our Strategic Objective

- *to win market share and gain client loyalty*
- *further develop the skills and professionalism of our people*
- *attain world best practice performance levels*
- *to be environmentally responsible*

Engineering Consultancy and Design

ADEA Power Consulting has the professionalism, expertise and quality systems to deliver a full range of consultancy services:

- *Design of substations, transmission and distribution lines for low, medium and high voltage systems*
- *Planning of system developments for the best technical and financial performance*
- *Preparation of technical specifications and analysis of tenders*
- *Project management and contract administration*
- *Marketing service and direct representations*
- *Procurement services of various equipment and goods*

ADEA Power Consulting has established partnerships and associations with companies from different parts of the world. This means that the consulting services we can provide have the ability to source additional expertise and assistance from other areas in order to meet the needs of our clients.

Planning and Design Services

Our planning and design services specialize in electrical, structural and mechanical engineering broadly as follows:

- *Reliability assessment and load forecast*
- *Fault level calculation*
- *Feasibility and development studies*
- *Conceptual design and design review for substations*
- *Detail design and specification for substations*
- *Transmission line route selection and review*
- *Transmission line tower design*
- *Earthing design*
- *Preparation and assessment of specification drawings*
- *On site design*
- *Civil work design for Substations and Transmission lines*

Project Management and Contract Administration

ADEA provide a value-added service in the areas of administration and management of both turnkey type construction projects as well as specific assignments.

We can offer a full range of services for projects, commencing from feasibility studies through to commissioning.

Our services include:

- *Feasibility studies*
- *Identification of project scope*
- *Preparation of cost estimate, project cost and budget*
- *Assistance in organizing financial funds*
- *Specification preparation*
- *Preparation of bid document*
- *Assistance in bid evaluation and contract award*
- *Reporting on the viability of contracting out client services*
- *Advising on risk minimization factors when obtaining contracted services*
- *Provide management personnel as required*
- *Ensure that client's project liaison requirements are met*
- *Ensure works conform to specified requirements*
- *Process contractual payments*
- *Site management*
- *Commissioning, preparation of 'As Built' drawings and project completion report*
- *Capacity building and training*

Procurement, Marketing services and direct representation

ADEA provide marketing services for international companies in Australia, South-East Asia, the Middle East, Africa and Eastern Europe.

ADEA Power Consulting Pty Ltd can offer assistance in procurement and sourcing of the following material for transmission line and substations:

- Transmission line lattice towers
- Substation steel structure
- Telecommunication towers
- Tubular/Monopole structure
- Transmission Line conductor
- Glass Insulators
- Porcelain Insulators
- Composite Insulators
- Transmission Line fittings
- OPGW cable and OPGW fittings

- Power cable
- Control and signalling cable
- Distribution material and equipment
- Fiber Reinforced Polymer Cross arm
- Testing of transmission line towers up to 1000kV
- Structural steel for railway
- Structural steel for building industry
- Steel pipes, lighting poles

ADEA has exclusive collaboration with number of suppliers from China, India and Turkey. Our QA teams are involved in monitoring of manufacturing process ensuring that products meet appropriate standards and our Client requirements. Our products have been successfully supplied for number of years to Australia, New Zealand, USA, China and number of other countries around of world.

Substations



INTRODUCTION AND BACKGROUND

ADEA Power Consulting Pty Ltd provides comprehensive consulting and project management services in the power transmission and distribution sector. The professional team at ADEA has been involved in a wide range of substation projects over many years in Australia and overseas, from initial engineering studies through to the planning, design and construction supervision as well as successful commissioning of HV, MV and EHV substations, and associated control, protection and communications systems.

The strength lies in the team consisting of qualified engineers and professionals with huge experience in substations ranging from 11 kV to 400 kV.

As a privately owned company, without vested interest ties to any larger industry or service provider, ADEA is able to provide completely independent advice to clients with a commitment to achieve genuine strategic and financial benefits for clients through effective project implementation.

ADEA is fully committed to provide the highest quality of service.

The permanently employed engineers/managers in our substations team have vast practical experience gained through the completion of a large number of projects over many years in countries such as *Iraq/North Iraq, Abu Dhabi, Egypt, Libya, Turkey, Bosnia and Herzegovina, Malaysia, Indonesia, Thailand, Australia, Ethiopia, Zambia, Tanzania, Sri Lanka, Yemen.*

SERVICES

ADEA Power Consulting Pty Ltd is engaged in turnkey type construction/rehabilitation projects and specific assignment as follows:

- *Feasibility studies*
- *Conceptual design and design review*
- *On site design*
- *Preparation of specification and bid document*
- *Tender evaluation and contract award recommendation*
- *Inspection and testing of material and equipment*
- *Project management and contract administration*
- *Installation/Erection*
- *Testing and commissioning*
- *Detail design and 'As Build' documentation*
- *Capacity building and on site training*

ADEA has taken a leading role in the provision of tailored solutions to meet client's specific needs to ensure the cost-effective design and implementation.

Transmission Line



INTRODUCTION AND BACKGROUND

ADEA Power Consulting Pty Ltd specializes in transmission lines including providing the complete engineering package, including the design, supply, erection, commissioning and maintenance of the plants. The strength lies in the team consisting of qualified engineers and professionals with large experience in O.H. Transmission lines from 33 kV to 500 kV.

ADEA Power Consulting Pty Ltd is fully committed to provide the highest quality of service. This commitment is derived from an in-depth understanding of our client's requirements, as well as the continuous development of integrated solutions through investigation and constructive dialogue between parties. A high degree of flexibility readily allows the provision of tailor-made schemes for the clients as required.

The permanently employed engineers/managers in our transmission line department have huge practical experience in O.H. transmission lines gained through the completion of past projects over the years in *Iraq/North Iraq, Abu Dhabi, Egypt, Libya, Turkey, Bosnia and Herzegovina, Malaysia, Indonesia, Australia, Ethiopia, Zambia, Tanzania, Sri Lanka.*

SERVICES

ADEA Power Consulting Pty Ltd are engaged in turnkey construction/rehabilitation projects and specific contracts including the following:

- *Feasibility studies*
- *Detailed O.H.TL design and engineering*
- *Supply/Procurement of various goods and equipment*
- *Construction / Rehabilitation supervision*
- *Project Management and contract administration*
- *Commissioning and testing*
- *Maintenance of the plants*
- *Personnel training*

Whatever the project, wherever its location, ADEA's team of experienced transmission line engineers are able to provide the comprehensive range of services listed above. As well as offering custom tailored projects in any combination required in order to meet our client's project requirements.

Our modern equipped Design Office has the latest Software & Hardware facilities to provide efficient and high-standard solution of all tasks with reference to O.H. Transmission Line as follows:

- *Line design program, Totally automates Plan & Profile/Tower spotting sheet drafting including Total Station instruments*
- *Analysis and Design of Steel Latticed O.H. Transmission Line Towers*
- *Analysis and Design of Reinforced Concrete Foundations for O.H. Transmission Line Towers*
- *Sags and Tension specialized program for the analysis of a multi-span tension section*

Power Distribution

Distribution Planning System Rehabilitation



Distribution Planning

Traditional utility planning procedures were primarily based on a 'top down' approach, where future system developments were determined from overall system requirements. In the case of power utilities, emphasis was mainly on generation and transmission networks and perhaps location of the substations to minimize the transmission network costs. Distribution networks have usually been subject to uncontrolled expansion, under / over utilization and unplanned development. As a result, many problems can be seen identified in the distribution networks of many utilities. These include high losses, inadequate network capacity, poor system reliability, voltage and power quality problems etc.

Bottom-Up Approach

Distribution networks extend to every geographic location covered by the utility providing final connection between the utility and the customer. They are therefore considered the most suitable system to capture localized customer requirements, demand and growth patterns etc. For example, demand growth will be different in different areas, certain areas need high supply reliability etc. The effective planning process therefore begins from distribution system. System requirements are then worked out in upward direction, from identification of distribution network reinforcements / expansions, substation augmentation and new substations to meet these distribution system requirements, as well as transmission line development to meet substation requirement. All of which converge to meet our final objective; which is to meeting our customer's needs and techno-economic optimization. This is known as the 'bottom-up' approach in utility planning. In modern utility approach, this process is carried out through computer aided network modeling and analysis tools.

ADEA Expertise

This is carried out through the use of modern planning techniques and computer aided tools, combined with ADEA experience and expertise in the application of these techniques. The planning tools include automated mapping, computer aided network modeling and analysis, computer aided load modeling and demand forecasting, GIS AM/FM Economic evaluation / justification and techno-economic optimisation of development proposals is also an important essence of ADEA expertise.



Computer Aided Network Modeling and Analysis

Scope of Services

ADEA offers a complete range of services on distribution planning, facility management and customer services covering wide scope of modern utility applications. These include the following;

Requirement Analysis

- *Evaluation of existing planning and operational systems*
- *Identification and development of methodologies and systems to meet future utility needs*
- *Selection of appropriate tools*
- *Preparation of feasibility reports*

Load Forecasting

- *Review and analysis of past demand data*
- *Identification of suitable load forecasting methodologies*
- *Use of computer aided load forecasting packages such as Micro Area Load Forecasting, Econometric modeling etc*
- *Requirement based load forecasting through distribution network modeling*
- *Establishment of load forecasting models and carrying load forecast incorporating future development plans*

Mapping

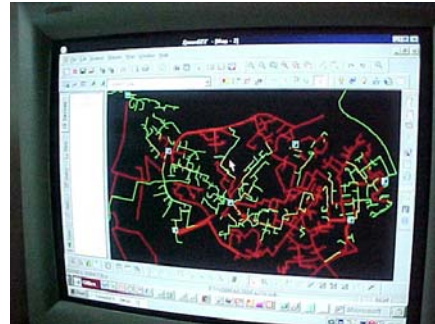
- *Identification of suitable mapping systems for utility networks*
- *Establishment of computer databases for network data*
- *Network digitizing and preparation of electronic maps for distribution networks*
- *Preparation of spatial data models*
- *Spatial data analysis for network expansion, rural electrification etc.*

Distribution System Planning and Design

ADEA offers specialized consultancy services for selection, installation, training and application of leading state of art software systems for medium voltage and low voltage distribution network modeling and analysis. Our services in this regard are unique as it covers not only the software package but its proper application to carry out integrated planning to develop comprehensive development plans with optimal techno-economic solutions.

The analysis carried out includes the following;

- *Modelling of Network, equipment and loads*
- *Load flow evaluations including evaluation of losses, voltage profiles etc.*
- *Fault Analysis*
- *Optimal switching*
- *Contingency analysis*
- *What if analysis*
- *Optimal Capacitor Placement*
- *Voltage Regulators*
- *Distribution System Reliability Evaluations*
- *Harmonic Analysis and suppression methods*
- *Protection Coordination Analysis*
- *Motor start and locked rotor analysis*
- *Load balancing*



Carrying out what if analysis to improve overloaded MV network

ADEA staff specialize in integrating results of such above analysis' for preparation of:

- *network development master-plans*
- *loss reduction programs*
- *network reinforcement and expansion programs*
- *rural electrification programs*
- *distribution network automation*
- *and reliability improvement programs etc.*

Operation and Facility Management Systems

- Network data capturing through GPS
- Automated mapping with network attribute data
- Design of Geographical Information Systems (GIS) for distribution networks.
- Utilization of GIS for planning, operation, construction and maintenance work
- Automated Plant and Equipment registry systems
- Transformer Load Management
- Preparation / design of automated maintenance management programs
- Performance evaluation, development of performance indices and targets
- Distribution network reliability monitoring and reliability evaluation

Demand Side Management

- Designing and carrying out load research
- Introduction of energy efficient equipment for domestic / commercial and industrial sectors
- Organizing consumer education programs
- Development of energy efficient building codes
- Training and conducting energy auditing
- Drafting policy papers for implementation of energy efficient practices

Rural Electrification Planning

- Preparation of computer models for cost benefit evaluation of rural electrification schemes.
- Carrying out techno-economic feasibility assessment for rural electrification programs
- Integrated rural electrification planning and preparation of rural electrification master-plan
- Study of low cost construction techniques, design specifications for rural electrification
- Assessment of viability of renewable energy sources

Engineering Audit

- Assessment of techno-economic performance of plant and equipment against specifications
- Evaluation of losses and assessment of loss reduction measures
- Operational systems analysis and systems improvement
- Power quality assessment and analysis
- Review of tariff systems, marginal costing and marketing policy
- Quality assessment of specifications and construction standards
- Project evaluation and post implementation review

Project Planning and Formulation

- Economic evaluation and assessment of development proposals
- Review and justification of project proposals
- Preparation of implementation programs
- Evaluation of manpower, materials and training requirements
- Preparation of cost estimates and funding requirements
- Recommendation of implementation modalities and progress review methodology
- Carrying out Environmental Impact assessment studies
- Preparation of project feasibility reports and project reports
- Our engineers are fully conversant and competent in application of the following software packages:
 - **SynerGEE, Middle Link, USA,** MV network Planning
 - **DMS/G, DIG- Scott & Scott, USA,** Mapping for Electricity Distribution Networks
 - **DPA/G, OSP, Rn-Pdc -Scott & Scott, USA,** MV distribution network analysis, optimal switching and protection coordination
 - **MLF - Scott & Scott, USA,** Micro Area Load Forecast
 - **TILM- Scott & Scott, USA,** Transformer Load (and Inventory) Management
 - **LVCALC - IVO, Finland**
 - Low Voltage Electricity Distribution Network Design
 - **ARC/INFO workstation,** Advanced GIS for mapping

Reference List

Engineers of ADEA Distribution team have handled / been involved in the following projects / assignments which speaks of their dedication to achieve excellent results under any condition;

- *Electricity Network Development Plan, Erbil Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/986*
- *Electricity Network Development Plan, Dohuk Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/986*
- *Electricity Network Development Plan, Sulaimaniya Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/98 6*
- *Medium Voltage Distribution Development Plan 1995 –2005
Ceylon Electricity Board, Sri Lanka
Funded by OECF – Japan*
- *Low Voltage Network Development and Loss Reduction Program
Ceylon Electricity Board, Sri Lanka*
- *Rural Electrification Project II
Ceylon Electricity Board, Sri Lanka
Funded by ADB*
- *Rural Electrification Project III
Ceylon Electricity Board, Sri Lanka, Funded by ADB*
- *Establishment of a Geographic Information System for MV and LV Distribution
Networks in Sri Lanka, Ceylon Electricity Board, Sri Lanka, Funded by ADB*
- *Second Power Development Project
Distribution Expansion and Rehabilitation Program (DERP)
Ceylon Electricity Board, Sri Lanka, Funded by World Bank*
- *Second Power Development Project
Local Authority Takeover Project (LATO)
Ceylon Electricity Board, Sri Lanka, Funded by World Bank*
- *Training program on Computer Aided Distribution Network Planning
Yemen, Funded by World Bank*

System Rehabilitation

Distribution networks are generally large in volume, as it spreads all over the country/area to feed its customers. Since, these networks are usually subject to huge expansions, the utilities are normally facing difficulties on carrying out routine and planned maintenance activities and this results a poor voltage and reliability levels to the end consumers and also fast deterioration of the network.

In order to overcome this situation, most of the utilities are going for a complete rehabilitation / refurbishment for its distribution networks, mainly to improve voltage and reliability levels of the system.

ADEA distribution team have been involved number of distribution rehabilitation projects in different countries, including evaluation of existing system, preparation of Rehabilitation Master-Plans and training on rehabilitation techniques.

Scope of Services

ADEA offers a complete range of services in regard to development of specifications and construction standards, system rehabilitation planning, 'On-the-Job' training in rehabilitation and project management especially on 'Turn-key' construction and rehabilitation projects. These include the following;

Project Management

- Preparation of project documents
- Preparation of Tender documents for Rehabilitation and Construction projects
- Tender evaluation
- Progress monitoring and evaluation

Development of Standards and Specifications

- Review of existing specifications for distribution materials etc.
- Development of new specifications
- Review of existing construction standards
- Development of new construction standards to suit with the utility requirements
- Preparation of complete Construction Standard Documents for the utility

Distribution System Rehabilitation Planning

- Evaluation of existing distribution network
- Development of Rehabilitation Master Plans
- Preparation of project documents
- Preparation of implementation programs
- Quality assurances

On-the-Job Training

- Planning of training programs
- Providing on-the-job training to utility staff
- Training on new tools and equipment
- Training on rehabilitation techniques
- Performance evaluation

Reference List

ADEA distribution team has involved / handled following assignments:

*Distribution Network Rehabilitation Master Plan for Erbil, Dohuk and Sulaimaniya Governorates of Northern Iraq
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/986*

*Rehabilitation of Electricity Network, Erbil Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/986*

*Rehabilitation of Electricity Network, Dohuk Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/98*

*Rehabilitation of Electricity Network, Sulaimaniya Governorate
Electricity Network Rehabilitation Project – UNDP Northern Iraq
Funded by United Nations under SCR/98*

*Medium Voltage Constriction Standards
Ceylon Electricity Board, Sri Lanka*

*Low Voltage Constriction Standards
Ceylon Electricity Board, Sri Lanka*