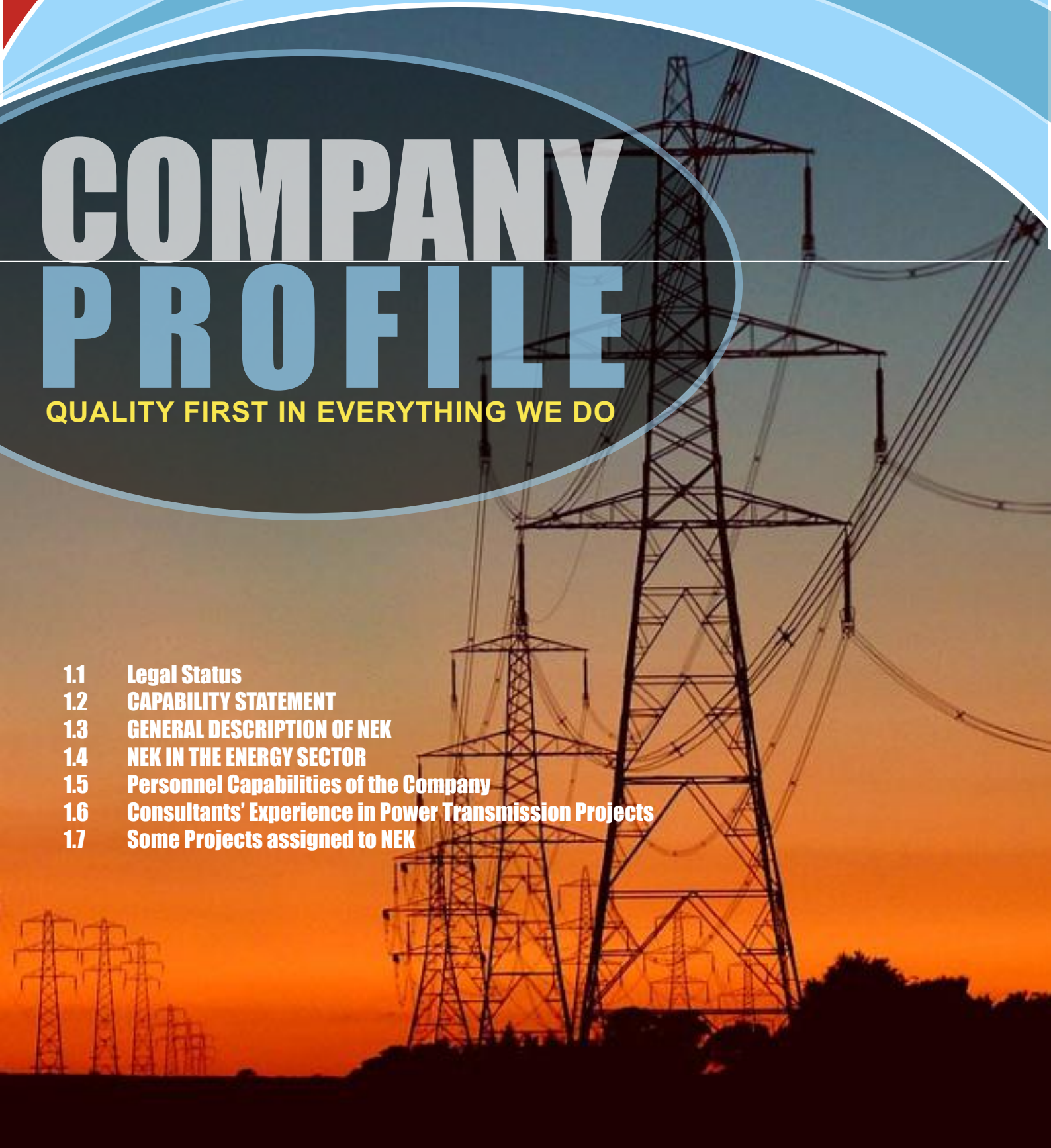
NEK CONSULTS LTD

COMPANY PROFILE

QUALITY FIRST IN EVERYTHING WE DO



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1.1 Legal Status

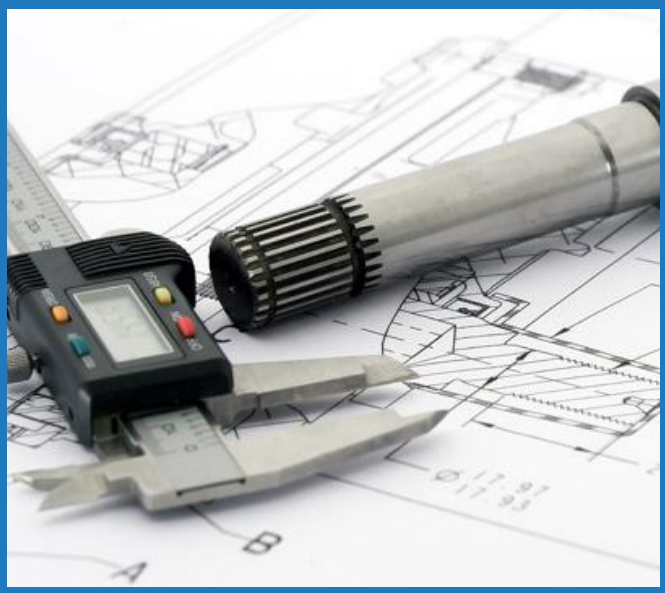
NEK is a privately owned, limited liability company incorporated in Uganda. The Company was founded and registered as a private limited liability company in 2003. NEK Consults Limited (NEK) is a member of the Association of Consulting Engineers of Uganda. NEK is a consulting firm registered in Uganda. It specializes in providing Engineering, Management and Business Consultancy services in the area of power, transport and other infrastructure projects. The firm has extensive experience working on projects financed by DANIDA, European Union, African Development Bank, World Bank and other major multi-lateral and bilateral lending institutions.

NEK Management and Business Consulting services cover formulation, design, implementation, monitoring, control and evaluation of corporate strategies and or strategic perspective, plus competitive and functional strategies. Engineering consulting services of NEK cover, Electrical electronics as well as mechanical and civil Engineering discipline, including energy demand studies and forecasts, project management and Monitoring, Organization development design and Information systems design.

NEK is particularly active in the area of Rural and Urban Electrification, Power systems planning (including Transmission and distribution line Design and planning) plus Energy conservation. The firm has over 25 staff of Certified and Registered Environmental Practitioners, Social Economists, Management Accountants, Public







Accountants, and Professional Engineers.
The company has implemented a wide range of consultancy services alone or sometimes in association with other renowned companies in Uganda or from other countries. Our range of consultancy services is in the following areas:

- Resettlement Action Plan (RAPs)
- Land Appropriation Dynamics (Survey and Property Valuation)
- Community-Based Consultations (CBCs)
- Feasibility Studies
- Engineering Designs
- Preparation of tender documents
- Supervision of construction
- Contract management
- Geo-Technical Surveys
- Hydrological Surveys
- Project Monitoring and Evaluation
- Environmental Impact Assessments (EIAs)
- Environmental Audits
- Technical diagnostics
- Operational diagnostics
- Project briefs
- Social impact assessment
- Financial and management aspects
- Human resource aspects
- Strategic development and investment matters

The specific know-how of the Company will be widely used to deliver the required works.
In all our consultancy works, we are guided by the principle of **'QUALITY FIRST IN EVERYTHING WE DO'.** In everything we do, we are guided by ISO-14001 Series to avoid failures in execution of our planning and design. This way we have always strived to improve our ability to deliver services to exceed our Clients expectations.



1.2 CAPABILITY STATEMENT

Through its participation in many major development programs in Uganda, NEK has followed all the major development trends and has since developed a specific approach, which combines irreproachable technical qualifications, with in-depth understanding of the national development issues.

NEK has been working at all levels, from community developments to sector studies to policy advice for multilateral organizations and Governments. NEK has strong capabilities in the economic, sociological, environmental, institutional, financial and technical design fields, as well as in the management of the links and interactions between those fields.

1.3 GENERAL DESCRIPTION OF NEK

NEK is one of the leading Consulting Companies in energy and environment sectors in Uganda. The Company provides engineering advice, technical assistance and training in the five following areas;

- Energy, industrial environment, chemicals and mining
- Economy and public sector management
- Agro-industries, private sector and privatization
- Agricultural and rural development
- Environment and natural resources



1.4 NEK IN THE ENERGY SECTOR

The Engineering activities of NEK in energy sector cover the following fields;

- Rural and urban electrification
- Power systems planning and Engineering
- Generation planning and design
- Transmission planning and design
- Distribution planning and design
- Power generation and utilization
- Power sector reform and deregulation
- Power plants
- Energy conservation and auditing

The variety of services and experiences of NEK both in the technical and management issues of the energy sector in Uganda provides it with an in-depth knowledge in this field and with excellent capabilities of contribution and support to the project.

Amongst the Engineering activities of NEK, Project Management services are provided covering;

- Project identification and preparation
- Programming and planning
- Project scheduling and monitoring
- Budgeting and cost control
- Design development and management
- Procurement strategy
- Preparation of tender documents
- Tender evaluation and contracting
- Quality control and management
- Contract administration and supervision of works



Power Sector Reform Strategies and Projects

NEK has a good track record regarding their performance in the Energy Sector. It has carried out many market and strategic studies, as well as studies in power sector project preparation. It provides expertise in sector related studies regarding improvement of the energy utilities in their commercial, corporate and industrial management.

Further, its assignments cover design and specification of appropriate systems to improve the reliability of power supply, electrification feasibility studies, the identification of critical loads of and their energy requirement as well as design, supervision of construction and commissioning of rural electrification schemes, transmission lines, load centers and sub stations.

1.5 Personnel Capabilities of the Company

Expert personnel at NEK comprise of high-level specialized gurus in the main fields of the project; power industry management, power transmission and Distribution networks, human resource management and power sector regulations.

NEK has highly qualified experts with extensive knowledge and experience in both technical area and economics. In all projects, NEK makes use of these dual competencies, with a large support between its different divisions.

On national electrification schemes, NEK mobilizes complete teams, formed by industry experts, marketing experts, business corporate experts, financial analysts, and/or advisors, chartered Engineers, chartered Surveyors, human resource specialists, etc.



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1.6 Consultants' Experience in Power Transmission Projects

Transmission and Distribution line routing often generate conflicts with societal use of resources within the project area. There is usually concern about the negative impacts when line routings are selected. Such concerns include:







- Social and cultural concerns
- Loss of land and property
- Loss of livelihood
- Public health concerns
- Impacts on terrestrial ecology and wildlife
- Impacts on aquatic flora and fauna

NEK has tremendous experience in the many technical disciplines required in these kinds of projects, namely;

- Resettlement Action Plans (RAPs)
- Community-Based Consultations (CBCs)
- Socio-Economic Impact Assessment (SEIAs)
- Land Appropriation Dynamics (Property Survey & Valuation)
- Transmission/Transportation Dynamics
- Project Economics/Feasibility Studies
- Environmental Impact Assessments (EIAs)
- Geology, Soil and Rock Mechanics
- Hydrology and Sediment Mechanics
- Terrestrial Flora and Fauna Dynamics
- Aquatic Flora and Fauna Dynamics
- Biodiversity Issues

We have implemented several assignments including transmission dynamics, energy economics/feasibility studies, RAPs, ESIAs, EIAs and property valuations for proposed 33/132/220kV transmission lines, mini hydro, and other alternative energy investments. We believe this experience gives us the leverage to deliver quality and affordable services to our Clients.

Our pool of consultants have varied and deeper experience in implementing engineering and environmental projects. Our consultants have over ten year experience in implement-

ing engineering and environmental projects, which is important in giving our prospective clients the requisite satisfaction. Our experience can be summarised under five broad categories as illustrated below:

Community Consultations/Socio-Economic Studies

The successes of any project that involves land take, property destruction and displacement of persons depends on how well the persons to be affected are made to feel part of such a project. This calls for early integration of the Project Affected Persons (PAPs) in the design and implementation of the project. More importantly, the impacts of the project activities on the livelihoods of the PAPs need to be determined if strategies to ameliorate the impacts on the livelihoods are to be designed. Moreover, funding agencies such as the World Bank require among other things the PAPs to be consulted and given alternatives, which leave them, at worst, in the pre-project state.

NEK has a wide experience in Community Consultations and Socio-Economic Surveys. We have carried out community consultations with PAPs, local authorities and other project stakeholders to determine the next best socio-economic coping strategies for development related projects. Besides, we are well conversant with operational requirements on involuntary resettlement of the World Bank and African Development Bank funded projects.



Land and Property Appropriation

Transmission line projects are usually associated with land take and property destruction, which requires cadastral studies, identification and valuation of affected properties. Key in this is the donor agency requirement for Replacement Cost Valuation, which leaves the affected person in a better state than Depreciated Valuation that does otherwise. NEK has a wide experience in valuing affected properties such as houses, trees, land, cultural sites, and others, which are triggered by involuntary resettlement. Photo evidencing is key in whatever valuation assignment we conduct.

Environmental Impact Assessments (EIAs) and Audits (EAs)

Development projects world over involve trade-offs between environmental degradation and benefits accruing to the project. This requires comprehensive environmental impact assessments and audits to determine extent of impact thus mitigation measures. We are conversant with techniques required in determining baseline environ-

mental conditions, potential environmental and social impacts. More important is development of mitigation measures, alternatives and environmental management plans.
NEK has carried out comprehensive EIA studies in the energy sector, industry and road sector. We have assessed ecological and socio-economic consequences of proposed projects in hydropower transmission lines, distribution and road works. We have assessed environmental issues in ongoing or completed projects to establish the extent of impacts during implementation as well as determining achievement of environmental objectives.

Power Transmission/Distribution and Technical Feasibility Studies

Investing in power transmission and distribution requires technical feasibility analysis to be done if the project is to be successful. Tower spotting survey and design, load forecasting, load flow analysis, contingency planning, short circuit analysis and optimization of technical losses as well as operations and maintenance costs are important considerations. Furthermore, voltage level selection, conductor size, protection, control and communication must be considered during technical feasibility if system stability is to be achieved. Technical feasibility studies in transmission/distribution line design and development require a holistic approach. Besides technical issues, underlying system factors such as topography, hydrology, flora and fauna have to be considered during line profiling (routing and substation layout). Topographic and hydrological conditions such as large rivers, wetlands, flooding and geotechnical conditions present technical constraints in line routing and design. Similarly, these factors influence choice between steel tower grids and concrete grids or wooden pole grids.





NEK has a wide experience in technical considerations such as transmission line design and configuration, standard requirements (Uganda, IEC, etc), electrical network analysis, switchgear, network controls, load dispatch, network calculations and network communication/protection for transmission line projects ranging from 33 through 132 to 220kVs. Our Consultants immense understanding of the local topographical, hydrological and geotechnical barriers are an added advantage which any Client would want to exploit.

Energy Economics/Financial Feasibility Studies

A technically feasible transmission line may not necessarily be financially viable. Supply and demand analysis, financial and economic analysis including risk analysis is vital before a 'most' viable alternative can be developed. Core economic analysis techniques such as Economic Net Present Value (ENPV), Economic Internal Rate of Return (EIRR) and Economic Cost Benefit Analysis (ECBA) are important in determining the economic viability of development projects. Furthermore, it is important to determine the financial viability of development projects if an informed trade-off is to be made in order to come up with the 'most' viable alternative. This is where financial analytical techniques such as Financial Net Present Value (FNPV) and Financial Internal Rate of Return (FIRR) are powerful tools often used.

Our Consultants are well grounded in the use of Economic and Financial tools to determine feasibility of development projects. We have carried out assessment of technical, financial, and economic viability in projects such as roads, housing estates and manufacturing plans. In the power sector, we have done studies on tariff modes, least cost and integrated resource planning, power plant optimization, load forecasts, energy and grid management.

Why NEK is Interested in the Assignment

NEK is interested in implementing this project because we believe it is the type of project, which suits the abilities of our staff and in particular, the experience of our company. From all these, we believe we are the best choice for this assignment for reasons outlined below.

Experience

Over the years, NEK has been engaged in a diverse range of Engineering and Environmental Projects. NEK has carried out Feasibility studies, detailed engineering designs, preparation of tender documents, supervision of construction, EPC contract management, EIAs, RAPs, Socio-economic and Land appropriation studies on hydropower and Electricity supply development projects at all stages in the project cycle.

We believe the schedule shown in the TOR is adequate and the work is similar to the previous projects we have handled. Our team range and organisation is adequate for the smooth running of the assignment.

Project Cycle

NEK offers and has experience in a full range of services required for running all stages of the project cycle from Feasibility studies, Engineering designs, Socio-Economic Studies, Community Consultation and Sensitisation, Land Survey and Property Valuation to Resettlement Action Planning and Implementation. Our staff have accumulated comprehensive experience covering a range of projects, thus have enormous feedback experience utilised in every new project. Against this background, therefore, we believe we will execute exhaustively all stages of the assignment and cover all possible technical challenges as and when they occur in a timely manner.



Project Size

NEK has varied experience in managing projects from small to large ones. Large multidisciplinary projects give us chance to effectively utilise our multidisciplinary and experienced human resource base. The experience gathered so far in such projects makes NEK suitable for this assignment.

Regional Knowledge

NEK was established in Uganda in 2003, therefore we have enormous knowledge of local conditions, a well established local network and experience from assignments in engineering, environmental and resettlement action plans in East Africa. We are serious partners in the consulting business and want to contribute to the rapid economic and social-economic development of Uganda. We are currently involved in several ongoing projects, thus we boast of a working knowledge and understanding of local culture, a



1.7 Some Projects assigned to NEK Consults LTD

combination important for the successful implementation of projects.

Creativity

In whatever we do, we believe in recommending to our clients the most cost effective solutions that help them meet their investment objectives and goals. NEK will bring in creativity to the project drawing from a wealth of experience acquired from a great variety of projects.

Project Management

Mindful of the assignment requirements NEK selects Project Managers basing on their wealth of relevant experience and specialised knowledge.

Activity	1	2	3	4	5	6	7	8	9	10
Supervision of construction			✓	✓	✓	✓	✓	✓	✓	✓
Assistance in bidding process to get EPC contractor			✓	✓	✓	✓	✓	✓	✓	✓
Training and knowledge transfer			✓	✓	✓	✓	✓	✓	✓	✓
Tender document preparation			✓	✓	✓	✓	✓	✓	✓	✓
Financial and economic analysis			✓	✓	✓	✓	✓	✓	✓	✓
Type, configuration and Layout of the substation	✓	✓	✓	✓	✓	✓				
Stability of interconnected networks	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protection, control and communication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Determination of support structures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selection of type and size of conductors	✓	✓					✓	✓	✓	✓
Selection of voltage grade (level)			✓	✓	✓	✓	✓	✓	✓	✓
Geology and Topology	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Substation site selection			✓	✓	✓	✓				
Line route selection							✓	✓	✓	✓
Load forecast	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Project Management			✓	✓	✓	✓	✓	✓	✓	✓

	Contract Date	Project Name
1	2009	Thai An 2X41MW Hydro power plant (subcontractor offering engineering services for switch yard to EPC Contractor – Messrs **People Ele. Appliance Group Co., Ltd)**
2	2010	330KV Transmission line and associated substations from Huangyuan to Delingha Project of 85km (subcontractor offering engineering services to EPC Contractor _ Messrs **Hongqi Group Electric Power Fittings Co., Ltd)**
3	2012	**Namanve South** 3X50/63 MVA, 132/33kV **Substation**
4	2014	**Mukono** 3X50/63 MVA, 132/33kV **Substation**
5	2014	**Iganga** 2X32/40 MVA, 132/33kV **Substation**
6	2014	**Luzira** 3X32/40 MVA, 132/33kV **Substation**
7	2014	132kV **Transmission line to Mukono substation in Mukono industrial park**
8	2012	132kV **Transmission line to Namanve South substation in Namanve South Industrial Park**
9	2014	132kV **Transmission line to Iganga substation in Iganga Industrial Park**
10	2014	132kV **Transmission line to Luzira substation in Luzira Industrial Park**





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