

# ELECTRICITY SECTOR



# Electricity Sector

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## Project list

No	Project
1	Alfula Power Project.
2	220KV South Kordufan Transmission line Project.
3	Dongola 10 MW Solar Power Project.
4	Port Sudan 20 MW Solar Power Project.
5	Khartoum 340 MW Solar Power Project
6	Wad Madani 30 MW Solar Power Project..
7	AlGedaref - Solar Power Project.
8	Atbara 50 MW Solar Power Project.
9	Kasala 10 MW Solar Power Project.
10	Nyala 10 MW Solar Power Project.
11	Al-Fashir-10 MW Solar Power Project
12	Al-Geneina 10 MW Solar Power Station.
13	Dongola 100 MW Wind Power Project.
14	Nyala 20 MW Wind Power Project.
15	Red Sea 180 MW Wind Power Project.
16	Red Sea Coal Fired Power Plant.
17	Khartoum RingTransmission Line 500KV.
18	Khartoum Network Improvement Project
19	Electrical power lost process.
20	Arkai-Port Sudan, Atbara- Khartoum Transmission line Project.
21	Aroma-Dordaib -Haya -Port Sudan Transmission line Project.
22	Halfa-Abudleeg Transmission line Project.
23	West and north of Omdurman Transmission line Project.
24	Upgrading for Elroseres power station from 40 to 50 MW.
25	Sinnar power station rehabilitation.
26	Changing of blades for units (5, 6, and 7).
27	Nuclear Energy.

## 1. Alfula Power Project

S.N.	CRITERION		Data
1.1	Project name.		Alfula Power Project
1.2	Project objectives.		<ul style="list-style-type: none"> <li>• Meet the growing power demand for the National Power Grid.</li> <li>• Boost economic and social development in Kurdufan and Darfur states.</li> <li>• Utilize Al Fula crude oil and natural gas for power generation.</li> <li>• Enhance the stability of the National Power Grid.</li> <li>• Assist in the implementation of the Sudan's overall economic and social transformation plans.</li> </ul>
1.3	Project sector.		Electricity .
1.4	Project capacity.		3x135 MW (405 MW thermal power generating units)
1.5	Location.		The project is located in West Kurdufan State, near the oil fields. The project site is located 900 km away from Khartoum. Al Fula steam power plant project is associated with a 220 kV double circuit transmission line from Alobaied to Babanusa.
1.6	Cost (Budget).		
1.7	Time frame		36 month.
1.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
1.9	Market.		National
1.10	Feasibility study.	Pre	-
		Final	-
1.11	Project status.		<ul style="list-style-type: none"> <li>• Specification &amp; tender documents are ready.</li> <li>• Design finished 100%</li> <li>• Equipments Manufacturing 40%</li> <li>• Transmission Equipments Transportation 95%</li> </ul>

## 2. 220KV South Kordufan Project

S.N.	CRITERION		Data
2.1	Project name.		220KV South Kordufan Project
2.2	Project objectives.		Ensure sustainable electricity supply by supplying power to South Kordufan , and national grid.
2.3	Project sector.		Electricity.
2.4	Project capacity.		<ul style="list-style-type: none"> <li>• Eight new substation tern key bases 60/60/15MVA (480MVA).</li> <li>• Transmission material for 630km only .</li> </ul>
2.5	Location.		South Kordufan State
2.6	Cost (Budget).		.
2.7	Time frame		38 month
2.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
2.9	Market.		National
2.10	Feasibility study.	Pre	-
		Final	Feasibility study Environmental study
2.11	Project status.		<ul style="list-style-type: none"> <li>• The advance payment 15% has been paid by Sudan Government.</li> <li>• All documents required by Export – Import Bank of China for satisfying the conditions of first drawdown has been fulfill including repayment mechanism agreement has been signed but till now we did not receive this document signed from the bank.</li> <li>• Kick off meeting held in Sudan on 19/12/2015 to 26/12/2015.</li> <li>• Design meeting and factory visits in China from 2/3 to 14/3/2016 finished.</li> </ul>

### 3. Dongola 10 MW Solar Power Project

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S.N.	CRITERION		Data
3.1	Project name.		Dongola 10 MW Solar Power Project
3.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to the national grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply the national grid by 2018.</li> <li>• Fuel saving</li> </ul>
3.3	Project sector.		Renewable Energy.
3.4	Project capacity.		10 MW photovoltaic solar power plant
3.5	Location.		Dongola, the capital of Northern state
3.6	Cost (Budget).		
3.7	Time frame		3-4 months.
3.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
3.9	Market.		National
3.10	Feasibility study.	Pre	-
		Final	Available
3.11	Project status.		<ul style="list-style-type: none"> <li>• Area : not secured yet.</li> </ul>

## 4. Port Sudan 20 MW Solar Power Project

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S.N.	CRITERION		Data
4.1	Project name.		Port Sudan 20 MW Solar Power Project
4.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 20 MW from solar energy to supply - national grid by 2018.</li> <li>• Fuel saving.</li> </ul>
4.3	Project sector.		Renewable Energy.
4.4	Project capacity.		20 MW photovoltaic solar power plant
4.5	Location.		Port Sudan, at the Red Sea state. It is located in the eastern part of Sudan along the Red Sea coast
4.6	Cost (Budget).		
4.7	Time frame		3 – 6 months
4.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
4.9	Market.		National
4.10	Feasibility study.	Pre	-
		Final	Available
4.11	Project status.		<ul style="list-style-type: none"> <li>• Area : not secured yet</li> </ul>

## 5. Khartoum 340 MW Solar Power Project

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S.N.	CRITERION		Data
5.1	Project name.		Khartoum 340 MW Solar Power Project
5.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 340 MW from solar energy to supply the national grid by 2018.</li> <li>• Fuel saving.</li> </ul>
5.3	Project sector.		Renewable Energy
5.4	Project capacity.		340 MW photovoltaic solar power plant
5.5	Location.		Khartoum Region - middle-west part of Sudan, The project will be located in 3-4 different sites near the main substations at Khartoum state.
5.6	Cost (Budget).		
5.7	Time frame		2-3 years
5.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
5.9	Market.		National
5.10	Feasibility study.	Pre	-
		Final	Available
5.11	Project status.		<ul style="list-style-type: none"> <li>• Area: not secured yet.</li> </ul>

## 6. Wad Madani 30 MW Solar Power Project

S.N.	CRITERION		Data
6.1	Project name.		Wad Madani 30 MW Solar Power Project.
6.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 30 MW from solar energy to supply the national grid by 2018.</li> <li>• Fuel saving.</li> </ul>
6.3	Project sector.		Renewable Energy
6.4	Project capacity.		30 MW photovoltaic solar power plant.
6.5	Location.		The project will be located at Wad Madani, the capital of Al Jazeera state. It is located in the central part of Sudan about 200 km southeast of Khartoum.
6.6	Cost (Budget).		
6.7	Time frame		3 – 6 months
6.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
6.9	Market.		National
6.10	Feasibility study.	Pre	-
		Final	Available
6.11	Project status.		<ul style="list-style-type: none"> <li>• Area: not secured yet.</li> </ul>



## 7. Al Gedaref - Solar Power Project

S.N.	CRITERION		Data
7.1	Project name.		AlGedaref - Solar Power Project
7.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to Nyala isolated grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply - Nyala Isolated grid by 2018.</li> <li>• Fuel saving.</li> </ul>
7.3	Project sector.		Renewable Energy
7.4	Project capacity.		10 MW photovoltaic solar power plant
7.5	Location.		AlGedaref state, in the eastern part of Sudan about 500 km southeast of Khartoum.
7.6	Cost (Budget).		
7.7	Time frame		3 – 6 months
7.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
7.9	Market.		National
7.10	Feasibility study.	Pre	-
		Final	Available
7.11	Project status.		<ul style="list-style-type: none"> <li>• Area : not secured yet.</li> </ul>

## 8. Atbara 50 MW Solar Power Project

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S.N.	CRITERION		Data
8.1	Project name.		Atbara 50 MW Solar Power Project
8.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 50 MW from solar energy to supply the national grid by 2018.</li> <li>• Meet the demand for electricity in Atbara industrial load area.</li> <li>• Fuel saving.</li> </ul>
8.3	Project sector.		Renewable Energy.
8.4	Project capacity.		50 MW photovoltaic solar power plant.
8.5	Location.		Atbara, at the River Nile state
8.6	Cost (Budget).		
8.7	Time frame		4-8 months
8.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
8.9	Market.		National
8.10	Feasibility study.	Pre	-
		Final	Available
8.11	Project status.		<ul style="list-style-type: none"> <li>• Area : not secured yet</li> </ul>

## 9. Kasala 10 MW Solar Power Project

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S.N.	CRITERION		Data
9.1	Project name.		Kasala 10 MW Solar Power Project
9.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply the national grid by 2018.</li> <li>• Fuel saving.</li> </ul>
9.3	Project sector.		Renewable Energy.
9.4	Project capacity.		10 MW photovoltaic solar power plant.
9.5	Location.		Kasala, the capital of Kasala state, eastern part of Sudan about 500 km east of Khartoum
9.6	Cost (Budget).		
9.7	Time frame		3-6 months.
9.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
9.9	Market.		National
9.10	Feasibility study.	Pre	-
		Final	Available
9.11	Project status.		<ul style="list-style-type: none"> <li>• Area: not secured yet.</li> </ul>

## 10. Nyala 10 MW Solar Power Project Project

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S.N.	CRITERION		Data
10.1	Project name.		Nyala 10 MW Solar Power Project Project
10.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to Nyala isolated grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply - Nyala Isolated grid by 2017.</li> <li>• Fuel saving.</li> </ul>
10.3	Project sector.		Renewable Energy
10.4	Project capacity.		10 MW photovoltaic solar power plant
10.5	Location.		Nyala city is in the western region at 12°2'11"N 24°52'37"E.
10.6	Cost (Budget).		
10.7	Time frame		3 – 4 months
10.8	Feasibility	ROI	25.99%
	Financial	PBP	5 YEAR
	Indicators.	IRR	12.67
10.9	Market.		National
10.10	Feasibility study.	Pre	-
		Final	Available.
10.11	Project status.		<ul style="list-style-type: none"> <li>• Area is available</li> <li>• Preparation of the tender document ongoing will be available in 2 months.</li> </ul>

## 11. Al-Fashir- Solar Power Project

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S.N.	CRITERION		Data
11.1	Project name.		Al-Fashir- Solar Power Project
11.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to Nyala isolated grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply Al-Geneina Isolated grid by 2017.</li> <li>• Fuel saving</li> </ul>
11.3	Project sector.		Renewable Energy
11.4	Project capacity.		10 MW photovoltaic solar power plant
11.5	Location.		Al-Fashir city is in the west region of the Sudan at 13°38'N 25°22'E.
11.6	Cost (Budget).		
11.7	Time frame		3 – 4 months
11.8	Feasibility Financial Indicators.	ROI	25.99%
		PBP	5 YEAR
		IRR	12.67
11.9	Market.		National
11.10	Feasibility study.	Pre	-
		Final	Available.
11.11	Project status.		<ul style="list-style-type: none"> <li>• Area is available</li> <li>• Preparation of the tender document ongoing, will be available in 2 months</li> </ul>

## 12. Al-Geneina Solar Power Station

S.N.	CRITERION		Data
12.1	Project name.		Al-Geneina Solar Power Station
12.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to Nyala isolated grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 10 MW from solar energy to supply Al-Geneina Isolated grid by 2017.</li> <li>• Fuel saving</li> </ul>
12.3	Project sector.		Renewable Energy
12.4	Project capacity.		10 MW photovoltaic solar power plant
12.5	Location.		Al-Geneina city is in the west region of Sudan at 13°26'N 22°26'E .
12.6	Cost (Budget).		
12.7	Time frame		3 – 4 months
12.8	Feasibility Financial Indicators.	ROE	25.99%
		PBP	5 Years
		IRR	12.67
12.9	Market.		National
12.10	Feasibility study.	Pre	-
		Final	Available.
12.11	Project status.		<ul style="list-style-type: none"> <li>• Area is available</li> <li>• Preparation of the tender document ongoing, will be available in 2 months</li> </ul>

### 13. Dongola 100 MW Wind Power Project

S.N.	CRITERION		Data
13.1	Project name.		Dongola 100 MW Wind Power Project
13.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 100 MW from wind power to supply the national grid by 2019.</li> <li>• Fuel saving.</li> </ul>
13.3	Project sector.		Renewable Energy
13.4	Project capacity.		100 MW wind turbine plant.
13.5	Location.		The Dongola wind farm is located in the northern Sudan .The project site is 10 km west of Dongola city. The available and secured land area of the project site is 49 square kilometers.
13.6	Cost (Budget).		
13.7	Time frame		17th month
13.8	Feasibility Financial Indicators.	ROE	17.13%
		PBP	7 Years
		IRR	10.10%
13.9	Market.		National
13.10	Feasibility study.	Pre	-
		Final	Available.
13.11	Project status.		<ul style="list-style-type: none"> <li>• Feasibility study and technical specifications available.</li> <li>• Area is secured</li> </ul>

## 14. Nyala 20 MW Wind Power Project

S.N.	CRITERION		Data
14.1	Project name.		Nyala 20 MW Wind Power Project
14.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to Nyala isolated grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 20 MW from wind power to supply Nyala isolated grid by 2018.</li> <li>• Fuel saving.</li> </ul>
14.3	Project sector.		Renewable Energy
14.4	Project capacity.		20 MW wind turbine plant.
14.5	Location.		Nyala wind farm is located in the western part of the Sudan near Nyala city at the Southern Darfour state, located approximately 900 Km southwest of Sudanese capital Khartoum. The project site is 10 km west of Nyala. The available and secured land area of the project site is 8 square kilometer.
14.6	Cost (Budget).		
14.7	Time frame		18-24 months.
14.8	Feasibility Financial Indicators.	ROE	17.13%
		PBP	7 YEAR
		IRR	10.10%
14.9	Market.		
14.10	Feasibility study.	Pre	-
		Final	Available.
14.11	Project status.		<ul style="list-style-type: none"> <li>• Feasibility study and technical specifications available.</li> <li>• Area is secured</li> </ul>



## 15. Red Sea 180 MW Wind Power Project

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S.N.	CRITERION		Data
15.1	Project name.		Red Sea 180 MW Wind Power Project
15.2	Project objectives.		<ul style="list-style-type: none"> <li>• Ensure sustainable electricity supply by supplying power to National grid.</li> <li>• Utilizing the available clean and sustainable renewable energy to generate 180 MW from wind power to supply national grid by 2019.</li> <li>• Fuel saving.</li> </ul>
15.3	Project sector.		Renewable Energy
15.4	Project capacity.		180 MW wind turbine plant.
15.5	Location.		The proposed project's site is located at Toker town in red sea state.
15.6	Cost (Budget).		
15.7	Time frame		18-30 months.
15.8	Feasibility Financial Indicators.	ROE	17.13%
		PBP	7 YEAR
		IRR	10.10%
15.9	Market.		National
15.10	Feasibility study.	Pre	-
		Final	Ongoing
15.11	Project status.		<ul style="list-style-type: none"> <li>• Area is available.</li> <li>• wind measurements completed</li> </ul>

## 16. Red Sea Coal Fired Power Plant

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S.N.	CRITERION		Data
16.1	Project name.		Red Sea Coal Fired Power Plant
16.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
16.3	Project sector.		Electricity.
16.4	Project capacity.		2x300 MW Coal Fired Power Plant
16.5	Location.		Red Sea State 70 Km North Port Sudan
16.6	Cost (Budget).		
16.7	Time frame		-
16.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
16.9	Market.		National
16.10	Feasibility study.	Pre	-
		Final	Available.
16.11	Project status.		Funding and Implementation

## 17. Khartoum Ring Line 500KV

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S.N.	CRITERION		Data
17.1	Project name.		Khartoum Ring Line 500KV.
17.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
17.3	Project sector.		Electricity.
17.4	Project capacity.		Substations:3+2 Extended Transmission lines 500 K.V. – 225Km
17.5	Location.		Khartoum State.
17.6	Cost (Budget).		
17.7	Time frame		-
17.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
17.9	Market.		National
17.10	Feasibility study.	Pre	-
		Final	Available.
17.11	Project status.		Funding and Implementation

## 18. Khartoum Network Improvement Project

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S.N.	CRITERION		Data
18.1	Project name.		Khartoum Network Improvement Project
18.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
18.3	Project sector.		Electricity.
18.4	Project capacity.		Substations:4new&9Extended Transmission lines 110,220 K.V. – 84Km
18.5	Location.		Khartoum State.
18.6	Cost (Budget).		
18.7	Time frame		-
18.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
18.9	Market.		National
18.10	Feasibility study.	Pre	-
		Final	Available.
18.11	Project status.		Funding and Implementation

## 19. Electrical power lost process

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S.N.	CRITERION		Data
19.1	Project name.		Electrical power lost process
19.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
19.3	Project sector.		Electricity.
19.4	Project capacity.		Minimizing of power loss from 18% to 11% with increments of energy from 281 up to 1639GWH. At the end of 2020 available energy will be 4642 GWH.
19.5	Location.		Distribution network in all states.
19.6	Cost (Budget).		
19.7	Time frame		-
19.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
19.9	Market.		National
19.10	Feasibility study.	Pre	
		Final	Available.
19.11	Project status.		Funding and Implementation

## 20. Arkai-Port Sudan, Atbara- Khartoum Transmission line Project

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S.N.	CRITERION		Data
20.1	Project name.		Arkai-Port Sudan, Atbara- Khartoum Transmission line Project..
20.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
20.3	Project sector.		Electricity.
20.4	Project capacity.		Substations: 2 new+2 Extended. Transmission lines 500 K.V. – 780Km
20.5	Location.		Khartoum –Port Sudan- Atbara .
20.6	Cost (Budget).		
20.7	Time frame		-
20.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
20.9	Market.		National
20.10	Feasibility study.	Pre	-
		Final	Available.
20.11	Project status.		Funding and Implementation

## 21. Aroma-Dordaib-Hai-Port Sudan

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S.N.	CRITERION		Data
21.1	Project name.		Aroma-Dordaib-Hai-Port Sudan.
21.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
21.3	Project sector.		Electricity.
21.4	Project capacity.		Substations:1 +2 Extension Transmission lines 220 K.V. – 490Km
21.5	Location.		Red Sea.
21.6	Cost (Budget).		
21.7	Time frame		-
21.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
21.9	Market.		National
21.10	Feasibility study.	Pre	-
		Final	Available.
21.11	Project status.		Funding and Implementation

## 22. Halfa-Abudleeg Transmission line Project

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S.N.	CRITERION		Data
22.1	Project name.		Halfa-Abudleeg Transmission line Project.
22.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
22.3	Project sector.		Electricity.
22.4	Project capacity.		Substations:1 .
22.5	Location.		Western Region.
22.6	Cost (Budget).		
22.7	Time frame		-
22.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
22.9	Market.		National
22.10	Feasibility study.	Pre	-
		Final	All Available except Environmental Impact Analysis.
22.11	Project status.		Funding and Implementation



## 23. West and North of Omdurman

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S.N.	CRITERION		Data
23.1	Project name.		West and North of Omdurman.
23.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
23.3	Project sector.		Electricity.
23.4	Project capacity.		Substations:3 +2 Extension Transmission lines 220 K.V. – 320Km
23.5	Location.		Khartoum State.
23.6	Cost (Budget).		
23.7	Time frame		-
23.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
23.9	Market.		National
23.10	Feasibility study.	Pre	-
		Final	Available.
23.11	Project status.		Funding and Implementation

## 24. Upgrading for Elroseres power station from 40 to 50 MW

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S.N.	CRITERION		Data
24.1	Project name.		Upgrading for Elroseres power station from 40 to 50 MW.
24.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
24.3	Project sector.		Electricity.
24.4	Project capacity.		Power upgrading.
24.5	Location.		Elroseres power station, The Generator Rewinding.
24.6	Cost (Budget).		
24.7	Time frame		-
24.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
24.9	Market.		National
24.10	Feasibility study.	Pre	-
		Final	In the study phase will be completed in June 2016.
24.11	Project status.		Funding.

## 25. Sinnar power station rehabilitation

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S.N.	CRITERION		Data
25.1	Project name.		Sinnar power station rehabilitation.
25.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
25.3	Project sector.		Electricity.
25.4	Project capacity.		The power station is to be upgraded to give 26 MW by modification and rehabilitation of measurement devices, control and the substation.
25.5	Location.		Sinnar power station.
25.6	Cost (Budget).		
25.7	Time frame		-
25.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
25.9	Market.		National
25.10	Feasibility study.	Pre	-
		Final	All studies, Tender documents and prequalification for 5 contractors Completed.
25.11	Project status.		Funding .

## 26. Changing of blades for units (5, 6, and 7)

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S.N.	CRITERION		Data
26.1	Project name.		Changing of blades for units (5, 6, and 7).
26.2	Project objectives.		Ensure sustainable electricity supply by supplying power to National grid.
26.3	Project sector.		Electricity.
26.4	Project capacity.		Changing of blades
26.5	Location.		Sinnar power station, the Generator Rewinding.
26.6	Cost (Budget).		
26.7	Time frame		-
26.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
26.9	Market.		National
26.10	Feasibility study.	Pre	-
		Final	There is an offer from Andritz (manufacturing company).
26.11	Project status.		Funding

## 27. Nuclear Energy

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S.N.	CRITERION		Data
27.1	Project name.		Nuclear Energy.
27.2	Project objectives.		More options for electrical energy resources in Sudan.
27.3	Project sector.		Nuclear Energy.
27.4	Project capacity.		3x600 MW (1800MW)
27.5	Location.		River Nile State and Red Sea State
27.6	Cost (Budget).		
27.7	Time frame		2031.
27.8	Feasibility Financial Indicators.	ROI	-
		PBP	-
		IRR	-
27.9	Market.		National
27.10	Feasibility study.	Pre	-
		Final	-
27.11	Project status.		Ministry of water Resources and Electricity already signed MOU with China National Nuclear Corporation.