NATIONAL ELECTRICITY
CORPORATION

NEC – SUDAN

NEC INVESTMENT GUIDE

PROJECTS PROFILES (2005-2010)
Port Sudan Power Station Project

1- Location:
Arkyiai Natural Harbor 75Km North to Port Sudan City

2- Type and Capacity:
500 MW Steam Coal Fired Generation with provision of Desalination Plant.

3- Project Status:
Area is reserved, Feasibility study done, ELA ongoing.

4- Est. Erection Period:
36 Months

5- Description:
* 5x100 MW steam turbines:
* Five (5) CFB Boilers
* Harbor receiving Coal
* Interconnection facilities
* Storage yard
* Housing estate

El Bagair Power Station Project

1- Location:
   El bagair, 42Km from Khartoum, Latitude 15°, Longitude 32°,

2- Type and Capacity:
   300 MW Combined Cycle Power station, burning crude oil.

3- Project Status:
   Area is reserved,

4- Est. Erection Period:
   30 Months

5- Description:
   * 4x50 MW GTs
   * 4 HRSG
   * 2x50 MW ST
   * Inter connection facilities;
   * Fuel storage facilities
   * Housing estate.

Kilo X Power Station Project

1- Location:
   Kilo X, 10 Km from Khartoum Center, Latitude 15º 31N, Longitude 32º 37E.

2- Type and Capacity:
   280 MW low speed Diesel engines, burning HFO

3- Project Status:
   Area is reserved, A Feasibility Study prepared.

4- Est. Erection Period:
   36 Months

5- Description:
   * 7x40 MW Low speed diesel engines
   * Interconnection facilities
   * Fuel storage tanks

Garri (3) Power Station Project

1- Location:
   Garri, Khartoum North, 70 Km from Khartoum Center

2- Type and Capacity:
   242 MW Combined Cycle Power station, burning crude oil.

3- Project Status:
   Area is reserved,

4- Est. Erection Period:
   30 Months

5- Description:
   * 4x40 MW GTs
   * 4 HRSG
   * 2x40 MW ST
   * Inter connection facilities
   * Fuel storage facilities

Sennar Power Station Project

1- Location:
   Sennar town, 290 Km south to Khartoum, Latitude 13º 33; Longitude 33º 35;
2- Type and Capacity:
   50 MW Hydro power plant on existing Sennar Dam
3- Project Status:
   The study was Don by MERZ and McClellan,
4- Est. Erection Period:
   24 Months
5- Description:
   * 4x12.5 MW Kaplan Turbines
   * Existing dam was built 1925
   * Interconnection to existing facilities.

Kasala Power Station Project

1- Location:
   Kasala City, 600 Km from Khartoum Center, Latitude 15.22° Longitude 39 19';

2- Type and Capacity:
   50 MW Diesel engines, Medium speed type. Firing HFO

3- Project Status:
   Area is reserved; Specification Available.

4- Est. Erection Period:
   18 Months

5- Description:
   * 2x25 MW medium speed diesel engines;
   * Interconnection to existing facilities.
   * Fuel storage tanks.

EL Obeid- AL Dibebat –Abu Zabad – Rijl Al Fola Part (A):
Transmission line

1- Voltage:
   220 KV

2- Route Length:
   2.1. El Obeid – Al Dibebat    100 KM
   2.2. Al Dibebat – Abu Zabad    80 KM
   2.3. Abu Zabad- Rijl Al Fual   120 KM

3- Project status:
   Route defined

4- Est. Erection period:
   One year

5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW+SGW

EL Obeid- AL Dibebat – Abu Zabad – Rijl Al Fola Part (B): Substations

1- No. of substations: three (3)
   1.1. Al Dibebat substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x35 MVA
   • No. of bays: 220 KV= 9bays: 33KV switchboard: 11KV switchboard.

1-2 Abu Zabad substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x35 MVA
   • No of bays: 220KV= 9 bays: 33KV switchboard: 11KV switchboard.

1-3 Rijl Al Fula substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x50MVA
   • No. of bays: 220 KV= 7bays: 33KV switchboard: 11KV switchboard.

2- Project status: Planned
3- Est. Erection period: One year

Hassahisa-Ginaid Part (A): transmission line

1- Voltage: 110 KV
2- Route Length: 15 KM
3- Project status:
   Route defined
4- Est. Erection period:
   6 months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Hassahisa-Ginaid Part (A): Substations

1- No. of substations: two(2)

1.1. Hassahisa substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 220/110/33kV
- Capacity: 2x100 MVA
- No. of bays: 220 KV= bays:5: 110KV switchboard:

1-2 Ginaid substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 110/33kV
- Capacity: 2x60 MVA
- No of bays: 110KV bays: 5:33KV switchboard:

1-3 Rijl Al Fula substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 220/33/11kV
- Capacity: 2x50MVA
- No. of bays: 220 KV= 7bays: 33KV switchboard:

2- Project status: Planned
3- Est. Erection period: 6 Months

Gadarif-Showak-Kilo3- Kasala Part (A): Transmission Line

1- Voltage: 220 KV
2- Route Length: 225 KM
3- Project status: Route defined
4- Est. Erection period: 18 months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Gadarif-Showak-Kilo3- Kasala Part (B): Substations

1- No. of substations: Three (3)

1.1. Kasala substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 220/110/33kV
- Capacity: 2x60 MVA
- No. of bays: 220 KV bays: 7: 110KV bays=5:33KV switchboard:

1-2 Shwoak substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 220/33kV
- Capacity: 2x35 MVA
- No of bays: 220KV bays: 7:33KV switchboard:

1-3 Kilo3 substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 220/110/33kV
- Capacity: 2x35MVA
- No. of bays: 220 KV bays= 7:33KV switchboard:

2- Project status: Planned
3- Est. Erection period: 18 Months

Kasala - Aroma Part (A): Transmission Line

- Voltage: 220 KV
2- Route Length: 60 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Kasala Aroma Part (B): Substations

1- No. of substations: One (1)

1.1. Aroma substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 220/110/33kV
   - Capacity: 2x55 MVA
   - No. of bays: 220 KV bays= 8; 110KV = 5 bays=33KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Dongola – Wadi Halfa Part (A): Transmission Line

1- Voltage: 220 KV  
2- Route Length: 400 KM  
3- Project status: Route defined  
4- Est. Erection period: Two years  
5- Description:  
   • Double circuit Transmission line on self supported steel lattice towers.  
   • Double bundled conductor 2x240 mm2 ACSR OPGW  
   • +SGW

Dongola –Karma-Wadi Halfa Part (B): Substations

1- No. of substations: Two (2)

1.1. **Karma** substation:
- **Type:** Conventional outdoor double bus-bar
- **Voltage:** 220/33kV
- **Capacity:** 2x50 MVA
- **No. of bays:** 220 KV bays:7; 33KV switchboard:

1-2 Wadi Halfa substation:
- **Type:** Conventional outdoor double bus-bar
- **Voltage:** 220/33kV
- **Capacity:** 2x50 MVA
- **No of bays:** 220KV bays= 5:33KV switchboard:

2- Project status: Planned
3- Est. Erection period: Two years

Atbara-Abu Hamed Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 224 KM
3- Project status: Planned
4- Est. Erection period: 18 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Atbara-Abu Hamed Part (B): Substations

1- No. of substations: One (1)
1.1. Abu Hamed substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 220/33kV
   - Capacity: 2x100 MVA
   - No. of bays: 220 KV bays:5: 33KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Babanusa - Adila Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 100 KM
3- Project status: Planned
4- Est. Erection period: 18 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Babanusa- adila Part (B): Substations

1- No. of substations: One (1)
1.1. Adila substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x20 MVA
   • No. of bays: 220 KV 7bays; 33KV switchboard; 11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Adila-El Da’ein Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 80 KM
3- Project status: Planned
4- Est. Erection period: 18 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Adila-ElDa’ein Part (B): Substations

1- No. of substations: One (1)

1.1. El Da’ein substation:
  - Type: Conventional outdoor double bus-bar
  - Voltage: 220/33/11kV
  - Capacity: 2x20 MVA
  - No. of bays: 220 KV 7bays: 33KV switchboard: 11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

El Da’ein-Nyala Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 180 KM
3- Project status: Planned
4- Est. Erection period: 18 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

El Da‘ein-Nyala Part (B): Substations

1- No. of substations: One (1)

1.1. Nyala substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 220/33/11kV
   - Capacity: 2x60 MVA
   - No. of bays: 220 KV bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: Two years

Nyala –El Fashir Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 200 KM
3- Project status: Route defined
4- Est. Erection period: 18 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm² ACSR OPGW +SGW

Nyala - El Fashir Part (B): Substations

1- No. of substations: One (1)

1.1. Nyala substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 220/33/11kV
   - Capacity: 2x60 MVA+ 2x35 MVA
   - No. of bays: 220 KV=7 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: 18 Months

Nyala - Kass Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 80 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Nyala - Kass Part (B): Substations

1- No. of substations: One (1)

1.1. Kass substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x60 MVA
   • No. of bays: 220 KV bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year

Kass- Zalinge Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 120 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   - Double circuit Transmission line on self supported steel lattice towers.
   - Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Kass- Zalinge Part (B): Substations

1- No. of substations: One (1)
1.1. Zalinge substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 220/110/33/11kV
   • Capacity: 2x20 MVA
   • No. of bays: 220 KV=7 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Zalinge- Genena Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 130 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Zalinge- Genena Part (B): Substations

1- No. of substations: One (1)

1.1. Genena substation:
  - Type: Conventional outdoor double bus-bar
  - Voltage: 220/110/33/11kV
  - Capacity: 2x60 MVA
  - No. of bays: 220 KV=7 bays: 110KV=33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Genena- Kolbus Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 70 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Genena - Kolbus Part (B): Substations

1- No. of substations: One (1)

1.1. Kolbus substation:
- Type: Conventional outdoor double bus-bar
- Voltage: 110/33/11kV
- Capacity: 2x5 MVA
- No. of bays: 110 KV=7 bays: 110KV=33KV switchboard:11KV=7bays:33KV switchboard:11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Kolbus- Tina Part (A): Transmission line

- Voltage: 110 KV
- Route Length: 70 KM
- Project status: Route defined
- Est. Erection period: One year

5- Description:
- Double circuit Transmission line on self supported steel lattice towers.
- Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Kolbus- Tina Part (B): Substations

1- No. of substations: One (1)

1.1. Tina substation:
   - **Type:** Conventional outdoor double bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x5 MVA
   - **No. of bays:** 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

El Fasher- Um Kadadah Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 140 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

El Fasher- Um Kadadah Part (B): Substations

1- No. of substations: One (1)
1.1. Tina substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 110/33/11kV
   • Capacity: 2x5 MVA
   • No. of bays: 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

El Fasher- Mellit Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 140 KM
3- Project status: Route defined
4- Est. Erection period: 6 Month
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

El Fasher-Mellit Part (B): Substations

1- No. of substations: One (1)

1.1. *Tina* substation:
   - **Type:** Conventional outdoor double bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x5 MVA
   - **No. of bays:** 110 KV=7 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned

3- Est. Erection period: 6 Month

Mellit- Kutum Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 65 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Mellit- Kutum Part (B): Substations

1- No. of substations: One (1)
1.1. *Tina* substation:
   - **Type:** Conventional outdoor double bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x5 MVA
   - **No. of bays:** 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

El Fasher-Tawila Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 60KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

El Fasher-Tawila Part (B): Substations

1- No. of substations: One (1)

1.1. Tawila substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x5 MVA
   - No. of bays: 110 KV=7 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned

3- Est. Erection period: One year

## Tawila - Kebkabiya Part (A): Transmission line

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>1- Voltage:</strong></td>
<td>110 KV</td>
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<tr>
<td><strong>2- Route Length:</strong></td>
<td>75KM</td>
</tr>
<tr>
<td><strong>3- Project status:</strong></td>
<td>Route defined</td>
</tr>
<tr>
<td><strong>4- Est. Erection period:</strong></td>
<td>One year</td>
</tr>
</tbody>
</table>
| **5- Description:** | Double circuit Transmission line on self supported steel lattice towers.  
Double bundled conductor 2x240 mm² ACSR OPGW +SGW |

Tawila - Kebkabiya Part (B): Substations

1- No. of substations: One (1)
1.1. Kebkabiya substation:
   - **Type:** Conventional outdoor double bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x5 MVA
   - **No. of bays:** 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Nyala-Eid El Fourshan Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 80KM
3- Project status:
    Route defined
4- Est. Erection period:
    One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Nyala- Eid Fourshan Part (B): Substations

1- No. of substations: One (1)

1.1. Eid El Fourshan substation:
- **Type:** Conventional outdoor double bus-bar
- **Voltage:** 110/33/11kV
- **Capacity:** 2x5 MVA
- **No. of bays:** 110 KV=7 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Eid El Fourshan - Rehead El Berdi Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 70KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm² ACSR OPGW +SGW

Eid Fourshan- Rehead El Berdi Part (B): Substations

1- No. of substations: One (1)
1.1. Rehead El Berdi substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x5 MVA
   - No. of bays: 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Nyala-- Grida Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 70KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Nyala - Grida Part (B): Substations

1- No. of substations: One (1)
1.1. Grida substation:
   • Type: Conventional outdoor double bus-bar
   • Voltage: 110/33/11kV
   • Capacity: 2x5 MVA
   • No. of bays: 110 KV=7 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Grida- Buram Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 85KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Grida- Buram Part (B): Substations

1- No. of substations: One (1)
1.1. Buram substation:
   - Type: Conventional outdoor double bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x5 MVA
   - No. of bays: 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Zalinge-Garsila Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 80KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Zalinge-Garsila Part (B) : Substations

1- No. of substations: One (1)

1.1. Garsila substation:
- **Type:** Conventional outdoor double bus-bar
- **Voltage:** 110/33/11kV
- **Capacity:** 2x5 MVA
- **No. of bays:** 110 KV=5 bays: 33KV switchboard :11KV switchboard:

2- Project status: Planned
3- Est. Erection period: One year

Nyala Power Station Project

1- Location:
   Nyala City, Capital of south Darfur state, Latitude 12°08; Longitude 24°48

2- Type and Capacity:
   35MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Five years

5- Description:
   • 5x7MW medium speed diesel engines firing heavy fuel oil
   • Interconnection facilities;
   • Fuel tanks.

El Genena Power Station Project

1- Location:
   Elgenena City, Darfur state, Latitude 13°27N,; Longitude 22°24E

2- Type and Capacity:
   26MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Two years

5- Description:
   • 7MW+4MW+3x5MW Diesel engines Medium speed type; firing heavy fuel oil
   • Interconnection facilities;
   • Fuel tanks.

El Fashir Power Station Project

1- Location:
   El Fasher, Darfur state, Latitude 13°39’N, Longitude 25°18’E

2- Type and Capacity:
   26MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Five years

5- Description:
   • Phase I (2x5MW)+Phase II (4x4 MW) diesel engines medium speed type, firing heavy fuel oil;
   • Interconnection facilities;
   • Fuel tanks.

Da’ein Power Station Project

1- Location:
   Da’ein, Darfur state, Latitude 11°27N., Longitude 26°08E

2- Type and Capacity:
   2MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Two years

5- Description:
   • 1x2MW Diesel engines Medium speed type; firing heavy fuel oil
   • Interconnection facilities;
   • Fuel tanks.

Edila Power Station Project

1- Location:
   Edila, Darfur state, N12 30.29.8 E24 17.06.4

2- Type and Capacity:
   2MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Two years

5- Description:
   • 1x2 MW Diesel engines, medium speed type, firing heavy fuel oil.
   • Interconnection to the existing;
   • Fuel tanks.

Kass Power Station Project

1- Location:
   Kass, , Darfur state, N12 30 29.8 E24 17 06.4

2- Type and Capacity:
   2MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Two years

5- Description:
   • 1x2 MW Diesel engines, medium speed type, firing heavy fuel oil.
   • Interconnection to the existing;
   • Fuel tanks.

Zalingi Power Station Project

1- Location:
   Zalingi, Darfur state, N12 53 05.7 E26 09 30.4

2- Type and Capacity:
   2MW Diesel engines, Medium speed type.

3- Project status:
   Area is reserved: Spec. Available.

4- Est. Erection period:
   Two years

5- Description:
   - 1x2 MW Diesel engines, medium speed type, firing heavy fuel oil.
   - Interconnection to the existing;
   - Fuel tanks.

Um Ruwaba-Absiya-Rashad Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 140 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW + SGW

Um Ruwaba-Abasiya-Rashad Part (B) : Substations

1- No. of substations: Two (2)

1.1. Zalinge substation:
  - Type: Conventional outdoor double bus-bar
  - Voltage: 220/33/11kV
  - Capacity: 2x40 MVA
  - No. of bays: 220 KV=7 bays: 33KV switchboard:11KV switchboard

1.2- Rashad substation:
  - Type: Conventional outdoor double Bus-Bar
  - Voltage: 220/33/11kV
  - Capacity: 2x40 MVA
  - No. of Bays: 220KV=7bays;33KV switchboard;11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year
  - Double bundled conductor 2x240 mm² ACSR OPGW +SGW

Rashad- Abu Jibeha-Kalogi Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 145 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Rashad- Abu Kiveha-Kalogi Part (B) : Substations

1- No. of substations: Two (2)

1.1. Abu Jibeha substation:
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x40 MVA
   • No. of bays: 220 KV=7 bays; 33KV switchboard:11KV switchboard

1.2- Kalogi substation:
   - Type: Conventional outdoor double Bus-Bar
   - Voltage: 220/110/33/11kV
   - Capacity: 2x60 MVA
   - No. of Bays: 220KV=7 bays; 110KV=5 bays; 33KV switchboard; 11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Kalogi-Talodi Kadogly Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 129 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   - Double circuit Transmission line on self supported steel lattice towers.
   - Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

1- No. of substations: Two (2)

1.1. Talodi substation:
- **Type:** Conventional outdoor double Bus-bar
- **Voltage:** 220/33/11kV
- **Capacity:** 2x40 MVA
- **No. of bays:** 220 KV=7 bays: 33KV switchboard:11KV switchboard

1.2- Kadogly substation:
- **Type:** Conventional outdoor double Bus-Bar
- **Voltage:** 220/33/11kV
- **Capacity:** 2x50 MVA
- **No. of Bays:** 220KV=7bays; 33 KV switchboard;11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year

Al Dibebat-AlDelanj Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 60 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Al Dibebat- Al Delanj Part (B): Substations

1- No. of substations: Two (2)
1.1. AL Delanjsubstation:
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x40 MVA
   • No. of bays: 220 KV=7 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Riji Al Fula-Babanosa Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 60 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm² ACSR OPGW + SGW

Rijl Al Fula - Babanosa Part (B): Substations

1- No. of substations: One (1)
1.1. Babanosa substation:
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 220/110/33/11kV
   • Capacity: 2x60 MVA
   • No. of bays: 220 KV=7 bays; 110 KV= 5 bays; 33KV switchboard; 11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Abu Zabad-AL Nuhood-Gibesh Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 210 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   - Double circuit Transmission line on self supported steel lattice towers.
   - Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Abu Zabad-Al Nuhood-Gibesh Part (B): Substations

1- No. of substations: Two (2)
1.1. AL Nuhood substation:
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x40 MVA
   • No. of bays: 220 KV=9 bays: 33KV switchboard:11KV switchboard
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 220/33/11kV
   • Capacity: 2x40 MVA

No. of bays: 220 KV=5 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

AL Nuhood-Hamarat Al Sheik Part (A): Transmission line

1- Voltage: 220 KV
2- Route Length: 220 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   - Double circuit Transmission line on self supported steel lattice towers.
   - Double bundled conductor 2x240 mm² ACSR OPGW +SGW

1- No. of substations: One (1)

1.1. *Hamarat Al Sheik* substation:

- **Type:** Conventional outdoor double Bus-bar
- **Voltage:** 220/33/11kV
- **Capacity:** 2x40 MVA
- **No. of bays:** 220 KV=5 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year

AL Obied-Bara-Sodari Part (A): Transmission line

- Voltage: 110 KV
2- Route Length: 155 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

AL Obied-Bara-Sodari Part (B): Substations

1- No. of substations: Two (2)

1.1. Bara substation:
   - **Type:** Conventional outdoor double Bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x40 MVA
   - **No. of bays:** 110 KV=7bays: 33KV switchboard:11KV switchboard
   - **Type:** Conventional outdoor double Bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x20 MVA

   **No. of bays:** 110 KV=7 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year

Sodari-Hamarat Al Wiz Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 125 KM
3- Project status: Route defined
4- Est. Erection period: One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

1- No. of substations: One (1)

1.1. Hamarat Al Wiz substation:
   - Type: Conventional outdoor double Bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x20 MVA
   - No. of bays: 110 KV=5 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year

Kalogi-Heban Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 60 KM
3- Project status:
   Route defined
4- Est. Erection period:
   One year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW + SGW

Kalogi-Heban Part (B): Substations

1- No. of substations: Two (2)

1.1. Heban substation:
   - **Type:** Conventional outdoor double Bus-bar
   - **Voltage:** 110/33/11kV
   - **Capacity:** 2x35 MVA
   - **No. of bays:** 110 KV=5 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: One year

Babanosa-Al Mujlad Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 40 KM
3- Project status: Route defined
4- Est. Erection period: 6 Months
5- Description:
   - Double circuit Transmission line on self supported steel lattice towers.
   - Double bundled conductor 2x240 mm2 ACSR OPGW +SGW

Babanosa-Al Mujlad Part (B): Substations

1- No. of substations: One (1)

1.1. Al Mujlad substation:
   - Type: Conventional outdoor double Bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x50 MVA
   - No. of bays: 110 KV=9 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: 6 Months

Al Mujalad-Abu Jabra Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 30 KM
3- Project status: Route defined
4- Est. Erection period: 5 Months
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW + SGW

Al Mujalad-Abu Jabra Part (B): Substations

1- No. of substations: One (1)

1.1. Abu Jabra substation:
   • Type: Conventional outdoor double Bus-bar
   • Voltage: 110/33/11kV
   • Capacity: 2x50 MVA
   • No. of bays: 110 KV=5 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned

3- Est. Erection period: 5 Months.

Al Mujlad-Hejlij-Abyi Part (A): Transmission line

1- Voltage: 110 KV
2- Route Length: 176 KM
3- Project status:
   Route defined
4- Est. Erection period:
   Two year
5- Description:
   • Double circuit Transmission line on self supported steel lattice towers.
   • Double bundled conductor 2x240 mm2 ACSR OPGW + SGW

Al Mujlad-Hejlij-Abyi Part (B): Substations

1- No. of substations: Two (2)
1.1. Hejlij substation:
   - Type: Conventional outdoor double Bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x50 MVA
   - No. of bays: 110 KV=7 bays: 33KV switchboard:11KV switchboard
1.2 Abyi Substation:
   - Type: Conventional outdoor double Bus-bar
   - Voltage: 110/33/11kV
   - Capacity: 2x50 MVA
   - No. of bays: 110 KV=7 bays: 33KV switchboard:11KV switchboard

2- Project status: Planned
3- Est. Erection period: One year