Interim Administration of Afghanistan
Ministry of Water & Power
Planning Department

DEVELOPMENT PROJECT BUDGET

1381-1390 YEARS

2002 2011

PRIORITY ORDER

Development Project budget for 1381-1390 year, Ministry of Water & Power
Electrical Energy Sector

The figures are in thousand US$

S.No	Name –Location of the Project and unit of Exploitation	Year of starting and finishing	Total Estimated cost and exploitation estimated Capacity	Estimated cost for 1381-1385	Estimated cost for 1386-1390	Remarks
1	Rehabilitation of power construction unit enterprise Kabul province	1381 - 2002 1383	2200	2200		This enterprise has the responsibility to erect HV and LV transmissions line –city –networks, power plants, and sub-station and distribution stations. This is the only special enterprise in the country. Its administration and ware-house buildings are located at jungalak which was the first line of fighting. Due to war, these enterprises have lost its all vehicles, workshops machineries, erection tools equipments, so its erection and construction capacity is decreased. With out rehabilitation can not perform the works of development projects.
2	Rehabilitation of spingher construction unit enterprise in Kabul province	1381 1383	3100	3100		This enterprise has the responsibility to construct, power plant sub-station, junction, distribution station administration and industrial building and is one of the special enterprise in the ministry. This enterprise due to war have lost its vehicles, tools equipments and circulating assets. With out rehabilitation cannot accept the development project works, because its construction capacity is decreased so, its capacity must be increased.
3	Rehabilitation of WAPECA enterprise in Kabul province	1381 1383	2250	2250		The water and power engineering consultancy authority(WAPECA) is an enterprise which is responsible for surveying, studying designing , and supervising of water and power projects. This enterprise have lasted its vehicles, soil Mechanics laboratory, surveying tools and equipments, designing tools etc. Its designing. surveying and studying capacity is deceased with out rehabilitation con not accept the development project works so, it is necessary to be rehabilitated.

1	2	3	4	5	6	7
4	Rehabilitation of DABM enterprise Kabul	1382 1384	5000	5000		Da Afghanistan Brishna Moassesa (DAMB) is responsible for maintenance and operation of power plants, transmission lines, sub-stations city networks and distribution of electricity energy in Afghanistan. Due to war DABM have lasted all its vehicles machineries, tools and equipments as result the DAMB capacity for maintenance and operation is decreased. In order to have regular electrical energy supply it is necessary to rehabilitate DAMB.
5	Rehabilitation of new and renewable source of energy enterprise.	1381 1383	2500	2500		This enterprise is responsible to research , develop and distribute solar energy equipment (pholovoltaic) solar pumping, solar heater wind energy generator , biomass and biogas. At the beginning this organization were supported by UNDP. Due to war this enterprise have lasted its vehicles ,tools warehouse laboratory etc. Commercial energy finally is finishing and the only energy, which is not finishing is solar and wind energy, and Afghanistan is rich and we must utilities the local energy source. By using this unlimited energy sources the environment condition will be improved and the living standard of people will increase. Therefore, it is necessary to support and rehabilitate this enterprise.
6	Rehabilitation of technical services deportment in Kabul.	1382 1384	3500	3500		This department is responsible for repairing of vehicles , machineries diesel generator , and transportation of goods, equipments and material from border to Kabul and from Kabul to the project site. Its buildings are located at puli-chakhi and was the first line of fighting , so have lasted all its vehicles and workshop machineries, without its rehabilitation due to decrease its capacity this deportment can not perform its obligation , so as a result the project works will be delayed , therefore , it is necessary to rehabilitation this department.

1	2	3	4	5	6	7
7	Rehabilitation of Hydro Power plants , and related buildings , (Naghlu,Sarobi,Daronta,Mahipar,Kajaki, Pulkhomri, second ,Ghorband, fazabad, charkar)	1381 1383	5000	5000	-	In the period of 24 year, the spare parts are not procured but we have used old spare part for the maintenance. All the hydro power plants like (Naghlu ,Sarobi,Daronta ,Mahipar ,Kajakai ,pulkhmri second ,Ghorband ,Faizabad charikar)have difficulties . In order to use the maxim capacity of the plants we must procure the spare- part.
8	Rehabilitation of 15/0.4 KV city networks of Kabul -City networks capacity in MW	1381 1390	25000 180	15000 100	1000 80	During the lost 24 years war the city networks are damaged. -Before war 714-distribution station were under operation and now we have rehabilited 286 distribution station and 418 distribution station are to be rehabilitated. - Before war the capacity of city networks were 300 MW and up to now we have rehabilitated the city networks up to 120 MW the city networks must be rehabilitated up to 300 MW. - The total No. of consumer s before were 150000 and now we have 60000 consumers. The rest of Kabul people wants electricity connection. So the city networks needs rehabilitation.
9	Rehabilitation of 110 KV (111,112 and 144) between sarobi –hydro plant up to Brishna –kot and between brishna –Kot and East sub-stations including sub-stations east and Brishna –Kot. -length of line in km -capacity of sub-station inMW	1381 1390	15000 83 200	8000 67 120	7000 16 80	Due to war condition 110 KV (111.112) transmission lines between sarobi –hydro plant and Brishna –Kot substation with 67.5 Km long and transmitting capacity 120 Mw are damaged .Only towers are left and some towers are also damaged. For rehabilitation of this line only ACSR conductors, clamps and 200 ton angle iron are needed. The 110 KV 144 transmission line between East and Brshnakot sub station are also damaged and length of this line is 16 Km. East sub-station with 40 MVA capacity ,110 /15 KV which were feeding east and south east of Kabul city are destroyed 80%. Brishna Kot substation with 53 MVA capacity 110/15 KV which were feeding west of Kabul is completely damaged. With out rehabilitation of OHL and s/s we cannot supply electrical energy to the rest of Kabul city.

1	2	3	4	5	6	7
10	Rehabilitation of Mazar –Sharif City networks - length of city networks	1381 1383 -	2200 100	2200 100	-	Mazar –i-sharif city networks has been partially damaged during internal war and the losses is increased and it is, and it is necessary to decrease losses from 30% to 15% by rehabilitation of networks. Decreasing the loss is saving till erection and constructing new power plant at gas field ,this networks is feeding by electricity energy purchased from a board in US$, so it is necessary to take care of losses.
11	Rehabilitation of Jouzjan city networks, jurgudooq –substation including administration building. -sub –station capacity in MVA -length of city networks in km	1381 1383 -	2000 16 90	2000 16 90	-	During internal war 16MVA ,110/35 /6 KV, power transformer oil is drained out, the protection system of this transformer is not completed, just one 16MVA power transformer is in operation which is not enough for the actual demand of Jouzjan oil –and Gas department and other residential areas. Therefore, it is necessary to rehabilitate this power transformer .Also due to war the city networks has got damaged partially. The losses are increased and we must decrease the losses to minimum. Because until erecting and construction of new Gas power plant at site, this networks, is feeding with electrical energy purchased from abroad, so we must use electrical energy effectively. Electricity authority of Jouzjan has no administration building. For better performance, it is necessary to build a building for this organization.
12	Rehabilitation of Kabul Pole plant factory. Annual production capacity in pole.	1382 1383 -	1500 5000	1500 5000		This factory, which produce PCC poles, were commissioned by technical and economical aid of Germany in 1358. Produce poles needed for electrical networks and communication networks. During war machineries of the factory are damaged and the building of the factory 50 % is destroyed. With out – rehabilitation of this factory it is difficult to rehabilitate and extended Kabul city networks. So it seem necessary to rehabilitation this factory. Can't 95%

1	2	3	4	5	6	7
13	Rehabilitation and improvement of Herat city net works 20/0.4 KV -capacity of networks (MW)	1381 1382	1000 30	1000 30		Contract for erecting construction and commissioning of 220/110 KV transmission line from Turkmenistan up to Herat city with length of 120 Km., including (220/110/20) sub –station ,60 MVA capacity on 03-4-2000 is signed with Turkmen side . This will be completed in 16 month period .Up to commissioning of this project , the Herat city networks which most of the equipment are at site, and 6 KV networks must be changed to 20 KV ,must be ready for commissioning , some equipment like energy meters, insulators and some amount of cable and end and middle 20KV Joints must be provided.
14	Construction and erection of Gas or cruid oil turbine at Jouzjan . - plant capacity in Mw. Have proposal	1382 1385	50000 100	50000 100		Northern province (Balkh , Jouzjan , Sari-pul , Fariab ,Samangan) has no hydro power but is rich in natural gas and cruid oil. At present and past the electrical energy is purchased from Turkmenistan and Uzbekistan and is distributed in these province. The cost of purchased energy is paid by US$. It is more economical to install Gas or cruid oil turbine at Shibarghan and by commissioning of this plant , the energy demand of these province will cattered for 25years. This type of plant can be installed in less time and preventing from escaping hard currency from the country.
15	Rehabilitation of 110 KV transmission line from Naghlu hydro power plant to Gulbahar with length of 70 Km. -length of line in Km.	1384 1387	7000 70	2000 -	500 70	Transmission line 110 KV on lattice tower from Naglu to Gulbahar were erected to feed Gulbahar-Tixtle –Jabbulus-serj textile and cement factory as well residential area in Gulbahar and pervan centre. From beginning of war, this line is completely damaged. for feeding of electricity of a/m factories and residential area it is necessary to rehabilitate this line. Gulbahar 110/6 KV sub station protection system is also damaged and needed rehabilitation in parallel with transmission line. The power plant located at Jabul Seraj and Charikar has low production capacities that can not cater the total damaged.

1	2	3	4	5	6	7
16	Rehabilitation of 110 KV transmission line from shirkhon bander up to kundooz city including kundooz sub-station -length of line in Km -capacity of sub station in MVA	1381 1382	800 70 40	800 70 40		110 Kv transmission line from shirkhan – bander up to kunduz and erection of 110/35/6 KV, 32 MVA capacity s/s were commissioned for transmitting electrical energy from Tajikistan to kunduz. During war 110 KV line are partially damaged, only poles are left. The s/s 110/35/6 KV and s/s 35/6 KV the projection system with D.C system are also damaged and needs rehabilitation. In short, run this is the only source of energy to kunduz province, for the time being kundoz has no electricity.
17	Rehabilitation of Jabul- serja hydro power plant in perwon province. - Capacity of plant in MW.	1382 1384	2000 2.54	2000 2.54		This small hydropower commissioned in1299 by technical aid of England and has 4-turbine generator. This plant is amortized and has very low production capacity. Therefore, it needs reconstruction. By reconstruction of this plant part electrical demand at parwan and Jabulseraj will be covered by this plant.
18	Rehabilitation of micro- hydle of Asad-abad at konar province -plant capacity in KW	1382 1383	750 700	750 700		This small – hydro plant is commissioned in 1363 by technical and economical aid of UNDP. The capacity of the plant is 2x350 kW. Due to irregular maintenance and operation the mechanical system are damaged , and need to change some part of this plant. For the time being one turbine is operating with low capacity and can – not catered the demand.
19	Rehabilitation of Grishk – hydro power plant at helmand province. -capacity of the plant in MW.	1983 1984	2500 2.2	2500 2.2		This hydro plant is built on boghrau irrigation canal in 1967 by technical aid of USA. The capacity of the plant is 2x1.1 MW. The electrical energy of this plant inationally were supplied to lashkergah city by 44KV transmission line. After commissioning of Kajakai –hydro power plant in 1974 this plant production energy is supplied to Grishk town. Due to amortization of this plant the copacity of this plant is very low and can not cater demand of Grishk town so it is necessary to re construct this plant.

1	2	3	4	5	6	7
20	Rehabilitation of Chalwarcha small hydro-power plant at Herat province -Capacity of plant in KW	1382 1383	100 80	100 80		Chalwarch- micro-hydle is commissioned in 1950 with installed capacity of 80 KW by Germany aid., In herat province, this is the only hydro-plant, which can supply energy to hospital, radio and communication system for 24 hours. Due to amortization for the time, being has no production. So it necessary to be reconstructed.
21	Rehabilitation of Chaki –wardak micro-hydle in Maidan-wardak province. - capacity in MW	1382 1384	2000 3,3	2000 3,3		Chaki-wardak with installed capacity of 3x1.1 Mw in chaki –wardak district is commissioned in 1319 by technical aid of Germany. This was the second plant which its energy were supplied to Kabul city by a 44Kv transmission line. After commissioning of Sarobi-hydro-power in 1336 ,the electrical energy of this plant are used in local community. Due to amortization the capacity of this plant is decreased considerably and cannot cater the increasing demand of local community .So it needs reconstruction . with reconstruction of this plant hospital and residencial area will be benefited from electrical energy and will improve environment condition

1	2	3	4	5	6	7
22	Gas Turbine (3+4) extending To combine Cycle - plant capacity in MW	1381 1382	2500 28.6	2500 28.6		The combine cycle contract with installed capacity of 28.6 MW, total cost of Swiss francs 71.75 million is singed with (ABB) Switzerland. On 23-5-1985. it was planned to be compleled in 32 months. The construction works up to 1988 were completed by spingher construction unit under supervision of (ABB) expert 90 percent and erection of boiler by Power construction unit under supervision of HCG co. were completed about 17 percent. In 1988 parallel with withdrawal of USSR forces the ABB expert for the reason of security left the site and went to their country .And suspended the project works. Up to now the project works are in suspension position .As per the UN suction in few last year, ABB experts did not come to Afghanistan. At present the conditions is suitable for works at site. So it is necessary that the project works should be started under supervision of ABB. Now ALSTOM experts and make the plant ready for commissioning. The company ask for the cost of delaying the works and cost of 14 cases damaged equipments. Which are damaged due and to roket attack. This plant needs no fuel and using the heat wasted from Gas turbine and the efficiency of Gas turbine increases from 24% to about 40% , also reduce the per unit cost of energy. We are trying to contact the company and ask them to send their expert to Kabul for starting the works of the project. We have written so many letters for the company through different a agencies but we have got no answer so far.

1	2	3	4	5	6	7
23	Construction of Bamyan micro-hydle scheme - plant capacity in KW	1383 1385	1600 750	1600 750		The Bamyan micro- hydle project with installed capacity of 3x250 Kw is designed by WAPCOS India. The construction works under supervision of Indian exports completed by spinghar construction unit about 40%. Some equipment is reached to Kabul from India. Bamyan has not electrical sources and electrification of Bamyan this project, must be commissioned.
24	Construction of Sarobi 2 hydro power plant - Plant capacity in MW.	1381 1390	70000 128,6	30000	40000 128,6	USSR experts has completed the technical and economical feasibility study of this project. This is one of the most important economical projects. The installed capacity is 128.6 MW and will have annual production capacity 815 MKWH that is equal to the total generation of the country. The designing construction and erection works is to be carried out.
25	Construction of micro- hydle at province (Talaqan , Tashqurghan, Punchshir , puil-khmri , chamkani , chari kar and Badakhshan)	1382 1387	7000 5000	3000 1000	4000 4000	Afghanistan is a mountainous county and is suitable for construction of micro –hydle schemes, construction of micro – hydle in rural area cause economic development and rural area will soon developed. Beside environment will be improved.
26	Survey and designed of micro-hydle in provinces .	1384 1390	1000	500	500	Afghanistan is a mountainous country. So constructions and erection of micro – hydle schemes are more possible. With installing micro –hydle scheme the rural community living standard will increase and the environment condition will improve. Construction of micro – hydle takes less time with less cost.
27	Preparing technical and economical feasibility study of wersach hydro power project in Takhar province -plant capacity in MW.	1386 1389	4000 40		4000 40	This project is studied on master plan level. Beside arranging water for irrigation has electrical potential of 40 MW. The study shall be curried by any engineering consulting services from abroad.

1	2	3	4	5	6	7
28	Preparing technical and economical feasibility study Bagh- Darah storage dam in Kapisa province - Plant capacity in MW	1384 1387	3000 280	1000	2000 280	This project is studied on master plan level. Beside arranging and controlling water, with commissioning of this project. The production capacity of Naghlo and Sarobi hydro power plants will be increased. The estimated installed capacity is shown 280 Mw and Firm capacity anticipated 180 MW. This is one of the most economical and benefit able project for central area. The study will be performed by foreign consulting co.
29	Preparing technical and economical feasibility study of hydro-power plants on koner river -plants capacity in MW	1387 1390	4000 1000		4000 1000	Koner river is rich in electrical potentials, and is studied on master plan level. On this river few points are shown for construction of hydro power plants total electrical potential shown on master plan study is estimated 1000MW. By commissioning these hydro power plants, the country will be mostly electrified the study will be carried out by foreign consulting co.
30	Preparing technical and economical feasibility study of hydro power plants on Kokcha River in Badakhshan province - Plants capacity in MW.	1386 1390	4000 1900		4000 1900	This river is passing from Fizabad city and flows to Amno river at Takhar province, and is rich from electrical potential point of view. This project is studied on master plan level. The master plan estimate the electrical potential on this river up to 1900 MW. The study shall be carried out by any foreign consulting company.
31	Preparing technical and economical feasibility study of coal fired power station at Heral province	1387 1390	3000		3000	Herat province centre up to now has no big enough plant to cater the electrical energy demand. So far the Herat city is electrified by different size of diesel generator. Diesel generators are used for lightning purposes. Moreover, there is no enough capacity to supply industrial consumers. The Sabzak coal mine is located in this province and has big reserve of coal and can feed a thermal power plant with more then 100 MW capacity. The study shall be carried out by any foreign consulting company.

1	2	3	4	5	6	7
32	Kajakai third unit erection and construction of 2nd power house in Helmand province - plant capacity in Mw .	1381 1390	20000 118	4000 18	16000 100	At present power house three turbine are designed, but two turbine of 2x16.5 MW are commissioned i n 1354 and the place for third unit is empty. The two units are under operation and the electrical energy is supplied to Kandahar and Helmand cities. But the production of these turbine can not catter the increasing demand , and it is necessary to install the third unit. The second power house with installed capacity of 3x33 Mw is designed next to the first power house, and the energy demand of Kandahar and Helmand province will be solved , and some part of it can be transmitted to Herat and Kabul.
33	Construction of hydro-power-plant on Kanabad new irrigation canal in Kunduz province . City networks -plant capacity in MW .	1383 1385	8000 10.5	8000 10.5		This plant with installed capacity of 3x3.5 Mw is designed on new irrigation canal of Khanabad-by-WAPCOS,India and is in construction stage. Kundoz and Takhar provinces have no local hydro power plant at present. In Takhar diesel generators electrify province in limited 3-4 hours. Kundoz province was electrified thought purchasing electrical energy from Tajikistan. At present is cut off. With commissioning of this plant electrical energy of these two provinces will solved to some extend for short time.
34	Rehabilitation of the Jalalabad city network. - length of city net-works in km.	1381 1382	200 10	200 10	-	With rehabilitation of city networks which is damaged due to war condition the losses from 30% will decrease to 15%. Decrease of loses are saving and the economic of enterprise will be increased. In the cost estimation equipment and erection fee are included. Nangerhar Breshna will perform the rehabilitation works.
35	Rehabilitation of city network and construction of diesel house of (405) KVA generator. Ghazni province -Generator capacity – KVA -Length of city networks – km.	1381 1381	150 405 10	150 405 10	-	With the construction of diesel house and erection of diesel generator, the electrical energy production with capacity of 405 KVA will be increased. With rehabilitation of city networks, which is damaged during the war, the losses will decrease and the income will increase. The Gazni household do not have the other power production sources. Just the people benefited four hours in daily of electrical energy. The construction, erection and equipment are included in the cost estimated. The works will be done by breshna nossesa .

1	2	3	4	5	6	7
36	Rehabilitation and extension of city – networks of Asadabad centre of Koner province. -length of networks in km	1383 1384	125 10	125 10		Asad-abad city networks are erected not to the extent of requirements and cannot observe 700 KW, which is the capacity of Asadabad hydro-plant. Also during war the present networks has been partially damaged, and the losses is increased and needs rehabilitation.
37	110 KV transmission rehabilitation Between puli-Khumri and Kunduz - length of line in Km	1383 1385	7000 90	7000 90		This transmission line for the purpose transferring of electrical energy from puli-I –khumri hydro power plant to kunduz were commissioned in 1343. During the war this 110 KV transmission line are completely damaged and for the time being kunduz city is dark. For the purpose of transmission of electrical energy form one side to other side its necessary to re-build this transmission line.
38	Rehabilitation of pol-i-Alam centre of loger province city network. - length of city networks in Km	1384 1385	60 6	60 6		Diesel generators electrify the centre of loger province, and during evening (3-4), hours supply electrical energy for residential and other consumers. During war, city network is damaged and the conductor is looted .So, the electrical energy supply for the consumer are in difficulty, so it needs rehabilitation.
39	Rehabilitation of Gardeez centre of Paktia province city networks Rehabilitation with its related administration building. - length of city networks Km	1384 1385	100 10	100 10		The centre of paktia province is electrified by diesel generator and at the evening (3-4) hour supply electrical energy for consumer. During war the city network are damaged and the conductor are looted. The distribution of electricity for all consumers due to the damaged is not fully. Also the loses are more, and must be decreased. The administration building must be repaired.
40	Rehabilitation of filko-micro-hydle In kandahar province -plant capacity In KW	1386 1388	600 600		600 600	Filko- micro- hydle with installed capacity of 2x300 kW on Alberoni canal are commissioned in 1950 by technical aid of Germany. On that time it was the only plant, which in parallel with Baba –Wali micro- hydle were supply electrical energy to kandahar city. This plant is amortized, needs reconstruction, with reconstruction of this plant part of load, kandahar city can be covered, and we must use maximum the local capacity.

1	2	3	4	5	6	7
41	Rehabilitation of Baba –wali micro – hydle scheme in kandahar -plant capacity in KW	1386 1388	150 150		150 150	Baba- Wali micro hydle scheme with installed capacity of 150Kw is commissioned in 1950 by technical aid of Germany. It takes water from Albironi canal. This plant is amortized and has no production and needs reconstruction and local capacity must be utilized.
42	Rehabilitation of pole plant -factory In kandahar province - factory capacity in poles	1386 1388	1000 5000	-	1000 5000	Kandahar pole plant with annual production capacity of 5000 poles was commissioned in 1354 with technical aid of USA This was an opened type and different PCC pole were produced in this factory. Factory due to war are destroyed. With out rehabilitation of this factory the city-networks rehabilitation and extension in south –west provinces will be difficult and needs rehabilitation.
43	Rehabilitation of Kabul electricity authority administration building and warehouse	1384 1388	1500	50	1450	Kabul electricity authority is one the big organization of Da Afghanistan Berhna- Massessa.(DABM) enterprise. Before war, these organizations had an administration and warehouse building at Dhmazang. Due to war this building is completely destroyed. With out Administration building it is difficult for the organization to perform it is obligation, so reconstruction of the related buildings is needed.
44	Rehabilitation of Gas turbine (1+2) Kabul East. Capacity in Mw	1385 1387	5000 43.6	1000	4000 43.6	Gas turbine (1+2) with installed capacity of 2x21, 8 MW and total cast Swiss farce 27 million were commissioned in 1358. This plant is designed to cover the electricity shortage especially during peak hours. This plant is made of (BBC) Switzerland.This plant had production up to 1367 . This plant has taken economical part in electrical production and catering deficit of energy of Kabul city. Due to war this plant is damaged about 50%, the control room, cable system, block out start step up transformer house, pumping house , are damaged turbine and generator are sound. With rehabilitation of this plant we can run it in bass – load as well as peak loud and solve for short run electrical energy deficit of Kabul city

1	2	3	4	5	6	7
45	Construction of water and Power Engineering consulting authority laboratories in Kabul.	1383 1385	1120	1120		This project is located beside airport road near to residential blacks of air forces at Bi-Bi-Mahro. The construction works up to 1372 are completed by 40% by Spinghar construction unit. The rest of works needs to be completed and must be ready for operation. The project works were suspended due to war conditions the WAPECA has no such buildings for running and performing his obligation.
46	Construction of new and renewable sources of energy Workshop and administration building in Kabul.	1383 1385	1100	1100		The project is located next to WAPECA project , up to 1372 the c onstruction w orks o f t he p roject a re c ompleted a bout 50% by spinghar construction unit and due to war condition so far the project works are suspended . The new and renewal sources of energy deportment has no work shop and administration building for his activities. These organizations carry out his activities in rented building. with completion of this project the, works of researching developing and producing solar collectors, and wind generators, photo – vortices ,and designing of micro –hydle will be expedited . With using solar and wind energy and making it popular causes improvement of environment, and prevent from expenditures of hard currency for purchasing commercial energy from abroad.
47	Construction of diesel generator work shop, and repair of technical service deportment.	1383 1385	1130	1130		This project is located in industrial parks at puli-charki area. The big warehouses due to war are damaged and needs repairment. The administration building also got damages and need repairment. The diesel generator workshop building construction works are not started. For better performance of repairment and transportation activities of the development, projects it is required to complete this project.
48	Rehabilitation of parwan city networks - length of city net-works in Km	1383 1385	270 15	270 15		Charikar centre of Parwan provinces city networks due to ware has got damaged , and the city is extended , the present city networks are not enough for electrical supply. The losses are increased and needs to be decreased.

1	2	3	4	5	6	7
49	Rehabilitation and extension of provinces , city net works (Nimrooz , Farah , Zabul , Ghor , Badgis , khost , Paktika , Baghlan, Taloqan, saripul , Samangan , orozgan , Laghman. -length of net- works in Km	1386 1390	2000 200		2000 200	City networks of these provinces are partially damaged and the losses are increased compared to standard norm and the provincial centres are extended. The present city networks can not supply electrical energy for all consumers, so it is needs to rehabilitate and extend the city networks.
50	Rehabilitation and extension Kandahar and Helmand provinces -length of city net works in Km	1386 1387	2000 200		2000 200	At present electrical energy of these provinces are supplied from kajakai hydropower plant. These two provinces are industrial and agricultural provinces, are extended, needs to extend the city networks, and rehabilitated the city networks in order to decrease the losses.
51	Erection of 110 KV transmission line from Naghlo hydro power plant up to Nengerhar province including 110/35/6 KV sub-station in Jalalabad city. - length of line Km.	1386 1390	7000 90		7000 90	In Jalalabad city Daronta hydro power plant with installed capacity of 11, 0 Mw are commissioned is 1343. Due to water shortage it can not operate in full capacity, sometimes its production is not more then three MW. At present the electrical energy demand of Jalalabad city which are extended is 36-40 Mw. The capacity of Daronta power plant is not enough to cover the increasing demand of Jalalabad city. During hot summer the production capacity due to shortage of water decrease, and electrical energy damaged at Kabul city decrease so it is possible to transmit electrical energy from Naghlo power plant to Jalalabad . So erection of this line is necessary.

1	2	3	4	5	6	7
52	Rehabilitation of 220 KV transmission line from form Hairatan to khulm sub-station including khulm sub-station . - length of line in Km - capacity of S/S in MW	1384 1388	12000 70 120	10000	2000 70 120	The 220 KV transmission line from Hairatan to Khulm were erected for transmitting electrical energy from Uzbekistan to khulm and then to mazar –i- sharif ,somahgan puli-khumri and Kabul. It was erected on PCC poles in double circuit the length of line is 70Km. This line during war is damaged only PCC pole with bracket are left. Khulm (220/110/10) KV, 120 MVA capacity sub-station that were erected at khulm is damaged too, and only portals with foundation are left. The buildings of s/s are also damaged. This line and sub-station form part of internal electrical ring, that will be continued to puli-khumri and Kabul. For the time being it is used for transmitting of electrical energy from Uzbekistan to Mazar –i-sharif , Jouzjan and samangan provinces so , it is important to be rehabilitated.
53	Erection of 220 KV transmission line from Samangan up to Puli-khumri including erection of 220 110/35 KV at puli-khmri	1386 1390	2200 75 32		2200 75 32	This transmission line is part of electrical internal ring and connects Balkh electrical system with Ghori electrical system and is included in long run plan. The poles are already erected and needs conductors and insulator to be erected. The puli-khumri 220 /110/35 .KV sub-station works are completed 50 % . The capacity of sub-station is 32MW. Some equipments are transported to the site.
54	Rehabilitation of 110 /15 KV North west sub-station of Kabul city.	1384 1385	1100	1100	-	The rehabilitation of this s/s is designed by electro technicGDR and the equipment reached to the site before war. The construction of equipment foundations are completed by power construction unit. By gathering of two German Society the GDR experts left Afghanistan and suspended the project works. It is needed to start the project works and make it ready for commissioning.
55	Gulbahar 2x3,5 MW diesel generator erection and construction - plant capacity in MW	1386 1389	200 7		200 7	Diesel generator with installed capacity of 2x3.5 MW is purchased from USSR and are transported to the site. The construction works of this project is completed about 90% by spinghar construction unit and the erection works are completed about 80 % power construction unit. Due to lack of technical portion it is not commissioned. For commissioning, the Russian expert help is needed. This plant must be commissioned.