

**MEPCO 6<sup>th</sup> STG and ELR Project (2006-07)**

**Environmental and  
Social Impact Assessment**

Volume 2 of 2 – Appendices

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## **VOLUME 2: APPENDICES**

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## **Appendix A: Terms of Reference**

This appendix provides the terms of reference for this ESA.

Citation in the Main Report: **Section 1.4.3.**

**Terms of Reference for Environmental and Social Assessment  
(ESA) for proposed Secondary Transmission and Grid (STG) and  
Distribution Rehabilitation/Energy Loss Reduction (ELR) Project  
Components.**

**September-2005**

**A     Background**

Pakistan's eight electricity distribution companies (Discos) have requested and obtained approvals of their respective Board of Directors to pursue World Bank financing of their investment programs. The DISCOs have prepared a number of investment projects and the respective PC-I's have been approved by CDWP and ECNEC. The components to be considered for Word Bank Financing will be selected from the STG and ELR projects of the Discos. For the Bank to consider their request, some additional preparatory work will be needed to strengthen environmental and social analysis, economic analysis and risk assessment, procurement plans and financial management.

The proposed project consists of the following components:

- a) Strengthening electricity distribution networks to reduce losses and improve supply;
- b) Strengthening electricity transmission network to reduce bottlenecks and improve system's reliability and quality; and
- c) Technical assistance (TA) for project implementation, capacity building, investment planning and sector reform.

The objective of the project is to help increase the efficiency, reliability and quality of electricity supply in terms of the overall technical and commercial losses, the availability and the voltage profile of electricity. The project also aims to support electricity sector reform and investment planning and financing through technical assistance.

**B     Project Description**

MEPCO wants to increase its transformation capacity by constructing new grid stations, conversion of existing 66 KV to 132 KV, Extension/Augmentation of existing grid stations to meet with load demand and for reliable/un-interrupted electric supply to its consumers. For this purpose 6<sup>th</sup> STG programme for the period 2005-06 to 2009-10 is going to be commenced. Scope of work for the Ist year i.e.2005-06 is being financed by local commercial banks while Word Bank will provide finances w.e.f.July-2006 onward. Scope of work for the period 2006-07 will be 05 No new grid stations, 02 No conversion and 14 No Extension/Augmentation alongwith 08 No 132 KV transmission lines.

The environmental/social consultants will conduct Environmental & Social Assessment (ESA) studies as per Bank requirements (the Bank's Safeguard

policies are listed in Annexure-1) to review and analyze whether the identified project components would trigger any of these Safeguard policies and address and respond to national regulatory requirements.

## **C      Scope of ESA studies**

The ESA studies will have three major parts, each to be dealt with separately: (i) an ESA for the project interventions to be taken up during the first year of investment (ii) Environmental and Social Assessment Guidelines (ESG) for addressing environmental and social impacts for project activities which are not known exactly now and are to be taken up in subsequent years and (iii) if any social impacts safeguards are identified through the ESA, a Resettlement Policy Framework (RPF) will be developed for project activities which are not known exactly now and are to be taken up in subsequent years.

The specific objective of ESA is to:

- a) Identify adverse environmental and social impacts associated with STG and ELR activities;
- b) Develop an Environmental Management & Monitoring Plan (EMMP) for the adverse environmental impacts; and
- c) Identify the need for a Resettlement Policy Framework based on the Social Assessment, which would be carried out in accordance with the Social Screening checklist (Annexure 2). Based on the results of the screening process, undertake Social Assessment (SA) and recommend mitigation measures (as required).

## **Major Components of ESA**

**Baseline Conditions:** The consultants will review the available literature, visit the project area and consult the respective DISCO and other line departments, to establish the baseline conditions in terms of physical and biological environment and socio-economic conditions in the project area. The consultants will prepare maps of suitable scale to highlight the socio-environment resources of the project area. The baseline will also identify Project Affected Persons (PAPs) with anticipated impacts on them and include an income/asset survey; and identify the application of social safeguards particularly OP 4.12; OP 4.10 and OPN 11.03.

**Analysis of Alternatives:** The consultants will analyze alternative siting of STG components in terms of their environmental and social impacts and benefits. The analyses should include the siting process, based on the description of the selected route; the alternative routes and the justification for the choice. Based on the selected route, the consultants will identify and prepare maps showing the corridor of impact (CoI). The analysis of alternatives will also avoid/minimize involuntary resettlement (including involuntary acquisition of land and impact on livelihood of PAPs). Furthermore, affectees will be compensated/income restored irrespective of their legal status. The consultants will also rationalize proposed ELR activities in terms of improvement in energy supplies, ensuring human safety; removal of system bottlenecks etc. in comparison with 'without project' conditions.

**Public/stakeholders' Consultations:** The consultants will identify project stakeholders and hold consultations with them, to delineate the appropriate boundaries of the environmental/ social assessments and to screen potential adverse environmental and social issues. The consultants will also receive feedback on the expected social issues related to the project impact and suggested mitigation measures. The stakeholders will include the primary stakeholder (those directly affected by the intervention) and secondary stakeholders (those indirectly affected and those who have an interest in the project). The consultants will document the proceedings of the consultations alongwith the list of participants and photographs.

**Identification of Environmental/Social Impacts of STG & ELR components:**

The consultants will evaluate which of the Bank's Safeguard policies are triggered due to the STG and ELR components, separately and collectively and what mitigation measures could be proposed to minimize and manage those impacts. They will also identify potential environmental and social issues of STG and ELR components in terms of their nature, magnitude, extent, location and timing and duration. These impacts may relate to the project design stage, construction stage and/or the project operation and decommissioning stage. It is expected that major environmental and social issues with regard to ELR activities will occur during the construction stage. Based on impact prediction methods and as the result of public consultations, the consultants will screen adverse environmental impacts for inclusion in mitigation measures and environmental management plan. The same process will be followed for identification of social impacts and public consultations will provide feedback of impacts from stakeholders' viewpoint. Identification of social impacts (with intensity of impact) by the ESA/SA will provide input into the RP/RPF (which ever is applicable).

**Mitigation measures:** The consultants will propose appropriate mitigation measures for the adverse environmental impacts. These measures could be based on exploring the ways to achieve the project objectives by alternative ways, proposing changes in the project design (size of the right of way/way leave size including height of the power line towers, siting of facilities including grid stations), through improved monitoring and management practices (storage of equipment & construction materials, labor camps, waste disposal, disposal of construction debris etc.) and/or through monetary compensation (resettlement, income/livelihood restoration. Social mitigation measures will follow from the alternative design implication (i.e.size, RoW, siting of grid stations and towers, location of high voltage transmission lines particularly through crowded urban areas, need for land, project's impact on land prices, if any etc.) and stakeholders consultation. Social screening will provide the input for the Social Assessment that may include an Entitlement Framework and the justification for a RP/RFP.

**Environmental Management & Monitoring Plan (EMMP):** The consultants will describe comprehensive environmental management and monitoring plan to ensure the adequacy and effectiveness of the proposed management by clearly identifying the roles and responsibilities of the contractor, supervisory consultant

and the client. The consultants will also elaborate on the monitoring mechanism and the reporting frequency. The consultants will prepare the cost for the proposed EMMP for its inclusion in the project cost. The consultant will also develop environment performance indicators to monitor, audit, evaluate and supervise negative and positive project environmental impacts. The consultant will also suggest monitoring, auditing and evaluation tools and formats of a monitoring plan including frequency and methodology of monitoring as well as allocate institutional responsibility and costs.

**Resettlement Plan/Resettlement Policy Framework (ESG and RP/RPF)** The social screening and Social Assessment will identify the need for a Resettlement Plan/Resettlement Policy Framework (if social safeguards, particularly OP 4.12 on Involuntary Resettlement, are triggered, through involuntary land acquisition and impact on livelihood of affectees). For details on Social Screening please refer to Annexure 2. Mitigation measures may include an entitlement framework, (as a part of the Social Assessment) or a Resettlement Plan/Resettlement Policy Framework. The requirements for any particular mitigation measure will be informed by the Social Assessment. Social costs/benefits of the project will be reflected in the project budget as project costs/benefits. The Consultant will also prepare monitoring indicators/a M&E system; and an institutional mechanism for implementing the social component of the program/project.

**Environment & Social Assessment Guidelines:** Scope of work for each DISCO essentially remains the same in the subsequent years as is for the first year except that it may vary in magnitude, geographical coverage and extent. Geographical extent of some of the DISCOs may include sensitive ecological systems like National Parks, wildlife sanctuaries, heavily populated areas, expensive land, large number of affectees, etc., where sensitivity of such system is to be addressed according to the Bank's safeguards policies and applicable national laws. Based on their ESA experience the consultants will therefore develop ESG and RP/RPF for the future projects by considering environmentally/socially sensitive areas/system. These guidelines will serve as the operational manual for the client, supervision consultants and the contractor to take care of the socio-environmental aspects of the project while implementing the project. Since most of the baseline environmental conditions will remain the same within the geographical boundaries of the respective DISCO, variation in adverse environmental impacts will depend on the type, magnitude and extent of the project interventions as well as the duration and timing of interventions. For this purpose, the consultants will develop checklists to record the adverse environmental and social impacts and on ground variations with those noted under the ESA. Where these changes are substantial/significant, a separate EMMP will be developed and will constitute ESA for the project. Else ESG will become an ESA as it will encompass impact identification to impact management with appropriate documentation. ESG will therefore comprise of baseline conditions, stakeholders' consultations, and analysis of alternatives, impact identification and an EMMP. For substantial social impacts such as impact on people in densely populated/urban areas, loss of short term loss of livelihood, involuntary land acquisition, disturbance in areas due to passage of powerful overhead electric lines etc., the SA/ESA would



provide information for the development of a RPF/RP (Where required). The RPF will contain information on baseline conditions, social impacts, information on stakeholders' consultation and mitigation measures including an entitlement framework. Besides, the RPF will also be a part of the EMMP. The general principles of the RPF will be applicable to similar programs implemented over time. Furthermore, the RPF should allow for changes that can be incorporated with a change in local conditions and social impacts.

#### **D Skills required**

The consultants team should preferably consists of an Environmental Expert with 8-10 years experience in ESAs particularly in the power sector, an expert on Social Issues with 8-10 years experience in social development particularly in the power sector and one Environmentalist with 3-5 years experience in the analysis of field data. The expert on social issues will need to have experience in conducting participatory consultations and in the use of consultation instruments. He/she will also need to have the capacity to undertake analysis using qualitative and quantities data/information.

#### **E Time Schedule**

The consultants will carry out the ESA studies in 12 weeks.

#### **F Deliverables**

##### ESA Report

1. Inception Report (2 weeks after the commencement of work)
2. Draft ESA Report with identification of social issues and mitigation measures (7 weeks after the commencement of work)
3. Final ESA Report after incorporating the comments by the Client and Bank (at the completion of ESA studies, 8 weeks)
4. Executive Summary both in English and Urdu languages (8 weeks)

##### ESG Report

1. Draft ESG Report with RPF (3 weeks after the commencement of work)
2. Final ESG Report after incorporating the comments by the Client and Bank (at the completion of ESA studies, 4 weeks)
3. Executive Summary both in English and Urdu languages (4 weeks)

Note: It is understood that the environment consultants will take up ESG studies after the completion of ESA studies – though both the studies could be started concurrently, in which case there should be close coordination between the two teams and total study time will reduce to 8 weeks. The social consultant will address the social concerns, determine the need for a RPF/RP (mitigation measures) and address these in the ESG report.

#### **G Suggested Structure of the ESA Report.**

- (a) *Executive summary.* Concisely discusses significant findings and recommended actions both for environmental and social aspects of the program.

(b) *Policy, legal, and administrative framework.* Discuss the policy, legal and administrative framework within which the EA is carried out. Explains the environmental requirements of any co financiers. Identifies relevant international environmental agreements to which the country is a party. Discuss the social framework as practiced by WAPDA, the Land Acquisition Act (1894) and Bank policies alongwith identification of gaps and recommended remedial measures.

(c) *Project description.* Concisely describes the proposed project and its geographic, ecological, social and temporal context, including any offsite investment that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing and raw material and product storage facilities). Indicates the need for any resettlement plan/RPF or Indigenous Peoples Development Plan (see also subparas. (i) to (iv) below). Normally the report includes a map showing the project site and the project's area of influence.

(d) *Baseline data.* Assesses the dimensions of the study area and describes relevant physical, biological and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation or mitigatory measures. The section indicates the accuracy, reliability and sources of the data. Baseline information will also include socio-economic and demographic characteristics of affected area and affected people including an income/asset survey of affected people. Baseline data will be needed on all aspects of the program intervention and will allow for assessment of post- intervention impact after project completion.

(e) *Environmental/Social impacts.* Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental/social enhancement. Identifies and estimates the extent and quality of available data, key data gaps and uncertainties associated with predictions and specifies topics that do not require further attention.

(f) *Analysis of alternatives.* Systematically compares feasible alternatives to the proposed project site, technology, design and operation – including the “without project” situation – in terms of their potential environmental and social impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement. It should also justify the reason for selection of this design from social viewpoint (e.g.number of affectees and interests affected, any loss of livelihood and any other social parameter considered in selection of the particular design).

(g) *Environmental management and monitoring plan (EMMP)*. Includes the RPF/RP and covers mitigation measures, monitoring and institutional strengthening;

(h) Besides the broad areas identified above in the ESA or SA, the following areas also need to be undertaken for these reports:

i). Identify stakeholders with stakes and impact of the project on them in terms of intensity of impact; Identify Project affected Persons and affected structures (if any); and also inventory and nature of adverse impacts; identify impact on women and vulnerable groups;

ii) Identify villages/urban areas to be impacted by land acquisition; for land acquisition process, lay out the method to be followed for voluntary/involuntary land acquisition. Please note that for involuntary land acquisition section-17 (b) will not be used (in the absence of an emergency or urgency); Identify social safeguards that may be triggered. And prepare an entitlement framework as a mitigation measure; determine whether a Resettlement plan or Resettlement Policy Framework is required.

iii) Lay out the participatory framework to be used by the project over its life; and

iv) Develop a conflict resolution mechanism.

**The SA may be a stand alone document or a part of the ESA report. Activities for data information gathering may be undertaken concomitantly with the environmental component of the Report.**

(i) *Appendixes*

- (1) List of EA/SA report preparers-individuals and organizations.
- (2) References-written materials both published and unpublished, used in study preparation.
- (3) Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local non-governmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys that were used to obtain the views of affected groups and local NGOs.
- (4) Tables presenting the relevant data referred to or summarized in the main text along with socio economic data, (primary and secondary) referred to in the report.
- (5) List of associated reports (e.g., Resettlement Plan or Indigenous People Development Plan).

## **Annexure I – List of the World Bank Operational Policies and Guidelines**

<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,menuPK:584441-piPK:64168435-the SitePK:584435,00.html>

Operational Policies (OP) /Bank Practices (BP) / Operation Directives (OD)

OP / BP 4.01 Environmental Assessment  
OP / BP 4.04 Natural Habitats  
OP 4.09 Pest Management  
OP 4.11 Cultural Property  
OP / BP 4.12 Involuntary Resettlement  
OD 4.20 Indigenous Peoples  
OP / BP 4.36 Forestry  
OP / BP 4.37 Safety of Dams  
OP / BP 7.50 Projects on International Waterways  
OP / BP 7.60 Projects in Disputed Areas  
BP 17.50 Disclosure of Operational Information

## **Annexure 2 – Social screening check list**

Who are people affected by the project – with categories of persons and intensity of impacts

What is the poverty level of affected persons?

Are directly affected stakeholders agreeable to allow the project?

What are the social issues, impacts of the project (loss of land, loss of livelihood, impact of high voltage transmissions on electrical and other machines, etc)

Does the project require land? If yes how much? How will it be acquired?

Is there any involuntary land acquisition? How will it be acquired (Please note—urgency/emergency clause of the Land Acquisition Act, i.e. Section 17.b, will not be applied)

Are there any affected structures if yes, how many?

Will there be any loss of livelihood of title and non title holders.

Is there a social conflict resolution mechanism in the communities?

Are the social safeguards triggered? If yes, which ones and how.

Any commercial activities affected in urban/rural areas?

## **Appendix B: Study Team**

This appendix provides the list of the key study team members who participated in this ESA.

Citation in the Main Report: **Section 1.4.6.**

### **Study Team**

The study team is provided below.

**M Omar Khalid:** He participated in the ESA study as the environmental expert and team leader. He carried out the field investigations, stakeholder consultation, impact assessment and ESA report compilation.

**Z B Mirza:** He provided inputs for the biological resources of the project area, and contributed in impact assessment.

**Usman Qazi:** He participated in the ESA as the socioeconomic expert. He carried out design of the public consultation component and impact assessment.

**Jameel Asgher:** He participated in the ESA as the socioeconomic expert. He carried out impact assessment and developed baseline.

**Isma Sana:** She participated in the ESA report as the socioeconomic and environmental expert. She carried out the stakeholder consultations and impact assessment.

**Imran Khalid:** He participated in the ESA report as the environmental expert. He carried out the impact assessment.

## **Appendix C: Photographs**

This appendix provides photographs of the project sites.

Citation in the Main Report: **Chapter 4** and **Section 4.4**.

**C.1 Bahawalpur Cantt. Grid Station Site****C.2 Feed for Bahawalpur Cantt. Grid Station**



### C.3 Jail Road Grid Station Sites







#### C.4 Feed for Jail Road Grid Station



## C.5 Makhdumpur Grid Station Sites





## C.6 Feed for Mukhdumpur Grid Station



**C.7 Suraj Miani Grid Station Site and its Feed****C.8 Sahiwal III Grid Station Site and its Feed**





### C.9 Feed for Head Sidhnai Grid Station



### C.10 Feed for Lal Sohanra Grid Station



### C.11 Kot Addu – Chowk Azam Transmission Line











## C.12 Kahrer Pecca – Lal Sohanra Transmission Line Route



### C.13 Lal Sohanra – Khairpur Tamewali Transmission Line Route



## C.14 Khairpur Tamewali – Hasilpur Transmission Line Route



## Appendix D: Stakeholder Consultations, Field Investigations and Crop Damage Data

This appendix provides details of the grass root stakeholder consultations and field investigations.

Citation in the main report: **Chapter 5** and **Section 7.6**.

### D.1 Project Components in Multan

Scope of work under the Project in the visited Area	<p>Multan is amongst the biggest cities of the country occupying large geographical area in southern part of the country. The place called as the city of <i>Pirs</i>, has attracted large number of immigrants not only from the neighboring districts but even from far off districts on account of development which took place due to the advent of canal irrigation on an extensive scale and industrial development. Most of the important tribes now inhabiting the district have immigrated during the past and the population of the city has been in a state of constant flux. This flux of population is not only confined in the central parts of the city, but with development activities in the suburbs of the city, their population is also growing.</p> <p>With the extensive increase in the population and the development activities in and around the city the need for advent supply of electricity is also becoming high. Although an active electricity supply system through MEPCO is functional and the city has been facilitated through numerous grids, but the electricity needs of the population are much higher than the existing supply. Due to the existing difference in demand and supply, some of the areas of the city especially in the outskirts are met with the complaints of low voltage, unscheduled and forced load shedding, power shutdown and fluctuations in supply. The extreme hot weather of the area aggravates the issues related with the poor electricity supply.</p> <p>Keeping in view the existing demand for profound electricity supply in the city and its suburbs, MEPCO in its project has proposed two new 132 kv grid stations in the areas of Jail Road and Suraj Miani.</p>
Name of the Route visited under the Project	The selected sites for new grid stations in the areas of Jail road and Suraj Miani.
Name of the Areas/ Villages Visited	<p>Site for 132 kv Jail Road Grid Station and the abadis (settlements)/ industrial units located near the site or along the path of its transmission line for the jail road grid station.</p> <p>Site for 132 kv Suraj Miani Grid Station and the abadis located near or along the path of its transmission line.</p>
Primary and Secondary Source of	The whole belt of Southern Punjab is accomplished



Livelihood	with a very fertile soil, rivers and canals. Based on these attributes, the primary source of income in these areas is agriculture and the agri based industries. Approximately 80% of the agriculture revenue of the country is gained from this part of the country. People of the area especially women are very hard working and obedient. Most of the population of Multan earns its living through agriculture (land owners, industrialists and peasants). Significant proportion of the inhabitants is also employed in government and private departments/institutions. The city also has a political influence as most of the renowned politicians of the country belong to this city. With change in the existing ethnic structure of the city majority of the people have also opted foreign countries for earning their livelihood in last few years.
Popular Caste of the Area	In past combine family system was popular among the inhabitants but now due to emerging needs and changing trends usually single family with 1 – 2 income earners resides in a house in urban areas. Whereas in rural areas combine family system is still popular having average 8 – 10 people living in a house and 2 – 3 income earners. The city is rich with variety of tribes and castes. The main tribes are Syeds, Qureshis, Arains, Kamboh, Pathans, Balochs, Jatts and Rajputs which have numerous castes and sub - castes. In past feudalism was popular in the city but now with development and awareness, local people have become empowered and the system is no longer in existence.
Any Social Issues in the areas	Crimes related with land conflicts and agriculture yield, dacoits, kidnapping, murder and theft are usually reported in these areas.
Status of Existing Development Activities in the Visited Area	Multan is one of the biggest cities of Pakistan after the four provincial capitals. Due to the sufficient development activities the city is gaining the interest of large number of inhabitants from the other districts and cities. People of the city are very religious and hospitable, thus keeping the values of saints who visited the area in past. The city is accomplished with renowned Mausoleums, Mosques, Mudressas and a Fort.  People are well educated due to the availability of credible religious and other educational institutions (schools, colleges, universities) in the area. Health facilities in the form of Civil Hospitals, Army Hospital, THQs, BHUs, RHCs, dispensaries are available along with private clinics and hospitals. People from the nearby villages and districts also prefer Multan for treatment. Seasonal fever especially during change of weather is common in the district. Sui gas, water supply and electricity are available in the city. The communication networks are available in the form of proper metal roads connecting the areas visited. Both electronic and print media are available in the city.
Sample Size of Public Consultation in the Visited Area	A shop in the market; a few households in the area,

	a vegetable ghee/ oil factory, a few farmers; the owner of the Suraj Miani grid station site; Staff of a Poultry Feed producing unit in the area.
Use of Electricity in the Area	Commercial, agricultural as well as household use.
Existing Complaints about the Availability of Electricity in the Area	Complaints of unscheduled/forced and elongated load shedding, power shutdown, low voltage during peak afternoon and evenings hours especially during summers and over billing were also recorded by the inhabitants of the visited areas.

### D.1.1 Public Consultations in the Visited Area

#### Jail Road Grid Station Site

The area of the Jail road is mostly filled with industrial units (i.e Cotton Ginning Mills, Vegetable Oil Mills, Rice Mills etc. The area is not thickly populated and human settlements in the area exists either in the form of mohallahs or scattered houses located near or within the cultivated fields. Currently, 132 kv Qasimpur Grid Station is supplying electricity to the areas of Jail road. The 11 kv feeder of Walayat Abad feeding the whole area is 7 km to 8 km away from the abadis and industries and is also facilitating the areas in its range other than Jail road. Because of the large consumer base, the Walayat Abad feeder is overloaded and not fulfilling the electricity needs of the areas that are fed through this feeder. These factors triggers the issues of forced load shedding, power shutdown, fluctuation in supply and extremely low voltage in abadis/ industries near Jail road in the peak evening hours during the year and especially in summers.

The site selected for the 132 kV Jail Road Grid Station is a barren and uncultivated land near central Jail road of Multan. The site is surrounded by few cultivated fields of seasonal crops. According to MEPCO officials, the site consisting of 4 – 6 acres of land (approx) selected for the grid station will be purchased from the land owner under the given procedure of WAPDA. The new grid station will facilitate 0.1 million population (approx) living in the areas of jail road. The industrial units situated in the area of jail road will receive the foremost benefit of this grid station. Although all these industries are using their own power generation plants as primary source of generation and MEPCO supply as secondary source but with the formation of a government grid facility in the nearby area available at cost lower than their private plants, there is a possibility that the industrial units will use MEPCO supply as primary source for power generation. The transmission of electricity to the new grid will be from 132 kv Qasimpur Grid Station. A 13 km long 132 kv double circuit transmission line from Qasimpur Grid Station will supply electricity to the new grid station. The route of transmission line from the source to the site will pass through the cultivated land near the source and the new site; therefore issues like loss of yield and loss of livelihood due to the installation of towers of the new transmission line in the cultivated fields are likely to exist. All such issues should be properly addressed according to the social safeguard policies of the World Bank.

### Suraj Miani Grid Station Site

The area of Suraj Miani is situated 2 – 3 km away from the main Multan city. It is a thickly populated area with 50,000 population (approx). The area is mainly confined for agricultural activities with minimum industrial activity. Presently the supply of electricity to Suraj Miani is from 132 kv Multan Industrial Estate Grid Station – Bosan Road which is already overloaded due to large number of consumers. The area being thickly populated demands sufficient supply of electricity as compared to the existing supply. Due to insufficient supply and exhaustive load on the existing feeders facilitating the area, complaints of forced load shedding and fluctuation in supply in the peak afternoon and evening hours during summers are common.

The site selected for Suraj Miani Grid Station is situated within thickly populated area and is surrounded by abadis/ mohallahs. It is a cultivated land, in which the land owner had grown an orchard of mango trees, few fields of seasonal crops and a poultry farm. Few shops and an academy of students adjacent to the site, owned by the land owner would also be included in the land given to WAPDA. According to MEPCO officials, the site for the grid station was offered by the land owner and its purchase from the owner would be done under the defined procedures of WAPDA. Like the jail road site, the selected site for Suraj Miani Grid is composed of 4 - 6 acres of land (approx). The new grid will facilitate electricity to almost all the areas of Suraj Miani. The source of supply to the new grid will be from 132 kv Multan Industrial Estate Grid Station. The new 10 km 132 kv double circuit transmission line will be T – Off on the nearby tower of the existing 132 kv line coming from Multan Industrial Estate Grid Station and passing from the fields near the new selected site. Like the existing line, the towers of the new transmission line will also pass mostly through the cultivated fields and near abadis on its way from source towards supply. There is a possibility that the route of the line will create issues of loss of yield, loss of livelihood along with accidents that could occur due to electric shocks and sparks to the nearby working peasants, abadis and grazing animals. Therefore some of the mitigation measures particularly keeping in view the standard distance and height of the towers for proper clearance and safety and insulation of distribution networks for prevention against any likely hazards due to these high powered towers and distribution networks should be given due importance and consideration while installing the towers and poles in the cultivated fields or near abadis. All such likely issues should be addressed fully according to the WB social safeguard policies.

The purpose of the social survey and public consultation near the selected sites for grid stations was to gather concerns of the stakeholders especially the land owners and the nearby population on the issues related with the land acquisition, loss of livelihood, safety and privacy issues that would likely to emerge in the areas and abadis near the visited sites.

#### Consultation No. 1

**Location:** Sassi Chowk is based on few abadis (locally called as mohallahs) and a small market in front of the Jail Road Grid Station site. The name of the area is based on the name of a local renowned and brave old women “Sassi,” who keeps cattle and sell their milk in the nearby areas for the past few years. The mohallah visited was composed of

approximately 50 houses and a small market of few basic utility shops. The site selected for the Jail Road Grid Station is an uncultivated land surrounded by few privately owned cultivated fields and few scattered houses. Currently the area is facilitated by a far off Walayat Abad feeder of Qasim Pur Grid Station and complaints of low voltage, forced/elongated load shedding and power shutdowns due to minor winds and rains are common. According to the inhabitants the reason for all such complaints is the excessive load on the existing source of supply (11 kv Walayat Abad Feeder). The Sussi Chowk will be benefited with the formation of a new grid. The quality of existing electricity supply in this area would be improved with separate new feeders from this grid. These feeders would facilitate the far - off areas along with the nearby consumers.

#### Discussions

- ▶ The respondents were local residents of the area.
- ▶ Most of the people (both male and female) of the mohallah are literate because of the availability of schools, colleges and universities in the nearby areas.
- ▶ Agriculture serves as the primary source of income for the inhabitants; however with development most of the people have also adopted employment in the nearby industries and government departments in Multan city.
- ▶ The inhabitants prefer living in a combine family system with 8 – 10 people (approx) living in a house having 2 -3 income earners.
- ▶ The inhabitants are liberal and males usually encourage females to work with them in fields.
- ▶ Water availability and sanitation system of area are satisfactory. However the unavailability of sui gas is the basic issue of the mohallah.

#### Comments on existing electricity supply

- ▶ The inhabitants of the mohallah are not wealthy. The appliances like T.V fridge, washing machine, electric cutters for fodder, iron and sewing machines, fans and bulbs are available in only well earned houses, while most of the inhabitants live a simple living and use fans and bulbs for comfort.
- ▶ The present supply of electricity is not sufficient and complaints of load shedding, low voltage, power shutdown during windy and rainy weather are experienced by the inhabitants. These issues exist during the whole year but aggravates in summers.
- ▶ The respondents shared grievance about corruption in WAPDA due to their negligence on issues related with the repair and maintenance of the faulty systems. Unnecessary delays in daily operation and maintenance of the faulty systems have become regular practice of the department and the work is usually done after giving money to the department other than the utility bills.
- ▶ Issues of over billing as compared to the usage of electricity are common.

#### Apprehensions

- ▶ The respondents shared apprehensions related with the existing distribution networks passing near the abadi that are not properly insulated and could cause threat to humans and animals.
- ▶ The respondents were not afraid of issues related with theft, security and privacy that could possibly emerge during the construction of the new grid station in their nearby vicinity.



### Suggestions for improvement in existing or new system

- ▶ The respondents promoted the idea of formation of a new grid station in their neighborhood that would improve the existing quality of electricity supply, enhance the development of the area and create massive employment opportunities.
- ▶ The inhabitants of the area demands a separate feeder for their mohallah as a result of a new grid station in their area.
- ▶ The respondents were unable to comment on the issues of loss of land, yield and livelihood that could possibly emerge while directing the route of the transmission line from source (i.e Qasimpur Grid Station) towards the new grid station.
- ▶ The respondents did not share suggestions and mitigation measures for improvement in the existing or new system.

### Consultation No. 2

**Location:** Sassi Chowk. A household situated in a mohallah comprising of few more houses near the grid station site and Sassi Chowk. The back side of the house opens into the cultivated fields owned by the owner of the house. These households will also be benefited with improved supply of electricity due to the formation of new grid station.

### Discussions

- ▶ A well earned house in which several electrical appliances of daily use like fridge, T.V, iron, electric rods, fans, bulbs, sewing and embroidery machines, electric cutter for fodder were available.
- ▶ Combine family system with average 25 people living in the house.
- ▶ One of the respondent's husband also runs a shop in the nearby market along with keeping animals and doing agriculture on his land.
- ▶ The women folk of the house are skilled and do embroidery for few boutiques and also help the male members in nurturing animals and selling dairy products in the nearby abadis.
- ▶ Concerned about the issues related with non availability of sui gas in the area
- ▶ Shared concerns about the issue of low wage paid by the boutiques to the women folk of the area incommensurable with their skills and labor.

### Comments on existing electricity supply

- ▶ No complaint of low voltage, but load shedding is occasional in winters.
- ▶ Frequent complaints of elongated load shedding and power shutdown especially in summers. These issues aggravates during windy and rainy weather in summers. Under such conditions, women are unable to work efficiently that effects their daily income.

### Apprehensions

- ▶ No apprehensions related with the existing electricity supply system.
- ▶ No issues of privacy and safety due to the formation of the new grid station.
- ▶ The respondents were not aware of apprehensions related with the loss of land, land acquisition, loss of yield and ultimately livelihood from their cultivated fields if their fields lie in the route of the transmission line and its tower be installed in their lush green fields.

**Suggestions for improvement in existing or new system**

- ▶ Promoted the idea of formation of a new grid station because this will improve the existing electricity supply in the area that ultimately improves the working conditions for inhabitants especially women who do embroidery and they would be able to earn fully from their labour and skills.
- ▶ The respondents were unable to provide suggestions for the improvement in the existing system or for the new grid station.

**Consultation No. 3**

**Location:** A Vegetable Ghee and Oil Mill on Jail road. After the harvesting of cotton from Sindh and Punjab during late summers, the cotton seeds are usually stored in the vegetable ghee & oil mills and these mills operate from September to March every year for extracting oil from the cotton seeds. Due to the unavailability of raw material (cotton seeds) during summers these mills remain close during extreme summers. All such mills located in the area of Jail road that are using/ not using MEPCO supply as a primary source will be benefited from the improved supply of electricity due to the formation of new grid station in their closed vicinity.

**Discussions**

- ▶ The respondents shared that high revenue is earned from the mill.
- ▶ The mill is operational from September till March depending upon the supply of the raw material i.e cotton seeds from Sindh and Punjab. The cotton seeds are stored and then used in making vegetable ghee & oil while its residue is sold in the market for use in animal and poultry food.
- ▶ The mill has not installed its own power generation plant and uses MEPCO supply (11 kV Walayat Abad Feeder from Qasimpur Grid Station) as a primary source of electricity.
- ▶ All the machines in the mill operate under the given electricity supply of MEPCO.

**Comments on existing electricity supply**

- ▶ The mill is operative from September to March and there are no complaints related with low voltage and fluctuation in the electricity supply during these months. However elongated load shedding occurs even during the season but has no impact on the working of the mill.

**Apprehensions**

- ▶ The respondents were not aware of any apprehensions that could possibly occur due to the existing electricity supply system or due to the formation of a new grid station.

**Suggestions for improvement in existing or new system**

- ▶ The respondents promoted the idea of new grid formation in the area but was unable to give any suggestions for improvement in the existing supply or for the new system.

**Consultation No. 4**

**Location:** Cultivated fields lying within the proposed route of the 132 kv transmission line from Multan Industrial Estate Grid Station towards the new 132 kV Suraj Miani Grid Station. According to the MEPCO officials, the new 132 kv transmission line will be T –

Off on the nearest existing tower of 132 kv transmission line passing from the cultivated area near the selected site of Suraj Miani Grid Station. The new transmission line will pass through the cultivated fields like the existing line on its way from source towards supply. Therefore few privately owned cultivated fields lying within the route of the new line will be affected due to the installation of towers in them.

#### Comments on existing electricity supply

- ▶ Low voltage, fluctuation, elongated load shedding, persistent power shutdowns that usually extend to even 2 days.
- ▶ Issues of sparks in the existing distribution networks passing through the nearby orchards during windy and rainy weather.
- ▶ Issues of over billing as compared to the usage of electricity.

#### Apprehensions

- ▶ The respondents refused the proposal of installation of towers in the cultivated fields.

#### Suggestions for improvement in existing or new system

- ▶ The respondents suggested that the path of the transmission line from the source towards supply should follow the road alignment so that the privately owned cultivated land is saved from the towers and their after affects on land and its yield.

#### Consultation No. 5

**Location:** Selected Site for Suraj Miani Grid Station. The site is located within the densely populated areas and abadis of Suraj Miani.

#### Discussions

- ▶ The annual average income from the yield through this land is 0.25 million
- ▶ According to one of the respondents, purpose for selling the land with all its utilities to WAPDA is to get better price of the land and utilization of the earned money in business and agriculture in the valued areas.
- ▶ The respondents shared that initially they planned a housing scheme on the land but the locality of the area maximum profit could not be drawn from the planned business therefore the family decided to sell the land to WAPDA.
- ▶ The respondents promoted the development in the area and therefore highlighted that the land will be sold at a very low price to WAPDA as compared to its value.
- ▶ The whole procedure of sale and purchase among both the parties is under process.

#### Comments on existing electricity supply

- ▶ No complaints related with the existing source of supply.

#### Apprehensions

- ▶ The respondents had no apprehensions with the existing system or with the formation of the new grid station.
- ▶ No issues of forced land acquisition.

**Suggestions for improvement in existing or new system**

- ▶ Promoted the idea of grid formation and suggested that standard procedures should be followed by the WAPDA during the formation of the grid station.

**Consultation No. 6**

**Location:** A household in the mohallah adjacent to the site selected for Suraj Miani grid station. The mohallah will be benefited with improve supply of electricity from the new grid station.

**Discussions**

- ▶ The area is densely populated with approximately 300 – 400 houses situated in one mohallah.
- ▶ One of the respondents uses electric wood cutter for fine cutting of wood for maximum sale.
- ▶ The insufficient supply of electricity could be one of the factors that attribute loss in the business, but the respondents were unable to relate the impact of this factor with loss in his business. According to him, it was less money due to which he is unable to buy good quality wood.

**Comments on existing electricity supply**

- ▶ According to the respondents the quality of electricity supply in the mohallah is sufficient and therefore there are no issues related with unscheduled load shedding and fluctuation in supply.
- ▶ The issue of drop/ low voltage is common in the area.

**Apprehensions**

- ▶ No issues of safety and privacy due to the formation of a grid station in the nearby vicinity.

**Suggestions for improvement in existing system**

- ▶ Promoted the idea of grid formation.
- ▶ No suggestions for improvement in the existing supply or new system.

**Consultation No. 7**

**Participants:** Officials of Shabbir Poultry Feed (an industrial unit), near Jail Road grid station site.

**Discussions:** Electricity supply from MEPCO was the main power source for the industrial unit visited, much like the other similar production facilities in the area. The participants complained about low voltage and frequent power breakdown in the area, affecting them and other industrial units in the area. This situation results in equipment damage as well as production loss.

**Comments regarding the proposed grid station:** The participants greatly appreciated the project, hoping that the low voltage and frequent power failure problems will be solved with the establishment of new grid station in the area. They were also of the view that with the improved power supply, the industrial units in the area will be able to increase their production capacity, thus enhancing the economic benefits for the owners, while also providing additional employment opportunities.

**Apprehensions:** The participants did not have any apprehension about the proposed project.

## D.2 Sahiwal III Grid Station Site

Scope of Work under the Project in the visited Area	<p>Sahiwal is one of the prominent cities of Punjab famous for its cattle breeding farms, dairy products and agriculture yield. The city is enriched with fertile land therefore its industrial units are also based on agriculture and dairy products. With the development of the city massive employment opportunities attracted large number of population from the nearby villages and far off districts. The flux of population in past few years has raised issues related with the sufficient availability of basic necessities of life to majority of the population settled in the suburbs of the city. The efficiency of available infrastructures of electricity, water and sui gas supply has declined due to massive load of consumers on them especially in the rural areas of the city.</p> <p>Apart from the other issues, sufficient supply of electricity is needed in the suburbs (especially rural areas) of the city. Although a credible system of MEPCO is functional and the city is being facilitated by two grids that are providing electricity to the rural and urban areas, but the demand is much higher than the existing supply. Due to above reason complaints of low voltage, unscheduled and forced load shedding, power shutdown and fluctuations in supply are common in the rural areas of the city. The extreme hot weather of the area triggers these issues which demands formation of a new grid station in the suburbs of the city.</p> <p>Keeping in view the existing demands for profound electricity supply in the suburbs of the city, MEPCO in its project has proposed a new 132 kv grid station in rural area of Chak 93/6R of Sahiwal.</p>
Name of the Route visited under the Project	The site selected for 132 kv Sahiwal - III Grid Station in Chak 93/6R of Sahiwal.
Name of the Areas/ Villages Visited	The site selected for the 132 kv Sahiwal Grid Station and abadis/ located near the site.
Primary and Secondary Source of Livelihood	Like other parts of Punjab, agriculture serves as the primary source of income for the inhabitants of Sahiwal. The area is accomplished with cultivated fields and therefore famous for its cattle breeding farms and dairy products. Few renowned agri - based industries (i.e textile mills, dairy industries and sugar mills) operative in the district are famous for their products in the country. Significant percentage of the inhabitants has flourished their own business (shops and factories) and the trend of working in the government and private departments is relatively low. Some of the inhabitants are also settled abroad. The rural women are very hard working and usually work with their families in cultivated fields as a potential income earner, while the urban women mostly get

	education and adopt jobs in schools, government and private departments after completing their studies.
Popular Caste of the Area	Just like Multan and other cities of Punjab, combine family system was popular among the inhabitants in past but now due to emerging needs and changing trends usually single family with 1 – 2 income earners resides in a house in the city. Whereas in suburbs (mostly rural and semi urban areas) combine family system is still popular with 8 – 10 people living in a house having 2 – 3 income earners (on average). The city is rich with variety of tribes and castes. Sahis, Jatts, Rajputs, Kharals, Sials, Wattoos, Kathias, Joyas, Hans, Arians, Kambohs, Chishtis, Bodlas, Syeds, Gujars, Baloch, Bhattis, Khokhars and Dogars are the popular castes of the district.
Any Social Issues in the areas	Crimes related with land and animal conflicts, agriculture yield, dacoits, kidnapping, murder and theft are usually reported in these areas.
Status of Existing Development Activities in the Visited Area	Sahiwal has a historical importance as it was considered amongst the major districts with a proper railway setup and administrative system long before the partition. The district is also famous for having the ruins of one of the oldest urban civilizations in the history of mankind, the Indus Valley Civilization – Harappa which flourished around 3,000 B.C. Now it is considered amongst the developed cities of Punjab with the availability of basic necessities e.g water, sui gas, electricity and a proper network of roads. Due to the sufficient development activities, the city is gaining the interest of large number of inhabitants from the other districts. People of the rural and urban areas of the city are very hard working. They are well educated due to the availability of credible religious and educational institutions (schools, inter/ degree colleges and mudrassas) but the literacy rate among females is higher as compared to the males who are mostly inclined towards their traditional business of agriculture. Health facilities in the form of DHQ, THQs, BHUs, RHCs, dispensaries are available along with private clinics and hospitals and people from the nearby villages and districts prefer Sahiwal for treatment. Seasonal fever especially during change of weather is common in the district. Sui gas is not available in most of the rural areas. Both electronic and print media are available in the district.
Sample Size of Public Consultation in the Visited Area	Residents of a village near the proposed site; Farmers working in the fields adjacent to the grid site; A Numbardar and the Nazim of the Union Council in which the site is situated; Workers at the brick kiln adjacent to the site.
Use of Electricity in the Area	Agricultural as well as household use.
Existing Complaints about the Availability of Electricity in the Area	Complaints of unscheduled/ forced load shedding, elongated power shutdown, low voltage especially during peak afternoon and evening hours in summers are common. Issues of over billing and theft of connections from the distribution networks were also

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	recorded during public consultation in the visited areas
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### Public Consultations in the Visited Area

#### Site for Sahiwal – III Grid Station

Chak 93/6R of Sahiwal is a populated area accomplished with cultivated land for agriculture. The site selected for the formation of a 132 kv Sahiwal - III Grid Station is located in this Chak. The selected site is a cultivated land surrounded with fields for seasonal crops. A brick kiln and a village of Chak are also situated in the nearby vicinity. The purpose of the formation of the new grid is to reduce the load of supply on the existing Sahiwal Old Grid Station and to provide better supply in terms of sufficient voltage without the complaints of load shedding and power shutdowns. The site selected for the grid station is a private owned land of the local farmer. According to the MEPCO officials and the inhabitants of the area, because of some property conflicts in the family, the land owner has offered his land to WADPA for the formation of the grid station. The purchase of the land between both the parties is under process. The supply of electricity to the new grid will be from 132 kv Sahiwal Old Grid Station situated in Tandilanwala, approximately 9 – 10 km away from the new grid station site. Although there will be no issues of resettlement of abadis or forced land acquisition but as route of 132 kv double circuit transmission line will pass through the cultivated land on its way from source towards the site, issues related with loss of yield and loss of livelihood are likely to emerge due to the formation of the grid. Therefore all such issues should be properly addressed under the social safeguard polices of the World Bank.

The purpose of social survey and public consultation in the area was to record complaints of the stakeholders due to the existing source of supply and to highlight any issues related with forced land acquisition for the grid and its transmission line, safety/ privacy concerns of nearby working and living communities. During the consultations issues related with loss of livelihood that could emerge as a result of the installation of towers in the cultivated land were given due consideration.

#### Consultation No. 1

**Location:** Cultivated fields of seasonal crops located adjacent to the site selected for the grid station. The population of the Chak 93/6R will be benefited with the improved supply of electricity provided through the formation of a new grid station.

#### Discussions

- ▶ Cattle keeping and selling of the dairy products is the primary source of income of the respondents.
- ▶ According to the respondents, the daily saving from the income is sufficient to run a simple living.
- ▶ Based on the income of the respondents, fans, bulbs, electric cutter for fodder and water motor are available in the house for usage. However, T.V, fridge, fans, bulbs, water motors, sewing & washing machines, iron etc are available only in the well earned houses of the Chak.



**Comments on existing electricity supply**

- ▶ No issues of voltage drop and fluctuation of light.
- ▶ Scheduled load shedding occurs during the whole year.
- ▶ Complaints of over billing as compared to the usage and consumption exist in the area.

**Apprehensions**

- ▶ No apprehensions with the existing electricity supply system.
- ▶ No awareness on apprehensions related with loss of livelihood that could possibly emerge due to the installation of towers of the transmission line in the fields where the respondents cultivates crops.
- ▶ The issues of theft already exist in the area, therefore no issues of safety/ protection and privacy due to the formation of the grid station.

**Suggestions for improvement in existing or new system**

- ▶ The respondents promoted the idea of the new grid formation
- ▶ The respondents were unable to give any suggestions for the improvement in the existing supply or new system.

**Consultation No. 2**

**Location:** Cultivated fields of seasonal crops located adjacent to the site selected for the grid station. The population of the Chak 93/6R will be benefited with the improved supply of electricity as a result of new grid station.

**Comments on existing electricity supply**

- ▶ No issues of voltage drop and fluctuation of light.
- ▶ Scheduled load shedding occurs during the whole year.
- ▶ Complaints of over billing as compared to the usage and consumption exist in the area.

**Apprehensions**

- ▶ The women of the area mostly work in the fields with their families therefore no apprehensions on issues of privacy and safety due to the formation of the grid station in the nearby land.

**Suggestions for improvement in existing or new system**

- ▶ The respondents promoted the idea of grid formation in the area and foresaw the formation of the grid would enhance employment opportunities for the locals.
- ▶ The respondents were unable to give suggestions for the improvement of the existing supply or new system.

**Consultation No. 3**

**Location:** Brick Kiln situated near the selected site in Chak 93/6 R. It is observed that forced labour is adopted in the brick kilns and the laborers working in the brick kilns are compelled to live and work under deteriorating conditions. These laborers have temporary settlements and therefore keep on migrating on the order of the owner of the brick kilns to different areas where such opportunities for the owner are available. The



electricity is not provided to the laborers therefore the formation of the new grid station in the area would have no impact on the brick kiln and its laborers.

#### Discussions

- ▶ The respondents have been working on the brick kilns for last few years since after the death of her husband.
- ▶ The brick kiln is the sole source of income for the respondents and their large families.
- ▶ The respondents shared their concerns on the minimum wage of Rs. 200/- that is paid to her occasionally to afford her family comprising of 5 children.
- ▶ The respondents shared grievance on the aspect of forced labor on the brick kiln due to which they are unable to adopt other or better employments.

#### Comments on existing electricity supply

- ▶ The respondents were unable to share her comments on the electricity supply because electricity is not provided in the brick kilns and kerosene lamps are used as source of light in the evening.

#### Apprehensions

- ▶ Due to above reason the respondents were unable to share concerns or apprehensions that could likely emerge due to the existing or new system.

#### Suggestions for improvement in existing or new system

- ▶ The respondents were unable to give suggestions for improvement in the existing supply or new system.

#### Consultation No. 4

**Location:** A village of Chak 93/6R located near the site selected for the Sahiwal III Grid Station. The village is not far from the main Sahiwal city and is considered as a semi urban and developed area with the facilities of water supply, electricity, road networks, educational and health facilities available in its surroundings. Sui gas is not available in the village and the inhabitants use gas cylinders for cooking purpose. The average population of the village is 8,000 (approx). Currently the electricity supply to the village is from Sahiwal Old Grid Station which is already overloaded due to large consumer base. Although the usage of electricity is merely domestic in the village but complaints of low voltage, elongated and unscheduled load shedding especially during peak hours (afternoon and evening) in summers are common. The village will be benefited with the formation of the new grid station in its close neighborhood because the quality of the supply would be improved from the nearby source.

#### Discussions

- ▶ The village is composed of total 150 houses (approx).
- ▶ The primary source of income is agriculture; however employment and business in Sahiwal city are also adopted by some of the people.
- ▶ Except sui gas all the basic necessities of life are available in the surroundings of the village.
- ▶ The inhabitants of the village are well established and could afford facilities like T.V, Fridge, iron, electric cutter for fodder, sewing and washing machines,

water motors etc along with fans, bulbs and electric rods. Air conditioners are also available in few well earned houses.

- ▶ The respondents shared that the major source of income of the whole district is agriculture; therefore electricity operated tube wells are used for sufficient water supply to the cultivated fields. Almost 4 – 5 electricity operated tube wells are available in the village that are used for irrigation in the nearby fields.

#### Comments on existing electricity supply

- ▶ The commercial activities are located 2 km away from the village therefore the use of electricity is merely domestic in the village.
- ▶ Due to the far off source, complaints of low voltage, unscheduled load shedding, fluctuations in existing supply are common and the people mostly use stabilizers for the safety of their electrical appliances.
- ▶ The above mentioned complaints further aggravates during peak hours in summers.
- ▶ The respondents shared grievance on the operational system of WAPDA as the department has installed faulty meters that usually give high reading as compared to the usage or consumption. Therefore issues of over billing occur due to such faulty systems.
- ▶ No issues with electricity distribution networks in the village as any accidents due to sparks or shocks in the supply distribution wires were not observed since the supply of electricity in the village.

#### Apprehensions

- ▶ The respondents had no apprehensions with the existing supply or with the new system.

#### Suggestions for improvement in existing or new system

- ▶ Promoted the idea of new grid formation in the nearby area that would trigger development of the area.
- ▶ Apart from the Chak, 6 – 7 villages (approx), 9 cold storages, 4 petrol pumps, a furniture market, and an army area exists in the surroundings of the selected site and would be facilitated through the new grid station.
- ▶ The respondents suggested for an independent 11 kV feeder for the village.

#### Consultation No. 5

**Location:** Village of Chak 93/6R. All the details regarding village and the impact of the project on the village are explained above.

#### Discussions with Interviewee

- ▶ The respondents focused discussion on the existing system and the promoted the idea of the formation of a new grid station in the area.

#### Comments on existing electricity supply

- ▶ Main issue of the agriculturists is loss in their yield due to unscheduled load shedding, power shutdowns, low voltage and fluctuations in the existing supply. Breakage of distribution lines facilitating the area is the main cause of the poor electricity supply in the area. These issues causes damage to the electricity operated tube wells and ultimately the agricultural yield in the area.

- ▶ The respondents shared concerns on the ineffective operational system of WAPDA; according to the inhabitants the department is not efficient in the maintenance of the faulty equipments.
- ▶ The respondents added that usually the local government has to afford the maintenance cost of the damaged transformers for sufficient and timely supply to the consumers.
- ▶ Issues of electricity theft from connections of the distribution networks exist in the village that ultimately raises issues of over billing from the paid consumers.

#### Apprehensions

- ▶ The respondents shared no apprehensions regarding the proposed project.

#### Suggestions for improvement in existing or new system

- ▶ The respondents promoted the idea of new grid formation and expected that the department would be able to handle issues of electricity theft in the area.
- ▶ The respondents gave no suggestions for improvement of the existing supply or new system.

### D.3 Bahawalpur Cantt., Kahrora Pecca, Lal Sohanra, Khairpur Tamewali and Hasilpur Grid Stations

#### Scope of Work under the Project in the visited Area

Bahawalpur is among the biggest and developed districts of Punjab Province. As a result of development and feasibility of basic necessities large number of inhabitants from Sindh, Punjab, NWFP and Balochistan migrated to Bahawalpur district. Because of geographical location the district has always remained important place for Administrative and Defense setup. A proper Cantonment was established in the suburbs of Bahawalpur which is now included in the city. Although the cantonment have its own setup for the infrastructures of water supply and sui gas but electricity is provided to the area through the far off Grid (220 kv Khanka Grid - Bahawalpur), which also facilitates some thickly populated areas of the city apart from the cantonment and some of the nearby Chaks (villages) of the areas. The efficiency of available infrastructures of electricity supply in Bahawalpur has declined due to massive load of consumers on them especially in the areas located in the suburbs of the city. Based on these factors, complaints of low voltage, unscheduled and forced load shedding, power shutdown and fluctuations in supply are common in the suburbs of the city. The extreme hot weather of the area also triggers these issues.

With the objective of reducing the load of consumers on the existing systems and facilitating all the consumers equally and sufficiently, MEPCO in its project has proposed a new grid station in suburbs of Bahawalpur that would facilitate the cantonment and few other areas (Chaks) situated in the close neighborhood of the cantonment.

Name of the Route visited under the Project	The site selected for 132 kv Bahawalpur Cantt Grid Station in Chak 12/B.C of Bahawalpur; Kehror Pecca – Lal Sohanra transmission line route; Lal Sohanra – Khairpur Tamewali transmission line route; Khairpur Tamewali – Hasilpur transmission line route.
Name of the Areas/ Villages Visited	The selected site for the 132 kv Bahawalpur Cantt Grid Station and abadis, infrastructures and institutions located in the vicinity of the site were visited during social survey.  Villages along the proposed routes of the transmission lines.
Primary and Secondary Source of Livelihood	The district can be divided into three parts i.e riverine area, the plain area, and the desert area. Therefore source of income varies with the terrain of the area. Like other parts of Punjab, agriculture serves as the primary source of income in the riverine and plain areas. In these areas climate and sandy soil is very suitable for the cultivation of cotton, sugarcane, mangoes and dates. Therefore the orchids of mangoes and dates are popular for their yield and quality. Agri - based industries (cottage, small and large) exists in the suburbs of the city. Animal keeping/ breeding is the primary source of income in Cholistan. Due to high literacy rate in the city area most of the people are associated with government and private departments for employment. Significant percentage of inhabitants also run their private business ranging from shops/ markets to small and large industries. Labour class is also found in abundance earning their living by working on daily wages. Like the other districts of the province, the trend of settling abroad also exists among the inhabitants. The inhabitants of the area are well known for their skills in embroidery, jewelry and other ornaments of daily use. Women of the area are very hard working and obedient. A rural woman supports her family by doing embroidery on clothes while the urban women after completing education usually prefer to seek employment in schools, colleges, university, government and private departments/ institutions available in the area.
Popular Caste of the Area	Just like Multan and other cities of Punjab, the trend for combine living was popular among the inhabitants in past but now due to emerging needs and changing trends usually single family with 1 – 2 income earners resides in a house in the city. Whereas in rural and semi urban areas combine family system is still popular with 8 – 10 people living in a house and 2 – 3 income earners (on average). Syeds, Qureshis, Balochs, Pathans, Rajputs, Jatts, Gujjars, Arains are the popular castes and resides in the district along with their sub – castes.
Any Social Issues in the areas	Like other cities of Punjab, crimes related with land and animal conflicts, agriculture yield, dacoits, kidnapping, murder and theft are usually reported in the area.

Status of Existing Development Activities in the Visited Area	<p>Bahawalpur established as an independent state long before partition and was ruled by the Amirs who were the decedents of rulers of Baghdad. Before partition it was considered amongst the richest and developed state of Indo – Pak. Later with the changing trends in the administrative setup, the state was given the status of the division comprising of large geographical area extending upto India and was given to the Punjab Province. After partition the division was included in Pakistan but remained under the control of the Amirs who promoted development in the area. The district has a historical significance and importance mainly because of the invasions made by intruders, the Cholistan desert, the forts and the mosques developed by Amirs during their rule. Bahawalpur is the developed city of Punjab with the availability of basic necessities e.g water, sui gas, electricity and a proper network of roads connecting the area with other parts of the country. Due to the sufficient development activities the city has gained, interest of large number of inhabitants from the other cities and districts. People of the rural and urban areas of the city are very hard working. They are well educated due to the availability of credible religious and educational institutions (schools, inter/ degree colleges, mudrassas, professional colleges, and a university) in the area. Health facilities in the form of DHQ, THQs, BHUs, RHCs, MCH centers and dispensaries are available along with private clinics and some renowned hospitals. People from the nearby villages and districts prefer Bahawalpur for treatment. Seasonal fever especially during change of weather is common in the district. Like other parts of Punjab sui gas is not available in the rural areas of the district. Both electronic and print media are accessible in the district.</p>
Sample Size of Public Consultation in the Visited Area	<p>A headmistress of the community model school in an abadi and residents of Chak 12/B.C situated in front of the selected site;  The <i>Numbardar</i> of the Chak 12/B.C;  the caretaker of the wheat bin shells adjacent to the selected site;  Civil Aviation Authority of Bahawalpur Airport located near the selected site;  Residents of Bahawalgarh village near Kehror Pecca;  Residents and <i>Patwari</i> of Hameedabad village near Khairpur Tamewali;  Official of the Lal Sohanra National Park.</p>
Use of Electricity in the Area	Agricultural as well as household use.
Existing Complaints about the Availability of Electricity in the Area	Complaints of unscheduled/ forced load shedding, elongated power shutdown, low voltage especially during summers were registered by the inhabitants during public consultation.

### Public Consultations in the Visited Area

The purpose of social survey and public consultation in the area was to record complaints/suggestions of the stakeholders due to the existing electricity supply and to highlight any apprehensions related with forced land acquisition for the grid formation, security, safety and privacy concerns of nearby infrastructures and living communities.

### Grid Station Sites

The site selected for the 132 kv Bahawalpur Cantt Grid Station is an army owned land located in Chak 12/B.C situated near Bahawalpur cantonment area. The cantonment initially lying in the suburbs of Bahawalpur city is now included in the city and is surrounded by various semi urban areas called "Chak". The site selected for the grid station is an open, uncultivated and barren land connected with a wheat storage centre from one side. Apart from the basti (settlement) of Chak 12/ B.C located in front of the site across the road, few temporary settlements of nomads lie near the selected site. Bahawalpur Airport located on Yazman Road is also not very far from the site (distance is approx 300 meters). Except the basti, the rest of the area is not populated. Currently all these areas are facilitated through the 220 kv Bahawalpur Khanka Grid Station which is already exhaustive and overloaded due to large number of consumers depending on its supply other than these areas.

According to the MEPCO officials, the new grid would facilitate the cantonment area along with few nearby chaks. As the army area would be facilitated on priority basis therefore army would have to objection on giving the land for grid station construction. Like other sites the purchase of the land between both the parties is under process. The supply of electricity to the new grid would be from 132 kv Bahawalpur K.P Tamewali Grid Station, situated in Khairpur Tamewali. The double circuit 132 kv transmission line from Bahawalpur K.P Tamewali Grid station would supply the electricity to the new grid. The route of the transmission line would pass through the unpopulated and uncultivated barren land therefore issues of forced land acquisition, resettlement of abadis, loss of land, livelihood, and bifurcation of land are not likely to emerge due to the formation of the new grid station.

However, the existence of airport near the site is critical and proper mitigation measures like the permissible distance of the grid from the airport runway, and permissible distance and height of 132 kv transmission line towers within the grid station and along the route from source towards supply should be given due consideration. All such issues should be addressed fully for avoiding hindrance and accidents either due to the grid station or its towers especially near runway, thus providing proper clearance to the flights. All such issues should be properly addressed under the World Bank social safeguard policies.

Kahrar Pecca, Lal Sohanra, Khairpur Tamewali and Hasilpur grid stations are existing facilities, where only extension or conversion activities will be undertaken during the proposed project.

### Consultation No. 1

**Location:** A small basti (settlement) of Chak 12/ B.C situated across the road in front of the site selected for grid station. The basti is composed of few houses, a primary school

for girls and few basic utility shops. The primary source of income of people is agriculture and animals; however few literate few educated people are employed in Bahawalpur City. Based on the economic status, though the inhabitants observe simple living but T.V, fridge, iron, water motors, bulbs, electric rods, fans etc are available in almost all houses. Currently 220 kV Khanka Grid – Bahawalpur is facilitating the Chak 12/B.C. The source of supply is quite far from the consumers and complaints of unscheduled/ elongated load shedding and power shutdowns are common during the whole year especially during summers which makes life uncomfortable for consumers. The basti will be benefited with the improved supply of electricity from a nearby new grid station.

#### Discussions

- ▶ The respondents shared that the Chak 12/ B.C is enriched with educated people of middle class strata. However the people of the basti are poor but could afford basic necessities of life.
- ▶ Overall the inhabitants of the Chak are dependent on agriculture and agri based industries for earning livelihoods. But educated people are either employed in government/ private departments or have established their private business in city.
- ▶ T.V, video, water motors, fridge, washing/sewing machines, iron are available in almost every house of the Chak along with basic necessities like fans, bulbs and electric rods. Depending upon the economic status, people of the basti have also kept these utilities for usage.
- ▶ The inhabitants encourage education; therefore community model schools for both boys and girls are available in the Chak.
- ▶ The respondents shared grievances on the amount of the funds that are usually given to the government schools for providing education. According to the respondents, the funds are not even sufficient to provide healthy and feasible environment to the students. The rooms available in the building are less as compared with the number of classes. The affordability of high utility bills is also issue that creates hurdles in the provision of quality education in such schools.

#### Comments on existing electricity supply

- ▶ Complaints of frequent and elongated load shedding and power shutdown usually during summers. Therefore fans and bulbs could not be used and students are compelled to study outside the classrooms even during extreme hot weather.
- ▶ No complaints about low voltage or fluctuations in the existing supply.
- ▶ The respondents were not aware about the formation of the new grid station in their neighborhood prior to the consultation.

#### Apprehensions

- ▶ The respondents shared no apprehensions related with the existing supply or the new grid.

#### Suggestions for improvement in existing or new system

- ▶ Promoted the idea of new grid station and suggested that standard procedures would be followed by the department during the formation of the new grid, installation of the towers and poles of distribution networks near the populated areas.



### Consultation No. 2

**Location:** Chak 12/ B.C. The Chak will be benefited with the improved supply of electricity from a new nearby grid station.

#### Discussions

- ▶ The Chak is composed of 717 houses and has a population of about 5,179.
- ▶ Almost 50 % of the population of the chak is associated with agriculture as primary source of income. The remaining 50% do employment, labor and business in the city.
- ▶ People of the area promotes education, therefore the literacy rate is 90% (approx). Both male and female get education at least up to 10<sup>th</sup> Grade as high schools are available in Chak.
- ▶ The health facilities are not available but city is adjacent to the Chak therefore people go to city for health treatment.
- ▶ The status of the inhabitants is sufficient to afford T.V, video, air conditioners, water motors, desert coolers, fridge, washing/electric sewing machines, iron etc for use.

#### Comments on existing electricity supply

- ▶ Complaints of unscheduled and elongated load shedding, low voltage, power shutdowns are common in the Chak during the year, especially during summer in peak hours (afternoon and evening). The reason is the supply from far off grid (i.e 220kv Khanka Grid Bahawalpur).
- ▶ Load shedding is also a regular practice in winters.

#### Apprehensions

- ▶ The respondents had no apprehensions either with existing system or due to the formation of the nearby grid station.

#### Suggestions for improvement in existing or new system

- ▶ Initially the respondents were unaware about the formation of a grid station like other inhabitants of the area; it was during public consultation that the people of the area knew about the formation of a new grid station within the neighborhood of their area.
- ▶ The respondents promoted the idea of the formation the new grid with expectation of improved and sufficient supply of electricity in the Chak from nearby source.
- ▶ The respondents had no suggestions for the improvement in the existing or new system.

### Consultation No. 3

**Location:** Bin Shells Centre of Bahawalpur Food Department. The boundary wall of these bin shells is adjacent to the site selected for grid. These Bin Shells are developed by the Bahawalpur Food Department and are used for bulk storage of wheat before its sales to the market and other cities. The Bin Shells Centre would be benefited with the improved supply of electricity from a neighboring new grid station.



#### Comments on existing electricity supply

- ▶ According to the respondents, the electricity is only used during evening and night basically for safety and security of the centre. Therefore there is minimum use of electricity in the centre in winter.
- ▶ According to the respondents, use of electricity is merely in summers during the working hours basically for protection against heat therefore issues like low voltage, power shutdown, unscheduled and elongated load shedding do not affect the daily income earned by the centre.

#### Apprehensions

- ▶ The respondents had no apprehensions related with security, safety and privacy issues due to the formation of the new grid station in the neighborhood of the centre.
- ▶ The respondents had no concerns of noise pollution and accidents that could likely emerge due to the formation of grid in the neighborhood.

#### Suggestions for improvement in existing or new system

- ▶ The respondents promoted the idea of the formation of the new grid near the centre and foresees this development as a source of employment for the local inhabitants and laborers of this Chak.
- ▶ The respondents were unable to give any suggestions on the improvement of the existing supply or on the new system (i.e installation of towers for transmission line from source to the new grid, specification of the new system, additional areas to be facilitated etc)

#### Consultation No. 4

**Location:** Bahawalpur Airport located on Yazman Road. The airport is at a distance of 180 km from the selected grid site. The estimated distance of the runway end from the grid site is approximately 5 km which is critical for the airport activities as under the Civil Aviation Authority (CAA) procedures no commercial activities are allowed within 3 km of the airport. The crucial distance between the runway end and the grid site could cause havoc if the proper standards and mitigation measures are not followed while forming the grid station and installing the supply receiving tower of transmission line within the grid station. The height of the supply receiving tower within the grid station would not only create hindrance in the navigation of the waiting flights due to electromagnetic disturbance in the air but accidents due to birds sitting on the tower or flying over the waste dumps in the housing colony within the grid near runway end would likely to occur. However the distance between the airport and route of the double circuit transmission line is sufficient, therefore its towers would have no affect on the airport activities.

In light of above factors, airport activities would be affected due to the formation of the new grid station, but if proper mitigation measures in terms of the height of the supply receiving tower within the grid station for proper clearance of the flights, permissible distance between the runway end and the grid wall for avoiding possibilities of accidents are addressed by WAPDA under their standard procedures and CAA procedures than the airport would be benefited with improved supply of electricity from the nearby source.

### Discussions

- ▶ The respondents were not aware about the formation of a new grid station near the airport. It was during public consultation that the airport authorities were told about the site selected for the formation of a new grid.

### Comments on existing electricity supply

- ▶ Currently the electricity supply to the airport is through 66 kV Baghdad-ul-Jadeed Grid Station which like the other grids has large consumers and is relatively far from the airport. Therefore complaints of elongated load shedding, fluctuations in the given supply and low voltage exists during the year but these issues aggravates in summers because of the extreme weather and maximum load on the source of supply.

### Apprehensions

- ▶ The respondents shared apprehensions related with the height of the 132 kV supply receiving transmission line tower within the grid. According to the respondents the standard height of the tower (100 ft) as communicated by the MEPCO representative would create hindrance in the path of the flights waiting in air for landing on the airport. The electromagnetic radiations will create hindrance in the navigation of the flights in the air which would increase the chances for accidents.
- ▶ It is a known fact that the bird and animal activities flourish with human settlements. A colony for the staff confined for wear and tear of grid will be made within the grid station. Like other human settlements wastes will be generated and dumped either within the colony or at place near the grid site, therefore exposure of the planes to scavenging birds and animals would likely to increase. The same apprehension would be due to the tower within the grid station.

### Suggestions for improvement in existing or new system

- ▶ A proper information letter encompassing the following points and enclosures (a. location map of the grid station site, b. exact height of the supply receiving tower within the grid station, c. actual distance of the grid site with the end of the runway, d. the specification and power of the grid station, e. possible route of the transmission line from source to supply, f. height of the 11 kv feeders and distribution poles near airport) should be given by WAPDA to the CAA for approval prior to the final selection of the site for grid formation.
- ▶ CAA after discussing all the points with their possible hazards and suggestions for their mitigation will give approval or rejection on the proposal in writing to WAPDA.
- ▶ Short circuit breakers should be installed on poles and proper mitigation measures for the safety of humans and airport activities should be valued by the department during the grid formation.

### Consultation No. 5

**Location:** Bahawalpur Airport.

### Discussions

- ▶ The respondents opposed the idea of grid formation in the neighborhood of airport because CAA does not allow any commercial activity within the 3 km of the airport.

**Comments on existing electricity supply**

- ▶ The respondents shared grievance that despite repeated written requests WAPDA did not give separate feeder to airport for its use.
- ▶ The quality of supply is not sufficient and complaints like low voltage, power shutdowns, unscheduled and elongated load shedding is common.
- ▶ The airport authority use generators during elongated load shedding and power shutdowns for its timely activities and operations.

**Apprehensions**

- ▶ The respondents supported the apprehensions shared above by CAA Officer.
- ▶ The respondents shared that no written information about the formation of the grid station has been provided yet by the WAPDA. This raises apprehensions about negligence of the issue by WAPDA.
- ▶ The supply receiving tower of the transmission line should be away from the circuit pattern of the flights. This issue would be tackled by CAA after receiving written information about the formation of the grid as CAA or any like authority could not comment without receiving written details.

**Suggestions for improvement in existing or new system**

- ▶ Requested for advance written permission prior to the final selection of site for grid station.
- ▶ The respondents proposed that WAPDA should use new equipments in the new grid stations for improvement in the supply.

**Consultation No. 6**

**Participants:** Residents of the village Bahawalgarh, near Kehror Pecca, along the proposed route of Kehror Pecca – Lal Shanra transmission line.

**Discussions:** The prime economic activity in the area is cultivation. The irrigation is mostly dependent upon tubewells, hence the area is badly affected by the voltage fluctuations, frequent power outages and shut downs. The participants complained about load shedding, which took place about 5-6 hours every day.

**Apprehensions**

- ▶ The respondents had no apprehensions about the transmission line passing through the area.
- ▶ The respondents had no concerns of noise pollution and accidents that could likely take place due to the construction works in the area.

**Suggestions**

- ▶ The participants expected the transmission line works to cause minimal damage to the land and crops
- ▶ The participants recommended that the transmission line tower design should allow cultivation underneath the towers.
- ▶ The participants demanded for a new grid station near their village.

**Consultation No. 7**

**Participants:** Staff of the Lal Sohanra National Park.

**Discussions:** The Lal Sohanra National Park exists in the Bahawalpur district, however its exact boundaries were not known. A meeting was held with the National Park staff to apprise them of the project, and to ensure that no project component is located inside the Park.

The Park staff provided the information about the Park boundaries, and confirmed that the Lal Sohanra – Khairpur Tamewali transmission line passes well outside the Park. The transmission line construction works will also not affect any of the Park resources either.

No other project components are planned to be located inside the Park either.

#### Apprehensions

- ▶ The respondents had no apprehensions about the transmission line passing through the area.
- ▶ The respondents had no concerns of noise pollution and accidents that could likely take place due to the construction works in the area.

#### Suggestions

- ▶ The participants did not have any suggestion regarding the proposed project.
- ▶ The participants however requested the MEPCO to address frequent power outages inside the Park, caused by the short-circuiting on the 11-KV feeder passing through the Park. The short circuiting was usually caused by the tree branched near the feeder.

#### Consultation No. 8

**Participants:** Residents of the village Chak 22 Hameedabad, near Khairpur Tamewali, District Bahawalpur along the proposed route of Lal Shanra – Khaipur Tamewali transmission line.

**Discussions:** The prime economic activity in the area is cultivation. Canal water is the primary source of irrigation water, though some tubewells also exist in the area. The village does not have electricity connection.

#### Apprehensions

- ▶ The respondents had no apprehensions about the transmission line passing through the area.
- ▶ The respondents had no concerns of noise pollution and accidents that could likely take place due to the construction works in the area.

#### Suggestions

- ▶ The participants expected the transmission line works to cause minimal damage to the land and crops
- ▶ The participants recommended that the transmission line tower design should allow cultivation underneath the towers.
- ▶ The participants expected MEPCO to compensate them for any damage caused by the construction activities.

**D.4 Kot Addu – Chowk Azam Transmission Line Route**

Scope of Work under the Project in the visited Area	<p>District Muzaffargarh is divided into four sub divisions/ tehsils namely Muzaffargarh, Kot Addu, Alipur, and Jatoi. Kot Addu is a well known area and is famous for having country's one of the largest thermal power generation plant, KAPCO. Kot Addu is a semi urban area of district Muzaffargarh with significant population settled in scattered patterns. The area rich in water reserves is mostly water logged and saline therefore agricultural activities exists in patches only on fertile land and is mostly confined to the orchids of mangoes and dates which are famous for their quality within and outside the country. Electricity driven tube wells are mainly used for irrigation apart from few canals in Muzaffargarh district. Currently a single circuit 132 KV Grid Station situated in Kot Addu is facilitating the electricity needs of all the areas lying between Kot Addu to Chowk Azam. This single grid having single circuit 132 KV transmission line is facilitating the population and tube wells in the area. Due to the exhaustive load of tube wells on the existing system the efficiency of the system has reduced and complaints of power shutdown, elongated/forced load shedding exist in the areas throughout the year especially in summers because of maximum load.</p> <p>Keeping in view the importance of a single grid station, MEPCO in its project has proposed extension/ augmentation of the existing 132 KV single circuit transmission line to double circuit transmission line from Kot Addu Grid Station till Chowk Azam. The purpose is the reduction of load on the existing single circuit transmission line from Kot Addu Grid Station to Chowk Azam and provision of sufficient supply to all the consumers facilitating from the Kot Addu Grid Station.</p>
Name of the Route visited under the Project	The route of the single circuit 132 KV transmission line from Kot Addu to Chowk Azam on which extension/ augmentation of double circuit 132 KV transmission line will occur.
Name of the Areas/ Villages Visited	The Kot Addu Grid Station along with the abadis/ infrastructures/ institutions lying within the route of the double circuit 132 KV transmission line from Kot Addu to Chowk Azam.
Primary and Secondary Source of Livelihood	Feudalism is popular and still prevalent in Muzaffargarh district. Therefore the people of the area are very submissive and obedient. Majority of the population of the district residing in rural areas are bound to obey their lords and are paid on account of their obedience. The rural population is poor and the economic status of the inhabitants is not sufficient to own their own land therefore agriculture on the cultivated land of lords' serves as the primary source of income for them. Apart from agriculture, animal keeping is also a popular occupation of the rural inhabitants. The skin of these animals is sold in the market for use in leather industries. Numerous depots



	<p>for keeping the dead skins of the locally grown animals are available in the area, which purchase skins of the animals from rural population and later sale them in the market/ tanneries in the other cities. Because of the low literacy rate in urban areas, the middle class usually do business (shops/ markets) in their own areas while the lower middle class do labour in other districts. The percentage of population working in the government and private departments is relatively low (i.e 5% approximately) as compared with the other districts of Punjab. The trend of settling abroad and earning livelihood is extremely low in these areas.</p>
Popular Caste of the Area	<p>Combine family system is popular in the rural areas of the district normally having 10 – 15 people in a house with 2 – 3 income earners (on average). In urban areas the trend of single family living is under progress but usually people prefer combine living. The entire population of the district is divided into different tribes and races. Khars, Gurmanis, Qureshis, Jatots, Dastis, Qalandranis, Hinjras, Langrials, Sheikhs (Thaims), Tarragars, Pirhars, Gopangs, Bukharis, Gillanis, Rajputs, Jatts and Arians are popular castes of the area. Shairwanis, Rajputs, Sheikhs and Qureshis are famous migrant families in the district.</p>
Any Social Issues in the areas	<p>Crimes related with land and animal conflicts, agriculture yield, dacoits, kidnapping, murder and theft are usually reported in the area.</p>
Status of Existing Development Activities in the Visited Area	<p>Mazaffargarh is one of the oldest towns which after independence gained the status of an independent district of Punjab. The district is divided into four sub – divisions/ tehsils of Muzaffargarh, Kot Addu, Alipur and Jatoti. Unlike the other districts and cities of Punjab, feudalism is still popular in the district which restricted the district from development in the past years. The district has a historical significance and shrines of saints, forts and mosques are spread around the district. People of the area are submissive, obedient and superstitious and obey their lords. However with changing needs and trends some of the private investments (e.g KAPCO and other like infrastructures) in the urban areas have brought development in the area. Industrial units based on agriculture (e.g textile, sugar, vegetable ghee &amp; oil) exist in the area along with gas and thermal power plants. The district is enriched with water reserves from both Indus and Chanab rivers. These reserves have made most of the cultivated land water logged and saline incapable for agriculture. Electricity is available in all the areas of the district whereas Sui gas is available only in the urban and semi urban areas. The administrative setup in the district is sufficient but usually influenced by the feudalism. Educational and training facilities in the form of schools, colleges and vocational training centres are available for catering the needs of the population but the literacy rate in the district is relatively low as compared with the other districts and cities. Health facilities in the form of DHQ, THQs, BHUs, RHCs,</p>

	MCH centres and dispensaries are available along with private hospitals and clinics. Seasonal fever is common in the district but problems of asthma, skin and eye infections are common in tehsil Kot Addu because of the KAPCO plant located in the vicinity of populated areas. The district and all its tehsils are connected with roads from other parts of the country. Roads leading to provinces of Sindh, NWFP, and Balochistan also pass through the district headquarter Muzaffargarh. Both electronic and print media are accessible in the district.
Sample Size of Public Consultation in the Visited Area	A basti already existing under the route of transmission line was surveyed and its residents were consulted. A headmistress of an unregistered primary school existing in the basti, inhabitants of few households in the neighborhood of towers of the existing transmission line was interviewed during public consultation.
Use of Electricity in the Area	Household as well as agriculture use.
Existing Complaints about the Availability of Electricity in the Area	Complaints of unscheduled/ forced load shedding, elongated power shutdown especially with winds and rains in summers were registered by the inhabitants during public consultation.

### Public Consultations in the Visited Area

#### Extension/ Augmentation of 132 KV Transmission Line from Kot Addu to Chowk Azam

Presently a single circuit 132 KV transmission line from 132 KV Grid Station in Kot Addu is supplying electricity in all the areas between Kot Addu and Chowk Azam. The source of electricity to the single grid of Kot Addu is from Kot Addu Thermal Power Generation Company, KAPCO which is not far from the grid. The provision of supply from the nearby source ensures the sufficient supply to the consumers but the grid is overloaded because of the large number of consumers including commercial use especially for electricity driven tube wells lying within Kot Addu and Chowk Azam. Although the areas facilitating from the Kot Addu grid station are not thickly populated and the populations follow a scattered pattern of settlement in the areas between Kot Addu till Chowk Azam but single circuit transmission line is not sufficient to satisfy the electricity needs in these areas.

The agriculture serves as the primary source of income for the poor inhabitants of the area therefore large amount of supply is given to tube wells for irrigation in the fields not affected with water logging and salinity. In order to satisfy the electricity supply to the tube well, almost seven 11 KV feeders from the grid are restricted for the tube wells and only five 11 KV feeders are available to facilitate the electricity needs of the population living in the areas between Kot Addu to Chowk Azam. The existing system is usually exhausted and damaged with breakage in the single circuit transmission line and usually results in unscheduled/ forced load shedding and power shutdown especially in summers.

Under the project of MEPCO, up gradation of the existing system from single circuit transmission line to double circuit transmission line is proposed. A new transmission line of total 106 km length will be passed through the towers of the existing single circuit

transmission line from Kot Addu to Chowk Azam. According to the MEPCO officials, the route of the new transmission line will remain same as the transmission line will be passed from the second circuits already available on the existing towers of the 132 kv transmission line.

The area lying between Kot Addu and Chowk Azam is not thickly populated and the settlements are in the scattered pattern. The route of the transmission line from Kot Addu and Chock Azam follow the same trend of passing from the land and near the abadis lying within its path. It has been observed that mostly barren and uncultivated land exists within the path of the transmission line and the areas are also not populated between Kot Addu and Chowk Azam. However path of the transmission line immediately emerging after the Kot Addu Grid Station passes from a thickly populated abadi known as "Basti Malook" locally known as "Sindhi Basti of Ali Abad." This basti is located in ward number 14 A under tehsil council of Kot Addu. As the local name of the basti indicates the basti is composed of inhabitants who migrated from Sindh to Punjab during 70s in search of labour and livelihood. The inhabitants of the basti belong to lower middle class and poor strata. The dilemma of the basti is that three towers of existing single circuit transmission line are installed within the basti. Two towers namely Tower No. 3 & Tower No. 4 exists within the vacant plots in the abadi, however the third tower, Tower No. 5 is installed immediately after the abadi. Under the MEPCO project the new transmission line will be passed from the second circuit of the existing transmission line towers. The existence of KAPCO plant near the basti is aggravating issues of air pollution and the inhabitants of the basti pay high price of this pollution as they suffer from asthma and severe skin/eye infections, all such allergies triggers with winds and rains during summer. Therefore the basti which is already under threat due to the existing towers of a single circuit transmission line would face life threatening issues with the new intervention of passing another transmission line of same specification from these towers therefore marking it as the development of the area.

Serious issues of audible noise, aroma, sparks and accidents due to the heavy transmission line passing from a very low height from the basti had made life difficult and threatening for the inhabitants of the basti. Apart from the households, few basic utility shops, institutions especially primary school for children also exists in the basti and lies under the transmission line.

In the light of the above issues, proper mitigation measures like resettlement of the basti in some other area, readjustment of the route of the transmission line and re - installment of the towers existing within and near the basti to the vacant areas, readjustment of the height of the existing towers that not only promotes proper clearance of the electricity supply but also provides prevention against accidents due to sparks and electrical shocks to humans and animals of the abadi. All such likely issues that could be anticipated due to the MEPCO intervention should be highlighted and addressed under the safeguard policies of social development of the World Bank.

The purpose of social survey and public consultation in the area was to record complaints, apprehensions of the stakeholders due to the existing electricity supply and the system and to highlight further apprehensions, issues related with new intervention of

passing another 132 KV transmission line for sufficient supply from the existing route and especially from the towers passing from the Basti Malook.

#### Consultation No. 1

**Location:** A double storey house in Sindhi Basti. The tower no. 3 is installed in a vacant plot adjacent to the house and the transmission line is passing from a very low height over the roof this house on its way towards the other tower. Most of the inhabitants of this basti have migrated from Sindh to Punjab during early 70s in search of labor and therefore the “Basti Malook” is known locally as “Sindhi Basti”. With development of an abadi in the vacant area most of the locals have now settled in this basti also. The basti is situated near Kot Addu grid station and lies within the route of the existing and new transmission line from Kot Addu to Chowk Azam. According to the inhabitants of the basti, the place was purchased by their forefathers for living long before the installation of the towers in the basti. Therefore the installation of the towers within the basti is unethical and against the social rights of safeguard and privacy of the population residing within the basti. The basti is composed of total 300 houses and approximately 1500 inhabitants reside in this basti. The basti is accomplished with few mosques, few shops, households and two primary schools. Currently due to high frequency transmission line of 132 KV passing from a very low height, issues of sparks and accidents due to electric shocks during rainy weather, irritating audible noise and aroma further aggravating during windy and rainy weather and electro magnetic disturbances in the electrical appliances are frequently experienced by the inhabitants of this poor basti. The basti will be further affected if a new transmission line of same frequency is passed from the second circuit on the existing towers.

#### Discussions

- ▶ The respondents shared, that the basti was formed in 1970. However the forefathers of the respondents built their house in this basti in 1974. Since then the respondents and their families are living in this basti.
- ▶ According to the respondents, the tower of the existing transmission line exists in the neighboring plot prior to the construction of their house.
- ▶ The inhabitants of the basti are mostly laborer in the nearby area and are mostly Sindhi by caste.
- ▶ Having the same origin the inhabitants are relatives of each other.
- ▶ Usually combine family system is observed with average 10 – 15 people living in a house with 2 – 3 income earners.
- ▶ The primary schools for boys and girls and few basic utility shops are available in the basti.
- ▶ Water supply, sui gas and electricity are available in the basti.
- ▶ The electrical appliances like T.V, fridge, desert coolers, water motors, iron, washing and sewing machines are available in only well earned houses apart from fans, bulbs and electric rods.

#### Comments on existing electricity supply

- ▶ Unscheduled/ forced load shedding, power shutdown with winds and rains during summers. The load shedding is a regular practice and occurs throughout the year but frequent during peak hours in summers.

- ▶ No issues of voltage drop and fluctuation in the supply.

#### Apprehensions

- ▶ The respondents shared that although no accidents due to electric shocks were observed from the nearby tower and transmission line but afraid of threats due to sparks that usually emerge from the line during windy and rainy weather.
- ▶ The height of the tower permits transmission line to pass from a very low height over the roof of the house, therefore the respondents shared grievance that they are unable to construct a proper additional storey except washrooms and terrace on the second floor.
- ▶ The respondents shared apprehensions related with electric shocks due to breakage in the line that emits current in bad weather.
- ▶ The respondents did not share any apprehensions related with the audible noise, aroma, high frequency radiations affecting the electrical appliance and their transmission, safety issues possibly occurring due to the nearby tower and transmission line.

#### Suggestions for improvement in existing or new system

- ▶ The respondents promoted the idea of up gradation of the existing system.
- ▶ The respondents suggested that while upgrading the system the tower of the transmission line existing within the abadi should be shifted and reinstalled in vacant areas away from abadi because of security issues that occur during winds and rains. Moreover with growing population of the area threats of accidents and exposure to hazards due to electric shocks will increase if the towers remain within the abadi.

#### Consultation No. 2

**Location:** A single storey house in Sindhi Basti. The distribution network pole is installed outside the house and the transmission line is also passing over the house. As mentioned above the basti will be further affected if a new transmission line of same frequency is passed from the second circuit on the existing towers.

#### Discussions

- ▶ The respondents shared historical background of the dwelling along with some basic figures related with the number of households, total population and the profession of the inhabitants of this basti.
- ▶ According to the respondents, the area now flourished as Sindhi basti was purchased by some Sindhis who migrated from Sindh to Punjab and developed this basti in early 70s.
- ▶ The plots were purchased prior to the installation of towers in the area, but as the forefathers were simple and unaware of the hazards allowed WAPDA to install towers in their basti. They considered installation of towers as development of their basti and were happy with the compensation paid to them for this development. They were unaware of the after affects and the high price which the inhabitants are paying now in terms of accidents, security, low price of land and diseases etc.
- ▶ In the light of the above issues, the respondents told that he has given several applications to WAPDA for removal of the existing two towers from the abadi but all such efforts ends up without any solution.



- ▶ The whole abadi having approximately 300 households and 1500 population is under the treat of this existing transmission line and its towers.
- ▶ Hand pump and private bores are used for water supply in the abadi. Therefore water motors are used in houses for extraction of water.
- ▶ The electrical appliances like T.V, fridge, desert coolers, water motors, iron, washing and sewing machines are available in only well earned houses apart from fans, bulbs and electric rods.
- ▶ People of the basti are poor, mostly laborers with average monthly income ranging between Rs. 3,000 to Rs. 4,000 so could not afford high priced electrical appliances and high utility bills by using such appliances.
- ▶ Main issue of the area is the atmospheric and water pollution due to nearby KAPCO plant. Diseases like asthma, skin and eye infections results from this pollution and aggravates with winds and rains during summers.
- ▶ No health facilities available in the basti or in nearby vicinity.

#### Comments on existing electricity supply

- ▶ The respondents were not satisfied with the existing supply as complaint of elongated and unscheduled load shedding especially during summer is common apart from fluctuations in the supply.
- ▶ The respondents shared that a few animals were killed last year by the nearby 11 KV feeder.
- ▶ Issues of over billing as compared to usage.
- ▶ Electric sparks are frequent during windy and rainy weather from the transmission line passing over the basti.
- ▶ Audible noise, aroma, high frequency radiations affecting the electrical appliance and their transmission, safety issues are common in the basti due to the transmission line.
- ▶ The audible noise from the transmission line is so irritating that children studying in open could not concentrate on study.

#### Apprehensions

- ▶ The respondents shared apprehensions related with the audible noise, corona, high frequency radiations affecting the electrical appliance and their transmission, safety issues possibly occurring due to the nearby tower and transmission line and threatening the lives of the inhabitants and their animals.
- ▶ The respondents added that due to the transmission line passing from a very low height from most of houses of this basti, the inhabitants of the basti are unable to extend their living. They are unable to build multiple storey houses, double storey schools and minars of the mosques.
- ▶ The respondents shared that the inhabitants are unable to fix antennas for clear reception of transmission; moreover disturbances due electromagnetic radiations of the transmission line are experienced while using electrical appliances like T.V etc.

#### Suggestions for improvement in existing or new system

Promoted the idea of up gradation of the existing system and suggested following mitigation measures that should be followed while up grading the system:

- ▶ Readjustment of the route of the transmission line from Kot Addu to Chowk Azam in a way that the new route will follow the path along the canal. In this way the existing towers in the abadi would be removed and re - installed along the canal. In the proposed route few additional towers will be installed which the department would be able to afford.
- ▶ The new upgraded system should be properly insulated so that accidents should be avoided.

### Consultation No. 3

**Location:** A Girls Primary School of Sindhi Basti. It is a semi - Kucha School situated under the existing transmission line. The school is not registered with government therefore it is deprived of basic facilities of proper staff, funds, rooms, latrines, water supply, sui gas and electricity required essential for giving quality education. Like mentioned above the basti and all its infrastructures/ institutions would be affected further if proper mitigation measures for the safety of the inhabitants and their belongings are not followed while up grading the system.

### Discussion with Interviewee

- ▶ The respondents shared concerns related with the inefficient working of government and their representatives. They elaborated by sharing grievance on the unregistered status of school. Several applications were given to the government for this issue but the issue still prevails.
- ▶ Due to unregistered status, the management of the school could not generate funds and facilitate necessary facilities essentially required for providing quality education.
- ▶ Approximately 650 girls are enrolled and getting education in the school in poor circumstances without sufficient rooms. Most of the classes are conducted in open because only two rooms are available in the so called school. Under such conditions school is unable to attract students from other areas.
- ▶ The inhabitants of the basti generated some funds for the school and built latrines and install water pump for ease and comfort of the students.
- ▶ The electricity is provided to the school from the neighboring house and takes monthly bill from the management of the school.
- ▶ Depending upon the socio economic status of the inhabitants' free education is provided to the students.

### Comments on existing electricity supply

- ▶ According to the respondents, towers were installed in the area before the development of the basti.
- ▶ Issues of unscheduled load shedding, power shutdown, fluctuations in supply are common especially during summers

### Apprehensions

- ▶ The respondents shared apprehensions related with exposure of the students studying in open under the transmission line.
- ▶ The respondents highlighted that the population of this abadi especially students studying in open under these lines will be affected at large because of accidents due to the transmission lines and their towers.

- ▶ The respondents shared concern that as the students study in open places therefore audible noise emitting from these transmission line divert their concentration.
- ▶ The respondents was concerned about the pollution emerging from the nearby KAPCO plant and shared that large number of students were affected with asthma, skin and eye allergies during rainy weather in summers last year. Therefore afraid that such issues would also emerge with the upgraded system in future and the system would cause detrimental health impacts in this abadi.

#### Suggestions for improvement in existing or new system

Promoted the idea of extension/ augmentation of the existing system and suggested following measures:

- ▶ The route of the upgraded transmission line should be diverted to the vacant areas other than the abadis and promoted that the towers existing in the basti should be removed as a result of this diversion.
- ▶ Electricity should be provided to the school from the WAPDA and not from the inhabitants of the basti.
- ▶ Proper measures for the protection of population should be accounted while installing towers of the transmission lines near the abadis and cultivated lands.

#### Consultation No. 4

**Location:** A single storey house in front of a mango orchid. The transmission line is passing from a very low height over the house. The second line would also be passed from the same path on its way from Kot Addu to Chowk Azam. The basti will be further affected if a new transmission line of same frequency is passed from the second circuit on the existing towers

#### Comments on existing electricity supply

- ▶ Complaints of load shedding and power shutdown common in the area.

#### Apprehensions

- ▶ The respondents shared apprehensions related with the audible noise, corona and sparks that occur from the passing transmission line. They are under constant threat because of the existing lines. So up gradation of the system would further add problems for his family.
- ▶ The respondents could not extend their houses as this would aggravate dangers of accidents due to exposure with the nearby lines.
- ▶ Due to the minimum distance the respondents could not plant shelter and fruit trees in his house.
- ▶ The respondents shared that they have observed an accident of the wood cutter working in an orchid in front of the house due to electric shock from the above transmission line, therefore afraid that such issues would likely to occur with the up gradation of the existing system.

#### Suggestions for improvement in existing or new system

- ▶ Promoted the idea of up gradation of the existing system but as a direct victim of transmission lines suggested alternate path other than the basti for the upgraded system.

- ▶ Apart from the Sindhi Basti, a wood storage depot near one of the tower (Tower No.8) was also visited and its owners contacted for recording any issues due to the nearby tower but the respondent told that he is not the owner of the depot and would shift to his own house in Kot Addu city within few weeks. Therefore the respondent shared no issues that he faced because of the existing lines neither anticipated any with the up gradation of the system.

## D.5 Makhdumpur and Head Sidhnai Grid Stations and their Feeds

Scope of Work under the Project in the visited Area	<p>Kahnewal District is one of the populous areas of Punjab famous for its agricultural produce. The area is enriched with fertile land and canal irrigation system. The increasing population and enhanced agricultural activities in past few years has raised issues related with the sufficient availability of basic necessities of life to majority of the population settled in the district's urban as well as rural areas. The efficiency of available infrastructures of electricity, water and sui gas supply has declined due to massive load of consumers on them especially in the rural areas.</p> <p>Sufficient supply of electricity is needed in the suburbs (especially rural areas) of the district. Although a credible system of MEPCO is functional and the area is being facilitated by two grids that are providing electricity to the rural and urban areas, but the demand is much higher than the existing supply. Due to above reason complaints of low voltage, unscheduled and forced load shedding, power shutdown and fluctuations in supply are common in the rural areas. The extreme hot weather of the area further aggravate these issues which demands formation of a new grid station in the area.</p> <p>Keeping in view the increasing demands for electricity supply in the area, MEPCO has proposed a new 132 kv grid station in rural area of Makhdumpur, near Kabirwala, and conversion of the existing 66-KV Head Sidhnai grid station to the 132-KV system.</p>
Name of the Route visited under the Project	<p>Establishment of the Makhdumpur grid station and its feed;</p> <p>Conversion of the Head Sidhnai grid station and its feed.</p>
Name of the Areas/ Villages Visited	<p>The site selected for the 132 kv Makhdumpur grid station and abadis/ located near the site, and along the transmission line to feed the grid station;</p> <p>Settlements along the feed for the Head Sidhnai grid station..</p>
Primary and Secondary Source of Livelihood	<p>Like other parts of Punjab, agriculture serves as the primary source of income for the inhabitants of the area. The area is renowned for cultivated fields and agricultural produce. Agricultural activity is the primary economic activity and profession of the area, with a large proportion of work force involved in it</p>

	directly or indirectly. The rural women are very hard working and usually work with their families in cultivation fields as a potential income earner, while the urban women mostly get education and prefer jobs in schools, government and private departments after completing their studies.
Popular Caste of the Area	The city is rich with variety of tribes and castes. Jatts, Rajputs, Kharals, Sials, Wattoos, Kathias, Joyas, Hans, Arians, Kambohs, Chishtis, Bodlas, Syeds, Gujars, Baloch, Bhattis, Khokhars and Dogars are the popular castes of the district.
Status of Existing Development Activities in the Visited Area	Health facilities exist in the area in the form of DHQ, THQs, BHUs, RHCs. Dispensaries are also available along with private clinics and hospitals in urban areas. Seasonal fever especially during change of weather is common in the district. Sui gas is not available in most of the rural areas. Both electronic and print media are available in the district.
Sample Size of Public Consultation in the Visited Area	Farmers and residents of the nearby villages along the feed for Makhdumpur grid station feed; Farmers and residents of the nearby villages along the feed for Head Sidhnai grid station feed.
Use of Electricity in the Area	Agricultural as well as household use.
Existing Complaints about the Availability of Electricity in the Area	Complaints of unscheduled/ forced load shedding, elongated power shutdown, low voltage especially during peak afternoon and evening hours in summers are common. Issues of over billing and theft of connections from the distribution networks were also recorded during public consultation in the visited areas

### Site for Makhdumpur Grid Station

The proposed sites (MEPCO is considering two alternative sites in the area) are located along the Kabirwala – Jhang road, in a rural setup. The land use of the area in general is predominantly agricultural, with few settlements and other structures. The sites are under cultivation with no structure existing over them.

### Consultation No. 1

**Location:** The farmers of the area where the grid station will be located. The population of the area will be benefited with the improved supply of electricity provided through the establishment of the new grid station. The owners of the proposed site and its immediate vicinity will be the affectees of the project.

### Discussions

- ▶ Agriculture is the primary source of income of the participants.
- ▶ According to the respondents, the daily saving from the income is sufficient to run a simple living.
- ▶ Based on the income of the respondents, fans, bulbs, electric cutter for fodder and water motor are available in the house for usage. However, T.V, fridge, fans, bulbs, water motors, sewing & washing machines, iron etc are available only in the well earned houses of the area.



**Comments on existing electricity supply**

- ▶ Voltage fluctuation and low voltage are experienced in the area.
- ▶ Scheduled load shedding occurs during the whole year.
- ▶ Complaints of over billing as compared to the usage and consumption exist in the area.

**Apprehensions**

- ▶ No apprehensions with the existing electricity supply system.
- ▶ No apprehensions associated with the establishment of the new grid station in the area.

**Suggestions for improvement in existing or new system**

- ▶ The respondents appreciated the idea of the new grid formation
- ▶ The respondents were unable to give any suggestions for the improvement in the existing supply or new system.

**Consultation No. 2**

**Location:** Cultivated fields along the feed for the Makhdumpur grid station. The participants included the project beneficiaries as well as affectees.

**Comments on existing electricity supply**

- ▶ Scheduled load shedding occurs during the whole year.
- ▶ Complaints of over billing as compared to the usage and consumption exist in the area.
- ▶ The people complained about low voltage and voltage fluctuation in the area.

**Apprehensions**

- ▶ The farmers shared the apprehension of damage caused to the crops during the proposed project's activities.

**Suggestions for improvement in existing or new system**

- ▶ The respondents appreciated the plan of new grid station in the area and expected enhanced availability of electricity for their domestic as well as agricultural purposes.
- ▶ The farmers preferred that the towers avoided the cultivation fields.
- ▶ The farmers expected the towers of such a design that would allow cultivation underneath the towers.

**Consultation No. 3**

**Location:** Cultivated fields along the feed for the Head Sidhnai grid station. The participants included the project beneficiaries as well as affectees.

**Comments on existing electricity supply**

- ▶ The participants complained about the scheduled load shedding that occurs during the whole year.
- ▶ The participants also complained of over billing as compared to the usage and consumption exist in the area.
- ▶ The people complained about low voltage and voltage fluctuation in the area.

**Apprehensions**

- The participants did not share any apprehension re the proposed project.

**Suggestions for improvement in existing or new system**

- The farmers preferred that the transmission line towers avoided the cultivation fields.
- The farmers expected that the crop damage would be minimized, and suggested that the transmission line tower design should allow cultivation underneath them.

**D.6. Crop Compensation Details****Crop Compensation: Khairpur Tamewali – Hasilpur Transmission Line**

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount <sup>1</sup> (Rs.)
1	0	680	Un-cultivated Land	-	0	0
2	680	1080	Cultivated Land	Hafiz Muhamamd Buksh	2.97	26,100
3	1080	1370	Cultivated Land	Allah Buksh	2.15	18,922
4	1370	1600	Cultivated Land	Maqsood Ahmad Warghi	1.71	15,007
5	1600	2420	Cultivated Land	Muhammad Arif Sial	6.08	53,505
6	2420	2990	Cultivated Land	Allah Ditta Kori	4.23	37,192
7	2990	3930	Cultivated Land	Nawaz	6.97	61,335
8	3930	4410	Cultivated Land	Abdul Rashid Bajwa	3.56	31,320
9	4410	4955	Cultivated Land	Rana Wali Muhammad	4.04	35,561
10	4955	5425	Cultivated Land	Ch. Abdul Ghafoor	3.48	30,667
11	5425	5985	Cultivated Land	Rana Ferzand Ali	4.15	36,540
12	5985	6475	Cultivated Land	Bilal Ahmad Arian	3.63	31,972
13	6475	6815	Cultivated Land	Muhammad Nawaz Sheikh	2.52	22,185
14	6815	7465	Cultivated Land	Rana Abdul Rehman	4.82	42,412
15	7465	8025	Cultivated Land	Amjad Shah	4.15	36,540
16	8025	8865	Cultivated Land	Meher Muhammad Haji	6.23	54,810
17	8865	9085	Cultivated Land	Parwari Allah Rakha	1.63	14,355
18	9085	9945	Cultivated Land	Ch. Munir Ahmad Gill	6.38	56,115
19	9945	10685	Cultivated Land	Nazir Ahmad	5.49	48,285
20	10685	10995	Cultivated Land	Ch. Muhammad Tariq	2.30	20,227
21	10995	11555	Cultivated Land	M.Rehmat & Ilyas Wahla	4.15	36,540
22	11555	12395	Cultivated Land	Muhammad Qasim	6.23	54,810
23	12395	13065	Cultivated Land	Nasir Baloach	4.97	43,717
24	13065	14425	Cultivated Land	Mian Sajjad Pirzada	10.08	88,739
25	14425	15045	Cultivated Land	Haji Bagga Labana	4.60	40,455
26	15045	16645	Cultivated Land	Mian Sajjad Pirzada	11.86	104,399
27	16645	17185	Cultivated Land	Muhammad Saleem	4.00	35,235
28	17185	17660	Cultivated Land	Muhammad Saeed	3.52	30,994
29	17660	18760	Cultivated Land	Shahid Karim Ullah	8.16	71,775
30	18760	20400	Cultivated Land	Muhammad Fiyaz Daha	12.16	107,009
31	20400	21160	Cultivated Land	Allah Diwaya	5.64	49,590

<sup>1</sup> Compensation has been calculated for two wheat crop season; Rs 4,400 per acre per season. This rate is the government approved rate for wheat crop, and is provided by MEPCO.

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
32	21160	21760	Cultivated Land	Sultan Mehmood	4.45	39,150
33	21760	22660	Cultivated Land	Noor Muhammad Daha	6.67	58,725
34	22660	27160	Un-cultivated Land	-	0	0
35	27160	27810	Cultivated Land	Rehmat Ullah Azad	4.82	42,412
36	27810	28310	Cultivated Land	Asmat Ali	3.71	32,625
37	28310	28810	Cultivated Land	Ch. Barkat Ali	3.71	32,625
38	28810	29050	Cultivated Land	Ch. Abdul Sattar	1.78	15,660
39	29050	29315	Cultivated Land	Manzoor Ahmad Arian	1.96	17,291
40	29315	29485	Cultivated Land	Shamim Akhtar	1.26	11,092
41	29485	29775	Cultivated Land	Wakeel Muhamamd Azhar	2.15	18,922
42	29775	29900	Cultivated Land	Doctor Shaukat Ali	0.93	8,156
43	29900	30040	Cultivated Land	Ch. Javed Rana	1.04	9,135
44	30040	30200	Cultivated Land	Muhamamd Aziz	1.19	10,440
45	30200	30390	Cultivated Land	Meher Khadim Hussain	1.41	12,397
46	30390	30550	Cultivated Land	Rana Muhammad Akram	1.19	10,440
47	30550	30750	Cultivated Land	Ch. Muhammad Farooq	1.48	13,050
48	30750	30930	Cultivated Land	Zahid Sitar Rana	1.33	11,745
49	30930	31150	Cultivated Land	Abid Hussain Rana	1.63	14,355
50	31150	31295	Cultivated Land	Muhammad Akram Arian	1.08	9,461
51	31295	31495	Cultivated Land	Ch. Zahid Rana	1.48	13,050
52	31495	32080	Cultivated Land	Ch. Muhamamd Akram	4.34	38,171
53	32080	32400	Cultivated Land	Haji Muhammad Afzal	2.37	20,880
54	32400	32780	Cultivated Land	Muhammad Zafar Rana	2.82	24,795
55	32780	33165	Cultivated Land	Ch. Abdul Sattar Arian	2.85	25,121
56	33165	33475	Cultivated Land	Housing Abadi Area	2.30	20,227
57	33475	33755	Cultivated Land	Park Area	2.08	18,270
58	33755	34055	Cultivated Land	Ch. Muhammad Khalid (Modern Ghee Mill)	2.22	19,575
59	34055	34195	Cultivated Land	Muhammad Iqbal Arian	1.04	9,135
60	34195	34480	Cultivated Land	M Rafique Nasir Arian	2.11	18,596
61	34480	34680	Un-cultivated Land	Railway Line Road Area	0	0
62	-	-	Estimated number of trees to be removed: 100. <sup>1</sup>	-	-	200,000
<b>Total</b>					<b>217.26</b>	<b>2,111,814</b>

**Crop Compensation: Lal Sohanra - Khairpur Tamewali Transmission Line**

No	From (m)	To (m)	Land Use	Land Owners/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs.)
1	0	200	Cultivated Land	Abdul Latif	1.48	13,050
2	200	450	Cultivated Land	Rafique Ali	1.85	16,312

<sup>1</sup> The exact number of trees and their owners can be determined only once the transmission line tower locations are finalized during the construction phase.

No	From (m)	To (m)	Land Use	Land Owners/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs.)
3	450	580	Cultivated Land	Muhammad Safdar	0.96	8,482
4	580	630	Cultivated Land	Muhammad Safdar	0.37	3,262
5	630	1250	Cultivated Land	Ashraf & Sadiq Brother	4.60	40,455
6	1250	1370	Cultivated Land	Allah Diwaya Sonea	0.89	7,830
7	1370	1550	Cultivated Land	Safdar Chishti	1.33	11,745
8	1550	1820	Cultivated Land	Wali Muhammad Chishti	2.00	17,617
9	1820	2620	Cultivated Land	Taj, Mukhtar Brothers	5.93	52,200
10	2620	3235	Cultivated Land	Sarwar Chishti	4.56	40,129
11	3235	3855	Cultivated Land	Ch. Amjad Ghoria	4.60	40,455
12	3855	4335	Cultivated Land	Khadim Hussain	3.56	31,320
13	4335	4835	Cultivated Land	Sohail Akhtar Kahlu	3.71	32,625
14	4835	5407	Cultivated Land	M. Nawaz Bajwa	4.24	37,323
15	5407	5707	Cultivated Land	Abdul Haque	2.22	19,575
16	5707	6360	Cultivated Land	Manzoor Baig	4.84	42,608
17	6360	7310	Un-cultivated Land	-	0	0
18	7310	8680	Cultivated Land	Manzoor Ahmad & Nazir Ahmad	10.16	89,392
19	8680	9480	Cultivated Land	Malik Ejaz Godden	5.93	52,200
20	9480	9920	Cultivated Land	Mian Muhamamd Waris	3.26	28,710
21	9920	10880	Cultivated Land	Fateh Muhammad	7.12	62,640
22	10880	12000	Cultivated Land	Mian Muhammad Mushtaq	8.30	73,080
23	12000	13580	Cultivated Land	Rashid Ahmad & Bashir Ahmad	11.72	103,094
24	13580	14480	Cultivated Land	Khan Muhammad Baloach	6.67	58,725
25	14480	15230	Cultivated Land	Faqir Hussain	5.56	48,937
26	15230	15880	Cultivated Land	Muhammad Sultan	4.82	42,412
27	15880	16380	Cultivated Land	Muhamamd Afzal	3.71	32,625
28	16380	16780	Cultivated Land	Khurshid Ahmad Baloach	2.97	26,100
29	16780	17140	Cultivated Land	Ramzan Baloach	2.67	23,490
30	17140	17660	Cultivated Land	Faiz Muhammad Baloach	3.86	33,930
31	17660	18100	Cultivated Land	Ahmad Nawaz Langha	3.26	28,710
32	18100	18545	Cultivated Land	Ghulam Rasool Baloach	3.30	29,036
33	18545	19325	Cultivated Land	Allah Yar Wahghi	5.78	50,895
34	19325	19385	Cultivated Land	Bahawal Canal Area	0.44	3,915
35	19385	22555	Un-cultivated Land	-	0	0
36	22555	23335	Cultivated Land	Nazar Muhamamd Cheema	5.78	50,895
37	23335	25735	Cultivated Land	Sardar Muhammad	17.80	156,599
38	25735	26895	Cultivated Land	Meher Noor Muhammad Sial	8.60	75,690
39	26895	27525	Cultivated Land	Muhammad Hanif	4.67	41,107
40	27525	28405	Cultivated Land	Lal Khan Ghedo	6.52	57,420
41	28405	29465	Cultivated Land	Ch. Wali Muhammad	7.86	69,165
42	29465	30785	Cultivated Land	Ch. Muhammad Javed	9.79	86,130

No	From (m)	To (m)	Land Use	Land Owners/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs.)
43	-	-	Estimated number of trees to be removed: 100	-	-	200,000
			<b>Total</b>		<b>197.69</b>	<b>1,939,885</b>

#### Crop Compensation Lal Sohanra - Kehror Pacca Transmission Line

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
1	0	70	School Plot	-	0	0
2	70	730	Cultivated Land	Afzal	4.89	43,065
3	730	870	Cultivated Land	Atta Muhammad	1.04	9,135
4	870	1530	Cultivated Land	Yar Muhammad	4.89	43,065
5	1530	1948	Cultivated Land	Atta Muhammad	3.10	27,274
6	1948	2188	Cultivated Land	Akbar Khan	1.78	15,660
7	2188	2644	Cultivated Land	Khan Umar	3.38	29,754
8	2644	2684	Cultivated Land	Haji Sardar Shah	0.30	2,610
9	2684	2847	Cultivated Land	Haji Bahar Shah	1.21	10,636
10	2847	2977	Cultivated Land	Bashir Ahmad	0.96	8,482
11	2977	3526	Cultivated Land	Allah Ditta	4.07	35,822
12	3526	3586	Cultivated Land	Sadiq	0.44	3,915
13	3586	3796	Cultivated Land	Ghulam Ali	1.56	13,702
14	3796	3985	Cultivated Land	Muhammad Nawaz Shah	1.40	12,332
15	3985	4125	Cultivated Land	Allah Wasaya	1.04	9,135
16	4125	4195	Cultivated Land	Muhammad Iqbal	0.52	4,567
17	4195	4255	Cultivated Land	Hafiz Allah Yar	0.44	3,915
18	4255	4325	Cultivated Land	Muhammad Iqbal	0.52	4,567
19	4325	4395	Cultivated Land	Allah Wasaya	0.52	4,567
20	4395	4465	Cultivated Land	Ghulam Mustafa	0.52	4,567
21	4465	4613	Cultivated Land	Allah Wasaya	1.10	9,657
22	4613	4733	Cultivated Land	Muhammad Nawaz Shah	0.89	7,830
23	4733	4803	Cultivated Land	Zafar Shah	0.52	4,567
24	4803	4953	Cultivated Land	Fazal Din	1.11	9,787
25	4953	5023	Cultivated Land	Rahim Shah	0.52	4,567
26	5023	5058	Cultivated Land	Zaman Shah	0.26	2,284
27	5058	5128	Cultivated Land	Zaman Shah	0.52	4,567
28	5128	5148	Cultivated Land	Pir Lal Shah	0.15	1,305
29	5148	5248	Cultivated Land	Muhammad Yar Sangla	0.74	6,525
30	5248	5388	Cultivated Land	Altaf Shah	1.04	9,135
31	5388	5895	Cultivated Land	Altaf Shah	3.76	33,082
32	5895	6025	Cultivated Land	Faiz Buksh	0.96	8,482
33	6025	6265	Cultivated Land	Bashir Ahmad	1.78	15,660
34	6265	6465	Cultivated Land	Haji Muhammad	1.48	13,050

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
35	6465	6765	Un-cultivated Land	River Satluj	0	0
36	6765	6835	Cultivated Land	Khan Muhammad	0.52	4,567
37	6835	6935	Cultivated Land	Mukhtar Ahmad	0.74	6,525
38	6935	7010	Cultivated Land	Ghulam Qadir	0.56	4,894
39	7010	7070	Cultivated Land	Allah Buksh	0.44	3,915
40	7070	7150	Cultivated Land	Mukhtar Ahmad	0.59	5,220
41	7150	7210	Cultivated Land	Mukhtar Ahmad	0.44	3,915
42	7210	7310	Cultivated Land	Ata Muhammad	0.74	6,525
43	7310	7460	Cultivated Land	Allah Yar	1.11	9,787
44	7460	7530	Cultivated Land	Allah Yar Khan	0.52	4,567
45	7530	7605	Cultivated Land	Ahmad Yar	0.56	4,894
46	7605	7680	Cultivated Land	Shah Muhammad Khan	0.56	4,894
47	7680	7770	Cultivated Land	Manzoor Ahmad	0.67	5,872
48	7770	7840	Cultivated Land	Shah Muhammad Khan	0.52	4,567
49	7840	7910	Cultivated Land	Allah Wasaya	0.52	4,567
50	7910	7980	Cultivated Land	Ghulam Haider	0.52	4,567
51	7980	8050	Cultivated Land	Atta Muhammad	0.52	4,567
52	8050	8250	Cultivated Land	Zahoor Khan	1.48	13,050
53	8250	8320	Cultivated Land	Allah Bachaya	0.52	4,567
54	8320	8390	Cultivated Land	Allah Divaya	0.52	4,567
55	8390	8540	Cultivated Land	Mukhtar Khan	1.11	9,787
56	8540	8917	Cultivated Land	Saif Ullah	2.80	24,599
57	8917	8987	Cultivated Land	Qasim Khan	0.52	4,567
58	8987	9057	Cultivated Land	Allah Yar	0.52	4,567
59	9057	9127	Cultivated Land	Ghulam Haider	0.52	4,567
60	9127	9197	Cultivated Land	Iqbal Khan	0.52	4,567
61	9197	9247	Cultivated Land	Mukhtar Ahmad	0.37	3,262
62	9247	9317	Cultivated Land	Nawab Khan	0.52	4,567
63	9317	9352	Cultivated Land	Atta Muhammad	0.26	2,284
64	9352	9387	Cultivated Land	Mukhtar Ahmad	0.26	2,284
65	9387	9457	Cultivated Land	Muhammad Qasim	0.52	4,567
66	9457	9497	Cultivated Land	Fazal -ur-Rehman	0.30	2,610
67	9497	9647	Cultivated Land	Sadiq Khan	1.11	9,787
68	9647	9677	Cultivated Land	Atta Muhammad	0.22	1,957
69	9677	9707	Cultivated Land	Tariq	0.22	1,957
70	9707	9907	Cultivated Land	Fateh Muhammad	1.48	13,050
71	9907	10267	Cultivated Land	Rabnawaz	2.67	23,490
72	10267	10302	Cultivated Land	Munshi S/O Muhammad Ramzan	0.26	2,284
73	10302	10372	Cultivated Land	Rab Nawaz	0.52	4,567
74	10372	10562	Cultivated Land	Din Muhammad	1.41	12,397
75	10562	10662	Cultivated Land	Subhan	0.74	6,525
76	10662	10732	Cultivated Land	Rafique	0.52	4,567
77	10732	11152	Cultivated Land	Mian Yousaf	3.11	27,405
78	11152	11352	Cultivated Land	Yousaf	1.48	13,050



No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
79	11352	11442	Cultivated Land	Abdul Razaq	0.67	5,872
80	11442	11512	Cultivated Land	Abdul Majeed	0.52	4,567
81	11512	11602	Cultivated Land	Allah Wasaya	0.67	5,872
82	11602	11722	Cultivated Land	Allah Wasaya	0.89	7,830
83	11722	11792	Cultivated Land	Mushtaq	0.52	4,567
84	11792	11932	Cultivated Land	Bashir Ahmad	1.04	9,135
85	11932	12002	Cultivated Land	Mushtaq	0.52	4,567
86	12002	12072	Cultivated Land	Allah Divaya	0.52	4,567
87	12072	12212	Cultivated Land	Muhammad Buksh	1.04	9,135
88	12212	12282	Cultivated Land	Qabaz S/O Allah Buksh	0.52	4,567
89	12282	12352	Cultivated Land	Haji Mithoo	0.52	4,567
90	12352	12592	Cultivated Land	Haji Saeed	1.78	15,660
91	12592	12732	Cultivated Land	Hafiz Nazar	1.04	9,135
92	12732	12802	Cultivated Land	Zahoor Ahmad	0.52	4,567
93	12802	12872	Cultivated Land	Nazir Ahmad	0.52	4,567
94	12872	13072	Cultivated Land	Khuda Buksh	1.48	13,050
95	13072	13142	Cultivated Land	Haji Bashir Ahmad	0.52	4,567
96	13142	13202	Cultivated Land	Hassan Buksh	0.44	3,915
97	13202	13342	Cultivated Land	Ghulam Haider	1.04	9,135
98	13342	13482	Cultivated Land	Ijaz S/O Allah Wasaya	1.04	9,135
99	13482	13622	Cultivated Land	Noor Muhammad	1.04	9,135
100	13622	13692	Cultivated Land	Sarwar Shah	0.52	4,567
101	13692	13762	Cultivated Land	Noor Muhammad Daha	0.52	4,567
102	13762	13832	Cultivated Land	Azam	0.52	4,567
103	13832	14032	Cultivated Land	Ghulam Rasool	1.48	13,050
104	14032	14102	Cultivated Land	Ghulam Rasool	0.52	4,567
105	14102	14172	Cultivated Land	Muhammad Ibrahim	0.52	4,567
106	14172	14412	Cultivated Land	Haji Allah Wasaya	1.78	15,660
107	14412	14622	Cultivated Land	Haji Ahmad Buksh	1.56	13,702
108	14622	14657	Cultivated Land	Allah Yar	0.26	2,284
109	14657	14797	Cultivated Land	Allah Buksh	1.04	9,135
110	14797	15097	Cultivated Land	Un-Known	2.22	19,575
111	15097	15347	Cultivated Land	Nawab Chaman Baig	1.85	16,312
112	15347	15417	Cultivated Land	Jam Baqa Muhammad	0.52	4,567
113	15417	15557	Cultivated Land	Chaman Khan	1.04	9,135
114	15557	15627	Cultivated Land	Malik Sharif	0.52	4,567
115	15627	15697	Cultivated Land	Haji Manzoor	0.52	4,567
116	15697	15767	Cultivated Land	Rasheed	0.52	4,567
117	15767	15802	Cultivated Land	Haji Bashir	0.26	2,284
118	15802	15837	Cultivated Land	Rasheed	0.26	2,284
119	15837	15907	Cultivated Land	Irshad Baig	0.52	4,567
120	15907	16047	Cultivated Land	Irshad Baig	1.04	9,135
121	16047	16117	Cultivated Land	Haji Ahmad Buksh	0.52	4,567
122	16117	16187	Cultivated Land	Pir Buksh	0.52	4,567

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
123	16187	16257	Cultivated Land	Pir Buksh	0.52	4,567
124	16257	16327	Cultivated Land	Faiz S/O Allah Buksh	0.52	4,567
125	16327	16397	Cultivated Land	Ahmad Buksh	0.52	4,567
126	16397	16537	Cultivated Land	Ghulam Yaseen	1.04	9,135
127	16537	16737	Cultivated Land	Bashir Ahmad	1.48	13,050
128	16737	16807	Cultivated Land	Haji Muhammad Buksh	0.52	4,567
129	16807	16877	Cultivated Land	Haji Wahid	0.52	4,567
130	16877	16947	Cultivated Land	Hafiz Ahmad Buksh	0.52	4,567
131	16947	17017	Cultivated Land	Bashir	0.52	4,567
132	17017	17087	Cultivated Land	Sardar Muhammad	0.52	4,567
133	17087	17157	Cultivated Land	Nasir	0.52	4,567
134	17157	17227	Cultivated Land	Abdul Ghaffar	0.52	4,567
135	17227	17297	Cultivated Land	Abdul Ghafoor	0.52	4,567
136	17297	17367	Cultivated Land	Faiz Buksh	0.52	4,567
137	17367	17437	Cultivated Land	Abdul Ghafoor	0.52	4,567
138	17437	17507	Cultivated Land	Muhammad Nazir	0.52	4,567
139	17507	17707	Cultivated Land	Mian Nasir	1.48	13,050
140	17707	18067	Cultivated Land	Manzoor Shah	2.67	23,490
141	18067	18207	Cultivated Land	Qasim Khan	1.04	9,135
142	18207	18407	Cultivated Land	Akhtar	1.48	13,050
143	18407	18477	Cultivated Land	Zafar	0.52	4,567
144	18477	18617	Cultivated Land	Zahoor Khan	1.04	9,135
145	18617	18687	Cultivated Land	Ghulam Mustafa	0.52	4,567
146	18687	18757	Cultivated Land	Ch. Allah Wasaya	0.52	4,567
147	18757	18827	Cultivated Land	Umar Din	0.52	4,567
148	18827	18897	Cultivated Land	Muhammad Ramzan	0.52	4,567
149	18897	18967	Cultivated Land	Alam Khan	0.52	4,567
150	18967	19002	Cultivated Land	Bashir Ahmad	0.26	2,284
151	19002	19072	Cultivated Land	Nazir Ahmad	0.52	4,567
152	19072	19142	Cultivated Land	Yousaf	0.52	4,567
153	19142	19212	Cultivated Land	Muhammad Sadiq	0.52	4,567
154	19212	19282	Cultivated Land	Kaloo S/O Wahid Buksh	0.52	4,567
155	19282	19352	Cultivated Land	Bilal Bhatti	0.52	4,567
156	19352	19525	Cultivated Land	Bashir Ahmad	1.28	11,288
157	19525	19665	Cultivated Land	Muhammad Tahir	1.04	9,135
158	19665	19805	Cultivated Land	Moulvi Iqbal	1.04	9,135
159	19805	19985	Cultivated Land	Ch. Javed	1.33	11,745
160	19985	20235	Cultivated Land	Ch. Javed	1.85	16,312
161	-	-	Estimated number of trees to be removed: 60	-	-	120,000
			<b>Total</b>		<b>147.33</b>	<b>1,416,150</b>

**Crop Compensation – Feed for Head Sidhnai Grid Station**

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
1	0	140	Cultivated Land	Bashir Ahmad	1.04	9,135
2	140	420	Cultivated Land	Shoque	2.08	18,270
3	420	490	Cultivated Land	Govt. Land	0.52	4,567
4	490	630	Cultivated Land	Dara S/O Sardar	1.04	9,135
5	630	700	Cultivated Land	Munir Jutt	0.52	4,567
6	700	960	Cultivated Land	Munir Jutt	1.93	16,965
7	960	995	Cultivated Land	Dr. Shamas	0.26	2,284
8	995	1065	Cultivated Land	Dr. Shamas	0.52	4,567
9	1065	1135	Cultivated Land	Ali Muhammad	0.52	4,567
10	1135	1315	Cultivated Land	Khan Baig	1.33	11,745
11	1315	1435	Cultivated Land	Bashir Ahmad	0.89	7,830
12	1435	1505	Cultivated Land	Rafique	0.52	4,567
13	1505	1575	Cultivated Land	Bashir	0.52	4,567
14	1575	1610	Cultivated Land	Arshad	0.26	2,284
15	1610	1680	Cultivated Land	Pehalwan	0.52	4,567
16	1680	1750	Cultivated Land	Muhammad Nawaz	0.52	4,567
17	1750	1890	Cultivated Land	Jamal Sargana	1.04	9,135
18	1890	2010	Cultivated Land	Muhammad Nawaz	0.89	7,830
19	2010	2080	Cultivated Land	Pehalwan	0.52	4,567
20	2080	2220	Cultivated Land	Allah Ditta	1.04	9,135
21	2220	2340	Cultivated Land	Allah Yar	0.89	7,830
22	2340	2460	Cultivated Land	Mehar Shahmand	0.89	7,830
23	2460	2530	Cultivated Land	Govt. Land	0.52	4,567
24	2530	2565	Cultivated Land	Abdul Sattar Jutt	0.26	2,284
25	2565	2685	Cultivated Land	Abdul Sattar Jutt	0.89	7,830
26	2685	2885	Cultivated Land	Nawaz Bhatti	1.48	13,050
27	2885	3065	Cultivated Land	Noor Muhammad Sial	1.33	11,745
28	3065	3185	Cultivated Land	Abid Ali	0.89	7,830
29	3185	3335	Cultivated Land	Nazir Ahmad	1.11	9,787
30	3335	3405	Cultivated Land	Abid Ali	0.52	4,567
31	3405	3885	Cultivated Land	Muhamamd Ali Sahoo	3.56	31,320
32	3885	4365	Cultivated Land	Haji Nawaz	3.56	31,320
33	4365	4435	Cultivated Land	Manzoor Ahmad	0.52	4,567
34	4435	4575	Cultivated Land	Daim S/O Makhana	1.04	9,135
35	4575	4695	Cultivated Land	Habib	0.89	7,830
36	4695	4785	Cultivated Land	Abid	0.67	5,872
37	4785	4935	Cultivated Land	Zahoor	1.11	9,787
38	4935	5085	Cultivated Land	Nusrat	1.11	9,787
39	5085	5155	Cultivated Land	Zahoor	0.52	4,567
40	5155	5305	Cultivated Land	Sardar Shaukat	1.11	9,787
41	5305	5505	Cultivated Land	Akhtar	1.48	13,050
42	5505	5955	Cultivated Land	Sardar Shafqat	3.34	29,362
43	5955	6090	Cultivated Land	Mazhar	1.00	8,809

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
44	6090	6410	Cultivated Land	Sardar Ishfaq	2.37	20,880
45	6410	6710	Cultivated Land	Haji Zafar	2.22	19,575
46	6710	6860	Cultivated Land	Sardar Shafqat	1.11	9,787
47	6860	7140	Cultivated Land	Mian Noor Muhammad	2.08	18,270
48	7140	7440	Cultivated Land	Sardar Ishfaq Ahmad	2.22	19,575
49	-	-	Estimated number of trees to be removed: 25	-	-	50,000
			<b>Total</b>		<b>55.17</b>	<b>535,451</b>

**Crop Compensation – Feed for Makhdumpur Grid Station**

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
1	0	60	Cultivated Land	Noor Muhammad	0.44	3,915
2	60	223	Cultivated Land	Ghulam Farid	1.21	10,636
3	223	266	Cultivated Land	Muhamamd Nawaz	0.32	2,806
4	266	326	Cultivated Land	Noor Muhammad	0.44	3,915
5	326	440	Cultivated Land	Muhammad Ramzan	0.85	7,438
6	440	479	Cultivated Land	Khizar Hayat	0.29	2,545
7	479	544	Cultivated Land	Malik Talib	0.48	4,241
8	544	639	Cultivated Land	Malik Iqbal	0.70	6,199
9	639	684	Cultivated Land	Malik Iqbal	0.33	2,936
10	684	734	Cultivated Land	Malik Mujahid	0.37	3,262
11	734	1014	Cultivated Land	Muhammad Tayyab	2.08	18,270
12	1014	1194	Cultivated Land	Malik Mazahar	1.33	11,745
13	1194	1314	Cultivated Land	Rana Yasrab	0.89	7,830
14	1314	1494	Cultivated Land	Malik Asif	1.33	11,745
15	1494	1547	Cultivated Land	Jhang Road Kabirwala	0.39	3,458
16	1547	1727	Cultivated Land	Malik Ahmad Nawaz	1.33	11,745
17	1727	2044	Cultivated Land	Malik Muhammad Sharif	2.35	20,684
18	2044	2224	Cultivated Land	Muhammad Zubair	1.33	11,745
19	2224	2284	Cultivated Land	Jahangir Khan	0.44	3,915
20	2284	2464	Cultivated Land	Mehar Safdar	1.33	11,745
21	2464	2524	Cultivated Land	Mehar Zafar	0.44	3,915
22	2524	2658	Cultivated Land	Muhammad Iqbal	0.99	8,743
23	2658	2778	Cultivated Land	Mehar Zafar	0.89	7,830
24	2778	2808	Cultivated Land	Malik Kausar	0.22	1,957
25	2808	2898	Cultivated Land	Khizar	0.67	5,872
26	2898	3598	Cultivated Land	Safdar Shah	5.19	45,675
27	3598	3658	Cultivated Land	Haji Shahid	0.44	3,915
28	3658	3688	Cultivated Land	Alsam	0.22	1,957
29	3688	3718	Cultivated Land	Abdul Aziz	0.22	1,957
30	3718	3871	Cultivated Land	Rao Akmal	1.13	9,983
31	3871	3961	Cultivated Land	Rao Khursheed	0.67	5,872

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
32	3961	4171	Cultivated Land	Muhammad Aslam	1.56	13,702
33	4171	4261	Cultivated Land	Zafar Hassan	0.67	5,872
34	4261	4381	Cultivated Land	Ijaz S/O Atta Muhammad	0.89	7,830
35	4381	4441	Cultivated Land	Nawaz Bhatti	0.44	3,915
36	4441	4501	Cultivated Land	Ziyarat	0.44	3,915
37	4501	4621	Cultivated Land	Sajjad	0.89	7,830
38	4621	4681	Cultivated Land	Shamshad	0.44	3,915
39	4681	4741	Cultivated Land	Talib Hussain	0.44	3,915
40	4741	4801	Cultivated Land	Allah Ditta	0.44	3,915
41	4801	4861	Cultivated Land	Talib Hussain	0.44	3,915
42	4861	4921	Cultivated Land	Allah Ditta	0.44	3,915
43	4921	4951	Cultivated Land	Nazim	0.22	1,957
44	4951	5041	Cultivated Land	Sadar Din	0.67	5,872
45	5041	5131	Cultivated Land	Mangat	0.67	5,872
46	5131	5161	Cultivated Land	Sadar Din	0.22	1,957
47	5161	5191	Cultivated Land	Muhammad Yasrab	0.22	1,957
48	5191	5311	Cultivated Land	Sadar Din	0.89	7,830
49	5311	5326	Cultivated Land	Muhammad Ramzan	0.11	979
50	5326	5371	Cultivated Land	Muhammad Sadiq	0.33	2,936
51	5371	5401	Cultivated Land	Abdul Ghafoor	0.22	1,957
52	5401	5431	Cultivated Land	Ghulam Muhammad	0.22	1,957
53	5431	5521	Cultivated Land	Fazil	0.67	5,872
54	5521	5581	Cultivated Land	Khizar	0.44	3,915
55	5581	5671	Cultivated Land	Altaf	0.67	5,872
56	5671	5761	Cultivated Land	Malik Aslam	0.67	5,872
57	5761	5941	Cultivated Land	Tasawar	1.33	11,745
58	5941	5971	Cultivated Land	Mazahar	0.22	1,957
59	5971	6151	Cultivated Land	Haq Nawaz	1.33	11,745
60	6151	6331	Cultivated Land	Muhamam S/O Bahadar	1.33	11,745
61	6331	6391	Cultivated Land	Iqbal	0.44	3,915
62	6391	6631	Cultivated Land	Muhammad Mushtaq	1.78	15,660
63	6631	6751	Cultivated Land	Kazim Shah	0.89	7,830
64	6751	6901	Cultivated Land	Waris Shah	1.11	9,787
65	6901	7021	Cultivated Land	Muhammad Abbas	0.89	7,830
66	7021	7141	Cultivated Land	Zafar Ali	0.89	7,830
67	7141	7381	Cultivated Land	Mukkhtar Bandeshah	1.78	15,660
68	7381	7501	Cultivated Land	Muhammad Hussain	0.89	7,830
69	7501	7561	Cultivated Land	Arif Ali Bandeshah	0.44	3,915
70	7561	7621	Cultivated Land	Arif Ali Bandeshah	0.44	3,915
71	7621	7651	Cultivated Land	Maqbool Ahmad	0.22	1,957
72	7651	7711	Cultivated Land	Arif Ali Bandeshah	0.44	3,915
73	7711	7771	Cultivated Land	Arif Ali Bandeshah	0.44	3,915
74	7771	7801	Cultivated Land	Arif Ali Bandeshah	0.22	1,957
75	7801	7861	Cultivated Land	Arif Ali Bandeshah	0.44	3,915

No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
76	7861	7921	Cultivated Land	Ch. Mumtaz	0.44	3,915
77	7921	7981	Cultivated Land	Maqbool S/O Buland	0.44	3,915
78	7981	8101	Cultivated Land	Abdul Karim	0.89	7,830
79	8101	8191	Cultivated Land	Liaqat Ali	0.67	5,872
80	8191	8221	Cultivated Land	Ch. Aslam	0.22	1,957
81	8221	8281	Cultivated Land	Ch. Aslam	0.44	3,915
82	8281	8341	Cultivated Land	Shaukat Ali	0.44	3,915
83	8341	8401	Cultivated Land	Shaukat Ali	0.44	3,915
84	8401	8461	Cultivated Land	Muhammad Chaman	0.44	3,915
85	8461	8551	Cultivated Land	Dil Muhammad	0.67	5,872
86	8551	8611	Cultivated Land	Muhammad Iqbal	0.44	3,915
87	8611	8671	Cultivated Land	Muhammad Rafique	0.44	3,915
88	8671	8731	Cultivated Land	Gul Muhammad	0.44	3,915
89	8731	8791	Cultivated Land	Gul Muhammad	0.44	3,915
90	8791	8821	Cultivated Land	Gul Muhammad	0.22	1,957
91	8821	8851	Cultivated Land	Muhammad Akram	0.22	1,957
92	8851	8881	Cultivated Land	Ghulam Shabbir	0.22	1,957
93	8881	8911	Cultivated Land	Muhammad Akram	0.22	1,957
94	8911	8941	Cultivated Land	Ghulam Abbas	0.22	1,957
95	8941	8971	Cultivated Land	Ghulam Shabbir	0.22	1,957
96	8971	9001	Cultivated Land	Shaukat Ali	0.22	1,957
97	9001	9031	Cultivated Land	Muhammad Sadiq	0.22	1,957
98	9031	9061	Cultivated Land	Muhammad Shafi	0.22	1,957
99	9061	9106	Cultivated Land	Ghulam Farid	0.33	2,936
100	9106	9151	Cultivated Land	Ghulam Sarwar	0.33	2,936
101	9151	9181	Cultivated Land	Muhammad Nawaz	0.22	1,957
102	9181	9301	Cultivated Land	Khan Muhammad	0.89	7,830
103	9301	9541	Cultivated Land	Muhammad Bashir	1.78	15,660
104	9541	9661	Cultivated Land	Qasim	0.89	7,830
105	9661	9901	Cultivated Land	Rasheed S/O Ali Muhammad	1.78	15,660
106	9901	10021	Cultivated Land	Manzoor Ahmad	0.89	7,830
107	10021	10351	Cultivated Land	Haji Rasheed	2.45	21,532
108	10351	10501	Cultivated Land	Muhammad Akram	1.11	9,787
109	10501	10651	Cultivated Land	Ahmad	1.11	9,787
110	10651	10681	Cultivated Land	Zulfiqar	0.22	1,957
111	10681	10732	Cultivated Land	Nasir Khan	0.38	3,328
112	10732	10792	Cultivated Land	Mithoo	0.44	3,915
113	10792	10852	Cultivated Land	Islam	0.44	3,915
114	10852	10912	Cultivated Land	Pannu	0.44	3,915
115	10912	10972	Cultivated Land	Muhammad Afzal	0.44	3,915
116	10972	11032	Cultivated Land	Qalab Khan	0.44	3,915
117	11032	11152	Cultivated Land	Shahid Abbas	0.89	7,830
118	11152	11212	Cultivated Land	Bashir Khan	0.44	3,915
119	11212	11272	Cultivated Land	Asghar Ali Pahor	0.44	3,915



No	From (m)	To (m)	Land Use	Owners/Cultivators (PAPs)	Area (Acres)	Compensation Amount (Rs.)
120	-	-	Estimated number of trees to be removed: 35	-	-	70,000
			<b>Total</b>		<b>83.32</b>	<b>805,477</b>

**Crop Compensation: Kot Addu - Chowk Azam Transmission Line**

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
1	0	340	Cultivated Land	Ch Abdul Wahab	2.52	11,092
2	340	680	Cultivated Land	Ch Razzaq S/O Nizim	2.52	11,092
3	680	1020	Partially cultivated	Rayasat Ali	0	0
4	1020	1360	Cultivated Land	Munshi Mohajir	2.52	11,092
5	1360	1700	Cultivated Land	Mahr Khadim	2.52	11,092
6	1700	2040	Cultivated Land	Mashori	2.52	11,092
7	2040	2380	Cultivated Land	Rana Ghafar	2.52	11,092
8	2380	2720	Cultivated Land	Mashri	2.52	11,092
9	2720	3060	Barren land	-:-	0	0
10	3060	3400	Cultivated Land	Sharfoo Araien	2.52	11,092
11	3400	3740	Cultivated Land	Khuda Bukhsh	2.52	11,092
12	3740	4080	Cultivated Land	Shahid	2.52	11,092
13	4080	4420	Cultivated Land	Ghulam Rasool	2.52	11,092
14	4420	4760	Cultivated Land	M.Nawaz	2.52	11,092
15	4760	5100	Cultivated Land	Mnazoor Hussain,	2.52	11,092
16	5100	5440	Cultivated Land	Yar Muhammad	2.52	11,092
17	5440	5780	Cultivated Land	M.Ayoub	2.52	11,092
18	5780	6120	Cultivated Land	Sharif	2.52	11,092
19	6120	6460	Cultivated Land	Chudhary Khalid	2.52	11,092
20	6460	6800	Cultivated Land	Fouji Haider	2.52	11,092
21	6800	7140	Cultivated Land	Munir Ahmad	2.52	11,092
22	7140	7480	Cultivated Land	Abdullah Khan	2.52	11,092
23	7480	7820	Cultivated Land	Kamal Chuan	2.52	11,092
24	7820	8160	Cultivated Land	Allah Dewaya	2.52	11,092
25	8160	8500	Cultivated Land	Abdul Aziz	2.52	11,092
26	8500	8840	Cultivated Land	Malik Zulfiqar	2.52	11,092
27	8840	9180	Cultivated Land	Malik IJaz	2.52	11,092
28	9180	9520	Cultivated Land	Qari Mushtaq	2.52	11,092
29	9520	9860	Cultivated Land	Muatafa	2.52	11,092
30	9860	10200	Cultivated Land	Bashir Ahmad	2.52	11,092
31	10200	10540	Cultivated Land	Allah Wasaya	2.52	11,092
32	10540	10880	Barren land	Manzoor Hussain	0	0
33	10880	11220	Barren land	Muhammad Nawaz	0	0
34	11220	11560	Barren land	Nazar Awan	0	0
35	11560	11900	Barren land	Nazar Awan	0	0

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
36	11900	12240	Barren land	Muhammad Ramzan	0	0
37	12240	12580	Barren land	Manzoor Shah	0	0
38	12580	12920	Barren land	Hadi Hussain	0	0
39	12920	13260	Barren land	Sajjad Hussain Shah	0	0
40	13260	13600	Barren land	Ghulam Yasin	0	0
41	13600	13940	Barren land	Ghulam Yasin	0	0
42	13940	14280	Barren land	Allah Bux	0	0
43	14280	14620	Barren land	Muhammad Ashiq	0	0
44	14620	14960	Barren land	Zafar Hussain	0	0
45	14960	15300	Barren land	Ghulam Shabbir	0	0
46	15300	15640	Barren land	Malik Ajmal	0	0
47	15640	15980	Barren land	Sultan Mehmood Hnaira	0	0
48	15980	16320	Barren land	Ghulam Mustafa	0	0
49	16320	16660	Barren land	Abdul Aziz	0	0
50	16660	17000	Cultivated Land	Asadulah Pathan	2.52	11,092
51	17000	17340	Cultivated Land	Ghulam Fareed	2.52	11,092
52	17340	17680	Cultivated Land	Mustafa Hanjra	2.52	11,092
53	17680	18020	Cultivated Land	Malik Bilal	2.52	11,092
54	18020	18360	Cultivated Land	Bashir Ahmad	2.52	11,092
55	18360	18700	Cultivated Land	Umer Khan	2.52	11,092
56	18700	19040	Cultivated Land	Bashir Ahmad	2.52	11,092
57	19040	19380	Cultivated Land	Fida Hussain	2.52	11,092
58	19380	19720	Cultivated Land	M.Shafi	2.52	11,092
59	19720	20060	Cultivated Land	Ghulam Shafi	2.52	11,092
60	20060	20400	Cultivated Land	M.Ayoub	2.52	11,092
61	20400	20740	Cultivated Land	M.Ayoub	2.52	11,092
62	20740	21080	Cultivated Land	M.Mushtaq	2.52	11,092
63	21080	21420	Cultivated Land	Qabrsitan	2.52	11,092
64	21420	21760	Cultivated Land	M.Hanif	2.52	11,092
65	21760	22100	Cultivated Land	Haji Ayoub	2.52	11,092
66	22100	22440	Cultivated Land	M.Ismail	2.52	11,092
67	22440	22780	Cultivated Land	Sahib Ali	2.52	11,092
68	22780	23120	Cultivated Land	M.Younas	2.52	11,092
69	23120	23460	Cultivated Land	Anwar Ali	2.52	11,092
70	23460	23800	Cultivated Land	Iftekhhar	2.52	11,092
71	23800	24140	Cultivated Land	M.Aslam	2.52	11,092
72	24140	24480	Cultivated Land	Malik Sultan Hanjra	2.52	11,092
73	24480	24820	Cultivated Land	Malik Sultan Hanjra	2.52	11,092
74	24820	25160	Cultivated Land	Rab Nawaz	2.52	11,092
75	25160	25500	Cultivated Land	Zulfiqar Ali	2.52	11,092
76	25500	25840	Cultivated Land	M.Akhtar	2.52	11,092
77	25840	26180	Cultivated Land	M.Khalid	2.52	11,092
78	26180	26520	Cultivated Land	Abdul Karem	2.52	11,092
79	26520	26860	Cultivated Land	Manzoor Ahmad	2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
80	26860	27200	Cultivated Land	Qasim Hussain	2.52	11,092
81	27200	27540	Cultivated Land	Sakhawat Muhammad	2.52	11,092
82	27540	27880	Cultivated Land	Hafiz Yar Muhammad	2.52	11,092
83	27880	28220	Cultivated Land	Merhar Ghulam Hussain	2.52	11,092
84	28220	28560	Cultivated Land	Zaffar Iqbal	2.52	11,092
85	28560	28900	Cultivated Land	Ghulam Muhammad	2.52	11,092
86	28900	29240	Cultivated Land	Mehar Ghulam Muhammad	2.52	11,092
87	29240	29580	Cultivated Land	Dr.M.Shafi	2.52	11,092
88	29580	29920	Cultivated Land	Shadi Khan	2.52	11,092
89	29920	30260	Cultivated Land	Masood Khan	2.52	11,092
90	30260	30600	Cultivated Land	M.Arshad	2.52	11,092
91	30600	30940	Cultivated Land	Gull Hussain Khan	2.52	11,092
92	30940	31280	Cultivated Land	Zamir Gul Khan	2.52	11,092
93	31280	31620	Cultivated Land	Bashir Ahmad	2.52	11,092
94	31620	31960	Cultivated Land	Ijaz Hussain	2.52	11,092
95	31960	32300	Cultivated Land	Rasheed Ahmad	2.52	11,092
96	32300	32640	Cultivated Land	Siddique Hussain	2.52	11,092
97	32640	32980	Cultivated Land	Ashiq Hussain	2.52	11,092
98	32980	33320	Cultivated Land	Ghulam Surani	2.52	11,092
99	33320	33660	Cultivated Land	Ghulam Surani	2.52	11,092
100	33660	34000	Cultivated Land	Government land Shoukat Ali	2.52	11,092
101	34000	34340	Cultivated Land	Shoukat Ali	2.52	11,092
102	34340	34680	Cultivated Land	Rehamt Ali	2.52	11,092
103	34680	35020	Cultivated Land	Rehamt Ali	2.52	11,092
104	35020	35360	Cultivated Land	M.Sadiq	2.52	11,092
105	35360	35700	Cultivated Land	M.Sadiq	2.52	11,092
106	35700	36040	Cultivated Land	M.Riaz	2.52	11,092
107	36040	36380	Cultivated Land	M.Riaz	2.52	11,092
108	36380	36720	Cultivated Land	M.Riaz	2.52	11,092
109	36720	37060	Cultivated Land	Karem Bux	2.52	11,092
110	37060	37400	Cultivated Land	Khokhar Textile Mills	2.52	11,092
111	37400	37740	Cultivated Land	Khokhar Textile Mills	2.52	11,092
112	37740	38080	Cultivated Land	Khokhar Textile Mills	2.52	11,092
113	38080	38420	Cultivated Land	Sarfraz Khan	2.52	11,092
114	38420	38760	Cultivated Land	Sarfraz Khan	2.52	11,092
115	38760	39100	Cultivated Land	Sarfraz Khan	2.52	11,092
116	39100	39440	Cultivated Land	M.Khalid	2.52	11,092
117	39440	39780	Cultivated Land	M.Ali	2.52	11,092
118	39780	40120	Cultivated Land	Munawwar Hussain	2.52	11,092
119	40120	40460	Cultivated Land	Dr M.Iqbal	2.52	11,092
120	40460	40800	Cultivated Land	Munir Ahmad	2.52	11,092
121	40800	41140	Cultivated Land	Dr,Anwar	2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
122	41140	41480	Cultivated Land	Nazir Ahmad	2.52	11,092
123	41480	41820	Cultivated Land	Majeed Ahmad	2.52	11,092
124	41820	42160	Cultivated Land	Mukhtiar Hussain	2.52	11,092
125	42160	42500	Cultivated Land	Asif	2.52	11,092
126	42500	42840	Cultivated Land	Ehsan Ullah	2.52	11,092
127	42840	43180	Cultivated Land	Mubarak Ali	2.52	11,092
128	43180	43520	Cultivated Land	M.Arif	2.52	11,092
129	43520	43860	Cultivated Land	Ch.M.Nawaz	2.52	11,092
130	43860	44200	Cultivated Land	Ch.M.Nawaz	2.52	11,092
131	44200	44540	Cultivated Land	Ch.M.Nawaz	2.52	11,092
132	44540	44880	Cultivated Land	Government land	2.52	11,092
133	44880	45220	Cultivated Land	Government land	2.52	11,092
134	45220	45560	Cultivated Land	Government land	2.52	11,092
135	45560	45900	Cultivated Land	M.Iqbal	2.52	11,092
136	45900	46240	Barren land	Government land	0	0
137	46240	46580	Cultivated Land	Ali Ahmad Jut	2.52	11,092
138	46580	46920	Cultivated Land	Rana Akram	2.52	11,092
139	46920	47260	Cultivated Land	Mubarak Ali Gujjar	2.52	11,092
140	47260	47600	Cultivated Land	M.Rafiq	2.52	11,092
141	47600	47940	Cultivated Land	Master Mushtaq	2.52	11,092
142	47940	48280	Cultivated Land	Ghulam Rasool Arain	2.52	11,092
143	48280	48620	Cultivated Land	Zulfiqar	2.52	11,092
144	48620	48960	Cultivated Land	Ghulam abbas	2.52	11,092
145	48960	49300	Cultivated Land	Rana Latif	2.52	11,092
146	49300	49640	Cultivated Land	Mustafa,	2.52	11,092
147	49640	49980	Cultivated Land	M.Arshad	2.52	11,092
148	49980	50320	Cultivated Land	M.Arshad	2.52	11,092
149	50320	50660	Cultivated Land	Sharif Masih,	2.52	11,092
150	50660	51000	Cultivated Land	Saleem Muhammad	2.52	11,092
151	51000	51340	Cultivated Land	Habib Ullah	2.52	11,092
152	51340	51680	Cultivated Land	Zaffar	2.52	11,092
153	51680	52020	Cultivated Land	Allah Ditta	2.52	11,092
154	52020	52360	Cultivated Land	M.Asiam	2.52	11,092
155	52360	52700	Cultivated Land	Rasheed Masih	2.52	11,092
156	52700	53040	Cultivated Land	Rasheed Masih	2.52	11,092
157	53040	53380	Cultivated Land	Bashir Masih	2.52	11,092
158	53380	53720	Cultivated Land	Mansha Masih	2.52	11,092
159	53720	54060	Cultivated Land	Khamisha Sadiq	2.52	11,092
160	54060	54400	Cultivated Land	Ghulam Rasool	2.52	11,092
161	54400	54740	Barren	Government land	0	0
162	54740	55080	Cultivated Land	Dilawar	2.52	11,092
163	55080	55420	Cultivated Land	Khalid Rahi,	2.52	11,092
164	55420	55760	Cultivated Land	Arif	2.52	11,092
165	55760	56100	Cultivated Land	Arif	2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
166	56100	56440	Cultivated Land	Arif	2.52	11,092
167	56440	56780	Cultivated Land	Arif	2.52	11,092
168	56780	57120	Cultivated Land	Arif	2.52	11,092
169	57120	57460	Cultivated Land	Ch.Anwar	2.52	11,092
170	57460	57800	Barren	Government land	0	0
171	57800	58140	Barren	Government land	0	0
172	58140	58480	Barren	Government land	0	0
173	58480	58820	Uncultivated	Ghulam Haider	0	0
174	58820	59160	Uncultivated	Ghulam Haider	0	0
175	59160	59500	Partially cultivated	Qasim Ali	1.26	5,546
176	59500	59840	Partially cultivated	Ijaz, Government land	1.26	5,546
177	59840	60180	Cultivated Land	Haji Faiz Ullah	2.52	11,092
178	60180	60520	Partially cultivated	Haji Faiz Ullah	1.26	5,546
179	60520	60860	Uncultivated	Government land	0	0
180	60860	61200	Cultivated Land	Government land	2.52	11,092
181	61200	61540	Cultivated Land	Habib Ullah	2.52	11,092
182	61540	61880	Cultivated Land	Habib Ullah	2.52	11,092
183	61880	62220	Cultivated Land	Government land	2.52	11,092
184	62220	62560	Cultivated Land	Maghar Khan	2.52	11,092
185	62560	62900	Cultivated Land	Ismil Ullah	2.52	11,092
186	62900	63240	Cultivated Land	Asmat Ullah	2.52	11,092
187	63240	63580	Partially cultivated	M.Shafi Kareem	1.26	5,546
188	63580	63920	Partially cultivated	M.Zahid	1.26	5,546
189	63920	64260	Cultivated Land	M.Amjad	2.52	11,092
190	64260	64600	Cultivated Land	Abdul Hameed	2.52	11,092
191	64600	64940	Partially cultivated	M.Sultan Kuchai	1.26	5,546
192	64940	65280	Cultivated Land	Dr.Amir Bux	2.52	11,092
193	65280	65620	Cultivated Land	M.Aslam Jut	2.52	11,092
194	65620	65960	Partially cultivated	Rana Arshad	1.26	5,546
195	65960	66300	Cultivated Land	M.Mukhtiar	2.52	11,092
196	66300	66640	Partially cultivated	Nawaz Khan	1.26	5,546
197	66640	66980	Cultivated Land	Fida Khan	2.52	11,092
198	66980	67320	Cultivated Land	Sarfraz Khan	2.52	11,092
199	67320	67660	Barren	Amanullah	0	0
200	67660	68000	Barren	Government land	0	0
201	68000	68340	Partially cultivated	Allah Ditta	1.26	5,546
202	68340	68680	Barren	Government land	0	0
203	68680	69020	Cultivated Land	Noor Muhammad	2.52	11,092
204	69020	69360	Cultivated Land	Qadir Bux	2.52	11,092
205	69360	69700	Cultivated Land	Qadir Bux	2.52	11,092
206	69700	70040	Barren	Government land	0	0
207	70040	70380	Baren	Government land	0	0
208	70380	70720	Cultivated Land	M.Asghar	2.52	11,092
209	70720	71060	Cultivated Land	Khuda Bux	2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
210	71060	71400	Cultivated Land	M.Riaz	2.52	11,092
211	71400	71740	Cultivated Land	M.Sardar	2.52	11,092
212	71740	72080	Cultivated Land	Ghulam Qasim	2.52	11,092
213	72080	72420	Partially cultivated	Government land, M.Saleem	1.26	5,546
214	72420	72760	Cultivated Land	Saeed Ahmad khan	2.52	11,092
215	72760	73100	Cultivated Land	Saeed Ahmad khan	2.52	11,092
216	73100	73440	Cultivated Land	Pir Bux	2.52	11,092
217	73440	73780	Cultivated Land	M.Nadem	2.52	11,092
218	73780	74120	Cultivated Land	Sultan	2.52	11,092
219	74120	74460	Cultivated Land	M.Fareed	2.52	11,092
220	74460	74800	Cultivated Land	M.Fareed	2.52	11,092
221	74800	75140	Cultivated Land	Abdul Hameed	2.52	11,092
222	75140	75480	Cultivated Land	Abdul Hameed	2.52	11,092
223	75480	75820	Cultivated Land	M.Amin	2.52	11,092
224	75820	76160	Cultivated Land	Dr.Manzoor Ahmad	2.52	11,092
225	76160	76500	Cultivated Land	M.Javed	2.52	11,092
226	76500	76840	Cultivated Land	M.Javed	2.52	11,092
227	76840	77180	Cultivated Land	M.Anwar	2.52	11,092
228	77180	77520	Cultivated Land	M.Anwar	2.52	11,092
229	77520	77860	Cultivated Land	M.Anwar	2.52	11,092
230	77860	78200	Cultivated Land	Qadir Bux Hiraj	2.52	11,092
231	78200	78540	Partially cultivated	Manzoor Ahmad	1.26	5,546
232	78540	78880	Partially cultivated	Government land	1.26	5,546
233	78880	79220	Cultivated Land	M.Ashraf	2.52	11,092
234	79220	79560	Cultivated Land	Abbdul Ghaffar	2.52	11,092
235	79560	79900	Cultivated Land	Nazir Ahmad	2.52	11,092
236	79900	80240	Cultivated Land	Ch.Lal Din	2.52	11,092
237	80240	80580	Cultivated Land	Haji Mushtaq Ahmad	2.52	11,092
238	80580	80920	Cultivated Land	Kareem Bux	2.52	11,092
239	80920	81260	Cultivated Land	Riaz Ahmad	2.52	11,092
240	81260	81600	Cultivated Land	Sana Ullah	2.52	11,092
241	81600	81940	Cultivated Land	M.Akram	2.52	11,092
242	81940	82280	Sandy Area	Khurshid Muhammad S/O Ghulam Muhammad	0	0
243	82280	82620	Cultivated Area	Khurshid Muhammad	2.52	11,092
244	82620	82960	Cultivated Area	Muhammad Akram S/O Khuda Bux	2.52	11,092
245	82960	83300	Cultivated Area	Muhammad Aslam	2.52	11,092
246	83300	83640	Cultivated Area	Muhammad Aslam	2.52	11,092
247	83640	83980	Cultivated Area	Sher Muhammad S/O Muhammad Ramzan	2.52	11,092
248	83980	84320	Cultivated Area	Ijaz Hussain S/O Pir Bux	2.52	11,092
249	84320	84660	Cultivated Area	Ghulam Nabi S/O	2.52	11,092



No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
				Muhammad Siddique		
250	84660	85000	Cultivated Area	Ghulam Idress S/O Suleman	2.52	11,092
251	85000	85340	Cultivated Area	Gul Muhammad S/O Qadir Bux	2.52	11,092
252	85340	85680	Cultivated Area	Faiz Rasool S/O Qadir Bux	2.52	11,092
253	85680	86020	Cultivated Area	Government land	2.52	11,092
254	86020	86360	Cultivated Area	Muhammad Butta S/O Noor Muhammad	2.52	11,092
255	86360	86700	Partially cultivated	Din Muhammad S/O Ghulam Muhammad	1.26	5,546
256	86700	87040	Cultivated Area	Noor Muhammad S/O Taj Muhammad	2.52	11,092
257	87040	87380	Barren land	Ghulam Muhammad S/O Taj Muhammad	0	0
258	87380	87720	Cultivated Area	Government land	2.52	11,092
259	87720	88060	Sandy Area	Muhammad Bux	0	0
260	88060	88400	Cultivated Area	Muhammad Bux	2.52	11,092
261	88400	88740	Cultivated Area	Government land	2.52	11,092
262	88740	89080	Cultivated Area	Ghulam Hussain S/O Rehman Ali	2.52	11,092
263	89080	89420	Cultivated Area	Maher Mazhar S/O Ghulam Muhammad	2.52	11,092
264	89420	89760	Cultivated Area	Nazar Shah S/O Pir Shah	2.52	11,092
265	89760	90100	Cultivated Area	Karim Bux S/O Bhaja	2.52	11,092
266	90100	90440	Cultivated Area	Muhammd Amin S/O Meher Pathana	2.52	11,092
267	90440	90780	Cultivated Area	Sultan Mehmood S/O Amir Muhammad	2.52	11,092
268	90780	91120	Un-Cultivated Area	Nasir S/O Ahmed Yar	0	0
269	91120	91460	Cultivated Area	Rafi Ullah S/O Fateh Muhammad	2.52	11,092
270	91460	91800	Cultivated Area	Altaf Hussain S/O Sher Muhammad	2.52	11,092
271	91800	92140	Sandy Area	Govt: Property	0	0
272	92140	92480	Cultivated Area	Ghulam Rasool S/O Allah Wasaya	2.52	11,092
273	92480	92820	Cultivated Area	Ghulam Rasool	2.52	11,092
274	92820	93160	Cultivated Area	Ghulam Hassan S/O Allah Bux	2.52	11,092
275	93160	93500	Cultivated Area	Mliak Muhammad	2.52	11,092
276	93500	93840	Cultivated Area	Muhammad Yaqoob S/O Ghulam Farid Jat	2.52	11,092
277	93840	94180	Cultivated Area	Maher Muhammad Mushtaq S/O Maher M. Sharif	2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
278	94180	94520	Some Cultivated Area	Muhammad Amir Sukhara	1.26	5,546
279	94520	94860	Some Cultivated Area	Allah Bux S/O Muhammad Bux	1.26	5,546
280	94860	95200	Cultivated Area	Haji Gulzar Hussain S/O Khair Din	2.52	11,092
281	95200	95540	Half Span Cultivated	Muhammad Yaseen S/O Muhammad Amin Duloo	1.26	5,546
282	95540	95880	Half Span Cultivated	Atta Muhammad S/O Allah Yar	1.26	5,546
283	95880	96220	Cultivated Area	Zawar Hussain S/O Ghulam Methala	1.26	11,092
284	96220	96560	Cultivated Area	Zawar Hussain	2.52	11,092
285	96560	96900	Cultivated Area	Rab Nawaz S/O Ghulam Rasool Arain	2.52	11,092
286	96900	97240	Cultivated Area	Mukhtar Ahmed S/O Nazir Ahmed Arain	2.52	11,092
287	97240	97580	Half Span Cultivated	Akbar S/O Ali Muhammad	1.26	5,546
288	97580	97920	Half Span Cultivated	Ghulam Hussain Awan	1.26	5,546
289	97920	98260	Half Span Cultivated	Shoukat Ali S/O Sultan Awaz	1.26	5,546
290	98260	98600	Cultivated Area	Manzoor Khan Awan	2.52	11,092
291	98600	98940	Cultivated Area	Latif Awan	2.52	11,092
292	98940	99280	Cultivated Area	Abdul Jabbar Awan	2.52	11,092
293	99280	99620	Cultivated Area	Azam Awan	2.52	11,092
294	99620	99960	Cultivated Area	Malik Ghulam Rasool	2.52	11,092
295	99960	100300	Some Cultivated Area	Master Nazir Ahmed Khushi Muhammad Malik Gous, Malik Ghulam Rasool	1.26	5,546
296	100300	100640	Govt. Property	Govt. Property	0	0
297	100640	100980	Cultivated Area	Malik Amir Qalam	2.52	11,092
298	100980	101320	Un- Cultivated Area	Riaz Hussain Joyia, Baba Farzand Ali Sajjid Arain, Mian M.Sher Muhammad, Liaqat Awan, Fuhig Sadiq M.Ashraf Insari ,M.Yousaf Gondal	0	0
299	101320	101660	Un- Cultivated Area	Talib Moughal	0	0
300	101660	102000	Un- Cultivated Area	M.Ramzan Sniber, Nawaz Baloch, Saif – ul-Rehman, Dost Muhammad Iftikhar Arain, Ahmed Arain Amir Muhammad	0	0
301	102000	102340	Cultivated Area	Muhammad Usman	2.52	11,092
302	102340	102680	Cultivated Area	Haji Khaliq Baloch	2.52	11,092
303	102680	103020	Cultivated Area		2.52	11,092

No	From (m)	To (m)	Land Use	Land Owner/Cultivator (PAPs)	Area (Acres)	Compensation Amount (Rs)
304	103020	103360	Cultivated Area	Court Yard	2.52	11,092
305	103360	103700	Cultivated Area	Muhammad Sharif S/O Muhammad Yousaf	2.52	11,092
306	103700	104040	Cultivated Area	Muhammad Aslam S/O Mubark Ali	2.52	11,092
307	104040	104380	Some Area Cultivated	Bashir Ahmed, Abdul Hameed, Fazal, Faqr Ahmed, Abdul Azaz, Javad , Abdul Hakim, M.Azeem Bashir Ahmed Mukhtar M.Ramzan	1.26	5,546
308	104380	104720	Govt: Property	Government land	0	0
			<b>Total</b>		<b>638.82</b>	<b>2,817,479</b>

## Appendix E: Health Effects of PCBs

This appendix provides the information on the health effects of the PCBs.

Citation in the Main Report: **Section 6.3.3.**

### What are PCBs?

Polychlorinated biphenyls (PCBs) are a group of 209 synthetic chemical compounds which are colorless and odorless. From 1929 to 1977 PCBs were manufactured in the United States and widely used in electrical equipment and other industrial uses. Due to the harm PCBs cause to humans and wildlife, their manufacture was banned in 1977.

### How are people exposed to PCBs?

PCBs are found primarily in lake and river bottom sediments and fatty tissues in fish. Eating contaminated fish remains the major route of exposure to PCBs. Other sources of exposure remain very small.

### How do PCBs affect human health?

PCBs are stored in the fat of animals and humans. PCBs and other contaminants can accumulate in the body over time. It may take months or years of regularly eating contaminated fish to build up amounts that are a health concern. However, PCBs may eventually affect your health or that of your children.

**Pregnant women and young children:** Mothers who eat highly contaminated fish before birth may have children who have slower mental development and difficulty learning. A pregnant woman can pass these chemicals to her unborn child and to the new baby through breast milk. However, the significant benefits of breastfeeding far outweigh the associated risks. Young children may also experience developmental health effects.

**Adults:** Adults should also remain concerned about PCBs because they may cause liver and immune system problems, including cancer.

### How can I reduce my health risks to PCBs?

Most exposure to PCBs comes from eating contaminated fish. The best way to reduce the health risks is to eat only the safest fish. Some examples include:

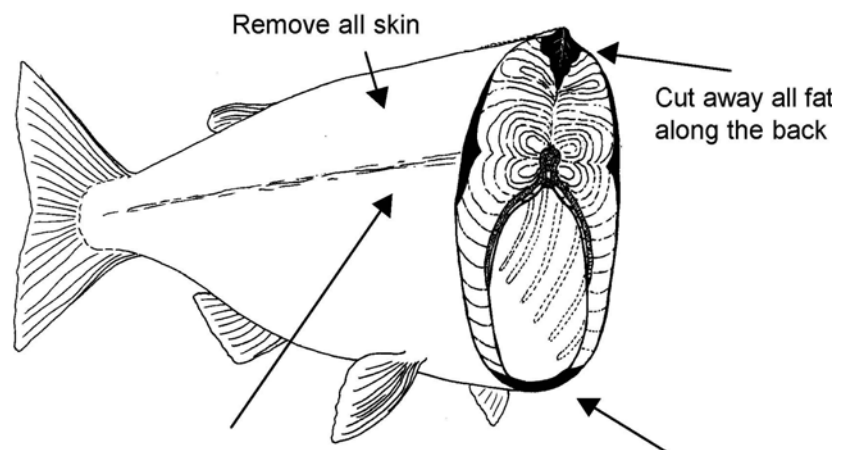
- Choose smaller and younger fish. Generally, panfish and fish just over the legal size will have fewer PCBs.
- Choose lean fish. Panfish, brook trout and brown trout that live in streams and rivers tend to be low in fat. Small walleye, northern pike and bass, especially those that are just legal size, also tend to have fewer chemicals.
- Release predator fish that are very large, like walleye, northern pike, muskie, and lake trout. These fish tend to have more PCBs. Bass have different advisories. Carp and catfish also tend to accumulate more chemicals. Any size of carp caught in the Lower Fox River should not be eaten

- Advise women of childbearing age, pregnant women, nursing mothers and young children to select their catch or meals carefully (follow the Wisconsin Fish Consumption Advisory, Internet links can be found below)
- Trim the skin and fatty areas off the fish where contaminants accumulate (see filleting recommendations below).

#### How can a fish be safely filleted?

Properly trimming fish can reduce the concentration of PCBs and other chemicals. However other chemicals such as methyl mercury, are stored throughout the fish and cannot be filleted. Trim the fatty areas of the fish before cooking. Cook the fish in ways that allow fat (and the unwanted chemicals) to drip away. About half of the PCBs can be removed by trimming away the fatty parts of the fish. Filleting and PCBs: Fillet along the belly, the top of the back, and the dark meat along the skin side of the fish. Remove the skin before cooking. This allows fats to drain off.

Cook so fat drips away. Bake, broil or grill on a rack, or poach and do not use the liquid for sauces or gravy.



Cut away a V-shaped wedge to remove the dark Slice off the fatty tissue along the entire length of the fillet belly fat

#### For more information

- Contact the Wisconsin Division of Public Health, Bureau of Environmental Health, PO Box 2659, Madison, WI 53701-2659, (608) 266-1120; or
- Visit the department's website, <http://www.dhfs.state.wi.us/eh>



Prepared by the Wisconsin Division of Public Health, with funds from the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, USDHHS. (PPH 45014 6/2001)

## Appendix F: Electromagnetic Radiation Effects

This appendix provides information on health impacts associated the electromagnetic radiation.

Citation in the Main Report: **Section 9.4.2.**

### Is There a Concern About Power Lines and Cancer?<sup>1</sup>

The concern about power lines and cancer comes largely from studies of people living near power lines (see [Q12](#)) and people working in "electrical" occupations (see [Q15](#)). Some of these studies appear to show a weak association between exposure to power-frequency magnetic fields and the incidence of some cancers.

However:

- the more recent epidemiological studies show little evidence that either power lines or "electrical occupations" are associated with an increase in cancer (see [Q19](#));
- laboratory studies have shown little evidence of a link between power-frequency fields and cancer (see [Q16](#));
- an extensive series of studies have shown that life-time exposure of animals to power-frequency magnetic fields does not cause cancer (see [Q16B](#));
- a connection between power line fields and cancer is physically implausible (see [Q18](#)).

### The International Commission on Non-Ionizing Radiation Protection (2001):

"In the absence of evidence from cellular or animal studies, and given the methodological uncertainties and in many cases inconsistencies of the existing epidemiologic literature, there is no chronic disease for which an etiological [causal] relation to [power-frequency fields] can be regarded as established". (See [B12](#))

### The International Agency for Research on Cancer (2001):

"There is limited evidence in humans for the carcinogenicity of extremely low-frequency magnetic fields in relation to childhood leukaemia.... There is inadequate evidence in humans for the carcinogenicity of extremely low-frequency magnetic fields in relation to all other cancers [and] there is inadequate evidence in humans for the carcinogenicity of extremely low-frequency electric fields." (see [Q27J](#))

### The U.S. National Institutes of Health (2002):

"The overall scientific evidence for human health risk from [exposure to power-frequency fields] is weak. No consistent pattern of biological effects from exposure to [power-

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<sup>1</sup> Excerpts from 'Power Lines and Cancer FAQs'. By John Moulder, Professor of Radiation Oncology, Medical College of Wisconsin, Milwaukee, Wisc, U.S.A. Address: [jmoulder@mcw.edu](mailto:jmoulder@mcw.edu).



frequency fields] has emerged from laboratory studies with animals or with cells. However, epidemiological studies... had shown a fairly consistent pattern that associated potential [exposure to power-frequency fields] with a small increased risk of leukemia in children and chronic lymphocytic leukemia in adults... For both childhood and adult leukemias interpretation of the epidemiological findings has been difficult due to the absence of supporting laboratory evidence or a scientific explanation linking [exposure to power-frequency fields] with leukemia."(see [Q27G](#)).

The U.K. National Radiological Protection Board (2004):

"The epidemiological evidence indicates that exposure to power-frequency magnetic fields above 0.4 microT [4 milliG] is associated with a small absolute raised risk of leukaemia in children... However, the epidemiological evidence is not strong enough to justify a firm conclusion that [power-frequency magnetic] fields cause leukemia in children. There is little evidence to suggest... that cancer risks of other types, in children and adults, might arise from exposure to [power-frequency magnetic] fields... The results of epidemiological studies, taken individually or as collectively reviewed by expert groups, cannot be used as a basis for derivation of quantitative restrictions on exposure to [power-frequency magnetic] fields." (see [Q27H](#))

Overall, most scientists consider that the evidence that power line fields cause or contribute to cancer is weak to nonexistent.