Poverty and Socio-economic Assessment

(PSA REPORT)

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Title: **Takhiatash Power Plant Efficiency Improvement Project**

Social and Gender Analysis Report for Project:

Uzbekistan: Takhiatash Thermal Power Plant Efficiency Improvement Project

February-March 2013

Note: Prepared by the Consultant for the Asian Development Bank.

Table of Content

Glossary

Mahalla	Territorial community, community of neighbours; In Uzbekistan, this word means a body of self-governance of citizens. Oficially named as Mahalla assembly of citizens (MAC).
Ovul	Rural territorial community of neigbours; similar to Mahalla, Ovul assembly of citizens (OAC or Rural assembly of citizens) represents a body of self-governance, in rural areas.
Tomorka	Household plot for agricultural activities.
Hokimiyat	Local authorities/local government.

Abbreviations

ADB	Asian Development Bank
CCGT	Combined Cycle Gas Turbine
AR	Autonomic Republic
CA	Central Asia, Central Asian
EA	Executing agency
GoU	Government of Uzbekistan
GHG	Greenhouse Gas Emission
NGO (NNO)	Nongovernmental not-for-profit organizations
MAC	Mahalla assembly of citizens
PEE	Preschool education establishments
PPTA	Project Preparatory Technical Assistance
PRSP	Poverty Reduction Strategy Paper
PSA	Poverty and Socio-Economic Analysis
RUZ	Republic of Uzbekistan
RAC	Rural Assembly of Citizens
SME	Small and medium enterprises
UZS	Uzbek sums
TA	Technical assistance
$	United States Dollar
UE	JSC Uzbekenergo
UTS	Urban-type settlement
WIS	Welfare Improving Strategy

Currency Exchange Rate as of the Period of the Study (February 2013)

1 USD = 2005 UZS

I. INTRODUCTION

A. GOALS OF THE PROGRAM, FOR WHICH PSA WAS CARRIED OUT

1. The Government of Uzbekistan has received technical assistance (TA) from the Asian Development Bank (ADB) for the preparation of the Takhiatash Power Plant Efficiencyy Improvement Project.

2. Uzbekistan's Power Generation plants are generally old and inefficient, and thus require urgent modernization. More than 75% of the power plant units are over 30 years old, reaching or sometimes exceeding their economic lives. The current thermal efficiency averages 31%, while the efficiency of Combined Cycle Gas Turbine **(**CCGT) exceeds 50%. Replacing the existing power generation assets with energy efficient equipment is a key strategy for securing reliable power supply, achieving energy savings and reducing greenhouse gas (GHG) emission.

3. The Takhiatash TPP is the main Power Supply Source for Karakalpakstan and Khorezm regions with over 3 million people living in the western part of Uzbekistan. The current total capacity of Takhiatash TPP is 730 MW. The Power demand outlook is strong in both regions with a number of industrial development projects planned in the Korezm and Karakalpakstan.

4. The proposed Project is a priority project identified by the State Joint-Stock Utility Company Uzbekenrgo (UE), in accordance with the Presidential Decree N ПП-1442, dated 15.12.2010 " On the priorities of the Industry development in the Republic of Uzbekistan in 2011-2015". The Government has requested Asian Development Bank (ADB) for project preparatory Technical assistance (PPTA) to develop the project and for a Loan to help finance replacement of the old power plant unit with a modern efficient Combined Cycle Gas Turbine.

5. The project envisages two main components. The objective of the first component of the project is Installation of one unit CCGT with installed capacity of 280 MW within existing Takhiatash TPP, to be commissioned by 2018. The second component focuses on the capacity development of Uzbekenergo to increase access to additional finance opportunities to fund future investment projects. It will include development investment funding strategy, building capacity to attract possible climate change funds, and to increase project preparedness to attract additional fundings.

6. The third component proposed on the basis of the Poverty and social analysis, gender analysis which was carried out based on the information collected in Takhiatash City, Karakalpakstan AR and Khorezm region. The proposed component include construction and start of effective operation a community social service center[1] adjacent to Takhiatash TPP and staff housing. The center will create employment opportunities, and commercial facilities including laundry services, contributing to improving welfare of the community and gender equality.

7. This report presents findings of a Poverty and Social Asessment (PSA) that was conducted in Takhiatash city, Karakalpakstan Autonomic Republic and Khorezm region in February-March 2013.

[1] The community social center, called "prophylactorium and center of social services" in the Russian language. This center will provide the following services to the employees of TPP and residents of Takhiatash City: Prophylactic medical services which include preventive healthcare and regular check-up procedures and supporting healthcare facilities (physical exercise gym) .

B. Goals of the Poverty and Socio-Economic Assessment

8. The goal of the PSA is to evaluate the economic, social and cultural factors affecting the Proposed project, and to develop a list of measures and actions for the mitigation/elimination of any negative impacts and risks on specific social groups, particularly vulnerable groups such as low-income families, disadvantaged groups, women and children, etc. As the Project involves the installation of new CCGT in Takhiatash Power plant, which in turn will increase efficiency of the Plant and improve electricity supply to the population, special emphasis has been placed in the PSA on reviewing the current situation relating to energy supply of population and social infrastructure institutions, level of services, including their reliability and accessibility, as well as affordability for all groups of users.

9. The key objectives of this study were:

(i) to obtain information about the socio-economic characteristics of households in the two project areas (Karakalpakstan and Khorezm), including data on poverty and employment indicators, sources of income and composition of expenditures, family size and structure, quality of life indicators, including access and reliability of the energy provision.
(ii) to identify social groups that will be impacted by the project and to describe the role and interests of each of these groups;
(iii) to provide a baseline for the subsequent evaluation of the socio-economic impact of the project areas on vulnerable groups and on reduction of poverty;
(iv) to identify the attitudes of the resident population towards the current situation with electricity provision services, and households' willingness and ability to pay for improved energy supply, with a particular focus on consumers with low living standards;
(v) as Takhiatash TPP is a major employer and considered to be an urban development plant in the city, to identify problems that affecting welfare, social and economic conditions of population in Takhiatash city, with the special attention to employees of the Power Plant.
(vi) to identify appropriate social development indicators for monitoring the project, and to recommend participatory mechanisms for the greater involvement of local communities and women.

II. RESEARCH METHODOLOGY

A. Goals of Data Collection

10. Data was collected to obtain a broad range of information about the characteristics of the target areas, relevant for the project, including:

(I) specific socio-economic features of Karakalpakstan and Khorezm Region;
(ii) the presence of ethnic minorities within the sub-project area, and their access to the services, and the development of a Minorities Action Plan if found needed;
(iii) gender specific features and issues relating to the access to the services and impact of the quality of the services on men and women in the Project area.
(iv) possible socio-economic benefits of the project, primarily for vulnerable groups of the population, with the special emphasis on rural population; women headed households, poor households.

(v) development of a participation strategy and the identification of participatory mechanisms and consultations.

B. Selection of Indicators

11. Indicators for the research instruments were selected in compliance with the Terms of Reference and the ADB Guidelines for Social Issues and Poverty Analysis. The indicators are clustered into the following groups:

(i) **Demographic indicators** – size, composition and structure of the surveyed households; age, gender and ethnic identity of the members of the surveyed households;
(ii) **Education and employment indicators** – level of education attained, employment sector and status of employment, etc. Economic activity, secondary employment of the members of the surveyed households;
(iii) **Living standards and quality of life indicators** – size and structure of income and of expenditures, households assets, poverty rate, access to communal services;
(iv) **Energy Supply and Use of electricity –** reliability of the electricity supply, quality of the services, payments for electricity, affordability and willingness to pay for the improved services.,
(v) **Public Infrastructure and access to the services**

12. All indicators developed were collected in such a way that they could be analyzed using several variables, including, but not limited to the following:

(i) gender of the head of household
(ii) ethnic identity of the head of household
(iii) type of housing
(iv) size of the household
(v) poor/non-poor households
(vi) rural/urban households
(vii) income and expenditures
(viii) access to electricity supply services and its quality.

C. Sampling Design

13. In compliance with the goals and objectives of the PSA and Gender Analysis, the whole population of Horezm and Karakalpakstan was divided into 3 strata: Tahiatash, rest of Karakalpakstan and Horezm. The total number of 900 households was surveyed in Karakalpakstan and Khorezm region, including 100 households in Takhiatash city, 400 households in Karakalpakstan AR, and 400 households in Khorezm region.

14. Consultant organised Focus Group discussion (FGD) in Takhiatash city and 20 structured interviews with major stakeholders in Karakalpakstan and Khorezm regions. In addition, data was collected from regional government offices of Karakalpakstan AR (Cabinet of Ministers of Karakalpakstan AR) and Khorezm region (Regional Khokimiyat) concerning the size of population, the number of households, the ethnic composition of the population, local productive enterprises and social infrastructure (i.e. the number and type of enterprises, social infrastructure establishments, and educational and medical institutions). The heads of Statistic departments of local Hokimiyats and Cabinet of Ministers of the Karakalpakstan AR provided most relevant data.

15. The sampling frame is the list composed of small territorial units (Primary Sampling Units – PSUs) of the following types:

    -Makhallas. Makhalla is a traditional neighbourhood community in urban areas. After independence, makhallas have been revived as an institute of social control.

    -Selskiy Skhod Grazhdan (SSG). This institute of social organization was formed instead of another institute (Poselkovyi Sovet or Selskiy Sovet) in rural area of the country. Usually SSG are self-governance units that control only one rural settlement.

16. Taken into consideration that reducing a number of sampling stages leads to more reliable data (with a less standard error and confidence interval), for the objectives of this PSA, it was decided that PSU will be smaller than a district. Below is a brief description of the two types of units, which constituted the sampling frame.

17. Makhalla Committee (MC) has good up-to-date lists of households. The geographical boundaries of each MC are clearly defined, which excludes territorial overlap. At least once a year the mahalla committee representatives visit all households in order to revise the lists. The lists are also updated when members of the household apply to the MC for residents' registration certificates. The MC is usually of an appropriate size, but in some cases two or more MC were merged in order to get a new unit with the overall number of households increased.

18. RAC/OAC- combine several villages, and after the revival of the mahalla system some of RACs combine several rural Makhallas instead of villages. Traditionally, lists of households are quite detailed and accurate.

19. The population and the total number of households in the project area was estimated using official statistics. The critical point of normal distribution is a constant value for the target representation to be equal to 0.90. The limit of sampling error is determined by the target level of significance and does not exceed 10%. Normal distribution of income was selected as a characteristic of the general totality for the following reasons:

    (i) this distribution is normal; and

    (ii) the cluster effect is insignificant due to substantial coincidence of inter-group and intra-group variance.

20. The sampling is the two-stage stratified clustered sampling. The general sampling scheme has the following stages:

    •Proportionate stratification by urban/rural population within regions for both regions, except Tahiatash city (as Tahiatash city as primary Project area -the urban stratum).

    •Sampling with Probability Proportional to size of Primary Sampling Unit (PSUs) within urban/rural strata.

    •Selecting of households within selected PSUs based on sequential random sampling.

21. A certain number of PSUs is sampled with PPS (Probability to be sampled depends on their size/number of people). The PPS-sampling within each cluster is carried out as follows:

    •The list of PSUs is sorted by their size.

    •Cumulative column is calculated next to "Size of PSU".

•The sampling interval F is calculated as the total size of all PSUs in the list divided by a number of PSUs to be sampled.

•Then the random start R-nd is fixed within the range of (1-F).

•beginning from R-nd and each time adding F, one systematically selects those PSUs which cumulative numbers enclose the current number.

22. Adhering to PPS sample allocation, an approximately equal number of interviews is allocated among selected PSUs of the same stratum. The number of PSUs in the sample depends on a minimum number of interviews to be achieved per PSU. It also considered travel and other costs of data collection, supervision, control and follow-up aspects, as well as minimum effective workload per PSU. Thus, about 60 PSUs were selected from the sampling frames.

23. Selection of households within selected PSUs was based on systematic sampling (route sampling). This stage is implemented by supervisors and interviewers during the fieldwork. The procedures of household selection within PSU were as following:

- Identification of PSU (makhalla) boarders. This information is available from makhallas (cities) or village committees (rural areas). Each interviewer used the graphic scheme for a particular PSU.
- Identification of Number of Households in Each PSU. An interviewer received the information on household numbers in each PSU (makhalla or village).
- Selection of the starting and consecutive households. An interviewer chose the starting point in the range from 1 to 5 households (including). Then an interviewer is identifying the households for the sample using the interval of 5 households. For example, if the starting point for the route was household #5, then the following households would be selected for the sample: 5, 10, 15, 20, 25... 75 (in the case of 15 interviews in total).
- Right side rule on the route. Interviewer was using the right side of the street during his route. When the street/lane is ending on one side, interviewer is turning around and continues the route on the same street but on its other side to the very end. This way all the households in a PSU have equal probability to get into the sample.
- Finishing the route. The route continues until the identified number of the households is interviewed.
- Documentation. Each interviewer kept a special roster with exact number of households in a particular PSU, addresses of the households in the sample, and the scheme of the route for control purposes.

24. This method allowed to easily achieve the required number of interviews when non-response rate is not known, keeping to an equal selection probability model. The household selection form includes the following parts:

- PSU identification – PSU number, type, name and address.
- PSU quantities – required number of interviews, expected number of households (measure of PSU size), actual number of households.
- Random numbers for selecting households.
- Identification of selected households – household number, address, name of household head, other relevant information.

- Other fieldwork data – visit date, response/non-response mark.

25. After completing the main list of households in accordance with the resulting sample, a back-up list of households was made to guarantee the survey against possible failures due to the refusals of respondents in the main list to be interviewed. The size of the back-up sample was equal to half of the basic sample. In the case of a refusal or the impossibility of interviewing the household on the main list, an interview was conducted with the next household on the back-up list. In these cases, interviewers recorded the reasons why households were replaced with back-up households. The rate of refusals of respondents was relatively high for the entire sample size at 15 %

26. If the makhalla list indicated one household, whereas in fact two or more separate households resided at the same address, the first head of household in alphabetical order was interviewed. If the mahalla list indicated two or more households carrying out household activities separately but residing at the same address, and where two or more of them had been selected as part of the main sample, the interview was conducted with only one of these households selected on the basis of the alphabetical order of the names of the heads of households. The other households located at the same address were replaced with the addresses of the households in the back-up list. If such household appeared to have been included in the basic sample, and another household was in the back-up sample, an interview was conducted with the former, but the latter was then excluded from the back-up list. Within a household, the head of family or the most informed family member was selected as the respondent.

D. Procedures for Data Collection and Analysis, and Stakeholder Participation

27. Both quantitative and qualitative methods of data collection were used for the PSA. This included a review and analysis of available information about the project areas (using official statistics in the first instance), findings from the extensive household survey, structured and in-depth interviews with key stakeholders and focus group discussion.

28. The field phase of the study was undertaken in February 2013. During the pre-field phase, questionnaire for household survey was designed and collection of data about the sub-project area started from all publicly available sources. The guidelines for the focus group discussions as well as three types of in-depth interview guides for use with different key stakeholders were designed. The sampling parameters and procedures for the household survey were refined. A briefing was held to train field staff including interviewers and supervisors in the use of research instruments and the sampling procedure. All documents, including the methodology for data collection, sampling procedures, questionnaires and guides, were coordinated and revised with international and local expert. The questionnaire for the survey is provided as a separate appendix to this PSA report.

29. The field study consisted of several phases. Prior to conducting the field study, a pilot study was carried out to pre-test, adjust and finalize the research tools – particularly the household survey questionnaire, the instructions for interviewing, and the sampling procedures. This stage took place in Tashkent region, rural and urban households. The compliance of the questionnaire with the study objectives was verified at four levels:

- at the level of the questionnaire, i.e., to what extent the questionnaire makes it possible to collect the required information; whether the information contained in the different sections of the questionnaires is contradictory, and whether some indicators are duplicated, etc.;
- at the level of the sections of the questionnaire, i.e., to what extent the indicators in each section of the questionnaire are necessary and sufficient for obtaining the required information;
- at the level of questions, i.e., to what extent the questions are clearly worded; whether ambiguous answers can be given to a question, whether alternative interpretations of the questions and proposed answer options are probable, whether the answer options for closed questions exhaust all possible options and to what extent, etc.;
- in parallel with these, the correctness of coding the questions and answer options and the justification for skipping respective questions was checked.

30. A two-day training session was held for field staff. In total 50 interviewers, 4 supervisors, 2 moderators, one programmer, data input operators and an Uzbek translator attended the training. On the first day, a detailed discussion of the Household questionnaire was held, looking at every question and possible answer option. In addition, several non-standard situations were illustrated using experiences from the pre-testing study. Interviewers were asked to practice interviewing each other. On the second day, a detailed analysis of the mock interviews was presented, and training in sampling procedures was given.

31. The household survey was implemented in total by 50 interviewers using a face-to-face method at the home of the respondents. The refusal rate was approximately 15% of the basic sample of households and the number of repeat visits by interviewers was approximately 10%. Household Survey covered in total 900 households, including 100 households in Takhiatash city, 400 households in Karakalpakstan AR and 400 households in Khorezm region. The quality of interviewers' work was checked by 4 supervisors using the following techniques:

    checking sampling procedures together with the local self-governance bodies

    re-visiting 5% of households that had been interviewed

    checking completed questionnaires for completeness and correctness in filling them in: (1) skipped answers were recorded; (2) inconsistencies and contradictory answers were identified; and (3) unclear responses in the open questions were clarified, etc.

32. A special data input software was designed for inputting information and cleaning the database, with an option of quality control of the inputted data, including: (1) setting the limits of the range of admissible values; (2) checking the correctness of skipping questions; (3) checking questions for cross-consistency; and (4) checking misprints made by data input operators.

33. The final database was processed using the standard statistical package SPSS V.15.0 and specifically designed software based on Delphi. The final cross-tables are attached to this report as separate Annex and will be used as baseline data for the following project monitoring purposes.

34. The PSA also included 19 structured interviews with representatives of key groups of stakeholders. The following groups of stakeholders participated the focus group discussion:

- Representatives and residents from the Mahallas of Takhiatash city;
- Representatives from social infrastructure establishments, such as: Educational establishments; Medical Establishments
- Specialists of other related government offices and representatives of local authorities;
- Specialists of “Uzbekenergo” and local branches
- Representatives of Local Hokimiyats;
- Representatives of NGOs

35. Structured and in-depth interviews were also conducted prior to the FGD with the individuals from the following groups of respondents: qualified experts: (1) local authority officers (Hokimiyat, etc.), and (2) “Eliectrotaminlash” local offices’ employees responsible for the distribution, maintenance and operation of the high-voltage lines; representatives of the local population such as house owners and mahalla leaders; management representatives of social infrastructure establishments and local businesses;

36. FGD’s and interviews were recorded, and minutes of the meeting prepared for the further analysis. In-depth interviews were used to achieve a better understanding of the nature of problems in the area of access and quality of the road, transport services, and for the development of strategies for coping with the current problems related to the quality of the road. FGD’s and in-depth interviews have been analyzed and incorporated into this report as direct quotations.

37. In addition, socio-demographic information (such as the total population, the total number of households and the ethnic composition), and information on productive and social infrastructure (i.e. the number and type of enterprises and social infrastructure establishments such as educational and medical institutions), was collected for all mahallas. Information was provided by the chairpersons of urban and rural mahallas, local authorities, departments of statistics, departments of public education, departments of finance and local employment agencies.

38. The Poverty and Social Impact Assessment will pay particular attention to the ADB’s over-arching objective of poverty alleviation and identify other ways in which the Project can improve the quality of life and health conditions of the local residents in the Project areas over both the short and long- term.

39. The assessment aims to:
    i) assess the overall impact of the project on the socio-economic prospects of Takhiatash City, and Karakalpakstan autonomic republic and Khorezm region, where the electricity from Takhiatash TPP is supplied;
    ii) assess the direct and indirect impacts of the project on the livelihoods of the population;
    iii) recommend a participatory process;
    iv) incorporate gender issues; and
    v) incorporate social safeguard issues, such as involuntary resettlement, ethnic minorities, labour, and other risks/vulnerability.

E. SECONDARY INFORMATION

40. During the preparatory phase, a brief review of relevant official statistics was carried out based on selected indicators, specifically:

(i) administrative data;

(ii) demographic statistics;
(iii) data on productive and social infrastructure establishments (enterprises, organizations, educational establishments, and medical institutions);
(iv) information on access to communal services.

The data of the State Committee of the Republic of Uzbekistan on Statistics (Goskomstat), district departments of statistics and "Uzbekenergo" local offices, were used as the base source of secondary information.

F. Constraints and Assumptions

41. When the study was conducted, following sets of problems were identified:

During the sampling design process, the main difficulties were related to selecting the households (sampling units):

(i) Mahallas use different registration methods. Some register families, while others register households, and this makes it difficult to correctly identify the unit for the survey sample;
(ii) The lists can register two separate households, when in fact they are the same household and carry out activities together;
(iii) The lists register one household when in fact there are two or more households that carry out household activities separately;
(iv) The list does not contain names of households or families, but postal addresses within the area of an apartment blocks.

Regarding the phase of selecting respondents, the main difficulties were related to:

(i) absence of the heads of household or informed respondent during the working day, which resulted in an increase in the number of repeat visits ;
(ii) refusal to be interviewed, averaging 15 % of the sample size. The relatively low level of refusal was achieved in some settlements, where representatives of local Mahalla offices were open for cooperation with the interviewers.

Regarding data collection in Mahallas, the main difficulties were related to*:*

(i) local self-governance bodies not having accurate data on production and social infrastructure establishments. This data can be obtained only from local statistics offices;
(ii) some local self-governance bodies do not have data on the ethnic composition of households. The only information they have is the general ethnic composition of the local resident population;
(iii) much of the data is incorrect, out-of-date, and not appropriately classified;
(iv) some mahalla staff members are insufficiently competent, which led to the provision of incorrect information.

Regarding secondary statistical data analysis, the main difficulties were related to:

(i) incomplete data and unavailability of some indicators at the different level (regional/district/city/makhalla) which were important for the study goals;
(ii) contradictory information obtained from different sources (e.g., from the local khokimiyats, statistics offices and local employment offices).

G. Data Authenticity and Reliability

42. The authenticity and reliability of the data obtained during the household survey was ensured by using a multi-level system of control over the quality of databases. The

methodology employed made it possible to ensure data representation at 0.90 for the sub-project area. It has to be stressed that the evaluation of representation and the estimation of mean errors and limits of errors of the sample were based on the distribution of average per capita household incomes (monetary) and can be correct only for those indicators, which (a) closely correlate with the indicators of incomes, and (b) show normal distribution. At the same time, errors in the employment of household members could be higher than 10%, given the significant seasonal variability in economic activity.

43. Regarding the questionnaire for local self-governance bodies dealing with the social and productive infrastructure and the ethnic composition of the local populations within the sub-project area, the data obtained from the regional statistics offices and other ministries and government agencies such as the departments of economics, health and education, were cross-checked in order to test authencity of the data. This extended the period of the field phase of the study.

III. RESULTS OF SOCIOECONOMIC AND GENDER ANALYSIS

III.I RESULTS OF SOCIOECONOMIC, ETHNIC AND GENDER ANALYSIS IN TAKHIATASH CITY AND KARAKALPAKSTAN AUTONOMIC REPUBLIC

A. SOCIOECONOMIC PROFILE OF THE PROJECT AREA

1. Brief Description of Takhiatash City and Karakalpakstan AR.

44. Taken into consideration that Takhiatash TPP is is the main power supply source for the Karakalpakstan AR and Khorezm regions with over 3 million population, during the PSA survey in February-March 2013, the project area included local urban and rural settlements of Karakalpakstan AR and Khorezm region. The brief description of the project area follows in the next part of the report.

45. **Karakalpakstan AR.** The Republic of Karakalpakstan is a sovereign state within the Republic of Uzbekistan. It is located in the northwest of the country on the Amu Darya flatlands and southern shores of the Aral Sea, The Republic consists of 15 districts: Amu Darya, Beruny, Bozatau, Kanlikul, Korauzak, Kegeyli, Kungrad, Muynak, Nukus, Takhtakupir, Turtkul, Hojeily, Chimbay, Shumanay, Ellikkalla; 12 towns: Beruny, Buston, Kungrad, Mangit, Muynak, Nukus, Takhiatosh, Turtkul, Khalkobod, Hojeily, Chimboy, Shumanay; 16 urban-type settlements, and 120 villages.

46. Geographically, the territory of the Republic of Karakalpakstan consists of the north-western part of the Kyzyl Kum Desert, the south-eastern part of the Usturt Plateu and delta Amu Darya River, as well as the southern part of the Aral Sea. The Sulton-Uvays Mountain Range is the largest among other mountain ranges. The Amu Darya river (the lower streams) is the only river that flows through this area. There are a variety of natural resources such as gas, iron, phosphorus, bentonite and kaolin clay, salt, marble, and granite. Climate is typically continental with dry and hot summers and relatively cold winters, without snow. The general rainfall is in winter and spring.

47. Karakalpakstan is the area of ecological disaster. The drying out of Aral Sea and ecological crisis in the region has caused huge economic losses, affected living standards and health of population in the Karakalpakstan AR and broader Aral sea area.

48. The size of Karakalpakstan accounts for approximately 37% of Uzbekistan's land area and has a population of 1.7 million people. 51% of population live in rural areas of Karakalpakstan. The Capital of the Autonomous Republic – Nukus- city with population of about 290 thousand. The distance from Nukus city to capital of Uzbekistan-Tashkent is 1255 km.

49. The educational institutions in Autonomic Republic comprises of 33 kindergartens, which are serving about 30 thousand children, 737 schools with 249 thousand pupils. Secondary special and professional education provided by 91 professional colleges and 10 academic lyceums with the total number of students – 82,375. About 16 thousand students are studying in seven Higher Education Institutions, and all of them located in Nukus city.

50. Takhiatash city was established in 1953. It is situated 12 km away of south of Nukus, and 5 km off the Turkmenistan' boarder. The population of the city as of January 1, 2013 was 47.5 thousand. 99.8% of population connected to the centralised water supply system, and 99.9% of the households connected to the natural gas supply system.

Table 1.1. The distance from Takhiatash city to major destinations on the territory of the Republic of Uzbekistan

Tashkent City	810 km	Samarkand city	688 km
Nukus city	12 km	Urgench city	124 km
Bukhara city	497 km	Andijan city	1081

51. There are 10 Makhallas in Takhiatash city, with the total number of 9745 families residing in 8841 households. The average size of the household is 5.5 people. There are 9 schools of general education, 15 kindergartens and 3 professional colleges in the city. 6455 students attending general education schools in 2012, and statistical data demonstrates negative growth of this indicator in 2011-2012 (95.5%) The district also has 1 hospital with capacity of 250 beds in total, and 2 outpatient policlinics. There are 81 doctors and 269 other medical personnel operating in the healthcare system of Takhiatash city.

Table 1.2. Administrative Information about the Project Area

	Area, Thousand km^2	Number of RAC's	Number of Mahallas	Number of Rural Population Localities
Karakalpakstam AR	166.6	139	234	1128
Takhiatash city	0.025	n/a	10	n/a

Source: Local Hokimiyats, Department of Statistics as of 1 January 2013

52. As of 1 January 2013, the total population of Karakalpakstan Autonomous Republic was 1,711.7 thousand people, with the population living in urban areas in average 49% and 51% in rural areas. According to the data provided by local statistics agencies, the average population density in Karakalpakstan at the end of 2012, was 10.3 people/km^2. In the capital of the republic the density is – 1314.5 people/km^2 and in Takhiatash city this indicator is even higher - 1878.2 people/km^2

Table 1.3. Population of Karakalpakstan AR

	Population 000's	Including:		Number of RAC and MAC	Population as % AR population	Population Growth, per 1,000 Population	Population Density (people/ km2)
		Urban	Rural				
Karakalpakstan	1711.7	846.1	865.6	234	100	18.9	10.3
Nukus	289.2	289.2	-	57	16.9	2.8	1314.5
Takhiatash	47.5	47.5	-	10	2.8	17	1878.2

Source: * Department of Statistics, Takhiatash City Hokimiyat, as of 1 January 2013

53. The average size of a household in Takhiatash city is 5.5 persons, and the average size of the family is – 4.9 persons Relatively high population growth rate, generated by a high birth rate (more than 22 births per 1,000 population) and a comparatively low mortality rate (4.9 deaths per 1,000 population) are characteristic of Takhiatash city. At the same time the population growth per 1,000 population in Karakalpakstan is 18.9.

Map 1. Map of Karakalpakstan AR (See Annex IV)

54. According to the available statistical data, as of 1 January 2013, 982.3 thousand people (or 57.3%) of the population of Karakalpakstan was of employable age (16-60 for men and 16-55 for women). The employment rate is relatively high, representing 62% of employable-age population in Karakalpakstan, in turn in Nukus the employable age population represents 57.4% of total city population.

55. In Takhiatash city 61.2% are people of employable age The employment level of employable age population in the city is a little lower than in average in Karakalpakstan and in 2012 was about - 61%. At the same time population of the city characterised by a high percentage of youth within the population (almost 32%). In 2012, 1,525 people were registered in employment offices as seeking for job, and 1,374 (or 90%) were provided with the employment during this period of time.

Table 1.4 Employment Indicators in Karakalpakstan and Takhiatash City

Karakalpakstan AR	Total
Employable-Age Population	982,300
Employed	609,026
Takhiatash City	Total
Employable-Age Population	27,300
Employed	16,700
Officially registered People seeking for Employment	1,525
Provided with Employment	1374
Receive unemployment subsidies	n/a

Source: Households Survey, February 2013

56. In average individual monthly wages during the December 2012 in Karakalpakstan AR was 934,327.8 UZS per month, in Nukus city 1,120,089 UZS and in Takhiatash City 1,038,444 UZS, which is close to the average national indicator[2].

57. As Uzbekistan does not officially have a poverty line, there is no data available to describe local standards of living. However local self-government offices using the methodology to identify low income families for low-income benefits and benefits for children. This approach is tied to the minimal wage level that is officially set-up in the country, and according to this method the low income family is the family which per-capita monthly income is lower than 1.5 minimal wage.[3]

58. According to information from local self-governance bodies, in December 2012 in Takhiatash city 336 families (or %3.4) were receiving low income families support. 2394 (24.5%) families were receiving benefits for children under 18, and 900 families (9.2%) received benefits for non-working mothers with children under 2 years old. 1,458 people in Takhiatash, including 155 children, are registered as having a disability and receive disability benefits.

[2] State statistics does not register incomes in informal sector, and excludes from reported average wages incomes in agriculture and small business sectors.
[3] In January 2013 the minimal wage level was 79,590 UZS

2. Social Infrastructure

Education.

59. The educational system of Karakalpakstan AR is represented by 737 general schools with some 249 thousand enrolled students, 330 kindergartens with 29,600 (as of Jan1, 2012) children, 91 professional colleges and 10 academic lyceums with more than 82 thousands students enrolled in secondary special education. All 7 Higher Education institutions are located in Nukus city and cover 15,888 students in 2012.

60. As of December 2012, in Takhiatash City 1,545 children were enrolled into 15 kindergartens. The coverage of the children of pre-school age with the kindergartens is 28%. There are 9 schools in the city with the total number of 6,455 pupils and 3 professional colleges providing education for 1,694 students on 19 specialities.

Table 1.1. Educational Establishments in Karakalpakstan AR and Takhiatash city, as of January 1, 2013

	Number of Establishments	Number of Children	Number of employees	% of Establishments, connected to centralized electricity supply system
Takhiatash city				
Kindergartens	15	1545	596	100
Schools	9	6455	937	100
Professional Colleges	3	1694	351	100
Academic Lyceums	-	-	-	
Higher Educational Institutes	-	-	-	
Karakalpakstan AR				
Kindergartens	330	29600	3249	100
Schools	737	248973	32158	100
Professional Colleges	91	75241	6565	100
Academic Lyceums	10	7134	771	
Higher Educational Institutes	7	15888	1383	100

Healthcare.

61. The healthcare facilities of Karakalpakstan include 50 In-patient medical facilities with the capacity of 8,503 beds, and 308 policlinics (out-patient medical facilities) for 23,322 visits. Out of the total number of medical institutions in autonomous republic 17 in-patient clinics situated in Nukus city. Ten of them are general hospitals. There is one infection diseases hospital, one maternity hospital, one specialised children hospital, and one city hospital. There are number of private dental clinics and pharmacies in the city. There total number of doctors working in health-care institutions in Nukus is 389 and 1083 other medical staff.

62. Analysis of the data on access of population to the medical services demonstrates that in Karakalpakstan indicators characterising availability of hospital beds for pregnant women and women in labour is lower than national average, 22.2 compare to 24.0. Availability of hospital beds or children in age of 0-14 also below national

average indicator with 27.1 beds for 10,000 children in Karakalpakstan against 33.7 in average in Uzbekistan.[4]

Table 1.6 Medical Institutions in Takhiatash City and Karakalpakstan AR, as of January 2013

	Number of Institutions	Number of Beds	Percentage of Establishments, connected to centralized electricity supply system	Percentage of Establishments, connected to centralized water pipeline
Takhiatash City				
Inpatient Institutions (Hospitals, Maternity Hospitals)	1	250	100	100
Outpatient Institutions/policlinics	2	500	100	100
Karakalpakstan AR				
Inpatient Institutions (Hospitals, Maternity Hospitals)	50	8503	100	100
Outpatient Institutions	308	23322	100	100

63. With the total population of 47,500 people Takhiatash city's system of healthcare institutions consists of: one in-patient hospital with 250 beds, which includes section of inflectional diseases, children's department and maternity hospital. There are two out-patient polyclinic with maternity consulting center and clinic for children. The total number of doctors working in healthcare institutions is 81 and nursing staff represented by 269 professionals. The coverage of the population with the hospital beds per 10,000 population is 52.6 (in 2012), compare to the average National indicator 47.9 (in 2011).

64. Brief analysis of socio-economic data of Takhiatash Thermo Power Plant. Takhiatash TPP with the 1,135 employees is a major employer of Takhiatash city. 1,013 employees are working in the major production. Power Plant has various non-major production activities, including: agricultural production and agricultural processing, construction, catering, housing and communal services. In total 111 employees are working in non-major types of activities, including agricultural production and processing, and catering.

65. The professional structure of employment in the Power Plant includes 73% of the total number of employees are working as production personnel, 11% of personnel are management staff, specialists and service personnel include 8.1% and 6.3 % of the total number of employees respectively. Average monthly wage in Takhiatash TPP in 2012 was 707,541.1 UZS with the highest average wages for management staff (1,285,019 UZS) and lowest among service staff 485,006.5 UZS. For the largest group of employees, production personnel, average gross payroll per capita was 624,723.0 UZS, which is lower than average in Takhiatash city (1,038,444 UZS).

B. Poverty Profile, Households' Incomes and Employment of the Population in Takhiatash City

66. Identification of poor households. A unified methodology for estimating a national poverty line has not been adopted yet in Uzbekistan. In 2005[5], taking the Household

[4] Women and Men of Uzbekistan. Statistical Bulletin, State Committee of the Republic of Uzbekistan on Statistics, 2012, page 99-101

Budget Survey conducted by the Goskomstat of the Republic of Uzbekistan as a basis, the World Bank defined the poverty rate for the country was 25.8%6. This document defined poverty line as 2.15 $ per capita per day.

67. For the purposes of this Poverty and Social Analysis it was found applicable to employ the existing methodology that is used in Uzbekistan to identify low-income families for low income families support and child caring benefits. The methodology identifies a low-income family as one in which the monthly income is lower than 1.5 fold of minimal wage per capita. In august 2011, for example, this indicator was 85,800 sum, or 45.55 USD.

68. As of January 1, 2013 the minimal wage was set at 79,590 sum per month, thus the poverty line has been set at 120000 sum (60USD) per month per person. Based on this methodology the official poverty line (as nominal indicator) will bring to 1.5 USD per day per capita, which is close to the UN indicator of poverty. The results of 2012 demonstrate that this indicator has increased up to 2 USD per capita per day.

69. 61% of the surveyed families reside in detached houses with plot of land. Almost all households have their houses/apartments in private property. All surveyed households (100% of the sample) are connected to the centralised electricity supply system. 93% of the households have access to the centralised drinking water system with the noticeable difference between poor and non-poor households. Only 88% of the poor households connected to the potable water compare to 95% of non-poor families. All those who have not connected to the water supply system are using stand-pipes on the street/yard. A similar pattern can be seen in the access to the sewerage system. Only 12% of poor and 20% of non-poor households can benefit from centralised sewerage system.

70. Takhiatash city has quite extensive coverage of land-line telephone system. 91% of the households have landline telephones with insignificant difference between poor and non-poor households. The same applied for the mobile phone network.

Table 1.7 Access to the communal services of poor and non-poor households (in%)

	Total	Poor	Non-poor
Centralised electricity supply system	100	100	100
Centralised potable water supply	93	88	95
Centralised heating system	17	12	20
Centralised sewerage system	17	12	20
Land-line telephone	91	88	92

Source: Households Survey, February 2013

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71. Income indicators are closely correlated with expenditures and household size i.e. the larger the household, the lower its per capita income and expenditure. Average monthly per capita expenditures for poor households in Takhiatash city constitute 77,400 UZS whilst the same indicator for non-poor household is equal to 172,600 UZS.

[5] Last poverty data available is dated 2005
[6] Welfare Improving Strategy of Uzbekistan: Full PRSP document for 2008-2010

72. The average Income from all types of activities in Takhiatash City Households in January 2013 was 688,000 UZS. For poor households this indicator was 387,000 UZS, while non-poor families received in average 863,000 UZS. The most significant income source in terms of contribution to family income is Income from Hired Employment (Salaries) Other significant sources of income are remittances sent from abroad, which constitute in average 24% and State pensions bringing 21% of household income. About 7% of the total average income of the households received from the small scale business activities and sales, 17% of the households participated in survey reported that they received type if income in January 2013.

Table 1.8. Average Weighted Structure of Income of Poor and Non-poor Households in Takhiatash City

	Average Total Income, 000's UZS	Percentage of Households Receiving such Income, %	Average Total Income 000's UZS (for all HH)	Average Contribution to Total Household Income, %
Salary	**466**	**62**	**289**	**42**
Poor	337	52	172	43
Non-poor	514	69	356	24
Income from growing and selling vegetables and fruits on your own or rented land	**15**	**1**	**0**	**0**
Poor	0	0	0	0
Non-poor	15	2	0	0
Income from growing and selling cattle	**10**	**1**	**0**	**0**
Poor	0	0	0	0
Non-poor	10	2	0	0
Income from fishing and forestry (collecting forest / herbs, berries or firewood)	**350**	**2**	**7**	**1**
Poor	100	3	3	1
Non-poor	600	2	9	1
Income from trade or small business	**292**	**17**	**50**	**7**
Poor	199	15	30	8
Non-poor	331	18	61	9
State Pensions	**363**	**39**	**142**	**21**
Poor	210	42	89	24
Non-poor	449	38	173	26
Stipends received by students in household	**38**	**2**	**1**	**0**
Poor	38	6	2	1
Non-poor	0	0	0	0
Benefits received in the makhalla	**107**	**20**	**21**	**3**
Poor	94	33	31	8
Non-poor	124	14	17	3

	Average Total Income, 000's UZS	Percentage of Households Receiving such Income, %	Average Total Income 000's UZS (for all HH)	Average Contribution to Total Household Income, %
Money transfers from friends or relatives who are not members of the HH	**143**	**3**	**4**	**1**
Poor	280	3	8	2
Non-poor	75	3	2	0
Rents from renting land or accommodation	**0**	**0**	**0**	**0**
Poor	0	0	0	0
Non-poor	0	0	0	0
Labor migration/Remittances	**518**	**32**	**166**	**24**
Poor	307	15	47	12
Non-poor	557	42	231	35
Craftsmanship, occasional work	**293**	**3**	**9**	**1**
Poor	80	1	2	1
Non-poor	400	2	12	2
Total			**688**	**100**
Poor			387	100
Non-poor			863	100

Source: Households Survey, February 2013

73. Analysis of the HHS results in terms of Income and expenditures revealed substantial differences between the share of various types of income in the general earnings structure of the poor and non-poor households. While a higher number of non-poor households received income from the hired employment (69% of all non-poor households received salaries, compared to 52% in poor households), and Remittances 42% (compared to 15% of all poor families), the role of state pensions and benefits received from Makhalla are essential in income generation for Poor Households. Low-Income benefits transfers from Makhalla were received by 33% all poor families participated in the survey in Takhiatash City.

74. At the same time Salaries are the most significant source in terms of contribution to the poor households income (43% to the total income). The next types of income that brings in total 32% to the poor households are state pensions and Transfers from Makhalla to Low-Income families. In non-poor families remittances have the biggest share in the total household income generation with 35%, State pensions and Salaries are the next in terms of share in the total household income with 26% and 24% respectively.

75. Although the Low-income benefits have relatively low share in non-poor households overall income (only 3%) 14% of the non-poor households participated in the survey are benefiting from these type of transfers.

76. There was practically no difference between poor and non-poor households of Takhiatash city in terms of share of the income generated from trade and small business. (8% of total income in poor households and 9% in non-poor ones). 15% of poor and 18% of non-poor households responded that they received income from this type of economic activity in January 2013. However in nominal monetary terms

earning of poor households received from business and trade in average were 1.6 times less than those received by non-poor families (199,000 UZS and 331,000 UZS correspondingly).

77. Different industries endow with different shares in the total monthly incomes of the urban and rural households. (Table 1.9) Considerably larger segment of non-poor households received income from hired employment in education, healthcare systems and public services. The same pattern applied for the income received from the employment outside of Uzbekistan. Not only larger share of the non-poor households received income from these types of economic activities, but the amounts received during reporting period are also higher. For example, average weighted total amount calculated for all households in stratum received from employment outside of Uzbekistan almost five times higher in non-poor households compare to non-poor ones.

78. Analysis of the data on sources of income reveals that members o the poor households are more often engaged in temporary and occasional employment, however earnings from this type of works is lower in poor households both in terms of total average income and weighted total average income (calculated for all households in stratum). (Table 1.9)

Table 1.9. Share of different sectors of employment in income of poor and non-poor households

	Average Total Income 000 UZS	% of Households receiving income	Average Total Income (for all HH)
Education or healthcare system	**369**	**27**	**99.6**
Poor	270	18	49.0
Non-poor	397	32	128.3
Public Service	**440**	**35**	**154.0**
Poor	343	27	93.5
Non-poor	473	40	189.2
Trade and small scale business	**292**	**17**	**49.6**
Poor	199	15	30.1
Non-poor	331	18	61.1
Tourism and related services	**0**	**0**	**0**
Poor	0	0	0
Non-poor	0	0	0
Construction	**375**	**4**	**15**
Poor	400	6	24.2
Non-poor	350	3	10.8
Agriculture and Forestry	**100**	**1**	**1.0**
Poor	100	3	9
Non-poor	0	0	0
Occasional/temporary employment	**204**	**10**	**20.4**
Poor	73	12	8.8
Non-poor	292	9	27
Industry/Manufacturing	**217**	**3**	**6.5**
Poor	0	0	0
Non-poor	217	5	10.0
Employment outside of Uzbekistan	**518**	**32**	**165.7**
Poor	307	15	46.5
Non-poor	557	42	231.4

Source: Households Survey, February 2013

79. Analysis of Income and Expenditures of the households demonstrated that in Takhiatash City overwhelming Majority of the households within the last 12 months were able to afford to meet their need in food (97%) and clothing (83%). It can be noticed that the difference between poor and non-poor families on the expenditures on Food and communal payments is not so visible. At the same time there is a visible discrepancy in the level of affordability between poor and non-poor households. (see Table 1.10). As the Table 1.10 demonstrates, for example, only 24% of the poor households were able to afford fuel in contrast to 75% of non-poor households.

Table 1.10 Level of affordability of goods and services for poor and non-poor households in Takhiatash city (in %)

Goods/Services	Total		Poor		Non-poor	
	Yes	No	Yes	No	Yes	No
Food	97	3	94	6	98	2
Clothing	83	17	73	27	89	11
Fuel	59	41	24	76	75	25
Medical services/medicines	87	13	73	27	94	6
Education expenses	62	38	52	48	66	34
Communal payments and fees	95	5	91	9	97	3
Taxes	79	20	64	33	86	14
Leisure and entertainment	89	11	79	21	94	6

Source: Households Survey, February 2013

80. It was noted during the analysis that, although Takhiatash is urban settlement 33% of the surveyed poor households and 63% of non-poor families have plots of land that are used for agricultural purposes. Many surveyed households reported that they grow cattle. 19% of the families own caws, 32% are breeding goats and 49% have hens. However according to the data most of the products grown are for the own consumption, only 6% of the poor and 2% of non-poor households reported that they received some income from selling agricultural produce and/or handicrafts. Monthly spendings of households on electricity bills payments are around 17,000 UZS sum (poor households being – 16,000 sum, non-poor – 17,000 sum) making around 5 % of the total household expenditures. However, the difference between minimum and maximum amounts reported by respondents is significant and varies from 5 to 50 thousand UZS a month in poor households, and 2-70 thousand UZS in non-poor.

Table 1.12. Demographic Characteristics of Poverty in Takhiatash City

	Average Household Size, Persons	Family Members under 7 Years of Age, %	Family Members 8-18 Years of Age, %	Family Members in Pension Age, %	Women in employable age 18-55 Years %	Men in employable age 18-55 Years %
Total	5.2	15.4	15.4	9.6	31.3	30.2
Poor	5.2	19.2	21.2	5.7	29.8	28.1
Non-poor	5.2	13.4	13.4	11.5	32.4	31

Source: Households Survey, February 2013

81. The analysis of the survey results in Takhiatsh city demonstrated that the demographic structure of the households appear to influence the total household income and thus level of poverty. The differences in composition of poor and non-poor households demonstrates that in general in poor households there are more children under age 7 and under age 18. At the same time the percentage of the households members of employable age is lower in poor households, and thus there is less number of bread-winners in the families.

82. There is a link between poverty and the educational levels attained both by the head of household and other household members. In poor families, the number of members with higher education is noticeably lower. Non-poor households (including heads) have completed education to a higher level – particularly at the tertiary level.

Table 1.13 Education Indicators for Household Members and Household heads in Takhiatash City

Household Members in Takhiatash City			
	Total	Poor	Non-Poor
No Education	0%	1%	0%
Incomplete Secondary Education (7-9 Years of schooling)	8%	11%	7%
Complete Secondary Education (10-11 Years of schooling)	21%	36%	15%
Secondary Vocational Educations	65%	50%	70%
Higher Education	6%	2%	7%
Students	7%	7%	8%
Household' Heads in Takhiatash City			
	Total	Poor	Non-Poor
No Education	1%	3%	0%
Incomplete Secondary Education (7-9 Years of schooling)	4%	3%	5%
Complete Secondary Education (10-11 Years of schooling)	29%	48%	20%
Secondary Vocational Educations	60%	42%	68%
Higher Education	6%	3%	8%
Students	0%	0%	0%

Source: Households Survey, February 2013

83. There are some differences between poor and non-poor households in terms of economic activity and employment levels. In poor households, in addition to having less members who are economically active, the share of unemployed members is more than 1.5 times higher compared to the non-poor families, The same tendency is with those members of households who are not working or looking for job. At the same time, the composition of the employment varies from poor to non-poor households. More members from the poor households hired in agricultural sector and industry, while more non-poor members are employed in trade and food catering. Considerable differences between poor and non-poor families are also seen in the share of the students among economically non-active employable age population. (Table 1.14)

Table 1.14. Economic Activity and Employment Indicators of Household Members in Takhiatash city (as % of Employable-age Household Members)

	Takhiatash City		
	Total	Poor	Non-poor
Economically Active	***75%***	***65%***	***79%***
Employed:	***53%***	***38%***	***60%***
Industry	18%	29%	15%
Agriculture	3%	13%	1%
Construction	11%	4%	13%
transportation communication	13%	13%	13%
Trade and food catering	13%	0%	16%
medicine and health service	11%	17%	10%
education, culture	21%	17%	23%
other sectors	9%	8%	10%
Unemployed	***47%***	***63%***	***40%***
Economically Inactive	***25%***	***35%***	***21%***
Students	12%	6%	17%
Pensioners and People with Disabilities	21%	17%	24%
Neither Work, Nor Look for a Job	67%	77%	59%

Source: Households Survey, February 2013

C. Electricity Supply and Energy Use

1. Electricity Supply and Use of Energy

84. As it was mentioned in the previous paragraphs all households surveyed are connected to the centralised electricity supply system. This information supported by the official statistics numbers received from Takhiatash city Socio-Economic Passport. Electricity meters are installed in all surveyed households, however only 46% of the households have electronic meters.

85. In average households in Takhiatash City consume 108 KwH of electricity. There is slight difference between poor and non-poor households energy consumption. Respondents from poor households reported that in average they use 94 KwH, and non-poor -114 KwH.

86. In average 88% of the total number of households participated in survey reported that they have refrigerators (76% of poor and 95% of non-poor HH). In average, according to respondents this piece of kitchen equipment was bought 14-16 years ago.

87. Use of electrical home appliances in Takhiatsh city is somehow limited, especially among poor households. 82% of poor households and 95% of non-poor households use refrigerator to keep foodstuff fresh during the summer months. Considerable number of the households additionally keep products in cool places (42% of poor and 60% of non-poor) or dry them out and/or засаливать (27%of poor and 18% of nonpoor households).

88. Although 7% of the households surveyed reported that they have washing machines, hand wash is still the only way of doing laundry of the clothes and bed-sheets. In average 99% of all households (100% of poor and 98% of non-poor) doing laundry of the clothes by hands. 46% of the households indicated that they do not have irons.

89. All households have at least one TV in the houses which were bought 5 to 8 years before the time of survey. DVD players are also widely used by the households participated in this study, 75% of non-poor and 27% of poor households own this type of home appliances. Computers and laptops have not become widely used, only 9% of the households in Takhiatash have them in their houses. As expected this type of electrical devices accessible only for non-poor households.

90. While all households surveyed are connected to the centralized power supply network, the quality of services provided often is quite poor. To some areas electricity is being supplied very irregularly, which makes the population dissatisfied with power supply stability. 63% of the household in Takhiatash city reported that the electricity supply is constant.

91. The major problem is frequent and prolonged interruptions in electricity supply. Although, during the in-depth and structured interviews with the stakeholders it was mentioned that there are practically no interruptions in power supply (with exceptions of emergency situations), 92% of the surveyed households reported such cases. According to the 71% of the households the interruptions of power supply occurs more than once a week.

> *Problems with electricity supply affecting many families. Unexpected disruptions and power surges very often damage home appliances, especially refrigerators, which are very sensitive to the level and quality of power supply. If it is broken and need replacement or require repair it is quite expensive for families. On the other hand one can not live without refrigerator now, and thus families has no choice but to spend.*
>
> ***Makhalla Resident***

92. During the interruptions, residents usually use the candles for lightening, and some of the households reported that they have oil and kerosene lamps. Those families who live in the detached houses during the summer period spend more time in the courtyards and mostly depend on the day-light which is long during this season, however in the winter with the short light-days dependency on electricity and lightening increases. It was especially mentioned by the HH heads, that lack of the lightening in the evenings make it difficult for schoolchildren to prepare the homework and make necessary readings.

93. Analysis of the respondents' answers regarding time-span of the electricity supply disruption demonstrates that even in the city, where TPP located, interruptions may last up to 5 hours. (see Annex Q5_5). 28% of the respondents stated that they had never been informed about forthcoming interruptions in energy supply. 46% mentioned that they sometimes receive information prior electricity cut-offs, and only 18% of households always know about it in advance. In addition, majority of the households (73%) reported that they do not know about the regulation of Uzbekenergo on electricity supply interruptions.

> *When we have large family events such as wedding parties, we have to call or contact specialists of local office of Uzbekenergo, sometime give money, or use friends and ensure that this day we do not have cut-offs.*
>
> ***Resident of Makhalla***

94. During the household survey, respondents were asked to categorize three major problems related to the electricity supply. More than 50% of households identified frequent interruptions as major problem. The second problem is low quality of the services provided by the power supply companies (43%). Most of the household

heads commented that the service providers usually do not inform clients about planned rolling blackouts, often do not attend service call, and it is difficult to reach telephone operators. Power surges and drawn-out electricity supply disruptions are third and fourth important problems with 29 and 28% of answers.

Table 1.15 Problems related to Electricity Supply of the Households in Takhiatash City

Problems	% of answers
Frequent Interruptions in Power Supply	52
Drawn-out electricity supply disruptions	28
Power Surges	29
Low Voltage	13
Low level of quality services	43

Source: Households Survey, February 2013

95. In general 96% of respondents agreed that that the current level of electricity supply is sufficient to meet the basic need of the households' members and use all basic home appliances. However, only 24% of all respondents evaluated general level of services as above average. (See Annex Q5_36_6)
96. At the same time large share of the households (63% of general sample in Takhiatash City) electricity metering system is working properly, 34% believe that the billing system and collection of payments are well organized. On the other hand, the customer services and timing and quality of the repair works and addressing the complains was evaluated by the customers as below average.
97. Less than 20% of respondents had regular contacts with the employees of Uzbekenrgo. Most of the contacts were regarding billing and payments for electricity. Almost all survey participants agreed that employees of Uzbekenergo are mostly polite, competent and client-oriented.
98. During the household survey, majority of respondents expressed their increased interest in the project and when asked, stated that the project will improve the existing situation. Some of the households' heads could not answer this questions, as they believe that there are other factors that affect reliability and consistency in energy supply, such as local energy transmission lines and high voltage transmission lines. (Table 1.16).

Table 1.16. Share of households who expect the project will improve energy supply of the households (In %).

	Takhiatash City		
	Yes	No	Not sure
All households	82	0	18
Women	68	0	32
Men	85	0	15
Poor	76	0	24
Non-poor	85	0	15

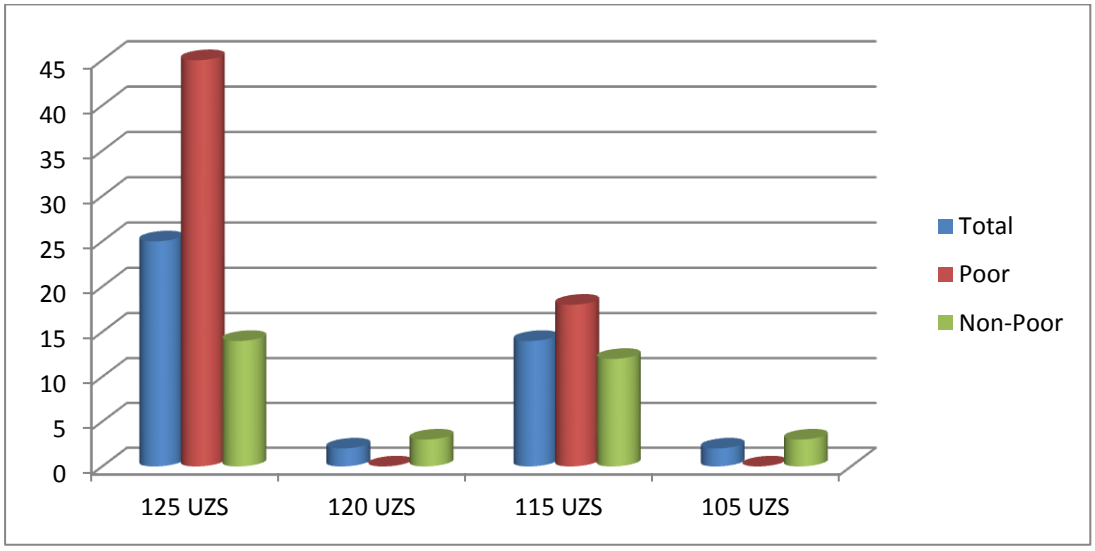
Source: Households Survey, February 2013

2. Payment for Electricity Supply

99. According to the Household Survey results majority of the households (85%) pay electricity bills once a month. 54% of the families who participated in assessment paying bills at cashier offices in Energotarmoq local office. At the same time, in total 34% of respondents reported that the payments for electricity usually automatically deducted from their salaries or pensions on the pre-payment basis (18 and 16% respectively).

100. Analysis of the household survey results with regards to willingness to pay for the improved services summarised in the Chart 1.17[7] As one can see 45% of poor households and 14% of non-poor ones are willing to pay up-to 125 UZS for Kwh for the constant energy supply services without long-lasting and frequent cut-offs.

Chart 1.1 Willingness of the Households to pay for the improved services in Takhiatash City



D. ETHNIC GROUPS

101. According to the statistical data the distribution of the ethnic composition of the population in Takhiatash City is heterogeneous with majority of population nominally being Kazakhs and groups of representatives of other ethnicities such as Uzbeks, Karakalpaks and Turkmens. Other ethnicities such as Russians and Koreans are less than 5% of the total population.

102. Ethnic minorities represented in local government and selective managerial bodies (council of the city deputats). In Takhiatash among 24 people deputies in the city Kengash 8 are Uzbeks, 5 are Kazakhs and 11 are Karakalpaks.

103. According to the household survey, the poverty rate and other poverty indicators suggest minor differences between ethnic groups. This data however cannot be extrapolated to an entire ethnic group. Because of the small number of different ethnic minorities in the sample, the data are not representative and it is not possible to draw firm conclusions or make comparisons between the living

[7] During the Households Survey the rate per 1 KwH was 104.40 UZS. By the time of this report finalization the electricity payment was increased for 7.2%.

standards of different ethnic groups. Despite the fact that these ethnicities co-exist in the area and share certain values in common, there are some differences between these ethnicities.

104. At the same time there were no significant differences between representatives of the different ethnicities in access to the communal services, affordability of basic goods and services, use of electrical appliances or problems that faced by the households related to the electricity supply cut-offs.

E. GENDER ANALYSIS

105. Although the main legislative documents in the sphere of gender equality are in place and Uzbekistan joined international conventions on achievement of gender equality, in practice gender inequality remains a common and supported by century-old traditions and lifestyle inside the households.

106. The total number of women in Takhiatash city is 24.1 thousand (50.7% of the total population). Takhiatash TPP employs 293 women, which is 25.8% of the total number of employees in the Power plant. 43 women employees are on paid maternity leave. The highest share of women employees are among technical personnel and specialists, 83 and 71 % respectively. The lowest number of women 5.2%is represented among management staff, with only seven women out of 134 employees working in this professional category.

107. The average gross payroll per capita for women is slightly higher than average in Power Plant (712,841UZB and 707,541UZB). Within three categories where the share of women is highest -- technical personnel (83%), specialists 71% and service personnel 68%, two categories have lowest average wages among the all five professional groups of employees.

Table 1.17 Gender Structure of Employment and average wages in Takhiatash TPP

	Total Number of employees	Out of them: women	% to the total	Average Wage
Total Number of employees	1135	293	25,8	707,541.1
Out of them Women	293	-	-	712,841.1
Managers	134	7	5,2	1,285,019.53
Specialists	93	66	71,0	819,233.12
Technical Personnel	6	5	83,3	622,430.56
Service personnel	72	49	68,1	485,006.49
Production Personnel	830	166	20,0	624,722.96

Source: Households Survey, February 2013

108. According to the statistical reports of Takhiatash TPP women comprise almost 55% of the total number of employees of non-main productive activities in the Power Plant. As it was mentioned earlier in this report, there are various types of non-main productive activities in the Power Plant. With exception of construction and catering the share of women among employees working in these areas is considerably higher compare to the main productive activity. (Almost 55% in average compare to 26%). (Table 1.18)

Table 1.18 Involvement of women in non-main activities and average wages in Takhaiatsh TPP

Types of Non-main productive activities	Number of employees	Women	% of women	Gross payroll (000) UZS	Women wages (000) UZS	Average Wages (UZS)	Average Wages for Women (UZS)
Agricultural Production	26	12	46.2	134,910	68,059	432,403.8	472,631.9
Forectry	6	5	83.3	17,474	14,555	242,694.4	242,583.3
Construction	4	1	25.0	55,550	11,110	1,157,291.7	925,833.3
Catering	7	0	0	27,845	0	331,488.1	0
Agricultural Processing	30	16	53.3	134,605	84,801	373,902.8	441,671.9
Housing services	13	11	84.6	28,027	28,027	179,660.3	212,325.8
Communal services	7		0	44,115	0	525,178.6	0
Health Center	15	14	93.3	81,873	75,142	454,850.0	447,273.8

Source: Households Survey, February 2013

109. 81% of the surveyed households are men headed and 19% are women headed. 63% of the total number of women heading households are widows, and 32% are divorced. 93% of men heading households are married. One of the facts that drew attention during the analysis of the households results is that the main owners of real property of the households are men in 78% of the surveyed households compared to 20% where the property belong to women. In 93% of cases in the men headed households and in 16% in women headed households the owners of the households are men. Besides, it's mostly men who manage family budgets and take decisions important for a household.

Table 1.19. Affordability of basic goods and services for men and women headed households in Takhiatash city (in %)

Goods and Services	Women headed HH	Men headed HH
Foodstuff	100	96
Clothing and footwear	95	80
Fuel	63	58
Medical services/medicines	95	85
Education	58	63
Communal Payments/Fees	100	94
Leisure and entertainment	100	86

Source: Households Survey, February 2013

110. Comparative analysis of the HHS results revealed that in general, in Takhiatash city, women headed households are better off compared to those headed by men. Noticeably, larger share of the women headed families were able to afford all basic goods and services with the exception of education. (Table 1.19). At the same time, according to the respondents answers, within last six months relatively larger share of women headed households borrowed money (42% of the women headed households compared to 37% of men headed).

111. The similar pattern observed in access of the households to the centralised heating system, sewerage system, and land-line telephone. The only exception from this situation is access centralised potable water supply. However it should be mentioned, that those women-headed households who reported that they do not have water supply system inside of the house using stand pipes in the courtyard of their houses.

Table 1.20 Women and Men Headed households' access to the Services

Access to Services	Women headed HH	Men headed HH
Centralised Energy Supply system	100	100
Centralised Potable water supply system	89	94
Centralized heating system	26	15
Centralised sewerage system	26	15
Telephone Land line system	95	90

Source: Households Survey, February 2013

112. Analysis of the data collected regarding households income structure revealed some gender difference between men and women headed households in Takhiatash city. The total average weighted income in women headed households in January 2013 was 656.6 thousand UZS. In men headed households this indicator was 6% higher and achieved 696.5 thousand UZS.

113. The main source of income for men and women headed households is salaries from hired employment (41.3% and 44.6% respectively). Women headed households are more active in small scaled business and trade (26% of women headed HH against 15% of men headed). The share of this type of income in women headed families (10.6%) is higher compared to the level of contribution to the total HH income in men headed households (6.4%). However, it is worth noting that in financial terms average income received by women headed households is in average 13% lower than those received by men-headed households who involved in small-scale business and trade.

Table 1.21 Average Structure of Income of men and women headed households in Takhiatash City

Sources of Income	Average Total Income (000 UZS)	% of the Households received this income	Average Weighted Income (for all HH in stratum)	Contribution to the total HH Income
Salaries				
Women Headed HH	506	58	293.0	44.6
Men Headed HH	457	63	287.7	41.3
Income from growing and selling vegetables and fruits on your own or rented land				
Women Headed HH	15	5	0.8	0.1
Men Headed HH	0	0	0	0
Income from growing and selling cattle				
Women Headed HH	10	5	0.5	0.07
Men Headed HH	0	0	0	0
Income from fishing and forestry (collecting forest / mountain herbs, berries or firewood)				
Women Headed HH	0	0	0	0
Men Headed HH	350	2	8.6	1.2

Income received from trade or small business				
Women Headed HH	264	26	69.5	10.6
Men Headed HH	304	15	45	6.4
State Pensions				
Women Headed HH	266	42	112	17
Men Headed HH	389	38	149	21.4
Stipends, received by member of the households who are students				
Women Headed HH	38	5	2	0.3
Men Headed HH	38	1	0.5	0.07
Low Income families benefits received from Makahalla				
Women Headed HH	150	11	15.8	2.4
Men Headed HH	103	22	22.9	3.3
Money transfers from friends or relatives who are not members of the household				
Women Headed HH	0	0	0	0
Men Headed HH	143	4	5.3	0.7
Rents from renting land or accommodation				
Women Headed HH	0	0	0	0
Men Headed HH	0	0	0	0
Remittances from employments outside of Uzbekistan				
Women Headed HH	414	37	152.5	23.2
Men Headed HH	548	31	169.1	24.2
Temporary works and occasional employment				
Women Headed HH	200	5	10.5	1.6
Men Headed HH	340	2	8.4	1.2
Total				
Women Headed HH			**656.9**	
Men Headed HH			**696.5**	

Source: Households Survey, February 2013

114. State pensions received by smaller share of men headed households, but twice higher share of women headed households received benefits for low-income families from Makhalla. Remittances are important source of income, which received by 37% of women headed households and 31% of men headed households. The size of income from this source is however 25% lower in women headed families. Gender differences exist not only in the average size of income but also distribution of minimum and maximum amounts reported by respondents in Takhiatash City (196-500 thousand UZS in women headed HH versus 60-900 thousand UZS in men headed HH).

115. There is no drastic difference between men and women headed households in terms of participation in labour migration and remittances. 11% of women headed households and 12% of men headed households reported that some of the family members worked out of Uzbekistan for more than 5 months in 2012.

116. Use of energy in women and men headed households There was a difference identified between men and women headed households with regards to the identification of major problems related to the power supply of the households. For both groups, men and women headed households, the major problem is frequent cut-offs of electricity provision. However, second most important problem for the women headed households is that power supply interruptions last longer hours,

while for the men headed households it is a low quality of customer service of Uzbekenrgo. This prioritization is quite rational, as women mostly responsible for the households chore and men responsibilities include taking care of the home appliances and equipment. Next problem prioritised by men headed household is power jumps, but women recognize low quality of the customer service as third most important problem facing by their households.

Table 1.22 Problems identified by men and women headed households in Takhiatash city

Problems	Women headed HH		Men headed HH	
	(%)	priority	(%)	priority
Frequent interruptions in power supply	58	1	50	1
Long-lasting interruptions in power supply	47	2	24	4
Power Jumps	16	4	32	3
Low voltage	5	5	14	5
Low quality customer services	33	3	46	2

Source: Households Survey, February 2013

117. In general, there is no significant difference in the gender of the electricity bills payers. Analysis of the data collected regarding the mode and frequency of payment for the electricity bills revealed dissimilarities between men and women headed households. more often the men rather than the women pay electricity bills once a month (89% of men headed HH and 68% of women headed HH). At the same time 11% of women headed households, compared to 1% of men headed families prefer to use prepayments.

118. Taken into consideration that majority of the households reported frequent and long-lasting energy cut-offs and that it is mostly women who are responsible for the households works, it is reasonable that a higher percentage of women compared to men thinks that the current level and quality of energy supply is not sufficient for the use of all necessary home appliances.

119. No large gender differences were identified with regards to the knowledge and understanding of the men and women about energy saving. However according to the HHS results there were no respondents from women headed households who knew about energy-saving stickers on home appliances.

120. At the same time in average 54% of the households surveyed noticed that decision on the type and brand of equipment that need to be purchased for the family use made by men and 39% agreed that all parties participate in decision making process. However, in only one men headed households (1% o the sample) the right to choose the type of home equipment given solely to women. In women headed families distribution of the answers is more even with 32% of the households mentioned that decision made by men, another 32% stated that it done by women and 36% declared that men and women..

121. When asked who is mostly responsible for the household chore the majority of respondents named wives or daughters/daughters-in-law (63 and 64% respectively). Only one household reported that they employ house-help, which was a women headed family. It worth to mention that 100% of all respondents from women headed households reported that all laundry are made by hands by women in their households. The similar picture is in men-headed families (Annex Q5_24_1)

122. According to the Household survey results gender differences exist not only between household heads, but also between gender groups in general. These differences lay mainly within education and employment indicators. Education levels of men, especially tertiary education is considerably higher than that of women-heads. At the same time higher education level achieved by almost the same share of the women and men households heads (5 and 6% respectively)

123. Lower level of education creates considerable disadvantage in the labour market and reflected in further indicators especially in the level of income earned and employment indicators (Table 1.24). The share of unemployed heads of the households is twice higher among women headed families compared to the men-heads. Level of entrepreneur households' heads are higher as well amongst the men, however it should be noted that participation in entrepreneurial activities is quite high (58%) among women heads of the households.

Table 1.23 Differences between the female and male headed households in Takhiatash City (In %).

	Women	Men
Heads of Households who have Not Completed School Education (%)	0%	6%
Heads of Households who Have Secondary Vocational Education (%)	47%	63%
Heads of Households who have Higher Education (%)	5%	6%
Households' Heads in Employable Age and Older, Who Are Entrepreneurs (%)	58%	80%
Unemployed Heads of Households of Employable Age and Older (%)	42%	20%
Employed Heads of Households of Employable Age and Older (%)	32%	46%
Children Under 16 years of Age, %	24%	29%
Household Size, Persons	4.8	5.4
Average Monthly Income, 000's SUM	657	696.5
Poverty Rate, %	21%	36%

Source: Households Survey, February 2013

124. Number of the households surveyed with no much difference whether men or women headed, have vocational education level. However according to the survey results less number of women have opportunity to continue receiving education. Since it is mostly higher and post-graduate education we can conclude that more men compare to the women have chances for higher level of education.

Table 1.25 Education level indicators of men and women groups (In %).

	Women	Men
No education	19%	14%
Incomplete basic education	1%	7%
Basic education	23%	22%
Vocational education	42%	40%

Higher education	5%	3%
Continuing receiving education	9%	15%

Source: Households Survey, February 2013

125. The share of economically active members constitutes in average 72% of all employable age people living in the households. Among the male households members the share of economically active is 90% compared to 56% among the female household members. Employment levels differs insignificantly between the gender groups, however there are significant difference in three major categories of economically inactive population. 68% of economically inactive women are those who neither work nor looking for job, which is more than three times higher than among men. At the same time students represents only 9% of all economically inactive women compared to 20% in male gender group.

Table 1.26 Economic Activity and employment indicators of Male and Female Households Members in Takhiatash City (% of employable age population)

	Total	Men	Women
Economically Active	72	90	56
Employed	53	55	51
Unemployed	47	45	49
Economical Inactive:	28	10	44
Students	11	20	9
Pensioners and People with Disabilities	29	60	23
Neither Work nor looking for job	60	20	68

Source: Households Survey, February 2013

F. CONSULTATIONS AND PARTICIPATION

126. Household survey paid particular attention to the consultation and participation mechanism. The project potential outcomes, both possible positive and negative impacts been discussed during the Focus Group Discussions, structured and in-depth interviews. The information and data presented below, reflect the ideas and outcomes of the analysis of information received during the survey and interviews. The issues, which were raised by the meetings participants, are summarised and presented in this report as direct quotations.

127. When asked, majority of respondents (82%) stated that they believe that the project will improve the existing situation with the power supply of the households in Takhiatash city. The majority of the households (76%) are confident that, after the project completion, they will have improved electricity supply without frequent interruptions and rolling blackouts. 71% of the respondents expecting that as one of the project results the lightening of the streets will be improved.

128. Somehow, the overall trust in the project results is higher among poor households. For example 36% of the poor households, compare to 22% of non-poor respondents believe that the project results with improved opportunities for the home-based business. Likewise 52% of the poor and 14% of non-poor households expressed their confidence that proposed Power Plant Development will improve current level of the services provided by social infrastructure organizations. (Table 1.26.).

Table 1.26. Share of households who believe that the Power Plant Efficiency Project will improve standards of living in Takhiatash City (In%).

Takhiatash City			
	Yes	**No**	**Don't know**
Improved energy supply of the households without frequent interruptions	76	1	23
Poor	82	0	18
Non-poor	74	2	25
Improved opportunities for the home based Business	28	11	61
Poor	36	9	55
Non-poor	22	12	66
Improved services of social infrastructure organizations	27	11	62
Poor	52	6	42
Non-poor	14	14	72
Improved Lightening of the streets	71	3	26
Poor	79	0	21
Non-poor	68	5	28

Source: Households Survey, February 2013

In Takhiatash city we do not face the problem with the frequent power cut-offs, we are city of the Power Station and Khokimiyat is very strict with the power supply. But although no frequent interruptions but very often the level of voltage is low, and not sufficient for use of appliances. We hope that after the reconstruction there will be constant supply. ***Makalla Resident***

129. As a part of the survey, respondents were asked what issues related to existing power supply system are of importance to them. In other words, based on their knowledge, households heads were requested to identify priorities in investments in power supply system improvements. In Takhiatash City following were underlined as issues of significance, in order of importance: (i) reconstruction and modernization of existing Power Plants, (ii) improvement of the level of services provided to the clients by Uzbekenergo and (iii) Introduction of new effective and efficient technologies in the Power Plant, was identified as third in top priority list for the survey respondents. (Table 1.27).

Table 1.27. Priorities for investments in energy supply sector identified by the respondents in Takhiatash City. (In %)

Issues	Total	Poor	Non-poor
Reconstruction and modernization of existing power plants	84	64	93
Reconstruction and Maintenance works of local power transmission lines	28	33	25
Introduction of new modern technologies in Power Plants	32	42	27
Construction of new Power Plants	6	6	7

Reconstruction and Maintenance works of High-Voltage power transmission lines	30	27	31
Improvement of services provided by Uzbekenergo to the clients.	47	36	55

Source: Households Survey, February 2013

130. At the same time many respondents and participants of the Focus Group Discussion mentioned that the city facing some problems that can be addressed within the proposed project. The problems mostly related to the access of the households to the water supply system, sewerage system, electricity supply disruptions etc. Due to these problems overwhelming majority of the households are having continues difficulties in organizing bathing, washing, laundry and cleaning. Residents of the Takhiatash city suggested that social component of the proposed project should include Community Services Center for the residents of the city.

131. The proposed Center should allow population to have access to the following services: Public Bath, Self-Served Laundry, Laundry Service, Dry-Cleaning Service, and Carpet Cleaning service. It was noted by many respondents that the dry-cleaning services do not exist in Takhiatash city, the same was said about public bath. Taken into consideration that Takhiatash TPP is discharging how water the costs for the water use in bath and laundry will be reasonable and services are affordable for the population.

III.II. POVERTY PROFILE, INCOMES AND EMPLOYMENT OF THE POPULATION IN KARAKALPAKSTAN AR

A. Poverty Profile, Households' Income and Employment Indicators in Karakalpakstan AR

132. **Poverty rate and household income in Karakalpakstan AR**. According to the findings from the household survey in Karakalpakstan AR, as of February 2013, 47% of all households participated in the study, had less than 1.5 folds of minimal monthly wage per person per month. The share of low-income families is much higher among rural households than in urban settlements. 56% of rural households surveyed compare to 43% of urban households are poor.

133. About 90% of the households reside in detached houses with land plot. There is almost no difference between poor and non-poor families in the type of accommodation and property rights. 90% of poor and 89% of non-poor live in the detached houses. 99% of poor and 97% of non-poor families reported that they own their house.

134. All households participated in the study in Karakalpakstan connected to the centralised power supply system. Access of the households to the Piped Water supply and Sewerage system in Karakalpakstan is limited. (See table 2.1). In average about half of the households surveyed have potable water and only 3% have access to sewerage system.

135. Analysis of the data regarding households access to communal services, potable water and sewerage system demonstrates that the difference between urban and rural areas is drastic. As we one can see from the Table 2.1 potable water supply system accessible for 69% of the urban households but only quarter of the families

surveyed in rural settlements can benefit from this type of service. Data collected during the HHS demonstrated that sewerage system virtually does not exist in the rural areas of Karakalpakstan. In urban areas 4% of the households reported that they have sewerage system.

136. Households surveyed reported extremely low level of coverage with the centralised heating system. Even in the urban settlements only 2% of the families had centralised heating system in their houses.

Table 2.1. Access to the communal services of the Households in Urban and Rural areas of Karakalpakstan (% of sample size)

	Total	Urban	Rural
Centralised electricity supply system	100	100	100
Poor	100	100	100
Non-Poor	100	100	100
Centralised potable water supply	53	69	25
Poor	48	62	30
Non-Poor	56	74	17
Centralised heating system	2	2	0
Poor	2	3	0
Non-Poor	1	2	0
Centralised sewerage system	3	4	0
Poor	2	3	0
Non-Poor	3	4	0
Land-line telephone	53	74	17
Poor	41	66	10
Non-Poor	64	81	28

Source: Households Survey, February 2013

137. The discrepancy exists not only between urban and rural households but also between poor and non-poor families. Poor households in general have a more limited access to the communal services, while the rural poor families are in the least favourable situation.

138. According to the data received, in 26% of the families participated in the survey in Karakalpakstan, within last 12 months, at least one of the household members worked outside of Uzbekistan. 33% of non-poor and 16% of poor households in urban areas and 44% and 16% respectively in rural areas reported that some of the family members worked out of the country for not less than 5 months during the last year. However it is noticeable that much higher number of the non-poor households have members who had worked abroad for a long period of time. It can be suggested that remittances received during that period is one of the factors that helps families to live out of poverty.

139. The average monthly per capita income of poor households was 64,333 UZS, which is almost 3 times lower than that of non-poor households (193,000 UZS). Per capita income in female-headed households was about 10% higher compared with that in households headed by men. Income indicators are closely correlated with expenditures and household size i.e. the larger the household, the lower its per capita income and expenditure.

Table 2.2. Main Income Indicators of Poor and Non-poor Households

	Average Monthly Income, 000's UZS	Average monthly Per capita Income
Total	673	134.6
Poor	386	64.3
Non-poor	965	193

Source: Households Survey, February 2013

140. The average total income from all types of activity in January 2013 was 673,000 UZS (Table 1.9). The most significant income source in terms of contribution to family income and coverage is income received from salaries. Transfers from state pensions system is the next major source of income generation which make 25% of total average household income in Karakalpakstan, 22% of the income received from remittances.

141. State pensions and transfers, as well as Makhalla provided benefits represent in total 40% of the average income of poor families. As one can see from the Table 2.3 these types of transfers are less important for non-poor households, however they still produce in total 23% of the total' income of non-poor families. It was noted during the analysis of the HHS results that 8% of the non-poor households are receivers of Mahalla-provided social benefits. As these payments are targeted transfers for low-income families it can be suggested that social benefits effectively perform the role of the pillar that supports families from falling into poverty.

142. Small-scale business activities and trade provide in average to the families who reported to have such income 438,000UZS, which is in monetary terms is second largest type of income after remittances. However, the share of the families receiving income from this source is in average 16%, with the noticeable difference between poor and non-poor households. Income from entrepreneurial activities, which is received by 20% of the sampled non-poor households, represents 11% of their total household income. Incomes from agricultural activities (such as growing and selling vegetables and fruits on the own or rented land, selling cattle, or fishing and forestry), are insignificant (about 4%).(Table 2.3)

Table 2.3. Average Weighted Structure of Income of Poor and Non-poor Households

	Average Total Income 000's SUM	**Percentage of Households Receiving such Income, %**	**Average Total Income 000's SUM (for all HH)**	**Contribution to Total House-hold Income, % (for all HH)**
Salaries	**432**	**53**	**227**	**34**
poor	234	49	115	30
non-poor	586	58	339	35
Income from growing and selling vegetables and fruits on your own or rented land	**174**	**3**	**5**	**1**
poor	75	3	2	1
non-poor	293	2	7	1
Income from growing and selling cattle	**162**	**8**	**12**	**2**
poor	123	10	12	3
non-poor	222	6	13	1

Income from fishing and forestry (collecting forest / mountain herbs, berries or firewood)	**192**	**2**	**4**	**1**
poor	134	4	5	1
non-poor	600	0	3	0
Income from trade or small business	**438**	**16**	**71**	**11**
poor	267	13	36	9
non-poor	544	20	107	11
State Pensions	**356**	**48**	**170**	**25**
poor	280	46	130	34
non-poor	424	50	214	22
Stipends received by students in household	**308**	**2**	**5**	**1**
poor	0	0	0	0
non-poor	308	3	11	1
Benefits received from Mahalla	**115**	**14**	**16**	**2**
poor	118	21	24	6
non-poor	109	8	9	1
Money transfers from friends or relatives who are not member of the household	**88**	**2**	**2**	**0**
poor	56	2	1	0
non-poor	113	2	2	0
Payments from renting land or accommodation	0	0	0	0
poor	0	0	0	0
non-poor	0	0	0	0
Remittances	**539**	**28**	**150**	**22**
poor	294	19	55	14
non-poor	652	37	243	25
Temporary employment and occasional work	**271**	**5**	**12**	**2**
poor	118	6	7	2
non-poor	510	3	18	2
TOTAL			**673**	**100**
poor			386	100
non-poor			965	100

Source: Households Survey, February 2013

143. Average total income in poor families is lower than in non-poor ones (386,000 and 965,000 UZS respectively). In general, for the most of the income types in poor families, when compared with those in non-poor ones, is 30% to 70% less. Not only the magnitude, but also the structure of income is different in poor families compared with non-poor ones: salaries play a less significant role in income generation, but social transfers are more important.

144. Remittances play important role in the households income. 19% of poor and 37% of non-poor households received money transfers from the members of the households who worked outside of the country. The share of this type of income is much higher in non-poor families (25%) and in poor families reach about 15% of the total households income. In average the poor families who reported this type of income received about 295,000 UZS per month, at the same time in non-poor families this transfers in average more than two times higher and reach 652,000 UZS.

145. Current situation with the level of affordability of goods and services can be seen in the Table 2.4 There is a clear and quite significant difference between poor and non-poor households. As one can see, even with the basic needs, such as foodstuff and clothing poor households have lower posibilities to meet the needs of the family members. Largest gap between poor and non-poor families is in the level of affordability of leisure and entertainment goods and services. Only 50% of the surveyed poor households compare to 75% of non-poor reported that within last 12 months they were able to afford vocation, leisure/entertainment services.

Table 2.4 Affordability of goods and services for the Urban and Rural households in Karakalpakstan (in %)

	Total	Rural	Urban
Foodstuff	91	91	91
Poor	86	88	85
Non-poor	96	95	96
Clothing	79	83	77
Poor	72	80	66
Non-Poor	85	84	85
Fuel	56	51	64
Poor	57	65	51
Non-poor	55	63	52
Medical services and medicine	80	85	77
Poor	71	79	65
Non-poor	88	92	86
Education and associated costs	71	72	71
Poor	65	71	61
Non-poor	76	73	77
Communal payments and fees	89	88	89
Poor	81	83	80
Non-poor	95	94	95
Leisure and entertainment	64	62	65
Poor	50	51	49
Non-poor	75	75	76

Source: Households Survey, February 2013

146. Analysis of the data obtained during the HHS in Karakalpakstan demonstrates that the monetary income received from agricultural activities is not very significant. In average only 13% of the households reported that they received some income from selling fruits, vegetables or other agricultural products. Naturally, this number is higher for the rural settlements where almost 25% received such income in 2012.

147. Most of the rural households surveyed own cattle: 75% of non-poor rural households and 71% of poor rural households have cows, 17% of non-poor and 13% of poor breed goats, and 31% of non-poor and 16% of poor farm sheep. The difference between poor and non-poor families in sheep farming might be explained by the specifics of growing sheep. It is considered as a good investment, and usually families buy young cattle and feed them for several months before selling. During this period there is no income generated and it requires expenses on forage, and thus for the poor households this type of cattle is not always the preferred one. On the other hand, with the cows the milk and milk products can be used for own consumption or sold during the year.

148. Various sectors of economy and types of economic activities play different roles in households' income generation. Analysis of the Households Survey results revealed that the remittances play in very important role in generation of households incomes. According to the information received from the respondents in average 28% of the households received remittances in January 2013 and these transfers form about 30% of the households' income in Karakalpakstan AR. Income received from remittances have larger share in the total earnings of non-poor families and reach 37%. At the same time for poor households share of this type of transfers also considerable and achieves in average 20% of their total income.

149. Earnings received from hired employment in education and health sectors together with Salaries received from Public service employment brings in average more than 36% of the total average income. In non-poor households the share of income earned in these sectors of economy is higher compared to the poor households.

Table 2.5 Role of different sectors of economy and types of economic activities in Income generation

Sectors of economy/Types of economic activities	% of households received income from this sector			Average Weighted Income (000 UZS)	% in total household Income
	Total	Urban	Rural		
Education and Health	**26**	**26**	**27**	**104.8**	**20.5**
Poor	21	22	20	48.36	17.79
Non-poor	32	29	39	160.9	21.85
Public Services	**19**	**23**	**12**	**80.2**	**15.7**
Poor	15	21	7	32.23	11.8
Non-poor	24	26	19	127.5	17.3
Small business activities and trade	**16**	**23**	**6**	**71.1**	**13.9**
Poor	13	22	2	35.5	13.05
Non-poor	20	24	11	106,7	14.5
Tourism and associated activities	**0**	**0**	**0**	**0**	**0**
Poor	0	0	0	0	0
Non-poor	0	0	0	0	0
Construction	**3**	**4**	**2**	**16.5**	**3.2**
Poor	3	5	1	8.24	3.3
Non-poor	3	4	2	22.3	3.0
Agriculture/Forestry	**15**	**7**	**28**	**36.5**	**7.16**
Poor	19	7	34	35.5	13.05
Non-poor	12	7	22	38.6	5.2
Temporary Employment and occasional works	**18**	**20**	**16**	**48.56**	**9.5**
Poor	25	29	20	56.9	20.9
Non-poor	12	12	11	35.9	4.8
Manufacturing	**1**	**2**	**0**	**1.95**	**0.38**
Poor	1	2	0	0.32	0.11
Non-poor	1	2	0	1.62	0.2
Remittances	**28**	**25**	**33**	**149.6**	**29.37**
Poor	19	16	22	54.8	20.15
Non-poor	37	32	48	242.9	32.9

Total Income from all sectors of economy				**509.21**	100
Poor				**271.85**	100
Non-poor				**736.42**	100

Source: Households Survey, February 2013

150. Analysis of the data related to the households expenditures summarised in Table 1.12. The breakdown of household expenditures by poor and non-poor families does not show significant differences, except perhaps the slight disparities in the share of expenditures for foodstuffs and leisure and entertainment. However, some minor discrepancies were noted between poor and non-poor families in percentage of the households who had expenditures on fuel, medical services and education.

Table 2.6. Average Structure of Expenditures of the Poor and Non-Poor Households in Karakalpakstan AR in January 2013

	Percentage in Total Expenditures	Percentage of Households Having such Expenditures
Foodstuffs	**41**	**100**
Poor	40	100
Non-poor	42	100
Clothes & Footwear	**10**	**97**
Poor	10	97
Non-poor	10	98
Fuel	**7**	**95**
Poor	7	93
Non-poor	6	98
Medical Services and medicine	**6**	**97**
Poor	6	96
Non-poor	6	99
Education	**6**	**97**
Poor	6	96
Non-poor	6	98
Communal Payments	**15**	**98**
Poor	16	97
Non-poor	15	99
Leisure and entertainments.	**9**	**80**
Poor	9	80
Non-poor	10	81

Source: Households Survey, February 2013

151. The survey showed that family size and structure appear to influence the level of income in the households and consequently level of poverty. According to the HHS results, large households are more likely to become poor. At the same time, analysis of the family composition of poor and non-poor households demonstrates that in poor households the share of the members under 7 and under 18 noticeably higher. There are more men of employable age in non-poor households and those two factors probably play central role in lower level of poverty, since there are more income-earners and less number of dependents.

Table 2.7. Demographic Characteristics of Poverty in Karakalpakstan AR

	Average Family Size, Persons	Family Members under 7 Years %	Family Members 8-18 Years %	Family Members in Pension Age, %	Men of employable age, 18-60 years %	Women of employable age, 18-55 years %
Total	5.8	1.0	1.1	0.7	30.6	27.8
Poor	6.4	1.2	1.3	0.6	28.8	27.1
Non-poor	5.3	0.6	0.9	0.7	32.4	28.3

Source: Households Survey, February 2013

152. There is a link between poverty and the educational levels attained both by the head of household and other household members. In poor families, the number of members with higher education is noticeably lower. Non-poor households (including heads) have completed education to a higher level – particularly at the tertiary level (Table 2.8).

Table 2.8 Education Indicators for Household Members in Karakalpakstan AR

	Karakalpakstan AR		
	Total	Poor	Non-poor
Household Members, as % of Household Members Above 16 Years of Age			
No Education	0%	1%	0%
Incomplete Secondary Education (7-9 Forms)	8%	11%	7%
Complete Secondary Education (10-11 Forms)	21%	36%	15%
Secondary Vocational Educations	65%	50%	70%
Higher Education	6%	2%	7%
Students	7%	7%	8%
Household Heads, %			
No Education	1%	3%	0%
Incomplete Secondary Education (7-9 Forms)	4%	3%	5%
Complete Secondary Education (10-11 Forms)	29%	48%	20%
Secondary Vocational Educations	60%	42%	68%
Higher Education	6%	3%	8%
Students	0%	0%	0%

Source: Households Survey, February 2013

153. Economic activity levels in the surveyed households in Karakalpakstan AR are relatively high: 58% (Table 2.9). A considerably high unemployment rate at about 41% of all who are economically active was registered in the households surveyed. Among those who are employed, two largest groups, representing approximately 45%, are working in education and culture sector and other sectors (mostly labour migration). Approximately 17% of the employed members of the households are hired in education and 14% in construction. 73% of the economically inactive are those who neither work nor look for a job.

154. There is a significant difference between poor and non-poor households in terms of economic activity and employment levels. In poor households much lower share of the economically active members are working and unemployment rate in poor

households is 1.8 times higher than that of non-poor. Within economically inactive members, the share of those who neither work nor looking for job is noticeably higher in poor households, at the same time there are less pensioners and students.

Table 2.9. Economic Activity and Employment Indicators of Household Members in Karakalpakstan AR

as % of Employable-age Household Members

	Total	Poor	Non-poor
Economically Active	***58%***	***55%***	***61%***
Employed	***59%***	***46%***	***70%***
industry	4%	6%	3%
agriculture	17%	27%	12%
construction	14%	8%	16%
transportation communication	6%	8%	6%
trade food catering	6%	5%	7%
medicine and health service	10%	12%	9%
education, culture	22%	15%	22%
other	22%	18%	24%
Unemployed	***41%***	***54%***	***30%***
Economically Inactive	***42%***	***45%***	***39%***
Students	15%	14%	17%
Pensioners and People with Disabilities	11%	8%	16%
Neither Work, Nor Look for a Job	73%	78%	67%

Source: Households Survey, February 2013

155. The link between poverty and the employment status of the heads of household follows the same trends. The risk of household poverty increases where the head is unemployed, or where the household head is engaged in temporary or seasonal employment, or in unregistered small business activities. In households where the head of household is employed in the State-budget-funded sector, the risk of poverty is slightly lower.

B. ENERGY SUPPLY AND ELECTRICITY USAGE IN THE HOUSEHOLDS OF KARAKALPAKSTAN AR

1. Electricity supple and use of energy

156. According to information obtained from the Cabinet of Ministers of Karakalpakstan AR 100% of the households are connected to the centralised energy supply system. However, no information could be accessed about the quality of the energy supply.

157. PSA results regarding the coverage of the centralized energy supply system confirm fully the data provided by the Local Government office. All surveyed households connected to the electricity supply system. However, many households Karakalpakstan reported that the quality of the energy supply is low.

158. Households in Karkalpakstan using two types of electricity meters: electronic and non-electronic (mechanical). Electronic meters installed in average in 64% of the households, with about 10% difference between poor and non-poor households

(59 % of poor and 69% of total non-poor households make use of electronic electricity meters).

Table 2.10 Availability of the electrical home appliances in households in Karakalpakstan AR (% to the sample)

Type of appliance	Total	Poor	Non-poor	Urban	Rural
Electrical Sewing Machine	2	1	3	2	2
TV set	100	99	100	100	100
DVD player	48	46	51	50	45
Washing Machine	8	4	12	10	5
Electrical Stove	12	11	14	16	5
Refrigerator (16)	67	61	74	77	51
Mobile Phone	92	89	93	92	91
Computer/Laptop	10	1	18	14	3
Air conditioner	3	1	3	3	1
Water heating system	1	0	1	1	0
Electrical heater	6	4	9	8	3
Iron	74	67	79	82	61

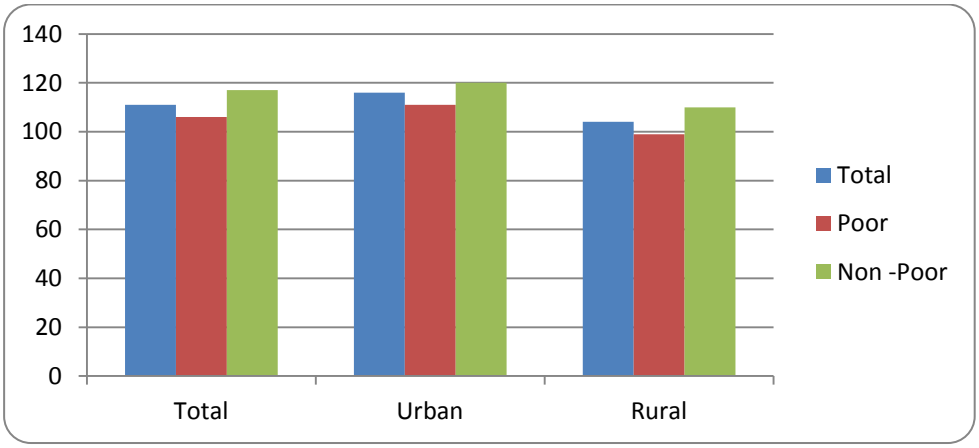
Source: Households Survey, February 2013

159. Availability of basic electrical home appliances varies across poor and non-poor households, as well as among rural and urban families. In February 2013 almost all households surveyed had TV set and about 50% reported that they have DVD players in their possession. Availability of refrigerators is somehow limited with only 61% of poor households and 51% of households living in rural areas having opportunity to use this type of equipment. Situation with washing machines even more discouraging: only 8% of the respondents declared that they have this kind of domestic device. The difference between poor and non-poor households is quite significant, the share of the non-poor respondents having chances to use washing machines is three times higher compared to the poor ones.

160. At the same time use of energy and level of consumption at large extend depends on the age and quality of the home appliances. It was noted, during the analysis of the HHS results that most of the basic household equipment is quite old. For example, average age of refrigerators is 16 years, washing machines 15 years.

161. In average the share of households expenses on electricity bills was 6% of the total expenditures in January 2013 with no difference between main stratums (poor-non-poor and urban-rural). However, both in urban and rural areas, consumption of energy in average is 10% higher among non-poor households.

Chart 2.1 Energy Consumption in Urban and Rural Areas in Karakalpakstan AR



162. Due to the limited availability of the refrigerators among urban and rural households more than 40% of the households in order to keep their foodstuff fresh store it in cool places, 20% of the total number of households preserve them by salting or drying out (24% of poor, and 16% of non-poor). In rural areas these types of food preservation are more common. (Annex Q5-23).

163. 97% of the respondents reported that in their households all laundry of the clothes and bed-sheets made by hands. In rural areas, no cases of using washing machine were identified during the survey. In almost all households washing is responsibility of women.

164. 78% of the households participated in the HHS reported that electricity supply in their houses is not constant. In rural areas situation is much worse than in urban settlements. Overwhelming majority of the rural households (95%) complained about the cut-offs in energy provision compare to 87% of urban households. (Annexes Q5_2 and Q5_3) In average 60% of those who reported occurrence of electricity disruptions agreed that energy cut-offs last up to 5 hours.

Table 2.11 Electricity cut-offs in households in Karakalpakstan AR as % of those who reported disruptions

	Total	Urban	Rural
Length of electricity supply disruption			
Less than 5 minutes	-	-	-
More than 5 min, but less than one hour	12	9	17
More than 1 hour, but less than 5 hours	60	60	59
More than 5 hours	18	17	19
Omitted question	10	14	5
Frequency of electricity supply disruption			
Every day	68	62	76
2-3 times a week	10	7	15
At least once a week	4	5	3
Less than once a week	8	12	2
Omitted question	10	13	5

Source: Households Survey, February 2013

165. In general rural households have more often electricity supply cut-offs, but the length of disruption is close to those reported in urban settlements. For example only 2% of the households from rural areas compared to 12% of the urban households informed interviewers that the accidents of disruption of power supply occurred less than once a week. At the same time in urban areas larger share of the poor families complained about long lasting and frequent cut-offs.

166. Knowledge of the rules and regulations is important for energy users, as this improves their understanding of customers' rights and responsibilities as well as responsibilities of energy suppliers and distributors. In average 82% of the households' heads are not informed about the rules of Uzbekenergo on use of electrical power. Among the urban households' heads there were more of those who knew about these rules.

167. During the HHS respondents were requested to identify three most important problems related to the electricity supply of their houses. In average, 67% of the households surveyed consider that frequent interruptions in power supply is most critical problem which affect the quality of their life. Low voltage is the second problem prioritised by households heads, 60% of respondents indicated it as one o the most important. The long lasting electricity supply is the third most often identified problem. There is no difference between urban and rural households in prioritization of the problems concerning the energy provision. (Table 2.12)

Table 2.12 Ranking the significance of the problems faced by Rural and Urban Households with energy supply in Karakalpakstan AR (in % to the answers)

Problems	Total	Urban	Rural
Frequent Interruptions in Power Supply	67	58	81
Drawn-out electricity supply disruptions	54	51	56
Power Surges	43	41	45
Low Voltage	60	57	64
Low level of quality services	16	16	16

Source: Households Survey, February 2013

168. About 50% of the all surveyed households indicated that current level of energy supply is not sufficient to meet their existing needs in electricity. Again, as it was noted in previous paragraphs the situation in rural areas much more difficult. Only 37% of the rural households compared to the 57%of the families residing in the urban areas think that existing level of electricity provision meets their basic needs. 81% of the rural respondents compared to 58% of urban residents agreed that frequent interruptions are the primary problem for their households. Moreover, 67% of the rural households believe that in the present situation they are not able to fully use all essential electrical home appliances (Compared to 40% of the urban respondents who expressed the same concerns.) (Table 2.12).

169. Although the extremely limited number of the households are engaged in home-based businesses (only 2%), majority of those who involved in such activities (85%) agreed that current level of energy supply is not sufficient for full use of equipment needed for success of business activities and frequent and long lasting interruptions of electricity provisions negatively affect it too.

170. Disruptions of Electricity provision affect not only households but also social infrastructure organizations, such as schools, kindergarten, and sometimes

healthcare establishments. About 7% of the survey respondents mentioned that electricity cut-offs had an effect on the households members while they were in schools, policlinics or other organizations. The same concerns are applied to the other service providers for example beauty salons, Paynet services, and grocery stores.

171. In general, 51% of the total number of households participated in survey in Karakalpakstan evaluated the overall level of services on energy supply as below average. Majority of the respondents satisfied with the quality of electricity meters, billing system and payments collections, however level of satisfaction by services related to the customers assistance such as responses to clients' complains and timing for repairing and maintenance works were evaluated below average (Annexes Q5_36_1 - Q5_36_6). When asked about the way of improvement of services provided by Uzbekenergo 41% of the survey participants referred to the ensuring constant and sustainable electricity supply.

The disruption of the electricity supply is creating many problems for the college. First of all we have two classes with computers, if there is a cut-off or high voltage jump, the risk of computers burning is very high. Who will pay for the replacement or the new spare-parts. For all our complains we only get one answer, emergency break-out. On the other hand how we can use the equipment in the workshops if there is no electricity? At the end, all these factors negatively affect the overall quality of education. ***Deputy Director of the College***

2. Payment for Electricity Supply and other associated costs

172. One of the objectives of the Household Survey was to identify how households coping with the lack of electricity and if they use additional generators to cover their need in energy. Questions regarding the use of generators and associated costs that household incur were asked during the interviews with respondents in urban and rural settlements in Karakalpakstan AR.

173. Analysis of the data collected allowed to conclude that very limited number of families (12 households, in other words only 3% of the total number of households) use diesel electricity generators in the households during the cut-offs, or for additional needs in energy. Although there is no considerable difference between poor and non-poor respondents but according to the results of the study more rural poor households use generators for their needs compared to rural non-poor families.

174. In average diesel generators that are used by the households produce about 65 KwH energy a month. The distribution of answers received from different respondents varies from 40 to 150 KwH a month. Typical expenditure of the households on fuel for the diesel generator is 13,000 UZS a month. Households in urban areas spend about 16,000 UZS for this purpose, and households in rural areas 9,000 UZS a month. Thus average cost of 1 KwH produced by diesel generator is about 203 UZS. In rural areas this cost is lower (138 UZS) which might be explained by the fact that in rural areas there are more opportunities to by diesel at lower price for cash.

Table 2.13 Use of Diesel Generators in Urban and Rural Households in Karakalpakstan AR

	Total Average	Urban Average	Rural Average
How many KwH produces Diesel Generator	64	63	65
How much HH spent on the fuel for Diesel Generator (UZS)	13,000	16,000	9,000
Costs of 1 KwH produced by Diesel Generator (UZS)	203	254	138

Source: Households Survey, February 2013

175. In accordance with the Decree of the Cabinet of Ministers N 245, dd 22.08.2009, "On approval of the rules of use of electrical and heating energy" the payments for electricity consumed by the households should be done monthly, within first 10 days of the following month. At the same time to the households connected to the Automated system of monitoring and control of electricity consumption, energy is supplied on the prepayment basis. The billing system for energy supply is such that in the households where the electronic meters installed the automatic discontinuation of energy provision occurs if the prepayment utilised and there is a debt of the households for the energy consumed.

176. According to the HHS results overwhelming majority of the households pay for the electricity once a month (89%). Only 3% of the respondents use pre-payment for energy supply services. More than 50% of the households participated in the survey are paying electricity bills in the local offices of Uzbekenergo or directly to the controllers who come to the households to collect money and check readings in the meters (34% of the total number of households).

177. While a majority of the households pay their electricity bills in local Uzbekenergo offices or to the controllers, more than 10 % of the households reported that the payments for the energy supply withhold from their salaries or pensions. At the same time there are many complains that system of the bill payments is not efficient. Many households reported that although they are paying for electricity on the prepayment basis, controllers still come to visit and request for the payments, as the information is not provided on the timely basis to controllers.

178. Households' survey results allow us to evaluate willingness of the households to pay for improved services (Table 2.14).

Table 2.14 Willingness of the Households in Karakalpakstan AR Pay for reliable and consistent energy supply (tariffs per 1 KwH)

as % of sample size

	Proposed Tariffs per 1KwH			**Average Maximum amount per KwH[8]**
	125 UZS	**120 UZS**	**115 UZS**	**105UZS**
Total average	**20**	**20**	**37**	13

[8] Those respondents who had not chosen any of proposed tariffs offered to name the maximum amount per KwH that household will be willing to pay for reliable and constant energy supply. Answers varied from 104UZS (current tariff) up to 110 and for analysis the average was calculated.

Poor	16	16	49	12
Non-poor	24	23	26	14
Urban	18	18	37	15
Rural	24	21	37	9

Source: Households Survey, February 2013

179. As one can see from the table above about 10% of the surveyed households were having difficulties to answer the questions regarding tariffs. At the same time out of those who answered, majority expressed their willingness to pay up-to 115 UZS per 1 KwH which is about 10% increase of the current tariff. The larger share of the poor households is ready to pay this amount for the improved service in energy supply. Equal share of the respondents are ready to pay 125 UZS and 120 UZS per KwH provided that the energy provision is consistent and reliable.

B. Impact of Access to Reliable and Constant Electricity Supply on Entrepreneurship and Small-Scale Business Development

180. Problems related to the energy supply such as frequent and prolonged interruptions as well as low voltage and power jumps are some of the factors that hamper the expansion and development of small-scale businesses, including those organized at household level. The negative effects include increased production costs due to the needs to buy electricity generators, as well as ensure availability of fuel during the cut-offs. In addition, the power jumps and low voltage often leads to equipment failures. It should be kept in mind that the quality and volume of sales of certain products often depends on the energy supply. Especially nowadays, when most of the employees, pensioners and students receive their salaries, pensions and stipends in non-cash basis (Bank payment cards/deposit cards), lack of electricity during the process of purchasing means no payment can be done, and this situation affect both businesses and customers. In all cases, interruptions in the supply of energy result in decreased productions, sales and thus profits for the entrepreneurs and it undermines the sustainability of small-scale enterprises.

Our shop is serving population with the grocery products, some fruits and vegetables and basic households stuff. For proper functioning and to keep all our goods fresh we need all our refrigerators work properly 24/7. In addition all our non-cash payments can be made only if electricity is stable. In other words, success of my business in many ways depends on the sustainable energy supply.

Shop Owner

181. According to the specialists of “Energotaminlash” (Energy distribution office) sufficient energy supply is important not only for the existing businesses but even more important for regional development. Every new business that want to be initiated need to receive approval on available energy resources in this area that can be used for the new business development.

D. GENDER ANALYSIS IN KARAKALPAKSTAN AR

182. The total number of women in Karakalpakstan AR is approximately 873 thousand, or 51% of the population. 15% of the households surveyed in Karakalpakstan are headed by women. Among those who are women-heads 84% are widows, 3% divorced and 12% reported that they are married. There are no significant gender disparities between men and women headed households in terms of labour migration. In 9% of women headed and 8% of men headed families the head of the household or his/her spouse is working outside of the place of permanent residency.

183. However, there is considerable difference between women and men headed households in urban and rural areas. If in urban areas 13% of the women headed households heads or their spouses are working outside of Uzbekistan, in rural areas no such cases were registered during the survey. (Annex Q1_4)

184. Level of labour migration is quite significant in Karakalpakstan. In average, at least one member from 31% of the women headed and 25% of men-headed households worked outside of Uzbekistan for at least five month in 2012. There are some disparities between families from rural and urban areas in terms of participation in labour migration. In urban areas this type of employment is more common among women headed households, while in rural areas the are more members of the men headed households participating in labour migration. (Annex Q2_3)

185. In Karakalpakstan there is a slight difference in income between female-headed households and male-headed households (636,000UZS and 681,000UZS respectively), yet poverty rate is almost the same with the difference only 1%. In general men-headed households are more activity involved in home-based agricultural activities. Both in urban and rural areas more men-headed households breed cattle and poultry, and thus received additional income from this type of activities.

186. The analysis of the respondents' answers with regards to the affordability of the basic goods and services for the households members revealed considerable disparities between men and women headed households. In general men-headed households are much better- off in terms of meeting the expenses on basic needs. This difference especially substantial in the level of affordability of costs associated with education of the households' members. (Table 2.15)

Table 2.15 Affordability of basic goods and services or the men and women headed households in Karaklpakstan AR

	Women-headed HH	Men-headed HH
Foodstuff	**90**	**92**
Urban	92	91
Rural	85	92
Clothing and footwear	**71**	**81**
Urban	68	79
Rural	75	84
Fuel	**50**	**57**
Urban	45	52
Rural	60	65
Healthcare services/Medicine	**76**	**81**
Urban	71	78
Rural	85	85
Education	**59**	**73**

Urban	63	72
Rural	50	75
Communal Payments	**78**	**90**
Urban	79	91
Rural	75	90
Leisure and entertainment	**48**	**66**
Urban	45	68
Rural	55	63

Source: Households Survey, February 2013

187. In addition, there is a difference in terms of using expensive household appliances. With exception of washing machines, all other electrical home appliances are available more in men-headed households. (Annex Q4_3_1-Q4_3_15). The same pattern observed in ownership of transport means. In Karakalpakstan only 3% of women headed households, compared to 20% of men-headed have car or minibus.

188. Education levels of female heads of households are lower compared with male heads, but higher compared with women in general sample. In female-headed households, the level of average monthly income is lower than that of male-headed households, at the same time, per capita income in men headed households is lower, due to the bigger family size. Analysis of the data from the HHS demonstrated that female heads of households having very low levels of economic activity (which is often explained by their old age). 72% of the women head are unemployed. The share of entrepreneurs among working female household heads, is relatively high but almost three times lower than that of men. (Table 2.16).

Table 2.16 Profiles of Households Headed by Women and by Men in Karakalpakstan AR

	Women	Men
Heads of Households who have Not Completed School Education, %	19%	6%
Heads of Households who Have Secondary Vocational Education, %	22%	32%
Heads of Households who have Higher Education, %	16%	17%
Households' Heads in Employable Age and Older, Who Are Entrepreneurs, %	28%	78%
Unemployed Heads of Households of Employable Age and Older, %	72%	22%
Employed Heads of Households of Employable Age and Older, %	9%	38%
Children Under 16 years of Age, %	28%	27%
Household Size, Persons	5	6
Average Monthly Income, 000's SUM (thousand)	636	681
Poverty Rate, %	48%	47%

Source: Households Survey, February 2013

189. Gender differences in education indicators are not significant. Education levels of women compared with those of men is slightly higher in secondary and professional education, however equal share of men and women completed higher education. (Table 2.17).

Table 2.17 Education Indicators for Women and Men in Karakalpakstan AR

as % of gender groups above 16 years of age

	Women	Men
Completed Education Level		
No Education, %	11%	12%
Incomplete Secondary Education, %	4%	5%
Secondary Education, %	37%	34%

Secondary Vocational Education, %	26%	24%
Higher Education, %	7%	7%
Continue Receiving Education, %	16%	18%

Source: Households Survey, February 2013

190. The level of economic activity among women of employable age is low not only when compared with men (35% versus 77%), but also when compared with women who are heads of households. Out of all economically active 70% of women and 54% of men have a job (at least a temporary one). Unemployment rate is higher among employable age male members of the surveyed households. 65% of the female members of the households who are of employable age are economically inactive, and overwhelming majority are not working or looking for employment opportunities. At the same time share of the students is more than three times higher among the men compared to the women after 18 years of age.

Table 2.18 Employment Status of Employable-Aged Respondents by Gender in Karakalpakstan AR (as % of employable-age gender groups)

	Total	Men	Women
Economically Active	58	77	35
Employed	59	54	70
Unemployed	41	46	30
Economically Inactive	42	23	65
Students	15	30	9
Pensioners	11	24	15
Neither work, nor look for a job	73	46	77

Source: Households Survey, February 2013

191. Cultural factors also seem to contribute to the low levels of women's employment. Women with young children appear to have less employment opportunities and, according to World Bank estimates, in Uzbekistan, each child under 5 years that a woman has, decreases her chances of being employed by 7%[9].

192. Judging by the results of the household survey, both female and male-headed households have similar living conditions. Both types of households live in the same types of accommodation, and have similar access to piped water and sewerage systems. Improvements of amenity rooms (kitchen, bathroom and toilet) are also on the same level. In other words, all households, regardless of the gender of the household head, have to deal with the same problems, related to the quality of communal services.

193. Monthly consumption of electricity in Women and Men headed households on average the same. Women headed households similarly to men headed identified the same three major problems related to electricity supply: Frequent interruption of the power supply is the major problem, the second problem is low voltage of electricity and the third in the priority list is long-lasting electricity disruptions. (Annex Q5_5_1-Q5_5_3)

194. The survey has shown that the main responsibilities related to the household chore lies with women (wife, doughter or doughter in law) with no difference in the gender of the head of household, and this responsibility can be quite burdensome, especially in the living conditions with the limited access to the centralised water supply, heating system, sewerage system and inconsistent energy supply. For

[9] Living Standards Assessment (LSA), World Bank, 2003.

example, as already mentioned in previous chapters of this report, all households surveyed have to hand-wash all clothing and bed-sheets. Naturally, larger share of women headed households noted that current supply of electricity is not sufficient to meet the current needs of the household.

E. CONSULTATIONS AND PARTICIPATION

195. During the survey and structured and in-depth interviews, Local Government and residents of households showed extremely high interest in the Proposed Project. The majority of the households (81%) are confident that, after the completion of the project their households will have access to a normally operating energy supply system. In general the higher share of the poor households (with exception of opportunities for the home-based business) trust that that the project will improve the current situation with the energy supply (Table 2.19).

Table 2.19 Trust and Willingness of Households in Karakalpakstan AR

as % of sample size

After the completion of the project your households will have:	Total	Poor	Non-Poor
Better energy supply	81	81	80
Energy supply without frequent disruptions	81	86	77
Increased opportunities for home-based business	55	49	60
Improved services of the social infrastructure organizations	60	60	60
Improved street lightening	46	51	41

Source: Households Survey, February 2013

196. It is important to note that 17% of respondents, who were not able to answer the questions expressed their doubts not about the project outcomes, but about the capacity high voltage lines and local electricity transmission lines. Respondents also articulated their concerns about capabilities of the Uzbekenrgo and Eletrotaminlash to keep the system functioning satisfactorily after the completion of large-scale works.

197. During the household survey, as well as during in-depth interviews with households, entrepreneurs and specialists, respondents emphasized that construction and instalment of the new CCGT in Takhiatash Power Plant have to be accompanied with works on increasing capacities of high voltage power lines and local lines. In their opinion, unless these works are done in parallel it will not be possible to ensure the constant supply of the energy to the households and businesses.

It is necessary to ensure that the power lines are in proper conditions, and are able to withstand the increased voltage. Otherwise situation will remain the same even with the better production at the Takhiatash Power Plant. ***Ovul' Resident***

198. Despite the well-grounded scepticism regarding the capabilities of the Uzbektaminlash and Uzbektarmoq to keep the system functioning sustainable, the willingness of households to participate in implementing the Project appears to be very high. At the same time 37% of the households are ready to pay 10% increase for

the improved energy services and 20% of the surveyed respondents are ready for 15% increase.

199. In average 68% of the respondents in Karakalpakstan AR having electricity cut-offs every day, including 76% of the rural and 62% of the urban households. 60% of the households surveyed facing these problems households from 1 up-to 5 hours. Therefore, the urgency of the proposed project is evident to a majority of respondents. Besides, in the opinion of more than half of the respondents, improvement of the energy supply as a result of the project will increase opportunities for the home-based business activities.

200. During the household survey, respondents were offered an opportunity to rank in order of priority, the investments needs in the electricity supply systems in their region (Table 2.20). According to respondents in Karakalpakstan AR, the main priorities should be, firstly, reconstruction and modernization of the existing Power plants, and secondly, construction of the new plants. The third priority for the investments that are important for the households is improvement of the customer services, with the special attention to the billing and payment system efficiency, timely response to the customer complains, and customer orientation.

Table 2.20 Opinion of Surveyed Households Regarding Priority Directions for Investments in Energy Supply System in Karakalpakstan

	Total	Poor	Non-Poor
Reconstruction and modernization of the existing Power Plants	67	64	70
Construction of the new power plants	56	61	52
Maintenance and service of the high-voltage lines	34	31	36
Maintenance and service of the local power lines	21	21	20
Improve customer services	41	40	42
Introduction of new technologies on the Power Plants	31	31	32

Source: Households Survey, February 2013

IV. SOCIOECONOMIC IMPACT OF TAKHIATASH TPP EFFICIENCY IMPROVEMENT PROJECT

201. While the project will not have a direct impact on income growth and poverty reduction in Karakalpakstan AR, the indirect impacts on the living standards and well-being of the local population will be significant. The expected economic and social impacts of the proposed project will include the following:

(i) If the proposed project is implemented, the population of the Karakalpakstan AR will have access to improved electricity supply, which will significantly improve the lives residents. Due to the higher thermal efficiency of the combined cycle turbine the use of gaz for the electricity production will be more effective, and thus the frequency and length of the power supply interruptions to the households will be significantly reduced, and consequently have positive impact on the people lives. This is particularly important for those households who currently cannot afford the costs of diesel energy generators and fuel.

(ii) Implementation of the sub-project will significantly increase the quality of life of socially vulnerable population groups: elderly, people with disabilities, and children. The sub-project will have particular impact on improving women's quality of life, as mostly women are responsible for household chores, and also looking after small children, old people and people with disabilities. The Implementation of the project will reduce time spent on time and labour-consuming domestic tasks which can be made easier with the use of modern electrical appliances.

(iii) Financial benefits will also be received by those households, who are facing problems related to the damages of the electrical home appliances due to electricity failure, low voltage or power line surges.

(iv) There will be some direct impact on the levels of employment in the project area, although it will not be significant. A number of jobs for skilled professionals will be created in the proposed construction of the Community Service Center within third component. Jobs for unskilled workers could also be created during construction activities of the Housing and the Center in the form of public works that may involve some currently unemployed persons registered in the local employment offices. The indirect impact of the sub-project on employment will be in the form of expanded opportunities for employment and self-employment in such sectors as public catering and service provision.

(v) Implementation of the project will enhance the capacity of private undertakings in production and service provision, and will lead to increases in the volume, quality and competitiveness of their products and services. This will indirectly promote the increase and stabilization of income received by employees of these enterprises.

(vi) Providing an adequate energy supply for social infrastructure (secondary schools, vocational colleges, kindergartens, and other social and cultural establishments) and private enterprises in the service and food catering sectors, will increase the quality of the services provided to the population.

(vii) The project will improve the overall lightening of public places of the region and roads, which are presently in poor condition owing to the continual energy saving measures. This is particularly important for people with disabilities and elderly people, as well as women, who suffer the most from the bad lightening of the streets.

(viii) Implementation of the project will contribute significantly in the recovery and enhancing of the mahallas' social capital, and will increase the level of trust in local authorities, public bodies and local self-government.

(ix) The social capital of communities will increase through the mobilization and involvement of local people in the project through consultations, surveys and involvement in technical activities related to the project, as well as through the capacity building activities and trainings on consumers' rights protection.

(x) Implementation of the project will enable the increased effectiveness of other related projects, which are being implemented in Karakalpakstan AR funded by the State budget and other donors, including projects on development of small-scale business, family business and home-based work.

The comprehensive matrix of the Program impact on poverty reduction and its social strategy is illustrated in the linked document to this PSA report (SPRSS Matrix).

V. RESULTS OF THE SOCIO-ECONOMIC ANALYSIS IN KHOREZM REGION

A. SOCIO-ECONOMIC PROFILE OF KHOREZM REGION

202. During the organization of the Rapid Social Analysis and household survey, it was decided that taken into consideration that Takhiatash TPP supplies energy to Khorezm region along with Karakalpakstanthe secondary data will be collected in Khorezm region. 400 households across the region were randomly selected in urban and rural areas.

203. Khorezm region is situated on the north-western part of Uzbekistan, on the left bank of Amudarya river. The territory of the region is 6,1 thousand sq.km, or 1,4% of the total territory of Uzbekistan. On the north, Khorezm region shares the boarder with Karakalpakstan and on the south with Turkmenistan. Climate of the region is sharp-continental, with the difference between minimum and maximum temperature around the year about 78^{o}C, reaching in summer +43-+45^{o}C and in winter dropping down to -30^{o}-33^{o}C.

204. The population in the region as of January 1 2013 is 1,654.2 thousand people. Of which 33.2% live in urban areas and 66.8% - in rural areas. The average population density is 271.2 people per 1 sq. km. The average population growth in 2012 was 16.6 people for 1000 population.

205. Traditionally in Uzbekistan parents live with the family of the oldest son in the one household and household may consist of more than one familyu. In total, in Khorezm region, 439,432 families resides in 267,422 households, in average 1.6 families per household.

206. 55.5% of the population of Khorezm region are of employable age. Out of 917.9 thousand people of employable age 643.4 or 70% are employed. 37.2 thousand people were registered in employment offices as looking for jobs in 2012. 32.6 thousand were provided with employment through re-training schemes and regional programs on new jobs creation.

207. Average monthly wage in Khorezm region in December 2012 was 833,100 UZS. Average per capita income in December 2012 was 248,162 Uzb Soum. According to the data from Statistic Department 3823 families were receiving social benefits for low-income families.

208. Education system in Khorezm region represented by 263 kindergartens, 531 general education schools, 85 professional colleges and 6 academic lyceums. There are 3 Higher Education Institutions, all of which located in Urgench city, with the total number of 8324 students. 6327 students are enrolled in secondary-special and professional education courses in colleges and lyceums as of December 2012. All educational institution in the region are connected to the centralised water supply system and electricity.

209. Healthcare system in Khorezm region is introduced by in-patient and out-patient institutions. There are 33 in-patient medical facilities in the region with the total capacity 6688 beds. At the same time it should be mentioned in this report that availability of hospital beds for pregnant women and women in labour in Khorezm region is lower than average in the country, substantiated by 21.2 beds for 10,000 women compare to the average national indicator of 24. The situation is no

different with the provision of hospital beds for children of age 0-14. In Khorezm region this indicator is 25.1 compare to average national 27.1. [10]

210. Access to basic communal services: According to the data received from Koream regional khokimiat 100 % of households are connected to the centralised electricity supply system. Household survey results confirmed this information. Analysis of the respondents answers suggest that, in average only about 50% of households surveyed in Khorezm region are connected to the centralised potable water supply system. Access to the heating system and sewerage services is extremely low in the region (Table 3.1).

211. Coverage of the households with the land-line telephone services is limited, with only 32% of the households surveyed reported that they have telephone line in their houses. There is about 10% difference between poor and non-poor households in access to these services.

Table 3.1. Coverage of Households with Municipal Services in Khorezm region

	Percentage of the households with access to				
	centralized water supply	**electricity**	**centralized heating system**	**Centralized sewerage system**	**Land-line telephone**
Khorezm Region					
Total	50	100	4	0	32
Poor	46	100	7	1	26
Non-Poor	53	100	2	0	35

Source: Households Survey, February 2013

C. Poverty Profile, Incomes and Employment of the Population in Khorezm Region

212. The average Monthly Income in Khorezm region, in January 2013 was 855,000 UZS, with the substantial difference between the level of income among the poor and non-poor households. (Table 3.2)

Table 3.2. Income of Poor and Non-poor Households in Khorezm Region

	Average Monthly Income, UZS	Average Monthly per Capita Income UZS
Total	855,000	142,500
Poor	455,000	75,833
Non-poor	1,063,000	177,166

Source: Households Survey, February 2013

[10] Women and Men of Uzbekistan, 2007-2010, Statistical Bulletin, State Committee of the Republic of Uzbekistan on Statistics, Tashkent, 2012 page 99

213. The most significant income source in terms of contribution to family income is income received from remittances (in average 30% of household income) with 35% of the total number of surveyed households receiving this type of income. Salaries are the second largest source of households income, and 45% of households reported to have it. Entrepreneurial activities, such as small scaled businesses, income from growing and selling agricultural products and cattle in total bringing in about 16% of the income.

Table 3.3. Average Weighted Structure of Income of Poor and Non-poor Households in Khorezm region

	Average Total Income, UZS	Percentage of Households Receiving such Income, %	Average weighted total income	Contribution to Total Household Income, %
Salaries from hired employment	**517**	**45**	**231**	**27**
poor	306	**35**	107	22
non-poor	**594**	**51**	300	28
Income from growing and selling vegetables and fruits on your own or rented land	**159**	**15**	**24**	**3**
poor	**124**	**16**	20	4
non-poor	**179**	**15**	26	2
Income from growing and selling cattle	**214**	**13**	**27**	**3**
poor	**135**	**9**	13	3
non-poor	**241**	**15**	35	3
Income from fishing and forestry (collecting forest / mountain herbs, berries or firewood)	**310**	**1**	**2**	**0**
poor	**500**	**1**	4	1
non-poor	**120**	**0**	0	0
Income from trade or small business	**514**	**17**	**89**	**10**
poor	**222**	**19**	42	9
non-poor	**691**	**17**	115	11
State Pensions	**335**	**45**	**150**	**18**
poor	**274**	**50**	138	28
non-poor	**374**	**42**	159	15
Stipends received by students in household	**220**	**4**	**8**	**1**
poor	**135**	**1**	2	0
non-poor	**234**	**5**	11	1
Benefits received from mahalla	**199**	**10**	**20**	**2**
poor	**150**	**13**	20	4
non-poor	**238**	**9**	21	2
Money transfers from friends or relatives who are not members of your household	**25**	**0**	**0**	**0**
poor	**0**	**0**	0	0
non-poor	**25**	**0**	0	0
Rents from renting land or accommodation	**0**	**0**	**0**	**0**
poor	**0**	**0**	0	0
non-poor	**0**	**0**	0	0
Remittances/ Labor migration	**725**	**35**	**254**	**30**

	Average Total Income, UZS	Percentage of Households Receiving such Income, %	Average weighted total income	Contribution to Total Household Income, %
poor	**438**	**23**	102	21
non-poor	**810**	**42**	338	32
Temporary employment/occasional work	**426**	**12**	**50**	**6**
poor	**323**	**12**	38	8
non-poor	**479**	**12**	57	5
TOTAL			**855**	**100**
poor			485	100
non-poor			1 063	100

Source: Households Survey, February 2013

214. Another relatively large source of income is old-age pensions contributing about 18%, and as it was revealed about in average 45% of the total number of households surveyed were eligible for this type of income. Mahalla-provided social benefits for low-income families do not contribute significantly to household income (in average this types of income contributing about 2% in total households' income).

215. Average total income in poor families is considerably lower than in non-poor ones and per capita income in the poor households is twice lower than in non-poor families (80,833 UZS and 177,166 UZS respectively). The structure of income is different with the higher dependence of poor families on the State pensions and low-income families benefits received from Makhalla, and salaries and remittances contribute higher share in total households' income in non-poor families.

216. Various sectors of economy are playing different role in the households income generation. In Khorezm region, according to the results of the HHS analysis the largest share in the total households income come from Remittances, with the significant difference between poor and non poor households. In poor families this type of income constitute about 32% while in non-poor ones around 42%. Income earned in education and health sectors is the second largest source, and represent about 19% of the total household income.

Table 3.4 Role of different sectors of economy and types of economic activities in Income generation

Sectors of economy/Types of economic activities	% of households received income from this sector			Average Weighted Income (000 UZS)	% in total household Income
	Total	Urban	Rural		
Education and Health	**25**	**29**	**22**	**121.77**	**18.98**
Poor	14	12	15	41.05	12.7
Non-poor	31	38	27	166.17	20.56
Public Services	**15**	**13**	**16**	**57.9**	**9.02**
Poor	7	10	6	20.4	6.3
Non-poor	19	15	22	78.6	9.72
Small business activities and trade	**18**	**25**	**14**	**89.6**	**13.97**
Poor	20	29	16	44.9	13.88
Non-poor	17	24	13	114.7	14.2

Tourism and associated activities	**1**	**0**	**1**	**2.5**	**0.39**
Poor	0	0	0	0	0
Non-poor	1	0	1	3.86	0.47
Construction	**3**	**1**	**2**	**11.5**	**1.8**
Poor	4	0	5	13.86	4.28
Non-poor	3	2	4	10.4	1.28
Agriculture/Forestry	**12**	**3**	**16**	**30.4**	**4.74**
Poor	13	0	19	33.5	10.36
Non-poor	11	4	15	31.1	3.84
Temporary Employment and occasional works	**14**	**20**	**11**	**56.1**	**8.74**
Poor	15	24	12	51.8	16.02
Non-poor	13	16	11	55.0	6.8
Manufacturing	**4**	**4**	**3**	**12.18**	**1.9**
Poor	5	10	3	15.5	4.79
Non-poor	3	2	4	10.6	1.31
Remittances	**35**	**36**	**34**	**253.7**	**39.5**
Poor	23	31	20	102.3	31.6
Non-poor	42	40	43	337.7	41.78
Total Income from all sectors of economy				**641.35**	
Poor				**323.31**	
Non-poor				**808.13**	

Source: Households Survey, February 2013

217. Although Khorezm region considered to be a one of the touristic centres in Uzbekistan income from the employment or business activities from tourism or other associated services is diminutive. Only one percent of the non-poor households are having income from this sector. In average about 18% of all households participated in the survey in Khorezm, earned income through the small business and trade. These earnings are making about 14% of the total family income.

218. While there is no significant difference between poor and non-poor households in participation in temporary employment and temporary works, in urban areas there are more households' members are engaged in these type of employment. At the same time in poor families this income comprise more than 16% of the total income, and only about 7% in non-poor once.

219. The difference in the structure of the household expenditures between poor and non-poor households is not significant. Slightly higher share of the non-poor households having expenditures on leisure, entertainment. Affordability of fuel is much lower among poor households compared to non-poor ones. Concerning the expenses for healthcare and education, these expenditures are less affordable for the poor households in comparison with non-poor families.

Table 3.4 Average structure of the Expenditures in Poor and Non-poor households in Khorezm Region

	Percentage in Total Expenditures	Percentage of Households Having such Expenditures
Foodstuffs	**41**	**99**

	Percentage in Total Expenditures	Percentage of Households Having such Expenditures
Poor	40	99
Non-poor	42	99
Clothes & Footwear	**10**	**97**
Poor	10	97
Non-poor	10	98
Fuel	**7**	**95**
Poor	7	93
Non-poor	6	98
Medical Services and medicine	**6**	**97**
Poor	6	96
Non-poor	6	99
Education	**6**	**97**
Poor	6	96
Non-poor	6	98
Communal Payments	**15**	**98**
Poor	16	98
Non-poor	15	99
Leisure and entertainments.	**9**	**80**
Poor	9	80
Non-poor	10	81

Source: Households Survey, February 2013

220. The analysis of the HHS results confirmed that family size and structure have its influence on total and per capita household income. Large households with more children and less number of members of employable age have more chances to become poor. The analysis of composition of poor and non-poor households in Khorezm region demonstrates that in average poor households have higher number of members (6.7 against 5.6 members in non-poor households) and children under age 7 (16.4% of the average poor households are children under age 7, compared to 10.7% in non-poor households).

Table 3.5 Demographic Characteristics of Poverty in Khorezm region.

	Average Family Size, Persons	Family Members under 7 Years of Age, %	Family Members 8-18 Years of Age, %	Family Members in Pension Age, %	Men of employable age, 18-60 Years %	Women of employable age, 18-55 Years %
Total	6	13.6	18.3	11.6	30.8	27.8
Poor	6.7	16.4	17.9	11.9	27.4	27
Non-poor	5.6	10.7	17.8	12.5	32.1	28.3

Source: Households Survey, February 2013

221. There is a link between poverty and the educational levels attained both by the head of household and other household members. In poor families, the number of households' heads with incomplete secondary education is slightly higher than in non-poor households. In general heads of non-poor households have completed

higher level of education, 23% of the households' heads of non-poor families have completed secondary vocational education, and that indicator is about twice higher than in poor households. The same tendency is observable for the households' members, in general there are more members of non-poor households with completed higher and tertiary level of education.

Table 3.5. Education Indicators for Household Heads in Khorezm region

% Household Heads in Khorezm region			
	Total	Poor	Non-poor
No Education	0%	0%	0%
Incomplete Secondary Education (7-9 Forms)	2%	3%	2%
Complete Secondary Education (10-11 Forms)	64%	72%	59%
Secondary Vocational Educations	19%	12%	23%
Higher Education	15%	13%	16%
Students	0%	0%	0%
% Household Members in Khorezm region			
	Total	Poor	Non-poor
No Education	0%	0%	0%
Incomplete Secondary Education (7-9 Forms)	5%	5%	5%
Complete Secondary Education (10-11 Forms)	59%	66%	55%
Secondary Vocational Educations	27%	25%	28%
Higher Education	9%	5%	12%
Students	8%	8%	9%

Source: Households Survey, February 2013

222. An economic activity level in Khorezm region is relatively low and equal to 40% (Table 3.6). Economically inactive segment composed of the rather small segment of students (9%) pensioner and people with disabilities (6%) and the rest of the members are those who neither work nor look for job (85%). The unemployment rate that was registered in the households surveyed is noticeably high and achieving 26%. Among those who are employed, the largest group, representing 23% of all employed are working in education and culture sector. More than 17% of the employed are working in agriculture and about 15% in construction sector. About 17% of all those who employed are engaged in other types of employment, including labour migration and temporary employment.

223. There is a insignificant difference (within 10%) between poor and non-poor households in terms of economic activity and employment levels. The rate of unemployment in poor households is slightly higher than in non-poor households, and the share of economically inactive among all members of employable age is about 10% higher compared to the non-poor families.

224. At the same time there is a difference in the structure of employment between poor and non-poor households .Poor households members are more often employed in agriculture sector, while in non-poor households larger share of the members are working in state financed education and culture sectors and health and medical services.

Table 3.6. Economic Activity and Employment Indicators of Household Members in Khorezm region (% of employable age members)

	Total	Poor	Non-Poor

Economically Active	40	34	43
Employed	74	72	76
Unemployed	26	28	24
Economically Inactive	61	66	57
Students	9	8	9
Pensioners and People with Disabilities	6	6	5
Neither Work, Nor Look for a Job	86	86	85

Source: Households Survey, February 2013

C. ENERGY SUPPLY AND ELECTRICITY USAGE IN THE HOUSEHOLDS OF KHOREAM REGION

1. Electricity supple and use of energy

225. According to information obtained from the Regional Khokimiyat of Khorezm Region 100% of the households are connected to the centralised energy supply system. However, there is no centrally collected information with assessment of the quality of the energy supply.

226. Analysis of the data regarding the coverage of the households with the centralized energy supply system confirmed the data provided by the Local Government office. All surveyed households connected to the electricity supply system. However, many households Khorezm rural and urban areas reported that the quality of the energy supply is low.

227. In Khorezm region households operate two types of electricity meters. The new electronic meters were installed in average in 52% of the surveyed households, with relatively high difference between rural and urban, as well as poor and non-poor households. For instance 40% of rural poor compared to 55% of non-poor households use electronic meters. Second type of the meters is mechanical (non-electronic) used in average by 48% of the households. Although use of non-electronic meters assumes that the payment for the electricity is made on consumption basis, majority of the households reported that payment are withheld monthly from salaries and pensions on the prepayment basis.

Table 3.7 Availability of the electrical home appliances in households in Khoresm Region (% to the sample)

Type of appliance	Total	Poor	Non-poor	Urban	Rural
Electrical Sewing Machine	3	2	3	3	2
TV set	100	100	100	100	100
DVD player	61	53	66	72	56
Washing Machine (17)	29	28	29	14	36
Electrical Stove	9	6	10	15	6
Refrigerator (13)	87	83	89	94	83
Mobile Phone	95	94	96	95	95
Computer/Laptop	9	6	10	12	6
Air conditioner	7	5	8	9	6
Water heating system	1	1	1	1	2
Electrical heater	3	1	5	7	2
Iron	85	77	89	91	81

Source: Households Survey, February 2013

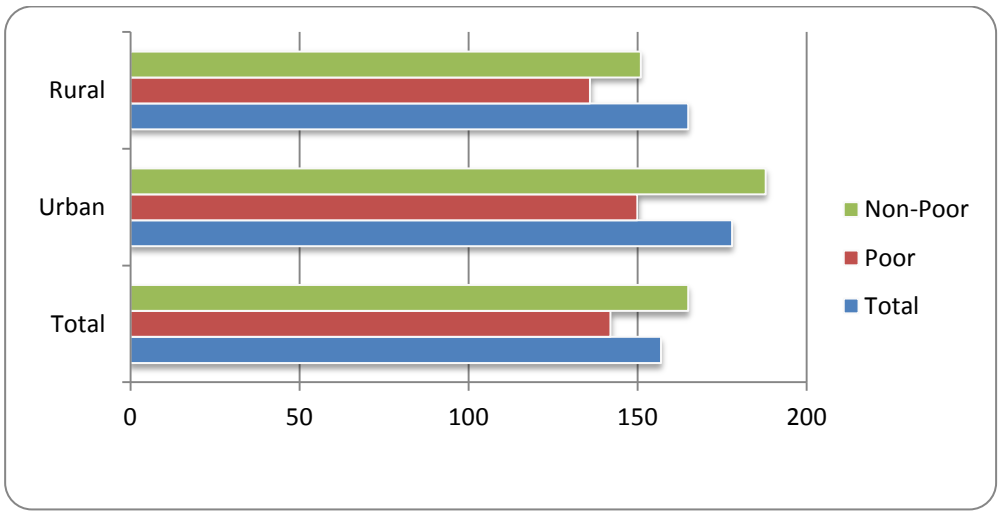
228. The Household survey among others assessed availability of basic electrical home appliances in rural and urban areas of Khoream region and across poor and non-poor households. (Table 3.7) As one can see in February 2013 all households participated in the survey had TV set. Availability of the other electrical appliances varies among poor and non-poor households, as well as between families residing in rural and urban areas. (Annex Q4_3_4_1-Q4_3_4_12). Although availability of refrigerators and irons is not universal, however these indicators are much higher compare to the households in Karakalpakstan AR. It should be mentioned in this report that average age of the refrigerators in Khorezm region households is about 13 years.

229. Situation with washing machines even more discouraging, average age of the washing machines in the surveyed households is about 17 years. In average less than 30% of the respondents reported that they have this type of equipment. However, it is interesting fact that pattern of availability of the washing machines is different from the other home appliances, higher share of the owners among rural households. The difference between rural and urban households is quite significant, the share of the rural respondents having chances to use washing machines is 2.5 higher compared to the poor ones.

230. More than 90% of the households are using regular electrical lamps on their houses due to the unavailability in the local shops or higher costs of the energy-saving lamps. 94% of the respondents reported that none of the electrical home appliances presented in their households have sticker A.

231. In average the share of households expenses on electricity bills was about 30,000UZS, which is according to the respondents assessment in average 9% of the total households expenditures in January 2013, with no difference between main stratums (poor-non-poor and urban-rural). However, both in urban and rural areas, consumption of energy in average is 16% higher among non-poor households.

Chart 3.1 Energy Consumption in Urban and Rural Areas in Khorezm Region



232. The HHS results revealed extremely low level of use of electrical washing machines in Khorezm region. In average 99% of the all surveyed households are hand- washing the clothes and bed-sheets. In rural areas, no cases of using washing machine were identified during the survey. In almost all households washing and laundry is responsibility of women (wives and daughters/daughters-in-low).

233. 92% of the households participated in the HHS reported that provision of the energy in their houses is not constant. In urban areas situation is a little better compared to the rural settlements. While 80% of the urban households assess the energy supply as not stable in rural areas this problem is faced by almost all surveyed the households (98%). The answers of the respondents for the next question supported these findings, 100% of the households from rural areas confirmed that they have electricity disruptions compared to the 93% of the urban respondents. (Annexes Q5_2 and Q5_3)

234. In average 84% of the respondents in Khorezm region never been informed prior to the energy supply cut-off and 93% of the families (with 15% difference between urban and rural respondents) informed interviewers that they are experiencing electricity cut-offs every day. The length of the energy supply cut-offs varies from five minutes for up-to more than 5 hours a day.

235. Substantial difference between urban and rural households can be seen in the prolonged disruptions in the electricity provision. Whereas in urban areas disruptions for more than 5 hours were reported only by 2% of the respondents, in rural areas such long-lasting interruptions were encountered by 28% of the surveyed households. (Table 3.8)

Table 3.8 Electricity cut-offs in households in Khorezm Region (%)

	Total	Urban	Rural
Length of electricity supply disruption			
Less than 5 minutes	1	0	1
More than 5 min, but less than one hour	28	40	22
More than 1 hour, but less than 5 hours	50	51	49
More than 5 hours	19	2	28
Omitted question	2	7	0
Frequency of electricity supply disruption			
Every day	93	83	98
2-3 times a week	2	2	2
At least once a week	1	1	0
Less than once a week	2	7	0
Omitted question	2	7	0

Source: Households Survey, February 2013

236. Respondents from Khorezm region is much better informed about the rules of Uzbekenergo on the supply and use of electrical energy compared for example with residents of Karakalpakstan region (Annex Q_9). Knowledge of this rules are very important for the consumers rights protection, however although the situation with the energy supply in rural areas is much more difficult, less respondents from the rural households know these rules (54% of respondents from rural areas compared to 64% in urban).

237. Analysis of the results revealed that in average in 87% of the the households participated in the survey current level of energy supply is not sufficient to meet the essential needs in electricity. And again, situation in rural areas much more difficult. Only 9% of the rural households compared to the 21%of the families residing in the urban areas think that existing level of electricity provision meets their basic needs. In addition, assessment of the possibilities to use electrical equipment, demonstrates that 88% of the rural households and 79% of the urban households believe that in the present situation with the frequent and long lasting energy cut-offs, they are not able to fully use all essential home appliances

238. Out of all 400 households surveyed in Khorezm region only 7 reported that they are engaged into home-based entrepreneurial activities. Majority of those who involved in such activities (75%) agreed that current level of energy supply is not sufficient for full use of equipment needed for success of business activities. All of them indicated that frequent and long lasting interruptions of energy supply has a negative impact on business process.

239. Energy provision disruptions affect not only households but also social infrastructure organizations, such as schools, kindergarten, and sometimes healthcare organizations, although hospitals and health clinics are classified organizations which cannot be cut-off from electricity supply, unless emergency situation. About 7% of the survey respondents mentioned that electricity cut-offs had an effect on the households members while they were in schools, policlinics or other organizations. Other service providers, such as beauty salons, Paynet services, grocery and convenience stores, are experiencing energy interruptions the same as all households in the neighbourhood area.

240. Within the household survey' respondents selected three most important problems with regards to the energy provision of their households. In average, 91% of the households surveyed consider that frequent interruptions in power supply is most critical problem which affect the quality of their life. The second problem prioritised by the respondents is long duration of the interruptions, 80% of respondents indicated it as one of the most important. The low voltage of the electricity in the households is the third most often identified problem. There is no difference between urban and rural households in prioritization of the problems concerning the energy provision. (Table 3.9)

Table 3.9 Ranking the significance of the problems faced by Rural and Urban Households with energy supply in Khorezm Region (in % to the answers)

Problems	Total	Urban	Rural
Frequent Interruptions in Power Supply	91	81	97
Long-lasting electricity supply disruptions	80	65	87
Power Surges	32	28	33
Low Voltage	49	51	47
Low level of quality services	14	11	15

Source: Households Survey, February 2013

241. Majority of the households (76%) evaluated the overall level of services on energy supply as below average, with 42% of the respondents indicated that the overall quality of the services provided are very bad. Majority of the respondents satisfied with the quality of electricity meters, however level of satisfaction by services related to the accuracy of the billing systems, customers assistance such as

responses to clients' complains and timing for repairing and maintenance works were evaluated below average by majority of the respondents (Annexes Q5_36_1 - Q5_36_6). When asked about the way of improvement of services provided by Uzbekenergo 34% of the survey participants referred to the ensuring constant and sustainable electricity supply.

2. Payment for Electricity Supply and other associated costs

242. Analysis of the data collected in Khorezm region regarding the use of diesel electricity generators revealed that very limited number of families (17 households, in other words only 4% of the total number of households) use diesel electricity generators in the households during the cut-offs, or for additional needs in energy. Almost all households, which are using diesel generators, reside in rural areas. There is a small difference between rural urban and poor with 5% of non-poor and 8% of poor households reported to have in their possession and use diesel generators.

243. Households using diesel generators reported that their generators produce in average about 98 KwH energy a month. The distribution of the respondents answers varied from 40 to 200 KwH. The average expenditures of the households on fuel for the diesel generators in Khorezm region was 25,000 UZS a month. In urban areas, households spend about 20,000 UZS for this purpose, and households in rural areas in average 26,000 UZS a month. Based on this data, we can calculate average cost of 1 KwH produced by diesel generator in urban and rural areas. In urban areas producing of the 1 KwH energy costs to the households about 400 UZS while in rural areas this cost is relatively lower (252.43 UZS). This calculations demonstrates that cost of the energy produced by diesel generators by far higher than the current rate for 1 KwH of electricity provided through centralised energy supply system.

Table 3.10 Use of Diesel Generators in Urban and Rural Households in Khorezm Region

	Total Average	Urban Average	Rural Average
How many KwH produces Diesel Generator	98	50	103
How much HH spent on the fuel for Diesel Generator (UZS)	25,000	20,000	26,000
Costs of 1 KwH produced by Diesel Generator (UZS)	255.1	400	252.4

Source: Households Survey, February 2013

244. According to 84% of the HHS respondents make payments for the electricity once a month and another 14% pay once in a quarter. 5% of the households are paying on the prepayment basis, and often payments for the energy supply withhold from their salaries or pensions. More than 40% of the households participated in the survey are paying electricity bills directly to the controllers who come to the households to collect money and check readings in the meters or in the local offices of Uzbekenergo (Annex Q5_7).

245. While considerable part of the households pay their electricity bills to the controllers (42%), majority of the respondents (in total 51%) reported that the payments for the energy supply withhold from their salaries or pensions. At the same time large number of the respondents indicated that in spite of the all prepayments controllers most of the time do not have full information about the payment status and continue to come to the households and request to prove that payments are made in time. This situation in addition to the frequent cut-offs cause many conflict situation.

246. Analysis of the information received from survey respondents allowed to estimate willingness of the households to pay for improved services in energy supply (Table 2.14). Majority of the households are willing to pay about 20% increase of the payment for 1 KwH energy if the energy supply is constant and efficient. 11% of the respondents indicated that they are not willing to cover the increase of the price. However it should be noted in this report that in Uzbekistan all communal payments, including payments for the electricity, are increased twice a year.

Table 3.11 Readiness of Households in Khorezm Region to Pay for reliable and consistent energy supply (tariffs per 1 KwH)

as % of sample size

	Proposed Tariffs per 1KwH			Average Maximum amount per KwH[11]
	125 UZS	120 UZS	115 UZS	104UZS
Total average	**65**	**6**	**17**	11
Poor	59	8	20	9
Non-poor	68	5	15	12
Urban	70	4	11	14
Rural	62	7	21	9

Source: Households Survey, February 2013

D. Impact of Access to Reliable and Constant Electricity Supply on Regional Development, Entrepreneurship and Small-Scale Business Development

247. According to the numerous Government decisions Khorezm region included into the program for the regional development of infrastructure and industry. Regional khokimiyat expect that with the new Decree of the government on the development of Khorezm region as touristic center the number of new businesses will be developing in the area. However, limitations on energy supply is one of the factors that according to the local government and office of Uzbekenergo decelerating regional development in Khorezm.

248. All the problems that were identified by the households affecting small businesses and service providers in the region. Frequent and long-lasting disruptions together with low voltage of electricity during the period of energy supply are the factors that slowing down the development small and medium businesses, including home-based entrepreneurial activities. Many respondents indicated that low voltage and unexpected cut-offs often lead to the breakage of expensive

[11] Those respondents who had not chosen any of proposed tariffs offered to name the maximum amount per KwH that household will be willing to pay for reliable and constant energy supply. Answers varied from 104UZS (current tariff) up to 105 and for analysis the average was calculated. In average 2% omitted this question.

equipment. Some of the businesses already using small diesel electricity generators, but these are additional cost that should be cared by entrepreneurs. In general, regional limitation on the energy supply, interruptions and low voltage results in decreased productions, sales and thus profits for the entrepreneurs and it negatively affect the sustainability of small-scale businesses.

If I want to expand my business, first thing I do, I need to check if the local lines and electricity transformator will be able to maintain increased energy use. Usually the local controllers from Uzbekenergo say that we need to change the lines, buy and replace transformator etc. How we can grow our business if even now with the current level of use there is no electricity most of the time. ***Local Entrepreneur, owner of Convenient Store***

249. At the same time respondents and representatives of the local authorities believe that the modernization of Takhiatash TPP should be done in parallel with the increase of the capacities of high voltage energy transmission lines. The general concerns were expressed, that otherwise the modernization of the Power plant will not have expected positive impact on the regional development and growth of the local businesses.

ANNEX II
LIST OF PEOPLE CONSULTED AND INTERVIEWED

Uzbekistan: Takhiatash TPP Energy Improvement Project
Karakalpakstan AR and Khorezm Region

№	Name	Organization/position
1	Nurulla Abdullayev	PMU Manager
2	Bahit Madraimov	Director, Takhiatash TPP
3	Rustam Davletov	Chief Engineer of the Project
4	Alisher Khudoybergenov	Khokim, TAkhiatash City Khokimiyat
5	Farid Matikeev	Deputy Khokim Takhiatash City Khokimiyat
6	Fakhriddin Khalillayev	Chief Engineer, Takhiatash TPP
7	Mukaddas Rakhimova	Chief, Planning and Economic Department, Takhiatash TPP
8	Dilmurod Tillamuradov	Specialist, Takhiatash TPP
9	Sultonmurod Kutlimurodov	Chief, Staffing Department
10	Pulat Kutlimurodov	Specialist, PIU Takhiatash TPP
11	Shukhrat Abdirsuliev	Chairperson, Trade Union Organization, Takhiatash TPP
12	Nurlan Erlipesov	Deputy Chairman of the Cabinet of Ministers of the Republic of Karakalpakstan
13	Muyatdinov Nizamiddin	Deputy Khokim, Nukus city khokimiyat
14	Shakardjon Khudjaniyozova	1st Deputy Khokim, Khorezm Regional Khokimiyat
15	Masharip Bakiyev	Head of Consolidated Department, Regional Khokimiyat of Khorezm region
16	Davronbek Sharipov	Senior Specialist, Consolidated Department, Khorezm regional Khokimiyat
17	K.M. Khadjiev	Chief Engineer, Khorezm region “Electrotarmok”
18	Bakhtigali Kunakbayev	Deputy Khokim, TAkhiatash City Khokimiyat
19	Mirpulat Babashev	Chairperson of Business Incubators Association.
20	Auezimbetova K	Head of Takhiatash Women Committee
21	Atadjonov Rustam	Takhiatash College of Energy Power
22	Avezmetov Ravshan	Khorezm Region, Urgench City, Groccery Shop Owner

ANNEX 2
LIST OF PARTICIPANTS OF THE FOCUS GROUP DISCUSSION

Takhiatash City
March 27, 2013

№	Name	Organization/position
1	Yazova Shirin	Makhalla 7, Advisor
2	Jumaniyazov Kuchkarboy	Makhalla 6, Resident
3	Usmanov Makhan	Makhalla 8 Resident
4	MAtchanov Urazboy	Engineer, TAkhiatash TPP, Kamolot Lider
5	Abdurasulov Farkhat	MAkhalla 10 Resident
6	Babadjanova Gulchekhra	MAkhalla 4, advisor
7	Tursinbayev Adil	MAkhalla 1, REsident
8	NAbiyev Amet	Head of TAkhiatash city Healthcare Association
9	Bozorboyeva Sora	Private clinic “Kun tarmoish TAkhiatash Tibbiyot”
10	Saparbayeva Nazira	Children out-paitient Clinic N 2, head nurse
11	Jalimbetova Rita	Children out-paitient Clinic N 2, nurse
12	Abdurasulev Shukhrat	Chair of trade union, Takhiatash TPP
13	NAzarov Mukhtar	Chief Engineer, TAkhiatash energy distribution department
14	Khusainova Gulkhumor	City Hospital, Maternity Department
15	Batabayeva Zukhra	City Hospital, Nurse
16	TAvakelova Aynur	Fund Makhalla
17	TAjekeev Azamat	Kamolot
18	Kojikbayeva Jumtosh	Private company “TAkhiatash Medservis”
19	Maykurbanova Dilbar	City Department of education
20	Jndullayeva Miyassar	Makhalla 3, chairperson of Makhalla committee
21	Kutlimurodov Polat	Takhiatash TPP, engineer
22	Jumaboyeva Mekhrikhon	Takhiatash City Healthcare department
23	Torayeva Zamira	TTB, medical officer
24	Auezimbetova K	Head, TAkhiatash City Womin Committee
25	Atadjonov Rustam	Takhiatash College of Energy Power
26	Miltikbayeva Anna	Makhalla 5, charperson
27	Begdulayeva Ayporsha	School #2, Deputy Director
28	MArziyaeva Rayhon	School N1, TEacher
29	Kutiboyev Azamat	Takhiatash Department of education
30	Asanova B	Kindergarten N8
31	Kurbanbayeva Dildora	Kindergarten N8
32	Nurniyozova Aysulu	Kindergarten N7
33	Ismailova Matluba	Kindergarten N7
34	Khanildiyeva Yazgul	Kindergarten N4
35	Kuchkarova Dilorom	Kindergarten N4
36	Yusup Kamalov	Alternative energy Sources, Chairperson
37	Izzat Azimbetov	Union for protection of Aral and Amudarya
38	Kamalova Ravshan	Facilitator FGD
39	Kanikbayeva Roza	Assistant FGD facilitator

ANNEX 3
SUMMARY OF THE FOCUS GROUP DISCUSSION

In Takhiatash City, Karakalpakstan AR

Topic: Takhiatash Termo Power Plant Energy Improvement Project. Social Implications

Attendees: 36 people, representatives of Hokimiyat and its departments, Takhiatash TPP and other related organizations ensuring provision of the energy supply services, organizations of city infrastructure, representatives Mahalla assemblies of citizens, residents and non-government organizations.

Date: March 27, 2013

Place: College of Energy Power

Facilitators: Kamalova Ravshan and Shagazatova Malika

1. Facilitator, Ravshan Kamalova, opened the meeting and informed meeting' participants about the project objectives and purpose of the meeting. She informed major stakeholder representatives and residents of city about the Household Survey that were conducted to examine the socio-economic situation in Takhiatash City and the problems that arise for people due to the poor energy supply.
2. The objectives of the meeting and interviews were:

(i) To identify the major problems related to the energy supply, causes and consequences of the problems identified as a result of group work
(ii) To identify the local needs and priorities of the investments in the energy supply service.
(iii) To confirm the outcomes of the HHS and identify the local needs of the city residents in Social Development component

3. The first task for the participants was to identify individually most important problems associated with the energy supply in TAkhiatash City. Every participant of the meeting measured problems on the scale one-to five with maximum points to be allocated five.
4. According to the FGD participants the following are the problems associated with the energy supply in TAkhiatash City:

First problem, with 67 points was Low level of quality of the services provided by the organizations within the structure of Uzbekenrgo .
Second problem is Low –voltage of electricity – 21 points
Third problem – Frequent disruptions in energy supply– 19 Points.

5. It was noted by the participants that Khokimiyat management is very keen on keeping energy supply constant, and in the center of the city disruptions occur rarely, however in districts located on distance from the center of the city, and where no schools, hospitals or policlinics the cut-offs happens quite often.

6. The FGD was organized as the following: Five groups were formed to discuss and present major outcomes of discussion. Each group consisted 6-8 people, representing different groups of stakeholders.

7. Groups were requested to identify Issues Causes and Consequences of the main problems that were identified by the participants during the first task. The following are the outcomes of discussions in the groups which were presented and further agreed with all participants.

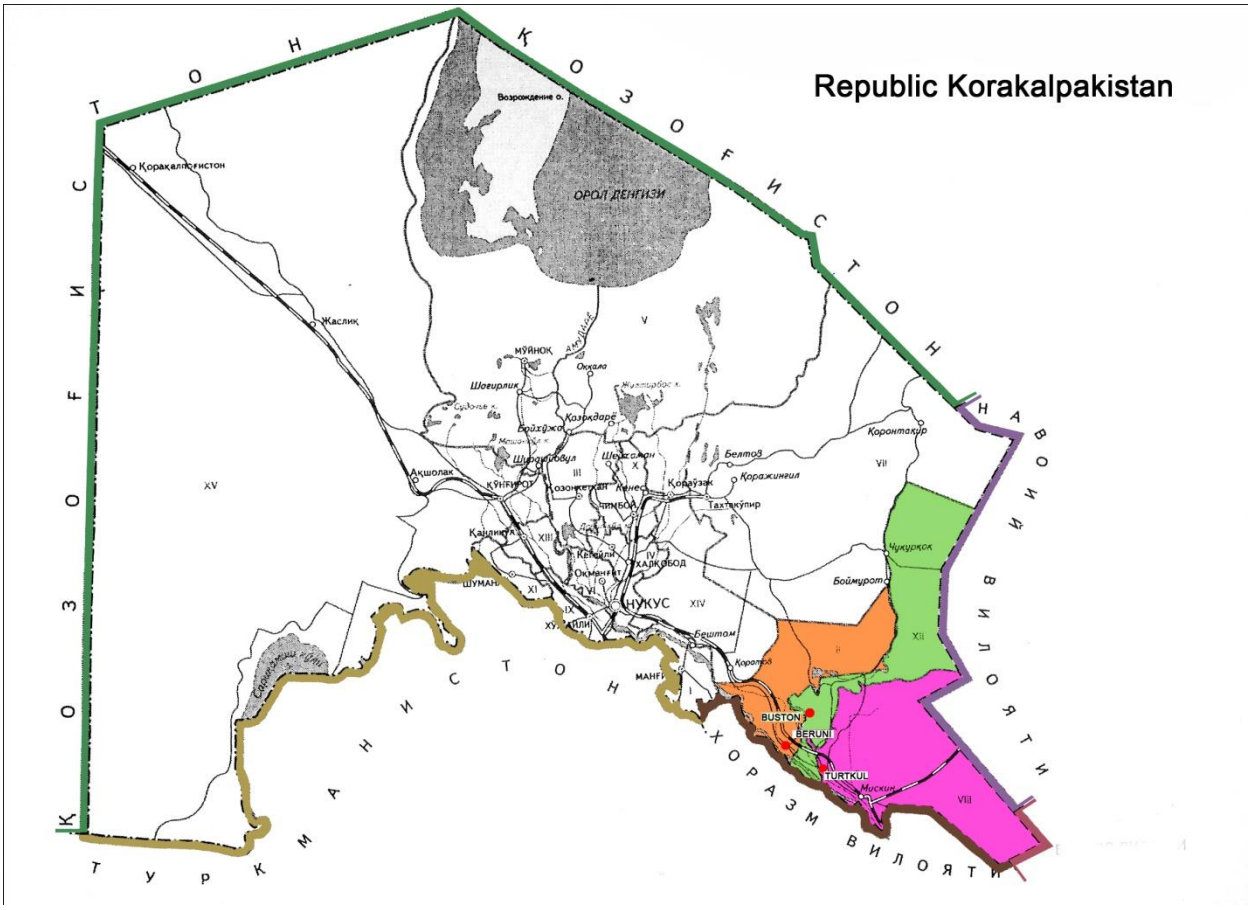
8. **Issues:** Organizations responsible for the energy supply do not inform population prior to the cut-offs,
   Low voltage during the day, and especially in the winter months
   Enforcement of the payments for the electricity, in spite of the prepayments already made.
   Electricity Cut-offs, Due to the debts of the neighbors, who are using the same line
   Limitations on energy supply for the districts located far from the center of the city
   When emergency cut-offs happens at late evening or night time, the consumers complains are not accepted, and they need to wait until next morning.
9. **Reasons:** Most of the local lines are old and cannot maintain increased use of electricity;
   Old lines often, during the rain and wind are just rip-apart or cause low voltage or power jumps;
   Old transformators do not cope with the increased use of electricity;
   Often local electricity transmission lines are strung lower than required height, which is dangerous especially near schools and kindergartens.
10. **Consequences:** Financial losses in the households and organizations, due to the damage of home appliances, computers and other equipment;
    High risks of the fire;
    Delays in preparation of meals in the schools and kindergartens, where kitchens are using electrical stoves.

11. **Second Task** for the discussion in focus groups was to identify pros and cons of the Takhiatash TPP Project:
    As the result of the discussions in five groups following were identified as pros:
    1. More energy will be produced with the same level of gas supply, and thus population will be provide with more stable and constant energy supply;
    2. New Equipment will produce less noise, and people who live in TPP neighborhood areas will benefit from it.
    3. With the new turbine there will be less emission and thus the air of the city will be cleaner and more safe for the population
12. Concerns: Since this Project is not expanding capacity of the TPP, and the new equipment highly technological and have electronic management and monitoring systems, probably there will be reduces in the number of employees of TPP. This is serious problem for the city where employment opportunities already extremely limited; Within the project there should be some component that will create new jobs for the people of Takhiatash.
13. **Third Task:** Discussion of the proposed (on the basis of the information from the HHS) construction of Community service Center. The following proposals from the Groups were collected at the end of discussion: The community Service Center should be built in Takhiatash city, and need to be accessible for the city population.

14. The Center should provide following services: Public Bath, Self-service Laundry services, Laundry and Dry Cleaning, Carpet Cleaning. In order to increase the opportunities for the women with the small children to use these facilities to have one child care room within the premises of the Center. The quality of the water should be checked for the safety purposes, the same as discharged water from the Center should be properly treated. Price Policy for the services of the Center should ensure the affordability of the services for the general public and for the socially vulnerable groups of population.

ANNEX IV. MAP OF KARAKALPAKSTAN AR

Map1. Karakalpakstan AR by districts



ANNEX V

TAKHIATASH POWER PLANT EFFICIENCY IMPROVEMENT PROJECT
COMPONENT III: CONSTRUCTION AND EQUIPPING COMMUNITY SERVICE CENTER IN TAKHIATASH CITY

Project Name: **Construction and Equipping Community Service Center in Takhiatash City** **Country:** **Uzbekistan**	
Department/Division:	**Staff Responsible:**
Amount Requested: $ (Please refer to the Attachment 1 for details) *(Please note that a simplified DMF and Outline TOR are not required for proposals under $100.000)*	

Background and Rationale:

The Government of Uzbekistan emphasized the priority of the rural development and development of social infrastructure declaring the year of 2013 as Year of prosperity and well-being. At the same time the role of gender mainstreaming and advancing the role and status of women supported by the various Government documents, on of which is National Action Plan (CEDAW).

Takhiatash City is located in Karakalpakstan AR with the population over 47.5 thousand. In Takhiatash city 61.2% are people of employable age The employment level of employable age population in the city is a little lower than in average in Karakalpakstan and in 2012 was about - 61%.

Takhiatash Thermo Power Plant (TPP) with the 1,135 employees is a major employer of Takhiatash city witj 1,013 employees are working in the major production. Power Plant has various non-major production activities, including: agricultural production and agricultural processing, construction, catering, housing and communal services. In total 111 employees are working in non-major types of activities. TPP employees has limited access to the prophylactic medical facilities due to unavailability of this type of services in Takhiatash city and financial and timing constrains in access to the medical facilities of Uzbekenergo in Tashkent city. Lack of the access to the prophylactic medical facilities for the city residents also has negative impact on the general population health, especially taking into consideration that Karakalpakstan region is the region of ecological disaster.

The HHS results revealed that 93% of the households have access to the centralised drinking water system with the noticeable difference between poor and non-poor households. Only 88% of the poor households connected to the potable water compare to 95% of non-poor families. All those who have not connected to the water supply system are using stand-pipes on the street/yard. A similar pattern can be seen in the access to the sewerage system. Only 12% of poor and 20% of non-poor households can benefit from centralised sewerage system.

In average households in Takhiatash City consume 108 KwH of electricity. There is slight difference between poor and non-poor households energy consumption. Respondents from poor households reported that in average they use 94 KwH, and non-poor -114 KwH.

Although 88% of the total number of households participated in survey reported that they have refrigerators (76% of poor and 95% of non-poor HH), the use of this type of appliance is limited, especially among poor households. 82% of poor households and 95% of non-poor households use refrigerator to keep foodstuff fresh during the summer months, however as it was revealed the refrigerators in use were purchased 14-16 years ago. Considerable number of the households additionally keep products in cool places (42% of poor and 60% of non-poor) or dry them out and/or salting (27%of poor and 18% of nonpoor households).

Although 7% of the households surveyed reported that they have washing machines, hand wash is still the only way of doing laundry of the clothes and bed-sheets. In average 99% of all households doing laundry of the clothes by hands. 46% of the households indicated that they do not have irons.

While all households surveyed are connected to the centralized power supply network, the quality of

services provided is poor. To some areas electricity is being supplied irregularly, which makes the population dissatisfied with power supply stability. Only 63% of the household in Takhiatash city reported that the electricity supply is constant.

The major problem is frequent and prolonged interruptions in electricity supply. According to the 71% of the households the interruptions of power supply occurs more than once a week.

It was noted by many respondents that the dry-cleaning services do not exist in Takhiatash city, the same was said about public bath.

Due to the problems associated with the access to the sewerage system, water supply and energy supply disruptions majority of the households have difficulties in bathing, washing, laundry and cleaning. To address these issues the Takhiatash City community proposed to establish Community Services Center, within the framework of the proposed Project.

Based on the findings of HHS, in-depth interviews and discussions with the stakeholders the following proposed for the Social Development Component: Construction of the Community Service center adjacent to Takhiatash TPP and staff housing. The center will create employment opportunities, and commercial facilities including laundry services, contributing to improving welfare of the community and gender equality. Prophylactic medical center will provide medical services for the employees of Takhiatash TPP and Karakalpakstan and Khorezm regional branches of Uzbekenergo, as well as residents of Takhiatash City. Prophylactic medical services will include preventive healthcare and regular check-up procedures and supporting healthcare facilities. The community service center will increase the access of the population to the following services: self-service laundry facilities, laundry service, dry-cleaning, and carpet cleaning service. Takhiatash TPP is discharging hot water which could be used for the bath and laundry, and decrease the costs associated with the heating water. This allows to keep the prices reasonable and affordable for the population.

Expected results: (Impact, outputs, outcomes, and expected key performance indicators)
The Project goal is to improve access of the population of Takhiatash city to the prophylactic medical services, which is important, especially in the ecological disaster area. It will also improve access and use of the services of Public Bathing, Dry-cleaning, Laundry and carpet cleaning services which do exist currently in the city. Availability of these services are especially important for women. The outcome of the project is improved access of the residents to the services which do not exist or extremely limited/low quality in the city. The anticipated outputs of the project will include (i) Functioning medical facilities and community service center, providing services to the population, which are accessible, affordable and gender sensitive; (ii) job creation for men and women in the city;

Scope: Project activities will include (i) construction of the Prophylactic Medical Center and Community service center; (ii) procurement of equipment for the dry-cleaning, laundry and carpet cleaning services, (iii) work with the stakeholders and communities to ensure affordability and gender sensitivity of the services provided by the Center.

The Project's location is Takhiatash city and duration is 24 months.

Relationship to ADB's Policy on GAD and Uzbekistan Country Partnership Strategy:

The proposed project is in line with the priorities set forth in ADB's Policy on Gender and Development (GAD), specifically implementation and formulation of gender-sensitive policies, capacity building, GAD awareness, and exploring opportunities to directly address new and emerging issues for women. It also consistent with the ADB CPS (2012-2016) mandate for Uzbekistan, which defined "provision of support for energy efficiency enhancement" as key areas for ADB interventions. The proposal is in-line with the National Welfare Improvement Strategy (2011-2014).

The proposed project will address social and gender issues and support Governemtn efforts in implementation of the tasks identified for the Year of Prosperity and well-beng
The Project is linked to the Takhiatash PP efficiency improvement Project

Implementation Arrangements:

The Project will be implemented as a third component within implementation of Takhiatash Power Plant Efficiency Improvement Project and financed by Uzbekenergo's own financial resources.
The Project Management Unit will coordinate closely activities related to the construction of Prophylactic Medical Center and construction and equipping Community Service Center. PMU will work closely with the Uzbekenergo, Takhiatash PP Management team and Local stakeholders in identification of the place for construction, list of equipment, pricing policy and other issues related to the affordability, accessibility and gender sensitivity of the services provided by the Center.
Gender mainstreaming will be facilitated by the Social and Gender Specialist in PMU in close cooperation with the Women's Committee (WC) representative in City Khokimiyat and relevant technical expertise will be sought from Takhiatash Power Plant.

Project Management Unit will be responsible for day-to-day coordination and monitoring of project activities, coordinating with local government agencies, civil society organizations, communities, and preparing periodic progress and financial reports. Social and Gender Specialist will monitor implementation of the activities and prepare progress reports in according with the Gender Action Plan. Individual local consultant or NGO will be recruited to design PR materials, conduct gender awareness training and provide other required services.

ANNEX VI. GENDER ACTION PLAN

Activity	Performance Indicators/Targets
Output 2: Capacity development	
PMO recruit Social and Gender Specialist/Focal Point	A social and gender specialist/focal point designated in PMO
Tariff analysis and training developed and delivered	At least 20% of training participants are female employees of UE
Output 3: Social Development: Community Social Service Center and Housing developed	
Social Service center constructed and operational by 2018	At least 50 % of new jobs created in the Social Service Center are for women Access to the improved health care services for Takhiatash TPP employees and community increased
Dry-cleaning, laundry and carpet-cleaning facilities constructed and equipped by 2018	At least 50 % of new jobs are for women Access to the dry-cleaning, laundry and improved carpet-cleaning facilities for men and women increased
Community outreach campaigns and trainings for youth are conducted	8 Makhalla Advisors attended TOT on (i) hygiene promotion, (ii) efficient energy use and (iii) GAD awareness. 1500 leaflets and distribution materials on hygiene, GAD basics and efficient energy use developed and distributed to 8 Makhallas in the project area Training modules on: (i) hygiene promotion, (ii) efficient energy use and (iii) GAD awareness developed. TOT conducted for the teachers in 3 colleges and 9 schools conducted (at least 24 teachers trained) Regular trainings in 3 colleges and 9 schools conducted for students with 50x50 boy and girls trainings participants.