



# Environmental and Social Quarterly Monitoring Report

---

Project Number: 43903 (Loan 2722)  
March 2014

## PAKISTAN: Uch-II Power Project Environmental and Social Development Quarterly Monitoring Report (Q1 2014)

This report has been submitted to ADB by the Uch II Power (Private) Limited and is made publicly available in accordance with ADB's public communications policy (2011). It does not necessarily reflect the views of ADB.

**Asian Development Bank**

## ENVIRONMENTAL AND SOCIAL MONITORING REPORT

Q1-2014

A	Project/Business Name and Summary Information	
	<b>Development of 404 MW Gas Fired Combined Cycle Power Plant by Uch-II Power (Private) Limited</b>	
(i)	<i>Location of project/business</i>	Dera Murad Jamali, Baluchistan, Pakistan
(ii)	<i>Nature</i>	Construction, commissioning and operation of gas fired combined cycle power plant
(iii)	<i>Scale/size</i>	404 MW (ISO Gross Rating) 2 Gas Turbines x 01 Steam Turbine
(iv)	<i>Date of construction/operation commencement</i>	Construction activities commenced in July 2011. Project achieved Commercial Operation Date (COD) on April 4, 2014. after successful completion of Reliability Run Test on April 3, 2014
(v)	<i>Name, designation and signature of person responsible for preparing/reviewing the report</i>	Fida Muhammad Khan, Manager HSE Uch-II / Babar Saeed Khan, Deputy General Manager Construction Uch-II
B	Relevant Environmental Permits or Compliance Certificates	
(i)	<i>Summary of permit conditions &amp; media(s) covered</i>	"No Objection Certificate issued by BEPA"
(ii)	<i>Issue by which government Agency</i>	Baluchistan Environmental Protection Agency (BEPA)
(iii)	<i>Issuance date and duration of validity</i>	December 9, 2010 – BEPA also issued Confirmation of compliance after completion of construction work under PEPA Regulation 2000
(iv)	<i>Renewal requirements</i>	None
C	Incidents of Violations or Non-Compliance	
(i)	<i>Recorded date and responsible agencies</i>	None in Q1-2014
(ii)	<i>Nature of non-compliance</i>	No reportable incident to authorities recorded during Q1-2014.
(iii)	<i>Violation or non-compliance based on what environmental standards and regulations</i>	N/A
(iv)	<i>Recorded dates and authorities</i>	During Q1-2014, EHS related observations of minor nature recorded during routine site monitoring. Log with corrective actions attached as Appendix A.
(v)	<i>Media or community reactions (if any)</i>	None in Q1-2014
(vi)	<i>Corrective actions, deadlines, identification of responsible parties</i>	Short term corrective actions identified through regular site H&S walks. Please refer to Appendix A.
	<i>(a) short-term: remedial action</i>	Please refer to Appendix A
	<i>(b) long-term: preventative measures</i>	None in Q1-2014
D	Incidents of Environmental and Safety Accidents	
(i)	<i>Incident recorded dates and responsible agencies,</i>	None in Q1-2014
(ii)	<i>Scale of damage and injury (if any)</i>	None in Q1-2014
(iii)	<i>Authorities in charge of investigation/recording</i>	EPC contractors site management and HSE team is responsible for reporting and investigating the incidents
(iv)	<i>Media or community reactions (if any)</i>	None in Q1-2014
(v)	<i>Corrective actions, deadlines, identification of responsible parties</i>	None in Q1-2014
	<i>(a) short-term: remedial action</i>	None in Q1-2014
	<i>(b) long-term: preventative measures</i>	None in Q1-2014
E	Labour Relations and Conditions	
(i)	<i>Nature of labour dispute or grievance</i>	None reported by EPC in Q1- 2014
(ii)	<i>Legal requirements, Permit conditions and renewal requirements</i>	None in Q1-2014
(iii)	<i>Authorities in charge of</i>	EPC contractor responsible for managing its labour relations and conditions

	<i>investigation/recording</i>	
(iv)	<i>Media or community reactions (if any)</i>	None in Q1-2014
(v)	<i>Corrective actions, deadlines, identification of responsible parties</i>	N/A
(vi)	<i>Labour relations and living conditions for construction labour force</i>	<p>No Labor related issues recorded during Q1-2014. Majority of labor residing at site in dormitories with satisfactory living conditions. Basic Medical facility with a qualified Doctor and nurse also available at site.</p> <p>EPC contractor's labour policies are in compliance with ILO core labour standards. EPC contractor use to revisit payrolls of labour as per requirement of Government policies (GOP minimum wages applicable in each cadre and local market). EPC workers also insured (group life insurance) as per national law.</p> <p>As per contractor's procedure for "Camp and Security Management" In-charge Personal &amp; Administration dept. at project site is responsible for maintenance of working and living conditions at site. Regular housekeeping inspections, hygiene inspections for messing facilities, toilet facilities of labor housing compound are performed by site HSE team.</p> <p>A mechanism for registering of complaints is available for labour. Workers complaint register and complaint drop boxes available at site and camp. No labour union exists at project site.</p>
<b>F</b>	<b>Environmental Capacity</b>	
(i)	<i>Staff capacities in environmental management (as relevant)</i>	Please find the EHS Organogram indicating Uch-II, Owners Engineer and EPC team attached as Appendix B. Uch-II HSE Manager, HSE Officer and 02 HSE Site Coordinators are also present at site.
(ii)	<i>Degree of awareness of: (i) environmental management, (ii) health and safety, (iii) environmental laws and regulations</i>	Relevant EPC, OE and Uch-II staff aware about the Project EMP & H&S Mgt plan and all other Environmental applicable & relevant Laws and regulations.
(iii)	<i>Training programs carried out</i>	<p>EPC contractor carried out regular site HSE induction as per their procedure for its entire staff as well as subcontractors. Specific in house trainings regarding electrical safety, noise and its hazards, confined spaces, housekeeping, work at height protocols, slip trip falls, manual handling, JSA/RA, hot jobs, firefighting, and other relevant topics carried out by EPC Health &amp; Safety management team. Altogether a total of 146 workers trained on different EHS topics in Q1-2014.</p> <p>HIV/AIDs/STD awareness sessions are also conducted with site work force in Q1-2014 as per HSE training plan. Please refer to Appendix C</p> <p>Appendix C (<i>EPC In house Training Statistics Q1-2014</i>)</p>
(iv)	<i>Needs assessment of environmental management capacity (as relevant)</i>	EPC, EHS staff capacity monitored regularly for effective implementation of EHS Program. Project EHS Organogram attached as Appendix B.
(v)	<i>Compliance audits carried out</i>	Uch-II End project third party audit performed in mid of February 2014. Audit report has been shared with EPC contractor for closeout of suggested corrective actions.
<b>G</b>	<b>Stakeholder Consultation/CSR Activities</b>	
(i)	<i>Details of consultations, if any, with local communities, nongovernmental organizations, civil society groups, and other stakeholders, including affected people</i>	None has been conducted in Q1-2014
(ii)	<i>Describe efforts to promote community relations and local development for inhabitants of the project area.</i>	<p>Local manpower employed in project by EPC contractor and subsequently trained unskilled workers. Please find attached Appendix-I narrating nature of trainings provided to unskilled work force in Q1-2014.</p> <p>No migration / movement of communities residing in the vicinity of project site.</p>
(iii)	<i>Project procedures for (a) hiring and (b) acquisition of goods and services</i>	<p>EPC labour hiring procedure in place.</p> <p>Historical data of the labor hired in construction activities during Q1-2014 is presented in attached Appendix-G.</p>

(iv)	Provide List of grievances and status of grievance resolution	None in Q1-2014. Grievance redress mechanism and LPU & GRTG available and in place.	
H	Issues, Status of Implementation of Mitigating Measures in the Environmental and Social Management Plan and Compliance with Environmental Qualities and Standards (national and international, as relevant) and Environmental and Social Requirements		
	Parameter	Issue	Status
1	Air	None	Dust monitoring and suppression with water sprinkling on-going on the vehicles movement tracks / roads both on & offsite.
2	Water (surface and ground water)	None	Overall compliance with EMP (as applicable against specific parameters) in place. Attached is Appendix E, indicating waste water analysis and water consumption record Q1-2014.
3	Waste generation and management	None	Waste generated at site is being collected, segregated and quantified. Hazardous waste generally comprised of used oils, oily filters & rags etc. is disposed off site through a recycling waste contractor on regular basis. Attached is Appendix E indicating waste generation record Q1-2014.
4	Noise and vibration	None	EPC contractor monitoring ambient & occupational noise levels on monthly basis. Attached is Appendix E indicating occupational and ambient noise monitoring results Q1-2014.
5	Occupational health and safety	None	Monitoring of Health & Safety Key performance Indicators done by EPC. Site medical center / officer maintaining workers health records for reported cases.
6	Community safety and security	None	Community safety and security are ensured at project site through effective implementation of mitigation measures proposed by project environmental management plan. The mitigation measures include; development of traffic management plan to minimize disturbances to local communities, established a grievance redress management system to handle and resolve any community complaints that arise during construction and operation phase, limiting the non-local staff within the boundary wall of power plant to avoid project workforce and community interaction. EPC contractors SOP for security arrangements is also in place.
7	CO <sub>2</sub> emissions by the Project		394.20 tons of CO <sub>2</sub> for site Diesel Gens sets and vehicular CO <sub>2</sub> emissions for construction site reported in Q1-2014 by EPC contractor. Calculations based upon total Diesel fuel used for the same purpose by EPC and its subcontractors. Total volume of fuel (HSD) consumed Q1-2014 = 148,755 litres approx.  Assumptions used in total calculating CO <sub>2</sub> emissions provided in Appendix F.
8	Environmental and Social Management Plan, including IFC E&S Action Plan (September 29, 2010)		Project H&S plan and EMP implementation and monitoring in place by EPC contractor.  Attached Appendix H summarizes the compliance status of mitigation measures for E&S plan (Ref Appendix A Table 4-1 of EIA)

		ESAP Update: OGDCL and NTDC's EIA has been completed. BEPA issued NOC to OGDCL in May 2013.
I	Summary Assessment of Client Performance and Recommendations	
<p>Project achieved Commercial Operation Date (COD) on April 4, 2014 after completion of Reliability Run Test on April 3, 2014.</p> <p>Overall cumulative progress is 99.96% against the revised Extension of Time (EOT) planned progress of 100%. Engineering and procurement phase for the project as per original scope has been completed. Only delivery of replacement parts or required under design modifications is pending. Construction of the project has come to a close. Work on punch list items rectification under progress by EPC.</p> <p>Uch-II colony construction and handover to O&amp;M team has been completed.</p> <p><b><u>H&amp;S Activities</u></b></p> <p>Uch-II Project has overall recorded 11.83 million man hours till Q1-2014. An unfortunate fatal accident occurred in June-2013 just after achieving 7.6 million safe man hours. Since then 4.23 million man hours have been recorded till March-2014.</p> <p>Regular H&amp;S monitoring walks performed by Uch-II HSE team to ensure that project activities being performed are in compliance with project H&amp;S plan and procedures. Issues and findings addressed to EPC contractor through monitoring reports and ensured their timely close out.</p> <p>Uch-II end project third party HSE audit performed in mid of February 2014. Audit report has been shared with EPC contractor for closeout of suggested corrective actions. A significant improvement in housekeeping conditions of plant observed. An increased level of PTW compliance recorded in Q1-2014.</p> <p>Permanent safety signage at plant areas and road safety signs installation work carried out during the period under review. Development of Uch-II H&amp;S procedures for operation phase is in progress.</p> <p>Housekeeping inspections, tool box talks with workforce, PTW checks and HSE trainings of staff carried out as per plan.</p> <p>No other significant Environmental &amp; Social issues to report.</p>		

**Uch-II Site Monitoring Summary Q1-2014**  
**Corrective Actions**

**Appendix-A**

Monitoring Conducted by	HSE Uch-II
Corrective Actions By	EPC Contractor

S. No	Findings	Corrective Actions
1	Heavy lift activity was in progress near CCR without barricading the area and workers found standing under the suspended load. <ul style="list-style-type: none"> <li>Unsafe act</li> </ul>	Activity was stopped and lifting supervisor is advised to barricade the area and to conduct TBT with workers.
2	Poor standard of housekeeping was observed in the raw water treatment area where scaffolding tubes, planks and water drums were spotted scattered and creating the tripping hazards. <ul style="list-style-type: none"> <li>Housekeeping Issue</li> </ul>	Issues addressed to the site HSE team to ensure proper cleaning of the area and removal of waste material.
3	Un-inspected power grinder was being used by the DIPL team at the top platform of lube oil console skid. <ul style="list-style-type: none"> <li>Un-inspected Equipment</li> </ul>	Instructed the workers to get the grinder inspected before further use.
4	Concrete demolition activity was being carried out by the DCS workers inside the gas conditioning skid area without obtaining the Permit from PTW office. Workers spotted standing at the roof performing cutting activity without using any fall protection. <ul style="list-style-type: none"> <li>PTW non compliance</li> <li>Non-compliance of work at height protocols</li> </ul>	Activity was stopped. Work incharge was called on the spot and addressed the non-compliances. EPC site management is addressed to fully comply with PTW protocols.
5	At RO building area, front cover of a power distribution panel was found open creating the electrocution hazards for the workers working nearby. <ul style="list-style-type: none"> <li>Electrical Hazard</li> </ul>	Informed to site HSE team and advised to check all panel boxes in the area.
6	Paint cans, wood and plastic materials were kept together near ST transformer area creating fire hazard. <ul style="list-style-type: none"> <li>Unsafe Condition / Fire Hazard</li> </ul>	Immediately removed the combustible materials from the area.
7	Cable termination activity was being performed by the DIPL team inside the commissioned SS-14 building without obtaining the PTW. Risk assessment was not sufficient to cover all the hazards. <ul style="list-style-type: none"> <li>Non-compliance of PPEs</li> </ul>	Hold the activity and instructed the job supervisor to obtain PTW for the job. Issue addressed to EPC site management to maintain strict PTW compliance all the time.
8	Un-protected cable trench near SS-14 station auxiliary transformer was spotted creating falling hazards for the workers working there.	Civil team is informed to install guard rails around trench to avoid risk of fall.

9	<p>A worker without mandatory PPE's and safety harness was spotted performing the welding job at car parking area of admin building.</p> <ul style="list-style-type: none"> <li>• Non-compliance of PPEs</li> </ul>	TBT carried out with worker to realize the importance of use of PPEs.
10	<p>Damaged / un-insulated welding cable was being utilized by the DCS team in car parking shed area for welding activity.</p> <ul style="list-style-type: none"> <li>• Electrical Hazard</li> </ul>	Stopped the work and job supervisor is instructed to replace the damaged cable with healthy one before commencing the job again.
11	<p>Improper storage of chemical drums spotted in the waste water treatment area near the dosing skid close to R O building.</p> <ul style="list-style-type: none"> <li>• Unsafe Condition</li> </ul>	Site HSE team is informed to ensure the proper storage of chemical drums with availability of identification tags and MSDS.

## Appendix B

The organizational chart for the EPC HSE Team is structured as follows:

- HET Safety Manager (commissioning)** (Blue box)
  - HSE Engineer** (Blue box)
    - DCS HSE Manager** (Orange box)
      - HSE Officer** (Orange box)
        - Environment & HAZMAT Engineer (Vacant)** (Orange box)
        - Scaffolding Inspector** (Orange box)
      - HSE Engineer Documentation & Reporting** (Orange box)
        - Mail Nurse** (Orange box)
      - DCS Site Manager** (Orange box)
        - Commissioning Safety Engineer** (Blue box)
      - Corporate HSE Manager** (Orange box)
        - Uch-II HSE Manager** (Green box)
          - Uch-II HSE Officer** (Green box)
          - Uch-II HSE Coordinators (02)** (Green box)

**URS (Outside the main team structure):**

- Uch-II Project Manager** (Green box)
- Uch-II Construction Manager** (Green box)
- OE HSE Auditor Periodic Basis** (Orange box)

Uch-II	04
EPC Total Strength	14
EPC Position Vacant	1

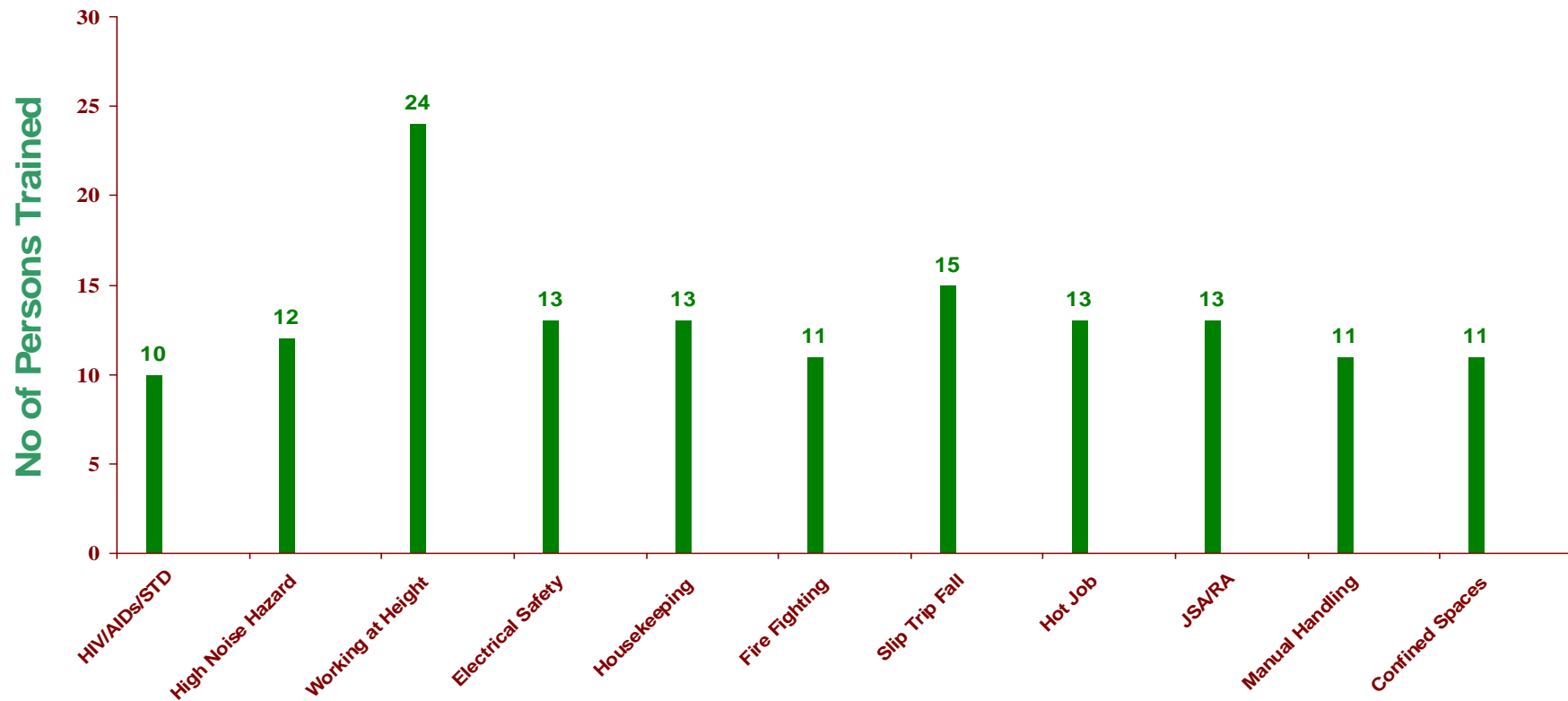


## EPC (Descon) In house HSE Training Record

Q-1 2014

Training Topics	Jan-14	Feb-14	Mar-14	Total
High Noise Hazards	12			12
Working at Height		24		24
Electrical Safety			13	13
Housekeeping	13			13
Fire Fighting			11	11
Slip Trip Fall	15			15
Hot Job		13		13
JSA / RA			13	13
Manual Handling		11		11
Confined Spaces			11	11
HIV / AIDS / STD Awareness		10		10

Q-1 2014	146
----------	-----



## **Appendix E**

### **Uch-II Waste Generation Statistics**

Waste Type	Unit	Jan-14	Feb-14	Mar-14
Used oil	Ltr	720	440	440
Metal	Tons	0.22	0.19	0.12
Paper/ Plastic/ Glass	Kg	45	25	28
Empty Cement Bags	Tons	0.9	0.8	0.6
Food Waste	Tons	2.4	1.7	1.3
Waste Water	m <sup>3</sup>	3844	4176	4960
Oil Filters & Oily Rags	Kg	28	23	21
Used Batteries	Nos	-	-	-
Old Tyres	Nos	1	0	0

### **Uch-II Waste Water Analysis**

Parameters	NEQS Limit	Jan-14	Feb-14	Mar-14
pH	6-9	8.2	7.7	7.9
COD (ppm)	150	115	90	121
BOD (ppm)	80	63	60	41

### **Uch-II Water Consumption Record**

Water Type	Unit	Jan-14	Feb-14	Mar-14
Raw Water	m <sup>3</sup>	2071	1485	1146
Potable Water	m <sup>3</sup>	3267	2341	1806
Total Consumption	m <sup>3</sup>	5338	3826	2952

<b>Ambient Noise Levels (Decibels)</b>				
<b>Location / Area</b>	<b>Unit</b>	<b>Jan-14</b>	<b>Feb-14</b>	<b>March-14</b>
North East Corner	Decibels (dB)	45	44	46
North West Corner	dB	42	41	43
South East Corner	dB	47	46	48
South West Corner	dB	44	43	45

<b>Occupational Noise Levels (Decibels)</b>				
<b>Location / Equipment</b>	<b>Unit</b>	<b>Jan-14</b>	<b>Feb-14</b>	<b>March-14</b>
Camp Genset	Decibel (dB)	87	89	88
CCR Building	dB	62	74	63
HRSG-1	dB	73	75	71
HRSG-2	dB	74	76	74
Transit Mixer	dB	78	78	--
Warehouse (inside building)	dB	53	52	64
Admin Building (ground floor)	dB	58	60	54
Admin Building (First floor)	dB	62	59	66
Admin Building (second floor)	dB	57	58	60
Tank Area	dB	70	68	69

## Appendix-F

### Diesel to CO<sub>2</sub> conversion Methodology

Standard diesel fuels generally contain around 87% carbon by weight, the rest being hydrogen and other very minor components. The amount of carbon in a liter of diesel fuel varies, but this only affects the total CO<sub>2</sub> production slightly.

- 1 liter of diesel typically weighs 0.83kg (the density is 830 kg/m<sup>3</sup>)
- about 87% of this is carbon, so one liter of diesel contains  $0.83 \times 87\%$   
= 0.722 kg of Carbon.
- Each atom of carbon weighs 12 atomic units. When it combines with two atoms of Oxygen in the combustion process it becomes CO<sub>2</sub>, which weighs 44 atomic units.

The 0.722 kg of carbon in the original fuel then becomes  $0.722 \times 44/12$   
= 2.65 kg of CO<sub>2</sub>.

- So 01 liter of diesel fuel produces about 2.65 kg of CO<sub>2</sub>.

Actual diesel consumed at site in Q1, 2014 = 148,755 liters

Total CO<sub>2</sub> produced =  $148755 \times 2.65 = 394,200$  Kg

Equivalent Tons of CO<sub>2</sub> produced = 394.20 tons

## Reference used in the diesel to CO2 conversion methodology



### Calculating CO<sub>2</sub> emissions

CO<sub>2</sub> production is related to the amount of fuel combusted and the fuel's carbon content. A lesser consideration is the fraction of the carbon oxidized, which is assumed to be 100 percent for emissions from transportation. The formula for CO<sub>2</sub> emissions from fossil fuels is Fuel Combusted X Carbon Content Coefficient X Fraction Oxidized X (44/12).

The [Intergovernmental Panel on Climate Change](#) (IPCC) guidelines for calculating emissions inventories require that an oxidation factor be applied to the carbon content to account for a small portion of the fuel that is not oxidized into CO<sub>2</sub>. For all oil and oil products, the oxidation factor used is 0.99 (99 percent of the carbon in the fuel is eventually oxidized, while 1 percent remains un-oxidized.)<sup>[1.]</sup>

Finally, to calculate the CO<sub>2</sub> emissions from a gallon of fuel, the carbon emissions are multiplied by the ratio of the molecular weight of CO<sub>2</sub> (m.w. 44) to the molecular weight of carbon (m.w.12): 44/12.

CO<sub>2</sub> emissions from a gallon of gasoline = 2,421 grams x 0.99 x (44/12) = 8,788 grams = 8.8 kg/gallon = 19.4 pounds/gallon or litre equivalent

CO<sub>2</sub> emissions from a gallon of diesel = 2,778 grams x 0.99 x (44/12) = 10,084 grams = 10.1 kg/gallon = 22.2 pounds/gallon or litre equivalent <sup>1</sup>.

GHG emissions are typically reported in terms of CO<sub>2</sub> equivalent (CO<sub>2</sub> Eq.) to provide a common unit of measure, and because CO<sub>2</sub> is the most prevalent of all GHGs. Other GHGs are converted into CO<sub>2</sub> equivalent on the basis of their global warming potential (GWP), for example 1 kilogram of another GHG may be estimated to have the same radiative forcing effect as a much larger number of kilograms of CO<sub>2</sub>. Guidelines are given in the IPCC 4<sup>th</sup> Assessment report

Transportation sources emit several other compounds that are believed to have an indirect effect on global warming but are not considered greenhouse gases. These substances include ozone, carbon monoxide, (CO) and aerosols. Scientists have not yet been able to quantify their impact with certainty, and these compounds are not included in the transportation GHG emissions estimates. For example, Ozone traps heat in the atmosphere and prevents a breakdown of CH<sub>4</sub>, but its lifetime in the atmosphere varies from weeks to months, making it difficult to estimate net radiative forcing effects. CO<sub>2</sub> on the other hand stays in the atmosphere for over 100 years before breaking down. CO indirectly affects global warming by reacting with atmospheric constituents that would otherwise destroy CH<sub>4</sub> and ozone. Aerosols are small airborne particles or liquid droplets that have both direct and indirect effects on global warming. The most prominent aerosols are sulfates and black carbon, or soot. Sulfate aerosols also have some cooling effect by reflecting light back into space. Traffic related black carbon is however considered to be a major pollutant and of growing concern for health reasons, in particular in Asia.

---

<sup>1</sup> Note: These calculations and the supporting data have associated variation and uncertainty. Some agencies use other values in certain circumstances, and in some cases it may be appropriate to use a range of values

Prepared for the Climate Change section, Advocacy, UITP web site [www.uitp.org](http://www.uitp.org)

**Appendix-G****Number of Workers Engaged in UCH II Construction Activities**

Q1-2012						Q2-2012					Q3-2012				
	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total
<b>Skilled</b>	8	616	17	0	641	12	703	17	0	732	19	648	17	0	684
<b>Unskilled</b>	71	35	0	0	106	102	99	0	0	201	130	138	0	0	268
<b>Total</b>	79	651	17	0	<b>747</b>	114	802	17	0	<b>933</b>	149	786	17	0	<b>952</b>

Q4-2012						Q1-2013					Q2-2013				
	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total	Local (Baluchistan Province)	Local (Rest of Pakistan)	Expatriate	Female Wokers	Total
<b>Skilled</b>	27	942	17	0	986	34	1358	28	0	1420	25	1446	28	0	1499
<b>Unskilled</b>	157	290	0	0	447	177	377	0	0	554	108	392	0	0	500
<b>Total</b>	184	1232	17	0	<b>1433</b>	211	1735	28	0	<b>1974</b>	133	1838	28	0	<b>1999</b>

Q3-2013						Q4-2013					Q1-2014				
	Local (Baluchist an Province)	Local (Rest of Pakistan)	Expatriat e	Femal e Woker s	Total	Local (Baluchist an Province)	Local (Rest of Pakistan)	Expatriat e	Female Wokers	Total	Local (Baluchist an Province)	Local (Rest of Pakistan)	Expatriat e	Female Wokers	Total
<b>Skilled</b>	22	1500	30	0	1552	13	874	51	0	938	30	373	25	0	428
<b>Unskilled</b>	92	315	0	0	407	77	159	0	0	236	35	85	0	0	120

Total	114	1815	30	0	1959	90	1033	51	0	1174	65	458	25	0	548
-------	-----	------	----	---	------	----	------	----	---	------	----	-----	----	---	-----

## Compliance Status of EMP Control Measures Q1-2014

### Appendix-H

### Uch-II Project

<b>Environmental / Social Impacts</b>	<b>Control &amp; Mitigation Measures</b>	<b>Monitoring Frequency</b>	<b>Responsibility</b>	<b>Compliance Status</b>
<b>Construction Noise</b>	<ul style="list-style-type: none"> <li>- Regular maintenance of machinery to reduce construction noise</li> <li>- Use acoustic panels around high noise machines</li> <li>- Monthly monitoring of Uch-II ambient &amp; occupational noise</li> </ul>	Monthly	EPC Contractor	Complied
<b>Dust Emissions</b>	<ul style="list-style-type: none"> <li>- Daily monitoring of dust on roads and excavation areas</li> <li>- Water sprinkling at dusty areas / roads on daily basis</li> <li>- Use of dust masks by labor working in the dusty areas</li> </ul>	Daily	EPC Contractor	Complied
<b>Land Use</b>	<ul style="list-style-type: none"> <li>- Land update kept minimum required and restricted to existing compound area and within existing water supply pipeline</li> </ul>		EPC Contractor / Uch-II	Complied
<b>Water Sourcing</b>	<ul style="list-style-type: none"> <li>- Water consumption monitoring on monthly basis</li> <li>- Water conservation</li> </ul>	Monthly	EPC Contractor / Uch-II	Complied
<b>Vehicles &amp; Equipment Emissions Testing</b>	<ul style="list-style-type: none"> <li>- Periodic maintenance / tuning of all vehicles used during project</li> <li>- Third party emissions testing as per defined frequency</li> </ul>	Baseline when vehicle / equipment inducted in pool & subsequently after every year	EPC Contractor	Complied
<b>Soil and Land Contamination</b>	<ul style="list-style-type: none"> <li>- Fuel, lubricants and chemical storage in covered bunded areas</li> <li>- Regular inspection of work areas and storage areas to detect any leakages/ spillage</li> <li>- Safe movement of chemicals and fuels</li> <li>- Spill emergency response procedure</li> </ul>	Daily	EPC Contractor	Complied
<b>Drainage &amp; Storm Water Run-off</b>	<ul style="list-style-type: none"> <li>- Provision of proper drainage system at camp area and site area</li> <li>- Provision of storm water drainage system at entire site</li> <li>- Provision of following drainage system for power plant and all drains will discharge into evaporation pond after required treatment</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor / Uch-II	Complied



	<ul style="list-style-type: none"> <li>Cooling Tower blow down, Demin plant regenerated waste water, Sanitary wastewater, Oily wastewater and Sludge from clarifiers</li> </ul>			
<b>Camp Effluent</b>	- Provision of proper septic tanks for construction camp effluents	Ongoing (throughout the project phase)	EPC Contractor	Complied
<b>Hazardous &amp; Non Hazardous Waste Management</b>	<ul style="list-style-type: none"> <li>Segregation of hazardous &amp; non hazardous waste</li> <li>Waste storage at designated areas</li> <li>Waste quantification on monthly basis</li> <li>Non-hazardous waste disposal to proper landfill</li> <li>Hazardous waste disposal through approved waste contractor</li> </ul>	Monthly	EPC Contractor	Complied
<b>Disturbance to Wild Life</b>	<ul style="list-style-type: none"> <li>Preying and hunting is prohibited at Uch-II site for all kind of animals and birds</li> <li>Any incident reported shall be investigated &amp; controlled.</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor / Uch-II	Complied
<b>Community &amp; Power Plant Workers Safety</b>	<ul style="list-style-type: none"> <li>Following traffic and heavy load movement plan</li> <li>Monitoring safety hazards arising from traffic nuisance</li> <li>Taking corrective actions to prevent reoccurrence.</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor / Uch-II	Complied
<b>Traffic Disturbance</b>	<ul style="list-style-type: none"> <li>Use of national highway for transportation</li> <li>Traffic rush hours avoided for transportation of heavy loads</li> <li>Follow speed limit rules</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor	Complied
<b>Local Employment Conflicts</b>	- Providing employment to labors, & semi-skilled local population	Ongoing (throughout the project phase)	EPC Contractor	Complied
<b>Archaeological &amp; Cultural Resources</b>	<ul style="list-style-type: none"> <li>Monitoring excavation activities carefully</li> <li>Upon discovering any remains of archeological significance immediately informing Uch-II and preserving them</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor / Uch-II	Complied
<b>Project/Community Interface</b>	<ul style="list-style-type: none"> <li>Non local project staff house in construction camp within boundary of power plant</li> <li>Grievance handling procedure developed to handle community social &amp; environmental complaints</li> </ul>	Ongoing (throughout the project phase)	EPC Contractor / Uch-II	Complied

**Appendix-I**

Un-skilled Workers Training Record		
	No of workers Trained	Nature of Trainings Provided
Q1-2013	149	<b>Work</b> at Height, <b>Confined</b> Spaces, <b>Manual</b> Handling Techniques, <b>Hand</b> Injuries/Pinch Points, <b>Slip</b> Trip Fall Hazards, <b>Chemical</b> & Fuel Handling, <b>Hot</b> Job Safety, <b>Fire</b> Fighting
Q2-2013	272	<b>Burns</b> First Aid, <b>Health</b> & Hygiene, <b>Work</b> at Height / Use of Scaffold, <b>Confined</b> Spaces, <b>Grinder</b> Safety, <b>Defensive</b> Driving, <b>Slip</b> Trip Fall Hazards, <b>Manual</b> Handling Techniques
Q3-2013	107	<b>Commissioning</b> Safety, <b>HAZMAT</b> , <b>Spill</b> Response, <b>Work</b> at Height / Use of Scaffold, <b>Confined</b> Spaces, <b>Fire</b> Fighting
Q4-2013	135	<b>Excavation</b> Safety, Use of <b>PPEs</b> , Slip Trip Fall Hazards, <b>Work</b> at Height /Use of Scaffold, <b>Manual</b> Handling
Q1-2014	28	<b>Confined</b> Spaces, <b>Electrical</b> Safety, <b>Slip</b> Trip Fall Hazards, <b>Work</b> at Height, <b>Manual</b> Handling, <b>Housekeeping</b> , <b>HIV/AIDs &amp; STDs</b> awareness