Environmental Monitoring Report

Semestral Report
Project number: 46391-001
Period: July to December 2018
April 2019

Viet Nam: Ha Noi and Ho Chi Minh City Power Grid Development Sector Project

SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT

Period July – December 2018

Project Number: 46391-001

Loans 3161/8286-VIE: HA NOI AND HO CHI MINH CITY POWER GRID DEVELOPMENT SECTOR PROJECT

Executing Agency: EVN Ho Chi Minh City

Prepared by Ho Chi Minh Power Corporation, Electricity of Vietnam for Asian Development Bank
CURRENCIES
(Rate of exchange of 31 December 2018)
Currency Unit – VND
$1.00 = 23,155 VND

ABBREVIATIONS

ADB
Asian Development Bank
B&C documents
Bidding and Contract documents
CEMP
Contractor Environmental Management Plan
CSC
Construction Supervision Consultant
EIA
Environmental Impact Assessment
EMP
Environmental Management Plan
E VN HANOI
Ha Noi Power Corporation
E VN HCMC
Ho Chi Minh City Power Corporation
HCMC
Ho Chi Minh City
IEE
Initial Environmental Examination
MoNRE
Ministry of Natural Resources and Environment
PIC
Project Implementation Consultant
RoW
Rights of Way
UGC
Underground cable
UXO
Unexploded Ordnance

WEIGHTS AND MEASURES

dB(A) – Decibel (weighted average)
ha – hectare
km – kilometre
km² – square kilometre
m – meter
m² – square meter
m³ – cubic meter

NOTE
In this report, "$" refers to US dollars unless otherwise stated.

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1. INTRODUCTION

1. Ha Noi and Ho Chi Minh City Power Grid Development Project aims to strengthen the capacity and reliability of the power infrastructure in Ha Noi and Ho Chi Minh City, Viet Nam through the rehabilitation and development of the 220kV and 110kV high-voltage power transmission systems and substations and associate to medium voltage supply for the power distribution system of the two cities. The Project also aims to strengthen the institutional capacity of Ha Noi Power Corporation (EVNHANOI) and Ho Chi Minh City Power Corporation (EVNHCMC).

2. The Project in Ha Noi and Ho Chi Minh City consists of 8 core subprojects and 27 non-core subprojects that were originally defined by the Viet Nam Electricity (EVN).

3. Total 4 core and 8 noncore subprojects will be constructed in Ho Chi Minh city.

1.1. Report Purposes

4. The purpose of this report is to provide:
   - Preparation status of IEEs for all noncore subprojects;
   - Monitoring results during construction phase of 2 subprojects namely: (i) South Sai Gon-District 8 transmission line; (ii) 110kV Thu Duc Water Plant S/S and UGC; in compliance with both policies of ADB and the Government on the environmental safeguards;2;
   - Mitigation measures implemented during construction phase; and
   - Monitoring results during operation phase of 5 subprojects namely: (i) 110 kV Tham Luong substation; (ii) 110 kV underground cable connecting to Tham Luong substation; (iii) 110kV Tan Hung S/S and connection line; (iv) 220 kV District 8 S/S and (v) 110kV Thu Duc Water Plant S/S and UGC.

1.2. Project Implementation Progress

1.2.1. On-going Site Works

5. By the end of this semi-annual period (31 December 2018), 5 subprojects were completed, namely: (i) 110 kV Tham Luong substation; (ii) 110 kV underground cable connecting to Tham Luong substation; (iii) 110kV Tan Hung S/S and connection line; (iv) 220 kV District 8 S/S and Thu Duc Water Plant S/S and UGC T/L and handed over to the operation management unit which is the High Voltage Grid Company of Ho Chi Minh City (a subsidiary of Ho Chi Minh Electricity Corporation) and came into operation in December 2016, December 2016, August 2017, Oct 2017 and November 2018 respectively.

6. During this monitoring period (between 1 July 2018 and 31 December 2018), the construction activities took place in 2 subprojects. The scope of each contract package is summarized in Table 1.

7. Three subprojects; (i) Cau Bong- Binh Tan transmission line; (ii) 220kV Tan Cang S/S and (iii) 220kV Cat Lai - Tan Cang power line, were not under construction in this monitoring period because of the following reasons:

---

1 There were nine subprojects proposed in the original list, but one (11kV Cat Lai – An Khanh power line) was withdrawn in 2017.

2 During this monitoring period, there was no construction work for three subprojects; (i) Cau Bong- Binh Tan T/L; (ii) 220kV Tan Cang S/S and (iii) 220kV Cat Lai - Tan Cang power line. See chapter 1.2.1 for the reasons.
(i) **Cau Bong- Binh Tan transmission line:** Construction stopped from May 2018 due to the delays in approval by MOIT for adjustment of technical design and in approval of compensation for affected households by local authorities. The EVNHCMC sent a letter to Hoc Mon district to solve a problem, until now no positive result has been obtained.

(ii) **220kV Tan Cang S/S:** Until the end of December 2018, the Ministry of Defense has not handed over the ground to EVN HCMC, so no construction is taking place yet.

(iii) **220kV Cat Lai - Tan Cang power line:** Since the Contractor- Northern Power Construction Joint Stock Company violated regulations in the bidding, EVN HCMC issued a document No. 2361-EVNHCMC on 22 June 2018, reported to the Electricity of Vietnam (EVN) and asked EVN to allow EVNHCMC to liquidate the contract with this contractor. Currently, EVN has no written response, so there is no basis for implementing the next step. Therefore, until the end of December 2018, W1 package has not been implemented.

Table 1 : The Scope of 2 civil works packages of two subprojects

<table>
<thead>
<tr>
<th>No.</th>
<th>Subprojects/Contract packages</th>
<th>Scope of work</th>
<th>Contractor</th>
<th>Construction starting date</th>
<th>Expected Operation date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Sai Gon - District 8 220kV transmission line</td>
<td>The new 6.5 km 220kV overhead (OHL) and underground (UGC) transmission line to connect the new District 8 substation to Binh Chanh substation (South Sai Gon).</td>
<td>Joint venture of HCMC Urban Drainage Company and Transportation and Public Works Join stock company</td>
<td>August 2016</td>
<td>March 2019</td>
</tr>
<tr>
<td>2</td>
<td>110kV Thu Duc Water Plant S/S and UGC T/L</td>
<td>Construction of new 110 kV substations, and 50m underground cable. The underground cable will be started from the new tower which will be constructed at the span 44A and 45A of the 110kV Thu Duc - Binh An transmission line, then will go to the busbar of the 110kV Thu Duc water plant substation.</td>
<td>Electric Construction Joint Stock Company No.1)</td>
<td>28 August 2017</td>
<td>November 2018</td>
</tr>
</tbody>
</table>

8. The progress of ongoing civil work of 2 subprojects is summarized in Table 2.
Table 2: Construction Progress of 2 subprojects

<table>
<thead>
<tr>
<th>No.</th>
<th>Subprojects</th>
<th>Implementation progress</th>
</tr>
</thead>
</table>
| 1   | South Sài Gòn - District 8 220kV transmission line | **Construction package–NSG-Q8-G: “Digging and rebuilding underground cable ditch”**:  
- Section on Ta Quang Buu Street and Road 1107: Completed the construction of cable tunnel and underground cable ditch.  
- The section on National Highway 50: The construction progress is 100%  
**Construction package–NSG-Q8-D1: “Providing installation and connection of 220kV underground cable”**:  
- The contractor has pulled 36/36 cable for 05 segments from Q8 Substation to JP1. The construction progress is 100%  
**Construction package –NSG-Q8-D2: “Overhead transmission line”**  
- Completed position of 12/12 towers. The construction progress is 100%. However, the subproject has not been completed because it is waiting for electricity cut-off schedule to finalize connecting to electricity network. |
| 2   | 110kV Thu Duc Water Plant S/S and UGC | - Construction of new 110 kV substations: Completed  
- 50m underground cable: Completed  
- The substation came into operation in November 2018 |

(Source: HCMC EVN December 2018)

1.2.2. Previous Activities

9. The Project proposes 12 subprojects (4 core subprojects and 8 non-core subprojects) for EVNHCMC. During this semi-annual period no IEE of non-core subprojects has been prepared (Table 3).

Table 3: Status of Environmental Safeguards Documents

<table>
<thead>
<tr>
<th>Subproject</th>
<th>DoNRE EIA Approval</th>
<th>IEE</th>
<th>Construction started</th>
<th>Construction completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Core Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of 110 kV Tam Lương S/S</td>
<td>Oct-14</td>
<td>Disclosed in Jan 2014</td>
<td>Mar-16</td>
<td>Dec-16</td>
</tr>
<tr>
<td>Construction of 110 kV underground T/L to Tam Lương S/S</td>
<td>Oct-14</td>
<td>Disclosed in Jan 2014</td>
<td>May-16</td>
<td>Dec-16</td>
</tr>
<tr>
<td>B. Non-Core Project</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/L (220kV/110kV) Cau Bong - Bình Tân</td>
<td>Jun-15</td>
<td>Disclosed in Nov 2015</td>
<td>Aug-16</td>
<td>(Dec 2019)</td>
</tr>
<tr>
<td>110kV Tan Hung S/S and connection line</td>
<td>Jun-15</td>
<td>Disclosed in Mar 2016</td>
<td>Sep-16</td>
<td>Aug-17</td>
</tr>
<tr>
<td>110kV Thu Duc Water Plant S/S and UGC T/L</td>
<td>Aug-15</td>
<td>Disclosed in Jun 2016</td>
<td>Aug-17</td>
<td>Nov-18</td>
</tr>
<tr>
<td>110kV Phuoc Long S/S and connection line</td>
<td>Mar-17</td>
<td>Disclosed in May 2017</td>
<td>Dec-17</td>
<td>(Mar 2019)</td>
</tr>
<tr>
<td>220kV Tan Cang S/S</td>
<td>Mar-17</td>
<td>Disclosed in May 2017</td>
<td>Dec-17</td>
<td>(Mar 2019)</td>
</tr>
<tr>
<td>11kV Hoc Mon 3 Sub and connection line (4 km UGC)</td>
<td>Q4 2018</td>
<td>Disclosed in Q4 2018</td>
<td>Q4 2018 (expected)</td>
<td>(Mar 2019)</td>
</tr>
<tr>
<td>11kV Cau Ka Sub and connection line</td>
<td>Q4 2018</td>
<td>Disclosed in Q4 2018</td>
<td>Q4 2018</td>
<td>not yet</td>
</tr>
</tbody>
</table>

*S/S = substation, T/L = transmission line*
2. COMPLIANCE WITH ADB LOAN COVENANTS AND APPLICABLE GOVERNMENT LAWS, REGULATIONS AND REQUIREMENTS

2.1. Status of compliance with ADB loan covenants

10. As required, all safeguard environmental schedule stated on Loan Covenant need to strictly comply with. The list of environmental loan covenants and the level of compliance of Loan 3161/8286 is presented in Table 4.

Table 4: Project environment covenants and level of compliance

<table>
<thead>
<tr>
<th>ADB Environmental loan covenants</th>
<th>Status of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schedule 4, Paragraph 7</strong></td>
<td>Complied with Ten (10) EIA for 10 subprojects’ (Tham Luong substation; 110kV Underground cable connected to Tham Luong substation; 220 kV District 8 substation; 220kV South Saigon – District 8 transmission line; 220 kV Cau Bong-Binh Tan transmission line, 110 kV Tan Hung and connection line, Phuoc Long SS and connection line, 110kV Thu Duc Water Plant S/S; 220kV Tan Cang S/S; 220kV Cat Lai-Tan Cang power line) have been prepared and approved by Ho Chi Minh city Environment and Natural Resources Department. Eight (8) IEEs have been prepared for 10 subprojects, (where 2 IEE addressed 4 subprojects: Tham Luong substation with 110kV Underground cable connected to Tham Luong substation and 220kV South Saigon – District 8 substation) and others are 220 kV Cau Bong-Binh Tan transmission line, 110 kV Tan Hung and connection line, Phuoc Long SS and connection line, 110kV Thu Duc Water Plant S/S and UGC T/L, 220 kV Tan Cang substation and 220 kV Cat Lai-Tan Cang transmission line; They are approved by ADB and disclosed on ADB website. EMP is one chapter in both Vietnamese EIA and ADB IEE. EMP has been included in bidding documents of all issued civil packages.</td>
</tr>
<tr>
<td><strong>Schedule 4, Paragraph 10</strong></td>
<td>Being complied with EVNHC/MC has recruited national consultant companies to prepare IEEs for 8 non-core subprojects and PIC reviewed and revised before submitting for ADB approved. The bidding documents and bid evaluation reports in accordance with procedures acceptable to ADB for recruiting individual consultants.</td>
</tr>
<tr>
<td><strong>Schedule 5, Paragraph 3</strong></td>
<td>Being complied with - Semi-annual monitoring reports have been submitted to ADB for approval and disclosure, starting from the period of Jan-June 2016; - Daily monitoring at construction site is conducted by environmental officer of contractors and construction supervision consultants;</td>
</tr>
</tbody>
</table>

The Borrower shall ensure that the Executing Agencies do not award any Works contract which involves environmental impacts until: (a) The Ministry (or its Department, as the case may be) of Environment and Natural Resources has issued an environmental certificate approving the IEE relevant to the Subproject; and (b) the Executing Agencies have incorporated the relevant provisions from the EMP into the Works contract related to the Subprojects.
### ADB Environmental loan covenants

<table>
<thead>
<tr>
<th>Schedule 5, Paragraph 8</th>
<th>Status of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Borrower shall cause the Executing Agencies to make available necessary budgetary and human resources to fully implement the EMP and the RP.</td>
<td>Being complied with the implementation included mitigation measures and compliance monitoring. The budgets for mitigation measures and cost for environmental effect monitoring were included in civil work contracts of ongoing subprojects. The performance monitoring cost is included in the management budget of PMU, and contracts of CSC and PIC.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schedule 5, Paragraph 9</th>
<th>Status of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Borrower shall cause the Executing Agencies to ensure that all bidding documents and contracts for Works contain provisions that require contractors to: (a) comply with the measures relevant to the contractor set forth in the IEE, the EMP and the RP and any corrective or preventative actions set forth in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; and (c) provide the Executing Agencies with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and the RP.</td>
<td>The bidding documents of all civil contracts contain provisions that require contractors to comply with mitigation measures stated in IEE including the implementation of environmental effect monitoring. The budget for EMP requirements included in the contracts of relevant stakeholders (as contractor, CSC, PIC). And unanticipated environmental risks or impacts that arise during construction will be included in SEMR and send to relevant stakeholder for implementing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schedule 5, Paragraph 10</th>
<th>Status of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Borrower shall cause the Executing Agencies to do the following: (a) submit semi-annual Safeguards Monitoring Reports to ADB until the Project completion and disclose relevant information from such reports to the affected persons and to ADB website promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and the RP, as applicable, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and (c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP, and the RP promptly after becoming aware of the breach.</td>
<td>Being complied with the requirements set forth in EMP through internal environmental management system. As of 31 December 2018, environmental effect monitoring was conducted for 1 of 2 under construction subprojects, which is 110kV Thu Duc Water Plant S/S and UGC T/L for one time in August 2018, because the construction finished in November 2018, the second monitoring time was not conducted. Regarding South Saigon-District 8 T/L: environmental effect monitoring was conducted in June 2018, after that from September 2018 no construction activities have been identified.</td>
</tr>
</tbody>
</table>
ADB Environmental loan covenants

were implemented. Thus, environmental effect monitoring was not implemented because no impact occurred
- All civil works on the site complied with ADB requirements

<table>
<thead>
<tr>
<th>Schedule 5, Paragraph 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>For any Works supported under the Project, the Borrower shall ensure that the Executing Agencies will not issue a notice to proceed with such Works, until it has been confirmed in writing that the related construction site is free and clear from any unexploded ordnance.</td>
</tr>
<tr>
<td>Complied with</td>
</tr>
<tr>
<td>- The Project Owner sent a letter to the Ho Chi Minh City Military Command to get recommendation for UXO clearance for all subprojects before the construction starts. The Ho Chi Minh City Military Command has recommended conducting UXO clearance for all subprojects that are now under construction. The UXO clearance has been conducted by military unit, which hires by the Project owner, before construction commences.</td>
</tr>
<tr>
<td>- Four subprojects; (i) Construction of 110 kV Tham Luong S/S; (ii) Construction of 110 kV underground T/L to Tham Luong S/S; (iii) District 8 SS; and (iv) Cau Bong - Binh Tan TL have obtained clearance of UXO by Army Brigade 25 of Dong Nai Province. The Safety Assurance Commitments were issued on (i) 28 December 2015; (ii) 28 December 2015, (iii) 30 June 2016; and (iv) 15 February 2017 by Brigade 25, respectively (see Appendix 1 of the environmental monitoring report for January-June 2017)</td>
</tr>
<tr>
<td>- Two completed subprojects: “Tan Hung SS” and “South Saigon-District 8” TL need not to implement UXO clearance since those subprojects are upgraded/expanded from existing transmission line and substation that are being clearance of UXO before.</td>
</tr>
<tr>
<td>- 110kV Thu Duc Water Plant substation and UGC Transmission Line TL need not to implement UXO clearance since the subproject area is a part of Thu Duc Water Plant that are being cleared from UXO during construction of the Water Plant in 2005</td>
</tr>
</tbody>
</table>

CSC = Construction Supervision Consultant

### 2.2. Status of compliance with government environmental requirements

11. The status of compliance with Government Environmental requirements are presented in Table 5.

#### Table 5: The Government Environmental requirements and compliance levels

<table>
<thead>
<tr>
<th>No.</th>
<th>Government requirements</th>
<th>Environmental requirements</th>
<th>Compliance levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Environmental Protection Law No.55/2014/QH13 of the 13th National Assembly, the 7th Session, passed on 23 Jun 2014 and put into force from 1 Jan 2015.</td>
<td>Fully complied with</td>
<td>All environmental protection requirements are fulfilled, such as preparation of EIA report, implementation of mitigation measures.</td>
</tr>
<tr>
<td>2</td>
<td>Decree No. 18/2015/ND-CP dated 14 Feb 2015 of the Government on Regulating</td>
<td>Being complied with</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Government requirements</td>
<td>Environmental Standards and Regulations</td>
<td>Compliance levels</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------</td>
<td>-----------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Government requirements</strong></td>
<td><strong>Environmental Standards and Regulations</strong></td>
<td><strong>Compliance levels</strong></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Decree No.38/2015/ND-CP dated 24 Apr 2015 issued by the GOV on waste and wasted materials management.</td>
<td></td>
<td>Being complied with Solid waste is properly collected and disposed at Da Phuoc city licenced landfill site by HCMC urban Environmental Company, who signed a disposal contract with contractors.</td>
</tr>
<tr>
<td>4</td>
<td>Circular No.36/2015/TT-BTNMT dated 30 June 2015 issued by the MONRE regarding the hazardous waste management.</td>
<td></td>
<td>Being complied with Hazardous waste is collected and treated separately during construction phase at Da Phuoc landfill site by HCMC urban Environmental Company.</td>
</tr>
<tr>
<td>5</td>
<td>Circular No.27/2015/TT-BTNMT dated on 29 May 2015 on strategic environmental assessment, environmental impact assessment, and environmental protection plan.</td>
<td></td>
<td>Being complied with EIAs have been prepared for all subprojects following the guidance in the Circular and approved by relevant authorities before construction started.</td>
</tr>
<tr>
<td><strong>Legal documents on electricity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Decree No.14/2014/ND-CP dated 26 Feb 2014 promulgated by the GOV regarding the detailed regulation on the implementation of the Electricity Law on electric safety, put into force from 15 Apr 2014.</td>
<td></td>
<td>Being complied with All safety regulations on ROW distances, UGC safety regulations etc. are strictly followed.</td>
</tr>
<tr>
<td>2</td>
<td>Circular No.31/2014/TT-BCT dated 2 Oct 2014 issued by the Ministry of Industry and Trade (MOIT) regarding the detailed regulation on some contents of electrical safety.</td>
<td></td>
<td>Being complied with The regulated working hours, rest hours, occupational safety and occupational hygiene are relatively followed.</td>
</tr>
<tr>
<td><strong>Other relative legal documents:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Decree No. 45/2013/ND-CP dated 10 May 2013 of the GOV regarding the detailed regulation on some articles of the Labor Code on working hours, rest hours, occupational safety and occupational hygiene.</td>
<td></td>
<td>All workers must wear working protection facilities and trained on safety regulation at construction site.</td>
</tr>
<tr>
<td>2</td>
<td>Circular No.22/2010/TT-BXD dated 2 Dec 2010 issued by the Ministry of Construction (MOC) regarding the regulation on labour safety during the project construction process.</td>
<td></td>
<td>The labour hygienic conditions are relatively followed.</td>
</tr>
<tr>
<td>3</td>
<td>Decision No.3733/2002/QD-BYT issued by the Ministry of Health dated 10 Oct 2002 regarding the promulgation of 21 labour hygiene standards, 5 principles and 7 labour hygiene measurements.</td>
<td></td>
<td>Being complied with The impact mitigation measures are applied to meet this standard.</td>
</tr>
<tr>
<td><strong>Environmental Standards and Regulations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>QCVN 05:2009/BTNMT - National technical regulation on ambient air quality;</td>
<td></td>
<td>Being complied with The impact mitigation measures are applied to meet this standard. Water is sprayed when the dust is visible at construction site. All trucks transporting construction material are covered by canvas, etc.</td>
</tr>
<tr>
<td>2</td>
<td>QCVN 26:2010/BTNMT - National technical regulation on noise.</td>
<td></td>
<td>Being complied with The impact mitigation measures are applied to meet this standard.</td>
</tr>
</tbody>
</table>
3. INCORPORATION OF ENVIRONMENTAL REQUIREMENTS INTO PROJECT CONTRACTUAL ARRANGEMENTS

12. The environmental considerations have been incorporated into the subproject documents such as the EMP/IEE and the bidding and contract (B&C) documents of all subprojects. In the bidding and contract (B&C) documents, the content of the potential environmental impact and proposed mitigation measures for construction period in the EMP section in the disclosed IEE and the emergency respond plan are included.

4. SUMMARY OF ENVIRONMENTAL MITIGATIONS AND COMPENSATION MEASURES IMPLEMENTED

4.1. Monitoring methodology

4.1.1. Monitoring Compliance with Environmental Management Plan (EMP)

1. Monitoring of compliance by the contractors with the EMP is done through (i) reviewing the completed monthly EMP compliance forms of CSCs for each civil work package. ii) Site inspection by HCMC PMB (weekly); iv) environmental effect monitoring; and iv) Random site inspection by PIC, at least twice per year. In addition, monitoring is aided by the monitoring checklists that were prepared by the contractors based on detail described mitigation measures. The effectiveness of a contractor’s environmental management of particular impact item is evaluated subjectively using the following rating criteria:

   1. Very Good: all required measures are conducted
   2. Good: main measures are conducted
   3. Medium: some measures conducted
   4. Weak: few measures conducted
   5. Very weak: very few measures conducted

4.1.2. Site visit

13. The technical/environmental staffs of the HCMC PMB and construction supervision consultants visit sites daily to inspect both construction progress and implementation of environmental mitigation measures.

14. The contractor environmental officer works at construction daily to supervise contractor in application of suitable mitigation measures for ongoing subprojects. The PIC increases her visit
to all ongoing construction sites two times per year instead of 1 time per year to 30% of
construction site as stated in her TOR. During this report period, PIC conducted site visit of 2
subprojects which were under construction during this monitoring report: South Sai Gon-District
8 220 kV transmission line and 110kV Thu Duc Water Plant substation & UGC T/L subprojects,
on 24 December 2018.

4.2. Compliance Monitoring

4.2.1. Establishment of environmental management system and responsibilities of
relevant stakeholders

15. As stated in the approved IIEes, the independent environmental monitoring consultant will
not be mobilised to conduct environmental monitoring. Thus, the compliance monitoring tasks
have been assigned for Construction supervision consultant and HCMC PMB supported by PIC.
This monitoring focus on implementation of environmental protection measures of the
construction contractors. The contractor is responsible for environmental effect monitoring. Since
contractors are not competent/not permitted for taking and analysing environmental parameters,
they hire a regulated environmental monitoring unit with certified laboratory to conduct this
environmental effect monitoring. The status of internal environmental monitoring system could be
summarized in Figure 1.
Figure 1: Environmental management system
(Note: WO 1, 2 is a general symbol for working packages of a subproject)

16. The detail description of Environmental monitoring responsibilities of each stakeholder is presented in Table 6.

Table 6: Environmental monitoring Stakeholder's responsibilities

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Responsibilities</th>
<th>Status of compliance</th>
</tr>
</thead>
</table>
| Ho Chi Minh City Project Management Board (HCMC PMB) | • Establish an Environment Unit led by an Environmental Staff to implement EMP tasks  
• Manage, implement and supervise the compliance of the EMP and any conditions for approval, including the supervision of construction and operation of all Board staff and Contractor | Yes, HCMC Project Management Board has assigned two responsible staff to be in charge of EMP implementation monitoring and coordinate along relevant stakeholders. |
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Responsibilities</th>
<th>Status of compliance</th>
</tr>
</thead>
</table>
|                                                | • Evaluate the performance of EMP and conduct revisions, or suspension of operations in cases of violating the conditions of the EMP, which can cause serious impacts on the local community. However, no case has happened until now.  
• Ensure the effective communication and dissemination of content and requirements in EMP to the Contractor.  
• Assist the Contractor in implementing sub-plans  
• Supervise EMP performance  
• Report EMP performance to EVN, ADB by semi-annual environmental monitoring report  
• Prepare summary reports on Project’s environmental activities upon request  
• Brief the Project’s information in community meetings  
• Ensure continuing communication with local communities and fulfill commitments to facilitate for community consultations during project life.                                                                                                                                                                                                                       | - Yes, construction supervision consultants were assigned to be in charge of EMP compliance monitoring;  
- HCMC PMB assigned 2 officers to monitor 2 subprojects under construction  
- The supervision activities have been taking place daily at construction site.  
- The “environmental supervision plan” and “environmental monitoring plan” were prepared and implemented; and the consultants have provided on job training to workers on the implementation of environmental mitigation measures and health & working safety                                                                                     |
| Construction Supervision Consultant           | • Prepare and implement Environmental Supervision Plan during construction phase.  
• Prepare and implement Environmental Monitoring Plan during construction phase  
• Report on any incidents or non-compliances of EMP to HCMC PMB  
• Ensure adequate onsite training to all staff related to environmental supervision  
• Provide recommendations on EMP performance to HCMC PMB                                                                                                                                                                                                                          |                                                                                                           |
| Project Implementation Consultant (PIC)        | • Assist EVN/DPMB for monitoring and evaluation of safeguards compliance  
• Maintain close coordination with the safeguard team throughout the project life.  
• Support HCMC PMB in preparation of IEE for noncore projects and in writing semi-annual environmental monitoring report  
• Work with HCMC PMB to provide training for awareness building on safeguards issues                                                                                                                                                                                                                                                                       | Yes, project implementation consultant has been mobilised to support consultant company hired by HCMC PMB in IEE preparation and provide trainings and conduct site inspection                                                                 |


<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Responsibilities</th>
<th>Status of compliance</th>
</tr>
</thead>
</table>
| Contractor  | • Prepare and keep records and necessary data as required in EMP and submit to Supervision Consultant  
• Ensure that workers are informed of purposes of EMP and aware of necessary measures to implement EMP  
• Be responsible for environmental effect monitoring. Contractor need to hire the environmental monitoring Centre/Agency with certified laboratory (VILAS) to taking and analysing environmental samples | Yes, each contractor of completed/ongoing civil work packages assigned environmental officers to be in charge of environmental management. |
| Regulated environmental monitoring Centre/Agency with certified laboratory (VILAS) | • These units (hired by the contractor) will conduct measuring directly and taking air, water, soil samples from the construction site. Then bring the samples to the VILAS certified laboratory to analyse. | The Research Centre for Technology and Environmental service has been hired by the contractor of 110kV Thu Duc Water Plant substation and UGC Transmission Line subprojects for monitoring of air and wastewater quality.  
The Research Centre for Technology and Environmental service has been hired by the contractor of South Sai Gon-District 8 TL for monitoring of air and wastewater quality for third quarter 2018 |
| Local authority and community | • Participate in monitoring EMP implementation | Yes |

17. Monitoring system has been established among relevant stakeholders of ongoing subprojects to ensure internal monitoring of EMP compliance; the detail is summarized in Table 7.

<table>
<thead>
<tr>
<th>Environmental officer</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho Van Minh</td>
<td>HCMC Project Management Board- officer responsible for environment aspect of ADB funded projects</td>
</tr>
<tr>
<td>Nguyen Thi Loan</td>
<td>Project Implementation Consultant (PIC)</td>
</tr>
<tr>
<td><strong>South Sài Gòn - District 8 220kV transmission line</strong></td>
<td></td>
</tr>
<tr>
<td>Đặng Công Tuan</td>
<td>CSC-Nam An Company</td>
</tr>
<tr>
<td>Nguyễn Hieu</td>
<td>Contractor-Joint venture of HCMC Urban Drainage Company and Transportation and Public Works Join stock company</td>
</tr>
<tr>
<td><strong>110kV Thu Duc Water Plant substation and UGC Transmission Line</strong></td>
<td></td>
</tr>
<tr>
<td>Đạo Thị Kim Thúy</td>
<td>HCMC Project Management Board- officer responsible for all aspect including environment for this subproject</td>
</tr>
<tr>
<td>Đoàn Minh Đức</td>
<td>Electric Construction Joint Stock Company No. 1</td>
</tr>
</tbody>
</table>

CSC = Construction Supervision Consultant

4.2.2. Status of Environmental Management Plan (EMP) Compliance during the Operation Phase

18. Five completed subprojects (i) 110 kV Tham Luong substation; (ii) 110 kV underground cable connecting to Tham Luong substation; (iii) 110 kV District 8 substation; (iv) 110 kV Tan Hung substation and connection line and 110kV Thu Duc Water Plant substation & UGC T/L
subprojects have been in operation stage since December 2016, December 2016, October 2017, August 2017 and November 2018, respectively.

19. The environmental monitoring during operation phase is conducted by HCMC high voltage Company who submits the monitoring report quarterly to EVN HCMC and DONRE. The Ho Chi Minh City Power Project Management Board will send a letter to EVN HCMC to request providing the results of EMF monitoring of Tan Hung substation. The obtained results will be attached in next monitoring report (Jan-June 2019). In the case of Thu Duc Water Plant substation, it has started operation in November 2018. The EMF monitoring will be conducted in first quarter 2019. During operation no occupational accidents, no hazardous incident, no occupational injury for workers. The status of EMP compliance of these five subprojects during the operation phase is summarized in **Error! Reference source not found.**.

### Table 8: EMP Compliance Status of Completed Subprojects

<table>
<thead>
<tr>
<th>No.</th>
<th>EMP Requirement</th>
<th>110 kV Tham Luong substation</th>
<th>110 kV District 8 substation</th>
<th>110 kV Tan Hung substation and connection line</th>
<th>110 kV Tham Luong UGC T/L to kV Tham Luong substation</th>
<th>110 kV Thu Duc Water Plant substation &amp; UGC T/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Came into operation in:</td>
<td>December 2016</td>
<td>October 2017</td>
<td>August 2017</td>
<td>December 2016</td>
<td>November 2018</td>
</tr>
<tr>
<td>2</td>
<td>Occupational health and safety regulations and guidelines of MoLISA should be applied to operations of substation or transmission line.</td>
<td>Occupational health and safety regulations and guidelines of MoLISA have been applied, and no occupational accidents, no hazardous incident, no occupational injury for workers occur.</td>
<td>Same as left.</td>
<td>Same as left.</td>
<td>Same as left.</td>
<td>Same as left.</td>
</tr>
<tr>
<td>3</td>
<td>Ensure substation property is adequately fenced with clearly visible danger warning signs to keep public out.</td>
<td>The substation property is adequately fenced with high brisk wall and clearly visible danger warning signs are on place to keep public out</td>
<td>Same as left.</td>
<td>Same as left.</td>
<td>N/A to T/L</td>
<td>Same as the subproject “110 kV Tham luong substation and N/a to T/L”</td>
</tr>
<tr>
<td>4</td>
<td>Ensure transmission line towers are marked with clearly visible danger warning signs to keep public out.</td>
<td>N/A to substation</td>
<td>N/A to substation</td>
<td>The connection line towers are marked with clearly visible danger warning signs to keep public out. Thus, no danger to local people will be occurred</td>
<td>N/A to underground T/L</td>
<td>N/A to substation and underground T/L</td>
</tr>
<tr>
<td>5</td>
<td>(For substation) Store and handle transformer fluids and other hazardous materials according to international procedures and standards</td>
<td>The transformer fluids and other hazardous materials are stored and handled according to the Vietnamese and international procedures and standards. The substation has signed a contract with Ho Chi Minh URENCO to be transported and treated hazardous waste as regulated by Vietnamese Government</td>
<td>Same as left.</td>
<td>Same as left.</td>
<td>N/A to T/L</td>
<td>Same as the subproject “110 kV Tham luong substation and N/a to T/L”</td>
</tr>
</tbody>
</table>
4.2.3. Status of Environmental Management Plan (EMP) Compliance during the Construction Phase

20. During this report period, 2 subprojects were under construction. They are:
   - South Sài Gòn - District 8 220kV transmission line
   - 110kV Thu Duc Water Plant substation & UGC T/L

21. The EMP compliance of the 2 subprojects is taken from monthly reports of contractors and construction supervision officers. The monitoring results are summarized below (all photos are taken during July-December 2018).

   a. South Sài Gòn - District 8 220kV transmission line

   The Good Points (Figure 2)

22. The subproject has placed board with subproject information and contacted telephone number as well as warning signs at construction sites. The workers were equipped with proper protective equipment during working at height (Photo ). The construction site was surrounded by safety pass to prevent unauthorized people’s access (Photo Photo ).

23. To reduce the noise generated by project vehicles/trucks transporting the soil during the night, contractors use the best noise reduction machinery and requested drivers make no horn, turn off the engine during the loading of materials or waste. All drivers strictly follow the regulation, cover truck carrying soil, building materials. As a result, no claim from households living along the construction has been occurred.

24. Construction workers have been living at houses rented near construction sites, so that the hygienic condition is sufficient (clean water, good water drainage, solid waste is collected by HCMC urban environment company). Workers have been provided training courses on the prevention of social evils and registered of temporary stay at Ward People’s Committee.

<table>
<thead>
<tr>
<th>Photo 1: The workers were using proper protective equipment during working at height</th>
<th>Photo 2: Safety pass was placed at the construction site</th>
</tr>
</thead>
</table>

Figure 2: Photos of good points of South Sài Gòn - District 8 220kV transmission line site (July-December 2018)
**The Points need to be overcome (Figure 3)**

- No warning sign on the road, where the installation of electrical pole was ongoing
  
  *(Construction package –NSG-Q8-D2: “Overhead transmission line”) (Photo)*

- Safety pass was not placed at the construction site of tower No. T15
  
  *(Construction package –NSG-Q8-D2: “Overhead transmission line”) (Photo)*

- Domestic and construction solid waste were scattered over the tower foundation No. T15
  
  *(Photo 5, 6)*

- Remained construction material at construction site of tower No. T15 *(Photo)*

- Stagnant water at construction site of tower No. T15 *(Photo)*

---

**Photo 3.** No warning sign on the road, where the installation of electrical pole was ongoing

*(Construction package –NSG-Q8-D2: “Overhead transmission line”)*

**Photo 4.** Safety pass was not placed at the construction site of tower No. T15

*(Construction package –NSG-Q8-D2: “Overhead transmission line”)*

**Photo 5.** Domestic solid waste was scattered over the tower foundation No. T15

*(Construction package –NSG-Q8-D2: “Overhead transmission line”)*

**Photo 6.** Remained construction solid waste at construction site of tower No. T15

*(Construction package –NSG-Q8-D2: “Overhead transmission line”)*
16

|---|---|

**Figure 3:** Photos of limited points of South Sai Gon-District 8 transmission line (December 2018)

b. **110kV Thu Duc Water Plant substation & UGC T/L**

*The Good Points (Figure 4)*

25. The subproject has placed board with subproject information and contacted telephone number as well as warning signs at construction sites. The construction activities have been implemented inside an area of Thu Duc water plant, where no residential area is closed by, so that the environmental impact on local people is limited. In addition, the substation is surrounded by high brick wall *(Error! Reference source not found.)*.

26. To reduce the noise gene rated by project vehicles/trucks transporting the construction materials, contractor uses the best noise reduction machinery and requested drivers make no horn, turn off the engine during the loading of materials. All drivers strictly follow the regulation, cover truck carrying building materials. As a result, no complaints from surrounding residents about the environmental problems caused by the project. Construction workers live at rented houses near construction sites, so that the hygienic condition is sufficient (clean water, good water drainage, solid waste is collected by HCMC urban environment company). Workers have been educated/ trained on the prevention of social evils and registered of temporary stay at Ward People's Committee.

27. After construction of substation completed, constructor is starting built/rehabilitating a road leading to the substation *(Error! Reference source not found.)*. The completed substation is very clean *(Error! Reference source not found.)* with available fire distinguishers for the case of fire *(Error! Reference source not found.)*.
<table>
<thead>
<tr>
<th>Photo 9: Construction site is surrounded by high brick wall</th>
<th>Photo 10: Construction of road leading to substation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo 11: Clean completed substation</td>
<td>Photo 12: Fire distinguishers are available at substation</td>
</tr>
</tbody>
</table>

**Figure 4:** Photos of good points of 110kV Thu Duc Water Plant S/S and UGC transmission line (December 2018)

*The Points need to be overcome (Figure 5)*

- Workers did not fully wear protective equipment at work (*Photo 14*)
- Clean water was not covered with lid (*Photo 15*) at construction site of road leading to the substation
- Electricity wire and water pipes are unsafety distributed (*Photo 16*) at construction site of road leading to the substation
| Photo 13: Workers did not fully wear protective equipment at work | Photo 14: Workers did not wear hard cap and shoes at work |
| Photo 15: Clean water was not covered with lid | Photo 16: Electricity wire and water pipes are unsafety distributed along alignment of road |

Figure 5 Photos of limited points 110kV Thu Duc Water Plant substation & UGC T/L (December 2018)
4.2.4. The monitoring reports of contractors

28. Contractors write weekly reports submitted to the HCMC PMB. Reports include: the number of workers at the week; environmental safety; construction progress of the project; accumulated construction volume and quality management. The report also includes illustrations of construction activities. Although these are construction progress reports, but the environment issue has also been monitored. However, the environmental impact and mitigation measures are described only briefly in this report.

29. In order to report more detailed on the mitigation measures adopted to minimize the environmental impact, such as smoke, dust, noise, safety, community health etc. the separate environmental reports are prepared by both contractors monthly and CSC quarterly. Those reports are submitted to HCM PMB.

4.2.5. Capacity Building or Training Activity

30. During this period, the monthly and quarterly environmental monitoring reports have been reviewed/commented by PIC then sent back to contractors and CSCs for correction and additions. The PIC has also instructed/guided them to write the reports. By this way, the environmental monitoring reports of contractor and CSC have been improved.

4.2.6. Results of Environmental Compliance Monitoring

31. As mentioned in previous section, during this monitoring report, 2 subprojects (District 8 substation and Tan Hung substation and connection line) have both construction phase and operation phase. Thus, the results of Environmental Compliance monitoring include both construction and operation phases.

32. Table 9 presents the results of EMP compliance monitoring during construction phase.

### Table 9: EMP Compliance Status of Ongoing Civil Work Package

<table>
<thead>
<tr>
<th>No.</th>
<th>EMP Requirement</th>
<th>South Saigon-District 8 TL</th>
<th>110kV Thu Duc Water Plant substation &amp; UGC T/L</th>
</tr>
</thead>
</table>
| 1   | Establishment of contractor’s facilities (offices, concrete batching areas etc.). | 1: Very Good  
- Sites are surrounded by a security fence so that they do not interfere with the welfare or social cohesion of surrounding communities.  
- Contractor’s storage facilities have been stored tightly at regulated area.  
- Workers use public toilet nearby construction site | 1: Very Good  
- Sites are surrounded by a security fence so that they do not interfere with the welfare or social cohesion of surrounding communities.  
- Contractor’s storage facilities have been stored tightly at regulated area. |
| 2   | Demarcation and clearing of RoW and ancillary facilities | 1: Very Good  
- Construction site is on the pavement or next to the road, which is well demarcated by iron plate fence.  
- No clearance of vegetation and other facilities is needed. | 1: Very Good  
- Construction site is inside Thu Duc Water Plant. It is surrounded by high brick wall  
- No clearance of vegetation and other facilities is needed. |
| 3   | Preparation of site: excavation, removal and disposal of unusable materials | 4: Weak  
- Domestic and construction solid waste were scattered over the lower foundation No T15 | 1: Very Good  
- Excavated material is used to raise the substation foundation. No soil amount needs to be disposed |
| 4   | Dust management | 1: Very Good  
- The contractor has applied dust control measures: covered truck transporting construction material; covered construction material and piles etc. | 1: Very Good  
- The contractor has applied dust control measures: covered truck transporting construction material; covered construction material and piles etc. |
<table>
<thead>
<tr>
<th>No.</th>
<th>EMP Requirement</th>
<th>South Saigon-District 8 TL</th>
<th>110kV Thu Duc Water Plant substation &amp; UGC T/L</th>
</tr>
</thead>
</table>
| 5   | Noise and vibration                     | 1: Very Good  
- The work generating big noise like road surface cutting is implemented right after permitted time by HCMC transportation Department (at 9 P.M.)  
- The duration of the road surface cutting lasts only half or one hour. | 1: Very Good  
- The work generating big noise is implemented at daylight hours only.                                        |
| 6   | Waste water from construction site      | 4: Weak  
- Wastewater generated at the tower area No. T17  
- Oil and fuel from machinery was collected and disposed to a regulated site.                                   | 1: Very Good  
- No wastewater generated at the construction site  
- Oil and fuel from machinery was collected and disposed to a regulated site.                                    |
| 7   | Disposal of site waste                  | 4: Weak  
- Unused Construction material is remained at construction site of tower No. T15 [Not improved since the previous monitoring period] | 1: Very Good  
- All waste materials were collected and disposed to Da Phuoc landfill.                                        |
| 8   | Storage and handling of fuel and lubricants | 1: Very Good  
- A fuel storage located next to the contractor office were securely fenced and provided with oil and water separators.  
- All waste oil and oil filters were collected and if possible recycled, otherwise to be disposed of to landfills | 1: Very Good  
- A fuel storage located next to the contractor office were securely fenced and provided with oil and water separators.  
- All waste oil and oil filters were collected and if possible recycled, otherwise to be disposed of to landfills |
| 9   | Community Safety from increased vehicle movements | 1: Very Good  
- All vehicles were properly maintained in good condition as they have passed technical registration and operated in accordance with transportation laws.  
- All loads were properly secured, and the loads are covered by canvas to prevent dust and falling down. | 1: Very Good  
- All vehicles were properly maintained in good condition as they have passed technical registration and operated in accordance with transportation laws.  
- All loads were properly secured, and the loads are covered by canvas to prevent dust and falling down. |
| 10  | Workplace health and safety              | 4: Weak  
- No warning sign on the road, where the installation of electrical pole was ongoing (Construction package -NSG-Q8-D2: "Overhead transmission line") [Not improved since the previous monitoring period]  
- Control noise and dust at construction site provided all workers with safety equipment  
- The workers are supplied on-site with: Potable water. | 4: Weak  
- Erect warning signs and barriers around work areas  
- Control noise and dust at construction site provided all workers with safety equipment  
- The workers are supplied on-site with: Potable water.  
- The workers were not fully using proper protective equipment when working [Not improved since the previous monitoring period] |
| 11  | Public access to site                   | 4: Weak  
- Safety pass was not placed at the construction site of tower No. T15 [Not improved since the previous monitoring period] | 4: Weak  
- Electricity wire and water pipes are unsafety distributed along alignment of road.                              |
<table>
<thead>
<tr>
<th>No.</th>
<th>EMP Requirement</th>
<th>South Saigon-District 8 TL</th>
<th>110kV Thu Duc Water Plant substation &amp; UGC T/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Worker health and safety</td>
<td>4: Weak - Workers are aware on the social problems and measures of preventing HIV/AIDS through mass media and training of contractor; - Workers are provided, safe water and hygienic bathing and cooking; - Workers have been equipped with labour protecting equipment and wear them during working time; - First aid, medicines are available at site for workers. - At one working place, worker was working at the area where the installation of electrical pole was ongoing. This could cause injury if the pole falling down. [Not improved since the previous monitoring period]</td>
<td>2: Good - Workers are aware on the social problems and measures of preventing HIV/AIDS through mass media and training of contractor; - Workers are provided, safe water and hygienic bathing and cooking; - First aid, medicines are available at site for workers. - Clean water was placed on the ground of the road construction site that did not ensure the hygienic condition (Construction of road leading to the substation) [Not improved since the previous monitoring period]</td>
</tr>
<tr>
<td>13</td>
<td>Rehabilitation of the project site</td>
<td>Not finished yet</td>
<td>1. Very good - Completed substation is very clean, - Road leading to substation has been constructed</td>
</tr>
<tr>
<td>14</td>
<td>Record of environmental monitoring</td>
<td>1. Very good - The monthly environmental monitoring report includes the section on environmental safety and environmental hygiene. The implemented environmental mitigation measures are included</td>
<td>1. Very good The monthly environmental monitoring report includes the section on environmental safety and environmental hygiene. The implemented environmental mitigation measures are included</td>
</tr>
</tbody>
</table>

4.3 Results of Environmental effect monitoring

4.3.1. 110kV Thu Duc Water Plant substation & UGC T/L

33. The Environmental effect monitoring has been conducted by contractor of 110kV Thu Duc Water Plant substation & UGC T/L subproject (Electric construction Joint Stock Company No. 1) who took environmental samples on 20 August 2018. The Environmental & Technology Research and Services Centre in Ho Chi Minh city has analysed the samples, and the results were obtained on 27 August 2018.

34. Assessment: the surrounding environment of 110kV Thu Duc Water Plant substation & UGC T/L subproject is good, no sign of environmental pollution. It can be concluded that the construction activities of the subproject do not affect the surrounding environment. The analysed results noise, air quality and wastewater quality from laboratory are presented in Appendix 2. The monitoring results are presented in Table 10

Table 10: The monitoring results of 110kV Thu Duc Water Plant substation & UGC T/L subproject

<table>
<thead>
<tr>
<th>Monitoring parameters</th>
<th>Monitoring locations/coordinates</th>
<th>Environmental quality assessment through monitoring result</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Air quality: noise level, NO₂, SO₂, CO, dust</td>
<td>XQ.200818.005 Expected Substation Construction area (X: 612,668; Y: 1,200,856 m)</td>
<td>All parameters are lower than allowable limits of regulations 1. Noise values are lower than allowable limit (70 dB) of QCVN 26:2010/BTNMT for noise.</td>
</tr>
</tbody>
</table>
2. Other air quality values are also lower than allowable limits of QCVN 05:2013/BTNMT for ambient air quality (The results are presented in Appendix 1)

| 3 | Wastewater quality: pH, TSS, BOD₅, NH₄⁺, NO₃⁻, PO₄³⁻, Grease and Oil, Total Coliform | NT.2008.001.001. Wastewater from workers’ camp | NT.2008.001.002. Wastewater from foundation of transformer | All parameters are lower than allowable limits of QCVN 14:2008/BTNMT column B for surface wastewater quality (The results are presented in Appendix 1) |

5. KEY ENVIRONMENTAL ISSUES

5.1. Key Issues Identified
(e.g., non-compliance to loan covenants, EMP and/or government environmental requirements, insufficient mitigation measures to address Project impacts, incidents, accidents, etc.)

5.1.1. South Saigon-District 8 TL
- Domestic and construction solid waste were scattered over the tower foundation No. T15
- Wastewater generated at the tower area No. T17.
- Unused Construction material is remained at construction site of tower No. T15. [Not improved since the previous monitoring period]
- No warning sign on the road, where the installation of electrical pole was ongoing. It can cause accident to communicators on the road (Construction package –NSG-Q8-D2: “Overhead transmission line”) [Not improved since the previous monitoring period]
- Safety pass was not placed at the construction site of tower No. T15. [Not improved since the previous monitoring period]
- At one working place, worker was working at the area where the installation of electrical pole was ongoing. This could cause injury if the pole falling down. [Not improved since the previous monitoring period]

5.1.2. 110kV Thu Duc Water Plant S/S and UGC transmission line
- Workers did not fully wear protective equipment at work. [Not improved since the previous monitoring period]
- Electricity wire and water pipes are unsafety distributed at construction site of road leading to the substation. [Not improved since the previous monitoring period]
- Clean water was not covered with lid at construction site of road leading to the substation. [Not improved since the previous monitoring period]

5.2. Issues identified during ADB’s review mission in December 2018
35. ADB review mission conducted field visit of “110 kV Thu Duc Water Plant substation” on 6 December, and no serious environmental issues were identified.

5.3. Issues from previous report(s)
36. The corrective actions for issues identified during the previous semi-annual period were addressed immediately after PIC/HCMC PMB’s environment officer reminders (Table 15 of the previous monitoring report).

6. COMPLAINTS
37. No complaints regarding environmental issue was received during this monitoring period.
7. CONCLUSION AND RECOMMENDATION

7.1. Overall Progress of Implementation of Environmental Management Measures

38. The overall progress of Implementation of Environmental Management Measures can be evaluated as Fair (ranking 3). All necessary documents required by ADB as well as by Vietnamese Government have been prepared by HCMC PMB.

7.2. Problems Identified and Actions Recommended

39. The issues identified during this reporting period (summarized in Chapter 5.1 (Key Issues Identified)) and actions (to be) implemented are presented in Table 11. The deadline for the implementation of corrective actions was agreed among contractor and monitoring teams at the same time.

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3 Overall sector environmental management progress could be described in qualitative terms or be evaluated based on a ranking system, such as the following:
1. Very Good
2. Good
3. Fair
4. Poor
5. Very Poor
Additional explanatory comments should be provided as necessary.
<table>
<thead>
<tr>
<th>Subproject</th>
<th>Issues</th>
<th>Targets/Solutions</th>
<th>Proposed Issue</th>
<th>Closed date</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Sai Gon - District 8 transmission line</td>
<td>No warning sign on the road, where the installation of electrical pole was ongoing. It can cause accident to communicators on the road.</td>
<td>The warning sign on the road, where the installation of electrical pole was ongoing should be placed to avoid causing accident to communicators on the road.</td>
<td>The warning sign was placed on the road immediately after PIC/HCMC PMB’s environment officer reminders.</td>
<td></td>
</tr>
<tr>
<td>Safety pass was not placed at the construction site of tower No. T15.</td>
<td>Safety pass should be placed at the construction site of tower No. T15.</td>
<td>Safety pass was placed at construction site of tower No. T15 after PIC/HCMC PMB’s environment officer reminders (Figure 6, photo 17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic and construction solid waste were scattered over the tower foundation No. T15.</td>
<td>Domestic and construction solid waste were scattered over the tower foundation No. T15 should be cleaned up.</td>
<td>Domestic and construction solid waste were cleaned up from the tower foundation No. T15 after the tower installation was finished (Figure 6, photo 17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained construction material at construction site of tower No. T15.</td>
<td>Remained construction material at construction site of tower No. T15 should be taken away to reuse.</td>
<td>Remained construction material at construction site of tower No. T15 was taken away to reuse. (Figure 6, photo 17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stagnant water/wastewater at construction site of tower No. T15.</td>
<td>Stagnant water at construction site of tower No. T15 should be drained and the depression location should be filled up to avoid rain water stagnated in future.</td>
<td>Stagnant water/ Wastewater at construction site of tower No. T15 was drained and the depression location has been filled up by soil when the installation of tower was completed. These issues have been addressed before the tower construction has been completed. (Figure 6, photo 18) after PIC reminders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At one working place, worker was working at the area where the installation of electrical pole was ongoing. This could cause injury if the pole falling down.</td>
<td>Worker should avoid working at the area where the installation of electrical pole was ongoing. This could cause injury if the pole falling down.</td>
<td>After PIC’s reminders, workers not related to the installation of electrical pole, avoided working at the areas where they might get potential risk of occupational accidents from falling poles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110kV Thu Duc Water Plant S/S and UGC transmission line</td>
<td>Workers did not fully wear protective equipment at work.</td>
<td>Workers should wear hard cap, gloves and shoes at work.</td>
<td>After PIC reminders, the contractor provided necessary PPEs to all workers and requested them to wear adequately PPEs while working. Consequently, through site-visits of environmental consultant, workers already were equipped with helmet, gloves and shoes.</td>
<td></td>
</tr>
<tr>
<td>Clean water was not covered with lid at construction site of road leading to the substation.</td>
<td>Clean water tank should be covered with lid ensure the hygienic condition.</td>
<td>Clean water tank was covered with lid ensure the hygienic condition after PIC reminders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity wire and water pipes are unsafety distributed at construction site of road leading to the substation.</td>
<td>Electricity wire and water pipes should safety distributed along road alignment to avoid causing injury to workers.</td>
<td>Electricity wire and water pipes were taken when the road has been finished (Figure 6, photo 19, 20)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Photo 17- Domestic and construction solid waste were cleaned up from the tower foundation No. T15 after the tower installation was finished

Photo 18- Tower 15 is completed. Stagnant water/Wastewater generated at the tower area was drained and the depression location was filled up

Photo 19- The completed road to Thu Duc water plant substation has been cleaned. (direction to outside road)

Photo 20- The completed road to Thu Duc water plant substation has been cleaned. (direction to substation gate)

Figure 6 Photos of implemented corrective actions
Appendix 1: Environmental Effect Monitoring results of Thu Duc subproject

Air quality
Sample taken on 20 August 2018, results obtained on 27 August 2018

<table>
<thead>
<tr>
<th>STT</th>
<th>DON VI</th>
<th>THÔNG SỐ ĐON VI</th>
<th>PHƯƠNG PHÁP THỬ NGHIỆM</th>
<th>KẾT QUẢ THỬ NGHIỆM</th>
<th>QCVN 05:2013/ BTNMT</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>XQ.005</td>
<td>XQ.006</td>
<td>XQ.007</td>
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<tr>
<td>1.</td>
<td>Đồ ồn</td>
<td>dBA</td>
<td>TCVN 7878-2:2010</td>
<td>51</td>
<td>54</td>
</tr>
<tr>
<td>2.</td>
<td>NO₂</td>
<td>mg/m³</td>
<td>TCVN 6137:2009</td>
<td>0,064</td>
<td>0,068</td>
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<tr>
<td>3.</td>
<td>SO₂</td>
<td>mg/m³</td>
<td>TCVN 5971:1995</td>
<td>0,056</td>
<td>0,062</td>
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<tr>
<td>4.</td>
<td>CO</td>
<td>mg/m³</td>
<td>HDCV_01_CO</td>
<td>3,2</td>
<td>3,6</td>
</tr>
<tr>
<td>5.</td>
<td>bụi</td>
<td>mg/m³</td>
<td>TCVN 5067:1995</td>
<td>0,24</td>
<td>0,26</td>
</tr>
</tbody>
</table>

Người thực hiện: ThS. Nguyễn Đình Phúc
T. Phiên bố nghiệm: ThS. Nguyễn Thị Mai Thảo
**Water quality**

Wastewater sample taken on 20 August 2018, results obtained on 27 August 2018

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### KET QUẢ THỬ NGHIỆM

1. **Đơn vị yêu cầu:** Công ty Cổ phần xây lắp điện 1
2. Địa điểm lấy mẫu: Trạm Biến áp 110kV Nhà máy nước Thủ Đức và đường dây đấu nối
3. Địa chỉ: Dương Song Hạnh – Xã Lọ Hà Nội, phường Linh Trung, quận Thủ Đức, Tp. Hồ Chí Minh
4. Tên mẫu: Nuốc thái
   - Số lượng: 02 mẫu
5. **Kỳ hiệu mẫu:**
   - NT.200818.001: Nuốc thái tại khu lán trái
   - NT.200818.002: Nuốc thái tại hồ mong MBA
6. Ngày lấy mẫu: 20/08/2018
7. Thời gian thử nghiệm: 20/08-27/08/2018

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<th>STT</th>
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<th>PHƯƠNG PHÁP THỬ NGHIỆM</th>
<th>KẾT QUẢ THỬ NGHIỆM</th>
<th>QCVN 14:2008/ BTNMT Cổ B</th>
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<tr>
<td>1</td>
<td>pH</td>
<td>TCVN 6492:2011</td>
<td>NT.001 6.8</td>
<td>5-9</td>
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<td>2</td>
<td>TSS</td>
<td>TCVN 6625:2000</td>
<td>NT.001 32.8</td>
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<td>3</td>
<td>BOD₅</td>
<td>TCVN 6601-1:2008</td>
<td>NT.001 36.8</td>
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<tr>
<td>4</td>
<td>NH₄⁺</td>
<td>SMFWW 4500-NH₄-E:2012</td>
<td>NT.001 2.12</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>NO₃⁻</td>
<td>US EPA 352.1</td>
<td>NT.001 0.88</td>
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<tr>
<td>6</td>
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<td>TCVN 6202:2008</td>
<td>NT.001 0.41</td>
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<tr>
<td>7</td>
<td>Đau mồ</td>
<td>TCVN 5070:1995</td>
<td>NT.001 0.36</td>
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<td>8</td>
<td>Coliform</td>
<td>TCVN 6187-2:1996</td>
<td>NT.001 4.500</td>
<td>5000</td>
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</tbody>
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Người thực hiện: Nguyễn Thị Ngọc Dung  
T. Phòng thí nghiệm: ThS. Nguyễn Đình Phúc  
Ghi chú: ThS. Nguyễn Thị Mai Thảo

---

1. Không được dịch sao một phần phổ biến kết quả thử nghiệm này ra khỏi không có sự đồng ý của Trung tâm NCDY Công nghệ và Môi trường.
2. Kết quả thử nghiệm chỉ gây chân đoán về chất lượng nước.
3. Hiện tại lượng mẫu 05 năng kỳ triệu kết quả nua
4. Ghi chú: Cả tiêu biểu 5/50 trong chuyện; Cú tiêu độ đạt nguy hiểm trong
   BM01-TN&BCQ/002