

# Social Safeguards Due Diligence Report

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# Due Diligence Report  
April 2016

## INO: Java-Bali 500-Kilovolt Power Transmission Crossing

Prepared by PT PLN Persero for the Government of Indonesia and the Asian Development Bank.

## CURRENCY EQUIVALENTS

(as of 30 April 2016)

Currency unit	–	rupiah (Rp)
Rp1.00	=	\$0.0000757060
\$1.00	=	Rp13,209

## ABBREVIATIONS

ADB	–	Asian Development Bank
COD	–	commercial operation date
Ext	–	extension (of substations)
EMF	–	electromagnetic field
GIS	–	gas insulated substations
GOI	–	Government of Indonesia
LARP	–	land acquisition and resettlement plan
PCB	–	polychlorinated biphenyl
PLN	–	Perusahaan Listrik Negara (Persero) (State Electricity Company)
TB	–	trafo bay
Trf	–	transformers
Upr	–	upgrading (of substations)

## WEIGHTS AND MEASURES

kV (kilovolt)	–	unit of voltage, equal to 1,000 volts
MVA (megavolt-ampere)	–	unit of apparent power

## NOTE

- (i) In this report, "\$" refers to US dollars.

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**Report**  
**Resettlement Due Diligence**  
**INDONESIA: Java – Bali 500 kV Power Transmission Crossing Project**  
**Extension and Upgrading of 150 kV Substations, Component 7**

**April, 2016**

**I. Introduction**

1. Initially, the overall power interconnection system covers six components in which 4 components (component 1,2,5,and 6) to be financed by ADB and 2 components (component 3 and 4) to be financed by PLN. During the Fact- Finding Mission held on 14 – 25 May 2012, PLN requested ADB to include the financing for expansion of 150/20 kV substations to ensure capacity enhancement of the substation in Bali to distribute transmitted power and to improve the reliability, quality, and efficiency of power supply in the Java – Bali Grid. There are 26 150 Kv substations need to be upgraded (4 in Bali and 22 in East Java) and in August 2012 PLN revised the proposal to the 23 substations only (2 substations in in Bali and 21 substations in East Java). A joint assessment conducted by ADB and PLN on 1 – 5 August 2012 to the selected substations identified that additional lands required for the extension have been available in the existing substations, therefore the project shall not trigger involuntary resettlement. This report is included in the 2013 LARP. It indicates that during project implementation, similar assessment and report for final selected substations are required and submit them to ADB prior to the contract award.

2. In 2015, PLN has a final selection of the substations to be included in the Component 7 and came with 11 existing 150 kV substations to be equipped either with new 150kV/20kV 60 MVA transformers (substation extension) or replacement of existing lower capacity transformers with new 150kV/20kV 60 MVA transformers (substation upgrading).

3. The environmental and social assessment of the selected 11 150 kV substations under the Component 7 was carried out in March 2015 by PLN Environmental team. Site visits were conducted to all substations located both in Bali and Java and the assessment serves as the final assessment of the selected substation during project implementation as per requirement in the 2013 LARP. The purpose of the review was to assess the environmental and social impacts that may occur from the implementation of the Component 7, including potential land acquisition, PCB issues, health impacts from electromagnetic fields (EMFs), pollution contributed by transformer oil, and to develop appropriate mitigations.

**II. Component Description**

4. The extension or upgrading the substations with the new 150kV/20kV transformers for electricity distribution is done with consideration; i) limited capacity of the existing electricity supply provided; ii) forecast of electricity demand in the substation service area; iii) availability of land for extension. As extension involves installation of new transformers, then there will be no old transformers will be installed into substation extensions

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5. If the extension of substations through new transformers is considered inappropriate due to the unavailability of land or lack of current or future demand, the existing transformers will be upgraded to 150 kV/ 20 kV. The 150 kV/20 kV transformers are to be installed while the existing transformers will be removed and transported to another location in Indonesia where the electricity consumption is still low and can be handled by the existing transformer. Thus, there is no transformers being used to require disposal will be generated by either substation extension or upgrading. The project location, scope, and capacity of the selected substations are outlined in the table below

**Table 1: Project location, scope and Capacity**

NO.	Substation	Districts/ City	Voltage	Scope Project	of MVA/LB	Juta USD	COD
I	<b>East Java</b>						
1	Lumajang	Lumajang	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2017
2	Alta prima	Surabaya	150/20 kV	Upr, 1 TB, 1 Trf	60	1.71	2017
3	Babat/Baureno	Lamongan	150/20 kV	Upr, 1 TB, 1 Trf	60	1.71	2017
4	Cerme	Surabaya	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2018
5	Manyar	Surabaya	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2018
6	Banaran	Madiun	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2018
7	Sampang	Surabaya	150/20 kV	Upr, 1 TB, 1 Trf	60	1.71	2018
8	Wonokromo	Surabaya	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2019
9	Sby. Selatan (Wonorejo)	Surabaya	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2019
II	<b>Bali Province</b>						
10	Negara	Tabanan	150/20 kV	Ext, 1 TB, 1 Trf	60	2.15	2019
11	Payangan	Gianyar	150/20 kV	Upr, 1 TB, 1 Trf	60	1.71	2019

**III. Site Visit Findings.**

6. **Project scope and proposed capacity.** Of the 11 proposed substations, 7 substations are proposed for extension and 4 substations are for uprating. Proposed capacity for all substations are 1 x 60 MVA.

7. **Land need and Availability** Additional 600 sq.m of land is required for each equipment extension in the conventional substation and around 70 - 160 sq.m for GIS. The required land plots have been available in the existing substations owned by PLN. Therefore, no land acquisition will be required for uprating as the new equipment will be installed on the

existing equipment space. Availability of lands in the conventional substation even exceeds the needs for additional land




8. **Land Use and Status.** The lands are generally not occupied, managed or used by any people. All lands are owned by PLN. Therefore, no hand-over process of land, legally or customarily, is required. Detailed information on land needed, availability, location, status, and pictures could be seen in Annex 1.

9. **Conclusion and Recommendation.** As lands required for the extension/uprating have been available in the existing substations and no one is using the land either for shelter or livelihood, then involuntary resettlement will not be triggered by the project.



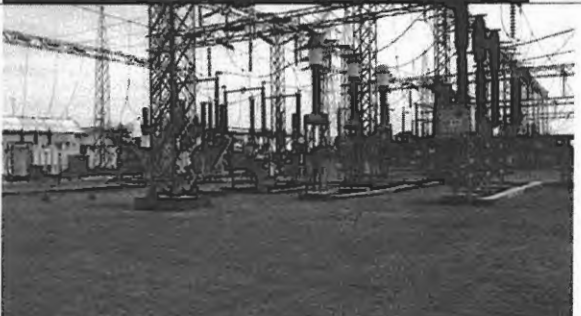

No	Substation	Resettlement Impact (Yes/No)
<b>A</b>	<b>Bali</b>	
1	Payangan	No
2	Negara	No
<b>B</b>	<b>East Java</b>	
1	Lumajang	No
2	Alta Prima	No
3	Babat/Baureno	No
4	Cerme	No
5	Manyar	No
6	Banaran	No
7	Sampang	No
8	Surabaya Selatan (Wonorejo)	No

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**Annex A: Survey Results of Existing Substation Transformers and Environmental Conditions and Issues**

NO	SUBSTATION	PICTURE OF LAND REQUIRED AND LAND AVAILABLE
1	<p>LUMAJANG SUBSTATION                      Project Scope : EktensionTrafo #3                      Proposed capacity : 1 x 60 MVA                      Land Location : In the substation                      Land Status : PLN's Land                      Land Use : Existing transformer placement, empty land                      Conclusion : No resettlement impact</p>	
2	<p>GIS WONOKROMO                      Project Scope : EktensionTrafo #3                      Proposed capacity : 1 x 60 MVA                      Land Location : In the substation                      Land Status : PLN's Land                      Land Use : Existing transformer placement, empty land                      Conclusion : No resettlement impact</p>	
3	<p>BANARAN SUBSTATION                      Project Scope : EktensionTrafo #3                      Proposed capacity : 1 x 60 MVA                      Land Location : In the substation                      Land Status : PLN's Land                      Land Use : Existing transformer placement, empty land                      Conclusion : No resettlement impact</p>	

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NO	SUBSTATION	PICTURE OF LAND REQUIRED AND LAND AVAILABLE
4	<p><b>MANYAR SUBSTATION</b>  Project Scope : EktensionTrafo #3  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	
5	<p><b>CERME SUBSTATION</b>  Project Scope : EktensionTrafo #3  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	
6	<p><b>SAMPANG SUBSTATION</b>  Project Scope : Uprating Trafo #1  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact  Resettlement, category C</p>	
7	<p><b>SURABAYA SELATAN SUBSTATION</b>  Project Scope : Uprating Trafo #3  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	

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NO	SUBSTATION	PICTURE OF LAND REQUIRED AND LAND AVAILABLE
8	<p><b>ALTAPRIMA SUBSTATION</b>  Project Scope : Uprating Trafo #1  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	
9	<p><b>BABAT SUBSTATION</b>  Project Scope : Uprating Trafo #1  Proposed capacity : 1 x 60 MVA  Land Location : In the substation  Land Status : PLN's Land  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	
10	<p><b>NEGARA SUBSTATION</b>  Project Scope : Uprating Trafo #3  Proposed Capacity : 1 x 60 MVA  Land Location : In the substation  Land Use : Existing transformer placement, empty land  Conclusion : No resettlement impact</p>	

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