 Monitoring report form (Version 05.1)		
MONITORING REPORT		
Title of the project activity	Bundled Solar Power Project by EKI Energy Services Limited (EKIESL-CDM.September-13-02)	
UNFCCC reference number of the project activity	10076 ¹	
Version number of the monitoring report	01	
Completion date of the monitoring report	01/12/2016	
Monitoring period number and duration of this monitoring period	Monitoring period number: 01 03/12/2014 to 01/11/2016 (both days included)	
Project participant(s)	Hindustan Platinum Pvt. Ltd.	
Host Party	India	
Sectoral scope(s)	Sectoral Scope: 1 - Energy industries (renewable / non-renewable sources)	
Selected methodology(ies)	Methodology: AMS-I.D “Grid connected renewable electricity generation” (EB 61, Version 17)	
Selected standardized baseline(s)	Not Applicable	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	20,464	
Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	NA	23,440

¹ <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1417605753.92/view>

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

Proposed bundled project activity is the implementation of a 7.52 MW solar photovoltaic technology based power plant in Village - Dhabla Sondhiya, Tehsil - Barod in Shajapur District, Village - Jamuniya, Tehsil – Susner in Agar District and Village - Rojhani, Tehsil – Barod in Agar District in the state of Madhya Pradesh. The electricity generated from the project activity would be sold to third party.

The electricity exported by the proposed project activity would displace an equivalent amount of electricity generated by the power plants already operational and proposed to be added in the North-East-West-North East (NEWNE) Grid which relies predominantly on fossil fuels. Thus, it contributes towards reduction in the demand-supply gap during periods of electricity shortage and increase in the share of renewable energy in the grid mix.

The estimation of GHG emission reductions by the project activity is limited to carbon dioxide (CO₂) only and its primary source is the fossil fuels consumed in the NEWNE grid. The expected annual net electricity delivered to the grid by the proposed project activity is 11,278 MWh. The estimated annual average and total GHG emission reductions over the chosen crediting period are 10,671 tCO₂e and 74,700 tCO₂e respectively.

The investors of the project are as follows:

Sl. No.	Project Investor	Herein after referred as	Capacity (MW)	Date of Commissioning	Purpose
1	Hindustan Platinum Pvt. Ltd. – (1.25 MW)	HPPL-1	1.25	30/03/2013	Third Party Sale
2	Hindustan Platinum Pvt. Ltd. – (2.50 MW)	HPPL-2	2.50	30/09/2013	
3	Active Solar LLP	ASL	1.25	26/04/2013	
4	Bona Terra GreenHouses LLP	BTGL	0.63	26/04/2013	
5	GTC Power Pvt. Ltd.	GTCPPPL	0.63	30/09/2013	
6	Neevya Solar LLP	NSL	0.63	30/09/2013	
7	Sanpower Solar LLP	SSL	0.63	30/09/2013	
Total Capacity			7.52 MW		

A.2. Location of project activity

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The proposed 7.52 MW solar power project is installed in state Madhya Pradesh.

Sl. No.	Project Investor	Capacity (MW)	Village	Tehsil	District	State
1	HPPL-1	1.25	Dhabla Sondhiya	Barod	Shajapur	Madhya Pradesh
2	HPPL-2	2.50	Rojhani	Barod	Agar	Madhya Pradesh
3	ASL	1.25	Dhabla Sondhiya	Barod	Shajapur	Madhya Pradesh
4	BTGL	0.63	Dhabla Sondhiya	Barod	Shajapur	Madhya Pradesh
5	GTCPPPL	0.63	Jamuniya	Susner	Agar	Madhya Pradesh
6	NSL	0.63	Jamuniya	Susner	Agar	Madhya Pradesh
7	SSL	0.63	Rojhani	Barod	Agar	Madhya Pradesh

The nearest Airport is Devi Ahilyabai Holkar Airport situated at Indore approximately 188 km away, and well connectivity by Madhya Pradesh State Highway (MP SH 27) by road. It would take approximately 3hrs 30 minutes to reach the site by road.

Project Investor	Capacity (MW)	Site	Latitude		Longitude	
			Deg°	Min"	Deg°	Min"
HPPL-1	1.25	Dhabla Sondhiya	23	47	75	49
HPPL-2	2.50	Rojhani	23	43	76	27
ASL	1.25	Dhabla Sondhiya	23	47	75	49
BTGL	0.63	Dhabla Sondhiya	23	47	75	49
GTCPPPL	0.63	Jamuniya	23	96	76	14
NSL	0.63	Jamuniya	23	96	76	14
SSL	0.63	Rojhani	23	43	76	27

A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
India (host)	Hindustan Platinum Pvt. Ltd. (Private entity)	No

A.4. Reference of applied methodology and standardized baseline

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Title: Grid Connected Renewable Electricity Generation

Reference: AMS I.D. (Version 17, EB 61)

A.5. Crediting period of project activity

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Crediting period (07 years 00 Months)

Type of crediting period	Renewable
Crediting period from	03/12/2014 to 02/12/2021
Length of the Crediting Period	7 Years
Monitoring period from	03/12/2014 to 01/11/2016
Length of the Monitoring Period	700 Days

A.6. Contact information of responsible persons/entities

Mr. Prakash Kumar Sahu
 EKI Energy Services Limited.
 Enking Embassy, Office No. 201, Plot 48, Scheme 78 part 2, Vijay Nagar
 Indore, Madhya Pradesh - 452010, INDIA

Email id – business@enkingint.org

Web – www.enkingint.org

Phone – 0731-4289086

Further, project participant for this project activity as indicated in Appendix 1 below.

SECTION B. Implementation of project activity**B.1. Description of implemented registered project activity**

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The technology employed by the Proposed Project Activity includes the usage of poly crystalline based solar PV modules with an aggregate of 7.52 MW generation capacity to supply the generated electricity to the Grid. The Proposed Project Activity is estimated to supply on average approximately 11,278 MWh of electricity annually. The generation and consumption of the Proposed Project Activity is monitored continuously through the energy meters at project site & substations. The data is used for the calculation of exports to the grid and imports from the grid.

The above mentioned investors employed the Solar PV Modules of poly crystalline technology for the proposed 7.52 MW project. The Solar power system has been designed with number of sub main plants, solar PV arrays and inverters of suitable capacity.

The electricity exported by the proposed project activity would displace an equivalent amount of electricity generated by the power plants already operational and proposed to be added in the North-East-West-North East (NEWNE) Grid which relies predominantly on fossil fuels. Thus, it contributes towards reduction in the demand-supply gap during periods of electricity shortage and increase in the share of renewable energy in the grid mix.

No events or situations happened during the reported monitoring period which can alter the applicability of the applied methodology.

B.2. Post-registration changes**B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

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There is no request for deviation applied during this monitoring period.

B.2.2. Corrections

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There have not been any corrections to project information or parameters fixed at validation during the current monitoring period.

B.2.3. Changes to start date of crediting period

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Not Applicable.

B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration

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There has not been any change in the monitoring plan during the current monitoring period.

B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

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Not Applicable.

B.2.6. Changes to project design of registered project activity

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There has not been any change in the PDD during the current monitoring period.

B.2.7. Types of changes specific to afforestation or reforestation project activity

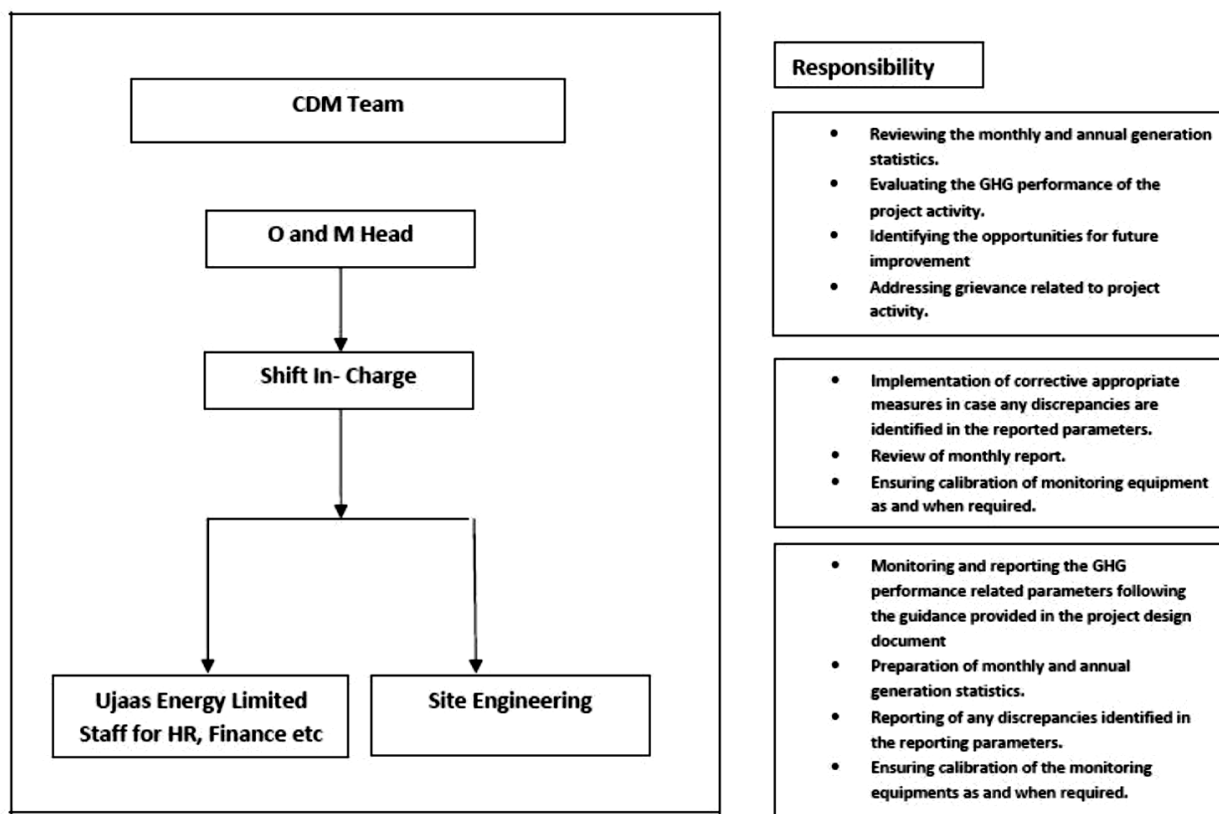
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Not Applicable.

SECTION C. Description of monitoring system

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The organizational structure for the proposed power plant envisages site engineers responsible for O&M of the plant. The site engineers will report to the shift in-charge, who will then report to the O&M Head. The day-to-day operation like planning the routine maintenance, safety and environmental control will be placed under the care of the site engineers. All administrative functions like personnel, industrial relations, labour welfare and financial functions will be looked after by MBSL. The organizational structure and responsibilities on project operation, monitoring and data recording has been mentioned below:



Reading and Correction of Meters: For the purpose of energy accounting, Ujaas Energy Limited will provide ABT compliant meters at the interface points. Interface metering will confirm to the Central Electricity Authority (Installation and Operation Meters) Regulation, 2006. Meter reading from Main meter will be taken by MPPKVCL representative every week. In the event that the main meter is not in service as a result of maintenance, repairs or testing, then the check meter will be used during the period the main meter is not in service.

Calibration of Meters: Calibration of all the meters will be undertaken once in three years and faulty meters will be duly replaced immediately. Calibration will be done by an authorized agency or reputed laboratory.

Emergency Preparedness and Uncertainty Procedure: In case Main meter or check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the check meter will be used. In case both the main and check meter are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters shall be calibrated immediately and the error percentage found in the main meter during its calibration shall be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid.

Data Recording and Archiving:

Ujaas Energy Limited will keep complete and accurate records of operating log at the Power Plant. The data will be archived electronically as well as in log books at the power plant and will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. In case the dates of a particular monitoring period do not match with the dates of the billing cycle, the net electricity exported to the grid would be calculated from:

- Data collected by Ujaas Energy Limited from the ABT compliant main meter installed at the plant end and recorded in the daily log books
- Apportioning the net electricity exported to grid, as recorded in the consolidated SLDC report, based on the number of days in the monitoring period and the number of days for which SLDC report was prepared.

The conservative value among the two would be used for calculation of emission reductions during that period.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Data/parameter:	EF _{grid, OM, y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Central Electricity Authority: "CO ₂ Baseline Database for Indian Power Sector", Version 9 http://www.cea.nic.in/reports/planning/cdm_co2/database_9.zip
Value(s) applied	0.9776
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 04.0.0" as 3-year generation weighted average using data for the years 2010-2011, 2011-2012 & 2012-2013. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 9.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

Data/parameter:	EF _{grid, BM, y}
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Central Electricity Authority: "CO ₂ Baseline Database for Indian Power Sector", Version 9 http://www.cea.nic.in/reports/planning/cdm_co2/database_9.zip
Value(s) applied	0.9673

Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 04.0.0" as 3-year generation weighted average using data for the years 2010-2011, 2011-2012 & 2012-2013. The data are obtained from "CO2 Baseline Database for Indian Power Sector" version 9.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

D.2. Data and parameters monitored

Data/parameter:	EG _{BL,y}
Unit	MWh
Description	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in a year y (MWh).
Measured/calculated/default	Measured
Source of data	Joint Meter Reading Sheets
Value(s) of monitored parameter	24,041.25
Monitoring equipment	Energy Meters of accuracy class 0.2 are used for monitoring
Measuring/reading/recording frequency:	Monthly
Calculation method (if applicable):	The net electricity supplied to the grid by the project activity will be calculated from the difference of the net energy exported to the grid and the net energy imported from the grid as measured by the bi-directional main energy meter at the grid inter-connection point. A check meter will also be installed as a backup at this point. The meters will be of accuracy class 0.2s. The monitoring will be on a continuous basis and monthly recording will be undertaken. The log-books will be maintained at the project site for this purpose.
QA/QC procedures:	The calibration of all the meters will be undertaken once in three year in accordance with the General Guidelines to SSC CDM Methodologies. In the event that the main meter is not in service as a result of maintenance, repairs or testing, the check meter will be used. The meter readings will also be cross checked with records for sold electricity (invoices)
Purpose of data:	The Data/Parameter is required to calculate baseline emission.
Additional comments:	Data will be archived electronically for a period of 2 years beyond the end of crediting period.

D.3. Implementation of sampling plan

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Sampling is not required for the given project activity.

SECTION E. Calculation of emission reductions or GHG removals by sinks

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

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According to the guidelines of the applicable small scale approved methodology AMS.I.D (Version 17),

"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid."

Thus, proposed project activity will evacuate power to the NEWNE Grid complying with the stated guideline.

Further as per paragraph 11 of AMS.I.D (Version 17), “the baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.”

The emission factor has been calculated by using option (a) as per the paragraph 12 of AMS.I.D (Version17) i.e. as combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the „Tool to calculate the emission factor for an electricity system“ Version 4.0.0.

Key data/ parameters used for baseline calculation:

S. No.	Data Variable	Data Unit	Variables	Data Source
1	$EG_{BL,y}$	MWh	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh).	Monthly electricity generation report.
2	$EF_{CO_2,grid,y}$	tCO ₂ /MWh	CO ₂ emission factor of the grid in year y.	CO ₂ Baseline Database for the Indian Power Sector prepared by Central Electricity Authority, Version 9 ²

Parameter	Baseline Emissions, BE _y
Description of Baseline	As per the applied methodology, AMS ID, (Version 17), para 11, the baseline emissions are the product of electrical energy baseline expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Rationale	The project is a renewable energy project with maximum output capacity of 7.52 MW which is as per specified limits of 15 MW of maximum output capacity. Also the project activity displaces electricity to regional grid NEWNE grid. Hence Type I Renewable energy projects and Category D – Electricity Generation for a System are applicable to the project as per Appendix B of the simplified modalities and procedures for small-scale project activities. Also applicability of SCC CDM methodology AMS-I.D has been clearly demonstrated in Footnote 5, in Section B.2 above. Thus the PP has chosen to determine Baseline scenario and Baseline calculations in accordance with AMS I.D.
Mathematical Relations	$BE_y = EG_{BL,y} * EFCO_{2,grid,y}$ $ER_y = BE_y - PE_y - LE_y$ $ER_y = BE_y - 0 - 0$ (as, $PE_y = LE_y = 0$) $ER_y = BE_y$

E.2. Calculation of project emissions or actual net GHG removals by sinks

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Since the project activity is a renewable energy project which generates electricity using solar power therefore there are no resulting project emissions.

² http://www.cea.nic.in/reports/planning/cdm_co2/database_9.zip

E.3. Calculation of leakage

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No leakage is considered from the project activity as per approved methodology AMS-I.D.

E.4. Summary of calculation of emission reductions or net GHG removals by sinks

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	GHG emission reductions or net GHG removals by sinks (t CO ₂ e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	23,440	0	0	NA	23,440	23,440

E.5. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO ₂ e)	20,465	23,440

E.6. Remarks on difference from estimated value in registered PDD

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From E.5 above, we can observe that actual emission reduction for the monitoring is higher than estimated emission reductions by 15 %, this is due to the fact that higher PLF has been observed during current monitoring period.

Appendix 1. Contact information of project participants and responsible persons/entities

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	M/s Hindustan Platinum Pvt. Ltd.
Street/P.O. Box	C-122
Building	TTC Industrial Area, Pawane Village,
City	Navi Mumbai
State/region	Maharashtra
Postcode	400703
Country	India
Telephone	
Fax	
E-mail	
Website	
Contact person	Mr. Gautam Choksi
Title	Vice President – Finance
Salutation	Mr.
Last name	Choksi
Middle name	
First name	Gautam
Department	Accounts & Finance
Mobile	
Direct fax	
Direct tel.	
Personal e-mail	

Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	EKI Energy Services Limited
Street/P.O. Box	Plot 48, Scheme 79, Part- 2, Vijay Nagar
Building	Enking Embassy
City	Indore
State/region	Madhya Pradesh
Postcode	452010
Country	India
Telephone	+91 731 4289086
Fax	+91 731 4289086
E-mail	manish@enkingint.org
Website	www.enkingint.org
Contact person	Manish Dabkara
Title	CEO
Salutation	Mr.

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		