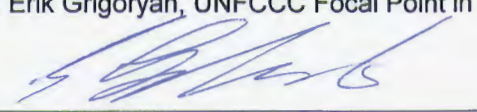




**Proposed standardized baseline submission form
(Version 03.0)**

To be used by a designated national authority (DNA) when submitting a proposed standardized baseline in accordance with the "Procedure: Development, revision, clarification and update of standardized baselines" (CDM-EB63-A28-PROC).

INFORMATION TO BE COMPLETED BY THE DNA

Title of the proposed standardized baseline:	Grid Emission Factor for the Electricity System of the Republic of Armenia for 2016
Name(s) of the Party or Parties to which the proposed standardized baseline applies:	Republic of Armenia
DNA submitting this form:	Ministry of Nature Protection of Republic of Armenia
Is the proposed standardized baseline submitted by a single Party or group of Parties? <i>(If the Party had 10 or fewer registered CDM project activities as of 31 December 2010, or each Party of the group of Parties had 10 or fewer registered CDM project activities as of 31 December 2010, has the Party or each Party of the group of Parties used the option to omit the assessment report more than twice in past submissions of a proposed standardized baseline?)</i>	<input checked="" type="checkbox"/> Single Party <input type="checkbox"/> Group of Parties
Attachments:	
<input checked="" type="checkbox"/> Additional documentation supporting the submission (e.g. relevant data, statistics, studies, calculation tables, quality control report, etc.), where applicable <input checked="" type="checkbox"/> Data used to establish the proposed standardized baseline in a sector-specific data template <input type="checkbox"/> An assessment report prepared by a designated operational entity (DOE) <input type="checkbox"/> Letters of approval of all the DNAs of the Parties to which the proposed standardized baseline applies, where the standardized baseline applies to a group of Parties	
Name of authorized officer signing for the DNA:	Mr. Erik Grigoryan, UNFCCC Focal Point in Armenia 
Date (DD/MM/YYYY) and signature for the DNA:	15.09.2017
Contact information of the focal point(s) of the DNA: <i>(Names, e-mail addresses and phone contacts for procedural and technical communication on the submission)</i>	Mr. Erik Grigoryan UNFCCC National Focal Point Tel.: (37411) 818 518, Fax: (37410) 583933 Web: www.mnp.am , E-mail: erikgrig@gmail.com erik.grigoryan@mnp.am
Name(s) of the proponent(s) of the proposed standardized baseline:	

Affiliation of the proponent(s): <i>(The definition of “admitted observer organization” can be found at https://cdm.unfccc.int/Reference/Guideclarif/glos_CDM.pdf)</i>	<input checked="" type="checkbox"/> Party <input type="checkbox"/> Project Participant (PP) <input type="checkbox"/> International Industry Organization <input type="checkbox"/> Admitted Observer Organization
Contact information of the focal point(s) of the proponent(s): <i>(Names, e-mail addresses and phone contacts for procedural and technical communication on the submission. This section does not need to be completed if the DNA(s) is(are) the proponent(s) of the proposed standardized baseline.)</i>	
INFORMATION TO BE COMPLETED BY THE SECRETARIAT AND THE PROPONENT(S)	
Further inputs requested from the proponent(s) on the proposed standardized baseline: <i>(List of additional information and/or modifications that are required to prepare a draft standardized baseline, if applicable.)</i>	
Response from the proponent(s): <i>(If there are changes in the proposed standardized baseline form as a result of changes carried out, submit the changes in the highlighted text).</i>	

Proposed standardized baseline submission form
CDM-PSB-FORM (Version 03.0)

Title: “Calculation of Grid Emission Factor for the Electricity System of RA for 2016”

Submission date (dd/mm/yyyy): 26 June 2017

Version number: 01.0

Approaches

Check below all the approaches used to develop the proposed standardized baseline and state the version and/or the reference (number, title, version) if applicable.

- ☐ The approach contained in the “Guidelines for the establishment of sector specific standardized baselines” (Version: _____)
- ☐ A methodological approach contained in an approved, proposed new or revised baseline and monitoring methodology (reference: _____)
- ☒ A methodological approach contained in an approved, proposed new or revised methodological tool (reference: version 5.0 of the “Tool to calculate the emission factor for an electricity system”)
- ☐ The approach contained in the “Guideline: Establishment of standardized baselines for afforestation and reforestation project activities under the CDM” (version: _____)

Combination of the approaches (if applicable)

Provide a justification for the necessity and the appropriateness of the combination if more than one approach was used for the development of the proposed standardized baseline.

New or revised methodology or methodological tool (if applicable)

This section is applicable to the following situations:

1. *If there is no approved methodology or methodological tool available that can be used for the development of the proposed standardized baseline, and if the proponent wishes develop a new methodological approach by submitting a new methodology or methodological tool or revise the approach contained in an approved methodology or methodological tool, and/or*
2. *If there is no approved methodology available to be used together with the proposed standardized baseline for the estimation of emission reductions, and the proponents wishes to develop new methodology or revise the existing approved methodology.*

Check below how the new or revised methodology or methodological tool is/was submitted for approval by the CDM Executive Board and for what purpose in accordance with the “Procedure: development, revision and clarification of baseline and monitoring methodologies and methodological tools”. In this case, indicate below the title of the new or revised methodology or methodological tool if applicable:

- *New or revised methodology or methodological tool¹:*

- ☐ New methodology (title: _____)
- ☐ Revised methodology (title: _____)
- ☐ New methodological tool (title: _____)
- ☐ Revised methodological tool (title: _____)

- *Purpose:*

- ☐ For using the methodological approach in new/revised methodology/methodological tool for development of the proposed standardized baseline
- ☐ For using the new/revised methodology together with the proposed standardized baseline to estimate emission reductions

- *Process:*

- ☐ Methodology(ies)/methodological tool is/was proposed through the bottom-up process
- ☐ Request the secretariat to seek a mandate from the CDM Executive Board for its top-down development (if this option is selected, provide justification below)

(Justification: _____)

Elements to be standardized

Check below all the elements to be standardized by the proposed standardized baseline:

- ☐ Additionality
- ☐ Baseline/baseline land-use scenario
- ☒ Baseline emission/removal parameter
- ☐ Land eligibility (applicable only to afforestation and reforestation project activities)

¹ The proposed new or revised methodology or methodological tool for the purpose of developing a proposed standardized baseline, or the proposed new or revised methodology or methodological tool that will be used together with the proposed standardized baseline, may be submitted to the secretariat at the same time with the proposed standardized baseline in accordance with the “Procedure: development, revision and clarification of baseline and monitoring methodologies and methodological tools”.

SECTION C: PROPOSED STANDARDIZED BASELINE DEVELOPED USING A METHODOLOGICAL APPROACH CONTAINED IN AN APPROVED OR PROPOSED NEW OR REVISED METHODOLOGICAL TOOL

Complete this section only when the proposed standardized baseline is developed using a methodological approach contained in the valid version of an approved methodological tool or in a proposed new or revised methodological tool (an example of this is the application of the “Tool to calculate the emission factor for an electricity system” to estimate the CO₂ emission factor of an electricity grid).

Applicability of the proposed standardized baseline

State the host country(ies) or region(s) within a host country to which the proposed standardized baseline is applicable. In case of region(s) within a host country, document transparently the geographical boundaries of the region (e.g. provinces, electric grids, etc.).

Republic of Armenia (on all territory)

Baseline parameter standardization

Explain how the methodological approach contained in the valid version of the approved methodological tool or in the proposed new or revised methodological tool was applied to standardize the baseline parameter (e.g. baseline emission factor). Document all underlying data, data sources, assumptions, calculation steps and outcomes in a clear and transparent manner.

The grid emission factor for the electricity system of the Republic of Armenia (Armenia) for 2016 has been calculated in line with provisions and recommendations provided in the version 5.0 of the “Tool to calculate the emission factor for an electricity system” (Tool) and based on information and data obtained by DNA from public sources and respective state authorities of Armenia.

Step 1: Identify the relevant electricity systems

The national power distribution grid of Armenia covers all the country and is identified as the project electricity system for the purposed of grid emission factor calculation. The Armenian power system maintains power exchange with the national electricity grid of Iran and Georgia. In such a way, Iranian and Georgian national grids are considered as the connected electricity systems. For the purpose of determining the operating margin emission factor the Tool proposes four options to determine the CO₂ emission factor(s) for net electricity imports from a connected electricity system. Within the scopes of this study option (a) i.e. 0 tones CO₂ per MWh is selected.

STEP 2. Choose whether to include off-grid power plants in the project electricity system

Option I of the Tool i.e. “Only grid power plants are included in the calculation” is selected; hence, off-grid power plants are not included in the project electricity system.

STEP 3. Select a method to determine the operating margin (OM)

According to the definition used in the Tool, low-cost/must-run resources are defined as power plants with low marginal generation costs or dispatched independently of the daily or seasonal load of the grid. They include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation. In accordance with this definition, within the scope of this study, all power plants except for four large thermal power plants (Yerevan TPP, Hrazdan TPP, Hrazdan TPP Unit N5 and CCGT Unit at Yerevan TPP) are selected as low-cost / must-run power plants.

Based on the statistic information provided by the Ministry of Energy Infrastructures and Natural Resources of RA during the period of 2012-2016, low-cost/must-run (LCMR) resources constituted more than 50% of the total grid generation in average of the five most recent years. Additionally, based on information on hourly load data provided by the Ministry, it was identified that averages load by LCMR resources is higher than average lowest annual system load (LASL) over the three years. Hence, following the procedure for application of operational margin methods provided in the Tool, “Simple adjusted OM” was selected for calculation of the operating margin emission factor.

Step 4: Calculate the operating margin emission factor according to the selected method

In order to evaluate Operational Margin, net quantity of electricity (mln kWh) generated and delivered to the grid by all power units serving the system need to be identified as well as CO₂ emission factor (tCO₂/MWh) of power units operated on fossil fuels need to be calculated. Information on net generation of electricity by all power plants (both LCMR and no LCMR) the Armenia power system in 2014-2016 is presented in the table below. According to the Tool, electricity import is also considered in calculation of Simple adjusted OM.

POWER PLANT	Delivered electricity (MWh)			Type of fuel
	2014	2015	2016	
No LCMR ²				
Hrazdan Thermal Power Plant	905226.6	507854.7	409255.2	natural gas
Unit 5 of Hrazdan Thermal Power Plant	827590.2	615732.6	668631.8	natural gas
Yerevan Thermal Power Plant	-	-	-	natural gas
CCGT Unit at Yerevan TPP	1398771.7	1541259.7	1380764.4	natural gas
LCMR ³				
Metzamor NPP	2265639.0	2571098.1	2194847.1	nuclear
Sevan-Hrazdan CHPPs (IEC)	465328.9	444311.1	395599.4	hydro
ContourGlobal Hydro Cascade	826596.3	909566.5	981804.0	hydro
Small Hydro Power Plants ⁴	670561.8	818676.3	940108.2	hydro
Lori-1 Wind Power Plant	3701.8	3384.1	1612.8	wind
Qajaran Wind Power Plant (Arats LLC)	-	13.6	49.9	wind
Energy Center at YSMU – CHP Unit	14540.4	12334.4	6327.7	natural gas
ArmRoscogeneration CJSC – CHP Unit	11469	9030.6	11594.7	natural gas
Import	204849.5	172822.0	263526.8	
TOTAL with Import	7594275.2	7606083.7	7254122	
LCMR Plants	4257837.2	4768414.7	4531943.8	
Low-cost/must-run plants + import	4462686.7	4941236.7	4795470.6	

² There is no publicly available information demonstrating that any of four large fossil fuel plants serving the system is dispatched by the grid operator independently of the daily or seasonal load of the grid. Hence there are no strong arguments for consideration of that plant as low-cost/must-run resources.

³ Small CHP units are included in low-cost/must-run plants list because these plants are dispatched by the grid operator independently based on power purchase agreements. According to decision of the Public Services regulatory Commission of RA, national grid is obliged to purchase electricity produced by such plants base on the tariff approved by the Commission. Moreover, CHP units are operated in heating seasons to produce thermal energy that is consumed for uninterruptable heating of consumers (e.g. residential and university building). Hence, these units shall be considered as must-run.

⁴ The list of small hydropower plants included in “Small Hydro Power Plants” category is provided in the Annex I.

In the table below results of calculation of emission factors for no LCMR power plants for 2014-2016 is presented.

POWER PLANT	Year	Fuel consumption $FC_{i,m,y}$	Net calorific value of fuel $NCV_{i,y}$	Emission factor $EF_{CO_2,i,y}$	Emission factor
		1000m ³	GJ/1000m ³	tCO ₂ /GJ	tCO ₂ /MWh
Hrazdan TPP	2014	275583	34.710	0.054	0.57
	2015	162509	34.773	0.054	0.6
	2016	129544	34.278	0.054	0.59
Unit N5 at Hrazdan TPP	2014	210883	34.759	0.054	0.48
	2015	148592	35.165	0.054	0.46
	2016	164951	34.503	0.054	0.46
CCGT at Yerevan TPP	2014	305644	34.583	0.054	0.41
	2015	336813	34.554	0.054	0.41
	2016	303887	34.378	0.054	0.41

Note: The measurement of natural gas is made under the following conditions: temperature – 15°C, pressure – 1 atm.

In the table below results of calculation of emission factors for LCMR power plants for 2014-2016 is presented.

POWER PLANT	Year	Fuel consumption $FC_{i,m,y}$	Net calorific value of fuel $NCV_{i,y}$	Emission factor $EF_{CO_2,i,y}$	Emission factor
		1000m ³	GJ/1000m ³	tCO ₂ /GJ	tCO ₂ /MWh
Metzamor NPP, Large and Small HPPs, Lori-1 WPP	2014	0	0	0	0
	2015	0	0	0	0
	2016	0	0	0	0
Energy Center at YSMU – CHP Unit	2014	4309	34.790	0.054	0.56
	2015	3878	34.823	0.054	0.59
	2016	2116	34.272	0.054	0.62
ArmRosco generation CJSC – CHP Unit	2014	3125	34.869	0.054	0.52
	2015	2576	34.620	0.054	0.54
	2016	3227	34.290	0.054	0.52

Note: The measurement of natural gas is made under the following conditions: temperature – 15°C, pressure – 1 atm.

Calculation of lambda factor is performed in accordance with the procedure set by the Tool and based on chronological (hourly) power generation data for each plant/unit provided by the Ministry.

In the table below results of calculation of lambda factor and respective Simple adjusted OM for 2014-2016 are presented.

The number of hours for which low-cost/must-run sources are on the margin (hours)	2014	2015	2016
	17	12	24
Lambda factor	0.0019406	0.0013699	0.0027322
Simple adjusted OM emission factor (tCO ₂ /MWh)	0.475	0.458	0.452

Step 5: Calculate the build margin emission factor

Following the procedure for selection of power units m used to calculate the build margin described in the Tool, the set of five power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently (SET5-units) has been identified along with their annual electricity generation (AEGSET-5-units, in MWh).

In the table below information on installed capacities and cumulative share of power generation of these plants is given for 2014-2016.

The set of five power units (excluding power units registered as CDM project activities) that started to supply electricity to the grid most recently (SET5-units) for 2014-2016

Year	N	POWER PLANT	First year in service	Power generation in 2014, MWh	Cumulative share, %
2014	1	Yegheg SHPP	2014	746.5	0.01
	2	Spitak Jur SHPP	2014	13.6	0.00
	3	Mane SHPP	2014	896.4	0.01
	4	Khachaghbyur-2 SHPP	2014	8056.7	0.11
	5	Khachi Qar SHPP	2014	3878.6	0.05
	TOTAL			13591.9	0.18
Year	N	POWER PLANT	First year in service	Power generation in 2015, MWh	Cumulative share, %
2015	1	Daranak SHPP	2015	955.7	0.014
	2	Arevis-1 SHPP	2015	477.6	0.007
	3	Nigava SHPP	2015	5351.3	0.080
	4	Gndevanq SHPP	2015	190.5	0.003
	5	Qajaran Wind Power Plant	2015	13.6	0.0002
	TOTAL			6988.8	0.104
Year	N	POWER PLANT	First year in service	Power generation in 2015, MWh	Cumulative share, %
2016	1	Seca SHPP	2016	1071.2	0.02
	2	Anapat-1 SHPP	2016	1573.1	0.02
	3	Amberd-3 SHPP	2016	11234.8	0.16
	4	Meghri-1 SHPP	2016	2512.7	0.04
	5	Her-Her SHPP	2016	1351.6	0.02
	TOTAL			17743.3	0.25

As it is seen from the above table the total power generation of the 5 recently commissioned power plants is much lower than 20% of total power generation of the system.

The next step requires determining the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total}, in MWh), and to identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEG_{total} (SET_{≥20%}) and determine their annual electricity generation (AEG_{SET-≥20%}, in MWh);

In the table below information on annual electricity generation as well as share of electricity generation of the plants included in SET_{≥20%} is given.

The set of power units (excluding power units registered as CDM project activities) that started to supply electricity to the grid most recently and that comprise 20% of the system generation (SET_{≥20%}) for 2014-2016

Year	POWER PLANT	First year in service	Fuel	Power generation, MWh	Share of AEG _{total} (%)
2014	Hrazdan TPP Unit N5	2011	NG	857490	11.6
	85 small WPPs and HPPs	2010-2014	HY	301689	4.08
	CCGT Unit at YTPP	2010	NG	1447860	19.59
	TOTAL			2607041.4	35.27

2015	Hrazdan TPP Unit N5	2011	NG	638368	9.52
	94 small WPPs and HPPs	2010-2015	HY	415337	6.19
	CCGT Unit at YTPP	2010	NG	1594592	23.78
	TOTAL			2634155.2	39.49
2016	Hrazdan TPP Unit N5	2011	NG	694823	9.93
	105 small WPPs and HPPs	2010-2016	HY	490324	7.01
	CCGT Unit at YTPP	2010	NG	1427313	20.41
	TOTAL			2612466.8	37.35

As it is seen from the above two tables the group of power units included in SET_{≥20%} comprises the larger annual electricity generation than power plants included in SET_{5-units} in 2014-2016 period.

Since all power units included in the selected group (SET_{≥20%}) started to supply electricity to the grid no more than 10 years ago, the set of power plants in the latter table is used for calculation of the Build Margin.

In the below emission factors for plants included in Build Margin as well as Build Margin emission factor for the system 2014-2016 are given.

Year	POWER PLANT	Emission factor of power plants included in BM (tCO ₂ /MWh)	Build Margin emission factor (tCO ₂ /MWh)
2014	Hrazdan TPP Unit N5	0.48	0.3854
	85 small HPPs	0	
	CCGT Unit at YTPP	0.41	
2015	Hrazdan TPP Unit N5	0.46	0.3591
	94 small HPPs	0	
	CCGT Unit at YTPP	0.41	
2016	Hrazdan TPP Unit N5	0.46	0.3456
	105 small HPPs	0	
	CCGT Unit at YTPP	0.41	

Step 6: Calculate the combined margin emissions factor

For the purpose of this study the weighted average Combined Margin (CM) method (Option a) has been used as the preferred option.

As the result of the performed calculations the following CM emission factors have been received for ex post approach for 2014-2016.

Year	EX POST (tCO ₂ /MWh)	
2014	Simple Adjusted Operating Margin	0.4753
	Build Margin	0.3854
	CM for wind and solar	0.4528
	CM for all other projects	0.4303
2015	Simple Adjusted Operating Margin	0.4581
	Build Margin	0.3591
	CM for wind and solar	0.4333
	CM for all other projects	0.4086
2016	Simple Adjusted Operating Margin	0.4525
	Build Margin	0.3456
	CM for wind and solar	0.4258
	CM for all other projects	0.3991

As the result of the performed calculations the following CM emission factors have been received for ex ante approach for 2016.

Year	EX ANTE (tCO ₂ /MWh)	
2016	Simple Adjusted Operating Margin	0.4620
	Build Margin	0.3456
	CM for wind and solar	0.4329
	CM for all other projects (1 st CP)	0.4038
	CM for all other projects (2 nd and 3 rd CP)	0.3457

Validity of the proposed standardized baseline

State the period of time for which the proposed standardized baseline is valid in accordance with the "Standard for determining coverage of data and validity of standardized baselines".

Three years.

Deviations from the approved methodological tool (if applicable)

Provide descriptions of and justifications for the necessity and the appropriateness of any deviations from the valid version of the approved methodological tool to develop the proposed standardized baseline. Also justify why a revision of the valid version of the approved methodological tool is not necessary.

References and any other relevant information

Supporting Documentation:

1. Excel based calculation model consisting of 4 files (*confidential*):
 - a. Armenia_Calculation of GEF for 2014 Ex-Post
 - b. Armenia_Calculation of GEF for 2015 Ex-Post
 - c. Armenia_Calculation of GEF for 2016 Ex-Post
 - d. Armenia_Calculation of GEF for 2016 Ex-Ante
2. GEF 2016 Armenia (pdf version) (*public*)

Annex I: List of small hydropower plants (SHPPs)

N	POWER PLANT	Delivery (MWh)		
		2014	2015	2016
1	Dzora HPP	68111.7	89110.8	83903.1
2	Salenergo LLC	14719.8	15466.3	16646.6
3	Gyumri SHPP	10876.1	16388.7	15087.5
4	Areni HPP (Erenergo CJSC)	3463.0	3736.7	4289.6
5	Kapan-Energy CJSC	32120.7	33937.4	43157.5
6	Hakobjanyani-Galstyani SHPP LLC	4729.8	5082.3	4793.9
7	Q-H LLC	2406.6	2541.2	2764.7
8	Agarak SHPP	2104.8	2110.2	2248.3
9	Armavir-Luys CJSC	2835.7	4432.5	4174.1
10	Mushegh SHPP LLC	2667.2	2412.4	2582.3
11	Ijevan SHPP	3926.9	5711.8	7017.0
12	Hydroenergia LLC (Yerevan)	2501.5	2224.5	2605.2
13	Energia LLC (Avan HPP)	1089.0	1063.5	987.4
14	Energia LLC (Aparan)	14262.3	14445.5	14018.6
15	Hydroenergia LLC (Kotayk)	2698.9	2393.9	2564.4
16	Ararat JEG CJSC (Kamenka)	0.0	0.0	0.0
17	G.Tatevosyan LLC (Ani HPP)	137.6	67.5	0.0
18	Energotekhnika LLC	302.2	297.3	566.6
19	Ler-Jur LLC (Atchut1)	1210.6	1157.2	1417.7
20	Energatsantsshin OJSC (Narek HPP)	0.2	55.2	0.0
21	Zovashen SHPP LLC	2348.4	2271.8	3603.3
22	Elegis SHPP LLC (Elegis)	5410.8	5422.3	5426.8
23	Atlas Energo LLC	0.0	0.0	0.0
24	Elgia LLC	0.0	0.0	0.0
25	Narenergo LLC	4603.0	4819.6	5205.6
26	Bazenq CJSC	24925.2	25022.8	28772.4
27	Ler-Jur LLC (Atchut2)	3045.0	3588.3	3802.2
28	H-G HPP LLC	9086.8	8905.1	9050.6
29	G.G.V. LLC	3513.1	4497.3	5500.0
30	Aking CJSC	1622.2	1692.8	2290.4
31	H.A.G.Eryak CJSC	1995.5	2174.1	2408.0
32	Zangezur-95 SHPP	6357.0	6107.5	5984.7
33	Benzar Energy LLC	958.7	888.3	920.0
34	Loraget SHPP LLC	1292.4	1678.1	2423.1
35	Astghik-Hovhannes LLC (Hoktember HPP)	0.0	0.0	0.0
36	Tirakal LLC (Kurtan HPP)	7342.7	10709.7	11481.4

37	Singl Gor LLC (Sandaghbyur HPP)	1721.6	1677.2	1770.4
38	Bitlis Men LLC (Aygezard HPP)	2010.8	1983.3	1937.3
39	Ler Eks Energia LLC (2)	1669.3	1724.3	1726.0
40	Ler-Jur LLC (Chichkhan)	2408.0	3621.4	4052.1
41	RINE LLC	564.6	552.3	560.8
42	Elegis SHPP LLC (Hermon)	3575.7	3844.4	4675.1
43	Pargev-Vardan LLC	1155.7	1164.6	1147.3
44	Mavr LLC (Chanakhchi)	1780.3	2377.0	2852.5
45	Engels Tumanyan LLC (Gevorgavan HPP)	0.0	40.4	8.5
46	Izodrom LLC (Jaghdan HPP)	9918.0	10071.7	11331.9
47	Tezh SHPP (Tezh Waterflow LLC)	3355.4	4258.4	4579.0
48	Smbul LLC	961.5	935.8	931.1
49	Ost-El LLC (Haghpat1)	0.0	396.2	483.6
50	Ost-El LLC (Haghpat2)	2130.3	2309.8	3357.8
51	Firma G.A.K. LLC (Getap HPP)	471.9	267.0	652.8
52	Ler Eks Energia LLC (4)	1696.9	1640.6	1672.2
53	Ararat JEGC JSC (Hnevank-1 and 2)	2246.6	0.0	0.0
54	Shaghat LLC	151.5	89.8	189.0
55	Hosk LLC (Bovadzor HPP)	2056.4	2283.3	2046.0
56	Qurkik Jalal LLC	357.1	455.6	566.0
57	Ler Eks Energia LLC (6)	1850.0	1848.1	2086.3
58	Lernapati Kantegh LLC	544.4	1007.9	1043.0
59	THS LLC	7158.1	8337.9	11264.3
60	Zorakar LLC (Ajri HPP)	2032.9	2141.6	3020.3
61	Atlas Energo LLC (Aygedzor-2 HPP)	2356.4	3410.4	4984.7
62	Gosghek LLC	291.0	715.2	874.8
63	Syunik LLC (Apres HPP)	9201.4	9097.9	8770.3
64	Hak Hek LLC (Karakaya HPP)	4526.6	4989.4	5780.8
65	Ler Eks Energia LLC (3)	1663.4	1630.7	1852.1
66	Sektor Qvant LLC (Dzoragyugh-1)	3755.7	3531.0	3806.2
67	A.A.Khachatrayn LLC (Shushanik HPP)	4789.7	5013.0	5091.8
68	Hermon MAD LLC (Qaraglukh HPP)	1422.7	1559.8	2067.4
69	Ani OJSC (Jradzor HPP) (CDM - Ref. 1835)	21020.0	24844.3	24271.5
70	Surb Aghbyur LLC	2054.0	2257.8	2989.7
71	Arnavar LLC (Heghnajur HPP)	2002.6	2596.3	3006.2
72	Qarevard LLC (Khachaghbyur-1 HPP)	3812.0	4576.1	5852.8
73	Eliza Farm LLC (Spitak-1 HPP)	2200.9	2729.2	2858.8
74	Vakuflo LLC (Aragats-1 HPP)	2447.9	1782.3	3169.4
75	Firma G.A.K. LLC (Her-Her1)	1898.0	2610.2	1931.6
76	Sektor Qvant LLC (Dzoragyugh3)	4556.1	4352.3	4585.1

77	Gosh SHPP LLC (Khachardzan HPP)	844.7	1135.5	1467.7
78	Sanrayz Electric CJSC	1440.7	1555.2	2026.1
79	El-Kas LLC (Gegharot HPP)	6551.6	6883.0	8377.7
80	Amberd SHPP (1)	3832.7	4385.4	4887.2
81	VICI GROUP LLC (Hakhunm)	506.7	638.0	932.6
82	Loraget HEK LLC (Sisakan-1)	1755.6	1978.1	2306.2
83	MINA-MAYA LLC (Eghegnadzor)	3548.8	3895.6	4439.3
84	VG ev Vordiner (Her-Her-1)	2862.1	2929.2	3357.4
85	Jaghayi Dzor (Goght-1)	3630.8	3354.4	3912.6
86	Jaghayi Dzor (Goght-2)	3177.5	2867.2	6363.7
87	Lusakunq LLC (Ayrq HPP-1)	630.2	698.6	774.4
88	Kh & M Ynkerner (Vararakn HPP)	3419.6	4007.5	4625.2
89	Qanar CJSC (Sarnakunq HPP)	1742.7	1734.2	1851.0
90	ERIK SHPP LLC (Erik)	3351.5	4242.3	6482.6
91	Tsav HPP (Energatsantsshin OJSC)	5601.7	5694.6	8160.1
92	Tigran & Ashkhen LLC (T&A SHPP)	2300.9	2280.5	2321.9
93	Azatek HEK CJSC (Azatek HPP)	1810.2	1824.2	1871.1
94	Jahuk LLC (Artavan-1)	4633.2	4744.2	5381.6
95	Apahov Taniq LLC (Vahagni)	5975.6	6081.5	6105.8
96	Lusakunq LLC (Ayrq HEK-2)	1405.5	1348.3	1714.4
97	El-En-Eks LLC (Aghstev-1)	7919.7	9052.4	10306.4
98	Lusakunk LLC (Avazan SHPP)	544.6	440.5	0.0
99	H.A.G. Eryak (Voskepar SHPP)	2990.0	3049.2	3974.6
100	ZH ev H LLC (Angeghakot SHPP)	494.4	458.0	456.4
101	MKSHG Energia LLC (Martuni SHPP)	3100.0	3416.4	4356.8
102	Elbist LLC (Marmashen SHPP)	2271.8	5778.9	4348.4
103	Masfish LLC (Vardanants SHPP)	2533.0	3854.0	4072.4
104	Karbi Jrhos HPP (Karbi Jrhos HPP LLC)	1247.6	2217.5	2404.1
105	Sirarpi HPP (Sirarpi AH LLC)	3036.6	2990.6	1702.8
106	Firma G.A.K. LLC (Saravan)	2189.7	2301.2	3378.2
107	Jermuk Hidrotekh LLC (Jermuk HPP-2)	8808.5	8631.6	9112.8
108	Afamia LLC (Darbas SHPP-2)	1850.8	1794.0	1916.6
109	Mina-Maya LLC (Eghegnadzor SHPP-1)	5370.1	6139.5	5345.6
110	Khum HPP (Khum LLC)	1372.8	1355.6	1464.0
111	Martsiget-2 SHPP (Argishti-1 LLC)	7653.6	8947.8	10675.7
112	Sanuk HPP (Smbul LLC)	20.4	19.1	18.4
113	Gevorgavan HPP-1 (Engels Tumanyan LLC)	2747.6	4320.7	5208.2
114	Tashir HPP-1 (Alezi LLC)	426.6	604.9	576.2
115	Jotaghbyur-4 (Hov - Khach LLC)	1316.0	1461.9	1537.9
116	Jotaghbyur-5 HPP (Hov - Khach LLC)	978.7	1054.6	1066.0

117	Qarahunj HPP (Qarahunj HPP LLC)	8211.9	8529.7	8825.2
118	Tsovak HPP (Armanson - Energy LLC)	945.3	1063.1	1034.3
119	Arjadzor HPP (Arjadzor LLC)	689.9	1147.2	1258.0
120	Jotaghbiur-3 SHPP (Hov-Khach LLC)	1981.5	2182.0	2136.5
121	Pozitron SHPP (Aiuda-Los LLC)	3573.5	4119.6	5118.1
122	Jotaghbiur-2 SHPP (Hov-Khach LLC)	1780.0	1939.0	1884.9
123	Vahan SHPP (ERIK SHPP LLC)	1066.9	1638.8	2001.0
124	Getik-1 SHPP (Ariuo-Energy LLC)	6329.1	8131.1	12830.8
125	Vardahovit SHPP (Vardahovit LLC)	5521.4	5356.4	6555.1
126	Kechut SHPP (Vou Din LLC)	27092.2	29687.2	29479.8
127	Katnarat SHPP (Vanshain LLC)	2967.2	5730.4	5659.6
128	Pharos SHPP (Laitex LLC)	889.5	4069.0	2881.4
129	Jotaghbiur-1 SHPP (Hov-Khach LLC)	1992.9	2156.6	2051.8
130	Oshenergo SHPP (Eghvard artadrakan baza LLC)	0.0	0.0	0.0
131	Njdegh SHPP (Sar-Rob LLC)	6180.9	6642.8	7480.2
132	Amberd-2 SHPP (Amberd SHPP LLC)	5829.8	7666.7	8362.2
133	V.A.L.SHPP (V.A.L.Energo LLC)	239.2	417.1	438.3
134	Goghtanik SHPP (HHNMS LLC)	4455.0	4085.5	3709.9
135	Dzor-Dzor-2 HPP (Energodzor LLC)	539.6	538.9	555.5
136	Yeghegis-3 HPP (Syunyats Water LLC)	6265.4	5797.6	5377.8
137	Vardenik SHPP (Jrasahq LLC)	12372.6	13089.1	16248.5
138	Eghegis-2 SHPP (Rael LLC)	7564.3	6954.8	6492.4
139	Vorotan-7 SHPP (HGNQ Group LLC)	2616.6	2545.9	2475.9
140	Lernashen-1 SHPP (Gurgen-Mher LLC)	1404.3	1506.5	1468.7
141	Lor HEK-1 SHPP (Veh Loren LLC)	1168.6	1208.6	1414.2
142	Arpa SHPP (Arpa-Energia LLC)	11080.8	12300.2	13285.5
143	Ishkhanasar SHPP (Miezerq LLC)	14867.9	14452.5	14892.1
144	Artik-1 SHPP (Artik SHPP LLC)	2321.2	2633.4	2831.6
145	Kantegh SHPP (Gelieguzan LLC)	6784.8	7116.8	7939.1
146	Amasia SHPP (Ersted LLC)	584.1	3946.7	2681.4
147	Dzoraget-5 SHPP (Hazar u mek LLC)	2641.7	3965.8	3860.7
148	Dzoraget-6 SHPP (VRB Concern LLC)	2595.5	4630.9	4952.3
149	Argichi SHPP (Hydro Corporation LLC)	14360.2	26233.8	27512.0
150	Khachaghbyur-2 SHPP (Megaenergy LLC)	899.5	11593.1	1774.3
151	Geghi-2 SHPP (Eremirenergi LLC)	1461.5	1055.4	1954.9
152	Nane SHPP (Arates Energy LLC)	3235.8	6248.7	8266.6
153	Martsiget-1 SHPP (Marts Energy LLC)	328.6	4298.7	5637.5
154	Gndasar SHPP (Gndasar LLC)	346.0	919.6	947.3
155	Her-Her SHPP (Vorotan HEKH LLC)	1318.7	972.7	2604.0
156	Kachachkut SHPP (Van Al En K LLC)	793.6	1172.6	1156.4

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157	Vayots SHPP (Surb Aghbyur LLC)	3622.3	3643.3	4141.5
158	Brnakot-1 SHPP (AG Hayrapetyanner LLC)	495.1	816.5	1020.9
159	Brnakot-2 SHPP (AG Hayrapetyanner LLC)	158.7	369.9	467.9
160	Getik-4 SHPP (ANDG Style LLC)	758.0	4451.2	9732.3
161	Dastakert SHPP (Basa Shin LLC)	394.4	1202.6	1149.6
162	Yegheg SHPP (Yegheghek LLC)	746.4	5715.2	6352.0
163	Spitak Jur SHPP (AEG Service)	13.6	192.0	0.0
164	Mane SHPP (Kayur HEK LLC)	893.4	3620.1	2161.3
165	Khachaghbyur SHPP (Energy Kok)	7936.1	1223.5	127.0
166	Khachi Qar SHPP (BSB LLC)	3870.9	3419.9	1653.0
167	Tigran Mets SHPP (Rus and Har LLC)		5183.4	10088.6
168	Dzagedzor-2 SHPP (Qajaran Montazh LLC)		1831.2	2636.0
169	Varantsov SHPP (Varantsov LLC)		841.5	5346.1
170	Voghji-1 SHPP (Kapan Energy CJSC)		10682.5	14968.2
171	Kosh SHPP (AKAG LLC)		1613.1	2625.8
172	Daranak SHPP (Agrospasarkum MC OJSC)		925.2	1387.9
173	Arevis-1 SHPP (Aqsati LLC)		470.7	2658.9
174	Nigava SHPP (Nigava LLC)		5236.4	11702.3
175	Gndevanq SHPP (BSB LLC)		190.5	1613.5
176	Khachaghbyur-2 SHPP (Megaenergy LLC)			15122.8
177	Key Energy SHPP (Qarevard LLC)			779.4
178	Gomq SHPP (Natenergy 68 LLC)			142.5
179	Sahakyan-1 SHPP (Stek Energo CJSC)			1625.9
180	Dali SHPP (Khachatryan Eghbayrner LLC)			551.4
181	Seca SHPP (Karalevas LLC)			1071.0
182	Anapat-1 SHPP (Tetevi Anapat LLC)			1571.0
183	Amberd-3 SHPP (Amberd HEK LLC)			10787.5
184	Meghri-1 SHPP (Grin Power LLC)			2421.9
185	Her-Her SHPP (Arm-Aero CJSC)			1346.9
		670561.8	818676.3	940108.2

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	1 September 2015	Revision to: <ul style="list-style-type: none"> • Reflect updated requirements in the version 04.0 of “Procedure: Development, revision, clarification and update of standardized baselines” (CDM-EB63-A28-PROC) ; • Include editorial improvement.
02.0	1 December 2013	The document title has changed from “Proposed standardized baseline form” (F-CDM-PSB) to “Proposed standardized baseline submission form” (CDM-PSB-FORM). Revision to: <ul style="list-style-type: none"> • Reflect updated requirements in the “Procedure: Development, revision, clarification and update of standardized baselines” • Include editorial improvement
01.0	23 March 2012	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Methodology Keywords: standardized baselines		