

**Dariali Energy HPP**  
**Annual Environmental and Social Performance Report**

**Performance Requirement 1**

1. Period covered by this report: **26 March, 2017 to 26 March, 2018**
  
2. Environmental and social management system and management plans:
  - a. Were any changes made to the ESMS, occupational health and safety plan, waste management plan, or other plans with environmental or social requirements? Yes / No

**Yes**

- b. If yes, please describe what was changed and summarize the changes:

**DE has been updating and providing the E&S monitoring reports to lender on annual and quarter basis. Reports are also uploaded on the Company's webpage.**

**Aquatic Biodiversity monitorings were updated on Spring and Autumn. Reports are also uploaded on the Company's webpage.**

3. Compliance with government requirements
  - a. Were there any government inspections related to environmental, safety, or social issues? If yes, describe any findings of noncompliance and any enforcement actions taken.

**There were no government inspections related to environmental, safety, or social issues.**

- b. Did Dariali Energy violate any permit conditions or other government regulations or requirements? If yes, describe the instances of noncompliance and actions taken by Dariali Energy.

**No**

**Performance Requirement 2**

4. Employment

a. Employment data

Category	Total	
	Male	Femal
Number of employees (incl. Tbilisi office)	50	10
Number of professional employees	20	3
New hires (incl. Tbilisi office)	8	2
Number living in DE accommodations	15	
Number workers leaving/terminated (see 4.b below)	3 (personal statements)	

b. If workers were fired (that is, terminated for cause), describe the reason(s): n/a

5. Safety (see item 4 for training): Report on quarterly and annual basis

	Total hours worked	Total	Lost-time injuries	Amount of lost time (days) due to injury/incident
A	This period 26.03.17-26.03.18	95,314	0	0
B	Since last lost-time injury	0	0	0
C	Since commissioning (unit 1)	12012 hr	0	0

Note: a "Lost-time injury" is an injury sustained *at work* by an employee that leads to the loss of productive work time in the form of worker delays or absenteeism of at least one shift

d. For each lost-time injury this period, please provide the following information:					
<i>Date</i>	<i>Injury or illness</i>	<i>Cause (if accident, describe)</i>	<i>Type treatment provided?</i>	<i>Number of hours/days off work?</i>	<i>Investigation completed? (Yes/No)</i>
26.03.17- 26.03.18	0	0	0	0	

c. Describe changes in activities or practices made as a result of investigations into accidents or injuries:

d. How many formal inspections of safety conditions and PPE usage were conducted by the HSE manager during the period? 26.03.17-26.03.18

*Provide dates, summary of major deficiencies identified, actions taken, and current conditions.*

20.04.2017, 18.05.2017, 15.06.2017, 19.07.2017, 17.08.2017, 21.09.2017, 19.10.2017, 24.11.2017, 1.12.2017, 29.12.2017, 18.01.2018, 26.02.2018, 15.03.2018

HSE manager conducted formal inspections once in a month.

Deficiencies: 6 workers were without safety helmet, 20 workers were seen without high visibility vests, 1 worker was without safety boots;

Reprimand was issued to workers;

Currently PPE usage is ensured by all workers

e. Investments: List any major improvements this period in safety equipment, safety conditions, PPE usage, or other safety-related conditions:

Dielectric gloves, dielectric rugs, dielectric boots, safety harnesses, electronic detectors, public safety signs were purchased

6. Worker grievances/complaints

a. Grievances received this period and unresolved grievances from previous period(s)

<i>Date received</i>	<i>How received? (box, email, person, etc.)</i>	<i>Complaint summary</i>	<i>Person assigned to handle</i>	<i>Date of resolution</i>	<i>Resolution summary</i>	<i>Resolution accepted by complainant? (Y/N)</i>
26.03.17- 26.03.18	0					

- b. For grievances unresolved after 30 days, please provide reasons no resolution has been reached and what efforts have been made to resolve)

7. Training

- a. Provide details on training given during the period, including emergency drills:

<i>Session</i>	<i>Name of trainer</i>	<i>Type of training (induction, safety, traffic, etc.)</i>	<i>Number of workers trained</i>	<i>Materials attached (Y/N)</i>
Training session 1 (session name or subject)	T. Rusishvili	Safety (technical) rules	60	N
Training session 2	T. Rusishvili	Technical operating rules	54	N
...	T. Rusishvili	Fire safety	54	
	T. Rusishvili	First aid	54	
Attach training materials for each session, or cover page only if over 10 pages long				

- b. Total number of workers receiving training related to safety this period? 60
- c.
- d. Percentage of new hires (this period) who received general induction training? 100 %
- e. Percentage of new hires who received job-specific safety training? 100 %

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8. Worker accommodations

a. How many inspections of worker accommodations were made by the HSE manager or others during the period? 22

b. Provide dates of partial and complete inspections, if any:

Complete inspections: 15.04.2017, 15.05.2017, 15.06.2017, 14.07.2017, 28.07.2017, 11.08.2017, 25.08.2017, 8.09.2017, 21.09.2017, 6.10.2017, 20.10.2017, 3.11.2017, 17.11.2017, 1.12.2017, 15.12.2017, 29.12.2017, 12.01.2018, 25.01.2018, 8.02.2018, 22.02.2018, 9.03.2018, 23.03.2018 ✓

Issues fixed:

Repaired the floor;

Room locker (2 times);

Lightning fixed (3 times);

Lightbulb fixed (2 times);

Added heating device (4 times)

c. Did accommodations generally meet the requirements of *Workers' accommodation: processes and standards* (September 2009)?

IF not, please provide details (inspection date, deficiencies identified, actions taken, current status):

**Performance Requirement 3**

9. Waste

a. Provide quantities of wastes generated and managed – use Georgian rules for waste types and management:

<i>Type of waste</i>	<i>Generated this period (kg)</i>	<i>Sent off-site (see 9.b)</i>	<i>Disposed on-site</i>	<i>Still stored on-site</i>
Nonhazardous solid waste	2200	2200	0	0
Used oil	0	0	0	0
Other hazardous waste	0	0	0	0

b. For wastes sent off-site, provide dates, haulers, disposal/treatment sites:

Waste is sent once a week, municipality waste vehicle, municipality landfill

c. How many inspections of fuel storage and waste management were made by the HSE manager during the period? Provide dates and findings of significant deficiencies/problems, actions taken, and current conditions.

Daily visual check. No significant deficiencies/problems, plastic bags were not in the trash bins (5 times), cigarette ends were not in the trash bins (4 times)



10. Spills

<i>Date</i>	<i>Material spilled</i>	<i>Amount (provide units)</i>	<i>Hazardous? (Y/N)</i>	<i>Was river contaminated?</i>	<i>Describe cleanup</i>	<i>Authorities notified?</i>
26.03.17-23.03.18	0	0	0	0	0	0

**Upstream and downstream water sample was tested in certified laboratory and no hazardous (oil, heavy metals and etc.) substances were found.**

**Performance Requirement 4**

11. Were there any incidents involving trespassing on the site by a member of the public or other unauthorized person? If so, provide details (date, description of the trespass, location, resolution)

**Two times hunters were seen nearby the Headworks territory, DE warned that they were near the project site and pointed the safe zone where they could safely walk.**

12. Traffic accidents:

- a. Were there any traffic accidents involving project vehicles or equipment during the period? If yes, provide details (dates, nature of accident/incident, injuries and/or damage, any actions taken)

**No**

- b. Were there any traffic incidents involving non -project vehicles and/or pedestrians? If so, provide details (dates, nature of accident/incident, description of worker/non-worker injury and/or damage, any actions taken)

**No**

**Performance Requirement 6**

13. Environmental flows (Eflows)



DE - 2017 Jan - 2018  
Mar.xlsx

Please see detailed information in Environmental flow chart :

	<i>Number of full days (if any)</i>	<i>Total number of hours (including on full days)</i>	<i>Percentage of total operating hours</i>
Zero turbines operating	4	137 hr 13 min	1,77%
One or more turbines operating		Turbine 1- 2069; Turbine 2- 2842; Turbine 3- 2513 Total- 7784 hours	98,23 %
Eflows <i>(see note 1)</i> :			n/a
Less than 2.29m <sup>3</sup> /sec	0,9	22	0,25%
Between 2.29m <sup>3</sup> /sec and 2.79m <sup>3</sup> /sec	363,1	8714	99,75 %

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Notes:

Information above is for the period from 26.03.17 to 26.03.18

- Eflows are considered flows that are not diverted to the sand basin or pipeline and that pass through the fish pass or gates.
  - Flows between 2.29 and 2.79m<sup>3</sup>/sec are within 10% of the required EFlow
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14. Fish pass operation

**Please see detailed information in Environmental flow chart (attached, task 3)**

<i>Flows through fish pass (see note)</i>	<i>Number of full days (if any)</i>	<i>Total number of hours (including on full days)</i>	<i>Percentage of operating hours</i>
Between 0.6m <sup>3</sup> /sec and 0.8m <sup>3</sup> /sec	360	8640	98,9 %
No flow through fish pass	4 (during headworks flushing activity)	96	1,1 %
>0 but less than 0.6m <sup>3</sup> /sec	0	0	0
Over 0.8m <sup>3</sup> /sec	0	0	0
Note: Flows between 0.6 and 0.8m <sup>3</sup> sec are within about 15% of the required flow through the fish pass			

Note: Information above is for the period from 26.03.17 to 26.03.18

15. Include a graph showing average hourly and average daily flows through the intake, fish pass, and gates.

**Please see detailed information in Environmental flow chart (attached, task 3)**

16. Fish monitoring

a. Was fish migration through the weir monitored this period? Yes / No.

**Yes**

b. Were invertebrates monitoring during this period? Yes/No

**Yes**

c. If yes, who conducted the monitoring?

d. If yes, what dates and hours?

**25-29 April, 10-14 October, and 18 - 21 November 2017**

e. Attach monitoring report :



Aquatic Biodiversity Monitoring -April 2017.pdf



Aquatic Biodiversity Monitoring- December 2017.pdf

f. What were the total number of adult and juvenile trout that passed through the fish pass during the spring and fall migration seasons?

**The task of calculation of all fish passing by the fish pass was not a part of monitoring program for the BR. DE has not installed the special equipment for automatic counting of the fish in the fish pass.**

17. Implementation of Adaptive Management Plan recommendations. Note that some measures may be for only the March 2017 report, with further requirements to be specified in Blue Rivers December 2016 report.

- a. Measure 1: from October to March and after high sediment events, check sediments at end of sand basin chambers twice per day, clean out when sediment reaches within 40cm of threshold

**The monitoring of the sediments were conducted in accordance to the O&M plan. Please refer to flushing information:**



flushing dariali hpp  
2017.docx

- b. Measure 2: Install and operate water level meters in fish pass and all gates (describe how flow rates are measured/estimated through all gates, including trash racks/basin basin).

**Water discharge measurement device on the fish pass is installed and calibrated.**

- c. Measure 3: Sediment flushing at night. Describe time of sediment flushing events listed in item 21.b.

**There was no Sediment flushing during night.**

- d. Measure 4: Operation of fish trap framework and search for suitable resistive counter. Describe when framework was used and the results of fish trapping.

**Please see reports in task 16 “e”**

- e. Measure 5: Modifications of channel downstream of fish pass and weir, to a depth of up to 20cm, in advance of upstream migration (describe actions taken and time—see item 18)

**The excavation of the downstream channel with the length of 200 meters, in accordance to the Blue Rivers recommendation was performed three times on November 25, 2017, January 5, 2018 and February 17, 2018**

- f. Measure 6: See items 13 and 14

**Please see the Environmental flow chart**

- g. Measure 7: fish pass operation: see item 14.

**Please see the Environmental flow chart**

- h. Measure 8.1.1A&B: fish monitoring -- see item 16.a

**Please see reports in task 16 “e”**

- i. Measure 8.1.2A&B: invertebrate monitoring -- see item 16.b

**Please see reports in task 16 “e”**

j. Measure 8.2.1A&B: water level/depth/discharge monitoring during low-water season. Report results of monitoring

**Please see the Environmental flow chart**

k. Measure 8.2.2: channel monitoring during low-water season. Report results of monitoring

**The excavation of the downstream channel with the length of 200 meters, in accordance to the Blue Rivers recommendation was performed three times on November 25, 2017, January 5, 2018 and February 17, 2018**

l. Measure 8.2.3: fine and coarse sediment dynamics downstream of headworks. Report results of monitoring

**Please see flushing details (section 17 “a”)**

m. Measure 8.2.4: fish pass calibration. Report results.

**Water discharge measurement device on the fishpass is installed and calibrated**

. Measure 9: training of local staff. Report results and future plans.

**On 27–28 of April 2017, in Stepantsminda, training was held on ecological monitoring in the post-commissioning period (according to the Monitoring program and Action plan).**

**The training included presentation of the theory as well as practical exercises during the field surveys. Please see attached reports for more information (section 16 “e”).**



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18. Was the channel immediately downstream of the weir modified during the period to maintain a channel suitable for upstream and downstream fish passage? Describe dates and actions taken, and configuration of the channel when complete.

**The excavation of the downstream channel with the length of 200 meters, in accordance to the Blue Rivers recommendation was performed three times on November 25, 2017, January 5, 2018 and February 17, 2018**

19. Implementation of Reinstatement Plan recommendations

- a. Are there any areas where slopes were stabilized during this period, or need to be stabilized? If yes, provide information on location, approximate square meters, actions taken to stabilize to date, and actions yet to be taken (and when scheduled).

**On the pipeline corridor, erosion process was observed therefore the territory was protected and stabilized by gabions.**

- b. Describe actions taken to implement the reinstatement plan: locations and actions taken to stabilize slopes, replace topsoil, establish revegetation, etc.

**Dariali Energy has provided natural re-vegetation by means of spreading the hay on relevant territories, which was successfully developed and natural re-vegetation was partially sufficient to restore the slopes. Placement of hay will be conducted on Spring 2018 as well.**

c. Please estimate the percent vegetation ground cover on corridor, including uphill and downhill slopes:

**The percentage may be estimated as 20% of vegetation ground cover on corridor, including uphill and downhill slopes**

20. Implementation of Terrestrial Biodiversity Action Plan recommendations:

a. Describe any training or other actions taken to reduce/discourage hunting and poaching of birds and animals.

**HSE Manager will explain measures on each Safety Trainings to reduce/discourage hunting and poaching of birds and animals. Same recommendations/measures were informed to the stakeholders during the public event in April, 2017.**

b. Describe placement of platforms and boxes for bird nesting, and whether birds were observed using any of them.

**DE has purchased and installed 15 platforms and 15 boxes for bird nesting for the observations.**

21. Sand trap flushing

a. Was sand flushed out of sand basin this period?

**Please see flushing details.**

b. If yes, please describe dates and approximate amounts of sand

**Please see flushing details.**

c. Did sand block the main channel? If yes, what actions were taken to clear?

**No**

**Performance Requirement 10**

22. Stakeholder grievances/complaints

a. Grievances received this period and unresolved grievances from previous period(s)

**There were no grievances received.**

<i>Date received</i>	<i>How received? (box, email, person, etc.)</i>	<i>Complaint summary</i>	<i>Person assigned to handle</i>	<i>Date of resolution</i>	<i>Resolution summary</i>	<i>Resolution accepted by complainant? (Y/N)</i>

b. For grievances unresolved after 30 days, please provide reasons no resolution has been reached and what efforts have been made to resolve)

3. Describe significant outreach to local and other stakeholders this period (date, stakeholder(s), purpose of meeting/outreach)

**There were no significant outreach to local and other stakeholders this period.**

24. Was the project covered by the press during this period?

The official opening ceremony of Dariali HPP was broadcasted by all kind of media of the country.

c. If yes, please provide this information:

<i>Date</i>	<i>Media (TV/radio station, newspaper, etc.)</i>	<i>Summary of coverage</i>
08.04.2017	Rustavi 2, Imedi TV, Palitra TV, 1 TV	Official opening ceremony review and highlights of the project benefits
	Resonance newspaper, Kviris palitra and etc	

25. Did Dariali Energy issue any press releases? If so, provide copies (and translations).

**Press release regarding the official opening ceremony:**

<http://darialienergy.ge/en/darialis-hidroeleqtrosadguris-ofitsialuri-gakhsnis-tseremonia/73>

**Press release regarding the stakeholder activity:**

<http://darialienergy.ge/en/stakeholder-engagement-activity/72>