



Verification Report for

Project : 36 MW Biomass Based Grid Supply Power Project by
SDSSSKL, Shirol, India.

UCR Project ID : 402

Name of Verifier	SQAC Certification Pvt. Ltd.
Date of Issue	March 01, 2024
Project Proponent	Shree Datta Shetkari Sahakari Sakhar Karkhana Ltd.
UCR Project Aggregator	Progressive Management Consultants
Work carried by	Mr. Santosh Nair
Work reviewed by	Mr. Praful Shinganapurkar

Summary:

SQAC Certification Pvt. Ltd. has performed verification of the “36 MW Biomass Based Grid Supply Power Project by SDSSSKL, Shirol, India”. The purpose of the project activity is to generate electricity using renewable biomass and thereby reduce GHG emissions by displacing fossil fuel dominated grid-based electricity with biomass based renewable electricity.

The project activity meets the following UN SDG's:



Verification for the period: **01/04/2013 to 31/12/2022** (09 Years, 09 Months)

The GHG emission reductions were calculated on the basis of UCR Standard for Baseline Grid Emission Factor, CDM UNFCCC Methodology, ACM0006: Electricity and heat generation from biomass, Ver 16.0. The verification was done remotely by way of video calls / verification, phone calls and submission of documents for verification through emails.

Accredited by 5 Jupiter House, Callera Park, Aldermaston, Reading Berkshire RG7 8NN, United Kingdom (UK).

India Office: Off. No. 4, Fifth Floor, Buildmore Business Park, New Canca Bypass Road, Khorlim, Mapusa, Goa – 403 507

Web: www.sqac.in

Email: info@sqac.in Tel: 7219716786 / 87





SQAC is able to certify that the emission reductions from 36 MW Biomass Based Grid Supply Power Project by SDSSSKL, Shirol, India, (UCR ID – 402) for the period **01/04/2013 to 31/12/2022** amounts to **7,37,471 tCO₂ (7,37,471 CoUs)**

Detailed Verification Report:

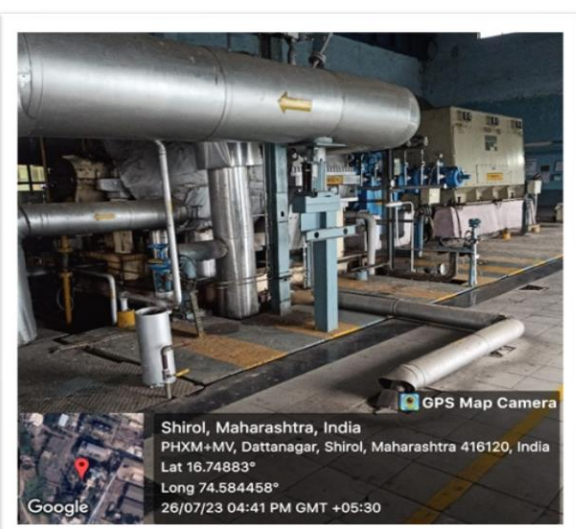
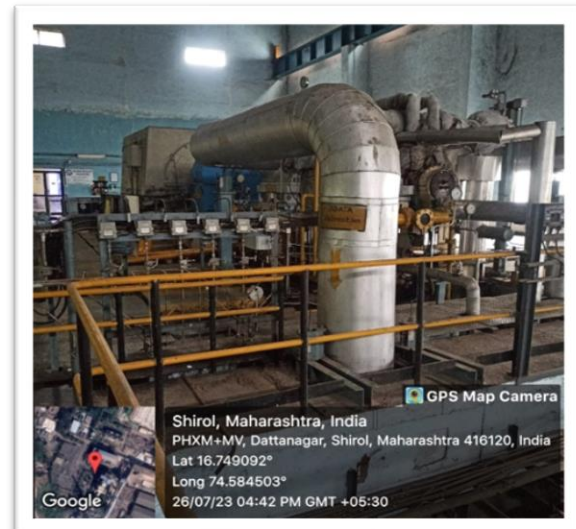
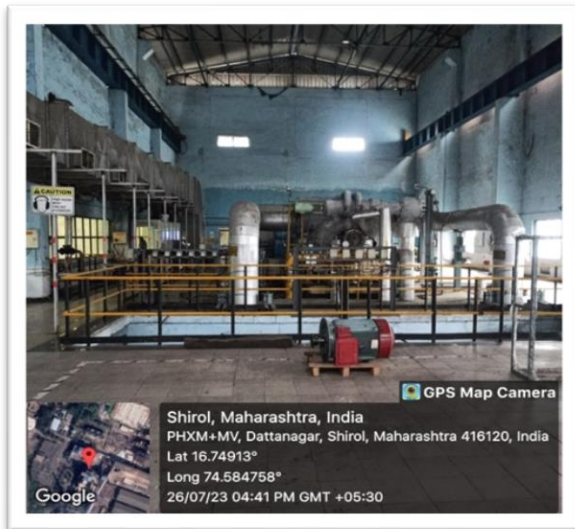
Purpose:

The project entails the establishment of a 36 MW renewable biomass (bagasse) electricity generation cogeneration facility by M/s. Shree Datta Shetkari Sahakari Sakhar Karkhana Ltd (SDSSSKL). Its objective is to produce electricity without fossil fuels, utilizing renewable biomass, thus mitigating greenhouse gas emissions by substituting grid-based electricity, which relies predominantly on fossil fuels, with renewable biomass-generated electricity.

The UCR project activity's operational commencement is marked by the initial commercial power supply to the grid, which commenced on 11/08/2011 (as indicated in the Power Purchase Agreement dated 21/06/2013), although grid connectivity was established earlier on 04/08/2011. During a standard sugarcane crushing season, the facility has a gross power generation capacity of 33.50 MW, which increases to 36 MW during the off-season.

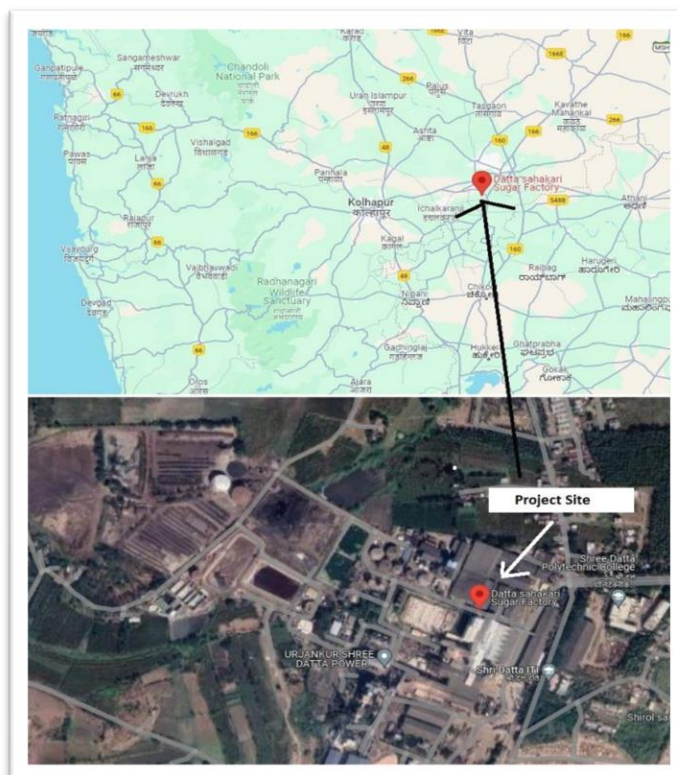
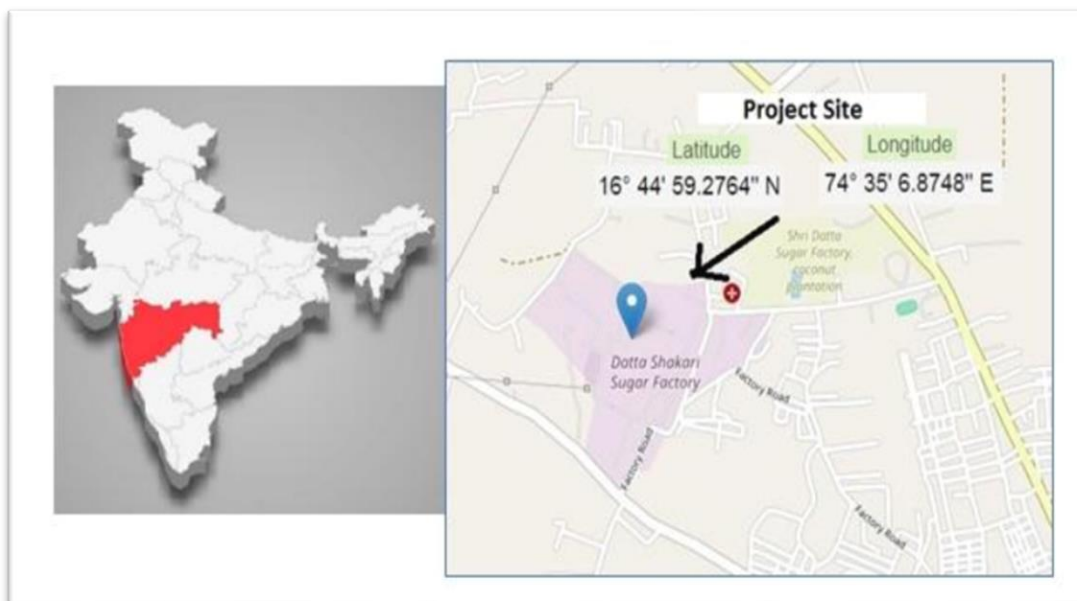
In a typical sugarcane crushing season, the gross power generation capacity is 33.50 MW, and in the off-season, it is 36 MW. Captive consumption is typically 11 MW and 3.5 MW during the on- and off-season respectively while approximately 22.50 MW and 32.50 MW are exported to the state grid, i.e. Maharashtra State Electricity Distribution Limited (MSEDL).





Location of project activity:

Country : India
 District : Kolhapur
 Village : Shirol
 Tehsil : Shirol
 State : Maharashtra



**Scope:**

The scope covers verification of emission reductions from the project - 36 MW Biomass Based Grid Supply Power Project by SDSSSKL, Shirol, India, (UCR ID – 402).

Criteria:

Verification criteria is as per the requirements of UCR Standard.

Description of project:

The UCR project activity is a grid-connected bagasse-based cogeneration power plant with a high-pressure steam turbine configuration. The UCR project activity is the electricity generation capacity and the installation of facilities for allowing captive use and export of electricity to the electricity grid. The high-pressure boilers are fired by bagasse, a byproduct from the sugar manufacturing process to generate steam, which in turn powers the steam turbine to generate power.

The UCR project activity involves the installation of a 36 MW turbo generator along with high pressure 110 kg/cm² (g) capacity boiler.

The technology of biomass residue-based high steam pressure power generation itself is known and in use in India. The use of a high-pressure system allows for increased efficiency levels for electricity generation.

The project is a green field renewable energy power generation project connected to the grid and supplies electricity to the grid and is used for captive purposes. The project activity is generating electricity using biomass (sugar factory residues) with a 1x180 TPH single drum, Travelling Grate boiler using a 36000 KW, 8 HP turbine whose capacity will be governed at MW.

On an annual average basis, the project exports around 1077528 MWh/yr to the Indian electricity grid. Power is generated and supplied in the sugar season and off-season at 11 kV and stepped-up on-site to 132 kV before being transmitted to the nearby Jaysingpur sub-station located at Kolhapur.



United Nations Sustainable Development Goals:

The project activity generates electrical power using Biomass, thereby displacing non-renewable fossil resources resulting in sustainable, economic and environmental development. In the absence of the project activity an equivalent amount of power generation would have taken place through fossil fuel dominated power generating stations. Thus, the renewable energy generation from project activity will result in reduction of the greenhouse gas emissions.

Positive contribution of the project to the following Sustainable Development Goals:

Development Goals Targeted	SDG Target	Indicator (SDG Indicator)
SDG 7: Affordable and Clean Energy  7 AFFORDABLE AND CLEAN ENERGY	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Target: Renewable Power supplied to the grid in the monitored period = <u>1077528 MWh</u>	7.2.1: Renewable energy share in the total final energy consumption
SDG 8: Decent Work and Economic Growth  8 DECENT WORK AND ECONOMIC GROWTH	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. Target: • Training staff annually • Employment of staff	8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
SDG 09: Industries, Infrastructure and Innovation  9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	The project activity provides employment to people 115 villages in the area.
SDG 13: Climate Action  13 CLIMATE ACTION	13.2: Integrate climate change measures into national policies, strategies and planning Target: <u>737471</u> tCO₂ = Quantity of tCO₂ reduced in this monitored period	13.2.1: Number of countries that have communicated the establishment or operationalization of an integrated policy/ strategy



Technical details of the project activity

Boiler Details:

Manufacture	IJT (Isgec John Thompson) make 180 TPH High pressure Boiler (MR/14914)
Type	Single- drum, water tube, Membrane wall, natural circulation, Balanced draught, Top Supported, Travelling Gate boiler
Net Steaming capacity at MCR (kg/hr) for Bagasse firing	180,000
Steam temperature at super heater outlet (Deg C)	540± 5
Steam Pressure at main steam stop valve (kg/cm ²) (g)	109
Peak Capacity of Boiler (Kg/hr)	198,000
Minimum possible duration for peak capacity/Shift (8 hrs)	30 Minutes

Turbine Details:

Make	36 MW Simense Make
Type	Extraction cum condensing
Steam pressure at the TG inlet	105 ATA
Steam temperature at the TG inlet	535° C
Exhaust steam pressure	0.064 ATA
Steam inlet quantity	179.51 TPH
Gear Box	
Rated Power	36,000 KW
Energy production	
Gross power	33.50 (season); 36 MW (off – Season)
Auxiliary consumption	11.00 MW (Season); 3.5 MW (off-season)
Net power for export after auxiliary consumption	22.5 MW (season); 32.50 MW (off-season)

MAHARASHTRA STATE ELECTRICITY TRANSMISSION COMPANY LTD.,
EHV CC O&M ZONE, KARAD

Administrative Building
1st Floor Vijaynagar
Karad, 415114
Dist : Satara

CE/EHV CC O&M/ZONE/KRD/T/ **4-2147** Date : - **9 AUG. 2011.**

To,
Superintending Engineer,
Testing Communication Circle,
Karad.

Sub: Synchronisation of 36MW Co-generation plant at Dattanagar Tal. Shirol, Dist. Kolhapur and release of H.T. Power supply.

Ref.: 1. C.E., MSLDC L. No. 1522 dtd. 08.03.11.
Addressed to M/s. Urjanurkar Shree Datta Power Co. Ltd.
2. S.E. (KT) MSEDCL L. No. 5907 dtd. 08.08.11.

With reference to the above subject, the C.E.(MSLDC), Kalwa has granted the permission for synchronization of 36MW Co-generation plant of M/s. Urjanurkar Shree Datta Power Co. Ltd., at Dattanagar, Tal. Shirol, Dist. Kolhapur.

The S.E., MSEDCL Circle MSEDCL has given permission to release the H.T. Power supply to M/s. Urjanurkar. The joint testing has been carried out on 01.08.11.

It is directed to check the detail scheme before synchronization and release of H.T. Supply. The company has decided to synchronize the plant on 10th August 11 to the grid.

Singh *20*
Chief Engineer,
EHV CC O&M Zone, Karad.
O/C Approved by CE

Copy to:-
1) The S.E., EHV Const. Circle, Kolhapur.
.....It is requested to ask concern to charge the bays & line after verifying the details document.
2) The S.E., EHV O&M Circle, Kolhapur....For necessary action.
3) The S.E., MSEDCL, Tarabai Park, Kolhapur.
.....It is requested to ask testing unit to present at the time of charging.
4) The E.E., Const. Division, Kolhapur/O&M Dn., Kolhapur.
5) The E.E., Testing Division, Kolhapur.
6) M/s. Urjanurkar Shree Datta Power Co. Ltd. Dattanagar, Tal. Shirol, Dist. Kolhapur.
.....It is requested to comply the points mentioned in the letter by C.E., MSLDC Kalwa to the earliest.

M/F T

**Level of Assurance:**

The verification report is based on the information collected through interviews conducted over video calls / phone calls, supporting documents provided during the verification, Project Concept Note (PCN) / Monitoring Report (MR), submitted to SQAC. The verification opinion is assured provided the credibility of all the above.

Review of the following documentation was done by SQAC Verifier, Mr. Santosh Nair, who is experienced in such projects.

Documentation Verified:

- Project Concept Note (PCN)
- Monitoring Report (MR)
- JMR's
- Month wise Quantity of biomass residue combusted in the project plant.
- Environmental Clearance
- Commissioning Certificate
- Calibration Certificates
- Data provided upon request of all the documents of the related project.
- MIS Report
- Power Purchase Agreement
- Invoice

Sampling:

Not applicable

Person interviewed:

Mr. Vijay Ingle – Co-generation Manager: Shree Datta Shetkari Sahakari Sakhar Karkhana Ltd.
Mr. Dheeraj Patil – Instrument Engineer: Shree Datta Shetkari Sahakari Sakhar Karkhana Ltd.
Mr. Yogesh Hulgeri – Electrical Engineer: Shree Datta Shetkari Sahakari Sakhar Karkhana Ltd.



Corrective Action Requests (CARs)

Corrective Action Requests (CARs) and their resolutions are listed below:

There is only 1 CAR:

CAR 1:

The net quantity of electricity supplied to the grid as per JMR & Invoice is not matching with the ER statement for the Jan 2013 to March 2013.

Response from Project Participant

The data pertaining to those 3 months are not available as it was dealt with a third party. The only alternative is to ignore these 3 months. The correction has been made in the MR & ER sheet and accordingly Monitoring Report (V02) has been released after revising the crediting period from 01/04/2013 to 31/12/2022 due to mismatch of figures.

Conclusion by Verification Team

Verified Monitoring Report (V02) for correction and found to be matching as per requirement. Hence Corrective Action Request CAR-1 is closed.

TESTING & QUALITY ASSURANCE LABORATORY				
		MSDCL, TESTING DIVISION, Bapat Camp, Kolhapur-416005. Phone 0231 2680585; Fax 0231 2658127; email: eetkolhapur@mahadiscom.in		
TEST REPORT				
Test Report No.: TQA/KOP/115/13-14		Issue Date: 24 Aug 2013		
Date of Testing: 20 Aug To 21 Aug 2013		Place of Testing: TQA Lab		
Customer Name & Address: M/s Urjankur Shree Datta power com. Shirol				
Customer Ref: SRF. No: TQA/KOP/Test-040/13-14 Date: 17.08. 2013				
Details of Meter Under Test (MUT)				
Condition of item on Receipt : Good				
Description of item : 4 Quadrant Energy meter with ABT feature				
Make : Elster	CTR : -1A			
Model: A1800	PTR : 11Kw/110V			
Class : 0.2s	Sr. No: 16595518			
Ambient Condition during Testing.				
Temperature: 25 +/- 2.5 Deg C.		Relative Humidity: 35 to 65 %		
Details of Reference Standard used during Testing				
Sr. No.	Reference Standard	Particulars i.e. Ranges / Parameters	Validity up to	Traceability
1	3 Phase Reference Meter EP2-303-5 Sr. No: 020761	Active Energy, Reactive Energy, AC Voltage, AC Currents, PF, Frequency.	24 th Aug 2013	NABL Accredited Laboratory
REFERENCE STANDARD: IS 14697 or 13779 / 1999				
 Arun Landge Deputy Executive Engineer (AUTHORISED SIGNATORY)				
FF/TQA/KOP/002				
TR/115/13-14/ Page 1 of 2				

TESTING & QUALITY ASSURANCE LABORATORY				
		MSDCL, TESTING DIVISION, Bapat Camp, Kolhapur-416005. Phone 0231 2680585; Fax 0231 2658127; email: eetkolhapur@mahadiscom.in		
TEST REPORT				
Test Report No.: TQA/KOP/142/13-14		Issue Date: 21 Sept 2013		
Date of Testing: 18 Sept To 19 Sept 2013		Place of Testing: TQA Lab		
Customer Name & Address: M/s Urjankur Shree data Power company Ltd. Shirol.				
Customer Ref: SRF. No: TQA/KOP/Test-047 /13-14 Date: 05.09. 2013				
Details of Meter Under Test (MUT)				
Condition of item on Receipt : Good				
Description of item : 4 Quadrant Energy meter with ABT feature				
Make : Elster	CTR : -1A			
Model: A1800	PTR : 11Kw/110V			
Class : 0.2s	Sr. No: 12853662			
Ambient Condition during Testing.				
Temperature: 25 +/- 2.5 Deg C.		Relative Humidity: 35 to 65 %		
Details of Reference Standard used during Testing				
Sr. No.	Reference Standard	Particulars i.e. Ranges / Parameters	Validity up to	Traceability
1	3 Phase Reference Meter EP2-303-5 Sr. No: 020761	Active Energy, Reactive Energy, AC Voltage, AC Currents, PF, Frequency.	29 th Aug 2014	NABL Accredited Laboratory
REFERENCE STANDARD: IS 14697 or 13779 / 1999				
 Arun Landge Deputy Executive Engineer (AUTHORISED SIGNATORY)				
FF/TQA/KOP/002				
TR/142/13-14/ Page 1 of 2				



MAHARASHTRA POLLUTION CONTROL BOARD

Tel : 2402 0701 / 2401 0497
Fax: 2402 4066
Website : <http://mpcb.mah.nic.in>
E-mail : mpcb@mah.nic.in

Kalpatri Point,
2nd, 3rd & 4th floor,
Opp. Cineplane,
Near Slon Circle, Slon (E),
Mumbai - 400 022.

RED/L.S.I
Consent No. 20/RO(P&R)/E.C. No. KP-1429/08/CG-4/3 Date: 12/11/2009

Consent to Establish under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974, under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous Wastes (Management & Handling) Rules, 1989 and Amendment Rules, 2003.
[To be referred as Water Act, Air Act and HW (M & H) Rules respectively].

CONSENT is hereby granted to
M/s. Urjankur Shree Datta Power Company Ltd
A/P: Gat No 251 M/s. Shree Datta Shiroli S.S.K. Ltd
Dattanagar Shiroli, Tal. Shiroli, Dist. Kolhapur

located in the area declared under the provisions of the Water Act, Air Act and Authorization provisions of the Act and the Rules and amendments, thereto subject to the following terms and conditions:

1. The Consent to Establish is granted for a period up to: Commissioning of the project.
2. The Consent is valid for the manufacture of:
a. Product: Electricity Generation Maximum Quantity: 36 MW
b. Electrically Generation

3. CONDITIONS UNDER WATER (Prevention & Control of Pollution) Act, 1974:
(i) The quantity of trade effluent from:
a) Boiler Blow Down shall not exceed 470 M³/Day.
b) Cooling Tower Blow Down shall not exceed 30 M³/Day.
c) Other Process shall not exceed 75 M³/Day.
(ii) The quantity of sewage effluent from the factory shall not exceed 4 M³/day.
(iii) Trade Effluent Treatment: The applicant shall provide comprehensive treatment system consisting of primary, secondary and/or tertiary treatment as is warranted with reference to effluent treated effluent to the following standards:
The industry shall provide separate STP for treatment of effluent generated from co-generation project.
Industrial Effluent of Power Plant:
The industrial effluent discharging from various sections of Power Plant shall be given such treatment as may be required as the site condition permits that the final quality of effluent shall have to comply with standards;

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: <http://mpcb.gov.in>
Email: cac-cell@mpcb.gov.in

Kalpatri Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Slon Circle, Slon (E), Mumbai-400022

RED/L.S.I (R9)
No:- Format1.0/CAC/UAN No.MPCB-
CONSENT-0000140268/CR/2211001024

Date: 14/11/2022

To,
M/s. Urjankur Shree Datta Power Company Limited,
G.No:251, At Post-Dattanagar
Tal-Shiroli, Dist-Kolhapur.

Your Service is Our Duty

Sub: Renewal of Consent for manufacturing of Electric Power (Co-gen) - 36 MW.

Ref: 1. Earlier Consent granted by Board vide No. format1.0/CAC/UAN No. MPCB-CONSENT-116132/CR-2110000984, dtd. 21.10.2021
2. Minutes of CAC Meeting dtd. 30.08.2022.

Your application No.MPCB-CONSENT-0000140268 Dated 01.06.2022

For: grant of Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. The consent to renewal is granted for a period up to 31/07/2026
2. The capital investment of the project is Rs.220.6548 Crs. (As per C.A Certificate submitted by industry)
3. Consent is valid for the manufacture of:

Sr No	Product	Maximum Quantity	UOM
1	Electric Power (Co-gen)	36	MW

4. Conditions under Water (P&CP), 1974 Act for discharge of effluent:

Sr No	Description	Permitted (in CMD)	Standards to	Disposal Path
1.	Trade effluent	455	As per Schedule-I	Recycle/reused 100 % for Cooling tower, Dust suppression and Ash handling plant etc.
2.	Domestic effluent	4.5	As per Schedule-I	On land for gardening

M/s Urjankur Shree Datta Power Company Ltd., CR/UAN No.MPCB-CONSENT-0000140268 14/11/2022
02:53:35 pm / QMS_PCR_F02/00 Page 1 of 10

URJANKUR SHREE DATTA POWER COMPANY LIMITED
Dattanagar, Taluka Shiroli, Dist: Kolhapur 416120.
Tel : 91 2322 23 6551-55 Fax : 91 2322 236480
Email : urjankur@urjankur.com

Ref: USDPL/MoEP/2022-23/ Date: 04/01/2023

To,
Deputy Director General of Forest (Central),
West Central Zone,
Regional Office (WCZ),
Ground Floor, East wing,
New Secretariat Building, Opp. VCA Ground,
Civil Lines, Nagpur - 440001.

Subject: Six Monthly Compliance Report for the Period June 2022 to Dec 2022
Reference: Environmental Clearance for 36 MW Bagasse Based Co-generation Project at Urjankur Shree Datta Power Company Ltd., Dattanagar, Shiroli, Dist. Kolhapur. [No. J-13012/6/2008/IA-II(T) dated August 11, 2009]

Dear Sir,

With Reference to the above subject matter, we are submitting the environmental status report and compliance of environmental clearance conditions.

Thanking You.

Yours faithfully,

Director,
Urjankur Shree Datta Power Company Ltd

ANNEXURE - A

Meter Reading Of Power Generation Unit

Name of the Generator
Urjankur Shree Datta Power Company Limited

C.T. Ratio Available / Connected 225/1 - 225/1 A (0.2s-CT) (Connected).
Meter Ratio - 1 / 1 Amps
Date of first commissioning 11th August 2013

P.T. Ratio Available / Connected 110 KV / 110 V (Connected).
Meter Ratio - 11KV / 110 V
Date of EPA With MSEDCL 21st June 2013

Scale Factor - 1
Multiplying Factor (MF) 2250
Installed Generation Capacity 36 MW

Check Meter Make / Number - Secure APEX - ABT / APMB 2531 (Sr Number)
Surplus Generation Capacity for Season 22.5 MW
Surplus Generation Capacity for Off - Season 32.5 MW

Previous Reading			Current Reading		
Date & Time	Active Power (KWH)	Apparent Power (KVAH)	Date & Time	Active Power (KWH)	Apparent Power (KVAH)
01.04.2013 & 00:05:12	50927.21	51784.82	01.05.2013 & 13:02:00	58611.46	59597.22

Difference KWH reading : 7,684.25
Actual Unit Exported in KWH : 1,72,89,563.00
Difference KVAH reading : 1,294.95
Actual Reactive Power Shared : 29,13,638.00

EX. ENGINEER,
M.S.E.D.C.L.
MSEDCL (O&M), JAYSINGPUR

Authorized Signatory
Urjankur Shree Datta Power Company Limited

Copy To
1. CE, (CP), 5th Floor, Prakashgad, Bandra (E), Mumbai - 400 051
2. CE, (O & M) Kolhapur Zone, MSEDCL
3. CE, Load Dispatch Centre, MSDC, Kolwa.
4. SE (CP), MSEDCL, 5th Floor, Prakashgad, Bandra (E), Mumbai - 400 051
5. Office of the Commissioner of Sugar, "Sugar Complex", Agriculture College Campus, Shivaji Nagar, Pune - 411 005



ANNEXURE - B

URJANKUR SHREE DATTA POWER COMPANY LIMITED
Regd. Off: The LAFS Financial Centre, Plot C-2, C-3, Block - Kuria Complex, Bandra (East), Mumbai - 400 051,
Ph: 491-25-263 3333 Fax: 491-25-263 3297

INVOICE

Invoice No USDPL/MSDCL/2013-14/001 For the month of April 2013 Date Saturday, May 04, 2013

Name of the Generator Urjankur Shree Datta Power Company Limited

Name of the MSDCL Maharashtra State Electricity Distribution Company.

C.T. Ratio Available / Connected 225/1 - 225/1 A (0.2+CI) (Connected), Meter Ratio:- 1 / 1 Amps Date of first commissioning 11th August 2011

P.T. Ratio Available / Connected 110 KV / 110 V (Connected). Meter Ratio:- 11KV / 110 V Installed Generation 36 MW

Scale Factor:- 1 Multiplying Factor 2250 Surplus Generation 22.5 MW

Billing Meter Make / Number:- Secure APEX - ADT / APMB 2531 (Sr. Number) Surplus Generation Capacity for Off-Season 32.5 MW (Class - 0.2s)

Active Power (KWh)		Reactive Power (KVARH)	
Previous Reading	50927.21	Previous Reading	8683.37
Current Reading	58611.46	Current Reading	9978.32
(A) Difference	7684.25	(A) Difference	1294.95
(B) Difference X MF	1,72,89,563.00	(B) Difference X MF	29,13,638.00

Ratio - KWH KVARH 16.85 %

BILL PARTICULARS					
Exported KWH	Unit Rate as per EPA (Rs./Kwh)	Amount	Shortfall KVARH	Penalty Per KVARH	Amount of Penalty
1,72,89,563.00	5.69	9,83,77,613.00	33,10,605.00	0.25	8,27,651.00

Net Amount Payable before Due Date Re. 9,75,49,962.00

Amount in Words - Rupee Nine Crores Seventy Five Lakhs Forty Nine Thousand Nine Hundred Sixty Two Only

The payment may please be deposited in USDPL Cash Credit Account as given below:-

S.No	Particulars	Urjankur Shree Datta Power Company Limited
1	Name of the Bank	Bank of India
2	Account No.	01603011000059
3	Branch Particulars	Bank of India Building, 4th Floor, 70/80, Mahatma Gandhi Road, Fort, Mumbai - 400001
4	IFSC Code/RTGS code	BIKD0000160
5	Branch Code	

For Urjankur Shree Datta Power Company Limited

Authorized Signatory

FY 2014-15

Quantity of Fuel Consumed (In tonnes)

Sr.No	Month	Biomass Fuel-1 (Bagasse)	Biomass Fuel-2 (Cane Trash)	Biomass Fuel-3 (Bamboo)	Biomass Fuel-4 (De-barked)	Biomass Fuel-5 (Coconut-shells)	Biomass Fuel-6 (Palm)	Biomass Fuel-7 (Waste Stream of Sugar)	Biomass Fuel-8 (Coal)	Biomass Fuel-9 (Sugarcane)	Biomass Fuel-10 (Cane Trash)	Biomass Fuel-11 (Sugarcane)	Biomass Fuel-12 (Coal)
1	April	26238.412	756.840	7.620	6.200	22.460	0.000	14.82	50.000	0.000	0.000	0.000	0.000
2	May	20683.840	276.120	0.000	0.000	0.000	0.000	0.000	4602.180	0.000	0.000	0.000	0.000
3	June	2223.930	0.000	0.000	0.000	0.000	0.000	0.000	2094.510	0.000	0.000	0.000	0.000
4	July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	August	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	October	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	November	18881.440	27.890	0.000	0.000	0.000	0.000	0.000	2861.544	0.000	0.000	0.000	0.000
9	December	18311.890	496.490	0.000	0.000	0.000	0.000	0.000	4462.000	0.000	0.000	0.000	0.000
10	January	16278.890	913.550	0.000	0.000	0.000	0.000	0.000	844.900	0.000	0.000	0.000	0.000
11	February	44633.510	1892.140	0.000	0.000	0.000	0.000	0.000	840.000	0.000	0.000	0.000	0.000
12	March	14207.790	809.080	0.000	0.000	0.000	0.000	0.000	840.000	0.000	0.000	0.000	0.000

Urjankur Shree Datta Power Company Limited
Regd. Off: The LAFS Financial Centre, Plot C-2, C-3, Block - Kuria Complex, Bandra (East), Mumbai - 400 051,
Ph: 491-25-263 3333 Fax: 491-25-263 3297

CERTIFIED TRUE COPY

NEHA ANURAG GUJDIR
CHARTERED ACCOUNTANT
MEM. No. 150803

Urjankur Shree Datta Power Company Limited
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CERTIFIED TRUE COPY

For POWER SAMANT & JADHAV
Chartered Accountants

Munish A. Power
Partner
Mem. No. 103025





BOILER REGISTRATION NO-MR 14914
BOILER MAKE-ISGEC JOHN THOMPSON
BOILER TYPE-WATER TUBE, TRAVELLING GRATE
WORKING STEAM PRESSURE-109 KG/CM²
MAIN STEAM TEMP-540±5 deg.C
EVAPORATION (MCR)-180 TPH
HEATING SURFACES-8060 SQ.MTR

SIEMENS				SIEMENS Limited VADODARA, GUJARAT, INDIA			
Type	SST300 VE50AL						
No.	3,21,10,210		Year of Construction		2010		
Power	season	33500	kW	Speed	6800	RPM	
	offseason	36000					
P _{inlet}		105.0	Ata	t _{inlet}	535.0	°C	
P _{bleed - 1}	season	9.296	Ata	t _{bleed - 1}	231.4	°C	
	offseason	8.028			221.8		
P _{bleed - 2}	season	22.781	Ata	t _{bleed - 2}	337.4	°C	
	offseason	18.384			318.0		
P _{bleed - 3}	season	—	Ata	t _{bleed - 3}	—	°C	
	offseason	—			—		
P _{extraction}	season	3.569	Ata	t _{extraction}	142.1	°C	
	offseason	3.569			146.1		
P _{exhaust}	season	0.064	Ata	t _{exhaust}	36.98	°C	
	offseason	0.153			54.00		

A.C.GENERATOR			
TDPS MADE IN INDIA			
OUTPUT	1000 KVA	TYPE	
STANDARD		YEAR OF MANUFACTURE	
NO. OF PHASES	3	WEIGHT	kg
NO. OF POLES	4	ENCLOSURE SYSTEM	
VOLTAGE (AC)	1100 V	COOLING SYSTEM	
CURRENT (AC)	500 A	COOLANT TEMP.	°C
FREQUENCY	50 Hz	MAX. RISE OF ST. BY RTD	°C
SPEED	1800 min ⁻¹	CROSS OF INS. ARM.	FLD.
LIMITING SPEED	1800 min ⁻¹	BRGS.	DE INDE
P.F.	0.8	GRS/OIL	
TYPE OF STATOR CONN.	Y	QTY.(gm/lgm)	DE INDE
EXC.VOLTAGE (DC)	362 V	LUB.INT.	DE hrs/INDE hrs.
EXC.CURRENT (DC)	524 A	M/C No.	
ALTITUDE	< 1000 M	DUTY	CONTINUOUS
		PHASE SEQ.	ACW CW
ROTATION VIEWING AT DRIVEN END.			
MANUFACTURED BY TD POWER SYSTEMS PVT. LTD., BANGALORE			
UNDER LICENSE FROM TOYO DENKI SEIZO K.K. JAPAN.			





Applied methodologies and standardized baselines:

UCR Protocol Standard Baseline

SECTORAL SCOPE - 01 Energy industries (Renewable/Non-renewable sources)

TYPE I - Renewable Energy Projects (Large Scale)

CATEGORY - **ACM0006 Electricity and heat generation from biomass, Version 16.0**

This methodology is applicable to project activities that operate biomass (co-) fired power and-heat plants. The project activity includes the installation of new plants at a site where currently power or heat generation occurs. The new plant replaces or is operated next to existing plants (capacity expansion projects). Project types included under this methodology are co-generation of power and heat using biomass. Typical activities include capacity expansions, as is the the current UCR project activity.

UCR CoU Standard is used to determine the baseline grid emission factor for the 2013-2022 period.

Application of methodologies and standardized baselines

- The project activity is a power generation project using a biomass (bagasse) and displaces CO₂ emissions from electricity generation in power plants that are displaced due to the project activity. Since the project activity utilises biomass



(bagasse) for the generation of power and supplies it to the local grid, it displaces fossil fuel (coal), and hence it meets the primary applicability criteria of the UCR and UNFCCC CDM methodology. The project is also included in the positive list of approved types of activities of the UCR CoU Standard.

- The project activity is a power-and-heat plant that encompasses cogeneration plants, i.e. a power-and-heat plant in which at least one heat engine simultaneously generates both process heat and power. The total installed capacity of project activity is 36MW which is acceptable as per the applied large-scale methodology.
- The installation of a new biomass residue fired power generation unit, which replaces existing power generation capacity fired with fossil fuel as in the project plant (power capacity expansion projects) is also included in this methodology.
- For the purposes of this methodology, heat does not include waste heat, i.e., heat that is transferred to the environment without utilization, for example, heat in flue gas, heat transferred to cooling towers or any other heat losses.
- The biomass used by the project plant is not stored for more than one year. The biomass used by the project plant is not processed chemically or biologically (e.g., through esterification, fermentation, hydrolysis, pyrolysis, bio or chemical degradation, etc.) prior to combustion.
- The Project Activity uses biomass residues from a production process (e.g., production of sugar), and the implementation of the project does not result in an increase of the processing capacity of (the industrial facility generating the residues) raw input (e.g., sugar) or in other substantial changes (e.g., product change) in this process.
- The project activity unit does not co-fire fossil fuel and/or does not exceed the limit of 25% co-firing fossil fuel criteria as per the UCR Protocol for such projects.
- Biomass generated power is used for direct grid supply and for meeting the captive needs at the facility. The project activity involves the grid-connected bagasse-based electricity generation capacity involving the installation of facilities for allowing the export of electricity to the regional grid.
- Biomass is not sourced from dedicated plantations. The existing installed



turbogenerators are fired by bagasse, a by-product of the sugarcane processing and a biomass residue. Biomass used by the project plant is limited to biomass residue (bagasse).

- Bagasse is burnt in boilers as generated from the sugar mill and does not require any specific technology for its preparation before combustion. No fuel preparation equipment has been installed at site for preparation of bagasse. Hence no significant energy quantities are required to prepare the biomass residues for fuel combustion.
- The project activity also does not include any GHG emissions related to the decomposition or burning of biomass. The baseline heat emissions for the project activity are not included in the project boundary nor does it claim for emission reductions from heat.

Applicability of double counting emission reductions

The biomass-based boiler and turbine are constructed by the project proponent within the project boundary. The biomass-based boiler, turbine and energy meters have unique IDs, which is visible on the units. The generated electricity is measured using energy meters which also have unique serial numbers.

Additionally, the same has been stated in the undertaking provided in the Double Counting Avoidance Assurance Document (DAA) by SDSSSKL dated 23/12/2023.

Project boundary, sources and greenhouse gases (GHGs)

The project boundary includes the physical, geographical site(s) of:

- a) All plants generating power and/or heat located at the project site fired with biomass, fossil fuels or a combination of both;
- b) All power plants connected physically to the electricity system (grid) that the project plant is connected to.

Leakage Emissions (LE_y)

Leakage emissions is not applicable as the project activity does not use technology or equipment transferred from another activity.

Hence $LE_y = 0$



	Source	GHG	Included?	Justification/Explanation
BASELINE	GHG Emissions from fossil fuel in Grid Baseline Power Generation.	CO ₂	Included	Major source of GHG emissions
		CH ₄	Excluded	Excluded for simplification. This is conservative.
		N ₂ O	Excluded	Excluded for simplification. This is conservative.
	Uncontrolled burning or decay of surplus biomass residue.	CO ₂	Excluded	Excluded for simplification. This is conservative.
		CH ₄	Excluded	Excluded for simplification. This is conservative.
		N ₂ O	Excluded	Excluded for simplification. This is conservative.
PROJECT ACTIVITY	Emissions from Biomass Project Activity On-site fossil fuel and electricity consumption due to the project activity (stationary or mobile) Off-site transportation of biomass during cultivation	CO ₂	Included	Fossil fuel co-fired with biomass is included as a major project emission source. Off-site transportation of biomass during cultivation using default emission factor as per the methodology.
	Combustion of biomass residue for electricity and / or heat generation Storage of biomass Residue Wastewater from the treatment of biomass.	CH ₄	Excluded	No fossil fuel / electricity is consumed at the project site due to the project activity. No biomass residue from off-site will be used for the project activity. Excluded for simplification. This is conservative. Wastewater is treated aerobically.
		N ₂ O	Excluded	Excluded for simplification. This is conservative.

Project Emissions (PE_y)

The project emissions (PE_y) under the methodology may include:

- CO₂ emissions from transportation of biomass and/or biomass residue to the project site,
- CO₂ emissions from on-site consumption of fossil fuels due to project activity,
- CO₂ emissions from electricity consumption at the project site that is attributable to the project activity and



- CH₄ emissions from combustion of biomass.

Where:

PET_y = are the CO₂ emissions during the year y due to transport of the biomass to the project plant in tons of CO₂,

PET_y = Default project emissions as per UCR notification dated 04/10/2023 has been applied following the provisions from the TOOL12,

- *For large-scale project activities, apply a net-to-gross adjustment of 10%, i.e. multiply the emission reductions determined based on the applied methodology by 0.9 to determine the final amount of emission reductions that can be claimed.*

PE_{FFCO₂, y} = are the CO₂ emissions during the year y due to fossil fuels co-fired by the generation facility in tons of CO₂,

PE_{EC,y} = are the CO₂ emissions during the year y due to electricity consumption at the project site that is attributable to the project activity in tons of CO₂,

GWP_{CH₄} = is the Global Warming Potential for methane valid for the relevant commitment period and,

PE_{Biomass,CH₄,y} = are the CH₄ emissions from the combustion of biomass during the year y.

When the project activity exceeds the co-firing limit of 25% for any month during the monitored period, the emission reductions have not been considered, in keeping with the principle of conservativeness. Also the project emissions have been included for the said month on account of coal usage being a major source of emissions for the same. The emission reduction calculations sheet has been updated for the same.

The project activity also doesn't include the CH₄ emissions from the combustion of biomass.

Hence,

PE_{FFCO₂, y} = PE_{FC,j,y} = are the CO₂ emissions during the year y due to fossil fuels co-fired by the generation facility in tons of CO₂, in process j during the year y (tCO₂ / yr);

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$$

FC_{i,j,y} = the quantity of fuel type i combusted in process j during the year y (mass or volume unit / yr);

COEF_{i,y} = the CO₂ emission coefficient of fuel type i in year y (tCO₂ / mass or volume unit);

i = the fuel types combusted in process j during the year y.



The coefficient of emission factor of the fuel is calculated in accordance with the option 'B' of the "Tool to calculate project or leakage CO₂ emissions from fossil fuel consumption" which states that "The CO₂ emission coefficient **COEF**_{i,y} is calculated based on net calorific value and CO₂ emission factor of the fuel type i as follows:"

$$\mathbf{COEF}_{i,y} = \mathbf{NCV}_{i,y} \times \mathbf{EF}_{CO_2,i,y}$$

Where:

COEF_{i,y} = the CO₂ emission coefficient of fuel type i in year y (tCO₂/ mass or volume unit);

NCV_{i,y} = the weighted average net calorific value of the fuel type i in year y (GJ/ mass or volume unit);

EF_{CO₂,i,y} = weighted average CO₂ emission factor of fuel type i in y

CO ₂ emission factor for coal	0.09970 tCO ₂ e/GJ	Confirmed from IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories (99,700kg/TJ)
Hence, the project emission estimate on account of firing of coal fines is calculated as:	$\mathbf{COEF}_{i,y} = \mathbf{NCV}_{i,y} \times \mathbf{EF}_{CO_2,i,y}$	$= 0.0142358 \text{ GJ/kg} \times 0.09970 \text{ tCO}_2\text{e/GJ}$ $= 0.001419309 \text{ tCO}_2\text{e/kg}$

Hence,

$$\mathbf{PE}_{FFCO_2,y} = 0,$$

$$\mathbf{PE}_{EC,y} = 0 \text{ and,}$$

$$\mathbf{PE}_{Biomass,CH_4,y} = 0$$

Leakage Emissions (LE_y)

Leakage emissions is not applicable as the project activity does not use technology or equipment transferred from another activity.

Hence

$$\mathbf{LE}_y = \text{Leakage emissions} = 0$$

Establishment and description of baseline scenario (UCR Protocol)

The baseline scenario identified is:



Renewable energy technology displaces technology using fossil fuels, wherein the simplified baseline is the fuel consumption of the technology that would have been used in the absence of the project activity, times an emission factor for the fossil fuel displaced.

The baseline emissions due to displacement of electricity are determined by net quantity of electricity generation as a result of the project activity (incremental to baseline generation) during the year y in MWh times the CO₂ emission factor for the electricity displaced due to the project activity during the year y in tons CO₂/MWh

Given that power generation for internal consumption is part of the present project activity, emission reductions are only claimed from on-site incremental power generation that is injected into the grid. Therefore, the baseline scenario is the emission of GHG from the present electricity generation mix of the electricity grid.

Direct off-site emissions in the project activity arise from the biomass residue transport. However, the biomass is generated from the in-house processes pertaining to the sugar processing industry, hence, biomass residue transport is only accounted if biomass residue is imported from outside the project boundary. The same type of CO₂ emission occurs during transportation of coal from coalmines to thermal power plants (supplying power to state grid). The biomass is collected from the nearby sources and is transported by trucks to the project site.

Each truck laden with biomass is weighed on the electronic weighbridge and the corresponding readings are noted in the plant log books. For the current monitoring period no biomass residue was collected from outside, thus for this monitoring period, the value of this parameter is zero, however, using the UCR principles of conservativeness, transport emissions are calculated by applying a net-to-gross adjustment of 10%, i.e. multiply the emission reductions determined based on the applied methodology by 0.9 to determine the final amount of emission reductions. The reported values of the quantity of biomass transported can be verified against the plant records.

Emission Reductions (ER_y) is the emission reduction due to the project activity are calculated as the difference between the baseline emissions and the sum of the project emissions and the leakage:

$$ER_y = BE_y - (PE_y + LE_y)$$

BE_y = Baseline emissions in year y (t CO_{2e})

As mentioned in the methodology the baseline emissions are calculated as follows:

$$BE_y = EG_{pj,y} * EF_{grid,y}$$



Where:

EG_{grid,y} = Quantity of net electricity generation that is fed into the local grid as a result of the implementation of the project activity in year y (MWh)

EF_{grid,y} = The CO₂ emission factor for grid connected power generation in year y calculated using UCR Standard emission factor (0.9 tCO₂/MWh).

LE_y = Leakage emissions = 0

For this methodology, it is assumed that transmission and distribution losses in the electricity grid are not influenced significantly by the project activity and are therefore not accounted for.

Year	GENERATION (MWh)	Auxiliary (MWh)	Net Export to Grid (MWh)	Coal Consumed (Tonnes)
2013	56743.481	4329.246	40866.233	19748.31
2014	174747	14725.8	124413.599	26730.08
2015	174438.472	14126.439	127576.51	13371.923
2016	166834.502	13124.631	119097.826	13392.825
2017	112671.983	8863.5	78521.152	3943.213
2018	153084.525	10424.7965	110550.7219	2290.54
2019	154427.19	12125.3345	114798.3356	2565
2020	169290.48	13788.54	122602.6857	10655
2021	159057.475	14747.007	132590.3344	1196.463
2022	149870.3625	12342.777	106510.7644	1445.1
Total	1471165.471	118598.071	1077528.162	95338.454



Emission Reductions:

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total/yr
Net Power Exported Mwh	40866.23	124414	127576.5	119097.8	78521.15	110550.7	114798.3	122602.7	132590.3	106510.8	1077528.2	107753
Baseline Emission Reductions tCO ₂ eq	36779	111972	114818	107188	70669	99495	103318	110342	119331	95859	969771	96977
Project Emissions (coal) tCO ₂ eq	28029	37939	18979	19009	5597	3251	3641	15123	1699	2052	135319	13532
Project Emissions Biomass Cultivation/ Transport tCO ₂ eq	3677.9	11197.2	11481.8	10718.8	7066.9	9949.5	10331.8	11034.2	11933.1	9585.9	96977.1	9697.7
ER tCO ₂ eq	5072	62835	84357	77460	58005	86294	89345	84184	105698	84221	737471	73747

Calculated renewable power (MWh) to grid supplied = 1077528 MWh

Calculated total baseline emission reductions (Bey) = 969771 tCO₂eq

Total Emission Reductions (ERy) = 7,37,471 CoUs (7,37,471 tCO₂eq)

Conclusions:

Based on the audit conducted on the basis of UCR Protocol, which draws reference from UCR Standard for Baseline Grid Emission Factor, CDM UNFCCC Methodology ACM0006: Electricity and heat generation from biomass, Ver 16.0, the documents submitted during the verification including the Data, Project Concept Note (PCN) / Monitoring Report (MR), SQAC is able to certify that the emission reductions from the project - 36 MW Biomass Based Grid Supply Power Project by SDSSSKL, Shirol, India (UCR ID – 402) for the period **01/04/2013 to 31/12/2022** amounts to **7,37,471 tCO₂ (7,37,471 CoUs)**

Santosh Nair
Lead Verifier (Signature)



Praful Shinganapurkar
Senior Internal Reviewer (Signature)

Date: 01/03/2024