

महाराष्ट्र शासन
वनविभाग



मुख्य वनसंरक्षक (प्रा.), ठाणे वनवृत्त, ठाणे यांचे कार्यालय
सनप्लाझा कमर्शियल प्रिमायसेस, चौथा मजला, हरि ओम नगर, मुलूंड, मुंबई -81
दुरध्वनी क्रमांक - 022-25329642 / 25329865
Email: ccfthane@mahaforest.gov.in / ccfthane@gmail.com

Desk-10/FCA/A-20/CR-80/24-25/ 03 /2026-27

Dated: 10 /04/2026

Letter

To,

**The Addl. Principal Chief Conservator of Forests,
and Nodal Officer,
Maharashtra State,
Nagpur - 440 001.**

Subject- Diversion of 243.74 ha (Shahapur division 181.45 ha. and West Nashik division 62.29 ha.) Forest land for Bhavali Pumped Storage Project (1500 MW) village Kothale & Kalbhode in Tal-shahapur Dist-Thane & village Jamunde, Tal-Igatpuri, Dist- Nashik in the State of Maharashtra.

- Ref- 1. Government of India, MoEF&CC, New Delhi letter dated 17.03.2026
2. Your office letter no.Desk-17/S1/PID-153240/Thane/3081, dated 20.03.2026
3. Deputy Conservator of Forests, Shahapur letter no.Desk-10/FCA/09, dt.07.04.2026

Government of India & your office has raised 2 queries vide reference No.1 and 2. Accordingly, Deputy Conservator of Forests, Shahapur has submitted the compliance of the same vide reference No.3. This office agrees with the same.

2.00 Three sets of queries compliance reports are attached herewith for information and further necessary action.

Encl- As above 2 sets.

(N. R. Praveen)
(N. R. Praveen)

Chief Conservator of Forests (T.), Thane

Copy to the Chief Conservator of Forests (T.), Nashik for information and necessary action.

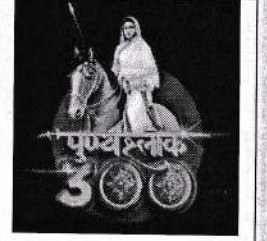
Copy to the Deputy Conservator of Forests, Shahapur and West Nashik for information and necessary action.

Copy to Authorized signatory, JSW Energy PSP Two Limited at JSW centre, Bandra Kurla Complex, Bandra (East) Mumbai-400 051 for information and necessary action.

मुख्य वनसंरक्षक (प्रा.) ठाणे वनवृत्त ठाणे
यांचे कार्यालय
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अग्रबक क्रमांक.....
प्रशासकीय अधिकारी



Office of the Deputy Conservator of Forests,
Shahapur Forest Division, Shahapur
Shahapur-Asangaon Road, Old Agra Road, At
Asangaon, Post Taluka Shahapur, District Thane 421
601
Telephone No.: 02527/272096
Email: dcfshahapur@gmail.com,
dycfshahapur@mahaforest.gov.in



No.D-10/FCA/ 09 / 2026-27

Shahapur 421 601 date 07 / 04 / 2026

To,

The Chief Conservator of Forests (T.)
Thane.

Subject:- Proposal for diversion of 243.74 ha. (Shahapur division 181.45 and West Nashik diversion 62.29 ha) Forest Land for Bhavali Pumped storage Project (1500MW) Village Kothale and Kalbhonde in Tal. Shahapur Dist. Thane & Village Jamunde Tal. Igatpuri, Dist. Nashik in the State of Maharashtra. (FP/MH/HYD/153240/2022)

- Ref.:-
- 1) Application letter of Mr.Lalit Parab, DGM- Projects, M/S JSW Egergy PSP Two Limited. 06.3.2022
 - 2) Letter From the Government of India, MoEF&CC, New Delhi Dated 17/03/2025.
 - 3) Letter from APCCF & Nodel Officer, Nagpur Dated Desk -17/ FCA-S1/PID/-153240/ Thane/ 3081/2025-26 dt.20.03.2026.
 - 4) Your Office letter No Desk-10/FCA/CR-80/24-25/438/2025-26, Dt.20/03/2026
 - 5) This office letter Desk-10/FCA/ 4284 /25-26, dt.24.03.2026
 - 6) compliance letter of Mr.Lalit Parab, DGM- Projects, M/S JSW Egergy PSP Two Limited. 25.03.2026
 - 7) Letter From DCF, West Nashik No.Deck-3/Land/2753 dated 25/03/2026
 - 8) This office letter Desk-10/FCA/ 4365 /25-26, dt.30.03.2026
 - 9) compliance letter of Mr.Lalit Parab, DGM- Projects, M/S JSW Egergy PSP Two Limited. 02.04.2026

With reference to subject mentioned above, this is to respectively inform you that, the Government of India, MoEF&CC, New Delhi has raised 2 queries vide letter reference No.2 and APCCF & Nodel Officer, Nagpur letter reference No.3 and also CCF Thane forwarded letter reference No.4 Accordingly, reference letter No.5 has been informed that to submit the Condition wise compliance report by the User Agency.

The User Agency has submitted the point-wise compliance of the shortcomings raised by the GOI MoEF&CC, New Delhi vide letter dated 17.03.2026 to This Office and the office of Deputy conservator of Forest, West Nashik accordingly letter No.6 along with

E:\data0\pd\Land 2\Land 2.1\PROPOSAL\JSWJSW Letter comply of GOI letter dt.17.3.2026.docx

necessary documents / undertakings to Deputy Conservator of Forest, West Nashik. Then they submitted that compliance report to Chief conservator of forest, Nashik by reference No.7.

But, The user agency have not submitted the KML and Maps of changing area statements, so we return that queries comply with reference letter No.8 has been informed that to submit the Condition wise compliance report by the User Agency.

According to above raised queries, user agency M/S JSW Egergy PSP Two Ltd. Submitted compliance report accordingly letter No.9 along with necessary documents.

According to EDS issued on 17 March 2026 By MoEF&CC to submitted the compliance report along with necessary documents / undertakings as follow.

Sr. No.	Observation / Shortcoming	Clarification & req. Docs Annexures
1.	As per the component-wise break up of the forest land proposed for diversion, 40.91 ha. of forest land has been proposed for muck dumping and job facilities. The State Government shall explore the possibility of shifting of such non-site specific activities on Non-Forest land.	<p><u>Justification for Location of Dumping & Job Facility Areas</u></p> <p>The user agency has submitted that the Bhavali Pumped Storage Project (PSP) is inherently site-specific in nature, as pumped storage schemes are governed by stringent topographical, geological, hydrological and engineering requirements.</p> <p>Shifting of the dumping and job facility areas is not feasible due to the site-specific nature of the project in view of following constraints:</p> <ul style="list-style-type: none"> - Detailed reconnaissance of the lower reservoir project area indicates that the surrounding region is predominantly forest land. - The nearest potential non-forest/Non-Tribal private land identified is located at a distance of more than 75km away and that too outside Thane district. - Shifting dumping areas to locations 75 km away would require additional access roads, significantly increasing the forest land requirement for roads, which may become comparable to or even exceed the dumping area requirement itself. For example, shifting of dumping site even 15 km will increase the diversion of forest land in road component by approx. 50 Ha. - Additionally, long-distance transportation of muck would lead to higher fuel consumption, increased emissions, disturbance to forest areas and wildlife and additional safety risks. It would also adversely affect construction efficiency due to increased cycle time and repeated handling of material, thereby impacting the construction schedule & Project viability. The detailed studies on environmental impact of distant Dumping area was submitted vide EDS reply dtd. 06.01.26. <p>In view of above, shifting of dumping and job facility areas is not feasible. However, we have reviewed in detail various options to further optimize forest land requirement for the same. Through revised construction methodology, phased utilization of infrastructure, adoption of engineered stabilization and</p>

compaction measures, it is now proposed to reduce the Dumping and job facility area of 40.91 ha to 23.122 ha which is about 17.788 ha (43.5%) reduction in forest area.

The reduced area of Dumping sites is as follows:

Site	Earlier proposed			Revised Proposal			Reduction (ha)		
	Reserved Forest (ha)	Private Forest (ha)	Total Forest Area (ha)	Reserved Forest Area (ha)	Private Forest Area (ha)	Total Forest Area (ha)	Reserved Forest Area	Private Forest (ha)	Forest Land (ha)
D-1	4.455	13.88	18.335	0	7.916	7.916	4.455	5.964	10.419
D-2	22.575	0	22.575	15.206	0	15.206	7.369	0	7.369
Total	27.03	13.88	40.91	15.206	7.916	23.122	11.824	5.964	17.788

While revising the muck dumping area requirement, special emphasis was given to reduction of Reserve forest area. As a result, of the total 17.788 Ha area reduced, 11.824 ha (66.5%) is Reserved Forest and 5.964 ha. (33.5%) is Private Forest area. Annexure-1

It is further submitted that:

- The muck disposal areas are directly linked to tunnel portals, dam excavation zones and underground works. Location of these facilities in close proximity to the excavation sites is essential for:
 - Minimize environmental impacts on ecology
 - Improve construction efficiency and reduce duration of forest disturbance
 - Reduce haulage distance of excavated material
 - Minimizing Safety Risks
 - Reducing Social Impact
 - Ease of environmental monitoring and compliance:

Of the total 6.45 MCM excavation, 3.61 MCM (56%) will be reused, while 2.84 MCM (44%) will be disposed of at the proposed dumping sites.

The proposed muck disposal sites are located in areas having low vegetation density and have been selected to avoid dense forest patches. A comprehensive and approved Muck Management Plan has been prepared, incorporating engineering stabilization measures and biological reclamation, ensuring environmental protection, slope stability and long-term restoration of the sites.

- It is also kindly submitted that the Expert Appraisal Committee (River Valley & Hydroelectric Projects), MoEF&CC, conducted site visit on 2nd & 3rd Jan 2025. The findings of the site visit were discussed amongst the Hon'ble EAC members under Additional Agenda Item 22.4 in the 22nd EAC Meeting held on 10th Jan., 2025. The Committee recommendations as per the Minutes of the Meeting are reproduced hereunder.


"the relocation of muck disposal site may not be insisted on while considering the proposal for clearance since the muck disposal site was found to have been selected properly.

		<p>Further, ecologically better sites were not appeared available in nearby areas. Any relocation at this stage might lead to much changes and may lead to more adverse consequences. However, safety measures as contained in EMP and in other documents should be adhered into".</p> <p>It is kindly submitted that the dumping areas shall be stabilized and restored in accordance with the approved Muck Management Plan and handed over to state forest department. We have also submitted an undertaking confirming that the Muck disposal site will be properly stabilized and scientifically reclaimed with vegetation after completion of disposal activities and will not be used for any Non-forest activities.</p>
2.	<p>As per the component - wise break up, 0.77 ha of forest land has been proposed for the approach road to the upper dam and 39.162 ha. for the approach road to the lower dam. The State Government shall re-examine the requirement of forest land for these roads, reassess and optimize the requirement of forest land for construction of the roads, with regard to the gradient and width of road, and further explore the possibility of realigning the road to non -forest land.</p>	<p>The user agency has submitted that access roads are essential for connectivity between various project components such as dam sites, tunnel portals, underground works and construction facilities during the execution & operational stage.</p> <p>The road network was originally planned considering the requirements of construction methodology, heavy equipment transportation, hill road gradients, turning radius at bends and long-term operational accessibility.</p> <p>Further, the alignment of roads is significantly influenced by site topography and terrain conditions. The project area lies in steep hilly terrain with a gross head of approximately 450 m. Hill roads cannot be constructed in straight alignment which necessitates the proposed road length & area.</p> <p>Optimization of Project Road Area</p> <p>In compliance with the observations the road alignment, construction methodology and access planning for project components were reviewed in detail with the objective of further minimizing the forest land requirement.</p> <p>Accordingly, the following optimization measures have been undertaken:</p> <ul style="list-style-type: none"> - Optimization of carriage way width - Reduction in Surface Road Footprint through underground access <p>Based on these considerations, the forest land requirement for Roads in Lower reservoir area is reduced from 39.162 ha to 19.381 Ha. <u>Annexure-1</u></p> <p>*User agency accommodating the above changes in layout and realign their construction planning & methodology, resulted in overall reduction in forest area from 243.74 ha. to 207.171 ha. i.e. 36.59 ha. forest area is now proposed for reduction. The resulting area statement and map indicating the details of overall area change is enclosed as <u>Annexure -2</u></p>

		and also The user agency undertaking that The resulting updated KML file will be submitted as part of our FC Stage II Compliances. <u>Annexure -3</u>
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This above information four sets of EDS Proposal are enclosed herewith for further necessary action.

Encl: - as above.


(Dipesh Malhotra)
Deputy Conservator of Forests,
Shahapur Forest Division, Shahapur

Copy to:- Additional Principal Chief Conservator of Forest & Nodal Officer, Maharashtra State ,
Nagpur for information .

Copy to:- Chief Conservator of Forest (T), Nashik circle, Nashik for information .

Copy to:- Deputy Conservator of Forest, West Nashik Division, Nashik for information .

Copy to:- M/s JSW Energy PSP Two Limited, Bandra (E), Mumbai for information.



JSW/PSP-BHAVALI/FC/2026-27/001
Dated- 02/04/2026

To,
The Deputy Conservator of Forests
Shahapur Division,
District Thane, Maharashtra

Sub: Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74ha. (Shahapur Division 181.45 ha and West Nasik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nasik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)– **regarding submission of EDS compliance issued on 17.03.2026.**

Ref:

1. Letter no. 8-06/2025-FC dated 17.03.2026.
2. Nodal office, Nagpur letter no. 17/SI/PID-153240/Thane/3081/2025-26 dated 20.03.2026.
3. CCF Thane office forwarding outward no. Desk-10/FCA/A-20/CR-80/24-25/438/25-26 dated 20.03.2026.
4. Your good office letter no. Room-10/FCA/4284/2025-26 dated 24.03.2026.
5. Our Office letter No. JSW/PSP-BHAVALI/FC/2025-26/76, dated 25.03.2026
6. Your office letter No. 10/FCA/436/2025-26 dated 30/03/2026.

Respected Sir,

With reference to the above mentioned letter received from your office, please find enclosed the EDS response and it is further submitted that:

- With reference to shifting of Muck disposal site outside forest area, as explained in our enclosed EDS response (Annexure-1), it is technically not feasible to shift muck disposal site outside the forest area however, we are now proposing reduction in Muck dumping area from 40.910 ha. to 23.122 ha. in Shahapur Division
- With reference to reassess and optimize forest area for roads. As mentioned in our enclosed EDS response, the road area in forest land has been optimized from 39.162 ha to 19.381 ha. in Shahapur Division (Annexure-1).
- While accommodating the above changes in our layout and realign our construction planning & methodology, resulted in overall reduction in forest area from 243.74 ha. to 207.171 ha. i.e 36.569 Ha forest area is now proposed for reduction. The resulting area statement and map indicating the details of overall area changes is enclosed as Annexure-2.
- It is kindly submitted that the resulting updated KML file will be submitted as part of our FC Stage-II compliances. Undertaking in this regard is enclosed as Annexure-3

Thanking you,

Yours faithfully,
For: JSW Energy PSP Two Limited


Lakshmi Parab
(Authorized Signatory)

Encl.:

1. Annexure 1: EDS response
2. Annexure 2: Map indicating proposed area reduction.
3. Annexure 3: Undertaking for submission of revised KML as part of FC Stage -2 compliances.





महाराष्ट्र शासन
वनविभाग

उप वनसंरक्षक, शहापूर वनविभाग, शहापूर यांचे कार्यालय
शहापूर आसनगांव जुना आग्रा रोड ४२९६०१, शहापूर.ता.पो.मु.,
दुरध्वनी क्र.- ०२५२७- २७२०९६

ईमेल आयडी-dycfshahapur@mahaforest.gov.in/dcfshahapur@gmail.com



क्रमांक - कक्ष-10/FCA/ 4365 /2025-26

दिनांक 30 / 03 / 2026

प्रति,

मे. जेएसडब्ल्यु एनर्जी पीएसपी टु लि.,
जेएसडब्ल्यु सेंटर, बांद्रा कुर्ला कॉम्प्लेक्स,
बांद्रा (पूर्व) मुंबई - 400 051.

विषय:- वनजमिन- ठाणे व नाशिक

मे. जेएसडब्ल्यु एनर्जी पीएसपी टु लि., मुंबई यांनी भावली पंप स्टोरेज प्रोजेक्टचे बांधकाम करण्यासाठी ठाणे व नाशिक जिल्हयातील 243.74 हे. वनजमिन वळतीकरणाबाबत.

- संदर्भ:-
1. मे. जेएसडब्ल्यु एनर्जी पीएसपी टु लि., मुंबई यांचेकडील पत्र क्र. JSWNEI/ BHAVALI/FC/— 2023-24, दिनांक 6/03/2022
 2. केंद्र शासन, दिल्ली यांचेकडील दि.17.03.2026 रोजीचे पत्र.
 3. मुख्य वनसंरक्षक, ठाणे यांचेकडील पत्र क्र. कक्ष-10/FCA/A-20/CR-80/24-25428/ 25-26, दि. 20/03/2026.
 4. या कार्यालयाचे पत्र क्र.कक्ष-10/FCA/4284/25-26, दि.24.03.2026
 5. आपलेकडील दि.25/03/2026 रोजीचा पुर्तता अहवाल.
 6. उपवनसंरक्षक, नाशिक पश्चिम यांचेकडील पत्र क्र.कक्ष -3/जमीन/2753/2025-26, दि.25.03.2026

विषयांकित प्रकरणी मे. जेएसडब्ल्यु एनर्जी पीएसपी टु लि., मुंबई यांनी 1500 MW भावली पंप स्टोरेज प्रोजेक्ट (PSP) करिता आवश्यक असलेल्या ठाणे जिल्हयातील शहापूर वनविभागाचे कार्यक्षेत्रातील मौजे कळमोंडे व मौजे कोयळे, ता. शहापूर येथील एकुण 181.45 हे.आर व नाशिक जिल्हयातील नाशिक पश्चिम वनविभागाचे कार्यक्षेत्रातील मौजे जामुंडे, ता. इगतपूरी येथील एकुण 94.3 हे.आर असे एकुण एकंदर 275.75 पैकी 243.74 हे.आर वनजमीनीचे वळतीकरणास केंद्र शासनाची मंजूरी मिळणेकामी वन (संवर्धन) अधिनियम, 1980 चे कलम 2 अंतर्गत सुधारीत प्रस्ताव ऑनलाईन www.forestclearance.in वर सादर केलेला असून सादर प्रस्तावाचा सांकेतांक क्रमांक FP/MH/HYD/153240/2022 असा आहे. सादर प्रस्तावाची हार्ड कॉपी या कार्यालयास पुढील कार्यवाहीसाठी सादर केलेली होती.

त्या अनुषंगाने सादरचा प्रस्ताव तत्त्वतः मंजूरीसाठी सादर करण्यांत आलेला होता. केंद्र सरकारकडून वेळोवेळी काढण्यांत आलेल्या त्रुटीची पुर्तता करून सादर प्रस्ताव मंजूरीकामी सादर करण्यांत आलेला होता.

तथापि केंद्र शासनाकडून सादर प्रस्तावामध्ये दि.17.03.2026 रोजी खालीलप्रमाणे 2 बुटी उपस्थित करण्यांत आलेल्या आहेत. सादर बुटीची पूर्तता करणेकामी संदर्भ क्र.03 अन्वये मुख्य वनसंरक्षक, ठाणे (प्रा.) यांनी पुढील कार्यावाहीसाठी या कार्यालयास सुचित केले आहे. त्या अनुषंगाने पूर्तता अहवाल सादर करणेकामी संदर्भ क्र.04 अन्वये आपणांस कळविण्यांत आले आहे.

एकरणी प्रस्तावात दि.17.03.2026 रोजीचे बुटी पत्रातील अट क्र. 1 व 2 साठी वनेतर जमीन प्रस्तावित करणेबाबत सुचविले असून आपण प्रस्तावित क्षेत्राचे जवळपास वनेतर जमीन उपलब्ध नसलेबाबत, तसेच सादरची प्रस्तावित जमीन प्रस्तुत कामासाठी योग्यच असून जवळ आहे. त्यामुळे सादरचे बाधित क्षेत्र कमी करून नव्याने क्षेत्र प्रस्तावित करत असलेबाबत संदर्भ क्र.05 अन्वये प्राप्त झालेल्या पूर्तता अहवाल नमूद केले आहे व कमी करण्यांत आलेल्या क्षेत्राबाबचे दस्ताऐवत अंतिम मंजूरी पत्रातील अटीचे पूर्तता अहवाला सोबत जोडून देण्यांत येणार असलेबाबतचे हमीपत्राने कळविण्यांत आलेले आहे .

तथापि आपणांमार्फत नव्याने प्रस्तावित करण्यांत आलेल्या क्षेत्राची KML व नकाशे सोबत जोडले नसल्याने प्रस्तावित केलेले क्षेत्राची पाहणी करणे शक्य होत नाही.

तरी आपणांस सुचित करण्यांत येते की , नव्याने प्रस्तावित करण्यांत आलेल्या क्षेत्राची KML copy व सर्व नकाशे परीवेशवर नव्याने upload करून पूर्तता अहवाल अंगलभाषेत 5 प्रतीत या कार्यालयास लवकरात लवकर सादर करणे, जेणे करून पुढील कार्यवाही योजणे या कार्यालयाकडून शक्य होईल.

सहपत्र- वरीलप्रमाणे.

(दीपेश मन्हात्रा)

उप वनसंरक्षक

शहापूर वनविभाग, शहापूर

प्रतिलिपी:- मुख्य वनसंरक्षक (प्रा.) ठाणे, मुख्य वनसंरक्षक (प्रा.) नाशिक यांजकडे माहितीसाठी सविनय सादर.

प्रतिलिपी:- उपवनसंरक्षक, नाशिक पश्चिम यांना माहितीसाठी व उचित कार्यवहीसाठी सन्नेह आशेषित.

प्रतिलिपी:- वनक्षेत्रपाल डोळखांब व वाशाळा यांना माहितीसाठी व उचित कार्यवहीसाठी रवाना.

प्रतिलिपी:- सहाय्यक वनसंरक्षक (वनिकरण व वन्यजीव) शहापूर यांना माहितीसाठी व उचित कार्यवहीसाठी रवाना.

2/- प्रकल्प यंत्रणेने प्रस्तावित केलेल्या सुधारीत क्षेत्राची पाहणी करून अहवाल सादर करावा.



JSW Energy PSP Two Limited

Regd. Office : JSW Centre,
Bandra Kurla Complex,
Bandra (East), Mumbai - 400 051

CIN.: : U40106MH2021PLC367136
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website: www.jsw.in

JSW/PSP-BHAVALI/FC/2025-26/-76

Dated- 25th March 2026

To,
The Deputy Conservator of Forests
Shahapur Division,
District Thane, Maharashtra

✓ To,
The Deputy Conservator of Forests
West Nashik Division
District-Nashik, Maharashtra

Sub: Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74ha. (Shahapur Division 181.45 ha and West Nashik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nashik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)– **regarding submission of EDS compliance issued on 17.03.2026.**

Ref: i. Letter no. 8-06/2025-FC dated 17.03.2026.
ii. Nodal office, Nagpur letter no-17/SI/PID-153240/Thane/3081/2025-26 dated 20.03.2026.
iii. CCF Thane office forwarding outward no. Desk-10/FCA/A-20/CR-80/24-25/438/25-26 dated 20.03.2026.
iv. DCF Shahapur office letter no. Room-10/FCA/4284/2025-26 dated 24.03.2026.

Dear Sir,

With reference to the above, we are submitting herewith our point-wise compliances to the shortcomings as desired by the MoEF&CC, Government of India vide letter dated 17.03.2026 alongwith the supporting documents attached as an annexures for your reference and to process it further.

Thanking you,

Yours faithfully,
For- JSW Energy PSP Two Limited

Lalit Parab.
(Authorized Signatory)



Encl.: Compliance letter along with supporting documents in 5 sets.



JSW/PSP-BHAVALI/FC/2025-26/-75

CIN.: : U40106MH2021PLC367136
Phone : +91 22 4286 1000
Fax : +91 22 4286 3000
Website: www.jsw.in

Dated- 25th March 2026

✓ To,

The Deputy Conservator of Forests
Shahapur Division,
District Thane, Maharashtra

To,

The Deputy Conservator of Forests
West Nashik Division
District-Nashik, Maharashtra

Sub: Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74ha. (Shahapur Division 181.45 ha and West Nashik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nashik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)– **regarding submission of EDS compliance issued on 17.03.2026.**

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Thanking you,

Yours faithfully,

For- JSW Energy PSP Two Limited

Lalit Parab.

(Authorized Signatory)



Encl.: Compliance letter along with supporting documents in 5 sets.



महाराष्ट्र शासन
वनविभाग

उप वनसंरक्षक, शहापूर वनविभाग, शहापूर यांचे कार्यालय
शहापूर आसनगांव जुना आग्रा रोड ४२१६०१, शहापूर, ता.पो.मु.,
दुरध्वनी क्र. - ०२५२७- २७२०९६

ईमेल आयडी-dc/shahapur@mahaforest.gov.in/dc/shahapur@gmail.com



क्रमांक - कस-10/FCA/ 4284 /2025-26

दिनांक 24 / 03 / 2026

प्रति,

मे. जेएसडब्ल्यू एनर्जी पीएसपी टु लि.,
जेएसडब्ल्यू सेंटर, बांद्रा कुर्ला कॉम्प्लेक्स,
बांद्रा (पूर्व) मुंबई - 400 051.

विषय:- वनजमिन- ठाणे व नाशिक

मे. जेएसडब्ल्यू एनर्जी पीएसपी टु लि., मुंबई यांनी भावली पंप स्टोरेज प्रोजेक्टचे बांधकाम करण्यासाठी ठाणे व नाशिक जिल्ह्यातील 243.74 हे. वनजमिन वळतीकरणाबाबत.

- संदर्भ:-
1. मे. जेएसडब्ल्यू एनर्जी पीएसपी टु लि., मुंबई यांचेकडील पत्र क्र. JSWNEU/BHAVALI/FC/--- 2023-24, दिनांक 6/03/2022
 2. केंद्र शासन, दिल्ली यांचेकडील दि.17.03.2026 रोजीचे पत्र.
 3. मुख्य वनसंरक्षक, ठाणे यांचेकडील पत्र क्र. कस-10/FCA/A-20/CR-80/24-25428/25-26, दि. 20/03/2026.

विषयांकित प्रकरणी मे. जेएसडब्ल्यू एनर्जी पीएसपी टु लि., मुंबई यांनी 1500 MW भावली पंप स्टोरेज प्रोजेक्ट (PSP) करिता आवश्यक असलेल्या ठाणे जिल्ह्यातील शहापूर वनविभागाचे कार्यक्षेत्रातील मीजे कळमांडे व मीजे कोथळे, ता. शहापूर येथील एकूण 181.45 हे.आर व नाशिक जिल्ह्यातील नाशिक पश्चिम वनविभागाचे कार्यक्षेत्रातील मीजे जांभुंडे, ता. इगतपूरी येथील एकूण 94.3 हे.आर असे एकूण एकंदर 275.75 पैकी 243.74 हे.आर वनजमीनीचे वळतीकरणास केंद्र शासनाची मंजूरी मिळणेकामी वन (संवर्धन) अधिनियम, 1980 चे कसम 2 अंतर्गत सुधारीत प्रस्ताव ऑनलाईन www.forestclearance.in वर सादर केलेला असून सादर प्रस्तावाचा सांकेतांक क्रमांक [FP/MH/HYD/153240/2022](http://www.forestclearance.in) असा आहे. सादर प्रस्तावाची हार्ड कॉपी या कार्यालयास पुढील कार्यवाहीसाठी सादर केलेली होती.

त्या अनुषंगाने सादरचा प्रस्ताव तत्त्वतः मंजूरीसाठी सादर करण्यांत आलेला होता. केंद्र सरकारकडून वेळोवेळी काढण्यांत आलेल्या बुटीची पूर्तता करून सादर प्रस्ताव मंजूरीकामी सादर करण्यांत आलेला होता.

तथापि केंद्र शासनाकडून सादर प्रस्तावामध्ये दि.17.03.2026 रोजी खालीलप्रमाणे 2 बुटी उपस्थित करण्यांत आलेल्या आहेत. सादर बुटीची पूर्तता करणेकामी संदर्भ क्र.03 अन्वये मुख्य वनसंरक्षक, ठाणे (प्रा.) यांनी पुढील कार्यवाहीसाठी या कार्यालयास सुचित केले आहे.

1. As per the component -wise break up of the forest land proposed for diversion, 40.91 ha. of forest land has been proposed for muck dumping and job facilities. The State Government shall explore the possibility of shifting of such non-site specific activities on Non-Forest land.

- 2 As per the component - wise break up, 0.77 ha of forest land has been proposed for the approach road to the upper dam and 39.162 ha. for the approach road to the lower dam. The State Government shall re-examine the requirement of forest land for these roads, reassess and optimize the requirement of forest land for construction of the roads, with regard to the gradient and width of road, and further explore the possibility of realigning the road to non -forest land.

तरी आपणांस सुचित करण्यांत येते की , केंद्र शासनाचे दि.17.03.2026 रोजीचे पत्रामध्ये उपस्थित केलेल्या वरिल त्रुटीचा पुर्तता अहवाल नाशिक वनविभागामार्फत 5 संचामध्ये अंगलभाषेत (English) या कार्यालयास लवकरात लवकर सादर करणे, जेणे करून पुढील कार्यवाही योजणे या कार्यालयाकडून शक्य होईल.

सहपत्र- वरीलप्रमाणे.



(दीपेश मल्होत्रा)

उप वनसंरक्षक
शहापूर वनविभाग, शहापूर

प्रतिलिपी:- मुख्य वनसंरक्षक (प्रा.) ठाणे, मुख्य वनसंरक्षक (प्रा.) नाशिक यांजकडे माहितीसाठी सविनय सादर.

प्रतिलिपी:- उपवनसंरक्षक, नाशिक पश्चिम यांना माहितीसाठी व उचित कार्यवहीसाठी सन्नेह आशेषित.

प्रतिलिपी:- वनक्षेत्रपाल डोळखांब व वासाळा यांना माहितीसाठी व उचित कार्यवहीसाठी रवाना.

प्रतिलिपी:- सहाय्यक वनसंरक्षक (धनिकरण व वन्यजीव) शहापूर यांना माहितीसाठी व उचित कार्यवहीसाठी रवाना.

File No. 8-06/2025-FC
 Government of India
 Ministry of Environment, Forest and Climate Change
 (Forest Conservation Division)

Indira Paryavaran Bhawan
 Aliganj, Jor Bagh Road
 New Delhi- 110003
 Dated: 17-03-2026

To
 The Principal Secretary (Forests)
 Government of Maharashtra
 Mumbai.

Subject: Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74 ha. (Shahapur Division 181.45 ha and West Nasik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nasik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)– reg.
 Madam/Sir,

I am directed to refer to the Govt. of Maharashtra's letter No. FLD-1225/CR-101/F-10 dated 05.08.2025 and further information submitted vide letter dated 19.01.2026 on the subject proposal seeking prior approval of the Central Government in accordance with Section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 and to say that the proposal was considered in the Advisory Committee meeting held on 27.02.2026. The detailed minutes of the said meeting is placed on the website of this Ministry: www.parivesh.nic.in. After examination of the proposal, the Committee deferred the proposal for want of the following information:

- i. As per the component-wise breakup of the forest land proposed for diversion, 40.91 ha of forest land has been proposed for muck dumping and job facilities. The State Government shall explore the possibility of shifting of such non-site specific activities on Non-forest lands.
 - ii. As per the component-wise break-up, 0.77 ha of forest land has been proposed for the approach road to the upper dam and 39.162 ha for the approach road to the lower dam. The State Government shall re-examine the requirement of forest land for these roads, reassess and optimize the requirement of forest land for construction of the roads with regard to the gradient and width of road, and further explore the possibility of realigning the road to non-forest land.
2. In view of above, the State Government is requested to furnish the information, as indicated above, for further consideration of the proposal in the Ministry.

Yours faithfully,
 Sd/-
 (Raja Ram Singh)
 Deputy Inspector General of Forests

Copy to:-

1. The Principal Chief Conservator of Forests & HoFF, Department of Forest, Government of Maharashtra, Nagpur.
2. DDGF (Central), Regional Office, Ministry of Environment, Forest and Climate Change, Nagpur.
3. The APCCF-cum-Nodal Officer (FCA), Government of Maharashtra, Nagpur.
4. The User Agency.
5. The Monitoring Cell, FC Division, MoEF&CC, New Delhi for uploading the letter on PARIVESH portal.


Desk-10/FCA/A-20/CR-80/24-25/ 438 /25-26
Thane- 400 603 Date -20/03/2026

Copy to the Chief Conservator of Forests (T.), Nashik for information and necessary action.

Copy to the Deputy Conservator of Forests, Shahapur and West Nashik for information and necessary action.

Copy to Authorized signatory, JSW Energy PSP Two Limited at JSW centre, Bandra Kurla Complex, Bandra (East) Mumbai-400 051 for information and necessary action.

Encl. :- As Stated.


(Roshan Rathod)

Divisional Forest Officer(V.),Thane
office of the **Chief Conservator of Forests (T.), Thane.**

Digitally signed by
Raja Ram Singh
Date: 17-03-2026
13:31:35

OFFICE OF THE PRINCIPAL CHIEF CONSERVATOR OF FORESTS (HEAD OF FOREST FORCE), MAHARASHTRA STATE, NAGPUR

ADDITIONAL PRINCIPAL CHIEF CONSERVATOR OF FORESTS AND NODAL OFFICER
First Floor, 'B' Wing, Van Bhavan, Civil Lines, Nagpur-440001.

Tel no. 0712-2556916 E-mail- apccfnodal@mahaforest.gov.in

No.:Desk-17/SI/PID-153240/Thane³⁰⁸¹/2025-26
Nagpur – 440 001, Dated : 20/03/2026

To,

The Authorized Signatory,
JSW Energy PSP Two Ltd.
At JSW Centre Bandra Kurla Complex, Bandra (East),
Mumbai-400051


Sub:- Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74 ha. (Shahapur Division 181.45 ha and West Nasik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nasik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)-reg.

Ref:- The Government of India, MoEF&CC, New Dlehi letter no. File No.8-06/2025-FC, dated 17/03/2026.

The copy of the Government of India, MoEF&CC, New Dlehi letter referred above is enclosed herewith for information & necessary action.

It is therefore requested to submit compliance with all relevant documents in **English** through proper channel to this office for further submission to the Ministry for consideration of the proposal for approval

Encl:- As above


(N. Jeykumaran)
Member Secretary
Deputy Conservator of Forests
(Forest Conservation)

Copy to Chief Conservator of Forests (T), Thane for information and necessary action..

Copy of the Chief Conservator of Forests (T), Nashik for information and necessary action.

Copy to the Deputy Conservator of Forests, Shahapur Forest Division, Shahapur for information and necessary action

Copy to the Deputy Conservator of Forests, West Nashik Forest Division for information and necessary action

File No. 8-06/2025-FC
Government of India
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division)

Indira Paryavaran Bhawan
Aliganj, Jor Bagh Road
New Delhi- 110003
Dated: 17-03-2026

To
The Principal Secretary (Forests)
Government of Maharashtra
Mumbai.

Subject: Proposal for seeking prior approval of the Central Government under Section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of JSW Energy PSP Two Limited for non-forestry use of 243.74 ha. (Shahapur Division 181.45 ha and West Nasik Division 62.29 Ha) of forest land (reserved forest, protected forest and private forest) for Bhavali Pumped Storage Project (1500 MW) in Thane & Nasik District in the State of Maharashtra (Online proposal No. FP/MH/HYD/153240/2022)– reg.

Madam/Sir,

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- i. As per the component-wise breakup of the forest land proposed for diversion, 40.91 ha of forest land has been proposed for muck dumping and job facilities. The State Government shall explore the possibility of shifting of such non-site specific activities on Non-forest lands.
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Yours faithfully,
Sd/-
(Raja Ram Singh)
Deputy Inspector General of Forests

Copy to:-

1. The Principal Chief Conservator of Forests & HoFF, Department of Forest, Government of Maharashtra, Nagpur.
2. DDGF (Central), Regional Office, Ministry of Environment, Forest and Climate Change, Nagpur.
3. The APCCF–cum-Nodal Officer (FCA), Government of Maharashtra, Nagpur.
4. The User Agency.
5. The Monitoring Cell, FC Division, MoEF&CC, New Delhi for uploading the letter on PARIVESH portal.

Digitally signed by
Raja Ram Singh
Date: 17-03-2026
13:31:35



Compliance of Essential Detail Sought (EDS) dtd. 17.03.2026:

Sr. No.	Observation/Shortcoming	Clarification & required Documents and Annexures
1.	As per the component-wise breakup of the forest land proposed for diversion, 40.91 ha of forest land has been proposed for muck dumping and job facilities. The State Government shall explore the possibility of shifting of such non-site specific activities on Non-forest lands	<p><u>Justification for Location of Dumping & Job Facility Areas</u></p> <p>It is respectfully submitted that the Bhavali Pumped Storage Project (PSP) is inherently site-specific in nature, as pumped storage schemes are governed by stringent topographical, geological, hydrological and engineering requirements.</p> <p>Shifting of the dumping and job facility areas is not feasible due to the site-specific nature of the project in view of following constraints:</p> <ul style="list-style-type: none">- Detailed reconnaissance of the lower reservoir project area indicates that the surrounding region is predominantly forest land.- The nearest potential non-forest/Non-Tribal private land identified is located at a distance of more than 75km away and that too outside Thane district.- Shifting dumping areas to locations 75 km away would require additional access roads, significantly increasing the forest land requirement for roads, which may become comparable to or even exceed the dumping area requirement itself. For example, shifting of dumping site even 15 km will increase the diversion of forest land in road component by approx. 50 Ha.- Additionally, long-distance transportation of muck would lead to higher fuel consumption, increased emissions, disturbance to forest areas and wildlife and additional safety risks. It would also adversely affect construction efficiency due to increased cycle time and repeated handling of material, thereby impacting the construction schedule & Project viability. The detailed studies on environmental impact of distant Dumping area was submitted vide EDS reply dtd. 06.01.26. <p>In view of above, shifting of dumping and job facility areas is not feasible. However, we have reviewed in detail various options to further optimize forest land requirement for the same. Through revised construction methodology, phased utilization of infrastructure, adoption of engineered stabilization and compaction measures, it is now proposed to reduce the Dumping and job facility area of 40.91 ha to 23.122 ha which is about 17.788 ha (43.5%) reduction in forest area.</p>



The reduced area of Dumping sites is as follows:

Site	Earlier proposed			Revised Proposal			Reduction (ha)		
	Reserved Forest (ha)	Private Forest (ha)	Total Forest Area (ha)	Reserved Forest Area (ha)	Private Forest Area (ha)	Total Forest Area (ha)	Reserved Forest Area	Private Forest (ha)	Forest Land (ha)
D-1	4.455	13.88	18.335	0	7.916	7.916	4.455	5.964	10.419
D-2	22.575	0	22.575	15.206	0	15.206	7.369	0	7.369
Total	27.03	13.88	40.91	15.206	7.916	23.122	11.824	5.964	17.788

While revising the muck dumping area requirement, special emphasis was given to **reduction of Reserve forest area**. As a result, of the total **17.788 Ha area reduced, 11.824 ha (66.5%) is Reserved Forest and 5.964 ha. (33.5%) is Private Forest area.**

It is further submitted that:

- The muck disposal areas are directly linked to tunnel portals, dam excavation zones and underground works. Location of these facilities in close proximity to the excavation sites is essential for:
 - Minimize environmental impacts on ecology
 - Improve construction efficiency and reduce duration of forest disturbance
 - Reduce haulage distance of excavated material
 - Minimizing Safety Risks
 - Reducing Social Impact
 - Ease of environmental monitoring and compliance:
- Of the total 6.45 MCM excavation, 3.61 MCM (56%) will be reused, while 2.84 MCM (44%) will be disposed of at the proposed dumping sites.
- The proposed muck disposal sites are located in areas having low vegetation density and have been selected to avoid dense forest patches. A comprehensive and approved Muck Management Plan has been prepared, incorporating engineering stabilization measures and biological reclamation, ensuring environmental protection, slope stability and long-term restoration of the sites.
- It is also kindly submitted that the Expert Appraisal Committee (River Valley & Hydroelectric Projects), MoEF&CC, conducted site visit on 2nd & 3rd Jan 2025. The findings of the site visit were discussed amongst the Hon'ble EAC members under Additional Agenda Item 22.4 in the 22nd EAC Meeting held on 10th Jan., 2025. The Committee recommendations as per the Minutes of the Meeting are reproduced hereunder.



		<p><i>“the relocation of muck disposal site may not be insisted on while considering the proposal for clearance since the muck disposal site was found to have been selected properly. Further, ecologically better sites were not appeared available in nearby areas. Any relocation at this stage might lead to much changes and may lead to more adverse consequences. However, safety measures as contained in EMP and in other documents should be adhered into”.</i></p> <ul style="list-style-type: none"> - It is kindly submitted that the dumping areas shall be stabilized and restored in accordance with the approved Muck Management Plan and handed over to state forest department. We have also submitted an undertaking confirming that the Muck disposal site will be properly stabilized and scientifically reclaimed with vegetation after completion of disposal activities and will not be used for any Non-forest activities.
<p>2.</p>	<p>As per the component-wise break-up, 0.77 ha of forest land has been proposed for the approach road to the upper dam and 39.162 ha for the approach road to the lower dam. The State Government shall re-examine the requirement of forest land for these roads, reassess and optimize the requirement of forest land for construction of the roads with regard to the gradient and width of road, and further explore the possibility of realigning the road to non-forest land.</p>	<p>It is respectfully submitted that access roads are essential for connectivity between various project components such as dam sites, tunnel portals, underground works and construction facilities during the execution & operational stage.</p> <p>The road network was originally planned considering the requirements of construction methodology, heavy equipment transportation, hill road gradients, turning radius at bends and long-term operational accessibility.</p> <p>Further, the alignment of roads is significantly influenced by site topography and terrain conditions. The project area lies in steep hilly terrain with a gross head of approximately 450 m. Hill roads cannot be constructed in straight alignment which necessitates the proposed road length & area.</p> <p><u>Optimization of Project Road Area</u></p> <p>In compliance with the observations the road alignment, construction methodology and access planning for project components were reviewed in detail with the objective of further minimizing the forest land requirement.</p> <p>Accordingly, the following optimization measures have been undertaken:</p> <ul style="list-style-type: none"> - Optimization of carriageway width - Reduction in Surface Road Footprint through underground access <p>Based on these considerations, the forest land requirement for Roads in Lower reservoir area is reduced from 39.162 ha to 19.381 Ha.</p>

Based on the above revised area proposal, Component wise Project land break up is attached as **Annexure-1** and undertaking w.r.t submission of revised documentation for the proposed forest area reduction is attached as **Annexure -2**.



**Energy PSP Two Limited**Regd. Office: JSW Centre,
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051,

CIN: U40106MH2021PLC367136

Phone: 022-4286 1000

Fax: 022-4286 3000

Undertaking

(Regarding submission of revised documentation w.r.t proposed reduction in Forest land Diversion)

With reference to EDS Point No. 1 & 2 of the MoEF&CC, New Delhi, EDS letter dated 17.03.2026, regarding proposed Forest land diversion for Muck Dumping & job facilities and project roads.

The earlier applied forest area diversion of 243.74 Ha has been revised to 207.171 Ha. with reduction in Dumping area and Projects roads.

We hereby undertake that all the required revised documentation with regard to 207.171 Ha forest area diversion will be submitted as part of FAC Stage-II compliance documentation.

We affirm that this undertaking is submitted in good faith and in compliance with the conditions prescribed for the project.

Yours Sincerely,

For- JSW Energy PSP Two Limited

Lalit Parab.
(Authorized Signatory)



Place: Igatpuri, Nashik

Date: 25th March 2026



Part of O.P. Jindal Group

Bhawali PSP- Forest Land Area Reduction & Component wise Breakup

The requirement of forest land is reduced to **207.171 ha** as against the earlier proposed **243.74 ha** (reduction of approximately **36.569 ha**). The revised component-wise break-up of the land requirement is as follows:

Sr. No.	Component	Revised Forest Area (ha.)		Total Revised Forest Area (ha.)	Non-Forest Area (ha.)	Total Area (ha.)
		Reserved/Protected Forest	Private Forest			
1	TRT (Underground)	5.397	0	5.397	0	5.397
2	Cable & Ventilation	0.211	0	0.211	0	0.211
3	Upper Dam & Reservoir	58.42	0	58.42	29.15	87.57
4	Lower Dam & Reservoir	44.92	36.18	81.1	0	81.1
5	Working Space	0	4.8	4.8	0	4.8
6	Pothead Yard	0.9	0	0.9	0	0.9
7	Fire Fighting Tank	0.1	0	0.1	0	0.1
8	Saddle Dam	0.11	0	0.11	0	0.11
9	ADIT/ MAT (Underground)	1.452	0.237	1.689	0	1.689
10	Approach Road to Upper Dam	0.77	0	0.77	1.93	2.7
11	Service Corridor	3.786	0	3.786	0	3.786
12	HRT (Underground)	4.513	0	4.513	0	4.513
13	Power House (Underground)	0.954	0	0.954	0	0.954
14	Approach Road to Lower Dam	10.851	8.53	19.381	0	19.381
15	TRC	1.918	0	1.918	0	1.918
16	Dumping Area & Job facilities -1	0	7.916	7.916	0	7.916
17	Dumping Area & Job facilities -2	15.206	0	15.206	0	15.206
Total		149.508	57.663	207.171	31.08	238.25

The previous component-wise break-up of the land requirement is as follows:

Sr. No.	Component	Reserved Forest Area (ha.)		Total Forest Area (ha.)	Non-Forest Area (ha.)	Total Area (ha.)
		Reserved/Protected Forest	Private Forest			
1	TRT (Underground)	4.2	0	4.2	0	4.2
2	Cable & Ventilation	0.084	0	0.084	0	0.084
3	Upper Dam & Reservoir	58.42	0	58.42	29.15	87.57
4	Lower Dam & Reservoir	44.92	36.18	81.1	0	81.1
5	Working Space	0	4.8	4.8	0	4.8
6	Pothead Yard	0	0	0	0	0
7	Fire Fighting Tank	0	0	0	0	0
8	Saddle Dam	0.11	0	0.11	0	0.11
9	ADIT/ MAT (Underground)	0.23	0.76	0.99	0	0.99
10	Approach Road to Upper Dam	0.77	0	0.77	1.93	2.7
11	Service Corridor	2.874	0	2.874	0	2.874
12	HRT (Underground)	6.68	0	6.68	0	6.68
13	Power House (Underground)	2	0	2	0	2
14	Approach Road to Lower Dam	20.932	18.230	39.162	0	39.162
15	TRC	1.64	0	1.64	0	1.64
16	Dumping Area & Job facilities -1	4.455	13.88	18.335	0	18.335
17	Dumping Area & Job facilities -2	22.575	0	22.575	0	22.575
Total		169.89	73.85	243.74	31.08	274.82





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Undertaking

(Regarding submission of revised documentation w.r.t proposed reduction in Forest land Diversion)

With reference to EDS Point No. 1 & 2 of the MoEF&CC, New Delhi, EDS letter dated 17.03.2026, regarding proposed Forest land diversion for Muck Dumping & job facilities and project roads.

The earlier applied forest area diversion of 243.74 Ha has been revised to 207.171 Ha. with reduction in Dumping area and Projects roads.

We hereby undertake that all the required revised documentation including KML regard to 207.171 Ha forest area diversion will be submitted as part of FAC Stage-I compliance documentation.

We affirm that this undertaking is submitted in good faith and in compliance with the conditions prescribed for the project.

Yours Sincerely,

For- JSW Energy PSP Two Limited

Lalit Parab.
(Authorized Signatory)



Place: *Igatpuri*

Date: *10/04/2026*



Part of O.P. Jindal Group





Energy PSP Two Limited

Regd. Office: JSW Centre,
Bandra Kurla Complex,
Bandra (East), Mumbai – 400 051,
CIN: U40106MH2021PLC367136
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Undertaking for Muck disposal area

We hereby undertake that:

1. The proposed muck disposal sites have been carefully selected in consultation with the concerned authorities and duly reviewed during the EAC, MoEF&CC site visit. The sites are located in areas with very low vegetation density and minimal ecological sensitivity.
2. In view of the unavailability of suitable non-forest or private land in proximity to the project area, relocation of muck disposal to non-forest land is not feasible.
3. A Comprehensive Muck Management Plan has been prepared and approved, which includes appropriate engineering and biological measures for slope stabilization, erosion control, and long-term ecological restoration.
4. The muck disposal sites will be properly stabilized and scientifically reclaimed with vegetation after completion of disposal activities. After commissioning of the project, these sites shall not be used for any non-forest activity.

We affirm that this undertaking is submitted in good faith and in compliance with the conditions prescribed for the project.

Place: NASHIK

Date: _____

Yours Sincerely,

Mr. Lalit Parab.



DGM- Projects.

Authorized Signatory,

For JSW ENERGY PSP TWO LIMITED



सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)



Minutes of 32ND MEETING OF THE EXPERT APPRAISAL COMMITTEE O
N\\ meeting River Valley and Hydroelectric Projects held from 29/05/2025 to 29/05/2025 **Date:** 09/06/2025

MoM ID: EC/MOM/EAC/815629/5/2025
Agenda ID: EC/AGENDA/EAC/815629/5/2025
Meeting Venue: N/A
Meeting Mode: Virtual
Date & Time:

29/05/2025	10:30 AM	05:30 PM
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1. Opening remarks

The 32nd meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on 29th May, 2025 through Virtual mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The Minutes of the Meeting held on 31st EAC meeting on 14th May, 2025 were confirmed.

3. Details of proposals considered by the committee

Day 1 -29/05/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Bhawali Pumped Storage Project (1500 MW) by JSW Renewable Energy (Vijayanagar) Limited located at NASHIK, MAHARASHTRA			
Proposal For		Fresh EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/MH/RIV/481391/2024	J-12011/08/2022-IA-I(R)	08/08/2024	River Valley/Irrigation projects (1(c))

3.1.2. Project Salient Features

32.1.1 The proposal is for grant of Environmental Clearance (EC) to the proposed project namely Bhavali Pumped Storage Project (1500 MW) in an area of 278.92 Ha in Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra by M/s JSW Energy PSP Two Limited.

32.1.2: The Project Proponent and the accredited Consultant M/s. EQMS India Private Limited, made a detailed presentation on the salient features of the project and informed that:

- i. The proposal is for environmental clearance to the project for Bhavali Pumped Storage Project (1500MW), located at Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra, by M/s JSW Energy PSP Two Ltd.
- ii. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 27th meeting held during 09.05.2022 and recommended for grant of Terms of References (ToR) for the Project. The ToR has been issued by Ministry vide letter No J-12011/08/2022-IA. I(R) dated 27.6.2022.
- iii. The project is listed at S.N.1(c) (i) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and is appraised at Central Level by Expert Appraisal Committee (EAC).
- iv. The geographical co-ordinate of the project are –
Upper Reservoir: 19⁰36'31.69" N ,73⁰35' 45.06" E;
Lower Reservoir: 19⁰34' 56.38" N,73⁰ 35' 10.0" E"

v. The Bhavali Pumped Storage Project envisages creation of an upper reservoir (gross storage:12.35 MCM & live storage: 11.08 MCM) by constructing 962.47m long dam comprising of 822.47 m long Geomembrane faced rockfill dam (GRFD) with maximum height of 48.64m from foundation, 60m long and 61m height ungated spillway with 4 bays of 12.5m each; 4 blocks of 20m length each non-overflow section of maximum height of 49.57m from foundation, two each on either side of spillway. 80m long saddle dam (maximum height 10m from foundation) to reduce backwater to enter ESZ area. The lower reservoir (gross storage:13.26MCM; live storage:11.71MCM) shall be created by constructing concrete gravity dam 365.5m long at top with maximum height of 48.15m from foundation and 104 m long ,74m high (from foundation) ungated spillway with 8 bays of 10.5m each. Diffuser type Intake structure with 3 intakes (25.5mx10.5m) of 42.44m length shall be provided. The water conductor system shall comprise of 67.96 m long three intake tunnels of 7m diameter each with design discharge of 131.74cumec each. 5.1m diameter, followed Steel lined pressure shaft 3 nos. of independent, 5.1m diameter with length varying from 1568.09m to 1594.89m, six 3.8m diameter branch pressure shaft after first bifurcation of design discharge 65.96cumec each; two 2.9m diameter 46.83m long steel lined branch pressure shaft after second bifurcation of design discharge 32.98cumec each. Underground powerhouse (167mx22mx52.9m) housed with 7 No's. Francis vertical shaft reversible pump-turbine (5 X 250MW & 2 X 125 MW) discharging into circular draft tube 5.20 m and 4.0m diameter for large and small unit; two 4m diameter concrete lined branch tail race tunnel for 32.98cumec discharge after 3rd bifurcation; six 5.2meter diameter concrete lined branch tail race tunnel for 65.78 cumec discharge after 4th bifurcation; followed by three 7m diameter main tail race tunnel with length varying from 621.17m to 646.57m,each discharging 131.74cumec, 105m long trapezoidal tail race pool followed by 560m long trapezoidal tail race channel. Annual energy generation by Bhavali PSP in turbine mode is 4049.17 MU whereas annual energy consumed in pump mode is 5110.33 MU.

vi. **Land Requirement:** The total land requirement under the project for upper and lower rock fill dam, reservoir & other works, has been assessed as 278.92 ha of which private land is 35.18 ha, forest land 243.74 ha.

vii. **Demographic details in 10 km radius of project area:** The study area comprises of 40 villages. As per the Census of India 2011, the total households under study area villages are 9190. The total population of villages is 52201 composed of 26398 males and 25803 females with sex ratio of 977. The cast wise composition of the total population made up the Scheduled Cast population is 2234 (4.28%) and Scheduled Tribe population is 32079 (61.45%), which shows that the Scheduled Tribe is the dominant cast in most of the villages in study area. The total literate population is

28605, of which male and female population is 16974 and 11631 respectively. Total literate population is 64.83%, of which male and female literates are 76.40 % and 53.09 % respectively. The total working population is 24293 (46.53%) which comprises of main workers 18849 (36.10%) and marginal workers 5444 (10.43%) while non-workers are 27908 (53.47%). Among main workers, cultivators constitute the highest category (54.3%), followed by cultivators (29.7%) and other workers (15.90%). Among marginal workers agricultural labour constitutes the highest category (50.7%) followed by cultivators (31.9%) and other workers (15.4%).

viii. **Water Requirement:** The total water requirement during construction shall be 1000 kld(Domestic:100kld & Construction 900kld) and shall be met from the surface sources viz., nearby reservoir(s).

ix. **Project Cost:** The estimated project cost is Rs. 8964.02 Crores. Total capital cost earmarked towards environmental pollution control measures and the Recurring cost (operation and maintenance) will be about Rs. 282 lakh per annum.

x. **Project Benefit:** Employment will be 3000 persons as direct. PP proposes to allocate Rs 600 lakh for implementing issues raised during public hearing towards CER (As per Ministry's O.M. F.No.22-65/2017-IA.III, dated 30th September,2020, CER cost is not based on percentage cost of project)

xi. **Environmental Sensitive area:** Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. However, no part of the project lies within Eco-sensitive zone of the Sanctuary. The distance between the project boundary and Kalsubai Harichandragad Wildlife Sanctuary is 2.21 km and 12.5m from ESZ boundary. The distance of the Wildlife Sanctuary has been duly approved by the Chief Wildlife Warden, Nagpur, Maharashtra vide letter no. -()///..//- on dated 29th Nov., 2024.

(1) The MOU for setting up of the proposed Bhavali Pumped Storage Project (1500MW) has been made on 14th day of September,2021, between the Industries Department, Government of Maharashtra and M/s JSW Neo Energy Ltd.

(2) Govt. of Maharashtra, Water Resources Department, Hydrology and Dam Safety, issued certificate for water availability for project vide No. WFR/UIhas/894, dated 21.11.2022.

xiii. **Resettlement and rehabilitation:** The total private land required for the project is 35.18 ha which is spread over Jamunde village in Tehsil Igatpuri, District Nashik, Maharashtra. There shall be 130 affected families of which 10 shall be displaced families. The acquisition of the land shall be carried out by mutual negotiation in consonance with "RFCTLARRA", 2013. The total cost for implementing Rehabilitation and Resettlement Plan is Rs 1232 lakh comprised of the cost of land acquisition (Rs 854.54 lakh), R&R entitlement (Rs 82.05 lakh) and the cost of Tribal Development Plan (Rs 295 lakh).

xiv. **Scheduled –I species:** Nine mammalian species (Panther, Striped Hyaena, Jackal, Khokad, Jungle cat, Wolf, Chow Singha, Barking deer and Porcupine); 11 avifauna species (White backed Vulture, Slender billed vulture, Sparrow hawk. Brahminy kite, Booted eagle, Crested serpent eagle, Grey junglefowl, Indian peafowl, River tern, Barn owl and Brown wood) and three herpetofauna species (Indian Cobra, Russell's Viper and Rat snake) were recorded/reported from study area.

A budget of Rs. 326.50 Lakhs/- has been approved by Chief Wildlife Warden, Nagpur, Maharashtra vide letter no. -()///..//- on dated 29th Nov., 2024 for conservation of these Schedule-I species under Wildlife and Biodiversity Management Plan.

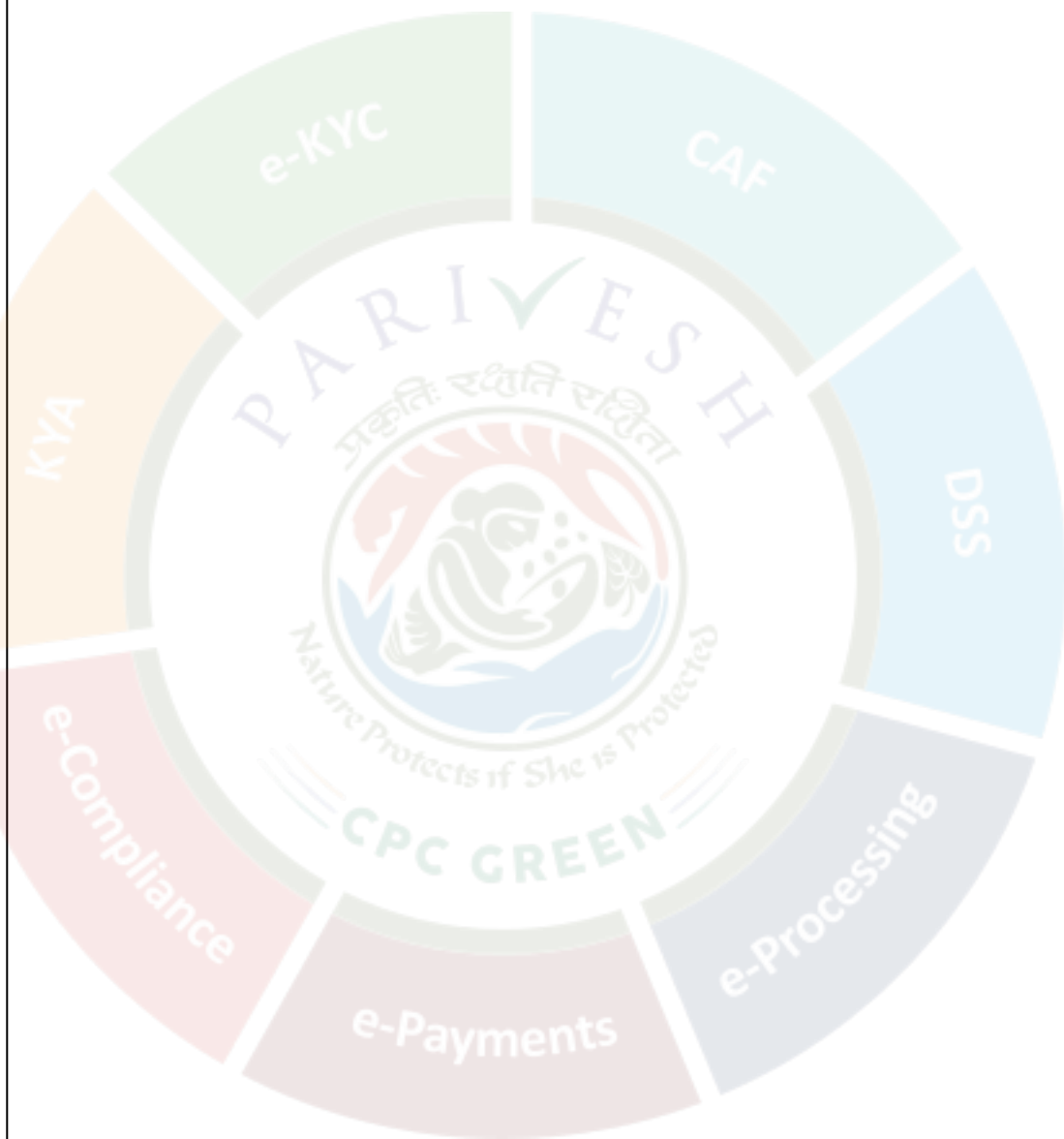
xv. **Alternative Studies:**

Based on ground topography and surface geo-mapping for preliminary understanding of the geological set up of the project area, for layout of WCS and powerhouse, two alternatives, viz., Alternate -1 with all components of WCS and powerhouse as underground and the Alternate-2 with surface powerhouse, were studied. Alternate-1 was preferred over Alternate-2 as the latter involved about 135m deep surface excavation for surface powerhouse, which would necessitate intricate supports and slope stability measures, besides posing seepage problem during operation compounded with problems with storm water drainage. The selected alternative has been found to be more suitable considering the minimal overall forest land requirement and minimal requirement of private land and least displacement of people habitations.

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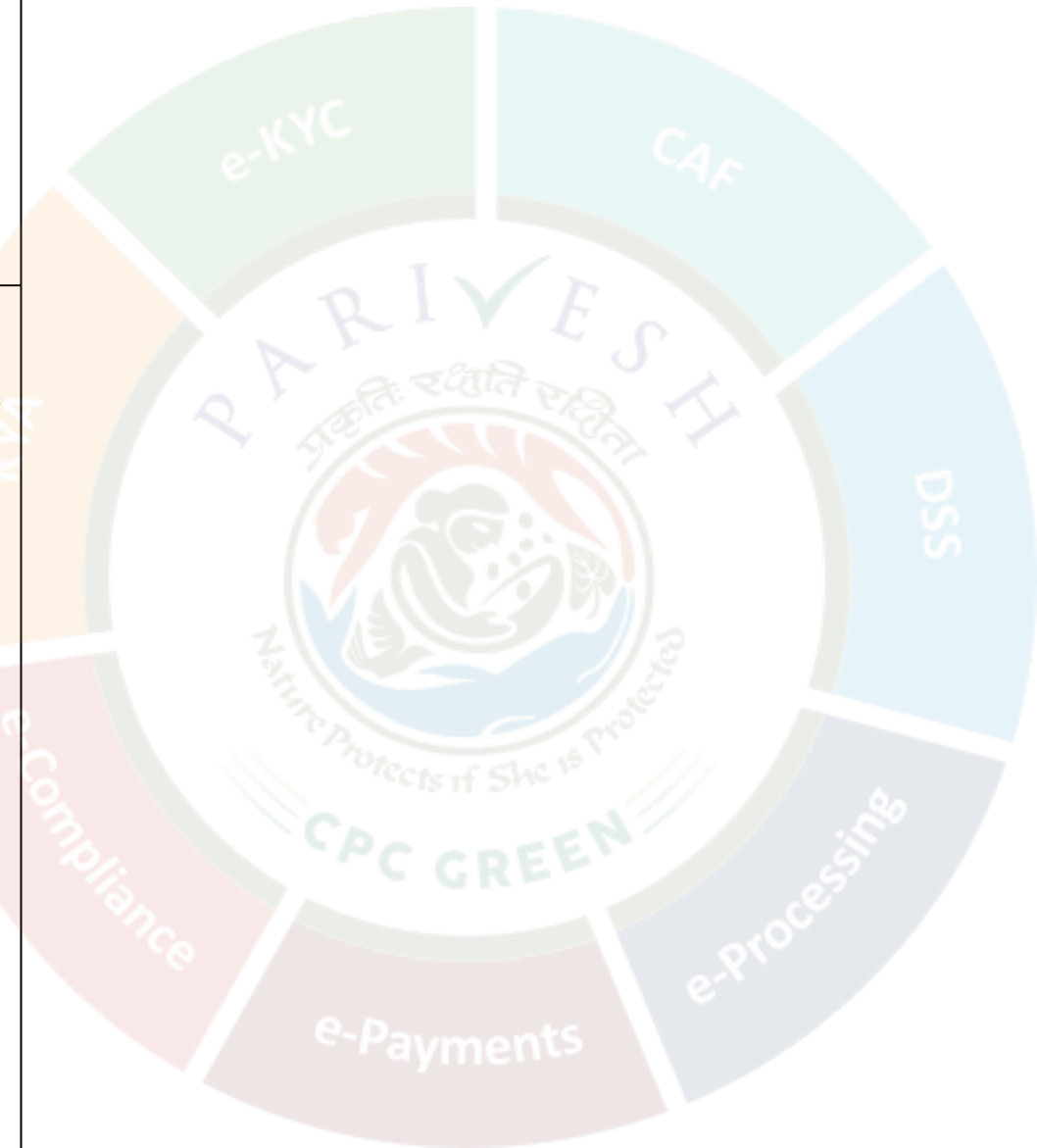
xvii. Details of Solid waste/ Hazardous waste generation/ Muck and its management

a) Solid Waste: Municipal Solid Waste (MSW) likely to be generated during construction and operation shall be 38.8 Ton/annum and 7.2ton/annum respectively which shall be managed as per Solid Wastes Management Rules, 2016.

Hazardous waste: It inter alia includes burnt mobile oil and greases (6ton/annum) from vehicles and construction machinery and equipment which shall be handled and disposed through authorised dealer as per Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016.

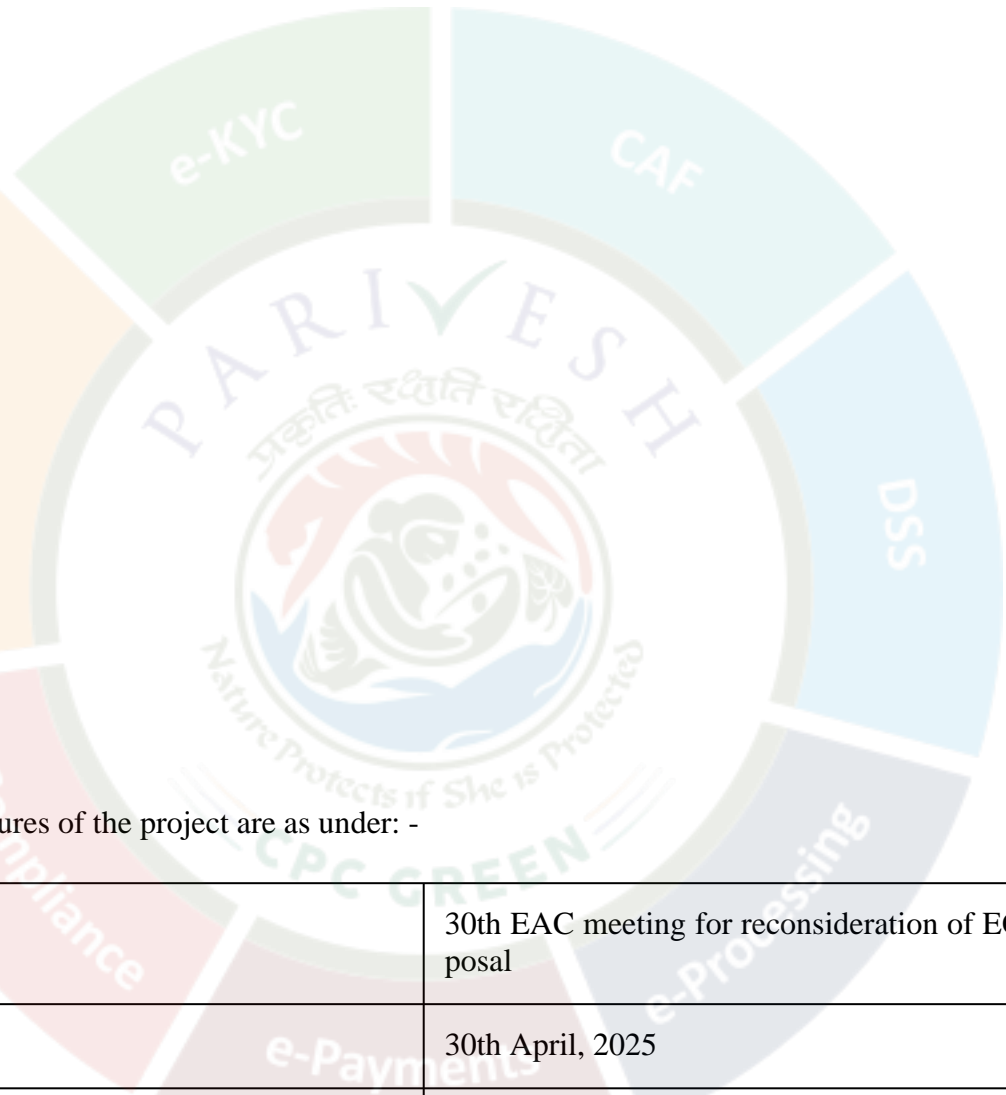
The total quantity of muck / debris, to be generated due to the project, shall be 64.06 lakh cum, out of which 36.08 lakh cum shall be consumed on the project work leaving 28.43 lakh cum, which with 42% swell factor shall amount to 40.37 lakh cum shall be disposed at two designated muck disposal sites in an area of 44.09 ha. The muck disposal sites shall be developed from below the ground level by providing retaining wall. After construction of retaining wall, the muck brought in dumpers shall be dumped and manually spread behind the wall. The muck shall be laid with vertical angle not exceeding 28° in such a manner that rock mass is properly stacked behind the wall with minimum of voids. The muck pile shall be later covered with geo-Geo-coir textile properly held to the ground by steel wire U-nails and rehabilitated by afforestation of herbs and shrubs.

P a r t i c u l a r	D i s t r i c t N a s h i k	D i s t r i c t T h a n e
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xix. The salient features of the project are as under: -

Project Details

EAC meeting/s	30th EAC meeting for reconsideration of EC proposal
Date of Meeting/s	30th April, 2025
Date of earlier EAC meetings	Earlier, the proposal was appraised in front of the EAC (River Valley & Hydroelectric Project) in its 14th EAC meeting held on 30th Aug., 2024. The proposal was deferred for want of additional details.
Name of the Proposal	“Bhavali Pumped Storage Project” (1500M W) at village Jamunde, Tehsil Igatpuri, District Nashik and villages Kalbhonde and Kothale, Tehsil Shahpur District Thane, Maharashtra M/s J SW Energy PSP Two Limited

Proposal No.	Proposal No.: IA/MH/RIV/481391/2024; File No. J-12011/08/2022-IA. I(R)
Location (Including Coordinates)	Upper dam: Jamunde (Igatpuri Tehsil-Nasik) Lower dam: Kalbhonde & Kothale (Shahapur Tehsil - Thane) Upper Reservoir: 19°36'31.69" N ,73°35' 45.06" E; Lower Reservoir: 19°34' 56.38" N,73° 35'10.0" E
Company's Name	JSW Energy PSP Two Ltd.
CIN no. of Company/user agency	U40108MH2021PLC367136
Accredited Consultant and certificate no.	EQMS India Pvt. Ltd., Karkardooma, Delhi-110092 QCI/NABET/ENV/ACO/2225/0303, Valid up to 23.11.2025.
Project location (Coordinates /River/Reservoir)	Upper Reservoir: 19°36'31.69" N ,73°35' 45.06" E; Lower Reservoir: 19°34' 56.38" N,73° 35'10.0" E
Inter- state issue involved	No
Proposed on River/ Reservoir	This is an Off-stream Open Loop Pumped Storage Project
Type of Hydro-electric project	Standalone Pump Storage Project.
Seismic zone	Zone III (Moderate Damage Risk Zone)
Category of the project	A
Capacity / Cultural command area (CCA)	1500MW/11600 MWH
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-
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EC Co mp lian ce Re por t b y R. O, M OE F& CC	No t a ppl ica ble

Electricity Generation Capacity

Powerhouse Installed Capacity	1500MW
Generation of Electricity Annually	4049.17 MU
No. of Units	5 X 250MW + 2 X 125 MW

Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt land)	2 (Forest land)
Cross section of proposed muck area, height of muck with slope.	D-1: Area=22.3ha, Height average=12.50m D-2: Area=22.6ha, Height average=5.5m Slope of muck shall be lesser than 28 ⁰
Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	1.0-2.5 km No river at muck disposal site.
Total Muck Disposal Area	44.90 ha (forest)
Estimate Muck to be generated	Muck to be generated: 64.51 lakh cum Consumed on work: 36.08 lakh cum To be disposed: 28.43 lakh cum
Transportation	By road
Monitoring mechanism for Muck Disposal	The project authorities shall erect a barrier to regulate to and fro movement of traffic from the excavation site. Entry of all vehicles passing the barrier and the information regarding quan

	titles of earth material being transported shall be properly arrayed in a register in a transparent manner and shall be liable to be made public by the project authorities as and when required. Proper e-challan shall be issued.
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Land Area Breakup:

Private land	35.18 ha
Forest Land	243.74 ha
Government land	0.00 ha
Submergence area/Reservoir area	169.60
Land required for project components	74.14 ha

Presence of Environmentally Sensitive areas in the study area:

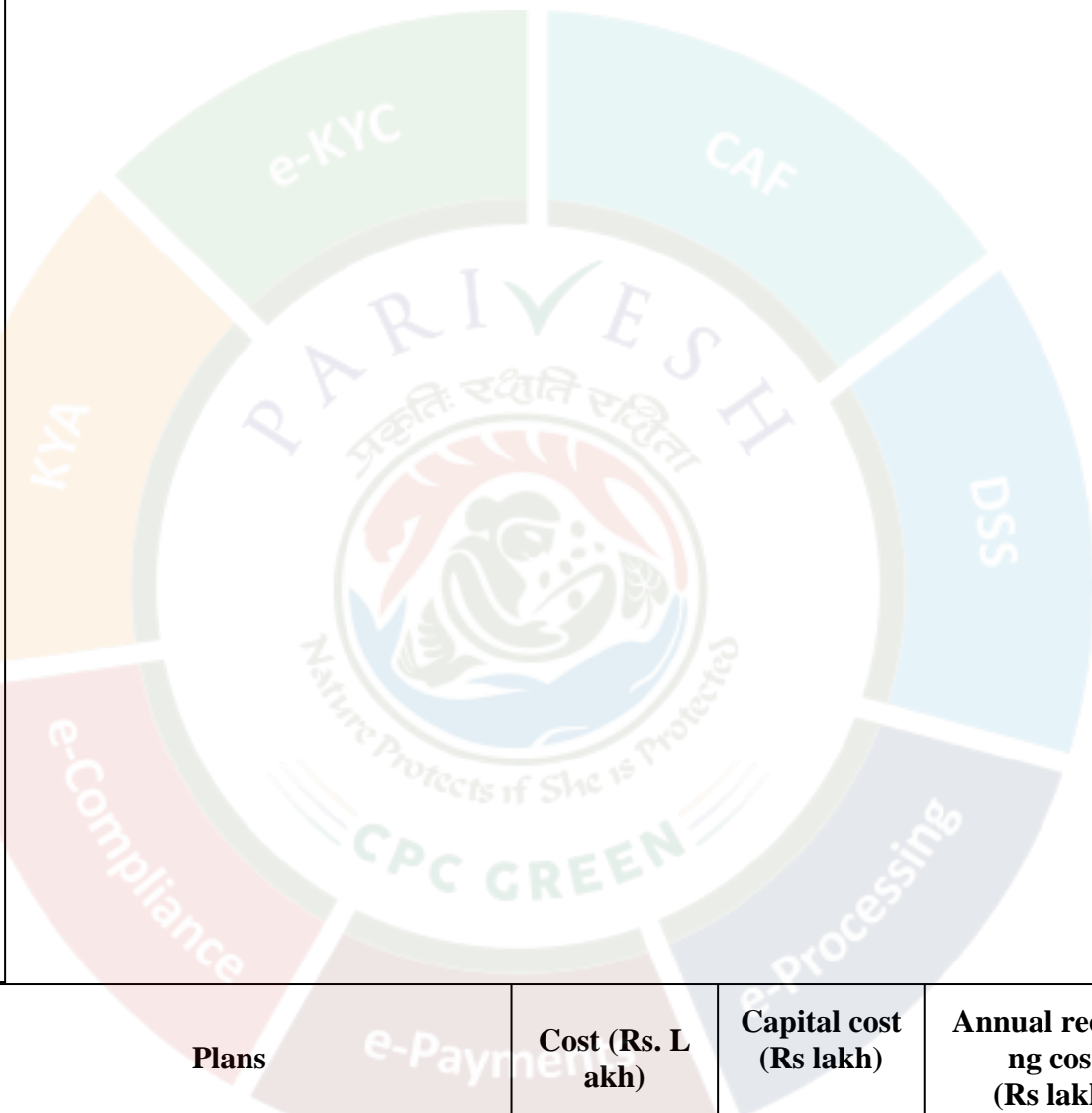
Forest Land/ Protected Area/ Environmental Sensitivity Zone	Yes/No	Details of Certificate/ letter/Remarks
Reserve Forest/Protected Forest Land.	Yes	-
National Park	No	Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. However, no part of the project lies within Eco-sensitive zone of the Sanctuary. The distance between the project boundary and Kalsubai Harichandragad Wildlife Sanctuary is 2.21 km and 12.5 m from ESZ boundary. The distance of the Wildlife Sanctuary has been duly authenticated by the Chief Wildlife Warden, Nagpur, Maharashtra vide their letter no. -()///..// - on dated 29 th Nov., 2024
Wildlife Sanctuary	Yes	
Archaeological sites monuments/historical temples etc	No	-
Additional information (if any)	No	-

Court case details: No court case/litigation is pending.

Status of other statutory clearances:

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S. N.	Plans	Cost (Rs. Lakh)	Capital cost (Rs lakh)	Annual recurring cost (Rs lakh)
1.	Catchment Area Treatment Plan	250.00	210.00	10.00
2.	Compensatory Afforestation Scheme	3914.26	3914.26	
3.	Wildlife and Bio-diversity Management plan	326.00	326.50	0.00
4.	Resettlement & Rehabilitation Plan	1232.00	1232.00	0.00
5.	Green Belt Development Plan	120.00	80.00	10.00

6.	Reservoir Rim Treatment Plan	30.00	30.00	0.00
7.	Fisheries Management Plan	130.00	130.00	0.00
8.	Muck Management Plan	2390.00	2350.00	10.00
9.	Restoration Plan for Quarry Sites & lands capping	65.00	45.00	5.00
10.	Disaster Management Plan	30.00	26.0	1.00
11.	Water, Air and Noise Management Plan	140.00	48.00	23.00
12.	Public Health Delivery Plan	95.00	31.00	16.00
13.	Labour Management Plan	160.00	42.00	29.50
14.	Sanitation & Solid Waste Management Plan	145.00	85.00	15.00
15.	Local Area Development Plan	100.00	100.00	0.00
16.	Environmental Safeguards During Const.	316.00	00.00	79.00
17.	Energy Conservation Measures	225.00	15.00	52.50
18.	Environmental Monitoring Plan	140.00	16.00	31.00
19.	CER Plan for addressing issues raised during public hearing	600.00	600.00	0.00
20.	Watershed Management	500.00	500.00	0.00
Total EMP		11848.00	10680.00	292.00

30.1.3 The proposal was earlier considered by the EAC in its 14th meeting held on 30th August, 2024. Accordingly, PP submitted following additional details sought by the EAC on 14th April, 2025.

Query 1: The Project Proponent (PP) shall re-visit soil sampling analysis as results show very high organic carbon in soils and submit the revised results mentioning permissible limits in the results of soil analysis.

Reply: The soil sampling results were reviewed for all ten locations in the study area and the range of soil organic carbon analysed is presented in the following table which also mentions the soil fertility status for organic carbon as outlined in Soil manual of ICAR at National level and State (Maharashtra) level. It is evident from the table that the soil of the study area is medium to very high in organic matter.

S. N	Location	Environmental Setting	Organic carbon %	Soil fertility range for SOC
1.	Upper dam site (Jamund)	Forest	1.04-1.19	<u>National Level</u>

	e)			<0.5%-Low 0.5%-0.75%-Medium >0.75%-High
2.	Dhamudkiwadi	Scrub	0.89-1.14	State Level <0.2%- Very Low 0.21%-0.40 %-Low 0.41%-0.60 %- Medium Low 0.61%-0.80 %- Medium 0.81%-1.00 %- High >1.00 %-Very High
3.	Bhavali Khurd	Agriculture	0.78-1.02	
4.	Lower dam site (Kalbhonde)	Forest	2.57-2.67	
5.	Kothale	Agriculture	2.83-3.00	
6.	Kahnodapada	Agriculture	1.08-1.17	
7.	Hinglod	Agriculture	1.93-2.05	
8.	Manwedhe	Forest	1.19-1.31	
9.	Kurungwadi	Agriculture	1.04-1.16	
10	Borli	Agriculture	0.76-0.91	

Sampling Village	Soil Organic Carbon (%)								
	Total Samples	<0.5	0.51-0.75	0.76-0.99	1.0-3.0	>3.0	Min	Max	AV
Bhavali Khurd	23	1	8	13	1	-	0.45	1.03	0.78
(Kalmonde)	49	1	4	3	16	25	0.38	4.8	2.73
Kothala	39	1	3	4	8	23	0.45	4.64	2.83
Hinglod	54	1	4	1	37	11	0.45	3.60	1.93
Kurungwadi	63	16	14	11	22	-	0.11	1.40	0.71
Borli	15	10	2	1	2	-	0.19	1.67	0.5

Source: <https://soilhealth.dac.gov.in/PublicReports/NutrientsStatusReportFarmer> Wise

Query 2: PP shall relocate the location of Muck Disposal site and should be away from Forest land.

Reply: The upper reservoir of the Bhavali Pumped Storage Project is proposed in Village Jamunde, Tehsil Igatpuri, District Nashik while the lower reservoir is proposed in Village Kalbhonde, Tehsil Shahpur, District Thane, Maharashtra. Muck generated during the construction will be disposed on the designated area. Since no viable alternative locations with better ecological advantages are available nearby, the earmarked area for muck disposal in forest land has been considered to minimise the impacts of project on the Environment and Forest.

The forest land diversion proposal has been duly accepted by the Forest Department, with the Deputy Conservator of Forests (DCF) recommending it by completing Part-II of Form-A under the Forest

(Conservation) Act. Furthermore, the Project layout of the Proposed PSP site has been approved by the Central Water Commission, Hydel Civil Designs (E&NE) Directorate, New Delhi vide their letter dated 15th Feb., 2024. All measures outlined in the 'Muck Disposal Management Plan' will be implemented by the Company, with a separate budget allocated under the Muck Management Plan.

Additionally, the same has been verified by the Members of Sub-Committee of EAC (Hydro & River Valley Project) during their project site visit on 2nd & 3rd Jan., 2025. The findings of the site visit were discussed amongst the Hon'ble EAC members at Additional Agenda Item 22.4 in the 22nd EAC Meeting held on 10th Jan., 2025. As per the recommendations of Minutes of the Meeting,

“the relocation of muck disposal site may not be insisted on while considering the proposal for clearance since the muck disposal site was found to have been selected properly. Further, ecologically better sites were not appeared available in nearby areas. Any relocation at this stage might lead to much changes and may lead to more adverse consequences. However, safety measures as contained in EMP and in other documents should be adhered into”.

Query 2: Assessment of water requirement of local population and water availability shall be studied.

Reply: Total water requirement for all purposes in the micro-watershed villages has been assessed, considering domestic consumption by inhabitants, water needs for livestock, and irrigation requirements for crop grown in irrigated areas during both cropping seasons. The total water requirement for domestic use, including drinking water and livestock needs has been estimated at 2056806 cum (205.68 ham) and 205680.6 cum (20.57 ham), respectively. The irrigation water requirement based on groundwater abstraction has been assessed at 2402400 cum (240.24 ham). Thus, the total water requirement for all purposes shall be 466.49 ham.

S. N.	Name	Popula tion ce nsus 2 011	Projec ted Po pulation 2022	Annual Domesti c water Require ment @7 0 lpcd (c um)	Irrigation Requirement		Annual Domestic animal Re quirement @10% of domestic water req uirement	Total A nnual re quireme nt (ha m)
					Are a (h a)	cum		
1.	Bhavli B k	1023	1146	29274	0	0	2927.4	3.22
2.	Titoli	1076	1205	30791	0	0	3079.1	3.39
3.	Bortembh e	1673	1874	47875	0	0	4787.5	5.27
4.	Kanchang aon	1906	2135	54542	84	67200 0	5454.2	73.20
5.	Talogha	2501	2801	71569	60	48000 0	7156.9	55.87
6.	Taloshi	1795	2010	51366	44	35200 0	5136.6	40.85
7.	Nandgaon sado	4203	4707	120273	0	0	12027.3	13.23

8.	Pimpri Sa droddin	2316	2594	66275	0	0	6627.5	7.29
9.	Fangul G avhan	1531	1715	43811	0	0	4381.1	4.82
1 0.	Borli	616	690	17627	0	0	1762.7	1.94
1 1.	Bhavli K h	23073	25842	660257	83.9	67120 0	66025.7	139.75
1 2.	Kaluste	3885	4351	111173	20.1	16080 0	11117.3	28.31
1 3.	Bharwaj	819	917	23437	0	0	2343.7	2.58
1 4.	Manjarga on	889	996	25440	0	0	2544	2.80
1 5.	Nirpan	828	927	23694	0	0	2369.4	2.61
1 6.	Gavhande	701	785	20060	8.3	66400	2006	8.85
1 7.	Jamunde	589	660	16855	0	0	1685.5	1.85
1 8.	Kurungw adi	1055	1182	30190	0	0	3019	3.32
1 9.	Ambewad i	2183	2445	62469	0	0	6246.9	6.87
2 0.	Taked Kh	1120	1254	32050	0	0	3205	3.53
2 1.	Kasara K h.	2588	2717	69430	0	0	6943	7.64
2 2.	Dand	165	173	4427	0	0	442.7	0.49
2 3.	Umbrava ne	249	261	6680	0	0	668	0.73
2 4.	Fugale	1018	1069	27310	0	0	2731	3.00

25.	Vashala Bk	1439	1511	38605	0	0	3860.5	4.25
26.	Vashala Kh	325	341	8719	0	0	871.9	0.96
27.	Susarwadi	1044	1096	28008	0	0	2800.8	3.08
28.	Pingalwadi	162	170	4346	0	0	434.6	0.48
29.	Dhakane	1882	1976	50489	0	0	5048.9	5.55
30.	Kothale	1233	1295	33078	0	0	3307.8	3.64
31.	Kalbhonde	997	1047	26747	0	0	2674.7	2.94
32.	Julawani	1382	1451	37076	0	0	3707.6	4.08
33.	Jambhulwad	665	698	17840	0	0	1784	1.96
34.	Roadvahal	476	500	12770	0	0	1277	1.40
35.	Hinglud	404	424	10838	0	0	1083.8	1.19
36.	Chondhe Kh.	384	403	10302	0	0	1030.2	1.13
37.	Chilhar	588	617	15775	0	0	1577.5	1.74
38.	Ranvahir	1468	1541	39383	0	0	3938.3	4.33
39.	Ghatghar	1176	1288	32901	0	0	3290.1	3.62
40.	Udadawane	1539	1685	43057	0	0	4305.7	4.74
Grand Total		72966	80501	2056806	300.3	2402400	205680.6	466.49

Table 2: Ground Water Recharge & Annual Requirement

S. No.	Name	Rainfall recharge (ham)	Total annual ground water requirement (ham)	Deficit (-ve) Surplus (+)
1.	Bhavli Bk	101.33	3.22	98.11
2.	Titoli	42.22	3.39	38.83
3.	Bortembhe	46.91	5.27	41.64
4.	Kanchangaon	139.50	73.20	66.3
5.	Talogha	132.85	55.87	76.98
6.	Taloshi	172.84	40.85	131.99
7.	Nandgaonsado	150.41	13.23	137.18
8.	Pimpri Sadroddin	209.82	7.29	202.53
9.	Fangul Gavhan	103.75	4.82	98.93
10.	Borli	119.23	1.94	117.29
11.	Bhavli Kh	151.35	139.75	11.6
12.	Kaluste	209.12	28.31	180.81
13.	Bharwaj	113.25	2.58	110.67
14.	Manjargaon	151.54	2.80	148.74
15.	Nirpan	78.17	2.61	75.56
16.	Gavhande	136.10	8.85	127.25
17.	Jamunde	96.59	1.85	94.74
18.	Kurungwadi	485.10	3.32	481.78
19.	Ambewadi	586.14	6.87	579.27
20.	Taked Kh	117.57	3.53	114.04
21.	Kasara Kh.	729.02	7.64	721.38

22.	Dand	415.94	0.49	415.45
23.	Umbravane	350.74	0.73	350.01
24.	Fugale	260.40	3.00	257.4
25.	Vashala Bk	521.22	4.25	516.97
26.	Vashala Kh	112.50	0.96	111.54
27.	Susarwadi	154.01	3.08	150.93
28.	Pingalwadi	334.91	0.48	334.43
29.	Dhakane	311.54	5.55	305.99
30.	Kothale	480.82	3.64	477.18
31.	Kalbhone	480.27	2.94	477.33
32.	Julawani	237.64	4.08	233.56
33.	Jambhulwad	357.98	1.96	356.02
34.	Roadvahal	316.39	1.40	314.99
35.	Hinglud	132.27	1.19	131.08
36.	Chondhe Kh.	272.58	1.13	271.45
37.	Chilhar	144.19	1.74	142.45
38.	Ranvihir	303.63	4.33	299.3
39.	Ghatghar	753.12	3.62	749.5
40.	Udadawane	620.19	4.74	615.45
Total		1373.31	8.36	1364.95

As inferred from Table 1 & 2, the total annual groundwater requirement for all purposes is 466.49 ham, while the annual groundwater recharge is 1373.31 ham. This indicates that the villages in the study area have a sufficient groundwater supply, with no signs of water scarcity.

Query 4: Permission for water availability obtained from CWC /concerned department mentioning that rain water is sufficient for filling one time filling reservoir.

Reply: Water availability certificate has been issued by the Chief Engineer, Water Resource Department, Hydrology & Dam Safety, Government of Maharashtra vide letter no. WFR/UIhas/894 on 21st Nov., 2022.

Query 5: PP shall submit the undertaking stating that no water flow stoppage/blockage shall be

done for filling reservoir during monsoon season.

Reply: Copy of undertaking dated 14.04.2025 has been submitted.

Query 6: The PP shall prepare wild life conservation plan in consultation with expert Institutions and submit the wildlife conservation plan approved by Chief Wildlife Warden as Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. As the project cover area is located in Western Ghats, the EAC sub-committee shall conduct site visit for assessing the ground conditions and possible environmental impacts due to project comprehensively before further consideration of the proposal.

Reply: The distance between the project boundary and Kalsubai Harichandragad Wildlife Sanctuary is 2.21 km and 12.5 m from ESZ boundary. The distance of the Wildlife Sanctuary along with Wildlife and Biodiversity Management Plan has been duly approved by PCCF (HoFF), Maharashtra vide letter dated 29th Nov., 2024. Approved budget for Wildlife and Biodiversity Management Plan is Rs. 326.50 Lakhs/- . Copy of Approval letter along with Certified Map has been submitted.

Dr. Ajay Kumar Lal, Member EAC (Hydro & River Valley project) and Dr. P. R. Sakhare Members & Representative from MoEF&CC visited the Proposed Bhavali Pumped Storage Project” site on 2nd & 3rd Jan., 2025 and the findings of the site visit were discussed amongst the Hon’ble EAC members at Additional Agenda Item 22.4 in the 22nd EAC Meeting held on 10th Jan., 2025

Query 7: Given that 243.74 ha. Forest land are involved, the PP shall provide a detailed classification /land use pattern /vegetation details of the project area including information on forest density, species diversity, and other relevant ecological characteristics.

Reply:

The Forest Clearance application (FP/MH/HYD/153240/2022) is currently under process and has been recommended by the concerned Divisional Forest Officer by filling Part-II for further processing. The details given below are based on the uploaded Form Part - II of FC application and copy of the uploaded Form Part – II has been submitted.

Detail Classification-

The project area is 274.82 ha. and forest land required to be diverted is 243.74 ha of which 181.45 ha in Forest Division Shahapur and 62.29 ha lies in Nasik West Forest Division, Maharashtra. as shown in Table 3

Table 3: Forest Land details and Classification

S.N.	Village /Tehsil/District	Forest Division	Classification	Forest (ha)
1	Kalbhone/ Shahapur/Thane	Shahapur Forest Division, Maharashtra	Reserved Forest	97.92
2	Kothale/ Shahapur/Thane		Protected Forest	9.68
3	Kothale/ Shahapur/Thane		Private Forest (Deemed RF)	73.85
Forest Area for Diversion				181.45
4	Jamunde/Igatpuri / Nasik	Nasik West Forest Division, Maharashtra	Reserved Forest	62.29
Forest Area for Diversion				62.29

Grand Total	243.74
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Land Use Pattern

The dominating classes are Tropical Moist Deciduous Forest (75%) and Tropical Semi- evergreen Forest (25%). The land use pattern of Forest area in study area is given below in Table 4.

Table 4: Land use & Land cover of Forest covered Area in project

S.N.	Land use category	Area in ha.	Area in %
1	Tropical Moist Deciduous Forest (Open & Dense Forest)	181.45	75%
2	Tropical Semi- evergreen Forest	62.29	25%
Total		243.74	100%

Vegetation details:

Details of Vegetation available in the forest land proposed for diversion as per given in following table:

S. No.	Forest Division	Area(in ha.)	Forest Type	Density	Eco-Class
1	Shahapur Forest Division, Maharashtra	73.85	Private Forest	0.2	Eco- Class 1
2		107.6	Reserved & Protected Forest	0.6	Eco- Class 1
3	Nasik West Forest Division, Maharashtra	62.29	Reserved Forest	0.5	Eco- Class 1

Species diversity:

The details of Species diversity of Shahpur and Nashik Forest division is given below:

A. The details of Species diversity in Shahpur Forest Division is given in Table 5

Table 5: Species-wise local/scientific names and girth-wise enumeration of trees at FRL

S. No.	Scientific Name	Local Name	(0-30)cm.	(31-60)cm.	(61-90)cm.	(91-120)cm.	(121-150)cm.	(>150)cm.
1	<i>Tectona grandis</i>	Sag	157	102	8	1	0	0
2	Others	other species	18155	13537	3440	938	442	153

3	<i>Adina cordifolia</i>	Hedu	90	64	19	9	4	3
4	<i>Terminalia tomentosa</i>	Ain	11345	10184	1663	475	163	49
5	<i>Gmelina arborea</i>	Shivan	263	265	6	14	2	3
Total			30010	24152	5136	1437	611	208
Sub Total (No of Trees.)			61554					

B. The details of Species diversity in Nashik West Forest Division is given in Table 6

Table 6: Species-wise local/scientific names and girth-wise enumeration of trees at FRL

S. No.	Scientific Name	Local Name	(0-30)cm.	(31-60)cm.	(61-90)cm.	(91- 120)cm.	(121- 150)cm.	(>150)cm.
1	<i>Mangifera indica</i>	Aam	62	140	70	65	63	99
2	<i>Gomphrena glabosa</i>	Aamantegali	13	4	0	0	0	0
3	<i>Bauhinia racemosa</i>	Aapta	0	4	2	0	0	0
4	<i>Pterocarpus marsupium Roxb</i>	Aasan	98	85	17	3	1	4
5	<i>Phyllanthus emblica</i>	Avala	98	10	0	2	0	0
6	<i>Terminalia elliptica</i>	Ain	505	693	98	9	2	0
7	<i>Albizia odoratissima</i>	Aiv	15	23	4	0	0	0
8	<i>Cassia fistula</i>	Bahava	6	9	0	1	0	0
9	<i>Bambusa vulgaris</i>	Bambu	1	0	0	0	0	0
10	<i>Thespesia populnea</i>	Bhendi	1	2	1	1	0	0

11	<i>Mimusops elengi L</i>	Bogada	16	0	0	0	0	0
12	<i>Cordia dichotoma</i>	Bokar	0	2	0	0	0	0
13	<i>Pterocarpus marsupium</i>	Bonda	164	212	47	9	2	0
14	<i>Ziziphus mauritiana</i>	Borkut	1	0	0	0	0	0
15	<i>Butea monosperma</i>	Butuska	0	1	0	0	0	0
16	<i>Santalum album</i>	Chanda	4	3	0	0	0	0
17	<i>Tamarindus indica</i>	Chinch	0	1	0	0	0	0
18	<i>Grewia tiliifolia Vahl</i>	Dhaman	1	0	0	0	0	0
19	<i>Anogeissus latifolia</i>	Dhavada	1	0	0	0	0	0
20	<i>Woodfordia fruticosa L</i>	Dhayati	5	1	0	0	0	0
21	<i>Elettaria cardamomum</i>	Ela	1	4	4	1	3	1
22	<i>Artocarpus heterophyllus</i>	Fanas	1	3	1	0	0	0
23	<i>Dialium ovoideum Thwaites</i>	Gaal	11	5	0	1	1	0
24	<i>Psidium guajava</i>	Gawa	2	0	0	0	0	0
25	<i>Delonix regia</i>	Gol	1	1	0	0	0	0
26	<i>Plumeria rubra L</i>	Gulchay	257	108	5	1	1	1
27	<i>Terminalia chebula</i>	Hirda	139	207	66	31	26	25

28	<i>Syzygium cumini</i>	jambhul	472	506	98	54	19	0
29	<i>Murraya koenigii</i>	Kadipata	0	1	0	0	0	0
30	<i>Neolamarckia cadamba</i>	Kalamb	0	1	0	0	0	0
31	<i>Bauhinia variegata</i>	Kanchan	4	4	0	0	0	0
32	<i>Macaranga peltata</i>	Kandar	0	1	0	0	0	0
33	<i>Averrhoa carambola</i>	Karambi	211	146	39	20	9	9
34	<i>Carapa guianensis</i>	karap	28	51	38	4	2	1
35	<i>Capparis decidua</i>	Karel	11	7	4	1	0	0
36	<i>Carissa carandas</i>	Karval	16	11	0	1	0	1
37	<i>Murraya koenigii</i>	Karwa	0	2	0	0	0	0
38	<i>Carissa carandas</i>	Kavandar	11	0	0	0	0	0
39	<i>Grewia villosa</i>	Kharmati	1	0	0	0	0	0
40	<i>Glycosmis pentaphylla</i>	Kirmira	10	0	0	0	0	0
41	<i>Cyphostemma currorii</i>	Kobat	0	1	0	0	0	0
42	<i>Butea monosperma</i>	Koyakhar	0	5	0	1	0	1
43	<i>Schleichera</i>	Koyambal	1	5	0	0	1	0
44	<i>Holarrhena pubescens</i>	Kuda	22	6	0	0	0	0

45	<i>Careya arborea</i>	Kumbha	34	35	10	1	2	0
46	<i>Ixora brachiatata</i> Roxb	Lokhandi	6	1	0	0	0	0
47	<i>Madhuca longifolia</i>	Moh	27	11	2	0	0	0
48	<i>Feronia limoni</i>	Pabha	77	9	1	0	0	0
49	<i>Butea monosperma</i>	Palas	11	12	4	0	0	0
50	<i>Erythrina variegata</i>	Pangara	3	0	1	1	0	0
51	<i>Monoon longifolium.</i>	Patgiri	1	0	0	0	0	0
52	<i>Ficus amplissima</i>	Payer	8	18	2	4	0	1
53	<i>Ficus arnottiana</i>	Payir	0	8	1	0	1	0
54	<i>Psidium guajava</i>	Peru	0	1	0	0	0	0
55	<i>Cerbera odollam</i>	Pombal	1	0	0	0	0	0
56	<i>Bombax ceiba</i>	Savar	0	1	0	1	0	0
57	<i>Bixa orellana</i>	Shendri	16	16	1	1	0	0
58	<i>Gmelina arborea</i>	Shivan	10	3	1	0	0	0
59	<i>Flacourtia indica</i>	Tambat	1	1	0	0	0	0
60	<i>Ziziphus rugosa</i>	Toran	7	6	0	0	0	0
61	<i>Senna tora</i>	Tura	0	1	0	0	0	0
62	<i>Ficus racemosa</i>	Umbar	17	74	45	51	43	124

63	<i>Heterophragma quadriloculare</i>	Varas	68	136	18	7	5	0
64	<i>Limonia acidissima</i>	vila	12	11	2	3	0	1
65	<i>Elettaria cardamomum</i>	Velvachi	0	1	0	0	0	0
Total			2489	2610	582	274	181	268
Sub Total (No of Trees.)			6404					

Relevant Ecological Characteristics:

1. Presence of water bodies such as rivers, lakes, streams, wetlands, etc., has been studied.
2. The project does not involve diversion or disturbance of any major aquatic or wetland ecosystem.
3. The area does not fall under any known migratory routes or wildlife corridors.
4. Biodiversity in the area is typical of the region and does not indicate the presence of any unique or sensitive ecosystems.
5. The project is not located within any Notified Eco- Sensitive Zone (ESZ), National Park, Wildlife Sanctuary, Biosphere Reserve, or Important Bird Area (IBA).
6. No traditional sacred groves, community-conserved areas, or ecologically significant cultural practices have been identified in the study area.

Query 8: Submit details of tree to be removed for construction of the project.

Reply: Total no. of trees are 67958, out of which 64050 trees are affected by the project, out of which at ~ 50% of trees girth size below 30 cm scheduled to be cut down during the construction phase However, there is no need to cut trees that are located in the areas designated for the underground components of the project.

Tree Enumeration Summary Data				
Sr. No.	Division	Village Name	Total Tree As per Part-II FC	Trees to be felled
1	Nashik	Jamunde	6404	6235
2	Shahpur	Kothale, Kalbhonde	61554	57646
Total			67958	64050

32.1.4 The proposal was re-considered by the EAC in its 30th meeting held on 30th April, 2025 and sought certain additional details. Accordingly, PP submitted following additional details sought by the EAC on 18th May, 2025:

Query 1: PP shall revisit the muck management plan along with cost estimate, reclamation plan and requirement/ justification of RCC retaining wall.

Reply: As advised during the 30th EAC meeting, the muck management plan has been revised. As the muck sites are located on sloping ground and muck cannot be placed at its natural angle of repose, Therefore, the need for providing retaining structure has arisen for providing vertical support to the bottom of the muck slope and help against sliding and protecting the toe of the reshaped dump profile. Hard measures to support backfill shall be provided with gabion structures. For facilitating movement of

wildlife, 12 number animal ramps with slope 2(h):1(v) has been envisaged at intermediate location. Biological measures shall involve laying of topsoil mixed with compost or vermin-compost amended with bio-fertilizer and covering with Geo-coir textile. Sprinkler irrigation systems, including pumps and accessories, will be installed to support plantation watering. Provision for maintenance of plantation for six years is also incorporated. It is proposed to plant trees, shrubs & bushes over muck dumping area. The revised budget for Muck Management is Rs. 2390 lakh (Biological reclamation: Rs 1279.83 lakh; Engineering: Rs 1110.00 lakh). Detailed Muck Management Plan has been submitted.

Query 2: Justification for revising the EMP cost from Rs10680 lakh to Rs 9780.76 lakh.

Reply: During the Final EC appraisal of the proposed project, the capital cost under the Environmental Management Plan (EMP) was projected at Rs. 10680 lakh. This was revised to Rs. 9780.76 lakh. The rationale for this revision is detailed below:

•**Compensatory Afforestation:** An initial provision of Rs. 4854 lakh was made for CA scheme including NPV, based on the cost analysis prescribed in the Ready Reckoner sanctioned by the PCCF (HoEF), Maharashtra, vide letter no. F-1/1127/- dated 4th Oct., 2019. However, the final compensation under CA scheme was later assessed on the basis of proposed CA land and approved by the Divisional Forest Officer(s) of Nashik and Thane through Part-II, Form-A of FC application (uploaded on the PARIVESH Portal), amounting to Rs. 3914.26 lakh resulting in decrease in cost of CA scheme including NPV. This resulted in cost reduction of Rs 939.74 lakh. (-). Copy of approved CA scheme has been submitted.

•**Wildlife Conservation and Biodiversity Management Plan:** A budget of Rs. 286 lakh was initially proposed for the conservation of Schedule- I species recorded in the study area. This has been revised to Rs. 326.50 lakh as per the approval of the Wildlife and Biodiversity Plan by Chief Wildlife Warden, Nagpur, Maharashtra vide letter no. F-1/307/- on dated 29th Nov., 2024. This resulted to an increase in cost increase of Rs 40.50 lakh (+).

Now, the MoM dated 30.04.2025 recommended incorporating additional initiatives within the watershed area to enhance livelihoods and support cultural restoration. In response, these activities have been integrated into the Watershed Development Plan and the Local Area Development Plan. As a result, the cost of the Watershed Development Plan has risen from Rs. 500 lakh to Rs. 980 lakh, while the cost of the Local Area Development Plan has increased from Rs. 100 lakh to Rs. 419 lakh. This increase in expenditure accounts for the earlier shortfall in the Environmental Management Plan (EMP) budget. Accordingly, the revised total EMP cost now stands at Rs. 10680 lakh.

Query 3: Impact on migration of birds because of noise levels, changes in water body, if any should be discussed with experts in ornithology and presented.

Reply: A total of 49 bird species, representing 25 different orders, were recorded during this survey. The migratory status of these species is based on the classification provided by the International Union for Conservation of Nature (IUCN).

The Northern Pintail is the only specie, categorized as a long-range migrant, while 5 species (the Booted Eagle, Grey Heron, Great Egret, Great Cormorant, and Black-winged Stilt) are considered medium-range migrants. An additional 11 species (Black Kite, Alpine swift, Indian pond heron, Cattle egret, Sykes nightjar, Asian woolly-necked stork, Asian Koel, Black Drongo & Long-tailed shrike) are recognized as short-range or local migrants, moving predominantly within the Indian subcontinent in response to environmental conditions. During the construction phase, various impacts on the wildlife are anticipated in the surrounding areas of the proposed project in terms of increased noise levels. However, these impacts would be temporary in nature and confined to construction phase only and various mitigation measures will be adopted by the company to reduce the possible impacts. However, the commissioning of the proposed Bhavali PSP will result the creation of two water reservoir (waterbodies) and having various positive impact on the Migratory birds. Detail of impacts of noise and change in waterbodies and mitigation measures on the migratory Avi-fauna of the study area has been submitted.

Query 4: Impact of micro seismicity and hazards and recommendations on concrete structures are to be discussed properly.

Reply:

Seismic activity, including micro seismicity, can have significant implications on the integrity and performance of concrete structures, particularly in infrastructure projects such as dams, powerhouses, tunnels, and other civil engineering components. Recognizing this, the Indian Standards have been

developed to provide seismic zoning maps and guidelines for structural design considering seismic forces.

To address seismic effects more precisely, particularly at the micro level, the National Committee on Seismic Design Parameters (NCSDP) has been constituted to review and approve site-specific seismic studies for major infrastructure projects. Several expert institutions such as IIT Roorkee, the Institute of Seismological Research (ISR), and other specialized agencies are actively involved in conducting these studies across the country.

Bhavali Pumped Storage Project (Maharashtra) lies in seismic zone III. Therefore, the recommended seismic coefficients to be adopted for preliminary design as per of IS-1893 (1984) are: $\alpha_h = 0.12$ and $\alpha_v = 0.08$. Detailed site-specific seismic study of the Project was conducted by IIT Roorkee. The study was carried out in accordance with the guidelines issued by NCSDP. Based on the findings, a comprehensive report outlining the site-specific seismic parameters was prepared and submitted to the FE& SA Directorate under the Ministry of Jal Shakti for consideration by the NCSDP.

The Committee (NCSDP), in its 38th meeting held on 10.05.2024, approved the site-specific seismic study report for the Bhavali Pumped Storage Project. However, as per NCSDP guidelines, the horizontal seismic co-efficient obtained (i.e. $\alpha_h = 0.09$ and $\alpha_v = 0.06$) through site specific study shall be compared with the values arrived through the application of IS-1893 (1984), where the recommended value is 0.12 and 0.08 for Zone III, and the higher of the two values shall be adopted. In view of this, the recommended horizontal seismic co-efficient are (α_h)=0.12 and (α_v)= 0.08. These approved parameters have already been considered in the design of all civil structures of the project, in line with relevant Indian Standard codes (IS 1893, IS 456 and IS 6512:1984: Criteria for Design of Dams for Earthquake Conditions).

This approach gives very conservative design of the concrete structures including the other project components. This approach ensures that the structures are safe against seismic effects and remain stable and reliable over the long term of their design life. Approval letter of site-specific seismic report has been submitted.

Query 5: A comprehensive watershed management including, surface water flow- scarcity and overflow, climate change impacts, soil erosion, restoration of green cover, enhanced groundwater recharge, impacts on surface and sub-surface spring flow, improvements in livelihood and cultural restoration, and related recommendations must be provided.

Reply:

The watershed management plan have been revised w.r.t. surface water flow-scarcity and overflow, climate change impacts, soil erosion, restoration of green cover, enhanced groundwater recharge, impacts on surface and sub-surface spring flow, improvements in livelihood and cultural restoration, and related recommendations. Copy of revised Watershed Development Plan has been submitted. Nonetheless, the pointwise response is briefed as below:

●**Surface Water Flow- Scarcity and Overflow:** The annual water balance components for the watershed indicated that out of 99169.6 ham of annual precipitation, 31791.6 ham and 48948 ham were lost by evapo-transpiration and surface runoff respectively. The water balance also revealed that 10140.85 ham was net annual contribution to groundwater by percolating into shallow aquifer which was followed by 492.35 ham of base flow but the ground water recharge and storage is very large that accounts to only 10669.42 ham and scarcity of water is not the matter of concern over the micro watershed (Section 3.7.15).

●**Climate Change Impacts:** These have been dealt with in detail in section 5.2 of the report. Due to climate change in study area, temperature and rainfall are projected to increase, which will impact the project in watershed in the following ways:

- ü Increase in surface run off in the month of July. The PSP, based on re-circulation of initial filled water, shall not be impacted by any impacts on hydraulic regime due to any climate change.
- ü Increase in annual mean temperature will result in increase in the vapor pressure deficit resulting from higher temperature and may lead to increased evaporation losses, but the quantum shall be insignificant and will be more than compensated due to increased yield from increased rainfall during monsoon in the lower dam catchment.
- ü The increased surface runoff provides an opportunity to enhance water storage and groundwater recharge for future use.

ü With the projected increase in precipitation, yield of rainfed crops could improve if the water resources are managed properly.

ü Generation of GHG emission (50689-ton CO₂ equivalent) during construction and 175 tons CO₂ equivalent during initial years of reservoir operation.

● **Soil Erosion:** In the watershed the average rate of soil erosion is 32.50 tons/ha/year. About 6192 ha (15.20%) is under very severe erosion. 32812 ha (80.5%) under severe erosion and 1754 ha (4.30%) is under moderate erosion (Section 3.7.15)

● **Restoration of Green Cover:** For restoration of forest land (243.75 ha) to be diverted, compensatory plantation shall be raised in 245.735 ha in Ratnagiri District under Compensatory Afforestation Plan. For construction of project, 63881 trees are scheduled to be felled in project area. For restoration of green cover in the project area, about 196070 trees shall be planted. Besides this, under the Watershed Management Plan, it is proposed to carry out host of activities which involves improvement of green cover in the area by planting 284895 trees. Thus, an all-out endeavour has been made to restore green cover in the project area by planting 480965 trees (Section 5.25 and Table 5.4). Thus, nearly 7.50 times of the trees cut shall be planted.

● **Enhanced Groundwater Recharge:** As part of the watershed management plan aimed at enhancing groundwater recharge, various water conservation and storage structures have been proposed. These include 50 Loose Boulder Check Dams, 80 farm ponds measuring 8m x 8m x 2m, 20 farm ponds measuring 12m x 12m x 2m, and 2 stop dams. The implementation of these structures is expected to significantly improve groundwater recharge. According to GEC 2015 guidelines, the estimated recharge from percolation through these ponds is approximately 2.36 ham, as detailed in Section 6.5.6 and Table 5.18)

● **Impacts on Surface and Sub-Surface Spring Flow:** The alignment of the underground water conductor system is neither overlain by any spring nor any spring exists within 1.5 km from the either side of centre line of the WCS .During construction, there shall not be any impact of drilling and blasting and consequent vibrations set on rock mass on spring of the area which are located far away from project area (Section 5.1).

● **Improvements in Livelihood and Cultural Restoration:** For improvement in livelihood of the landless, marginal farmers and families headed by female various on farm based non-farm-based livelihood raising opportunities have been incorporated in the plan. For restoration of religious and cultural belief of trial population the project proponent has already made assurance to undertake repairs of local Deities & clan God temples and financially assisting them for restoring their exquisite art and crafts, basketry, pottery, weaving, painting, and sculpture. Activities to be undertaken for Livelihood improvement are dealt with in section 6.2.1; 6.2.3 and 6.3 of the watershed Development Plan and are briefly enumerated in Table below:

S.N.	Main Activities	Amount (Rs)
Allied & Other Livelihood Activities		
(i)	Assistance to 32 families for Mango Orchard @ Rs 167000/acre	5344000
(ii)	Assistance to 75 families for Pomegranate Orchard @ Rs 145500/acre	10912500
(iii)	Assistance to 45 families for Guava Orchard Rs126000/acre	5670000
(iv)	Assistance to 40 families for Vermi Compost Unit@ Rs 25000	1000000
Sub Total		22926500
Livelihood Activities		

A	A-On farm-based livelihood activities	
(i)	Assistance to 243 BPL families for Goat Rearing Rs 24000	5832000
(ii)	Assistance to 24 BPL families for small Poultry @ Rs135600	3254400
(iii)	Assistance to 200 BPL families for backyard Poultry @ Rs3600	720000
(iv)	Assistance to 40 BPL families for Nursery raising Rs 37000	1480000
Sub Total		11286400
B	B-Off farm-based livelihood activities	
(i)	Assistance to 34 families for Tailoring enterprises Rs 24000/unit	816000
(ii)	Assistance to 19 families for handpump kit @ Rs 6000/unit	114000
(iii)	Assistance to 15 families for Wood carving tools @ Rs 20000/unit	300000
(iv)	Assistance to 30 families for petty handy craft tools @ Rs 4000/unit	120000
(v)	Assistance to 5families for Welder kit @ Rs 24000/unit	120000
Sub Total		1470000

3.1.3. Deliberations by the committee in previous meetings

Date of EAC 1 :30/08/2024

Deliberations of EAC 1 :**14.1.3 The EAC during deliberations noted the following:**

The EAC deliberated on the information submitted and as presented in the meeting and observed that the proposal is for grant of Environmental Clearance to the project for Bhavali Pumped Storage Project (1500 MW) in an area of 278.92 Ha in Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra by M/s JSW Energy PSP Two Limited

The Hydro-electric project is listed as item no. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006, as amended under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

The project proposal was earlier considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 27th meeting held during 09.05.2022 and recommended for grant of Terms of References (ToR) for the Project. The ToR has been issued by Ministry vide letter No J-12011/08/2022-IA. I(R) dated 27.6.2022.

The EAC noted that the total land requirement under the project for upper and lower rock fill dam, reservoir & other works, has been assessed as 278.92 ha of which private land is 35.18 ha, forest land 243.74 ha. The EAC also noted that, Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. However, no part of the project lies within Eco-sensitive zone of the Sanctuary. The nearest project boundary is about 12.5m from ESZ boundary. Same has been certified by Deputy Conservator of Forest (Wildlife), Nashik, vide letter O.W. No. Cell-4/Survey/C.N.1/7/ Year 2023-24, Date: 06/4/2023. There are no tiger/elephant corridors within the project area.

The EAC members expressed serious concerns about the availability of water for filling the reservoir, as the PP indicated that the reservoir would be filled only once during the rainy season. However, based on existing records, rainfall during the rainy season is very limited. Under these conditions, the reservoir cannot be adequately filled during the monsoon season. The EAC also observed that the regular flow of water in the tream/nalah is crucial for mangrove plants, and any blockage may have negative impacts on them. Additionally, the EAC noted that soil sampling analysis revealed a high carbon content in the soil which has no correlation with the topography of the region.

14.1.4 The EAC after detailed deliberations deferred the proposal for want of following additional information:

- i. The Project Proponent (PP) shall re-visit soil sampling analysis as results shows very high contain carbon in Soil analysis and submit the revised results mentioning permissible limits in the results of soil analysis.
- ii. PP shall relocate the location of Muck Disposal site and should be away from Forest land.
- iii. Assessment of water requirement of local population and water availability shall be studied.
- iv. Permission for water availability obtained from CWC /concerned department mentioning that rain water is sufficient for filling one time filling reservoir.
- v. PP shall submit the undertaking stating that no water flow stoppage/blockage shall be done for filling reservoir during monsoon season.
- vi. The PP shall prepare wild life conservation plan in consultation with expert Institutions and submit the wildlife conservation plan approved by Chief Wildlife Warden as Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. As the project cover area is located in Western Ghats, the EAC sub-committee shall conduct site visit for assessing the ground conditions and possible environmental impacts due to project comprehensively before further consideration of the proposal.
- vii. Given that 243.74 ha. Forest land are involved, the PP shall provide a detailed classification /land use pattern /vegetation details of the project area including information on forest density, species diversity, and other relevant ecological characteristics.
- viii. Submit details of tree to be removed for construction of the project.

Date of EAC 2 :30/04/2025

Deliberations of EAC 2 :

30.1.4 The EAC during deliberations noted the following:

The EAC deliberated on the information submitted and as presented in the meeting and observed that the proposal is for grant of Environmental Clearance to the project for Bhavali Pumped Storage Project (1500 MW) in an area of 278.92 Ha in Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra by M/s JSW Energy PSP Two Limited

The proposed project is listed as item no. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006, as amended under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

Earlier observations by the EAC

- The project proposal was earlier considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 27th meeting held during 09.05.2022 and recommended for grant of Terms of References (ToR) for the Project. The ToR has been issued by Ministry vide letter No J-12011/08/2022-IA. I(R) dated 27.6.2022.
- The EAC noted that the total land requirement under the project for upper and lower rock fill dam, reservoir & other works, has been assessed as 278.92 ha of which private land is 35.18 ha, forest land 243.74 ha. The EAC also noted that, Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. However, no part of the project lies within Eco-sensitive zone of the Sanctuary. The nearest project boundary is about 12.5m from ESZ boundary. Same has been certified by Deputy Conservator of Forest (Wildlife). Nashik, vide letter O.W. No. Cell-4/Survey/C.N.1/7/ Year 2023-24, Date: 06/4/2023. There are no tiger/elephant corridors within the project area.
- The EAC members expressed serious concerns about the availability of water for filling the reservoir, as the PP indicated that the reservoir would be filled only once during the rainy season. However, based on existing records, rainfall during the rainy season is very limited. Under these conditions, the reservoir cannot be adequately filled during the monsoon season. The EAC also observed that the regular flow of water in the tream/nalah is crucial for mangrove plants, and any blockage may have negative impacts on them. Additionally, the EAC noted that soil sampling analysis revealed a high carbon content in the soil which has no correlation with the topography of the region.

Current deliberations:

- The EAC noted that the sub-committee of the EAC visited the proposed Bhavali Pumped Storage Project" site on 02.01.2025 and 03.01.2025. and the recommendations of site visit were deliberated by the EAC members in its 22nd EAC Meeting held on 10th January, 2025. The observations and recommendations of the Sub-committee are as follows:
 - i. The selected location is topologically stable and non-prone to landslides as such. It is not therefore so fragile or sensitive., The proposed project is not likely to cause considerable negative impacts on the geological conditions; rights and interests of people related to water resources of downstream locations if the conditions and safeguards imposed vide the TOR granted are complied with fully and comprehensibly. Further, the Project Proponent is also to ensure strict compliance of the assurances given during public hearing.
 - ii. The relocation of muck disposal site may not be insisted on while considering the proposal for clearance since the muck disposal site was found to have been selected properly. Further, ecologically better sites did not appear available in nearby areas. Any relocation at this stage might lead to much changes and may lead to more adverse consequences. However, safety measures as contained in EMP and in other documents should be adhered to in toto.
 - iii. Water for operation of project will be sourced from self-yield from catchment area. There will be no dependency on the nearby streams and already established dams/reservoirs as confirmed and assured by the proponent. As stated above, since there are not much agricultural or drinking requirements in or nearby areas, the dam intervention should not be a matter of concern. Nevertheless, project proponent, as assured, will ensure maintenance of e-flow and minimum threshold water availability all year around.
 - iv. Nalla passing through the lower reservoir is a non-perennial and was containing very low level of water at the time of visit. However, as per the discussion held with the PP, natural flow of nallas/streams will not be restricted/diverted. Provision of ungated slipways has been considered to maintain

natural flow of non-perineal nallas/streams.

- v. Out of total forest area of 243.74ha, 160.21ha is reserved forest, 73.85 ha is deemed forest and 9.68 ha is protected forest. The forest density in the proposed forest land involved in the project site is approx. 150 trees/la. A total of around 35000 trees and saplings are likely to be sacrificed. Therefore, it is important to insist on submitting the case under FCA and receive stage-I clearance at the earliest by the Project Proponent.
- vi. PP has started the CER/CSR activities in the affected villages which includes the construction of public toilets, classrooms in the Govt. School, Mid-day Meal kitchens, and distribution of study materials, Shoes etc. to the students, blankets to the villagers.
- vii. Wildlife conservation and biodiversity management plan has been approved by CWLW on 29.11 .2024 with a cost of Rs. 326.50 Lakhs

The EAC observed that PP has revised EMP budget from Rs10680 lakh to Rs 9780.76 lakh, therefore it was advised not to change the cost of EMP specially under head compensatory afforestation plan. Further, the EAC noted that PP has signed MOU for setting up of the proposed Bhavali Pumped Storage Project (1500MW), which was made on 14th day of September, 2021, between the Industries Department, Government of Maharashtra and M/s JSW Neo Energy Ltd.

The EAC noted that the proposed muck disposal site is entirely located within a forest area. Although the sub-committee, during its site visit, recommended that relocating the site may not be necessary, concerns were raised during further discussions. It was observed that the estimated cost for the muck management plan is ₹29.90 crore, with over 80% (₹20.52 crore) allocated to engineering measures, specifically, the construction of a reinforced cement concrete (RCC) retaining wall measuring 6 meters in height, 30 cm in thickness, and approximately 2 kilometers in length. The EAC expressed serious concerns about the suitability of the site and questioned the necessity of the RCC retaining wall. In response, the project proponent explained that the wall is intended to stabilize the muck disposal area. Nevertheless, the EAC further raised concerns about potential restrictions on the free movement of wildlife in the area following construction of the wall.

The EAC noted that the Wildlife Conservation Plan has been duly approved by Chief Wildlife Warden, Nagpur Maharashtra with a cost of INR 326.50 Lakhs vide letter dated 29th November 2024. However, the EAC expressed concern over the absence of a time-bound action plan outlining the implementation strategy. Given that the project area falls within the Western Ghats Eco-Sensitive Zone, the Committee emphasized the need for a well-defined mechanism to ensure the effective execution of the Wildlife Conservation Plan. The EAC also discussed on the utilization of seismicity in the study area and associated seismic hazard zonation mapping related recommendation on the construction of structures. A comprehensive watershed management related recommendations were also not very clear.

30.1.5 The EAC after detailed deliberations deferred the proposal for want of following additional information:

1. PP shall revisit the muck management plan along with cost estimate, reclamation plan and requirement/ justification of RCC retaining wall.
2. Justification for revising the EMP cost from Rs10680 lakh to Rs 9780.76 lakh.
3. Impact on migration of birds because of noise levels, changes in water body, if any should be discussed with experts in ornithology and presented.
4. Impact of micro seismicity and hazards and recommendations on concrete structures are to be discussed properly.
5. A comprehensive watershed management including, surface water flow- scarcity and overflow, climate change impacts, soil erosion, restoration of green cover, enhanced groundwater recharge, impacts on surface and sub-surface spring flow, improvements in livelihood and cultural restoration, and related recommendations must be provided.

3.1.4. Deliberations by the EAC in current meetings

32.1.5 The EAC during deliberations noted the following:

The EAC deliberated on the information submitted and as presented in the meeting and observed that the proposal is for grant of Environmental Clearance to the project for Bhavali Pumped Storage Project (1500 MW) in an area of 278.92 Ha in Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra by M/s JSW Energy PSP Two Limited.

The proposed project is listed as item no. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006, as amended under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

Observations by the EAC in its meeting held on 30th August, 2024

- The project proposal was earlier considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 27th meeting held during 09.05.2022 and recommended for grant of Terms of References (ToR) for the Project. The ToR has been issued by Ministry vide letter No J-12011/08/2022-IA. I(R) dated 27.6.2022.
- The EAC noted that the total land requirement under the project for upper and lower rock fill dam, reservoir & other works, has been assessed as 278.92 ha of which private land is 35.18 ha, forest land 243.74 ha. The EAC also noted that, Kalsubai Harichandragad Wildlife Sanctuary exists within 10 km of project boundary. However, no part of the project lies within Eco-sensitive zone of the Sanctuary. The nearest project boundary is about 12.5m from ESZ boundary. Same has been certified by Deputy Conservator of Forest (Wildlife), Nashik, vide letter O.W. No. Cell-4/Survey/C.N.1/7/ Year 2023-24, Date: 06/4/2023. There are no tiger/elephant corridors within the project area.
- The EAC members expressed serious concerns about the availability of water for filling the reservoir, as the PP indicated that the reservoir would be filled only once during the rainy season. However, based on existing records, rainfall during the rainy season is very limited. Under these conditions, the reservoir cannot be adequately filled during the monsoon season. The EAC also observed that the regular flow of water in the tream/nalah is crucial for mangrove plants, and any blockage may have negative impacts on them. Additionally, the EAC noted that soil sampling analysis revealed a high carbon content in the soil which has no correlation with the topography of the region.

Observations by the EAC in its meeting held on 30th April, 2024

- The EAC noted that the sub-committee of the EAC visited the proposed Bhavali Pumped Storage Project" site on 02.01.2025 and 03.01.2025. and the recommendations of site visit were deliberated by the EAC members in its 22nd EAC Meeting held on 10th January, 2025. The observations and recommendations of the Sub-committee are as follows:
 - i. The selected location is topologically stable and non-prone to landslides as such. It is not therefore so fragile or sensitive., The proposed project is not likely to cause considerable negative impacts on the geological conditions; rights and interests of people related to water resources of downstream locations if the conditions and safeguards imposed vide the TOR granted are complied with fully and comprehensibly. Further, the Project Proponent is also to ensure strict compliance of the assurances given during public hearing.
 - ii. The relocation of muck disposal site may not be insisted on while considering the proposal for clearance since the muck disposal site was found to have been selected properly. Further, ecologically better sites did not appear available in nearby areas. Any relocation at this stage might lead to much changes and may lead to more adverse consequences. However, safety measures as contained in EMP and in other documents should be adhered to in toto.
 - iii. Water for operation of project will be sourced from self-yield from catchment area. There will be no dependency on the nearby streams and already established dams/reservoirs as confirmed and assured by the proponent. As stated above, since there are not much agricultural or drinking requirements in or nearby areas, the dam intervention should not be a matter of concern. Nevertheless, project proponent, as assured, will ensure maintenance of e-flow and minimum threshold water availability all year around.
 - iv. Nalla passing through the lower reservoir is a non-perennial and was containing very low level of water at the time of visit. However, as per the discussion held with the PP, natural flow of nallas/streams will not be restricted/diverted. Provision of ungated slipways has been considered to maintain natural flow of non-perineal nallas/streams.
 - v. Out of total forest area of 243.74ha, 160.21ha is reserved forest,73.85 ha is deemed forest and 9.68 ha is

protected forest. The forest density in the proposed forest land involved in the project site is approx. 150 trees/ha. A total of around 35000 trees and saplings are likely to be sacrificed. Therefore, it is important to insist on submitting the case under FCA and receive stage-I clearance at the earliest by the Project Proponent.

vi. PP has started the CER/CSR activities in the affected villages which includes the construction of public toilets, classrooms in the Govt. School, Mid-day Meal kitchens, and distribution of study materials, Shoes etc. to the students, blankets to the villagers.

vii. Wildlife conservation and biodiversity management plan has been approved by CWLW on 29.11 .2024 with a cost of Rs. 326.50 Lakhs

The EAC observed that PP has revised EMP budget from Rs10680 lakh to Rs 9780.76 lakh, therefore it was advised not to change the cost of EMP specially under head compensatory afforestation plan. Further, the EAC noted that PP has signed MOU for setting up of the proposed Bhavali Pumped Storage Project (1500MW), which was made on 14th day of September,2021, between the Industries Department, Government of Maharashtra and M/s JSW Neo Energy Ltd.

The EAC noted that the proposed muck disposal site is entirely located within a forest area. Although the sub-committee, during its site visit, recommended that relocating the site may not be necessary, concerns were raised during further discussions. It was observed that the estimated cost for the muck management plan is ₹29.90 crore, with over 80% (₹20.52 crore) allocated to engineering measures, specifically, the construction of a reinforced cement concrete (RCC) retaining wall measuring 6 meters in height, 30 cm in thickness, and approximately 2 kilometers in length. The EAC expressed serious concerns about the suitability of the site and questioned the necessity of the RCC retaining wall. In response, the project proponent explained that the wall is intended to stabilize the muck disposal area. Nevertheless, the EAC further raised concerns about potential restrictions on the free movement of wildlife in the area following construction of the wall.

The EAC noted that the Wildlife Conservation Plan has been duly approved by Chief Wildlife Warden, Nagpur Maharashtra with a cost of INR 326.50 Lakhs vide letter dated 29th November 2024. However, the EAC expressed concern over the absence of a time-bound action plan outlining the implementation strategy. Given that the project area falls within the Western Ghats Eco-Sensitive Zone, the Committee emphasized the need for a well-defined mechanism to ensure the effective execution of the Wildlife Conservation Plan. The EAC also discussed on the utilization of seismicity in the study area and associated seismic hazard zonation mapping related recommendation on the construction of structures. A comprehensive watershed management related recommendations were also not very clear.

Observations of present EAC meeting:

The EAC noted that in the muck management, PP has made adequate muck management plan since muck sites are on sloped ground and can't hold naturally, retaining structures like gabion walls are needed to support the muck and prevent sliding. Protection measures such as 12 number animal ramps, plantation with maintenance of plantation for six years such as trees, shrubs & bushes over muck dumping area has been proposed. The revised budget for Muck Management is Rs. 2390 lakh (Biological reclamation: Rs 1279.83 lakh; Engineering: Rs 1110.00 lakh). Detailed Muck Management Plan has been submitted.

The EAC noted that the final compensation under CA scheme was later assessed on the basis of proposed CA land and approved by the Divisional Forest Officer(s) of Nashik and Thane through Part-II amounting to Rs. 3914.26 lakh resulting in decrease in cost of CA scheme from Rs. 4854 lakh including NPV. This resulted in cost reduction of Rs 939.74 lakh.

Further, EAC observed that the budget Wildlife Conservation and Biodiversity Management Plan of Rs. 286 lakh was initially proposed for the conservation of Schedule- I species recorded in the study area. This has been revised to Rs. 326.50 lakh as per the approval of the Wildlife and Biodiversity Plan by Chief Wildlife Warden, Nagpur, Maharashtra. Due to increase in expenditure accounts for the earlier shortfall in the Environmental Management Plan (EMP) budget. Accordingly, the revised total EMP cost now stands at Rs. 10680 lakh.

The EAC also observed that the public hearing report is satisfactory; however, it was recommended that the concerns raised by the general public should be addressed in time bound manner.

32.1.1 The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of prior Environmental Clearance by the Ministry to Bhavali Pumped Storage Project (1500 MW) in an area of 278.92 Ha in Village Kalbhonde, Kothale and Jamunde Sub District Shahapur and Igatpuri, District Thane and Nashik, Maharashtra by M/s JSW Energy PSP Two Limited, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following specific environmental safeguard conditions:

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

Socio-economic	
1.	Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
2.	RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.
3.	Solar panel be provided to the families living in rural areas within 10 km radius of project.
4.	School up to 12 th Standard with smart lasses shall be established and managed to provide free quality education for children from project affected villages/Tribal villages.
5.	50 bed multi-speciality hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.
6.	Skill development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population.
7.	The area is ecologically fragile therefore Project Proponent shall ensure that safety measures as mentioned in the EMP shall be fully implemented.
Disaster Management	
1.	Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.
2.	Robust monitoring mechanism for muck disposal along with no. of vehicle used in transportation shall be prepared and details of the same shall be submitted to concerned regional office of the Ministry. Tracking devices should be installed on the muck carrying vehicles so as to ensure it is being dumped at designated site/sites.
3.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural