CENTRAL EMPOWERED COMMITTEE

(CONSTITUED BY THE HON'BLE SUPREME COURT OF INDIA

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F.No. 1-19/CEC/SC/2020-Pt. (59) **Dated: 23rd April 2021**

To

The Registrar
Supreme Court of India
New Delhi-110001
(Attn: PIL Section)

SUB: CEC REPORT NO. 6 OF 2021 – Report of the CEC in Application No. 1440 filed before the CEC by the Applicant Goa Foundation alleging violation of the Hon'ble Supreme Court order dated 5.10.2015 in I.A. No. 1308 of 2005 and related I.As in W.P. (C) No. 202 / 95 (Matters relating to the National Park / Wildlife Sanctuaries) and contravention of the Wild Life (Protection), 1972 in granting clearance by the Standing Committee of National Board for Wildlife in respect of three linear infrastructure projects within the boundaries of Wildlife Sanctuary and National Park in the State of Goa.

Sir,

The Report of the Central Empowered Committee on the above subject is enclosed in 2 volumes (Four copies). It is requested that the Report may please be placed before the Hon'ble Court.

Yours faithfully

(Amarnatha Shetty)
Member Secretary

Copy to :

1. Mr. Harish N. Salve, Sr. Advocate & Amicus Curiae.
2. Mr. A.D.N. Rao, Advocate & Amicus Curiae.
3. Mr. Siddhartha Choudhary, Advocate & Amicus Cur ae
4. The Secretary, Ministry of Environment , Forests & Climate Change New Delhi
5. The Secretary, Ministry of Power, Government of India, New Delhi
6. The Secretary, Ministry of Road Transport and Highways, Government of India, New Delhi

Contd..2/-

7. The Chairman, Railway Board, Ministry of Railways, New Delhi
8. The Chairman, National Highways Authority of India, Dwarka, New Delhi
9. The Chief Secretary, Government of Goa, Panaji
10. The Chief Secretary, Government of Karnataka, Bengaluru
11. The Principal Chief Conservator of Forests, Department of Forest & Wildlife, Govt. of Goa, Panaji
12. The Principal Chief Conservator of Forests, Govt. of Karnataka, Bengaluru
13. The General Manager, South Western Railways, Hubbali
14. The Chief Project Manager, Rail Vikas Nigam Limited, New Delhi
15. The Additional PCCF, Regional Office, MoEF&CC, Bengaluru
16. The Member Secretary, National Tiger Convention Authority, New Delhi
17. The Chief Engineer, Public Works Department, Goa
18. The Chief Electrical Engineer, Government of Goa, Panaji
19. M/s Goa Tamnar Transmission Power Ltd, New Delhi
20. Standing Counsel for the MoEF&CC
21. Standing Counsel for the State of Goa
22. Applicants / Respondents through their Advocate on Record
23. All Members of CEC

CENTRAL EMPOWERED COMMITTEE

REPORT No. 6 of 2021

IN

APPLICATION NO. 1440

IN

W.P. (C) No. 202 of 1995

(Volume I)

Filed by:-

GOA FOUNDATION

Dated: 23rd April 2021

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CENTRAL EMPOWERED COMMITTEE

REPORT OF THE CEC IN APPLICATION NO. 1440 FILED BEFORE THE CEC BY THE APPLICANT GOA FOUNDATION ALLEGING VIOLATION OF THE HON'BLE SUPREME COURT ORDER DATED 5.10.2015 IN I.A. NO. 1308 of 2005 AND RELATED I.As IN W.P. (C) No. 202 / 95 (MATTERS RELATING TO THE NATIONAL PARK / WILDLIFE SANCTUARIES) AND CONTRAVENTION OF THE WILD LIFE (PROTECTION), 1972 IN GRANTING CLEARANCE BY THE STANDING COMMITTEE OF NATIONAL BOARD FOR WILDLIFE IN RESPECT OF THREE LINEAR INFRASTRUCTURE PROJECTS WITHIN THE BOUNDARIES OF WILDLIFE SANCTUARY AND NATIONAL PARK IN THE STATE OF GOA.

This Report is being submitted by the CEC in terms of order dated 5.10.2015 in I.A. No. 1308 and related I.As in W.P. (C) No. 202/1995 of this Hon'ble Court regarding matters relating to National Parks and Wildlife Sanctuaries. An extract of the order is reproduced below:

> *"We request the NBWL to furnish a copy of the orders passed by it within 30 days time to the CEC. The CEC is at liberty, if, for any reason, they are aggrieved by the decision of the Standing Committee of NBWL to approach this Court by filing an appropriate petition/application."*

2. i) The Standing Committee of the National Board for Wildlife (hereinafter "SC NBWL") in its 56th held on 17.12.2019 decided to recommend the proposal for wildlife clearance (agenda item 56.3.1 and 56.3.2) for (a) doubling of existing railway line from Castlerock to Kulem, Goa State involving 120.875 ha. of land (Protected Area land 113.857 ha + Non Protected Area land 7.108 ha.) passing through Bhagwan Mahaveer Wildlife Sanctuary subject to fulfilling certain conditions and (b) doubling of existing railway track from Kulem to Madgaon, Goa involving 16.514 ha. of land (Protected Area land 14.4185 ha + Non Protected Area land 2.095 ha.) passing through the Bhagwan Mahaveer Wildlife Sanctuary subject to fulfilling certain conditions.

ii) The Standing Committee of the National Board for Wildlife in its 57th Meeting held on 07.04.2020 decided to recommend the proposal (agenda item 57.3.2) for use of 85.50 ha. land (Forest Land 48.3 ha. + Protected Area land 11.54 ha. and Non Protected Area land 36.76 ha.) for laying of LILO of one CKT of Narendra (existing) – Narendra (new) 400 KV D/C Quad line at Xeldem Goa.

iii) The Standing Committee of the National Board for Wildlife at the 57th Meeting also considered the proposal

(agenda item 57.3.3) for use of 32.085 ha land (PA land 31.015 ha. + Non Protected Area land 1.887 ha.) for 4 lanning of existing NH-4A in Anmod – Mollem section from Km 84/133 to Km 97/000 in the Goa – Karnataka border, Goa State.

Copies of the relevant extracts from the minutes of the 56th and 57th Meeting of SC NBWL held on 17.12.2019 and 7.4.2020 are enclosed as **ANNEXURE R-1(Colly.)** to this Report.

3. The CEC, in terms of this Hon'ble Court order dated 05.10.2015, with a view to examine the above three proposals recommended by SC NBWL addressed letters dated 19.02.2020 and 15.09.2020 to the Secretary, MoEF&CC with the request to send all the documents including Application made by the project proponents, site inspection reports and copies of documents / presentations, if any, made by the Applicant pertaining to the above project. Copies of the letters of CEC dated 19.02.2020 and 15.09.2020 addressed to the Secretary, MoEF&CC are enclosed as **ANNEXURE R-2 (Colly.)** to this Report.

4. On 26.6.2020 the Goa Foundation filed Application No. 1440 before the CEC stating that the Standing Committee of the National Board for Wildlife (SC NBWL) at its meeting held on 17.12.2019 and 7.4.2020 respectively have violated this Hon'ble Court order dated 5.10.2015 and the provisions of the Wild Life (Protection) Act, 1972 by granting Wildlife Clearance for the following three linear infrastructure projects passing through the Bhagwan Mahaveer Wildlife Sanctuary and Mollem National Park in the Western Ghats in the State of Goa –

A) The doubling of the 26 km stretch of the railway line in Western Ghats from Castlerock in Karnataka to Kulem in Goa.

B) Four lanning of the National Highway 4A from Km 84 to Km 97.

C) The Goa Tamnar Transmission Project involving laying of Additional 400 Kv feed to Goa and additional system for power evacuation from generation projects pooled at Raigarh (TAMNAR POOL).

5. The Applicant has prayed for the following reliefs:

"a) Examine the decisions of the Standing Committee of the NBWL (Respondent No.1) related to approval of the three projects within the Bhagwan Mahaveer Wildlife Sanctuary and National Park, Goa and recommend their cancellation;

b) Examine and recommend the cancellation of the permits issued, if any, by the Respondent No.2 for the three impugned projects;

c) Examine the guidelines issued by MoEF&CC relating to infrastructure projects in wildlife sanctuaries and national parks and recommend their withdrawal or cancellation;

Interim Relief :

d) Pending hearing and final disposal of this application for an order directing the Respondents not to commence any development works within the Bhagwan Mahaveer Wildlife Sanctuary and National Park, Goa and the notified 1 km ESA from the boundaries of both till further orders."

6. CEC is filing this Report after taking virtual meetings on 11th December 2020, 14th December 2020 and 12th April 2021 with the Applicant, representatives/Counsel of Goa Tamnar Transmission Project, Ministry of Power, Ministry of MoEF&CC, South Western Railway, Rail Vikas Nigam Limited (RVNL), PWD, Electricity and Forest Departments of Government of Goa and Government of Karnataka and after site visits from 18th January 2021 to 22 January 2021 by P V Jayakrishnan, Chairman, CEC, Amarnatha Shetty, Member-Secretary, CEC, Mahendra Vyas, Member CEC and A.D.N. Rao, Amicus Curiae and after examining all the relevant documents filed by the Applicant and the various agencies.

MAIN OBJECTIONS RAISED BY GOA FOUNDATION

7. The Applicant Goa Foundation has objected to the linear infrastructure projects, namely, doubling of railway track from Castlerock in Karnataka to Kulem in Goa and from Kulem to Madgaon, Goa four lanning NH-4A from Km 84 to Km 97 and laying additional 400 Kv feed to Goa on the following grounds:

i) BMWLS & NP (Bhagwan Mahaveer Wildlife Sanctuary and National Park) covering an area of 240 sq km is one of the oldest wildlife sanctuary and forms part

of the continuous Protected Area Network in Goa and Kali Tiger Reserve and Anshi Dandeli Wildlife Sanctuary in Karnataka forming part of an important tiger corridor.

ii) Taken together, the three projects involve diversion of about 170 ha forest land and sanctuary land break up being Railway Project 128.28 ha, Highway Project 31.015 ha and Transmission Project 11.54 ha. Development works during the construction period will entail further destruction of forest land and Sanctuary/National Park and wildlife in the Project Area.

iii) About 37000 trees will require to be felled within BMWLS & NP break up being, Railway Project 20,758 trees, Highway Project 12091 trees and Transmission Project 4146 trees.

iv) No cumulative assessment of impacts of all three projects on wildlife habitat has been carried out or even considered to assess their impact on integrity of the BMWLS&NP.

v) The three projects will destroy the integrity of the Protected Area (PA)

vi) The environment impact assessment of these three projects have been shoddily carried out with little or no

assessment of proper impact on wildlife habitat including its bio-diversity.

8. The CEC has received a large number of appeals / representations including from the peoples representatives, scientists, researchers, ecologists, environmentalists, lawyers, veterinarians, artists, painters, illustrators, filmmakers, musicians, sculptures, students, villagers, tourism and travel trade raising objections against these projects. A compilation of some of the above representations in the form of a chart / statement giving extract / gist from their appeal is enclosed as **ANNEXURE-R-3** to this Report.

IMPORTANCE OF THE WESTERN GHATS ECO SYSTEM – ONE OF WORLD'S EIGHT HOTSPOTS

9. i) The Biodiversity and Environmental Assessment of the proposed doubling of railway track between Castlerock in Karnataka and Kulem in Goa was commissioned by Rail Vikas Nigam Limited (RVNL) who invited suggestion from Center for Ecological Sciences and Department of Civil Engineering, Indian Institute of Science (IIS) Bangalore. The Final Report, incorporating

suggestions, was submitted in August 2017 to RVNL by the IIS, Bangalore.

(ii) As per the above Report the hilly region of Goa and Karnataka forms part of the Western Ghats, a continuous chain that runs parallel to west coast of Peninsular India and is approximately 1900 km long. Western Ghat extends from Gujarat in the north to Kerala in the south, spreading across five different States in Peninsular India. The Western Ghats are a continuous chain of mountains with a major gap near Palghat (Kerala). Mean elevation of the ghats is 900 metres MSL with the highest peak Anaimudi (2695 meters) in the Anamalai range in the south. The Western Ghats along with Sri Lanka are considered to be one of the “hot spots” of biological diversity. Goa is located in the central Western Ghats and biologically an important area.

iii) The Western Ghats is home to many rivers that flow both in east and west direction. Three large rivers of Peninsular India, namely, the Cauvery, the Krishna and the Godavari originate in the Ghats and flows eastwards into the Bay of Bengal. There are innumerable small rivers and rivulets that flow westwards to the Arabian Sea. Major rivers that flow west include the Narmada, the

Sharavathi, the Aghanashini, the Kali, the Periyar, the Bharatpuzha, the Pamba, the Chaliyar and the Chalakudy.

iv) The Western Ghats, one of global biodiversity hotspots, also described as one of worlds eight “hottest hotspots” accounts for about 4000 species of flowering plants (about 27% of the country’s total species are known to be from the Western Ghats). Of 645 species of evergreen trees, about 56% are endemic to Western Ghat. Among the invertebrate groups, about 350 (25% endemic) species of ants, 330 (11% endemic) species of butterflies, 174 (40% endemic) species of odonates (dragonflies and damselflies) and 269 (76% endemic) species of molluscs (land snails) have been described from this region. The known fish fauna of the Ghats is 288 species with 40% of these being endemic to the region. The amphibian fauna has about 220 species of which 78 % are endemic. Of the 225 described species of reptiles, 62% are endemic. Over 500 species of birds and 120 species of mammals are also known from this region. The Western Ghats region harbours the largest known populations of Asian elephant, tiger, dhole, and gaur. The area is home to 30% of Asian Elephants population, 33% of Indian Wild Tiger and 26% of Indian

Leopard Population. The Western Ghats also harbour a number of wild relatives of cultivated plants, including pepper, cardamom, mango, jackfruit and plantain. **Spread across 9 National Tiger Reserves, 20 National Parks and about 68 Wildlife Sanctuaries, the land scape forms one of the largest and most contiguous Protected Area networks in the country.**

v) Three distinct forest types are found here namely :

(a) Southern Tropical evergreen forests,

(b) Southern Tropical semi-evergreen forests confined to the hills and

(c) Moist deciduous forest found in the coastal plains.

vi) BMWLS which accounts for large proportion of proposed project has about 721 species of wild plants belonging to 490 genera and 119 families. There are about 126 species reported to be endemic with a large number of them confined to the Western Ghats. Though BMWLS account for 0.05% of the area of the Western Ghats, it harbours 8.4% of endemic species that are endemic to the Western Ghats. BMWLS also accounts for 50% of species that are described from the State of Goa.

vii) Despite its small size, Goa is endowed with a rich faunal diversity. The mammals include several species listed in Schedule I of the Wild Life (Protection), 1972 such as the larger mammals (Indian Gaur, Tiger, Leopard). Elephants are rare seasonal visitors from nearby Karnataka. Striped hyena, jackals and dhole are seen. Other mammals include sloth bear, otters, pangolin and giant squirrel. Over 450 species of birds both resident and migratory have been recorded in the State. The State bird is Ruby throated yellow bulbul (Pycnonotus dispar). According to IUCN rankings White backed vulture and Long-billed vulture are critically endangered, while Malabar pied hornbill and Great pied hornbill are nearly threatened. There is a good reptilian diversity including the poisonous snake King cobra (Naja hannah). The Western Ghats harbour notably high diversity of amphibians with several of them being endemic. Thirty two Species of amphibians have been added from Goa alone to the taxon list. 205 species of fishes (fresh water) have been described from the State of Goa.

10. The impact of the three projects are discussed in the following paragraphs in three separate sections in the order as given below:

Section A: Doubling of the stretch of the railway line from Castlerock in Karnataka to Kulem in Goa.

Section B: Four laning of NH-4A from km 84 to km 97.

Section C: Goa Tamnar Transmission Project involving laying of Additional 400 Kv feed to Goa and Additional system for Power Evacuation from generation projects pooled at Raigarh (TAMNAR POOL)

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SECTION A

DOUBLING OF THE STRETCH OF THE RAILWAY LINE FROM CASTLEROCK IN KARNATAKA TO KULEM IN GOA – PART OF PHASE II OF THE PROJECT FROM TINAIGHAT TO VASCO.

11. The details of the project are as given below :

i) RNVL, a Government of India Mini Ratna undertaking has undertaken execution of the proposed project of doubling of the existing 342 km long rail line from Hospet-Tinaighat-Vasco Murmagoa port in the State of Goa. The project has been sanctioned by the Ministry of Railways at a cost of Rs.2127 crores with a view to enhance section capacity of existing single line track.

ii) It has been stated that the existing railway single line Hospet-Vasco was laid in 1900 and connects iron ore mining/industrial areas in Hospet to Murmugao Port in Vasco. Both Goa and Hospet in Karnataka are tourist destinations. Due to industrial growth and growth in tourists, the existing single line capacity is saturated. To meet the increasing demand and future growth, the existing railway single line has to be doubled so that more

and more goods trains/passenger trains can be run to meet the increasing demand. To minimise land acquisition, this rail doubling is being done parallel to the existing single line.

iii) This is the only railway line between Hospet and Vasco Port passing through forest land and there is no alternative as the alignment invariably has to pass through the forest. Since the proposed railway doubling is parallel to the existing railway line which passes through the already existing corridor in the forest, the new doubling railway line is proposed through same forest along the same corridor. According to South Western Railway they already have 70.795 ha of land, in the existing ROW which support 9758 trees of various species. In addition forest area of 43.062 ha. with 8783 trees is proposed for diversion for doubling of rail line including tunnel portion.

iv) There are two phases of the Project. Phase I involving doubling of the existing line parallel to the existing line between Hospet and Tinaighat (245 kms) is and within the railway land and which work stands completed. Phase II of the Project, length 91 km between Tinaighat and Vasco, is also

parallel to the existing track and remains to be completed. The estimated cost of Phase II from Tinaighat to Vasco is Rs.900 crores and involves diversion of 9.57 ha forest land in Dandeli Wildlife Sanctuary, Karnataka and 113.857 ha in Bhagwan Mahaveer Wildlife Sanctuary, Goa.

v) The 26 kms stretch of the proposed doubling of the railway track from Castlerock in Karnataka to Kulem in Goa is part of 91 km length Phase II of the project. The estimated cost of the project from Castlerock to Kulem is Rs.90 crores. This stretch of 26 kms length of railway line passes through pristine natural forests of the Western Ghats from Castlerock (Joida Taluk, Karwar District, Karnataka) to Kulem (Sanguem Taluk, South Goa District, Goa State). This existing single line track was laid in the year 1900 on Meter Gauge and it was converted into Broad gauge in the year 1996-98.

vi) Capacity utilisation of the existing line track has increased to 120%, for which Railways have not been able to introduce any new passenger trains on this section. RVNL has submitted two separate proposals for wildlife clearance–

a) Tinaighat - Castlerock - Caranzol Railway Doubling for Karnataka Stretch

And

b) Castlerock - Kulem Railway Doubling for Goa Stretch

The Castlerock forests are part of Dandeli-Anshi Tiger Reserve (DATR) in Karnataka while forests between Goa-Karnataka border and Kulem fall within the BMWLS in Goa. The issues raised in the Application by Applicant mainly relate to Phase-II of the doubling of the existing line between Tinaighat and Vasco;

DECISION OF THE STANDING COMMITTEE OF THE NATIONAL BOARD FOR WILDLIFE

12 The Standing Committee of the National Board for Wildlife at its 56th meeting held on 17.12.2019 considered the proposal for wildlife clearance for doubling of existing railway line from –

(a) Castlerock (Karnataka) to Kulem (Goa) involving use of 120.875 ha of land (Protected Area

113.857 ha and non-Protected Area reserved forest: 7.018 ha) from the BMWLS;

(b) Kulem to Madgaon Goa State involving use of 16.514 ha of land (Protected Area: 14.4184 ha and non PA : 2.095 ha) from the BMWLS.

The State Chief Wildlife Warden has recommended the proposals amongst others with the condition that the railway authorities may explore the option of putting some gate in tunnel which can be opened through some mechanical/electronically controlled switches before train arrival so as to ensure that the wild animals are not trapped in some of the long tunnels when the train passes through the tunnel.

The Standing Committee decided to recommend the proposals subject to the conditions that -

(a) the project proponent will comply with all the conditions imposed by the Chief Wildlife Warden. The approved Animal Passage Plan should be implemented by the project proponent and

(b) the annual compliance certificate on the stipulated conditions should be submitted by the State Chief

Wildlife Warden and an annual compliance certificate shall be submitted by the State Chief Wildlife Warden to the Govt of India.

RESPONSE OF RVNL TO OBJECTIONS RAISED BY APPLICANT GOA FOUNDATION FOR DOUBLING RAILWAY LINE.

Following is the response of the Rail Vikas Nigam Ltd. to the objections raised by Goa Foundation

13. RVNL, responding to objections raised by Applicant Goa Foundation to the doubling of the rail track in Western Ghats from Castlerock to Kulem, has stated that the existing 26 km rail line between Castlerock- Kulem railway stations has been laid on a difficult alignment with 7.5 degree curvature and 1 in 37 gradient on a tough terrain. There are 48 Nos. of curves, 112 nos. of bridges and 16 nos. of tunnels (total tunnel length 2.3kms) between Castlerock and Kulem Ghat Section. The section is having continuous falling gradient from Castlerock station towards Kulem station. Due to existence of sharp curves and gradients in the section, severe restrictions have

been imposed for running of trains “Up the Ghat” and “Down the Ghat” as listed below :

(a) Down ghat - All trains running down the ghat should stop at the outer of every station to ensure that proper braking force is available and not to roll down.

(b) Up ghat – Every train going up the ghat must be attached with Bankers in the form of Multiple Unit Locos for passenger trains and TLC (Tripled Loco consist) for goods trains.

(c) All passenger trains running up the ghat are being allowed at a restricted speed of 40 km/h whereas goods trains are being allowed at a speed of 30 km/h

(d) All passenger and goods trains running down the ghat are permitted at a restricted speed of 30 km/h only as against the maximum permissible speed of 100 km/h in adjoining sections.

(e) In the normal course the running time of passenger trains in this section would be about 15 to 16 minutes as against the present 80 to 90 minutes and 120 to 150 minutes for goods trains.

(f) Because of the additional Loco requirement for only Up ghat trains, these locos after reaching Castlerock are required to be sent back Down ghat to haul next Up train (Loco balancing). Thus, this loco balancing in the ghat section is occupying the most of the available path for trains.

(g) As a result of these severe restrictions in running of trains in this section, Railways are not able to utilise the section capacity of the entire route between Londa to Vasco optimally. At present, Railways are able to run only 02 pairs of Passenger trains along with 07 pairs of Goods trains (Total 9 Pairs) in this section whereas, in other single line sections, railways are able to deal 20 pairs of passenger and goods trains. Thus, section capacity utilisation is below 50% due to the constraints of working of trains in Ghat section. As such, Ministry of Railways decided to go for track doubling of the entire route with a view to generate path for introduction of new passenger trains in this route having connectivity towards Southern states of Karnataka, Andhra Pradesh, Telangana, Tamilnadu as well as towards Central and Northern

states passing through including Miraj, Pune, Bhusawal and Bhopal.

(h) Any improvement in the alignment of flattening of the gradients require detour in a new alignment cutting across the Wildlife Sanctuary thereby creating a new corridor requiring diversion of larger forest area. To minimise the diversion of forest land and also to avoid fragmentation of sanctuary, even though it is difficult during project construction stage as well as in future maintenance stage, Railways have decided to follow existing alignment duly utilising available land (ROW) with additional minimum forest land at entry and exit of the tunnels, so that there will be minimum disturbance to existing flora and fauna.

(i) According to Railways they already possess 86.9 ha. land within Bhagwan Mahaveer Wildlife Sanctuary and Mollem National Park. The new doubling track has been proposed at a distance of 5.8 m from existing track except for detours and deviation at the locations of entry and exit of Tunnels. With a view to have minimum disturbance to the Wildlife Sanctuary, 51.48 ha. of Forest Land

has been requisitioned for diversion which will be used along with 86.90 ha. of existing railway land and in the possession of the Railways to be used for doubling track. The new alignment (doubling track) will have 7 major and 74 minor bridges and 23 tunnels.

(j) It may be stated that earlier Railways had submitted a proposal with gradient of 1:60 with the total length of 35.76 kms in the Castlerock-Kulem section. The total land to be diverted for the proposed alignment was 80 ha located entirely within Bhagwan Mahaveer National Park. This proposal was rejected by the Goa Government as it would have led to fragmentation of the Protected Area. The revised proposal entails laying of the track parallel to the existing one. (Page 6, para 17 of affidavit dated 24.8.2020 filed before the CEC by PCCF, Forest Department, Goa Government)

(k) According to RVNL doubling of Hospet – Tinaighat-Vasco rail line is a game changer in the economic development of South Western part of India. This is a 342 km long rail line connecting Goa Port to all parts of Karnataka, hinterland areas in the States

of Maharashtra, Andhra Pradesh, Telangana and Tamilnadu. This rail link is also part of Sagar mala Project.

(l) This project was sanctioned in 2011-12 and 252 kms doubling has already been completed out of total length of 342 kms. An expenditure of approximately Rs. 1900 cr. has been incurred on this project so far. Further, 16 km stretch between Sanvordem to Madgon was to be completed by the end of 2020. As such only about 74 kms remain for completion of the project, out of which 34 kms are passing through Bhagwan Mahaveer Wildlife Sanctuary and Mollem National Park. Unless the doubling of remaining 74 kms is completed, Ministry of Railways will not get the desired benefit of increasing speed of train operations and for introducing more trains in this over saturated section.

(m) In the present scenario where there has been reduction in transportation of iron ore and coal the following justification for doubling of rail track has been given by the Ministry of Railways/RVNL to the CEC:

(i) In case of exigencies for the ease of smooth movement of troops and materials from India's biggest Naval Airbase INS Hansa, strategically located at Dabolin in Goa;

(ii) trans-shipment of public during the period of pandemic;

(iii) ideal location of Goa port for development of industries around Hubballi, Dharwar and Belagaum cities and industrial hubs in North Karnataka;

(iv) conservation of greenery and reduction of vehicles on road;

(v) removal of bottlenecks in running of trains in the ghat section between Castlerock and Kulem due to several restrictions in running of trains;

(vi) to cater to the increasing tourists' footfall in Goa from southern states including from Telengana and Andhra Pradesh;

(vii) improving passenger amenities and introduction of 24 coach length mail and express trains along this route;

(viii) construction of road over bridges for uninterrupted traffic;

(ix) providing faster inter-state passenger train connectivity at cheaper rate ;

(x) the Railways have taken it as a mission for doubling and electrification of all important routes by 2024; and

(xi) the proposed route from Hospet in Karnataka to Vasco in Goa is the cheaper route for transport of freight from steel industries located around Bellary area.

INFORMATION SOUGHT BY THE CEC ON QUANTUM AND NATURE OF GOODS TRAFFIC THROUGH THE EXISTING RAILWAY LINE BETWEEN GOA – KARNATAKA – GOA.

14. The CEC *vide* letters dated 7.1.2021 and 5.2.2021 has requested the Railway authorities for the following details of traffic to assess the necessity of doubling of this most inefficient 26 km section of the Railway Line from Castlerock to Kulem passing through a very difficult terrain and also through the National Park and Wildlife Sanctuaries in the States of Goa and Karnataka :

i) The quantum and nature of goods traffic from and to Karnataka via Murmagoa Port through the existing railway line between Goa and Karnataka

ii) The quantum of goods traffic to and from Andhra Pradesh / Telangana via Murmagoa Port through the existing line between Goa and Karnataka

iii) The quantum of goods traffic to and from Tamilnadu via Murmagoa Port through the existing single line between Goa and Karnataka

iv) Average number of goods trains passing daily through this railway line from Murmagao Port via Castlerock.

v) Average number of bogies in each rake of the goods trains during a given year.

vi) Number of passenger trains moving daily to and from Tinaighat to Murmagoa / Vasco.

vii) The maximum speed at which the train can move along the existing rail line on either direction.

viii) The quantity of goods traffic by rail to and from Karnataka through Krishnapatnam Port in Andhra Pradesh and New Mangalore Port in Karnataka.

ix) Movement of goods traffic between South Western Railway and Konkan Railway.

15. In response the Deputy General Manager, South Western Railways *vide* letter dated 17.2.2021 submitted the following information to the CEC :

i) Quantity and year-wise break-up of Goods Traffic from and to Karnataka via Murmagoa Port through the existing Railway Line between Goa and Karnataka (in rakes)

Year	From Karnataka to Goa		From Goa to Karnataka		Nature of Goods
	Rake (Load +Empty)	**Break up of Goods (Loads)**	**Rake (Load +Empty)**	**Break up of Goods (Loads)**	
2013-2014	485+1634	Steel -377 Stone – 108	2119+0	Coal – 2119	COAL, LIME STONE, STEEL, BAUXITE, GRANITE, IRON ORE, GYPSUM
2014-2015	575+1858	Steel -499 Stone – 81	2403+0	Coal - 2352 Lime Stone - 30 Iron Ore – 21	
2015-2016	319+2780	Steel -233 Stone – 86	3099+0	Coal - 2976 Lime Stone -115 Iron Ore -08	
2016-2017	626+2641	Steel - 540 Stone - 86	3267+0	Coal - 3105 Lime Stone -159 Gypsum – 03	
2017-2018	519+2316	Steel - 475 Stone - 44	2835+0	Coal - 2623 Lime Stone - 210 Gypsum – 02	
2018-2019	427+1989	Steel -388 Stone – 39	2416+0	Coal - 1861 Lime Stone - 238 Dolomite -01 Gypsum - 02 Iron Ore – 314	
2019-2020	407+2092	Steel -364 Stone – 43	2499+0	Coal - 2226 Lime Stone – 273	
2020-2021 (up to Dec.)	429+1390	Steel -354 Stone - 27 Iron Ore-48	1819+0	Coal - 1635 Lime Stone – 184	

ii) Quantity and year-wise break-up of goods traffic by Rail to and from Karnataka through Krishnapatnam Port in Andhra Pradesh.

Year	Traffic from Krishnapatnam Port to Karnataka		Traffic to Krishnapatnam Port From Karnataka	
	Rake (Load +Empty)	**Break up of Goods (Loads)**	**Rake (Load +Empty)**	**Break up of Goods (Loads)**
2013-2014	NA		NA	
2014-2015	NA		NA	
2015-2016	NA		NA	
2016-2017	1417+18	Coal - 921 Container -84 Dolomite - 16 Fertiliser - 37 Iron Ore - 122 Lime Stone 237	199+0	Container - 135 Steel - 32 Granite - 32
2017-2018	1505+21	Coal - 971 Container -96 Dolomite - 18 Fertiliser - 34 Iron Ore - 123 Lime Stone - 263	207+0	Container - 122 Steel - 28 Granite - 57
2018-2019	3552+08	Coal - 1951 Container -61 Fertiliser - 49 Iron Ore - 1325 Lime Stone - 166	211+0	Container - 115 Steel - 39 Granite - 53 Granulated Slag - 04
2019-2020	1651+06	Coal - 1127 Container -57 Dolomite - 35 Fertiliser - 56 Lime Stone – 376	136+0	Container - 98 Granite - 38
2020-2021 (up to Dec.)	648+17	Coal - 491 Container -43 Dolomite - 06 Fertiliser - 49 Lime Stone -59	209+0	Container - 61 Steel - 77 Granite - 38 Granualted Slag- 01 Maize - 30 Sugar- 2

16. On analysing the details submitted by the South Western railways it is seen that since the proposed new line to be laid will be parallel to the existing line it will be naturally following the same existing gradient and will also be subjected to similar existing severe restrictions as the first line on the movement of trains up and down the Ghat. The second line therefore can increase the efficiency in the Ghat Section only to the extent of availability of an additional line and is not likely to add either to the turn-around time of each train or loco or to the speed of the train. Further the movement of goods traffic in this Section presently requires five engines, 3 engines in the front end pulling the train and 2 engines in the rear end to push the train up. The same arrangement and mechanism will need to be repeated in the proposed new line also thereby knowingly, there being no alternative, ensuring that this section of the new proposed second rail track passing through the Wildlife Sanctuary and the National park will continue to be one of the most inefficient railway track.

17. It is seen from the data for the year 2013-2014 to 2020-21 furnished by the South Western Railways that there is an unidirectional movement of traffic from Murmagoa Port in the State of Goa and Krishnapatnam Port in the State of Andhra Pradesh to Hospet / Bellary regions in Karnataka. As regards

the movement of traffic in the reverse direction from the hinter land in Karnataka to Murmagoa Port in the State of Goa it was observed that more than 80% of the rakes are returning empty. Similarly, the number of rakes being moved to Krishnapatnam Port is a fraction of the number of rakes moving from Krishnapatnam Port to Karnataka. Further coal from Goa and Krishnapatnam Ports forms about 92% and 62 % respectively of the goods traffic movement to the hinterland in Karnataka. During the period under analysis in the year 2016-17 the maximum number of rakes (3267) have moved from Goa to Karnataka through this route and the percentage of loaded rakes that moved from Karnataka to Goa varied from 10-29% to 23.58% of the total number of rakes moving from Goa to Karnataka. In fact in the year 2016-17 only 626 loaded rakes have moved from Karnataka to Goa and remaining 2641 rakes have returned empty to Goa.

18. From the current level of goods traffic movement it can be inferred that on an average not even 20% of the existing capacity of the single Railway line is being used by the hinterland in Karnataka for transport /export of goods to Murmagoa Port in Goa. Further, on an average about 92% of goods being transported from Goa to Karnataka through this line is coal. The Murmagoa Port Authorities during the site visit

of CEC as also the Railways in their response have confirmed to CEC that the recently revised policy of Government of India does not support import of coal and the new policy encourages use of indigenously mined coal. The export of iron ore from Karnataka as a policy is discouraged. As the data suggest, assuming 3267 number of rakes transported during 2016-17 is the maximum capacity of the single line, currently only 81.63% of the capacity is being utilised for movement of goods from Goa to Karnataka and 14.68% capacity is being utilised for movement of goods from Karnataka to Goa. The change in policy combined with empty rakes reaching Goa from Karnataka only goes to confirm the huge existing capacity available in the present single track itself for transport of goods from Karnataka to Murmagoa Port and back.

19. Murmagoa Port and the State of Goa are well connected by the Konkan Railway and good synergy exists between South Western Railway and Konkan Railway in terms of the movement of goods between these two railways. The hinter land in Karnataka is also well connected to other Ports in East Coast as well as Mangalore Port in West Coast. Copies of the letters dated 1.2.2021 and 17.2.2021 received from the South Western Railway giving details of goods traffic is enclosed as **Annexure R- 4 (Colly.)** to this Report.

20. Further, in response to the request of the CEC on the projected goods traffic for the next ten years the southern railway vide their letter dt. 07/08.04.2021 have given the information relating to the past eight years (2013-2014-2020-2021) and projected traffic for the next ten years (2021-22 to 2030-31). It is of interest to note that while the total goods traffic from Goa to Karnataka is given as 708 rakes for the years 2020-21 this figure goes up sharply to 3850 rakes in the year 2021-22 and which is further projected to rise to 5600 rakes during 2030-31. Similarly the actual goods traffic of 2751 rakes from Goa to Karnataka and which includes 2220 rakes of coal increases sharply to 3640 rakes which includes 2400 rakes of coal and which is projected to rise further to 5500 rakes during 2030-2031. These projected traffic figures are not backed by any supporting data. It has also not been explained as to what these projected traffic figures will actually look like during the construction phase of minimum 4 to 5 years (2021-22 to 2026-27). If the projected traffic is an actual reflection of the market demand in that case the additional goods traffic projected should be using a port other than the Murmugoa port during the construction phase. While it has been separately stated that the coal import is being discouraged as a policy of Government of India, however in the projected coal traffic statement no such indication is visible. The actual coal traffic

during 2020-21 was 2220 rakes and is projected at 2000 rakes during 2030-31. Most of the projected goods traffic between Karnataka and Goa continues to be empty rakes. A copy of the letter dated 07/08-04-2021 from South Western Railway is enclosed as **ANNEXURE R- 5** to this Report.

OBSERVATIONS OF NATIONAL TIGER CONSERVATION AUTHORITY (NTCA) UNDER SECTION 38 (O) OF WILD LIFE (PROTECTION) ACT, 1972

21. The NTCA has prepared a site appraisal report regarding diversion of 10.45 ha (9.57 ha. in Dandeli Wildlife Sanctuary (DWS) and 0.88 ha in Haliyal Division) for doubling the railway track between Tinaighat-Castlerock-Caranzol falling in Kali Tiger Reserve (KTR). This Tiger Reserve comprises of two important protected areas of the region namely Dandeli Wildlife Sanctuary (DWS) and Anshi National Park (ANP) which are contiguous to one another. The area of KTR is 1101.51 sq km and is bounded by protected areas of Bhimgad Wildlife Sanctuary (BWS), Bhagawan Mahaveer Wildlife Sanctuary (BMWS) and Molem National Park (MNP) and wildlife rich regions of Supa backwaters and forests of Tinaighat Range of Haliyal Division. The forest area of Castlerock Range holds a sizeable population of tigers (25 in 2020) and doubling of the

railway track is to be undertaken through this range. It is also an important Tiger Corridor in Central Western Ghats connecting the tiger habitats in Karnataka, Goa and Southern Maharashtra. The Camera Trap records show that tigers from Bhadra Tiger Reserve and Kali Tiger Reserve (KTR) and Sahyadri Tiger Reserve (STR) use this corridor actively for dispersal.

22. Kulem in Goa is located at 69 meter above MSL (Mean Sea Level) whereas Castlerock is at an elevation of 580 meter above MSL which is located at a distance of about 26 kms from Kulem. This difference in elevation explains the steep gradient of 1:37 of the existing single line railway track between Kulem and Castlerock.

23. NTCA has observed that the Final Railway Alignment Report acknowledges that topography with high hills and steep gorges has been a major problem for construction of as many as 81 bridges and 20 tunnels. This Report also mentions that for undertaking construction activities of this scale required clearly marked area for dumping materials, parking of equipment and camping. The proposed project area is inaccessible with road available only at Castlerock and Kulem. The three intermediate railway stations at Caranzol,

Dudhsagar and Sonalim can be approached only through trains with no approach roads. Consequently, transportation of men, material and equipment to the project site is a bigger challenge than the topography. The Final Railway Alignment Report also lists out the following specific and unique constraints in terms of this project :

(a) **Long rainy season**: In the project area, the rainy season lasts from July to November leaving only 7 working months from December to June. Therefore the estimated 48 months (4 years) of the project period as given in the project documents will spread over to a period of about seven years.

(b) **Disposal of excavated earth from cutting and tunnel construction**: The existing track has steep hills on the left side and deep gorges/valley to the right side. With the proposed track being aligned to the left of existing track there will be an earth work to the tune of 17.59 lakh cubic meter from excavation and tunneling where as the filling would be 9.49 lakh cubit meter. Out of 17.59 lakh cubic meter an estimated 4.8 lakh cubic meter will be used

for filling purpose and the remaining 13 lakh cubic meter will be transported out of Castlerock-Kulem section.

(c) **Need for special measures**: Because of topographical and access related problems, special measures are required to be taken during construction. Though tunnels are of shorter lengths yet construction cannot be accomplished easily. Special techniques and improvisation of methods is required for construction of bridges over deep gorges which poses huge challenges. Even the minor bridge construction would involve transportation of precast boxes to the site.

TIGER DISTRIBUTION, DISPERSAL AND CONNECTIVITY RELATED OBSERVATIONS

24. The last four cycles of All India Tiger Estimation (AITE) exercise conducted from 2006-2018 and the tiger corridor atlas created by Wildlife Institute of India point to the fact that from 2006, the tiger occupancy in the region has expanded from Dandeli Wildlife Sanctuary (DWS) to Bhagwan Mahaveer Wildlife Sanctuary (BMWS) / Mollem National Park (MNP) and

forests of Ponda and Sanguem tehsils. The proposed project is located within the important tiger landscape 'Anshi-Dandeli-Sharavathi Valley population' comprising protected areas of Mollem-Netravati-Anshi-Dandeli, Sharavati Valley - Mookambika along with Reserved Forests of Haliyal and Yelapur. This complex has connections in the North with the forests of Goa and upto Sahyadri Tiger Reserve (STR) in Maharashtra. In the South this has connections with the Kudremukh-Bhadra complex. This connectivity about the movement of tigers between these complexes has been established through camera trap based evidence. The recently concluded phase 4 tiger monitoring exercise of Kali Tiger Reserve (KTR) has confirmed the movement of tigers between Anshi-Dandeli and Sahyadri Tiger Reserve. A total of 25 tigers (male 10, female 12 and unidentified 3) have been photo captured in KTR during 2020. A noteworthy finding of conservation significance is photo capturing of a tiger in Castle rock range which was earlier camera trapped in Sahyadri Tiger Reserve (STR) in Maharashtra.

25. Apex predators like tigers exist at low densities and require extensive forest areas for survival. Factors like habitat destruction, habitat fragmentation, isolation and poaching of prey base can push small population of tigers towards

extinction. This would require managing smaller populations in meta population framework while ensuring habitat connectivity between different populations so that there exists ample opportunity for individuals of populations for dispersal, establishing territory and reproduction.

FEASIBILITY OF MITIGATION MEASURES

26. A direct impact of the railways on wildlife is death of wild animals due to collision with the trains. Research studies highlight that wildlife mortality caused by trains can have impact on mammalian populations which are endangered having larger home ranges and that occur in fairly low density levels and those with low reproductive rate. Wherever the rail line bisect the habitats or migration routes of endangered mammals the mortality is found to be the highest. The victims of train collision are diverse with different body sizes from amphibians, reptiles, carnivores, ungulates to mega herbivores like elephants.

27. The existing single track railway line between Hubballi to Vasco (which includes proposed track doubling area also) has

in the recent years been responsible for death of several large mammals and carnivores not just in the Protected Area but also in the territorial forest areas. Plotting of wildlife death incidents due to train collisions shows that wild animals routinely get killed by trains both inside the protected areas like Dandeli Wildlife Sanctuary and also in the wildlife rich adjoining reserved forests of Haliyal forest division. With the proposed doubling of existing railway track and subsequent electrification of the line, it is feared that the wildlife mortality and habitat fragmentation may increase by many folds.

28. The tough terrain of the project area with steep mountain on one side and deep valley on the other side of the existing railway track makes the task of selecting conventional mitigation structures/measures challenging.

29. Commenting on the “Biodiversity and Environmental Assessment of proposed doubling of railway track between Kulem and Castlerock in Goa-Karnataka” Report (prepared by Indian Institute of Science Bangalore), NTCA has stated that this report lacks in critical assessment particularly of project impacts and merely reiterates project proponents views. In fact recommendations and mitigation measures are fairly

generic in nature and have been prescribed without taking into account the ground realties. Certain suggestions like joint patrolling of forest and railway staff in critical areas for monitoring wildlife presence and seeking information about animal movement from local people (in an area where there are hardly any human settlements near railway tracks) are impractical and theoretical in nature.

30. NTCA has suggested that it would be appropriate to have an independent and detailed assessment of the cumulative impact of the project for the entire stretch from Tinaighat to Kulem an extent of about 170 plus hectare of eco class 1 Western Ghats forest land which includes forest land and land available with Railways. The Western Ghats have lost about 33000 sq km (30-40%) of its forest cover in the last 100 years and a significant proportion of this forest loss has resulted from linear intrusions like power transmission lines, highways and from construction of dams.

31. The vegetation cover of the land under the control of South Western Railways beyond the railway track and embankment is very much similar to the forest land of the sanctuary in terms of species composition and biodiversity values. For Castlerock-Kulem section, 113.857 ha is proposed

for diversion and this area also appears beyond the area under Railways. Along the existing single line alignment there have been instances of landslides. As the proposed project involves significant amount of cutting and filling in the steep terrain, landslides may become frequent all along the project area.

32. The only justification given by the user agency for this rail doubling project is due to industrial growth in Karnataka and growth of tourism and that the existing single railway line capacity is saturated. But there are no material facts and figures to support the claim of growth of industry and tourism and saturation of the existing single line.

33. While concluding NTCA has recommended –

a) The railway doubling project from Tinaighat-Castlerock-Caranzol and Castlerock-Kulem be considered in toto as a single project and the cumulative biodiversity and environmental impacts of the project be assessed critically factoring in the economic viability and short and long term benefit to the region.

b) A detailed study on the feasibility of mitigation measures in the difficult terrain may be conducted by

involving Wildlife Institute of India, Dehradun. The study may cover the entire 25 km stretch of the project area from Castlerock in Karnataka to Kulem in Goa.

c) Considering the routine death of wild animals particularly of large herbivores like Indian Gaur, Indian Elephant due to train collisions in the territorial areas of Haliyal and Belgaum forests the study of WII need to address the impact on wildlife in this connected landscape and prescribe suitable mitigation measures over the entire stretch of the line through this wildlife rich forests of the Western Ghats.

d) Given the potential of this project to damage the integrity of the last remaining wilderness of Western Ghats it may not be taken in isolation from the widening of NH-4A that is being executed within 5-6 kms north of this project site with the same professed goal of quick, increased capacity for movement of men and material and development. The NH-4A widening project is in advanced stages of completion in certain stretches and about to start in certain stretches. It would be in the interest of sustainable development that a cumulative cost benefit analysis of these two projects may be commissioned. Such studies will facilitate economic development of the

region while considering the ecological environmental and economic concerns. A copy of the Site Appraisal Report of NTCA is enclosed as **ANNEXURE R-6** to this Report.

OBSERVATIONS AND RECOMMENDATIONS

34. i) The BMWLS, notified in 1967, covers an area of 240 sq kms within the Dharbandora and Sanguem taluks in Goa and is a part of the contiguous PA network in Goa. In 1978 a part of the sanctuary measuring around 107 sq km was notified as the Mollem National Park. The BMWLS and NP is contiguous with the Kali Tiger Reserve and Anshi Dandeli Wildlife Sanctuary in Karnataka forming part of an important tiger corridor and contiguous wildlife habitat system within the Western Ghats. The rich and diverse flora and fauna highlight the ecological importance of the PA which serves as a host for numerous endemic species including among others mammals, reptiles and birds and is also the source of origin of numerous rivers and rivulets.

ii) The area of forests involved in doubling of rail line between Tinaighat and Vasco in the State of Karnataka

is 10.45 Ha and in the State of Goa is 138.0916 Ha (136.4827 Government forests plus 1.6089 private forests). The forest land has thick vegetation with canopy density ranging between 0.60 to 0.80. Felling more than 12000 trees will create edge effect by altering plant community and erode plant diversity at site. The gap will promote weeds and exotic species that outcompete native plants and alter animals use of habitat. A Statement giving the details of forest area involved in the States of Goa and Karnataka is enclosed as **ANNEXURE R-7** to this Report.

iii) The actual loss of Wildlife Habitat will be much larger than what has been projected in the proposal for Forest and Wildlife Clearance because these proposals have not taken into account for the forest land of similar ecological significance and which will actually be required for parking heavy machinery and the area required for road connectivity and for setting up of two stone crusher units as proposed by RVNL and for dumping of construction material;

iv) the construction of the second line is expected to generate 17,59,000 cubic metre of muck and the handling/disposal of the same will have serious

ecological consequences in a high rainfall project site during construction phase;

v) the widening of the right of way (ROW) and resultant increase in the number of trains on doubling of track and enhanced speed along level terrain within the Wildlife habitat will make animal crossing much more risky and dangerous;

vi) the territorial integrity of the largest network of the Protected area in the Western Ghats landscape is going to be permanently further dissected and will have serious consequences on the dispersal of long range Wildlife across the landscape;

vii) the cuttings of hills for laying the second line involving construction of 23 tunnels will accentuate further landslides in high rainfall areas like that of Western Ghats;

viii) the larger opened up canopy in closed canopy forest landscape with metals, steel rails and concrete slabs laid on the track will increase the ambient air temperature and alter the micro climate within the evergreen forest which will have irreversible consequences on species composition in the forest community and the quality of the Wildlife Habitat;

ix) larger opening in canopy in closed canopy forest landscape will result in discontinuity of habitat of arboreal animals which may now force them to descend down the trees to cross the rail line highly risking their life ;

x) increased numbers of trains carrying goods such as coal and ore associated with increased pollution of an ecologically fragile and biodiversity rich forest and which in turn will impair the species diversity in a stable forest landscapes one of the eight biodiversity hotspots of the world;

xi) the tough terrain of the project area with steep mountains on one side and deep valleys on the other side of the existing rail track make the proposed mitigation measures ineffective;

xii) permissibility of operation of the crusher units within the protected Area has not been considered;

xiii) part of the volume of cuttings and muck involved in this project is likely to enter the fresh water aquatic ecosystem of streams and rivers crossing the rail track during rainy season and seriously impair the aquatic ecosystem including aquatic flora and fauna; and

xiv) fresh clearings in the wet evergreen forests will give way for invasive species of weeds which out compete native plants, which will irreversibly alter the species composition of the entire bio diversity rich forest landscape.

35. The Standing Committee of National Board for Wildlife (SC NBWL) in its 56th meeting held on 17.12.2019 has recommended the railway line doubling project proposal in respect of the Goa portion but did not deem it necessary to obtain any specific recommendation on mitigation measures from the Wildlife Institute of India, Dehra Dun. However, later in its 59th meeting held on 5th October 2020, in respect of the same railway line doubling project proposal but falling in Karnataka portion between Tinaighat – Castlerock – Caronzol SC NBWL deemed it necessary to obtain specific recommendation of the Wildlife Institute of India with regard to the mitigation measures to be undertaken before making its recommendation. Since the Forest and Wildlife in the project area in both the States of Goa and Karnataka where the project is being implemented are identical and contiguous and form part of the same Western Ghat landscape and since the Wildlife in this landscape move freely without any reference to the State boundaries which divide their habitat, examination of

the proposals by the Standing Committee in piece meal and application of different standards for different stretches of the same wildlife habitat is not understood.

36. It is also observed that the Goa portion of the proposal was recommended in the 56th Meeting of the Standing Committee and in which meeting Dr. Sukumar of Indian Institute of Science and who is also Member, SC NBWL and who was involved in the preparation of the Biodiversity Environmental Assessment Report had participated whereas when the Karnataka portion of the project was considered by the SC NBWL in its 60th meeting held on 5.1.2021, Dr. Sukumar recused himself from the meeting of Standing Committee of National Board of Wildlife on the ground that he had conducted studies on Biodiversity Assessment in the Tinaighat area. A copy of the minutes of the 60th Meeting of SC NBWL held on 5.1.2021 is enclosed as **ANNEXURE R-8** to this Report.

37. The camera trap photographs captured on either side of the railway track and the recent reported killing of four tigers in Madaei Wildlife Sanctuary in the State of Goa goes to establish that the land scape through which the railway line passes is an important Tiger Corridor connecting the three

States of Goa, Karnataka and Maharashtra. In this context, it is important to note that the recommendation of the State Wildlife Board to declare BMWL as Tiger Reserve is still pending consideration of the State. In these circumstances SC NBWL is mandated to seek recommendations of NTCA under Section 38 (0) of Wild Life (Protection Act), 1972 before making any recommendations in respect of projects being implemented along the Tiger Corridors. Here it has to be noted that the SC NBWL has deemed it necessary to obtain the report of NTCA in respect of Karnataka part of the rail line doubling project but inexplicably has not deemed it necessary to obtain the recommendation of the NTCA in respect of rail line between Castlerock–Kulem passing through Goa State. It is also rather unusual for the SC NBWL to have examined the phase II of railway line doubling project from Tiniaghat in Karnataka to Vasco in Goa as two separate projects and in the process given its approval for Goa portion on 17th December, 2019 and for Karnataka portion only on 05.01.2021 after a period of more than one year. During this entire process they have by passed the guidelines issued by the MoEF&CC vide letter F.No. 6-10/2011WL dated 19/12/2012.

Few photographs taken during the site visit of CEC which are illustrative of the nature of the pristine ecosystem of the Western Ghats around Castlerock and some of the

representative photos collected from the government agencies and others showing the animals involved in accidents along the railway track are enclosed as **ANNEXURE-R-9 (Colly.)** to this Report.

38. RVNL in the submission made before the CEC stated that the final Notification of the National Park may exclude the railway land from its purview since no concurrence of the Central Government was taken before publishing the preliminary notification. In response it may be stated that the Wildlife recognises no such limitations of notification within their habitat. As such the railway track deep inside the forest and that too in an ecologically sensitive area is very much part of their habitat irrespective of whether included or excluded from the notification.

39. CEC during the site visit has visited the entire section passing through the Protected areas and observed that an over pass has been recommended by the Wildlife Institute, Dehradun at km23/450 where the railway line is passing on a 6 m high embankment. An overpass at this location is practically impossible.

40. The alignment of Tiniaghat – Vasco section of railway track passing through the Western Ghats was selected and constructed during the 1890's at a time when Goa was not connected by any other rail network to rest of India. Considering the terrain of Goa, construction of the coastal railway line in the 1890's was a huge technological challenge. In the present day context while planning for extensive nationwide network of rail lines any plan for doubling the existing most inefficient rail track between Castlerock and Kulem with a parallel equally inefficient track again with a steep 1:37 gradient along the existing alignment is not understood. We have earlier at Para 13 (vii) {a to g} of this Report seen all the serious drawbacks of the existing inefficient track that have been listed by RVNL. The specific details in this regard are not being spelt out here again to avoid repetition. As a matter of fact the doubling of the existing track between Castlerock and Kulem with all the severe restrictions and limitations of the existing track which the new doubling track will also face is not going to remove the bottleneck in the railway connectivity between Karnataka and Goa.

41. RVNL in their response with regard to the justification for doubling of line, have stated that the project through the Kulem-Castlerock section is not only for the transportation of

iron ore / coal but is also for the transportation of various other goods to and from Murmagoa Port apart from the long standing demand for passenger trains. The carriage of coal when compared to the past has declined from 12.27 million tonnes in 2015-2016 to 9.57 million tonnes in 2019-2020. RVNL, on examination of the alternative routes to different ports, has submitted the following table:

S.No.	**Location of Port**	**Distance from Bellary**	**Transportation charges per rake from Bellary**	**No. of rakes being dealt from Bellary**
1	Vasco Port	400 km	Rs. 38 lakhs per rake	10 Rakes per day
2	Krishnapatnam Port	490 km	Rs. 44 lakhs per rake	12 Rakes per day
3	Mangalore Port	425 km	Rs. 41 lakhs per rake	NIL
4	Chennai Port	460 km	Rs. 44 lakhs per rake	3 Rakes per day

42. It is seen from the table above that the distance to other Ports including those located in East coast from the hub of iron ore and steel industries in Bellary area is not substantial. In the event of increased demand for transport by rail then in such a scenario the products can be transported to Ports other than Murmagao. It cannot be overlooked that the capacity addition

of railway line to Ports in East coast does not involve the destruction of the fragile eco-system as in the case of railway line passing through the ecologically sensitive Western Ghats. The requirement of import export connectivity to ports of northern Karnataka can therefore be best achieved by developing better rail connectivity to Krishnapatnam port. CEC has been informed that the railway line distance between Krishnapatnam and Bellary has been cut short by 72 Kms after the commissioning of Obulavaripalli – Venkatachalam – Krishnapatnam line. The distance from Krishnapatnam to Bellary Junction now is 415.57 Km whereas the distance from Murmuagoa to Bellary Junction is 445.03 Km. This indicates that there is a strong case for use of Ports in East Coast even if it involves development of additional rail line as and when need for capacity addition to rail transport arises in future.

43. RVNL has stated that the Railway line route to Chennai and Krishnapatnam Port are over saturated and use of ports in East Coast is not plausible without first laying an additional track. In the circumstances instead of first laying an additional track to East-coast Ministry of Railways has proposed of connectivity to Murmagao by laying an additional most inefficient track passing through an ecologically sensitive Western Ghats. It is also important to note that the additional

rail tracks to Krishnapatnam Port and Chennai, as and when constructed will not be passing through biodiversity rich fragile eco-system like that of Western Ghat and will also not be like existing inefficient track with gradient of 1:37 with all its serious drawbacks seen earlier. The trains to Krishnapatnam Port and Chennai will also be able to run at speeds averaging 100 Km per hour instead of 30-40 Km per hour and will not be requiring 5 engines to pull it in one direction. Also on application of ecological cost to the movement of rakes to Murmagoa it will be more advantageous to move the goods to ports located in East Coast. It is also important to state that the final commercial cost of transport to any coast will depend on the final global destination to which or from which the consignment is to be delivered / imported and the cost between the factory premises and the Port is not the deciding factor.

44. Even otherwise, keeping in view the operationlisation of Konkan Railway, the proposed 4-lanning of NH-4A and augmentation of air connectivity to Goa by having a new airport, doubling the section of the most inefficient rail line between Castlerock – Goa cannot be justified from operational or economic or ecological angle.

45. Keeping in view the facts as highlighted above and considering that

i) the doubling of the existing rail line will not have any positive impact on the gradient and curvature of the new line and it will operate at the same inefficient level as the existing line and will be operating with all the existing severe limitations on running of trains ‘Up the Ghat’ and ‘Down the Ghat’ as that of the existing line (Ref para 13);

ii) railway line was laid in 1890s when there was no other rail connectivity available to Goa and at present the Konkan railway line gives excellent connectivity to Northern and Southern parts of India.

iii) the Murmagoa Port Trust authorities as well as the project proponents have submitted that consequent to changes in government policy to discourage import of coal there will be reduction in the coal import which currently forms more than 90% of goods traffic from Murmagoa Port;

iv) the estimate of projected increase in traffic from Karnataka to Goa furnished by the railways is not based on facts and is without any sound reasoning

and as statistics shows mostly includes empty rakes returning to Goa and that despite the change in policy on import of coal the same has not been reflected in the projected traffic from Goa to Karnataka;

v) the current movement of goods to Murmagoa Port constitutes only about 20% of the rakes going out from Goa and which leaves a huge unutilised capacity in the existing single line itself;

vi) there are alternative ports like Krishnapatnam in east coast available with better rail connectivity for transport of goods to and from industrial belt of northern Karnataka and the capacity of the same is yet to be fully utilised;

vii) the opening of the forest cover in the ecologically sensitive Western Ghats along the existing line is likely to invite light demanding invasive weeds like Mikania species which colonise fast in the open area and spread to the nearby forest canopy and destroy the natural forest;

viii) the increased number of trains and wider openings through the ecologically sensitive Western Ghats for laying the track will further fragment the habitat

and will make the movement of wildlife including arboreal animals across the railway line much more difficult and dangerous and is bound to result in high casualties amongst the wildlife;

ix) the railway line cuts across the most important animal corridor in the Western Ghat landscape between Karnataka and Maharashtra through the State of Goa and will be a serious impediment for movement of long ranging animals like tiger and elephant.

x) the approval by NBWL to go ahead with the project has been granted in respect of Goa Portion without first obtaining the advice of NTCA as statutorily required under section 38 (O) of the Wild Life (Protection) Act, 1972;

xi) there is a gross under estimation of the requirement of virgin forest land for implementation of the project in as much as the project implementation will require additional land for road connectivity, temporary dumping of the excavated earth/blasted stone and parking of heavy machinery and as such during the stage of implementation of the project much more than

120.875 Ha of estimated forest land is likely to be destroyed; and

xii) the connectivity between Goa and Karnataka is being strengthened/improved by way of 4 laning of NH-4A along the same route and by development of new airport

CEC does not find any justification for undertaking a project of this nature which will destroy the fragile Eco-system of the Western Ghats which is an internationally recognised Biodiversity hot spot and also one of the most important wildlife corridor of the Country. Moreover this doubling project will only be marginally enhancing the capacity of the most inefficient section of the Railway Network passing through ecologically sensitive and bio-diversity rich Tiger Reserve, Two Wildlife Sanctuaries and a National Park. In these circumstances it is recommended for the consideration of this Hon'ble Court to revoke the permission granted by the Standing Committee of National Board for Wildlife (SC NBWL) for doubling of the railway track passing through the ecologically sensitive Western Ghats from Tinaighat-Castlerock in Karnataka to Kulem in Goa involving 120.875 ha. of land (Protected Area 113.857 ha. and Non-Protected Area Reserved Forest 7.108

ha.) from the Bhagwan Mahaveer Wildlife Sanctuary (BMWLS) in the State of Goa and 10.45 ha. (9.57 ha. Dandeli Wildlife Sanctuary and 0.88 ha. in Haliyal Forest Division) in the State of Karnataka vide Minutes of the 56th and 60th Meeting of the SC NBWL in violation of the guidelines issued by the MoEF&CC under the Wild Life (Protection) Act, 1972 and in violation of Hon'ble Supreme Court order 5.10.2015 and without considering the justification for the doubling of the most inefficient railway line with 1:37 gradient and with severe restrictions on movement of trains and without considering the availability of alternative railway routes as well as alternative modes of transport.

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SECTION B

GOA-TAMNAR TRANSMISSION PROJECT (GTTPL) FOR LAYING OF ELECTRIC LINES UNDER THE TRANSMISSION SCHEME "ADDITIONAL 400 Kv FEED TO GOA AND ADDITIONAL SYSTEM FOR POWER EVACUATION FROM GENERATION PROJECTS POOLED AT RAIGARH (TAMNAR POOL)".

46. The Goa-Tamnar Transmission Project (GTTP) is part of National Grid Development and is proposed to be implemented through the Special Purpose Vehicle Goa-Tamnar Transmission Project Private Limited, (GTTPL), New Delhi (hereinafter referred to as GTTPL). The Project involves the laying of Additional 400 Kv feed to Goa and Additional System for Power Evacuation from Generation Projects pooled at Raigarh (Tamnar) Pool so as to supply the projected power requirement of Goa with reliability. Presently demand of Goa is mainly catered through Mapusa 3X315 Double Circuit (D/c) line 400/220 Kv substation which gets feed from Kolhapur 400 Kv substation through a 400 Kv D/c line. Goa system is also connected with Maharashtra and Karnataka through 220 Kv lines.

47. The 38th Meeting of Standing Committee on Power System Planning in Western Region held on 17.07.2015 at New Delhi discussed the provision for a new 400 Kv sub-station in Goa at Xeldem along with its inter connections with the Inter-State Transmission System and agreed to the same. The 39th Meeting of Standing Committee on Power System Planning in Western Region held on 30.11.2015 considered and deliberated on several alternatives all of which involved crossing of Western Ghats (forest area). The following transmission system was discussed and recommended in the 39th and 40th SCM of Western Region held on 30.11.2015 and 01.06.2016 respectively and 39th and 40th SCM of Southern Region held on 28-29.12.2015 and 19.11.2016 respectively:

i. LILO of one ckt of Narendra (existing) – Narendra (New) 400 Kv D/c (Quadline) at Xeldem. Approximately 10 Km length passes through Dandeli Wildlife Sanctuary;
ii. Xeldem-Mapusa 400 Kv D/c (Quadline);
iii. Xeldem (New) – Xeldem (existing) 220 Kv HT LS D/c line; and
iv. Dharamjayagarh Pool Sections “B” – Raigarh (Tamnar) pool 765 Kv D/c line.

The Scheme has been recommended for implementation in the 36th Meeting of the Empowered Committee on Transmission held on 26.07.2016.

48. The GTTP is part of the 400 Kv D/C Narendra (Karnataka) – Xeldem (Goa) Transmission Line which starts at Narendra Village in Dharwad District, Karnataka and Terminates at Xeldem in Goa. The overhead lines covered under the GTTP will pass through over, around and between various villages, towns and cities as listed in Gazette Notification dated 28.11.2018 of Ministry of Power, Central Electricity Authority (Annexure R-6 of Affidavit dated 02.08.2020 filed by Respondent M/s Goa-Tamnar Transmission Project Private Limited). The estimated cost of the Project is Rs.58.2 lakhs. A copy of the Notification dated 28.11.2018 of the Ministry of Power is enclosed as **ANNEXURE-R-10** to this Report.

49. The Respondent GTTPL was granted approval under section 68 (1) of the Electricity Act, 2003 for the Transmission Project. The Central Electricity Regulatory Commission granted GTTPL the Transmission licence for the Project on Build, Own, Operate and Maintain (BOOM) basis. Thereafter on 28.11.2018 the GTTPL was granted authorization by the

Central Electricity Authority (CEA) under section 164 of the Electricity Act, 2003 for laying of electric lines under the Project. The Project, apart from enhancing the current power transmission capacity and reliability will also ensure power security to the State of Goa with provision for future expansion to meet the growing energy needs and projected power requirements of the State. Since Goa is already well connected with the Western Region grid at 400 Kv (through Kolhapur – Mapusa 400 Kv D/c lines and 220 Kv lines) and since Goa has got share of 100 MW in the Ramagundam STPS which is located in Southern Region it was found advantageous to have the second 400 Kv connection from Southern Region side.

50. According to the project proponents (GTTPL) out of the total 93.931 km length of the Transmission Project 16.331 kms involving 75.122 ha of land is in the State of Goa. Out of 16 kms, a stretch of 2.51 km falls in Bhagwan Mahaveer Wildlife Sanctuary (BMWLS). Further out of 75.122 ha of land an extent of 48.3 ha is forest land and remaining 26.822 ha is non-forest land. Out of 48.3 ha of forest land having 15772 trees an extent of 11.54 ha falls in Protected Area BMWLS, 19.61 ha is Reserve Forest, 2.38ha is unclassified forest and14.77 ha is private forest. In the State of Goa there are a total of 41 transmission towers out of which 16 towers are in

Private Land, 6 towers are in BMWLS, 13 towers are in notified government forests and 6 towers are in private forests. The entire length of 16.331 km corridor in Goa State has been proposed along new alignment.

51. In addition in the State of Karnataka a total length of 77.67 km of the Transmission line is to be drawn under this project. Out of 77.67 kms a stretch of 6.64 km falls in Dandeli Wildlife Sanctuary (DWLS), 29.272 Kms. passes through Government Forest and 2.614 kms. passes through Private / Deemed Forests (total 38.497 kms). Total extent of forest land involved along this 38.497 kms. is 177.09 ha. Out of 177.091 ha. of forest land an extent of 30.412 ha falls in Protected Area of DWLS. 134.655 ha is government forest land and 12.024 ha is Private forest / deemed forest land. An estimated 62289 trees are required to be felled in the 46m wide ROW along 38.497 km forest area in Karnataka State. The Karnataka Forest Department is yet to seek clearance under FC Act 1980 from MOEF&CC for diversion of forest land for this project of laying the 400 Kv D/c line passing through the State Forests. Similarly the State Wildlife Board and the Standing Committee of National Board for Wildlife is yet to make its recommendations under Wild Life (Protection) Act, 1972 in respect of the Karnataka portion of the proposal submitted by

GTTPL. A copy of the statement showing the division wise details of forest area and trees with number of towers is enclosed as **ANNEXURE R-11** to this Report.

52. The Transmission Project intends to lay over head cables with about 400 metres in span between two towers inside the BMWLS. The height of the towers inside the sanctuary will vary from 45 m (150 feet) to 54m (177 feet). The clearance between the ground and the sag portion of the 400Kv high voltage line prescribed under the Electricity Act is 29.44 feet.

53. Land measuring a maximum of 20 metres by 20 metres is required for the construction of foundation tower footing of each tower. Therefore a total of about 0.25 ha of land will be required for the construction of tower footing of all the towers. Since the felling will take place mainly at the location of tower footing and considering that maximum density of 35 to 40 trees will be cut at each of the tower locations where the towers are proposed to be located a total of about 250 trees will require to be felled for constructing the 6 towers in Goa. Further, to maintain the ground clearance about 1000 trees (revised from original 4146 trees) will be required to be cut. This includes

the 250 trees to be felled for tower footing. Since trees falling in the corridor of the transmission line mostly fall below transmission line they may be required to be trimmed or lopped from time to time and not felled since the height of the towers inside the BMWLS will vary from 45 meters (150 feet) to 54 meters (177 feet) and under the statute a minimum ground clearance of 29.49 feet is mandatory for 400 Kv transmission line. The transmission line when constructed will not be affecting the movement of wildlife. Also because of long span (400 meters) between two towers the natural regeneration will be allowed to come up after the stringing work on the towers is completed excepting in the 0.25 ha. area required for the 6 tower footings. The Transmission Project being an overhead transmission line does not bifurcate the forest into different parts except for arboreal animals. Respondent GTTPL has denied that a large number of trees have intentionally been excluded from enumeration so as to minimize perception of environmental damage. The transmission line projects are environmentally friendly and are excluded from environment impact assessment studies.

54. Biodiversity study is required when proposed diversion of protected area is above 50 ha. Since in the instant case only 11.54 ha falls in the Protected area there was no requirement

of conducting any Bio-Diversity Impact Assessment (BIA) and drawing up Biodiversity Management Plan (BMP) yet the Respondent GTTPS got the BIA and BMP studies conducted by an international agency Environmental Resource Management (ERM). This agency prepared the BIA Report and drew up BMP highlighting mitigation measures to be implemented by Respondent GTTPS so as to minimize the environmental impact. It was observed that the proposed Project did not have much of impact on the wildlife habitat and bio-diversity loss. The impact of the Transmission Project on the environment is temporary and minor. Further, changes, if any, in the land use during the construction period will be localised and recoverable. The Report of the ERM was duly submitted to the Wildlife Warden, North Goa and subsequently to the State Wildlife Board.

55. The proposed transmission line passes through North Goa Forest Division and Bhagwan Mahaveer Wildlife Sanctuary and forest and wildlife area involved is said to be the minimal and unavoidable.

56. According to Goa State Officials while finalising the route, Respondent GTTPL had also explored the possibility of

avoiding protected areas. However, no better corridor with minimum impact on wildlife could be found because on the one side there is the Mollem National Park while on the other side there is the Mhadei Wildlife Sanctuary. The present route was ultimately agreed upon and finalised after assessment of the three possible routes by the State Forest Department and after ensuring minimal impact on environment. The Statement showing the alternate routes examined by GTTPL is enclosed as **ANNEXURE R-12** to this Report.

57. At the meeting of State Board for Wildlife held on 2.12.2019 the State Board recommended the proposal relating to the Transmission Project to the National Board for Wildlife with the direction to the Respondent GTTPL to minimize and restrict cutting of trees within the protected area from the initially enumerated 4146 trees and 985 cane clumps to below 1000 trees in the entire 46 meter wide corridor of the transmission line and which was agreed to by the Respondent GTTPL. The State Board further directed the GTTPL to deposit 3% of the Project cost to the Goa State Forest Department for utilizing this money for eco-restoration, prey augmentation, reducing public dependence on forests and promoting traditional livelihood in and around the Protect area.

58. The Standing Committee of National Board for Wildlife (SC NBWL), at its meeting held on 07.04.2020, recommended the proposal in respect of Goa State subject to Respondent GTTPL complying with all the conditions imposed by the State Chief Wildlife Warden. The SC NBWL further recommended that the Respondent GTTPL should submit annual compliance certificate on the stipulated conditions to the State Chief Wildlife Warden who in turn shall submit an annual compliance certificate to the Government of India.

59. Under the Forest (Conservation) Act, 1980 approval of MoEF&CC will have to be taken for diversion of forest land for non-forest use before construction of transmission line commences in forest area. The Regional Empowered Committee of the Regional Office (SZ) of the MOEF&CC, Bangalore has examined the proposal for diversion of 48-30 ha. of forest land for construction of LILO of one CKF of Narendra (existing) to Narendra (New) 400 Kv D/C quad at Xeldem Transmission Line (North Division 36.76 ha. Wildlife & Eco Tourism (North) 11.54 ha.) in favour of M/s. Goa Tanmar Transmission Project Ltd. in its meeting held on 23.2.2021 and recommended that

"REC examined the proposal and heard the presentation made by the User Agency. REC noted that there is an already existing 110KV defunct line to Narendra and therefore desired that State Government should explore the possibility of alignment of the proposed 400 KV D/C line in the same corridor. REC also noted that the User Agency has also submitted a proposal for diversion of 177.091 ha. of forest land in Dharwad, Haliyal, Dandeli Wildlife (Kali Tiger Reserve) and Belagavi Divisions for laying of Goa-Tanmar 400 KV D/C Quad Transmission Line (LILO Project) in the State of Karnataka, which is under process at the State Government level for Forest and Wildlife Clearance. As per the guidelines issued under FC Act, any proposal for linear project such as roads, railway line, transmission line etc. needs to be processed in their entirety for comprehensive assessment of requirement of forest land and consequences if approval of any forest land is not granted. Therefore, REC decided to consider both the proposals together after receipt of proposal for Karnataka portion."

A copy of the minutes of the meeting of the REC, Bangalore held on 23.2.2021 is enclosed as **ANNEXURE R-13** to this Report.

60. However it is seen that the Regional Office of MOEF&CC vide letter dated 19.11.2020 has given concurrence for diversion of 69.41 ha. forest land in North Goa forest division for construction of 400 KV D/C Xeldem –Mapusa Transmission Line in favour of M/s. GTTPL. Also concurrence of MOEF&CC was issued vide letter dated 1.1.2021 for additional 28.24 ha. of forest land for construction of Xeldem to Xeldem (existing) 220 KV HTLS/C transmission line under North and South Goa Divisions in favour of M/s. GTTPL. It is to be noted that these two proposals for which concurrence was given by MOEF&CC are also part of the same project of Additional 400 KV feed to GOA approved by CEA. A copy each of the letter dated 19.11.2020 and 1.1.2021 of MoEF&CC, Regional Office, Bangalore is enclosed as **ANNEXURE R-14 (Colly.)** to this Report.

61. Further compensatory afforestation has to be undertaken to compensate for loss of forest cover because of diversion of forest land for the proposed Transmission Project. The Respondent shall bear the cost of raising and maintaining compensatory afforestation and / or penal compensatory afforestation.

OBSERVATION AND RECOMMENDATIONS

64. Additional 400 KV Feed to Goa has been approved vide notification dated 28.11.2018 by Central Electricity Authority with the following scope of work;

i. LILO of one cktof Narendra (existing) – Narendra (new) 400 Kv D/c quadline at Xeldem. Approxemately 10 km length passes through Dandeli Wildlife Sanctuary.
ii. Xeldem – Mapusa 400 Kv D/c quadline
iii. Xeldem (New) – Xeldem (existing) 220 Kv HTLS D/c line
iv. Dharamjaygarh Pool Section B – Raigarh (Tamnar) pool 765 Kv D/c line.

65. There is an inbuilt provision in the approved scheme to connect southern region (Sangod / Xeldem) with Northern Goa region (Mapusa) with a 400 Kv D/c quadline. This 400 Kv line has the capacity to carry 1200 MW of power from Mapusa to Sangod as claimed in the cost benefit analysis presented by the project proponents in the Forest Clearance proposal. Further distribution of power in the southern region are planned from Sangod 400 Kv and 220 Kv substation. A copy of the map of Goa state showing the spatial distribution of project elements is enclosed as **ANNEXURE R-15** of this Report.

66. It is seen from the minutes of the 39th meeting of the Standing committee on power system planning in Western region held on 30.11.2015 that while considering the option of additional feed to Goa through the Kolhapur (PG) – Mapusa – Xeldem (Sangod) 400 Kv D/c Quad Line without going for a new corridor from Narendra (existing) to Sangod / Xeldom the Chief Engineer, Goa Electricty Department (GED) in the said meeting stated that Goa is already well connected with the Western region Grid at 400 Kv D/c line and 220 Kv lines. It is desirable to have the second 400 Kv connectivity through southern side. Further, Goa has got share of 100 MW in the Ramagundan, STPS which is located in Southern Region. Therefore Narendra (existing) Xeldem 400 Kv D/c Quad Line may be agreed as second 400 Kv feed to Goa. He further stated that the existing Supa – Ponda 110 Kv D/c line at present is not in use and the line corridor could be released for implementation of Narendra (existing) - Xeldem 400 Kv D/c line in their territory state, if required.

67. It has also been stated in the Minutes that with the implementation of the planned WR-SR interconnections, the existing issue of limited ATC (Available Transmission Capacity) between WR-SR corridors may not be a limiting factor for export of power from WR to SR.

From the above the following is clear and becomes possible:

i) Flow of 1200 MW power from WR (Mapusa) to SR (Sangod / Xeldem) and vice versa.

ii) One of the consideration for approving the present Southern Region Corridor is that 100 MW power is also to be carried by the new 400 Kv line from Karnataka.

iii) In the event of 100 MW power from Ramagundam is carried by 400 Kv line the existing 220 Kv line between Ambevadi (Karnataka) and Ponda (Goa) will become defunct and the same line corridor is available for drawing 400 Kv line in which case the 220 Kv line has to be dismantled on commissioning of new 400 Kv corridor.

68. In the above context the following recordings in the Minutes of the 39th meeting of the Standing Committee on Power System Planning in Western Region held on 30.11.2015 is significant:

> "Narendra (existing) – Xeldem 400 Kv D/c line would pass through forest area of Western Ghats. In the past also during forest clearance process of Kaiga– Narendra

400 Kv D/c line a lot of resistance from various activists and NGO's was faced. The forest clearance was recommended by Karnataka Government in 2002 only after joint confirmation from Power Grid and CEA that no further transmission line shall be laid in the area. Therefore laying of Narendra (existing) – Xeldem 400 Kv D/c line may be resisted by activist / NGO's and obtaining forest clearance and actual implementation of the line may be delayed as in case of Mysore – Kozhikode – 400 Kv D/c line."

69. The Member, CEA has suggested that amongst the alternatives suggested, the alternative involving minimum forest clearance problems may be finalised as second 400 Kv feed to Goa.

70. The Committee was aware of the importance attached to forest clearances in the Western Ghat region. However it missed to examine the best alternative of replacement of the existing 220 Kv line with 400 Kv line, which is an existing line and is passing through the already cleared forest cover in the National Park and Wildlife Sanctuaries, to avoid fresh clearing of forest canopy for drawing the proposed 400 Kv line. The

Chief Engineer (GED) Goa in the meeting had infact made out a case for the 400 Kv line from southern side since 100 MW is already being carried from the Southern Region. A copy of the Minutes of the 39th Meeting of the Standing Committee on Power System Planning in Western Region held on 30.11.2015 is enclosed as **ANNEXURE R-16** to this Report.

71. The alignment of the second 400 Kv line to Goa, even if it is taken along the new corridor as proposed in the application for forest and wildlife clearance passing through virgin forest areas, on its commissioning the existing 110 Kv (defunct) and 220 Kv lines drawn between Karnataka and Goa will require to be dismantled as the 100 MW power can be carried through the new 400 Kv line having 1200 MW capacity. Taking into account the total available power supply lines and the peak power demand of Goa State (presently 670 MW) in the forseable future there will be no justification to continue with 110 Kv and 220 Kv lines between Karnataka and Goa.

72. The proposed route along 110 Kv line has not been recommended by DCF (Wildlife& ECO Tourism) because it passes through dense evergreen forest patch of Sanctuary and National Park. Also it is an ideal habitat for Gaur with lush grasses growing on rocky escarpments. These two statements

are somewhat contradictory because if it is dense evergreen forest then in that case there cannot be open spaces and grass on ground. The fact however is that this alignment has secondary growth of vegetation along the defunct line and not dense virgin forest. Also Herbivore density is always higher in open forest. The openings created for laying the 400 Kv line will not take way the rocky escarpment and grassy patches. Instead it may create more grassy habitat underneath the 400 Kv line with 46 meter wider corridor. The higher tower heights and higher minimum clearance available will have lesser impact on wildlife. On the other hand if we were to go along the new proposed corridor through virgin forest it is certain to imbalance the equilibrium of the existing climax forest ecosystem. Further while discarding the 110 Kv line the Dy. Conservator of Forest has not considered the scope of replacement of 220 Kv Line which line runs almost parallel to the defunct 110 Kv line and which has 35 meter wide corridor and the corridor is free of tree growth. Copy of the letter dated 10.07.2018 of Dy. Conservator of Forest, Wildlife and ECO – Tourism (N) is enclosed as **ANNEXURE R-17** to this Report. A copy of the line overview of 220 / 110 Kv line presented by GTTPL and photographs of the existing 110/220 Kv line and the proposed site for 400/220 Kv substation at Sangod are enclosed as **ANNEXURE R-18 (Colly.)** to this Report.

73. It is important to note that a stretch of 2.5 Km length of the defunct 110 Kv corridor in Karnataka starting from Goa – Karnataka inter State border is proposed to be used for drawing new 400 Kv line and existing 8 towers of 110 Kv line will be replaced by equal number of towers of 400 Kv in this stretch of 2.5 Kms. The remaining corridor of the proposed 400 Kv line will pass through virgin forest land in Karnataka also. The SC NBWL has recommended the project proposal of GTTPL in respect of Goa State even before receiving the proposal from the State of Karnataka which is a clear violation of the guidelines issued by MOEF&CC in this regard. The SC NBWL does not seen to have examined the alternative available in its entirety within the State of Goa so as to ensure that there is judicious use of the available power transmission lines passing across the fragile and bio diversity rich ecosystem of the Western Ghats.

74. Keeping in view the detailed discussion above CEC is of the considered view that instead of clearing canopy of virgin forest cover along 10.50 km long corridor with 46m ROW in Goa State the proposed 400 Kv line should be drawn along the existing 220 Kv corridor line in Goa State after establishing 400 Kv corridor connectivity between Mapusa and Sangod and 220

Kv line between Sangod and Xeldem. This activity in fact is also part of the present project approved by CEA. This course of action will ensure adequate supply of power to the Southern Goa Region when the 100 MW of power now being received from Ramagundam through 220 Kv line is temporarily disrupted during the construction phase of 400 Kv line between Narendra and Sangod. Accordingly the project proposal in respect of Karnataka part will require to be suitably amended so as to make use of the existing 110 / 220 Kv line Corridor. This will also ensure that the commitment given by Power Grid and CEA to the Karnataka Government that no further transmission line shall be laid in the area is not violated. Most important of all this modification in the proposal will help in saving the precious forest cover and wildlife in the ecologically fragile and biodiversity rich Western Ghats.

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SECTION C

FOUR LANNING OF EXISTING NH-4A FROM GOA-KARNATAKA BORDER (ANMOD) TO MOLLEM FROM KM 84.133 TO KM 97.000 IN THE STATE OF GOA (ANMOD TO PANAJI SECTION)

75. The National Highway-4A (New No. NH-748), 153.075 km in length, connects Panaji in Goa to Belgavi in Karnataka. A stretch of 68.942 kms out of 153.075 km falls in the State of Goa and 84.133 kms falls in Karnataka. The NH-4A links NH-4 (Pune-Bangalore) to NH-17 (Goa-Mumbai).

76. The Ministry of Road Transport and Highway (MRT&H) *vide* letter dated 13.3.2015 approved the proposal to widen the NH-4A from two lane to four lane in Goa through Goa PWD and vide letter dated 26.2.2016 approved the proposed alignment for the section of NH-4A from km 84.000 to km 153.075 in the State of Goa (Anmod to Panaji Section) on BOT(Toll) basis under NHDP-III as per details below:

i) From km 84.000 to km 96.000. Widening on valley side with improvement of the existing alignment with alternative III as proposed by Consultant and recommended by CE (NH) Goa.

ii) From km 96.00 to km118.00 and from km 125.00 to km 143.400. The proposed alignment is almost following the existing alignment with minor curve improvement and the same is accepted.

Two packages of total length of 16.46 kms have already been completed and six packages for a design length of 48.636 km including the present part passing through the forest are at various stages of approval. A copy of the index map of the proposed road alignment is enclosed as **ANNEXURE R-19** to this Report.

77. The National Highway Authority of India (NHAI) has been entrusted to implement the development of some of the stretches of National Highways under the National Highways Development Programme. As part of this endeavour the NHAI through the PWD of Government of Goa has decided for the development of existing Goa/Karnataka Border – Panaji Goa section of NH-4A from km 94.133 to km 153.075 (Anmod to Panaji section) in the State of Goa.

78. The present proposal is to widen NH-4A from km 84.133 to km 97.000, a distance of 12.867 kms from Anmod in Karnataka border to Mollem in Goa. At present the Right of

Way is 12 m and carriage way is 7 m and **the plan is to widen the double lane highway into a four lane highway with ROW of 26 m and carriageway of 14 m. This is proposed to be done partly by widening the existing highway but largely by creating completely new viaduct structures on the valley side, parallel to the existing highway wherever it cannot be widened due to difficult nature of the terrain**. This stretch of highway presently is very narrow as stated above and has sharp turns and deep valleys. Because of sharp increase in the vehicular traffic, the above said stretch of NH-4A has become prone to accidents. In fact about 216 accidents have been reported in the said stretch during the period 2011-2019 (as per records maintained by the Traffic Police Department, Goa). The need for four lane NH-4A has become necessary on following grounds:-

i) Existing 2 lane configuration road cannot accommodate the future traffic.

ii) With increase in traffic there will be slow movement of vehicles resulting in carbon emissions and noise pollution

iii) At present there are no safe passages for wildlife resulting in man-animal conflict and causing road kill.

iv) Provision of safe passages will rejoin the fragmented eco system

v) Existing road is having deficient geometric features and sub-standard curves, resulting in number of accidents and breakdown of vehicles. Improvement of accident prone stretches due to widening, geometric improvement and the proposed elevated corridor will ensure smooth and safe movement of vehicular traffic.

vi) Reduces the time of travel, vehicle operating cost and fuel consumption. Consequently there will also be reduction of air pollution

vii) As Goa is a tourist destination future growth will be more. Widening to four lanes will ensure smooth flow of traffic.

viii) NH-4A is the major connectivity for capital city Panaji and Vasco Port and also improve connectivity with Mumbai, Belgaum, Hubli, Dharwad and Kolhapur of neighbouring States of Karnataka and Maharashtra.

ix) The proposal to widen NH-4A from two lane to four lane is expected to have minimum impact on flora and fauna and will also ensure ecological stability. The estimated cost of the Project is Rs.594 crores.

79.i) The Standing Committee of National Board for Wildlife (SC NBWL) has in its 57th meeting held on 7.4.2020 considered the proposal of project proponent, PWD Government of Goa for use of 32.085 ha. land (PA land 31.015 ha + non-PA land 1.887 ha) for four lanning of existing NH-4A in Anmod-Mollen Section from km 84.133 to km 97.000 in the Goa-Karnataka border passing through the sanctuary/National Park.

ii) It was noted that the State Board for Wildlife has recommended the proposal in its meeting held on 2.12.2019 with the direction to the user agency to minimize the damage to wildlife habitat, minimum felling of trees and to deposit 3% of the project cost with the Forest Department.

iii) The Standing Committee observed that the State Chief Wildlife Warden has recommended the proposal with the following conditions:

a) As the terrain is undulating with heavy rainfall and gradient above 30 cm, the construction of road along the road is highly vulnerable to soil erosion as such all precautions/measures are to be taken to control soil erosion and washout of soil in the forest streams. The precautions are

to be taken in respect of soil erosion by construction of rubble wall boundaries across the contour lines so that the soil should not wash away and soil erosion is controlled. The site is inspected and all possible underpasses are recommended with dimensions as per the size of animals. These underpasses will reduce the death of wildlife by accidents. The user agency should in particular look often at these factors during execution of the project.

iv) User agency will also undertake works of putting up proper signage to control speed limit, to allow wild animals on priority, not to light fire in wildlife sanctuary area, not to litter in wildlife sanctuary area and not to park vehicles unnecessarily. Similarly put a proper bid board at entry point on both sides to caution vehicles that they are entering wildlife sanctuary. The structures like fire watch towers, view points for public, toilets and potable drinking water facilities should be provided.

80. The Standing Committee of the NBWL after discussing and considering the matter decided to recommend the proposal subject to the following conditions:

a) the project proponent will comply with all the conditions imposed by the State Chief Wildlife Warden (SCWW). The Animal Passage Plan should be implemented by the user agency; and

b) the annual compliance certificate on the stipulated conditions should be submitted by the project proponent to the SCWW and an annual compliance certificate shall be submitted by the SCWW to the Government of India.

81. i) The NHAI, through the PWD of Govt. of Goa, has decided for the development of existing Goa/Karnataka border – Panaji Goa section of NH-4A from km 84 to km 153.075 (Anmod to Panaji section) in the State of Goa. In the above mentioned stretch, from existing km 84.133 to km 97.000 falls under the BMWLS and NP and a part 'Reserved Forest'. The details of forest land to be diverted for implementation are as follows:

Area proposed in Wildlife Sanctuary	6.750 ha
Area proposed in National Park	24.265 ha
Total area proposed in WLS&NP	31.015 ha
Area proposed in Reserved Forest	1.070 ha
Total area proposed for diversion	**32.085 ha**

ii) PWD has stated that out of 31.015 ha passing through BMWLS and NP only 11.10 ha forest land will be required for permanent diversion and 19.915 ha forest land will be returned back to Forest Department and shall be restored to forest.

82.i) The total number of trees in PA falling in the ROW including the newly proposed alignment are 12097 of which 2141 trees are affected in BMWS and 9956 trees are affected in Mollem National Park. The Goa Forest Department and PWD have denied that no proper enumeration has been done.

ii) The girth wise classification of trees falling along the proposed alignment are as given below:

GIRTH SIZE	NO OF TREES
≥ 30 cms	7337
≥ 60 cms	2808
≥ 90 cms	1120
≥ 120 cms	458
≥ 150 cms	374
Total number of trees	**12097**

83. As already seen in preceding paragraphs the entire stretch of NH-4A lies in the State of Karnataka and Goa and provides an important link between NH-4A and NH-17. The

starting 12.867 kms of the Project Road in the State of Goa from km 84.133 to km 97.000 passes through BMWLS and NP and is the only feasible option as far as the technical aspects are concerned, that requires minimum land under the forest cover; with a view to minimize the impact on the wildlife, environment and forest the up gradation and widening is restricted to the existing ROW as much as possible with a viaduct structure parallel to it on the valley side has been proposed and would require minimum forest land for diversion. It has been decided to implement the cutting of rock in the project area by mechanical rock cutting device and there will be no blasting of rock.

84. As seen above the 12.867 kms stretch under consideration is passing through wildlife sanctuary and National park. The following three Options for improvement were considered with regard to viaduct structure parallel to the existing two lane NH-4A:

i) Widening on hill side (to form new 2 lane carriage way)

ii) Widening on valley side without improving the existing (mostly on via duct)

iii) Widening on valley side with realignments

It has been stated by the Respondent PWD that after detailed study at site based on the topographical survey and preliminary design of vertical alignment it was identified that from km 89 to km 92 can be connected with smooth geometry within permissible gradients. Based on the above three Options, Option (iii) is considered most feasible even though the construction cost is higher than the first two Options. Moreover the project stretch falls in Wildlife Sanctuary and National Park and Option (iii) involves minimum acquisition of the forest land falling in Wildlife Sanctuary and National Park. This Option also ensures improvement of the existing alignment to the proper geometric standards. Option (iii) was also approved subsequently by the competent authority in the Central Government (MRTP&H).

85. The details of construction of the 4 lane road along the new alignment (Option iii) involving construction of viaducts is as below:

i)	4 lane viaduct (valley side)	3.090 kms
ii)	2 lane viaduct (valley side) plus 2 lane existing improvements	4.110 kms
iii)	2 lane after cutting hillside plus 2 lane existing improvement	0.650 kms
iv)	Widening from existing 2 lane to 4 lane in plain terrain	2.700 kms
	Total length of alignment in WLS&NP	**10.550 kms**

86. The proposal pertaining to four lanning of NH-4A has also provided for four animal crossings as given below:

Design Chainage Kms	Proposal	Span Arrangement
i) 84.400 L	Underpass	12x5 m
ii) 92.150 R	Underpass	20x5 m
iii) 93.170 R	Underpass	12x5 m
iv) 93.850 R	Overpass	12x5 m

87. The CEC after the site visit had sought the views of the State PWD on increasing the width of the animal crossings and also converting part of the two lane elevated road to 4 lane so as to open up more forest areas for animal crossings. The State PWD in response have vide letter dated 23.2.21 stated that –

i) the width of the span of overpass and underpasses can be increased, if desired;

ii) it is technically not feasible to avoid cutting of hills over a length of 0.6 kms;

iii) Possibility of increasing the length of 4 lane viaduct will be reworked as per IRC guidelines/standards on recommendation of CEC as it involves revision of cost and approval of MoRT&H

The response of State PWD to the comments offered by the CEC during the site visit held on 21.1.2021 is enclosed as **Annexure R-20** to this Report.

88. The Applicant, the Goa Foundation, has raised the following two issues connected with the implementation of the 4 lanning of NH-4A.

i) The total length of NH-4A is about 153 Kms and the implementation of this project requires Environmental Clearance (EC) from MoEF&CC as prescribed in EIA notification 2006 if the length of Highway exceeds 100 kms whereas the road project is being implemented by splitting the work into two so as to avoid obtaining EC under EIA notification, 2006.

ii) Two lane highway was constructed by the Portuguese Colonial Government much before the notification of the Wildlife and Sanctuary and the road in Goa State is as wide as it is in Karnataka part and 4-lanning of this road with new alignment at certain locations is not necessary (a) specially when NHAI still has not gone for 4-lanning in Karnataka part; (b) the 4-lanning of the road is not beneficial to the wildlife or to the management of the Wildlife Sanctuary and the National park and hence the

approvals granted by the NBWL on 7.4.2020 to this project is in violation of the provisions of the Wild Life (Protection), 1972.

89. The Applicant Goa Foundation has in the Application stated that the widening of NH-4A has been divided into two projects operating in the two States of Goa and Karnataka and being undertaken by two different departments (in Karnataka it is the NHAI itself, while in Goa it is the PWD). It has been stated that the PWD Goa relied upon the Notification dated 22.12.2013 of MoEF&CC exempting the mandatory requirement of an Environmental Clearance (EC) for NH projects less than 100 Kms. However when the NHAI attempted to do the same the Hon'ble High Court of Karnataka prima facie did not accept this argument and in its order dated 24.2.2020 in the PIL filed before it has recorded that –

" the length of NH-4A which is taken up for widening may be more than 100 kilometers, stretching over Karnataka and Goa. If that be so, it cannot be said that widening is undertaken for the length which is less than 100 kilometers"

90. The NHAI has given up the proposal to divert 6.423 ha of forest land in the Anshi Dandeli WLS proposed for the widening of the highway and has instead decided to maintain the width of the road in the WLS at the existing 12 M.

91. The above raises a basic question – whether the Project Road – Panaji to Belgavi – a distance of about 153 kms has to be treated as one project being more than 100 kms and in which case necessary EC has to be first obtained for Project Road from Panaji to Belgavi before the proposal is considered further.

92. NH-4A from km 0.000 to km 84.000 involves diversion of 84.853 ha forest land for improvement of this highway passing through Belgaum, Khanapur, Gunji and Ramnagar in the State of Karnataka. The 84.853 ha forest land fall in Belgaum and Haliyal Forest divisions and in Dandeli Wildlife Sanctuary. Initially the State Government recommended diversion of 93.568 ha of forest land but because of reduction of width of widening in Dandeli WS the requirement of forest land was brought down to 84.853 ha as below:

Name of forest division	Proposed RoW / width	Extent proposed initially (in ha)	Modified RoW/Width in meters	Extent revised in ha
Belgaum division	26 mts for road and 45 mts for RoB	53.74	-	53.74
Haliyal division	25 mts for road and 45 mts for RoB	24.69	-	24.69
Wildlife Division Dandeli (Dandeli WS)	14 mts	15.13	12	6.423 due to reduction as per PCCF CWL suggestion
TOTAL		**93.56**		**84.853**

The MoEF&CC, after considering the recommendation of the Regional Empowered Committee, vide letter dated 31.12.2015 conveyed in principle Stage I approval for diversion of 78.43 ha of forest land falling outside the Protected Area (i.e. km 0 to km 70.80) for improvement of NH 4A from km 0.00 to km 84.400 in Belgaum, Khanapur, Gunji and Ramnagar by-pass in favour of Project Director, NHAI subject to fulfillment of conditions prescribed.

93. The NHAI vide their letter dated 13.2.2019 addressed to the PCCF (HoFF) Karnataka stated that out of total requirement of 84.853 ha of forest land required for improvement of NH-4A from km 0.00 to km 84.400 an extent of

78.43 ha is falling under the forest areas of Belgaum and Haliyal Forest areas of Belgaum and Haliyal Forest Divisions and balance 6.423 ha in part of Dandeli Wildlife Sanctuary. The diversion of 6.423 ha of forest land within the Protected Area of Dandeli WS is not required as the NHAI are following the existing alignment within the available RoW i.e. 12 m. Further considering that up-gradation of NH is of national importance since it connects the two States namely Goa and Karnataka the NHAI will continue to work in the given RoW (12m) and further process for diverting additional 6.423 ha of forest land in the Protected Area may be dropped.

OBSERVATIONS AND RECOMMENDATIONS

94. The road NH-4A proposed to be widened connects Goa to Karnataka and parts of Maharashtra and has been in existence since long. It was constructed for a low density traffic in the hilly terrain and cuts across the Western Ghats. Now the high density traffic on surface road blocks the movement of animals, specially long ranging wildlife across the Western Ghat landscape of more than 10000 sq. kms. The camera-trap photographs taken at different locations on either side of this

road have demonstrated the movement of all type of animals including the Tiger across this road. This surface terrain forest road therefore requires to be reconstructed at least along predominant animal crossing areas on elevated structures for providing smooth passage to animals.

95. Non-development/improvement of this road in the long run with increased density of traffic will result in uninterrupted flow of traffic thereby leaving hardly any time for the wildlife to cross this road from one side to the other. Considering the future increase in traffic, something unavoidable, and keeping in view the interest of the Wildlife Sanctuary and the National Park it is imperative to ensure improvement of the existing road by shifting it to an elevated structure at strategic locations leaving the surface terrain free for movement of all types of wildlife. The CEC has examined the mitigative measures proposed by the project proponent and is of the considered view that the mitigative measures proposed also require to be upgraded so as to minimise the impact of 4-lanning of NH-4 on the wildlife in the Western Ghat Region.

96. Four lane via duct of 3.090 Kms proposed in the plan will provide easy passage for animals to move across the road along the landscape. It was observed during the site visit that most of the proposed elevated stretch of the road (3.090 km) runs along the steep section of the hill range where the animal movements are extremely limited. It is therefore necessary that four lane elevated road is also constructed along some stretches of the gentle slope/valley point of the forest landscape where the animal density is higher to facilitate unhindered movement of wildlife across the landscape. It is accordingly proposed to construct 4 lane elevated road between chainage 92.000 km and 93.500 Kms instead of having surface terrain road to make the 4-lanning of the road beneficial for the management of the Wildlife Sanctuary and the National Park. Consequently the animal underpasses proposed at 92.150 R and 93.170R chainages in the plan of PWD will no longer be required to be constructed.

97. It is observed that the width of the span of the under passes / over passes provided for the movement of animals by State PWD are inadequate in width for free movement of wild animals. The animal underpass at chainage 84.400 L is an important animal passage at the plateau of the hill range and CEC during the site visit saw evidence of movement of animals

across the road at this point. However, the animal underpass now proposed at this chainage 84.400 L with 12m span is grossly inadequate for free movement of wildlife. It is therefore considered necessary to increase the length of the span of the proposed 4 lane elevated road from 12 m to 100 m. Similarly the span of the 4 lane elevated road that has been proposed between chainage 84.207 and 84.287 also needs to be increased to at least 200 M as this point of crossing along with the proposed animal underpass at chainage 84.400 L are the only two locations in the plateau where animals can criss-cross the road without risking their life. A copies of the animated views of the projected 4 lane elevated road, animal underpass and animal overpass is enclosed as **ANNEXTURE R-21(Colly.)** to this Report.

98. CEC after examining the 4-lanning of NH-4A road proposed between chainage 84.133 to 97.000 and after considering the long term management requirement of the Park so as to minimize animal road kills and man- animal conflict and also with a view to minimize the adverse impact of 4-lanning of NH-4A has made certain suggestions in the meeting held on 12.4.2021 and vide letter dated 13.4.2021 sought the views of the PWD, Government of Goa and NHAI.

In response the Chief Engineer (NH,R&B) PWD, Government of Goa has incorporated the changes in line with the suggestions of CEC to the earlier proposed plan of four lanning / improvement of the existing Goa / Karnataka border – Mollem Goa Section of NH-4A road. A copy the letter dated 13.4.2021 of CEC and the letter dated 20.4.2021 of the Chief Engineer (NH, R&B) of Government of Goa is enclosed as **ANNEXURE R-22 (Colly.)** to this Report.

Keeping in view of the changes proposed by CEC and agreed to by the PWD, State of Goa it is recommended for consideration of this Hon'ble Court that the 4-lanning of NH-4A proposal approved by the SC NBWL may be permitted to be implemented with the following modifications :

i) the span of the animal overpass proposed at 93.850 be increased from the present 12m to 50m;

ii) the span of the animal underpass at 84.400 L be increased from the present 12 m to 100 m with 3 sections;

iii) the proposed 4 lane road in plain terrain be converted to 4 lane elevated road (viaduct) between km 91/850 and 93/350 km over a length of 1.5 kms; and

iv) the length of the proposed 4 lane elevated road (viaduct) is increased from 80m to 363m between kms 84/207 and 84/570;

The proposal for diversion of forest land for non-forest purpose under Forest Conservation Act, 1980 and the NBWL clearance under the Wild Life (Protection), 1972 will accordingly be required to be amended by the project proponents.

99. The project being more than 100 Kms in length, the Environmental Clearance under EIA notification, 2006 is required to be obtained by the project proponent and while doing so the project proponent should keep in view the observation of the Hon'ble High Court of Karnataka (refer to para 89 of this Report) before implementation/continuation of improvement of the 4-lanning of the NH-4A along the 153 Kms stretch between Belagavi in Karnataka and Panaji in Goa.

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100. RECAPITULATION OF RECOMMENDATIONS

SECTION A

DOUBLING OF THE STRETCH OF THE RAILWAY LINE FROM CASTLEROCK IN KARNATAKA TO KULEM IN GOA – PART OF PHASE II OF THE PROJECT FROM TINAIGHAT TO VASCO.

Keeping in view the facts as highlighted above and considering that

i) the doubling of the existing rail line will not have any positive impact on the gradient and curvature of the new line and it will operate at the same inefficient level as the existing line and will be operating with all the existing severe limitations on running of trains ‘Up the Ghat’ and ‘Down the Ghat’ as that of the existing line (Ref para 13);

ii) railway line was laid in 1890s when there was no other rail connectivity available to Goa and at present the Konkan railway line gives excellent connectivity to Northern and Southern parts of India.

iii) the Murmagoa Port Trust authorities as well as the project proponents have submitted that consequent to changes in government policy to discourage

import of coal there will be reduction in the coal import which currently forms more than 90% of goods traffic from Murmagoa Port;

iv) the estimate of projected increase in traffic from Karnataka to Goa furnished by the railways is not based on facts and is without any sound reasoning and as statistics shows mostly includes empty rakes returning to Goa and that despite the change in policy on import of coal the same has not been reflected in the projected traffic from Goa to Karnataka;

v) the current movement of goods to Murmagoa Port constitutes only about 20% of the rakes going out from Goa and which leaves a huge unutilised capacity in the existing single line itself;

vi) there are alternative ports like Krishnapatnam in east coast available with better rail connectivity for transport of goods to and from industrial belt of northern Karnataka and the capacity of the same is yet to be fully utilised;

vii) the opening of the forest cover in the ecologically sensitive Western Ghats along the existing line is likely to invite light demanding invasive weeds like

Mikania species which colonise fast in the open area and spread to the nearby forest canopy and destroy the natural forest;

viii) the increased number of trains and wider openings through the ecologically sensitive Western Ghats for laying the track will further fragment the habitat and will make the movement of wildlife including arboreal animals across the railway line much more difficult and dangerous and is bound to result in high casualties amongst the wildlife;

ix) the railway line cuts across the most important animal corridor in the Western Ghat landscape between Karnataka and Maharashtra through the State of Goa and will be a serious impediment for movement of long ranging animals like tiger and elephant.

x) the approval by NBWL to go ahead with the project has been granted in respect of Goa Portion without first obtaining the advice of NTCA as statutorily required under section 38 (O) of the Wild Life (Protection) Act, 1972;

xi) there is a gross under estimation of the requirement of virgin forest land for implementation

of the project in as much as the project implementation will require additional land for road connectivity, temporary dumping of the excavated earth/blasted stone and parking of heavy machinery and such during the stage of implementation of the project much more than 120.875 Ha of estimated forest land is likely to be destroyed; and

xii) the connectivity between Goa and Karnataka is being strengthened/improved by way of 4 laning of NH-4A along the same route and by development of new airport

CEC does not find any justification for undertaking a project of this nature which will destroy the fragile Eco-system of the Western Ghats which is an internationally recognised Biodiversity hot spot and also one of the most important wildlife corridor of the Country. Moreover this doubling project will only be marginally enhancing the capacity of the most inefficient section of the Railway Network passing through ecologically sensitive and bio-diversity rich Tiger Reserve, Two Wildlife Sanctuaries and a National Park. In these circumstances it is recommended for the consideration of this Hon'ble Court to revoke the permission granted by the Standing Committee of

National Board for Wildlife (SC NBWL) for doubling of the railway track passing through the ecologically sensitive Western Ghats from Tinaighat-Castlerock in Karnataka to Kulem in Goa involving 120.875 ha. of land (Protected Area 113.857 ha. and Non-Protected Area Reserved Forest 7.108 ha.) from the Bhagwan Mahaveer Wildlife Sanctuary (BMWLS) in the State of Goa and 10.45 ha. (9.57 ha. Dandeli Wildlife Sanctuary and 0.88 ha. in Haliyal Forest Division) in the State of Karnataka vide Minutes of the 56th Meeting of the SC NBWL in violation of the guidelines issued by the MoEF&CC under the Wild Life (Protection) Act, 1972 and in violation of Hon'ble Supreme Court order 5.10.2015 and without considering the justification for the doubling of the most inefficient railway line with 1:37 gradient and with severe restrictions on movement of trains and without considering the availability of alternative railway routes as well as alternative modes of transport.

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SECTION B

GOA-TAMNAR TRANSMISSION PROJECT (GTTPL) FOR LAYING OF ELECTRIC LINES UNDER THE TRANSMISSION SCHEME "ADDITIONAL 400 Kv FEED TO GOA AND ADDITIONAL SYSTEM FOR POWER EVACUATION FROM GENERATION PROJECTS POOLED AT RAIGARH (TAMNAR POOL)".

Keeping in view the detailed discussion above CEC is of the considered view that instead of clearing canopy of virgin forest cover along 10.50 km long corridor with 46m ROW in Goa State the proposed 400 Kv line should be drawn along the existing 220 Kv corridor line in Goa State after establishing 400 Kv corridor connectivity between Mapusa and Sangod and 220 Kv line between Sangod and Xeldem. This activity in fact is also part of the present project approved by CEA. This course of action will ensure adequate supply of power to the Southern Goa Region when the 100 MW of power now being received from Ramagundam through 220 Kv line is temporarily disrupted during the construction phase of 400 Kv line between Narendra and Sangod. Accordingly the project proposal in respect of Karnataka part will require to be suitably amended so as to make use of the existing 110 / 220 Kv line Corridor. This will also ensure that the commitment given by Power Grid and CEA to the Karnataka Government that no further transmission line shall be laid in the area is not violated. Most

important of all this modification in the proposal will help in saving the precious forest cover and wildlife in the ecologically fragile and biodiversity rich Western Ghats.

Keeping in view the above this Hon'ble Court may consider issuing necessary directions to the Ministry of Power, Government of India, Goa State Electricity Department and GTTPL to redraw and modify the alignment of additional 400 Kv line corridor between Narendra (existing) – Sangod (new) in the State of Goa and Karnataka.

SECTION C

FOUR LANNING OF EXISTING NH-4A FROM GOA-KARNATAKA BORDER (ANMOD) TO MOLLEM FROM KM 84.133 TO KM 97.000 IN THE STATE OF GOA (ANMOD TO PANAJI SECTION)

CEC after examining the 4-lanning of NH-4A road proposed between chainage 84.133 to 97.000 and after considering the long term management requirement of the Park so as to minimize animal road kills and man- animal conflict and also with a view to minimize the adverse impact of 4-lanning of NH-4A has made certain suggestions in the meeting held on 12.4.2021 and vide letter dated 13.4.2021 sought the views of the PWD, Government of Goa and NHAI. In response the Chief Engineer (NH,R&B) PWD, Government

of Goa has incorporated the changes in line with the suggestions of CEC to the earlier proposed plan of four lanning / improvement of the existing Goa / Karnataka border – Mollem Goa Section of NH-4A road.

Keeping in view of the changes proposed by CEC and agreed to by the PWD, State of Goa it is recommended for consideration of this Hon'ble Court that the 4-lanning of NH-4A proposal approved by the SC NBWL may be permitted to be implemented with the following modifications :

i) the span of the animal overpass proposed at 93.850 be increased from the present 12m to 50m;

ii) the span of the animal underpass at 84.400 L be increased from the present 12 m to 100 m with 3 sections;

iii) the proposed 4 lane road in plain terrain be converted to 4 lane elevated road (viaduct) between km 91/850 and 93/350 km over a length of 1.5 kms; and

v) the length of the proposed 4 lane elevated road (viaduct) is increased from 80m to 363m between kms 84/207 and 84/570;

The proposal for diversion of forest land for non-forest purpose under Forest Conservation Act, 1980 and the NBWL clearance under the Wild Life (Protection), 1972 will accordingly be required to be amended by the project proponents.

The project being more than 100 Kms in length, the Environmental Clearance under EIA nctification, 2006 is required to be obtained by the project proponent and while doing so the project proponent should keep in view the observation of the Hon'ble High Court of Karnataka (refer to para 89 of this Report) before implementation/continuation of improvement of the 4-lanning of the NH-4A along the 153 Kms stretch between Belagavi in Karnataka and Panaji in Goa."

This Hon'ble Court may please ccnsider the above Report and may please pass appropriate order in the matter.

(Amarnatha Shetty)
Member Secretary

Dated : 23rd April 2021