

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2010/Fuel/282/2 pt 1.

New Delhi, dt. 30.01.2015.

Chief Mechanical Engineers,
All Indian Railways.

Sr. Executive Director (ED),
RDSO
Lucknow.

Chief Administrative Officer,
IROAF, Laxmi Nagar,
Delhi.110092.

SUB: Direct sale of bio-diesel by manufacturers/suppliers other than OMCs.

REF: (i) MoM circulated vide Director/ Cabinet secretariat No. 2/CM/2015 (i) dated 19.01.2015.
(ii) MoM circulated vide Board's letter of even no. dated 09.12.2014

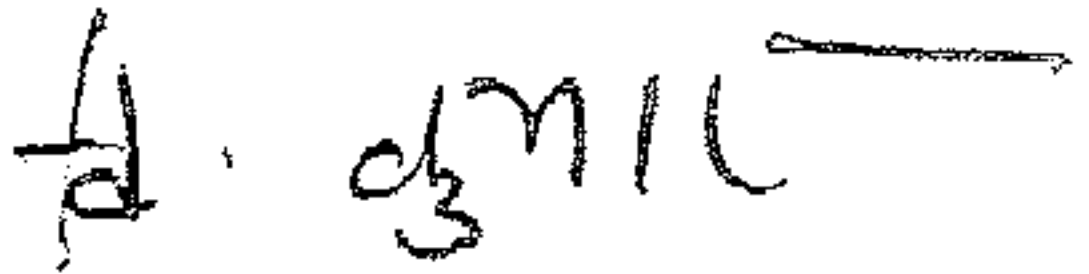
As per Press Information Bureau's note issued on 16.01.2015 (Copy enclosed), the Union cabinet gave its approval for amending the Motor Spirit (MS) and High Speed Diesel (HSD) control order for Regulation of Supply, Distribution and Prevention of Malpractices dated 19.12.2005. The amendment will allow private biodiesel manufacturers, their authorised dealers and Joint Ventures (JVs) of Oil Marketing Companies (OMCs) authorized by the Ministry of Petroleum & Natural Gas (MoP&NG) as dealers and give marketing/ distribution functions to them for the limited purpose of supply of bio-diesel to consumers.

In this regard, Board vide letter referred (ii), has already advised Railways, IROAF and RDSO for necessary actions on Bio-Diesel for locomotives. Status of some important issues discussed during the meeting is as under:

- (i) Railways to create necessary infrastructural facilities at identified locations.
- (ii) Railways to quickly finalise requirement, process indents and complete procurement by 31.03.2015.
- (iii) Booking of funds for Bio-Diesel has been advised vide Board's letter No. 2013/ACII/2/2 dated 16.09.2014.
- (iv) RDSO has circulated the list of tests to be conducted on Bio-Diesel at different stages, vide letter No. ED.6.16.4 (Vol VII) dated 07.01.2015.
- (v) RDSO to initiate process of vendor assessment and certification, to be completed by 15.02.2015.
- (vi) IROAF has circulated guidelines regarding storage, marking on Bio-Diesel tank, decanting, blending and issue of Bio-Diesel vide letter No. IROAF/3/CME/BD/Railways dated 08.12.2014.

Railways, IROAF and RDSO should take necessary actions immediately to implement blending of Bio-Diesel for locomotives under advice to this office.

DA: As above


30.01.15
(Vivek Kumar)
Exec.Dir.Mech.Engg.(Traction)
Railway Board

**Press Information Bureau
Government of India
Cabinet**

16-January-2015 15:00 IST

Direct sale of bio-diesel by manufacturers/suppliers other than OMCs

The Union Cabinet chaired by the Prime Minister, Shri Narendra Modi, today gave its approval for amending the Motor Spirit (MS) and High Speed Diesel (HSD) control order for Regulation of Supply, Distribution and Prevention of Malpractices dated 19.12.2005. The amendment will allow private biodiesel manufacturers, their authorised dealers and Joint Ventures (JVs) of Oil Marketing Companies (OMCs) authorized by the Ministry of Petroleum & Natural Gas (MoP&NG) as dealers and give marketing/ distribution functions to them for the limited purpose of supply of bio-diesel to consumers. Further, the investment and production conditions (as applicable) specified in the Marketing Resolution dated 08.03.2002 of MoP&NG will also be relaxed and a new clause added to give marketing rights for Bio-diesel (B100) to the private biodiesel manufacturers, their authorised dealers and JVs of OMCs authorized by the MoP&NG for direct sales to consumers.

The Cabinet has also decided to suitably amend Para 5.11 and 5.12 of the National Policy on Bio-fuels for facilitating consumers of diesel in procuring bio-diesel directly from private bio-diesel manufacturers, their authorized dealers and JVs of OMCs authorized by the MoP&NG. This decision will encourage the production and use of bio-diesel in the country.

Background MoP&NG announced a Bio-diesel Purchase Policy, effective from 1.1.2006, to encourage production of bio-diesel in the country for blending it with diesel with the objective of increasing energy security and meeting other emission and environment objectives. Under this Policy, OMCs are to buy Bio-diesel (B100), meeting fuel quality standard prescribed by the Bureau of Indian Standards (BIS), at a uniform price, as decided by the OMCs from time to time, for blending with HSD to the extent of five percent, at identified purchase centres across the country.

PSU OMCs under the MoP&NG have been actively pursuing the bio-diesel programme and entered into MoUs and formed JVs for cultivation of bio-fuels species on revenue wasteland and degraded lands in the State. These JV companies have been formed with the objective of increasing production and marketing of Bio-diesel in the country. They have sought permission to undertake activities like sourcing, trading, supply, distribution, marketing etc. of Bio-diesel to consumers.

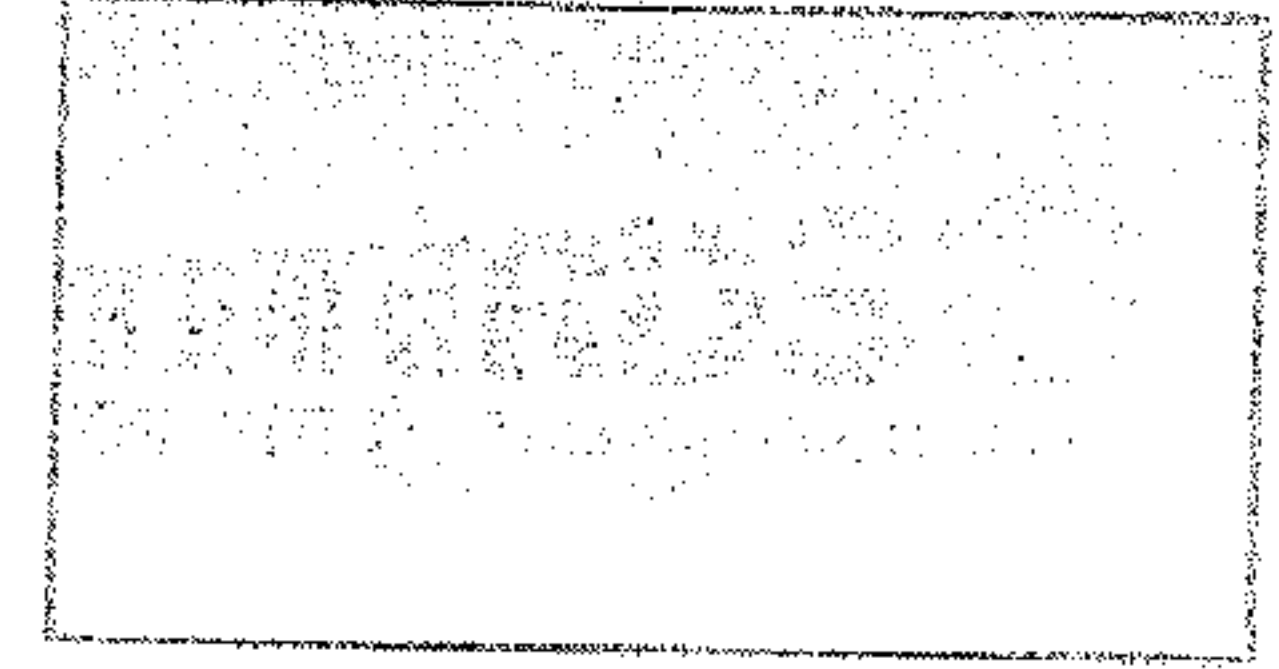
As the price of diesel is already deregulated and determined by the market, there is no economic justification in preventing private biodiesel manufacturers, their authorised dealers and JVs of OMCs authorized by the MoP&NG from selling biodiesel directly to consumers subject to their product meeting prescribed BIS standards.

DS



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Engine Development Directorate

No.ED.6.16.4 (Vol VII)

Dated : 07.01.2015

**All Chief Mechanical Engineers
All CMPEs/Diesel
All Indian Railways**

Sub : Sources and testing of biodiesel.

1. Sources : Based on information available with RDSO, following are the likely suppliers of biodiesel -

i) M/s Southern On Line Bio Technologies Ltd.,
H No. 8-3-833/173, Kamalpuri Colony, Phase-II,
Hyderabad - 500073, Telangana.
Ph. 040-49221999
Fax 040-4922 1998


ii) M/s Biomax Fuels Ltd.
15, 3rd Avenue, Indira Nagar,
Adyar, Chennai - 600020
Tele/Fax : 044-24454756/24454332

2. Tests on biodiesel : At the time of qualification of a biodiesel supplier, full specification testing as well as additional tests as per Annexure-I will be done by RDSO. As and when an order is placed on a qualified vendor, the following test protocol will apply -

i) Full specification testing to be done by the purchaser on the main lot manufactured by the supplier for each type of feedstock used, including additional tests as per Annexure-I.

- ii) Firm to dispatch 0.5 kL of biodiesel to RDSO for engine performance tests on Alco and EMD test bed with B5 blend, out of the first ordered quantity only, of a type of feedstock used.
- iii) Subsequent to clearance of above, firm to dispatch biodiesel to purchaser as per terms and conditions of the purchase order. The characteristics of biodiesel which will need to be tested for each sub lot, at manufacturer's end, in presence of IR inspecting agency, before dispatch, are as per Annexure-II (these would be applicable to sub lots of the main lot manufactured by the supplier and being supplied as per delivery requirements of the purchase order).
- iv) The characteristics of biodiesel which need to be tested for each lot, received at RCD, by IR inspecting agency, are as per Annexure-III.
- v) B100 if stored for longer duration than 6 months should be re-tested as per tests at Annexure-II before use.
- vi) If an order is placed on a firm not qualified by RDSO, then the firm will be required to undergo qualification by RDSO before starting supplies.

Subsequent to blending B5, to be handled similar to petrodiesel. Test requirements would be reviewed based on experience gained.


 (R. N. Misra)
 Sr. ED(CNG)/ED

Distribution

1. मुख्य यॉत्रिक इंजीनियर एवं सीएमपीई / डीजल, मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुंबई - 400001
फैक्स 022-22620210
2. मुख्य यॉत्रिक इंजीनियर एवं सीएमपीई / डीजल, पूर्व रेलवे, फेयरली प्लेस, कोलकाता - 700001
फैक्स 033-22200439
3. मुख्य यॉत्रिक इंजीनियर एवं सीएमपीई / डीजल, उत्तर रेलवे, बड़ौदा हाउस, नई दिल्ली - 110001
फैक्स 011-23387114
4. मुख्य यॉत्रिक इंजीनियर एवं सीएमपीई / डीजल, दक्षिण रेलवे, पार्क टाउन, चेन्नई - 600003
फैक्स 044-25355971
5. मुख्य यॉत्रिक इंजीनियर एवं सीएमपीई / डीजल, दक्षिण मध्य रेलवे, रेल निलयम, सिकन्दराबाद - 500071
फैक्स 040-27822582

Additional Tests of Biodiesel

Annexure-I

Parameter	Limit	Method
Monoglyceride content	0.8%, m/m max.	ASTM D 6584
Diglyceride content	0.2%, m/m max.	ASTM D 6584
Triglyceride content	0.8%, m/m max.	ASTM D 6584
Group I metals (Na+K)	5, max, mg/kg	EN 14108 & EN 14109
Group II metals (Ca+Mg)	5, max, mg/kg	EN 14538
*Cold filter plugging point (CFPP)	6° C, max	IS 1448, P:110
*Pour point	3° C, max	IS 1448, P:10

*IS 1460:2005 for petrodiesel specifies limits for CFPP & Pour point separately for summers and winter. However for geographical uniformity, more critical of the limits have been indicated for B100:B100 storage tanks and dispensation fuel lines should ensure flow properties of the biodiesel used and thus preferably be stored/dispensed at least 5° to 10° higher to the cold filter plugging point.

Suggested additional test requirements would be reviewed based on experience gained.

Annexure-II

Characteristics of Biodiesel which would need to be tested for each lot at Manufacturer's end before dispatch to limits of IS 15607:2005 (latest revision)-

Ref : RDSO M&C Dte. letter no. M&C/Lub/VI/2/Alternate Fuel dated 02/12/14

S.No.	Characteristic	Test Method ISO/ASTM/IS:1448
1	Density @ 15° C, kg/m ³	P-16/P-32
2	Kinematic Viscosity @ 40° C, Cst	P-25
3	Flash Point(PMCC) ° C, Min.	P-21
4	Sulphur, mg/Kg, max.	D 5453
5	Carbon residue (Ramsbottom)% by mass, max	D 4530
6	Sulphated Ash, % by mass, max.	P-4
7	Water Content mg/Kg, max.	D2709
8	Total Contamination, mg/Kg, max.	EN 12662
9	Copper Corrosion, 3 hrs @ 50° C, max	P-15
10	Acid Value, mg KOH/gm, max.	P-1/Sec-1
11	Methanol, % by mass max.	EN 14110
12	Ethanol, % by mass max.	EN 14110
13	Ester Content, % by mass max.	EN 14103
14	Free Glycerol, % by mass max.	D6584
15	Total Glycerol, % by mass max.	D6584
16	Phosphorous, mg/Kg max.	D4951
17	Na & K, mg/Kg max.	EN 14108 & EN 14109
18	Ca and Mg, mg/Kg max.	EN 14538
19	Iodine value	EN 14104
20	Oxidation Stability @ 110° C, h, min..	EN 14112

Annexure-III

Characteristics of Biodiesel which would need to be tested for each lot on receipt at RCD to limits of IS 15607:2005 (latest revision) -

Ref: RDSO M&C Dte. letter no. M&C/Lub/VI/2/Alternate Fuel dated 02/12/14

S.No.	Characteristic	Test Method ISO/ASTM/IS:1448
1	Density @ 15° C, kg/m ³	P-16/P-32
2	Kinematic Viscosity @ 40° C, Cst	P-25
3	Flash Point (PMCC) ° C, Min.	P-21
4	Carbon residue (Ramsbottom)% by mass, max	D 4530
5	Sulphated Ash, % by mass, max.	P-4
6	Copper Corrosion, 3 hrs @ 50° C, max	P-15
7	Iodine value	EN 14104

Government of India
Ministry of Railways
INDIAN RAILWAYS ORGANIZATION FOR ALTERNATE FUELS
12th Floor, Core - 1, Scope Minar, District Centre, Laxmi Nagar, Delhi - 110092.
Phone No.: 011- 22024683 Fax No.: 011 - 22024696
email : cmebd@iroaf.gov.in

No. IROAF/3/CME/BD/Railways

Dated 08/12/2014

Chief Mechanical Engineer,
All Indian Railways,

Sub: Use of Bio-Diesel-storage, blending and issue.
Ref: Meeting at Railway Board on 04/12/2014.

During the CME's conference on 12/11/2014, some Railways had requested for comprehensive guideline on the subject of Bio-Diesel procurement, storage and dispensation. As per the decision taken in that meeting, a special meeting on this subject was convened by the Board on 04/12/2014. The decisions taken on various aspects are under issue by the Board. It was decided in the meeting that IROAF would circulate guidelines in regard to storage, marking, blending of Bio-Diesel with petro diesel and issue of B5 Bio-Diesel to locos. Accordingly the undernoted guidelines are being circulated:

1. Decanting, storage & marking

- a. While blending with Bio-Diesel is to be globally implemented, in the first phase, it needs to be implemented on those fuel installations which meet the following requirements:
 - Have road approach enabling oil tankers to arrive upto decanting point
 - Having a daily issue of at least 20KL of diesel
 - A spare storage tank that can be earmarked for storage of Bio-Diesel
- b. The storage tank identified for exclusive storage of Bio-Diesel (B100) should be marked with prominent green color bands. In case of underground storage tanks the pipeline from the control valves into and out of this Bio-Diesel storage tank should be painted green.
- c. In the existing pipeline layout, all the storage tanks are connected to the common decanting pipeline, with the inflow to individual tank controlled by its valve. On receipt of Bio-Diesel supply through the road tanker, the same will be decanted at the existing decanting terminal and pumped into the (B100) Bio-Diesel tank. No change in the decanting infrastructure is required.

2. Blending

- a. Best blending, without assistance of any mechanical stirring arrangement, will be achieved by mixing petro diesel into Bio-Diesel.

- b. At a time one of the empty storage tanks will be used to prepare B5 Bio-Diesel. For this purpose the discharge valves of B100 Bio-Diesel tank and that of the empty storage tank would be opened and B100 Bio-Diesel equal to 5% capacity of the empty storage tank would be pumped into the empty storage tank. After that the discharge valves of both these tanks would be closed.
- c. The balance volume of the empty storage tank would then be filled with petro diesel through the decanting pipeline. The splash of petro diesel into the Bio-Diesel already available in the tank would provide the requisite blending. Once blended, they will have no tendency to segregate.
- d. Similarly other storage tanks can also be filled with B5 blend of Bio-Diesel, one by one.

3. Issue of blended Bio-Diesel

- a. The 5% Bio-Diesel mixture prepared as per the steps indicated in item 2 above would be ready for issue to the locomotives.
- b. The issue to the locomotives will be made following the existing practices with petro diesel.


(B.K. Agrawal)
Chief Mechanical Engineer/BD

Copy to : EDM/ETraction, Railway Board, New Delhi

Copy to : Sr. ED/Engine Development (CNG), RDSO, Lucknow