

Ministry of Railways

Ministry of Railways decides to adopt HOG system (Head on Generation technology) in all LHB Coaches trains

Till date, 342 trains have already been converted into HOG. This is resulting in saving of approximate Rs 800 crore

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The way ACs run and power supply is done in railway coaches is to transform. Such new technological transformation is also to bring in foreign exchange saving of about 1400 Crore Rupees per year.

In the new technology called - Head on Generation technology, the power will be drawn from the Overhead Electric supply. The power generator cars which used to make huge noise and emit fumes will no more be there. In place of two such generator cars there will be one standby silent generator car to be used for emergency. In place of the other car, there will be LSLRD (LHB Second Luggage, Guard & Divyaang Compartment). This LSLRD will also have capability to convert power from the overhead supply to be utilised in the entire train while providing space for luggage guard room and additional passengers. Currently, the cost of power is over Rs. 36 per unit and with HOG it will available at Rs. 6 Per unit.

Giving these details, Member, Rolling Stock, Shri Rajesh Agarwal said that it is planned to convert all LHB trains to HOG system within this year. Till date 342 trains have already been converted into HOG. This is resulting in saving of approximate Rs 800 crore per year now. 284 more trains are to be converted into HOG by the year end to be resulting in more savings. In the year 2017, decision has been taken for complete switch over to LHB technology. After this decision, adoption of HOG conversion has been taken in mission mode to complete this work in time bound manner. The work involved modification in electrical system of power cars and coaches: All new coaches from Production Units are to be HOG compliant. The conversion work has been allotted to Zonal Railways and with the dedicated efforts of field officers; This will provide noise free and pollution environment for passenger at station.

Break up of trains already converted to HOG

Type of Trains	Number of Trains
Rajdhani	13
Shatabdi	14
Duronto	11
Sampark Kranti	06
Humsafar	16
Other Mail/ Express	282
Total	342

Break up of Trains to be converted to HOG

Type of Trains	Number of Trains
Rajdhani	12
Shatabdi	08
Duronto	06
Sampark Kranti	07
Humsafar	08
Other Mail/ Express	243
Total	284

Brief about Head on Generation system:

Head on Generation system is electrical power supply system where electrical power for catering hotel load of train, which includes Train Lighting, Air conditioning, Lighting, fannage and other passenger interface requirement working on electrical power supply. This scheme is widely used power supply system by Railways world over. The power in this system is received from locomotive. With introduction of this scheme heavy underslung power generating equipment gets eliminated. Further it also reduces use of Diesel sets employed in power cars in End on Generation system.

In the year 1996, Indian railways entered into ToT agreement with Linke Hofmann Busch Germany. The LHB coaches have been designed to run on End on Generation system with two power cars employing two DG sets on either end.

During the period from 2000 to 2017, both LHB and ICF coaches used to be manufactured in Railway Production Units. LHB coaches continued to be manufactured with EOG power supply system employing two power cars at either end. Whereas ICF coaches with self generating technology employing belt driven

alternators in bogies continued to be manufactured.

Cost of electricity generation from DG set and in self generating coaches is very high resulting into increase in diesel consumption and substantial operating expenditure

• **Advantages of HOG system**

	In Rs (Crore)
Annual savings on account of ongoing conversion work	<u>759</u>
Total Savings after completion of HOG conversion work	<u>1390</u>

Energy cost per unit in different power supply system of coaches

Type of coaches	Cost of Electricity (Rs per unit)
Self Generating (Diesel Traction)	36.14
Self Generating (Electric Traction)	12.37
End on Generation (EOG)	22
Head on Generation	6

Reduction in air and noise pollution from EOG to HOG

	EOG	HOG
CO ₂	1724.6 Tons per annum	Nil
NO _x	7.48 Tons per annum	Nil

KSP/AP

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