(d) if so, the details thereof; and

(e) the Central Government's stand in this regard?

THE MINISTER OF STATE IN THE MINISTRY OF FOOD PROCESSING INDUSTRIES (SADHVI NIRANJAN JYOTI): (a) and (b) The Ministry of Food Processing Industries do not specifically reserve funds/subsidy for commodity specific processing units to the States including mango pulp and tamarind processing. However, under the Scheme for Creation/Expansion of Food Processing & Preservation Capacities (CEFPPC) which is one of the new scheme components of Pradhan Mantri Kisan Sampada Yojana (PMKSY) being implemented by this Ministry, Fruits and vegetable processing including mango pulp and tamarind processing is an eligible sector for availing grant in aid. The scheme envisages financial assistance in the form of Grant in aid @ 35% of the eligible project cost subject to a maximum of ₹ 5.00 crore in General Areas; and 50% of the eligible project cost subject to a maximum of ₹ 5.00 crores in North Eastern States including Sikkim and Difficult areas including Himalayan States (Himachal Pradesh, J&K and Uttarakhand), State Notified ITDP areas and Islands. Further, the Government also provide financial assistance to its registered exporters for exports of agricultural and food products. The Government through Agricultural and processed Food Products Exports Development Authority (APEADA) released an amount of ₹ 14.73 crores to 50 exporters of Tamil Nadu State which includes three exporters of mango pulp with an assistance of ₹ 77.58 lakhs.

(c) The Government has not received any proposal from the Government of Tamil Nadu to provide support for the export of mango pulp and other food products from the State.

(d) and (e) Questions do not arise.

Steps taken to bring energy/fuel efficiency in Railways

4639. SHRI CHUNIBHAI KANJIBHAI GOHEL: Will the Minister of RAILWAYS be pleased to state:

(a) the major steps taken by Railways to cut down use of diesel fuel as also to bring energy/fuel efficiency in its operational system to cut down cost during the last one decade;

(b) whether such steps have yielded some positive results in terms of energy/ monetary savings, the details thereof;

(c) the details of energy consumption during the last three years, division-wise; and

(d) whether Railways have charted out a plan to expand the use of solar energy in its system, if so, the details thereof and by when it would be feasible to be used in train operations also?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS (SHRI RAJEN GOHAIN): (a) Steps taken by Railways to cut down use of diesel fuel and energy/fuel efficiency in its operation system as under:

i. Minimum Inventories of all major Railway Consumer Depot (RCD)s have been reduced from 15 to 5 days.

ii. Use of B-5 blended High Speed Diesel (HSD) with 5% Biodiesel in the Diesel Locomotives has been started.

iii. Trip ration is being reviewed properly to tighten the slack trip rationing.

iv. The performance of loco pilots is being monitored regularly. List of bad and good runners are being identified on the basis of fuel consumption *vis-a-vis* trip ration. Bad runners are being counseled and monitored by loco inspectors. Monitoring of Loco Pilots using dynamic brakes and performing coasting according to the topography are being done.

v. To avoid idle running of the Engine of Diesel locomotive, a Joint Procedure Order (JPO) has been jointly issued at Railway Board level with operating department and accordingly at Zonal Railways level also for shutting down of diesel locos in case of idling of the locomotive. Monitoring of idling of diesel locomotives has been started through Remote Monitoring and Management of Locomotive and Trains (REMMLOT) fitted in Diesel Locomotive.

vi. Rationalization of fueling pattern has been implemented based on landed price of HSD oil. The cheaper RCDs are fueling more to diesel locomotive to avoid fueling at costlier location of RCDs.

vii. All Overaged Broad Gauge Diesel Mixed Traffic Engine (WDM2) locos have been withdrawn from mainline service.

viii. Conversion of Driving Power Car (DPC) of DEMU trains in dual fuel (Diesel + LNG/CNG) mode has been started to use CNG in place of HSD.

ix. Auxiliary Power Unit has been introduced in Diesel locos for automatic shutting down of the diesel locomotive while standing idle.

x Retro-fitment of Micro-processor control system in diesel Locomotives have been executed to achieve fuel efficiency.

xi. Common Rail electronic Direct Injection (CReDI) system has been developed and are being fitted in Diesel Locomotive.

xii. Miller cycle based turbochargers and Variable Turbine Geometry (VTG) Turbochargers have been developed for ALCo locomotives to achieve fuel efficiency.

(b) Yes, Sir, expected positive results yielded are as under:

i. 4% saving in fuel consumption has been realized at Eng Test Bed with the use of CReDI on ALCo locomotive engine and 2.5% saving in fuel consumption on HHP locomotives.

ii. Approx. 23 nos. of DPCs have been converted and running in duel fuel (Diesel + CNG) Mode. Diesel displacement of upto 20% has been achieved.

iii. Reliability verification testing of Miller cycle based turbocharger has been completed in field. Approx. 2% fuel saving and 20% reduction in NOx is expected by use of miller cycle based turbocharger. Performance evaluation on engine test bed is scheduled in next month.

iv. Variable Turbine Geometry (VTG) turbocharger has been fitted on a WDG3A loco and 2.5% fuel saving (approx.) has been realized on test bed.

(c) Yes, Sir. The details of energy consumption during the last three years, division-wise is as under:

Sl. No.	Zonal Railways	Division	2014-15	2015-16	2016-17	2017-18 (Upto Feb)
1	2	3	4	5	6	7
			(HSD Oil Consumption in KLs)			
1.	Central	Mumbai	36754	36162	42200	45624
		Bhusawal	44304	46321	41833	38013
		Nagpur	10363	11172	9561	9196

1	2	3	4	5	6	7
		Solapur	92126	93847	92793	81494
		Pune	61196	62928	61066	52956
2.	Eastern	Asansol	23834	23772	24017	20790
		Howrah	46681	45803	41104	32859
		Sealdah	13591	13163	12300	10153
		Malda	60740	59214	59267•	54462
3.	East Central	Dhanbad	44345	47180	47359	45622
		Danapur	11284	10862	11468	10245
		Samastipur	22465	23603	23961	22151
		Mughalsarai	45726	46871	45989	46714
		Sonpur	53422	52569	46822	42291
4.	East Coast	Waltair	70334	80066	86396	77925
		Sambalpur	46698	54255	54255	50813
		Khurda Road	41738	46458	46458	36679
5.	Northern	Delhi	128036	127393	134765	130383
		Firozpur	73718	70778	65009	50311
		Ambala	94108	91025	• 80772	68328
		Lucknow	120923	121623	119657	100566
		Moradabad	87901	85780	78876	62870
6.	North Central	Allahabad	44365	44236	40428	39301
		Jhansi	44182	47847	45406	37389
		Agra	5891	8320	8438	8255
7.	North Eastern	Izzatnager	16219	20342	22970	22949
		Lucknow	101576	95800	83685	65506
		Varanasi	31055	37373	35226	32283
8.	North Frontier	Kathiar	92711	98626	104605	87075
		Rangiya	27467	28303	24623	25241

1	2	3	4	5	6	7
		Lumding	66981	65183	76055	71147
		Tinsukia	10908	13019	14296	14248
9.	North Western	Ajmer	69521	70127	75174	63771
		Bikaner	52383	45929	45467	42177
		Jaipur	133429	133944	139745	129618
		Jodhpur	82170	79316	79686	78004
10.	Southern	Salem	22028	21150	21430	20251
		Palghat	52050	53504	52220	44428
		Trivandrum	12531	11890	11347	12702
		Chennai	4751	4320	4390	4407
		Tiruchchirappalli	31888	28248	30030	32246
		Madurai	32720	28248	30030	32246
11.	South Central	Secunderabad	77165	78742	75487	65518
		Hyderabad	34039	34174	32517	31121
		Vijayawada	22967	23830	25597	23386
		Guntakal	106039	101544	98622	88060
		Guntur	20879	20805	17976	18546
		Nanded	33337	35551	36185	35382
12.	South Eastern	Adra	5197	5546	5946	5218
		Kharagpur	9608	9230	8470	7705
		Chakradharpur	22976	22692	21553	20050
		Ranchi	7462	6823	7047	6568
13.	South East Central	Bilaspur	15759	20491	19956	20370
		Raipur	26345	28778	28191	27223
		Nagpur	15064	13933	10746	10086
14.	South Western	Bengaluru	75471	76688	75025	65770
		Mysore	42672	38309	38188	39177

1	2	3	4	5	6	7
		Hubli	97571	104122	103062	94860
15.	Western	Mumbai Central	4574	4282	3256	2033
		Vadodara	15959	17405	11059	13244
		Ahmedabad	122024	118408	106255	94167
		Ratlam	40180	39388	38137	31357
		Rajkot	20590	18754	18155	17925
		Bhavnagar	34479	31499	28634	21630
16.	West Central	Jabalpur	74709	78665	72502	75335
		Bhopal	63286	59716	66198	59513
		Kota	10545	9322	6680	7538
		TOTAL	3164009	3185266	3126624	2835471

Energy consumption for traction purpose in last three years

Sl. No.	Zonal Railways	Division	Energy Consumption (In Million Units)		
			2015-16 (April-March)	2016-17 (April-March)	2017-18 (April-Dec.)
1	2	3	4	5	6
1.	Central	Bhusawal	580.38	540.49	426.41
		Mumbai CST	767.93	756.66	552.02
		Nagpur	565.9	545.12	426.85
		Pune	21.95	2.1	5.25
		Solapur	2.22	20.45	33.37
2.	East Coast	Khurda Road	602.6	637.04	508.25
		Waltair	411.64	429.92	315.82
3.	East Central	Dhanbad	507.5	520.33	389.68
		Danapur	268.13	271.23	208.2
		Mughalsarai	315.62	282.41	219.98
		Sonpur	18.78	51.64	63.74

1	2	3	4	5	6
4.	Eastern	Asansol	245.54	249.43	180.15
		Howrah	361.22	383.86	268.99
		Sealdah	349.69	352.94	282.2
5.	METRO	-	65.86	68.57	53.29
6.	North Central	Agra	261.37	275.08	193.9
		Allahabad	1017.62	1065.5	749.41
		Jhansi	405.57	395.08	315.53
7.	North Eastern	Varanasi	4.67	24.92	23.07
		Lucknow	6.15	33.08	67.87
8.	Northeast Frontier	Katihar	-	4.79	
9.	Northern	Delhi	311.14	349.05	211.61
		Firozpur	103.76	117.16	119.89
		Lucknow	87.65	115.84	102.78
		Moradabad	100.37	144.01	149.76
		Ambala	117.54	128.63	97.18
10.	North Western	Jaipur	0	0	2.55
11.	South Central	Vijayawada	653.9	626.26	541.17
		Guntur	0	0	0.76
		Guntakal	208.08	193.8	179.22
		Hyderabad	0	0	0
		Secunderabad	663.97	610.43	503.11
12.	South East Central	Bilaspur	874.61	614.2	487.82
		Nagpur	301.02	247.14	188
		Raipur	208.77	204.05	158.32
13.	South Eastern	Adra	170.38	178.02	124.66
		Chakradharpur	722.06	725.15	571.02
		Kharagpur	494.71	516.98	400.31

1	2	3	4	5	6
		Ranchi	133.4	134.65	100.33
		Chennai	568.77	563.81	429.36
		Madurai	38.88	42.56	34.61
14.	Southern	Palghat	54.47	65.3	73.16
		Salem	200.46	193.71	145.18
		Tiruchchirappalli	61.56	70.6	51.88
		Trivandrum	175.79	180.54	134.12
15.	South Western	Bengaluru	80.61	91.51	67.48
		Bhopal	539.47	534.96	411.23
16.	West Central	Jabalpur	236.68	223.57	150.59
		Kota	421.9	436.61	330.32
		Ahmedabad	15.7	16.17	13.11
17.	Western	Mumbai	758.17	741.95	579.84
		Vadodara	374.79	334.58	261.22
		Ratlam	383.45	375.67	297.8
	Total		15842.4	15682.76	12207.16

(d) Details of plan for use of solar energy are as under:

i. Indian railways has planned for 1000 MW of solar power plants by 2020-21 with 500 MW at railway rooftops for non-traction use and 500 MW land based for mostly in traction use. The solar power from land based plants shall be mostly used in train operation.

ii. IROAF is implementing provision of Solar Panels on roof top of coaches and Brake Vans of freight trains for taking up part hotel load (electric lighting and fans load).

iii. In Goods train, Solar Panels on trial basis have been fitted on the roof top of 50 Nos. Guard Brake Vans.

iv. In passenger Trains Solar panels on trial basis has been fitted on the roof top of 06 Nos. Trailer Coaches of Diesel Electric Multiple Units (DEMU).

v. Indian Railways has planned for 1000 MW of solar power plants by 2020-21 with 500 MW at railway rooftops for non-traction use and 500 MW land based for traction use. The solar power from land based plants shall be used in train operation.

vi. Tender for 700 Nos. more Guard Brake Vans is likely to be uploaded by March, 2018 end.

vii. Tender case for 250 Nos. Trailer Coaches of DEMU for Flexi Solar Panels was discharged and Re-Tender is expected to be completed by the end of March, 2018.

viii. The fitment of Solar Panel is also planned in 10 Exhibition Coaches of Swachhata Express, which is to be flagged off in April, 2018.

Installation of anti-collision devices in trains

4640. SHRI PARTAP SINGH BAJWA: Will the Minister of RAILWAYS be pleased to state:

(a) whether Railways have failed to check frequent train accidents;

(b) if so, whether Railways have taken any decision to install anti-collision devices for preventing the said accidents;

(c) if so, the reasons for not using the said device in all the railway Zones after its successful installation on pilot basis in the year 2006;

(d) whether Railways propose to prepare any action plan for taking immediate action regarding installation of the said device to check train accidents; and

(e) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS (SHRI RAJEN GOHAIN): (a) No, Sir. The number of consequential train accidents have decreased during the current year *i.e.* from 01/04/2017 to 31/03/2018 to 73 as compared to 104 numbers during the corresponding period of last year.

(b) to (e) Anti-Collision Device (ACD) developed by Konkan Railway Corporation Limited (KRCL) was provided under a pilot project on 1736 Route Kilometres on Northeast Frontier Railway (NFR). During trials, complex operational and technical problems were experienced which could not be fully resolved by KRCL due to design limitations of ACD. As such, proliferation of ACD has not been undertaken.

Indian Railways have now planned to provide Automatic Train Protection (ATP) conforming to ETCS level-2 standards on the entire Indian Railway Broad Gauge (BG)