

Use of Alternative Fuels in GSE

Roger Johnson
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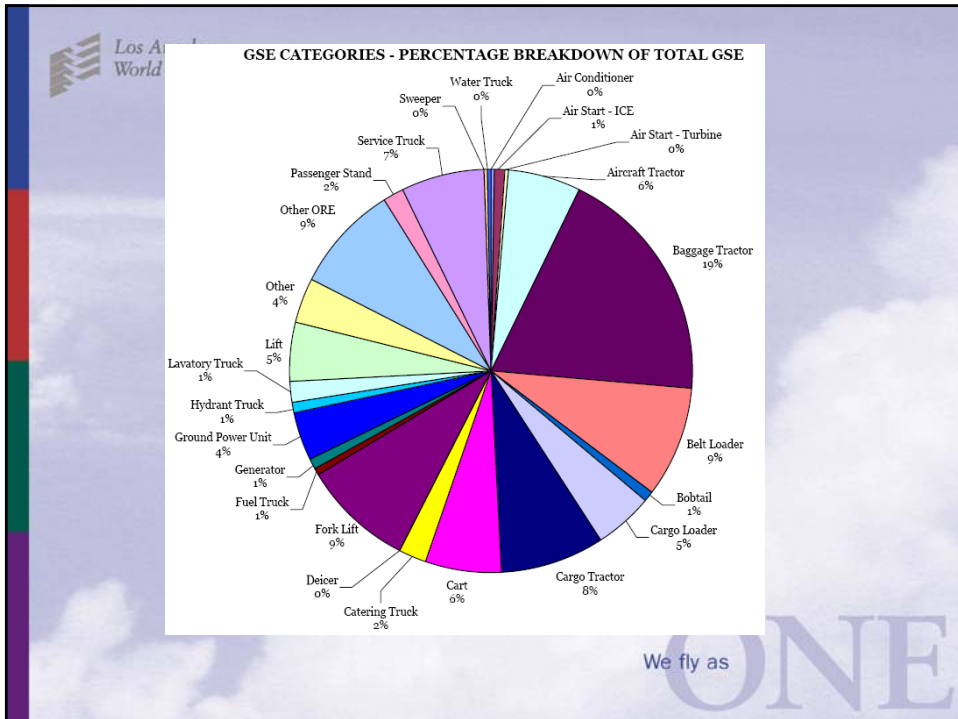
LAX GSE Emissions

- Approximately 1,338 tpy NO_x + HC (2006)
- Equivalent to annual emissions from 85,000 – 100,000 automobiles

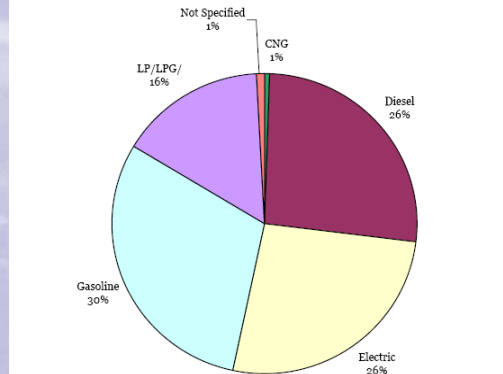
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**Summary of LAX GSE Equipment and Fuel Types
(October 2006)**

GSE Category	Equipment Type		Fuel Type									
			Diesel		Gasoline		Electric		LPG/CNG		Not Specified	
	Count	% of Total	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category	Count	% of Category
Air Conditioner	9	0.3%	8	88.9%		0.0%	1	11.1%		0.0%		0.0%
Air Start	29	1.1%	29	100.0%		0.0%		0.0%		0.0%		0.0%
Aircraft Tractor	157	5.7%	138	87.9%	3	1.9%	14	8.9%	2	1.3%		0.0%
Baggage Tractor	531	19.2%	51	9.6%	72	13.6%	293	55.2%	115	21.7%		0.0%
Belt Loaders	246	8.9%	30	12.2%	76	30.9%	103	41.9%	30	12.2%	7	2.8%
Bobtails	22	0.8%	2	9.1%	18	81.8%		0.0%	2	9.1%		0.0%
Cargo Loader	133	4.8%	132	99.2%	1	0.8%		0.0%		0.0%		0.0%
Cargo Tractor	229	8.3%	21	9.2%	109	47.6%	4	1.7%	95	41.5%		0.0%
Cart	162	5.9%	6	3.7%	2	1.2%	152	93.8%	2	1.2%		0.0%
Catering Truck	61	2.2%	41	67.2%	16	26.2%		0.0%	4	6.6%		0.0%
Deicer	1	0.0%		0.0%	1	100.0%		0.0%		0.0%		0.0%
Fork Lift	245	8.9%	20	8.2%	15	6.1%	54	22.0%	151	61.6%	5	2.0%
Fuel Truck	20	0.7%	14	70.0%	4	20.0%		0.0%	2	10.0%		0.0%
Generator	17	0.6%	11	64.7%	6	35.3%		0.0%		0.0%		0.0%
Ground Power Unit	111	4.0%	82	73.9%	16	14.4%	12	10.8%	1	0.9%		0.0%
Hydrant Truck	26	0.9%	15	57.7%	11	42.3%		0.0%		0.0%		0.0%
Lavatory Truck	40	1.4%	8	20.0%	31	77.5%		0.0%		0.0%	1	2.5%
Lift	135	4.9%	32	23.7%	44	32.6%	38	28.1%	21	15.6%		0.0%
Other	99	3.6%	49	49.5%	34	34.3%	15	15.2%	1	1.0%		0.0%
Other ORE	236	8.6%	6	2.5%	208	88.1%	7	3.0%	15	6.4%		0.0%
Passenger Stand	47	1.7%	4	8.5%	23	48.9%	19	40.4%	1	2.1%		0.0%
Service Truck	180	6.5%	30	16.7%	140	77.8%	8	4.4%	2	1.1%		0.0%
Sweeper	10	0.4%	1	10.0%	4	40.0%	2	20.0%	1	10.0%	2	20.0%
Water Truck	6	0.2%	1	16.7%	4	66.7%		0.0%		0.0%	1	16.7%
Not Specified	7	0.3%		0.0%	1	14.3%		0.0%		0.0%	6	85.7%
TOTAL NUMBER AND % OF TOTAL	2759	100.0%	731	26.5%	839	30.4%	722	26.2%	445	16.1%	22	0.8%



FUEL TYPES FOR TOTAL GSE - PERCENTAGE BREAKDOWN

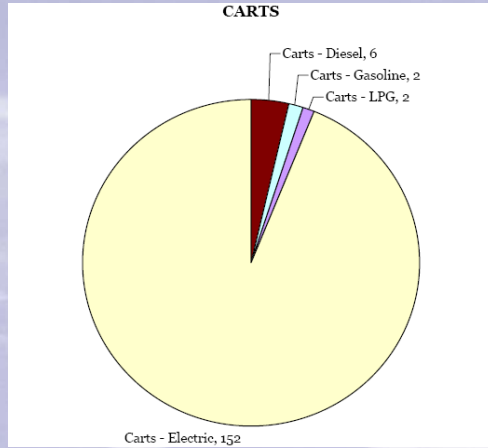


• Approximately 42% Alternative Fuel

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Fuel Types of Top 10 GSE at LAX

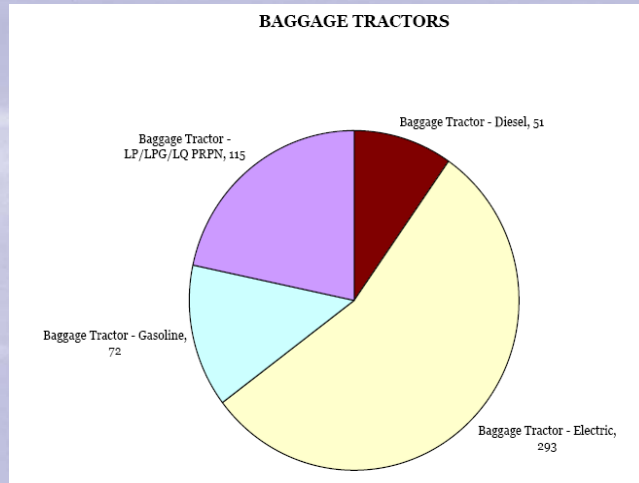
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95% Alternative Fuel

- 94% Electric
- 1% LPG/CNG

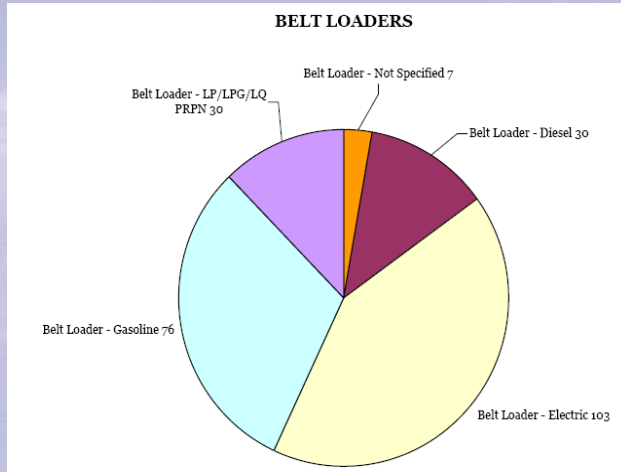
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77% Alternative Fuel

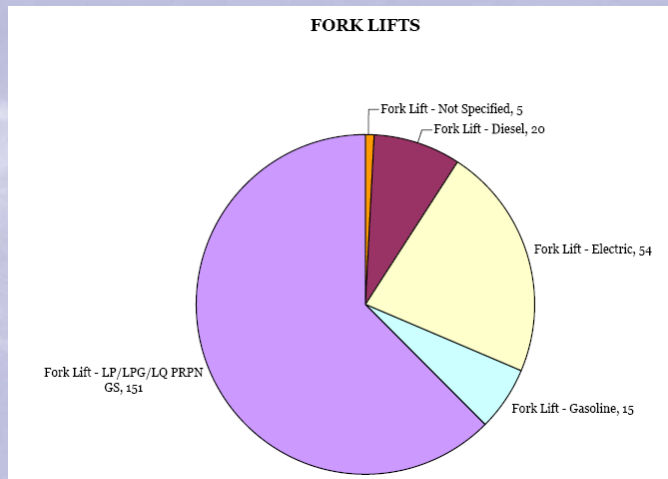
- 55% Electric
- 22% LPG/CNG

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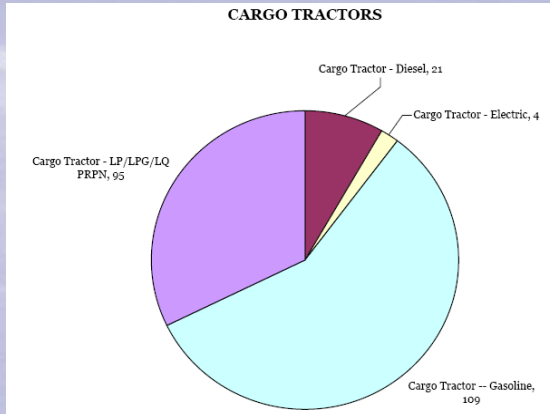
53% Alternative Fuel
•42% Electric
•12% LPG/CNG

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84% Alternative Fuel
•22% Electric
•62% LPG/CNG

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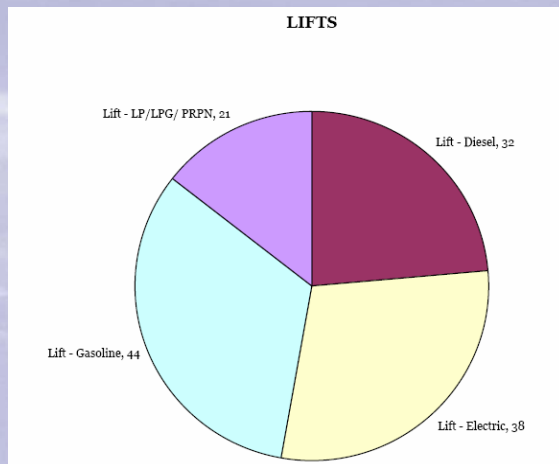


43% Alternative Fuel

- 2% Electric
- 41% LPG/CNG

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ONE



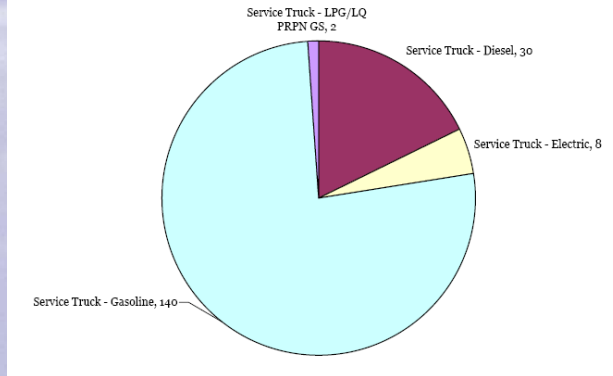
43% Alternative Fuel

- 28% Electric
- 15% LPG/CNG

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SERVICE TRUCKS



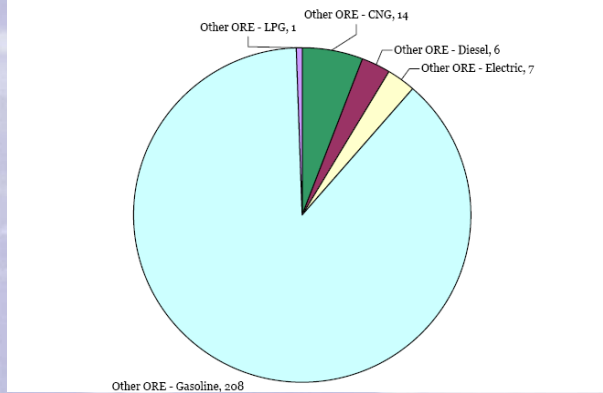
5% Alternative Fuel

- 4% Electric
- 1% LPG/CNG

We fly as

ONE

OTHER ORE

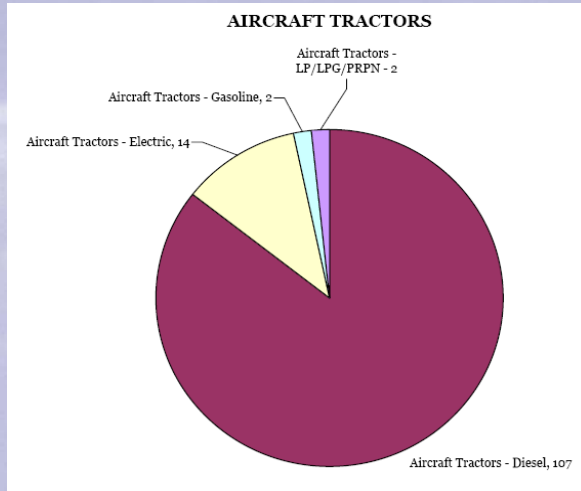


9% Alternative Fuel

- 3% Electric
- 6% LPG/CNG

We fly as

ONE



10% Alternative Fuel

- 9% Electric
- 1% LPG/CNG

We fly as

ONE



Less than 1% Alternative Fuel

We fly as

ONE