Historical Summary of Diesel & Gas Turbine Survey Results (through order year 2013)

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On behalf of
EGSA Market Trends Committee

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Objectives of Analysis

- Compile previous results from the Diesel & Gas Turbine power generation engine order survey to review historical changes – focusing on Gas versus Diesel by power range.
- Highlight North America engine orders compared to worldwide totals.
- Overlay EGSA alternator shipment survey results for North America to show trend information.

Format of Diesel & Gas Turbine Market Survey Results – Order Year 2013

RECIPROCATING ENGINE (DIESEL, DUAL-FUEL & GASEOUS-FUEL) POWER GENERATION ORDERS, January – December 2013

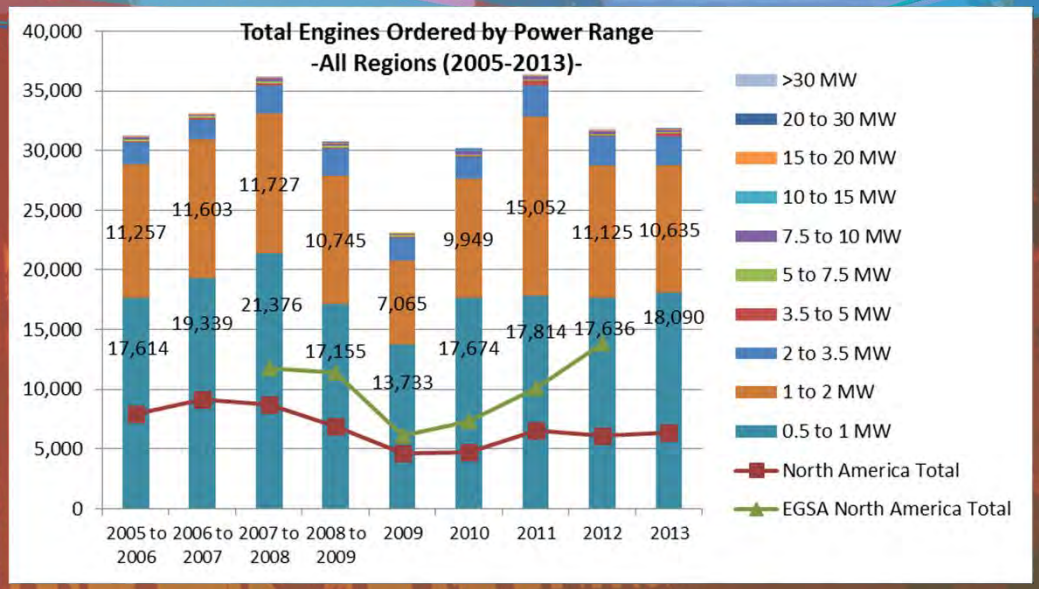
Output Range (MW)	Units Ordered	Total Engine Output (MWe)	Type Of Generating Service			Engine Operating Speed Ranges (r/min)				Fuel					Western Europe	Eastern Europe, Russia & CIS	Middle East	Far East	Southeast Asia & Australia	Central Asia	North Africa	Central/West, East & South Africa	North America	Central America & Caribbean	South America
			Standby	Peaking	Continuous	Below 300	300 - 600	720 - 1000	Above 1000	Diesel Fuel	Heavy Fuel	Dual Fuel	Liquid Biofuel	Natural Gas											
0.50 - 1.00	18 090	13 335	9816	477	8297	0	6	3	18 081	17 086	7	6	0	989	2358	1108	2895	2039	1257	2833	16	753	3389	457	985
1.01 - 2.00	10 635	15 407	5450	365	4820	0	0	151	10 484	9171	95	0	4	1325	1504	474	1145	2407	1649	680	0	289	1981	174	332
2.01 - 3.50	2485	6260	1482	143	860	0	0	35	2450	2137	12	0	1	334	396	52	194	385	256	39	1	46	994	38	84
3.51 - 5.00	196	834	13	0	183	0	0	102	94	22	87	0	4	83	15	13	53	13	16	8	0	61	10	3	4
5.01 - 7.50	142	863	39	0	103	0	0	92	32	56	42	6	0	44	43	19	31	28	6	1	0	4	4	0	6
7.51 - 10.00	179	1667	6	1	172	0	5	174	0	10	69	3	0	97	6	11	6	5	53	45	0	22	0	4	27
10.01 - 15.00	11	127	0	0	11	0	10	1	0	0	4	6	0	1	1	0	0	0	0	0	0	4	0	0	6
15.01 - 20.00	75	1330	0	0	75	0	75	0	0	0	5	39	0	31	0	6	30	0	16	0	0	10	12	1	0
20.01 - 30.00	3	63	0	0	3	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
30.01 and above	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	31 816	39 886	16 306	986	14 524	0	99	558	31 141	28 482	325	60	9	2904	4323	1683	4364	4877	3253	3606	17	1189	6390	677	1447

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey

- Survey results available at: www.dieselgasturbine.com
- Although results are shown by power range and Duty Cycle, Engine Speed, Fuel Type and Region – only one dimension is shown at a time.
- Results are limited to this one dimensional view to protect the companies participating in the survey.

Worldwide Engine Orders by Power Range (2005-2013)

- Over 90% of the engine orders above 0.5 MW are concentrated in the 0.5 to 2 MW range.
- North America accounts for approximately 18 – 25% of worldwide engine orders above 0.5 MW on a yearly basis.
- EGSA reported alternator shipments for use in North America is consistently 30-50% above the levels for engine orders for North America – this is due to the fact that the D&GT survey is a demand driven (orders) survey and the EGSA survey reflects consumption of alternators for genset packaging in North America for domestic use and export.
- In terms of trend the orders from 2012 to 2013 were fairly flat overall with a slight volume shift from the 1 to 2 MW to the 0.5 to 1 MW range.



Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
0.5 to 1 MW	17,614	19,339	21,376	17,155	13,733	17,674	17,814	17,636	18,090
1 to 2 MW	11,257	11,603	11,727	10,745	7,065	9,949	15,052	11,125	10,635
2 to 3.5 MW	1,778	1,632	2,316	2,255	1,925	1,791	2,556	2,428	2,485
3.5 to 5 MW	147	200	180	111	94	149	427	129	196
5 to 7.5 MW	129	111	150	153	103	92	99	83	142
7.5 to 10 MW	151	149	284	155	129	347	279	178	179
10 to 15 MW	14	18	29	31	25	34	13	3	11
15 to 20 MW	60	59	83	82	86	64	92	113	75
20 to 30 MW	0	0	8	1	0	17	4	0	3
>30 MW	1	0	1	0	0	1	2	1	0
Grand Total	31,151	33,111	36,154	30,688	23,160	30,118	36,338	31,696	31,816
North America Total	7,956	9,130	8,725	6,878	4,677	4,772	6,589	6,129	6,390
EGSA North America Total*Note 1			11,740	11,400	6,081	7,366	10,128	*Note 1 13,838	Not Available

*Note 1: The EGSA Alternator Shipment Survey was discontinued with the latest available reporting period of Q2 2012 data. The total of 13,838 for EGSA North America in 2012 is an extrapolated value based on using Q1 & Q2 data as well as historical average estimates for Q3 & Q4 volumes as a percentage of the yearly alternator shipment total.

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey, EGSA Quarterly Generator Shipment Survey.

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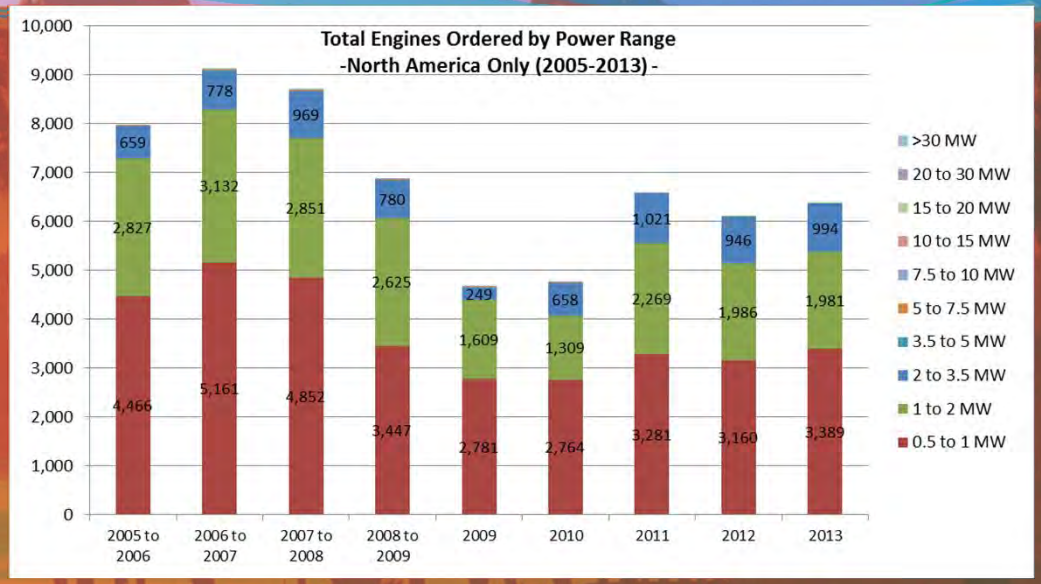
North America Engine Orders by Power Range (2005-2013)

- The average power range distribution for North American engine orders (units basis) over the period 2005-2013 was:
  - 0.5 to 1 MW: 55%
  - 1 to 2 MW: 33%
  - 2 to 3.5 MW: 12%
- Significant amount of variance per year in the 1 to 2 MW range.
- Growth over last 3 years (2011-2013) in the levels in 2-3.5 MW range to around 1000 units/year.

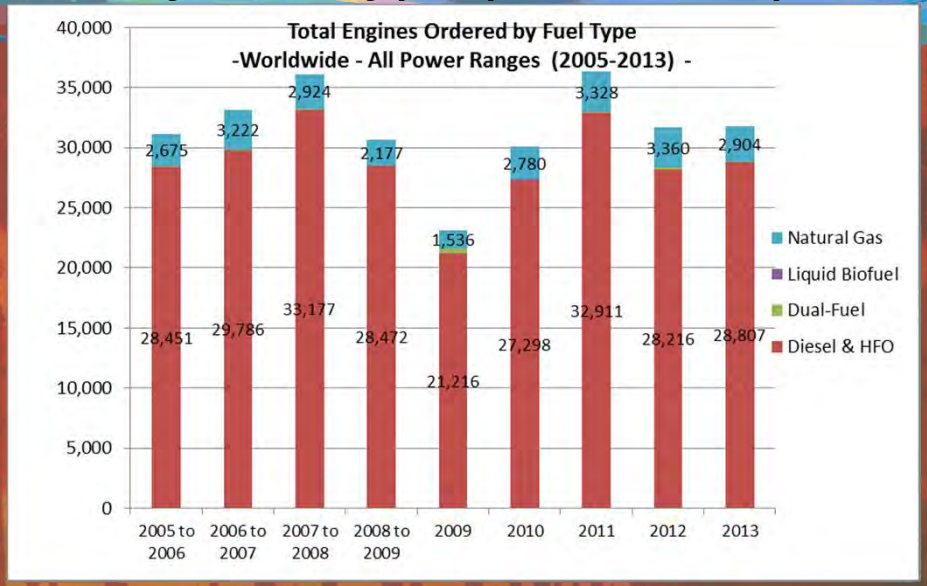


Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
0.5 to 1 MW	4,466	5,161	4,852	3,447	2,781	2,764	3,281	3,160	3,389
1 to 2 MW	2,827	3,132	2,851	2,625	1,609	1,309	2,269	1,986	1,981
2 to 3.5 MW	659	778	969	780	249	658	1,021	946	994
3.5 to 5 MW	3	17	4	7	5	10	9	5	10
5 to 7.5 MW	1	14	9	10	15	11	6	9	4
7.5 to 10 MW	0	24	30	9	18	20	3	1	0
10 to 15 MW	0	3	0	0	0	0	0	0	0
15 to 20 MW	0	1	10	0	0	0	0	22	12
20 to 30 MW	0	0	0	0	0	0	0	0	0
>30 MW	0	0	0	0	0	0	0	0	0
Grand Total	7,956	9,130	8,725	6,878	4,677	4,772	6,589	6,129	6,390

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey

Worldwide Engine Orders by Fuel Type (2005-2013)

- The average split by fuel type (units basis) over the period 2005-2013:
  - Diesel &HFO: 90.9%
  - Dual Fuel: 0.3%
  - Liquid Biofuel: 0.05%
  - Natural Gas: 8.7%



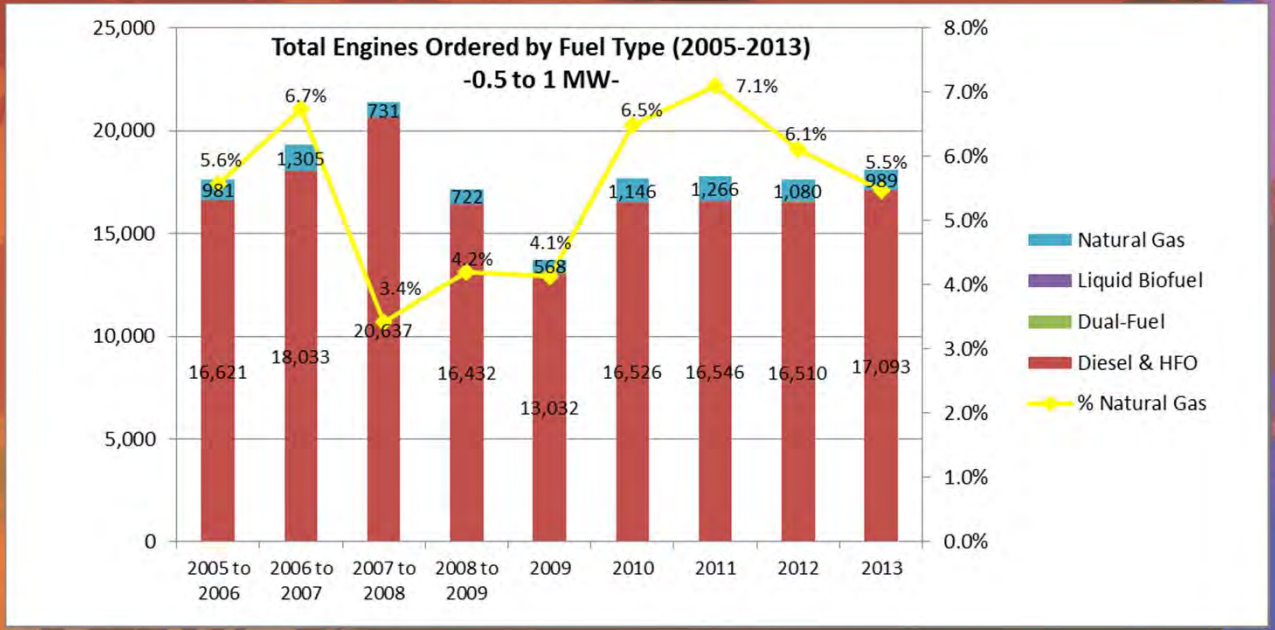
Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
Diesel & HFO	28,451	29,786	33,177	28,472	21,216	27,298	32,911	28,216	28,807
Dual-Fuel	24	41	14	28	401	36	93	111	60
Liquid Biofuel		62	31	11	7	4	6	9	9
Natural Gas	2,675	3,222	2,924	2,177	1,536	2,780	3,328	3,360	2,904
Grand Total	31,150	33,111	36,146	30,688	23,160	30,118	36,338	31,696	31,780

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey

Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
Diesel & HFO	91.3%	90.0%	91.8%	92.8%	91.6%	90.6%	90.6%	89.0%	90.6%
Dual-Fuel	0.1%	0.1%	0.0%	0.1%	1.7%	0.1%	0.3%	0.4%	0.2%
Liquid Biofuel	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Natural Gas	8.6%	9.7%	8.1%	7.1%	6.6%	9.2%	9.2%	10.6%	9.1%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Worldwide Engine Orders by Fuel Type (2005-2013) 0.5 to 1 MW

- The 0.5 to 1 MW range is dominated by Diesel & HFO standby units with an uptick in natural gas units starting from 3-4% during the years 2007-2009 to 6-7% in 2010-2013.
- Fall from 6.1% to 5.5% of total units natural gas from 2012 to 2013 due to the large difference in relative proportion of Diesel & HFO to Natural Gas.
- We would expect this trend to continue towards natural gas to strengthen in future years as it becomes a more attractive and viable fuel option globally.



Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
Diesel & HFO	16,621	18,033	20,637	16,432	13,032	16,526	16,546	16,510	17,093
Dual-Fuel	12	1	0	1	133	2	2	46	6
Liquid Biofuel		0	0	0	0	0	0	0	0
Natural Gas	981	1,305	731	722	568	1,146	1,266	1,080	989
Grand Total	17,614	19,339	21,368	17,155	13,733	17,674	17,814	17,636	18,088
% Natural Gas	5.6%	6.7%	3.4%	4.2%	4.1%	6.5%	7.1%	6.1%	5.5%

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey

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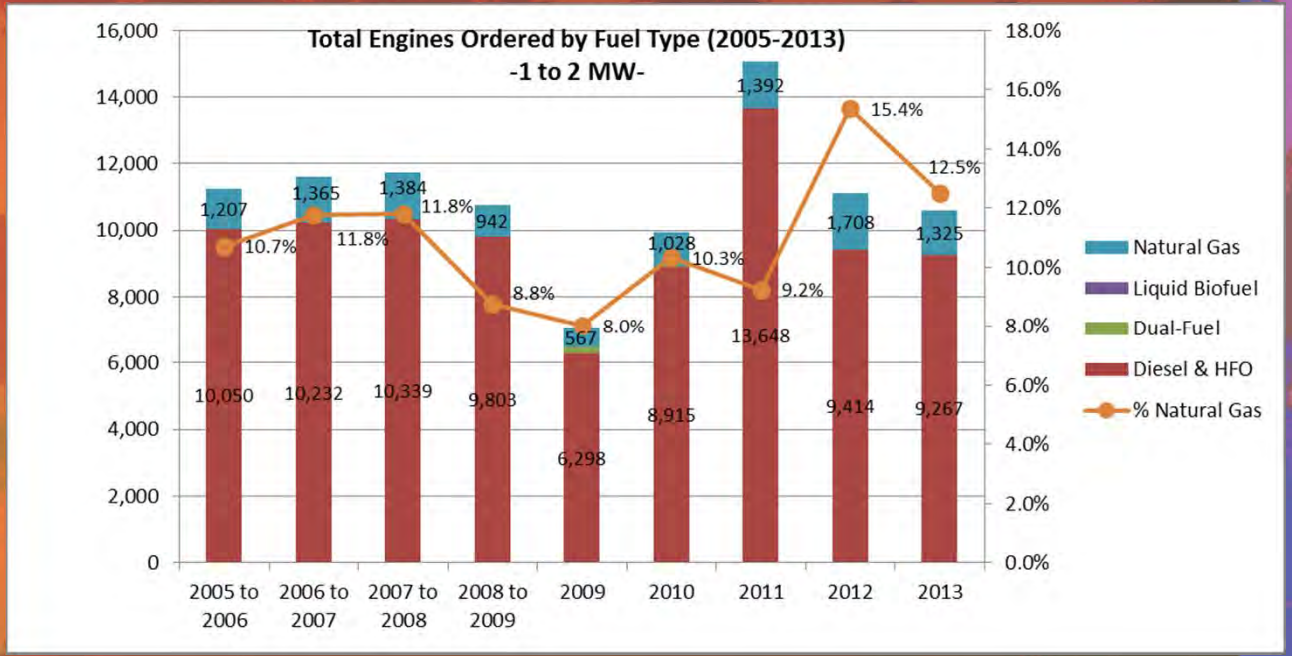
Worldwide Engine Orders by Fuel Type (2005-2013)
1 to 2 MW

- The 1 to 2 MW range has shown the most significant growth of all power ranges in recent years – both in Diesel and Natural Gas.
- In the 1 to 2 MW there is a relatively greater proportion of natural gas units due to use in cogeneration and prime applications (10-12% per year).
- Although total units in the 1 to 2 MW range have decreased the last 2 years since a high of 15,052 in 2011 the percentage of natural gas has remained at higher levels at 15.4% and 12.5% in 2012 and 2013 respectively.



Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
Diesel & HFO	10,050	10,232	10,339	9,803	6,298	8,915	13,648	9,414	9,267
Dual-Fuel	0	0	0	0	200	4	6	0	0
Liquid Biofuel		6	4	0	0	2	6	3	4
Natural Gas	1,207	1,365	1,384	942	567	1,028	1,392	1,708	1,325
Grand Total	11,257	11,603	11,727	10,745	7,065	9,949	15,052	11,125	10,596
% Natural Gas	10.7%	11.8%	11.8%	8.8%	8.0%	10.3%	9.2%	15.4%	12.5%

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey

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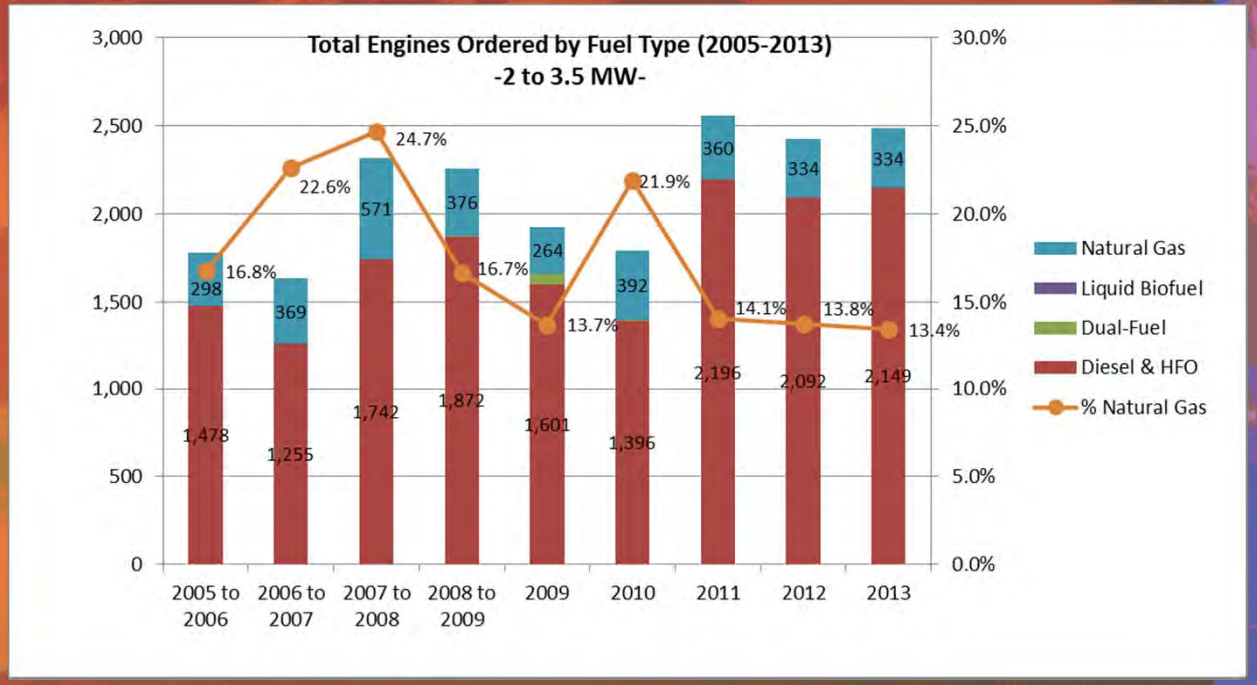
Worldwide Engine Orders by Fuel Type (2005-2013)
2 to 3.5 MW

- In the 2 to 3.5 MW range there are more natural gas units considered for larger utility and peaking projects.
- The penetration of natural gas units is more dependent on the region and the stability of the natural gas supply.
- Noticeable increase in Diesel & HFO orders in 2011-2013 above 2,000 units per year.
- Natural Gas as a percentage of total has stabilized at 13-14% over the last 3 years.



Output Range (MW)	2005 to 2006	2006 to 2007	2007 to 2008	2008 to 2009	2009	2010	2011	2012	2013
Diesel & HFO	1,478	1,255	1,742	1,872	1,601	1,396	2,196	2,092	2,149
Dual-Fuel	1	0	0	4	57	3	0	0	0
Liquid Biofuel		8	3	3	3	0	0	2	1
Natural Gas	298	369	571	376	264	392	360	334	334
Grand Total	1,777	1,632	2,316	2,255	1,925	1,791	2,556	2,428	2,484
% Natural Gas	16.8%	22.6%	24.7%	16.7%	13.7%	21.9%	14.1%	13.8%	13.4%

Source: Diesel & Gas Turbine Worldwide – Power Generation Order Survey