

General Electric Co.

The Empire Resets; Cutting Estimates and Lowering Price Target

The GE narrative is as open and undefined as it's been in decades with the new CEO likely to set the course on four key aspects of the story over 2H: (1) standing '18 guidance, where we see a reset on EPS closer to a GAAP structure (\$1.30)/FCF of ~\$1, along with new long term targets that do not show a "V-shape" recovery, but incorporate a (2) material restructuring that should include project selectivity, dilutive for several years, but accretive thereafter, (3) a change in capital allocation strategy, with a potential cut to buyback, and (4) portfolio priorities/strategic direction where in a sum of the parts analysis we see fair value of ~\$20. We detail in this note a framework for analyzing the messaging to come over the next several months, and while we expect a fresh start, a positive, we don't see a quick or easy fix to the current predicament. Unlike other resets where the multiple expands, we don't see the future growth potential as a catalyst here, and are cutting our price target to \$22 and remain UW.

- **GE has underperformed but more of a reversion, supported by fundamentals.** GE stock has underperformed by 3,000 bps since May 2016, though this was after ~1,500 bps of outperformance between the GECS announcement and May '16. In the meantime, the consensus mindset has moved off of \$2 (EPS), evidence that performance is justified and in our view not a reason on its own to buy GE, though the story has reached a new phase.
- **What next? EPS reset, real restructuring, capital allocation changes, portfolio.** The CEO change was unexpectedly early, and the departure of the head of Power suggests to us that fundamentals are weaker than expected. To start, we see a relatively weak 2Q on rolling FCF that will not go far enough to dispel related concerns, and should result in operating cuts to the '17 base. From here, the new CEO, over the course of the 2H, has four fronts around which to set a new agenda, for which we believe everything is on the table for change: (1) EPS/FCF outlook, including likely (2) restructuring, (3) capital allocation, and (4) portfolio priorities. Messaging on these fronts will be key to evaluate achievability, the true level of change here, and ultimately set the narrative while timing of share-based comp allocations (including options pricing) is the next important data point that is TBD.

General Electric Co. (GE;GE US)

FYE Dec	2016A	2017E (Prev)	2017E (Curr)	2018E (Prev)	2018E (Curr)	2019E	2020E
EPS - Recurring (\$)							
Q1 (Mar)	0.21	0.21A	0.21A	-	-	-	-
Q2 (Jun)	0.51	0.26	0.25	-	-	-	-
Q3 (Sep)	0.32	-	-	-	-	-	-
Q4 (Dec)	0.46	-	-	-	-	-	-
FY	1.49	1.60	1.57	1.80	1.50	1.65	1.75
Bloomberg EPS FY (\$)	1.49	-	1.63	-	1.89	2.09	-

Source: Company data, Bloomberg, J.P. Morgan estimates.

See page 130 for analyst certification and important disclosures.

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Underweight

GE, GE US

Price: \$27.35

▼ **Price Target: \$22.00**
 Previous: \$27.00



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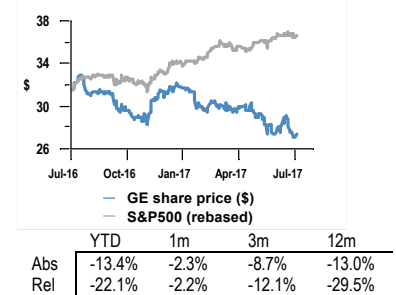
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Price Performance



Company Data	
Price (\$)	27.35
Date Of Price	05 Jul 17
52-week Range (\$)	33.00-26.79
Market Cap (\$ mn)	249,705.50
Fiscal Year End	Dec
Shares O/S (mn)	9,130
Price Target (\$)	22.00
Price Target End Date	31-Dec-17

- **(1) EPS/FCF outlook: cutting estimates, \$1 is the credible anchor, not \$2.** Bulls expect an EPS cut to be “not that bad”, and many have migrated below \$1.90, but with the sudden management change, we see something more material. Our estimate goes to \$1.50 for 2018 and includes a cut to Power/Oil&Gas, a tweak lower in buyback, the coming accounting change and a move to continuing ops at GECS (vs just vertical assets). However, to simplify, we think management will consider something closer to FCF where our new estimate is \$0.95, and here a GAAP structure (including non-op pension) makes some sense, which gets us to \$1.30, a “consensus conversion” of ~75%. There is a fine line here where too much of a cut puts the dividend at risk and disrupts the heavy retail/passive base, though too little of a cut means more of the same where actual results will continue to chase estimates.
- **...with limited growth potential beyond: \$1.25 in '20E FCF.** With limited resources for capital deployment, and the mixed growth outlook for these late cycle businesses our 2020 GAAP estimate (\$1.57) is below standing consensus for 2017, with \$1.25 in FCF. This lack of growth is probably the most under-appreciated aspect of the story and a big differentiator versus other past “reset” stories like Emerson, who had short cycle tailwinds, 20% balance sheet optionality and 100%+ FCF conversion. GE ranks low on all fronts and looks to us more like JCI, a lower growth portfolio that trades at a ~25% discount on reported EPS but close to parity on FCF.
- **(2) Restructuring “red meat” for Bulls, but ultimate outcome is likely dilutive near term...** With SGA/R&D low, and gross margin only 27%, we don't see a quick fix from restructuring alone. After hailing Digital as a differentiator, Bulls are calling for spending cuts here, and there could be some savings, though we see much of this is non-discretionary and needed to maintain the historic moat, stem secular pressures, and try to keep up with those like Siemens. The degree of footprint commitment recently, including HDGT capacity for 48 H-frames (23 shipments for '17), the ~45 GW market forecast for which we expect to be cut soon, means extended paybacks on whatever restructuring comes, further complicated by substantial local commitments in Russia, Saudi Arabia, Algeria, Ghana, Nigeria, among others. Ultimately, we see potential for cumulative restructuring of ~\$7 B over a five year period, ~75% of which is cash (~\$5B). In addition, we see project selectivity, possibly in the range of ~\$25B, also necessary to improve margins, though ultimately dilutive to the intermediate term cash flow by ~\$0.15, not reflected in our numbers, given the uncertain nature of what may come.
- **...as what went wrong cannot be easily fixed...** Put simply, poorly timed investments to catch up to emerging markets and ultimately optimistic growth assumptions for “resource rich” countries, along with a corporate imperative for market share, has left the company with structural over-capacity, mostly in Power/Oil&Gas/Transportation. While GE can tout leading shares in these oligopolistic markets, these are increasingly competitive (more now from EMs) globally complex businesses where established players not only compete on price, but generally underprice risk as they take on more solutions scope to nail down services streams that in some areas are increasingly less lucrative and tough to turn into cash flow. The recent Alstom/BHI deals doubled down here.

- **...with cultural restructuring focused less on “accountability”, more “pragmatism”.** On the softer, cultural side, Bulls constantly say execution needs to be better, though we think the opposite: that execution, as defined as stretching to hit a target in any way possible, should be replaced by “pragmatism”, where managers are not afraid to bring bad news to the C-suite. A product of the Welch era, we believe there is almost too much accountability at GE, to a point where bad news does not travel fast enough to senior management leading to decisions that are not perfectly informed and more often than not late, as per the push into EM-related fossil markets. Disclosure requirements make the game of managing problems after they happen with financial engineering significantly more challenging than in the Welch era. From an investor perspective this “no bad news” culture was a key reason why expectations never reset. This is a key change we will be watching for.
- **(3) Capital allocation: limited balance sheet options with a watchful eye on the dividend, a significant hurdle to quick fix.** With a levered finco, heavy pension overhang, and most capital committed, we see limited optionality here for a new CEO to limit dilution that comes from a change in strategy. The >100% dividend payout ratio in the near term means there is no cash piling up on the balance sheet. The new CEO has committed to the dividend, so we think the buyback is the most fungible use to ratchet back and provide support for the near-term dividend, saving ~\$7B but dilutive by ~\$0.05. Even saving the buyback leaves optionality at 5% of the market cap, below the sector average.
- **(4) Portfolio debate: “financials to fossil”; after transformation, we see good businesses, bad industries...** At a simplified level, Bulls would likely make the case that with leading market shares and a strong installed base, these are “great businesses”. Now that segment profits have missed, Bulls are essentially saying this lower level deserves a higher multiple. We disagree. The portfolio quality is reflected in FCF, which has decoupled because of the business model, and the reach for revenue around the globe where growth is inherently less efficient. Put simply, the GE portfolio is split between “fossil” related products (~50% of revs), which we believe are at best operating in “new normal” environments, a Healthcare business that is ~50% low growth/commoditized, and then “jewels”, Aviation and Life Sciences (~27% of revs). Every company we cover has businesses that face long term challenges, but this ratio is the most skewed to the downside. This is not a result of GE’s inability to make good products/innovate, it’s mostly because of the end market dynamics to which the company levered up to further with Alstom and BHI.
- **...SOTP is negative with significant dis-synergies with an unwind unlike anything ever seen in a break-up.** We see the SOTP in the ~\$20 range, or ~30% below standing levels. Aside from a qualitative debate on business quality, the impact of dis-synergies around pension, tax, corporate functions (GE/BHI “GE Store” rationale?), accounting (material JV structures, numbering ~40, for which disclosure is almost non-existent, except that \$400mm+ was spent out of investing CF last year), ~\$50B of guaranteed GECS debt, and ultimately FCF divergences between businesses are key detracting factors. Also keep in mind that the company has a standstill agreement for 2 years on BHI, while the new CEO talked down a spin of

Healthcare while talking up the value of the GE store. We also would expect significant run rate corporate costs, which could potentially add \$1B to the base.

- **We will evaluate what comes, but remain UW.** We use a combination of SOTP and straight valuation and cut our PT to \$22. With most companies set to beat and raise with balance sheet options for upside, on our numbers GE stands out for a legitimate base case for ~20% downside, with more downside in a recession scenario, and limited upside optionality/growth off of whatever the base becomes. We remain UW.

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Summary Investment Thesis

After the GECS spin announced in April '15, GE was clearly a more analyzable company for Industrial investors, with the debate shifting to actual performance in the Industrial businesses as well as the quality of the businesses and the end markets they participate in. Results over the past couple years have been materially weaker on profits, punctuated by the collapse in Industrial FCF, driven partly by oil & gas markets but also inherent challenges in the largest, core power gen business. Bulls have a view that weakness here is temporary, though management recently reinforced that there is no V-shaped recovery in FCF in the near term. While the \$2 in '18 EPS was more or less officially off the table following EPG, the earlier than expected CEO change has re-opened debate around everything, including (1) the reset consensus EPS, (2) cost structure, (3) capital allocation strategy, and (4) portfolio priorities. A debate around business quality is the backdrop for this discussion, and, in any event, there is a need for a material reset, one that cleans up the presentation of the numbers, though with such a thin line between cash and the dividend, meaning there are limits to how much can be done without validating those concerns. In this note, we provide our take on all four key aspects, and subsequently update our estimates out to 2020, cutting 2018 numbers to a Street low \$1.50, ~20% below consensus. We lower our PT to \$22, which is an average of fundamentals and our SOTPs and we think more fairly reflects business quality.

“Mind the GAAP”: step one is a reset on '18, for which anchor is \$1 not \$2...

We believe the first order of business for the new CEO is to sit down for in-depth business reviews and figure out what the run rate sustainable base of earnings is. We think, given a clean sheet of paper, the new CEO has an opportunity to reset the earnings base in line with fundamental reality as well as close to a comparable GAAP number vs peers. With a weak 1H resulting in risk to annual guidance, and management in May already walking away from standing '18 guide of \$2, it's clear that the adjustment is to the downside. With a fresh cut at the model, dialing in weakness at the Power Gen business and the realities of standing oil price, we are cutting our 2018 operating estimate from \$1.80 to \$1.50. Importantly, \$0.15 are cash cuts, with some other tweaks for a lower buyback (see below), along with further \$0.05 of potential downside from the coming accounting change, and moving GECS from pro-forma “Verticals” to “continuing ops” (\$0.05). The corresponding FCF estimate irrespective of accounting change is now \$0.95. We also believe that the company will look to simplify the message and limit standing adjustments, moving more towards a GAAP estimate, which may or may not include re-incorporating pension (\$0.18). The table below shows how all of this shakes out, showing “conversion on consensus” of a more reasonable, yet far from best in class at ~75%. Indeed, GE is by far sector worst when it comes to differences between GAAP and consensus, and then “consensus conversion” something we believe a move to GAAP would help remedy.

Table 1: GE 2018 EPS and FCF

EPS Guide (High-end)	\$2.00
Standing Consensus	\$1.89
Prior JPMe	\$1.80
Fundamental Cuts JPMe	(\$0.15)
Buyback Cut	(\$0.05)
Accounting Change (GE Guide)	(\$0.05)
GECS "Other continuing ops"	(\$0.05)
New JPMe	\$1.50
Non-operating Pension	(\$0.18)
New GAAP	\$1.32
New FCF JPMe	\$0.95
"Consensus Conversion"	72%

Source: Company reports, Bloomberg and J.P. Morgan estimates

Table 2: EE/MI 2016 Consensus EPS vs GAAP EPS and GAAP FCF

\$ per share and %

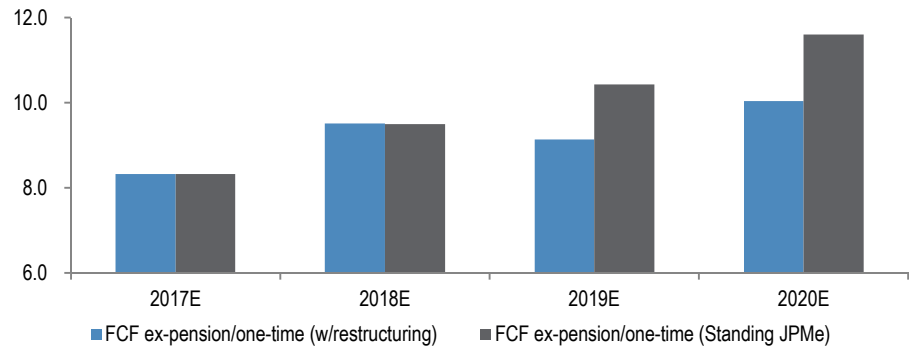
	GE	DHR	DOV	EMR	HON	IR	MMM	PNR	ROK	ROP	UTX	Avg
GAAP Cont Ops	\$1.00	\$3.08	\$3.25	\$2.52	\$6.20	\$5.52	\$8.16	\$2.47	\$5.56	\$6.43	\$6.13	
Consensus EPS	\$1.49	\$3.61	\$2.82	\$2.98	\$6.60	\$4.13	\$8.16	\$3.05	\$5.93	\$6.57	\$6.61	
Difference	49%	17%	-13%	18%	6%	-25%	0%	23%	7%	2%	8%	8%
GAAP FCF	\$0.66	\$4.19	\$4.45	\$3.75	\$5.69	\$4.69	\$8.47	\$4.06	\$6.33	\$9.01	\$5.71	
Difference	-56%	16%	58%	26%	-14%	14%	4%	33%	7%	37%	-14%	10%
= Consensus conversion	44%	116%	158%	126%	86%	114%	104%	133%	107%	137%	86%	110%

Source: Company reports and Bloomberg

Restructuring program likely, but expensive with extended paybacks, with ~15% dilution in a base case scenario, not yet in our numbers

Going forward, we think the new CEO could likely come up with new cost cut plans, though this is after already ~\$14B in restructuring & 'other' costs already taken/announced over the course of this cycle, SG&A and R&D already at or below sector average levels for key segments like Aviation and Power, and corporate costs down materially over the last 5 years. We don't think there is much more room to cut here to drive further upside to standing estimates (ALO accretion, BHI synergies, Renewables expansion, all already credited for in our and consensus models). With a backdrop of tough markets and slow growth (we model 1.5% organic CAGR for Industrial from 2017-2020E), we think the only opportunity remaining on the cash front is to exit markets/regions which have low/negative cash margin, a total revenue base that could be as large as \$20B, and turning focus to product lines and regions which have some secular growth drivers (Aviation, Healthcare). We don't think this will be easy given GE's presence in tough markets and regions, which have needed local employee and investment commitment to secure contracts, and is likely to be a long-drawn multi-year process which will be cash/earnings dilutive in the near to medium-term with long-term paybacks that could stretch over many years. Net-net, we see the need for ~\$7B in incremental restructuring, of which ~75% is cash (using peer ratios) in order to drive the overall FCF margin levels to more normalized levels. This heavy restructuring would ultimately result in near-term FCF dilution (~10-15% on 2020 ests) reducing our standing near-term FCF CAGR estimates by 5%. *To be clear, this exercise is theoretical and merely intended to demonstrate the degree of near-term restructuring and earnings dilution needed.*

Figure 1: FCF in 2019, 2020 to Be Materially Lower than Standing Estimates with Aggressive Restructuring



Source: J.P. Morgan estimates

Capital allocation: thin line on dividend, but likely maintained, buyback looks vulnerable, still not above average optionality to grow business

The new CEO has messaged clearly that the dividend is sacrosanct. However, with essentially no available cash flow and a dividend payout of ~100% on FCF/~75% on GAAP EPS, funding it, at least for the near term, is an issue. With ~\$50 B in guaranteed GECS debt and a ~\$35B pension overhang, we don't see as much room for leverage as Bulls do. In an effort to maintain flexibility for the future, we see a cut to the buyback, following on the recent slow roll of repurchase in 2Q17. With the profile below, "optionality" as we define it would move to ~5% of the market cap, closer to the sector but still below average of ~8% for the group. This relative lack of resources remains a key reason why other stocks look more attractive to us.

Table 3: Expected Sources and Uses of Cash

\$ billion	'17-'20	Comments
<u>Expected sources of cash</u>		
Parent cash on Balance Sheet 12/31/16	10.5	
Industrial CFOA, 2017E (GAAP)	8.2	Includes Water/Industrial Deal Taxes and \$1.7B Pension Contribution
Industrial CFOA, 2018E (GAAP)	10.8	Includes \$1.6B Pension Contribution
Industrial CFOA, 2019E (GAAP)	11.6	Includes \$1.6B Pension Contribution
Industrial CFOA, 2020E (GAAP)	12.6	Includes \$1.6B Pension Contribution
Divestiture Proceeds (2017-2020E)	7.0	Water + Industrial Solutions + Lighting
P&E Dispositions (2017-2020E)	2.3	
GECC dividends (2017-2020E)	10.0	Assuming \$7B in 2017 and \$1B each in 2018-2020E
<u>Net Debt Proceeds (2017-2020E)</u>	27.9	<u>Assumed 2018 ending net leverage of 2.0x</u>
Total sources	101.0	
<u>Uses of cash</u>		
Parent cash required on balance sheet (JPMe)	(5.0)	
Dividend 2017E	(8.4)	
Dividend 2018E	(8.3)	Flat Div/Share and Flat Share count
Dividend 2019E	(8.3)	Flat Div/Share and Flat Share count
Dividend 2020E	(8.3)	Flat Div/Share and Flat Share count
Capex 2017E	(4.0)	
Capex 2018E	(3.6)	
Capex 2019E	(3.3)	
Capex 2020E	(2.9)	
Other Investing Cash Flow (2017-2020E)	(4.2)	
Buyback (Including GECC dividends, 2017-2020E)	(14.0)	\$7.5B in 2017, \$2B each in 2018-2020 to keep share count flat
Other Uses To Date (2017-Current)	(0.1)	
Announced/Completed M&A	(12.8)	Baker + LM Wind + Digital Deals
<u>Optionality (incremental M&A or additional buyback)</u>	<u>(17.9)</u>	
Total uses	(101.0)	

Source: J.P. Morgan Estimates

No “V-shape”: our 2020 at \$1.75 in EPS, \$1.25 in FCF

We think it’s legitimate to extend the narrative beyond ’18, we use 2020 as our base case for now, and do assume the business can grow over time. Using our fundamental estimates, we show 5% EPS growth CAGR, with a mix of tailwinds (Aviation top line, Renewables, BHI synergies, and Healthcare), and headwinds (Power, Transportation and lack of growth in GECS verticals). GAAP EPS and FCF would grow faster given GECS continuing ops recovery and lower restructuring assumptions. However, given limited available cash for growth, there is only so much the company can do to add upside.

Table 4: Summary GE Segment and Income Statement Model

	2016	2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E
Revenue						Core Growth				
Power	26,827	27,715	25,726	24,502	23,414		7.6%	-3.4%	-4.8%	-4.4%
Renewables	9,033	11,319	12,342	12,734	12,966		7.5%	4.6%	3.2%	1.8%
Oil & Gas	12,898	17,393	23,407	23,941	24,648		-4.8%	3.9%	2.3%	3.0%
Legacy GE Oil & Gas	12,898	12,283	12,124	12,245	12,609		2.0%	2.0%	2.0%	2.0%
Energy Connection + Lighting	15,133	12,746	9,501	9,691	9,885		3.5%	2.5%	3.5%	3.0%
Aviation	26,261	27,473	28,160	29,146	30,020		3.3%	3.0%	3.0%	3.0%
Healthcare	18,291	18,774	19,338	19,918	20,515		<u>-22.6%</u>	<u>-5.0%</u>	<u>1.5%</u>	<u>2.0%</u>
Transportation	<u>4,713</u>	<u>3,657</u>	<u>3,474</u>	<u>3,526</u>	<u>3,597</u>		<u>2.6%</u>	<u>1.3%</u>	<u>1.2%</u>	<u>1.3%</u>
Total Segment Sales	113,156	119,077	121,947	123,458	125,046					
Profit						Y/Y Growth				
Power	4,979	5,436	5,296	5,106	5,038		9.2%	-2.6%	-3.6%	-1.3%
Renewables	576	849	987	1,082	1,167		47.4%	16.3%	9.6%	7.8%
Oil & Gas	1,392	726	1,563	2,186	2,551		-47.8%	115.2%	39.8%	16.7%
Oil & Gas ex-BHI	1,392	1,179	1,128	1,169	1,299		-15.3%	-4.4%	3.7%	11.1%
Energy Connection + Lighting	311	319	285	436	544		2.5%	-10.6%	53.0%	24.7%
Aviation	6,115	6,401	6,392	6,703	7,205		4.7%	-0.1%	4.9%	7.5%
Healthcare	3,161	3,314	3,510	3,685	3,857		4.8%	5.9%	5.0%	4.7%
Transportation	1,064	775	709	728	750		-27.1%	-8.6%	2.7%	3.0%
Accounting Change			<u>(500)</u>							
Total Segment Profit	17,598	17,820	18,242	19,927	21,111		1.3%	2.4%	9.2%	5.9%
Total Segment Profit (ex-BHI)	17,598	18,272	17,807	18,911	19,859		3.8%	-2.5%	6.2%	5.0%
Adjusted Corporate (exc restr/gains/BHI)	<u>(2,040)</u>	<u>(1,624)</u>	<u>(1,515)</u>	<u>(1,315)</u>	<u>(1,315)</u>					
Total Ind Profit (incl BHI minority)	15,558	16,196	17,727	18,612	19,795		4.1%	3.3%	11.3%	6.4%
GE Capital	1,892	1,950	1,400	1,428	1,428					
Corp and Elims, GAAP (inc BHI minority)	(4,226)	(3,466)	(4,267)	(4,488)	(4,657)					
Interest and other financial charges	(2,026)	(2,364)	(2,425)	(2,425)	(2,425)					
Pre-tax Income	13,238	13,940	12,950	14,441	15,457					
Non-op Pension Add/Back	1,334	1,504	1,550	1,550	1,550					
Tax Rate	9%	14%	14%	14%	14%					
Income Taxes	(967)	(1,683)	(1,546)	(1,762)	(1,904)					
Avg. Shares - diluted	9,130	8,756	8,642	8,631	8,630					
Earnings Per Share - Reported	\$1.49	\$1.57	\$1.50	\$1.65	\$1.75					

Source: Company reports and J.P. Morgan estimates.

Table 5: Walk Through Different Definitions of FCF and Related Conversion on Reported and Industrial EPS

\$ millions

	2014	2015	2016	2017E	2018E	2019E	2020E
GAAP FCF							
Industrial CFOA	12,171	12,054	9,775	8,205	10,797	11,582	12,659
Gross Capex	(3,970)	(3,785)	(3,758)	(3,950)	(3,600)	(3,250)	(2,900)
Ind FCF GAAP	8,201	8,269	6,017	4,255	7,197	8,332	9,759
GE Capital Dividends (Ex-divestitures)	3,000	0	0	0	1,000	1,000	1,000
Industrial FCF/Share	\$0.81	\$0.83	\$0.66	\$0.49	\$0.83	\$0.97	\$1.13
Total FCF/Share	\$1.11	\$0.83	\$0.66	\$0.49	\$0.95	\$1.08	\$1.25
Industrial Conversion	84%	72%	51%	36%	62%	65%	71%
Total Conversion	67%	63%	44%	31%	63%	66%	71%
Walk from GAAP FCF to GE Definition							
(+) Dispositions	615	939	1,080	880	700	500	250
(+) Deal Taxes add-back	0	184	1,398	1,495	0	0	0
(+) GE Pension Contributions add-back	0	0	347	1,700	1,600	1,600	1,600
Ind FCF GE Definition	8,816	9,392	8,842	8,331	9,497	10,432	11,609
Industrial FCF/Share	\$0.87	\$0.94	\$0.97	\$0.95	\$1.10	\$1.21	\$1.35
Total FCF/Share	\$1.17	\$0.94	\$0.97	\$0.95	\$1.21	\$1.32	\$1.46
Industrial Conversion	90%	82%	75%	71%	82%	82%	85%
Total Conversion	71%	72%	65%	61%	81%	80%	83%
Walk from GAAP FCF to JPM Definition							
(+) Dispositions	615	939	1,080	880	700	500	250
(+) Deal Taxes add-back	0	184	1,398	1,495	0	0	0
(-) Other investing Activities/other	(1,060)	(1,296)	(2,302)	(1,236)	(1,200)	(1,000)	(750)
Ind FCF JPM Definition	7,756	8,096	6,193	5,395	6,697	7,832	9,259
Industrial FCF/Share	\$0.77	\$0.81	\$0.68	\$0.62	\$0.77	\$0.91	\$1.07
Total FCF/Share	\$1.06	\$0.81	\$0.68	\$0.62	\$0.89	\$1.02	\$1.19
Industrial Conversion	80%	71%	53%	46%	58%	61%	68%
Total Conversion	64%	62%	46%	39%	59%	62%	68%
Dividends to shareholders	(8,851)	(9,289)	(8,474)	(8,406)	(8,296)	(8,285)	(8,285)
FCF after Dividends (JPM Definition)	1,905	(1,193)	(2,281)	(3,011)	(599)	546	1,974

Source: Company reports and J.P. Morgan estimates.

Portfolio will be clarified but tough to make too many moves with dis-synergies, and if dividend maintained, limited available FCF to grow

The new CEO will likely have a fresh look at the portfolio and decide what is core and non-core, and this is tougher for us to call. Many Bulls see a wholesale breakup as the best outcome. We disagree and see the financial complexity at GE as a significant hurdle. Dis-synergies include pension (\$30 B+, \$7 B of which was “left-over” from GECS), tax (15% rate, despite US domicile), corporate functions (GE/BHI “GE Store” rationale?), accounting (material JV structures, numbering ~40, for which disclosure is almost non-existent). Lastly, FCF divergences between the businesses, with Power the most depressed, further complicate the situation and would make this asset as a stand-alone look potentially like a “bad bank” (see SPX corp).

Portfolio quality matters: Bulls anoint GE’s business as “great”, but metrics and secular trends don’t support this notion

Here, we are of the view that GE competes in globally complex businesses in markets that have a degree of secular challenge for which players not only compete on price, but generally underprice risk as they take on more solutions scope to nail down services streams that in some areas are increasingly less lucrative. GE invested heavily in emerging markets at the peak, with a corporate imperative around #1 market shares at even high costs, leading to significant overcapacity, which is now difficult to scale back on given local investments and JVs. In addition, GE has levered to global fossil fuel markets in order to scale out of secular declines in the core power gen business, and combined these are now low growth and tough to make returns in an efficient way.

Ultimate value drags into low 20s

We use a combination of SOTP and straight valuation to evaluate ultimate value here. Our prior traditional approach was based on applying a ~10% discount to GE’s industrial 2018 EPS and our own assumption for valuation of GE Capital, which lead to a net value of \$24. Based on our SoTP (which is an average of several SoTPs below), we see ~\$20 as closer to fair value, given the weak FCF profile and substantial degree of underfunded pension.

Table 6: Our Regular GE Price Target Derivation

	'18 EPS	P/E Multiple	Per Share
Industrial EPS	\$1.34	17.1	\$22.9
	Tang BV/Sh	Multiple	Per Share
<u>GE Capital Implied</u>	<u>\$1.67</u>	<u>0.7</u>	<u>\$1.2</u>
Price Target			\$24

Source: J.P. Morgan estimates.

Table 7: Average of SoTPs

SoTP EBITDA	\$19.2
SoTP FCF	\$22.5
SoTP FCF inc investing	\$18.5
SoTP EBITDA (using E&C multiples)	\$18.1
SoTP FCF (using E&C multiples)	\$21.3
<u>SoTP FCF inc inv (using E&C multiples)</u>	<u>\$17.6</u>
Average	\$20
Current GE share price	\$27
Difference	-29%

Source: J.P. Morgan Estimates, Bloomberg

Lowering PT to \$22

In the end, we see limited options here given 5% balance sheet optionality and inflated margins, with a sum of the parts showing downside to the low \$20s on our estimates. We are all ears on the new narrative, though the bottom line to us is that the businesses are generating a certain level of cash on which the stock is expensive, and we are not sure one man can change that. Given our view that cash is the only thing to trust, and it remains weak, we are lowering our PT to \$22 based on the above, which we think more fairly reflects business quality.

Table 8: Price Target

Traditional valuation approach	\$24
<u>SoTP Based (see page 73)</u>	<u>\$20</u>
Average	\$22
Difference vs Current levels	-20%

Source: J.P. Morgan Estimates, Bloomberg

A \$22 PT would imply a ~20% discount (~15x) to our sector target multiple of 19x on our 2018 Industrial EPS estimate. For GE Cap we use a \$1 value based on ~\$10B in pro-forma tangible equity assumptions for left-over GE Capital (click [here](#) for our detailed calc on GE Capital valuation).

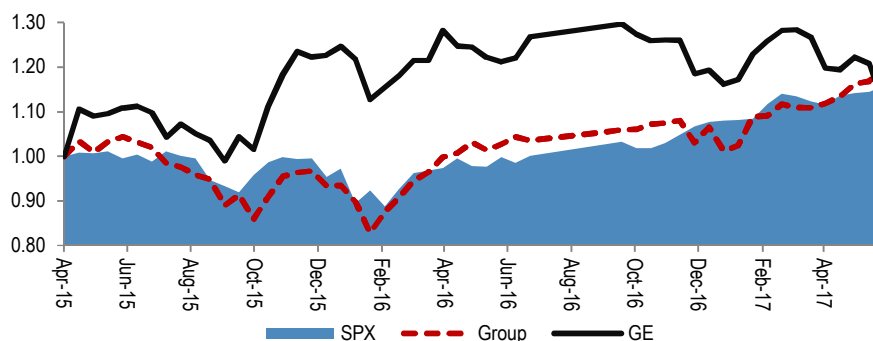
Table 9: Implied Multiple on Industrial EPS Based on New Price Target

	'18 EPS	P/E Multiple	Per Share
Price Target	\$1.50	14.7x	\$22
<u>GE Capital</u>			<u>\$1.2</u>
Industrial EPS Implied	\$1.34	15.8x	\$21

Source: J.P. Morgan estimates.

Quick point of clarification on Bull case which is “stock has underperformed” and it’s “not that bad”, while multiple can expand after reset, like Emerson – While the stock has underperformed recently, indexing to the announcement of the transformational GECS spin, the underperformance has only been 1,500bps. This is fully explained by earnings revisions, where our forward estimates for GE FCF have come down 40-45% vs an average of ~10% for large cap peers (HON, UTX, EMR, MMM).

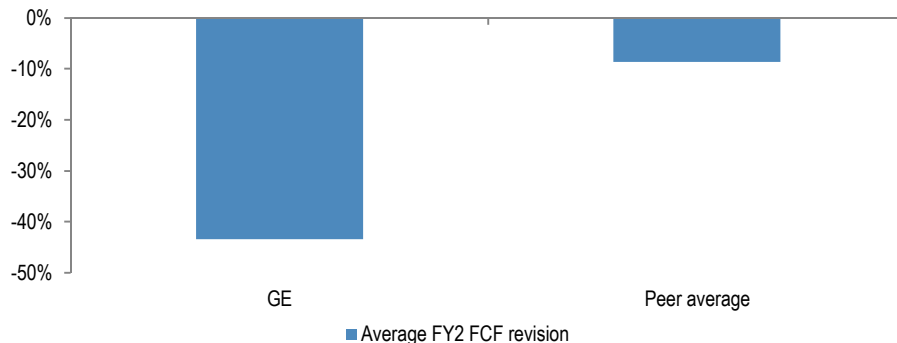
Figure 2: GE Indexed Stock Performance vs Group and S&P 500 since GE Capital Sale Announcement



Source: Bloomberg

Figure 3: Forecasted FCF Revisions for GE vs Peers

% change vs initial estimates



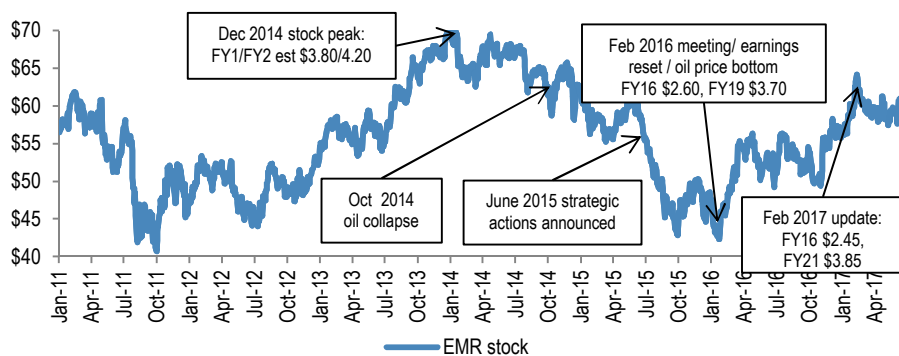
Source: J.P. Morgan estimates

Emerson had cyclical leverage, 20% cash optionality and 100%+ conversion after its reset, whereas GE has limited upside cyclicity, ~5% optionality and 70% conversion

We equate the coming earnings reset to what happened at Emerson during FY16, as combination of tougher fundamentals and dilutive portfolio moves lead to FY18 estimate to move from \$3.80 to ~\$2.80. The stock multiple expanded as the earnings came down, but only because of the growth profile in the out years, supported by short cycle oil/gas upside from the trough, as well as capital deployment upside totaling 20% of the market cap, with FCF conversion on consensus of 100%+ to support downside. The situation at GE is nowhere near as “growthy”, given late cycle businesses that show almost no cyclical leverage, capital deployment potential of ~5% of the market cap, and FCF conversion of ~70%.

Figure 4: EMR Stock Price and Timeline of Key Events

Per share



Source: Bloomberg, Company reports, and J.P. Morgan

Table 10: EMR EPS Revisions Have Been Negative, but Balance Sheet Optionality Has Helped Stock Price Be Resilient

Time Frame	EPS	Stock Price	Multiple		
FY15 end		\$48			
17 est	\$3.50		13.7		
18 est	\$3.80		12.6		
2016 Investor Conf		\$49			
17 est	\$3.25		15.1		
18 est	\$3.58		13.7		
19 guide	\$3.70		13.2		
Standing		\$59			
16 actual	\$2.45		24.1		
17 est	\$2.58		22.9		
18 est	\$2.88		20.5		
19 guide	\$3.10		19.0	FCF/share	Yield
20 at 10% growth	\$3.41		17.3	~\$3.60	6.1%
21 guide	\$3.85		15.3		
16-20 CAGR	8.6%				
16-21 CAGR	9.5%				
Capital Deployment					
Available CF '17-'20	\$3,700				
% market cap	10%				
Total capacity	\$7,500				
% of standing cap	20%				
EPS % added	20%				

Source: Company reports and J.P. Morgan estimates

If our numbers are right, GE is on the verge of such a reset, a combination of fundamental downside and potentially dilutive portfolio moves. However, the difference here is that GE does not have the balance sheet capacity, leverage to growth, or the business quality (FCF and gross margin). Whereas EMR could deploy 10%/20% of its market cap in available cash flow and total balance sheet capacity, GE can only deploy 1%/8% per our analysis. This removes the downside floor we saw in EMR, and in our view makes it highly unlikely the multiple can respond as Emerson's did. We believe the multiples implied at our \$22 PT are justified by the low growth, optionality and a FCF yield of ~4.5% (2018E).

Table 11: GE EPS Revisions Are Also Negative, but Without the Balance Sheet Support of EMR

Time Frame	EPS	Stock Price	Multiple		
FY16 End		\$32			
17 est	\$1.60		19.8		
18 est	\$2.00		15.8		
EPG/Standing		\$27			
17 est	\$1.63		16.7		
18 est	\$1.89		14.4		
19 est	\$2.09		13.1		
Post Fall		\$22			
16 actual	\$1.49		14.8		
17 est	\$1.27		17.3		
18 est	\$1.32		16.7		
19 est	\$1.47		15.0	FCF/Share	Yield
20 est	\$1.57		14.0	\$1.25	5.7%
16-20 CAGR	2.0%				
Capital Deployment					
Available CF '17-'20	\$3,000				
% market cap	1.3%				
Total capacity	\$18,000				
% of standing cap	7.8%				
EPS % added	4.5%				

Source: Company reports and J.P. Morgan estimates

The Stock Story: What Went Wrong?

It's now clear to us, per the relative performance of GE stock, that the strategy to drive it during Immelt's time as CEO (Sept 2001-present) missed the mark. The underperformance of GE stock has been significant vs both the market and peers, with underperformance even when measured post the recession (Dec 2009-present) despite GE having a much lower bar to clear given its exposure to GECS, at the eye of the storm in the financial crisis that drove substantial underperformance into its height. In this section we walk through at a high level what happened and what drove the consistent underperformance.

Figure 5: Comparative Returns: GE Lagged Significantly During Immelt's Time as CEO



Source: Bloomberg

Table 12: Total Shareholder Return, 9/30/01-present

	Price change	Total return	Annual Eq
DHR	850%	887%	15.7%
HON	407%	637%	13.6%
UTX	422%	623%	13.5%
MMM	316%	507%	12.2%
EMR	151%	296%	9.2%
GE	-26%	23%	1.3%
Average	353%	496%	10.9%
XLI index	185%	284%	9.0%
S&P 500 index	132%	217%	7.6%

Source: Bloomberg. Note: Measured through end of May 2017.

Table 13: Total Shareholder Return, 12/31/09-present

	Price change	Total return	Annual Eq
HON	241%	306%	20.8%
DHR	198%	206%	16.3%
MMM	147%	198%	15.9%
GE	81%	129%	11.8%
UTX	75%	109%	10.4%
EMR	39%	74%	7.8%
Average	130%	170%	13.8%
XLI index	143%	182%	15.0%
S&P 500 index	116%	153%	13.3%

Source: Bloomberg. Note: Measured through end of May 2017.

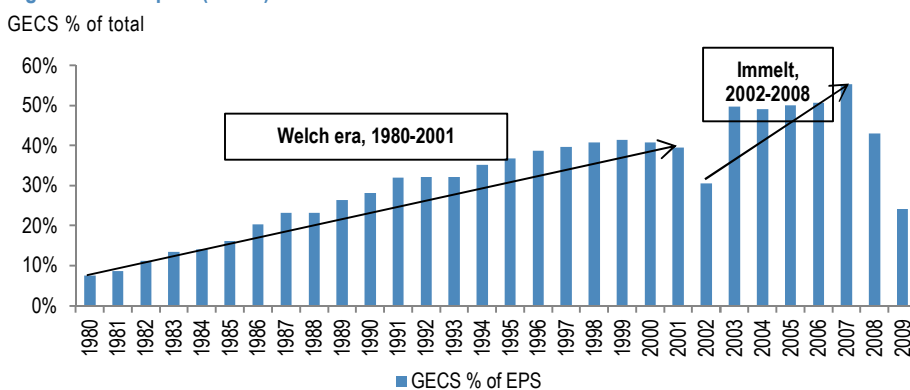
Welch era an important consideration, success that set the stage for where we are today

Former CEO Jack Welch built a culture of earnings management that was not sustainable. Getting the numbers was the most important objective, for which a strong sense of accountability (including fear around job loss) led to managing problems with financial engineering. When CEO Jeff Immelt replaced former CEO Welch, the company had delivered seven straight years of ~15% growth on average (high of 19% in '00, and low of 11% in '98). The quarterly track record during the Welch era was amazingly consistent, as 85% of quarters from 1988 through mid-2001 met consensus expectations, with six beats and only two misses (by \$0.01 each in 4Q94 and 1Q95). The key levers here were GE Capital, which delivered an earnings CAGR of 19% from 1985 to 2000, with 12 of 15 years at 15-20% growth, a low of 10% ('87) and a high of 43% ('88) and, in the end, the power bubble (power went from ~10% of profits in '99 to 33% in '02). The average increase in stock price was 22%/year over that time period and the forward P/E multiple expanded from ~11.5x to >40x.

2002-2008: Some portfolio pruning, generally UW EMs, seeds sown for financial crisis

Putting aside the high base of the Welch era, we believe the initial cycle for CEO Immelt was busy dealing with the fallout from the turbine bubble, along with other portfolio cleanup including Insurance (though there is still a portfolio they own). The businesses at this stage were not levered enough to the higher growth commodity related emerging markets businesses, where there was above average growth (NBCU, Aircraft Engines, Power Systems), somewhat of an issue. The bigger miss of the 2002-2008 cycle, however, was not doing anything to rein in GE Capital, and in fact growing it into the teeth of the downturn, we believe a function of a reliance on related earnings that should have been reset.

Figure 6: GE Capital (GECS) % Contribution to GE EPS



Source: Company reports, and J.P. Morgan

Despite this unsustainable lever, GE's reported results were generally below expectations, as per the typical negative revision to forward earnings estimates from the Street each year, by an average of ~5%.

Table 14: 2002-2008 EPS: Initial vs Final Expectations

Year	Initial EPS est	Final EPS est	Y/Y % chg	A vs E
2002	\$1.59	\$1.51	7%	-5%
2003	\$1.62	\$1.55	3%	-4%
2004	\$1.58	\$1.58	2%	0%
2005	\$1.79	\$1.74	10%	-3%
2006	\$2.00	\$1.98	14%	-1%
2007	\$2.23	\$2.20	11%	-1%
2008	\$2.46	\$1.91	-13%	-22%
Average			5%	-5%

Source: Bloomberg

2009-2013: Financial crisis change intact, chasing EMs into the peak

Dealing with GECS fallout in '08/'09, the company pivoted to establish a bigger presence in emerging markets, something they highlighted in a material way in 2012, close to the related peak, investing to expand in oil/gas as late as 2013, again into the peak of the market. Since 2006, after the big EM capex investment phase, GE invested ~\$20B+ in industrial acquisitions through 2011, primarily in the Oil & Gas vertical, with most deals having a substantial >50% international footprint, betting on growth regions and specifically resource rich regions.

Table 15: Major Oil & Gas Acquisitions, 2009-2013

Acquisitions	Valuation (B\$)	EV/EBITDA
Well Support division of John Wood	~\$2.8	16-17x
Wellstream	~\$1.3	14-15x
Dresser	~\$3	8-9x
Lufkin	~\$3.3	16-17x
Total	~\$10.5	~12.5-13x

Source: Company reports, and J.P. Morgan estimates

Figure 7: GE Major Acquisitions from 2006-2011



Source: Company reports. GE Mar 2012 presentation Used with Permission

In addition, as per the tables on page 51, GE has invested heavily in footprint and growing the employee base in growth regions on the back of robust growth expectations in resource rich regions. As shown below, we believe results here, particularly into resource rich regions, have meaningfully underperformed expectations.

Figure 8: 2012 Footprint

Region	Location	Repairs	Manufacturing	Distribution
Russia/CIS	Russia	✓	✓	
MENAT	Saudi	✓	✓	
	Iraq	✓		
	UAE			✓
SSA	Angola	✓	✓	
	Nigeria	✓	✓	
A&NZ	Australia	✓		✓
Latam	Brazil	✓		✓

Source: Company reports. GE Mar 2012 presentation Used with Permission

During this time, GE’s reported results were better than they were in the initial phase of Immelt’s tenure, with average negative revisions of 2% to forward earnings estimates from the Street.

Table 16: 2009-2013 EPS: Initial vs Final Expectations

Year	Initial EPS est	Final EPS est	Y/Y % chg	A vs E
2009	\$1.51	\$1.00	-48%	-34%
2010	\$0.89	\$1.12	12%	26%
2011	\$1.29	\$1.37	22%	6%
2012	\$1.56	\$1.50	10%	-4%
2013	\$1.69	\$1.64	9%	-3%
Average			1%	-2%

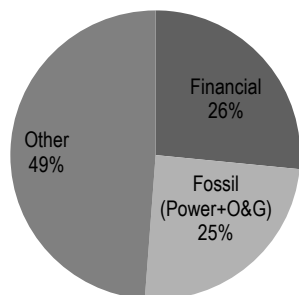
Source: Bloomberg

2014-2016: final pivot from “financials to fossil”

Further into the cycle, for whatever reason, the portfolio moves took a dramatic leg up in 2014 with the Alstom transaction, essentially doubling down on centralized power generation, and later spending \$7B to tie up with BHI. Perhaps even more consequential was the announced exit of GECS, a move that was cheered by most, albeit almost 10 years too late in our view, and more heavily dilutive than initially advertised. Indeed, fundamentally, the two high level macro drivers of the GE story, growth markets and Oil/Gas, both peaked out and rolled down, with Aviation stretching to make up for some of the shortfall. Ultimately, over the course of Immelt’s time, the company drove a pivot from financials to fossil which is where the flavor of the portfolio stands today.

Figure 9: GE Profits by Type - 2001

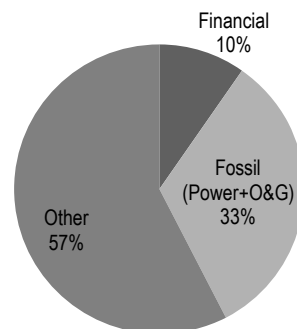
% of segment profits



Source: Company reports

Figure 10: GE Profits by Type - 2016

% of segment profits



Source: Company reports

Table 17: Pivot from GECS to Fossil

Date	Announcement
April 2014	GE/Alstom deal announced
April 2015	GE announces plan to exit GECS
October 2016	GE/BHI deal announced

Source: Company reports

Table 18: GE 2014-16 Segment Profit Bridge

In billions

	2014-16
Starting	\$16.5
Core Power, O&G, Aviation ex-LTSA gains	(1.8)
Other industrial (HC, locos/mining)	0.0
LTSA gains	1.2
Alstom	0.8
Baker	0.0
GECS	0.3
Adj core corporate (ex-restruc/gains)	0.4
Ending	\$17.5

Source: Company reports, and J.P. Morgan estimates

Table 19: GE 2014-18E Segment Profit Bridge

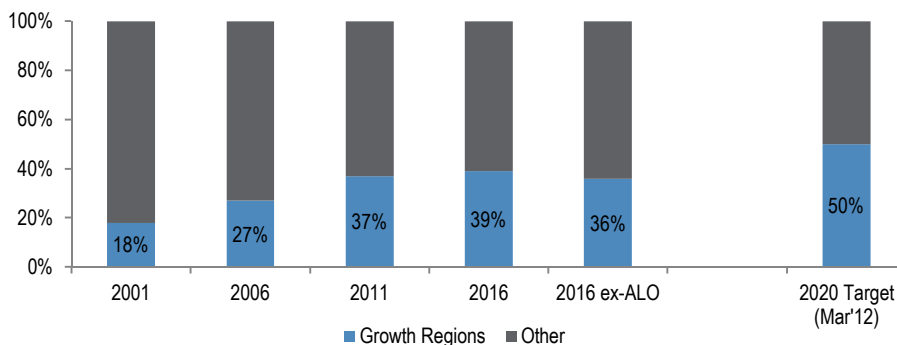
In billions

	2014-18E
Starting	\$16.5
Core Power, O&G, Aviation ex-LTSA gains	(2.9)
Other industrial (HC, locos/mining)	0.0
LTSA gains	2.0
Alstom	1.8
Baker, includes restructuring impact	0.3
GECS	0.3
Adj core corporate (ex-restruc/gains)	0.9
Ending	~\$19

Source: Company reports, and J.P. Morgan estimates

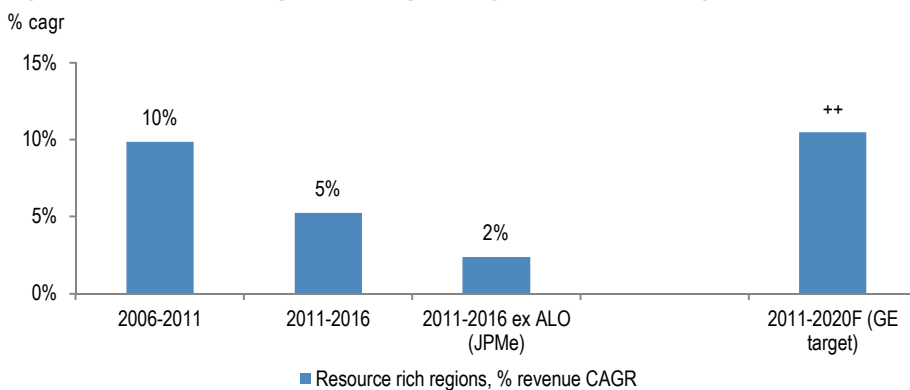
We believe that the weakness in core profits was mainly driven by Oil & Gas and Power segments, as anticipated tailwinds from emerging markets and commodities came in below plan. Notably, we think growth from resource rich regions in the LSD-MSD range from 2011-2016 was well below the targeted DD range.

Figure 11: Growth Regions Mix Tracking Well Below Initial Plans



Source: Company reports and J.P. Morgan estimates. *Based on April 2014, 2016 ALO mix assumes ~65% revs from Growth Regions

Figure 12: Resource Rich Regions Have Significantly Underperformed Targeted Levels



Source: Company reports, and J.P. Morgan estimates

Where Are We Now? Our Qualitative View of Necessary Actions

While we try and focus around numbers and usually leave the high level editorial to others, with a new CEO, we think it's appropriate to, for a minute, focus on the more philosophical, cultural aspects at play here. In the end, we agree that the company is more simplified, positive, with essentially 4 major legs to the story but aside from Aviation, we believe the portfolio now is generally characterized by low growth businesses that have plenty of capacity and while they can tout leading shares, they are still forced to compete heavily on price or expanded scope where the risks are not appropriately reflected in project bids putting a greater onus on senior management to make the right strategic decisions based on the right info. In other words, this is not about cost structure or profligate spending, or a lack of accountability. Execution and accountability has always been present, just wrongly defined as hitting a financial target, which may or may not drive shareholder value, in any way possible. We see need for "pragmatism", where managers are not afraid to bring bad news to the C-suite, far removed from the Welch era. Indeed, disclosure requirements make the game of managing problems after they happen with financial engineering significantly more challenging than it was 20 years ago. We provide a quick run through below.

Embedded marketing culture...

We believe there is an inherent marketing culture embedded at GE. From a multitude of check marks and clouds to muddle presentations with little consistency to the disclosure, to "Ecomagination", to the entire "Leading Digital Industrial" story, it appears to us there is a requirement for an initiative to be able to be "pitched" as relevant to the hot trend of the day to gain traction, as opposed to letting results speak for themselves. Even the activist investment, which seemed to us to be more of a collaboration than the typical relationship, appeared timed to help validate strategic moves than push for greater value. Higher level, GE is one of a few companies where a Vice Chair is a marketing person.

...bad news does not travel fast enough to the C-suite...and investors...

For various reasons, GE senior management is almost never ahead of the curve when calling market inflections. To be sure, there is an art to this, and there are few management teams that have this skill, but GE seems to be particularly vulnerable to being late in their market calls, an element of what the Bulls see in less than effective capital deployment but also related to what we see in earnings performance.

First was the gas turbine bubble for which GE did not call until 2002. Second was the acquisition calls on Water and Security, the hot markets of the day that had already been discovered. Third, and most costly, was the lack of willingness to sell down GECS, which could have been done to mitigate risk in 2004/2005 (we believe, based on conversation with Jeff Immelt in 2005 at the annual sell-side breakfast, the company had evaluated a move at that time). Coming out of the downturn, Aero derivatives were the next bubble in 2011 and then in 2014 (oil & gas peak), followed by locomotives in 2016, for which management was pitching growth up until it became abundantly clear the booms were unsustainable. Most recently was Oil/Gas where, beyond the capital committed, management was too optimistic up until even last year (guiding for down 10-15% profit decline in '16 as late as Dec of '15), and still has '17 guidance that we think is too aggressive. More strategically, and on organic investments, one could argue that the H-frame was a catch-up versus peers who had products ready for the US HDGT base-load revival, requiring a level of capacity commitment (test bed) and promises that we believe linger with risk. Either mid-level management did not know, or, for some reason did not provide the on the ground intelligence soon enough.

Table 20: Examples Where GE Was Late to Call Market Inflections

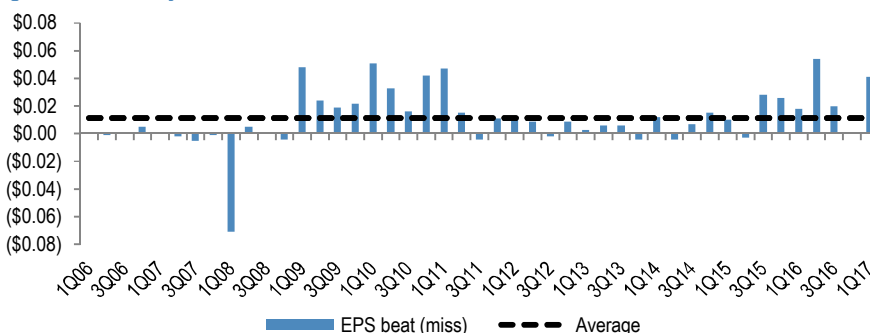
	Market inflections	Comment
#1	Gas turbine bubble	Peaked in 2000, GE did not call until 2002
#2	Water/security acquisitions	Acquired water/security assets from 02-06, the fad of day, subsequently sold post-recession for less than they paid
#3	Lack of willingness to sell GECS	We believe GE evaluated in 04-05, but was unwilling to sell given earnings dilution
#4	Aero-derivative bubble	Peaked in 2011 as EMs boom began to fade, and subsequently with oil & gas in 2014
#5	Locomotive boom	Rolled over hard in 2016-17, with management pitching growth until it became abundantly clear the market was unsustainable
#6	Oil & gas boom	Management was too optimistic here until even last year, calling for 10-15% decline vs 43% reported, and is still on the hook for 2017, 2018, and 2020 guidance that is too aggressive
#7	Digital investment ramp	Began investing here to defend position, but only after players like Siemens and ROK had already begun

Source: J.P. Morgan

...as middle management tries to maintain the “execution” discipline, albeit in a different world with greater disclosure...

While Bulls argue that there needs to be more execution accountability going forward, we think the definition needs to be rethought, with perhaps more of a willingness to welcome bad news when it happens. Indeed, under CEO Welch, GE’s “execution” culture was made famous by several quarters of “beats”, many of which came by \$0.01. This was a culture that defined the GE manager, though was clearly put to the test with new disclosure rules, and a different business environment post 9/11. Indeed, in the last year of Welch’s tenure, the 10K was 110 pages, there was no conference call and the quarterly press releases were 5 pages. Last year’s 10K was 275 pages, the quarterly press release is ~15 pages, there is an hour long conference call with ~15 pages of slides with a ~30 page “supplement”. The company still seems to “beat” by pennies though this is now almost an irrelevant starting point for the conversation in our view. 1Q17 results are a prime example of this dynamic. Seemingly, senior management is trying to run the same playbook but in a radically different environment. We scratch our heads as to why and from a practical perspective believe that, because of the dominant passive and retail shareholder base that GE likely believes would swing on a headline “miss”, while one softer note, its to avoid having to give bad news.

Figure 13: Quarterly EPS Beat/Miss



Source: Bloomberg

...that is perpetuated by “stretching” in a low quality way...

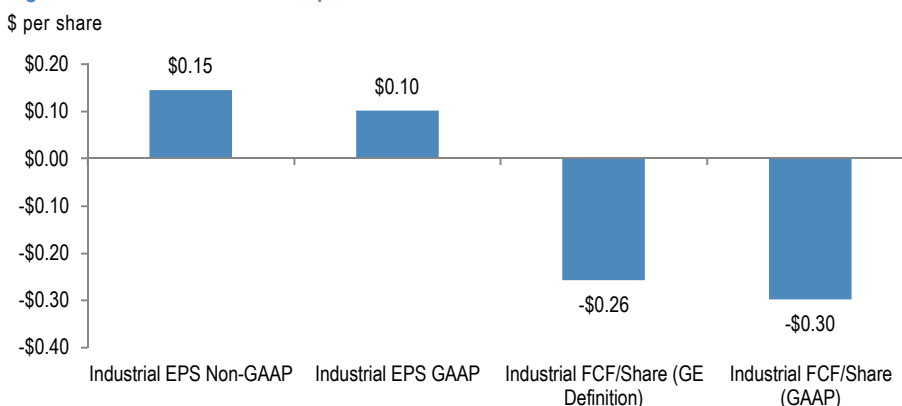
Recent results have shown little change in the practice, perhaps not to the same extent as GECS related real estate gains, though still items that are low quality. These include significant non-cash gains that are used to offset cash costs, and lower tax rate. To be clear, these gains have come in many forms, ranging from gains on asset sales (Appliances, Water, etc) to contract asset adjustments, one-time non-cash earnings that arguably have more of an operating basis but are still non-cash nonetheless. These items show that results are still “managed” tightly akin to what we saw under Welch.

Table 21: GE Non-Cash Earnings as % of Pre-Tax Income

non-cash earnings add-backs in cash flow statement	2014	2015	2016	2017E
Asset sale gains	188	1,020	3,701	3,002
LTSA gains*	1,000	1,400	2,200	3,200
Contract Assets ex-LTSA gains	572	519	1,729	300
Total	1,760	2,939	7,630	6,502
GE Industrial Pre-tax Income	9,638	11,152	11,346	11,990
% of pre-tax profit	18%	26%	67%	54%

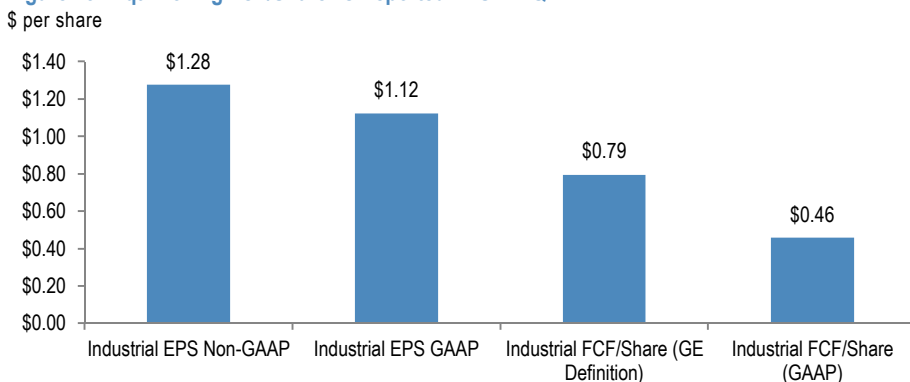
Source: Company reports and J.P. Morgan estimates. 2017 LTSA gains assumption is based on 1Q run-rate of \$800mm

Figure 14: 1Q17 FCF/Share vs Reported EPS



Source: Company reports, and J.P. Morgan estimates.

Figure 15: 4-qtr Rolling FCF/Share vs Reported EPS in 1Q17



Source: Company reports, and J.P. Morgan estimates.

...leaving an over-promise/under-deliver cycle

The problem that is created when optics matter is that news does not travel fast enough for contingencies to snap into place, and shortfalls are continually covered up with low quality levers that are increasingly visible, there is an unhealthy tension that prohibits a full “reset”. The \$2 Street estimate is a case in point. While this is not new news, we continue to come back to the fact that the FY2 estimate for GE has been \$2 since 2011, a number that is still somewhat of a promise, even after an implicit guide down from this past EPG. We are big believers that management teams act rationally with the hand they are dealt, and while many don’t choose the right path to value creation over time, those that don’t face a harder set of decision points than investors many times appreciate. We believe the then incoming CEO Jeff Immelt evaluated what a reset would entail several times though chose to try and grow through it.

Table 22: Peak 2-Yr Forward Consensus EPS Estimates vs Actual/Current JPMe

	2-yr Forward Street	Actual/JPMe
2011 (2013E)	\$1.96	\$1.64
2012 (2014E)	\$2.01	\$1.65
2013 (2015E)	\$2.02	\$1.31
2014 (2016E)	\$2.09	\$1.49
2015 (2017E)	\$1.93	\$1.57
2016 (2018E)	\$2.03	\$1.50
2017 (2019E)	\$2.29	NA

Source: J.P. Morgan estimates.

Who Is The New CEO?

In steps John Flannery, effective August 1st, a GE lifer who spent most of his career at GE Capital, before transitioning to a GGO role in 2009 (head of GE India, where he increased industrial sales 50% in 2011 according to his bio), then to corporate (head of business development from 2013-2014), and leading the Healthcare division since 2015 (one of the best performers in the portfolio over the past year or so, with average organic growth of 3.5% in 2015/16, and 60bps of margin expansion since 2014). While we don't necessarily see anything wrong here, the track record isn't spotless, having grown GECS assets 2x into the peak and then making the call on Alstom which, with all respect to the Board, has been far from "successful".

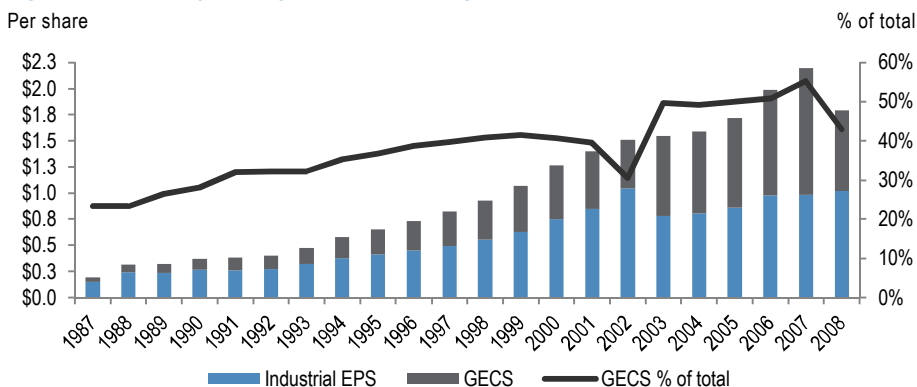
Table 23: GE Timeline for Incoming CEO John Flannery

Date	Experience	Accomplishments
1987-1997	GE Capital: risk management, LBOs, restructuring	NA
1997-2003	GE Equity: Portfolio management, 2 years as CEO, 3 years in Argentina	NA
2003-2005	GE Capital Bank Loan	Earnings & assets grew +2X
2005-2009	GE Capital Asia, CEO	Earnings +2X pre-crisis, leadership through crisis
4Q09-1Q13	GE India, CEO	Record growth, localized mfg & supply chain
Apr 2013-4Q14	Corporate business development, SVP	Alstom, Appliances disposition, GE Cap SYF IPO
2015-present	GE Healthcare, CEO	Led turnaround: cost & products; Organic revs +3.5%, margins +60bps from 2014-2016
Effective Aug '17	CEO	TBD

Source: Company reports, and J.P. Morgan

At GE Capital, incoming CEO Flannery began his career evaluating risks for LBOs, following which he led the corporate restructuring & workout group in the 90s, before moving on to lead GE's Equity business. GE Capital experienced tremendous growth during his time there, moving from 25% of company earnings to 55% from 1987-2007, prior to the financial crisis. He played a role in this performance through leadership roles at GE Equity, GE Capital Bank Loan, and GE Capital Asia. At GE Capital Bank Loan, the business doubled its assets and earnings during his time there (2003-2005), while earnings also doubled at GE Capital Asia prior to the financial crisis, through which he led the business.

Figure 16: GECS Played a Key Role in GE Earnings Growth



Source: Company reports

One of the most notable aspects of his role in BD was his lead on the acquisition of Alstom, which he described as “highly strategic” with the “power sector...core to GE’s future and...excellent growth prospects.” We would characterize this deal as disappointing early on, with both cash and core earnings below expectations. To start, the final price of the acquisition was \$10.3B with TTM EBITDA (ending Sept-15) close to breakeven vs initial valuation of ~8x (based on TTM Mar-13). On the earnings performance post deal close, the business delivered segment profits of ~\$400mm (Nov/Dec '15 and FY16), along with ~\$1.1B in tax benefits, offset by restructuring/other charges. Key to note here is the operations + synergy bucket which ended 2016 at \$0.5B vs initial guidance of \$1.3B while acquisition accounting charges were +\$0.1B vs initial expectation of -\$0.7B. On this front, we continue to scratch our heads on the goodwill in the deal, up ~\$3.8B since 4Q15 to \$17.3B, driven by unfavorable customer contracts, legal reserves, and tax. Goodwill moved up in every quarter post deal close, and is now well in excess of the purchase price on a gross or net basis. This despite incoming CEO Flannery asserting on the April 2014 GE/ALO acquisition conference call that “a heavy due diligence” had been done. This brings us to the ultimate cash profile, which expectedly remains poor and has been a drag of \$0.9B since acquisition vs a positive earnings contribution of ~\$0.5B. The key reason in our view is that operations are tracking well below plan.

Table 24: Alstom Deal Metrics: Initial vs Final

	April '14	July '14 (After Divestitures)	May '15 (After Divestitures)	Sept '15 (After Divestitures)	Current (After Divestitures)
High Level Metrics					
'16 EPS accretion	0.08-0.10	0.06-0.09	0.06-0.09	0.05-0.08	0.05
'18 EPS accretion			0.15-0.20	0.15-0.20	0.15-0.20
IRR	high teens	high teens	'strong'		15%+
EV	13,500	10,100		9,500	10,300
EBITDA (FY end, Mar)	1,709	1,354		600	600
EBITDA (LTM Sep'15)					11
EV/EBITDA FY'15	7.9	7.5		15.8	17.2
EV/EBITDA FY'15 PF synergies	4.6	4.0		2.6	2.9

Source: Company reports and J.P. Morgan estimates.

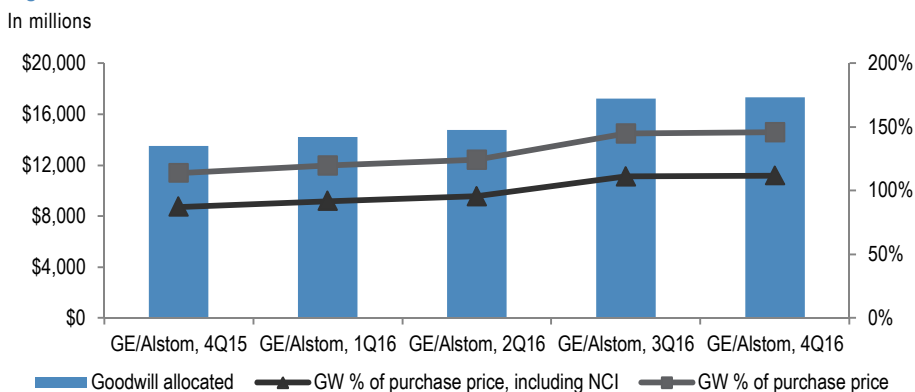
Table 25: Alstom 2016 Performance vs Initial Targets

In billions, except per share data

	Initial 2016 Target	2016 Actual	2018 Target	2020 Target
Operations	0.2	(1.0)		
Cost Synergy Benefits	1.1	1.5	2.5	3.0
Synergy Investment	0.0	0.0		
Acquisition Accounting	(0.7)	0.1		
Deal/integration costs	(0.1)	(0.1)		
JV minority interest	0.1	0.2		
Segment op profit	0.6	0.8		
Corporate charges (acquisition accounting/synergy)	(0.7)	(1.0)		
Net tax benefits	0.7	0.8		
EPS	\$0.05	\$0.04	\$0.18-20	

Source: Company reports and J.P. Morgan estimates. Note: may not add up due to rounding.

Figure 17: GE Alstom Goodwill Allocation



Source: Company reports.

Table 26: Alstom Historical Cash Usage (Generation)

In millions

	Euro	USD
Cash Usage FY1H15 (ended Sept '14)	1,000	1,350
Cash Usage FY2H15 (ended Mar '15)	(800)	(950)
Cash Usage FY1H16 (ended Sept '15)	1,000	1,100
Cash Usage Oct'15	600	650
Cash Usage Nov-15 to Dec-16 (as part of GE)		936
Total Outlay (Mar-14 to Dec-16)		~3,000

Source: Company reports and J.P. Morgan estimates. Alstom FY ending March.

For perspective, looking at Alstom's sales and backlog since the deal was announced, the business had already seen material deterioration over the last 3 years. FY16 (Mar-16) backlog was down ~10% from the FY15 backlog (Mar-15), and down 25% over two years. Sales since 2013 are tracking down at a ~22% CAGR.

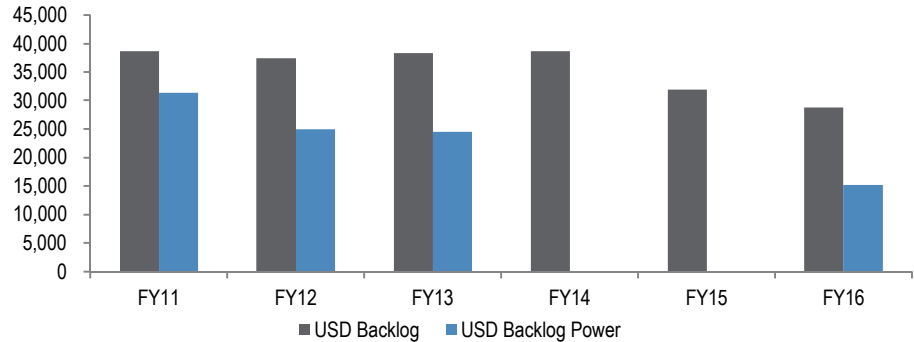
Table 27: ALO Power Revenue Progression since GE Acquisition Announcement

\$ million

	2013	2014	2016	2013-2016 CAGR
ALO	13,000	10,100	6,252	-22%
Power gen products	6,500	4,400	2,700	-25%
<i>Steam</i>	5,200	3,400	2,000	-27%
<i>Gas</i>	1,300	1,000	700	-19%
Power gen services	6,500	5,700	3,900	-16%
<i>Elims</i>			-348	

Source: J.P. Morgan Estimates, Company Reports

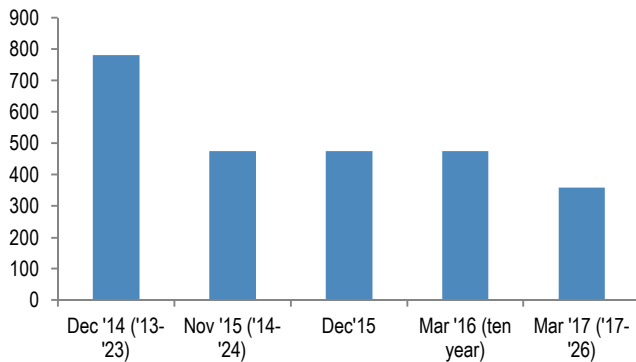
Figure 18: Alstom Energy Backlog (FY end March)



Source: Company reports and J.P. Morgan estimates.

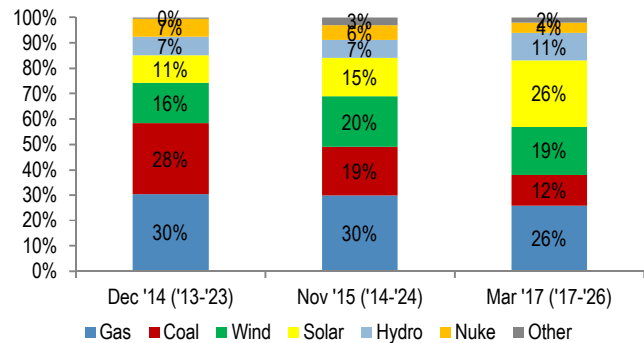
GE's own official coal demand forecasts have been cut materially over time to just ~12% of total Global Power additions vs ~28% 2.5 years ago and ~20% 1.5yrs ago, which they attributed to retirements, with wind/solar picking up share. The figures here are not as important as a predictor of the future as they are to show the trend, and how GE had planned based on that trend.

Figure 19: GE Power Industry Outlook – 10-yr GW Coal Additional



Source: Company reports.

Figure 20: GE Power Industry Outlook – GW Installed Shows Significant Increase in Renewables at Expense of Fossil



Source: Company reports. Note: Dec '14 adjusted to exclude non-grid connected power, which we assume is mostly oil based.

What Comes Next? Earnings Reset, Restructuring, Capital Allocation/Portfolio Priorities Set

We do not believe that the August 1st CEO transition was as planned as the company has projected, and believe the early change suggests that the future will be anything but “status quo”. There are many aspects of charting a new course and setting a new narrative from many angles. We see several potential courses of action for the new CEO including first resetting expectations, which would drive dividend coverage lower, and likely at the very least require a cut to the buyback. We also could see a “real” restructuring program, perhaps in the ~\$7billion range to shut in over-capacity in businesses that are no longer as promising for FCF growth. The decision would then be around potentially breaking the portfolio up. This is where the business quality debates would come in and we believe in the end, the SOTP would come in below standing levels, with significant potential dis-synergies around tax and other corporate functions.

Earnings Reset: “Minding the GAAP” but Not All Optics, \$1 Is the Anchor, Not \$2

First, the 2018 \$2 target has effectively been shelved, though there are a range of outcomes around what the new consensus guidance becomes in the reset scenario. There are two considerations here, fundamentals (ie – cash), and then reporting structure (ie – GAAP or non-GAAP). The table below shows how GE stands out when it comes to differences in reporting between consensus numbers, GAAP and, then ultimately FCF, or what we now call “consensus conversion”.

Table 28: EE/MI 2016 Consensus EPS vs GAAP EPS and GAAP FCF

\$ per share and %

	GE	DHR	DOV	EMR	HON	IR	MMM	PNR	ROK	ROP	UTX	Avg
GAAP Cont Ops	\$1.00	\$3.08	\$3.25	\$2.52	\$6.20	\$5.52	\$8.16	\$2.47	\$5.56	\$6.43	\$6.13	
Consensus EPS	\$1.49	\$3.61	\$2.82	\$2.98	\$6.60	\$4.13	\$8.16	\$3.05	\$5.93	\$6.57	\$6.61	
<i>Difference</i>	49%	17%	-13%	18%	6%	-25%	0%	23%	7%	2%	8%	8%
GAAP FCF	\$0.66	\$4.19	\$4.45	\$3.75	\$5.69	\$4.69	\$8.47	\$4.06	\$6.33	\$9.01	\$5.71	
<i>Difference</i>	-56%	16%	58%	26%	-14%	14%	4%	33%	7%	37%	-14%	10%
= Consensus conversion	44%	116%	158%	126%	86%	114%	104%	133%	107%	137%	86%	110%

Source: Company reports and Bloomberg

Based on our standing 2018 estimate, we see \$1.32 in 2018 EPS as a reasonable starting point which is also closer to our standing \$0.95 in 2018 FCF/share.

Table 29: Realistic 2018 GAAP EPS and FCF Base

	2018	2019E	2020E
EPS Standing Consensus	\$1.89		
Power Gen Fundamentals (JPMe vs Cons)	(\$0.15)		
Oil & Gas (JPMe vs GE Target)	(\$0.05)		
Buyback	(\$0.04)		
Other (Aviation, Transpo, non-fundamentals)	(\$0.05)		
GECS Other continuing ops	(\$0.06)		
<u>Accounting Change</u>	<u>(\$0.05)</u>		
EPS Non-GAAP (JPMe)	\$1.50	\$1.65	\$1.75
<u>Non-op Pension</u>	<u>(\$0.18)</u>	<u>(\$0.18)</u>	<u>(\$0.18)</u>
EPS GAAP (JPMe)	\$1.32	\$1.47	\$1.57
FCF/Share GAAP (JPMe)	\$0.95	\$1.08	\$1.25

Source: Bloomberg, Company reports and J.P. Morgan estimates.

Our updated model, stretched to 2020

Our fresh 2017-2020 estimates are below consensus for all years, with estimated revenue CAGR of ~1-1.5%, margin expansion of ~75bps/y (up ~50bps in 2017 y/y ex-BHI), and Industrial profit CAGR of ~7%, which includes a segment profit CAGR of ~6% (~3% ex-BHI). Our new 2017 EPS of \$1.57 is down from \$1.60 prior, driven primarily by lower buyback assumptions, and our 2018 estimate is now materially lower than prior at \$1.50 (\$1.80 prior) which includes the impact of upcoming accounting change as well as moving GE capital to continuing ops approach (vs just verticals prior). While we delve into our detailed forward outlook by segment in later sections, key drivers of our fundamental cuts are 1) lower revenue and profit estimates for the Power segment, 2) lowered assumptions for Oil & Gas based on the standing WTI strip and 3) lower buyback (now \$7.5B for 2017 vs \$12.5B prior and \$2.5B for 2018 vs \$4.5B prior).

Table 30: Summary GE Segment and Income Statement Model

	2016	2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E
Revenue						Core Growth				
Power	26,827	27,715	25,726	24,502	23,414		7.6%	-3.4%	-4.8%	-4.4%
Renewables	9,033	11,319	12,342	12,734	12,966		7.5%	4.6%	3.2%	1.8%
Oil & Gas	12,898	17,393	23,407	23,941	24,648		-4.8%	3.9%	2.3%	3.0%
Legacy GE Oil & Gas	12,898	12,283	12,124	12,245	12,609		2.0%	2.0%	2.0%	2.0%
Energy Connection + Lighting	15,133	12,746	9,501	9,691	9,885		3.5%	2.5%	3.5%	3.0%
Aviation	26,261	27,473	28,160	29,146	30,020		3.3%	3.0%	3.0%	3.0%
Healthcare	18,291	18,774	19,338	19,918	20,515		-22.6%	-5.0%	1.5%	2.0%
Transportation	4,713	3,657	3,474	3,526	3,597		2.6%	1.3%	1.2%	1.3%
Total Segment Sales	113,156	119,077	121,947	123,458	125,046					
Profit						Y/Y Growth				
Power	4,979	5,436	5,296	5,106	5,038		9.2%	-2.6%	-3.6%	-1.3%
Renewables	576	849	987	1,082	1,167		47.4%	16.3%	9.6%	7.8%
Oil & Gas	1,392	726	1,563	2,186	2,551		-47.8%	115.2%	39.8%	16.7%
Oil & Gas ex-BHI	1,392	1,179	1,128	1,169	1,299		-15.3%	-4.4%	3.7%	11.1%
Energy Connection + Lighting	311	319	285	436	544		2.5%	-10.6%	53.0%	24.7%
Aviation	6,115	6,401	6,392	6,703	7,205		4.7%	-0.1%	4.9%	7.5%
Healthcare	3,161	3,314	3,510	3,685	3,857		4.8%	5.9%	5.0%	4.7%
Transportation	1,064	775	709	728	750		-27.1%	-8.6%	2.7%	3.0%
Accounting Change			(500)							
Total Segment Profit	17,598	17,820	18,242	19,927	21,111		1.3%	2.4%	9.2%	5.9%
Total Segment Profit (ex-BHI)	17,598	18,272	17,807	18,911	19,859		3.8%	-2.5%	6.2%	5.0%
Adjusted Corporate (exc restr/gains/BHI)	(2,040)	(1,624)	(1,515)	(1,315)	(1,315)					
Total Ind Profit (incl BHI minority)	15,558	16,196	17,727	18,612	19,795		4.1%	3.3%	11.3%	6.4%
GE Capital	1,892	1,950	1,400	1,428	1,428					
Corp and Elims, GAAP (inc BHI minority)	(4,226)	(3,466)	(4,267)	(4,488)	(4,657)					
Interest and other financial charges	(2,026)	(2,364)	(2,425)	(2,425)	(2,425)					
Pre-tax Income	13,238	13,940	12,950	14,441	15,457					
Non-op Pension Add/Back	1,334	1,504	1,550	1,550	1,550					
Tax Rate	9%	14%	14%	14%	14%					
Avg. Shares - diluted	9,130	8,756	8,642	8,631	8,630					
Earnings Per Share - Reported	\$1.49	\$1.57	\$1.50	\$1.65	\$1.75					

Source: Company reports and J.P. Morgan estimates.

Table 31: GE 2017 and 2018 Estimate Changes

\$mm except per share

Profits	2017E		2018E	
	Current	Prior	Current	Prior
Power	5,436	5,698	5,296	6,134
Renewable Energy	849	797	987	1,034
Oil & Gas (inc BHI)	726	736	1,563	1,948
<i>Oil & Gas Legacy</i>	<i>1,179</i>	<i>1,180</i>	<i>1,128</i>	<i>1,253</i>
Energy Connection + Lighting	319	474	285	616
Aviation	6,401	6,378	6,392	6,459
Healthcare	3,314	3,331	3,510	3,555
Transportation	775	784	709	807
Industrial Segment Profit	17,820	18,198	18,742	20,553
GE Capital	1,950	1,850	1,400	1,800
Corporate and Eliminations, GAAP (inc BHI minority)	(3,466)	(3,608)	(4,267)	(4,443)
Interest and other charges	(2,364)	(2,200)	(2,425)	(2,250)
Pre-tax Income	13,940	14,240	12,950	15,660
Non-op Pension Add/Back	1,504	1,430	1,550	1,430
Tax Rate	14.1%	14.6%	14.0%	14.0%
Income Taxes	(1,683)	(1,807)	(1,546)	(1,940)
Avg. Shares - diluted	8,756	8,672	8,642	8,408
Earnings Per Share - Cont Ops	\$1.57	\$1.60	\$1.50	\$1.80

Source: J.P. Morgan Estimates.

High Level Revenue Model – Before delving into a detailed revenue outlook, we provide a quick bottom-up summary of our revenue growth assumptions by sub-segment for 2017-2020. Overall, we see ~1.5% organic CAGR from 2016-2020 (~2.5% in 2017, up ~1-1.5% in 2018-2020). Among the segments, Renewables, Healthcare, Oil & Gas and Aviation are the most steady LSD-MSD type growers, largely offset by severe decline in Power. Transportation has a couple of tough years in the near term before it stabilizes.

Table 32: Sub-segment Organic Revenue Model

	16 Revs	% of sales/segment sales	'17 Organic Growth rate	'18 Organic Growth rate	'19 Organic Growth rate	'20 Organic Growth rate
Power	26,827	24%	8%	-4%	-5%	-4%
Services/other	16,016	60%	-1%	-3%	-4%	-5%
Gas Power	8,853	33%	15%	-9%	-5%	-3%
Steam Power	1,958	7%	10%	5%	-10%	-10%
Renewables	9,020	8%	8%	5%	3%	2%
Equipment	8,170	91%	9%	3%	1%	-1%
Services	850	9%	20%	25%	25%	25%
Aviation	26,321	23%	4%	2%	4%	3%
Commercial Services	11,070	42%	5%	6%	5%	6%
Comm'l OE	8,381	32%	0%	-3%	2%	-2%
Systems	3,403	13%	2%	2%	2%	2%
Military Engine	1,396	5%	3%	3%	3%	3%
Military Services	2,071	8%	3%	3%	3%	3%
Other/Additive				15%	15%	15%
Oil and Gas	13,003	11%	-5%	4%	3%	4%
Turbomachinery + Downstream	6,540	50%	-7%	0%	0%	2%
Drilling/Subsea	2,919	22%	-21%	-15%	0%	4%
Surface	1,370	11%	19%	0%	3%	3%
Digital Solutions	2,174	17%	5%	3%	3%	3%
Baker/Revenue Synergies					6%	5%
Healthcare	18,291	16%	3%	3%	3%	3%
Healthcare system	12,839	70%	1%	3%	3%	3%
Life Sciences	4,361	24%	5%	5%	5%	5%
Digital	1,090	6%	3%	4%	4%	4%
Transportation	4,713	4%	-23%	-4%	2%	3%
Loco Services	1,998	42%	-5%	0%	3%	3%
Locos Equipment	2,074	44%	-47%	-16%	-3%	2%
Mining	330	7%	0%	0%	5%	5%
Other/Digital	311	7%	3%	5%	5%	5%
Energy Connection	15,136	13%	2%	2%	2%	2%
Power Conversion	1,987	13%	1%	2%	2%	2%
Grid Solutions	5,513	36%	1%	2%	2%	2%
Industrial Solutions	2,902	19%	1%	2%	0%	0%
Lighting + Appliance	4,734	31%	2%	3%	3%	3%
Overall Organic Growth			3%	1%	1%	1%

Source: Company reports and J.P. Morgan estimates.

Margin Summary – On margins, as a summary, we model ~50bps of y/y margin expansion ex-BHI in 2017 and 2018 followed by ~50bps from 2018-2020. Overall, including the Baker deal, we model ~190bps of expansion from 2017-2020 and at a high level the expansion is driven primarily by cost productivity (BHI synergies and ALO accretion) and acq/div mix offset somewhat by product mix (LEAP).

Table 33: Industrial Segment Margin

	2016	2017E	2018E	2019E	2020E	2017E Y/Y (bps)	2018E Y/Y (bps)	2019E Y/Y (bps)	2020E Y/Y (bps)
Power	18.6%	19.6%	20.6%	20.8%	21.5%	105	97	25	68
Renewables	6.4%	7.5%	8.0%	8.5%	9.0%	112	50	50	50
Oil & Gas	10.8%	4.2%	6.7%	9.1%	10.3%	(662)	250	245	122
Oil & Gas ex-BHI	10.8%	9.6%	9.3%	9.6%	10.3%	(119)	(30)	25	75
Energy Connection + Lighting	2.1%	2.5%	3.0%	4.5%	5.5%	44	50	150	100
Aviation	23.3%	23.3%	22.7%	23.0%	24.0%	1	(60)	30	100
Healthcare	17.3%	17.7%	18.2%	18.5%	18.8%	37	50	35	30
Transportation	22.6%	21.2%	20.4%	20.7%	20.9%	(138)	(80)	25	20
Total Segment Margin	15.6%	15.0%	15.0%	16.1%	16.9%	(59)	(1)	118	74
Total Segment Margin ex- BHI	15.6%	16.0%	16.1%	16.9%	17.6%	48	6	83	65
Total Margin (incl adj corp and ALO/BHI)	14.0%	13.9%	14.0%	15.4%	16.1%	(8)	11	138	77

Source: Company reports and J.P. Morgan estimates.

Table 34: 2017-2020E Margin Bridge

2017E	15.0%
Mix	-0.9%
Cost Productivity	3.2%
Value gap	0.0%
Acquisitions	0.3%
FX	0.0%
Core	0.1%
Other ongoing inflation/other	-0.9%
2020E	16.9%

Source: J.P. Morgan estimates.

JPM FCF Outlook – \$0.95 in 2018, \$1.25 in 2020. Based on our fundamental assumptions we lay out above, we walk through our FCF model through 2020. On the traditionally defined FCF basis (we call it GAAP), we see \$1.25 in 2020E FCF/share, from a base of \$0.66 (\$0.93, ex-one-time) in 2016 and \$0.49 (\$0.75, ex-one-time) in 2017E. On our own definition, which includes the cash outflow from investing activities, a significant drag, and an important consideration in judging available FCF, we see 2020 FCF/share of ~\$1.20 off of a 2016 base of \$0.68 and 2017 estimate of \$0.62. Based on GE’s definition, which excludes pension and includes PP&E dispositions, we see 2020 FCF of \$1.46 off of a 2016 base of \$0.97 and our 2017 estimate of \$0.95. Key factors apart from the regular flow through of fundamentals include 1) Decline in the add-back from contract assets from \$3.9B in 2016 to \$2.25B in 2020, 2) Pension contributions stay at the \$1.6B/y run-rate from 2018-2020, 3) GE Capital starts to dividend \$1B in FCF from 2018 onwards, 4) Net PP&E goes from \$3B in 2017/2018 to \$2.75B in 2020.

Table 35: Walk Through Different Definitions of FCF and Related Conversion on Reported and Industrial EPS

\$ millions

	2014	2015	2016	2017E	2018E	2019E	2020E
GAAP FCF							
Industrial CFOA	12,171	12,054	9,775	8,205	10,797	11,582	12,659
Gross Capex	(3,970)	(3,785)	(3,758)	(3,950)	(3,600)	(3,250)	(2,900)
Ind FCF GAAP	8,201	8,269	6,017	4,255	7,197	8,332	9,759
GE Capital Dividends (Ex-divestitures)	3,000	0	0	0	1,000	1,000	1,000
Industrial FCF/Share	\$0.81	\$0.83	\$0.66	\$0.49	\$0.83	\$0.97	\$1.13
Total FCF/Share	\$1.11	\$0.83	\$0.66	\$0.49	\$0.95	\$1.08	\$1.25
<i>Industrial Conversion</i>	84%	72%	51%	36%	62%	65%	71%
<i>Total Conversion</i>	67%	63%	44%	31%	63%	66%	71%
Walk from GAAP FCF to GE Definition							
(+) Dispositions	615	939	1,080	880	700	500	250
(+) Deal Taxes add-back	0	184	1,398	1,495	0	0	0
(+) GE Pension Contributions add-back	0	0	347	1,700	1,600	1,600	1,600
Ind FCF GE Definition	8,816	9,392	8,842	8,331	9,497	10,432	11,609
Industrial FCF/Share	\$0.87	\$0.94	\$0.97	\$0.95	\$1.10	\$1.21	\$1.35
Total FCF/Share	\$1.17	\$0.94	\$0.97	\$0.95	\$1.21	\$1.32	\$1.46
<i>Industrial Conversion</i>	90%	82%	75%	71%	82%	82%	85%
<i>Total Conversion</i>	71%	72%	65%	61%	81%	80%	83%
Walk from GAAP FCF to JPM Definition							
(+) Dispositions	615	939	1,080	880	700	500	250
(+) Deal Taxes add-back	0	184	1,398	1,495	0	0	0
(-) Other investing Activities/other	(1,060)	(1,296)	(2,302)	(1,236)	(1,200)	(1,000)	(750)
Ind FCF JPM Definition	7,756	8,096	6,193	5,395	6,697	7,832	9,259
Industrial FCF/Share	\$0.77	\$0.81	\$0.68	\$0.62	\$0.77	\$0.91	\$1.07
Total FCF/Share	\$1.06	\$0.81	\$0.68	\$0.62	\$0.89	\$1.02	\$1.19
<i>Industrial Conversion</i>	80%	71%	53%	46%	58%	61%	68%
<i>Total Conversion</i>	64%	62%	46%	39%	59%	62%	68%
<i>Dividends to shareholders</i>	(8,851)	(9,289)	(8,474)	(8,406)	(8,296)	(8,285)	(8,285)
FCF after Dividends (JPM Definition)	1,905	(1,193)	(2,281)	(3,011)	(599)	546	1,974

Source: Company reports and J.P. Morgan estimates.

Table 36: GE Cash Flow Statement and Forecasts

\$ millions

	2014	2015	2016	2017E	2018E	2019E	2020E
GE Ind EPS Non-GAAP	\$0.96	\$1.14	\$1.28	\$1.35	\$1.34	\$1.48	\$1.58
GE Capital EPS Non-GAAP	\$0.69	\$0.17	\$0.21	\$0.22	\$0.16	\$0.17	\$0.17
GE EPS Consolidated non-GAAP	\$1.65	\$1.31	\$1.49	\$1.57	\$1.50	\$1.65	\$1.75
GE Ind EPS GAAP	\$0.82	\$0.96	\$1.14	\$1.15	\$1.16	\$1.30	\$1.40
GE Capital EPS GAAP	\$0.68	-\$1.58	-\$0.24	\$0.12	\$0.16	\$0.17	\$0.17
GE EPS Consolidated GAAP	\$1.51	-\$0.61	\$0.90	\$1.27	\$1.32	\$1.47	\$1.57
Net income GAAP	15,233	(6,145)	8,176	11,114	11,403	12,679	13,553
Depreciation & Amortization	2,508	2,473	2,597	2,715	2,962	2,912	2,912
Earnings retained by GECS	1,625	12,284	21,345	5,954	(400)	(428)	(428)
Deferred income taxes	(476)	(1,800)	1,107	0	0	0	0
Other Operating Cash Flow	2,973	2,083	(7,438)	(6,938)	(3,210)	(2,872)	(2,716)
OPCF before working cap	21,863	8,895	25,787	12,845	10,756	12,291	13,321
Working Capital Generation (Usage)	(994)	(350)	3,221	2,122	1,041	291	338
Change in current receivables	(473)	666	929	73	(119)	(114)	(104)
Change in inventories	(877)	(282)	(1,337)	1,367	673	502	531
Change in accounts payable	884	276	1,716	396	531	280	294
Change in progress collections	(528)	(1,010)	1,913	286	(43)	(377)	(382)
Other (including discops)	(5,700)	7,797	862	239	0	0	0
Net cash from Operations	15,169	16,342	29,870	15,205	11,797	12,582	13,659
GE Capital Dividend		4,300	20,095	7,000	1,000	1,000	1,000
Industrial CFOA	12,171	12,054	9,775	8,205	10,797	11,582	12,659

Source: Company reports and J.P. Morgan estimates.

Table 37: Breakdown of "Other Operating Cash Flow"

\$ millions

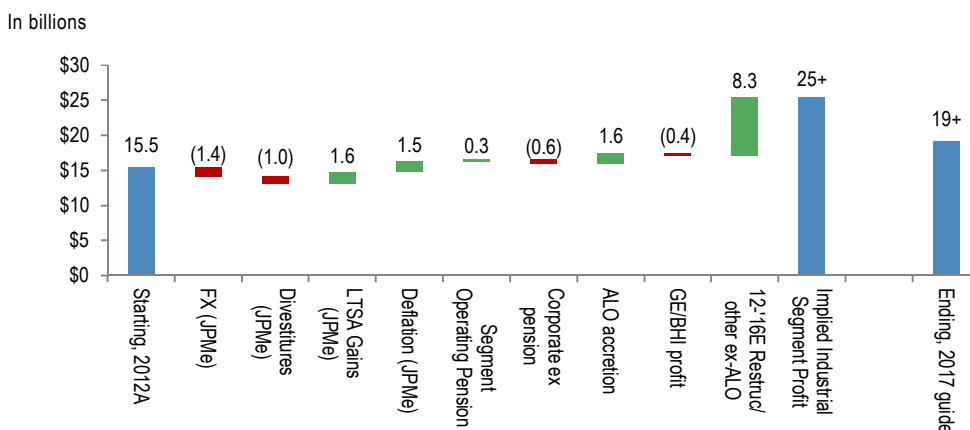
	2014	2015	2016	2017E	2018E	2019E	2020E
Other Operating Cash Flow	2,973	2,083	(7,438)	(6,938)	(3,210)	(2,872)	(2,716)
Gains/losses	(188)	(1,020)	(3,701)	(3,002)	(1,019)	(531)	(250)
Contract Assets	(1,572)	(1,919)	(3,929)	(3,500)	(3,000)	(3,000)	(3,000)
Income Taxes	773	1,671	(2,752)	(1,495)	0	0	0
Interest Charges	332	380	275	275	275	275	275
Principal Pension Plans (cost + add-backs)	3,368	4,265	3,071	1,600	1,900	1,900	1,900
<u>Other</u>	<u>260</u>	<u>(1,294)</u>	<u>(402)</u>	<u>(816)</u>	<u>(1,366)</u>	<u>(1,516)</u>	<u>(1,641)</u>
Additional Amortization (JPMe)	1,301	1,442	1,724	1,724	1,724	1,724	1,724
Other Pension add-backs/contributions (JPMe)	201	(653)	(711)	(990)	(990)	(990)	(990)
Restructuring add back (JPMe)	1200	1300	2,600	1,200	400	250	125
Other (JPMe)	(2,442)	(3,383)	(4,015)	(2,750)	(2,500)	(2,500)	(2,500)

Source: Company reports and J.P. Morgan estimates.

Cost Cut Red Meat Likely Thrown to Bulls, but Cash Negative Near Term with Longer Term Paybacks

There is a rife debate around what is discretionary and non-discretionary cost in this portfolio. Bulls highlight the \$2B being spent in Digital, though we believe that this is less discretionary and key to establishing a moat around what truly is the crown jewel here, the installed base. This is a key aspect of our call, that ramping things like Digital and other non-discretionary investments to serve these intensely competitive global markets is expensive, and ultimately there is limited payback on cost out actions. We show below that assuming a 1-yr payback on “restructuring and other” charges taken in the past, and adjusting for the aforementioned tailwinds, as well as drags that have come from FX and divestitures, should have alone yielded \$10B of Industrial segment profit growth (\$8.8B ex-ALO), vs the expected \$4B (\$2.4B ex-ALO and BHI), which would imply EPS of \$2.25+, vs the \$1.60-1.70 guidance (Street \$1.64) and the reaffirmed ~\$2 at high-end in 2018 (Street \$1.90).

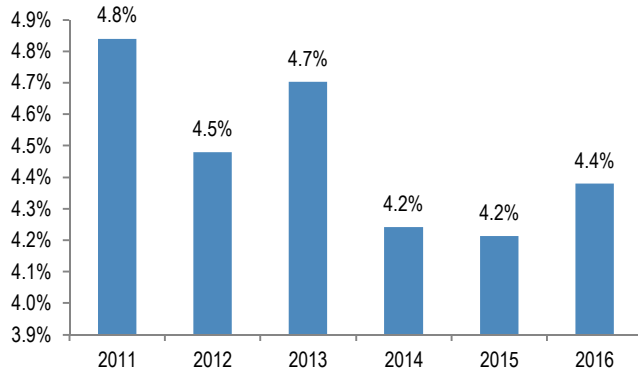
Figure 21: GE's Implied “Restructuring and Other” Driven Profit vs Actual Industrial Segment Profit Guidance



Source: Company reports, and J.P. Morgan estimates

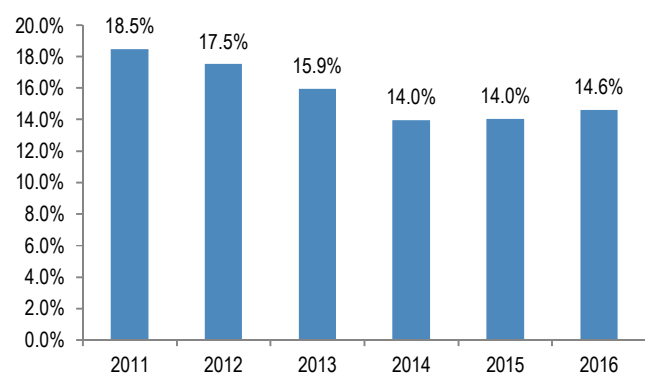
Going forward, we think the new CEO could likely come up with new cost cut plans, though with ~\$14B in restructuring & ‘other’ costs already taken/announced over the course of this cycle, SG&A and R&D are already at or below sector average levels for key segments like Aviation and Power, and corporate costs down materially over the last 5 years.

Figure 22: R&D/Sales



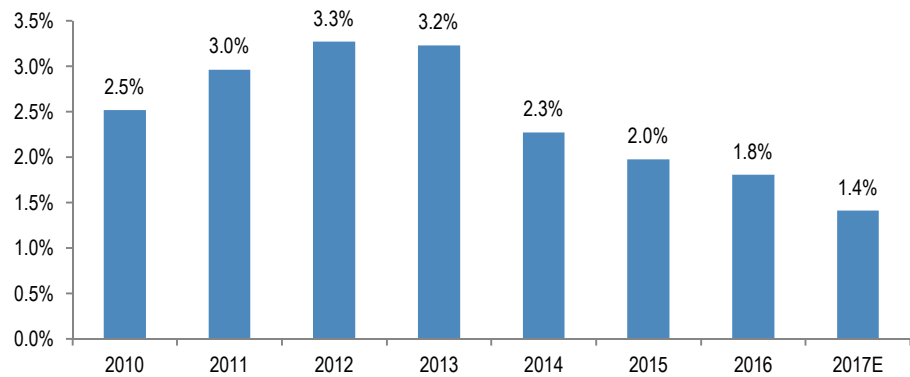
Source: Company reports, and J.P. Morgan estimates

Figure 23: SG&A/Sales



Source: Company reports, and J.P. Morgan estimates

Figure 24: Corporate Costs (ex-rest/gains)/Industrial Sales



Source: Company reports, and J.P. Morgan estimates

We don't think there is much more room to cut here to drive further upside to standing estimates (ALO accretion, BHI synergies, Renewables expansion, all already credited for in our and consensus models). With a backdrop of tough markets and slow growth (we model 1.5% organic CAGR for Industrial from 2017-2020E), we think the only opportunity remaining on the cash front is to exit markets/regions which have low/negative cash margin, and turning focus to product lines and regions which have some secular growth drivers (Aviation, Healthcare). We don't think this will be easy given GE's presence in tough markets and regions, which have needed local employee and investment commitment to secure contracts, and is likely to be a long-drawn multi-year process which will be cash/earnings dilutive in the near to medium-term with long-term paybacks that could stretch over many years.

We present an illustrative 5yr sales and FCF model below, where we break out GE's sales and FCF in different buckets including 1) Projects/sales that don't generate cash (essentially dragging the overall FCF profile like Alstom, Emerging market Transportation deals, portion of Oil & Gas and legacy Power business, ~25% of sales in total), 2) all other revenues. Next we assume that GE would need to undertake significant restructuring in order to shut down or exit these low cash margin projects with restructuring magnitude based on the degree of revenues being cut and the net employees/facilities reduction. Net-net, we see the need for ~\$7B in incremental restructuring, of which ~75% is cash (using peer ratios) in order to drive the overall FCF margin levels to more normalized levels. This heavy restructuring will also ultimately result in near-term FCF dilution (~15% on 2020 ests) reducing our standing near-term FCF CAGR estimates by 5% (2017-20E goes from ~12% CAGR to ~6% CAGR). *To be clear, this exercise is theoretical and merely intended to demonstrate the degree of near-term restructuring and earnings dilution needed.*

Table 38: GE Standing JPMe FCF CAGR

	2017E	2018E	2019E	2020E	2017-2020 CAGR
Total Sales	119.1	121.9	123.5	125.0	
FCF ex-pension/one-time	8.3	9.5	10.4	11.6	11.7%
FCF/Sales	7.0%	7.8%	8.4%	9.3%	

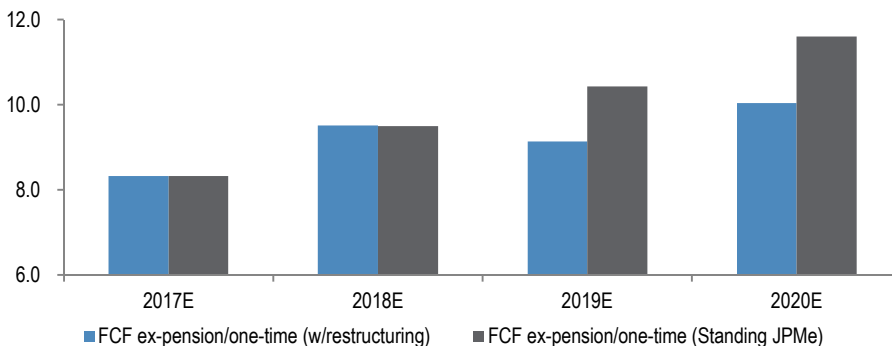
Source: J.P. Morgan estimates.

Table 39: FCF CAGR with Aggressive Restructuring

	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2017-2020 CAGR	5 yr CAGR (2018-2023)
Poor Cash Projects									
Sales	26.5	26.5	19.9	11.9	6.0	2.4	0.0		
FCF	0	0	0	0	0	0			
FCF/Sales		0.0%	0.0%	0.0%	0.0%	0.0%			
All other									
Sales	93	95	97	98	101	103	106		2.1%
FCF	8.3	9.5	10.4	11.6	12.1	12.7	13.3		7.0%
FCF/Sales	9.0%	10.0%	10.7%	11.8%	12.0%	12.3%	12.6%		
Restructuring costs			1.7	2.0	1.5	0.9	0.6		
Cash restructuring costs			(1.3)	(1.5)	(1.1)	(0.7)	(0.5)		
Total Sales	119.1	121.9	116.8	110.3	106.8	105.8	106.0		-2.8%
FCF ex-pension/one-time	8.3	9.5	9.1	10.0	11.0	12.0	12.9	6.4%	6.2%
FCF/Sales	7.0%	7.8%	7.8%	9.1%	10.3%	11.4%	12.1%		

Source: J.P. Morgan estimates.

Figure 25: FCF in 2019, 2020 to Be Materially Lower than Standing Estimates on Aggressive Restructuring



Source: J.P. Morgan estimates.

Capital Allocation: Bye Bye Buyback?

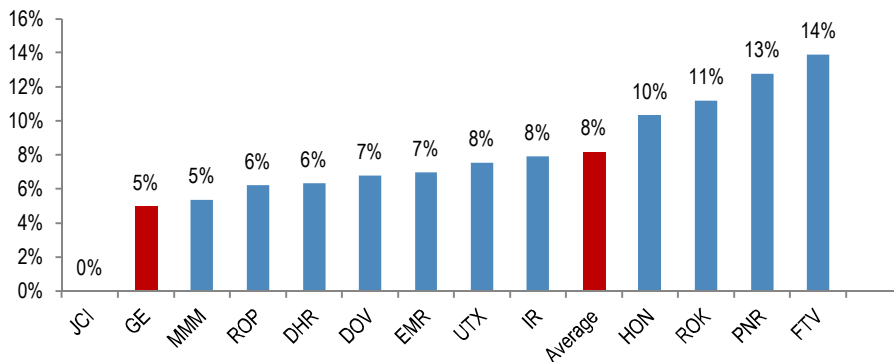
Second is the status of capital allocation with signaling on the dividend that it's sacrosanct. With the FCF backdrop described above, and a 75-80% average payout through 2020, we think there needs to be a rethinking of the priorities. Given the company came up ~\$2 B short on the GE Capital dividend, and the pension remains a stubborn issue, with ratings still important as long as the finco is around, we think there is potential for the rest of the GECS related buyback to stay on the balance sheet (~\$5B). This will help sustain the dividend but ultimately is dilutive to forward EPS/FCF per share by ~\$0.04. We update our analysis on sources and uses of the cash below. Based on our new estimates, despite the cut in buyback in 2017 from \$12.5B to \$7.5B and \$20B in incremental debt assumption, we arrive at just ~\$15-20B in discretionary cash flow after the dividend (flat at current levels), which if deployed could drive ~5% of upside to our 2020 EPS, well below the average standing balance sheet optionality of ~8% for the group.

Table 40: Expected Sources and Uses of Cash

\$ billion	'17-'20	Comments
Expected sources of cash		
Parent cash on Balance Sheet 12/31/16	10.5	
Industrial CFOA, 2017E (GAAP)	8.2	Includes Water/Industrial Deal Taxes and \$1.7B Pension Contribution
Industrial CFOA, 2018E (GAAP)	10.8	Includes \$1.6B Pension Contribution
Industrial CFOA, 2019E (GAAP)	11.6	Includes \$1.6B Pension Contribution
Industrial CFOA, 2020E (GAAP)	12.6	Includes \$1.6B Pension Contribution
Divestiture Proceeds (2017-2020E)	7.0	Water + Industrial Solutions + Lighting
P&E Dispositions (2017-2020E)	2.3	
GECC dividends (2017-2020E)	10.0	Assuming \$7B in 2017 and \$1B each in 2018-2020E
<u>Net Debt Proceeds (2017-2020E)</u>	27.9	<u>Assumed 2018 ending net leverage of 2.0x</u>
Total sources	101.0	
Uses of cash		
Parent cash required on balance sheet (JPMe)	(5.0)	
Dividend 2017E	(8.4)	
Dividend 2018E	(8.3)	Flat Div/Share and Flat Share count
Dividend 2019E	(8.3)	Flat Div/Share and Flat Share count
Dividend 2020E	(8.3)	Flat Div/Share and Flat Share count
Capex 2017E	(4.0)	
Capex 2018E	(3.6)	
Capex 2019E	(3.3)	
Capex 2020E	(2.9)	
Other Investing Cash Flow (2017-2020E)	(4.2)	
Buyback (Including GECC dividends, 2017-2020E)	(14.0)	\$7.5B in 2017, \$2B each in 2018-2020 to keep share count flat
Other Uses To Date (2017-Current)	(0.1)	
Announced/Completed M&A	(12.8)	Baker + LM Wind + Digital Deals
<u>Optionality (incremental M&A or additional buyback)</u>	<u>(17.9)</u>	
Total uses	(101.0)	

Source: J.P. Morgan Estimates

Figure 26: GE Balance Sheet Optionality vs Group

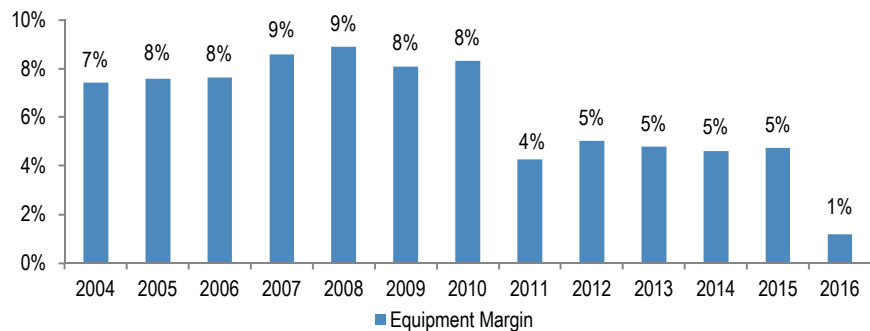


Source: Company reports and J.P. Morgan estimates.

Portfolio Priorities: Is This Portfolio Good or Bad? We See Secular Challenges in End Markets...

As per the above, we think making the company smaller and more focused and agile with an ability to attack growth is a good idea from a long term strategic perspective. In the end, however, as we show further below in the SOTP, we do not think there is an easy path to value creation. Central to any analysis is the question of whether these businesses are “good businesses”? Bulls assume they are. Outside of FCF, discussed at length above and a signal of weak quality, is gross margin, and more specifically, equipment margin, both of which are weak. The equipment margin stands out the most. We believe the weakness is more structural, as we see challenges to varying degrees in each of GE’s 4 main lines of business. We describe these below, followed by why we think these operating levels are more stubborn than Bulls believe. In the end, we split the GE portfolio between “fossil” related products (~50% of revs), which we believe are at best operating in “new normal” environments, a Healthcare business that is at least 50% low growth/commoditized, and then the “jewels”, Aviation and Life Sciences (~27% of revs). Every company we cover has businesses that face long term challenges, but this ratio is by far the most skewed to the downside.

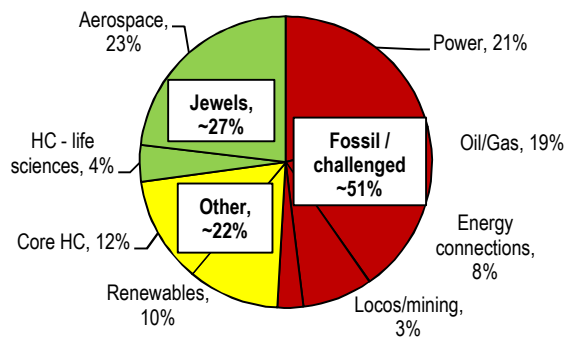
Figure 27: GE Industrial Equipment Margin Highlights Structural Challenges



Source: Company reports and J.P. Morgan estimates.

Figure 28: GE Portfolio by End Market Type

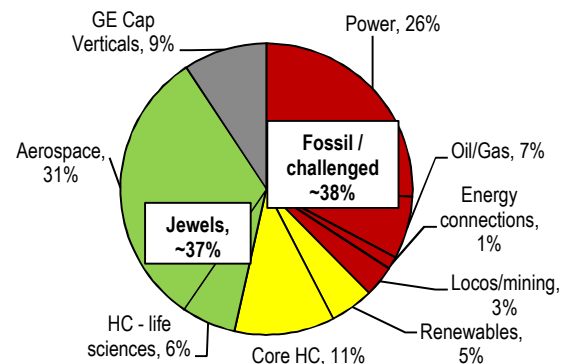
% of Industrial sales (2018E)



Source: Company reports, and J.P. Morgan estimates

Figure 29: GE Profit Mix by Segment

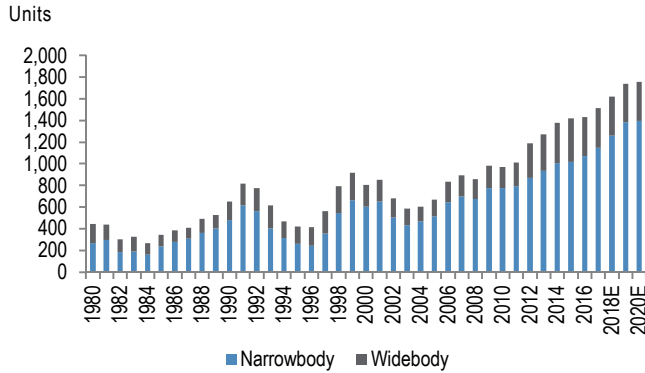
% of total company profits (2018E)



Source: Company reports, and J.P. Morgan estimates

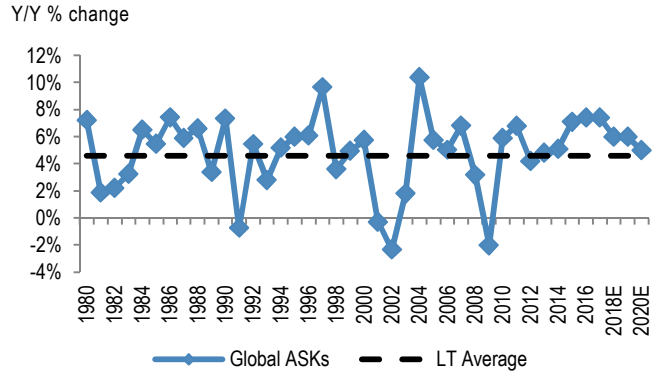
To start, the best franchise here is Aviation, and we really don't have a problem with this asset. As noted in our Paris Air Show takeaways ([link](#)), while we see limited margin upside as engine mix transitions from legacy products at higher margin (CFM56s, GE90) to new products at lower margin (LEAPs, GE9X), the business continues to execute at a high level, with an attractive macro backdrop highlighted by strong backlogs that provide visible growth for a number of years and healthy air traffic demand (aftermarket growth). The track record here is hard to argue with.

Figure 30: Large Commercial OE Deliveries



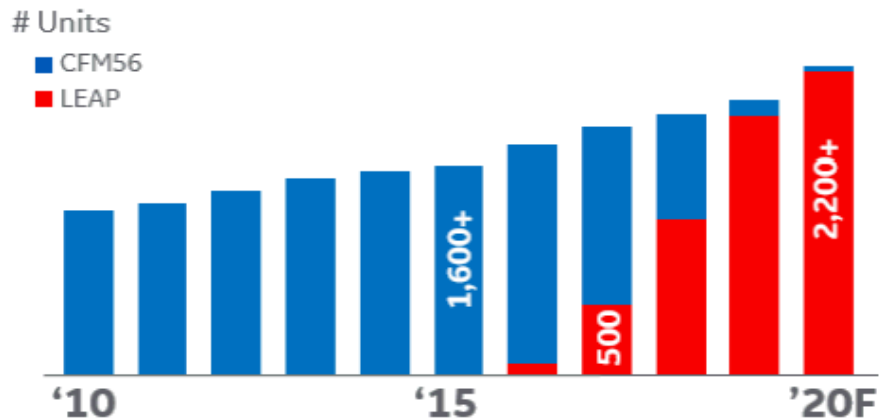
Source: Company reports, and J.P. Morgan estimates

Figure 31: Global Available Set Kilometers



Source: ICAO, IATA, and J.P. Morgan estimates

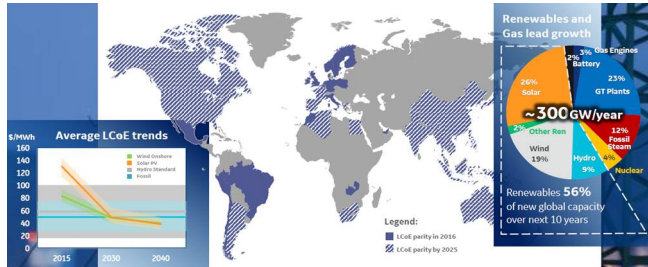
Figure 32: CFM/LEAP Production Profile



Source: Company reports

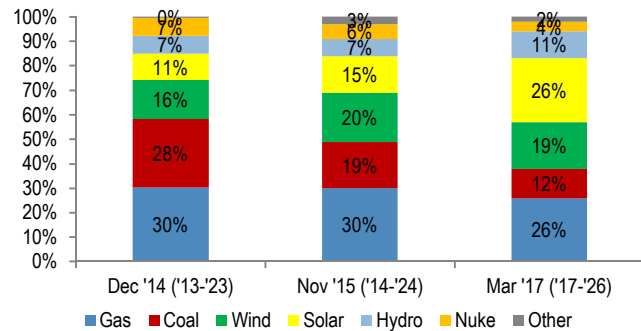
However, in the other ~75% of the portfolio, we see a tough growth environment in industries where growth is increasingly globally dispersed, and highly competitive. This is best exemplified by GE's power business, broadly defined as the Power (gas turbine equipment services, coal turbines), Renewables (mostly onshore wind) and Energy Connections (now mostly grid) segments. As we detailed in our recent note ([link](#)), the backdrop for power gen is negative, in our view, particularly for fossil power (gas/steam) equipment and services, the core of the GE Power portfolio. In OE, after a period in which the US replaced coal with gas, and EM/resource rich end market scaled up their infrastructure, there is a dearth of new demand for turbines, leading to intense competition abroad in an industry that already has significant overcapacity. Utility customers in developed markets, where the majority of the services stream lies, are facing severe disruption to their traditional business models from renewables that are rapidly approaching parity (even according to GE), forcing them to cut costs with many now targeting what used to be an untouchable maintenance spend. This has already happened in Europe and we see increased evidence in the US. Net-net, the backdrop of secularly challenged load growth in developed markets, and a continued global shift from conventional power (fossil based) to renewables is negative for GE.

Figure 33: Cost of Renewables Without Subsidies Near Parity with Fossil Fuel



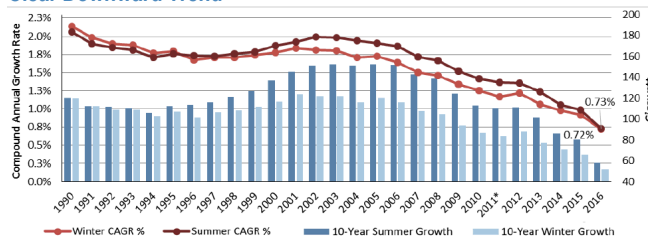
Source: Company reports.

Figure 34: GE Power Industry Outlook – GW Installed Shows Significant Increase in Renewables at Expense of Fossil



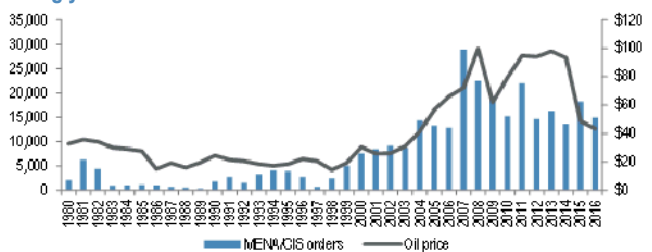
Source: Company reports. Note: Dec '14 adjusted to exclude non-grid connected power, which we assume is mostly oil based.

Figure 35: NERC-Wide Demand 10-Yr Load Growth Forecasts Shows Clear Downward Trend



Source: NERC, 2016 Long-Term Reliability Assessment. Note: Compounded annual growth rate (CAGR) provides the year-over-year growth rate over the duration of the assessment period. It is derived as follows: $CAGR = (\text{Year 10 TID} / \text{Year 1 TID})^{(1/9)} - 1$

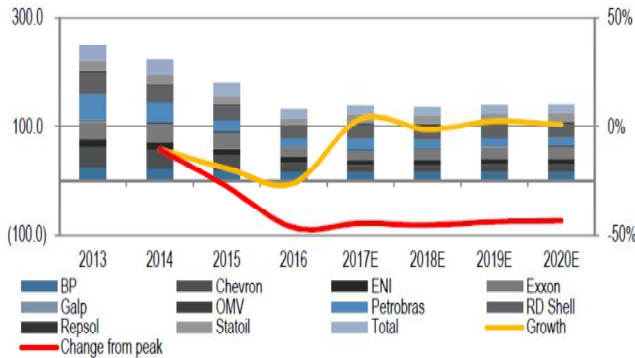
Figure 36: Gas Turbine Orders from the Middle East and CIS Are Strongly Correlated to the Oil Price



Source: J.P. Morgan, McCoy, Bloomberg

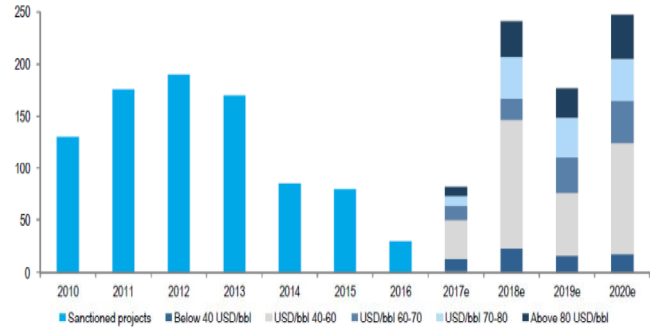
Turning to Oil/Gas, while this has been a big area of debate, rightfully so given its ~50% decline from the peak, with what we believe is lingering downside risk to standing 2020 forecasts, this segment is only 6% of the portfolio now. Still, growth in energy efficiency and alternative energy sources are also a headwind to demand growth here, and GE's outsized presence in offshore/subsea is more structurally challenged as the marginal source of supply, which can be optimistically characterized as "bumping along the bottom" ([link](#)).

Figure 37: IOC Long-Term Capex Outlook: Overall Spending >40% Below Peak to the End of the Decade



Source: Bloomberg, Company Reports, J.P. Morgan Estimates

Figure 38: Offshore Greenfield Capex \$bn, Sorted by Oil Price Breakeven



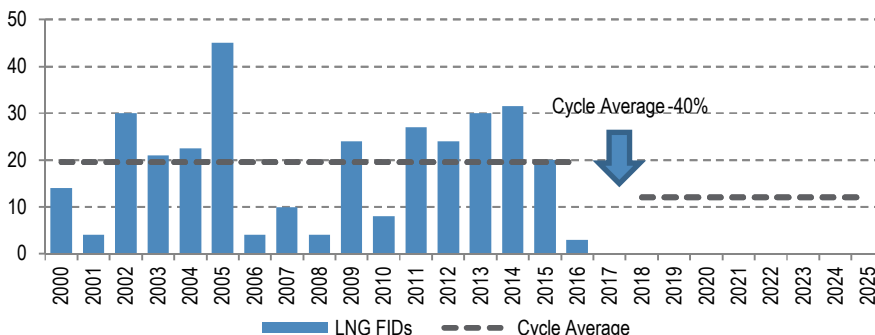
Source: Subsea7 annual report 2016

Figure 39: LNG Supply / Demand Balance



Source: Berkeley Research. *Note: conversion between Bcm/year and Mtpa ~0.75x

Figure 40: LNG Capacity Addition FIDs (mtpa) and Cycle Average



Source: Royal Dutch Shell company presentation, Wood Mackenzie, J.P. Morgan estimates.

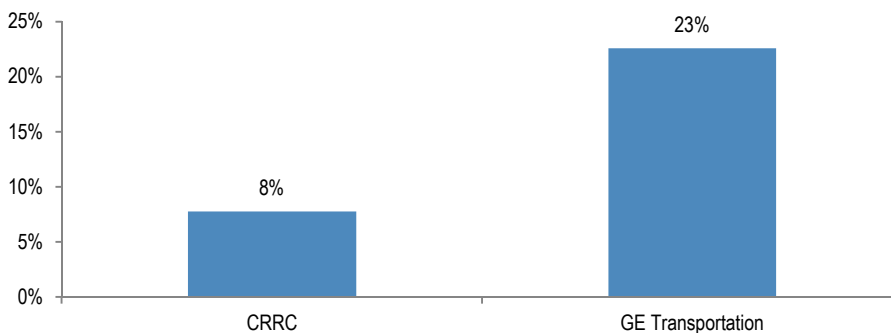
Somewhat related to fossil markets above is the small locomotives business. Here we see significant overbuild and pressure on coming deliveries in an over-capacitized US market. This has forced GE to look globally for deals, though we do not think they will ultimately be as lucrative. Here, two recently signed deals in India and Nigeria have come with significant scope, and local commitments. Meanwhile, Chinese company CRRC recently announced its intentions to continue to come abroad to compete, targeting international revenues to be ~15% of sales by 2020 vs 10% currently, as China related products roll down. For reference, CRRC's margins are well below GE Transportations.

Table 41: Recent CRRC International Deals

Deal/Region	Comments
Los Angeles, USA	Deal for 64 subway cars with option to buy another 218. Total value of \$647mm
Pennsylvania, USA	45 cars for \$137.5mm with option or an additional 10 cars for \$23.5mm

Source: Company reports and J.P. Morgan estimates.

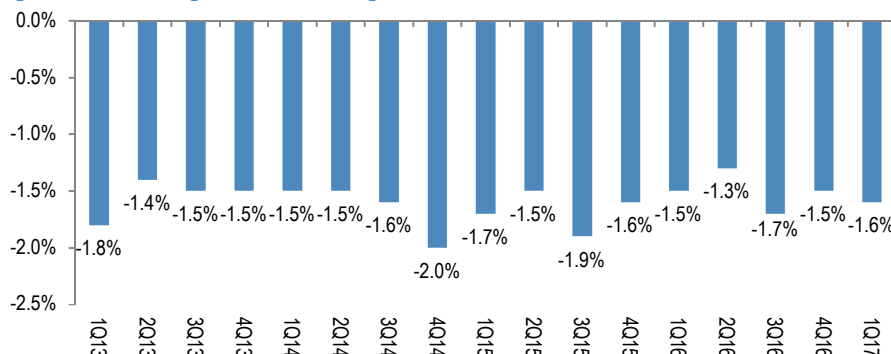
Figure 41: CRRC Operating Margins vs GE Transportation



Source: Company reports and J.P. Morgan estimates.

Lastly, after a long period of stagnation, Healthcare has been a solid business over the past couple of years, though we continue to view the core imaging franchise (>2/3 of sales) as low growth, and increasingly commoditized, with price pressure a headwind each year that needs to be overcome ([link](#)).

Figure 42: GE HC Segment Order Pricing



Source: Company reports and J.P. Morgan estimates.

We do not believe that just because a company does supply it all, it should be supplying it all: ROK sold its motors business, removing content, and the stock has arguably re-rated

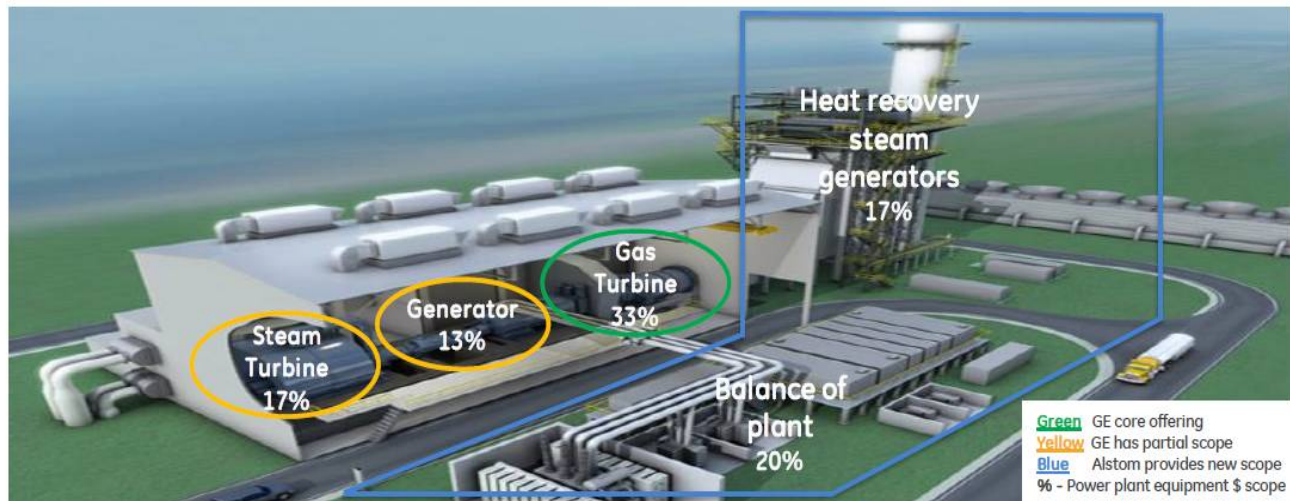
The price to compete comes in the form of greater underpriced scope, and heavy investments...

Digging a bit deeper into the profile of these end markets, we see that they are characterized by bigger projects, with the winner having run a gauntlet of a highly competitive bidding process in which the major players are generally transparent at the same table one by one. As per the disclosure in the recent GE/BHI filing and the GE 10-K, this is not always about like for like product pricing; in many instances, GE has gone after scope, or loosened terms as a way to be more competitive on deals.

GE/BHI S-4 comment: “Arrangements for the sale of goods and services sometimes include multiple components. Our arrangements with multiple components usually involve an upfront deliverable of equipment and future service deliverables such as installation, commissioning, training or the future delivery of ancillary products. In most cases, the relative values of the undelivered components are not significant to the overall arrangement and are typically delivered within three to six months after the core product has been delivered. In such agreements, selling price is determined for each component and any difference between the total of the separate selling prices and total contract consideration (i.e., discount) is allocated pro rata across each of the components in the arrangement. The value assigned to each component is objectively determined and obtained primarily from sources such as the separate selling price for that or a similar item or from competitor prices for similar items. If such evidence is not available, we use our best estimate of selling price, which is established consistent with the pricing strategy of the Business and considers product configuration, geography, customer type, and other market specific factors”

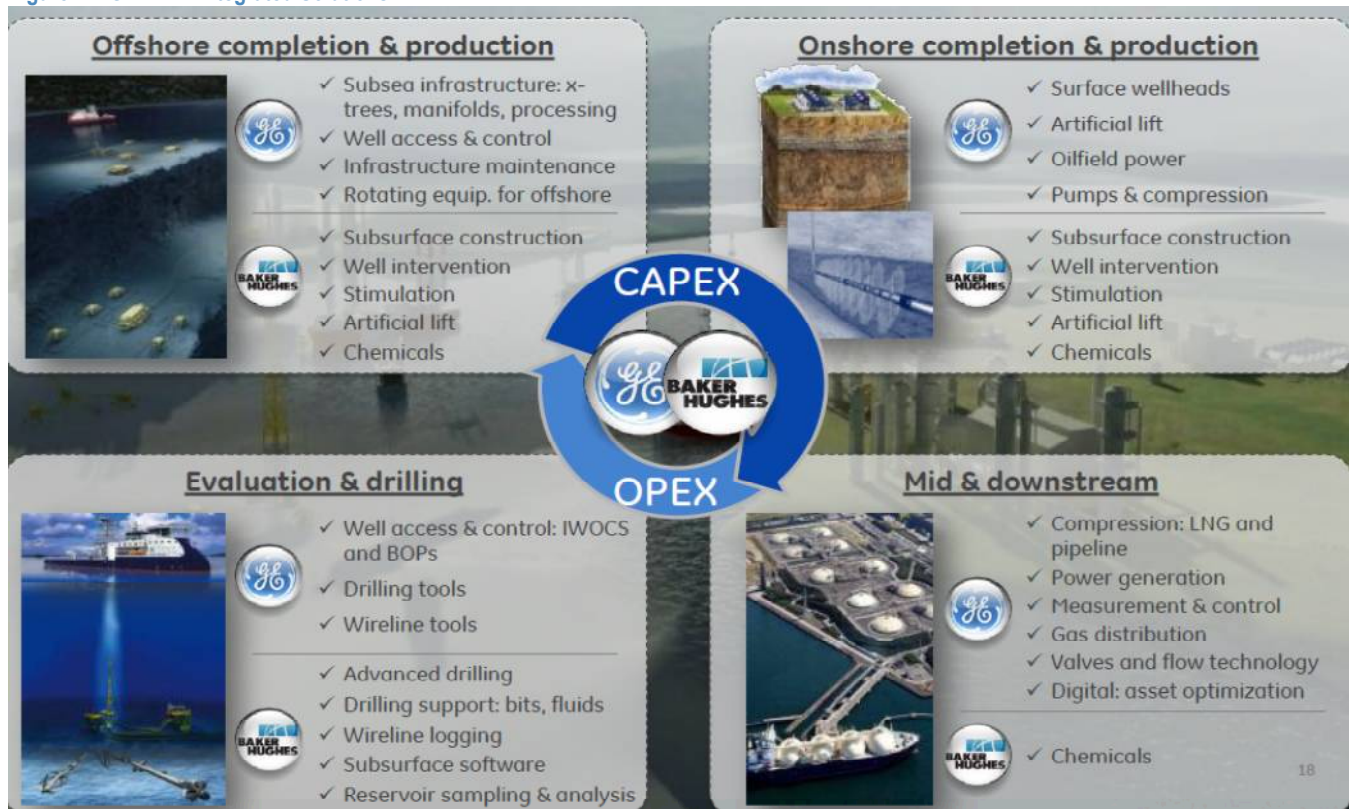
Indeed, the entire “GE Store” argument is based on the notion that the company can do “everything” for its customers with complete solutions and products that don’t necessarily have a solid value proposition. In other words, profitability of discrete products is secondary.

Figure 43: GE-Alstom Combination Opportunity in a Combined Cycle Gas Power Plant



Source: GE Investor Presentation. Used with permission.

Figure 44: GE + BHI Integrated Solutions



Source: GE Investor Presentation. Used with permission.

There are also additional deals in and around these projects where GE promises to build a plant and hire local associates. This seems to us to be the cost of doing business. As one GE leader once stated “jobs are the world’s currency”. We summarize below GE’s publicly announced initiatives and investments in different regions.

Table 42: MENAT

Country	Investments/Employee base
Saudi Arabia	<ul style="list-style-type: none"> They currently employ ~2000 employees up from 800 in 2011 with an expectation to add 2000 more employees over the next 5 years. Announced a new innovation center in Nov'15 on top of \$1B already invested in the region. GEMTC (GE Manufacturing Technology Center) has the largest HDGT repair facility in the world with 500 employees till the spring of 2016 and a total space of 26,000 sq mt. Signed a deal with Saudi Aramco to digitize operations. Under the deal GE will provide a private cloud and staff a DTO with local engineers, process experts and technologists, generating 250 local jobs.
Algeria	<ul style="list-style-type: none"> They had 2 offices, 2 facilities, 3 training centers employing 600+ employees by the fall of 2014. They created 3 joint ventures across the energy spectrum, breaking ground in 2015 at GE Algeria Turbines (GEAT) and are preparing the site; we expect it to be operational by 2018. GE and Sonelgaz made an agreement to build a \$300mm manufacturing complex which is expected to produce gas turbines, steam turbines, generators and control systems.
Kuwait	<ul style="list-style-type: none"> GE has 250 employees and one technology center in Kuwait.
Egypt	<ul style="list-style-type: none"> They are adding 2,000 sq meters in 2017 to bring total facility to 5,000 sq meters for assembly, repair and maintenance for oil/gas products locally, hiring more than 100 locals.
Turkey	<ul style="list-style-type: none"> 600 employees, 5 facilities in 2012.

Source: Company reports and J.P. Morgan estimates.

Table 43: Sub Saharan Africa

Country	Investments/Employee base
Nigeria	<ul style="list-style-type: none"> GE has ~500 employees in Nigeria In May 2017 announced \$100 mm investment in services plant for power and oil and gas. Won \$2.2B railway connection project where GE will act as project manager to build two trunk lines. Plan to invest \$1B over the next five years including \$250 mm for a multi-modal facility that will create 2,300 local jobs. The deep water project for which the multi-modal facility was primarily conceived has been put on hold. GE also pledged to spend an additional \$800 mm in local sourcing of goods and services, labor, staff welfare and training in Nigeria. GE is building a 383 KW Solar PV plant in Kaduna State. In Dec 2016, GE signed a memorandum of understanding with Nigeria to set up five solar power projects of 100 MW capacity each in the West African country. In oil/gas, GE spends \$11 mm annually to service facilities in Port-Harcourt and Onne.
South Africa	<ul style="list-style-type: none"> GE has 1,100 employees, \$70 mm investment in customer innovation center and \$19 mm investment in supplier development funds in South Africa.
Ghana	<ul style="list-style-type: none"> GE established a new plant in Ghana in 2017 to provide 45,000 hours of training to Ghanaian personnel over the next 5 years. In 2014 they opened a 200 person capacity office in Accra which now has >80 employees, 95% are locals. GE is an investor in Ghana 1000 which planned for 1000 MW power park by 2016 in fall '14. GE has 250 employees and one technology center in Kuwait.
Angola	<ul style="list-style-type: none"> GE has 600 employees in Angola in 2017. In 2013 they entered into a partnership with Angolan Group GLS to invest \$175 mm to build new manufacturing facility in Soyo Province Zaire for sub-sea equipment. GE is committed to invest \$45 mm from 2014-2018 to develop local talent in Angola. They entered into a partnership with MOH to develop 10 hospitals in Angola. 600 employees, 5 facilities in 2012

Source: Company reports and J.P. Morgan estimates.

Table 44: LatAm

Country	Investments/Employee base
Brazil	<ul style="list-style-type: none"> GE had 12,000 employees in the country with 29 production and services units in 2014 GE plans to invest \$900 mm for a project to build a turbines and HSRG plant and a major transmission system. In early 2012 they said, they planned to spend \$190 mm in various facilities for oil/gas alone, which was revised to \$400 mm in Fall 2012. In 2011, GE spent \$90 mm to build 55,000 sq meter facility in Niteroi for \$200 mm contract, 500 new jobs. GE invested \$100 mm for GRC in Rio in 2012 and hired 400 engineers. In 2014 GE noted the opening of a \$500 mm, 250,000 sq foot Technology Center. Early in the decade they doubled production capacity at the locomotive plant in Contagem, to about 120 locomotives a year, and they are ready to further increase capacity. Made a \$300 mm investment in EBX

Source: Company reports and J.P. Morgan estimates.

Table 45: Asia

Country	Investments/Employee base
India	<ul style="list-style-type: none"> GE opened a Digital Hub in late 2016, and currently employs 1,500 IT and software associates with the expectation to add additional 1,000 positions. In November 2015 GE was awarded a \$2.6B order for 1,000 locos, for which they are building a \$200 mm factory and two maintenance facilities in India
Indonesia	<ul style="list-style-type: none"> GE has 800 local employees in 10 facilities in addition to its country head office in Jakarta and two factories in Yogyakarta and Batam, and a service center in Bandung. In Feb '13 Immelt visited Indonesia and announced GE's plan to spend \$300 mm in the next five years to support the country's infrastructure development. GE has invested more than \$1B in Indonesia to date Every year, more than 200 of Indonesia's local citizens are trained by GE through customer engagement programs, best practice sharing, and campus activities. In September 2012, GE signed a Letter of Intent with PLN to develop a pilot biomass power plant in Sumba that will use wood chips as fuel. The power plant will use GE's Integrated Biomass Gasification solution to generate 1 megawatt (MW) of electricity to remote areas in Indonesia. GE has 1,100 employees, \$70 mm investment in customer innovation center and \$19 mm investment in supplier development funds in South Africa.
Australia/NZ	<ul style="list-style-type: none"> GE has ~6,000 employees across 180 sites in Australia/NZ. Invested \$100 mm for a facility in Perth serving subsea, turbo, power gen and transportation.
Korea	<ul style="list-style-type: none"> GE has 1500 employees in Korea with 15 offices including in Seoul (Headquarters) & Pangyo (ETC), manufacturing of HRSG (Changwon), Ultrasound (Seognam), Chemicals (Iksan), and technology Centers for Ultrasound R&D (Seongnam), FastTrak Center (Songdo).

Source: Company reports and J.P. Morgan estimates.

Table 46: Europe

Country	Investments/Employee base
Italy	<ul style="list-style-type: none"> GE Expanded Avenza module construction yard to 140,000 sq meters in 2014, up from 40,000 in 2011, an incremental investment of \$12 mm, capacity for 10 modules. Opened Talamona Brilliant Factory in 2016 with a new completely automated production line for GE Oil & Gas and a new additive manufacturing line which will use laser technology to 3D print end burners for gas turbine combustion chambers
Russia	<ul style="list-style-type: none"> In 2013 GE's revenue from Russia was \$1.3B (\$300 mm in oil & gas, \$360 mm in power and water, \$370 mm in healthcare) with more than 3000 employees. In 1Q16, they said that they were on Track to invest \$1B in Russia across Oil & Gas, Power, Transportation by 2020. In 2016, GE and Rosneft agreed to further explore development plans for a facility in Murmansk to locally assemble GE oil & gas equipment to support Rosneft's production activities. Inter RAO UES and UEC JV in Energy and HC established in 2011 to assemble, sell and service HDGTs. The JVs will assemble products in Russia using components from GE international facilities and, over time, will source parts from qualified Russian suppliers.

Source: Company reports and J.P. Morgan estimates.

Table 47: USA

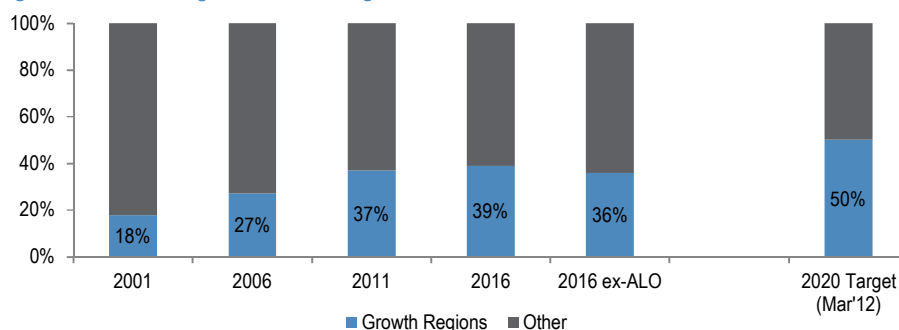
Country	Investments/Employee base
Oklahoma	<ul style="list-style-type: none"> GE invested \$110mm for a 125,000 sq feet space (initial estimate 95,000 sq feet) for a global research center for oil and gas in Oklahoma. Currently it employs 120 employees with potential to grow to 230.
San Ramon	<ul style="list-style-type: none"> Home of Digital/Predix. Software COE built in San Ramon with >2K employees and ~\$1.5B+ investment. New Digital foundries coming up in Boston
Huntsville	<ul style="list-style-type: none"> GE Aviation to invest \$200mm by 1H18 on 2 plants in Huntsville, to make silicon carbide materials and ceramic matrix composite parts for engines and HDGTs.
Greenville	<ul style="list-style-type: none"> Invested \$500mm in the last 5 years to construct the largest HDGT plant in the world with 1.7mm sq feet area and 3,200 employees. In 2Q16 GE announced opening of a 125K sq foot Advanced Manufacturing facility for which they spent \$73 mm for the first phase. They expect another \$327 mm investment in the future.

Source: Company reports and J.P. Morgan estimates.

...scaled up in EMs too late, leaving over capacity...

We also believe that, combining the above with a look at the related timing, shows GE was late to the game here, investing heavily, locally for growth into the teeth of the downturn. While we don't have exact numbers, the mosaic above would suggest that there is significant over-capacity in the equipment businesses here, a key reason as to why margins have collapsed. Stepping back, as per the Global Growth presentation in 2012, GE had targeted revenues from growth regions hitting ~50% of GE's overall revenues by 2020 vs 37% in 2012. However, halfway through the plan, growth regions now contribute only ~39% and ~36% excluding ALO, well below the initial plan.

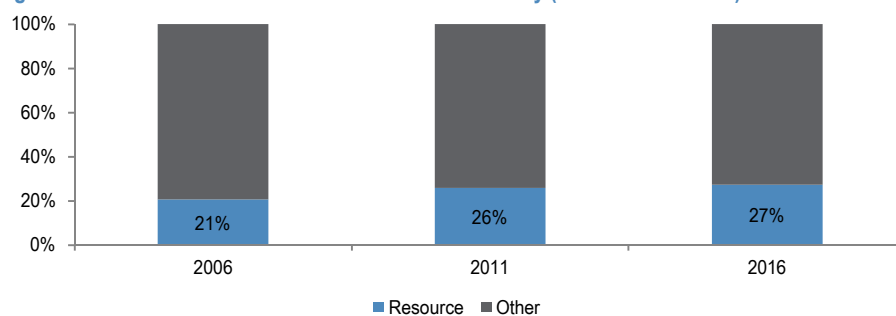
Figure 45: Growth Regions Mix Tracking Well Below Initial Plans



Source: Company reports and J.P. Morgan estimates. *Based on April 2014, 2016 ALO mix assumes ~65% revs from Growth Regions

A key reason for this disappointment has been weakness in resource rich regions, which were expected to outpace overall GE growth and also outpace growth in no-resource growth regions. Here the mix of revenues has stayed flattish since 2011 driven by weakness in oil & gas and also power gen markets.

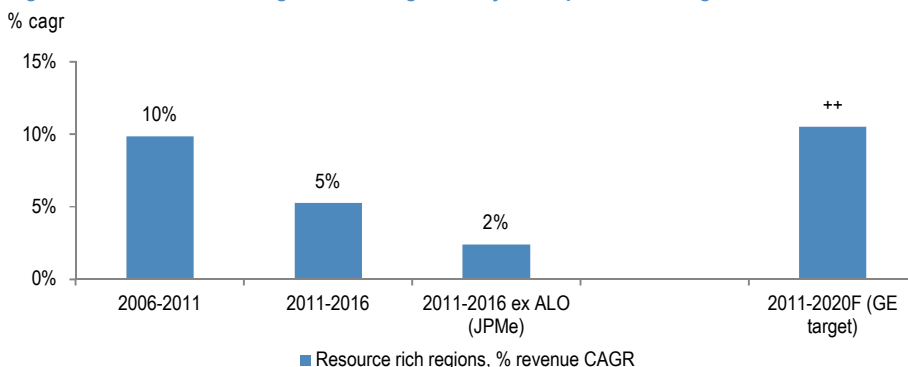
Figure 46: GE Resource Mix Growth Has Slowed Materially (inc FY ALO in 2016)



Source: Company reports and J.P. Morgan estimates.

Note that this includes the contribution from Alstom in 2016. Including Alstom, the 2011-2016 CAGR of ~5% missed the targeted DD ('+++') growth out to 2020. Adjusting the 2016 numbers to exclude it, the total sales CAGR for resource rich regions was an estimated ~2% from 2011-2016, even more substantially missing targeted levels.

Figure 47: Resource Rich Regions Have Significantly Underperformed Targeted Levels



Source: Company reports, and J.P. Morgan estimates

...trying to scale out of issues in fossil fuel markets...

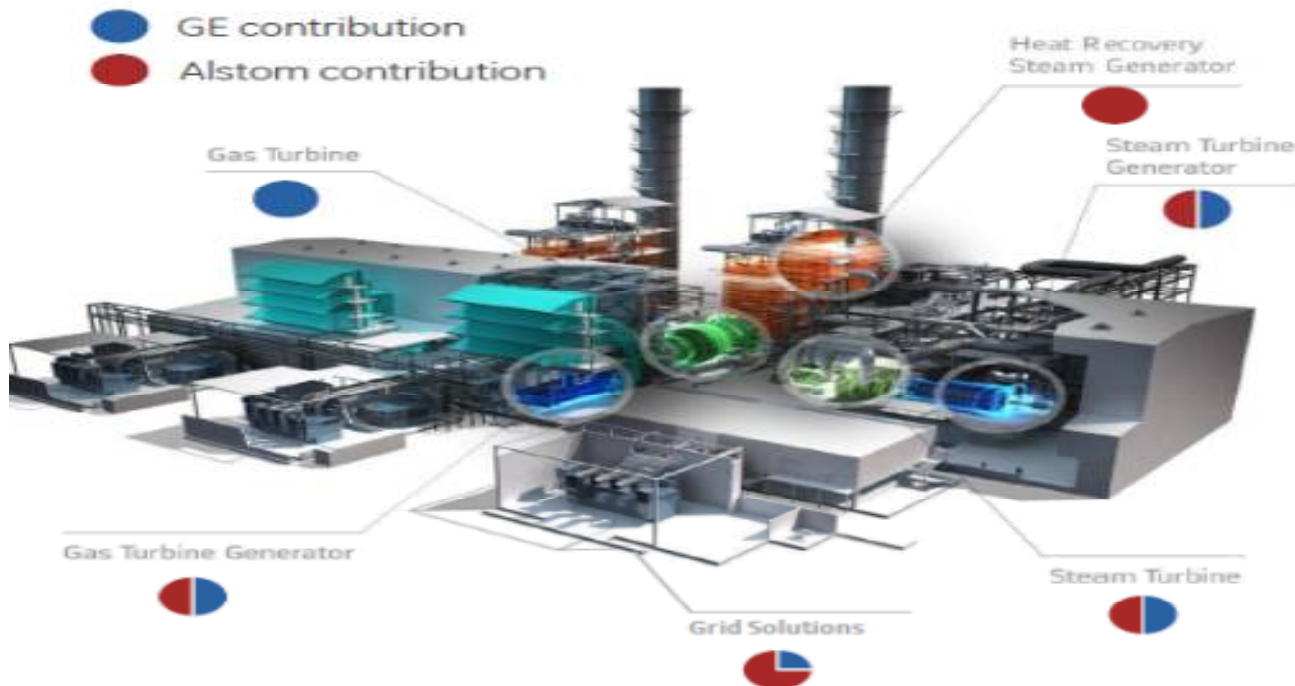
One of the ways GE has chosen to compete as such markets disappoint is through scale. In our view, this exacerbates the issue. In other words, they are adding more content, with less regard for the technological differentiation. Oil/gas and Alstom are the prime examples of this. While additional scope may drive more revenue, we do not believe margins are attractive on the expanded offerings that came with Alstom, as they are highly competitive, more so than GE’s core power turbine assets. A key new product line is the HRSG (Heat Recovery Steam Generator) where there are numerous competitors in the market globally with margins likely in the MSD range – an indication of business quality. Even on other supplementary product lines like Steam Turbines and Balance of Plant, there are large existing global competitors like Siemens and MHI, along with numerous competitors in the Steam Turbine area including Siemens, Harbin, Shanghai, Dongfang, SHIN, BHEL, Nanjing and MHI. Equipment Margins in steam turbines, heat recovery, boilers etc are 5% with more limited proprietary service content. Even on the renewables side competition is intense in both hydro and wind with global players such as Siemens, Vestas, Dongfang, BHEL, Suzlon and Andritz.

Table 48: Competition Across Combined GE-Alstom Offerings

	Competition
Gas Turbine/Generator	Siemens, MHI, Ansaldo
Steam Turbine/Generator	MHI, Siemens, Harbin, Shanghai, Dongfang, SHIN, BHEL, Nanjing, Ansaldo
Heat Recovery Steam Generator	Nooter, Vogt, CMI, MHI, NEM, AMEC and Babcock & Wilcox
Balance of Plant	Siemens
Grid	ABB, Siemens

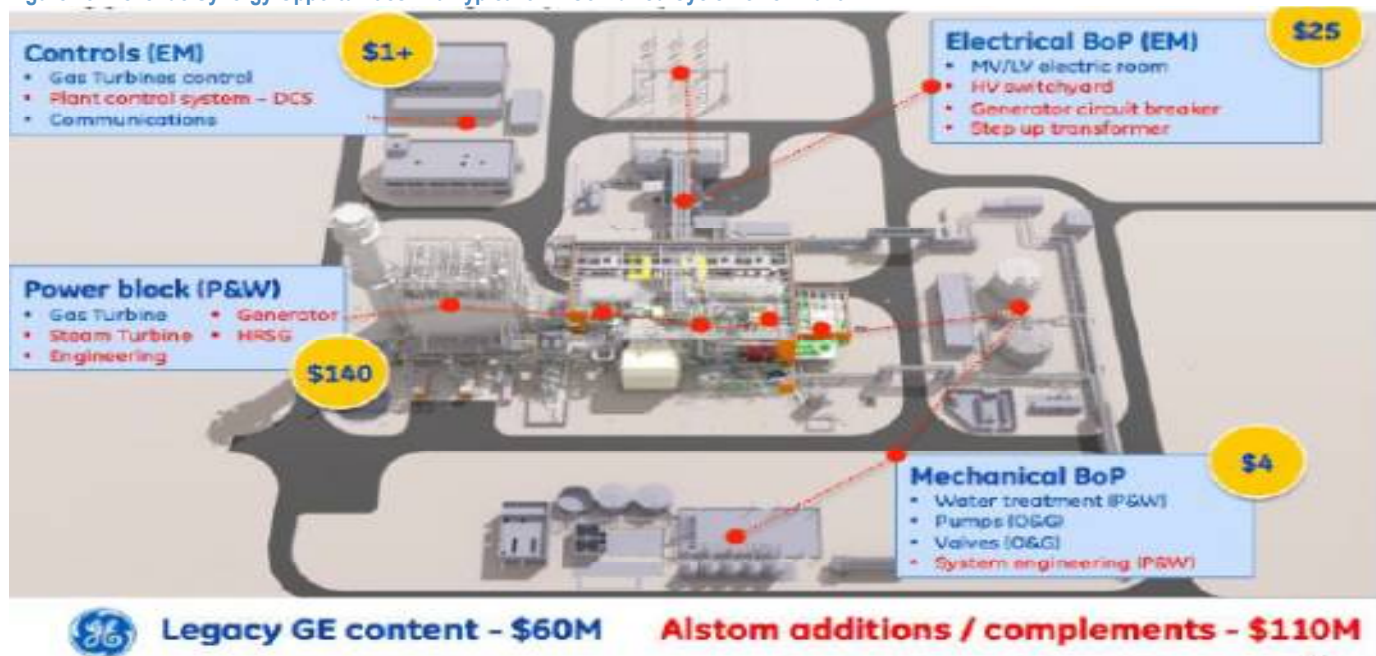
Source: Company reports and J.P. Morgan estimates.

Figure 48: GE-Alstom Combination Opportunity in a Combined Cycle Gas Power Plant



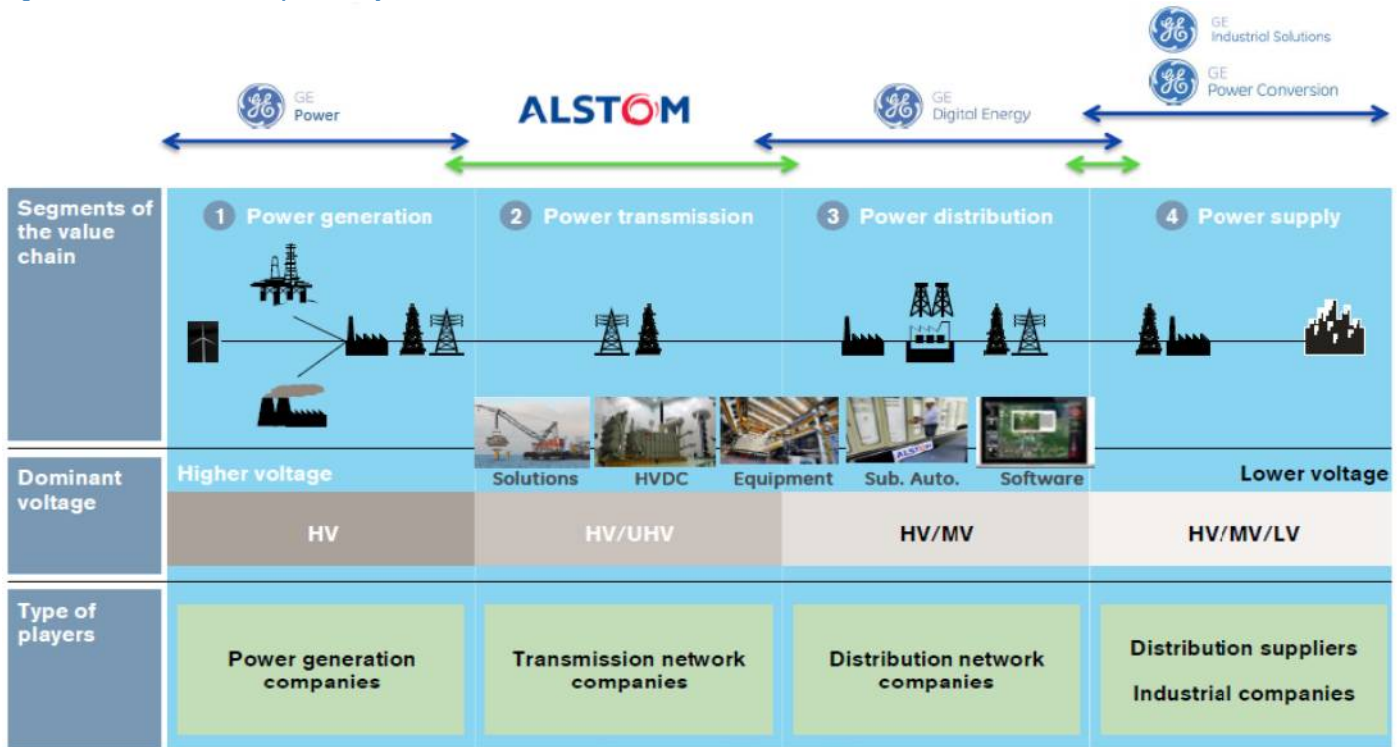
Source: GE Investor Presentation. Used with permission.

Figure 49: Revenue Synergy Opportunities in a Typical 9HA Combined Cycle Power Plant



Source: Company Reports. Used with Permission

Figure 50: Alstom Grid a Complementary Portfolio Fit with GE, but So What?



Source: Company reports. Used with permission

Table 49: Offshore Equipment - Product Line Comparison

	Pre-FID		E&C Services			E&C Equipment							Offshore Services		Newbuild Equipment	
	Concept / FEED	Subsurface	EPCI - Surface	EPCI - Subsea / Pipe	Vessel Installation	Trees	Wellheads	Manifolds / Controls	Processing	Pumps	SURF	Connectors	Tubular Running Services	Well Intervention	ROVs	Rig Equipment
Subsea Equipment	TechnipFMC	Forsys	Heerema											Edison Chouest Helix	Schilling, Cybernetix	
	OneSubsea (SLB)			Subsea 7						Framo						
	GE Oil & Gas	MDR-IO Consulting	BHI	McDermott-Petrofac							BHI	Wellstream				
	Aker Solutions	Xodus Subsea		Saipem						MAN Diesel Turbo						
Offshore Equipment	Oil States															
	Forum Technologies													Dynacon	Triton	
	NOV								Fjords							
	Dril-Quip															
Legend	Significant Ability		Ability through JV/Alliance			Some Ability		Negligible								

Source: Company reports and J.P. Morgan.

Table 50: Diversified Services - Upstream Product Lines by Market Share

	Baker Hughes	GE O&G	Halliburton	Schlumberger	Weatherford	New BHI
EVALUATION						
Wireline Logging	●	●	●	●	●	●
Logging-While-Drilling	●	N/A	●	●	●	●
Surface Data Logging	●	N/A	●	●	●	●
Geophysical Equipment & Services	N/A	N/A	●	●	N/A	N/A
DRILLING						
Directional Drilling	●	N/A	●	●	●	●
Downhole Drilling Tools	N/A	●	N/A	●	●	●
Rental & Fishing Services	●	N/A	N/A	●	●	●
Drilling Fluids	●	N/A	●	●	N/A	●
Drill Bits	●	N/A	●	●	N/A	●
Solids Control & Waste Management	●	N/A	●	●	N/A	●
Land Contract Drilling	N/A	N/A	N/A	●	●	N/A
Rig Equipment	N/A	●	N/A	●	●	●
COMPLETION						
Hydraulic Fracturing/Stimulation	●	N/A	●	●	●	●
Completion Fluids	●	N/A	●	●	N/A	●
Casing & Tubing Services, Cementation Tools	●	N/A	N/A	●	●	●
Oil Country Tubular Goods	N/A	N/A	N/A	●	●	N/A
Completion Equipment & Services	●	N/A	●	●	●	●
PRODUCTION						
Production Testing	N/A	N/A	●	●	N/A	N/A
Chemicals	●	N/A	●	●	N/A	●
Coiled Tubing	●	N/A	●	●	●	●
Artificial Lift	●	●	●	●	●	●

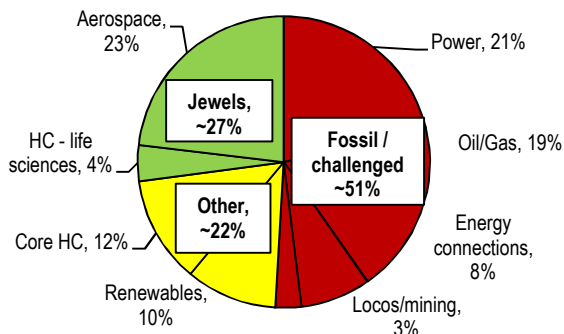
Source: Spears & Associates and J.P. Morgan estimates. Key: full circle = +20% global share, 3/4 = 10-20% share, 1/2 = 5-10% share, 1/4 = under 5% share.

...and challenged businesses overwhelming the jewels

With this approach, the jewels in the portfolio have been overwhelmed by the businesses with arguable secular challenges. Indeed, back in 2012, Aviation and Life Sciences represented ~22% of the portfolio. Despite both these businesses growing well above average, they still represent only ~25% of the portfolio.

Figure 51: GE Portfolio by End Market Type

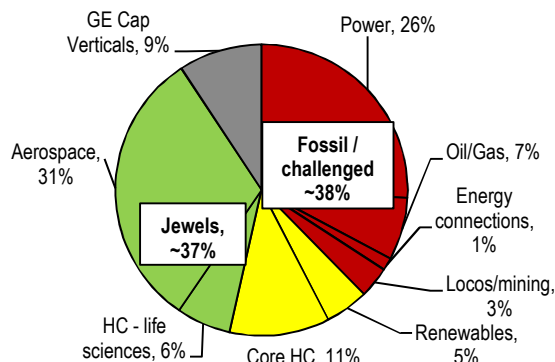
% of Industrial sales (2018E)



Source: Company reports, and J.P. Morgan estimates

Figure 52: GE Profit Mix by Segment

% of total company profits (2018E)



Source: Company reports, and J.P. Morgan estimates

Is Digital the next “Emerging Market”?

Many Bulls are now talking about the spending on Digital, which we estimate is now at a ~\$2B run rate on expenses, as the next area of cost cuts. Indeed, investments in 2016 for Digital were expected to total ~\$1.4B (\$2B in cumulative spend or ~\$800mm y/y in 2016) which includes \$0.4B in Digital Thread (digital connectivity factories, design, manufacturing, services, commercial), \$0.3-0.4B from Vertical capabilities (industrial applications, cloud migrations, product extension) and \$0.6-0.7B from Horizontal capabilities (Predix, applications, cloud infrastructure, cyber, edge). 2017 is expected to be up another ~\$400mm y/y. According to a recent article, CFO Jeff Bornstein noted that “GE has no choice but to invest in the strategy... If we don't do this then somebody else is going to”. This means that much like the sunk costs it has taken to set up shop in Emerging Markets, there is no easy way out to cut back these costs.

Figure 53: GE Global Digital Workforce Is ~28K



Source: Company reports and J.P. Morgan estimates. Used with Permission

There is also a capital cost, as they currently lease data center space from the likes of AWS and MSFT Azure, though management was clear at their investor meeting last year that it would want to maintain flexibility to fit customer preference with their own data center capacity. Also a challenge is having the capability to serve those outside the US, complicated by regulations around portability of data. After consolidating data centers recently, this initiative would appear to take GE in a different direction and require significant cash commitment to build out related infrastructure (see capex requirement including capital leases for AWS of ~50% of sales).

Valuation A Key Debate

Starting by looking at the standing valuation on key metrics, we note that GE looks cheap on headline P/E and EV/EBITDA metrics, but looking at cash metrics like EV/FCF and FCF Yield, this moves to a significant premium.

Table 51: Valuation on Different Metrics #1

% premium/discount on 2018

Premium/Discount	Reported EPS Consensus Approach (2018)	GAAP EPS (including amortization, restructuring)	Cash EPS (normalized to exclude amortization on reported EPS)	Adjusted GAAP EPS with BS Upside (including amortization, restructuring, normalized for pension)	Reported Balance Sheet Adjusted P/E	Reported Pension Adjusted P/E	EV/EBITDA
DHR	102%	117%	107%	117%	103%	102%	102%
DOV	101%	95%	88%	97%	101%	102%	77%
EMR	107%	101%	105%	100%	107%	105%	93%
FTV	110%	108%	116%	102%	104%	109%	104%
GE*	94%	89%	88%	93%	98%	93%	148%
HON	88%	83%	89%	91%	86%	99%	97%
IR	93%	88%	92%	87%	93%	91%	89%
JCI	73%	74%	69%	70%	79%	65%	93%
MMM	115%	109%	117%	112%	118%	116%	112%
PNR	86%	92%	90%	86%	82%	84%	84%
ROK	120%	113%	123%	109%	115%	118%	99%
ROP	123%	144%	130%	143%	125%	122%	106%
UTX	89%	88%	84%	94%	89%	95%	94%

Source: Bloomberg, Company reports, J.P. Morgan estimates.

Table 52: Valuation on Key Metrics # 2

% premium/discount on 2018

Premium/Discount	Adjusted GAAP EPS (including amortization, restructuring, normalized for pension)	Pension Adjusted EBITDA	EV/FCF (adjusted for Interest)	Dividend Yield	FCF Yield
DHR	117%	118%	108%	0.7%	5.0%
DOV	96%	88%	82%	2.2%	6.7%
EMR	99%	88%	92%	3.2%	5.5%
FTV	107%	114%	100%	0.4%	4.9%
GE*	88%	88%	127%	3.5%	3.5%
HON	94%	103%	98%	2.0%	5.3%
IR	86%	90%	86%	1.7%	5.8%
JCI	65%	75%	103%	2.3%	5.5%
MMM	109%	113%	114%	2.2%	4.6%
PNR	90%	99%	86%	2.1%	6.1%
ROK	112%	102%	89%	1.9%	5.2%
ROP	142%	131%	110%	0.6%	4.8%
UTX	94%	90%	104%	2.3%	5.5%

Source: Bloomberg, Company reports, J.P. Morgan estimates. For GE we use Industrial EV and EBITDA for EV/EBITDA. For EV/FCF we use total EV

We are lowering our PT to reflect new estimates and the SOTP

Lowering PT to \$22

Given our view that cash is the only thing to trust, and it remains weak, we are lowering our PT to \$22 based on a combination of our regular PT derivation methodology and the standing implied SoTP (detailed later in this section), which we think more fairly reflects business quality.

Table 53: Price Target

Traditional valuation approach	\$24
SoTP Based (see page 73)	\$20
Average	\$22
Difference vs Current levels	-20%

Source: J.P. Morgan Estimates, Bloomberg

A \$22 PT would imply a ~20% discount (~15x) to our sector target multiple of 19x on our 2018 Industrial EPS estimate. For GE Cap we use a \$1 value based on ~\$10B in pro-forma tangible equity assumptions for left-over GE Capital (click [here](#) for our detailed calc on GE Capital valuation).

Table 54: Implied Multiple on Industrial EPS Based on New Price Target

	'18 EPS	P/E Multiple	Per Share
Price Target	\$1.50	14.7x	\$22
GE Capital			\$1.2
Industrial EPS Implied	\$1.34	15.8x	\$21

Source: J.P. Morgan estimates.

Risk-Reward Unattractive

Along with our base case estimates price target above, we also evaluate a potential near-term upside scenario vs our standing estimates along with a near-term recession scenario which couple with our base case PT in order to look at the risk-reward profile vs our coverage universe. Net-net, we arrive at a probability weighted price target of ~\$24, down ~15% vs current levels and compares to the group average risk-reward of down ~4%.

Table 55: GE Risk/Reward Summary Table

	Stock Price Scenarios			Return Potential			Probability			Probability-Weighted	Upside/Downside
	JPM PT	Upside	Downside	JPM PT	Upside	Downside	JPM PT	Upside	Downside		
GE	\$22	\$28	\$18	-19%	4%	-34%	40%	40%	20%	\$24	-13%
Group Avg				-1%	12%	-43%					-4%

Source: J.P. Morgan estimates. Priced as of July 5, 2017.

We summarize our upside and downside scenarios below:

Upside Scenario: ~\$1.30 in 2018 FCF and ~\$1.70 in EPS (post accounting change and GECS other continuing ops)

We think there is potential for upside to 2018 EPS and FCF from 1) A continued uptick in AGPs on faster F penetration levels and 2) continued acceleration in Alstom synergies. On FCF, apart from the upside from fundamentals, we think there is potential for upside from a lower run-rate of pension contributions, lower restructuring and higher GE capital dividends (~100% of continuing net income).

Table 56: Potential Upside to Our Base Case Estimates for 2018

	Comments	2020 EPS Upside vs Base Case	2020 FCF Upside vs Base Case
AGPs + Gas Turbines	Continued steady increase in penetration; Only a Moderate Decline in Gas Turbine Market	\$0.05	\$0.03
Alstom Synergies	On Track with Deal Synergy Model	\$0.02	\$0.03
Total Fundamental Upside		\$0.07	\$0.07
Buyback	2017/2018 Buybacks as targeted vs \$7B lower in our base case	\$0.04	\$0.04
Tax	Lower Corp tax to ~10%	\$0.09	\$0.09
Pension Contributions	Tapers down from standing levels to \$1B by 2018	\$0.00	\$0.07
Lower Restructuring/Gains	~\$300mm in lower restructuring expense	\$0.00	\$0.03
<u>GECS Dividend</u>	<u>100% of continuing ops vs ~70% in our base case</u>	<u>\$0.00</u>	<u>\$0.05</u>
Total Upside		\$0.20	\$0.35
<u>Base Case</u>		<u>\$1.50</u>	<u>\$0.95</u>
Upside Case		\$1.70	\$1.30

Source: J.P. Morgan estimates.

Downside case

We think GE's profit downside in a near-term recession is likely to be worse than prior due to lack of pricing power in the Power & Renewables segment compared to last cycle, limited balance sheet optionality and headwinds in Aviation from a new engine ramp. We see potential for ~8% organic growth declines, similar to our assumption for the group average. Net-net, we think in a recession, there is potential for ~15% downside to our standing EPS to ~\$1.27 and FCF to \$0.80 (less than EPS reduction due to potential for some WC).

2020 Bull Case: \$1.90 in 2020 FCF Possible in a Perfect World

We think there is potential for upside to 2020 EPS and FCF if the economy continues to accelerate coupled with an uptick in oil price to \$70+. Few areas of potential upside to our model include 1) A sharper recovery in Oil & Gas, 2) Flawless execution on the LEAP and a faster than expected learning curve, 3) A continued uptick in AGPs on faster F penetration levels and continued acceleration in Alstom synergies, 4) Lower tax rate. On FCF, apart from the upside from fundamentals, we think there is potential for upside from a lower run-rate of pension contributions, lower restructuring and higher GE capital dividends (~100% of continuing net income).

Table 57: Potential Upside to Our Base Case Estimates for 2020

	Comments	2020 EPS Upside vs Base Case	2020 FCF Upside vs Base Case
AGPs + Gas Turbines	~70% F Penetration by 2020 vs ~50% in base case, Only a Moderate Decline in Gas Turbine Market	\$0.25	\$0.20
Alstom Synergies	On Track with Deal Synergy Model	\$0.07	\$0.07
Oil & Gas	Offshore Oil & Gas and LNG comes back and inflects in 2019/2020	\$0.05	\$0.05
<u>Aviation</u>	<u>Execution on LEAP, inflection in margins in 2019/2020</u>	<u>\$0.05</u>	<u>\$0.05</u>
Total Fundamental Upside		\$0.36	\$0.36
Buyback	2017/2018 Buybacks as targeted vs \$7B lower in our base case	\$0.04	\$0.04
Pension Contributions	Tapers down from standing levels to \$1B by 2018	\$0.00	\$0.07
Lower Tax Rate	Trump administration lowers corp tax rate	\$0.10	\$0.10
Lower Restructuring/Gains	~\$300mm in lower restructuring expense	\$0.00	\$0.03
<u>GECS Dividend</u>	<u>100% of continuing ops vs ~70% in our base case</u>	<u>\$0.00</u>	<u>\$0.05</u>
Total Upside		\$0.55	\$0.65
<u>Base Case</u>		<u>\$1.75</u>	<u>\$1.25</u>
Bull Case		\$2.30	\$1.90

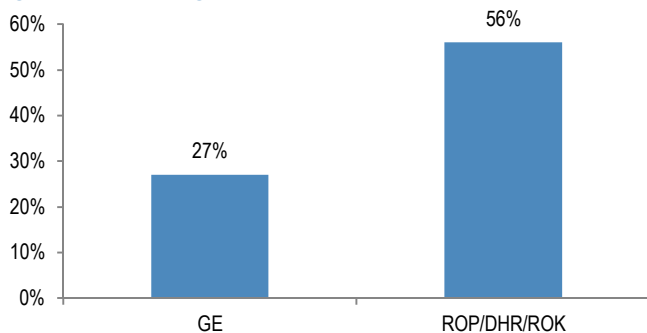
Source: J.P. Morgan estimates.

Premium companies like DHR, ROP and ROK have strong FCF and gross margin for a reason

EE/MI Comparisons: Bulls Anoint GE as “High Quality Asset”, but Financial Metrics Don’t Support It

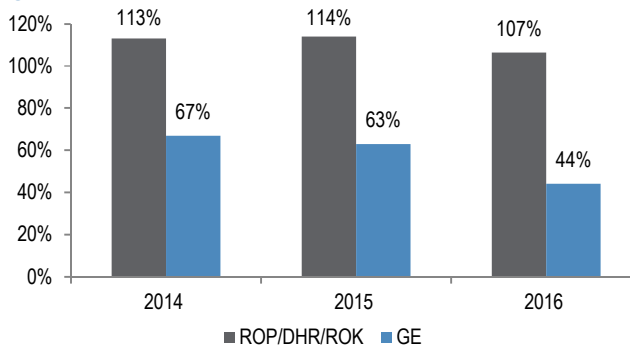
One of the key drivers for premium relative multiples in our coverage over a long period of time has been consistently high and improving gross margin coupled with strong FCF conversion. DHR, ROP and ROK stand out here, and while ROK is more cyclical, they screen as among the best franchises in our coverage. We think the high gross margins and strong FCF conversion at these companies are for a reason. Firstly, on gross margins, we note that these companies are not heavily exposed to multiple secularly challenged markets like GE with ROP and DHR, in particular, exposed to niche industrial, software and healthcare markets where they have created their own moat and are able to supplement with bolt-on acquisitions over time. ROK on the other hand, while less acquisitive and more cyclical, has demonstrated strong execution despite tough resource markets, as other areas of the portfolio have managed to offset, and all this while FCF conversion has remained solid. Equipment sold here aren’t big ticket in nature (large projects for ROK is defined as >\$5mm) and do not require significant JVs and local capex/investment commitment in order to secure projects (like GE) in challenged markets. In short, the business models at high quality companies are relatively cleaner and simple with little risk of overcapacity and secular growth challenges.

Figure 54: Gross Margin GE vs ROP/ROK/DHR



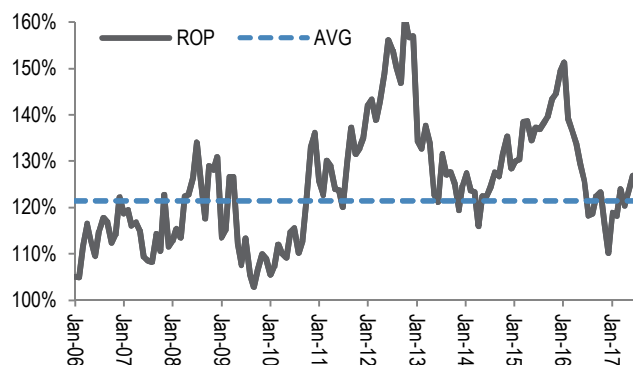
Source: Company Reports

Figure 55: FCF Conversion GE vs ROP/ROK/DHR



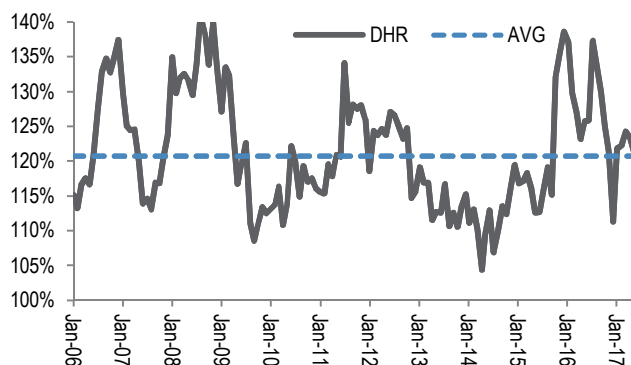
Source: Company Reports

Figure 56: ROP Relative EV/EBITDA Multiple Historically



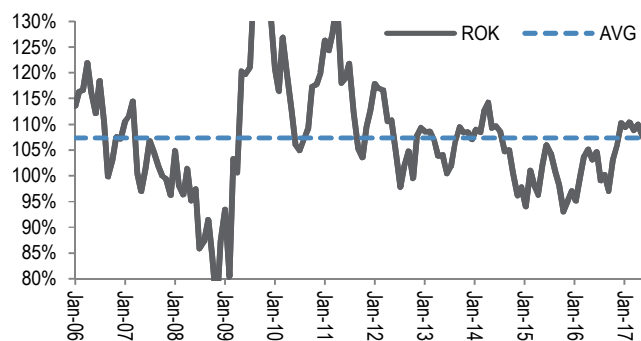
Source: Company reports and J.P. Morgan estimates.

Figure 57: DHR Relative EV/EBITDA Multiple Historically



Source: Company reports and J.P. Morgan estimates.

Figure 58: ROK Relative EV/EBITDA Multiple Historically



Source: Company reports and J.P. Morgan estimates

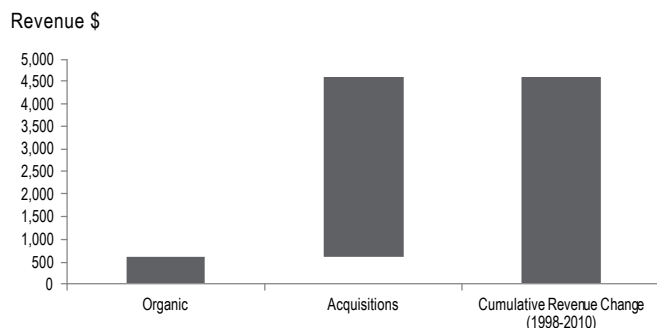
Emerson had cyclical leverage, 20% cash optionality and 100%+ conversion after its reset, whereas GE has limited upside cyclicality, ~5% optionality and 70% conversion

The Emerson Case: Network Power an example of trying to scale out of secular issues (similar to GE/ALO), but EMR businesses screen better

On the flip side, EMR is an example where the company invested late to try and scale out of problems in their Network Power business, which ultimately lead to having to sell the whole segment due to persistent secular challenges with a big reset in FY16. The story here played out over 3 acts, with management initially buying into a seemingly attractive end market, then trying to scale through acquisitions as the market peaked and margins struggled, leading to a multi-year period of weak fundamentals and a low value exit of the business at the bottom.

Emerson built up the Network Power business through a series of acquisitions since 1997, building a platform with core positions in power and cooling for data center infrastructure as well as embedded power. While the segment grew revenues at a ~40% CAGR from 1997 to the peak of ~\$6.8B in 2011, the vast majority of this growth came from acquisitions, with Network Power accounting for ~65% of total Emerson acquisition spend over this time period.

Figure 59: Acquisitions Were Almost All of Network Power's Cum Revenue Growth (1998-2010)



Source: Company reports, J.P. Morgan estimates.

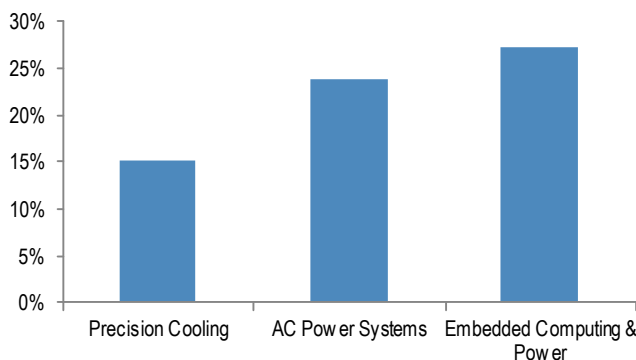
Table 58: Network Represented 65% of EMR Acquisition Spend \$ in mm

Year	Network Spend	Network Business Acquired
1998	325	APS from Northern Telecom Limited
1999	375	ASTECH
2000	1,165	Jordan Telecommunications, Ericsson Energy
2001	0	
2002	750	Avansys Power Co
2003	0	
2004	414	Marconi Corporation
2005	0	
2006	650	Artesyn, Knürr
2007	85	Stratos
2008	530	Motorola Inc.'s Embedded Computing
2009	0	
2010	2,700	Avocent, Chloride
Total	\$6,994	

Source: Company reports, J.P. Morgan estimates.

The aggressive acquisitions did lead to strong growth over last cycle, and core fundamentals were also mostly solid with both core power/cooling and embedded sub-segments outpacing competitors as management sought to build a better run business with more scale in notoriously difficult markets to compete in. Regionally, growth was tilted towards ROW and Asia, mostly due to acquisitions. From a macro fundamental standpoint, cyclicality was generally positive in the upturn despite a collapse following the tech bubble, with a sharp recovery in growth rates on the back of favorable macro dynamics and a strong position in Asia, driving penetration gains.

Figure 60: Network Power Sub-segment Growth Rates, 2003-2008



Source: Company reports, J.P. Morgan estimates.

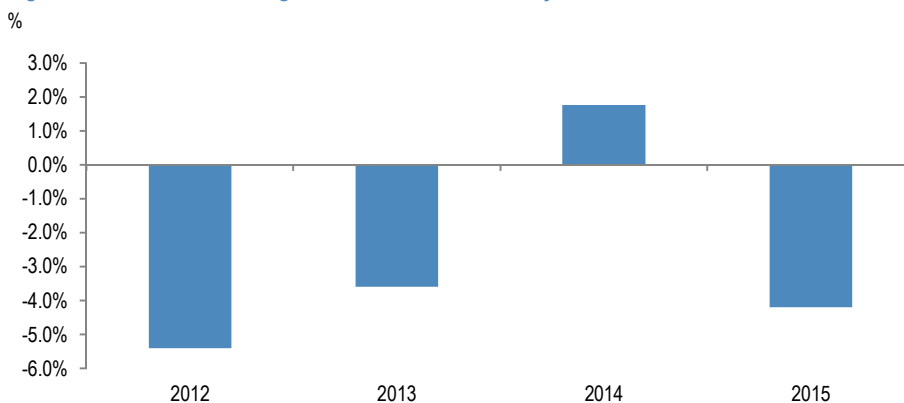
Figure 61: Network Power Organic Growth Rates



Source: Company reports.

However, this cycle proved to be different, as problems started creeping up in 2011/12 and never quite abated.

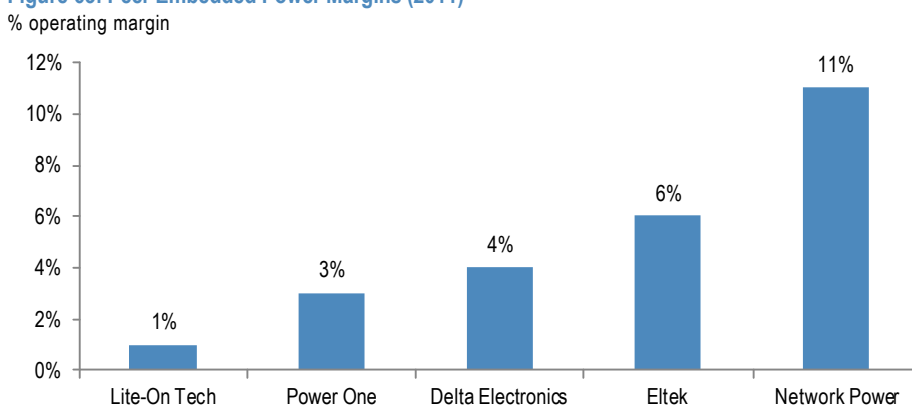
Figure 62: Network Power Organic Growth Slowed This Cycle



Source: Company reports

Weakness started at embedded (~30% of segment sales) with competitive dynamics getting increasingly tougher globally as the business became more commoditized. The troubles started in China with a competitive battle between large telco customers taking a negative toll, as well as rapid labor/material cost increases that EMR was not able to pass through due to increased intensity of competition. EMR did try to shed lower margin customers by increasing some prices, but this negatively impacted volumes. Ultimately, with embedded margins at low double digits around 2011, EMR couldn't compete with peers willing to accept MSD margins, and EMR ultimately sold a majority (51%) stake to Platinum Equity in late 2013 for \$300mm. This valuation was ~0.5x sales at the time, and we estimate a MSD type EBITDA multiple, both well below the ~1x sales and ~10x EBITDA multiples EMR paid to build up its embedded business.

Figure 63: Peer Embedded Power Margins (2011)



Source: Company reports.

Table 59: Embedded Acquisitions/Divestitures

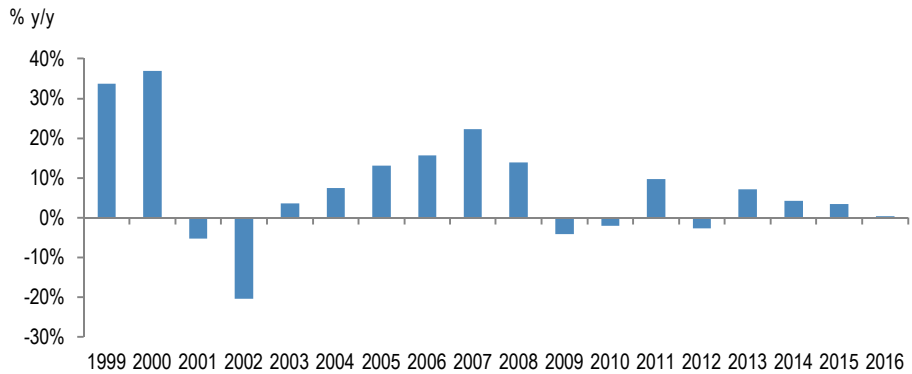
\$ in mm

Year	Target	Price	Revenue	EV/Sales
1999	Astec	630	650	1.0
2000	Jordan Telecom	440	400	0.9
2006	Artesyn Technologies	500	425	0.8
2008	Motorola Embedded	550	665	1.2
Total Acqs		2,120	2,140	~1.0x
Divestiture (~50%)		300	700	~0.4x

Source: Company reports, J.P. Morgan estimates

Even with embedded out of the portfolio, Network Power continued to struggle in core power/cooling end markets as telecom capex and IT demand slowed. Competition also intensified as core products became increasingly commoditized and competitors moved to more solutions based approaches while competing more aggressively on price, wiping out the ~5% penetration gains EMR achieved in the prior cycle. Internet giants also began to take more control of data center design and came in with lower power/cooling requirements for equipment, which structurally lowered demand and shifted product mix downward.

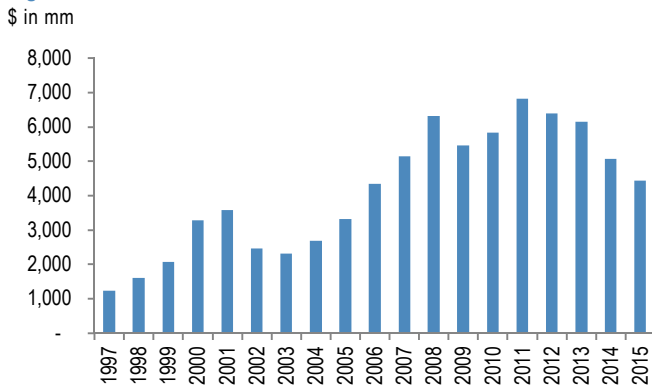
Figure 64: Telecom Capex Slowed This Cycle



Source: Bloomberg

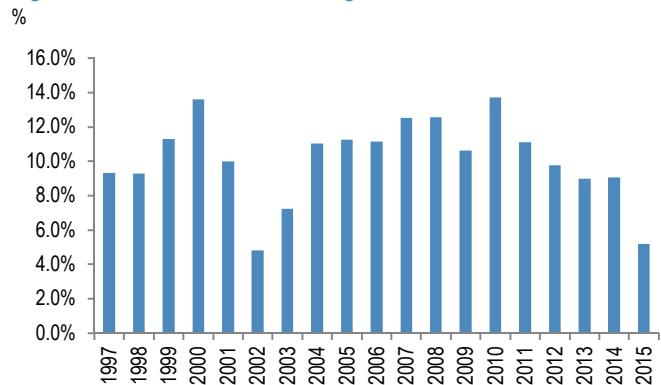
Ultimately, a segment which had represented \$6.8B in sales and ~13% margins at the peak in 2011 was down to \$4.4B in sales and ~5% margins (closer to 7% ex-restructuring) in 2015.

Figure 65: EMR Network Power Revenues



Source: Company reports

Figure 66: EMR Network Power Margins



Source: Company reports

Management ended up deciding to cut its losses in the Network Power business in mid 2015, briefly exploring a spin before ultimately selling the business to Platinum Equity for \$4B, which represented ~0.9x sales and ~7x EBITDA. Again, the company ended up getting less value for its Network Power assets during the bottom than it had paid for them at the peak, particularly when factoring in dis-synergies from tax.

Table 60: EMR Network Power Sale

Sales	\$4.4B
EBITDA	\$575mm
Gross Proceeds	\$4.0B
After-tax, estimated	\$3.3B
EV/Sales	0.9x
EV/EBITDA	7x
EV/EBITDA, after tax	6x

Source: Company reports and J.P. Morgan estimates

The end result here was a messy, multi-year transition story where EMR had to execute on ultimately dilutive portfolio moves just to get back to even with a clean base and a more simplified company. To be clear, we think management ultimately made the right move over the past few years in cleaning up the Network Power mistake and refocusing the portfolio, but this has been a multi-year reset and transition story where the stock has significantly underperformed and until recently had de-rated relative to the group, highlighting the negative consequences when management gets it wrong on an end market and fundamentals collapse.

Indeed, consensus FY2 EPS during early 2012 for EMR was \$4, while by comparison the company's new long-term guidance calls for \$3.85 in EPS by 2021. Taking this back even further, consensus FY2 during 2006 was \$2.50, as compared to 2016 EPS of \$2.52, with FY18 moving from \$3.80 at the end of FY15 to the standing estimate of \$2.80, a ~35% cut, a result of both fundamental weakness and portfolio dilution. More specifically, EMR ended up selling off the Network Power business, and in addition the company also decided to cut ties with most of the Industrial Automation platform through divestitures of the motors and drives, power gen and power transmission businesses. In all, they sold off ~\$6B of revenues in the portfolio overhaul along with ~\$650-700mm of EBITDA, or ~\$0.70 per share. The sales brought in a bit over \$4B in after tax proceeds, which was ultimately deployed into higher multiple buyback and M&A, likely contributing somewhere around \$0.20 per share, or net \$0.50 dilution. The rest of the negative revisions were due to fundamental dynamics, as the oil/gas cycle collapsed, structural challenges at Network Power emerged, and Climate share gains faded.

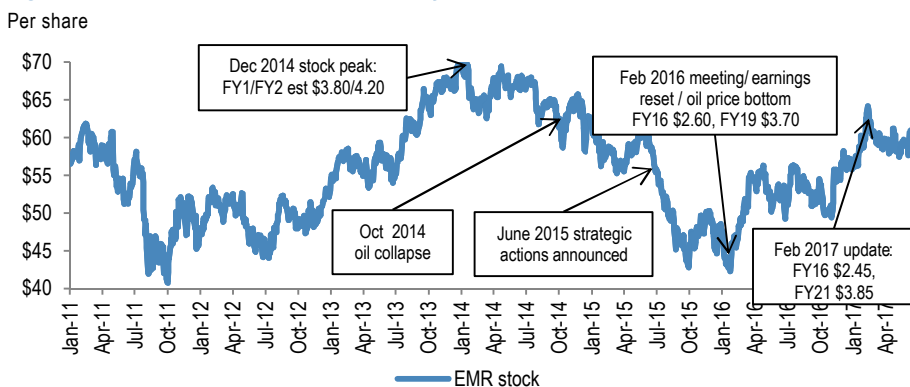
Below, we walk through how estimates have changed over the past two years, along with the stock price and multiple. The takeaway here is that while estimates have consistently gone down, the multiple has spiked to compensate. In our view, this is primarily because of balance sheet optionality, as asset sales and strong FCF conversion have still left EMR with significant firepower to remake the portfolio and drive future growth, along with upside leverage to short cycle oil/gas markets. Indeed, EMR has 10% of its market cap to deploy just in available cash flow, with total capacity up to 20% of market cap. While this hasn't been enough to fully offset fundamental weakness and other portfolio dilution, it has acted as a floor to downside, and EMR has only modestly underperformed the group since the end of 2015.

Table 61: EMR EPS Revisions Have Been Negative, but Balance Sheet Optionality Has Helped Stock Price Be Resilient

Time Frame	EPS	Stock Price	Multiple		
FY15 end		\$48			
17 est	\$3.50		13.7		
18 est	\$3.80		12.6		
2016 Investor Conf		\$49			
17 est	\$3.25		15.1		
18 est	\$3.58		13.7		
19 guide	\$3.70		13.2		
Standing		\$59			
16 actual	\$2.45		24.1		
17 est	\$2.58		22.9		
18 est	\$2.88		20.5		
19 guide	\$3.10		19.0	FCF/share	Yield
20 at 10% growth	\$3.41		17.3	~\$3.60	6.1%
21 guide	\$3.85		15.3		
16-20 CAGR	8.6%				
16-21 CAGR	9.5%				
Capital Deployment					
Available CF '17-'20	\$3,700				
% market cap	10%				
Total capacity	\$7,500				
% of standing cap	20%				
EPS % added	20%				

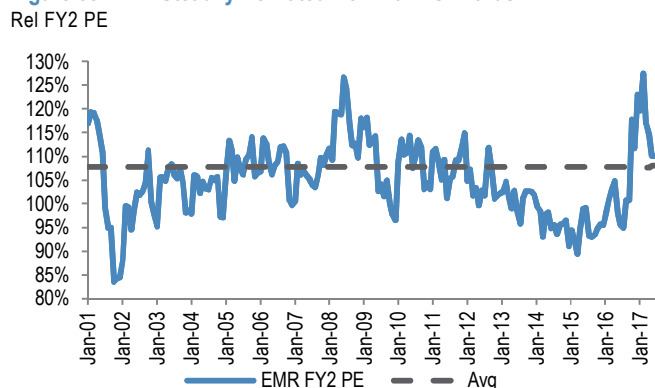
Source: Company reports and J.P. Morgan estimates

Figure 67: EMR stock price and timeline of key events



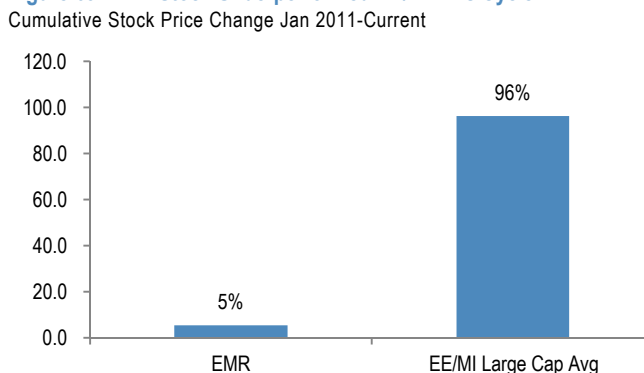
Source: Bloomberg, Company reports, and J.P. Morgan

Figure 68: EMR Steadily De-Rated from 2012 Onwards



Source: Bloomberg

Figure 69: EMR Stock Underperformed EE/MI This Cycle



Source: Bloomberg

If our numbers are right, GE is on the verge of such a reset, a combination of fundamental downside and potentially dilutive portfolio moves. However, the difference here is that GE does not have the balance sheet capacity, leverage to growth, or the business quality (FCF and gross margin). Whereas EMR could deploy 10%/20% of its market cap in available cash flow and total balance sheet capacity, GE can only deploy 1%/8% per our analysis. This removes the downside floor we saw in EMR, and in our view makes it highly unlikely the multiple can respond as Emerson's did. We believe the multiples implied at our \$22 PT are justified by the low growth, optionality and a FCF yield of ~4.5% (2018E).

Table 62: GE EPS Revisions Are Also Negative, but Without the Balance Sheet Support of EMR

Time Frame	EPS	Stock Price	Multiple	FCF/Share	Yield
FY16 End		\$32			
17 est	\$1.60		19.8		
18 est	\$2.00		15.8		
EPG/Standing		\$27			
17 est	\$1.63		16.7		
18 est	\$1.89		14.4		
19 est	\$2.09		13.1		
Post Fall		\$22			
16 actual	\$1.49		14.8		
17 est	\$1.27		17.3		
18 est	\$1.32		16.7		
19 est	\$1.47		15.0		
20 est	\$1.57		14.0	\$1.25	5.7%
16-'20 CAGR	2.0%				
Capital Deployment					
Available CF '17-'20	\$3,000				
% market cap	1.3%				
Total capacity	\$18,000				
% of standing cap	7.8%				
EPS % added	4.5%				

Source: Company reports and J.P. Morgan estimates

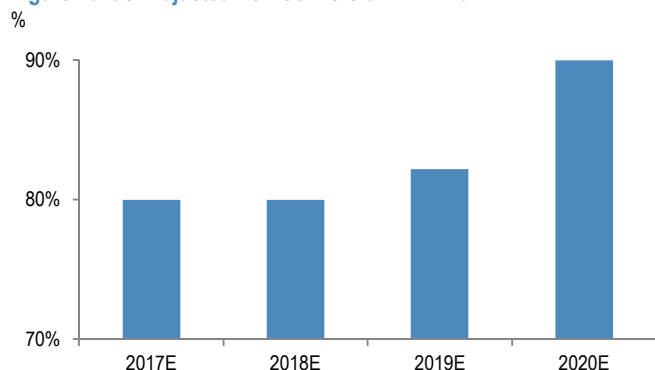
JCI Comparison: Similar cash challenges, JCI has synergies growth

We think there is also an interesting comparison to draw with another company in our coverage universe with weak free cash flow conversion, Johnson Controls. We walk through the profiles for each and a comparison of various metrics below, but

overall we scratch our heads around the fact that GE trades at a significant premium to JCI (5% premium on adjusted PE and 20% premium on EV/FCF) despite better cash conversion both now and (in our view) in the future (JCI ~80% conversion moving to ~90% by 2020 versus GE ~30% moving to ~70% by 2020).

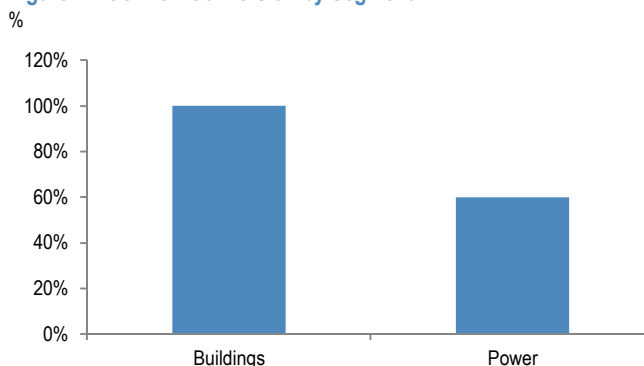
At JCI, free cash flow conversion runs at ~80% this year when adjusting out one-time deal related costs. This is the worst in our sector (other than GE), and there is a legitimate debate to be had around the quality of the portfolio and franchise here, but a big reason for the weak conversion has been stepped up investments in building out international capacity to meet battery demand in the Power Solutions business. Management has laid out a target to improve FCF conversion to 90% by 2020 by reducing these growth investments and improving working capital. In our view, there is risk that capex won't ultimately come down at Power as the battery business could require additional investments, and although the capacity is being expanded to meet strong demand (~5% organic growth in this segment), we do think it is fair to ding JCI somewhat here and view eventual capex reduction with some skepticism. Indeed, we argued in our initiation ([link](#)) that the company would be better off without Power Solutions, as underlying Building Efficiency free cash flow conversion is much stronger at ~100% (versus ~60% for Power), and a cleaner profile here would likely be viewed more favorably from a valuation standpoint. However, even with Power Solutions in the fold, free cash flow conversion going from ~80% to anywhere from 80-90% by 2020 (depending on how much credit one wants to give for capex reduction and working capital improvement) is still a much more attractive cash profile than at GE, as we highlight below. In other words, even assuming no improvement at JCI, the FCF conversion profile would still be ahead of GE in 2020, and JCI still trades at a significant discount.

Figure 70: JCI Adjusted FCF Conversion FY17-20



Source: Company reports

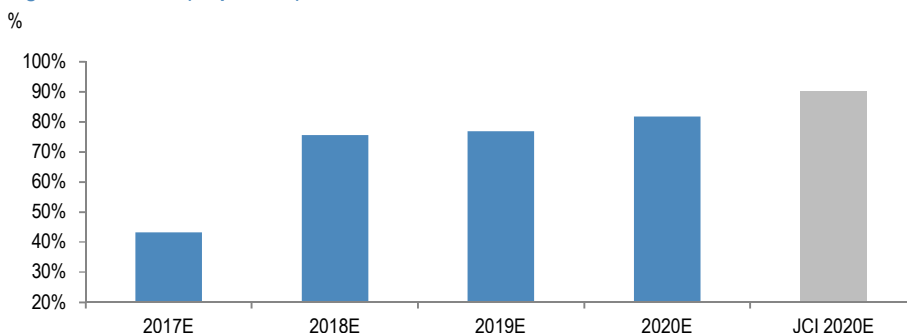
Figure 71: JCI FCF Conversion by Segment



Source: J.P. Morgan estimates

Turning to GE, there are a myriad of ways to look at free cash flow, but the best way to compare GE to JCI on an apples to apples basis is on GAAP FCF conversion expansion, as this is how JCI reports. On this basis, GE's cash flow is indeed depressed in 2017, not new news, and it should improve going forward as one-time items fade. However, even stretching out to 2020, our model shows that 2020 GE FCF expansion conversion would still be below that of JCI (90% at JCI versus 80% at GE).

Figure 72: GE FCF (ex-pension) Conversion FY17-20



Source: J.P. Morgan estimates

This is important to point out given the valuation disconnect here, as it shows the market is giving credit to GE for future improvement off depressed cash conversion while giving JCI no credit for a similar setup despite better FCF conversion at JCI both near term and longer term. To be clear, we understand these are two different businesses and cash conversion isn't the only element of valuation. All things considered, we think GE's business quality and franchise value are superior to JCI, and with everything equal GE should trade at a premium. With this said, however, the valuation gap does strike us as being too wide on the numbers, and from a fundamental standpoint one can argue that the forward profile at JCI is more straightforward and visible, with a relatively clean path to a low-DD EPS CAGR and ~\$3.75 per share by 2020 versus GE with a ~5% EPS CAGR and \$1.75 per share by 2020.

To summarize, we compare the two companies across a wide range of metrics in the table below. Overall, we see that GE trades at a premium to JCI across metrics despite a fundamental profile at JCI which is arguably better and more visible than at GE.

Table 63: GE vs JCI Comparison Summary

Metric	GE	JCI
Organic Growth 2017-20	~1.5%	~3.5%
Annual Segment Margin Expansion 2017-20	60bps	60bps
EPS CAGR 2017-20	~5%	~12%
FCF Conversion (ex-pension) 2017-20	45% in 2017 80% in 2020	80% in FY17 90% in FY20
Relative Adjusted FY2 PE	~90%	~65%
Relative FY2 EV/FCF	~125%	~105%
Adjusted 2020 PE	~15.5x	~11.5x
2020 EV/FCF	~20x	~16x

Source: Company reports and J.P. Morgan estimates

We don't think this gap can be fully explained by franchise value or business quality, and we see a significant disconnect between fundamentals and valuation when comparing the two companies. To be clear, we are not necessarily arguing that JCI is undervalued, as the company's valuation makes sense to us in context of the story and we think the company needs to earn a higher multiple over time while proving it

can execute. However, we do find it interesting that the market seems to have given full credit to GE for future fundamental improvement while giving no credit to JCI, despite the more visible levers at the latter. While both stories deserve to be looked at with some skepticism, GE's valuation doesn't seem to be embedding any, and the stock remains overvalued in that context, in our view.

SOTP Analysis Shows 30% Downside

While the traditional approach to SoTP is using EBITDA and P/E multiples, for GE we also evaluate SoTP using EV/FCF, given the large and outsized degree of non-cash gains in the earnings numbers. In addition, even on FCF, we evaluate SoTP using the standing run-rate of investing activities of ~\$1.5B for overall GE, given the recurring nature of this account, and relevant when evaluating the ultimate FCF available for returning to shareholder or M&A.

Below we summarize six different SoTPs, which include 1) EV/EBITDA using peer comps, 2) EV/EBITDA using E&C comps for the Power/EC/Transportation segment, 3) EV/FCF using peer comps, 4) EV/FCF using E&C comps for the Power/EC/Transportation segment, 5) EV/FCF including ~\$1.2B in run-rate investing activities, and 6) EV/FCF including ~\$1.2B in run-rate investing activities and using &C comps for the Power/EC/Transportation segment.

Table 64: Average of SoTPs

SoTP EBITDA	\$19.2
SoTP FCF	\$22.5
SoTP FCF inc investing	\$18.5
SoTP EBITDA (using E&C multiples)	\$18.1
SoTP FCF (using E&C multiples)	\$21.3
SoTP FCF inc inv (using E&C multiples)	\$17.6
Average	\$20
Current GE share price	\$27
Difference	-29%

Source: J.P. Morgan Estimates, Bloomberg

Table 65: SoTP Using EBITDA Multiples

\$ million

	EBITDA 2018 JPME	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	8,020	9.8	78,657	Eaton, Hubbell, ABB, Schneider, Alstom, Siemens, Phillips Lighting, Vossloh
Renewables	1,024	6.4	6,521	Vestas, Gamesa, Nordex, Servion, Goldwind
Aviation	7,292	11.2	81,622	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	4,295	14.2	60,998	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	2,489	12.0	29,870	BHGE Multiple
GE Industrial EBITDA	23,120	11.1	257,667	
Corporate	(3,900)	11.1	(43,464)	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			164,257	
Shares (2018E)			8,572	
Suggested value per share			19.2	
Current GE share price			27.4	
Difference			-30%	

Source: J.P. Morgan Estimates, Bloomberg

Table 66: SoTP Using EBITDA Multiples and E&C Comps for Power, EC and Transport

\$ million

	EBITDA 2018 JPME	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	8,020	8.4	67,312	Flour, KBR, CBI, JEC, BHEL, Samsung Engineering, Quanta
Renewables	1,024	6.4	6,521	Vestas, Gamesa, Nordex, Servion, Goldwind
Aviation	7,292	11.2	81,622	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	4,295	14.2	60,998	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	2,489	12.0	29,870	BHGE Multiple
GE Industrial EBITDA	23,120	10.7	246,323	
Corporate	(3,900)	10.7	(41,550)	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			154,826	
Shares (2018E)			8,572	
Suggested value per share			18.1	
Current GE share price			27.4	
Difference			-34%	

Source: J.P. Morgan Estimates, Bloomberg

Next we summarize our FCF SoTPs. Key here is our assumptions on FCF (GE definition which excludes one-time and pension) for different segments. 1) For HC, management has already talked about 100%+ conversion levels, 2) for Transportation recent investor presentations showed ~89% CFOA conversion in 2016/2017E, 3) anecdotal information from Paris show showed above segment average conversion for Aviation, and 4) for Oil & Gas the S-4 filings showed an

average ~50% conversion over the last 3 years. For Power, Renewables and E&C, we assume the GAAP to the overall ex-pension, ex-one-time FCF number is bridged by assuming below corporate average conversions.

Table 67: FCF Assumptions Used for Segment in SoTP

\$ million

2018E	Segment Income	Corp ex-Gain/Rest	Net Income	D&A	EBITDA ex-Corp	FCF Conv. (ex-pension)	FCF ex-Pension	Other Inv. Activities	FCF ex-Pension Incl Inv Activities
Power	5,296	(962)	3,572	1,130	6,426	55%	1,973	(313)	1,660
Renewable Energy	987	(203)	500	37	1,024	60%	300	(150)	150
EC + Lighting	285	(895)	(465)	441	726	50%	(233)	(116)	(348)
Aviation	6,392	(760)	4,907	900	7,292	85%	4,171	(343)	3,828
Healthcare	3,510	(912)	2,168	785	4,295	105%	2,277	(235)	2,041
Transportation	709	(169)	394	159	868	75%	295	(42)	253
Total	17,179	(3,900)	11,077	3,452	20,631	79%	8,784	(1,200)	7,584
Oil & Gas (GE Ownership)	1,645	0	1,427	844	2,489	50%	713	(150)	563
Total	18,825	(3,900)	12,503	4,296	23,120	76%	9,497	(1,350)	8,147

Source: J.P. Morgan Estimates

Table 68: SoTP Using FCF Multiples

\$ million

	FCF 2018 JPMe	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	2,036	21.3	43,273	Eaton, Hubbell, ABB, Schneider, Alstom, Siemens, Phillips Lighting, Vossloh
Renewables	300	14.2	4,261	Vestas, Gamesa, Nordex, Senvion, Goldwind
Aviation	4,171	25.1	104,585	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	2,277	23.2	52,882	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	713	53.0	37,810	BHGE Multiple
GE Industrial FCF ex-Pension	9,497	25.6	242,810	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			192,864	
Shares (2018E)			8,572	
Suggested value per share			22.5	
Current GE share price			27.4	
Difference			-18%	

Source: J.P. Morgan Estimates, Bloomberg

Table 69: SoTP Using FCF Multiples and E&C Comps for Power, EC and Transport

\$ million

	FCF 2018 JPMe	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	2,036	16.2	33,039	Flour, KBR, CBI, JEC, BHEL, Samsung Engineering, Quanta
Renewables	300	14.2	4,261	Vestas, Gamesa, Nordex, Senvion, Goldwind
Aviation	4,171	25.1	104,585	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	2,277	23.2	52,882	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	713	53.0	37,810	BHGE Multiple
GE Industrial FCF ex-Pension	9,497	24.5	232,577	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			182,630	
Shares (2018E)			8,572	
Suggested value per share			21.3	
Current GE share price			27.4	
Difference			-22%	

Source: J.P. Morgan Estimates, Bloomberg

Next we summarize our FCF SoTPs which include investing activities. Below is a summary of the segment FCFs including investing activities.

Table 70: FCF Assumptions Including Investing Activities Used for Segments in SoTP

\$ million

2018E	Segment Income	Corp ex- Gain/Rest	Net Income	D&A	EBITDA ex- Corp	FCF Conv. (ex-pension)	FCF ex- Pension	Other Inv. Activities	FCF ex-Pension Incl Inv Activities
Power	5,296	(962)	3,572	1,130	6,426	55%	1,973	(313)	1,660
Renewable Energy	987	(203)	500	37	1,024	60%	300	(150)	150
EC + Lighting	285	(895)	(465)	441	726	50%	(233)	(116)	(348)
Aviation	6,392	(760)	4,907	900	7,292	85%	4,171	(343)	3,828
Healthcare	3,510	(912)	2,168	785	4,295	105%	2,277	(235)	2,041
Transportation	709	(169)	394	159	868	75%	295	(42)	253
Total	17,179	(3,900)	11,077	3,452	20,631	79%	8,784	(1,200)	7,584
Oil & Gas (GE Ownership)	1,645	0	1,427	844	2,489	50%	713	(150)	563
Total	18,825	(3,900)	12,503	4,296	23,120	76%	9,497	(1,350)	8,147

Source: J.P. Morgan Estimates

Table 71: SoTP Using FCF (including investing activities) Multiples

\$ million

	FCF 2018 JPMe	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	1,564	21.3	33,254	Eaton, Hubbell, ABB, Schneider, Alstom, Siemens, Phillips Lighting, Vossloh
Renewables	150	14.2	2,128	Vestas, Gamesa, Nordex, Servion, Goldwind
Aviation	3,828	25.1	95,986	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	2,041	23.2	47,413	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	563	53.0	29,860	BHGE Multiple
GE Industrial FCF ex-Pension	8,147	25.6	208,641	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			158,694	
Shares (2018E)			8,572	
Suggested value per share			18.5	
Current GE share price			27.4	
Difference			-32%	

Source: J.P. Morgan Estimates, Bloomberg

Table 72: SoTP Using FCF (including investing activities) Multiples and E&C Comps for Power, EC and Transport

\$ million

	FCF 2018 JPMe	Suggested Multiple	Suggested value	Comps
GE Industrial				
Power, EC + Lighting, Transportation	1,564	16.2	25,390	Flour, KBR, CBI, JEC, BHEL, Samsung Engineering, Quanta
Renewables	150	14.2	2,128	Vestas, Gamesa, Nordex, Servion, Goldwind
Aviation	3,828	25.1	95,986	Safran, Honeywell, Rockwell Collins, United Tech, MTU
Healthcare	2,041	23.2	47,413	Hologic, Varian, Philips, Perkin Elmer, Waters, Baxter, Becton/Dickinson, Boston Scientific
Oil & Gas	563	53.0	29,860	BHGE Multiple
GE Industrial FCF ex-Pension	8,147	24.6	200,777	
GECS Tangible Book	14,000	0.7	10,117	
Net debt (2017 end, JPMe)			23,263	
Underfunded pension			36,800	
Equity value			150,830	
Shares (2018E)			8,572	
Suggested value per share			17.6	
Current GE share price			27.4	
Difference			-36%	

Source: J.P. Morgan Estimates, Bloomberg

Breakage from a break-up

We think the new CEO could consider a breakup, though dis-synergies around pension, tax, corporate functions (GE/BHI “GE Store” rationale?), accounting (material JV structures, numbering ~40, for which disclosure is almost non-existent), and ultimately FCF divergences between businesses suggest to us that SOTP is below the standing price.

FCF divergences a key factor – With the newco GE/BHI S-4 filing earlier this year, we now have more granular detail on FCF for the Oil & Gas segment. Last year’s FCF was -\$54mm and prior years (2015 and 2014) were \$0.8B and \$1.3B, respectively. Looking at conversion based ex-principal pension contributions, and making assumptions for allocations to Oil & Gas, we see historical 3-yr conversion of ~50-55% for this segment. For HC, management started providing detail since the HC investor meeting last year, and last 3-yrs have been solid at ~110-115% on average with 2017 expected to be 100%+. Finally, for Aviation, at the Paris Airshow, we got the sense that conversion for this segment is above the company average. Using just the 2016 conversion ratios, as provided by management, and using the ex-pension FCF delivered, we back into a conversion ratio of ~55-60% (ex-pension) for the remainder of GE.

Table 73: Implied Conversion ex-Oil/Gas and HC

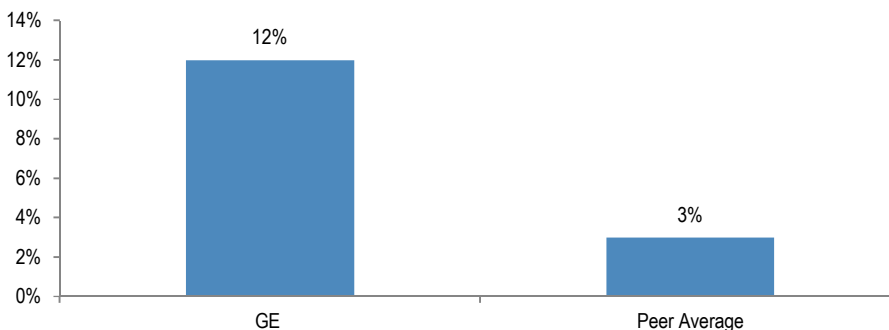
\$ million

2016	Sales	Segment Income	non-GAAP Net Income (JPMe)	FCF ex-Pension/one-time	FCF Conversion
Total GE Industrial	113,156	17,598	11,713	8,842	76%
(-) Oil & Gas	12,898	1,392	192	13	
(-) Aviation	26,261	6,115	4,259	3,705	85%
(-) Healthcare	<u>18,291</u>	<u>3,161</u>	<u>1,647</u>	<u>1,926</u>	<u>117%</u>
<i>ex-HC/Oil & Gas</i>			5,515	3,199	58%

Source: J.P. Morgan Estimates, Company Reports. For Oil & Gas, we assume ~\$45mm of pension contributions which is added back

Pension – GE’s underfunded pension status is currently ~12% of Mcap well ahead of the group average of ~3% which is why we believe pension contributions are unlikely to be dialed down significantly in the near to medium term, and will remain a continued overhang on the GAAP FCF/share and should be a key consideration in the SoTP. As background, the combined GE pension plans were underfunded by \$31B at the end of 2016, up from \$27B in 2015 and ~\$26B in the prior year. However, according to Moody’s, they now attribute 100% of this to GE, whereas prior to the GE Capital split it was 77% as they were under the impression that a portion of the plan related to those assets.

Figure 73: GE Underfunded Status (% of Mcap) vs Peers

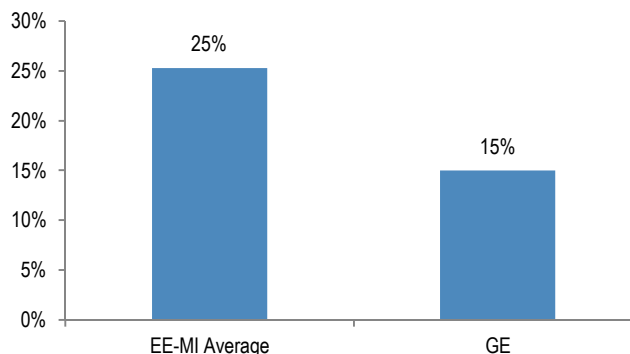


Source: Company reports and J.P. Morgan estimates.

Tax – Also, looking at tax-rate, GE’s mid-teens rate is well below the sector average of high 20s. A key reason for this is the global portfolio and presence coupled with debt structures in different regions, all of which help in maintaining a low tax rate, making a break-up value destructive from a tax standpoint. According to the 10-K, “a

substantial portion of the benefit related to business operations subject to tax in countries where the tax on that income is lower than the U.S. statutory rate is derived from our GECAS aircraft leasing operations located in Ireland, from our Power operations located in Switzerland and Hungary, and our Healthcare operations in Europe.”

Figure 74: GE Book Tax Rate vs Peers



Source: Company reports and J.P. Morgan estimates.

GE Capital: Guaranteed debt, runoff insurance, GECS receivables sales – As part of the GE Capital asset sales plan, GE guaranteed the debt for GE Capital. Per the 10Q, “debt assumed from GE Capital in connection with the merger of GE Capital into GE was \$54.4B, and GE guaranteed \$50.3B of GE Capital debt at 3/31/17.” This is in addition to debt at the Parent (Industrial) of \$23.7B, for a combined \$69B of debt. GE Capital also still has \$30+B run-off insurance portfolio, providing insurance and reinsurance for life and health risks and providing certain annuity products. Lastly, GE Capital factors receivables for GE, a cash benefit for the industrial business of \$2.1B in '16. In total, there was \$10B of GE customer receivables on the books at GE Capital at the end of 1Q17, down from ~\$12.3B in 4Q16, amounts that represent the majority of the difference between reported receivables for GE Industrial and GE Consolidated receivables (these are listed as “Current Receivables” whereas for GE Capital they are listed under “Financing Receivables”). We believe a substantial portion of the factored receivables are for business in the core Power, Oil & Gas, and Aviation segments.

Table 74: GE Capital Factors to Consider in Analysis

GE Cap items to consider	Size	Comment
GE guaranteed debt	~\$50B	As part of GE Cap sales plan, GE guaranteed portion of GE Cap debt
Run-off insurance portfolio assets	\$30+B	Remaining insurance assets post 2005 sale
GE customer receivables factoring	~\$10B	GE Cap finances customer receivables for GE's industrial businesses

Source: Company reports, and J.P. Morgan

Table 75: Total Debt

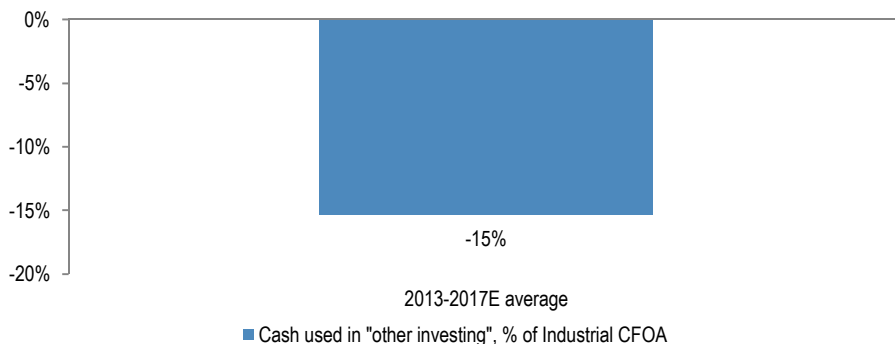
GE Industrial	\$23.7
<u>GE Capital Debt Guaranteed</u>	<u>\$50.3</u>
Total	\$74.0

Source: Company reports and J.P. Morgan estimates.

Accounting Dis-Synergies: JV structures a factor – JV related cash outflow is reported through “Other Investing Activities”, which, as we have highlighted in the

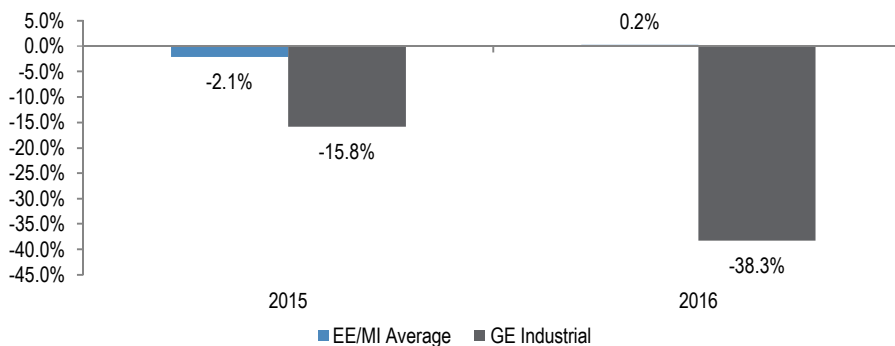
past, has been a consistent drag of ~\$1.5B over the past several years and well above peer averages. There is little discussion of the moving parts in the filings, though in 2016, GE had ~\$400mm in cash outflow (reported in investing activities) for funding of JVs related to Aviation, a sign that drags here can be material.

Figure 75: Cash Used for “Other Investing” Activities Has Been a Consistent and Material Drag
 % of GE Industrial CFOA



Source: Company reports, and J.P. Morgan estimates

Figure 76: “Other Investing Activities” Outflows (% of FCF) GE vs the Group



Source: Company reports and J.P. Morgan estimates.

Apart from this, the disclosure here is minimal and looking at historical press releases, we were able to calculate ~40 JVs at GE, encompassing all segments. Breaking up the company would expose all these JVs and related accounting methodologies and reporting styles – a likely dis-synergy in our view given the accounting here is currently more easily managed as part of a larger co. In other words, while there is unlikely to be any economic impact in terms of cash or costs from incremental details on JVs, we think this gives more visibility on underlying quality of earnings which may be valued differently by investors vs as part of a larger company.

Table 76: Aviation JVs

Partner	JV Type and incremental info
CFM International	CFM Engines 50/50 partnership with Safran
Engine Alliance	GP7200 50/50 partnership with P&W
Parker Hannifin	Advanced Atomization Technologies, LLC
GE Honda Aero Engines	50/50 JV with Honda Aero formed in 2004 for jet engines
Nexcelle	JV with SAFRANs Aircelle and GE's Middle River Aircraft (GE). \$500 mm rev in 2008 with 1,000 people, now 800 employees
FADEC Alliance	JV between GE and FADEC International (BAE and Safran JV) to develop digital controllers for the CFM LEAP, Passport, GE9x engines
Venture Aerobearings	JV with SKF (51% owner) for jet engine bearings
NGS Advanced Fibers	JV with NCK and Safran to make and sell silicon carbide (SiC) continuous fiber (important material in CFM's next-generation engine components), headquartered in Chuo-ku, Tokyo with facilities in Toyama-shi, Toyama in Japan Nippon Carbon will have a 50% share, GE and Safran will each have a 25% share Capital of 1.15B yen, built second plant in 2016
JV with Woodward	50/50 JV (neither WWD nor GE has controlling financial interest) for fuel systems components from the fuel inlet up to the fuel nozzle for the GE90, GENx, GE9X, Woodward received \$250 mm in cash, and \$75 mm over 15 years, and they participate jointly in operating results; previously WWD went direct, they are now sold to the JV, which in turn sells them to GE; WWD treating the \$250 mm as deferred income and will be recognized as their share of revenue comes in. WWD's income from the JV was \$6.2 mm in '16
Advanced Ceramic Coatings	50/50 JV with TurboCoating SPA that provides thermal barrier coatings for CMCs used in engines, expects to deliver its first coated components in late 2015, including CMC shrouds for LEAP, each engine has 18 CMC turbine shrouds. Building 62, 300 sq ft new plant in Duncan SC envi barrier coatings, beginning ops in 3Q17, \$15 mm investment for equip and 50 people hired; GE Aviation also spending \$200 mm to make silicon carbide materials and ceramic matrix composite parts for engines and HDGTs, \$200 mm investment complete in 1H18
XEOS	MRO JV with Lufthansa Technik (51% ownership, GE 49%) for GENx-2B, GE9X engines, new \$267 mm 350K sq foot facility starting construction in 1H17 and opening in September '18, beginning employment is 220 people and will grow to 500 employees
JV with Praxair	JV with Praxair Surface Technologies for development, support and application of specialized coatings for current and future engine models, including GE9X and LEAP. Praxair majority owner and consolidate results, GE remaining membership, beginning ops in 2Q16. Will expand footprint with a new coatings plant in the southeast United States, which will supplement the services provided to GE from Praxair's Indianapolis facility and other global operations
Aviage Systems	50/50 JV with AVIC - \$1.3 B capitalization. JV formed to develop/market integrated, open architecture avionics systems to the global commercial aerospace industry for new aircraft platforms. 260 engineers dedicated to C919 supported by joint team of 400
Tusas Engine Industries	JV with Turkish Aerospace Industries, Inc. (TAI) making critical parts for commercial, military and marine engines through 2035, with TAI retaining a majority ownership
GE 9x JV	GE9X program JV with IHI, Snecma, Techspace Aero (Safran), and MTU for combined ~25% share (75% GE share)
JV with Mubadala	New facility at the Nibras Al Ain Aerospace Park in Abu Dhabi with unspecified direct investment by GE. GE will also set up a dedicated parts logistics center for its GENx engine to service the joint venture and regional GENx operators
Garuda Maintenance Facility (GMF AeroAsia)	Garuda Indonesia and GE in 2013 jointly developed and launched the CFM56-7B engine test cell, a strategic step that will help Garuda Indonesia enhance GMF AeroAsia's engine shop capabilities, in line with international safety and maintenance standards. This collaboration with GE is part of Garuda Indonesia's transformation program, "Quantum Leap 2011 -- 2015," to strengthen the capability of its subsidiary, GMF AeroAsia, and support its vision to become a "Global Player"
Meltless Titanium	ATI will provide operational, technical, and project support to the joint venture. The joint venture will leverage ATI's technology, manufacturing, and quality leadership in the production of specialty metal powders and premium-quality titanium and nickel-based alloys for critical and technically advanced applications. The JV will also draw upon GE Aviation's engineering and development capabilities and technical knowledge of the use of alloyed titanium powders

Source: Company reports and J.P. Morgan estimates.

Table 77: Power & Renewables JVs

Partner	JV Type and incremental info
Alstom	ALO Grid
Alstom	ALO Renewable
Alstom	ALO Nuke/Steam
Hitachi	GE Hitachi Nuclear
GEAT (General Electric Algeria Turbines)	JV with Sonelgaz signed in 2014 to build an industrial complex to produce gas and steam turbines at a cost of \$400mm. The complex will produce six to eight generators and control systems per year with a total capacity of 2,000MW from 2017. Sonelgaz will have 51% ownership of the business (Algeria law limits FDI at 49%)
ALGESCO	JV with Sonelgaz and Sonatrach. First established in 1993 and now extended to repair 9FA gas turbines locally and create a local center of excellence
NTPC GE	NTPC & GE have partnered through the Joint Venture towards renovation & modernization of coal-fired power plants in India
Russian Gas turbines	50/50 JV with Inter RAO + UEC in Energy and HC established in 2011 to assemble, sell and service HDGTs, local assembly in '13. The energy JV between GE, INTER RAO UES and UEC was formed to manufacture, sell and service 77 MW highly efficient, low-emission GE 6FA industrial gas turbines to 50 Hz local specification. New facility opened in 2014 has a production capacity of 20 turbines per year.
XD Electric	GE distributes in the US, automation JV in China (59% XD/41% GE), 15% equity investment for \$535 mm.
Hamma	JV in Algeria. GE holds 70% stake in Hamma Water plant, a JV with AEC, operated by GE under a 25 year O&M agreement.
TGTS Services	JV with Toshiba formed initially in 1996 to serve Japan customers using GE's E & F GTs and was recently extended to include the H technology
PTGENTS services, Bandung Indonesia	PTGENTS services, Bandung Indonesia - A joint venture with PT Dirgantara Indonesia and PT PAL

Source: Company reports and J.P. Morgan estimates.

Table 78: Oil & Gas JVs

Partner	JV Type and incremental info
GE Triveni	Formed in 2010 with Indian firm Triveni Engineering & Industries that is majority 50/50 partnership offering 30-100MW steam turbines manufactured in Triveni Turbine plant in Bangalore, GE provides R&D at the Bangalore turbine manufacturing facility. \$18 mm in sales, 1.5 mm in profits after tax, Triveni only includes share of profit and not sales
Rosneft	Strategic agreement to establish a joint venture focused on developing local expertise and technology solutions for the growing oil and gas sector in the Russian Federation, part of GE's plan to invest \$1 billion in the oil and gas industry in Russia by 2020. Establishment of a Research and Development Center and an Application Engineering and Training Center in Russia
GE Keppel Energy Services	Former 50.01% share owned repair workshop in Singapore for GE and non-GE motors, generators, or other rotating machinery including gas turbines. 200 employees with plant in Jurong that is 500k square feet of facilities. In Feb '17, Keppel Corp sells GE Keppel Energy services back to GE for \$18 mm.
Kazakhstan technology transfer and licensing agreement	In 2009 GE Oil & Gas, Kazakhstan's National Welfare Fund JSC NWF Samruk-Kazyna and JSC ZKMK, a precision engineering plant operator, have today signed an agreement to work toward the establishment of a new joint venture to localize the production and servicing of gas turbines in the Republic of Kazakhstan. ZKMK will perform repair services on GE's range of high efficiency, high performance gas turbines and centrifugal compressors installed in Kazakhstan and neighboring countries, including Kyrgyzstan, Turkmenistan, Uzbekistan and Azerbaijan. GE Oil & Gas will provide ZKMK with the technical training and services necessary to support the localized services operation. In exchange, ZKMK will invest in the modification of its Uralsk manufacturing facility to ensure that GE Oil & Gas' installed fleet in the region, which includes over 50 gas turbines and 40 centrifugal compressors, can be maintained at peak performance levels for customers. The agreement supports the companies' intention to jointly finalize a gas turbine localization strategy to produce, assemble, supply and service the GE10/2 11-plusMW range of gas turbines in Kazakhstan and the Central Asia region
GE-GLS Oil & Gas Angola	JV with Angolan group GLS Holding, planning a proposed initial investment of US\$175mm to build a new manufacturing facility in Soyo, in the province of Zaire, that will supply subsea equipment to the oil and gas industry in Angola. Dr. Eugenio Neto, president and CEO of GLS Holding, S.A. is vice president of the new JV. Startup in 2015. GE rep said "An investment of this size will require a large workforce. While there are difficulties in finding staff locally, we are committed to recruiting and training Angolans for the project"
io JV	JV with McDermott International for oil & gas consulting, a new independent venture to transform the development of front-end solutions for offshore fields. io aims to deliver greater certainty into the design and planning of the offshore oil and gas field and overhaul the current operator-contractor relationship. io will leverage the knowledge of the contractor community through its parents' expertise to better guide offshore projects at the development stage. Its scope will range through portfolio evaluation, exploration and planning support, appraisal and feasibility, conceptual engineering and FEED to the final investment decision. Furthermore, unlike any other consultancy in the market today, io will consider the full field as one system with the technical insight to develop every aspect of the front-end solution. 4 offices in Houston, London, Perth and Abu Dhabi with 50 employees

Source: Company reports and J.P. Morgan estimates.

Table 79: Transportation JVs

Partner	JV Type and incremental info
GE TMH	50/50 diesel engine JV with Transmashholding for loco needs of Russian Railways, and also supply engines for maritime and distributed power applications. \$70m in equipment and training to establish a plant which would produce GEVO diesel engines of between 2 900 kW and 4 700 kW. Initial production of up to 250 engines per year is envisaged, with first units in 2018 and the potential to increase capacity and expand the product portfolio according to market demand
Kazakhstan	JV signed in 2012 to jointly build new plant to produce up to 400 units per year of eight-, twelve- and sixteen cylinder engines with capacity from 2200 to 4500 kW, rated speed from 950 to 1050 r / min to be sold in the markets of Kazakhstan, Russia, Ukraine, Belarus, Turkmenistan, Uzbekistan, Armenia, Kyrgyzstan, Tajikistan, Azerbaijan, Moldova, Estonia, Georgia, Mongolia, Latvia, and Lithuania with gradual localization of components with the plant to be launched in 2014, costing \$90 mm and sized at ~100,000 sq feet
Kazakhstan	GE in April '17 bought 50% interest in Lokomotiv Kurastyru Zauyty (LKZ). Lokomotiv Kurastyru Zauyty (LKZ) was formed in 2009, a 50/50 joint venture between Kazakhstan Railways (KTZ) and Russia's largest rail equipment producer, Transmashholding (TMH). LKZ manufactures GE Evolution Series locomotives for freight and passenger transportation in Kazakhstan and the broader CIS region making >300 over that time period with 100 EVO unit annual capacity
Brazil	GE's Contagem facility in Minas Gerais and GE says more than 60% of the value of the order is local content, first order placed in 2014
PT GE Lokomotif Indonesia	JV between PT Industri Kereta Api Indonesia / Indonesian Railway Industry (PT INKA) and GE Transportation, 20% local content
GE Sourcing India JV	GE Sourcing India JV - JV with Rail Ministry in which the ministry owns 25%

Source: Company reports and J.P. Morgan estimates.

Corporate – We think corporate dis-synergies are somewhat underappreciated when evaluating breakups. While some companies have done a good job of keeping these costs contained (like DHR/FTV/TYC), others have vocally talked about substantial dis-synergies. Looking at recent commentary from EE-MI players, IR noted a ~\$150mm corporate dis-synergy from a breakup or ~\$1B in value (~5% of Mcap) and UTX recently at EPG noted dis-synergies of ~\$200-250mm each for tax, treasury, and other functions which would amount to ~\$500mm and applying a similar multiple like IR, would equate to ~\$4-5B or ~5% of Mcap.

Shared Facilities/Services – We also note that multi-modal facilities (factories/facilities serving multiple GE segments) have been a big push over the last few years coupled with synergies around the GE Store, which was also seen as a validation of GE/BHI merger. While difficult to quantify, a break-up would drive significant dis-synergies on this front.

Table 80: Few Examples of GE's Multi-Modal Facilities

Region	Businesses/Segment manufacturing/servicing
Pune, India	3-D printing for other industries including service Aviation, Transportation and Healthcare segments of GE; \$200mm investment
Dammam, Saudi Arabia	GE Oil & Gas, Alstom Grid, gas turbines and mechanical drives
Calabar, Nigeria	Broader range of products in Power gen, Oil & Gas, ~\$250mm investment
Egypt	Power generation, renewables, water, oil & gas, aviation and rail transportation, \$200mm investment

Source: Company reports and J.P. Morgan estimates.

Too Big to Succeed? Size Has Mattered For Others Too

Putting GE Capital aside for a moment, over CEO Immelt’s time, the portfolio has indeed been rationalized, selling NBCU, Security, Appliances, and now Water and Industrial Solutions to focus on a core. There are two observations here. One, in our view most of the businesses GE has sold have been less than well managed prior to sale and have come out at below historical normalized operating rates. Second, the focus areas have been in big ticket infrastructure type businesses. The large market shares here in markets where there is “need” represent the core of the Bull case around this portfolio as a collection of “great businesses”. We believe that the opposite may be true, with the underlying hurdle to growth and incremental value creation the very size of these franchises and that GE is “too big to succeed”. We discuss at a high level why below.

Table 81: Major Acquisitions & Divestitures since 2009 (ex-GECS)

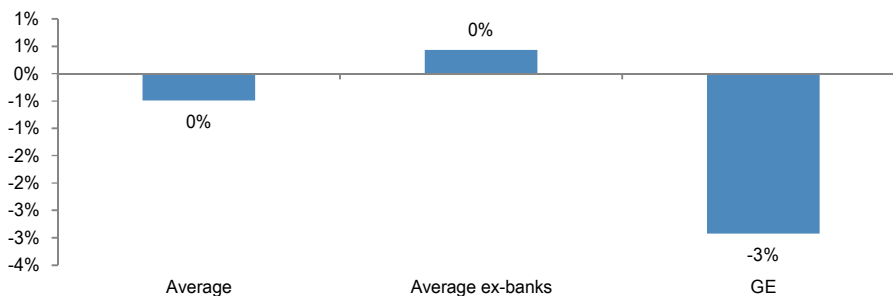
Segment	Acquisitions	Valuation (B\$)	EV/EBITDA	Note
Power	Converteam	~\$3.2	15x	
Oil & Gas	Well Support division of John Wood	~\$2.8	16-17x	
Oil & Gas	Wellstream	~\$1.3	14-15x	
Oil & Gas	Dresser	~\$3	8-9x	Sold Wayne Fueling for ~\$0.5B (DOV acquired for \$0.8B)
Oil & Gas	Lufkin	~\$3.3	16-17x	
Aviation	Avio	~\$4.4	8-9x	
Power	Alstom	~\$10	16-17x	
Oil & Gas	Baker Hughes	~\$7.4	11x	
Aviation	3D printing deals	~\$1.5	~70x	
Power	LM Wind Power	~\$1.7	8-9x	
Average			~12.5x	
Segment	Divestitures	Valuation (B\$)	EV/EBITDA	Note
NBCU	NBCU	~\$30	10-11x	
Infrastructure	Security	~\$1.8	~10x	Interlogix/EST purchased for combined \$2.2B
Appliances & Lighting	Appliances	~\$5.6	~10x	
Power	Water	~\$3.4	~12.5x	Betz/Ionics/Osmonics/Zenon purchased for combined \$3.8B
EC + Lighting	Industrial Solutions	TBD	TBD	
EC + Lighting	Lighting	TBD	TBD	
Average			~10.5x	

Source: Company reports, and J.P. Morgan estimates

When size has mattered in the past

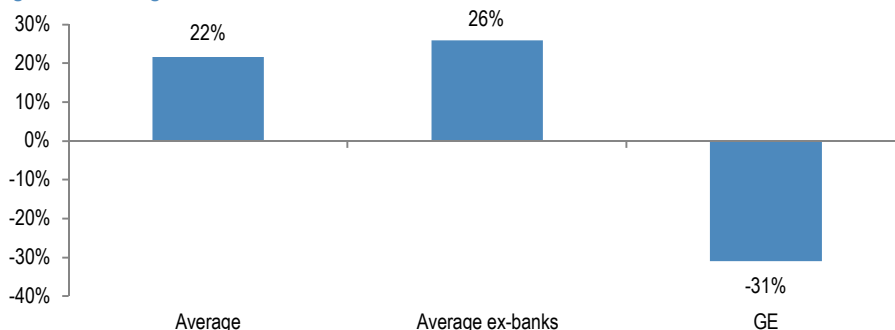
We sorted S&P 500 companies with >\$100B in revenues prior to the 2009 downturn and looked at 10-yr revenue CAGR vs prior pre-2009 peak levels. Here the average revenue CAGR for the ~15 companies in our screen was 0% from 2007-2017E and average absolute move in stock price from yr-end 2017 levels was ~25% vs ~65% for the S&P 500.

Figure 77: Average Revenue CAGR 2007-2017 for >\$100B Revenue Cos



Source: J.P. Morgan estimates, Bloomberg. Note that GE includes GE Capital. Companies in the Average calc include JPM, CVX, XOM, GE, HP (HPE + HPW), IBM, BAC, T, WMT, C, BRK, F, COP, MCK, VLO

Figure 78: Average Absolute Stock Performance since 2007 for >\$100B Revenue Cos



Source: J.P. Morgan estimates, Bloomberg. Note that GE includes GE Capital. Companies in the Average calc include JPM, CVX, XOM, GE, HP (HPE + HPW), IBM, BAC, T, WMT, C, BRK, F, COP, MCK, VLO

What other mega-caps should we compare this to?

Lastly, we have heard as pushback that GE should have a separate group of peers for comparison who have FCF yields that are just as weak. We show below a table of large caps (\$100B+) with FCF yields of <4.5%, and various characteristics of each including available FCF yield post dividend and the 2 year EBITDA growth rates as per consensus. While there several companies that fall in this bracket including majority of the Transportation stocks, key to note is that the dividend payout ratio averages ~35% vs GE's ~85%+ by 2018.

Table 82: FCF Yield vs Dividend Yield and EBITDA Growth ('17-19)

BB Ticker	FCF Yield	Dividend Yield	Payout Ratio	EBITDA CAGR (2017-2019)
GOOGL US Equity	4.3%	0.0%	0%	17%
AMZN US Equity	3.7%	0.0%	0%	31%
FB US Equity	3.9%	0.0%	0%	25%
V US Equity	4.1%	0.6%	15%	11%
PM US Equity	4.0%	3.4%	84%	10%
MCD US Equity	3.8%	2.4%	64%	3%
<u>KHC US Equity</u>	<u>4.3%</u>	<u>2.5%</u>	<u>59%</u>	<u>5%</u>
Average	4.0%	1.3%	32%	15%
Transports (FDX, UPS, CNR, CP, CSX, NSC, UNP)	3.9%	1.8%	45%	7%
GE (JPMe)	3.9%	3.4%	86%	9%

Source: Company reports and J.P. Morgan estimates.

Appendix: In-Depth Fundamental Segment Outlooks

Table 83: Summary GE Segment and Income Statement Model

	2016	2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E
Revenue						Core Growth				
Power	26,827	27,715	25,726	24,502	23,414		7.6%	-3.4%	-4.8%	-4.4%
Renewables	9,033	11,319	12,342	12,734	12,966		7.5%	4.6%	3.2%	1.8%
Oil & Gas	12,898	17,393	23,407	23,941	24,648		-4.8%	3.9%	2.3%	3.0%
Legacy GE Oil & Gas	12,898	12,283	12,124	12,245	12,609		2.0%	2.0%	2.0%	2.0%
Energy Connection + Lighting	15,133	12,746	9,501	9,691	9,885		3.5%	2.5%	3.5%	3.0%
Aviation	26,261	27,473	28,160	29,146	30,020		3.3%	3.0%	3.0%	3.0%
Healthcare	18,291	18,774	19,338	19,918	20,515		<u>-22.6%</u>	<u>-5.0%</u>	<u>1.5%</u>	<u>2.0%</u>
Transportation	<u>4,713</u>	<u>3,657</u>	<u>3,474</u>	<u>3,526</u>	<u>3,597</u>		<u>2.6%</u>	<u>1.3%</u>	<u>1.2%</u>	<u>1.3%</u>
Total Segment Sales	113,156	119,077	121,947	123,458	125,046					
Profit						Y/Y Growth				
Power	4,979	5,436	5,296	5,106	5,038		9.2%	-2.6%	-3.6%	-1.3%
Renewables	576	849	987	1,082	1,167		47.4%	16.3%	9.6%	7.8%
Oil & Gas	1,392	726	1,563	2,186	2,551		-47.8%	115.2%	39.8%	16.7%
Oil & Gas ex-BHI	1,392	1,179	1,128	1,169	1,299		-15.3%	-4.4%	3.7%	11.1%
Energy Connection + Lighting	311	319	285	436	544		2.5%	-10.6%	53.0%	24.7%
Aviation	6,115	6,401	6,392	6,703	7,205		4.7%	-0.1%	4.9%	7.5%
Healthcare	3,161	3,314	3,510	3,685	3,857		4.8%	5.9%	5.0%	4.7%
Transportation	1,064	775	709	728	750		-27.1%	-8.6%	2.7%	3.0%
Accounting Change			<u>(500)</u>							
Total Segment Profit	17,598	17,820	18,242	19,927	21,111		1.3%	2.4%	9.2%	5.9%
Total Segment Profit (ex-BHI)	17,598	18,272	17,807	18,911	19,859		3.8%	-2.5%	6.2%	5.0%
Adjusted Corporate (exc restr/gains/BHI)	<u>(2,040)</u>	<u>(1,624)</u>	<u>(1,515)</u>	<u>(1,315)</u>	<u>(1,315)</u>					
Total Ind Profit (incl BHI minority)	15,558	16,196	17,727	18,612	19,795		4.1%	3.3%	11.3%	6.4%
GE Capital	1,892	1,950	1,400	1,428	1,428					
Corp and Elims, GAAP (inc BHI minority)	(4,226)	(3,466)	(4,267)	(4,488)	(4,657)					
Interest and other financial charges	(2,026)	(2,364)	(2,425)	(2,425)	(2,425)					
Pre-tax Income	13,238	13,940	12,950	14,441	15,457					
Non-op Pension Add/Back	1,334	1,504	1,550	1,550	1,550					
Tax Rate	9%	14%	14%	14%	14%					
Income Taxes	(967)	(1,683)	(1,546)	(1,762)	(1,904)					
Avg. Shares - diluted	9,130	8,756	8,642	8,631	8,630					
Earnings Per Share - Reported	\$1.49	\$1.57	\$1.50	\$1.65	\$1.75					

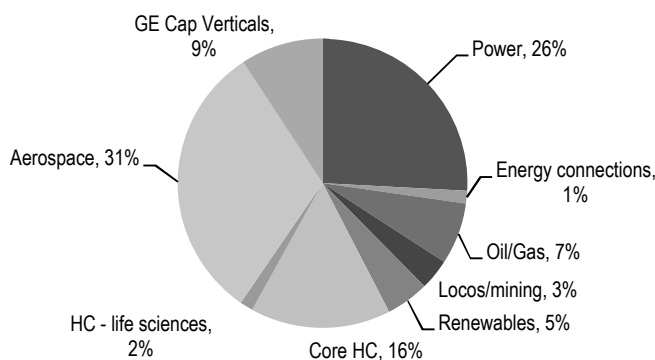
Source: Company reports and J.P. Morgan estimates.

Power (including EC): Centralized Generation Challenges Only Getting Worse

While most of our fundamentally negative call on GE has been around oil/gas, the next leg to watch, in our view, is GE Power, which at ~25-30% of the portfolio, is the most important business in the portfolio. The high level mosaic to us is that the shift from conventional power gen (coal/gas) to renewables has accelerated, a disruptive force, and a trade-off that is negative for traditional equipment providers like GE. Said another way, we believe that what was previously referred to as the “golden age of gas” is over, at least in terms of a growing profit pool, with material risk of downside to optimistic Street assumptions. GE’s late entrance into the H-frame market along with recent footprint builds in places like Russia and the Middle East/Africa drove more capacity into an already oversupplied market getting worse with Ansaldo/Shanghai Electric, that is turning down, with any related restructuring likely to be painful given potential restrictions around job cuts and removal of a heavily localized presence extending payback timing.

Figure 79: GE Profit Mix by Segment – 2018E

% of total



Source: Company reports, and J.P. Morgan estimates

We model core organic revenue CAGR decline of ~5% from 2017-2020 and overall profit CAGR decline of 3% (-11% decline ex-ALO, +25% for ALO driven to remaining synergies). As highlighted in detail further in subsequent sections, key major moving parts here are 1) Y/Y decline in HDGT shipments and related content from 2017 onwards coupled with margin declines from accelerated pricing pressure due to weak demand as well as manufacturing overcapacity, 2) ongoing declines in coal which changes the profile of the ALO deal and related synergies post recent backlog driven growth given its ~\$5.5B (~20% of segment revs) exposure to coal, 3) peaking service revenue growth and margins driven by declines in the legacy ex-AGP service business, and 4) peaking AGP shipments in 2017 and corresponding declines in LTSA gains.

Table 84: GE Power Model

\$ billion	2015	2016	2017E	2018E	2019E	2020E	2017-2020 CAGR
Absolute Revenue (including Acq/Div)							
Gas Power Systems	10.0	10.0	11.5	10.8	10.2	10.1	-4%
<i>GTs(Illustrative, including additional 'scope')</i>	5.6	5.2	6.5	5.8	5.1	5.0	-9%
<i>Industrial Gas Turbines (Illustrative, JPMe)</i>	1.3	1.6	1.8	1.8	1.9	2.0	3%
<i>Distributed Power + Other (JPMe)</i>	3.1	3.2	3.2	3.2	3.2	3.2	0%
Steam Power Systems	0.3	2.0	2.3	2.4	2.3	2.1	-3%
Power Services	10.9	14.8	14.8	14.4	13.8	13.1	-4%
<i>AGP</i>	1.6	2.2	2.2	1.9	1.6	1.3	-16%
<i>Steam Services</i>	0.5	3.9	4.1	4.1	4.0	3.8	-3%
<i>Gas Power Services Other</i>	8.9	8.7	8.5	8.3	8.2	8.0	-2%
Other/Elims	0.2	0.1	(0.8)	(1.8)	(1.8)	(1.8)	NM
Total	21.5	26.8	27.7	25.7	24.5	23.4	-5%
Y/Y (including Acq/Div)							
Gas Power Systems		0%	15%	-6%	-6%	-1%	
<i>GTs</i>		-5%	25%	-11%	-12%	-4%	
<i>Industrial Gas Turbines</i>		8%	10%	3%	3%	3%	
<i>Distributed Power + Other</i>		5%	0%	0%	0%	0%	
Steam Power Systems		9%	15%	5%	-3%	-10%	
Power Services		35%	0%	-3%	-4%	-5%	
<i>AGP</i>		39%	-1%	-11%	-15%	-23%	
<i>Steam Services</i>		NM	5%	0%	-3%	-5%	
<i>Gas Power Services/Other</i>		-2%	-2%	-2%	-2%	-2%	
Total		24.8%	3.3%	-7.2%	-4.8%	-4.4%	-7%
Total Organic			7.6%	-3.4%	-4.8%	-4.4%	-5%
Profit/Margins (including Acq/Div)							
Thermal equipment (GTs, Illustrative)		(0.1)	0.1	(0.0)	(0.1)	(0.2)	NM
Industrial Gas Turbines (Illustrative)		0.2	0.2	0.2	0.2	0.2	4%
<i>LTSA gains</i>		1.0	1.0	0.9	0.8	0.7	-12%
<i>AGPs</i>		0.8	0.8	0.7	0.6	0.5	-17%
<i>Services ex-LTSA, ex-AGP</i>		<u>2.0</u>	<u>2.0</u>	<u>1.9</u>	<u>1.8</u>	<u>1.8</u>	<u>-3%</u>
Services (ex-Steam, Illustrative)		3.9	3.8	3.6	3.3	2.9	-8%
<u>Other</u>		<u>0.5</u>	<u>0.4</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>-17%</u>
Legacy Power Segment Profits		4.4	4.5	4.0	3.6	3.2	-11%
<u>Alstom Profit</u>		<u>0.6</u>	<u>0.9</u>	<u>1.3</u>	<u>1.5</u>	<u>1.8</u>	<u>25%</u>
Total Power Profits		5.0	5.4	5.3	5.1	5.0	-3%
Total Power Profits Margin		18.6%	19.6%	20.6%	20.8%	21.5%	

Source: J.P. Morgan Estimates. Company Reports

In the remaining sections we walk through each of the above sub-segments and related moving parts that make up our forward outlook assumptions.

Gas power equipment demand remains sluggish, 2017 risks another step down

Global demand for large gas turbines has been volatile since the power bubble, and 2016 was no exception, weaker than expected. Orders for gas turbines for utility use declined 17% last year, coming in at 45GW, the lowest level since 2009. We had forecasted at mid-year that orders would total 48GW, though order intake disappointed meaningfully in the second half. The main disappointment was in the US and in Asia ex China/Japan, while the Middle East, historically accounting for 1/3 of global demand, collapsed excluding larger orders from early in the year.

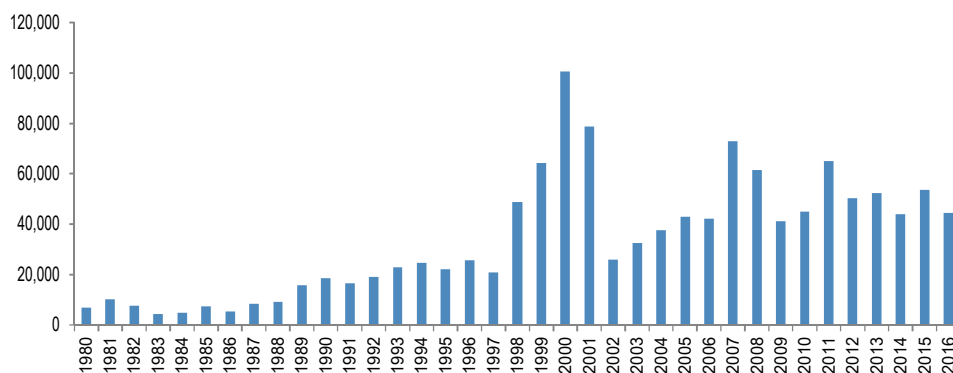
Table 85: Gas Turbine Orders for Utility Use

GW

	2015A	2016A	2016 estimate
Europe	0	0.3	0.2
United States	10.7	6.9	9.5
Middle East and North Africa	18.1	16.7	16
Asia ex Japan, China	7.8	3.9	6
China	5.9	5.1	4
Japan	1.7	2	2.5
Russia and CIS	3.8	2.7	3.5
Other	5.5	7.3	6.5
Total	53.5	44.9	48.2

Source: McCoy, and J.P. Morgan estimates

Figure 80: Global Gas Turbine Orders – Utility Use (MW)



Source: McCoy

Our standing assumption is that gas turbine orders for utility use will decline 10% to 41GW in 2017. The reason for the decline is mainly because we don't assume the mega projects in Middle East (Oman and Egypt, 22% of world market in 2016) repeat this year to the same degree with other large projects in other markets. We don't expect the US to improve from the poor 2016 and particularly poor H2 given political uncertainty around regulation. The US gas turbine market had roughly doubled post the implementation of tougher rules on coal plants from the EPA which may get reversed under the new administration. We expect the shutdown of coal plants (about 40GW in 2012-2016) to slow materially and this was the strongest driver for the pickup in gas turbine investments in recent years, in our view. We don't expect the Clean Power Plan to be implemented (currently held up by the courts).

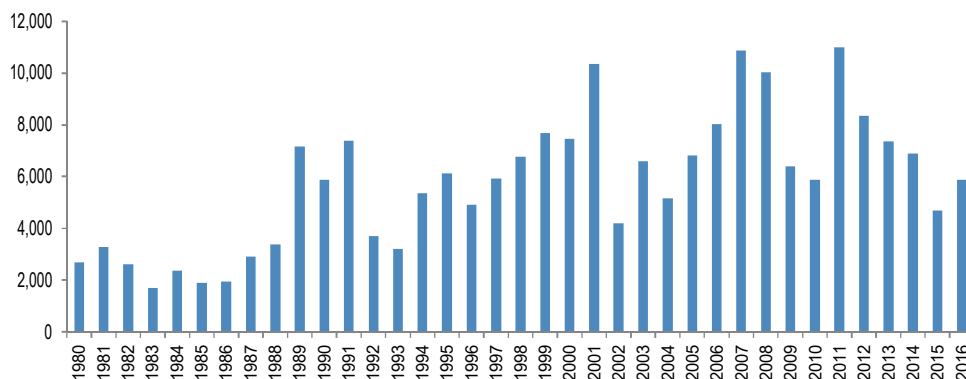
Table 86: Gas Turbine Orders for Utility Use

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017E
Europe	6.8	4.9	2.7	1.6	1.8	0.8	0.4	0	0.3	0.4
United States	7.9	5.2	4.1	5.3	5.7	5.7	10.2	10.7	6.9	6.5
ME + North Africa	18.4	17	18.2	20.8	15.7	21.6	14.5	18.1	16.7	11
Asia ex Japan, China	6.8	1.9	7.9	10.2	7.5	7.3	5.7	7.8	3.9	5
China	1.6	1.4	3.5	11.9	9.4	6.6	2.7	5.9	5.1	5
Japan	1.6	0.6	2.1	5.1	2.1	0.8	4	1.7	2	2.5
Russia and CIS	9.7	4.3	2.6	6	4.7	5.6	3	3.8	2.7	3
Other	13	9.2	6.4	7.2	3.1	3.9	3.8	5.5	7.3	7.5
Total	65.9	44.4	47.7	68	49.9	52.2	44.3	53.5	44.9	40.9

Source: McCoy, and J.P. Morgan estimates

Next we show the historical trends in turbines used in industrial facilities including the important oil & gas market. Orders in 2016 came in at 5.9 GW, an improvement from the low level of 2015 but still substantially below the record levels at the time of high investments into oil & gas in 2007/2008 and 2011/2012. Demand in 2016 for oil & gas projects remained in general very low, and also included some large orders (notably 1.2GW from Bahrain to GE related to an aluminum project and 1.2GW from Saudi Aramco to Siemens).

Figure 81: Global Gas Turbine Orders – Industrial Use (MW)

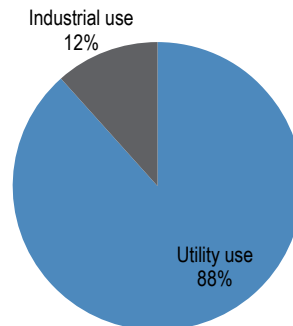


Source: McCoy

Key to note here is that the market for gas turbines for industrial use is much smaller than utility gas turbines on a GW basis. This means that even assuming a pickup as industrial/oil & gas markets recover, it can't make up for a decline in heavy duty gas turbines for utility use.

Figure 82: Global Gas Turbine Orders (Utility + Industrial, combined), 2016A

GW

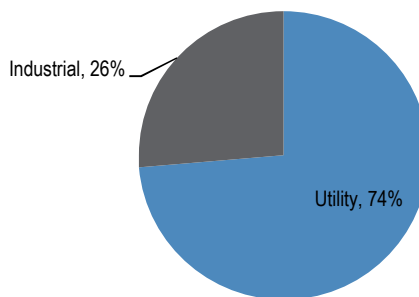


Source: McCoy

Another way to look at this is to compare the size of the traditional McCoy segment, which per GE is ~40-45GW for utility power gen, from which they generated \$14B in orders from '14-'16, to the industrial power gen segment (Fast Power + Combined Heat & Power), which per GE is ~15-25GW, from which they generated \$5B in orders from '14-'16. Either way, the point is that utility power gen is by far the more important market.

Figure 83: GE Orders, 2014-2016

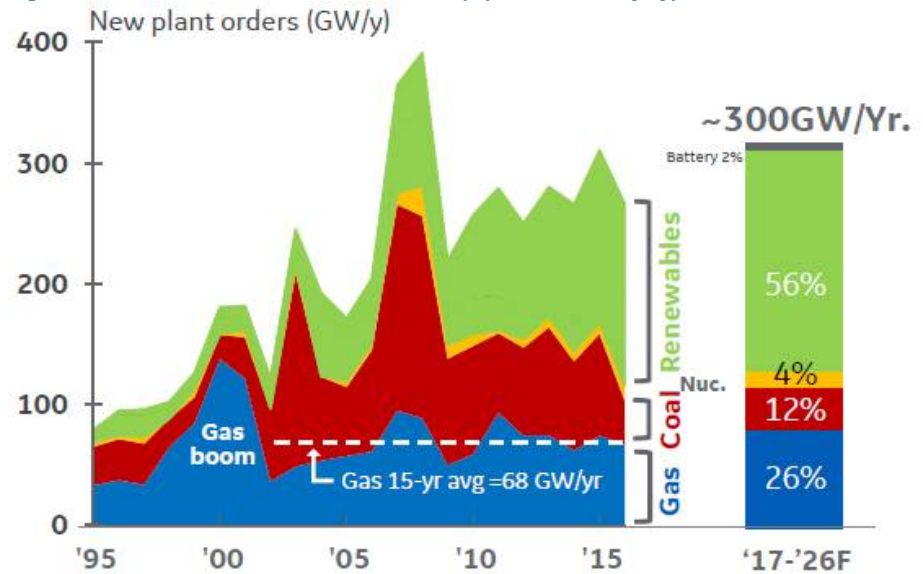
% split, in billions of dollars



Source: Company reports

GE remains too optimistic: GE as of March this year was forecasting gas to make up 26% of the ~300GW/year market for new power installations through 2026. This equates to 78GW/year for gas turbines (utility + industrial), and they said the trajectory would be flattish in 2017.

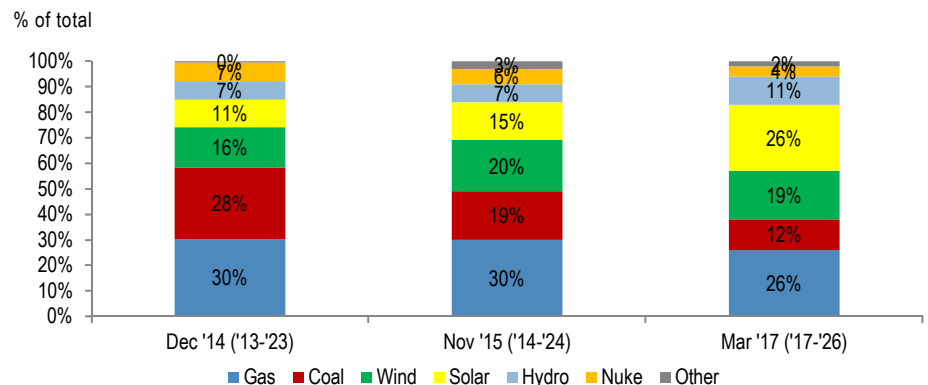
Figure 84: GE Ten-Year View on Global Power Equipment Orders by Type



Source: Company reports

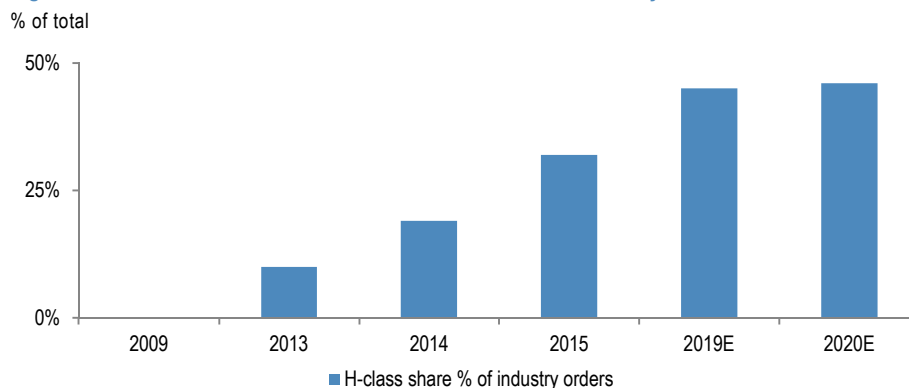
The company's official outlook on gas turbine demand hasn't really changed much over the past few years, though the way it's presented has, making comparisons difficult. In Dec 2014, they talked to a 3400 GW market from '13-'23 (includes 600 non-grid connected), of which 25% gas, 23% coal, 18% oil, 13% wind, 9% solar, 6% nuclear, 6% hydro/other. This in Nov '15 evolved to 2500 GW (excludes 700 non-grid connected) from '14-'24, of which 30% gas, 19% coal, 20% wind, 15% solar, 6% nuclear, 7% hydro/other, and 3% gas engines. The biggest change here was coal, which they attributed to retirements, with wind/solar picking up share. Then came the most recent update as shown above, with what looks like GW/yr forecasted in the low-300s, of which renewables is now 56% (26% solar, 19% wind, 11% hydro/other), gas 26%, coal 12%, nuclear 4%, and battery 2%. The figures here are not as important as a predictor of the future as they are to show the trend, and how GE has planned based on that trend. Ultimately the messaging has been for a flat market with share gains on the back of their H-frame (which we will opine on later). Their latest forecast, provided at a recent investor event, shows no change to prior forecasts.

Figure 85: GE Power Industry Outlook – GW Installed



Source: Company reports. Note: Dec '14 adjusted to exclude non-grid connected power, which we assume is mostly oil based.

Figure 86: H-class Gas Turbine Orders % of Total Gas Power Industry



Source: Company reports

Siemens, on the other hand, recently talked down the HDGT market at the J.P. Morgan Cap Goods Conf in mid-June 2017. Specifically, CEO Joe Kaeser suggested a 20% decline is in store for this year versus the standing forecast of a flat GW market from GE. Kaeser further noted the future will be volatile and lumpy with deals that are increasingly challenging from a competitive perspective. The negative view on fossil generation was reinforced at the conference by a bullish tone from almost all other CEOs around renewables which are now close to competitive on a levelized cost of energy (LCoE) basis, reinforcing comments from GE representatives from the last two weeks. In the end, a 20% decline in orders of gas turbines for utility use, combined with a stable small turbine market, suggests downside in the low-teens % range versus GE’s standing expectations for a flat market.

Table 87: Gas Turbine Market Looks to Have Downside vs GE Plan

GW	2016	2017 expected (GE)	2017 with utility -20%	Diff
Traditional McCoy utility segment	45	n/a	36	-20%
Rest of gas market (GE defined)	23	n/a	23	0%
Total market (GE defined)	68	68	59	-13%

Source: McCoy, Company reports, and J.P. Morgan

Despite being somewhat consolidated, this is a competitive market that is getting worse. If we look at the overall market (utility and industrial use), GE leads with 37% share, followed by Siemens with 34%, and MHI/MHPS with 15% share. The 5-year average market share of Siemens is 29% vs GE's 49%. The big winner in terms of market share in 2016 is Ansaldo with 11% share vs its long-term average of 3%. This is due to the acquired Alstom technology (anti-trust required disposal resulting from GE-Alstom deal) and its backing by Shanghai Electric (owns 40%) which has turned the company into a proper challenger with a financing support that had helped it win the 4.2GW Oman project a year ago, against the early lead of Siemens which was close to winning the project, according to Siemens. Ansaldo has established a 25% market share in China on the back of the partnership with Shanghai Electric vs no material presence before. Shanghai Electric used to work with Siemens historically though bought out the JV and is actually in the process of investing in an H-frame. Ansaldo recently opened a new facility in the port city of Genoa, which means it can now ship its turbines by sea, and signed deals to deliver the GT36 for use in two new plants in Shanghai, according to Power Engineering ([link](#)). Also noteworthy, from a competitive perspective, Manager Magazin reported last week that Siemens held talks with MHI/MHPS about a potential alliance, ranging from JVs to merging units. While the talks were said to have stalled, it's something to keep an eye on. By segment of the market, GE leads with 38% share of turbines for utility use, with Siemens at 32%, MHI at 15% and Ansaldo at 12%. Looking at industrial gas turbines, Siemens won material share, now at 40% vs GE's 50%. The 10-year average is 62% for GE vs 29% for Siemens. Siemens may be benefiting from the combination of Dresser Rand, Rolls-Royce Energy and its existing business. This is mainly coming through in frame turbines while GE retains the clear lead in aeroderivatives, according to McCoy, with 71% share.

Table 88: Market Share Development

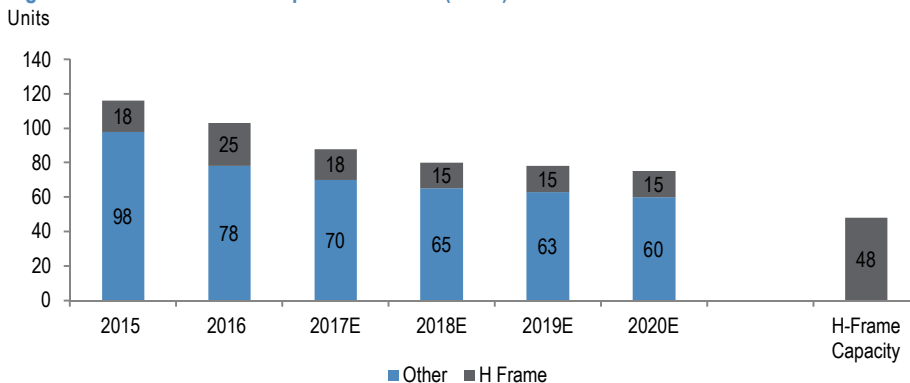
Global gas turbine market shares, Capacity ordered, turbines >3MW

	10y avg	5y avg	2015	2016
GE	49%	49%	46%	37%
-Heritage GE	44%	44%	46%	n/a
-Heritage ALO	6%	4%	n/a	n/a
Siemens	31%	29%	32%	34%
MHI	13%	15%	11%	14%
Ansaldo	3%	3%	4%	11%
Other	4%	3%	7%	4%

Source: McCoy, J.P. Morgan

Heavy investment to compete, some of which is tough to unwind. With high expectations for growth and intense competition, we believe there has been a level of over-investment here, which is tough to unwind. We start by pointing out that GE scaled up and invested heavily in H-frame after it saw the market moving in the direction of bigger turbines, with the investment coming just ahead of when the market for the largest gas turbines is rolling over (the utility space). We believe MHI and Siemens were focused here earlier and have proven the H-technology with commercial hours of operation, whereas GE is behind, having tested and validated its turbines at the Greenville facility before delivering to customers. Indeed, Siemens and MHI came with their first orders in 2010 and 2011 and maintain a dominant ~75% share of this market. From 2013 through 2016, GE invested ~\$2B (as per March '17 investor presentation) to commercialize the 9HA and 7HA models (testing, design, validation, etc), with first orders in 2014, as the market for gas turbines >40MW shifted from 0% H in 2009 to 10% in 2013, to now around 40%. While we give credit for building a position in what has become a bigger piece of the market (did they have a choice?), introducing a product like timed “perfectly” is risky and expensive. As it turns out, the market in the utility space is likely to be tougher than envisioned, with GE’s potential capacity for H turbines (48/yr) well in excess of standing shipment levels (mid-20s), which means they caught the market here, though volumes may ultimately be significantly less than expected. Meanwhile Shanghai Electric has proposed coming with its own capacity for an H-frame. In other words, this is not necessarily differentiated technology.

Figure 87: GE Gas Turbine Shipment Forecast (JPMe)

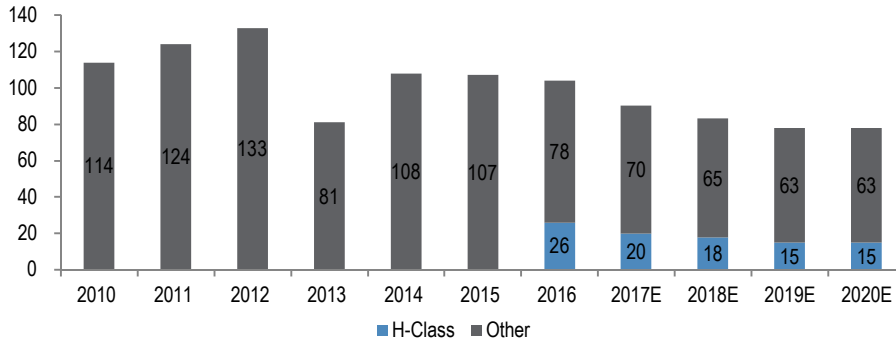


Source: Company reports, and J.P. Morgan estimates

Outside of technology, the company also has spent heavily recently to chase EMs. It's a challenge to get visibility on many of the specific deals but one in Russia stands out. Back in 2011, GE announced an investment in Russia to build turbines for a market that they believed would be 80 GWs of thermal power over a 20-year period (4 GW/yr). Fast forward and we see the Russian market has been a cumulative ~9 GWs of gas power (utility + IPP) from 2011-15, and run rating at ~1.8 GWs annually. While not perfectly comparable to the ~4 GW/yr noted, we believe it's still a fraction of the expected level (2.6 GW/yr from 2014-24, per the April 2016 presentation). The Middle East/ Africa looks like the next chase. Here the company has spent heavily in Saudi Arabia, most recently in May this year to set up shop with Dussur for manufacturing H-class turbines in the country. This is despite recent investments at Greenville which is now a 1.7mm square foot facility that had been able to supply a US market of ~250 turbines at the peak which last year stood at an estimated ~25 turbines. Bottom line, we believe that late timing on investments has resulted in significant overcapacity, some of which is hard to unwind given the commitment to local economies.

JPM Gas Turbine Model: Based on the tough macro and micro outlook described above, we see pressures going forward with potential for a sharp decline in orders and shipments in the coming years. We expect the company to miss their 2017 target of 100-105 GTs and model ~90 for the year with a drop off in subsequent years.

Figure 88: JPMe GE HDGT Shipment Forecast



Source: Company reports and J.P. Morgan estimates.

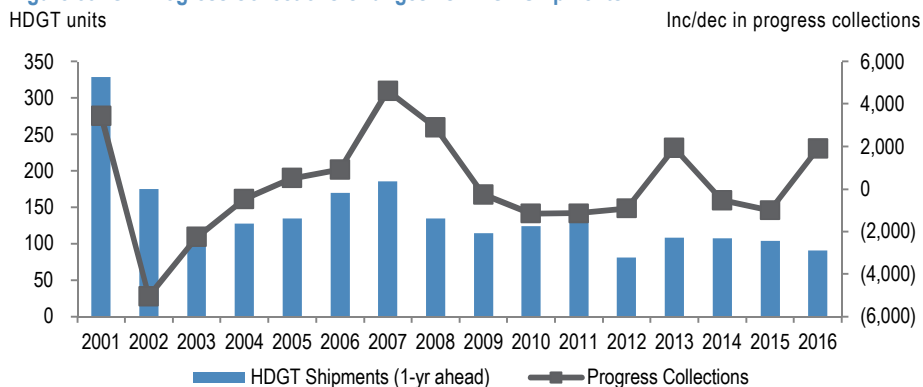
On the revenue line, we expect a bump in 2017 revenues given the additional scope, as per 2016 orders and a ~1.4x B2B, though expect this to hit a run-rate from 2018 onwards with the overall \$/GT shipped moving in-line with the shipment profile. On profits despite an already low profit base, we expect this to turn negative from 2018 onwards driven by pricing headwinds and volume deleverage. What's more important to keep in mind here is the cash impact from these, with progress collection payments likely to see a hit as shipments start to taper off.

Table 89: Gas Turbine Model

	2015	2016	2017E	2018E	2019E	2020E
Revenue						
Heavy duty gas turbine shipments (company data)	107	104	90	83	78	78
<i>H-Class</i>	0	26	20	18	15	15
<i>Other</i>	107	78	70	65	63	63
y/y	-1%	-3%	-13%	-8%	-6%	0%
Avg Thermal Equipment Revenues per H HDGT (inc scope)	85.0	86.7	128.7	125.5	121.1	116.9
y/y price	0.0%	2.0%	-1.5%	-2.5%	-3.5%	-3.5%
y/y mix/other/scope	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Avg Thermal Equipment Revenues per other HDGT	51.0	37.8	56.1	54.7	52.7	50.9
y/y price	0.0%	-1.0%	-1.5%	-2.5%	-3.5%	-3.5%
y/y mix/other/scope	-5.0%	-25.0%	50.0%	0.0%	0.0%	0.0%
Total Thermal Equipment Revenues (\$billion)	5.5	5.2	6.5	5.8	5.1	5.0
y/y	-6%	-5%	25%	-11%	-12%	-4%
Gas Turbine Profit	0.2	(0.1)	0.1	(0.0)	(0.1)	(0.2)
Gas Turbine Margin	3.5%	-2.5%	2.0%	-0.2%	-2.8%	-3.6%
Incremental/Decremental				20.0%	20.0%	20.0%

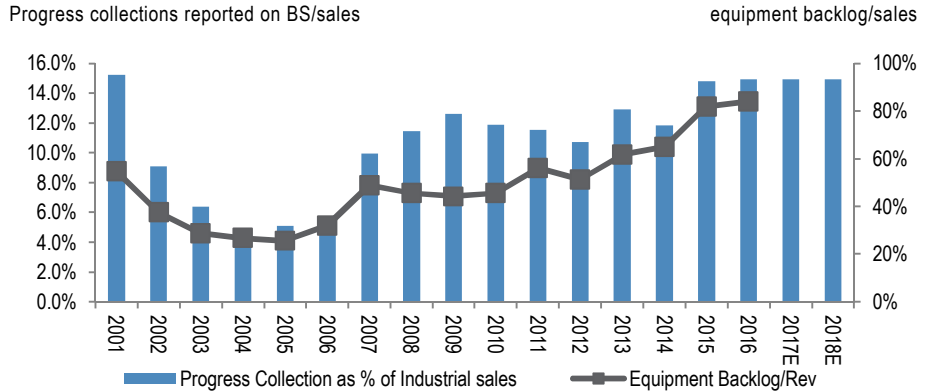
Source: Company Reports, J.P. Morgan Estimates

Figure 89: GE Progress Collections Changes vs HDGT Shipments



Source: Company reports and J.P. Morgan Estimates

Figure 90: Progress Collection vs Equipment Backlog



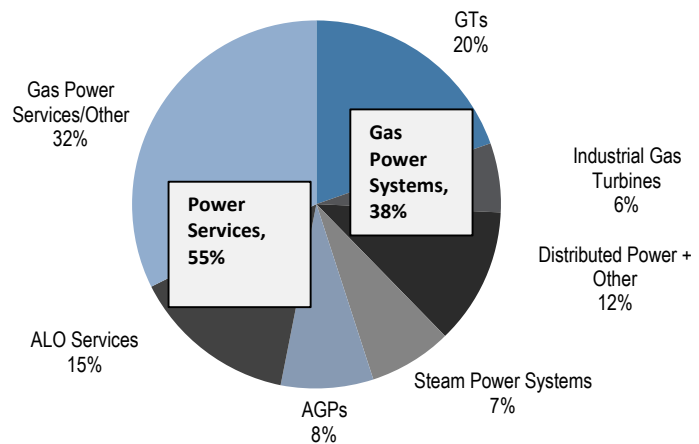
Source: J.P. Morgan Estimates, Company Reports

Power services the crown jewel but targeted by customers and intensifying competition

Services business is the crown jewel of the portfolio, and while we have always viewed it as the highest value franchise at GE, we see increased risks against the backdrop of weaker load growth and lower electricity prices in developed markets. The business is broken down as \$11B of revenue in the core (ex-ALO), and another \$4B from Alstom, with the total representing 55% of the segment revenue (likely ~85% of segment profits). Within the \$11B core is an estimated \$2-2.5B in AGP revenue (up from zero five years ago), something we have repeatedly pointed to as carrying a riskier profile than the steady nature of recurring LTSA payments.

Figure 91: GE Power Segment Breakdown (\$27B total sales)

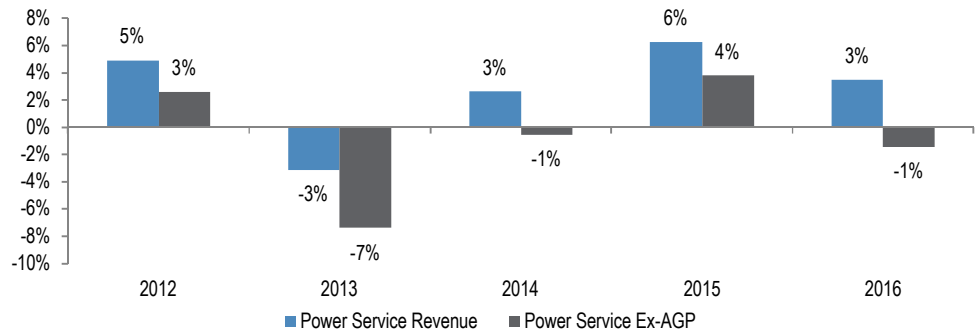
% of sales



Source: Company reports

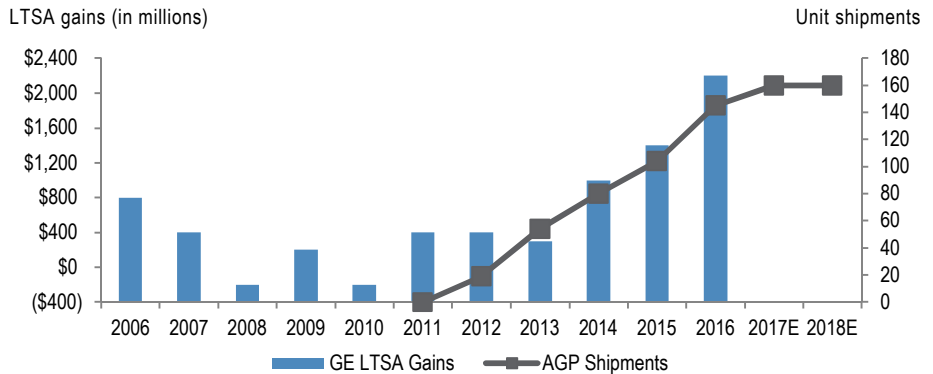
As indicated in previous research ([link](#)), we view AGPs as being at the nexus of the discussion around services and FCF conversion, and we continue to see risk of negative surprise going forward, especially in 2018. This major gas turbine overhaul, booked as a one-time transaction, raises revenue in the year delivered but, as per our channel checks, can lower the future services revenue stream, essentially a one-time bump, and a pull forward of services revenue making the business potentially more cyclical. What's more, a mosaic from channel checks with several utilities suggests that a post-AGP renegotiation of related services contracts is not uncommon, and the event likely represents a material amount of the \$2.2B of non-cash LTSA gains booked in 2016, a number that we expect to be higher in 2017. In other words, more upfront transaction (cyclical) based revenue, with lower revenues in the out years and potentially significant related non-cash earnings boosted by a gain, as well as extended payment terms impacting FCF conversion.

Figure 92: Power Service Revenue Growth including and excluding AGPs



Source: Company reports and J.P. Morgan estimates. For 2015, we have made an assumption based on prior segmentation for comparability services.

Figure 93: AGP Ramp Has Come with Significant Increase in Non-Cash LTSA Gains



Source: Company reports, and J.P. Morgan estimates

We pointed to specific instances where this has been observed, including from Southern California Edison (SCE) and Dynegy (DYN). The SCE case showed AGPs in exchange for lower LTSA (CSA) payments. In Sept 2015, GE announced a multiyear services agreement with SCE to upgrade the utility’s Mountainview Generating Facility. This is a 1054 MW combined-cycle power plant featuring four 7FA.03 units, two D-11 steam turbines and associated generators, which produced 5753499 net MWh with an overall capacity factor of 62.6% in 2015. As part of the new extended service agreement with SCE to upgrade the site’s generating equipment, GE agreed to supply six AGP sets; six sets of its DLN2.6+ combustion system, as well as its OpFlex software package; and four new unit rotors. GE was scheduled to begin installation in 2016, with project completion expected in 2017 ([link](#)). Looking at terms of the “new” CSA vs the original terms, the annual fees for 2015-2035 (classified as part of O&M / opex budget at the utility) were cut by roughly 50% vs the 2006-2014 period. These fees were scheduled to go up a lot in 2015, and went down a lot instead with the AGP/DLN upgrade purchases, an upfront investment of ~\$100mm (capex). This is a good illustration of what we are referring to when we say that the growth coming from big ticket, AGP sales is not all incremental as it eats into the core power services business (ex-AGPs), while at the same time creating a more transactional business model (in this case GE has not only sold AGPs for each turbine, but also two spares).

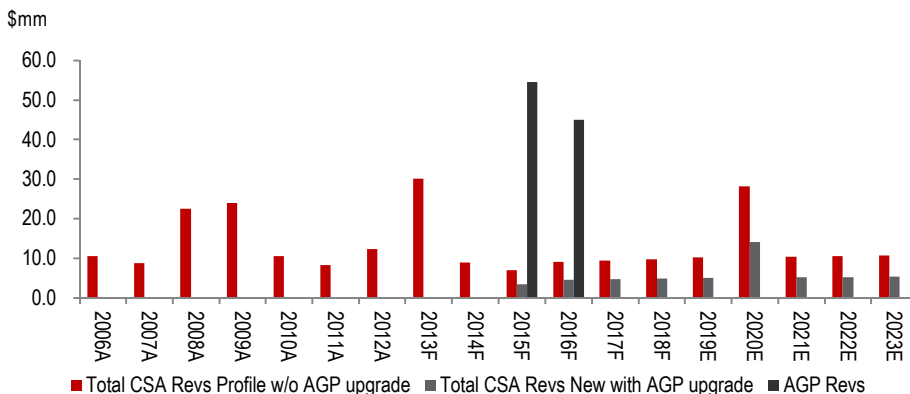
Table 90: Historical and Forecasted CSA Expense: Original vs “New” Contract

In millions

Year	Annual fees	Major outage fees	Total CSA fees	AGP upgrades	Note
Original CSA					
2006A	\$10.2	\$0.5	\$10.6	\$0.0	Plant achieved full commercial operation, and original CSA contract term began
2007A	\$7.8	\$1.0	\$8.8	\$0.0	
2008A	\$9.2	\$13.4	\$22.6	\$0.0	The first HGPI overhauls were completed in 2009
2009A	\$10.2	\$13.8	\$24.0	\$0.0	The first HGPI overhauls were completed in 2009
2010A	\$10.5	\$0.0	\$10.5	\$0.0	Annual fees vary based on operating hours, reliability incentive performance, and contract escalation.
2011A	\$8.3	\$0.0	\$8.3	\$0.0	
2012A	\$11.6	\$0.8	\$12.4	\$0.0	Expenses increased because it also included most of the CSA Parts Use Tax payment for the 2013 MI overhauls
2013F	\$10.3	\$19.8	\$30.1	\$0.0	The first MI overhauls were completed during 2013
2014F	\$8.9	\$0.0	\$8.9	\$0.0	In 2014, other expenses were set to increase because the CSA Annual Fees contract included a price increase when 60,000 operating hours level is reached. Upon reaching this milestone, the Variable Fee component of the CSA increases due to changing from Tier 1 to Tier 2 pricing, a higher cost. But old CSA was renegotiated.
“New” CSA					
2015F	\$3.5	\$0.0	\$3.5	\$54.6	“New” CSA at lower fees, with first payment for AGP upgrades
2016F	\$4.6	\$0.0	\$4.6	\$45.0	Second payment for AGP upgrades, with installation done as part of regularly scheduled HGPI overhauls
2017F	\$4.7	\$0.0	\$4.7	\$0.0	
2018F	\$4.9	\$0.0	\$4.9	\$0.0	
2019E	\$5.1	\$0.0	\$5.1	\$0.0	
2020E	\$5.2	\$8.9	\$14.2	\$0.0	The second MI overhauls

Source: SCE, and J.P. Morgan estimates

Figure 94: GE CSA/AGP Revenue Stream from SCE and Specific Turbines as Disclosed in Recent Filing



Source: SCE, and J.P. Morgan estimates. CSA rev from 2015-2023 w/o AGP upgrade is JPMe

Checks with DYN, meanwhile, also show AGPs coming with renegotiation of future LTSA payments. DYN has a fleet of 100-105 gas turbines (post ENGIE acquisition) and is GE's largest utility client in the US. The company, in the past, has talked about renegotiation of their turbine LTSAs and a more efficient supply chain as part of synergies associated with acquisitions/consolidation. Historically, LTSAs they have had in place with GE have been one off arrangements with each plant, and in many different forms and sizes. In 2013, DYN formed a team to make this more efficient and standardize agreements across fleets, which involved restructuring all the LTSAs in place to get more consistent format and coverage, with more standardized pricing, and this led to the need of AGP upgrades at certain plants to improve machine output and efficiency. These upgrades are negotiated as part of the restructuring of their LTSAs with GE and are built into the overall payment structure that stretches out for multiple years. Once an AGP upgrade is planned, price cuts on future LTSA payments could be to the tune of 10-20% depending on the negotiated upfront AGP cost. Another interesting aspect are the cash payment dynamics associated with these AGPs, where our checks indicated that they are able to defer payments for most of these upgrades, and as long as 4-5 years for some.

Power services model. This is the key lever in our Power model, with this sub-segment likely contributing ~90% of profits (ex-ALO). Based on our outlook for AGPs above, coupled with a decline in the legacy service business due to contract renegotiations to lower values, we expect revenues and related profits for the services business to decelerate meaningfully and anticipate a ~8% profit CAGR decline from 2017-2020.

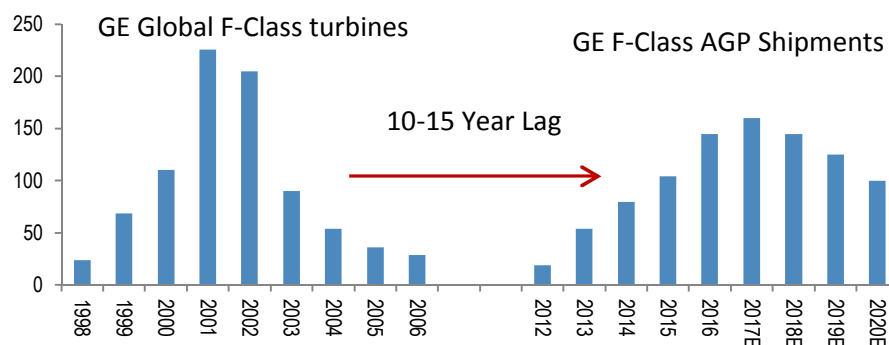
Table 91: GE Power Service Model

\$ billion	2015	2016	2017E	2018E	2019E	2020E	2017-2020 CAGR
AGP	1.6	2.2	2.2	1.9	1.6	1.3	-16%
Steam Services	0.5	3.9	4.1	4.1	4.0	3.8	-3%
Gas Power Services/Other	8.9	8.7	8.5	8.3	8.2	8.0	-2%
Power Services	10.9	14.8	14.8	14.4	13.8	13.1	-4%
Y/Y							
AGP		39%	-1%	-14%	-18%	-24%	
Steam Services		NM	0%	-5%	-5%	-5%	
Gas Power Services/Other		-2%	-3%	-1%	-1%	-1%	
Power Services		35%	-2%	-4%	-4%	-4%	
Profit							
LTSA gains	0.9	1.0	1.0	0.9	0.8	0.7	-12%
AGPs	0.6	0.8	0.8	0.7	0.6	0.5	-17%
Services ex-LTSA, ex-AGP	2.1	2.0	2.0	1.9	1.8	1.8	-3%
Services (ex-Steam, Illustrative)	3.6	3.9	3.8	3.6	3.3	2.9	-8%
Incrementals							
Ex-Steam Services (ex-LTSA, ex-AGP)			35.0%	35.0%	35.0%	35.0%	
AGP			40.0%	40.0%	40.0%	40.0%	

Source: J.P. Morgan Estimates. Company Reports

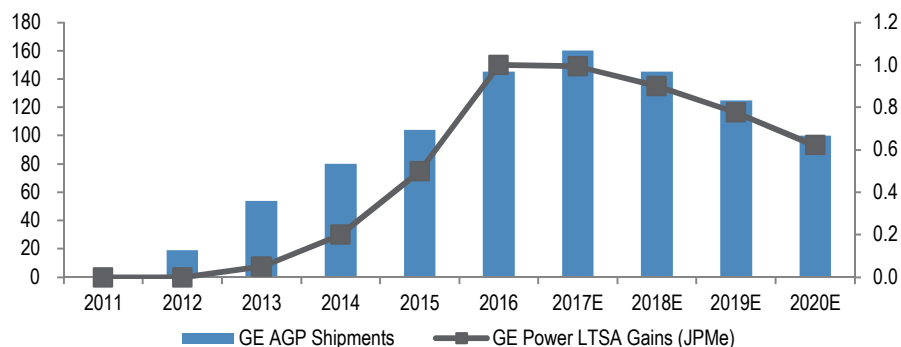
Key to our forecast is our assumption on AGP shipments and related impact on LTSA gains. We think AGP shipments are likely to peak in 2017 followed by declines from 2018 onwards as penetration gains start to moderate (our model currently assumes ~50% penetration of F turbines by 2020 vs ~20% by 2016). With a decline in AGPs, not only does the profit pool of these products get but also related LTSA gains, majority of which are booked when these AGPs are shipped.

Figure 95: Illustrative F-Class Annual Turbine Shipments vs F-Class Annual AGP Shipments Shows We Are Well into The Time Where Bubble Turbines Would Be Upgraded



Source: McCoy, Company reports and J.P. Morgan estimates.

Figure 96: GE AGP Shipments vs GE Power LTSA gain assumptions



Source: Company reports and J.P. Morgan estimates

We provide our summary AGP revenue and profit model below. In addition to unit shipment declines in AGPs, we also see declines in the average price/AGP as per the recent Power presentation where management referred to a variety of AGPs with different price points, ultimately hurting mix.

Table 92: AGP Model

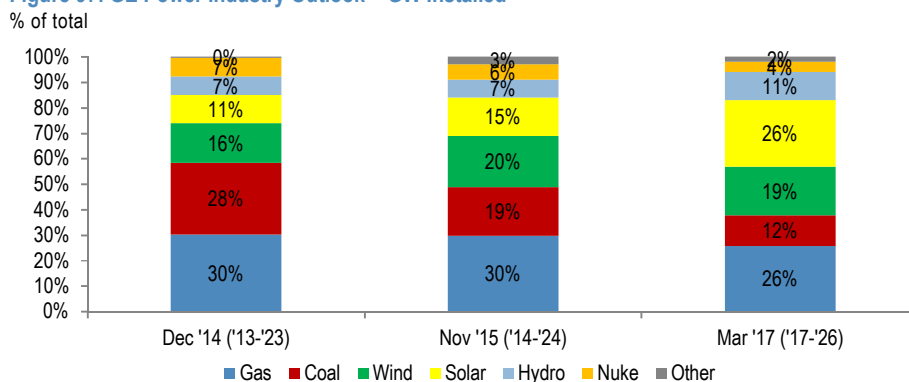
	2015	2016	2017E	2018E	2019E	2020E
AGP Upgrades (units)	104	145	160	150	135	110
y/y	30%	39%	10%	-6%	-10%	-19%
AGP Revenues per Upgrade (\$million)	15.0	15.0	13.5	12.8	12.2	11.6
y/y price	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
y/y mix/other	0.0%	0.0%	-10.0%	-5.0%	-5.0%	-5.0%
AGP Revenues (\$billion)	1.6	2.2	2.2	1.9	1.6	1.3
AGP Profits (\$billion)	0.6	0.8	0.8	0.7	0.6	0.5
LTSA Gains (\$billion)	0.9	1.0	1.0	0.9	0.8	0.7

Source: Company reports and J.P. Morgan estimates

Alstom businesses in secular decline, profit ramp due to deal synergies

While GE has managed to optically hit their profit and accretion targets for ALO, albeit in a low quality way (cash flow is still negative), we think the business in general is in secular decline. GE's own official coal demand forecasts were cut materially to just ~12% of total Global Power additions vs ~28% 2.5 years ago and ~20% 1.5yrs ago, which they attributed to retirements, with wind/solar picking up share. The figures here are not as important as a predictor of the future as they are to show the trend, and how GE has planned based on that trend.

Figure 97: GE Power Industry Outlook – GW Installed



Source: Company reports. Note: Dec '14 adjusted to exclude non-grid connected power, which we assume is mostly oil based.

B2B for ALO was a healthy ~1.6x in 2016, which we think could drive near-term growth, though lower underlying (ex-synergies) margin in nature. Post working through the near-term backlog, which we think has grown due to a near-term catchup from the severe decline through the acquisition process as well as some revenue synergies on new combined cycle (BoP) plant orders, we think the business is likely to taper off sharply with secular decline in coal power generation. Net-net, while core challenges remain, we think ALO is likely to remain the key driver of profit growth for overall GE driven by deal-related synergies, though we think this is close to a run-rate now given the business is close to fully integrated.

Table 93: ALO Power Revenue Progression since GE Acquisition Announcement

\$ million

	2013	2014	2016	2013-2016 CAGR
ALO	13,000	10,100	6,252	-22%
Power gen products	6,500	4,400	2,700	-25%
<i>Steam</i>	5,200	3,400	2,000	-27%
<i>Gas</i>	1,300	1,000	700	-19%
Power gen services	6,500	5,700	3,900	-16%
<i>Elims</i>			-348	

Source: J.P. Morgan Estimates, Company Reports

Table 94: JPM ALO Power Forecast

\$ billion

	2016	2017E	2018E	2019E	2020E
Alstom Power	6.3	6.9	6.9	6.7	6.2
Power Services	3.9	4.1	4.1	4.0	3.8
Gas Power	0.7	0.9	0.8	0.7	0.7
Steam Power	2.0	2.3	2.4	2.4	2.1
Elims	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)

Source: Company reports and J.P. Morgan estimates.

Table 95: ALO Profit Driven by Deal Synergies

\$ billion

	2016	2017E	2018E	2019E	2020E
Underlying Profit	(0.5)	(0.4)	(0.3)	(0.2)	0.0
Synergies	1.1	1.4	1.6	1.7	1.8
<u>Other</u>	0.0	0.0	0.0	0.0	0.0
Total	0.6	0.9	1.3	1.5	1.8

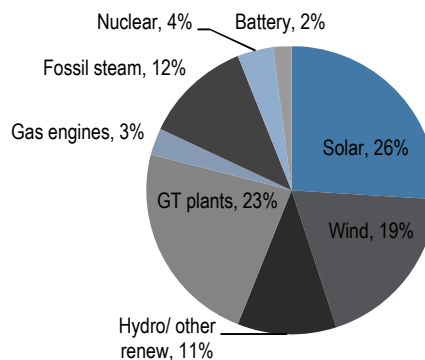
Source: Company reports and J.P. Morgan estimates.

Renewables: Pricing Pressure and Tough Markets

This segment has some growth but lower margins, challenged by coming price pressure, and smaller services potential. As per GE, renewables are expected to drive >55% of power gen capacity adds over the next decade, with solar leading the way (26%), where GE currently has no presence. Wind is seen adding 19% of new global capacity, with hydro/other at 11%. Gas turbine plants, meanwhile, are expected to represent 23% of new global capacity through 2026, with another 3% from gas engines, and steam/coal will be 12%.

Figure 98: Renewables Lead Growth in New Global Capacity Adds Over Next 10 Years

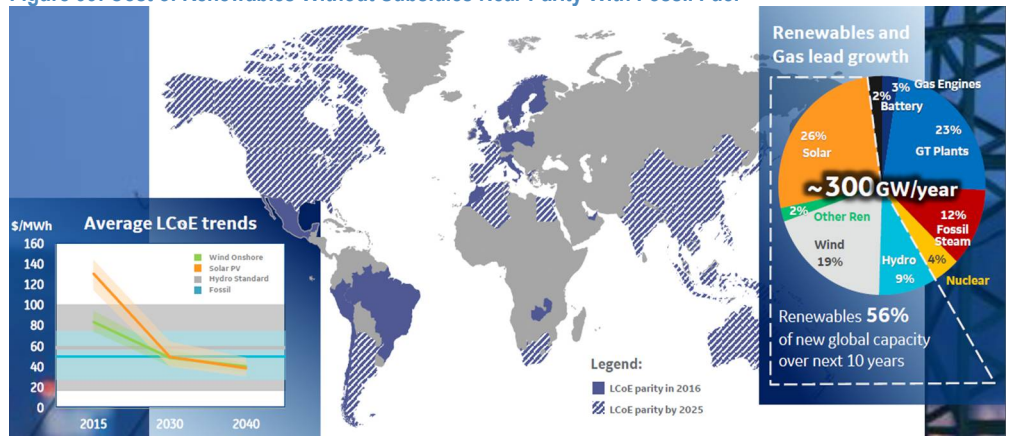
% of new global capacity adds, 2017-2026



Source: Company reports

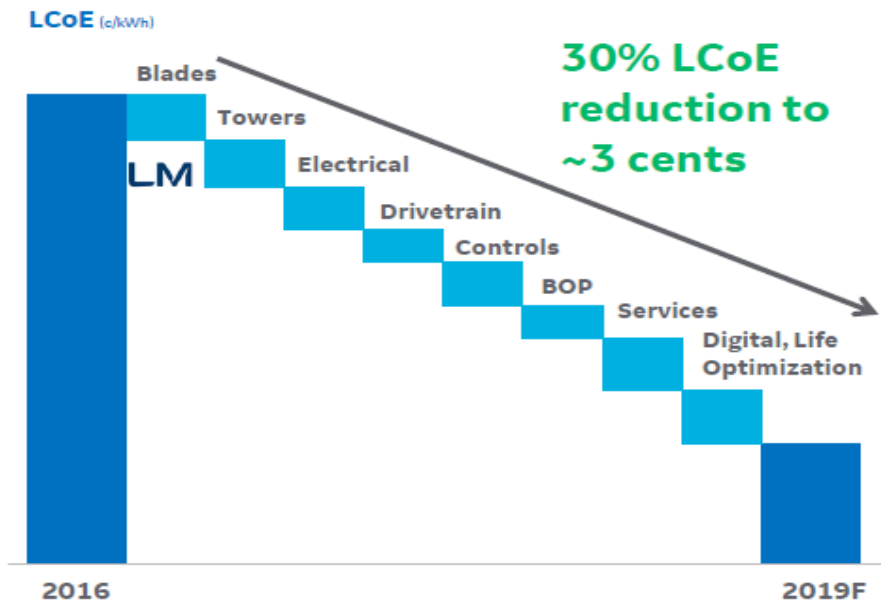
The key here is cost of renewables without subsidies nearing parity with fossil fuels. GE management recently referred to this as the “LCoE race”, with a goal to get to “3 cent wind”, a proxy for parity to the lowest levelized cost of energy. LCoE is a gauge for assessing cost of power investments, which has been falling constantly for clean power, making conventional generation investments uneconomic, according to GE Project Finance MD Jan Henrik Rufer, quoted by Bloomberg at G20 Day in Berlin. They have high visibility to achieving this lower LCoE in Wind, likely by the end of the decade, driven by improvement in technology for blades, towers, electrical, power conversion, controls, and services, including digital technologies.

Figure 99: Cost of Renewables Without Subsidies Near Parity With Fossil Fuel



Source: Company reports

Figure 100: Technology to Enhance Competitiveness of Wind Power



Source: Company reports

But even here, aside from having no exposure to the fastest growth market (solar), there are challenges on the margin front with persistent pricing pressure and project installations in tough markets. Indeed, despite ~\$600mm in cost out from 2015-2017, GE Renewables margins are expected to stay flat at ~7% for the segment, with a goal to hit 10% by 2020 (compares to 20+% for GE Power standalone segment). Pricing in this market is tough, and getting tougher. To quote the head of GE’s onshore wind business Peter McCabe:

*“The tariffs are shifting to auctions and tenders. And so that’s price pressure out there. So yesterday and today, you would bid in Europe with a feed-in tariff and that basically is a kicker for renewables. Today what we’re seeing in India, what we’re just seeing in Germany, is they’re going to auctions and an auction is our customers bid in at a certain rate for a kilowatt hour and they’re competing against wind, against fossil fuel, against solar. **And that’s great for Renewables business, but it drives continuing price pressures out there.**”*

*“And on the other side of it, to keep margins healthy where you got a declining price market is – we took \$600 million of cost down between 2015 and 2017 and we’re running at a 5% clip, actually a little bit north of that clip, and I’d expect that to continue, **it’s just a way of life in this business.**”*

Summary Renewables model: We continue to see a flat GW market from 2016 levels for the Renewables market, but with continued equipment pricing pressure offset somewhat by solid growth in services driven by repowering opportunities. Overall, we see ~5% organic CAGR from 2017-2020 with profit CAGR of ~10% driven by ALO synergies and an increase in service revenue mix.

Table 96: GE Renewables Revenue Model Reasonable Scenario

\$ billion	2015	2016	2017E	2018E	2019E	2020E	2017-2020 CAGR
Absolute Revenue (including Acq/Div)							
Equipment Revenue	5.8	8.2	10.3	11.1	11.1	11.0	2%
Service Revenue	0.5	0.9	1.0	1.3	1.6	2.0	25%
Total	6.3	9.0	11.3	12.3	12.7	13.0	5%
Y/Y (including Acq/Div)							
Equipment Revenue		41%	26%	7%	1%	-1%	
Service Revenue		78%	20%	25%	25%	25%	
Total		44%	25%	9%	3%	2%	
<i>Total Organic</i>		29%	8%	5%	3%	2%	
Profit/Margins (including Acq/Div)							
Legacy Renewables Profits	0.5	0.5	0.6	0.7	0.8	0.9	11%
Alstom Profit	(0.1)	0.0	0.2	0.2	0.3	0.3	12%
Total Renewables Profits	0.4	0.6	0.8	1.0	1.1	1.2	11%
Total Renewables Profits Margin	6.9%	6.4%	7.5%	8.0%	8.5%	9.0%	

Source: J.P. Morgan Estimates. Company Reports

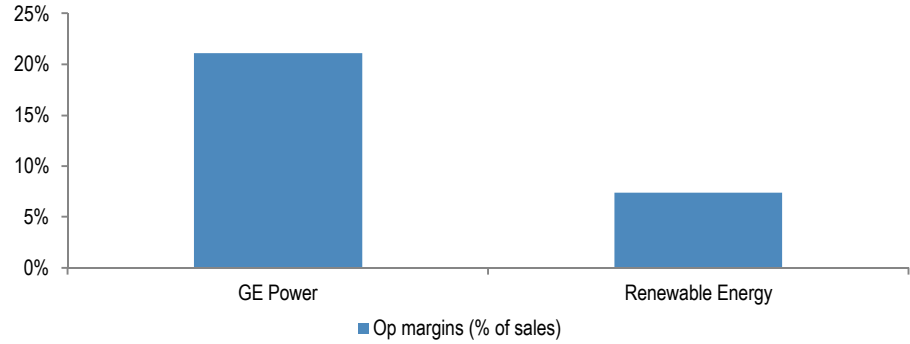
Table 97: Renewables Profit Bridge

\$ billion			
	Revenue	Profit	Incremental Margin
Start	11.3	0.8	8%
Equipment Revenue	0.2	(0.3)	
<i>Equipment Volume</i>	0.7	0.1	20%
<i>Equipment Price</i>	(0.5)	(0.5)	
LM wind	0.5	0.1	20%
Service Revenue	1.0	0.3	25%
Core Productivity		0.3	

Source: J.P. Morgan estimates.

Contrary to the traditional fossil power business, the services component of wind is much less of a factor, at just 10% of sales. This means less of a buffer in tougher times, and less potential for higher margins over time (the 10% margin target in 2020 assumes services mix rises to 20% of sales by that time). Bottom line, a move from conventional power gen to alternative energy sources is net negative for GE.

Figure 101: Growth in Renewables at Expense of Power Is Margin Dilutive



Source: Company reports, and J.P. Morgan estimates

Table 98: GE Renewables vs GE Power Combines CAGR Is Still Negative

\$ billion	2015	2016	2017E	2018E	2019E	2020E	2017-2020 CAGR
GE Power Profit (JPMe)	4.5	5.0	5.4	5.3	5.1	5.0	-3%
GE Renewables Profit (JPMe)	<u>0.4</u>	<u>0.6</u>	<u>0.8</u>	<u>1.0</u>	<u>1.1</u>	<u>1.2</u>	<u>11%</u>
Total	4.9	5.6	6.3	6.3	6.2	6.1	-1%

Source: J.P. Morgan Estimates, Company Reports

Oil/Gas: Near-term Estimates Have Downside Risk with Long-term Trajectory Likely to Be Structurally Below Prior Peaks

GE's Oil & Gas business and its combination with BHI provides the company with a full scale product portfolio, but is suited more for large scale projects where there will be higher value realized for both customers and GE. With WTI hovering at \$45/bl and no certainty in sight on the forward curve, we don't see the likelihood of large scale infrastructure investments in the near to medium-term, particularly in areas of GE specific strength like LNG and Deepwater. Digital, Downstream and US onshore are solid near-term levers, but not enough to move the needle and with US onshore likely close to peaking, remaining growth areas are not enough to bring back the business even close to prior cycle levels. With 2H16 expectations already coming in well short of mid'16 expectations, there remains substantial downside risk to EBITDA targets of the combined co, and GE Oil & Gas in particular with 1Q17 already starting well below, and seasonality pointing to ~20% downside to our own below consensus standing estimates for 2017. Our 2018 EBITDA estimate is ~\$3.9B, ~25% below standing guidance of ~\$5.2B and our 2020E of \$5.2B is well below the \$8B initial GE/BHI deal target and ~70% vs the prior peak (after adjusting for pressure pumping divestiture at BHI).

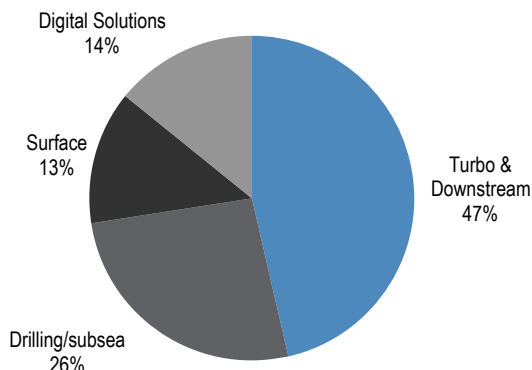
Table 99: GE-BHI Proforma Model

\$million							
	2014	2015	2016	2017E	2018E	2019E	2020E
Existing Baker Hughes	24,551	15,742	9,841	9,710	11,282	11,696	12,039
GE Oil & Gas	19,085	16,450	12,898	12,283	12,124	12,245	12,609
Total Revenue	43,636	32,192	22,739	21,992	23,407	23,941	24,648
Segment Profit							
Existing Baker Hughes	3,015	73	(673)	405	1,105	1,455	1,519
GE Oil & Gas	2,758	2,427	1,464	1,179	1,128	1,169	1,299
Cost Synergies				0	600	750	1,000
Restructuring Costs				(550)	(350)	(50)	0
Incremental Amortization				(100)	(200)	(200)	(200)
Operating Profit	5,773	2,500	791	934	2,283	3,124	3,617
<i>Operating Profit Margin</i>	<i>13.2%</i>	<i>7.8%</i>	<i>3.5%</i>	<i>4.2%</i>	<i>9.8%</i>	<i>13.0%</i>	<i>14.7%</i>
D&A	(2,399)	(2,338)	(1,695)	(1,504)	(1,636)	(1,636)	(1,636)
EBITDA	8,172	4,838	2,486	2,438	3,918	4,760	5,253
<i>EBITDA Margin</i>	<i>18.7%</i>	<i>15.0%</i>	<i>10.9%</i>	<i>11.1%</i>	<i>16.7%</i>	<i>19.9%</i>	<i>21.3%</i>
GE/BHI Target					\$5,200		\$8,000

Source: Company Reports, J.P. Morgan Estimates

For our 2020 modeling purposes, we use our own estimates of GE's oil & gas segments but use our internal JPM oil services team's assumptions for BHI. We also make our own assumptions for revenue and cost synergies. Below we walk through a few of the key macro drivers that impact GE's oil & gas business, particularly the LNG and Deepwater areas, both of which currently represent >50% of GE Oil & Gas revenues, and then subsequently detail our revenue model.

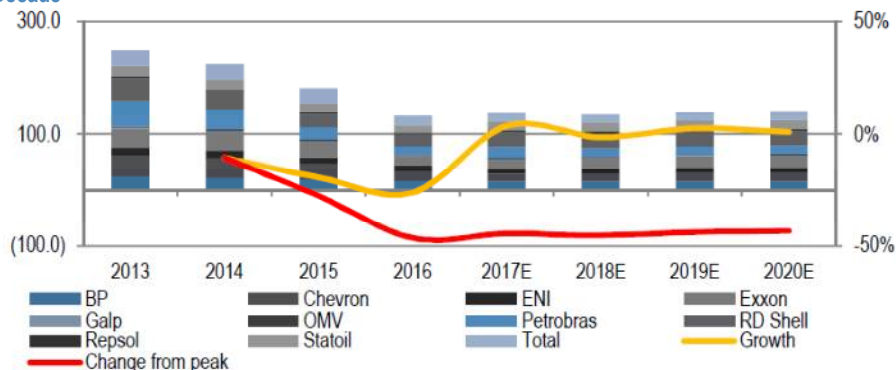
Figure 102: GE Oil & Gas Revenue Mix



Source: Company reports and J.P. Morgan estimates.

2017 IOC capex guidance suggests spending to remain ~50% below last cycle peak: The standing capex plans for IOCs and NOCs include spending on downstream, onshore upstream, etc – but provide some foresight into the growth trajectory for the sector. We see that total capex for the group has fallen 49% from the 2013 peak, and although we forecast a slight recovery in 2017 (+3% YOY), to the end of the decade cumulative corporate capex guidance is essentially flat.

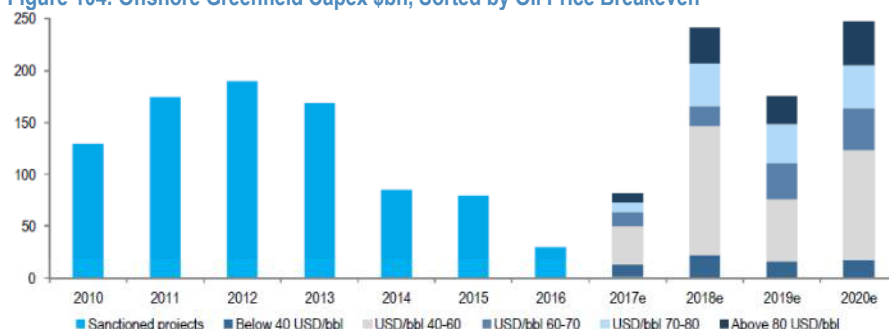
Figure 103: IOC Long-Term Capex Outlook: Overall Spending >40% Below Peak to the End of the Decade



Source: Bloomberg, Company Reports, J.P. Morgan Estimates

Our JPM Oil services macro outlook and view of the operator landscape concludes that the volume of work likely to be approved will remain low until the cost curve supports additional investment. Until then, only the most robust are likely to work. As illustrated below, oil in the lower end of our forecast range could see offshore greenfield capex at or below the depressed levels seen though 2014-2016, and it is only north of \$60/bbl where offshore capex could return to prior cycle levels.

Figure 104: Offshore Greenfield Capex \$bn, Sorted by Oil Price Breakeven



Source: Subsea7 annual report 2016

For many years, exploration spending was 18-19% of upstream capex, including during the 2008/09 general industry downturn. However in 2014, the share of exploration began to wane. On our JPM Europe Oil services team estimates, overall share of exploration has fallen to ~14%, which marks a low point, and potentially a nadir. The extreme day rate contractions seen in the Seismic and Drilling sub-sectors suggest that there is no greater incentive to explore. This recent low level of spending however does not augur well for future offshore development work (2020+); as fewer oil & gas fields are discovered, this translates into fewer developments.

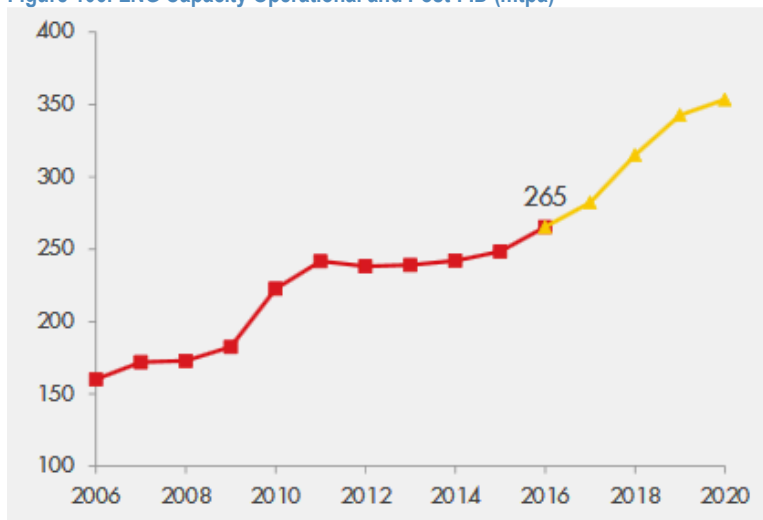
Figure 105: Global Exploration Spending as a % of E&P Spending



Source: Company Reports, J.P. Morgan Estimates

Post-FID projects to provide around one-third of new capacity requirements: LNG capacity already operational or under construction is expected to meet demand growth through the early 2020s. Current project backlog represents decent runway for GE Turbomachinery revenues, but continued growth and uptick is dependent on new orders, for which the outlook looks weak.

Figure 106: LNG Capacity Operational and Post-FID (mtpa)



Source: Royal Dutch Shell company presentation.

Figure 107: LNG Supply / Demand Balance

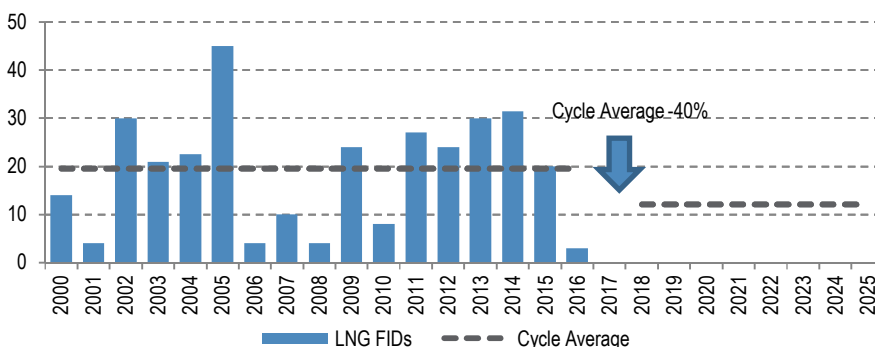


Source: Berkeley Research. *Note: conversion between Bcm/year and Mtpa ~0.75x

Forecast supply deficit in 2025 suggests need for long-lead equipment orders by 2019-2020, though next cycle likely to return to ~60% v. prior cycle run-rate:

Considering the ~4-6 year lead time from project FEED to coming online, demand for GE’s critical LNG compression and turbine equipment is likely to bottom ~2019-2020. Compared to 2005-2014 peak orders cycle, we believe the next LNG capital cycle should be able to pare back to only ~60% of prior boom cycle run-rate based on the capacity requirements.

Figure 108: LNG Capacity Addition FIDs (mtpa) and Cycle Average



Source: Royal Dutch Shell company presentation, Wood Mackenzie, J.P. Morgan estimates.

GE Oil & Gas near-term estimates behind numbers initially contemplated as part of deal structure. It's not news that 2016 was a tough year for GE Oil & Gas, though the S-4 filings released earlier this year showed 2H16 was much weaker than expected by GE internally, with reported EBITDA of \$1.9B for the full year vs the \$2.2B they had predicted as of late-September, meaning that 3Q/4Q combined came in >25% below their expectations (13% for the full year), with sales ~20% below (~10% for the full year). Note that this is compared to the numbers as reported by GE. We expect another step down for this business from ~\$1.9B in 2016 to ~\$1.7B in 2017 ex-restructuring, and our 2018 estimate assumes a modest bounce back to ~\$1.8B, well below the ~\$2.4B guided to as part of the deal.

Table 100: GE/BHI Sales: Internal and External Forecasts vs Actual Results and JPMe

In millions

	2014 peak	2015	2016	2017E	2018E	2019E	2020E
Sales							
Initial forecasts for GE O&G (internal only)	19,085	16,450	14,500	13,500	15,100	17,300	18,200
Forecasts for GE O&G provided externally							
GE reported / standing JPMe	19,085	16,450	12,898		11,824		
Difference vs most recent forecast	n/a	n/a	-11%		-22%		
GE O&G, all-in, as per S-4	19,191	16,688	13,269				
Difference vs most recent forecast	1%	1%	-8%				
Initial forecasts for BHI (internal only)	24,551	15,742	9,900	10,300	12,100	14,100	15,100
Forecasts for BHI provided externally							
BHI reported / standing JPMe	24,551	15,742	9,841		11,980		
Difference	n/a	n/a	-1%				
Initial forecasts for GE+BHI (internal only)	43,636	32,192	24,400	23,800	27,200	31,400	33,000
Forecasts for GE+BHI provided externally					28,000		34,000
GE+BHI reported / standing JPMe	43,636	32,192	22,739		23,904		
Difference vs most recent forecast	n/a	n/a	-7%		-15%		
GE+BHI, with GE adjustments, as per S-4	43,742	32,430	23,110				
Difference vs most recent forecast	0%	1%	-5%				
Expected Synergies							
Cost synergies			0	300	600	1,000	1,200
Rev synergies					100		400

Source: Company reports, and J.P. Morgan estimates

Table 101: GE/BHI EBITDA: Internal and External Forecasts vs Actual Results and JPMe

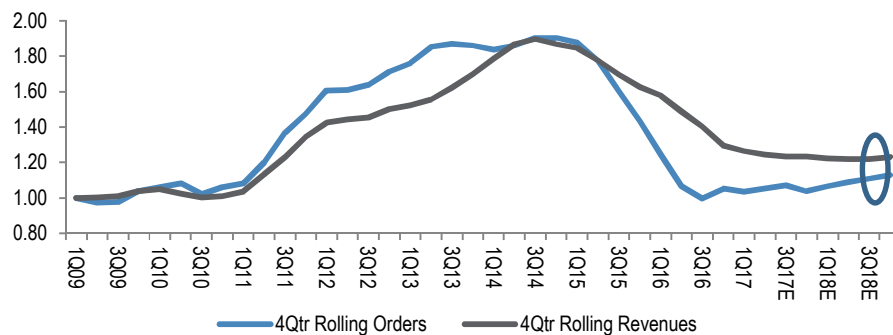
In millions

	2014 peak	2015	2016	2017E	2018E	2019E	2020E		
EBITDA									vs prior peak
Initial forecasts for GE O&G (internal only)	3,343	3,023	2,200	2,000	2,600	3,000	3,300		-1%
Forecasts for GE O&G provided externally					2,400		3,323		-1%
GE reported / standing JPMe	3,343	3,023	1,921		1,836				
Difference vs most recent forecast	n/a	n/a	-13%		-23%				
GE O&G, all-in, as per S-4	3,095	2,652	1,412						
Difference vs most recent forecast	-7%	-12%	-36%						
Initial forecasts for BHI (internal only)	4,829	1,815	500	1,700	2,500	3,300	3,600	vs prior peak	ex-PP
Forecasts for BHI provided externally					2,400		2,897	-25%	-15%
BHI reported / standing JPMe	4,829	1,815	493		2,316			-40%	-31%
Difference	n/a	n/a	-1%						
Initial forecasts for GE+BHI (internal only)	8,172	4,838	2,700	4,000	5,600	7,100	8,100	vs prior peak	ex-PP
Forecasts for GE+BHI provided externally					5,150		7,820	-4%	9%
GE+BHI reported / standing JPMe	8,172	4,838	2,414		4,444				
Difference vs most recent forecast	n/a	n/a	-11%		-14%				
GE+BHI, with GE adjustments, as per S-4	7,924	4,467	1,905						
Difference vs most recent forecast	-3%	-8%	-29%						
Expected Synergies									
Cost synergies			0	300	600	1,000	1,200		
Rev synergies					100		400		

Source: Company reports, and J.P. Morgan estimates

2017 starts weak: B2B here remains <1 with 4-qtr rolling B2B in 1Q17 of 0.87x. Looking at the order profile through 2015, 2016 and 2017 YTD, despite order growth turning positive in 1Q17 on easy comps, we continue to see potential for ~10% further downside to our 2018 estimates if orders were to recouple with revenues.

Figure 109: 4Qtr Rolling Indexed JPMe Oil/Gas Revenues vs Orders in Slight Order Growth Environment Through 2018



Source: Company reports and J.P. Morgan estimates.

Our GE Oil & Gas model: Net-net, based on the macro moving parts discussed above, we see continued ~5% organic decline in 2017 before stabilizing in 2018 at a low level, though we note that, based on LTM orders in 2016, this would need a sustained acceleration in order growth through 2017 and 2018.

Table 102: Oil & Gas Sub-segment Revenue Model

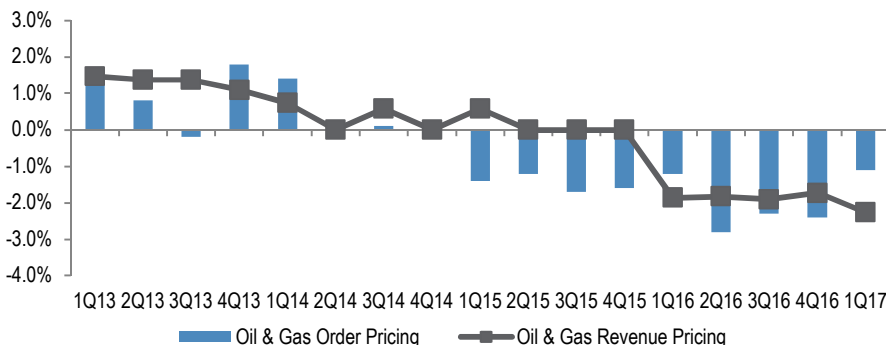
	2015	2016	2017E	2018E	2019E	2020E	LTM Orders (2016)
Turbomachinery	7,647	6,540	6,052	6,052	6,052	6,204	5,837
Equipment	3,882	2,931	2,638	2,638	2,638	2,704	
Services	3,765	3,610	3,415	3,415	3,415	3,500	
Subsea Systems & Drilling	4,304	2,919	2,313	1,962	1,962	2,046	1,591
Equipment	3,031	2,091	1,569	1,255	1,255	1,318	
Services	1,273	827	745	707	707	729	
Surface	2,192	1,370	1,634	1,634	1,683	1,733	1,483
Equipment	1,411	847	1,058	1,058	1,090	1,123	
Services	781	523	576	576	593	611	
Digital Solutions	2,333	2,174	2,283	2,352	2,422	2,495	2,148
Services	2,333	2,174	2,283	2,352	2,422	2,495	
Elims	(26)	(105)					
Subtotal - Oil & Gas (current reporting structure)	16,450	12,898	12,283	12,000	12,120	12,478	11,061
Equipment	8,324	5,869	5,264	4,523	4,735	5,056	3,661
Services	8,126	7,030	7,018	7,049	7,137	7,334	7,399
Y/Y growth							
Turbomachinery		-14%	-7%	0%	0%	2%	
Equipment		-25%	-10%	0%	0%	3%	
Services		-4%	-5%	0%	0%	3%	
Subsea Systems & Drilling		-32%	-21%	-15%	0%	4%	
Equipment		-31%	-25%	-20%	0%	5%	
Services		-35%	-10%	-5%	0%	3%	
Surface		-38%	19%	0%	3%	3%	
Equipment		-40%	25%	0%	3%	3%	
Services		-33%	10%	0%	3%	3%	
Digital Solutions		-7%	5%	3%	3%	3%	
Services		-7%	5%	3%	3%	3%	
Subtotal - Oil & Gas		-22%	-5%	-2%	1%	3%	
Equipment		-29%	-10%	-14%	5%	7%	
Services		-13%	0%	0%	1%	3%	

Source: Company reports and J.P. Morgan estimates.

Even on the margin side, pricing remains weak here, down 1% y/y despite easy comps and based on commentary from offshore, longer-cycle equipment providers, there isn't expected to be a step change improvement here even if demand comes back.

Subsea7 CEO – Q1 17 results conference call. “At the same time, regarding the bidding strategy, we're talking about the gradual recovery of the market. That means that what we are still seeing today is the pressure on margin with a lot of competition in particular for the smaller jobs around the world. So I think in terms of improvement of margin, need to be a gradual trend, and there will be no step-change in the market, which is today quite competitive.”

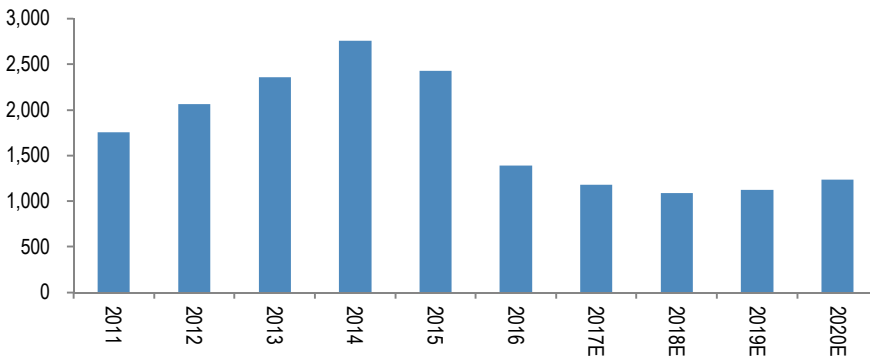
Figure 110: Y/Y Equipment Order and Revenue Pricing in Oil & Gas



Source: Company reports and J.P. Morgan estimates.

Net-net, we model profits down ~15% for GE Oil & Gas in 2017, before recovering in 2018 at a gradual pace, though we don't see the segment driving any upside to the overall GE growth profile and expect 2020 profits for the segment (ex-BHI synergies) to remain ~40% below prior peak levels.

Figure 111: GE Oil & Gas Profits

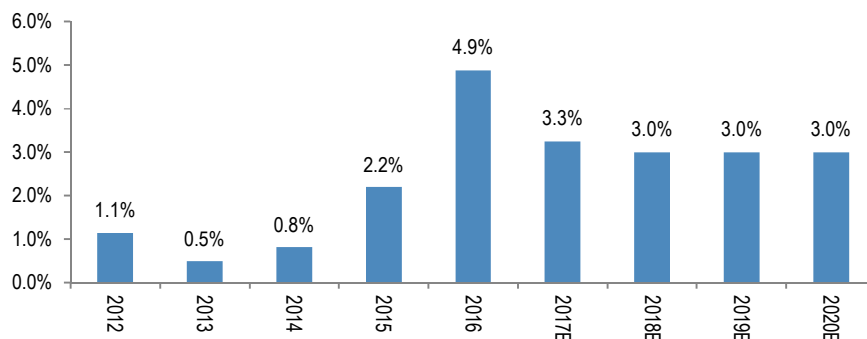


Source: Company reports and J.P. Morgan estimates.

Healthcare: Steady MSD/MSD+ Profit Growth in the Medium Term

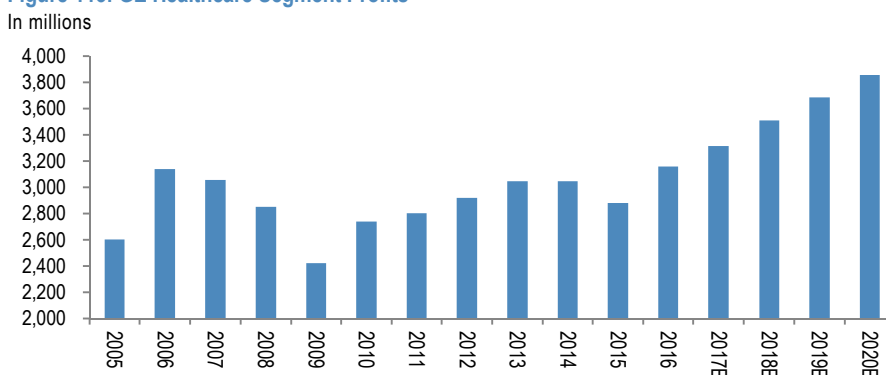
After a period of stagnation dating back a decade, performance has been solid over the last few quarters, with MSD organic revenue growth driven by HSD-DD growth in Life Sciences, which combined with cost reduction has driven better than expected margins. The key lever is Life Sciences, which we assume is growing at a 5% CAGR from 2017-2020. The Life Sciences division has been driving the segment top line in recent periods. Within this, it's primarily the \$1.5B bioprocess business that is "attractive" to us, growing revenues at a strong ~11% CAGR from 2007-2016 (~7% for Life Sciences overall). We note that this 11% growth has been aided by a few acquisitions over the years, with the organic rate more like ~7% (~5% for Life Sciences), still solid and reinforced by strong growth at peers like PLL Life Sciences, which is seeing double-digit growth in their bioprocess segment. The rest of the business, particularly diagnostics, is tied to imaging (management has said around half of the division is related to contrast agents and imaging enhancers, used in conjunction with its imaging equipment, essentially the old Amersham business). Against this backdrop, the company has given guidance for '17 that has it up again, with sales expected to grow at a LSD-MSD rate and profits up MSD-HSD. While price is an ongoing headwind of \$0.3B/yr, "restructuring and other" (cumulative ~\$3.5B in last 10 years, ~2% of sales) driven productivity has provided the offset, which along with volume/mix, remains key to future margin expansion. This financial profile should continue in the absence of an ACA related pause which we view as well within the realm of possibility (reinforced by incoming CEO John Flannery), a risk worth noting.

Figure 112: GE Healthcare Organic Growth



Source: Company reports and J.P. Morgan estimates.

Figure 113: GE Healthcare Segment Profits



Source: Company reports, and J.P. Morgan estimates.

Looking across the businesses, the core Healthcare Systems franchise that includes \$8B of revenue in diagnostic imaging (MRs, CTs, molecular imaging, and related services) and \$4B in mobile diagnostics (ultrasound, monitoring, clinical solutions) is expected to grow at LSD rate, with US weak due to ACA uncertainty. The Life Sciences division, meanwhile, which accounts for \$4B in revenue, has grown at a HSD-DD pace. We see similar trends continuing through the end of the decade with a higher growth rate in Life Sciences, given exposure to fast growing bio-pharma markets.

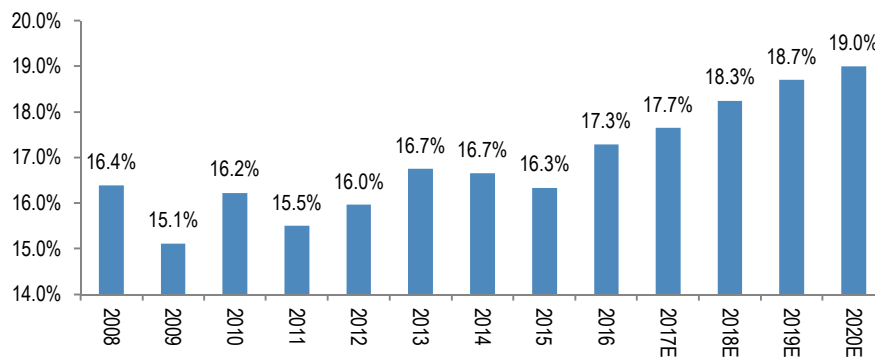
Table 103: Healthcare Sub-Segment Organic Revenue Growth Dynamics

	2016 Revs (JPMe)	% of sales	2017E Y/Y	2018E Y/Y	2019E Y/Y	2020E Y/Y
Healthcare system	12,839	70%	1%	3%	3%	3%
Life Sciences	4,361	24%	8%	5%	5%	5%
Digital	1,090	6%	5%	4%	4%	4%
Organic Growth	18,291		2.7%	3.3%	3.0%	3.0%

Source: Company reports

Moving to margins, management at recent conferences highlighted margin as the key priority over the next few years. Margins will be driven by product cost reduction, supply chain efficiencies and sourcing initiatives, as well as growth in Digital and Life Sciences revenue which is margin accretive. They put out a ‘+’ y/y margin target for 2017, off of the 17.3% base in 2016.

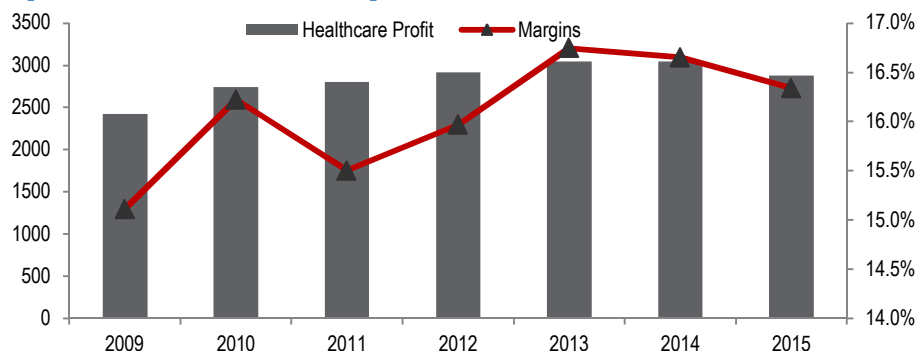
Figure 114: GE Healthcare Margin Trajectory



Source: Company reports and J.P. Morgan estimates.

This said, margin improvement has been challenging over the long run despite initiatives in the past to reduce product cost (2008-2014 margin expansion was flat on a cumulative basis). As per GE’s 2014 Services meeting, 95% of revenue went through target ERPs as of 2014 vs ~75% in 2009, with inventory turns up to ~7x from 6x, shipment on time to 85% vs 58% prior, all of which on a net basis resulted in ~\$1B in savings over the 2009-2014 period. However, profit growth over that period was just ~\$600mm on ~\$2.2B in revenue growth (~3% revenue CAGR), roughly 30% incremental margins. This means a structurally challenging marketplace ate into the savings from these initiatives and restructuring actions (~\$2B in cumulative spend over that period). Life Sciences business has grown margins along with their revenue base over the last decade with 20%+ margin currently, implying the legacy imaging side of the business likely saw margin declines during that period.

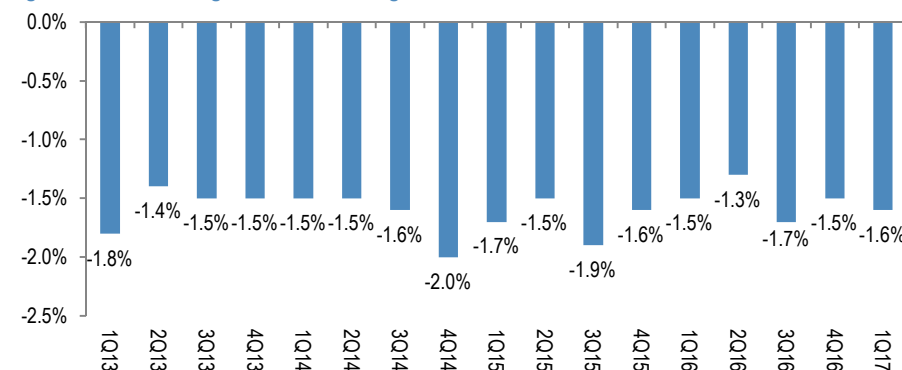
Figure 115: Healthcare Profits and Margins



Source: Company reports and J.P. Morgan estimates.

Going forward, improving volume growth (last 5 years organic growth was flat to up LSD) and increasing mix of high margin Life Sciences should help drive margin expansion. But this will continue to get offset by pricing pressure, which shows no signs of abating (1Q17 saw ~\$100mm in pricing pressure compared to the annual ~\$300mm last year), though management is making an effort to drive more service contracts and solutions sales to limit the core price pressure.

Figure 116: GE HC Segment Order Pricing



Source: Company reports and J.P. Morgan estimates.

With an estimated ~17.5-18.0% margin this year, the business is not that different from peers, suggesting that it is probably near its entitlement. This means margin improvement probably comes from volume leverage, mix, and continued execution on productivity initiatives. The bottom line is we see potential for improvement in margin, but this will require a combination of end market cooperation and continued restructuring (again, not included in segment ops).

Table 104: Healthcare Peer Segment Margins

Latest FY Actual	
Company	Segment Margin
Hologic	34%
Siemens Healthcare	17%
Philips Healthcare	8%
Becton, Dickinson and Co	22%
<u>Boston Scientific</u>	<u>18%</u>
Average	19%
GE	17.5-18%

Source: Company Reports/Filings.

Aviation: Likely Pause Near-term Before Resuming Growth in 2019-2020

Aviation has been the key growth driver for GE this cycle, which at ~35% of GE's segment profit has contributed to ~80% of the profit growth this cycle.

Table 105: Aviation Profit Growth as % of Total Segment Profit Growth

Aviation Profit Growth (2010-2017E)	3,097
GE Industrial Segment Profit Growth (2010-2017E)	3,814
% Contribution	81%

Source: Company reports and J.P. Morgan estimates.

Moving ahead, on commercial revenues, we see steady core growth vs 2017 levels of LSD-MSD driven by solid growth in commercial services of MSD/MSD+ offset by flattish to slight declines in equipment. On new product transitions the LEAP ramp is on track, and there are more CFM 56s being delivered than expected. At the Paris Airshow last month, GE reaffirmed targets for 2,200+ LEAPs in 2020 (450-500 in 2017, 1150 in 2018, 1900 in 2019), with CFM 56s peaking out in 2016. On services, GE saw 4600 shop visits in 2016 and expects 5% growth to 5600 in 2020. We present our summary commercial OE and service model below.

Table 106: Commercial OE Illustrative Model

y/y growth

GE Engines	2016	2017E	2018E	2019E	2020E
GE Engines	-3%	-12%	-15%	-12%	-11%
GE90	-1%	-18%	-25%	-8%	-9%
GE9x	1%	-10%	1%	-6%	-7%
Other	-14%	-4%	-25%	-34%	-31%
CFM/LEAP	19%	20%	12%	15%	3%
CFM	12%	-11%	-44%	-77%	NM
LEAP		NM	142%	64%	11%
EA	-5%	-23%	-47%	-29%	0%
Commercial OE Revenue Growth	4%	0%	-3%	2%	-2%

Source: J.P. Morgan Estimates

Table 107: Commercial Service Illustrative Model

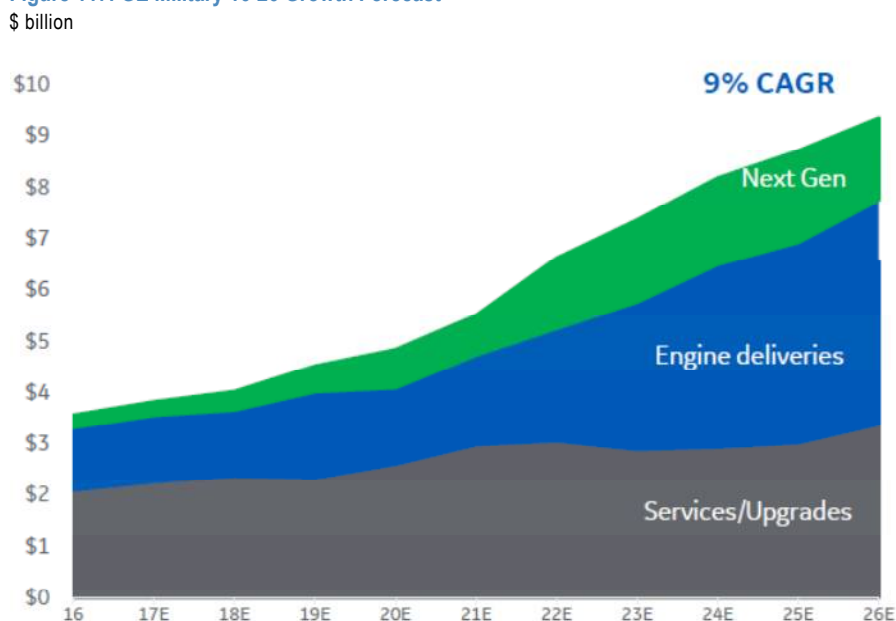
\$ million

	2016	2017E	2018E	2019E	2020E
CFM56 - 1st gen (-2/-3/-5A/-5C) - shop visits	666	533	426	341	273
<u>CFM56 - 2nd gen (-5B/-7B) - shop visits</u>	<u>2061</u>	<u>2143</u>	<u>2272</u>	<u>2408</u>	<u>2576</u>
CFM56 - total shop visits	2,727	2,676	2,698	2,749	2,849
y/y change in shop visits	-0.7%	-1.9%	0.8%	1.9%	3.6%
CFM56 - 1st gen - avg value of shop visit	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5
<u>CFM56 - 2nd gen - avg value of shop visit</u>	<u>\$2.9</u>	<u>\$3.0</u>	<u>\$3.1</u>	<u>\$3.2</u>	<u>\$3.3</u>
CFM56 - all engines - avg value of shop visit	\$2.3	\$2.5	\$2.7	\$2.9	\$3.0
% change in value of avg shop visit	6.4%	8.3%	7.3%	6.4%	5.8%
CFM56 - 1st gen - total aftermarket sales	\$333	\$240	\$192	\$153	\$123
CFM56 - 2nd gen - total aftermarket sales	\$5,973	\$6,460	\$7,053	\$7,701	\$8,487
CFM56 - all engines - total aftermarket sales	\$6,306	\$6,700	\$7,245	\$7,854	\$8,610
<u>CFM/LEAP (of which 50% GE)</u>	<u>3,153</u>	<u>3,350</u>	<u>3,623</u>	<u>3,927</u>	<u>4,305</u>
Other Engine Services (5% growth)	8,247	8,659	9,049	9,411	9,787
Total Services	11,400	12,009	12,672	13,338	14,092
Growth	14.0%	5.3%	5.5%	5.3%	5.7%

Source: J.P. Morgan Estimates

On the Military front, orders have been lumpy in recent quarters, and GE believes it is at an inflection in this \$3.5 B business, and after slower growth in the next few years, it sees a 9% CAGR through 2026. Key drivers are international and domestic budgets. For 2017 GE expects deliveries of 640 units versus 571 in 2015, despite a material decline in 1Q and a B2B well below 1.

Figure 117: GE Military 16-26 Growth Forecast



Source: Company reports. Used with Permission

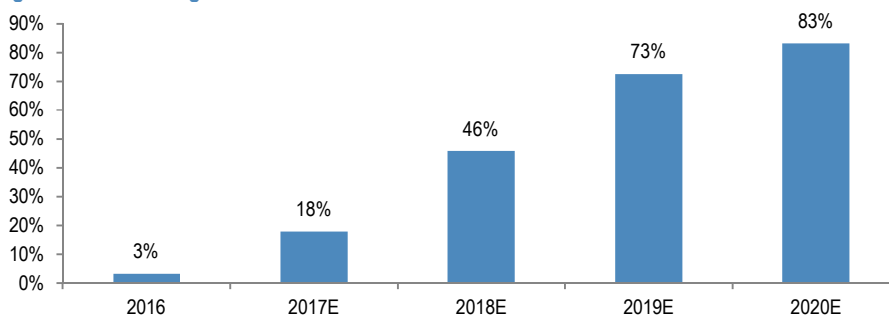
Table 108: Aviation Sub-segment Revenue Growth Dynamics

	% of sales	2017E Y/Y	2018E Y/Y	2019E Y/Y	2020E Y/Y
Commercial Services	42%	5%	6%	5%	6%
Comm'l OE	32%	0%	-3%	2%	-2%
Systems	13%	2%	2%	2%	2%
Military Engine	5%	3%	3%	3%	3%
Military Services	8%	3%	3%	3%	3%
Overall		3%	2%	4%	3%

Source: Company reports

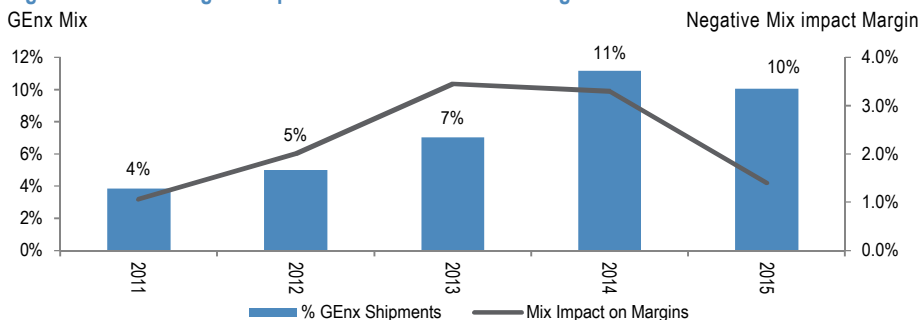
Moving to profits, to start, equipment order pricing has remained solid in the ~1.5% range, supporting the margin bridge coupled with benefits from renegotiation of service contracts to higher prices (LTSA contractual adjustments and related gains). Going forward, services growth above the segment average growth rate should aid margin mix, though the segment has visible pressure from an equipment margin perspective. We see high likelihood of negative commercial OE margins in 2017, driven by the LEAP ramp. For perspective, we show Aviation margins during the GENx ramp had a similar negative mix impact.

Figure 118: LEAP Engine Mix



Source: Company reports and J.P. Morgan estimates.

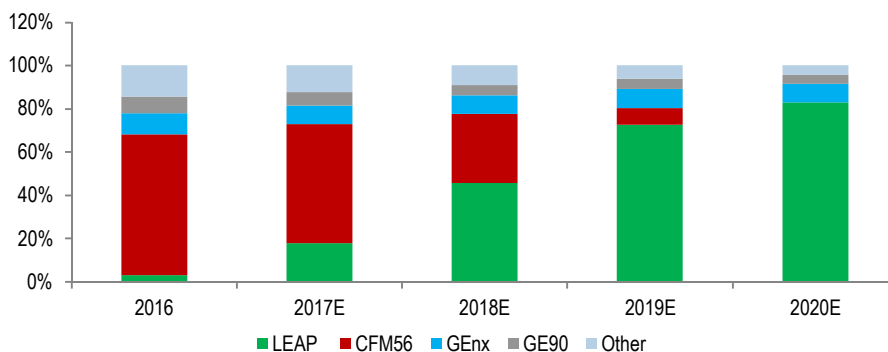
Figure 119: GENx Engine Shipment Mix vs GE Aviation Margin



Source: Company Reports, J.P. Morgan Estimates. Mix impact calculated from 10-Ks filings commentary

From 2017 and 2018 onwards, OE mix headwinds should start hitting harder as the LEAP ramps and CFM 56 engines, which are making money, roll off, both of which get somewhat offset by improving margins at GENx and continued growth in services, albeit at a slightly lower rate than recent years.

Figure 120: GE Engine Shipment Mix



Source: Company reports and J.P. Morgan estimates.

We incorporate the above mix dynamics to build out an illustrative Aviation profit model, which assumes losses on OE engines in the initial few years of shipments. We also show the impact of LTSA gains, which we assume grow with the pace of CFM shop visits, as well as the mix benefits of higher service vs OE revenue growth overall. Net-net, we see some near-term pressure due to strong OE ramp, but see a resumption of growth from 2019 onwards.

Table 109: GE Commercial Aviation Profit Model (Illustrative)

\$ million	2016	2017E	2018E	2019E	2020E
OE Profit					
CFM	288	255	143	33	0
GenX	(260)	(105)	0	38	35
LEAP	(116)	(477)	(828)	(800)	(581)
Other Engines	297	255	189	156	132
Total OE Profit	210	(71)	(496)	(574)	(414)
Revenue					
CFM	2881	2551	1432	325	0
GenX	1794	1608	1622	1518	1415
LEAP	173	1100	2662	4363	4842
Other Engines	2974	2551	1892	1555	1319
Total OE Revenue	7822	7810	7608	7761	7575
Margin					
CFM	10%	10%	10%	10%	10%
GenX (profit per engine)	(1.0)	(0.5)	0%	3%	3%
LEAP (profit per engine)	(3.0)	(2.0)	(1.4)	(0.8)	(0.5)
Other	10%	10%	10%	10%	10%
Operating Profit Commercial OE	210	(71)	(496)	(574)	(414)
Commercial Services Profit					
LTSA Gains	800	866	929	929	929
Ex-LTSA Gains	4,387	4,749	5,069	5,402	5,707
Operating Profit Comm Services	5,187	5,615	5,998	6,331	6,636

Source: Company reports and J.P. Morgan estimates.

Table 110: GE Commercial Aviation Profit Model (Illustrative)

\$ billions	2016	2017E	2018E	2019E	2020E
Revenues					
Comm'l OE	7.8	7.8	7.6	7.8	7.6
Comm' Services	11.4	12.0	12.7	13.3	14.1
Military Services	2.1	2.1	2.2	2.3	2.3
Military Equipment	1.4	1.4	1.5	1.5	1.6
<u>Other (Systems)</u>	<u>3.6</u>	<u>3.6</u>	<u>3.7</u>	<u>3.8</u>	<u>3.9</u>
Total Aviation Revenue	26.3	27.0	27.7	28.7	29.4
Y/Y Organic (Ex-Additive)	6.5%	2.9%	2.4%	3.6%	2.6%
Profits					
Comm'l OE	0.2	(0.1)	(0.5)	(0.6)	(0.4)
Comm' Services	5.2	5.6	6.0	6.3	6.6
<u>Other (Military, Systems)</u>	<u>0.7</u>	<u>0.7</u>	<u>0.8</u>	<u>0.8</u>	<u>0.8</u>
Total Aviation Profits	6.1	6.3	6.3	6.6	7.1
Y/Y Organic (Ex-Additive)	11%	3%	0%	5%	8%
Aviation Profit Margin	23.3%	23.3%	22.7%	22.9%	24.0%

Source: Company reports and J.P. Morgan estimates.

Transportation: Lean Years Through 2019

Management has already guided to significant revenue and profit declines for this segment in 2017 with loco shipments expected to be down ~50% y/y. We update our backlog/shipment analysis below by first starting with the expected order profile over the next few years. We start with our initial assumption of GE's Tier 4 locomotive orders and Tier 4 shipments through 2015 and resultant backlog. Next, based on 2016 orders and shipments profile, we arrive at the 2016 ending backlog (laid out below).

Table 111: 2015 Loco Shipments

Total Tier 4 Locomotive Orders	1635
Tier 4 Shipments So far	756
Tier 4 Backlog (similar to overall GE locos)	1029
4Q orders (JPMe, including 1000 India order)	1,113
4Q15 shipments (JPMe)	320
2015 Shipments	985
2015 shipments y/y	24%

Source: Company reports and J.P. Morgan estimates.

Table 112: 2016 Loco Shipments

2015 Ending Backlog	1,822
2015 Ending Backlog ex-India	822
2016 Shipments from 2015 backlog	673
2016 Loco Orders	25
2016 Orders converted to 2016 deliveries	23
2016 shipments implied	745
2016 shipments y/y	-25%

Source: Company reports and J.P. Morgan estimates.

Assuming shipments for the India projects start this year, coupled with our own assumption for 2017 orders (negligible orders from NA), we arrive at a loco shipment decline estimate of ~55% in 2017, close to management's guidance of down ~50% y/y. From here on, we assume ~5% order growth every year and making an assumption on book and ship within a year as well as shipments from prior year backlog (both assumed at ~75% based on historical trends), we calculate an additional ~15% decline in shipments in 2018, followed by LSD declines in 2019, before growing at a LSD rate in 2020.

Table 113: 2016 Loco Shipments

2016 Ending Backlog	1152	% off backlog
2016 backlog converted to 2017 shipments	214	
2017 Orders	150	% book and ship
2017 orders converted to 2017 shipments	113	75%
2017 shipments implied (including 100 from India)	326	
2017 y/y	-56%	

Source: Company reports and J.P. Morgan estimates.

Table 114: 2017 Loco Shipments

2017 Ending Backlog	975	% off backlog
2017 backlog converted to 2018 shipments (inc 100 from India)	157	
2018 Orders	158	% book and ship
2017 orders converted to 2018 shipments	118	75%
2018 shipments implied (including 100 from India)	275	
2018 y/y	-16%	

Source: Company reports and J.P. Morgan estimates.

Table 115: 2016 Loco Shipments

2018 Ending Backlog	858	% off backlog
2018 Ending Backlog (ex-India Order)	58	
2018 backlog converted to 2019 shipments (inc 100 from India)	144	
2019 Orders	165	% book and ship
2018 orders converted to 2019 shipments	124	75%
2019 shipments implied (including 100 from India)	268	
2019 y/y	-3%	

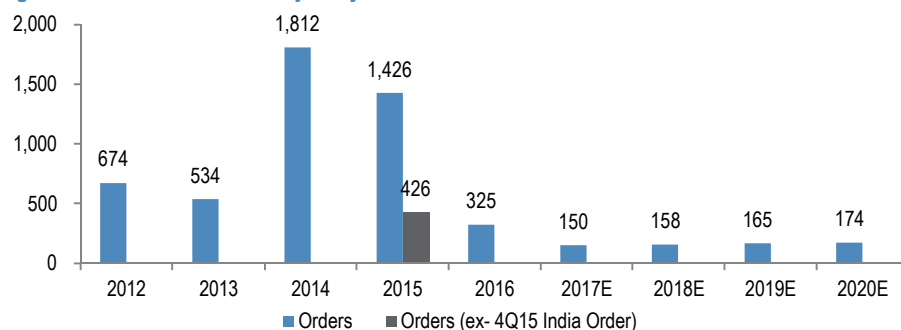
Source: Company reports and J.P. Morgan estimates.

Table 116: 2017 Loco Shipments

2019 Ending Backlog	756	% off backlog
2019 Ending Backlog (ex-India Order)	56	
2019 backlog converted to 2020 shipments (inc 100 from India)	142	
2020 Orders	174	% book and ship
2019 orders converted to 2020 shipments	130	75%
2020 shipments implied (including 100 from India)	272	
2020 y/y	2%	

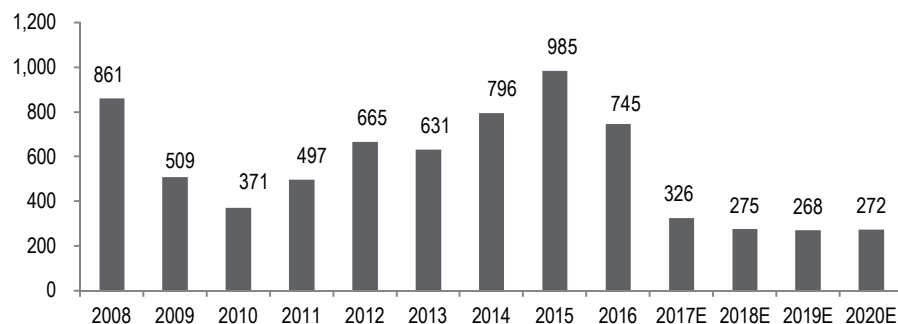
Source: Company reports and J.P. Morgan estimates.

Figure 121: GE Loco Orders Trajectory



Source: J.P. Morgan estimates, Company data.

Figure 122: GE Loco Deliveries



Source: Company reports and J.P. Morgan estimates.

On the services side, after severe declines in 2016, we see potential for further declines in 2017, albeit at a slower rate before flattening from 2018 onwards. We provide a quick summary of our bottom-up revenue assumptions in the table below. Finally in Mining, industry capex forecasts remain weak, and we see flattish growth here for the foreseeable future.

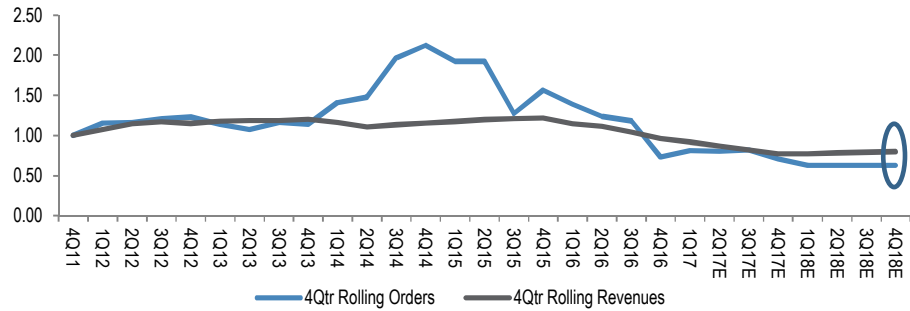
Table 117: Transportation Sub-segment Revenue Growth Dynamics

	% of sales	2017E Y/Y	2018E Y/Y	2019E Y/Y	2020E Y/Y
Loco Services	42%	-5%	0%	3%	3%
Locos Equipment	44%	-47%	-16%	-3%	2%
Mining	7%	0%	0%	5%	5%
Other	7%	3%	5%	5%	5%
Organic Growth		-23%	-4%	3%	3%

Source: Company reports

Looking at this another way, if orders were to stay flat vs our 2017 run-rate assumptions, our revenue estimates for 2018 which are already down materially vs 2017 would need to come down by ~15% before recoupling with orders. In other words, this segment could see material downside again in 2018 under that scenario.

Figure 123: 4Qtr Rolling Indexed JPMe Transportation Revenues in a Flat Order Environment through 2018



Source: Company reports and J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

General Electric Co. (Underweight; Price Target: \$22.00)

Investment Thesis

GE has transformed significantly, with major portfolio change on the GECS side, the largest deal in its history with Alstom, various financial frameworks, an activist, IOT emphasis, and the first year of stock outperformance in 2015 since 1999. Despite the upcoming CEO change, by the numbers, we see a core operating performance that is below plan, and, currently, a consensus expectations curve that we think remains too high, FCF that is the weakest in the sector, and, with that backdrop, a valuation that is expensive, with limited incremental catalysts to change the narrative. We stick to what the numbers say, which underpins our UW rating.

Valuation

Maintain UW; Cut Dec 2017 PT to \$22 from \$27. On our 2018 EPS estimate, GE shares now trade at ~18x, a ~5-10% discount to peers. Our Dec 2017 price target of \$22 is based on an average of our regular fundamental approach based (which shows ~\$24) on EPS as well as various SoTPs (which shows ~\$20). A \$22 PT would imply a ~20-25% discount (~15x) to our sector target multiple of 19x on our 2018 Industrial EPS estimate. For GE Cap we use a \$1 value based on ~\$10B in pro-forma tangible equity assumptions for left-over GE Capital (click [here](#) for our detailed calc on GE Capital valuation). Our group target multiple of 19x is at a ~5-10% premium to the standing S&P FY2 multiple, in line with its historical premium.

Risks to Rating and Price Target

Upside risks include: 1) significant improvement in FCF generation, 2) stronger-than-expected uptick in Digital revenues, which also helps profitability, 3) fundamentals in Oil & Gas recovering faster than expected, and 4) better-than-expected execution on product transition in Aviation.

General Electric Co.: Summary of Financials

Income Statement - Annual						Income Statement - Quarterly					
	FY15A	FY16A	FY17E	FY18E	FY19E	1Q17A	2Q17E	3Q17E	4Q17E		
Revenue	117,386	123,693	125,910	128,780	130,291	27,659A	29,557	-	-	Revenue	
COGS	-	-	-	-	-	-	-	-	-	COGS	
Gross profit										Gross profit	
SG&A	-	-	-	-	-	-	-	-	-	SG&A	
Adj. EBITDA	21,261	21,413	23,057	22,446	23,663	2,737A	3,281	-	-	Adj. EBITDA	
D&A	(2,473)	(2,597)	(2,715)	(2,962)	(2,912)	(589)A	(620)	-	-	D&A	
Adj. EBIT	14,524	15,264	16,304	15,375	16,866	2,148A	2,661	-	-	Adj. EBIT	
Net Interest	(1,706)	(2,026)	(2,364)	(2,425)	(2,425)	(564)A	(600)	-	-	Net Interest	
Adj. PBT	12,818	13,238	13,940	12,950	14,441	1,584A	2,061	-	-	Adj. PBT	
Tax	(1,507)	(967)	(1,683)	(1,546)	(1,762)	(143)A	(226)	-	-	Tax	
Minority Interest	-	-	-	-	-	-	-	-	-	Minority Interest	
Adj. Net Income	13,108	13,605	13,761	12,953	14,229	1,816A	2,210	-	-	Adj. Net Income	
Reported EPS	1.13	1.34	1.40	1.32	1.47	0.16A	0.21	-	-	Reported EPS	
Adj. EPS	1.31	1.49	1.57	1.50	1.65	0.21A	0.25	-	-	Adj. EPS	
DPS	0.93	0.93	-	-	-	-	-	-	-	DPS	
Payout ratio	82.1%	69.1%	-	-	-	-	-	-	-	Payout ratio	
Shares outstanding	10,016	9,130	8,756	8,642	8,631	8,811A	8,802	-	-	Shares outstanding	
Balance Sheet & Cash Flow Statement						Ratio Analysis					
	FY15A	FY16A	FY17E	FY18E	FY19E	FY15A	FY16A	FY17E	FY18E	FY19E	
Cash and cash equivalents	10,372	10,525	11,758	9,409	7,955	-	-	-	-	-	Gross margin
Accounts receivable	14,707	12,715	12,642	12,762	12,876	18.1%	17.3%	18.3%	17.4%	18.2%	EBITDA margin
Inventories	22,449	22,263	20,896	20,223	19,721	12.4%	12.3%	12.9%	11.9%	12.9%	EBIT margin
Other current assets	0	0	0	0	0	11.2%	11.0%	10.9%	10.1%	10.9%	Net profit margin
Current assets	47,679	45,640	45,496	42,593	40,751						ROE
PP&E	20,145	19,103	16,983	16,883	16,721	11.6%	15.6%	18.7%	18.2%	19.5%	ROA
LT investments	-	-	-	-	-	4.6%	4.5%	5.0%	4.7%	5.1%	ROCE
Other non current assets	255,739	213,131	214,032	219,429	222,729	7.4%	7.9%	9.2%	8.6%	9.2%	SG&A/Sales
Total assets	323,563	277,874	276,510	278,906	280,202	-	-	-	-	-	Net debt/equity
Short term borrowings	19,799	20,482	20,396	20,396	20,396	93.5%	89.1%	101.6%	107.4%	106.0%	P/E (x)
Payables	19,250	20,876	21,272	21,804	22,083	20.9	18.4	17.4	18.2	16.6	P/BV (x)
Other short term liabilities	41,538	36,509	33,789	32,546	31,168	2.8	3.3	-	-	-	EV/EBITDA (x)
Current liabilities	80,587	77,867	75,458	74,745	73,648	17.9	16.6	15.6	16.3	15.5	Dividend Yield
Long-term debt	83,770	58,810	64,942	67,442	67,442	3.4%	3.4%	-	-	-	Sales/Assets (x)
Other long term liabilities	59,554	63,992	63,720	63,720	63,720	12.5	10.6	9.8	9.3	9.8	Interest cover (x)
Total liabilities	223,911	200,669	204,120	205,908	204,810	103.5%	94.8%	380.3%	(250.0%)	826.8%	Operating leverage
Shareholders' equity	98,274	75,828	71,036	71,644	74,038						Revenue y/y Growth
Minority interests	1,378	1,378	1,354	1,354	1,354	(21.0%)	5.4%	1.8%	2.3%	1.2%	EBITDA y/y Growth
Total liabilities & equity	323,563	277,874	276,510	278,906	280,202	(8.3%)	0.7%	7.7%	(2.7%)	5.4%	Tax rate
BVPS	9.81	8.31	-	-	-	11.8%	7.3%	12.1%	11.9%	12.2%	Adj. Net Income y/y Growth
y/y Growth	(22.5%)	(15.4%)	-	-	-	(21.6%)	3.8%	1.1%	(5.9%)	9.8%	EPS y/y Growth
Net debt/(cash)	93,197	68,767	73,580	78,429	79,883	(20.8%)	13.9%	5.5%	(4.6%)	10.0%	DPS y/y Growth
						6.1%	0.1%	-	-	-	
Cash flow from operating activities	16,342	29,870	15,205	11,797	12,582						
o/w Depreciation & amortization	2,473	2,597	2,715	2,962	2,912						
o/w Changes in working capital	(350)	3,221	2,122	1,041	291						
Cash flow from investing activities	(12,767)	(1,894)	(8,342)	(5,850)	(3,750)						
o/w Capital expenditure	(3,785)	(3,758)	(3,950)	(3,600)	(3,250)						
as % of sales	3.2%	3.0%	3.1%	2.8%	2.5%						
Cash flow from financing activities	(8,211)	(27,430)	(5,702)	(8,296)	(10,285)						
o/w Dividends paid	(9,289)	(8,474)	(8,406)	(8,296)	(8,285)						
o/w Net debt issued/(repaid)	1,973	2,746	10,421	2,500	0						
Net change in cash	(5,544)	153	1,232	(2,349)	(1,454)						
Free cashflow	12,557	26,112	11,255	8,197	9,332						
y/y Growth	12.1%	107.9%	(56.9%)	(27.2%)	13.8%						

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Dec. o/w - out of which

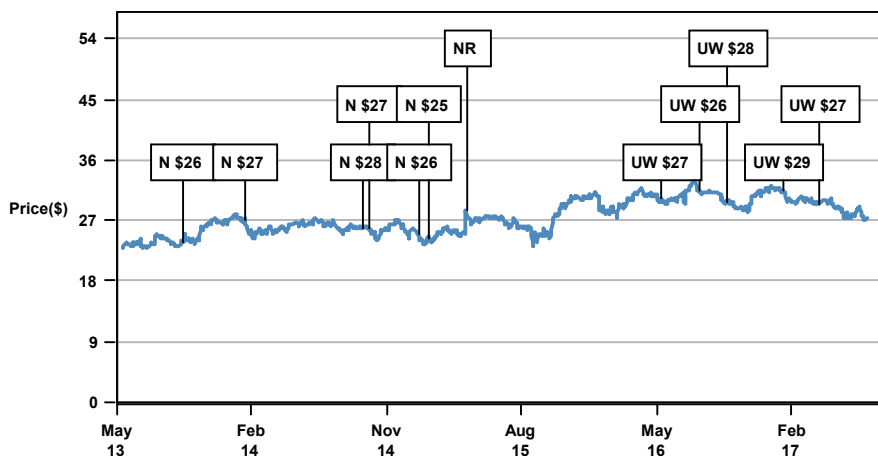
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General Electric Co. (GE, GE US) Price Chart



Date	Rating	Share Price (\$)	Price Target (\$)
11-Sep-13	N	23.87	26.00
16-Jan-14	N	27.20	27.00
11-Sep-14	N	26.02	28.00
24-Sep-14	N	26.02	27.00
05-Jan-15	N	25.06	26.00
26-Jan-15	N	24.48	25.00
10-Apr-15	NR	28.51	--
12-May-16	UW	30.34	27.00
25-Jul-16	UW	31.64	26.00
23-Sep-16	UW	29.89	28.00
13-Jan-17	UW	31.39	29.00
28-Mar-17	UW	29.44	27.00

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Break in coverage Apr 10, 2015 - May 12, 2016.

The chart(s) show J.P. Morgan's continuing coverage of the stocks; the current analysts may or may not have covered it over the entire period.

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IB clients*	68%	65%	46%

*Percentage of investment banking clients in each rating category.

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