Gas Turbines, 9M'19 Report

The "Report"

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Table of Contents

From the Editors

To our subscribers:

Since 1993, McCoy has measured the breadth, depth, and competitive elements of the power generation markets we serve. Our scope includes a clear mandate to judge market share.

Quarterly market performance updates provide transparency and insight, but the appropriate interval with which to assess OEM efficacy is annual.

All our best,
Bob McCoy
Dave Hetherington

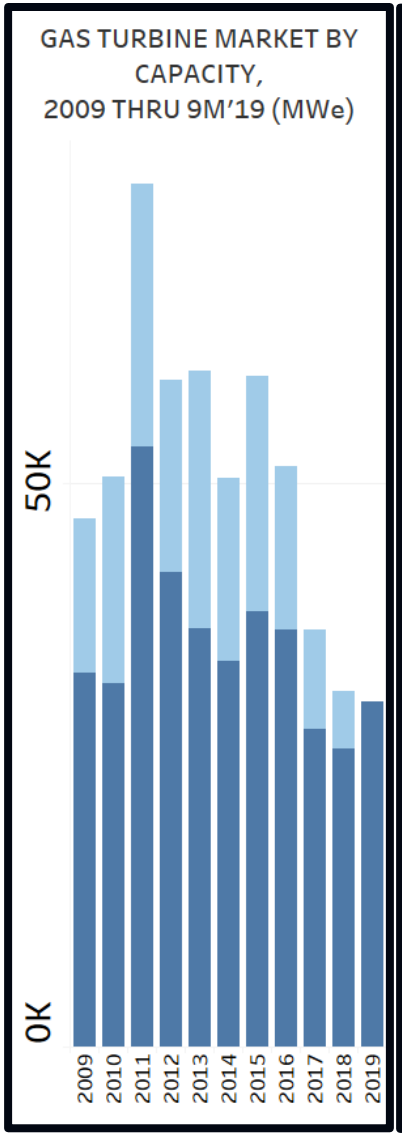
Table of Contents

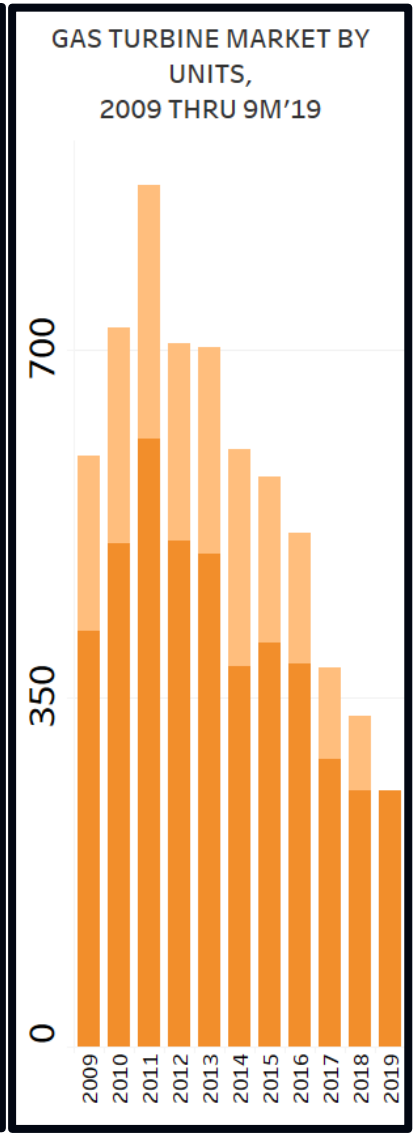
Global Market Summary

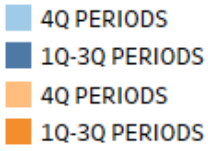
The market for gas turbines amounted to 30.6 GWe and 258 units during the 9M'19 period, up 16% on-year by capacity and in line by units relative to 9M'18 (images right).

While these top line numbers are encouraging, we will evaluate on the pages that follow the performances of the advanced class, power gen and industrial segments. Our focus is unit flow, the legacy measure of industry health and well being.

Subsequently, we present on-grid gas turbine performance for the Europe and USA markets which continue to show strong trends.







For both images, units of 10 MWe and up; source: McCoy surveys and publicly available information.

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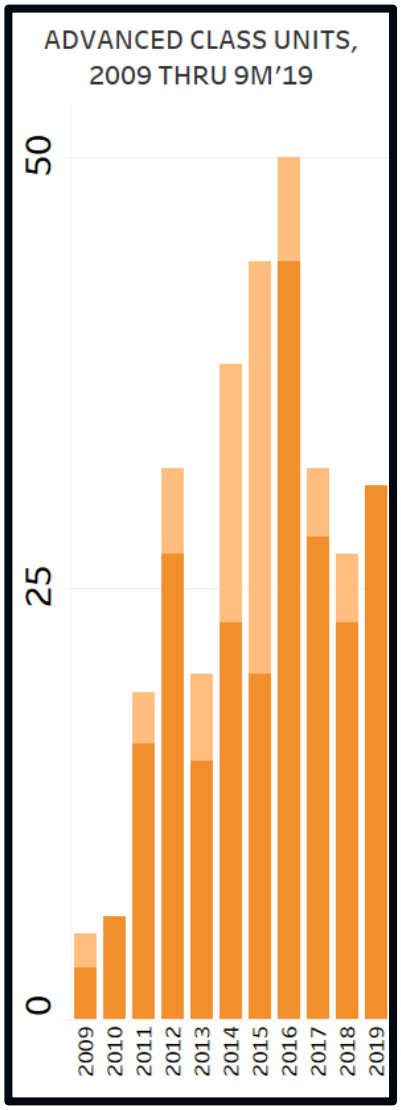
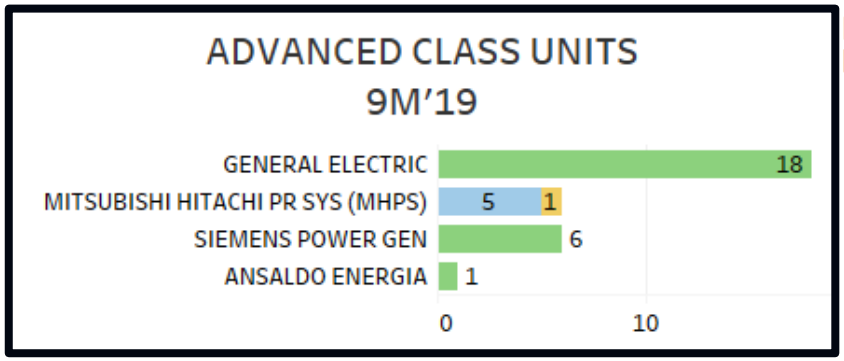
Advanced Class Segment

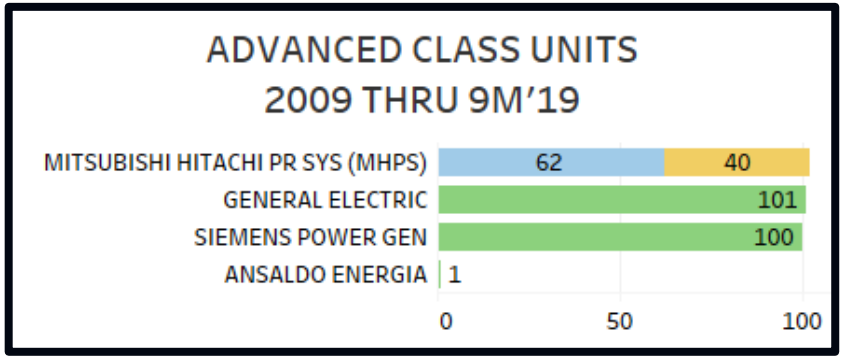
31 advanced class units cleared the market during 9M'19, eight higher on-year and the second best 9M performance on record (image near right).

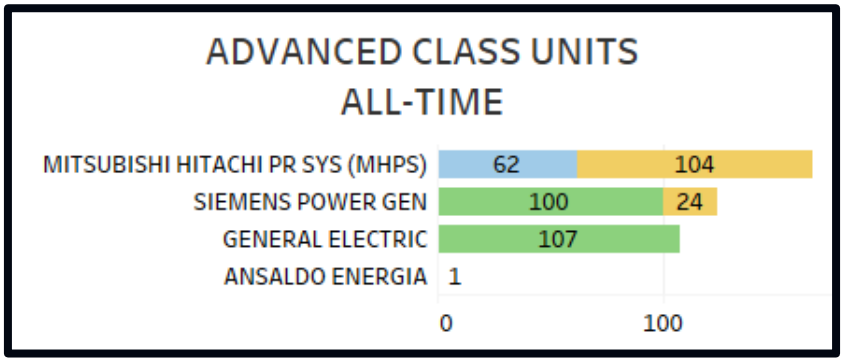
GE led the segment during 9M'19 with 18 units, MHPS and Siemens tied for second with six each, and Ansaldo was on the board with one (image top far right). Since 2009, the race among the top three is a dead heat: MHPS with 102 units, GE 101 and Siemens 100 (image middle right).

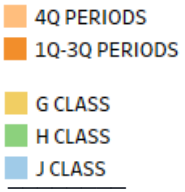
This segment garners the most attention, and higher volumes are welcome news. Yet, a broader evaluation of all demand from IPPs and utilities, who are the purchasers of nearly all advanced class units, is required.





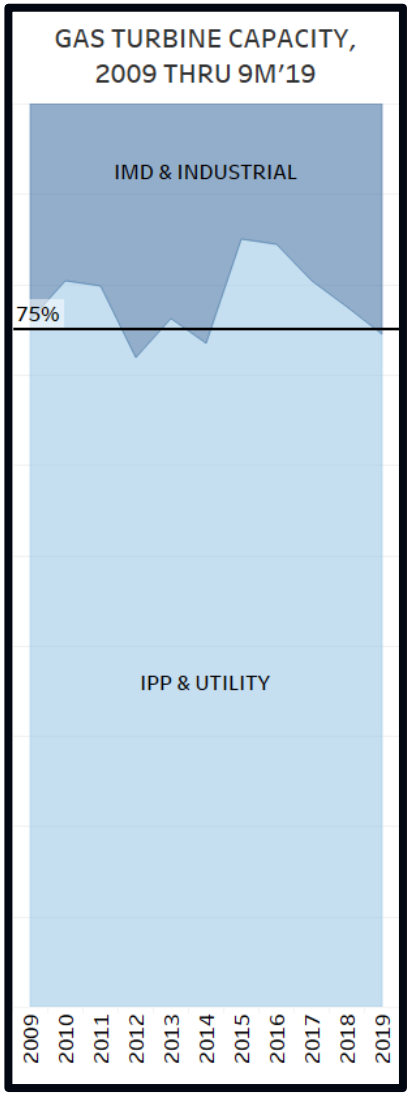


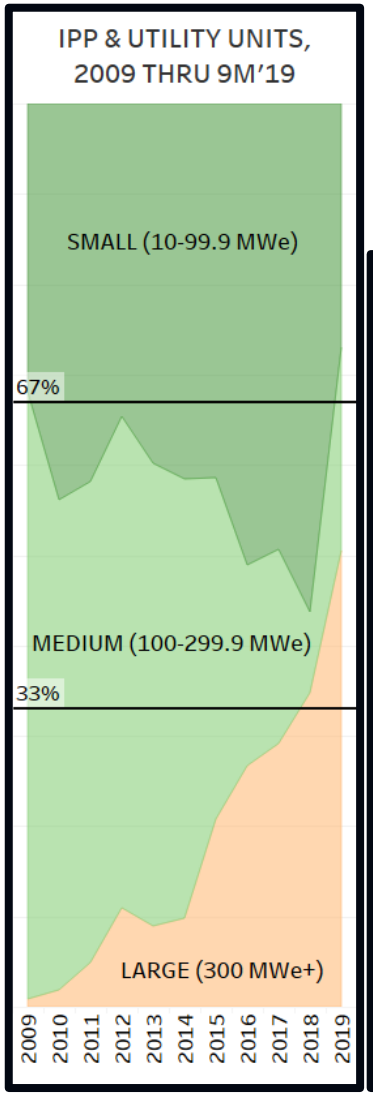




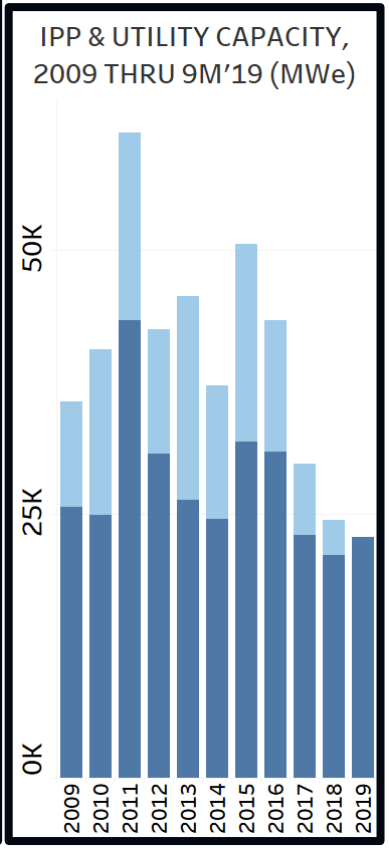
For all images, advanced class units only (which include G, H and J classes); source: McCoy surveys.

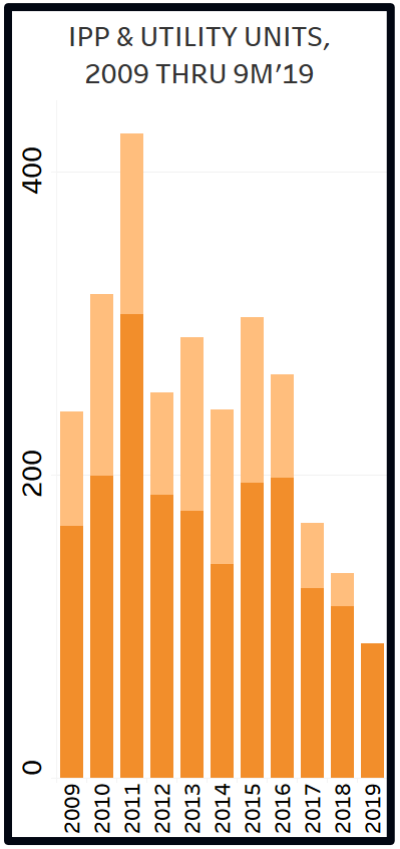
Power Gen Segment (IPP & Utility)

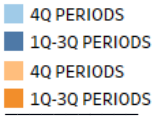




The IPPs and utilities segment is best measured by capacity and comprised 75% of 9M'19 capacity flow (image far left). These buyers continue to reach for units of size (image near left) and capacity volume shows marginal improvement on-year (image bottom left) which is encouraging. Still, unit volume showed further deterioration during 9M'19 (image bottom right).







For all images, units of 10 MWe and up; source: McCoy surveys and publicly available information.

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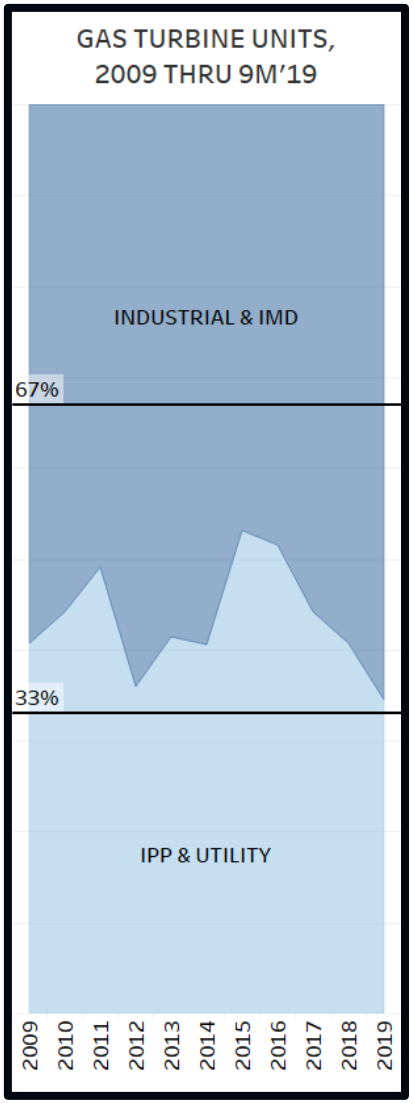
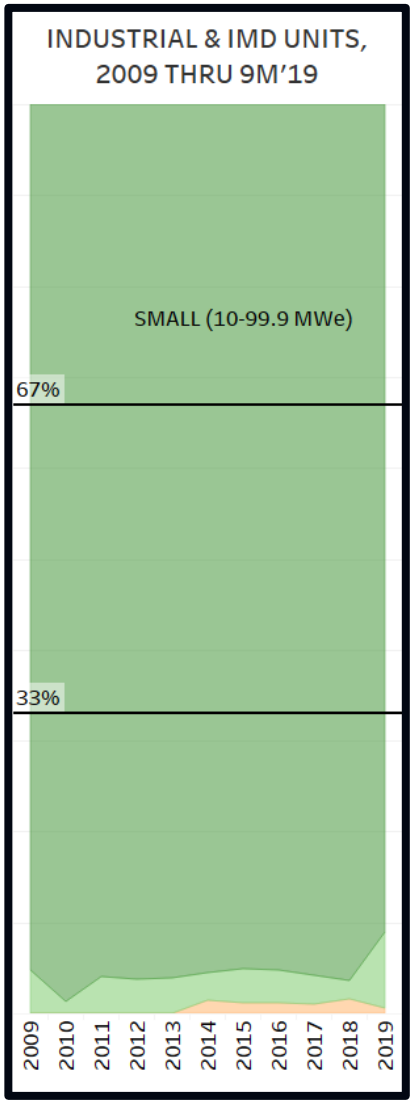
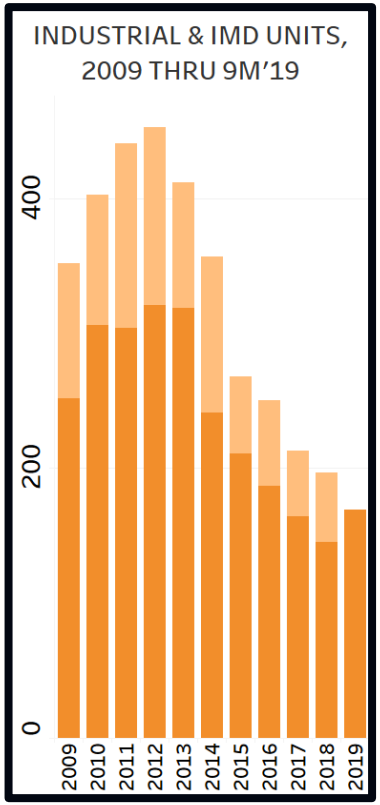
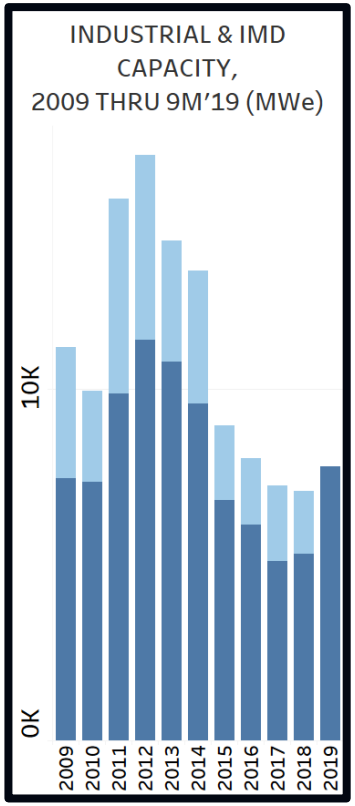
Industrial Segment (Industrial & IMD)

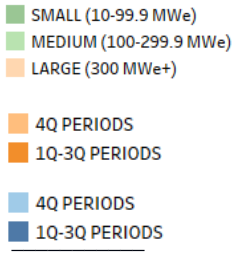




The industrial segment (off-grid power gen applications and mechanical drive applications) is best measured by unit volume, comprised two-thirds of 9M'19 units (image far left), and are uniformly small (image near left). For the first time in seven years, 9M unit flow was up on-year which is very encouraging. Furthermore, capacity was significantly higher on-year (image below right).







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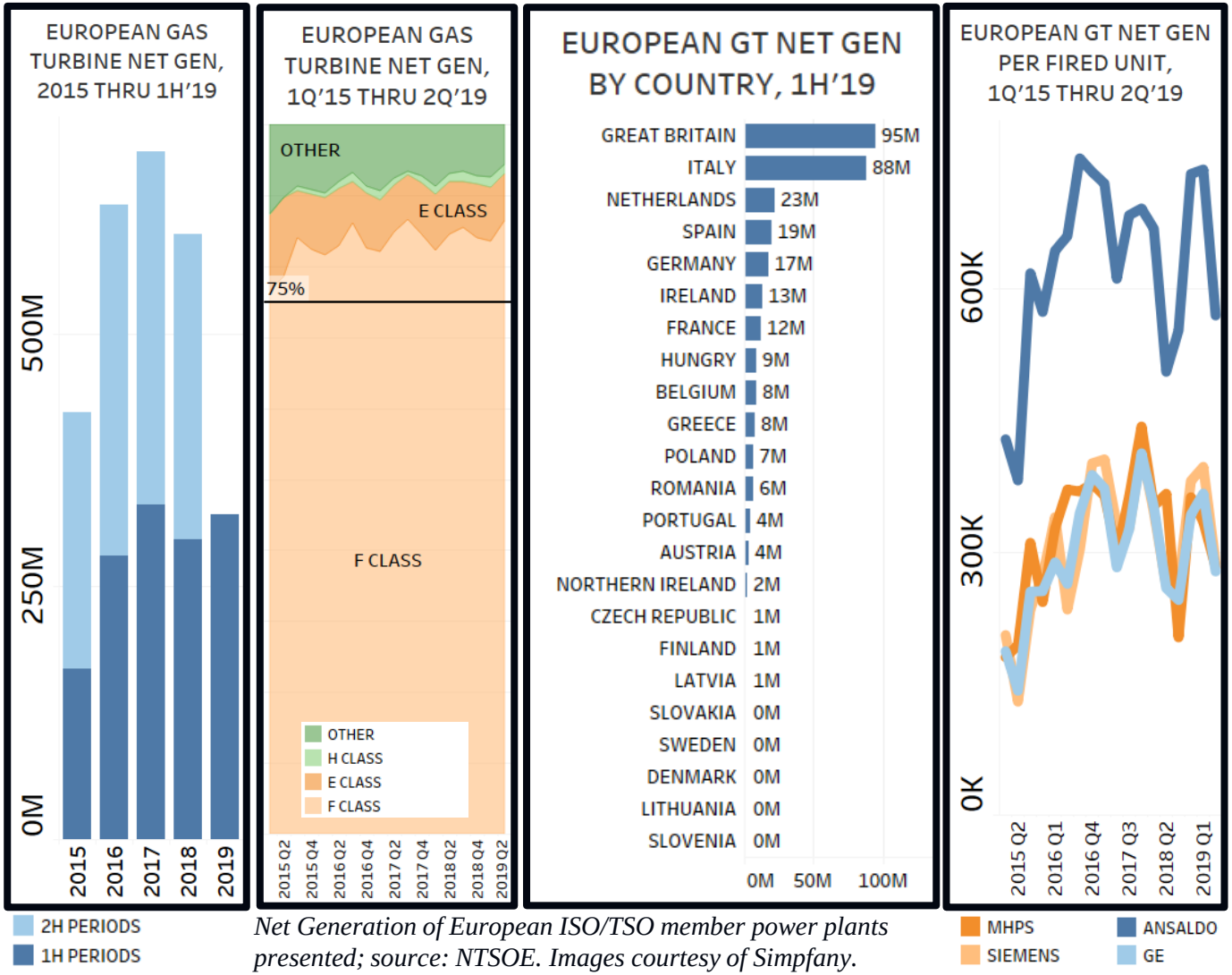
On-Grid Performance: Europe

In sum, the three segments from the previous pages show positive trends and the combination provides a strong case for a market bottom, but let's also quickly review on-grid performance.

We are excited to offer our first window on pan-European gas turbine utilization. Net gen of Europe's gas turbine fleet dropped 6% on-year in 2018 but rebounded 9% through the 1H'19 (image near right).

This fleet is F Class dominant (image near middle right), Great Britain and Italy generate the most net gen (image far middle right), and net gen profiles per fired unit indicate Ansaldo's are the busiest (image far right)

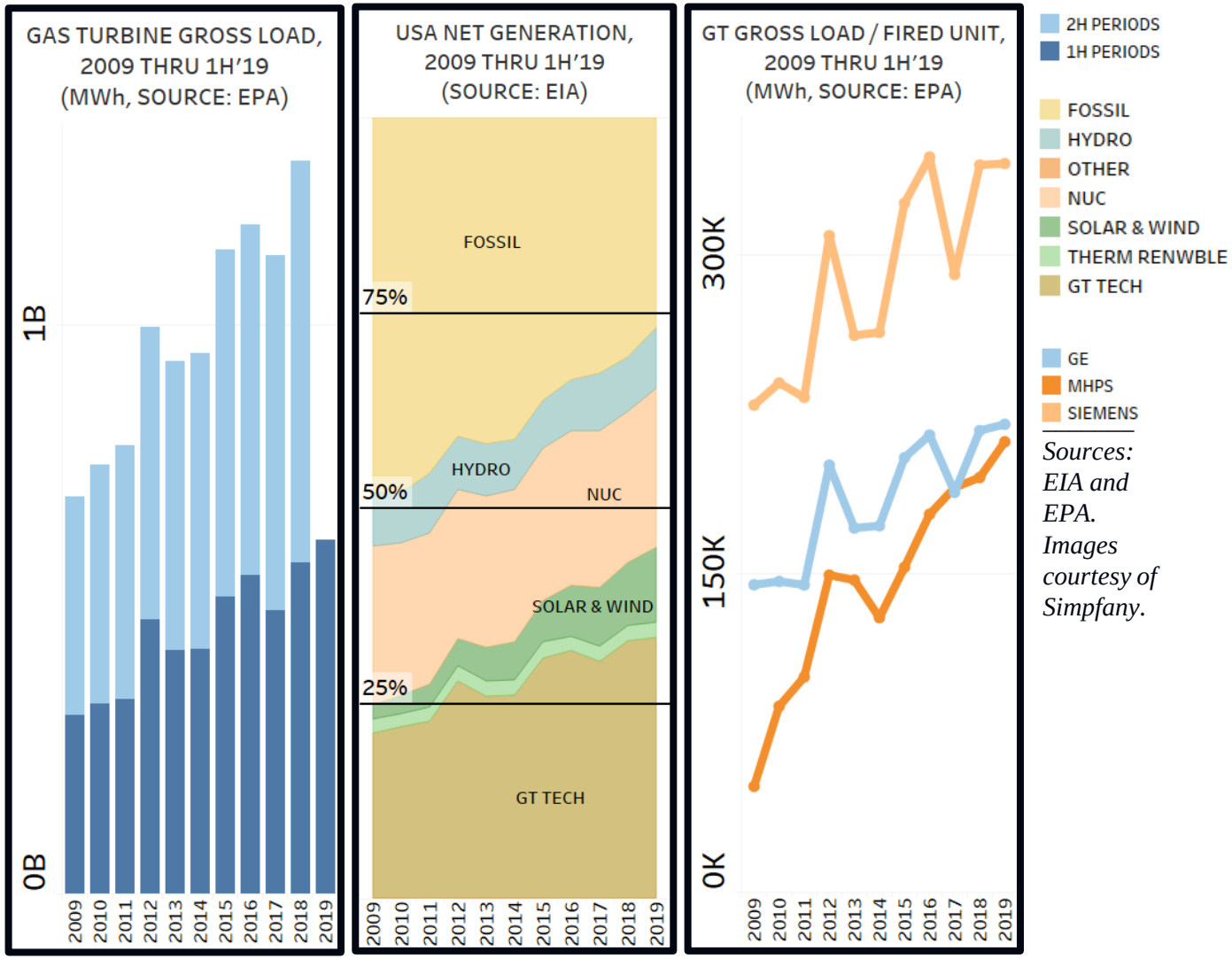


Net Generation of European ISO/TSO member power plants presented; source: NTSOE. Images courtesy of Simpfany.

On-Grid Performance: USA

In the USA market, the gas turbine continues to gain share. Most recently, gas turbine gross load rose 7% on-year during 6M'19 (image near right) according to the EPA (for units of least 20 MWe unit capacity), while the EIA (which reports on all gas turbine behavior) showed gas turbine utilization rose to 34% of all 6M'19 net generation, a fresh 9M high.

Of the 2,400 units tracked by the EPA that fired during 6M'19, Siemens' are the busiest (image far right).



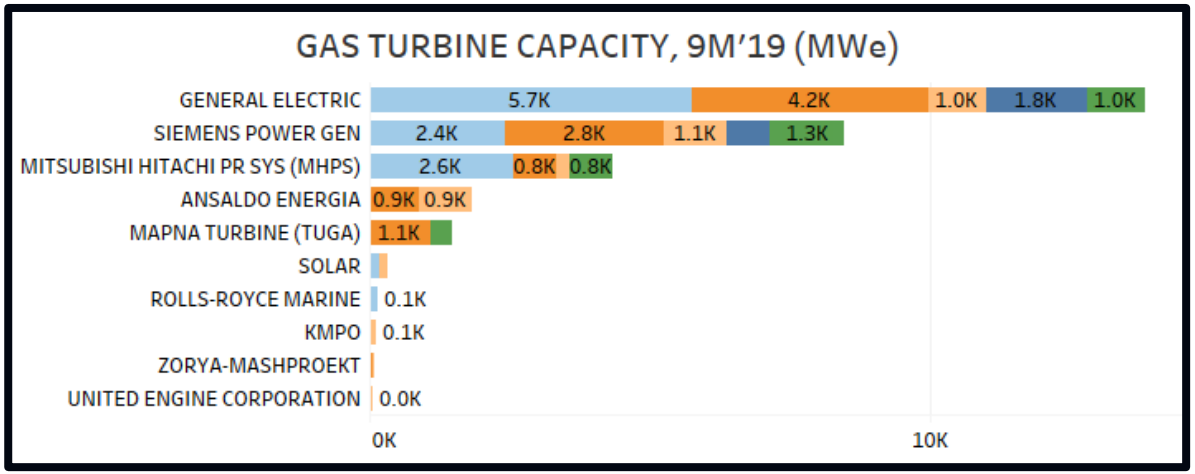
Sources: EIA and EPA. Images courtesy of Simpfany.

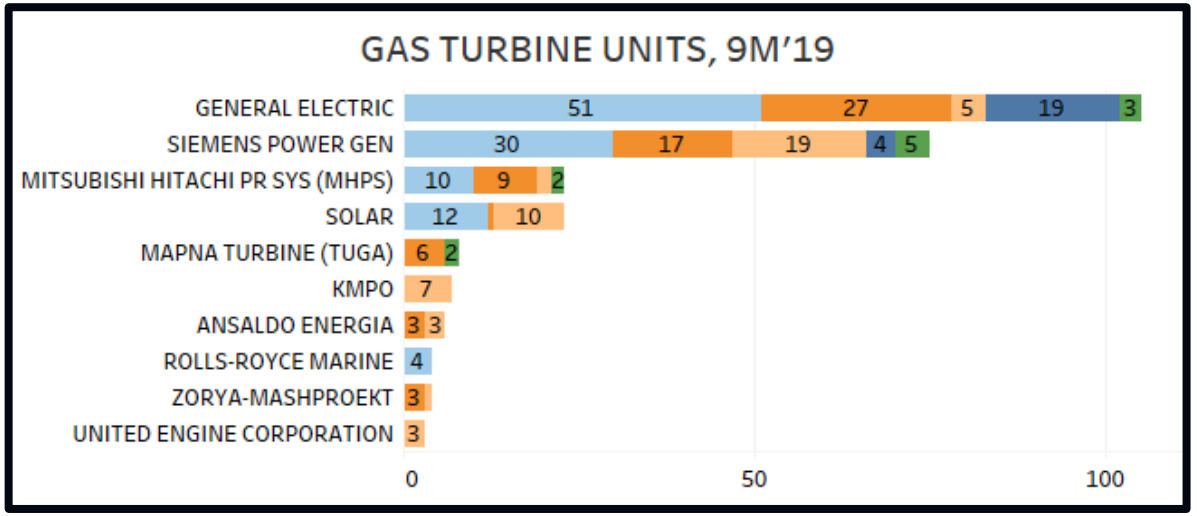
Market Share Discussion

As we approach year-end amid a bottoming market, a quick share assessment seems appropriate.

GE led the 9M'19 markets by both capacity and units. GE captured 13.8 GWe and a capacity share of 45% which included 5.7 GWe from the Americas and 4.2 GWe from Asia. Siemens was second with 8.5 GWe, and MHPS was third with 4.3 GWe.

By units, GE's share was 41% on 105 units. Siemens' 75 units included 19 of Europe's 50 ordered units and MHPS captured 23 units for share of 9%.





For both images, units of at least 10 MWe and up; source: McCoy surveys and publicly available information.

9M'19 Official League Tables – Technology Owner[(i)]

TECHNOLOGY OWNER	MWe 9M'19	MARKET SHARE
GENERAL ELECTRIC	13,806	45.1%
SIEMENS POWER GEN	8,469	27.7%
MITSUBISHI HITACHI PR SYS (MHPS)	4,333	14.2%
ANSALDO ENERGIA	1,813	5.9%
MAPNA TURBINE (TUGA)	1,464	4.8%
SOLAR	333	1.1%
ROLLS-ROYCE MARINE	144	0.5%
KMPO	126	0.4%
ZORYA-MASHPROEKT	82	0.3%
UNITED ENGINE CORPORATION	50	0.2%
TOTAL ORDERED CAPACITY	30,619	100.0%

TECHNOLOGY OWNER	UNITS 9M'19	MARKET SHARE
GENERAL ELECTRIC	105	40.7%
SIEMENS POWER GEN	75	29.1%
MITSUBISHI HITACHI PR SYS (MHPS)	23	8.9%
SOLAR	23	8.9%
MAPNA TURBINE (TUGA)	8	3.1%
KMPO	7	2.7%
ANSALDO ENERGIA	6	2.3%
ROLLS-ROYCE MARINE	4	1.6%
ZORYA-MASHPROEKT	4	1.6%
UNITED ENGINE CORPORATION	3	1.2%
TOTAL ORDERED UNITS	258	100.0%

(i) Units of 10 MWe and up; source: McCoy surveys and publicly available information. Solar units included for illustration purposes only and do not represent Solar's full order flow.

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