GE Gas Power Systems (gas turbine) fuel capabilities

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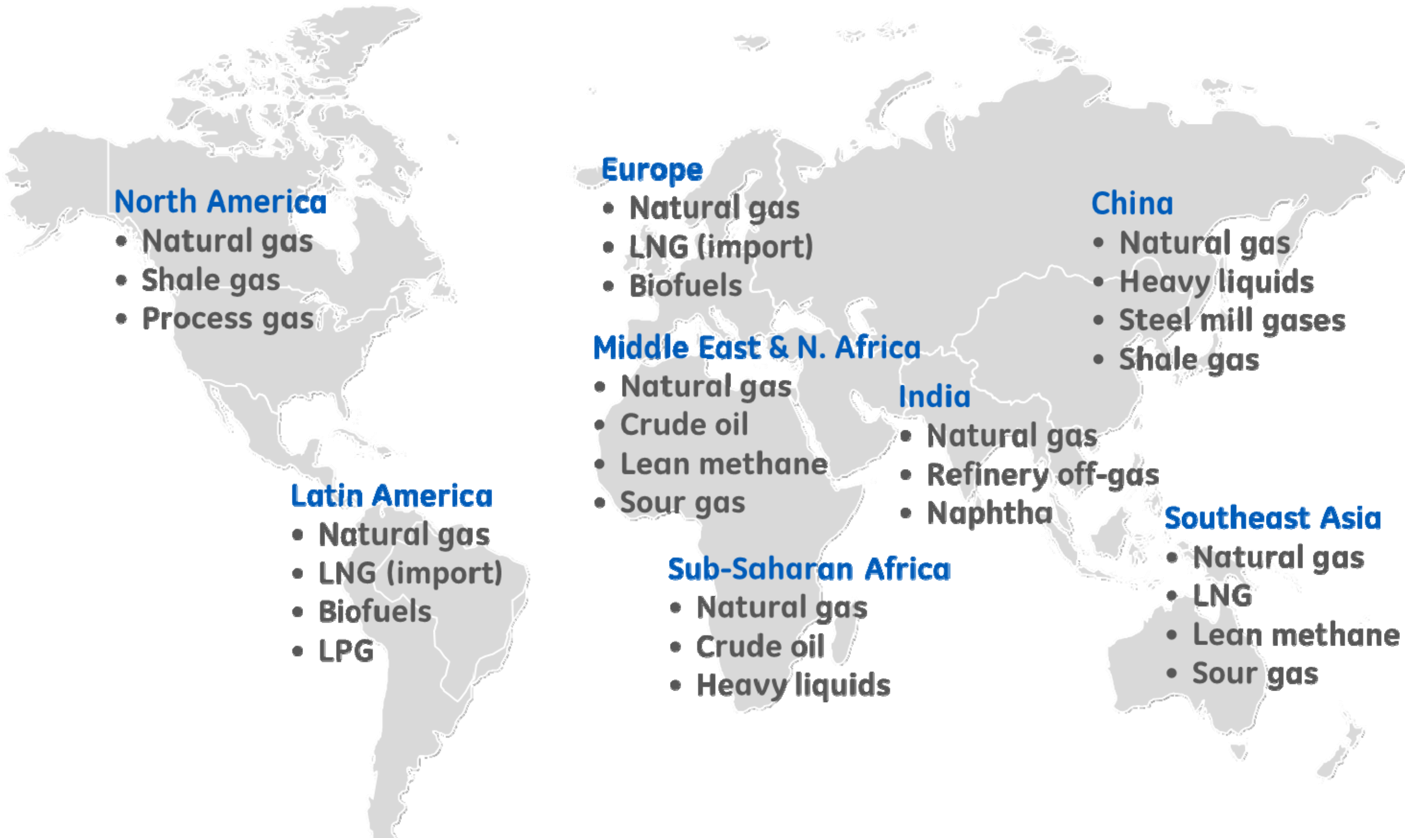
This document contains "forward-looking statements" – that is, statements related to future events that by their nature address matters that are, to different degrees, uncertain. For details on the uncertainties that may cause our actual future results to be materially different than those expressed in our forward-looking statements, see http://www.ge.com/investor-relations/disclaimer-caution-concerning-forwardlooking-statements as well as our annual reports on Form 10-K and quarterly reports on Form 10-Q. We do not undertake to update our forward-looking statements. This document also includes certain forward-looking projected financial information that is based on current estimates and forecasts. Actual results could differ materially. to total risk-weighted assets.]

NON-GAAP FINANCIAL MEASURES:
In this document, we sometimes use information derived from consolidated financial data but not presented in our financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP). Certain of these data are considered "non-GAAP financial measures" under the U.S. Securities and Exchange Commission rules. These non-GAAP financial measures supplement our GAAP disclosures and should not be considered an alternative to the GAAP measure. The reasons we use these non-GAAP financial measures and the reconciliations to their most directly comparable GAAP financial measures are posted to the investor relations section of our website at www.ge.com. [We use non-GAAP financial measures including the following:

- Operating earnings and EPS, which is earnings from continuing operations excluding non-service-related pension costs of our principal pension plans.
- GE Industrial operating & Verticals earnings and EPS, which is operating earnings of our industrial businesses and the GE Capital businesses that we expect to retain.
- GE Industrial & Verticals revenues, which is revenue of our industrial businesses and the GE Capital businesses that we expect to retain.
- Industrial segment organic revenue, which is the sum of revenue from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial segment organic operating profit, which is the sum of segment profit from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial cash flows from operating activities (Industrial CFOA), which is GE's cash flow from operating activities excluding dividends received from GE Capital.
- Capital ending net investment (ENI), excluding liquidity, which is a measure we use to measure the size of our Capital segment.
- GE Capital Tier 1 Common ratio estimate is a ratio of equity

Economically available fuels vary by region



Customers require fuel flexible power generation solutions

Experience with alternative fuels

Liquid fuels

- Diesel
- Marine gasoil
- Biodiesel
- Light cycle oil
- Naphtha
- Condensate
- Ethanol / Methanol
- Kerosene / Jet fuel
- Butane
- Gasoline
- Dimethyl ether (DME)
- Arabian Super Light crude oil
- Light crude oils
- Heavy fuel oil

Gaseous fuels

- Natural gas
- LNG
- H_2 blends
- Ethane
- LPG / Propane
- Flare gas and associated gas
- Coal bed methane
- Lean methane
- Refinery/process off gas
- Landfill gas/biogas blends
- High hydrogen
- Synthesis gas
- Steel mill gases
- Sour gas

GE offers comprehensive fuels solutions for power generation applications

Gas turbine fuel capability

Aero and Industrial gas turbines

Gas turbine	LM2500[1]	LM6000[1]	LMS100[1]	6B.03	7E.03, 9E.03, 9E.04	13E2	6F.01	6F.03
Combustor	DLE	DLE	DLE 2	DLN 1/1+	DLN 1/1+	AEV	DLN 2.5	DLN 2.6
Simple cycle output (MW)	23.8-37.1	45 - 57	108-117	44	91/132/145	203	52	82
NOx (ppm) @15% O_2	25	25	25	4	15	15	25	15
Min Turndown (% load)	50%	25%, 50%	50%	50%	35%	70%	40%	52%
Wobbe Variation (%)	± 20%	± 20% -25%	± 20%	> ± 30%	> ± 30%	± 10%	± 10%	+10%, -15%
Ethane (vol %)	~30-35%	~15-24%	~15%	100%	100%	~23%	~25%	~15%
Propane (vol %)	~35%	~15-24%	~15%	~100%	~100%	~23%	~15%	~15%
H_2 (vol %)	~5%	~5%	~5%	~30-32%	~30-32%	~5%	~ 0%	~5%
Inert (vol) % (CO_2, N_2)	~50%	~25-30%	~15%	~40%	~40%	~20%	~5%	~15%

Note 1 - There are multiple configurations available for GE's Aeroderivative gas turbines as well as the 13E2, and the values presented in this table are representative of the capability of the specific gas turbine model. Actual performance and capability are site and fuel specific

Gas turbine fuel capability

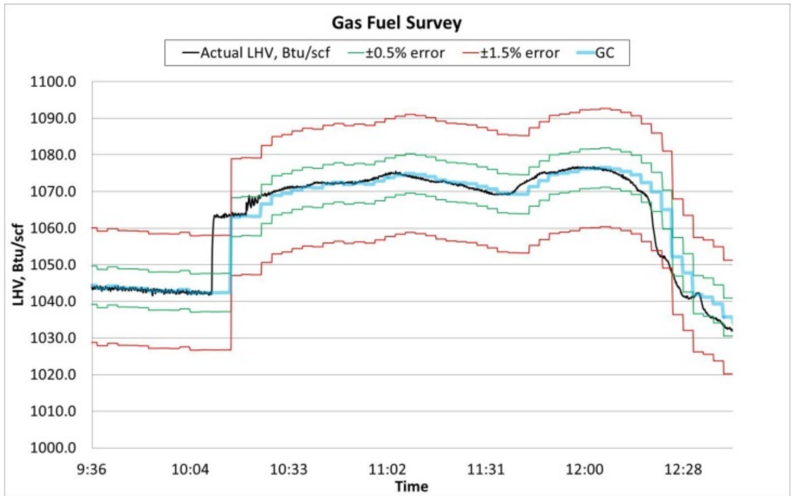
Utility scale gas turbines

Gas turbine	9F.04	9F.06	7F.05	7F.06	9HA.01	9HA.02	7HA.01	7HA.02
Combustor	DLN 2.6+	DLN 2.6+	DLN 2.6+	DLN 2.6+	DLN 2.6+ AFS	DLN 2.6+ AFS	DLN2.6+ AFS	DLN2.6+ AFS
Simple cycle output (MW)	281	342	232-241	270	429	519	280	346
NOx (ppm) @15% O_2	15	15	5-12	9	25	25	25	25
Min Turndown (% load)	35%	38%	44 - 46%	30%	30%	30%	25%	30%
Wobbe Variation (%)	± 15%	± 15%	± 7.5%	± 7.5%	± 15%	± 15%	± 10%	± 10%
Ethane (vol %)	~25%	~25%	~25%	~25%	~25%	~25%	~25%	~25%
Propane (vol %)	~35%	~25%	~35%	~25%	~35%	~35%	~25%	~25%
H_2 (vol %)	~5%	~5%	~5%	~5%	~5%	~5%	~5%	~5%
Inert (vol) % (CO_2, N_2)	~15%	~15%	~30%	~15%	~15%	~15%	~15%	~15%

Aeroderivative gas turbine fuel capability: heating value rate of change study

Fuel heating value variation – customer site data

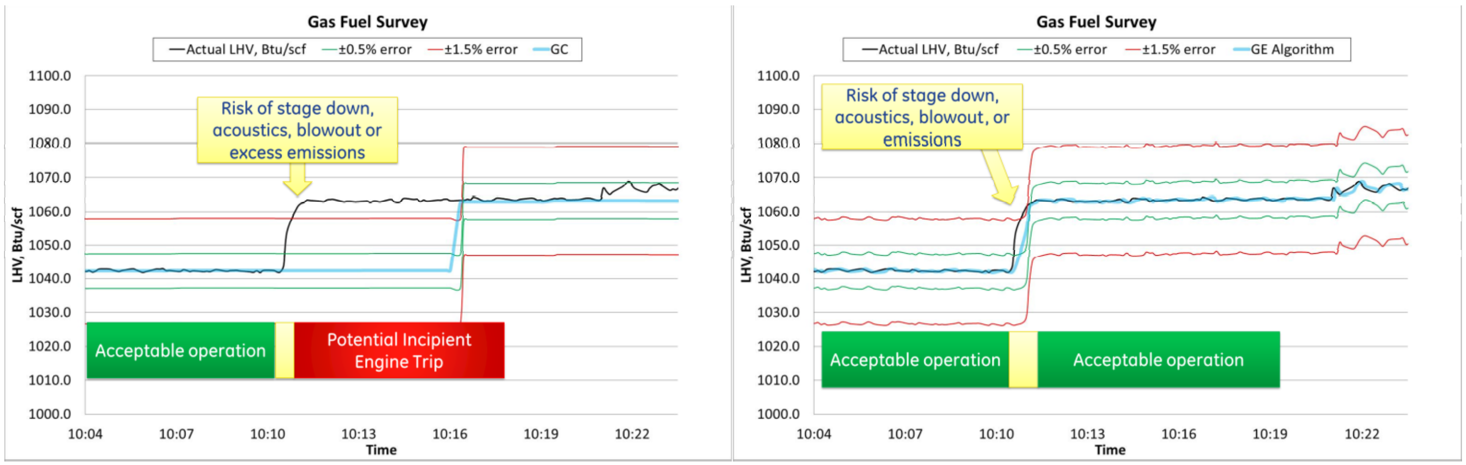
- Three hour survey of gas fuel at customer site (actual fuel composition is the dark line)
- Fuel LHV increased by ~ 20 BTU/scf during this time



Gas chromatograph data (heavy light blue line) lags behind the actual fuel composition change

Rapid fuel heating value changes

Comparing gas chromatograph to GE algorithm



<u>Baseline case</u>

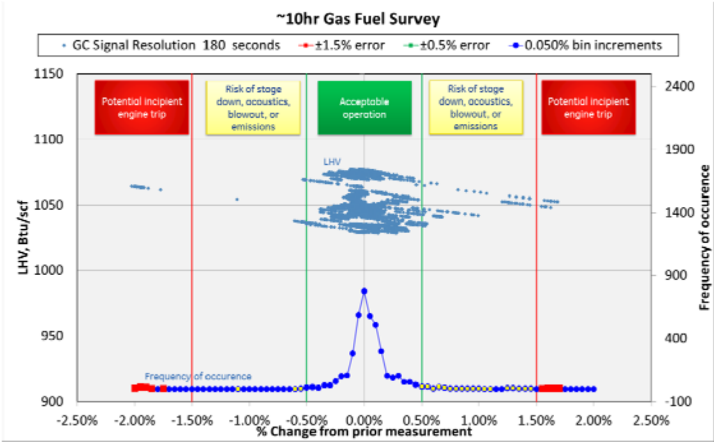
- Rate of change of fuel LHV exceeds GC response time
- Increased risk of potential combustor operational issues until GC data catches up to fuel composition

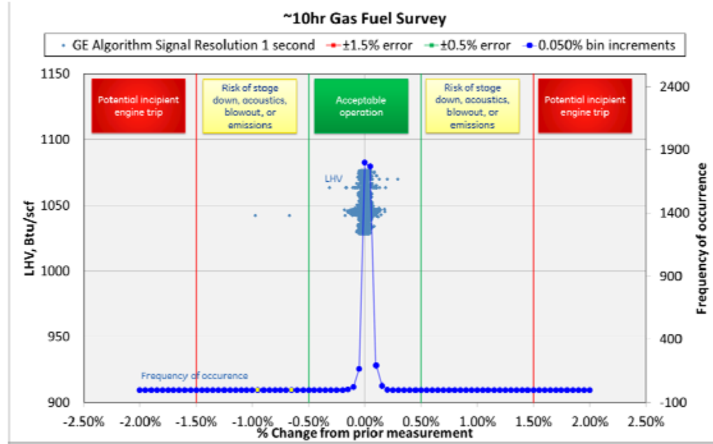
<u>GE fuel tracking algorithm</u>

- Algorithm tracks changes in fuel LHV, even with fast rates of change
- This algorithm limits potential risk of operational issue during rapid fuel heating value shifts

Rapid fuel heating value changes

Comparing gas chromatograph to GE algorithm





Baseline case

- Instances with LHV rate of change faster than GC can measure
- Increased risk of potential operational issues (Red zones)

GE fuel tracking algorithm

- Algorithm tracks changes in fuel LHV, even with fast rates of change
- Reduces potential risk of operational issues

Algorithm based on fuel property data tracks rapid fuel changes, limiting potential risk of operational issues

Heavy-duty gas turbine fuel capability case studies

Case study: *Refinery gas blending*

- GE's fuel-flexible DLN1 combustion technology enables customers to use a variety of fuels, including refinery gas
- DLN combustion technology allows for lower NOx emissions without the need for diluent injection
- Validated with more than 10,000 fired hours at a site using a refinery gas that is a blend of hydrogen and hydrocarbons

> "GE Power Generation Services' solution helped us to increase plant efficiency and reduce our environmental footprint, supporting our goals to produce cleaner energy and meet the region's increasingly stringent emissions requirements"
>
> – Antonio Berlanga, Operation Manager, Compañia Española de Petróleos (CEPSA)

Case study: *hydrogen blending*

- A US based customer requested the capability to allow blending of H_2 and natural gas
- GE provided the fuel blending system and updated the gas turbine control system
- Successful field operation blending (up to 5% H_2) with natural gas on a set of 7F.03 gas turbines configured with DLN 2.6 combustion system
- These units have accumulated over 80,000 fired hours on blended fuel

Case study: *Non-methane hydrocarbons*

- Refinery application in large US metropolitan area. Butane used as a start-up and back –up fuel on set of four 7E.03 gas turbines
- Customer converting Frame 5 and 6B.03 gas turbines for continuous 100% load operation on propane
- Gas turbine site in the US blending ethane and natural gas

GE’s gas turbines are all capable of operating on a blend of natural gas and ethane. Many of these are also capable of operating on 100% ethane or LPG

Case study: light crude in a F-class gas turbine

- 120 hour field test successfully performed on a 7F.04 gas turbine in Saudi Arabia; **First F-class DLN combustion system to operate on crude oil**

GE now has 15 7F gas turbines in Saudi Arabia that have operated on ASL. This fleet will grow to 33 gas turbines once other plants awarded to GE start commercial operation

Summary

- Shifts in availability and economics of traditional fuels are creating interest in new fuels for power generation
- GE's aeroderivative and heavy-duty gas turbines are capable of operating on a wide variety of fuels supporting a variety of powergen applications