
State of the Gasification Industry: Worldwide Gasification Database 2014 Update

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GTC, 2014

Overview

- Introduction
- New user interface
- Updated evaluations
- Conclusions

Introduction

- **First edition 1999**
- **Updates in 2001, 2004, 2007, 2010**
- **2013 Update**
 - Total 747 projects, 1741 gasifiers, of which:
 - Active commercial operating and planned 234 projects, 618 gasifiers
 - 105 GW_{th} operating and 147 GW_{th} planned or under construction

What's New in 2014 Database - Content

- **Content**

- Total 862 projects, 2378 gasifiers, of which:
- Active commercial operating and planned 272 projects, 686 gasifiers.
- 116 GW_{th} operating, 83 GW_{th} under construction and 109 GW_{th} planned.

- **Main additions**

- Continued increase in Chinese coal-to-chemicals projects, particularly for SNG.
- Additional biomass and waste plants (now shown separately).
- Update status of existing entries.

Cooperation with Other Databases

- **IEA Task 33 (biomass gasification)**
 - Important focus on pilot and development plants.
 - Emphasis on projects based on biomass gasification.
 - Includes downstream processes such bioSNG or bioFT.
 - GTC's gasifier-based data will not show these as separate entries.
 - GTC has a cut-off at 1MW_{th} .

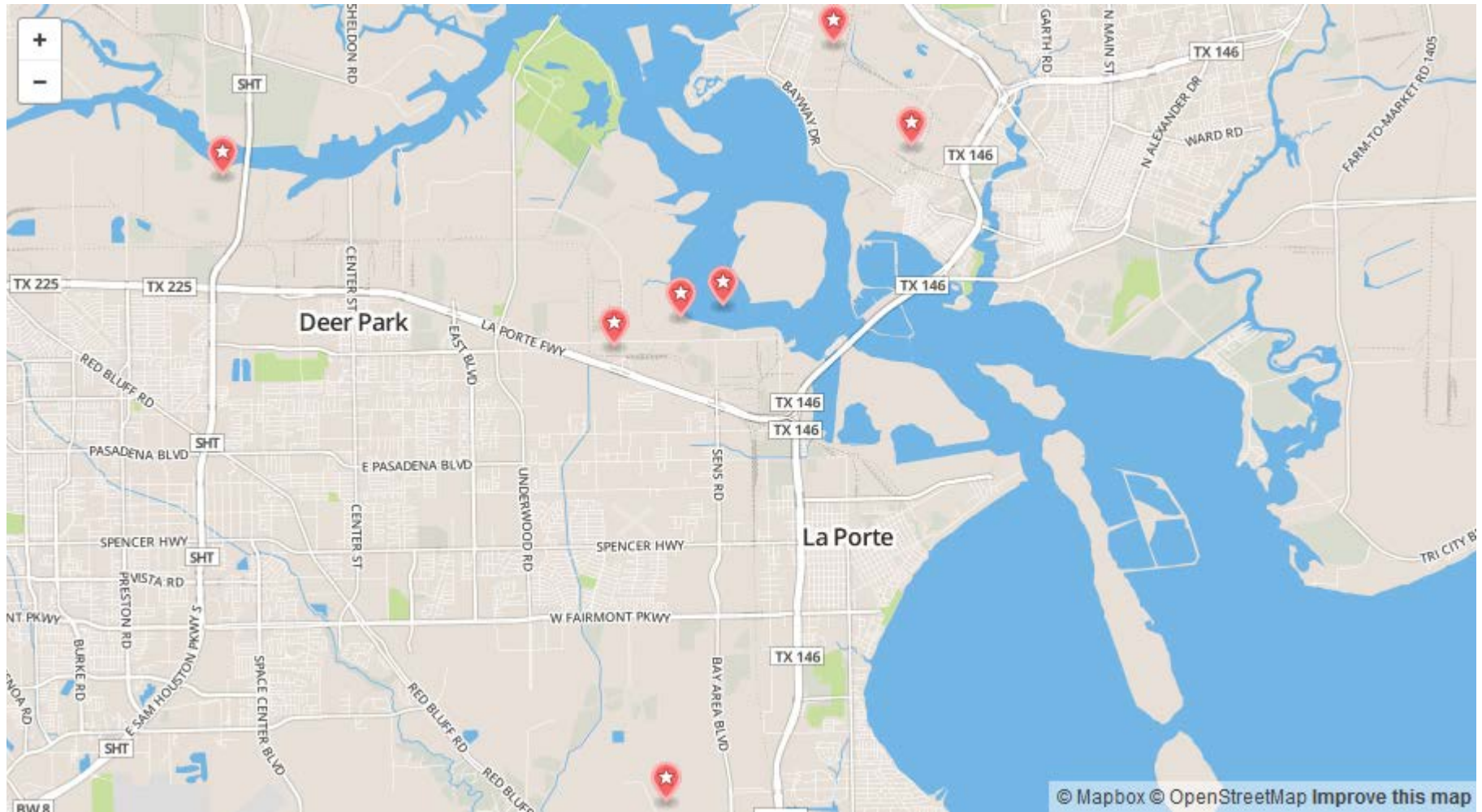
New Online User Interface - Map of Facilities



New Online User Interface - Map of Facilities



New Online User Interface - Map of Facilities



© Mapbox © OpenStreetMap Improve this map

New Online User Interface - Selection



What is Gasification? ▾

Gasification Applications ▾

Benefits of Gasification ▾

What is Gasification?

How Does it Work

Gasification vs. Incineration

Gasification vs. Pyrolysis

[World Database](#)

Map of Facilities

The Gasification Industry

Glossary



World Gasification Database

A directory of gasification facilities around the world.

You may enter or select values for the fields below, then click on "Search" to find the records that match your selection in the database

Region: ▾ Country: ▾ Technology: ▾

Product: ▾ Year Start: (on/after) ▾

Feed Class:
 Biomass Waste Coal Gas Petcoke Petroleum

[Clear Search](#)



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[What is Gasification?](#)
How Does it Work
[Gasification vs. Incineration](#)
[Gasification vs. Pyrolysis](#)
[World Database](#)



E-Mail Updates

Register to receive updates about developments in the gasification industry.

New Online User Interface - Datasheet

Polk County IGCC Project

[Return to Search Results](#)

Location:

City, State/Prov.: Mulberry, FL

Country: United States

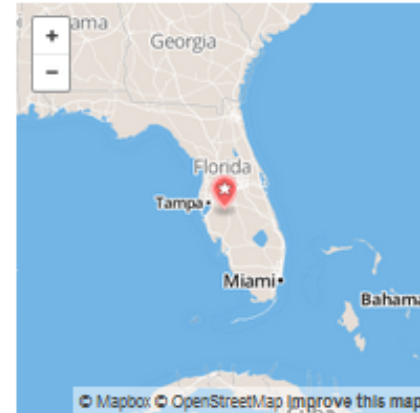
Region: North America

Facility Name: Polk Power Station, Unit No. 1

Facility Type: Electric Utility

Facility Status: Operating

Facility Notes:



Key Gasifier Information

GasifierID: 37

No. of Gasifiers:

Op'g/Sp/Total: 1/0/1

Gasifier Status: Operating

Start Date (MM/YY): Oct. / 1996

Application: Syngas for Power

Plant Owner: Tampa Electric Co.

Plant Owner Type: Utility

Plant Operator: Tampa Electric Co.

Plant Name: Polk County IGCC Project

Gas'n Tech: GE Gasification Technology

Vendor Contact:

Jerry Kassman

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New Online User Interface – Datasheet (2)

Feed/Product Information

Main Feed:

Category: Solid
Classification : Coal

Feed 1:

Category: Coal & petcoke
Capacity: 2,200 mt/d (max)

Feed 2:

Category:
Capacity: (max)

Feed 3:

Category:
Capacity: (max)

Syngas Capacity:

3,300,000 Nm³/d
Source: Gasifier licensor

Syngas Output:

451 MWth
Source: Gasifier licensor data

Eq. IGCC Cap., MWe:

Calc: 246

Main Product:

Category: Power

Product 1:

Category: Electricity
Capacity: 250 MWe (net)

Product 2:

Category:
Capacity:

Product 3:

Category:
Capacity:

Notes:

Other Information

O₂ Supply:

Oxidant: Oxygen
ASU Supplier: Air Products & Chemicals, Inc.

Syngas Cooler:

Cooler Type: Radiant & convective syngas coolers
Cooler Supplier: MAN GHG AG
MWth Duty:

Soot Handling: Separate handling unit

Gas Cleanup:

Supplier: Generic
Process: MDEA

Sulfur Removal:

Supplier: MECS
Process: Sulfuric Acid Plant

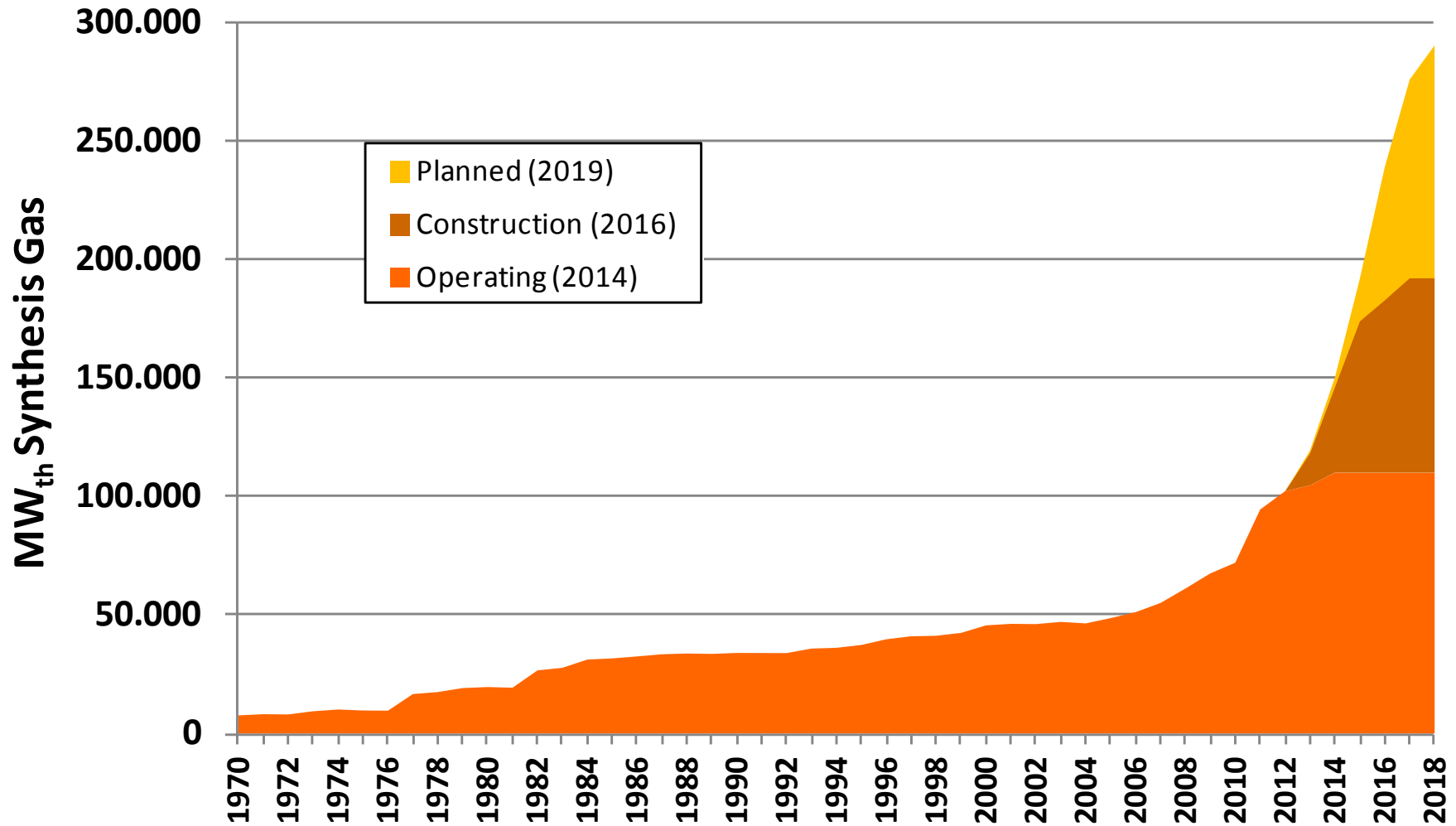
Gas Turbine:

No.: 1
Supplier: General Electric Co.
Model: 7FA
MWout: 192

HRSG:

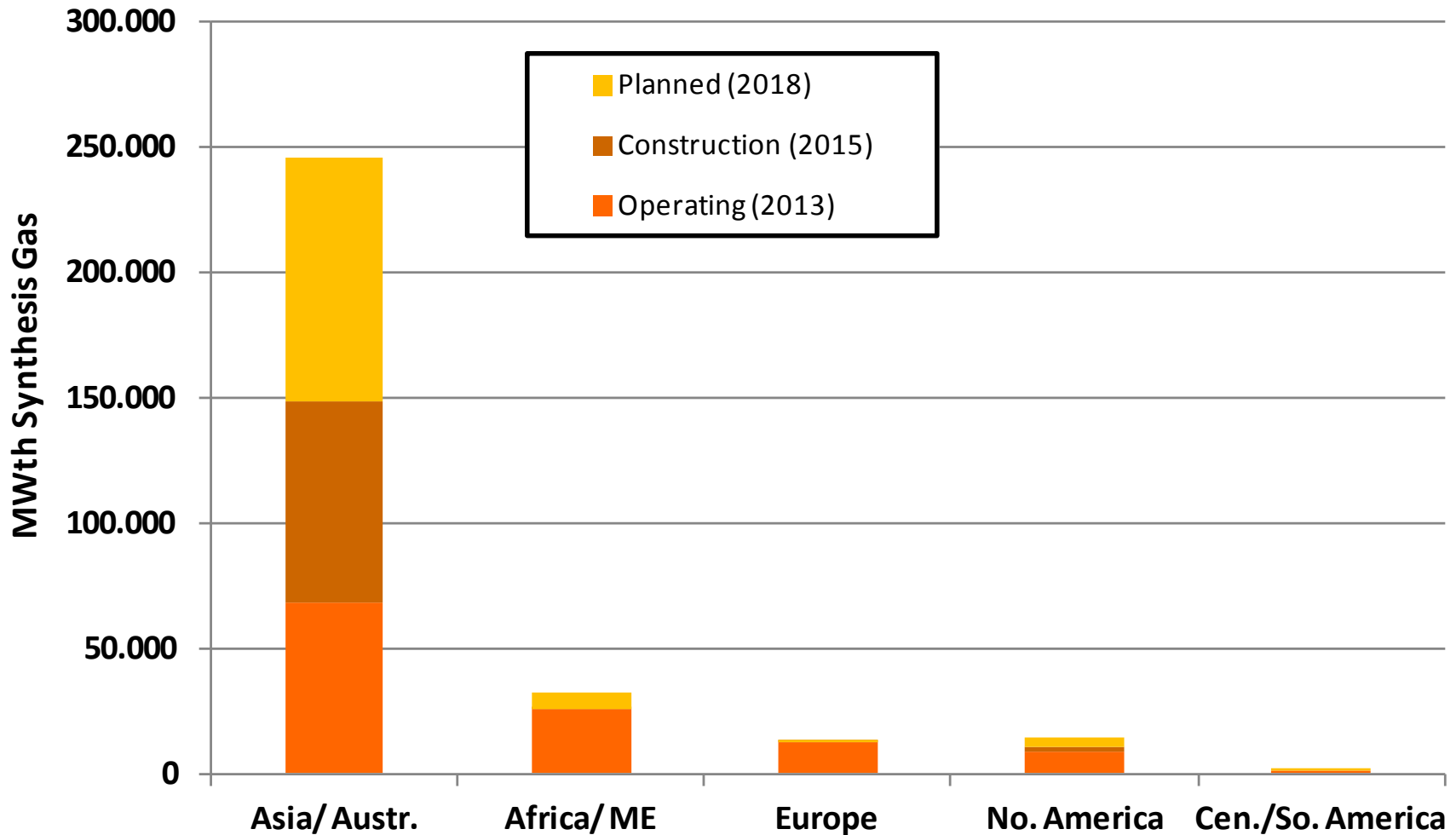
No.: 1
Supplier:
Model: Vogt/GE
Production:

Cumulative Capacity with Probable Increase



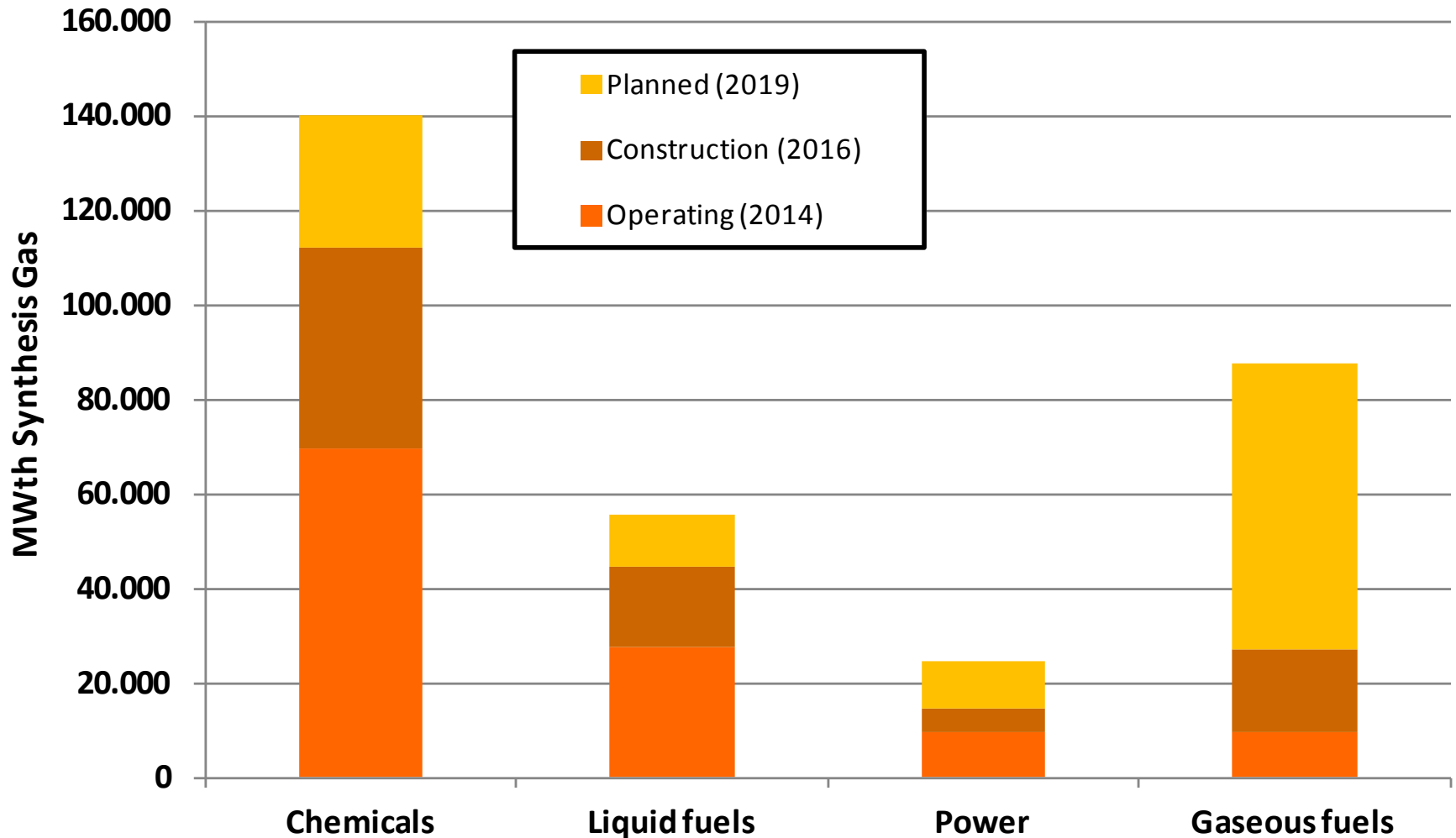
Source: GTC Database, 2014

Gasification by Region



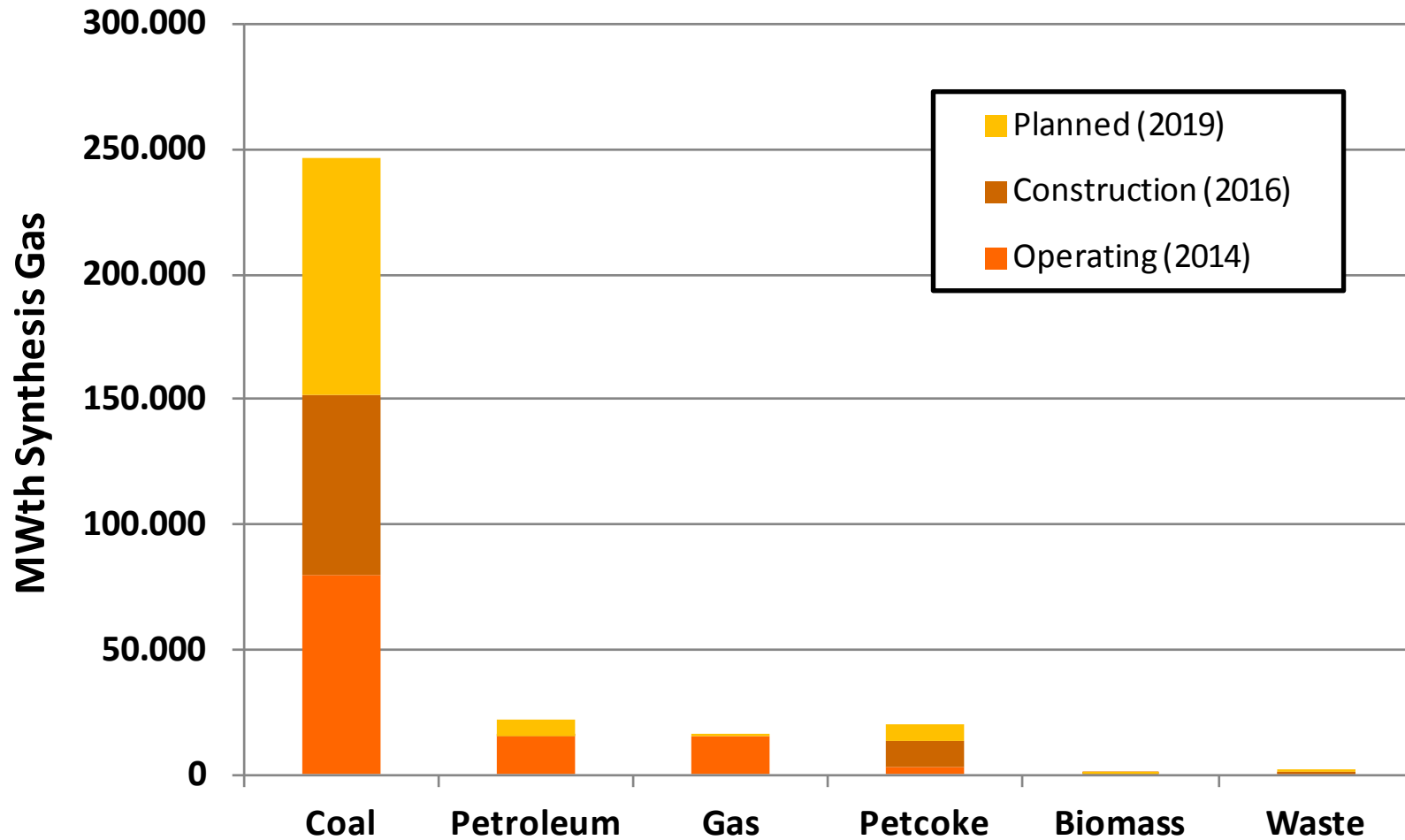
Source: GTC Database, 2014

End Use Applications of Syngas



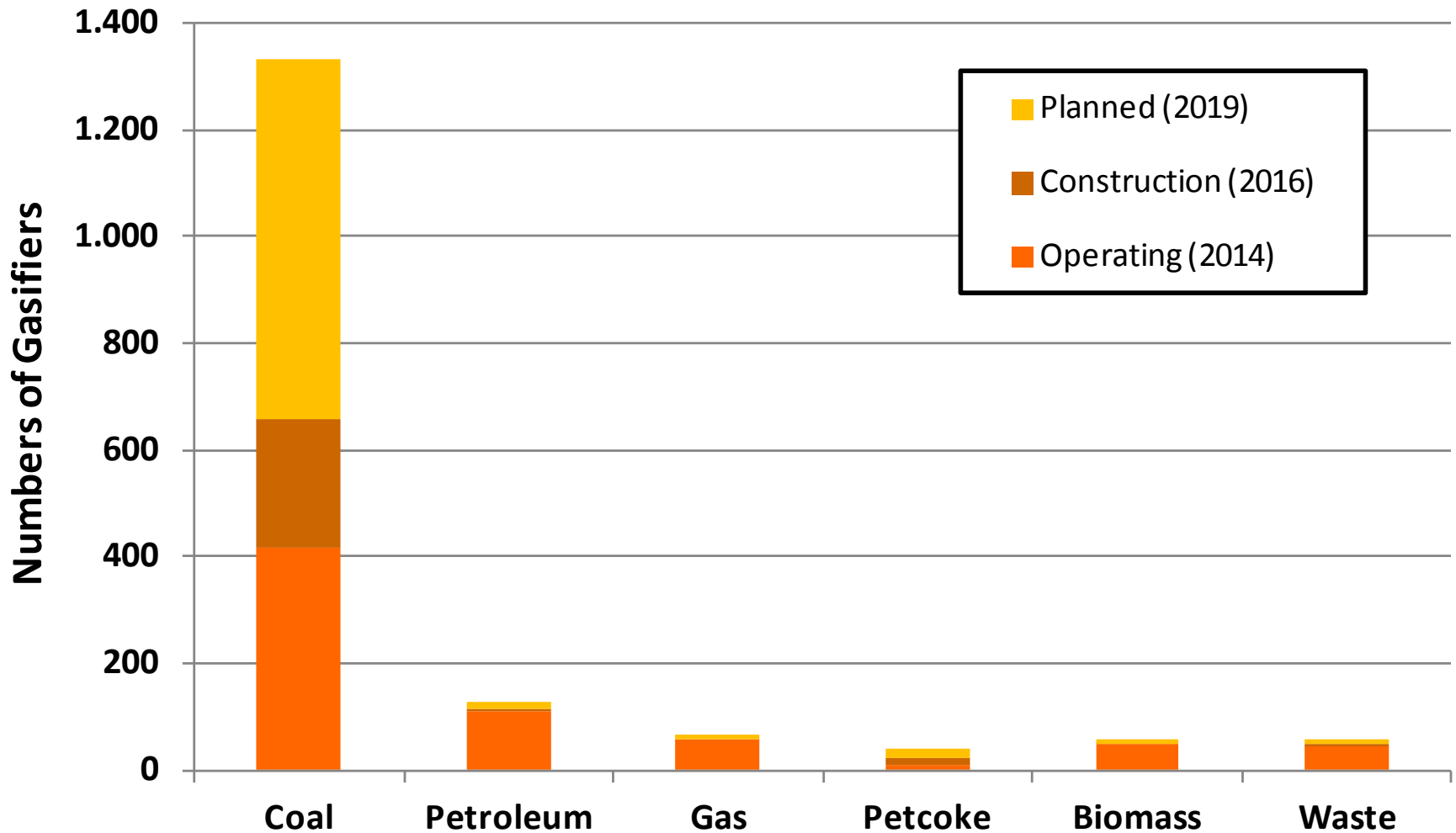
Source: GTC Database, 2014

Primary Feedstocks for Gasification



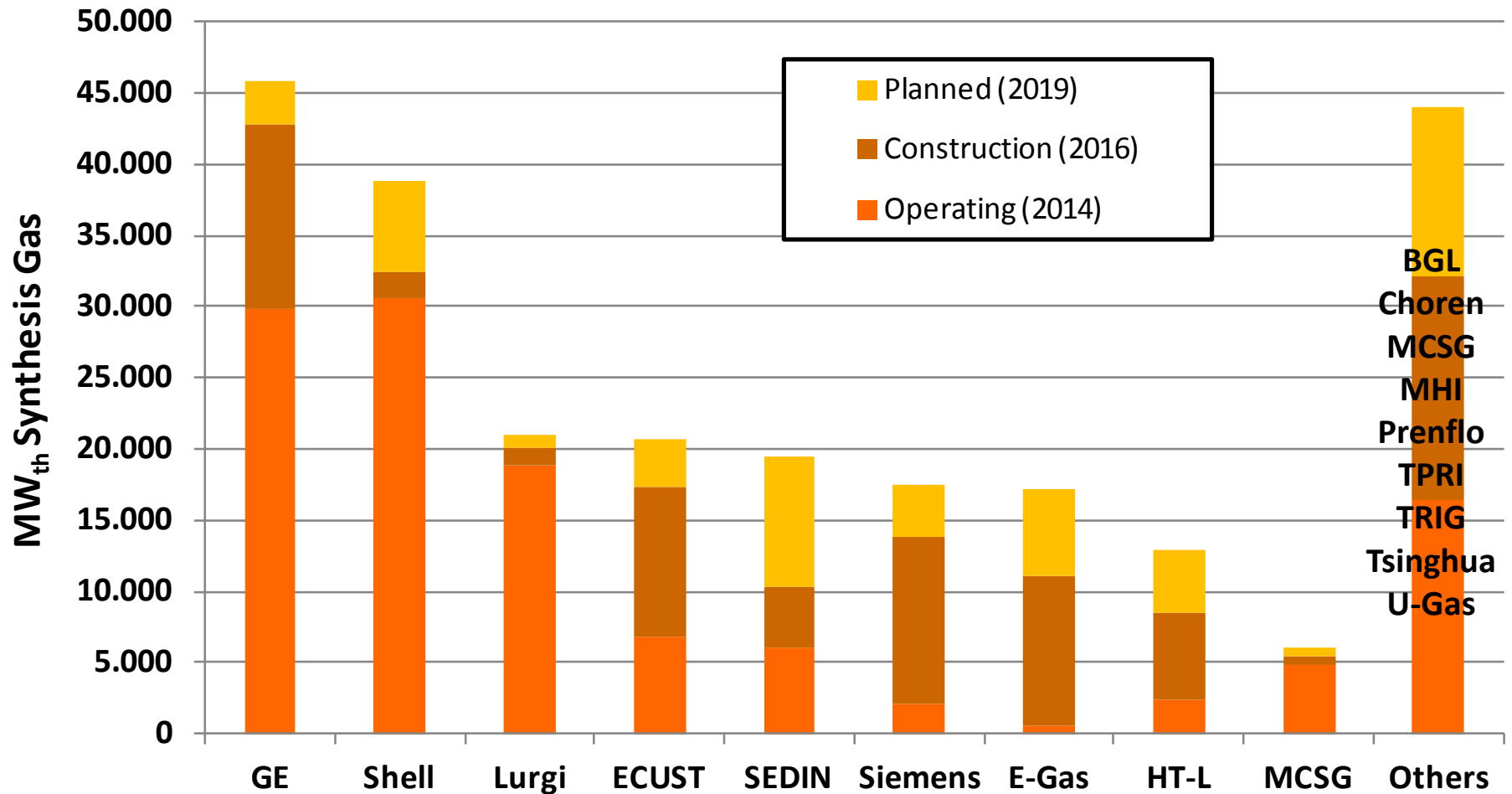
Source: GTC Database, 2014

Number of Gasifiers by Primary Feedstocks



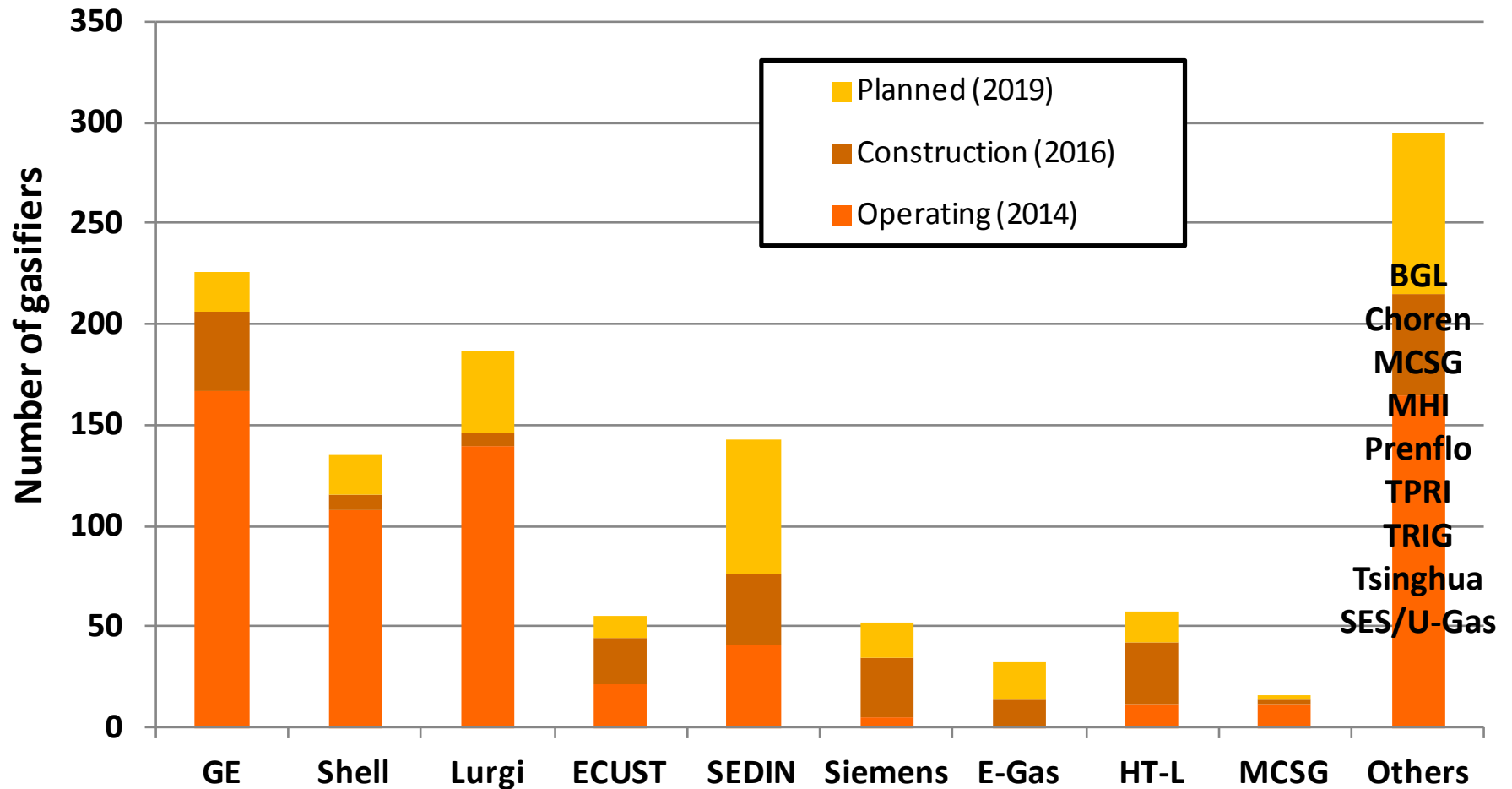
Source: GTC Database, 2014

Gasification by Technology



Source: GTC Database, 2014

Numbers of Gasifiers by Technology



Source: GTC Database, 2014

Top 10 Commercial Gasification Projects

Plants	Location	Techno-logy	Gasifiers	MWth Syngas	Start year	Feedstocks/ Products
Pearl GTL	Qatar	Shell	18 + 0	10936	2011	Natural Gas / FT Liquids
Sinopec Changji SNG Plant	China	Unspecified	20 + 2	10000	2017*	Coal / SNG
Sinopec Urumqi SNG Plant	China	Unspecified	24 + 4	10000	2017*	Coal / SNG
Yinchuan CTL Plant	China	Siemens	22 + 2	9300	2016*	Coal / FT Liquids
Jamnagar Gasification Plant Phase I	India	E-Gas	10 + 0	8893	2015*	Petcoke / Electricity-SNG-CO-Acetic acid
CPI Yili SNG Phase II	China	Unspecified	20 + 2	7500	2016*	Coal / SNG
Huadian Changji SNG Plant	China	Unspecified	20 + 2	7500	2017*	Coal / SNG
Datang Ningxia SNG Plant	China	SEDIN	45 + 3	7125	2015*	Lignite / SNG
Sasol Synfuels West	South Africa	Lurgi FBDB	40 + 0	7048	1977	Subbit. coal / FT liquids
Sasol Synfuels East	South Africa	Lurgi FBDB	40 + 0	7048	1982	Subbit. coal / FT liquids

*Planned/under construction

Top 10 Operating Gasification Projects

Plants	Location	Techno-logy	Gasifiers	MWth Syngas	Start year	Feedstocks/ Products
Pearl GTL	Qatar	Shell	18 + 0	10936	2011	Natural Gas / FT Liquids
Sasol Synfuels West	South Africa	Lurgi FBDB	40 + 0	7048	1977	Subbit. coal / FT liquids
Sasol Synfuels East	South Africa	Lurgi FBDB	40 + 0	7048	1982	Subbit. coal / FT liquids
Datang Duolun MTP Plant	China	Shell	3 + 0	3373	2011	Lignite / Methanol
Shenhua Ningxia Coal to Polypropylene II	China	SEDIN	14+ 2	2500	2014	Coal / Methanol-PP
Shenhua Ningxia Coal to Polypropylene I	China	Siemens	5 + 0	1912	2011	Coal / Methanol-PP
Great Plains Synfuels Plant	United States	Lurgi FBDB	12 + 2	1900	1984	Lignite / SNG
Shenhua Baotou Coal-to-Olefins Plant	China	GE	5 + 2	1750	2011	Coal / Methanol-Olefins
Hexigten SNG Plant	China	SEDIN	12 + 2	1670	2012	Coal / SNG
Rongxin Inner Mongolia Methanol Plant	China	ECUST	2 + 1	1400	2014	Coal / Methanol

Conclusions

- Trends similar to last year.
- Mega-plants contribute to rapid increase in gasification capacity.
- Main growth is in Chinese Coal-to-Chemical industry.
- Chinese SNG plants likely to dominate top 10 in a few years.
- Numbers of biomass and waste gasifiers is increasing steadily.

Acknowledgements

- Gasification Technologies Council.
- Technology licensors and plant owners and others for contribution of project data.
- Any additions/corrections are always welcome
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