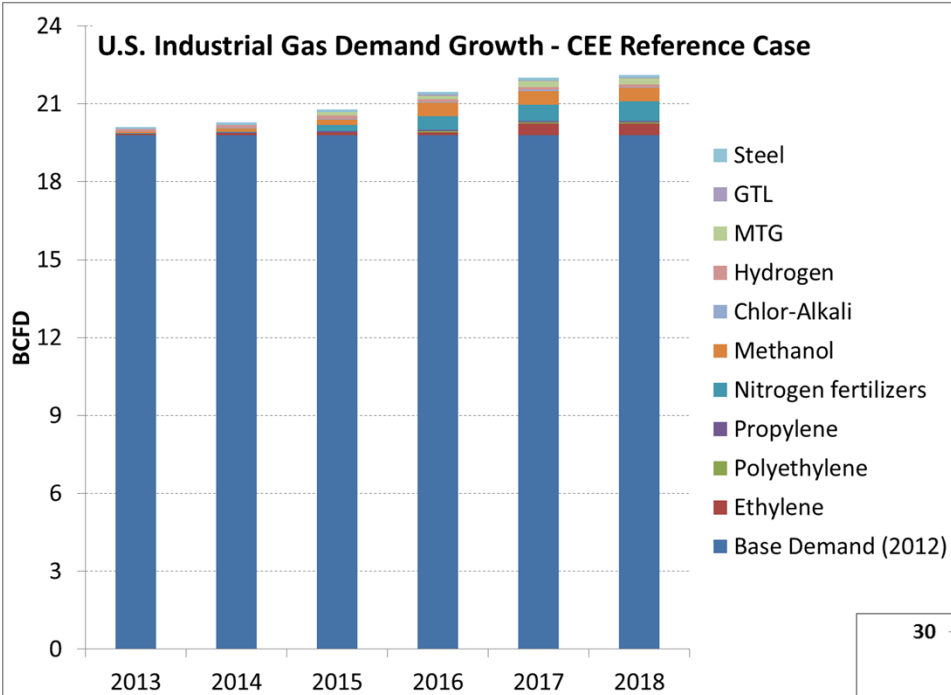


# Industrial Gas Demand in the U.S. – An Update



## CEE Industrial Projects Database

CEE developed a comprehensive inventory of projects in gas-intensive industries in early 2014. We reported some estimates from the database in June 2014. We are now providing an update. There is a smaller number of projects. The biggest change is the elimination of the SASOL GTL facility, which was just recently cancelled. We were cautious about this project's prospect in our June 2014 release but included it as it was reported in FEED.

**U.S. Industrial Gas Demand Growth - CEE Reference Case:** Completed, in FEED, obtaining permits, under construction or otherwise in progress.

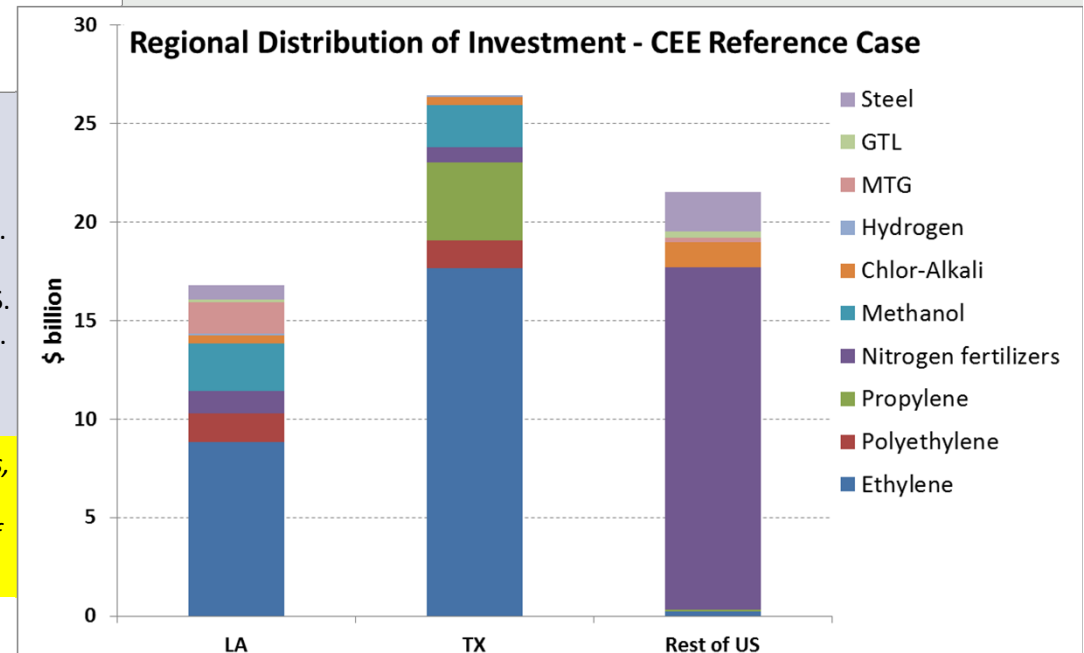
- Number of projects: 83
- Total investment: \$65 billion
- Gas consumption in 2020: **22.1 BCFD**, 2.3 BCFD more than in 2012

**CEE High Case:** Also including projects under consideration or in planning.

- Number of projects: 112
- Total investment: \$98 billion
- Gas consumption in 2020: **23.3 BCFD**

**Regional Distribution of Investment** - While most of the fertilizer capacity expansion is expected in the farm belt, the bulk of industrial investment and gas demand will remain in the Gulf Coast, primarily driven by ethylene-propylene-polyethylene plants and/or complexes. Of \$65 billion investment in the CEE Reference case, 41 percent will be in Texas, 26 percent in Louisiana, and 33 percent in rest of the U.S. The cancellation of GTL plants reduced Louisiana's share significantly. However, in terms of incremental natural gas demand, each region account for roughly a third of the total increase of 2.3 BCFD.

*We identified \$12-14 billion of investment in other chemicals, plastics, manufacturing, and metals, roughly 60% outside TX and LA. We do not have good data on gas use for most of these facilities but most of them are not gas-intensive. Still, this upside potential is worth noting.*



## CEE Reference Case: Counts of Projects and Total Investments in Major Gas-Using Industries (\$ million)

Project Type	Planning		FEED		Permits		In Progress		Completed		Total	
	Count	Investment	Count	Investment	Count	Investment	Count	Investment	Count	Investment	Count	Investment
Chlor-Alkali	1	\$500					1	\$132	4	\$1,956	6	\$2,588
Ethylene	6	\$14,599	1	\$7,000	1	\$972	9	\$17,226	7	\$1,505	24	\$41,303
GTL			2	\$265	1	\$200					3	\$465
Hydrogen	1	\$24					2	\$29	2	\$165	5	\$218
Methanol	4	\$6,100	1	\$1,000			4	\$2,805	2	\$730	11	\$10,635
MTG	3	\$3,200	1	\$195	1	\$200	1	\$1,400			6	\$4,995
Fertilizers	7	\$6,393	1	\$3,000	5	\$5,352	12	\$10,490	4	\$438	29	\$25,673
Polyethylene	5	\$922	2	\$386			7	\$2,467	1	\$20	15	\$3,796
Propylene	2	\$1,380			1	\$1,200	4	\$2,499	2	\$357	9	\$5,436
Steel									4	\$2,755	4	\$2,755
<b>Grand Total</b>	<b>29</b>	<b>\$33,119</b>	<b>8</b>	<b>\$11,846</b>	<b>9</b>	<b>\$7,924</b>	<b>40</b>	<b>\$37,048</b>	<b>26</b>	<b>\$7,927</b>	<b>112</b>	<b>\$97,865</b>

**Ethylene:** \$41 billion investment across 24 plants for incremental capacity of 16.3 million metric tons per year (mt/yr).

- 11 expansions
  - 7 completed (\$1.5 billion; 2.1 million mt/yr)
  - 4 in progress; expected online 2015 (\$1.2 billion; 650,000 mt/yr)
- 13 new builds
  - 5 in progress; expected online 2015-17 (\$16 billion; 6.2 million mt/yr)
  - 1 pursuing permits; expected online by 2017 (\$972 million; 500,000 mt/yr)
  - 1 in FEED; expected online by 2017 (\$7 billion; 1.5 million mt/yr)
  - 6 in planning (\$14.6 billion; 5.3 million mt/yr)

**Fertilizers:** Close to \$26 billion investment across 29 plants for incremental capacity of 15 million mt/yr.

- 1 restart completed (\$260 million; 500,000 mt/yr).
- 8 expansions
  - 2 completed (\$164 million; 216,000 mt/yr)
  - 5 in progress; expected online 2015-16 (\$4.7 billion; 3.6 million mt/yr)
  - 1 in planning (\$43 million; 55,000 mt/yr)
- 20 new builds
  - 1 completed (\$14 million; 13,900 mt/yr)
  - 7 in progress; expected online 2015-17 (\$5.8 billion; 3.6 million mt/yr)
  - 5 pursuing permits; expected online 2016-17 (\$5.4 billion; 2.7 million mt/yr)
  - 1 in FEED; expected online in 2017 (\$3 billion; 876,000 mt/yr)
  - 6 in planning (\$6.4 billion; 3 million mt/yr)

**Methanol:** Close to \$11 billion investment across 11 plants for incremental capacity of 7.1 million mt/yr.

- 2 relocations, one completed and one in progress, each worth \$550 million and 1 million mt/yr.
- 1 restart in 2013 (\$180 million; 780,000 mt/yr).
- 8 new projects
  - 3 in progress and expected online by 2016 (\$2.3 billion; 3.3 million mt/yr).
  - 1 in FEED and expected online in 2016 (\$1 billion; 1.75 million mt/yr).
  - 4 in planning (\$6 billion; 7 million mt/yr)