

NORTH AMERICAN MIDSTREAM INFRASTRUCTURE THROUGH 2035

APRIL 12, 2016



LEANING INTO THE HEADWINDS

Midstream infrastructure – mainline pipelines, laterals, processing plants, gathering lines, compression, lease equipment and storage – is essential to bringing domestic natural gas, natural gas liquids and oil production to households, businesses, industrial consumers, refineries and electric power generators. The benefits of the shale revolution that have transformed the North American energy landscape can only be realized by constructing new midstream infrastructure.

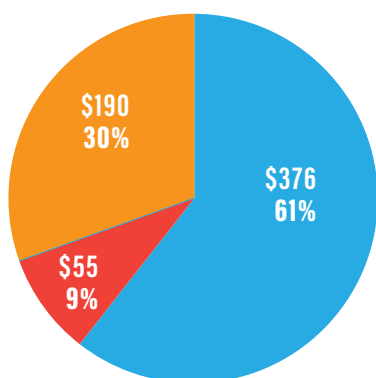
The INGAA Foundation, Inc. has sponsored reports forecasting midstream infrastructure for more than 20 years. The reports inform industry, policymakers and stakeholders about the new dynamics of North America's energy markets and the need for infrastructure development.

\$546 BILLION

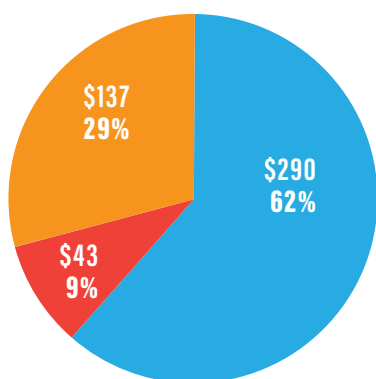
**TOTAL PROJECTED MIDSTREAM
CAPITAL EXPENDITURES**

TOTAL INFRASTRUCTURE INVESTMENT IS SUBSTANTIAL, AVERAGING
\$22.5 TO \$30 BILLION PER YEAR. THE MAJORITY OF MIDSTREAM
ACTIVITY IS ASSOCIATED WITH NATURAL GAS DEVELOPMENT.

HIGH CASE | BILLIONS OF 2015
2015-2035 | **\$621**



LOW CASE | BILLIONS OF 2015
2015-2035 | **\$471**



CRUDE OIL NATURAL GAS NGL

NATURAL GAS CAPITAL EXPENDITURES IS \$13.8 TO \$17.9 BILLION PER YEAR (2015-2035)

BILLIONS OF 2015\$ ¹	CURRENT STUDY	CURRENT STUDY	PRIOR STUDY
	HIGH CASE	LOW CASE	BASE CASE
GAS TRANSMISSION MAINLINE PIPE	\$3.6	\$2.2	\$4.2
LATERALS TO/FROM POWER PLANTS, GAS STORAGE AND PROCESSING PLANTS	\$2.4	\$1.5	\$2.2
GATHERING LINE (PIPE ONLY)	\$1.6	\$1.4	\$1.7
GAS GATHERING LINE COMPRESSION	\$1.4	\$1.1	\$1.1
GAS LEASE EQUIPMENT	\$1.3	\$1.1	\$1.3
GAS PIPELINE & STORAGE COMPRESSION	\$0.9	\$0.6	\$0.5
GAS STORAGE FIELDS	\$0.2	\$0.1	\$0.5
GAS PROCESSING CAPACITY	\$1.7	\$1.3	\$1.2
LNG EXPORT FACILITIES	\$3.7	\$3.4	\$2.2
TOTAL CAPITAL EXPENDITURES	\$16.8	\$12.7	\$14.9
TOTAL W/ IM & NOX CONTROL	\$17.9	\$13.8	N/A

¹ CAPEX REPORTED IN THE PRIOR STUDY WERE CONVERTED FROM 2012\$ TO 2015\$, USING A 4.3% INFLATION FACTOR.