

ESG/Sustainability Quantitative Information



Parent Company: Berkshire Hathaway Energy Company

Operating Company(s): Northern Natural Gas Company

Report Date: As of and for the year ended December 31, 2018

Disclaimer: Data included herein is based on information available as of October 28, 2019, and is subject to change without notice should new or additional information be obtained.

Refer to the "Definitions" column for more information on each metric.	Current Year 2018	Definitions
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Natural Gas Distribution

All methane leak sources per 98.232 (i) (1-6) are included for Distribution. Combustion sources are excluded. CO₂ is excluded.

Methane Emissions and Mitigation from Distribution Mains

Number of Gas Distribution Customers	NA	
Distribution Mains in Service	NA	These metrics should include all local distribution companies (LDCs) held by the Parent Company that are above the LDC Facility reporting threshold for EPA's 40 C.F.R. 98, Subpart W reporting rule.
Plastic (miles)	NA	
Cathodically Protected Steel - Bare & Coated (miles)	NA	
Unprotected Steel - Bare & Coated (miles)	NA	
Cast Iron / Wrought Iron - without upgrades (miles)	NA	
Plan/Commitment to Replace / Upgrade Remaining Miles of Distribution Mains (# years to complete)		These metrics should provide the number of years remaining to take out of service, replace or upgrade cathodically unprotected steel mains, and cast iron/wrought iron mains, consistent with applicable state utility commission authorizations.
Unprotected Steel (Bare & Coated) (# years to complete)	NA	Optional: # yrs by pipe type.
Cast Iron / Wrought Iron (# years to complete)	NA	Optional: # yrs by pipe type.

Distribution CO₂e Fugitive Emissions

CO ₂ e Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	NA	Fugitive methane emissions (not CO ₂ combustion emissions) stated as CO ₂ e, as reported to EPA under 40 CFR 98, Subpart W, sections 98.236(q)(3)(ix)(D), 98.236(r)(1)(v), and 98.236(r)(2)(v)(B) - i.e., this is Subpart W methane emissions as input below and converted to CO ₂ e here. This metric should include fugitive methane emissions above the reporting threshold for all natural gas local distribution companies (LDCs) held by the Parent Company that are above the LDC Facility reporting threshold for EPA's 40 C.F.R. 98, Subpart W reporting rule. <u>Calculated value based on mt CH₄ input below.</u>
CH ₄ Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	NA	INPUT VALUE (total mt CH ₄) as explained in definition above. Subpart W input is CH ₄ (mt).
CH ₄ Fugitive Methane Emissions from Gas Distribution Operations (MMSCF/year)	NA	
Annual Natural Gas Throughput from Gas Distribution Operations in thousands of standard cubic feet (Mscf/year)	NA	This metric provides gas throughput from distribution (quantity of natural gas delivered to end users) reported under Subpart W, 40 C.F.R. 98.236(aa)(9)(iv), as reported on the Subpart W e-GRRT integrated reporting form in the "Facility Overview" worksheet Excel form, Quantity of natural gas delivered to end users (column 4).
Annual Methane Gas Throughput from Gas Distribution Operations in millions of standard cubic feet (MMscf/year)	NA	
Fugitive Methane Emissions Rate	NA	Calculated annual metric: (MMSFC methane emissions/MMSCF methane throughput)

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Natural Gas Transmission and Storage

<u>All methane leak sources per 98.232 (e) (1-8), (f)(1-8), and (m) are included for Transmission and Storage. Combustion sources are excluded. CO₂ and N₂O are excluded.</u>		
Transmission Pipelines, Blow Down Volumes, and Fugitive Emissions		
Total Miles of Transmission Pipeline Operated by gas utility (miles)	14,928	
Volume of Transmission Pipeline Blow Down Emissions - outside storage and compression facilities:		As reported to EPA under 40 CFR 98, Subpart W.
Scf natural gas - pipeline throughput	1,520,510,194,000	
Scf natural gas - pipeline blowdowns	291,587,240	
Metric tons CO ₂ e - pipeline blowdowns	125,121	
Underground Natural Gas Storage Emissions		
Storage Compressor Station Emissions (metric tons CO ₂ e)	45,548	As reported to EPA under 40 CFR 98, Subpart W.
Storage Facility Wellhead Component Fugitive Emissions (metric tons of CO ₂ e)	48,621	Utilizing EPA emissions factors, as reported to EPA under Subpart W, 40 CFR 98.236, on the e-GRRT integrated reporting form, "Equipment Leaks Surveys and Population Counts [98.236 (q, r)]" tab.
CO₂e Emissions from Transmission and Storage Compression		
CO ₂ e Emissions from Transmission Pipelines (metric tons)	1,253,329	CO ₂ combustion emissions as reported to EPA under 40 CFR 98, Subpart C and methane emissions stated as CO ₂ e as reported under Subpart W.
CO ₂ e Emissions for Storage Facilities (metric tons)	162,363	CO ₂ combustion emissions as reported to EPA under 40 CFR 98, Subpart C and methane emissions stated as CO ₂ e as reported under Subpart W.
Conventional Air Emissions from Transmission and Storage Compression		
Emissions reported for all permitted sources (minor or major)		The number of permitted sources for conventional emissions may not be the same number of sources reporting under the EPA GHG reporting rule. Companies may wish to describe which, or how many, sources are included in the conventional pollutants data and whether the CO ₂ e data reported includes all of these sources.
NO _x (metric tons per year)	10,911	
VOC (metric tons per year)	505	

Natural Gas Gathering and Boosting

Methane Emissions		
Gathering and Boosting Pipelines, Blow Down Volumes, and Emissions		
Total Miles of Gathering Pipeline Operated by gas utility (miles)	NA	
Volume of Gathering Pipeline Blow Down Emissions (scf)	NA	This metric is collected to support calculations under EPA 40 CFR 98, Subpart W.
Gathering Pipeline Blow-Down Emissions outside storage and compression facilities (metric tons CO ₂ e)	NA	
CO₂e Combustion Emissions from Gathering and Boosting Compression		
CO ₂ e Emissions for Gathering & Boosting Compression Stations (metric tons)	NA	CO ₂ combustion emissions as reported to EPA under 40 CFR 98, Subpart C, as directed in Subpart W, 98.232(k).
Conventional Combustion Emissions from Gathering and Boosting Compression		
Emissions reported for all permitted sources (minor or major)		The number of permitted sources for conventional emissions may not be the same number of sources reporting under the EPA GHG reporting rule. Companies may wish to describe which, or how many, sources are included in the conventional pollutants data and whether the CO ₂ e data reported includes all of these sources.
NO _x (metric tons per year)	NA	
VOC (metric tons per year)	NA	

Comments

Emissions have only been aggregated for facilities that are subject to the reporting for the USEPA GHG Subpart C and Subpart W.