Gas Company 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, 2019*

Disclaimer: *Data included herein is based on information available as of November 4, 2020, 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.	Last Year 2018	Current Year 2019	% Change	Definitions
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	NA	-	
Distribution Mains in Service	NA	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	NA	-	
Cathodically Protected Steel - Bare & Coated (miles)	NA	NA	-	
Unprotected Steel - Bare & Coated (miles)	NA	NA	-	
Cast Iron / Wrought Iron - without upgrades (miles)	NA	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 catholdically unprotected steel mains, and cast iron/wrought iron mains, consistent with applicable state utility commission authorizations.
Unprotected Steel (Bare & Coated) (# years to complete)	NA	NA	-	Optional: # yrs by pipe type.
Cast Iron / Wrought Iron (# years to complete)	NA	NA	-	Optional: # yrs by pipe type.
Distribution CO2e Fugitive Emissions				
CO2e Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	NA	NA	-	Fugitive methane emissions (not CO2 combustion emissions) stated as CO2e, 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 in row 2.2 below and converted to CO2e 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. Calculated value based on mt CH4 input in the 2.2 (below).
CH4 Fugitive Methane Emissions from Gas Distribution Operations (metric tons)	NA	NA	-	INPUT VALUE (total mt CH4) as explained in definition above. Subpart W input is CH4 (mt).
CH4 Fugitive Methane Emissions from Gas Distribution Operations (MMSCF/year)	NA	NA	-	
Annual Natural Gas Throughput from Gas Distribution Operations in thousands of standard cubic feet (Mscf/year)	NA	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	NA	-	
Fugitive Methane Emissions Rate (Percent MMscf of Methane Emissions per MMscf of Methane Throughput)	NA	NA	-	Calculated annual metric: (MMSFC methane emissions/MMSCF methane throughput)

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Natural Gas Transmission and Storage				
				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.
Onshore Natural Gas Transmission Compression Methane Emissions				Fugitive Methane emissions as defined in 40 CFR 98 Sub W Section 232 (e) (1-8), CO2 and N2O emissions are excluded from this section.
Pneumatic Device Venting (metric tons/year)	1,023	1,048	2.4 %	Value reported using calculation in 40 CFR 98 Sub W Section 236(b)(4)
Blowdown Vent Stacks (metric tons/year)	2,445	2,187	(10.5)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(i)(1)(iii)
Transmission Storage Tanks (metric tons/year)	199	3	(98.7)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(k)(2)(v)
Flare Stack Emissions (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(n)(11)
Centrifugal Compressor Venting (metric tons/year)	494	96	(80.6)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(o)(2)(ii)(D)(2)
Reciprocating Compressor Venting (metric tons/year)	2,068	1,437	(30.5)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(p)(2)(ii)(D)(2)
Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters (metric tons/year)	448	722	61.1 %	Value reported using calculation in 40 CFR 98 Sub W Section 236(q)(2)(v)
Other Leaks (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(q)(2)(v)
Total Transmission Compression Methane Emissions (metric tons/year)	6,676	5,493	(17.7)%	
Total Transmission Compression Methane Emissions (CO2e/year)	166,910	137,329	(17.7)%	
Total Transmission Compression Methane Emissions (MSCF/year)	347,729	286,101	(17.7)%	Density of Methane = 0.0192 kg/ft3 per 40 CFR Sub W EQ. W-36
Underground Natural Gas Storage Methane Emissions				Fugitive Methane emissions as defined in 40 CFR 98 Sub W Section 232 (f) (1-8), CO2 and N2O emissions are excluded from this section.
Pneumatic Device Venting (metric tons/year)	1,592	1,589	(0.2)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(b)(4)
Flare Stack Emissions (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(n)(11)
Centrifugal Compressor Venting (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(o)(2)(ii)(D)(2)
Reciprocating Compressor Venting (metric tons/year)	303	302	(0.3)%	Value reported using calculation in 40 CFR 98 Sub W Section 236(p)(2)(ii)(D)(2)
Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters (metric tons/year)	103	136	31.3 %	Value reported using calculation in 40 CFR 98 Sub W Section 236(q)(2)(v)
Other Equipment Leaks (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(q)(2)(v)
Equipment leaks from valves, connectors, open-ended lines, and pressure relief valves associated with storage wellheads (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 236(q)(2)(v)
Other equipment leaks from components associated with storage wellheads (metric tons/year)	-	-	-	Value reported using calculation in 40 CFR 98 Sub W Section 232(q)(2)(v)
Total Storage Compression Methane Emissions (metric tons/year)	1,999	2,027	1.4 %	
Total Storage Compression Methane Emissions (CO2e/year)	49,969	50,663	1.4 %	
Total Storage Compression Methane Emissions (MSCF/year)	104,103	105,547	1.4 %	Density of Methane = 0.0192 kg/ft3 per 40 CFR Sub W EQ. W-36
Onshore Natural Gas Transmission Pipeline Blowdowns				Blowdown vent stacks for onshore transmission pipeline as defined in 40 CFR 98 Sub W Section 232 (m), CO2 and N2O emissions are excluded from this section.
Transmission Pipeline Blowdown Vent Stacks (metric tons/year)	5,000	3,806	(23.9)%	Value reported using calculation in 40 CFR 98 Sub W Section 232(i)(3)(ii)
Transmission Pipeline Blowdown Vent Stacks (CO2e/year)	125,005	95,150	(23.9)%	
Transmission Pipeline Blowdown Vent Stacks (MSCF/year)	260,427	198,229	(23.9)%	
Other Non-Sub W Emissions Data (OPTIONAL)				(OPTIONAL) If desired, report additional sources required by ONE Future include dehydrator vents, storage station venting transmission pipeline leaks, and storage tank methane.
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (metric tons/year)	-	-	-	
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (CO2e/year)	-	-	-	
Total Methane Emissions from additional sources not recognized by 40 CFR 98 Subpart W (MSCF/year)	-	-	-	
Summary and Metrics				
Total Transmission and Storage Methane Emissions (MMSCF/year)	712	590	(17.2)%	
Annual Natural Gas Throughput from Gas Transmission and Storage Operations (MSCF/year)	1,513,619,347	1,603,310,673	5.9 %	**Throughput data selected is sourced from the FERC Form 2.**
Annual Methane Gas Throughput from Gas Transmission and Storage Operations (MMSCF/year)	1,437,938	1,523,145	5.9 %	Methane content in natural gas equals 95% based on 40 CFR 98 Sub W 233(u)(2)(vii)
Methane Emissions Intensity Metric (Percent MMscf of Methane Emissions per MMscf of Methane Throughput)	0.0495 %	0.0387 %	(21.8)%	

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Natural Gas Gathering and Boosting				
METHANE EMISSIONS				
Gathering and Boosting Pipelines, Blow Down Volumes, and Emissions	NA	NA	-	
Total Miles of Gathering Pipeline Operated by gas utility (miles)	NA	NA	-	
Volume of Gathering Pipeline Blow Down Emissions (scf)	NA	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 CO2e)	NA	NA	-	
CO2e COMBUSTION EMISSIONS FOR GATHERING & BOOSTING COMPRESSION				
CO2e Emissions for Gathering & Boosting Compression Stations (metric tons)	NA	NA	-	CO2 combustion emissionsas reported to EPA under 40 CFR 98, Subpart C, as directed in Subpart W, 98.232(k).
CONVENTIONAL COMBUSTION EMISSIONS FROM GATHERING & BOOSTING COMPRESSION				
Emissions reported for all permitted sources (minor or major)	NA	NA	-	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 CO2e data reported includes all of these sources.
NOx (metric tons per year)	NA	NA	-	
VOC (metric tons per year)	NA	NA	-	