

Contracted wastewater treatment

Methane emissions from wastewater treatment														
Number of Federal employees	Number of excluded employees	Number of wastewater-subject employees			kg BOD / employee / day	workdays / year	Fraction of BOD allocated to workplace	Total BOD produced and allocated to workplace (kg)	Percentage of systems with primary treatment (%)	Percentage of BOD removed in primary treatment (%)	Methane correction factor	Methane-producing capacity of wastewater (kg CH4 / kg BOD)	Methane global warming potential (GWP)	Agency methane emissions from wastewater treatment (mtCO2e)
2,752	0	2,752			0.09	230	0.5	28,483	82.2%	32.5%	0.036	0.6	21	7.169
			Nitrous oxide emissions from effluent discharge											
			kg N / employee / day	Nitrogen uptake (kg N / kg BOD)	kg BOD / employee / day	workdays / year	Fraction of N allocated to workplace	Total N produced and allocated to workplace (kg)	Percentage of systems with nitrification/denitrification (%)	Fraction of nitrogen removed for systems with nitrification/denitrification	Molecular weight ratio of N2O to N2	Effluent emission factor (kg N2O-N / kg sewage-N produced)	Nitrous oxide global warming potential (GWP)	Agency nitrous oxide emissions from effluent discharge (mtCO2e)
			0.026	0.05	0.09	230	0.5	6,804	36.5%	0.7	1.571	0.005	310	12.339
			Nitrous oxide emissions from systems with nitrification/denitrification											
									Percentage of systems with nitrification/denitrification (%)			Emission factor (g N2O / employee / year)	Nitrous oxide global warming potential (GWP)	Agency nitrous oxide emissions from systems with nitrification/denitrification (mtCO2e)
												36.5%	7.0	310
			Nitrous oxide emissions from systems without nitrification/denitrification											
									Percentage of systems with nitrification/denitrification (%)			Emission factor (g N2O / employee / year)	Nitrous oxide global warming potential (GWP)	Agency nitrous oxide emissions from nitrification/denitrification (mtCO2e)
												63.5%	3.2	310
			Total emissions											
			Total agency emissions from wastewater treatment (mtCO2e)											
			23.421											

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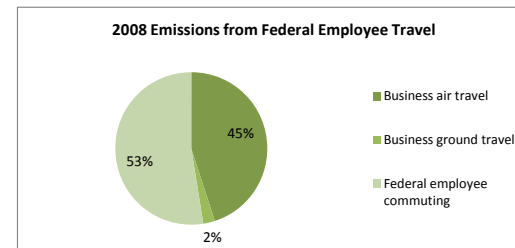
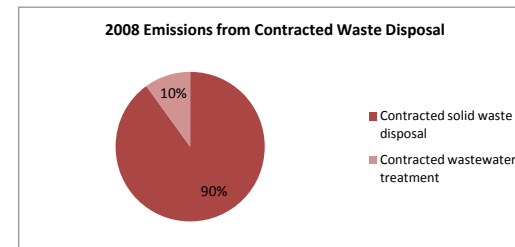
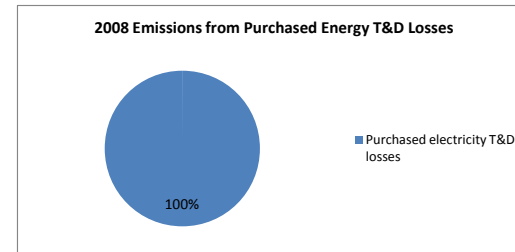
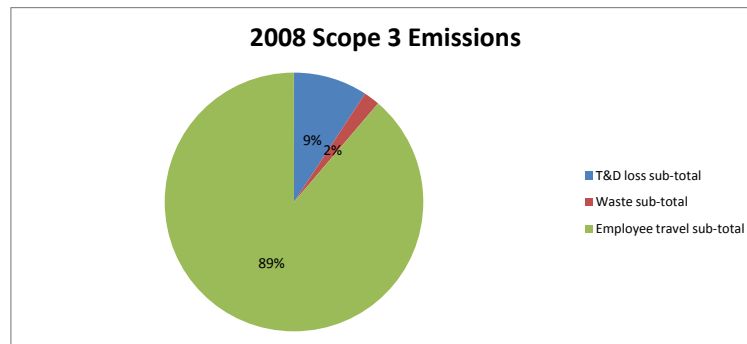
Summary: Scope 3 Emissions Reduction Target

		Automatic calculations				(Optional manual entries)	
		Estimated 2008 emissions (mtCO2e)	Reduction target (%)	(Optional manual entry) Alternative reduction target chosen by agency (%)	Estimated 2020 emissions (mtCO2e)	Manual entry of emissions distribution (%)	Reduction target (%)
Transmission and distribution (T&D) losses from purchased energy	Purchased electricity T&D losses	1,083.790	5.0%		1,029.601		
	T&D loss sub-total	1,083.790	5.0%		1,029.601	0.0%	#DIV/0!
Contracted waste disposal	Contracted solid waste disposal	211.454	5.0%		200.881		
	Contracted wastewater treatment	23.421	1.0%		23.187		
	Waste sub-total	234.874	4.6%		224.067	0.0%	#DIV/0!
Federal employee travel	Business air travel	4,685.000	5.0%		4,450.750		
	Business ground travel	256.062	5.0%		243.259		
	Federal employee commuting	5,466.848	5.0%		5,193.505		
	Employee travel sub-total	10,407.910	5.0%		9,887.514	0.0%	#DIV/0!
Agency total		11,726.574	5.0%		11,141.182	Manual entry of emissions distribution among the three categories (%) T&D losses Waste Employee travel Total	
							#DIV/0!

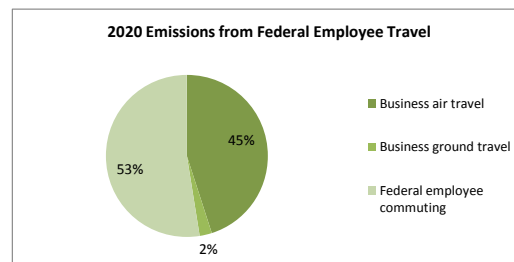
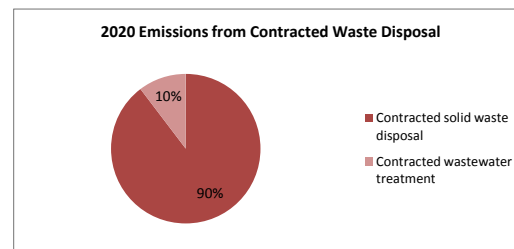
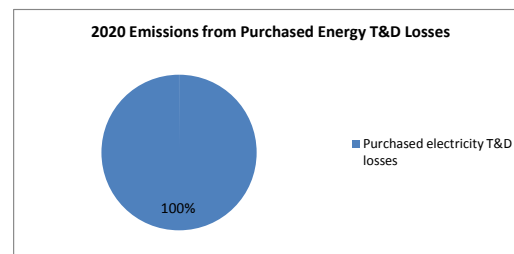
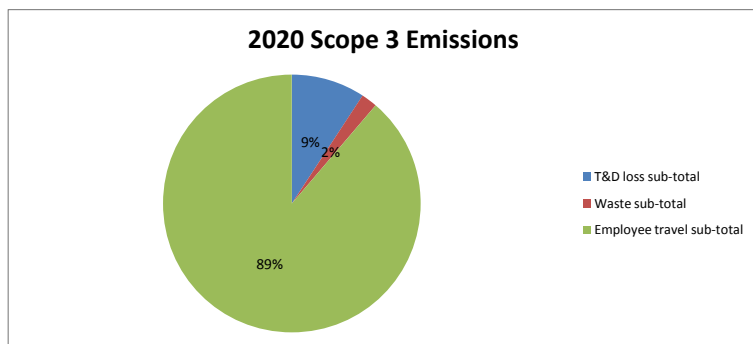
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The content of this scope 3 target tool is deliberative, pre-decisional communication. It is not Administration policy. Do not release.

Agency Name
2008 Estimated Distribution of Scope 3 Emissions



Agency Name
2020 Estimated Distribution of Scope 3 Emissions



Purchased electricity transmission and distribution (T&D) losses

Agency annual purchased electricity consumption from off-site sources (MWh)	National average electricity transmission and distribution (T&D) loss (%)	Electricity lost through T&D (MWh)	Emission factors for individual greenhouse gases		T&D emissions from individual greenhouse gases (metric tons of each gas)	Agency total CO ₂ -equivalent emissions from electricity T&D losses (mtCO ₂ e)
25,720	6.5%	1,788.021	Carbon dioxide (CO ₂) (lb/MWh)	1,329.35	1,078.147	1,083.790
			Methane (CH ₄) (lb/GWh)	27.27	0.022	
			Nitrous oxide (N ₂ O) (lb/GWh)	20.60	0.017	

Business air travel by Federal employees

Agency annual emissions from air travel (emissions data generated directly by GSA Travel Management Information System) (mtCO ₂ e)
4,685.000

Business ground travel by Federal employees

Rental vehicle travel					Non-rental vehicle travel							Total ground travel emissions (mtCO2e)	
							Emission factors						
Type of fuel for rental vehicles	Fuel for rental vehicles (gallons)	Emission factor (kg CO2 / gal)	Annual emissions for each fuel type (mtCO2e)	Annual emissions for rental vehicle business ground travel (mtCO2e)	Mode of transportation	Distance traveled (miles)	CO2 emissions factor (kg CO2 / mile)	CH4 emissions factor (kg CH4 / mile)	N2O emissions factor (kg N2O / mile)	Annual emissions for each non-rental mode of transportation (mtCO2e)	Annual emissions for non-rental vehicle business ground travel (mtCO2e)	256.062	
Gasoline	9,457	8.81	83.316	244,610	Personal vehicle used for business travel	20,000	0.364	0.000031	0.000032	7.491	11.452		
Diesel	15,891	10.15	161.294		Bus	-	0.107	0.000006	0.000005	-			
					Transit rail (e.g., subways and trams)	12,000	0.163	0.000004	0.000002	1.964			
					Commuter rail	-	0.172	0.000002	0.000001	-			
					Intercity rail (e.g., Amtrak)	10,772	0.185	0.000002	0.000001	1.997			

Federal employee commuting

Mode of transportation	Commute distance traveled (miles)	Number of commute days per year	Emission factors			Annual emissions for each mode of transportation (mtCO2e)	Total annual emissions from employee commuting (mtCO2e)
			CO2 emissions factor (kg CO2 / mile)	CH4 emissions factor (kg CH4 / mile)	N2O emissions factor (kg N2O / mile)		
Car	35,000	180	0.364	0.000031	0.000032	2,360	5,467
Light-duty truck	30,000	180	0.519	0.000036	0.000047	2,885	
Motorcycle	175	180	0.167	0.000070	0.000007	5	
Bus	750	180	0.107	0.0000006	0.0000005	14	
Transit rail (e.g., subways and trams)	6,850	180	0.163	0.000004	0.000002	202	
Commuter rail	-	-	0.172	0.000002	0.000001	-	
Intercity rail (e.g., Amtrak)	-	-	0.185	0.000002	0.000001	-	
Walk / bike	216	180	0	0	0	-	

3,498.78

Contracted solid waste disposal

Mass of municipal solid waste disposed at off-site landfills (lbs)	Mass of waste converted to gigagrams (Gg)	Methane correction factor	Degradable organic carbon (Gg C / Gg waste)	Fraction of degradable organic carbon simulated	Fraction of methane by volume in generated landfill gas	Molecular weight ratio of CH ₄ to C	Percentage of methane recovered and combusted (%)	Percentage of methane oxidized (%)	Methane emissions (Gg)	Methane global warming potential (GWP)	Carbon dioxide equivalent emissions (mtCO ₂ e)
670,060	0.303934	1	0.203	0.5	0.5	1.333	45.6%	10%	0.010069	21	211.454