This spreadsheet contains Worksheet 6-1, in accordance with the
Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM SOLID WASTE DISPOSAL SITES**
WORKSHEET	**6-1**
SHEET	**1 OF 1**
COUNTRY	**0**
YEAR	**0**

STEP 1	**STEP 2**	**STEP 3**						**STEP 4**				
A Total Annual MSW Disposed to SWDSs (Gg MSW)	B Methane Correction Factor (MCF)	C Fraction of DOC in MSW	D Fraction of DOC which Actually Degrades	E Fraction of Carbon Released as Methane	F Conversion Ratio	G Potential Methane Generation Rate per Unit of Waste (Gg CH_4/Gg MSW)	H Realised (Country-specific) Methane Generation Rate per Unit of Waste (Gg CH_4/ Gg MSW)	J Gross Annual Methane Generation (Gg CH_4)	K Recovered Methane per Year (Gg CH_4)	L Net Annual Methane Generation (Gg CH_4)	M One Minus Methane Oxidation Correction Factor	N Net Annual Methane Emissions (Gg CH_4)
						G= (C x D x E x F)	H= (B x G)	J= (H x A)		L= (J - K)		N= (L x M)
					16/12	0.00	0.00	0.00		0.00		0.00
					16/12	0.00	0.00	0.00		0.00		0.00
					16/12	0.00	0.00	0.00		0.00		0.00

Documentation box:

Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains Worksheet 6-1A (supplemental), in accordance with the
Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**QUANTITY OF MSW DISPOSED OF IN SOLID WASTE DISPOSAL SITES USING COUNTRY DATA**
WORKSHEET	**6-1A (SUPPLEMENTAL)**
SHEET	**1 OF 1**
COUNTRY	**0**
YEAR	**0**

A Population whose Waste goes to SWDSs (Urban or Total) (persons)	B MSW Generation Rate (kg/capita/day)	C Annual Amount of MSW Generated (Gg MSW)	D Fraction of MSW Disposed to SWDSs (Urban or Total)	E Total Annual MSW Disposed to SWDSs (Gg MSW)
		C = (A x B x 365)/1 000 000		E = (C x D)
		0.00		0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains Worksheet 6-1B (supplemental), in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**QUANTITY OF MSW DISPOSED OF IN SOLID WASTE DISPOSAL SITES USING DISPOSAL RATE DEFAULT DATA**
WORKSHEET	**6-1B (SUPPLEMENTAL)**
SHEET	**1 OF 1**
COUNTRY	**0**
YEAR	**0**

A Population whose Waste goes to SWDSs (Urban or Total) (persons)	B MSW Disposal Rate to SWDSs (kg/capita/day)	C Total Annual MSW Disposed to SWDSs (Gg MSW)
		C = (A x B x 365)/1 000 000
		0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains Worksheet 6-1C (supplemental), in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE CORRECTION FACTOR**
WORKSHEET	**6-1C (SUPPLEMENTAL)**
SHEET	**1 OF 1**
COUNTRY	**0**
YEAR	**0**

Type of Site	W Proportion of Waste (by weight) for Each Type of SWDSs	X Methane Correction Factor (MCF)	Y Weighted Average MCF for Each Type of SWDS
			Y = W x X
Managed		1.0	0.00
Unmanaged - deep (>=5m waste)		0.8	0.00
Unmanaged - shallow (< 5m waste)		0.4	0.00
Total		0.6	0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 1 of Worksheet 6-2, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM DOMESTIC AND COMMERCIAL WASTEWATER AND SLUDGE TREATMENT**
WORKSHEET	**6-2**
SHEET	**1 OF 4 ESTIMATION OF ORGANIC WASTEWATER AND SLUDGE**
COUNTRY	**0**
YEAR	**0**

STEP 1

A Region or City	B Population (1,000 persons)	C Degradable Organic Component (kg BOD/1000 persons/yr)	D Fraction of Degradable Organic Component Removed as Sludge	E Total Domestic/Commercial Organic Wastewater (kg BOD/yr)	F Total Domestic/Commercial Organic Sludge (kg BOD/yr)
				E = [B x C x (1-D)]	F = (B x C x D)
				0.00	0.00
				0.00	0.00
				0.00	0.00
				0.00	0.00
			Total:	0.00	0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 2 of Worksheet 6-2, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM DOMESTIC AND COMMERCIAL WASTEWATER TREATMENT**
WORKSHEET	**6-2**
SHEET	**2 OF 4 ESTIMATION OF EMISSION FACTOR FOR WASTEWATER HANDLING SYSTEMS**
COUNTRY	**0**
YEAR	**0**

STEP 2

A Wastewater Handling System	B Fraction of Wastewater Treated by the Handling System	C Methane Conversion Factor for the Handling System	D Product	E Maximum Methane Producing Capacity ($kg\ CH_4/kg\ BOD$)	F Emission Factor for Domestic/Commercial Wastewater ($kg\ CH_4/kg\ BOD$)
			D = (B x C)		F = (D x E)
			0.00		
			0.00		
			0.00		
			0.00		
		Aggregate MCF:	0.00		0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 3 of Worksheet 6-2, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM DOMESTIC AND COMMERCIAL WASTEWATER TREATMENT**
WORKSHEET	**6-2**
SHEET	**3 OF 4 ESTIMATION OF EMISSION FACTOR FOR SLUDGE HANDLING SYSTEMS**
COUNTRY	**0**
YEAR	**0**

STEP 3

A Sludge Handling System	B Fraction of Sludge Treated by the Handling System	C Methane Conversion Factor for the Handling System	D Product	E Maximum Methane Producing Capacity (kg CH_4/kg BOD)	F Emission Factor for Domestic/ Commercial Sludge (kg CH_4/kg BOD)
			D = (B x C)		F = (D x E)
			0.00		
			0.00		
			0.00		
			0.00		
		Aggregate MCF:	0.00		0.00

Documentation box:

Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 4 of Worksheet 6-2, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM DOMESTIC AND COMMERCIAL WASTEWATER AND SLUDGE TREATMENT**
WORKSHEET	**6-2**
SHEET	**4 OF 4 ESTIMATION OF METHANE EMISSIONS FROM DOMESTIC/COMMERCIAL WASTEWATER AND SLUDGE**
COUNTRY	**0**
YEAR	**0**

STEP 4

	A Total Organic Product (kg BOD/yr)	B Emission Factor (kg CH_4/kg BOD)	C Methane Emissions Without Recovery/Flaring (kg CH_4)	D Methane Recovered and/or Flared (kg CH_4)	E Net Methane Emissions (Gg CH_4)
	from Worksheet 6-2, Sheet 1	from Worksheet 6-2, Sheets 2 and 3	C = (A x B)		E = (C - D)/1 000 000
Wastewater	0.00	0.00	0.00		0.00
Sludge	0.00	0.00	0.00		0.00
				Total:	0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 1 of Worksheet 6-3, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM INDUSTRIAL WASTEWATER AND SLUDGE HANDLING**
WORKSHEET	**6-3**
SHEET	**1 OF 4 TOTAL ORGANIC WASTEWATER AND SLUDGE**
COUNTRY	**0**
YEAR	**0**

STEP 1

		A Total Industrial Output (t/yr)	B Degradable Organic Component (kg COD/m^3 wastewater)	C Wastewater Produced (m^3/tonne product)	D Fraction of Degradable Organic Component Removed as Sludge	E Total Organic Wastewater from Industrial Source (kg COD/yr)	F Total Organic Sludge from Industrial Source (kg COD/yr)
						E = [A x B x C x(1-D)]	F = (A x B x C x D)
Iron and Steel						0.00	0.00
Non-ferrous metals						0.00	0.00
Fertiliser						0.00	0.00
Food & Beverage	Canneries					0.00	0.00
	Beer					0.00	0.00
	Wine					0.00	0.00
	Meatpacking					0.00	0.00
	Dairy products					0.00	0.00
	Sugar					0.00	0.00
	Fish processing					0.00	0.00
	Oil & grease					0.00	0.00
	Coffee					0.00	0.00
	Soft drinks					0.00	0.00
	Other					0.00	0.00
Paper & Pulp	Paper					0.00	0.00
	Pulp					0.00	0.00
	Other					0.00	0.00
Petroleum refining/Petrochemicals						0.00	0.00
	Bleaching					0.00	0.00
	Dying					0.00	0.00
	Other					0.00	0.00
Rubber						0.00	0.00
Other						0.00	0.00
					Total	0.00	0.00

Documentation box:

Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 2 of Worksheet 6-3, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM INDUSTRIAL WASTEWATER TREATMENT**
SOURCE	
WORKSHEET	**6-3**
SHEET	**2 OF 4 ESTIMATION OF EMISSION FACTOR FOR WASTEWATER HANDLING SYSTEMS**
COUNTRY	**0**
YEAR	**0**

STEP 2

A Wastewater Handling System	B Fraction of Wastewater Treated by the Handling System	C Methane Conversion Factor (MCF)	D Product	E Maximum Methane Producing Capacity (kg CH_4/kg DC)	F Emission Factor for Industrial Wastewater Source (kg CH_4/kg COD)
			D = (B x C)		F = (D x E)
			0.00		
			0.00		
			0.00		
			0.00		
		Aggregate MCF:	0.00		0.00

Footnote: B_o is expressed in units of kg CH_4/kg DC, where DC is the indicator of degradable component of the waste (either COD or BOD). By definition, BOD is less than or equal to COD; the maximum BOD possible is, in fact, the COD. Therefore, when estimating the maximum CH_4 producing potential from BOD or COD, the maximum potential CH_4 produced per unit of BOD is equivalent to the maximum potential CH_4 produced per unit of COD. This value is 0.25. kg CH_4/kg COD.

Documentation box:

Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 3 of Worksheet 6-3, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM INDUSTRIAL WASTEWATER TREATMENT**
SOURCE	
WORKSHEET	**6-3**
SHEET	**3 OF 4 ESTIMATION OF EMISSION FACTOR FOR SLUDGE HANDLING SYSTEMS**
COUNTRY	**0**
YEAR	**0**

STEP 2

A Sludge Handling System	B Fraction of Sludge Treated by the Handling System	C Methane Conversion Factor (MCF)	D Product	E Maximum Methane Producing Capacity (kg CH_4/kg COD)	F Emission Factor for Industrial Sludge Source (kg CH_4/kg COD)
			D = (B x C)		F = (D x E)
			0.00		
			0.00		
			0.00		
			0.00		
		Aggregate MCF:	0.00		0.00

Documentation box:

Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains sheet 4 of Worksheet 6-3, in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**METHANE EMISSIONS FROM INDUSTRIAL WASTEWATER AND SLUDGE TREATMENT**
WORKSHEET	**6-3**
SHEET	**4 OF 4 ESTIMATION OF METHANE EMISSIONS FROM INDUSTRIAL WASTEWATER AND SLUDGE**
COUNTRY	**0**
YEAR	**0**

STEP 4

	A Total Organic Product (kg COD/yr)	B Emission Factor (kg CH_4/kg COD)	C Methane Emissions without Recovery/Flaring	D Methane Recovered and/or Flared (kg CH_4)	E Net Methane Emissions (Gg CH_4)
	Worksheet 6-3, Sheet 1	Worksheets 6-3, Sheets 2 and 3	C = (A x B)		E = (C - D) / 1 000 000
Wastewater	0.00	0.00	0.00		0.00
Sludge	0.00	0.00	0.00		0.00
				Total:	0.00

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

This spreadsheet contains Worksheet 6-4, in accordance with the
Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

MODULE	**WASTE**
SUBMODULE	**INDIRECT NITROUS OXIDE EMISSIONS FROM HUMAN SEWAGE**
WORKSHEET	**6-4**
SHEET	**1 OF 1**
COUNTRY	**0**
YEAR	**0**

	A Per Capita Protein Consumption (Protein in kg/person/yr)	B Population (number)	C Fraction of Nitrogen in Protein $Frac_{NPR}$ (kg N/kg protein)	D Amount of sewage N produced (kg N/yr)	E Amount of sewage N applied to soils as sewage sludge (kg N/yr)
				D = A x B x C	
Total				0	

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

F Net amount of sewage N produced (kg N/yr)	G Emission factor EF_6 (kg N_2O-N/kg sewage-N produced)	H Total Annual N_2O Emissions (Gg N_2O/yr)
F = D - E		H = (F x G) x (44/28) / 1 000 000
0		0.00

COUNTRY	**0**			
YEAR	**0**			
MODULE	**WASTE**			
SUBMODULE	**WASTE INCINERATION (OPTIONAL)**			
WORKSHEET	**6-5**			
SHEET	**1 of 1**			
GREENHOUSE GAS SOURCE AND SINK CATEGORIES	**ACTIVITY DATA Amount of incinerated wastes (Gg) A**	**Carbon content (fraction) (dimensionless) B**	**Fraction of fossil carbon [2] (fraction) (dimensionless) C**	**Combustion Efficiency (fraction) (dimensionless) D**
Municipal				
Sewage Sludge				
Clinical Waste				
Hazardous Waste				
Total Waste Incineration	**0.00**			

Municipal Solid Waste (MSW) includes household waste, yard/garden waste, commercial/market waste
and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolitio

[1] Emissions from those waste incineration activities from which energy is recovered should be reported under the Energy

[2] Consistent with the *IPCC Guidelines* , only CO2 emissions resulting from the incineration of carbon in waste of fossil c

Documentation box:
Parties are encouraged to provide relevant information used in calculation in this documentation box.

EMISSION FACTOR			EMISSIONS [1]		
CO_2 (Gg CO_2/Gg waste) E = B * C * D* 44/12	CH_4 (kg CH_4/Gg waste) E	N_2O (kg N_2O/Gg waste) F	CO_2 (Gg) G = A * D	CH_4 (Gg) H = A * E * 10^{-6}	N_2O (Gg) I = A * F * 10^{-6}
0.00			0.00	0.00	0.00
0.00			0.00	0.00	0.00
0.00			0.00	0.00	0.00
0.00			0.00	0.00	0.00
			0.00	**0.00**	**0.00**

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origin should be included in emissions estimates (cf. also GPG2000, Section 5.3).