

Table: Described methodology for emission quantification and spatial allocation for CH₄ fugitive emission¹s.

IPCC Code	EDGAR sector	Activity Data	Emission factor	Spatial disaggregation proxy
1B1 (Solid fuel)				
1B 1 (Mining)	<p>Brown coal PRO.BRC.LGN PRO.BRC.NSF</p> <p>Hard coal PRO.HDC.ANT PRO.HDC.BTC PRO.HDC.CKC PRO.HDC.SBC</p>	Coal production statistics using data from World Coal Association data.	IPCC Tier 1EF (IPCC, 2006)	Combining USGS coal mines (https://www.usgs.gov/), EPRTv4.2 for European mines (http://prtr.ec.europa.eu) and Global Energy Observatory (http://globalenergyobservatory.org) and China coal mine data from Liu et al. (2015).
1B1 (Post-mining and CH₄ recovery)	<p>Brown coal PRO.BRC.PST</p> <p>Hard coal PRO.HDC.PST PRO.HDC.REC</p>			
1B2 a (Oil and natural gas supply value chain)				
Exploration	<p>Natural gas PRO.GAS.NGS</p> <p>Oil PRO.GAS.NGS,PRO.OIL.BDS PRO.OIL.BGL,PRO.OIL.CNF</p>	Gas and oil production data, based on IEA fuel balances (2017)	IPCC Tier 1EF (IPCC, 2006)	NOAA-NDGC (2015)

¹ Further details can be found in Janssens-Maenhout (2019)

	PRO.OIL.CRU, PRO.OIL.NCR, PRO.OIL.NGL, PRO.OIL.OPR			
Transport and distribution	Natural gas PRO.GAS.DIS, PRO.GAS.PIP Oil PRO.OIL.PIP, PRO.OIL.TK4	Rate calculated based on length of pipe and material –using data from: Eurogas (2010), Marcogaz (2013), submissions to UNFCCC and CIA (2016).	IPCC Guidelines (2006) supplemented with data from country submissions to UNFCCC and Lelieveld et al. (2005).	Gas transmission and oil transmission: Janssens-Maenhout et al.(2014)) Oil terminals: World Port (2015), Oil tankers: Trombetti et al. (2017); Wang et al. (2007). Gas pipeline distribution: proxies developed using population CIESIN (2011) and road types Geofabrik (2015).
Flaring	PRO.GAS.VAF	Statistics for the total amount of gas flared and vented using data from EIA and national submissions to UNFCCC. The share that is flared was calculated using the NOAA satellite observation of flaring lights NOAA-NGDC.	Flaring: EF Based on national submissions to UNFCCC. Venting: IPCC Tier 1 EF (IPCC, 2006)	NOAA-NDGC (2015) Elvidge et al. (2016)