

鲁斯唯,胡清华,吴水平,王新红,陈晓秋.海峡西岸经济区大气污染物排放清单的初步估算[J].环境科学学报,2014,34(10):2624-2634

海峡西岸经济区大气污染物排放清单的初步估算

Establishment of air pollutant emission inventory in the West Coast of Taiwan Strait

关键词: [大气污染物|排放清单|动态更新|不确定度](#)

基金项目: [环境保护公益性行业科研专项\(No.201009004\)](#); [厦门大学山海基金\(No.2013SH011\)](#)

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摘要: 以2009年为基准年,结合污染源普查数据、统计年鉴及工业活动、居民生活等多个方面对海峡西岸经济区包括SO₂、NO_x、PM_{2.5}、VOCs和NH₃在内的大气污染物的排放量进行了估算,建立了海西区大气污染物排放清单.结果发现,上述5类污染物基准年的排放量分别为40.67×10⁴、55.84×10⁴、50.57×10⁴、152.26×10⁴和26.18×10⁴t.其中,SO₂、NO_x及PM_{2.5}的排放主要来自电厂,占排放总量的比例分别为25.58%、34.89%和38.75%;VOCs和NH₃的主要排放源分别来自植被排放和养殖业,其贡献量分别为49.12%和47.07%.采用GIS对排放清单进行网格化处理,得出SO₂、NO_x及PM_{2.5}的高排放强度区域与固定源的空间分布较为一致.此外,结合国家和地方"十二五"发展规划,采用情景分析方法估算了2015年海西区大气污染物的排放清单.与基准年相比,SO₂、NO_x和NH₃的排放量呈下降趋势,PM_{2.5}和VOCs的排放量呈大幅度增加.基准年排放清单的不确定性分析显示,VOCs排放估算的不确定度最大,为225%.

Abstract: The emission inventories of SO₂,NO_x,PM_{2.5},VOC_s and NH₃ in the Western Taiwan Straits Economic Zone in the base year of 2009 were established based on the pollution source census,statistical yearbooks,industrial activities and residential activities.The total emissions of SO₂,NO_x,PM_{2.5},VOCs and NH₃ were estimated to be 40.67×10⁴,55.84×10⁴,50.57×10⁴,152.26×10⁴ and 26.18×10⁴t,respectively.The power plants were the most important source and contributed to 25.58%,34.89% and 38.75% of the total emissions of SO₂,NO_x and PM_{2.5},respectively.However,the major source of VOCs and NH₃ was vegetation and livestock breeding,which contributed to 49.12% and 47.07% of the total,respectively.The relative high emission areas of SO₂,NO_x and PM_{2.5} were consistent with the locations of stationary sources based on GIS gridding techniques.In addition,the emission inventories in the year of 2015 were calculated using scenario analysis method based on the national and regional 12th Five-Year Plans.The emissions of SO₂,NO_x and NH₃ showed a slight decrease while the emissions of PM_{2.5} and VOCs increase significantly (around 24.18% and 74.42%,respectively) in 2015,as compared to those in 2009.The estimate of VOCs had the highest uncertainty of around 225%.

Key words: [air pollutants|emission inventory|dynamic updating|uncertainty](#)

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