

Liuzhou



Environmental Protection: Recovery and Development in Liuzhou City

Introduction

The steel industry came to Liuzhou in 1960's and sparked an economic boom that turned it into an industrial center. By the end of the 1980's, however, Liuzhou was among the top four areas in China for acid rain earning it the name "Acid Rain City". A city that had historically been known for the natural beauty of its landscape and its river was in an ecological disaster. This is an analysis Liuzhou's clean-up. Today children swim, raft and play in the river, and the sky is remarkably clear given that industrial production is higher today than it was in the 80's. The project explains and the poster depicts how the city was restored and is now once again recognized for "the most beautiful landscape in an industrial city and the strongest industrial city with a beautiful landscape" in China. The transition from polluted industrial center to ecologically balanced, livable industrial city was accomplished through the implementation of comprehensive plans for economic upgrading and urban transformation. Focusing on the physical environment the poster shows both the dynamics of degradation in the last decades of the 20th Century and the policies that have brought about recovery and restoration since 2000. Although recovery and restoration are far from complete, Liuzhou has arrived at a point where maintaining its livability through a sustained effort is the main concern.

The environmental quality in 80s and 90s

Liuzhou is an industrial city . In the 80s and 90s, with extensive economic development of heavy industry , it brought to Liuzhou considerable economic benefits, however the damage to the environment was beyond imagination. The most directly consequence was that Liuzhou was listed as one of the four big acid rain areas, and became "acid rain city." From 1985 to 1995, Liuzhou was a typical "acid city", the highest acidity pH of rain below 4, acid rain rate up to 98.5%.

1997	0.124	0.044	63.70%	4.94
1998	0.136	0.043	57.18%	4.98
1999	0.129	0.036	31.00%	5.17
2000	0.092	0.038	30.00%	5.31
2001	0.071	0.030	27.30%	5.17
2002	0.070	0.028	19.40%	5.40
年份	SO ₂ 年日均值(吨/m ³)	NO _x 日均值(吨/m ³)	酸雨率	PH 均值
1992	0.217	0.049	98.40%	4.29
1993	0.218	0.044	92.10%	4.41
1994	0.251	0.038	95.00%	4.37
1995	0.229	0.053	85.10%	4.26
1996	0.194	0.034	54.40%	4.61



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The Main Causes of Serious Pollution

•Industry consumes a lot of energy.

The main consumption of energy was raw coal, electricity and washed coal. The energy consumption accounted for more than 70% of the total in the whole city.



•Industrial layout and structure was irrational.

Due to historical reasons, the main industrial area of Liuzhou city arrange along the dominant wind axial direction.

•Influence due to the residents lifestyle.

Some residents and food stalls were still in the use of small coal stove, lower usage of clean fuel. Therefore, sulfur dioxide emission accumulate and stay in the low level of the atmosphere

•The special geographical position.

Liuzhou special topography and weather conditions are not conducive to the proliferation of sulfur dioxide, was an objective conditions for the serious acid rain pollution in Liuzhou.

•Improving the competitiveness of the city and expanding the space of urban development.
•According to the concept of ecological and livable, promote urban carrying capacity.



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Environmental Control Measures

•Measures against acid rain and sulfur dioxide pollution.

In order to control sources of acid rain pollution, Liuzhou implemented the total sulfur dioxide emissions control and issued the permit system, phasing out of fluidized bed combustion boiler.

•Strict implementation of energy conservation.

Liuzhou government implemented strict environmental capacity of total amount control system and ecological function regionalization system, giving priority to the environmental capacity.

•Adjust the energy structure and eliminate high energy industry.

The government control the rapid growth of high energy consumption and high pollution industry, accelerated the elimination of backward production capacity, vigorously promoted clean production.

Effects of Environment Management

In 2009, the environmental situation of Liuzhou was in the best level for the last 20 years. The annual quality of drinking water in Liujiang river keep the class III national surface water quality standard; Urban air quality achieved 125 days of excellent, 231 days of good, urban air quality good rate reach 88%.



In "Chinese City Competitiveness Blue Book", which published in 2009, the degree of Liuzhou city's environmental comfort and natural environmental beauty entered the ranks of the nation's top 10.

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