

Lessons from the German Ruhr Valley Experience with Energy and Economic Transition

德国鲁尔区能源和经济转型的经验

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NRDC China Coal Cap International Conference
Beijing, China
November 4, 2015

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工业生产率研究所
煤炭总量控制国际研讨会
中国北京
2015年11月4日

Industrial Restructuring in the Ruhr Valley

德国鲁尔地区的产业结构调整

Story of how over five decades, region underwent dramatic restructuring from original coal- and steel-based economy to more diversified service economy

在50多年里, 德国鲁尔区的经济经历了巨大的变化, 从其最初的基于煤炭和钢铁的经济, 逐渐转型成为更加多元化的服务型经济

Similar aspirations and challenges to China's "New Normal":

在新常态下中国面临了类似的期望和挑战:

How to develop the service economy as heavy industry growth slows – to soften social hardships and job loss, and proceed with industrial restructuring in such a way to help stem the tide of worsening environmental pollution.

在重工业增长缓慢的境况下, 如何发展服务型经济, 降低失业率, 以及应对随之而来的社会问题和治理环境污染

IIP Ruhr-China Exchange Project Overview

工业生产力研究所鲁尔-中国交流项目背景

Assist Chinese governments address impacts of structural change by learning from experience in Ruhr

通过学习德国鲁尔区的经验，协助中国各级政府解决结构调整的影响。

Partnering with the Wuppertal Institute for Climate, Environment and Energy, located adjacent to the Ruhr Valley

工业生产力研究所(IIP)和毗邻鲁尔区的伍珀塔尔气候、环境和能源研究院合作完成该项目

Developed bilingual report on Ruhr experience and lessons for China, shared with Chinese national and JJJ regional stakeholders

通过IIP和伍珀塔尔在鲁尔区的现场调查和采访，IIP完成了总结鲁尔工业结构调整的主要相关经验的报告，分享给中国国家和京津冀地区的相关政府和研究机构



Project Next Steps

项目的下一步工作

First China-Ruhr expert exchange at the end of November
十一月底发起首次中德专家深度讨论和特定专题交流

Write bilingual report to share with national and local policy makers and experts

完成考察交流研究报告，分享与国家 and 地方政府官员和专家

Design Project Phase Two
设计项目的第二阶段

Focus on in-depth exchange between German and Chinese national and local authorities and experts on specific, operationally relevant topics
集中在中德国家和地方官员和专家间对特定、有操作性专题的深度交流。

Focus on definition and design of new programs and supporting policies for implementation in China, especially at local levels.
重点关注在中国，尤其在地方层面，实施的新项目和政策的确定和设计。

Introduction to the Ruhr Valley

鲁尔地区的介绍

Located in northwestern Germany where three rivers run into the Rhine before flowing to the sea in the Netherlands.

位于德国西北部，莱茵河在荷兰入海之前，三条河流在这里汇入莱茵河。

150 years of industrial and urban development as a center for European coal and steel, based on region's coal resources and excellent transportation position

基于当地煤炭资源和有利交通位置的150年作为欧洲煤炭和钢铁生产中心之一的工业发展和城镇化历史

Population grew from just 400,000 in 1850 to 3.8 million in 1925 to 5.2 million today

人口从1850年的40万增长到1925年的380万到今天的520万

Navigation through 50 years of major structural change

50年间，重大经济结构变化

Definition of Essen as 2010 European Capital of Culture, representing one of many symbols of successful change.

确立艾森城市为2010年欧洲文化首都，代表了很多成功变化标志之一。



The Ruhr Valley in North-Rhine Westphalia (NRW) State, Germany

德国北莱茵威斯特法利亚州的鲁尔区



Overview of the Ruhr's Radical Economic Structural Change

鲁尔区经济结构巨变概述

Coal production fell from 115.4 mt in 1960 to 10.9 mt in 2009, and employment fell from 313,000 to 21,000. The last mine in the Ruhr will close in 2018.

煤炭产量从1960年的1.154亿吨下降到2009年的10,900,000吨，从业人数从313,000下降到21,000。鲁尔区的最后一个煤矿将在2018年关闭。

Once the steel production powerhouse of Western Europe, the Ruhr now produces only 15 mt per year, primarily in high-quality flat steel products. Employment in the steel industry fell from 230,000 in 1965 to 48,000 in 2012.

鲁尔曾经是西欧的钢铁生产重地，如今每年产量只有15,000,000吨，主要是高质量的扁钢产品。钢铁行业从业人员从1965年的230,000人降到2012年的48,000人。

Industry accounted for 62% of employment in 1961, but only 21% in 2011. The service sector has risen from 38% of employment in 1961 to 78% in 2011.

1961年，工业和建造行业占雇佣人数的62%，到2011年只有21%。雇佣损失大部分由增长的服务行业工种代替，从1961年的38%增长到2011年的78%。

Strong growth in services related to the previous manufacturing base, such as environmental protection technology and logistics, in addition to R&D and education.

服务行业增长包括与之前生产基地相关服务的强劲增长，如环保技术和物流，还有研发和教育产业的增长。

Dramatic Shifts in Employment in the Ruhr from 1961-2011

鲁尔区就业情况的变化, 1961年-2011年

	1961	1970	1987	1991	2001	2011
	Thousands of workers/1000人					
Agriculture 第一产业	6	7	11	22	10	9
Production 第二产业	1,426	1,216	828	852	587	496
Services 第三产业	876	941	1,227	1,378	1,677	1,824
TOTAL/总计	2,308	2,164	2,066	2,252	2,274	2,329
	Percentage/%					
Agriculture 第一产业	0.3	0.3	0.5	1.0	0.4	0.4
Production 第二产业	61.8	56.2	40.1	37.8	25.8	21.3
Services 第三产业	38.0	43.5	59.4	61.2	73.7	78.3

Successful navigation through radical economic shifts (I)

鲁尔区经济结构巨变概述 (一)

Economic restructuring involved hardship for the local people, it was difficult, and required a wide variety of programs and projects involving many institutions and people.

鲁尔区的经济和产业转型始于1950年代后期, 这一过程一直延续到今天, 并取得了巨大的成就。整个过程鲁尔区采取了一系列措施, 规划和实施了很多项目, 深深触及到当地民众和机构的社会和经济生活。

Public financial costs also were high—for social protection spending, infrastructure, and new projects.

公共财政支出也居高不下, 以兴建基础设施, 用于社会保障, 以及实施各类项目。

However, large-scale outward migration and long-term economic decline were avoided.

因此, 鲁尔区基本没出现大规模的人口外流和经济下滑。

Successful navigation through radical economic shifts (II)

鲁尔区经济结构巨变概述 (二)

Real GDP per capita has more than doubled from 1957 to 2013.
实际人均GDP在1957年到2013年期间翻了一番有余。

GDP per worker was ~€65,000 in 2012.
2012年鲁尔区就业人口的人均GDP达到了65,000欧元。

While GDP per worker was 4% below the national average in 2000, stronger growth per worker in the Ruhr caused the GDP per worker to actually slightly exceed the national average in 2012.

虽然鲁尔地区2000年的就业人口人均GDP比德国平均水平低4%，由于近几年就业人口的人均GDP的快速增长，2012年的就业人口人均GDP略超过全德平均水平。

Restructuring Policy in the Ruhr (1)

采取的政策措施 (一)

Recognize that restructuring requires a medium and long-term approach—there are no quick fixes.

认识到经济结构调整需要一个中期和长期的解决方案-没有任何快速解决方案。

Investments in education and easy knowledge exchange (esp. through internet) are critical for service economy growth.

在教育和快捷易用知识交流平台（尤其通过互联网）上的投资是服务型经济增长的必要条件。

The Ruhr motto of “Change as opportunity” —example of building up environmental service industry based on demand for environmental cleanup.
鲁尔的“改变为机遇”口号 - 基于环境污染治理需求建立环境服务产业。

Restructuring Policy in the Ruhr (2)

采取的政策措施 (二)

Bottom-up development projects, involving local people in new local community development, in re-development of abandoned industrial sites and environmental clean up.

当地项目的识别和实施可以融和自下而上的创意和自上而下的计划。自二十世纪80年代以来，地方机构在组织当地社区和商业界发展经济，环境治理，和二次开发项目新思路上的作用尤其有效。

This spurs local service industry development and develops positive, forward-looking spirit.

这样会刺激当地服务业发展和建立积极向前看的精神。

Development of local third-party institutions is critical.

发展当地第三方机构是至关重要的。

“Revitalization from within”

“从内部振兴”



Thank you!

谢谢!

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