

German Cities Low-Carbon Developing Planning - Key Experiences and Lessons

德国城市低碳发展规划 - 主要经验与教训

Hans-Joachim Ziesing

Member of the Government's Independent
Commission to Monitor Germany's Energy Transition

德国联邦政府能源转型独立监督委员会成员

**INTERNATIONAL WORKSHOP
COAL CONSUMPTION CAP AND ENERGY TRANSITION**

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The background: Germany's energy and climate policy: Decarbonising the Energy supply

背景：德国的能源和气候政策： 能源供应的去碳化

		基准年				
		Base year	2020	2030	2040	2050
核电（兆瓦）	Nuclear power (MW)	21517	8539	last reactors will be shut down by the end of 2022		
温室气体排放	Greenhouse gas emissions	1990	-40%	-55%	-70%	-80%/-95%
总的最终消费	Gross final consumption	xxx	18%	30%	45%	60%
发电*	Electricity generation*	xxx	35%	50%	65%	80%
			Share of renewable energies			
						可再生能源所占的比例
一次能源	Primary energy	2008	-20%	xxx	xxx	-50%
供暖	Space heating	2008	-20%	xxx	xxx	-80%
运输	Transport	2005	-10%	xxx	xxx	-40%
电力消耗	Electricity consumption	2008	-10%	xxx	xxx	-25%
*) 按照联盟协议 2025 年为40 - 45 % , 2035 年为55 - 60 % 。		*) According to the coalition agreement 40 - 45 % in 2025 and 55 - 60 % in 2035				
		° CHP share in electricity generation in 2020: 25 % 。 2020年发电热电联产在发电中所占的比例为 25 % ° Final energy productivity: Annual increase of 2.1 % from 2008 to 2050 最终能源生产率：2008至 2050 年，年增长率为2.1 %。 ° Doubling the annual building renovation rate to 2 % of the total building stock。使建筑翻新率倍增至现有建筑总量的2 %。 ° Building stock should be almost climate-neutral by 2050 。至2050年，现有建筑应基本全部实现气候中立。				

最后一座反应堆将于2022年底前关停

Germany's energy policy and the consequences for coal

德国的能源政策及对煤炭的处理

- The **German energy transition** is much more than phasing out nuclear energy. It is a **fundamental reconstruction** of our total energy system
 - 德国能源转型不仅仅是逐步淘汰核能，它是整个能源系统的根本性重建。
 - The reduction of greenhouse gas emissions by 80 to 95 % means nothing less than a widely **fossil und nuclear free economy and society** and instead of this a society **based on renewable energies**.
 - 将温室气体的排放降低80到95%，意味着一个广泛的不用化石燃料、无核化的经济和社会，一个主要基于可再生能源的社会。
 - The proposed reduction of primary energy consumption by 50 % by 2050 requires a **significant increase in energy efficiency**.
 - 如果建议至2050年减少一次能源消费的50%，则需要显著提高能源效率。
 - The most effective first steps for a fossil free and climate friendly economy is to **phase out the use of the emissions intensive fuels, i.e. lignite and hard coal**.
 - 实现不用化石燃料和气候友好经济的最有效的第一步是停止使用排放密集型燃料，如褐煤和无烟煤。
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Energy transition and the role of cities and municipalities

能量转换与城市及直辖市的职能

1. The energy transition is not only a matter on the national level but also on the **level of cities and municipalities**.

能源转型，不仅是国家层面上的问题，同时也是**城市和直辖市**层面上的问题。

2. All cities and municipalities have to contribute to the **long-term 80 to 95% emissions reduction target!**

所有城市和直辖市必须努力实现**长期的80%至95%的减排目标！**

3. As the power supply will **increasingly decentralize**, the political decision-making processes need to be strengthened locally.

由于电力供应**日益分散**，所以有必要加强地方的政治决策程序。

4. An ambitious **local climate protection policy** gets its key role as a compulsory task of general interest.

一项有前景的**地方气候保护政策**作为保护大家共同利益的强制性任务，发挥了关键作用。

5. In this context **phasing out of the use of coal** is essential for many cities and municipalities in Germany

在这个背景下，**逐步淘汰煤炭的使用**对于德国的许多城市和直辖市来说至关重要。

A National Climate Initiative supports local climate protection policies

国家气候倡议支持当地气候保护政策

- Within the **National Climate Initiative** the Federal Environment Ministry supports effective climate protection measures in cities on the basis of a specific program (**Municipal Directive**)
 - 在国家气候倡议中，联邦环境部支持在具体方案的基础上，实施有效的气候保护措施（市政指令）。
 - The most ambitious program is the program "**Master Plan 100% Climate Protection**" (start in 2011).
 - 最雄心勃勃的计划是“百分之百气候保护的总体规划”（2011年开始）。
 - Participating cities are committed to **reduce greenhouse gas emissions by 95 % and cut the final energy demand by 50 %** by 2050.
 - 参与城市承诺到2050年，将减少温室气体排放量的95%，并且减少终端能源需求量的50%。
 - At the end, this means nothing less than the decarbonisation of the local energy supply, especially to **phase-out the use of coal step by step**
 - 最终，这将意味着地方能源供应的脱碳，尤其是逐步淘汰使用煤。
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What criteria qualify master plan communities?

社区总体规划的标准是什么？

- 33 municipalities have submitted applications for funding under the Master Plan project.
 - 33座城市已经提交了总体规划项目中的资金申请。
 - Relevant criteria for qualification as a master plan community were:
 - 总体规划社区资质的相关标准为：
 - the municipality has already developed a strong climate and energy policy profile,
 - 市政府已制定了有效的气候和能源政策文件，
 - the municipality has the know-how and the administration is prepared in accordance to use this knowledge.
 - 全市拥有能够使用专业技术和管理知识的相关人员。
 - Scope, depth and feasibility of proposed implementation strategies.
 - 提出实施策略的适用范围、深度和可行性。
 - the degree of participation of citizens in the development and implementation of the Master Plan project.
 - 公民在制订和实施总体规划项目中的参与程度。
 - Only 19 municipalities and counties / regions fulfilled these requirements.
 - 只有19个城市和县/区符合这些要求。
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Funded municipalities and counties

受到资助的直辖市和县区

Total funding is 9.33 million EUR for 19 cities, municipalities and counties of nine federal states with a total of about 3.93 million inhabitants

19个城市、直辖市和九个联邦州县，共约393万居民的总经费是933万欧元

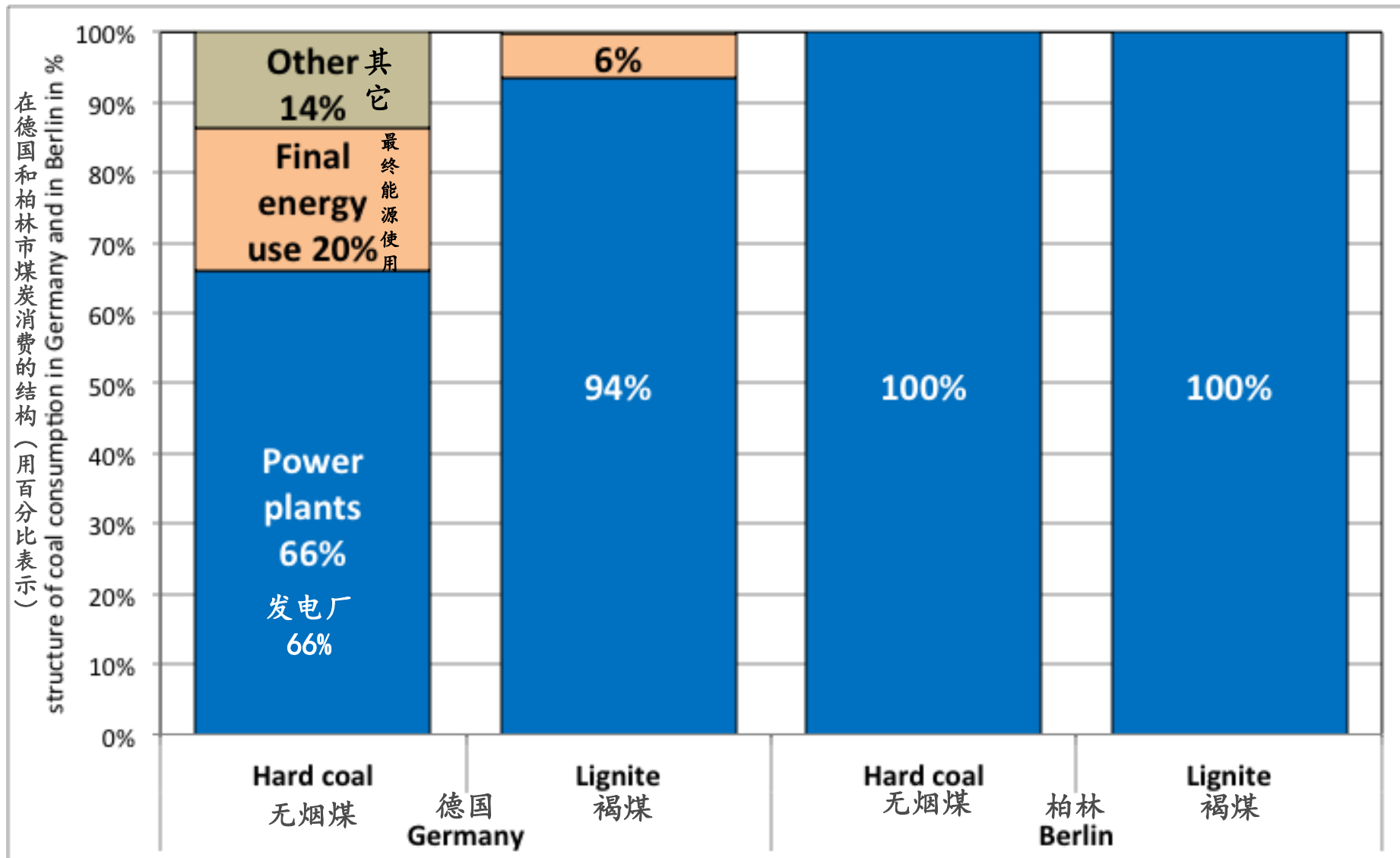
- 16 cities and municipalities with almost 1.66 million inhabitants
- 16个城市和直辖市有近166万居民
- 4 counties with about 2.27 million inhabitants
- 4个县约227万居民
- in a total of 100 cities and municipalities
- 共有100个城市和直辖市

居民类别	数量	人口	占人口比例
residents classes	number	population	share of population
> 500,000	2	1,812,000	46%
> 150,000 - 500,000	5	1,417,000	36%
>30,000 - 150,000	9	674,000	17%
<30,000	3	30,000	1%
Total 合计	19	3,933,000	100%

The role of coal in Germany and on local level (e.g. Berlin)

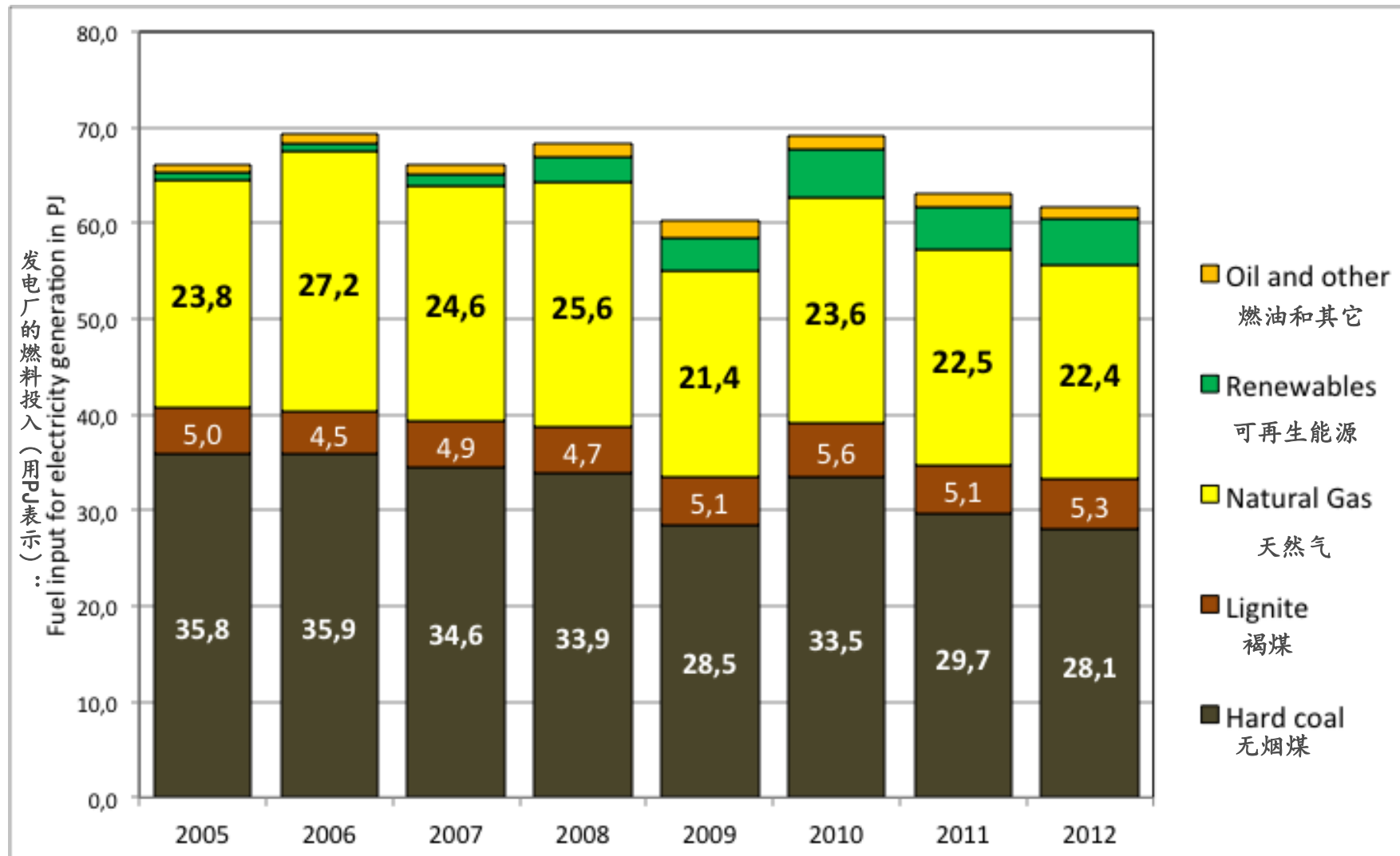
The dominance of the power sector

煤炭在德国国家和地方层面（如柏林）所发挥的作用
在电力行业中占主导地位



The role of coal in Berlin's power sector 2005 to 2012: TARGETS: PHASING OUT LIGNITE BY 2020 AND HARD COAL BY 2030!

2005年至2012年煤炭在柏林电力部门中的作用：目标：
2020年逐步淘汰褐煤， 2030年逐步淘汰无烟煤！



Conclusions

结论

1. For environmental reasons, phasing-out of coal is a widely used approach in all planning processes on the local level in Germany.
由于出于环境考虑，逐步淘汰煤炭是德国地方一级城市在所有规划过程中广泛使用的一种方法。
 2. However, account should be taken of the fact that coal is mainly used for power generation. Specific problems: Existence of long-term operating license and guarantee of ownership under constitutional law.
然而，必须考虑这样一个事实，即煤主要是用于发电。因此面临的具体问题是：持有长期的经营许可证，并且宪法保证其所有权。
 3. Therefore, the possibilities of intervention on the local level are limited. However, favourable conditions exist when the municipalities have their own municipal utilities.
因此，地方一级干预的可能性是有限的。但是，如果城市拥有自己的市政公用设施，则存在有利条件。
 4. Regardless, agreements or contracts between local authorities and power plant operators can be used to realise a more climate friendly power generation (not only by shutdowns but also by substitution of coal by natural gas, e.g.)
无论如何，可以通过地方当局和电厂运营商之间签订协议或合同，来实现对气候更加友好的发电（不只是通过关停，还可以采取用天然气替代煤等措施）。
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Thanks for listening

感谢参加

Dr. Hans-Joachim Ziesing

Hans-Joachim Ziesing博士

hziesing@t-online.de

电子邮箱: hziesing@t-online.de