

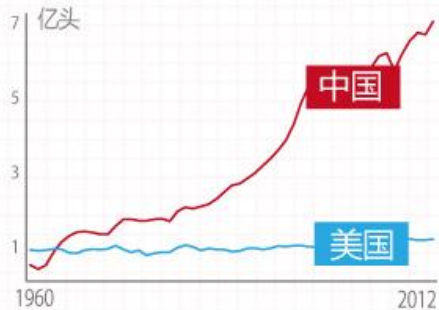


中国猪肉产业的环境影响

65% 的中国肉类消费为猪肉
中国人均猪肉消费量 **37 KG**



中国猪肉消费量约占世界 **1/2**



在过去50年中，中国猪肉产量增长了**15倍**

中国生猪饲养密度过大，加剧了饲料供应短缺，并造成了极大的环境负面影响。

饲养密度 (每百亩土地)



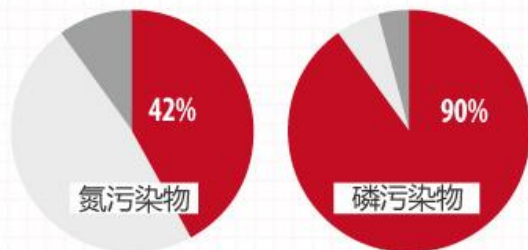
中国：94头

美国：20头

一头猪平均每天会产生约**5.3kg**废物。除了含有丰富的养分以外，还有大量的重金属、农药、及兽药残余，对环境产生极大影响。



在排入南海的污染物中，**42%**的氮和**90%**的磷来自于生猪养殖和生产过程。*



■ 生猪养殖生产 ■ 生活污水 ■ 其他来源

* 包括广东省珠江三角洲盆地、泰国湄南河盆地、以及越南红河和同奈河盆地。



引起地表水富营养化
破坏湿地和脆弱的沿海生态系统



硝酸盐和病原体向地下淋溶
污染土壤和水质



含有过量养分和重金属
降低土壤肥力，导致耕地面积减少



排出氨气、甲烷以及其他气体
造成空气污染，加剧温室效应



病死猪收集处理不规范
2013年上海黄浦江捞出16000头死猪

畜牧业废物总排放量约为工业排量的

三倍

中国猪肉产业每年产生废物

12.9亿吨



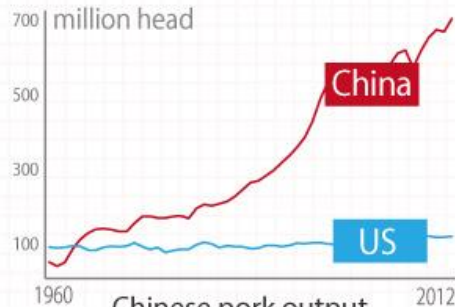
THE PORK INDUSTRY IN CHINA

65% of the meat consumed by China is pork.

81 LBS Per Capita Annual Pork Consumption in China

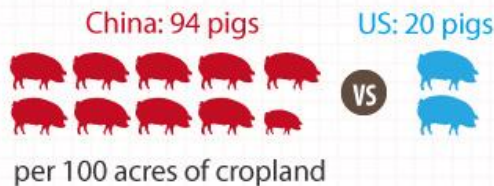


China consumes about **HALF** of the world's pork.



Chinese pork output has increased by **15 times** over the past five decades.

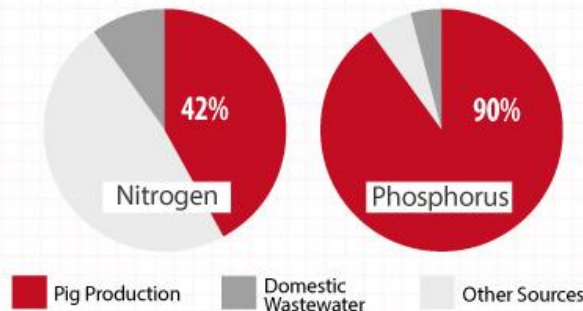
High hog population density in China has tightened supplies of feed and damaged the environment.



The average pig in China produces **5.3 kg** of waste each day, which contains nutrients, heavy metals, and pharmaceutical residues.




Pig production accounts for an estimated **42% of nitrogen** and **90% of phosphorus** flows into the South China Sea.*





* Including the Pearl River basin in Guangdong Province, the Chao Phraya River basin in Thailand, and the Red River and Dong-Nai River basins in Vietnam.

 Eutrophication of surface water damages wetlands and fragile coastal ecosystems

 Leaching nitrates and pathogens contaminate soil and water

 Excess nutrients and heavy metals damage soil fertility and shrink arable land

 Ammonia, methane, and other gases cause pollution and contribute to greenhouse effect

 Diseased pigs are not always disposed of properly – 16,000 carcasses were found in the Huangpu River in 2013

Livestock farm waste is about **3 TIMES** the amount emitted from industries.

1.29 BILLION metric tons of waste is produced by the Chinese pork industry per year.

中国风电领跑全世界

浪费何时休

并网困难、弃风严重导致中国风电厂运营状况不尽如人意
2013年

主要省份风力发电量及弃风比例 (万千瓦)
2013年



7716万千瓦
并网容量



9140万千瓦
实际吊装总量



11%
弃风率
(浪费电量)



中国是成长最快的世界第一风电大国。然而，由于规划滞后，电网企业缺乏鼓励政策，电网调控、配置技术有限，**并网困难**（风电场无法接入电网输送电量）以及**弃风限电**（电网企业由于消纳困难而限制接收风电发电量）已经严重制约了风电行业的健康发展。

美国风电装机量低于中国，而发电量却远超中国

2013年



167665 GWH

装机总量 6109 万千瓦



134900 GWH

装机总量 9140 万千瓦

2010年，超过30%的风力发电机无法并网，白白空转。

2012年，弃风限电所导致的直接损失超过100亿元。

2011年，三北地区20%的风力发电机处于闲置状态，弃风问题愈演愈烈。

2005年，中国仅拥有126万千瓦风电装机量，其中的82%为进口风机。

2009年，国外风机制造商在中国的市场份额已降至14%。

中国

美国

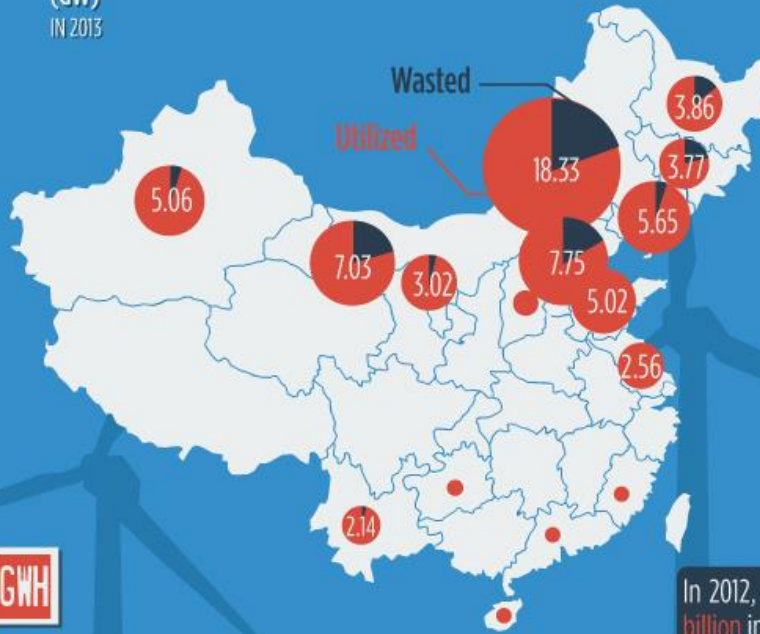
风电装机总量

is wasted

THE WIND RISES IN CHINA

CHINA'S WIND FARMS ARE UNDERPERFORMING DUE TO LOW GRID CONNECTIVITY AND CURTAILMENT IN 2013

WIND POWER PRODUCTION AND CURTAILMENT BY PROVINCE (GW) IN 2013



China is the fastest growing market for wind power in the world. But continued growth is hindered by **low grid connectivity** (wind turbines not physically connected to the power grid) and **high rates of curtailment** (power grid companies opt to limit the use of wind power due to difficulties in integrating this intermittent power onto the grid). Both issues stem from a lack of planning, insufficient market incentives for power grid companies, and outdated or weak grid technology.

THE U.S. HAS GENERATED MORE ENERGY WITH LESS INSTALLED WIND POWER CAPACITY THAN CHINA IN 2013



In 2013, China accounted for 28.7% of the world's installed wind power. The curtailment rate dropped to 11%, a significant improvement compared to 2012.

In 2012, wind farm owners lost \$1.6 billion in revenue due to curtailment.

In 2010, more than 30% of China's wind capacity was not connected to the grid.

In 2011, more than 20% of turbines in northern China were left idle.

In 2005, China had only 1.26 GW of installed wind capacity and 82% of turbines were imported.

By 2009, the market share of foreign-manufactured wind turbines had dropped to 14%.



CHASE THE STINK

Conquering China's Sludge Mountain

While smog tops the agenda on China's war on pollution, untreated sludge—an often toxic byproduct from sewage treatment—continues to quietly spread into groundwater and contaminate China's soil and food.

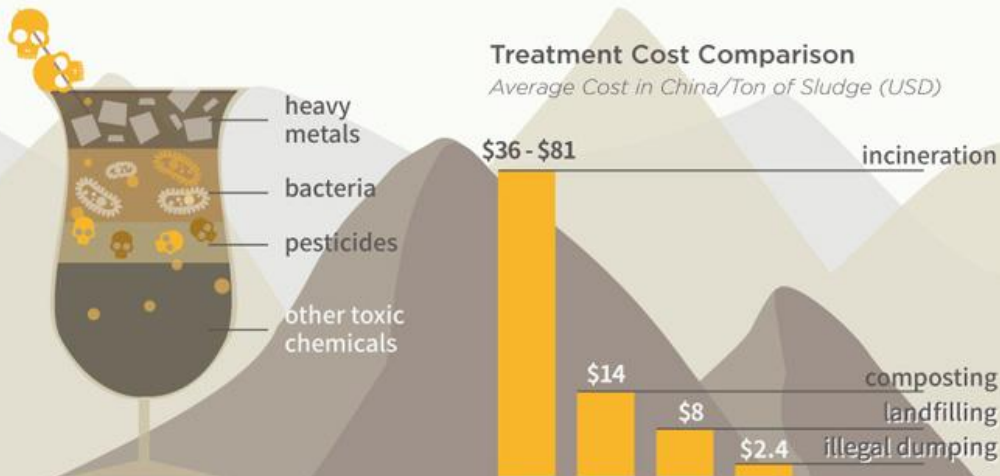
HOW MUCH SLUDGE DOES CHINA PRODUCE?

In 2012, China's wastewater plants produced about **30 million tons** of sludge.



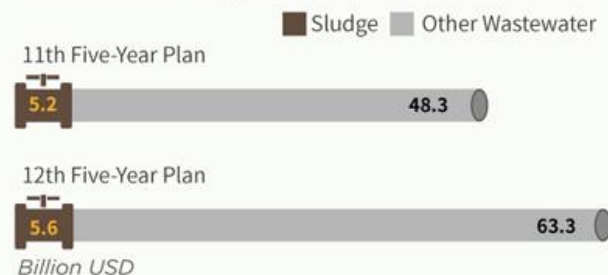
A TOXIC COCKTAIL, CHEAPER TO DUMP THAN TREAT

Untreated sewage sludge contains a concentrated cocktail of heavy metals, pesticides, bacteria, and other toxic chemicals that are costly to treat. Most is dumped or landfilled illegally.



THE INVESTMENT GAP

Wastewater treatment in China is on the rise, but investment for sludge treatment is not.



THE WAY FORWARD

Three interlinked policy mandates to create incentives to treat sludge:

