

*The views expressed in this presentation are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.*



## 徐海云

中国城市建设研究院有限公司总工程师，教授级高级工程师

**Xu Haiyun** Chief Engineer, Professor-level Senior Engineer, CUCD

- ✓ 住房与城乡建设部可持续发展与资源环境专家委员会委员
  - ✓ 住房与城乡建设部市政公用行业专家委员会环境卫生专家组成员
  - ✓ 国家发展改革委发展循环经济专家咨询委员会成员
  - ✓ 兼任中国环保产业协会生活垃圾处理委员会秘书长
- 
- ✓ **Member of the Sustainable Development and Resources and Environment Expert Committee of the Ministry of Housing and Urban-Rural Development**
  - ✓ **Member of the Environmental Sanitation Expert Group of the Municipal Public Industry Expert Committee of the Ministry of Housing and Urban-Rural Development**
  - ✓ **Member of the National Development and Reform Commission's Expert Advisory Committee for the Development of Circular Economy**
  - ✓ **Serving as Secretary General of the Domestic Waste Disposal Committee of China Environmental Protection Industry Association**

BIOS



## 徐海云

中国城市建设研究院有限公司总工程师，教授级高级工程师

BIOS

长期措施生活垃圾处理设计、咨询、规划、标准及科研工作。先后主持或参加生活垃圾处理"八五"、"十五"科技攻关项目、"十一五"以及"十二五"科技支撑项目。负责或参加多项生活垃圾处理工程以及生活垃圾处理有关标准编制，此外，还参加多项生活垃圾处理国际合作研究项目。联合国工业发展组织项目"中国城市垃圾清洁管理"中方专家负责人(2002-2005)；2005年-现在作为中方专家参加国际甲烷市场化合作计划垃圾填埋分委员会工作；2010年，被评为环卫行业杰出人物。主要论著：《村镇生活垃圾处理》，《城市生活垃圾管理与处理技术》等。

Long-term measures Domestic waste treatment design, consultation, planning, standards and scientific research work. Successively presided over or participated in the "Eighth Five-Year", "Tenth Five-Year" scientific and technological research projects, "Eleventh Five-Year" and "Twelfth Five-Year" scientific and technological support projects for domestic waste treatment. Responsible for or participating in a number of domestic waste treatment projects and the compilation of relevant standards for domestic waste treatment. In addition, he has also participated in a number of international cooperative research projects on domestic waste treatment. The head of the Chinese expert of the United Nations Industrial Development Organization project "China's Urban Waste Clean Management" (2002-2005); 2005-now as a Chinese expert to participate in the work of the Landfill Subcommittee of the International Methane Market Cooperation Program; in 2010, he was awarded the title of environmental sanitation Outstanding figures in the industry. Main articles: "Treatment of Domestic Waste in Villages and Towns", "Management and Treatment Technology of Urban Domestic Waste", etc.

ADB TA-9611 PRC

# 生活垃圾管理区域统筹面临的问题与建议

## Challenges and Technical Options for Integrated Regional Municipal Solid Waste Management in BTH – Q&A

徐海云

Haiyun Xu

August 25, 2022

# 主要内容

## CONTENT



Content

京津冀生活垃圾处理介绍  
Introduction of MSW disposal in Beijing, Tianjin and Hebei

行政范围的区域统筹  
Regional coordination of administrative scope

垃圾种类的统筹  
Integration of waste types

统筹与规划  
Integration and planning

建议  
Suggestions

# 1. 京津冀生活垃圾处理介绍

## Introduction of MSW disposal in Beijing, Tianjin and Hebei

- 京津冀协同发展历史背景
- The historical background of the coordinated development of Beijing-Tianjin-Hebei

1986年5月26日 中国环渤海经济区成立。京津冀区域经济概念也随之出现。

2004年2月，京津冀三地政府已经就一体化事项达成“廊坊共识”；6月，以京津冀为核心的环渤海合作机制建立。

1986

2004

On May 26, 1986, the China Bohai Rim Economic Zone was established. The concept of the Beijing-Tianjin-Hebei regional economy emerged.

In February 2004, the governments of Beijing, Tianjin, and Hebei reached the "Langfang Consensus" on integration matters; in June, the Bohai Rim cooperation mechanism with Beijing-Tianjin-Hebei as the core was established.

# 1.京津冀生活垃圾处理介绍

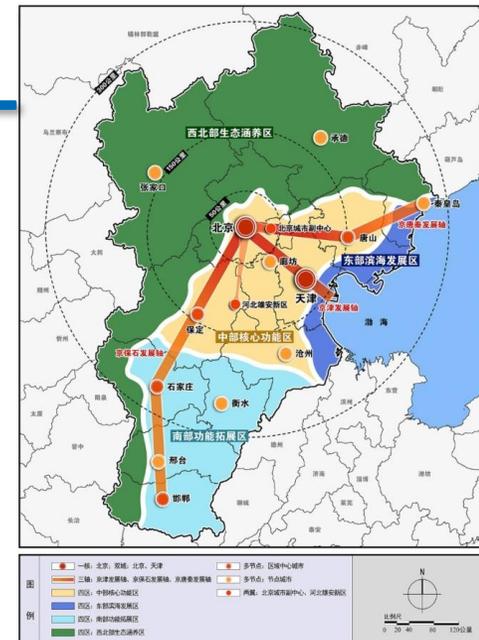
## Introduction of MSW disposal in Beijing, Tianjin and Hebei

### ➤ 京津冀协同发展历史背景

### ➤ The historical background of the coordinated development of Beijing-Tianjin-Hebei

国家十二五规划提出“推进京津冀区域  
经济一体化发展，打造首都经济圈，推  
进河北沿海地区发展”。

中央财经领导小组第九次会议审议研究  
了《京津冀协同发展规划纲要》。《纲  
要》指出，推动京津冀协同发展是一个  
重大国家战略。



2011

2015

The National Twelfth Five-Year Plan proposes to "promote the integrated development of the Beijing-Tianjin-Hebei region, build the capital economic circle, and promote the development coastal areas in Hebei"

The 9th meeting of the Central Finance and Economics Leading Group deliberated and studied the "Outline of Beijing-Tianjin-Hebei Coordinated Development Plan". The "Outline" pointed out that promoting the coordinated development of Beijing-Tianjin-Hebei is a major national strategy.

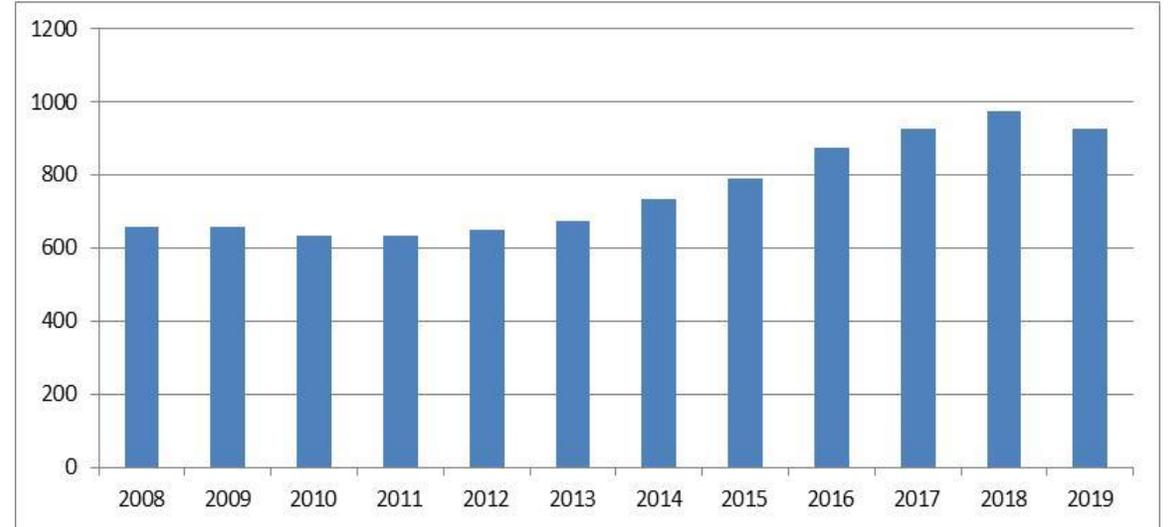
# 1.京津冀生活垃圾处理介绍

## Introduction of MSW disposal in Beijing, Tianjin and Hebei

### ➤ 北京 Beijing

- 人口:2189万(2020年常住人口)
- 面积: 1.64万平方千米
- 生活垃圾清运量: 798万吨 (2020年) , 人均1.0千克/日
- 到2020年,建成焚烧处理规模达到1.7万吨/日

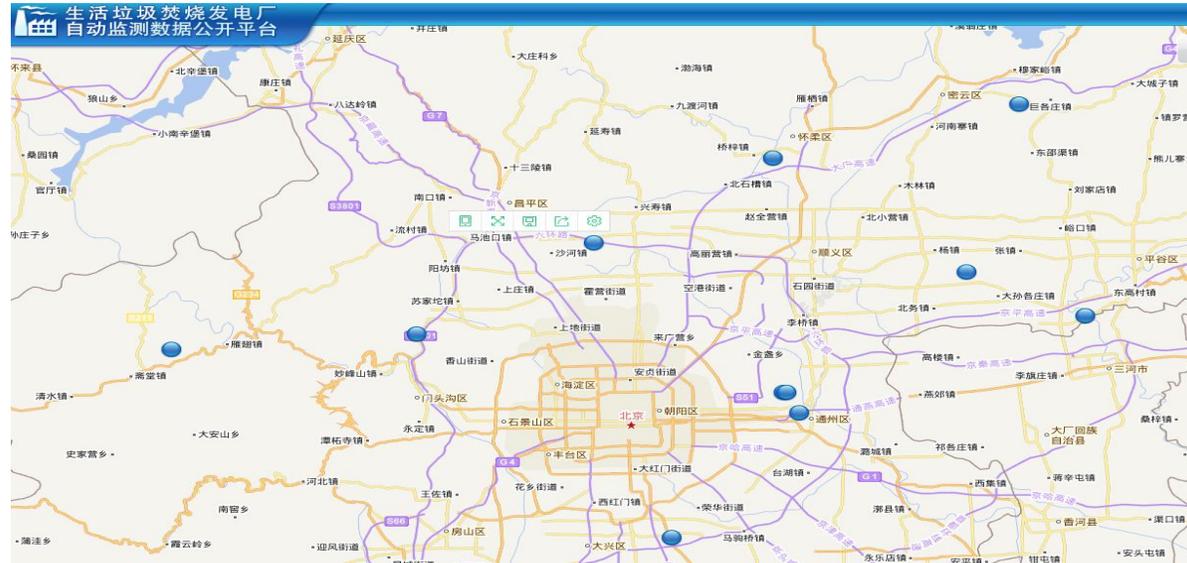
- Population: 21.89 million (resident population in 2020)
- Area: 16,400 square kilometers
- MSW removal amount: 9.25 million tons (2019), 1.16 kg/day per capita
- By 2020, the scale of completed incineration disposal has reached 17,000 tons/day



# 1.京津冀生活垃圾处理介绍

## Introduction of MSW disposal in Beijing, Tianjin and Hebei

### 北京 Beijing



1	北京高安屯	1600
2	北京鲁家山生活垃圾焚烧发电厂	3000
3	北京市朝阳区生活垃圾焚烧发电（二期）	1800
4	北京南宫生活垃圾焚烧发电厂	1000
5	海淀区生活垃圾焚烧发电厂	1800
6	北京通州区生活垃圾焚烧发电厂	2250
7	北京市密云生活垃圾焚烧发电厂	600
8	北京市顺义生活垃圾焚烧发电厂	700
9	北京平谷生活垃圾焚烧发电厂	200
10	北京市怀柔生活垃圾焚烧发电厂	600
11	北京阿苏卫生活垃圾焚烧发电厂	3000
12	北京房山区生活垃圾焚烧发电厂	1000
		17550

1	Gaoantun, Beijing	1600
2	Beijing Lujiashan MSW Incineration Power Plant	3000
3	Beijing Chaoyang MSW Incineration Power Plant (Phase II)	1800
4	Beijing Nangong MSW Incineration Power Plant	1000
5	Beijing Haidian MSW Incineration Power Plant	1800
6	Beijing Tongzhou MSW Incineration Power Plant	2250
7	Beijing Miyun MSW Incineration Power Plant	600
8	Beijing Shunyi MSW Incineration Power Plant	700
9	Beijing Pinggu MSW Incineration Power Plant	200
10	Beijing Huairou MSW Incineration Power Plant	600
11	Beijing Asuwei MSW Incineration Power Plant	3000
12	Beijing Fangshan MSW Incineration Power Plant	1000
		17550



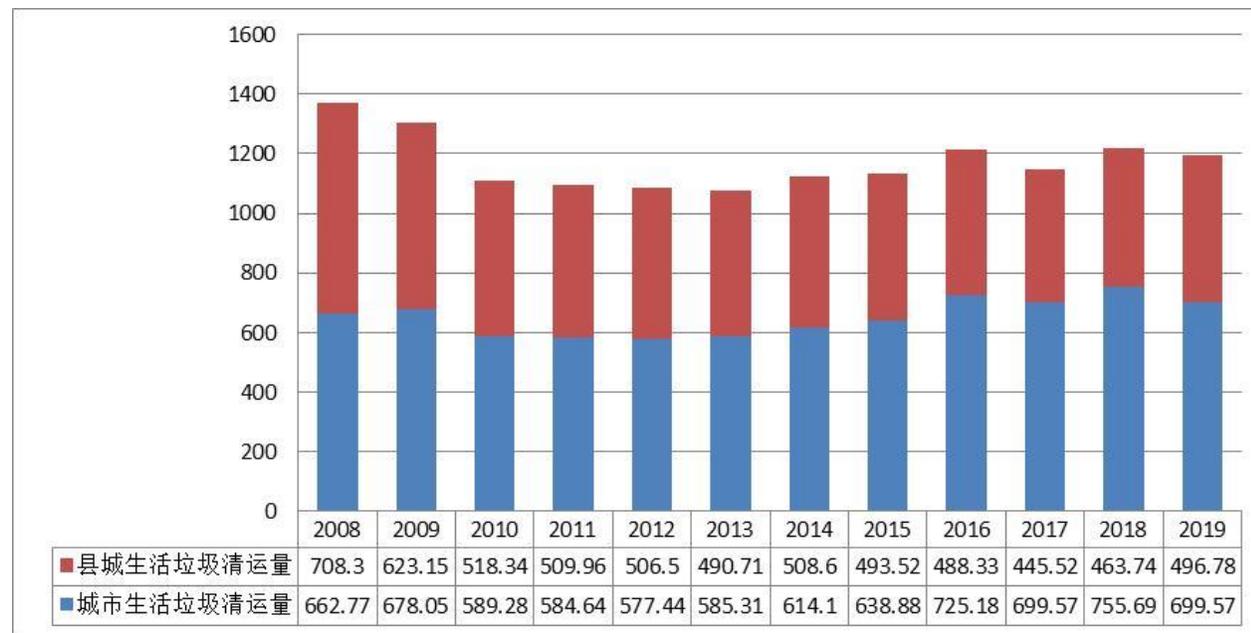
# 1.京津冀生活垃圾处理介绍

## Introduction of MSW disposal in Beijing, Tianjin and Hebei

### ➤ 河北 Hebei

- 人口: 7461.02 万(2020年常住)
- 面积: 18.88万平方千米, 总共有地级市11个、市辖区47个、县95个、县级市20个、自治县六个。生活垃圾清运量: 1234万吨 (2020年), 人均0.45千克/日。
- 2022年6月份, 河北省已经建成垃圾焚烧处理规模7.0万吨/日

- Population: 74.6102 million (resident population in 2020)
- Area: 188,800 square kilometers, with a total of 11 prefecture-level cities, 47 municipal districts, 95 counties, 20 county-level cities, and 6 autonomous counties.
- MSW removal amount: 11.96 million tons (2019), 0.44 kg/day per capita
- By June 2021, the scale of completed incineration disposal has reached 30,000 tons/day



# 1.京津冀生活垃圾处理介绍

## Introduction of MSW disposal in Beijing, Tianjin and Hebei

### ➤ 河北 Hebei

根据《河北省生活垃圾焚烧发电中长期专项规划(2018-2030年)》(修订版)中相关内容,到2020年底,拟建成垃圾焚烧发电项目45项,新增垃圾焚烧处理能力39100吨/日;2020年至2025年,拟建成垃圾焚烧发电项目21项,新增垃圾焚烧处理能力12950吨/日。河北省到2025年共计新增垃圾焚烧发电项目66项,新增垃圾焚烧处理能力52050吨/日,加上现有垃圾焚烧处理能力23950吨/日,预计河北省2025年共计垃圾焚烧处理能力76000吨/日。

According to the relevant content in *Medium-and Long-Term Special Plan for MSW Incineration Power Generation in Hebei Province (2018-2030)*" (revised edition), by the end of 2020, 45 waste incineration power generation projects are planned to be completed, with an additional waste incineration capacity of 39,100 tons/ Day; From 2020 to 2025, it is planned to build 21 waste incineration power generation projects, and increase the waste incineration disposal capacity by 12950 tons/day. Hebei Province will add 66 new waste incineration power generation projects by 2025. The newly added waste incineration capacity will be 52,050 tons/day. With the existing waste incineration capacity of 23,950 tons/day, the total waste incineration capacity of Hebei Province in 2025 is expected to be 76,000 tons/day.

## 2.行政范围的区域统筹Regional coordination of administrative scope

### 《中华人民共和国固体废物污染环境防治法》（2020年9月1日执行）

#### 第三章 工业固体废物

#### 第四章 生活垃圾

#### 第五章 建筑垃圾、农业固体废物等

#### 第六章 危险废物

**第三十五条 县级以上地方人民政府**应当制定工业固体废物污染环境防治工作规划，组织建设工业固体废物集中处置等设施，推动工业固体废物污染环境防治工作。

**第四十五条 县级以上人民政府**应当统筹安排建设城乡生活垃圾收集、运输、处理设施，确定设施厂址，提高生活垃圾的综合利用和无害化处置水平，促进生活垃圾收集、处理的产业化发展，逐步建立和完善生活垃圾污染环境防治的社会服务体系。

**第六十条 县级以上地方人民政府**应当加强建筑垃圾污染环境的防治，建立建筑垃圾分类处理制度。  
县级以上地方人民政府应当制定包括源头减量、分类处理、消纳设施和场所布局及建设等在内的建筑垃圾污染环境防治工作规划。

### Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste (implemented on September 1, 2020)

#### Chapter III Industrial Solid Waste

#### Chapter IV Municipal Solid Waste

#### Chapter V Construction Waste, Agricultural Solid Waste, etc.

#### Chapter VI Hazardous Waste

**Article 35. The local people's government at or above the county level** shall formulate a plan for the prevention and control of environmental pollution by industrial solid waste, organize the construction of facilities for the centralized disposal of industrial solid waste, and promote the prevention and control of environmental pollution by industrial solid waste.

**Article 45. The local people's government at or above the county level** shall make overall arrangements for the construction of facilities for the collection, transportation, and disposal of MSW in urban and rural areas, determine the location of facilities, improve the level of comprehensive utilization and safe disposal of MSW, promote the industrial development of MSW collection and disposal, and gradually establish and improve the social service system for the prevention and control of environmental pollution by MSW.

**Article 60. The local people's government at or above the county level** shall strengthen the prevention and control of environmental pollution caused by construction waste and establish a separated disposal system for construction waste. Local people's governments at or above the county level shall formulate work plans for the prevention and control of environmental pollution caused by construction waste, including source reduction, separated disposal, disposal facilities and site layout and construction.

## 2.行政范围的区域统筹Regional coordination of administrative scope

**第六十四条 县级以上人民政府农业农村主管部门**负责指导农业固体废物回收利用体系建设，鼓励和引导有关单位和其他生产经营者依法收集、贮存、运输、利用、处置农业固体废物，加强监督管理，防止污染环境。

**第七十六条 省、自治区、直辖市人民政府**应当组织有关部门编制危险废物集中处置设施、场所的建设规划，科学评估危险废物处置需求，合理布局危险废物集中处置设施、场所，确保本行政区域的危险废物得到妥善处置。

编制危险废物集中处置设施、场所的建设规划，应当征求有关行业协会、企业事业单位、专家和公众等方面的意见。

相邻省、自治区、直辖市之间可以开展区域合作，统筹建设区域性危险废物集中处置设施、场所。

**Article 64. The agricultural and rural authorities of the people's government at or above the county level** are responsible for guiding the construction of the agricultural solid waste recycling system, encouraging and guiding relevant units and other producers and operators to collect, store, transport, utilize, and dispose of agricultural solid waste in accordance with the law, strengthen supervision and management, and prevent environmental pollution.

**Article 76. The people's governments of provinces, autonomous regions, and municipalities directly under the Central Government** shall organize relevant departments to formulate plans for the construction of hazardous waste centralized disposal facilities and sites, scientifically evaluate the needs for hazardous waste disposal, and reasonably arrange facilities and sites for centralized disposal of hazardous waste to ensure that hazardous wastes in administrative areas are properly disposed of.

When formulating plans for the construction of facilities and sites for the centralized disposal of hazardous waste, the opinions of relevant industry associations, enterprises and institutions, experts and the public shall be solicited.

Adjacent provinces, autonomous regions, and municipalities directly under the Central Government can develop regional cooperation to coordinate the construction of regional hazardous waste centralized disposal facilities and sites.

## 2.行政范围的区域统筹Regional coordination of administrative scope

### 大城市中心城区生活垃圾处理需要跨区统筹

MSW disposal in central urban areas of big cities needs to be integrated across districts

- 北京市鲁家山生活垃圾焚烧发电厂(3000吨/日)
- Beijing Lujiashan Waste Incineration Power Plant (3000 t/d)

鲁家山垃圾分类处理焚烧发电项目开工 刘淇为项目奠基 郭金龙讲话 杜德印出席

来源：北京市市政市容管理委员会网站 日期：2010-10-24

【字号 大 中 小】

一个年处理生活垃圾100万吨，采取全封闭、负压作业，废弃物排放达到国内外最严格标准的现代化垃圾分类处理焚烧发电项目，不久后将在门头沟一片停产的矿地上拔地而起。10月23日上午，沿着蜿蜒的山路，市委书记刘淇驱车来到首钢鲁家山矿区南区，挥锹掘土为鲁家山垃圾分类处理焚烧发电项目（简称鲁家山项目）奠基。市委副书记、市长郭金龙在奠基仪式上讲话，市人大常委会主任杜德印出席。



The foundation stone laying ceremony of the project.



## 2.行政范围的区域统筹Regional coordination of administrative scope

---

**难点：面积、人口比较小的县、面积比较大人口比较少的县。**

**Difficulties: counties with a relatively small area and population, and counties with a relatively large area and a relatively small population.**

- **河北省面积最大的围场满族蒙古族自治县面积9000多平方公里；**
- **河北省面积最小的大厂县176平方公里。**
- **The largest county in Hebei Province, Weichang Manchu and Mongolian Autonomous County covers an area of more than 9,000 square kilometers;**
- **The smallest county in Hebei Province, Dachang County covers an area of 176 square kilometers.**

## 2.行政范围的区域统筹Regional coordination of administrative scope

---

### **(河北省) 2021年围场满族蒙古族自治县政府工作报告:**

坚持以美丽乡村建设为抓手，编制实施《农村人居环境整治提升五年行动方案》，接续开展农村人居环境综合整治和农村乱占耕地建房专项整治，改造无害化卫生厕所1.1万座，**启动建设日处理能力100吨的县城及周边生活垃圾处理设施1处，建成日处理能力10吨的农村生活垃圾热解气化设施10处**，推进生活垃圾处置一体化，基本实现农村生活垃圾无害化处置全覆盖。

(Hebei Province) Government Work Report of Weichang Manchu and Mongolian Autonomous County in 2021: Adhere to the construction of beautiful villages, formulate and implement the *Five-year Action Plan for Improvement of Rural Human Settlement Environment*, continue to carry out comprehensive improvement of rural human settlements and special improvement of rural arable land occupation and construction, and renovate 11,000 harmless sanitary toilets. Start the construction of counties and surrounding MSW disposal facilities with a daily disposal capacity of 100 tons, and build 10 rural waste pyrolysis and gasification facilities with a daily disposal capacity of 10 tons. Promote the integration of MSW disposal and basically achieve full coverage of the safe disposal of rural waste.

## 2.行政范围的区域统筹Regional coordination of administrative scope

### 400吨/日！康恒环境中标大厂回族自治县生活垃圾焚烧发电项目（一期）PPP项目

2020-08-31 18:12:23 来源: 全国能源信息平台

举报

自2020年9月10日，我局发布《大厂回族自治县市政工程专项规划（草案）》批前公示信息以来，收到社会各界对我县生活垃圾焚烧发电项目规划选址的大量意见和建议。对此，我们一定高度重视，充分尊重社会各界的意见和建议，组织有关部门和专家进行认真深入的研究和论证，具体情况将及时向社会公布。

来源：大厂回族自治县自然资源和规划局 2020年10月1日

### 400 tons per day! Kangheng Environment won the bid for the PPP project of Dachang Hui Autonomous County Waste Incineration Project (Phase I)

Since the issue of the pre-approval publicity information of the *Special Plan for Municipal Engineering of Dachang Hui Autonomous County (Draft)* on September 10, 2020, we have received a large number of opinions and suggestions from all walks of life on the planning and site selection of waste incineration power generation projects in our county. In this regard, we will definitely attach great importance to, fully respect the opinions and suggestions of all sectors of society, organize relevant departments and experts to conduct serious and in-depth research and demonstration, and the specific situation will be announced to the society in a timely manner.

Source: Natural Resources and Planning Bureau of Dachang Hui Autonomous County

### 3.垃圾种类的统筹 Integration of waste types

天津光大兴辰环保能源有限公司:4条750t/d焚烧线用于处理生活垃圾, 处理规模为3000t/d, 2020年建成。目前正在计划协同处理餐厨垃圾200t/d; 一般工业固体废物600t/d、市政污水厂污泥300t/d。项目预计2021年8月开工建设, 2021年9月投产运行。

Tianjin Everbright Xingchen Environmental Energy Co., Ltd.: 4 incineration lines with a scale of 750t/d are used to disposal MSW, with a disposal scale of 3000t/d, and will be completed in 2020. It is planned to coordinated disposal 200 t/d of kitchen waste; 600t/d of general industrial solid waste, 300t/d of municipal sewage sludge. The project is expected to start construction in August 2021 and put into operation in September 2021.



# 3.垃圾种类的统筹 Integration of waste types



UNTERNEHMEN ENERGIE AUS ABFALL

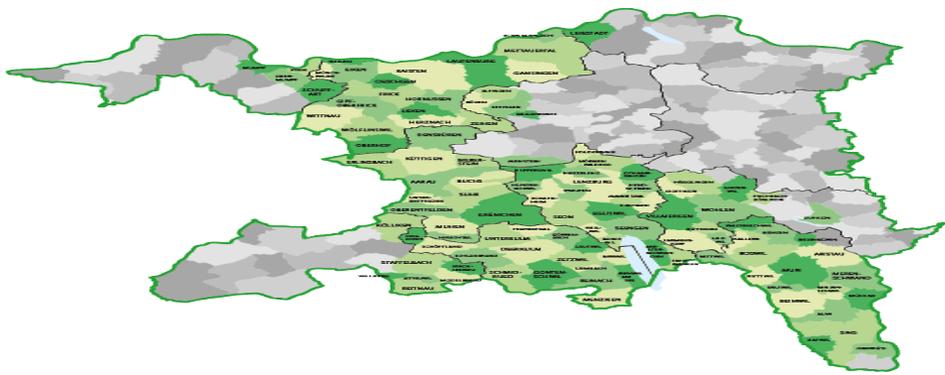
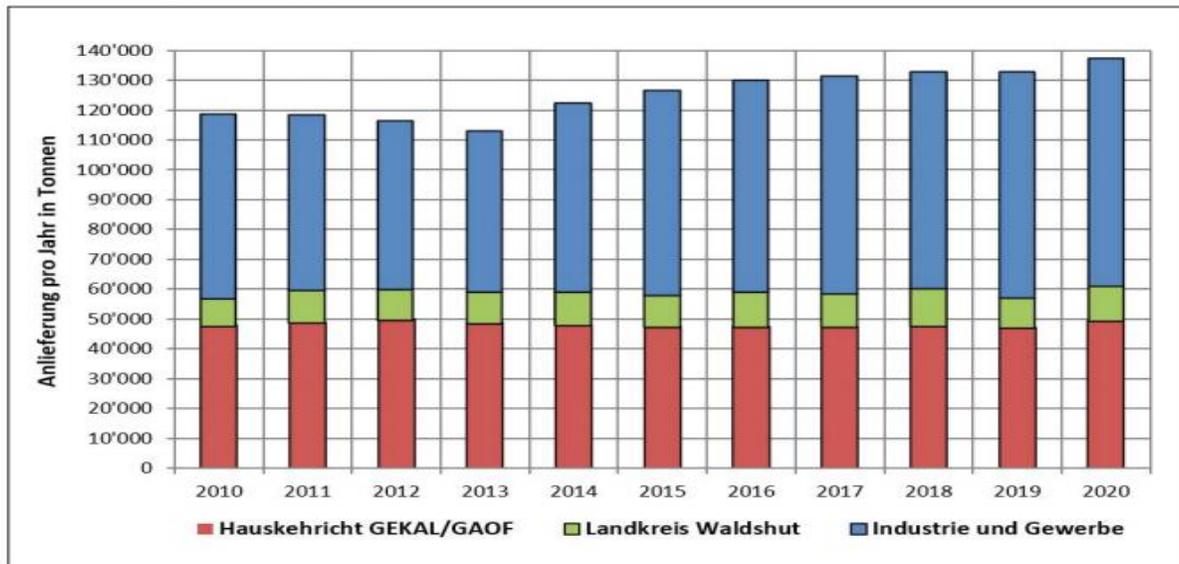


## ➤ 瑞士 Switzerland

- 国土面积41284平方公里
- 人均GDP86542美元（2014年）
- 人口数量823.55万人（2014年）
- 人口密度206.7人/平方公里（2014年）
- 30座生活垃圾焚烧厂
- 年焚烧生活垃圾量388万吨（2015年）
- 人均年焚烧量约470千克
- The land area is 41,284 square kilometers
- Per capita GDP is 86,542 USD (2014)
- The population is 8,235,500 (2014)
- The population density is 206.7 people/km<sup>2</sup> (2014)
- 30 MSW incineration plants
- The annual amount of MSW burned is 3.88 million tons (2015)
- The per capita annual incineration capacity is about 470 kg



Kehrichtmenge 2010-2020



- 焚烧厂地点: Buchs, Aargau
- 服务人口: 32.2万人（2020年）
- 焚烧处理能力400吨/日
- 生活垃圾占40%，其余为工业垃圾等
- Incineration plant location: Buchs, Aargau
- Service population: 322,000 people (in 2020)
- The incineration capacity is 400 tons/day
- MSW accounts for 40%, and the rest is industrial waste

## 4. 统筹与规划 Integration and planning

- **范围多大适宜：要进行真实比较**
- **人均垃圾量取多少：要以实际产生量为基础**
- **避免城市规划常常出现的问题**
- **300吨/日是界限吗？**
- **300/日生活垃圾焚烧发电，配置1条线还是两条线？**

- **What is the suitable range: to make a true comparison**
- **How much waste per capita should be taken: based on the actual amount produced**
- **Avoid problems that often occur in urban planning**
- **Is 300 tons/day the limit?**
- **With a scale of 300/ day, is one line or two lines configured for MSW incineration power generation?**

新华社北京7月13日电(“新华视点”记者乌梦达、董建国、徐海涛)“新华视点”记者近期在多地采访发现,在特大城市限制人口、中小城镇扩容的情况下,一些中小城镇迫切希望加速发展,纷纷提出2020年、2030年人口倍增的目标。国务院有关部门数据显示,据不完全统计,截至2016年5月,全国县以上新城新区超过3500个,规划人口达34亿。

这些规划能容纳全世界近一半人口的新城,谁来住?

**全国规划3500多个新城容纳34亿人口**

Xinhua News Agency, Beijing, July 13 ("Xinhua Viewpoint" reporters Wu Mengda, Dong Jianguo, Xu Haitao) "Xinhua Viewpoint" reporters recently interviewed in many places and found that under the condition of population restrictions in megacities and expansion of small and medium-sized towns, some small and medium-sized towns are eager to accelerate their development and put forward the goal of population doubling in 2020 and 2030. According to the data of relevant departments of the State Council, according to incomplete statistics, as of May 2016, there were more than 3,500 new urban districts above the county level in China, with a planned population of 3.4 billion.

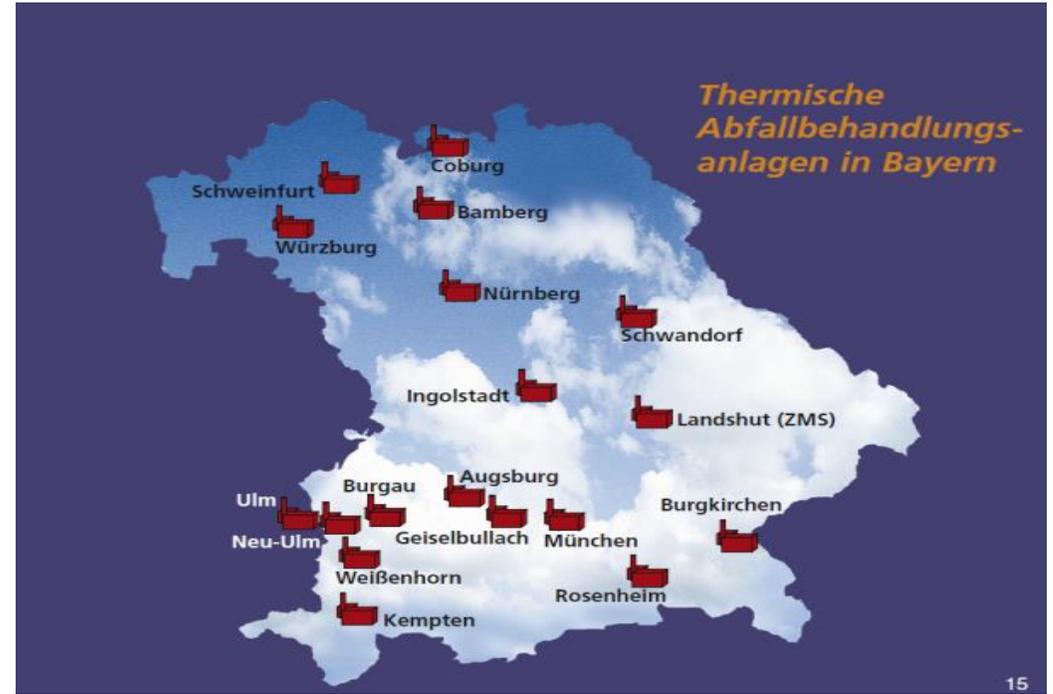
Who will live in these new towns that can accommodate nearly half of the world's population?

**More than 3,500 new cities are planned nationwide to accommodate 3.4 billion people**

# 4. 统筹与规划 Integration and planning

## 德国巴伐利亚州 Bavaria, Germany

- 面积70554平方公里
- 人口1180万
- 18座生活垃圾焚烧发电厂
- 年焚烧350万吨
- 人均年焚烧量约300千克
- The area is 70,554 square kilometers
- The population is 11.8 million
- 18 MSW incineration power plants
- The annual incineration amount is 3.5 million tons
- The per capita annual incineration amount is about 300 kg



- 施万多夫垃圾焚烧厂 (Schwandorf), 处理规模: 45万吨/年
- 服务面积1.5万平方公里, 超过巴伐利亚州1/5面积。
- 服务人口189万人
- Incineration Plant, with disposal scale of 450,000 tons/year
- The service area is 15,000 square kilometers, more than 1/5 of Bavaria.
- Serving 1.89 million people

## 4. 统筹与规划 Integration and planning

安徽省滁州市市区生活垃圾焚烧发电厂（处理规模：1050吨/日,服务范围：琅琊区、南谯区、全椒县、来安县，面积：4435平方千米，人口141万人。）

MSW Incineration Power Plant in Chuzhou City, Anhui Province (scale: 1,050 tons/day, service scope: Langya District, Nanqiao District, Quanjiao County, Lai'an County, area: 4435 square kilometers, population: 1.41 million.)



## 4.统筹与规划Integration and planning

---

**小型垃圾焚烧不是技术问题而是规模经济问题!**

**Small-scale waste incineration is not a technical problem but a scale economic problem!**

## 4. 统筹与规划 Integration and planning

**2020年7月31日，国家发展改革委、住房和城乡建设部、生态环境部发布了《城镇生活垃圾分类和处理设施补短板强弱项实施方案》（发改环资〔2020〕1257号）**

(二) 大力提升垃圾焚烧处理能力。

一是全面推进焚烧处理能力建设。生活垃圾日清运量超过 300 吨的地区，要加快发展以焚烧为主的垃圾处理方式，适度超前建设与生活垃圾清运量相适应的焚烧处理设施，到 2023 年基本实现原生垃圾“零填埋”。鼓励跨区域统筹建设焚烧处理设施。在生活垃圾日清运量不足 300 吨的地区探索开展小型生活垃圾焚烧设施试点。垃圾焚烧发电设施要严格落实环境监管“装、树、联”要求，逐步提高设施设计和建设标准，推动建设“邻利”型生活垃圾焚烧设施。

**On July 31, 2020, the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development, and the Ministry of Ecology and Environment issued the Implementation Plan for Strengthening and Improving MSW Separation and Disposal Facilities (FGHZ [2020] No. 1257)**

(2) Vigorously improve the capacity of waste incineration disposal.

One is to comprehensively promote the construction of incineration disposal capacity. In areas where the daily removal amount of MSW is more than 300 tons, it is necessary to speed up the development of incineration-based waste disposal methods, and moderately advance the construction of incineration facilities suitable for the MSW removal amount. By 2023, basically realize the "snow landfill" of primary waste. "Encourage regional integrated construction of incineration facilities. **Exploring pilot projects of small-scale MSW incineration facilities in areas where the daily removal amount is less than 300 tons.** Waste incineration power generation facilities must strictly implement the requirements of environmental supervision "Zhuang, Shu, and Lian", and gradually improve the design and construction standards of facilities to promote the construction of "adjacent-benefit" type MSW incineration facilities..

## 4. 统筹与规划 Integration and planning

2020年11月27日，住房和城乡建设部 中央宣传部 中央文明办 国家发展改革委 教育部 科技部 生态环境部 农业农村部 商务部 国家机关事务管理局 共青团中央 中华全国供销合作总社印发《关于进一步推进生活垃圾分类工作的若干意见》的通知（建城〔2020〕93号）

（十七）提升科技支撑能力。开展生活垃圾分类技术专题研究，推动生活垃圾分类投放、收集、运输、处理等技术发展。加强生活垃圾分类处理技术装备研发和集成示范应用，**重点解决小型焚烧处理、焚烧飞灰处置、渗滤液处理、厨余垃圾处理**等问题，构建生活垃圾从源头到末端、从生产到消费的全过程分类技术支撑体系。（科技部、住房和城乡建设部、工业和信息化部、中国科学院、中国工程院等按职责分工负责）

On November 27, 2020, the Ministry of Housing and Urban-Rural Development, the Central Propaganda Department, the Central Civilization Office, the National Development and Reform Commission, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Ecology and Environment, the Ministry of Agriculture and Rural Affairs, the Ministry of Commerce, the National Agency Affairs Administration, the Central Committee of the Communist Youth League, and the All-China Federation of Supply and Marketing Cooperatives issued the "About Notice on Several Opinions on Further Promoting the MSW Separation (Jiancheng [2020] No. 93)

(17) Enhance scientific and technological support capabilities. Carry out special research on MSW separation technology, and promote the development of MSW separation, collection, transportation, and disposal. Strengthen the research and development and integrated demonstration application of MSW separation disposal technology and equipment, **focus on solving small-scale incineration disposal**, incineration fly ash disposal, leachate treatment, kitchen waste disposal, etc., and construct a technical support system for the MSW separation from the source to the end, from production to consumption. (Ministry of Science and Technology, Ministry of Housing and Urban-Rural Development, Ministry of Industry and Information Technology, Chinese Academy of Sciences, Chinese Academy of Engineering, etc. are responsible according to the division of responsibilities)

# 4. 统筹与规划 Integration and planning

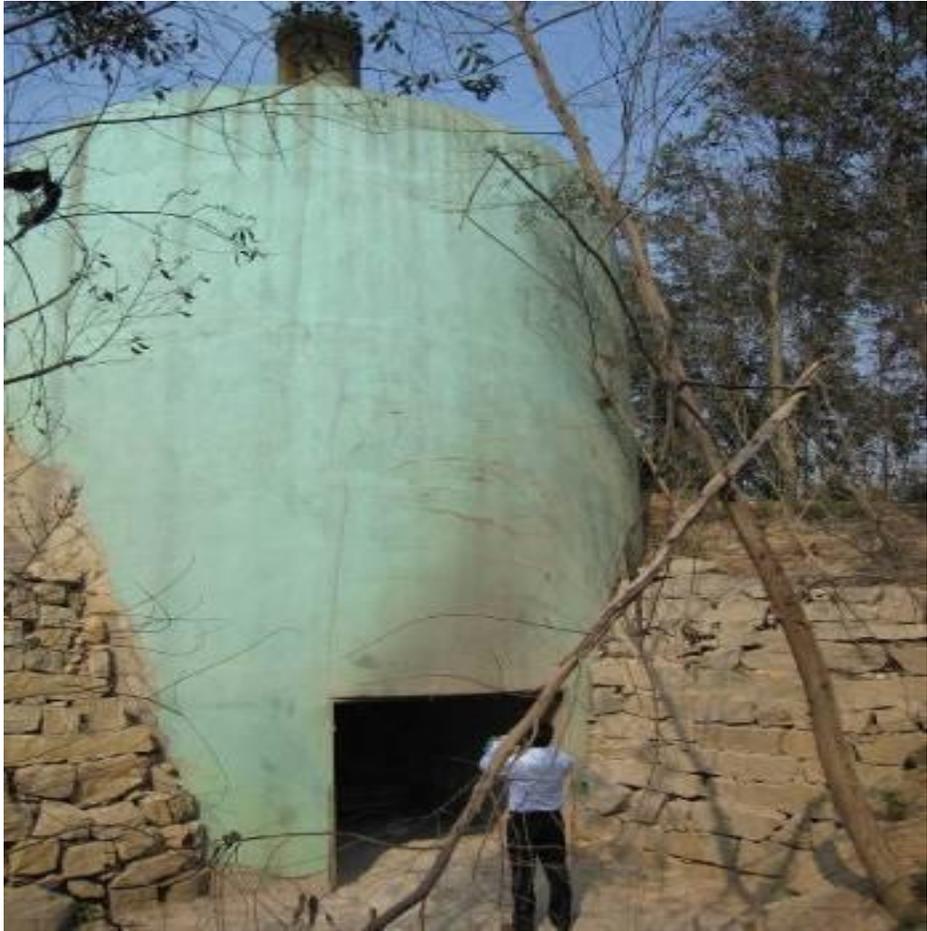
简易焚烧炉的发展  
(江西、福建、广西等地的实践)

Development of simple incinerator  
(Practice in Jiangxi, Fujian, Guangxi , etc.)



# 4. 统筹与规划 Integration and planning

---



# 4. 统筹与规划 Integration and planning

---



# 4. 统筹与规划 Integration and planning

[COMPANY](#)[WASTE TO ENERGY](#)[DRY DIGESTION](#)[NEWS](#)[CONTACT](#)

Nr.	Land	Anlage	Anzahl Linien ▲ ▼	Durchsatz/pro Linie (Mg/d) ▲ ▼	Durchsatz/pro Anlage (Mg/d) ▲ ▼	Thermische Leistung/pro Linie (MW) ▲ ▼	Thermische Leistung/pro Anlage (MW) ▲ ▼	Inbetrieb- setzung ▲ ▼	Rosttechnologie ▲ ▼
57	FR	Arles	1	72	72	8	8	1977	R
41	FR	Hénin-Carvin	2	84	168	11	22	1973	R
66	FR	Hénin-Carvin	1	84	84	10	10	1977	R
129	FR	Belfort	1	96	96	8	8	1988	S
301b	FR	Villefranche sur Saône	1	108	108	12	12	2002	R
13	FR	Rennes	2	120	240	15	29	1968	R
24	FR	Avignon	1	120	120	12	12	1971	R
33	FR	Vallée de Chevreuse	1	120	120	14	14	1972	R
54	FR	Valenciennes	3	120	360	13	38	1977	R
56	FR	Denain	2	120	240	13	26	1977	R
218	FR	Lons-le-Saunier	1	120	120	13	13	1994	R
267	FR	Chaumont / Haute- Marn	2	120	240	12	23	1998	R
269	FR	Blois	2	132	264	14	28	2000	S
16	FR	Metz	2	144	288	17	35	1970	R

## 4. 统筹与规划 Integration and planning

[COMPANY](#)[WASTE TO ENERGY](#)[DRY DIGESTION](#)[NEWS](#)[CONTACT](#)

Please choose...



Nr.	Land	Anlage	Anzahl Linien ▲ ▼	Durchsatz/pro Linie (Mg/d) ▲ ▼	Durchsatz/pro Anlage (Mg/d) ▲ ▼	Thermische Leistung/pro Linie (MW) ▲ ▼	Thermische Leistung/pro Anlage (MW) ▲ ▼	Inbetrieb- setzung ▲ ▼	Rosttechnologie ▲ ▼
7	CH	Zermatt	1	40	40	5	5	1964	R
8	CH	Limmattal	2	55	110	4	8	1971	R
50	CH	Bazenheid	2	84	168	12	24	1976	R
119	CH	Bazenheid	1	110	110	12	12	1984	R
23	CH	Hirwil	1	120	120	13	13	1970	R
125	CH	St. Gallen	2	125	250	14	28	1987	R

# 4. 统筹与规划 Integration and planning



Please choose...



Nr.	Land	Anlage	Anzahl Linien		Durchsatz/pro Linie (Mg/d)		Durchsatz/pro Anlage (Mg/d)		Thermische Leistung/pro Linie (MW)		Thermische Leistung/pro Anlage (MW)		Inbetriebsetzung		Rosttechnologie	
			▲	▼	▲	▼	▲	▼	▲	▼	▲	▼	▲	▼	▲	▼
298	JP	Hitoyoshi	2		46		91		5		10		2002		H	
189	JP	Kasai	2		48		96		6		13		1995		H	
112	JP	Takayama	2		50		101		4		8		1986		H	
233	JP	Shimosuwa	2		55		110		5		9		1998		H	
127	JP	Iwatsuki	2		65		130		6		13		1987		R	
152	JP	Owase	2		67		134		6		12		1990		H	
300	JP	Niihama	3		67		202		9		28		2002		H	
187	JP	Wajima	2		74		149		8		17		1994		H	
86	JP	Kamakura	2		75		150		9		18		1982		R	
156	JP	Tokoname-Taketoyo	2		75		150		8		16		1990		R	
215	JP	Otokuni	2		75		150		10		20		1995		R	

# 4. 统筹与规划 Integration and planning

## 200吨/日生活垃圾焚烧发电厂

- 方案一：1 x 200吨/日
- 方案二：2 x 100吨/日

MSW incineration power plant with a scale of 200 tons/day  
Scheme 1: 1 x 200 tons/day  
Scheme 2: 2 x 100 tons/day

## 400吨/日生活垃圾焚烧发电厂

- 方案一：1 x 400吨/日
- 方案二：2 x 200吨/日

MSW incineration power plant with a scale of 400 tons/day  
Scheme 1: 1 x 400 tons/day  
Scheme 2: 2 x 200 tons/day

## 300吨/日生活垃圾焚烧发电厂

- 方案一：1 x 300吨/日
- 方案二：2 x 150吨/日

MSW incineration power plant with a scale of 300 tons/day  
Scheme 1: 1 x 300 tons/day  
Scheme 2: 2 x 150 tons/day

## 500吨/日生活垃圾焚烧发电厂

- 方案一：1 x 500吨/日
- 方案二：2 x 250吨/日

MSW incineration power plant with a scale of 500 tons/day  
Scheme 1: 1 x 500 tons/day  
Scheme 2: 2 x 250 tons/day

## 600吨/日生活垃圾焚烧发电厂

- 方案一：1 x 600吨/日
- 方案二：2 x 300吨/日

MSW incineration power plant with a scale of 600 tons/day  
Scheme 1: 1 x 600 tons/day  
Scheme 2: 2 x 300 tons/day



**如何解决检修期间：垃圾处理问题！**  
**\*加大垃圾池**  
**\*打包储存**

How to solve the problem of waste disposal during maintenance! \*  
Expand the waste pool \* packaged and stored



## 4. 统筹与规划 Integration and planning

农村生活垃圾处理是否需要另外体系

*Whether it needs another system for MSW disposal in rural area*

### 中共中央国务院关于全面推进乡村振兴加快农业农村现代化的意见(2021年1号文件)

(十六) 实施农村人居环境整治提升五年行动。分类有序推进农村厕所革命，加快研发干旱、寒冷地区卫生厕所适用技术和产品，加强中西部地区农村户用厕所改造。统筹农村改厕和污水、黑臭水体治理，因地制宜建设污水处理设施。**健全农村生活垃圾收运处置体系，推进源头分类减量、资源化处理利用，建设一批有机废弃物综合处置利用设施。健全农村人居环境设施管护机制。**有条件的地区推广城乡环卫一体化第三方治理。深入推进村庄清洁和绿化行动。开展美丽宜居村庄和美丽庭院示范创建活动。

Opinions of the Central Committee of the Communist Party of China and the State Council on Comprehensively Promoting Rural Revitalization and Accelerating Agricultural and Rural Modernization (Document No. 1, 2021)

(16) Implement a five-year action to improve the rural human settlement environment. Promote the renovation of rural toilets in an orderly manner, accelerate the development of technologies and products for sanitary toilets in arid and cold areas, and strengthen the renovation of rural household toilets in the central and western regions. Coordinate the improvement of toilets in rural areas and the treatment of sewage and black and odorous water bodies, and construct sewage treatment facilities in accordance with local conditions. **Improve the collection, transportation and disposal system of rural waste, promote source separation and reduction, resource disposal and utilization, and build a batch of organic waste comprehensive disposal and utilization facilities. Improve the management and protection mechanism of rural human settlement environment facilities.** Promote integrated third-party management of urban and rural sanitation in areas where conditions permit. Deepen the promotion of village cleaning and greening activities. Carry out demonstration and creation activities of beautiful livable villages and beautiful courtyards.

## 4. 统筹与规划 Integration and planning

---

农村生活垃圾处理是否需要另外体系

*Whether it needs another system for MSW disposal in rural area*

**中共中央 国务院关于实现巩固拓展脱贫攻坚成果同乡村振兴有效衔接的意见（2020年12月16日）**

（八）持续改善脱贫地区基础设施条件。继续加大对脱贫地区基础设施建设的支持力度，重点谋划建设一批高速公路、客货共线铁路、水利、电力、机场、通信网络等区域性和跨区域重大基础设施建设工程。按照实施乡村建设行动统一部署，**支持脱贫地区因地制宜推进农村厕所革命、生活垃圾和污水治理、村容村貌提升。**

**Opinions of the Central Committee of the Communist Party of China and the State Council on Realizing the Effective Linkage of the Consolidation and Expansion of Poverty Alleviation and Rural Revitalization (December 16, 2020)**

(8) Continue to improve infrastructure conditions in poverty alleviation areas. Continue to increase support for infrastructure construction in poverty alleviated areas, focusing on planning the construction of a number of regional and cross-regional major infrastructure construction projects such as expressways, passenger and freight railroads, water conservancy, electric power, airports, and communication networks. In accordance with the unified deployment of the implementation of rural construction actions, **support the poverty alleviation areas to promote the revolution of rural toilets, the disposal of MSW and sewage, and the improvement of the appearance of the village according to local conditions.**

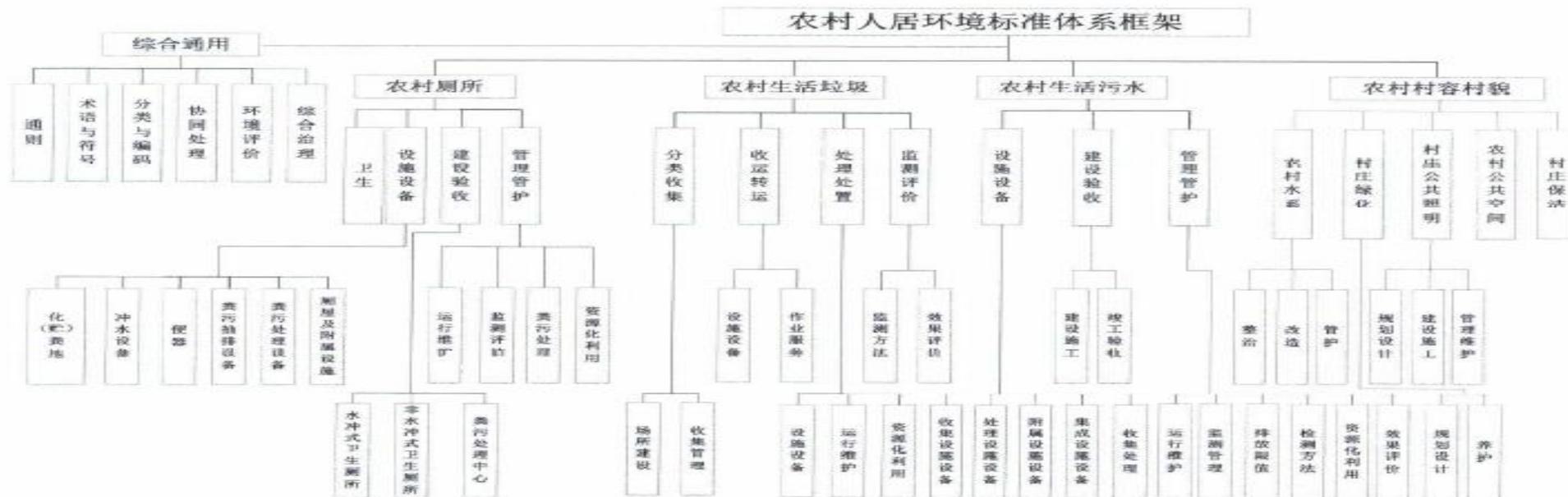
# 4. 统筹与规划 Integration and planning

市 场 监 督 管 理 总 局  
生 态 环 境 部  
住 房 城 乡 建 设 部  
水 利 部  
农 业 农 村 部  
国 家 卫 生 健 康 委  
林 草 局

国市监标技〔2020〕207号

市场监管总局 生态环境部 住房城乡建设部  
水利部 农业农村部 国家卫生健康委 林草局  
关于推动农村人居环境标准体系  
建设的指导意见

Guiding Opinions of the General Administration of Market Supervision, the Ministry of Ecology and Environment, the Ministry of Housing and Urban-Rural Development, the Ministry of Water Resources, the Ministry of Agriculture and Rural Affairs, the National Health Commission, and the Bureau of Forestry and Grass on Promoting the Construction of a Rural Human Settlement Environment Standard System



## 4. 统筹与规划 Integration and planning



### *Emission Standard for Air Pollution of Rural Waste Non-incineration Low Temperature Disposal Facilities in Heilongjiang Province was issued*

#### 黑龙江省《农村生活垃圾非焚烧低温处理设施大气污染排放标准》发布

来源： 编辑：牛婷婷 2020-11-23 10:22

【摘要】近日，由黑龙江省生态环境监测中心起草完成的《农村生活垃圾非焚烧低温处理设施大气污染排放标准》地方标准发布。

我省《农村生活垃圾非焚烧低温处理设施大气污染排放标准》发布  
污染物不应稀释和旁路排放

生活报讯（实习生王一记者李威兵）近日，由黑龙江省生态环境监测中心起草完成的《农村生活垃圾非焚烧低温处理设施大气污染排放标准》地方标准发布。据悉，该标准将于12月17日正式实施。该标准的出台，填补了国内农村垃圾非焚烧低温处理大气污染物排放标准方面的空白。

在任何情况下，农村生活垃圾的非焚烧低温处理设施不应采用空气或纯氧助燃，处理温度不应超过200℃；污染物排放以实测浓度作为达标判定依据，不应稀释排放和旁路排放。农村生活垃圾非焚烧低温处理设施产生的处理残渣与飞灰应采取密闭措施，分别收集、贮存、运输和处置。

农村生活垃圾非焚烧低温处理装置在运行过程中发生故障，应及时检修，尽快恢复正常。如果无法修复应立即停止投加生活垃圾，按照程序关闭系统。处理系统每年启动、停运过程排放污染物的持续时间以及发生故障或事故关闭处理系统排放污染物持续时间累计不应超过60小时。

## 4. 统筹与规划 Integration and planning

分散的农村地区生活垃圾怎么办？

What about waste in scattered rural areas?

### 6萬噸垃圾山 雲縣開始打包

04:10 2020/01/18 | 中國時報 | 周麗蘭、雲林



60,000 tons of waste hill is being packaged



雲林縣府申請垃圾打包計畫，17日進駐西螺鎮垃圾場，1小時可生產35捲，每個垃圾捲約1公噸。(周麗蘭攝)

不能填埋、没有焚烧，怎么办？打包暂存是可以考虑的选择

What should we do if it cannot be landfilled or burned? Temporary storage after packaging is an option to consider.

## 5.建议 Suggestions

①废纸、废金属、废塑料等可回收物要超越县、超越省行政范围进行统筹规划

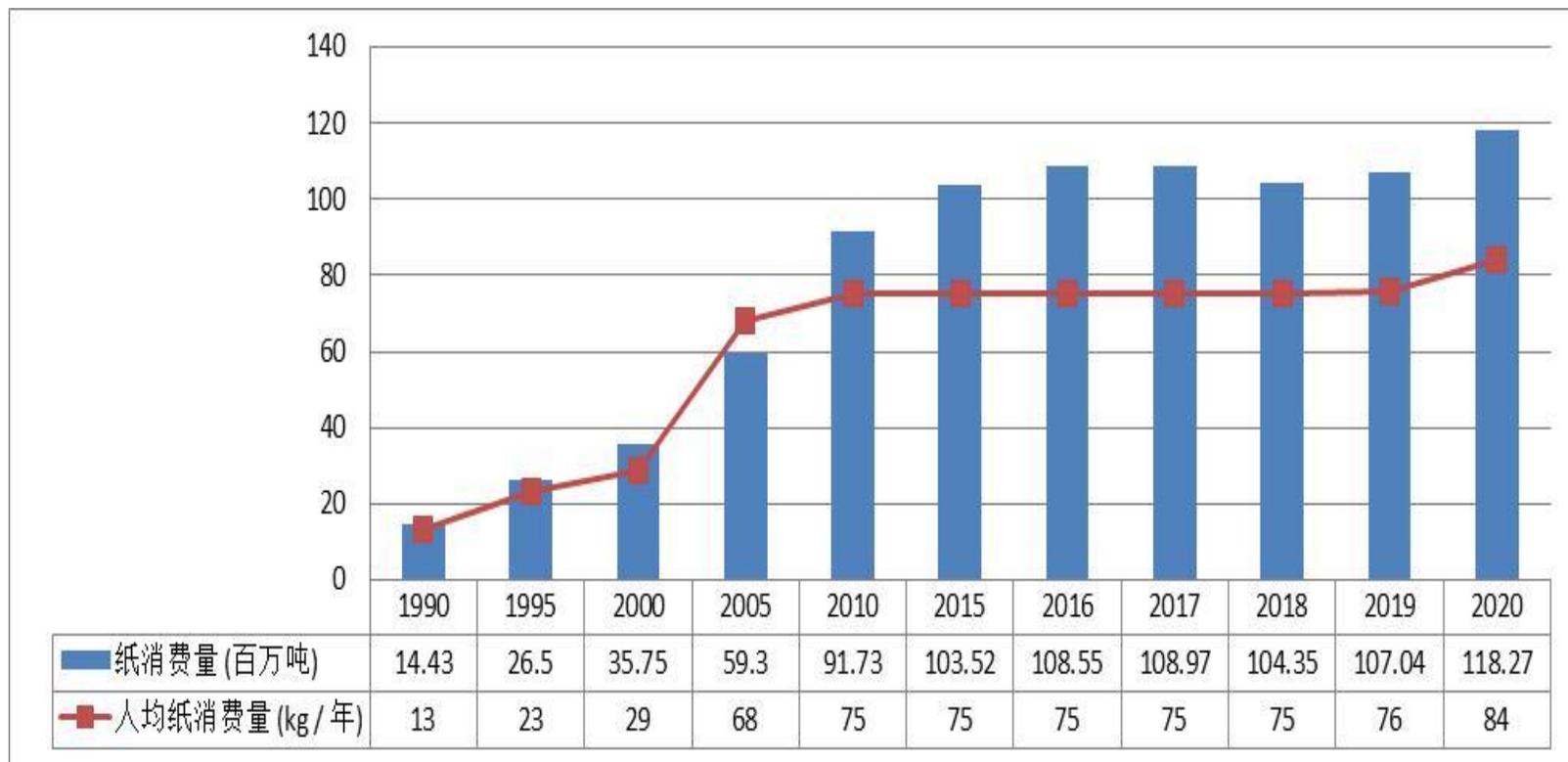
① Recyclables such as waste paper, waste metal, and waste plastics should be planned integrately beyond the county and provincial administrative boundaries.



## 5.建议 Suggestions

废纸：2020年我国人均纸的消费量约84千克，低消费量难以达到高回收率

Waste paper: The per capita paper consumption in China in 2020 is about 84 kg, and it is difficult to achieve a high recycling rate with low consumption



### 1990-2020年我国纸消费量

Paper Consumption in China from 1990 to 2020

3. 紙・板紙消費量		(千トン)		4. 一人当たり年間消費量		(kg/年)	
		2019年	2020年	2019年	2020年		
1	中国	108,362	109,913	1	スロベニア	264.6	269.8
	*	(107,040)	(118,270)	2	ベルギー	268.0	239.4
2	アメリカ	67,879	65,925	3	ドイツ	235.3	224.7
		<b>25,533</b>	<b>22,392</b>	4	オーストリア	227.0	206.2
3	日本	*	<b>(24,901)</b>	5	アメリカ	205.5	198.2
4	ドイツ	18,779	18,010	6	韓国	188.9	191.2
5	インド	17,148	14,573	7	日本	<b>202.7</b>	<b>178.4</b>
6	韓国	9,751	9,911		*	<b>(199.4)</b>	<b>(174.8)</b>
7	イタリア	10,359	9,874	8	台湾	168.9	173.3
8	ブラジル	9,585	9,230	9	ポーランド	161.2	165.4
9	メキシコ	8,585	8,311	10	アラブ首長国連邦	151.5	165.3
10	フランス	8,619	8,152	11	フィンランド	172.0	163.0
11	インドネシア	8,422	7,516	12	イタリア	169.4	158.2
12	イギリス	8,081	7,219	13	チェコ	154.8	155.4
13	ロシア	7,057	7,123	14	オランダ	164.1	155.0
14	トルコ	6,058	6,567	15	ニュージーランド	161.8	152.4
15	ポーランド	6,213	6,333	16	リトアニア	133.0	147.1
16	スペイン	6,640	6,189	17	デンマーク	149.9	145.7
17	ベトナム	5,256	5,362	18	カナダ	149.7	140.8
18	カナダ	5,709	5,308	19	エストニア	137.7	131.6
19	タイ	5,012	4,811	20	スウェーデン	149.2	126.2
20	台湾	3,983	4,090				
	*	(4,292)	(4,374)				

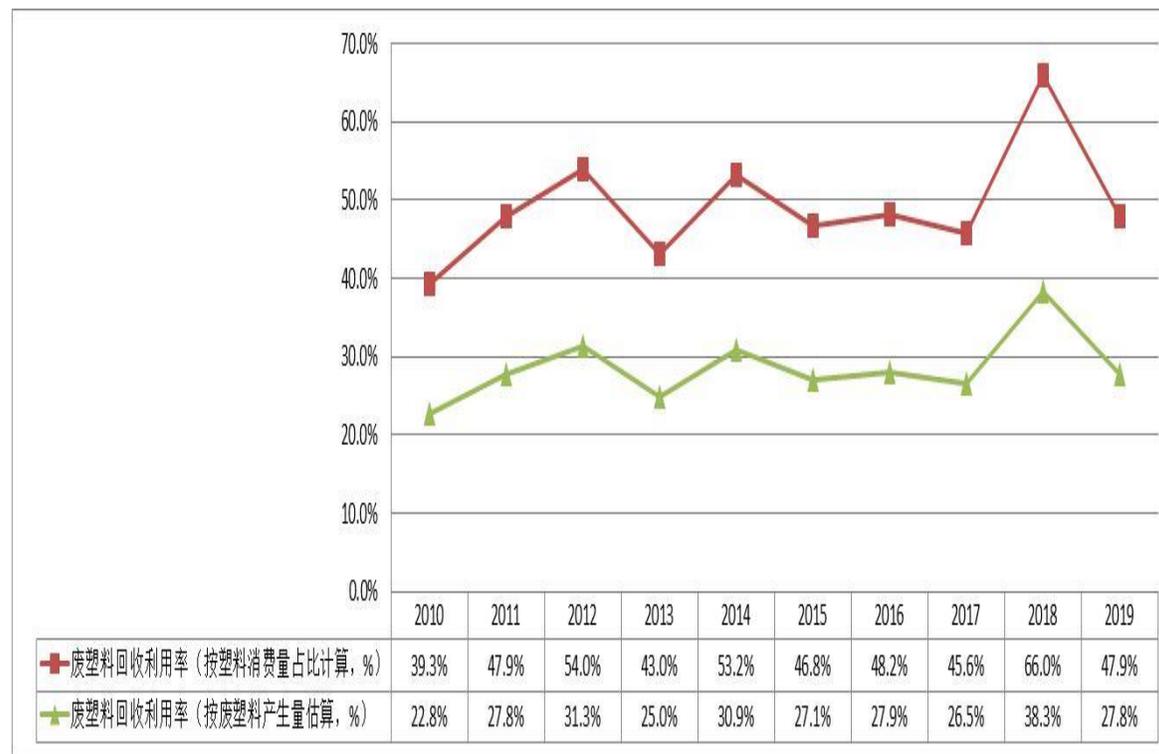
## 5.建议 Suggestions

我国还没有建立废塑料回收利用率计算方法，目前大多采用废塑料回收量除以塑料消费量表示废塑料回收利用率，这不是国际上通行的算法，国际上废塑料回收利用率的计算方法是用废塑料回收量除以废塑料产生量，这样计算方法更符合实际，因为在塑料消费中，占有较大比例的长寿命塑料制品如工程塑料不会在短时间内转变为废物。如果按照国际通行的废塑料回收利用率的计算方法，我国废塑料回收率将由25%左右变为50%左右。

China has not established a calculation method for the recycling rate of waste plastics. At present, most of the recycling rates of waste plastics are divided by the consumption of plastics to express the recycling rate of waste plastics. This is not an internationally accepted algorithm. The international calculation method for the recycling rate of waste plastics is to divide the amount of waste plastics recycled by the amount of waste plastics generated. This calculation method is more realistic, because in the consumption of plastics, long-life plastic products such as engineering plastics will not turn into waste in a short period of time. If according to the internationally accepted method of calculating the recycling rate of waste plastics, the recycling rate of waste plastics in China will change from about 25% to about 50%.

### 我国塑料回收利用水平被低估

The recycling level of plastics in China is underestimated



# 5.建议 Suggestions

単位：千トン

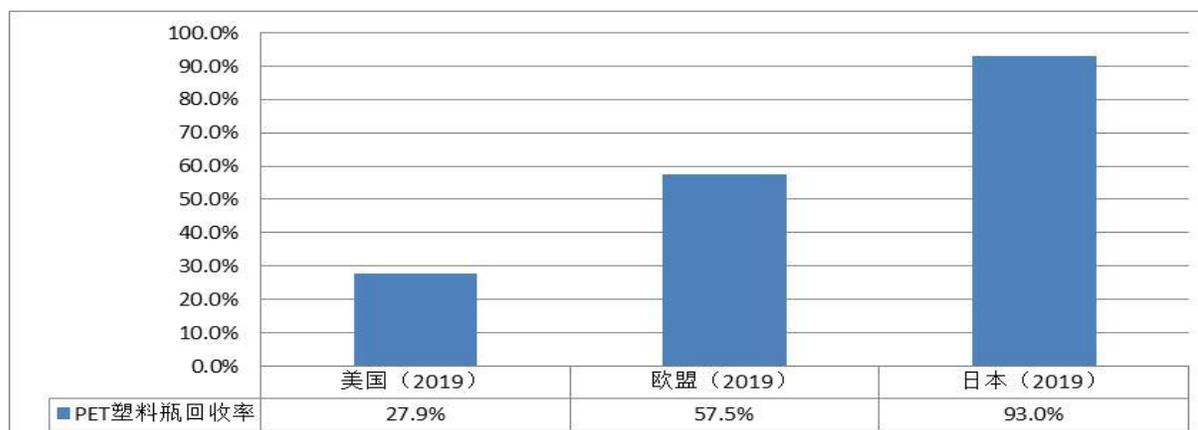
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
日本	リサイクル率(%)	89.9%	83.5%	85.8%	85.0%	85.8%	82.6%	86.7%	84.0%	84.9%	84.6%	85.8%
	回収率(%)	77.4%	72.2%	79.6%	90.5%	91.3%	93.5%	92.4%	88.8%	92.2%	91.5%	93.0%
	販売量(千トン)	565	596	604	583	579	569	563	596	587	626	593
	回収量(千トン)	437	430	481	527	529	532	520	529	541	572	552
	再資源化量(千トン)	508	498	518	495	497	470	489	501	498	529	509
欧州	リサイクル率(%)	32.1%	32.4%	36.0%	37.5%	40.7%	39.3%	41.2%	41.0%	41.8%	36.3%	39.6%
	回収率(%)	48.4%	48.3%	51.0%	52.3%	55.9%	57.2%	59.1%	59.8%	61.5%	56.1%	57.5%
	販売量(千トン)	2,816	3,004	3,109	3,204	2,935	3,062	3,119	3,146	3,207	3,648	3,637
	回収量(千トン)	1,363	1,451	1,587	1,675	1,641	1,752	1,842	1,881	1,972	2,047	2,090
	再資源化量(千トン)	905	974	1,120	1,202	1,195	1,204	1,285	1,291	1,340	1,323	1,441
米国	リサイクル率(%)	20.9%	20.8%	19.2%	21.1%	22.6%	21.6%	21.7%	20.1%	20.9%	20.3%	19.7%
	回収率(%)	28.0%	29.1%	29.3%	30.8%	31.2%	31.0%	30.1%	28.4%	29.2%	28.9%	27.9%
	販売量(千トン)	2,336	2,427	2,485	2,534	2,615	2,653	2,708	2,800	2,682	2,844	2,887
	回収量(千トン)	655	706	728	779	816	822	815	795	783	822	805
	再資源化量(千トン)	489	506	477	536	590	572	588	562	561	577	567

(出所) 欧州：Wood Mackenzie社(2018年調査方法の精査修正)  
 米国：NAPCOR  
 ※リサイクル率の分母をPETボトル販売量に統一して、推進協議会で計算し直しています。  
 ※元データの出所 米国=NAPCOR、欧州=PETCORE、2017年は、Wood Mackenzie、日本=PETボトルリサイクル推進協議会。  
 ※欧州のデータは、隔年報告。



**中国PET塑料瓶回收率  
95%或99%**

**The recovery rate of PET plastic bottles in China is 95% or 99%**

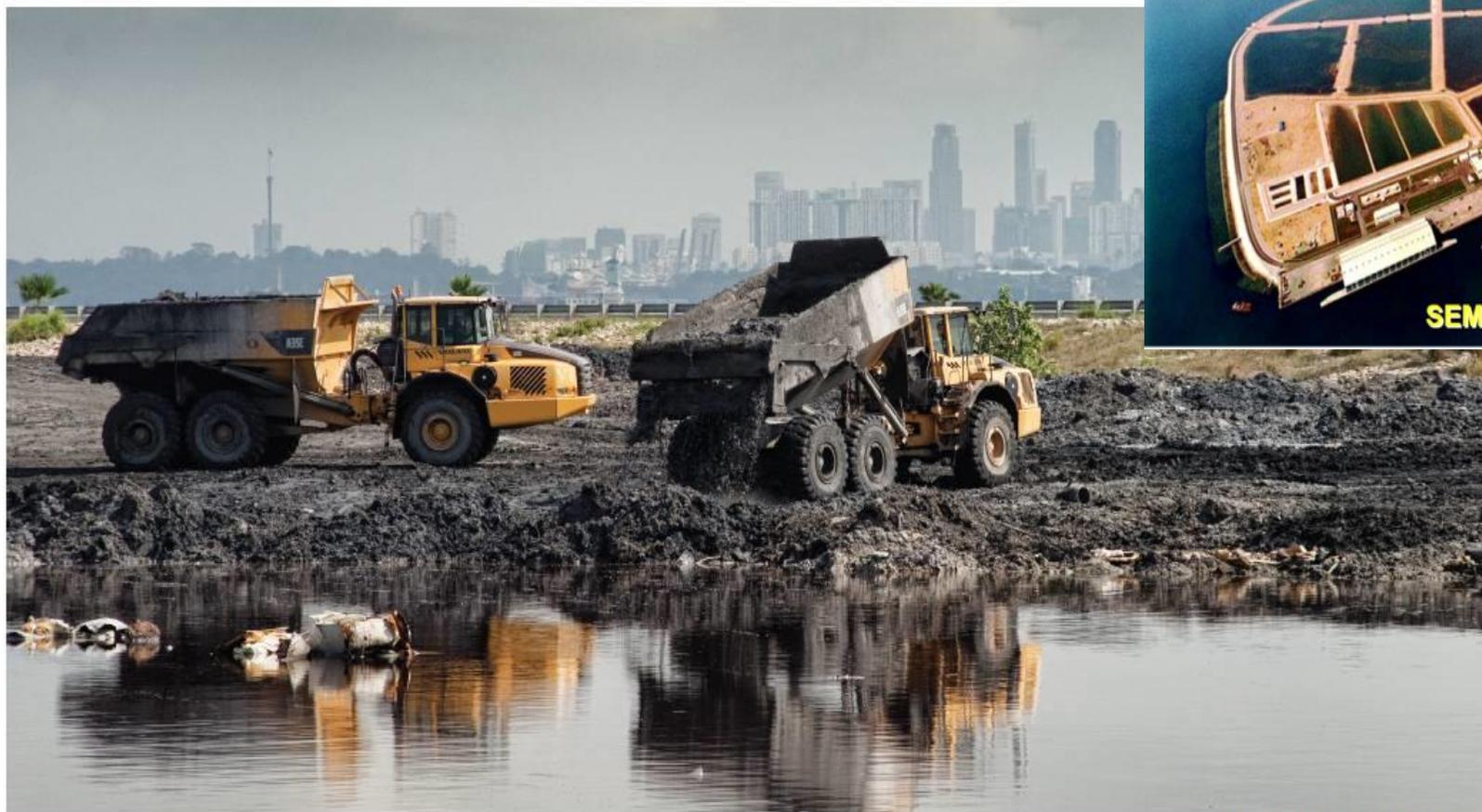


②不能利用的惰性垃圾（建筑垃圾、焚烧灰渣等）应统筹填埋

② Unusable inert waste (construction waste, incineration ash, etc.) should be landfilled integrately.

要规划足够的用地，  
使得剩余渣土地，有  
稳定的、长期的出路。  
不可能全部回收利用，  
总还有大量的剩余渣  
土

Sufficient land should be  
planned so that the remaining  
muck has a stable and long-  
term way out. It is impossible  
to recycle all of them, there will  
always be a large amount of  
remaining muck



Land of trash Ash and non-incineratable solid waste fill up Semakau Island and it is projected that the offshore landfill will be completely filled by 2045.



## 5.建议 Suggestions

### ③统筹“生物质垃圾”回收利用

#### ③ Integration of recycling and utilization of "biomass waste"

- 2020年8月，习近平主持召开扎实推进长三角一体化发展座谈会并发表重要讲话
- 第六，夯实长三角地区绿色发展基础。长三角地区是长江经济带的龙头，不仅要在经济发展上走在前列，也要在生态保护和建设上带好头。要把保护修复长江生态环境摆在突出位置，狠抓生态环境突出问题整改，推进城镇污水垃圾处理，加强化工污染、农业面源污染、船舶污染和尾矿库治理。**要推进环太湖地区城乡有机废弃物处理利用，形成系列配套保障措施，为长三角地区生态环境共保联治提供借鉴，为全国有机废弃物处理利用作出示范。**
- In August 2020, Chairman Xi hosted a symposium on solidly advancing the integrated development of the Yangtze River Delta and delivered an important speech.
- Sixth, lay a solid foundation for green development in the Yangtze River Delta. The Yangtze River Delta region is the leader of the Yangtze River Economic Belt. It must not only take the lead in economic development, but also take the lead in ecological protection and construction. It is necessary to put the protection and restoration of the ecological environment of Yangtze River in a prominent position, pay close attention to the rectification of outstanding problems in the ecological environment, promote the treatment of urban sewage and waste, and strengthen the treatment of chemical pollution, agricultural non-point source pollution, ship pollution and tailings ponds. **It is necessary to promote the disposal and utilization of organic waste in urban and rural areas around the Taihu Lake, and form a series of supporting measures to provide a reference for the joint protection and joint management of the ecological environment in the Yangtze River Delta, and to set a demonstration for the disposal and utilization of organic waste in China.**



## 5.建议 Suggestions

### ④统筹焚烧飞灰处理

#### ④ Integration of incineration fly ash disposal

#### 关于印发《城镇生活垃圾分类和处理设施 补短板强弱项实施方案》的通知

#### Notice on Issuing the *Implementation Plan for Enhancing and Improving MSW Separation and Disposal Facilities*

各省、自治区、直辖市及计划单列市、新疆生产建设兵团发展改革委、住房城乡建设厅（局）、生态环境厅（局）：

为深入贯彻落实习近平总书记关于生活垃圾分类和处理的重要指示批示精神，按照2020年《政府工作报告》部署，加快补齐生活垃圾分类和处理设施短板弱项，国家发展改革委、住房城乡建设部、生态环境部研究制定了《城镇生活垃圾分类和处理设施补短板强弱项实施方案》，现印发给你们，请贯彻执行。

国家发展改革委  
住房城乡建设部  
生态环境部  
2020年7月31日

All provinces, autonomous regions, municipalities directly under the Central Government and cities under separate state planning, Xinjiang Production and Construction Corps Development and Reform Commission, Housing and Urban-Rural Development Department (bureau), Ecological Environment Department (bureau):

In order to thoroughly implement the spirit of Chairman Xi's important instructions on the MSW separation and disposal, in accordance with the deployment of the 2020 *Government Work Report*, speed up the shortcomings of MSW separation and disposal facilities, the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development, and the Ministry of Ecology and Environment have researched and formulated the ***Implementation Plan for Enhancing and Improving MSW Separation and Disposal Facilities***, which is now issued to you for implementation.

National Development and Reform Commission, Ministry of Housing and Urban-Rural Development, Ministry of Ecology and Environment  
July 31, 2020

## 5.建议 Suggestions

---

### ④统筹焚烧飞灰处理

#### ④ Integration of incineration fly ash disposal

**三是加快建设焚烧飞灰处置设施。建设垃圾焚烧设施应同步明确飞灰处置途径，保障飞灰安全处置。京津冀及周边、长三角、粤港澳大湾区、长江经济带、黄河流域等重点区域要综合考虑区域内飞灰产生量、运输距离、环境容量等因素，跨区域布局建设飞灰协同处置设施。其它地区可在省域内统筹规划建设飞灰处置设施。探索推动符合条件的飞灰危险废物豁免管理。**

**The third is to accelerate the construction of incineration fly ash disposal facilities. While constructing waste incineration facilities, the way to dispose of fly ash should be clarified to ensure the safe disposal of fly ash. Key areas such as the Beijing-Tianjin-Hebei and surrounding areas, the Yangtze River Delta, the Guangdong-Hong Kong-Macao Greater Bay Area, the Yangtze River Economic Belt, and the Yellow River Basin shall comprehensively consider factors such as the amount of fly ash generated in the region, transportation distance, and environmental capacity, and cross-regional layout and construction of fly ash coordinated disposal facility. Other regions can make integrated plans for the construction of fly ash disposal facilities within the province. Explore and promote eligible fly ash hazardous waste exemption management.**

## 5.建议 Suggestions

### ⑤统筹城乡生活垃圾焚烧处理

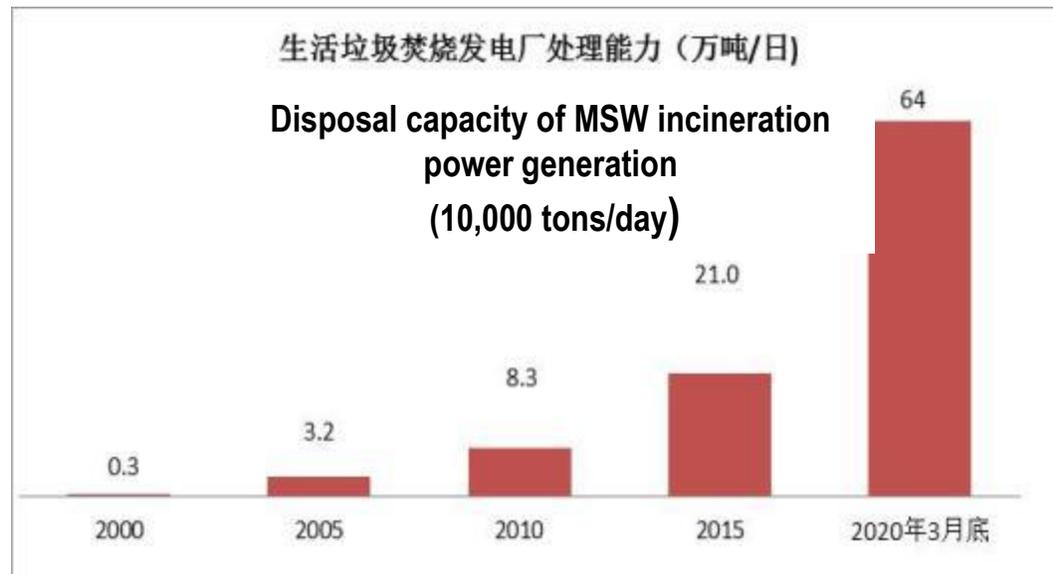
### ⑤ Integration of urban and rural waste incineration

#### 《“十四五”城镇生活垃圾分类和处理设施发展规划》

——垃圾焚烧处理能力：到2025年底，全国城镇生活垃圾焚烧处理能力达到80万吨/日，焚烧处理能力占城镇生活垃圾处理能力的65%左右。

*The Development Plan of MSW Separation and Disposal Facilities in the 14th Five-Year Plan*

——Waste incineration capacity: By the end of 2025, the national MSW incineration capacity will reach 800,000 tons per day, and the incineration capacity will account for about 65% of the MSW disposal capacity.



新华社北京2021年5月1日电 中共中央政治局4月30日下午就新形势下加强我国生态文明建设进行第二十九次集体学习。

习近平强调，要深入打好污染防治攻坚战，集中攻克老百姓身边的突出生态环境问题，让老百姓实实在在感受到生态环境质量改善。**要推动污染治理向乡镇、农村延伸**，强化农业面源污染治理，明显改善农村人居环境。

Xinhua News Agency, Beijing, May 1, 2021. On the afternoon of April 30, the Political Bureau of the CPC Central Committee conducted the 29th collective study on strengthening ecological civilization in China under the new situation.

Chairman Xi emphasized that it is necessary to in-depth fight the tough battle of pollution prevention and control, focus on tackling the prominent ecological and environmental problems around the people, so that the people can really feel the improvement of the quality of the ecological environment. **It is necessary to promote the extension of pollution control to towns and rural areas**, strengthen the control of agricultural non-point source pollution, and significantly improve the rural living environment.

## 5.建议 Suggestions

### ⑤统筹与生活垃圾特性类似的各类垃圾焚烧处理

### ⑤ Integration of incineration of all kinds of waste with similar characteristics to MSW

#### 《“十四五”城镇生活垃圾分类和处理设施发展规划》

鼓励生活垃圾协同处置。从焚烧垃圾的种类看，生活垃圾焚烧厂服务范围会由单一生活垃圾延伸到与生活垃圾特性类似的其他废弃物。与生活垃圾特性类似的工业垃圾，大件垃圾，农林生物质类垃圾如秸秆，城市污水厂污泥以及医疗垃圾（经过消毒灭菌）等可统筹规划，实现固体废弃物集约化焚烧处理。

*The Development Plan of MSW Separation and Disposal Facilities in the 14th Five-Year Plan* encourages the MSW integrated disposal. From the perspective of the types of waste incineration, the service scope of MSW incineration plants will extend from single MSW to other wastes with similar characteristics to MSW. Industrial waste with similar characteristics to MSW, bulky waste, agricultural and forestry biomass waste such as straw, municipal sewage plant sludge and medical waste (disinfected and sterilized) can be planned integrately to achieve intensive incineration of solid waste.

涉及新冠病毒的生活垃圾直接倒入焚烧厂垃圾池，然后直接进入焚烧炉焚烧处理！重要的是做好环卫作业人员的防护，而不是人为的、想象的、不切实际的给垃圾分类！

MSW related to Covid-19 is directly dumped into the waste pool of incineration plant, and then directly enters the incinerator for incineration! It is important to protect sanitation workers, not to separate waste artificially, imaginatively and unrealistically!

  
**ESWET**  
EUROPEAN SUPPLIERS OF WASTE TO ENERGY TECHNOLOGY

**PRESS RELEASE**

**A resilient waste management system to overcome the next crisis**

Public authorities are now planning the post-coronavirus recovery, but the worst mistake would be to endure, fix, then forget. To prevent further environmental and health issues, a resilient waste management system is crucial. Hygienisation through Waste-to-Energy plays a key part in it.

Brussels, 20 April 2020 - The COVID-19 outbreak is showing the increasing number of challenges the world has to face to keep a dramatic situation under control. This outbreak has disrupted the functioning of essential services and critical infrastructures that are all the more needed in time of crisis.

**Waste Incineration safely destroys viruses at high temperature**

CEWEP welcomes the recognition of waste management as a sector providing an essential service to our society by Virginijus Sinkevičius, the European Environment Commissioner, on the occasion of the publication of a guidance on waste shipment in the context of the COVID19 spread on 30<sup>th</sup> March 2020<sup>1</sup>.

CEWEP would like to emphasise the importance of Article 13 of the Waste Framework Directive 2008/98/EC, even more in the current circumstances, which requires Member States to take the necessary measures to ensure that waste management is carried out without endangering human health. Human health should have the highest priority.

Waste-to-Energy (WtE) incineration safely destroys viruses and other pathogens at high temperature. The waste is put directly into the bunker, and then discharged into the furnace through the feeding chute by an overhead crane, thus avoiding human contact with the contaminated waste.

On this occasion CEWEP would like to thank its members and all waste workers who are dealing with our waste every day. "They are doing a great job", CEWEP's President Paul de Bruycker says.

We would like to stress that waste sector employees must be granted 'key worker' status, i.e. they must be able to move freely and they must continue to receive educational and care services for their children while they are fulfilling their essential tasks during the current COVID19 outbreak.

# THANKS!

- 谢谢大家!
- THANK YOU VERY MUCH

Email: [xuhaiyun@263.net](mailto:xuhaiyun@263.net)

电话: 13501389879