

## 加强塑料循环利用 大力推进绿色发展



中国合成树脂协会塑料循环利用分会 副秘书长

同济大学循环经济研究所 博士后

矫旭东 博士

2019年3月29日

# 目 录 Content

1

形势分析:国内外废塑料综合利用 **Situation analysis:  
Comprehensive utilization of waste plastics at home and abroad**

2

顶层设计:Top-level design  
推进绿色发展Promoting green development

3

转型之路:绿色、循环、低碳发展  
**The transformative road: Green, Recycling,Low carbon development**

4

未来研判:塑料循环产业何去何从  
**Future prospect: Where shall the plastics recycling industry go?**

# **一、形势分析：国内外废塑料综合利用**

## **1. Situation analysis: Comprehensive utilization of waste plastics at home and abroad**

# 全球海洋塑料污染形势严峻The serious situation of global ocean plastic pollution

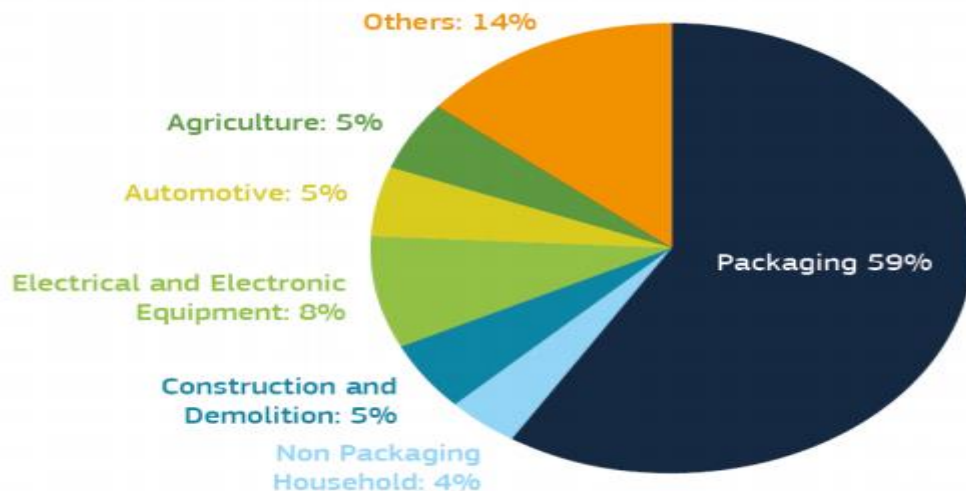




### 1、 欧盟废塑料产生情况The situation of EU waste plastics production

欧盟年塑料消费量4900万吨。其中包装39.9%、汽车8.9%、家用电器5.8%。废塑料产生量2580万吨。其中包装废物59%。

The EU consumes 49 million tonnes of plastic annually . Among them, packaging accounts for 39.9%, cars account for 8.9%, and household appliances account for 5.8%. The amount of waste plastics produced was 25.8 million tonnes, of which packaging waste accounts for 59%.



# 国际废塑料综合利用情况

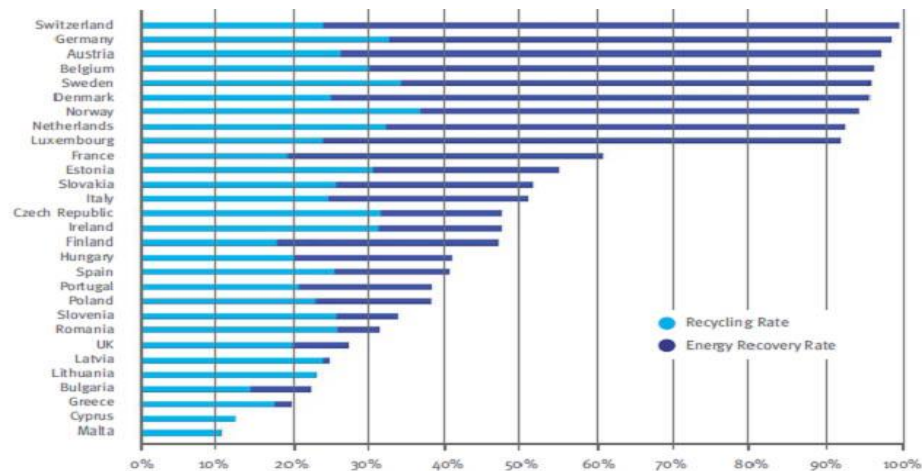
## The waste plastics' situation of international comprehensive utilization

### 2、废塑料进入海洋的问题日益受到关注

#### The growing concern about the problem of waste plastics entering the ocean

全球每年有500-1500万吨（消费量1.5-4%）废塑料进入海洋。欧盟的废塑料回收再生率约23-25%。不完全统计，欧盟每年有15-50万吨废塑料、7.5-30万吨微塑料进入海洋。

Every year, 5-15 million tonnes (1.5%-4% of consumption) of waste plastics enter the ocean. The recycling rate of waste plastics in the EU is about 23%-25%. According to incomplete statistics, the EU has 150-500 thousands tonnes of waste plastics and 75-300 thousands tonnes of micro-plastics entering the ocean every year.



### 3、一次性塑料包装成为关注的热点

#### Disposable plastic packaging has become a hot spot of concern

目前，全球废弃物总量中约有1/2—1/3为包装废弃物。美国包装废弃物占29.3%；日本包装废弃物约占40%，欧盟各国约占40%~60%，中国约占30%~40%。

据不完全统计，目前世界塑料包装废弃物每年高达5千万吨。

At present, about 1/2 to 1/3 of the total global waste is packaging waste. US packaging waste accounts for 29.3%; Japanese packaging waste accounts for 40%; EU countries' packaging waste accounts for 40%-60%; China's packaging waste accounts for 30%-40%.

According to incomplete statistics, the world's plastic packaging waste is currently 50 million tonnes per year.

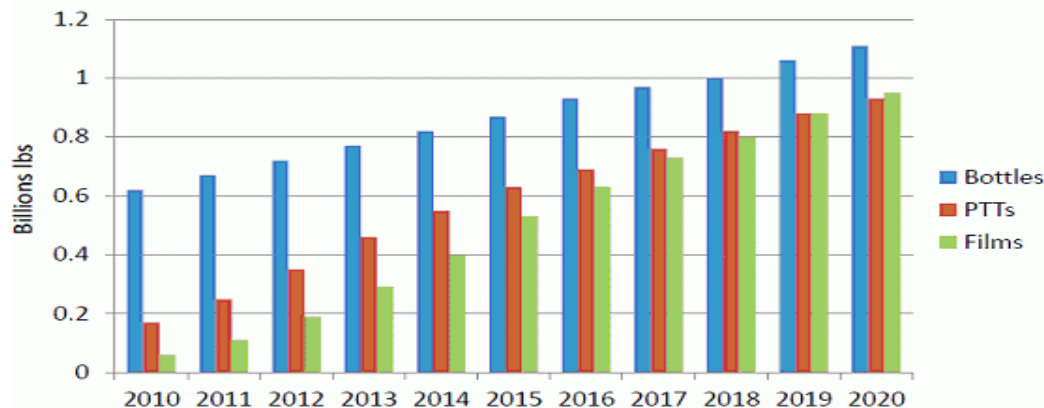


### 4、欧盟关于废塑料管理的新规划

#### EU new plan for waste plastics management

到2030年，包装用塑料全部可重复使用或再生，回收再生处理能力比2015年提高4倍，加大分选技术研发，加大对河流中废塑料的回收。

By 2030, all the packaging plastics can be reused or regenerated, and the recycling and regeneration capacity will be increased by 4 times compared with 2015. The research and development of sorting technology will be increased, and the recycling of waste plastics in rivers will be increased.



英国的废塑料再生利用规划



2018年，英国宣布禁止在王室产业内使用使用塑料吸管和塑料瓶，以减少塑料垃圾。

In 2018, the United Kingdom announced that it would ban the use of plastic straws and plastic bottles in the royal industry to reduce plastic waste.



### 1、废塑料行业整体进入转型调整期

#### The waste plastics industry enters the transitional adjustment period

2016年，中国进口废塑料730万吨，占世界废塑料进口总额的56%。2017年进口量下降到582.91万吨，同比减少20.66%。

In 2016, China imported 7.3 million tonnes of waste plastics, accounting for 56% of the world's total imports of waste plastics. In 2017, imports fell to 5.83 million tonnes, a year-on-year decrease of 20.66%.

国家“禁废”政策实施，国内进口废塑料大幅减少。据统计，国内废塑料产生量约为4500万吨，回收约1700万吨，比2017年降低了约10%，行业开始进入转型调整期。

The implementation of China's "forbidden waste" policy has resulted in a significant reduction in domestic imports of waste plastics. According to statistics, domestic waste plastics production is about 45 million tonnes, and the recycling is about 17 million tonnes, which is about 10% lower than that in 2017. The industry has entered a transitional adjustment period.

### 2、再生塑料企业技术、设备的升级力度加大

#### Increased upgrading of technology and equipment for recycled plastics enterprises

企业对于废气处理、高效造粒、低水耗清洗、高效分选等技术的关注度显著提升；

The company's attention to technologies such as waste gas treatment, high-efficiency granulation, low water consumption cleaning, and high-efficiency sorting has been significantly improved;



# 国内废塑料综合利用情况

## The waste plastics' situation of domestic comprehensive utilization

### 3、新型塑料园区建设步伐加快

#### The accelerating pace of construction of new plastic parks

整合零散的小作坊，纳入集合统筹管理。

Integrate scattered small workshops and bring them into collective management.

通过联合投资修建污水处理厂，平摊企业治污成本。整合产业链，保障环保达标的同时提高企业生存能力。

By jointly investing in the construction of sewage treatment plants to flatten the cost of pollution control enterprises. Integrate the industrial chain to ensure environmental protection meets standard and improve the viability of enterprises.

省	地市	县(区、市)	单位详细名称	行业类别	企业规模	年正常生产时间(小时)	年用电量(万千瓦时)	主要原料	主要燃料	主要燃料消耗量	主要产品	主要产品产量	2016年主要产品产量	脱硝工艺	脱硝工艺	除尘工艺	挥发性有机物治理工艺	是否安装在线监测设施	在线监测是否与环保部门联网
河北省	石家庄市	裕华区	塑料加工点	废塑料回收	小型	2400	0.3	废塑料	无		废塑料压块						无		
河北省	石家庄市	平山县	新合颗粒厂	废塑料	小型													否	否
河北省	石家庄市	平山县	马西龙颗粒厂	废塑料	小型													否	否
河北省	石家庄市	平山县	平山县旭辉塑料制品厂	废塑料	小型													否	否
河北省	石家庄市	平山县	煜盛塑料颗粒	废塑料	小型													否	否
河北省	石家庄市	平山县	玉建国塑料颗粒厂	废塑料	小型													否	否
河北省	廊坊市	大城县	王文塑料清洗厂	废塑料加工	小	120	0.8	废塑料	无	无	水洗塑料	吨	80	无	无	无	无	否	否
河北省	沧州市	青县	青县聚兴包装材料厂	废塑料加工	小微	1060	9	废塑料	电		塑料颗粒	吨	120	水浴脱硝	无	水浴除尘	无	否	否
河北省	沧州市	青县	青县风眼塑料颗粒厂	废塑料加工	小微	230	2	废塑料	电		粘合剂	吨	10	水浴脱硝	无	水浴除尘	无	否	否
河北省	沧州市	青县	青县恒星塑料颗粒厂	废塑料加工	小微	250	2	废塑料	电		塑料颗粒	吨	10	水浴脱硝	无	水浴除尘	无	否	否
河北省	沧州市	青县	青县广益塑料颗粒厂	废塑料加工	小微	1060	9	废塑料	电		塑料颗粒	吨	110	水浴脱硝	无	水浴除尘	无	否	否
河北省	沧州市	泊头	于晓旭塑料加工厂	废塑料加工	小微	800	0.2	废塑料	煤	吨	5	塑料颗粒	吨	18	无	无	无	无	否

# 国内废塑料综合利用情况

## The waste plastics' situation of domestic comprehensive utilization

### 4、再生塑料企业依托“一带一路”探索产业转移

#### Recycled plastics enterprises rely on “the Belt and Road” to explore industrial transfer

目前，东南亚各国投资的再生塑料企业超过1000家，马、泰、越三国的再生颗粒产能保守估计超过400万吨。

At present, more than 1,000 recycled plastics companies are invested in Southeast Asian countries, and the renewable particles production capacity of Malaysia, Thailand and Vietnam is conservatively estimated at over 4 million tonnes.

2018年1-3月，废塑料进口量泰国同比增至18倍，马来西亚增至4倍，越南增至2倍多。

From January to March 2018, Thailand's imports of waste plastics increased to 18 times year-on-year, Malaysia's increased to 4 times, and Vietnam's increased more than 2 times.





## **二、顶层设计：推进绿色发展，建设美丽中国**

### **Top-level design: Promoting green development**

顶层设计——2019年《政府工作报告》：加强污染防治和生态建设，大力推动绿色发展。  
Top-level design——2019 Government Work Report: Strengthen pollution prevention and ecological construction, and vigorously promote green development.



十三届全国人大二次会议  
全国政协十三届二次会议

## 十三届全国人大二次会议闭幕 习近平等党和国家领导人出席

- 促进资源节约集约和循环利用，推广绿色建筑、绿色快递包装。

Promote resource conservation and recycling, and promote green building and green express packaging.

- 加强固体废弃物和城市垃圾分类处置，促进减量化、资源化、无害化。

Strengthen the classified disposal of solid waste and municipal waste, and promote harmlessness, reduction and resource utilization.

## 过去五年的工作和十年的基本总结



- 中国特色社会主义道路“五位一体”：经济建设、政治建设、文化建设、社会建设、生态文明建设“五位一体”总体布局
- We must fully implement the overall plan for promoting economic, political, cultural, social, and ecological progress, ensure coordinated progress in all areas of endeavors in the modernization drive

- 十九大报告强调 “建设生态文明是中华民族永续发展的千年大计。”
- 十九大报告指出， “像对待生命一样对待生态环境。”
- 十九大报告强调， “我国社会主要矛盾已经转化为人民日益增长的美好生活需要和不平衡不充分的发展之间的矛盾。”
- The report emphasize that: “Building an ecological civilization is vital to sustain the Chinese nation’s development. ”
- The report indicate that: “We should cherish the environment as we cherish our own lives”
- The report emphasize that: “It makes clear that the principal contradiction facing Chinese society in the new era is that between unbalanced and inadequate development and the people's ever-growing needs for a better life. ”







## 关于印发《循环发展引领行动》的通知

2017-05-04 来源：资源节约和环境保护司网站

为贯彻党的十八届五中全会精神，落实“十三五”规划纲要，国家发展改革委等14个部委联合印发了《关于印发〈循环发展引领行动〉的通知》，对“十三五”期间我国循环经济发展工作做出统一安排和整体部署，有关内容如下：

### 建立废塑料资源循环利用体系 Establishing the system of waste plastics' cyclic utilization

**1.推动产业废弃物循环利用——推进废旧农膜、灌溉器材、农药兽药疫苗容器、渔具渔船等回收利用。** Promoting the cyclic utilization of industrial waste -- promote the recycling of used agricultural film, irrigation equipment, pesticide, veterinary medicine and vaccine containers, fishing gear and fishing boats.

**2.促进再生资源回收利用提质升级（选择快递业为切入点，开展物流业包装标准化和分类回收利用试点，鼓励企业对包装箱、总包装袋进行循环利用，提高循环利用率）** Promote the recycling and upgrading of renewable resources (choose the express industry as the entry point, set up experimental units of industry packaging standardization and classified recycling and utilization, encourage enterprises to recycle the packaging boxes and bags, improve the recycling rate)



电器电子产品  
electronics



铅酸蓄电池  
lead-acid battery



复合包装产品  
composite packaging



汽车产品  
cars

**到2020年，生产者责任延伸制度相关政策体系初步形成，重点品种的废弃产品规范回收与循环利用率平均达到40%。**

By 2020, the relevant policy system for the producer responsibility extension system will be initially formed, and the standard product recycling and recycling rate of key varieties will reach 40% on average.

**到2025年，生产者责任延伸制度相关法律法规基本完善，重点产品的再生原料使用比例达到20%，废弃产品规范回收与循环利用率平均达到50%。**

By 2025, the relevant laws and regulations of the producer responsibility extension system are basically improved, the proportion of recycled raw materials used in key products reaches 20%, and the standard recycling and recycling utilization rate of waste products reaches 50% on average.

### **三、转型之路——绿色、循环、低碳发展**

## **The transformative road: Green, Recycling and Low carbon development**

# 中国经济 转型



高资源消耗  
High level resource consumption

高能源消耗  
High level energy consumption

高投资率  
High investment rate

高污染  
Serious pollution

高对外贸易依存度  
High ratio of dependence on foreign trade

低科技贡献率  
Low science and technology contribution rate

低产值, 低利润  
Low production, low profit

粗放型模式阻碍经济可持续发展

Extensive economy development model hinder the sustainable development





**背景:**

两大危机迫使中国转型发展

- 危机一:资源能源消耗、生态环境恶化

危机二:经济不可持续增长

**Background:**

Two crises force China to transform economic development mode

- 1. Resource and energy consumption、deterioration of the ecological environment
- 2. Unsustainable economy development



## 循环经济Circular economy

- 是在物质的循环、再生、利用的基础上发展经济。
- 是一种建立在资源回收和循环利用基础上的经济发展模式。
- 原则是：减量化、再利用、资源化。
- Developing economy bases on the material circulation, regeneration and utilization.
- It is an economic development model based on resource recovery and recycling
- Principle: Reduce waste and resource consumption, reuse resources and recycle waste in the process of production, distribution and consumption.



## **四、未来研判：塑料循环产业何去何从**

**Future prospect: Where shall the plastics recycling industry go?**

# 行业变革

## 1、从“洋垃圾进口”转向“国内垃圾分类回收”



# 行业变革Sector revolution

## 2、从“随地建厂”转向“园区集中”

From “import waste ” to “domestic Waste Sorting and Recycling”



“资源循环利用产业基地”建设，国内布局50个示范基地。Construction of “Recycling Industry Base for Resources” and 50 demonstration based in China



# 行业变革Sector revolution

## 3、从“低小散”转向“集团化、规模化”

From “building factories without planning” to “concentrated zone for disposing waste”



# 行业变革Sector revolution

## 4、从“材料加工”向“产品生产”延伸

From “materials processing” to “products production”



# 行业变革Sector revolution

## 5、从“劳动密集型”转向“智能制造” From “labor intensive” to “knowledge-intensive”



# 未来塑料循环产业转型发展的趋势分析The trend analysis of plastic recycling industry transformation and development in the future

1

法规、标准将趋于完善Laws and regulations become more perfect

2

走向“政府引导，市场主体”的方向The guidance of government and market

3

中央财政资金“直接补助”改为“以奖代补”

Centre government finance turn from direct subsidies to reward mechanis

4

科技创新是国家政策导向

encouraging technological innovation is the trend of government policy

5

对违法行为的联合惩处措施加大Extra payment is made to the company for breaking the law

6

规范经营企业是未来政策支持方向Standardizing enterprise management is the government want to accomplish



谢谢！  
Thanks!