

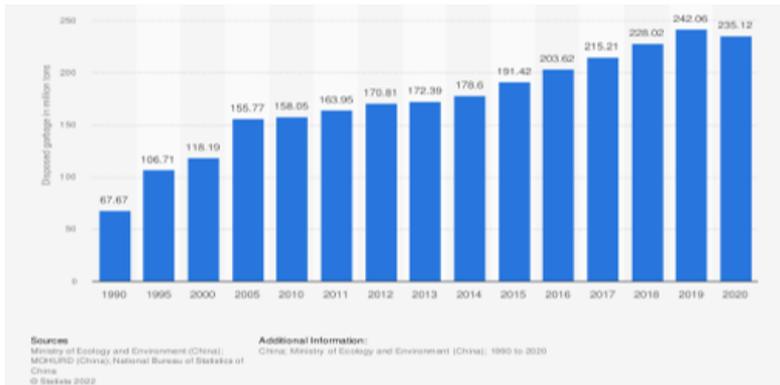


## Circular Economy 2-pager, 25th November 2022

### NATIONAL POLICY LANDSCAPE

China's exponential economic growth has had negative impacts on the health of the local population and the environment. Following public concerns about pollution levels and increasing amounts of waste, the Chinese government has initiated a number of actions and national strategies to green their economy. A major turning point between 2017-2019 was the decision to cease most of the formerly extensive waste imports to the country and introduce policies to accelerate materials recycling. More recently, the Chinese government has started to heavily invest in waste management solutions and renewable energies (in particular wind and solar – see below for further information) through **the 14th five-year economic plan (2021-2025)**. The plan features targets for reducing water and energy use, developing a circular industrial system, improving recycling capacity and promoting a materials reuse market, particularly in the infrastructure and buildings sectors. Additionally, the **Development Plan for the Circular Economy (2021)** was introduced to foster resource efficiency and materials recycling, product remanufacturing and circular design practices. Other relevant environmental milestones set by the Chinese government include: reusing 60% of all construction demolition materials by 2025, peaking national carbon emissions by 2030, sourcing 1/3 of all electricity from renewables by 2025 and achieving carbon neutrality by 2060.

#### Amount of Disposed Garbage in China 1990-2020 (in million tons)



### FACTS & FIGURES

#### ECONOMIC INDICATORS

- Population (2020): 1.41 bln
- Nominal GDP (2020): \$14.87 tln (#2)
- Purchasing power: \$10.51
- Imports from the NL: \$15 bln
- Economic growth: 3.3 %
- Ease of doing business rank (2020): # 31
- Corruption index: 42/100
- Unemployment rate (2021): 4.82 %
- Currency: Renminbi Yuan
- Time difference NL: + 7 hrs

#### CE INDICATORS

- Global innovation index (2021): #12
- Construction Waste Recovery Rate (2020): 50 %
- Bulk Solid Waste Recovery Rate (2020): 56 %
- Recycling Rate of Urban Household Waste: 50%
- Electricity from Renewable Resources (2020): 28.8%

### Renewable Energy Sector

Wind energy (around 330 GW at the end of 2021) and solar energy (306 GW) are forecasted to double by 2030, reaching 1.200 GW generation capacity. The goal for 2025 is to meet 33 % of the total energy demand through renewables. In 2021 alone, a capacity of 17 GW in offshore windfarms were installed (1.5x the total capacity of the UK, who has the second largest national capacity

worldwide). Government subsidies to offshore wind farms were phased out by the end of 2021, which may put pressure on local developers to increase the efficiency of their future projects. This represents a real opportunity for Dutch businesses active in the off-shore wind sector to provide installation and foundation solutions to their Chinese counterparts. Another fast-developing area is that of wind blade recycling.

## SELECTED PRIORITY AREAS CIRCULAR BUILDINGS & INFRASTRUCTURE

### Shanghai

Shanghai is the biggest city in China, and the third largest worldwide. The construction sector thus has a major environmental impact, with 85 million tons of construction waste being annually generated from the demolition of old urban areas. Therefore, since 2015, the government issued management regulations and technical guidelines on responsibility division and making policies on waste concrete usage. With the new five-year plan, application guidelines for R&D institutions and enterprises were addressed and a solid waste product system for construction waste and industrial solid waste is being set up, targeting carbon neutrality. Currently, priority is given to waste slurry with high water contents that usually ends up in landfill (costly, ineffective and energy-intensive), road fill or backfill. However, more value-maintaining processing technologies are sought after and shift from pure reduction to recycling of construction waste slurry. Promising areas of collaboration include: prevention of construction waste, waste pre-treatment technologies, transformation of construction waste into high-value-added buildings materials, and more.

### Shenzhen

Shenzhen is a hotspot of high-tech manufacturing that produces 150 million tons of waste annually. Following the '**Sustainable Development Plan**' (2017-2030) and the city's 14th five-year plan, the green construction sector has grown significantly to the extent that all new civil buildings constructed meet green buildings standards. Rates of prefab buildings and construction waste reuse are also rising quickly, representing a promising investment opportunity. In 2019, the city became a **National Zero Waste City Pilot** and is since heavily investing in circular management, with the plan to become waste-free by 2035. Interventions cover six areas: household waste, industrial solid waste, construction waste, hazardous waste, municipal sludge and agro waste. Further improvements are currently particularly sought after in the capacity for solid waste treatment and in the recycling rate of construction material, all of which represents a promising opportunity area for Dutch innovators.

### Nanjing

Nanjing is the second largest city in the East China region hosting major industries such as electronics, steel, and car manufacturing. Local ambitions to develop circular infrastructures are high, as waste production rates far exceed regional landfill capacities. In 2021, the city disposed of 3+ million tons only of construction waste. Since 2019, Nanjing Construction Waste Utilization Association gathers 50 enterprises active in fields including construction demolition, waste disposal, and recycled product applications, who compile industry standards and provide platforms for circular business and innovations. Additionally, other municipal associations have been established with the goal of bringing together over 500 field experts in an ad hoc alliance and building a large-scale circular industry chain. These initiatives represent an opportunity for Dutch businesses to contribute their innovative ideas in the field of circular construction and waste management.

### Links & Reports

- Transformation of Solid Waste Management in China
- Dutch Trade Mission to China, 2022
- China 2025 Renewables Energies Targets
- The 14th five-year plan and Circular Economy
- The Circular Economy Opportunity for Urban and Industrial Innovation in China
- UNDP 'Shenzhen Sustainable Development Plan' (2021)
- China's Roadmap towards Circular Economy: Insight and Outlook

### Business Networks

- Holland Home of Wind Energy
- Nanjing construction waste resource utilization association
- Belt and Road Environmental Technology Exchange and Transfer Center (Shenzhen) (B&R ETTC)
- China Construction Industrial & Energy Engineering Group (CCIEE)
- China Association of Circular Economy (CACE)

### Embassies & Related Organisations

- Chinese Embassy in The Hague
- Dutch Embassy in Beijing
- Netherlands Business Support Offices in China (also in Nanjing)
- Netherlands consulate-general in Shanghai
- RVO