

Remtech Expo 2019

Development and Environment in China

Chinese Market of Environmental Protection

September 19, 2019



Energy Environment Global Exchange

能源环境全球交易所

Agenda

- Development Maturity of the EP Market
- Technical Maturity of the EP Market
- What to expect
- Strategies for foreign companies

Development Maturity

The background features a solid green color with a pattern of semi-transparent, light green hexagons scattered across the surface. Additionally, there are vertical stripes of varying shades of green running from top to bottom, creating a textured, layered effect.

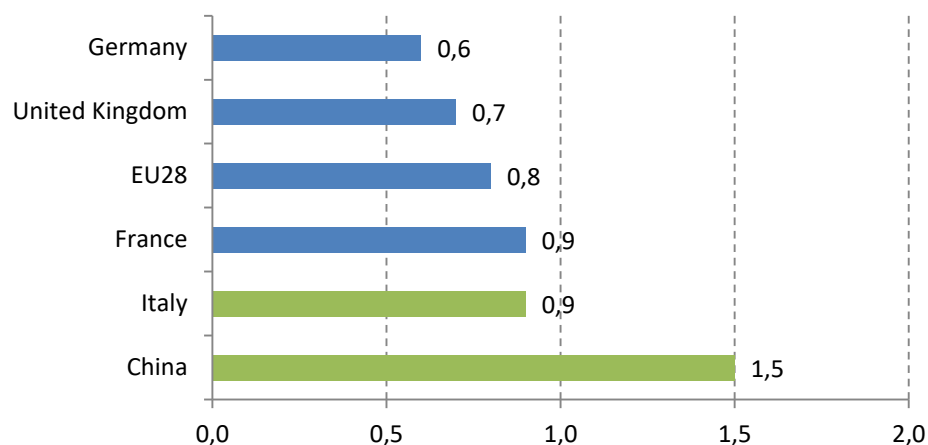
Market growth and situation

12° Five Year Plan (2011 - 2015):

«green» investments for 740 billion EUR (**8% of GDP**), 184 billions for Environmental Protection (2% del PIL)

13° Five Year Plan (2016 - 2020): «green» investments for 2000 billions EUR (**+270%**)

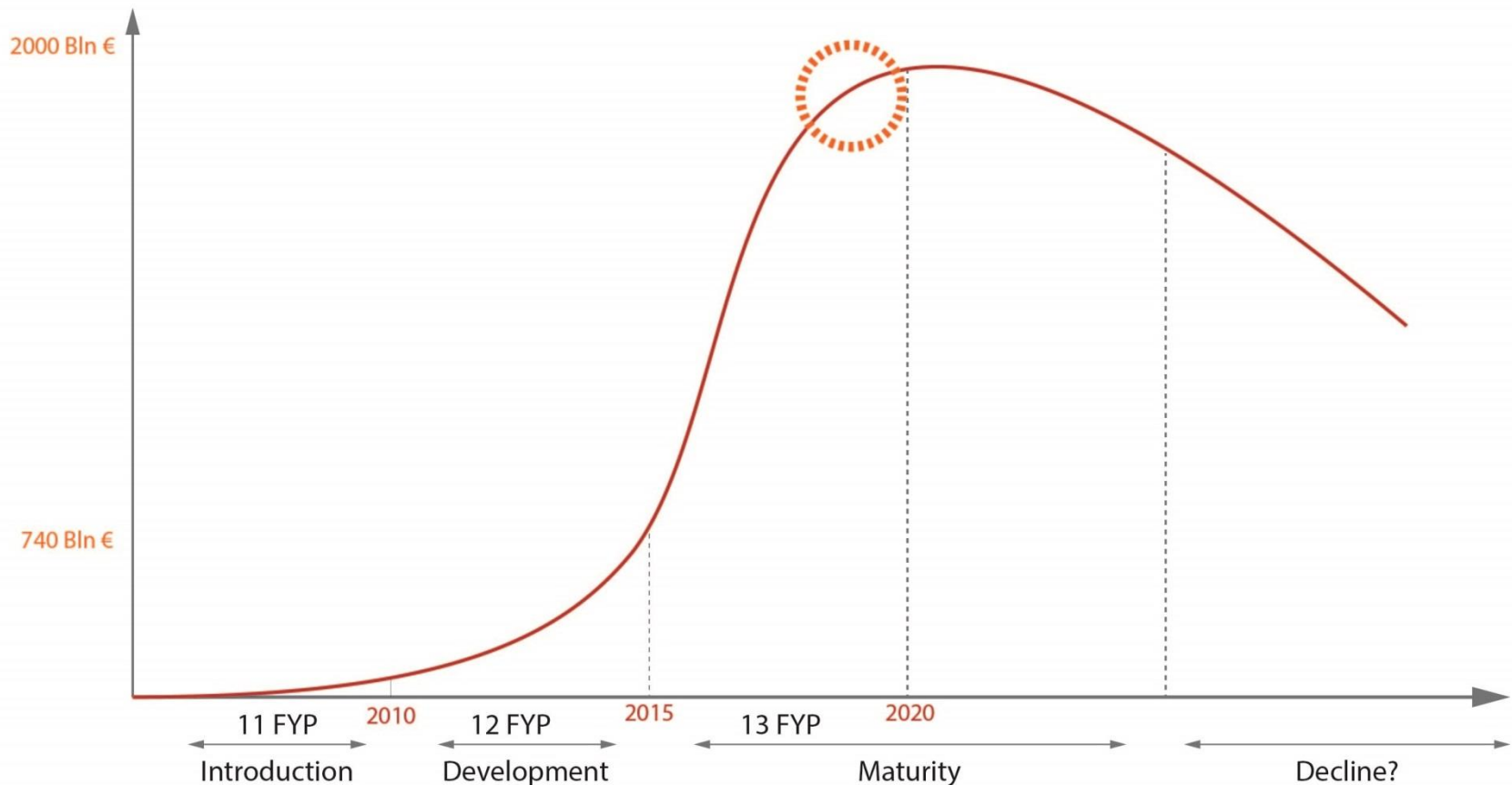
Government expenditure for Environmental Protection/GDP (2017)



Financial need: 15% from Government, **85% from Investors**

Market growth and situation

In 2019 the EP market slowed down.
Is it approaching the peak of its growth?



Development of the Environmental Protection Market in China
Source: EEGEX

Market growth and situation

3 Clues:

1) «National Sword» Policy

2) Foreign Companies have an hard time in being invited to public tenders/procurement compared to the previous years

3) Some Chinese leader Companies are in distress

4) How local Governments look at foreign companies in their planning documents

1. «National Sword» Policy

2013, Operation “Green Fence”, the first massive inspection and rejection of incoming loads of scrap material

2017 “National Sword” Policy is game changing:

1) announced as a strategy to halt smuggling operations, focusing on plastic scrape and paper

2) notice to the WTO on July 2017, China banned the import of recovered mixed paper, recycled PET, PE, PVC and PS and textiles by the end of the year

“National Sword”

- ❑ protects the development of the domestic supply chain of recycling industry (thus the name “national sword”?)
- ❑ stabilizes the price of recycled material

2. Foreign Companies and Chinese Public Procurement

Article 10 of 2002 Government Procurement Law clearly states the “Buy Chinese” principle:

*The government shall procure domestic goods, construction and services, **EXCEPT** in one of the following situations:*

- (1) where the goods, construction or services needed **ARE NOT AVAILABLE WITHIN THE TERRITORY OF THE PEOPLE'S REPUBLIC OF CHINA** or, though available, cannot be acquired on reasonable commercial terms;*
- (2) where the items to be procured are for use abroad; and*
- (3) where otherwise provided for by other laws and administrative regulations.*

Chinese Government is no more acknowledging the “technology gap” between domestic and foreign companies

3. Some Chinese leader companies are in distress

At least 4 of the most important Chinese companies had to be partly turn into State Owned from entirely listed in the Stock Exchange or privately held

Origin Water



Sound Global



Orient Landscape



Poten Enviro



The Common reason is because they were not able to face the mass of PPP project they were investing in.

4. Local Governments' planning for EP Industry

EP Industry development is planned at Provincial and sub-provincial level

Example: Sichuan and Chongqing EP Industry Development Plans

First tier:

50 SOEs lead the market

- Public Utility Companies
- EPC Contractors

Second tier:

200 “backbone”

- Provide vertical support on technologies and processes
- Some shares belong to the first tier SOEs

Third tier:

All the others provide support to Second tier

Foreign Companies:

Provide “Core” and “Most advanced” technologies to second tier companies

Foreign Companies have a very marginal role



Technical Maturity

The background features a solid green color with a pattern of semi-transparent white hexagons and vertical lines. The hexagons are arranged in a staggered grid, and the vertical lines are thin and evenly spaced, creating a technical or architectural aesthetic.

Expectations

When facing Local Governments and Academies, topics focus on «state of the art» technologies, such as:

Waste water treatment with ZERO sludge production

Enhanced membranes that last at least 2 years

Depolymerization of scrape plastics

Pyrolysis

Full automation of the plants, IoT driven

Techniques for soil remediation of mega-sites that can be completed in less than one year

...

Reality

China is actually investing huge resources in technology innovation, some Local Governments achieved good levels of environmental protection, but situations like this still exist:

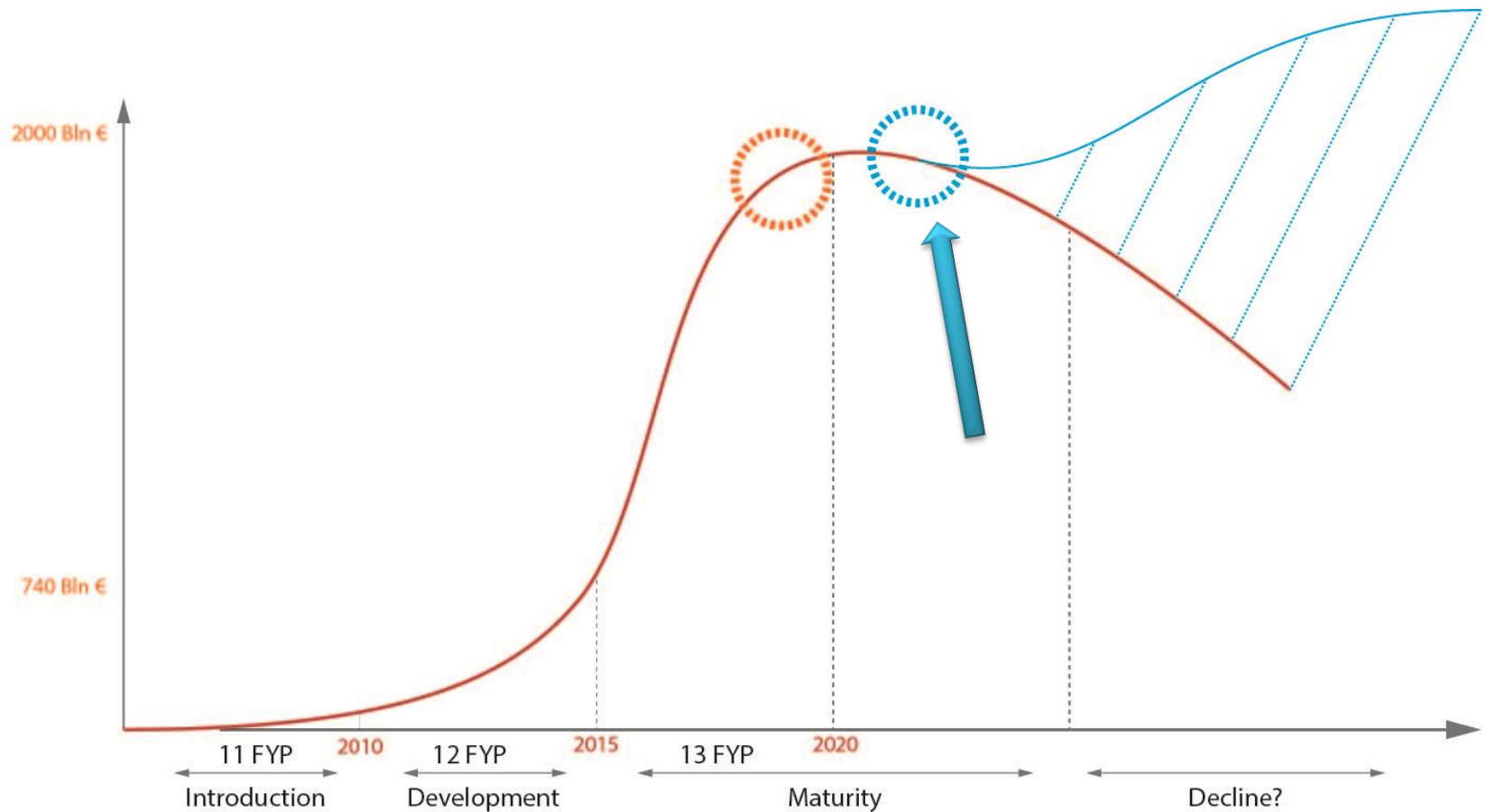




What to expect

What to expect

In 14 FYP the EP market will need measures to furtherly evolve and unlock growth potential



Development of the Environmental Protection Market in China
Source: EEGEX

What to expect

Empowering of private sector:

- ❑ Public-Private Partnership (PPP) mechanisms shall be enhanced and revised: the current model prioritizes the SOEs, but the Italian and European model of EEPA – Environmentally Equipped Productive Areas with consortia among user companies is a solution to both make them responsible for better performances and invest in the centralized plants that they will use
- ❑ Law enforcement: public control will be more and more tight, pushing companies to invest to achieve compliance
- ❑ Improvement of the financial and taxation systems (loans and green bonds are not enough)

- More opportunities for Second and Third tier companies
- More competitive market

Strategies for foreign companies

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- ❑ **Localization:** if your market is mainly in the Public Procurement, consider to establish the manufacturing branch in China (WFOE/JV). Core technologies may be still imported, but at least assembly and finishing should be in China, as well as maintenance and customer service.
- ❑ **Added value services:** in a more competitive market, technology is more appealing if it comes in bundle with services that offer perceived advantages.
- ❑ **Technology innovation:** second last generation technologies are no more competitive also in the private sector, new generation technologies should be automated and computerized (PLC+SCADA+IoT), enabling scalability and control rooms. AI - Artificial Intelligence will play a role.

Strategies for foreign companies

❑ **Strategic partnerships to work in China:**

- Choose second-tier partners to work with in China; if third-tier, check carefully the Company. Always begin with a deep discussion of the value proposition, business model and industrial plan.

❑ **Strategic partnerships to work with China, outside China (Belt & Road Initiative):**

- Choose first-tier partners to work with along the BRI: construction of infrastructures (Ports, airports, railways, highways and roads and industrial parks) requires systems and plants for environmental impact mitigation, waste and water treatment, etc.

Thank you

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