

# Circular Economy (CE): Local Governments' Policies and Practices in China

## (Syllabus)



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# Main points

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- **I. Circular economy has become China's long-term strategy**
- **II. Local governments' Policies and practices of circular economy in China, (Taking Shandong Province as an example)**
- **III. Case: Scheme for implementation of circular economy in Zibo City**



# I. Promote circular economy: China's long-term strategy

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- Macro-Economics Institute of National Development and Reform Commission: A Report on the Development Strategy for the Circular Economy in China
  - Strategic objective:** to build China into a recycling-oriented society with harmonious coexistence of human beings, society and nature by 2050.



# Background

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- **International Trend**
- **China's economic development state quo**
- **Demand of scientific development**



## **Macro policies at state level**

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- **State Council's Several Suggestion of Accelerating the Recycling Economy Development**
- **Work done by the environmental protection departments in this sphere by 2005**



# Macro policies at state level (continue)

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- On July 2nd, 2005, “Several Opinions of the State Council on Speeding up the Development of Circular Economy” was announced.
- On October 27th, 2005, ratified by the state council, six ministries jointly issued “Pilot Programs for Circular Economy”, appointing 7 key industries, 4 key sectors, 13 parks, and 10 zones (6 provinces and 4 cities) for this program.
- Laws and regulations.



## II. Local Government's Policies and Practices Concerning CE

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- Thoughts and targets in general
- Specific work to be done
- Policies and measures
- Regulations of pilot project
- Implementation project for certain industries
- Local CE-related laws and regulations



## Local government's policies and practices, Shandong Province as an example

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- Shandong is one of the provinces where circular economy was first developed.
- In harmony with the local situation, circular economy in Shandong has become a new CE mode in China, characterized by CE comprehensive pilot units at various levels of “point, line, and plane”.



## At the level of provincial government

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- In 2003, Shandong Provincial Government formulated and issued “Guideline for Ecological Province Construction Plan”.
- In August 2003, State Environmental Protection Administration appointed Shandong as one of the Pilot Ecological Provinces in China.
- Then Shandong Provincial Government signed *Target Responsibility Documents on the Building of Ecological Province (2003-2007)* with 17 municipal governments, thus assigning respective tasks to all cities.



## At the level of enterprises

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- **By the end of 2003, cleaner production audit has been finished in over 400 enterprises related to more than 10 industries such as papermaking, dye-printing, petrochemical, brewing, starch, chlor-alkali, metallurgy, electronics, machinery, chemical industry, and Pharmacy. Based on the statistics of cleaner production carried out in 310 enterprises, Volume of Industrial Wastes Discharged for every 10000 RMB worth of output value decreased by 20-30%.**
- **From 2003 to 2005, Ratio of Output Value to Energy and Water Consumption (ton of SCE/10 000 yuan) for over 1000 enterprises in Shandong decreased by 12.4% and 31% respectively. A survey on the development of CE in 122 enterprises shows that the annual gross output value has increased by 44.03% after CE was carried out.**



## At the level of industrial parks

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- **Yantai Economic and Technological Development Zone**  
The Average 10,000 Yuan GDP Water Consumption in. was measured 11.7 ton, 7.7% of the standard for an ecological city, 0.65 ton of SCE and 43.3%, COD discharge 1.73 kg and 43.3%.
- **Shandong Weifang Binhai Economic Development Area** has developed 4 industrial chains encompassing products related to bromine, soda, Bitter Chemicals, and fine chemicals, and has made it possible to “use water for five times”. In 2005 the tax and profit coming from the comprehensive utilization of “three wastes” account for over 20% of the newly made tax and profit there.



# At the level of regions

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- Rizhao City focuses on the construction of recycling-oriented enterprises, with a guideline of “small circular, medium circular, and big circular”, in an attempt to build a system in which substance and energy can flow between primary, secondary and tertiary industries.
- Due to the practice of CE, Rizhao Economic Development Zone and Rizhao Hi-tech Industrial Park have gradually cultivated a product chain, waste processing chain, and information sharing system.
- 16 sample ecological townships and 31 villages have been involved in the pilot project in Rizhao, which has so far produced noteworthy results.



# Effects

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- According to the ranking of the New Economy Index in 31 provinces, cities and autonomous regions made by Economic Daily at the end of 2004, Shandong Province ranked first in terms of CE index, and fourth next to Beijing, Shanghai and Guangzhou, in terms of New Economy Index. Without the influence of “large-scale” and the emergence of CE, Shandong could have been only in the 8th place.
- It has been proved that CE has helped Shandong obtain maximum return through the application of a minimum of effort in the process of economic development and the elevation of overall quality.



# New Actions

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- On January 1, 2007 Shandong Provincial Government issued “Pilot Programs for Circular Economy in Shandong Province”, stipulating that pilot project should be carried out in 10 cities including Qingdao, Jinan, and Zibo, 20 industrial parks including Zibo Hi-tech Development Zone, and 300 enterprises.
- From September 11<sup>th</sup> to 13<sup>th</sup>, 2007, expert panel discussion of “Pilot Programs for Circular Economy in Shandong Province” was held in Jinan.
- The whole province then saw the efforts to quicken the development of CE and build a conservation-minded society.



**Spur the development of CE through enforcing related laws, regulations, criteria and policies.**

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- **Local CE-related laws and regulations**
- **Administrative provisions and directive documents**
- **Standards**

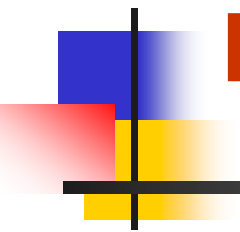


# Supervision and control

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- Since 2002, Shandong Provincial Economic and Trade Commission has set up Statistical System of Key Energy-consuming Enterprises, analyzing and supervising the consumption of resources in some 1000 key enterprises.
- Bulletin System of Principal Indexes of a Conservation-minded Society was set up. Since the first half of 2006, the average 10,000 Yuan GDP energy consumption and 6 other indexes have been employed as a means to evaluate the quality of the economic development. The results are to reported every half year.

# III. Case: Scheme for Implementation of Circular Economy in Zibo City





Zibo City



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Map of Shandong Province



# (I). Challenges

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- 1. Contradictions between supply and demand of resources worsen.
- 2. Characterized by heavy chemical industry, the economic pattern has not changed in essence.
- 3. Big challenge to dispose of the solid waste, renewable resources industry needs to be further improved.
- 4. The ecological environment still in a grim situation



## **(II). Work done to develop Circular Economy**

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- **1. Energy-saving, cleaner production and environment protection conducted**
- **2. Establishment of managerial system, laws and regulations**
- **3. Strong leadership**



## **(III). Overview of Development Objectives**

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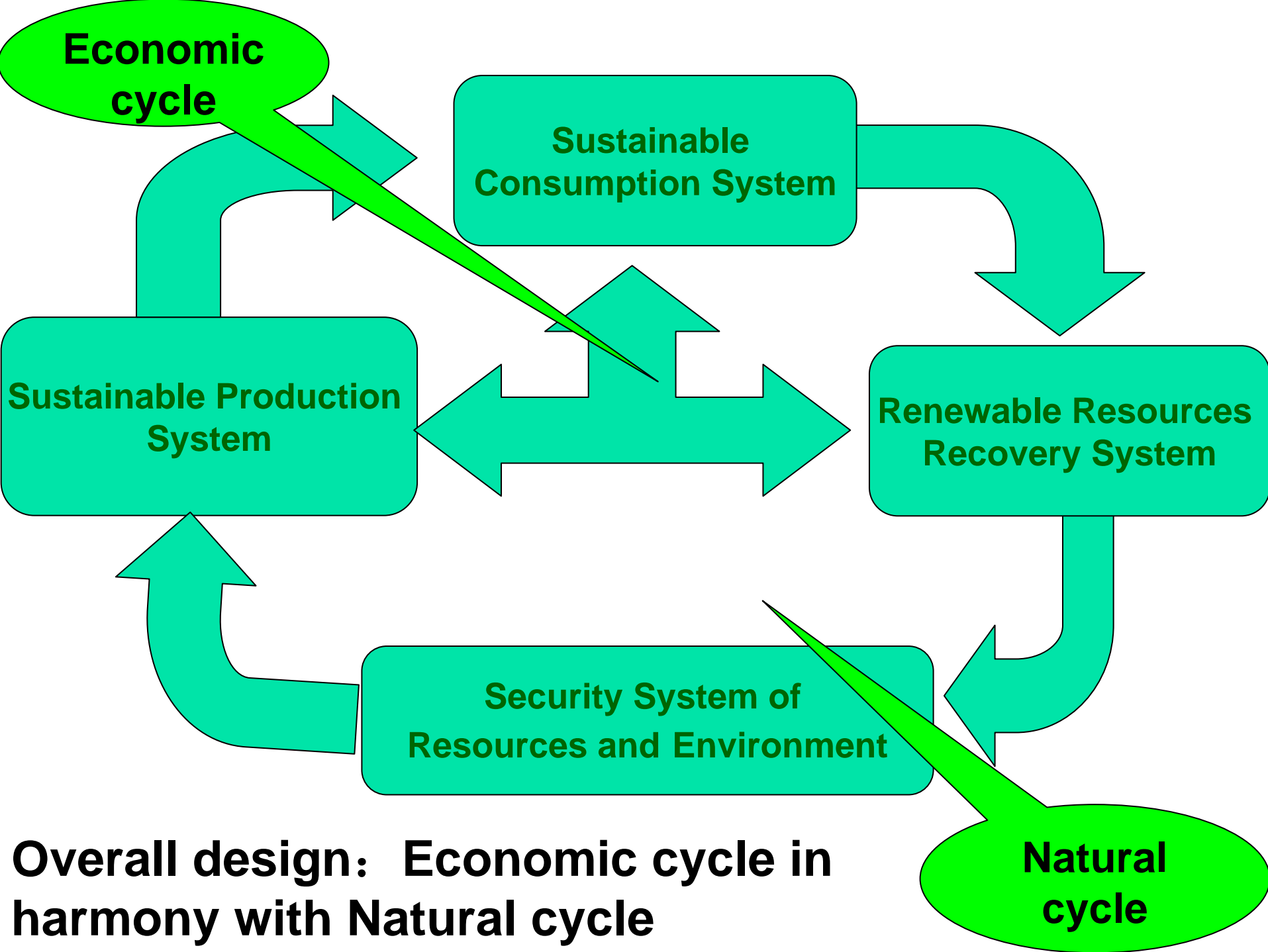
- **Establishing 4 systems**
- **Promoting 10 key linking techniques**
- **Speeding up the construction of conservation-minded communities or departments**
- **Developing CE operating mechanism**



## (IV). Primary Tasks

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- **In view of the characteristics of this city's heavy chemical industrial structure and its advantage as a raw material base, the city is to stick to the principle of "Reduce, Reuse, and Recycling of Resources", center around key industries, reasonably extend the industrial chains, build a network of industrial chains, elevate the quality of industries, optimize the industrial structure, stress "popularization of one idea, establishment of four systems, and promotion of ten key linking techniques", and finally build a CE development pattern suitable for Zibo.**



# Principal Task

**Popularize  
one notion**

**Notion of CE  
Government,  
enterprises, people**

**Security System of Resources  
and Environment  
CE Industry system**

**Construct  
four systems**

Technique and its demonstrations of environmental protection  
Integrated utilization and protective exploitation of resources  
Water resource conservation and Wastewater Zero Discharge  
Technique and its demonstrations of renewable and alternative resources  
Energy efficiency transformation of key enterprises and facilities  
Ecological design and cleaner production of the key enterprises and industries  
Key linking techniques in the key enterprises, industries, and parks  
Reproducing techniques of machinery and electrical appliances  
Integration and demonstration of CE techniques in agriculture and construction industry  
Integration of techniques for the construction of Recycling-oriented neighborhoods and regions

**Promote  
ten key techniques**



# Security system of resources and environment

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- To improve the security quality, the Security system of resources and environment is to be established in line with the development of CE, which will include energy, water resource, arable land, mineral and other resources, as well as improving the quality of ecological environment.



# Sustainable Production System

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- Sustainable Production System is characterized by cleaner production, resource-saving, and recycling, and is represented by recycling-oriented agriculture, industry and service industry. It saves energy, water, land, and material. The exercise of the resource recycling techniques and measures at the levels of enterprises, industrial parks and regions, contributed to the establishment of a CE industrial system covering different levels.



# Sustainable Consumption System

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- spread of ecological culture and the moderate consumption concept
- Cultivation of the behavioral modes of life, study and work.
- Overall performance of various ideas, acts and management concerning sustainable consumption in communities, government departments, shops, schools, and other places for life, study and work.



# **Renewable Resources Recovery System (Resources Recovery Industry)**

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- **The comprehensive utilization of solid waste should be taken as the main resources recovery industry, using gangue, fly ash, waste residue, sludge, red mud, garbage, and so on.**
- **Developing resource recovery industry:  
System of Classification and Collection of Household Garbage should be practiced  
System of buying and selling renewable resources should be set up  
A number of technologically advanced, large-scale resources recovery enterprises should be built**

# (V). Supporting Measures



Strengthen leadership and supervision

Establish and improve legal system for CE

Improve supporting policies for the development of CE

Scientific Supporting System and Intellectual Security System

Publicity and Training



# Suggestions on Legislation

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- People's Congress and government departments at all levels should clear up and correct the relevant provisions in laws, policies, and regulations that are inconsistent with the development of CE and the construction of the resource-saving society
- Adjusting taxes, fees, and fiscal policies, improving the system of rewards and punishments
- A market access system shall be established to set rigid restrictions to over-packaged products and disposable products
- Strengthening law enforcement



# Specific Suggestions on Practice

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- **Set up Zibo Municipal Environmental Education Center (also having the functions of the Center of Environmental Education & Publicity), which is responsible**
- **For the overall planning and implementation of publicity and education about building a cycling-oriented society; to help spread the notions of circular economy and environmental protection in a “cascade amplification” way, through reeducation among related teachers in schools at all levels, technicians and government employees, in order to provide the intellectual support for the construction of a CE-oriented society.**
- **To develop local curriculum of building a cycling-oriented society, for the schools at all levels;**
- **To train all the leaders, the technical personnel and the management personnel on the construction of a cycling-oriented society;**
- **To formulate and enforce “Plan of Zibo City for the Promotion of Moderate Consumption”, in order to promote the emergence of a sustainable consumption system in the whole society;**
- **To set strict limitations to consumer credit services available for high or excessive consumptions (for example, one family owns more than two houses), by means of levying local surtax for excessive consumption;**
- **To popularize the notion of Cycling-oriented society through bulletin boards of every workplace, neighborhood, and the media.**