

# Action Plan for Carbon Emissions Trading System

To Mitigate Climate Change Issues and Reduce Greenhouse Gases

- ◆ For flexible implementation of the Carbon Emissions Trading System in accordance with the national greenhouse gas emission allocation plan to be effectuated nationwide beginning **2015,**
- ◆ this action plan aims to stabilize the implementation of the Emissions Trading Plan for coping with climate change issues and reducing greenhouse gases earlier and make full preparation by establishing internal regulations that help achieve the targeted greenhouse reduction quota per workplace.

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Implementation Basis

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◎ **Article 11 (Establishment and Implementation of Action Plans by Local Governments), Framework Act on Low Carbon, Green Growth**

◎ **Article 19 (Trading of Emissions Permits), Act on the Allocation and Trading of Greenhouse Gas Emissions Permits**

### ◎ First Implementation Year: 2015

### ◎ Implementation Period

- 1<sup>st</sup> Phase: 2015 ~ 2017 (100% free allocation)
- 2<sup>nd</sup> Phase: 2018 ~ 2020 (97% free allocation)
- 3<sup>rd</sup> Phase: 2021 ~ 2025 (90% free allocation)

### ◎ Subjects: Workplaces related to waste treatment

#### ※ Emissions Trading Plan:

Trading carbon dioxide (tCO<sub>2</sub>-eq) in units of tons depending on the permits allowed to each company for reducing greenhouse gas emissions. The estimated price by the Ministry of the Environment is about 10,000 KRW per ton.

#### ※ Meaning of Free Allocation:

100% free allocation means that the target permits are allocated to each relevant company for free. Emissions exceeding the target permits shall be purchased by each relevant company.

#### ▣ Permits for Changwon

#### ▣ Specification on Annual Permits

Year	Target Permits	Estimated Emissions	Estimated Cost of Purchase	Remarks
2015	258,422 Tons	283,145	247,270,000 KRW	10,000 KRW/Ton applied
2016	250,121 Tons	283,145	330,260,000 KRW	
2017	244,619 Tons	296,276	516,570,000 KRW	

#### ※ Problems in case of Excess of Permits

In accordance with the estimation of annual Changwon carbon emissions, Changwon will need to purchase emissions permits of about 30,000 to 50,000 tons, which may cost about 300 to 500 Million KRW as the purchasing cost.

#### ※ Failure to meet the permits

**“Warning and penalty from the competent authority”** (Penalty up to 3 times over the average market price of emissions permits) as specified in Article 33, Act on the Allocation and Trading of Greenhouse Gas Emissions Permits

 Business Entities related to Waste Treatment

⊙ **Administrator: Changwon Municipal Government (25 places of business)**

⊙ Allocation per place of business (2015)

No.	Place of Businesses	Emissions Permits	No.	Place of Businesses	Emissions Permits
1	<b>Seongsan Recycling Plant</b>	45,194 Ton	14	Jinhae Food Facility	2,225 Ton
2	<b>Masan Hapcho Recycling Plant</b>	39,262 Ton	15	<b>Daesan Sewage Treatment Plant</b>	1,090 Ton
3	Jinhae Recycling Plant	8,797 Ton	16	<b>Bukmyeon Sewage Treatment Plant</b>	986 Ton
4	Changwon Cheonseon Landfill	14,728 Ton	17	<b>Bukmyeon Water Purification Plant</b>	439 Ton
5	Masan Deokdong Landfill	42,744 Ton	18	Changwon Night Soil Treatment Plant	621 Ton
6	<b>Jinhae Deoksan Landfill</b>	10,036 Ton	19	Masan Night Soil Treatment Plant	254 Ton
7	Machang Sewage Treatment Plant	36,791 Ton	20	Jinhae Night Soil Treatment Plant	38 Ton
8	Jinhae Sewage Treatment Plant	9,352 Ton	21	Changwon Recycling Plant	957 Ton
9	<b>Chilseo Water Purification Plant</b>	23,694 Ton	22	Masan Food Recycling Facility	2,587 Ton
10	Daesan Water Purification Plant	11,891 Ton	23	Gamcheong Village Sewage Treatment Plant	4 Ton
11	<b>Dongbu Malgeunmul Center</b>	640 Ton	24	<b>Woncheon Sewage Treatment Plant</b>	17 Ton
12	Seokdong Water Purification Plant	5,843 Ton	25	Jinjeon Sewage Treatment Plant	
13	<b>Jindong Sewage Treatment Plant</b>	232 Ton	<b>Permits for Changwon</b>		<b>258,422 Ton</b>

※ It is estimated that 10 places of business will exceed their emissions permits (in red)

It is estimated that 10 places of business may exceed their emissions permits by at least 15,745 tons based on emissions in 2013 and 2014 among 25 places of business in Changwon. It is also estimated that about 160,000,000 KRW will be paid for by purchasing emissions permits in 2015.

## Plan for Early Stabilization of 『Emissions Trading Plan』

### Emissions Reduction Duty System by Place of Business

- ◎ Strengthening the effort to reduce emissions through an emissions reduction duty system by place of business
- ◎ Readjusting the permits in case of increase or decrease of emissions by over 10% every year.

### Cost-bearing Principle on Excess Emissions

- ◎ Each place of business shall directly purchase the permits in case of emissions exceeding the allocated permits in accordance with the cost-bearing principle.
- ◎ Budget planning every year by estimating the excess per place of business.
  - Purchase Cost of Emissions Permits: expenditure budget of Changwon.
  - Sales Cost of Emissions Permits: revenue budget of Changwon.
- ◎ Internal management by place of business on emissions trading plan.
  - The places of business managed by contractors will execute agreements with the relevant contractors regarding the details related to the emissions trading plan including purchase costs (except those places of business directly managed by the Changwon Municipal Government).

### Penalties for Places of Business Exceeding Permits

- ◎ Penalty per place of business after examining emissions every year.
  - Good places of business reducing emissions: 3 places of business.

Emissions permits will be increased by 2~10% (sales-revenue)

- Places of business exceeding emissions permits: 3 places of business

Emissions permits will be reduced by 2~10% (purchase-expenditure)

※ Three good places of business that achieve emissions reduction and three exceeding emissions permits will be selected by examining emissions records in the waste treatment industry at the end of every March. Emissions permits will be reduced or increased for poor or good places of business by 2~10% in consideration of emissions permits to each place of business and penalties will also be applied.

 Strengthening training in monitoring and specifications for each place of business

◎ Strengthening the ability to estimate emissions by making specifications and monitoring every month.

◎ Stimulating efforts to reduce emissions including technical consultation with professionals, energy diagnosis and greenhouse gas reduction programs.

◎ Strengthening training on emissions reduction duties for each place of business and emphasizing endeavors to make energy saving a way of life.

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## Expected Effects

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◎ **Contribution to the early stabilization of the emissions trading plan in the first implementation year 2015.**

- Emphasizing the importance and promotion of the emissions trading plan.

◎ **Change of awareness regarding energy savings by stimulating competition among places of business.**

- Change of awareness and desire to practice by stimulating the competition including penalties per place of business that exceeds permits.

◎ **Contribution to the achievement of national target emissions and implementation of climate change adaptation 2030**

- Achievement of the goal to reduce emissions by 30% over the greenhouse gas emission estimate in 2030 (BAU).

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## 5 Schedule

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- ▶ Jan. 2016 ⇒ Request monitoring planning (MT) to a contractor per place of business
- ▶ Mar. 2016 ⇒ Request a professional institute to examine and verify the emissions specifications per place of business.
- ▶ May 2016 ⇒ Notification of the authentication of emissions permits per business entity managed by Changwon (place of business) from the Ministry of Environment.
- ▶ Jun. 2016 ⇒ Each place of business will directly purchase emissions on the KRX (Korea Exchange) in accordance with the emissions permits per place of business.