

Korea's Third NC and GHG Inventory in 2009

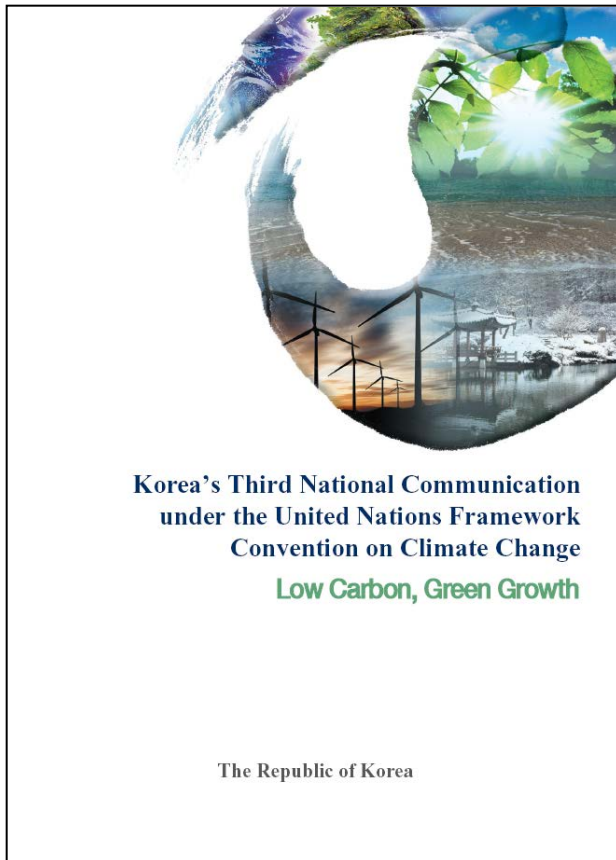
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3rd NC of Korea

■ Overview

- **Korea has submitted 3rd NC in Nov. 2011**
 - 1st NC : submitted in 1998
 - 2nd NC : submitted in 2003
- **Reflect the policies that are progressing rapidly**
 - Low Carbon, Green Growth('08)
 - Mid-term GHG Mitigation Target('09)
 - Adaptation Measures for Climate Change('10)
 - Consist of 8 Chapters

3rd NC of Korea-Contents(1)

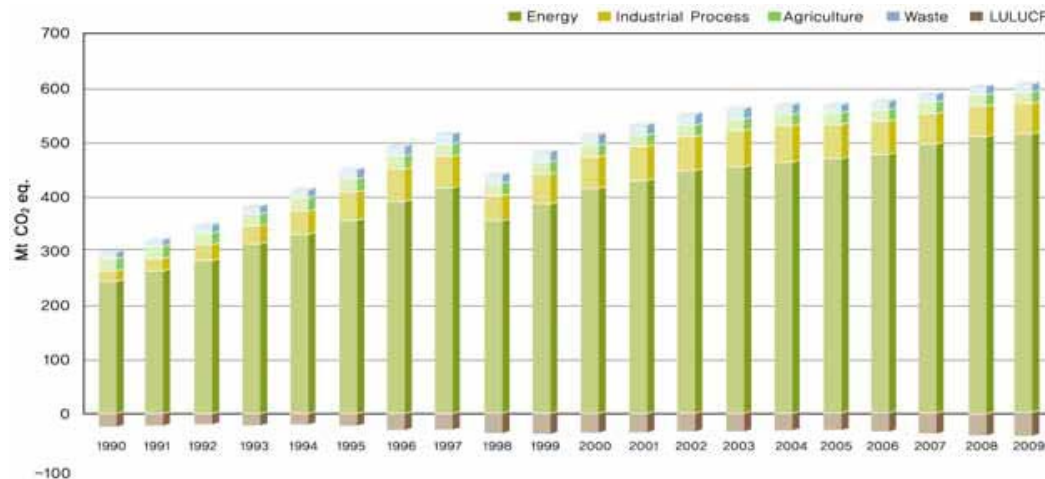
■ Chapter 1. National Circumstances

- Located in the middle latitudes
- The population is above 48 million
- Annual Mean Temp. : 12.7 °C
- Per capita GDP : 20,735 USD



3rd NC of Korea-Contents(2)

- Chapter 2. Greenhouse Gas Inventory
 - Total Emissions were 607.6 Mt CO₂ eq. in 2009
 - 105% increase compared to 1990
 - 0.9% increase compared to previous year
 - Including LULUCF, the net emissions : 564.7 Mt CO₂ eq

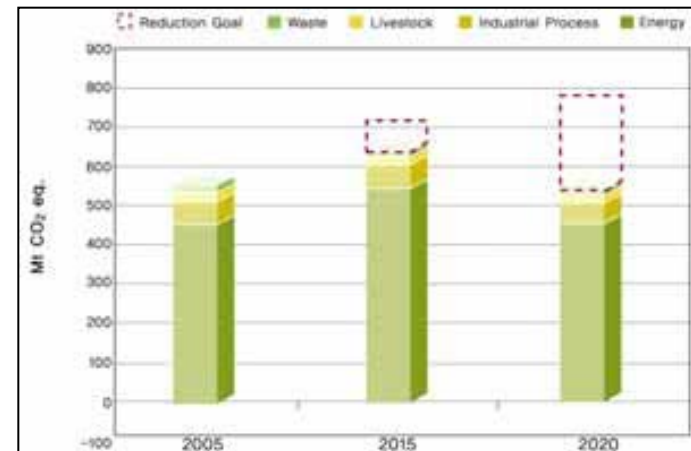
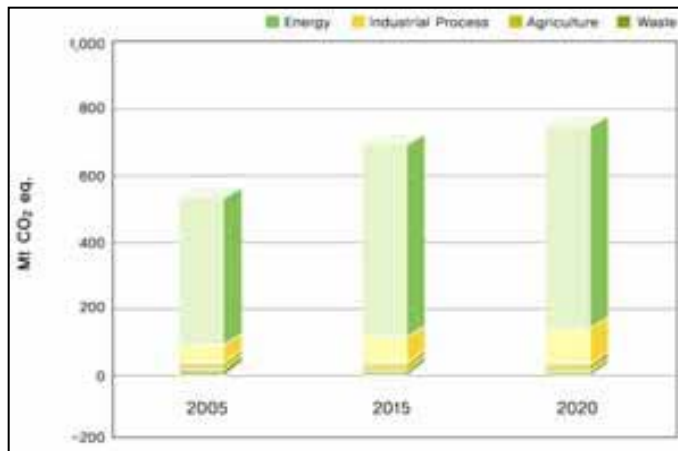


3rd NC of Korea-Contents(3)

- Chapter 3. Policies and Measures
 - Move forward with Voluntary, multilateral polices and measures in several sectors
 - Comprehensive Action Plan for Climate Change(2008~2012)
 - National mid-term GHG reduction goal do 30% below BAU by 2020
 - Relevant policies and measures for each sector are being implemented systematically

3rd NC of Korea-Contents(4)

- Chapter 4. Projected GHG Emissions and reductions by sector
 - The overall national GHG Emissions are projected to increase by 36.1% by 2020 compared to 2005 levels
 - If the reduction goal is successfully achieved, GHG emission in 2020 is expected to be decreased by 30% compared to BAU projection



3rd NC of Korea-Contents(5)

- Chapter 5. Vulnerability Assessment, Climate Change Impacts, and adaptation Measures
 - Climate Change impacts in Korea
 - Temperature increased by 1.8°C over the last century
 - Annual precipitation increased by 17%
 - Winter days shortened by 17 days compared to the 1912~1921 period
 - “National Climate Change Adaptation Master plan”
 - To minimize damages and in accordance with 2010 Framework Act on Low Carbon, Green Growth
 - This measure was jointly established by 13 ministries
 - 3 major adaptation foundation plans and seven different sectors

3rd NC of Korea-Contents(6)

- Chapter 6. Financial Assistance & Technology Transfer
 - IN 2008, Korea proposed the East Asia Climate Partnership (EACP)
 - Total of USD 200 million will be provided to fund
 - Focused on five different sectors (water, low-carbon city, low-carbon energy, forest, and waste)
 - The Global Green Growth Institute (GGGI)
 - To offer solutions the developing countries related to green growth, as well as making efforts to promote and encourage global cooperative development
 - Along with partnerships with various international agencies (IEA, APEC, CCLF and others), Korea is participating in technology cooperation with both developed and developing countries.

3rd NC of Korea-Contents(7)

- Chapter 7. Research and Systematic Observation
 - Korea has developed a mid- and long-term technology road map
 - The scientific climate change research
 - Climate change prediction
 - Modeling technology
 - Adaptation technology
 - Green technology development for GHG reduction
 - Technology for the protection of the environment
 - Reuse of resources
 - High-efficiency energy technology
 - Energy resource technology
 - Green technology for industrial and space assets

3rd NC of Korea-Contents(8)

- Chapter 8. Education, Training and Public Awareness
 - To strengthening cooperative efforts between public and private sectors
 - Encouraging community activities
 - Promoting education and training on climate change and global warming
 - To systematize climate change & energy education into the official curriculum for schools
 - The government and related industries makes efforts to improve public awareness about voluntary GHG reduction through special programs, campaign, advertising etc.
 - The civil society has expanded various activities to tackle climate change, including policy proposals to the government and voluntary civil action

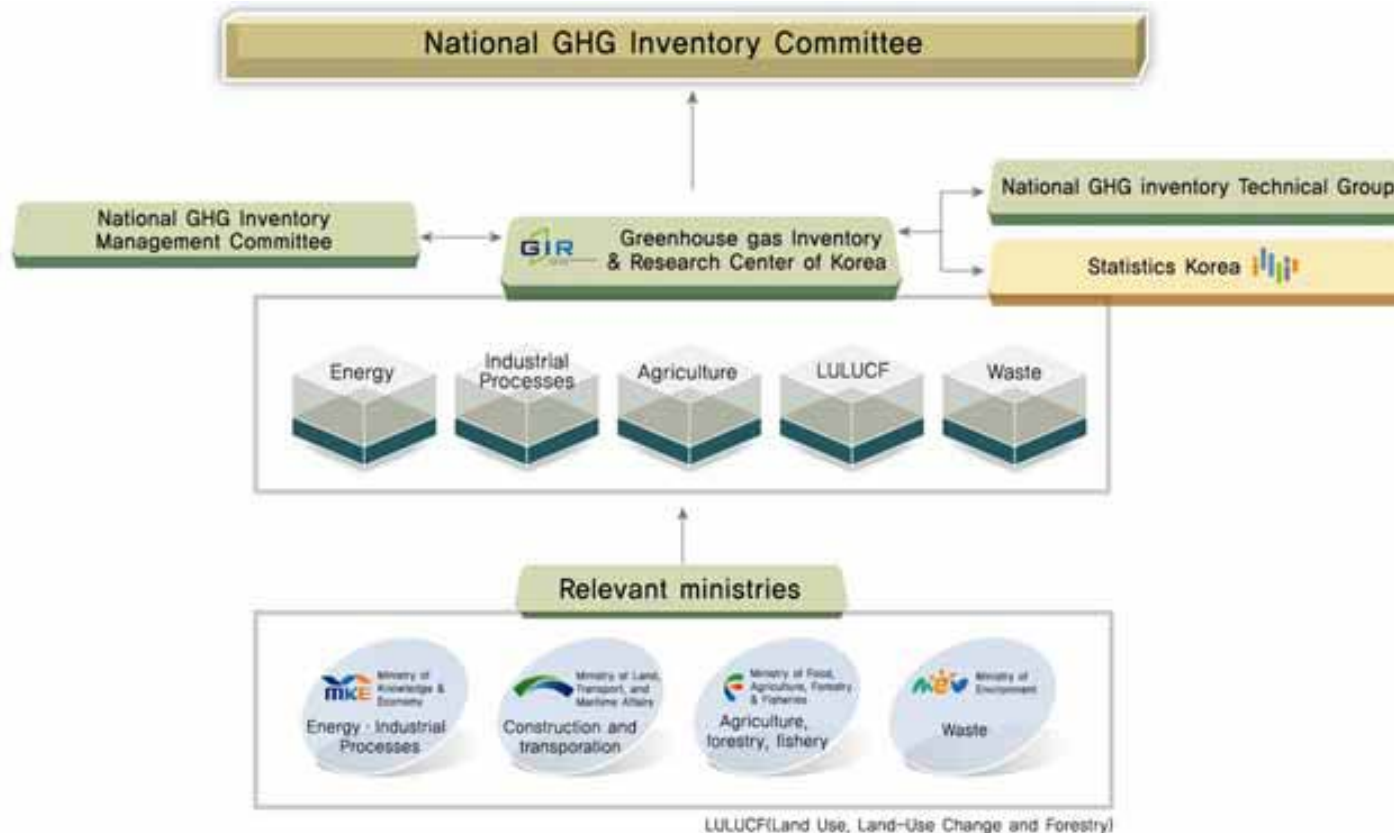


3rd NC of Korea

- **Some Meaningfulness**
 - **Korea has submitted 3rd NC in third among the non-Annex I countries**
 - Demonstrating our strong, voluntary commitment to actively respond to climate change
 - Performing the Bridging roll between developed and developing countries
 - **Korea plans to make and submit 4th NC in 2013 in accordance with the Cancun agreement**

GHG Inventory in 2009

■ National GHG Inventory Management system





GHG Inventory in 2009

- **The Framework Act on Low Carbon, Green Growth enacted in 2010**
 - **Designated the MOE as the representative body in charge of the national GHG inventory**
 - **Establishment of the GHG Inventory and Research Center of Korea (GIR)**
 - For a transparent and efficient national GHG inventory system
 - Planning and implementation for the overall management of the national GHG inventory
 - Management of QA/QC
 - Preparation of the Guidelines for Measurement, Reporting, and Verification (MRV) for the National GHG Inventory
 - Preparation for National Inventory Report (NIR) and Common Report Format (CRF)
 - Domestic verification for the national GHG inventory

GHG Inventory in 2009

■ The Estimation Methodologies

- Revised 1996 Guidelines for National Greenhouse Gas Inventories
- Good practice Guidance and Uncertainty Management for National Greenhouse Gas Inventories (2000)
- Good Practice Guidance for Land Use, Land-Use Change and Forestry (2003)

■ Five Sectors

- energy, industrial processes, agriculture, LULUCF (land-use, land-use change, and forestry), and waste

■ Six Direct GHGs

- CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆
- Estimation units, using Global Warming Potentials (GWP) for the conversion, is Million ton CO₂ equivalent (Mt CO₂ eq.).
- Indirect GHG are also calculated (NO_x, CO, NMVOC, SO₂)



GHG Inventory in 2009

- **Factors Used for Estimation**
 - **Estimation methodologies were tier 1 and tier 2 level**
 - **Emission factor used for estimation is mainly IPCC default values**
 - GIR of Korea is performing the verification for the country specific emission factors and plans to apply in 2010 inventory
 - **Most activity data and other relevant data are official data from Statistics Korea**
 - Some of them are survey results updated and managed by relevant institutions
 - In this case, GIR plans to set up the guideline for verification

GHG Inventory in 2009

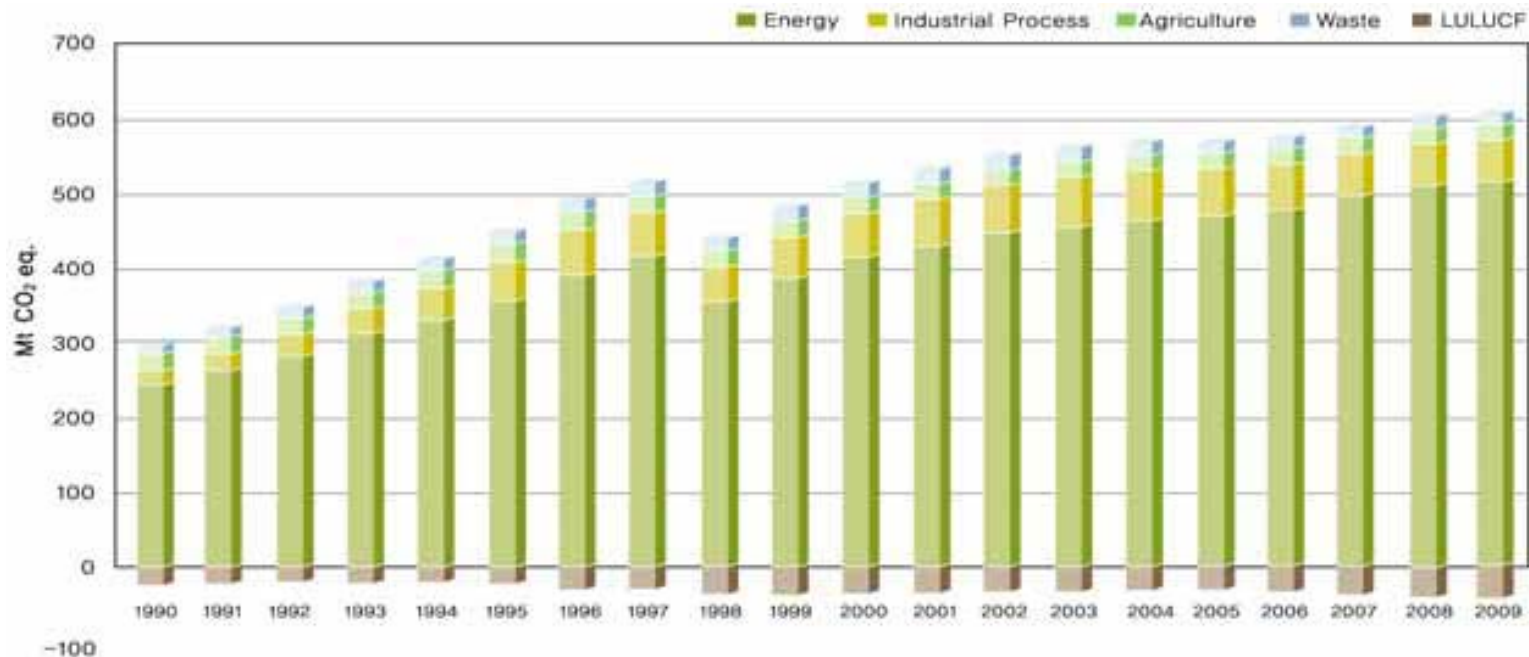
■ Key category Analysis

- Performing in accordance with GPG2000 with Tier 1 method
 - Level assessment and trend assessment
 - Key categories are those that add up to 95% of the total emission level

Source Categories		GHGs	Cumulative Contribution(%)
1A1a	Energy industries (electricity and heat) / coal	CO ₂	25.63
1A2a	Manufacturing industries (iron & steel) / coal	CO ₂	35.12
5A1	Forest Land remaining Forest Land	CO ₂	41.72
1A3b	Road Transportation / Diesel	CO ₂	48.02
1A1a	Energy industries (electricity and heat) / gas	CO ₂	52.67
1A2c	Manufacturing industries (Chemicals) / Oil	CO ₂	57.13
2A1	Cement Production	CO ₂	60.69
1A3b	Road Transportation / gasolin	CO ₂	63.98

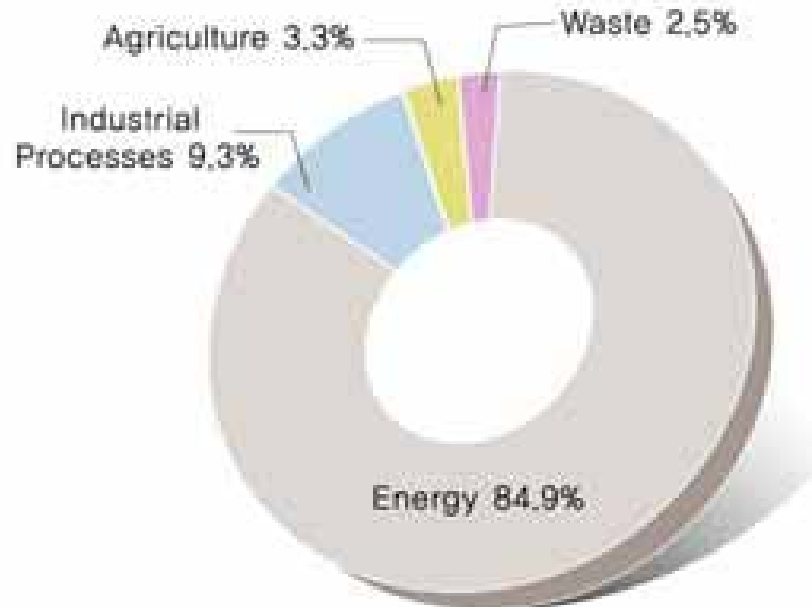
GHG Inventory in 2009

- Trends in GHG emissions and removals
 - Total GHG emission were 607.6 Mt CO₂ eq. in 2009
 - 105.0% increase since 1990 and 0.9% increase from 2008
 - Net GHG emission were 564.7 Mt CO₂ eq. in 2009
 - 106.6% increase since 1990 and 0.6% increase from 2008



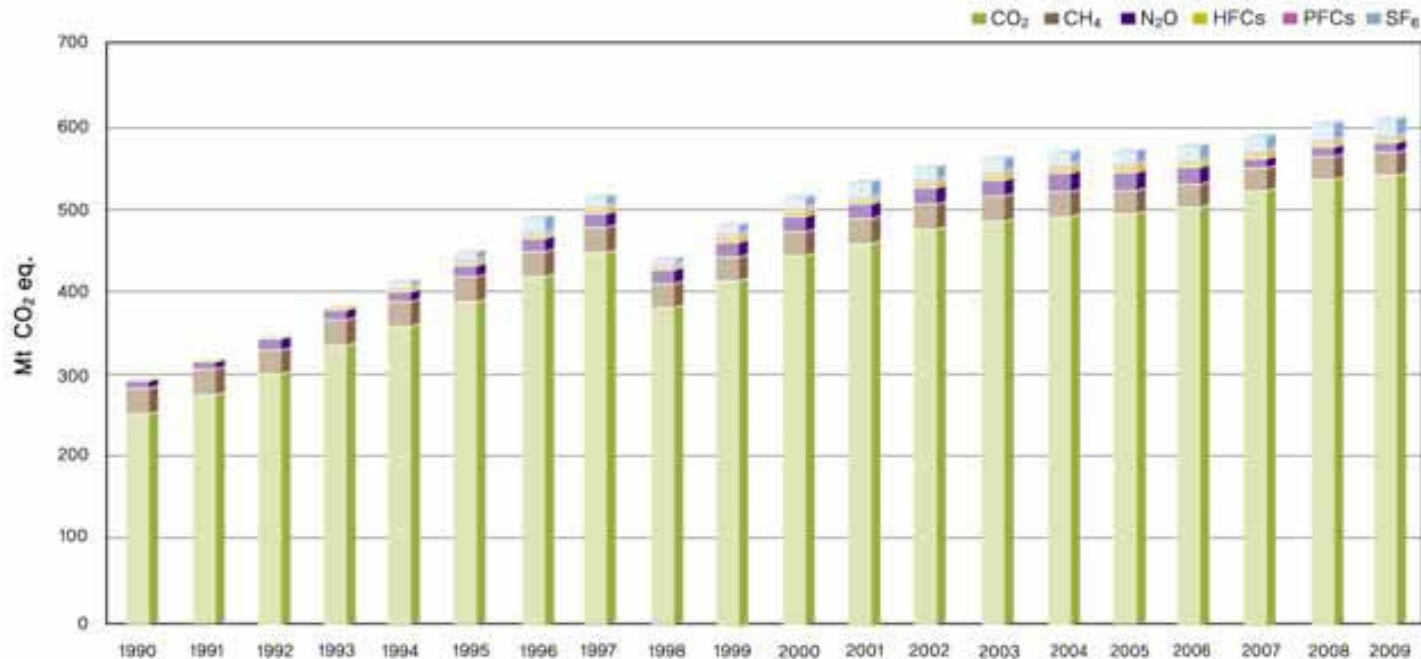
GHG Inventory in 2009

- GHG emissions by sector
 - Energy sector 84.9%, industrial processes 9.3%, agriculture 3.3%, waste 2.5%



GHG Inventory in 2009

- The greenhouse Gas emissions by gases
 - 89.0% of CO₂, 4.6% of CH₄, 3.1% of SF₆
 - 2.1% of N₂O, 1.0% of HFCs, 0.4% of PFCs





Thank you for your attention

