Office for Government Policy Coordination
Prime Minister's Secretariat
Greenhouse Gas Inventory and Research Center(GIR)

Using accounting for policy planning and decision making : Korean Case

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PATPA APR at Georgia

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Table of Contents ● ● ●

1 INTRODUCTION : Accounting for policy planning & decision-making?

Accounting for National GHG Reduction Target (Sectoral Policy & Measures)

(1) Establishment (Communication of NDC)
  - Base year or Baseline (Projection <- historical time-series!)
  - Various P&M options in a most likely/probable scenario

(2) Evaluation / Improvement (Implementation & Achievement of NDC)
  - National GHG Inventory Report
  - Indicators for tracking progress of each P&M (e.g. physical amount, share in %, efficiency/intensity in %)

2 ACCOUNTING : Target establishment

2020 NAMA ┄┄┄┄┄┄┄► 2030 (I)NDC

(1) Emission level (AD + EF)

Accounting Methodology : <u>IPCC GLs</u>

- AD : Nat'l Statistics (EB, Production, Agriculture, Waste)
- EF : Tiers (Default, CS, FS)

(2) Projection / Mitigation Analysis

Accounting Methodology : <u>Modeling</u> (KEEI / KOTI / KICT / KECO / GIR)

- Projection : Pop., HH, GDP, Industrial Structure, Fuel Price, etc.
- Mitigation Analysis : Sectoral Technology DB, *previous research*, etc.
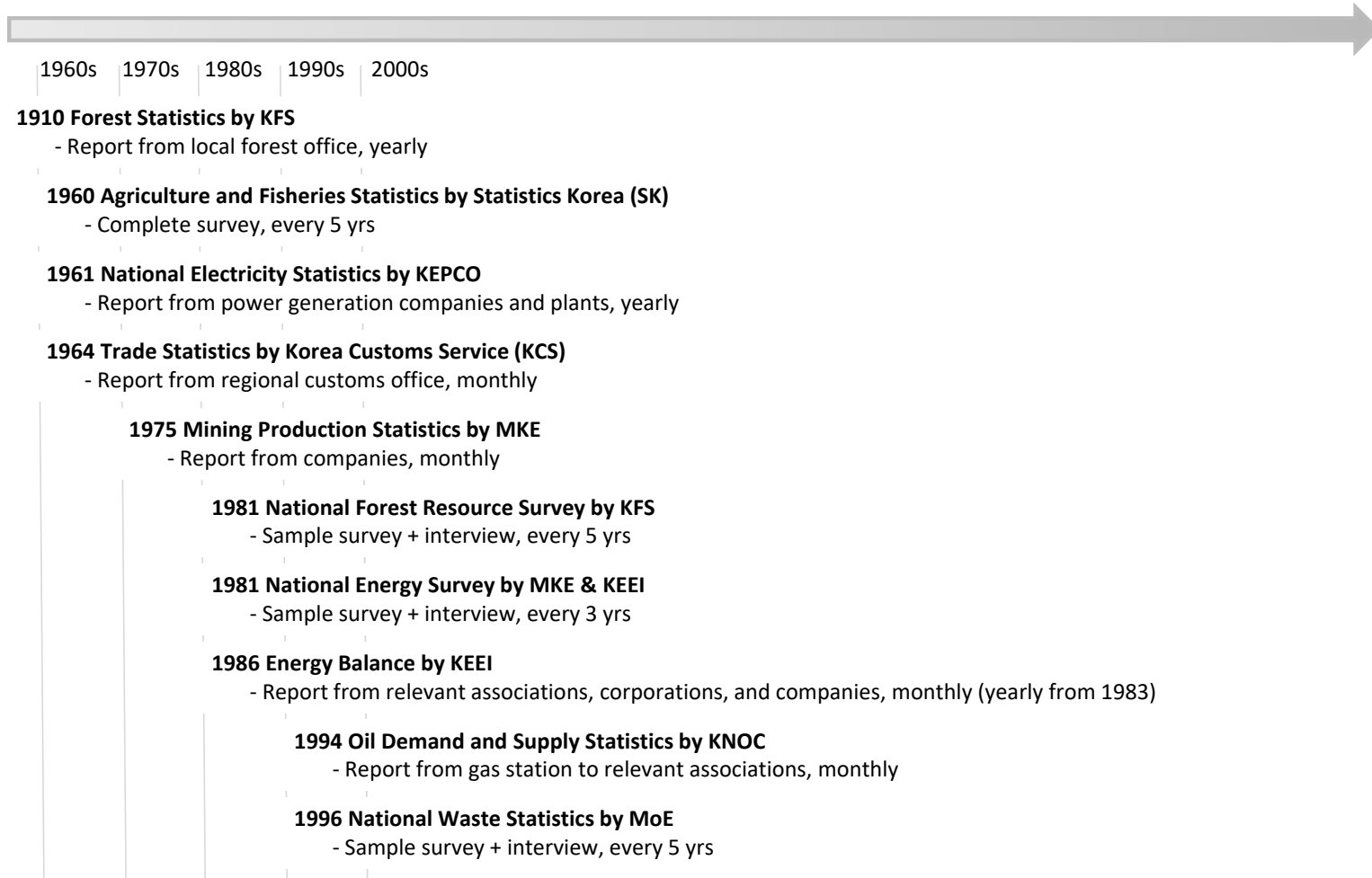
(3) Target (type) & P&Ms (Indicators)

Accounting Methodology : <u>None</u> for Target, <u>Law/GLs</u> for P&Ms

- Target : BAU -30% (2020), BAU -37% (2030)
- P&Ms : Cross-cutting (Emissions Trading Scheme,
         Target Management Scheme), Sectoral P&Ms (52 in 7 Sectors)

* Land excluded (2020) / decide later (2030), Market partly used (2030)

2   ACCOUNTING : Target establishment

1960s   1970s   1980s   1990s   2000s

1910 Forest Statistics by KFS
- Report from local forest office, yearly

1960 Agriculture and Fisheries Statistics by Statistics Korea (SK)
- Complete survey, every 5 yrs

1961 National Electricity Statistics by KEPCO
- Report from power generation companies and plants, yearly

1964 Trade Statistics by Korea Customs Service (KCS)
- Report from regional customs office, monthly

1975 Mining Production Statistics by MKE
- Report from companies, monthly

1981 National Forest Resource Survey by KFS
- Sample survey + interview, every 5 yrs

1981 National Energy Survey by MKE & KEEI
- Sample survey + interview, every 3 yrs

1986 Energy Balance by KEEI
- Report from relevant associations, corporations, and companies, monthly (yearly from 1983)

1994 Oil Demand and Supply Statistics by KNOC
- Report from gas station to relevant associations, monthly

1996 National Waste Statistics by MoE
- Sample survey + interview, every 5 yrs

3   ACCOUNTING : Target evaluation / improvement

(1) National / Sectoral (inventory) Emissions level evaluation

    - MRV for annual National Inventory Report from 2011 (Accounting Methodology : IPCC GLs, MRV GLs)

(2) Sectoral P&Ms evaluation   → *Help domestic government / policy-makers manage mitigation pathways!*

    - MRV for ETS & TMS (Accounting Methodology : MRV GLs)

    - Review for Mitigation Roadmap Progress Report (Accounting Methodology : Review GL)

       (Objective) 2020 NAMA Sectoral P&Ms review

       (Responsible Organization) Office for Government Policy Coordination / Prime Minister's Secretariat
                      in collaboration with 9 relevant ministries

       (Period) 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

       (Contents) 52 P&Ms in 7 sectors

         · Transformation (Energy Mix Improvement, Demand Side Management, Renewable Energy Tech. + ESS Promotion and etc.)

         · Industry (Fuel Substitution, Equipment Efficiency Improvement, Process Emission Reduction and etc.)

         · Transport (Fuel/Emission Standard Improvement, Electric Car Promotion, Public Transport Infrastructure Expansion and etc.)

         · Building (Insulation Standard Improvement, Green Remodeling Promotion, Appliance Efficiency Improvement and etc.)

       (Reporting/Review Components) Competent Department/Personnel, Overview, Performance Evaluation
                      with Indicators, Limitation/Challenges, Improvement Plan

3 **ACCOUNTING : Target evaluation / improvement**

| 표-1 | 분야별 온실가스 배출량 및 흡수량

(단위: 백만톤 CO$_2$eq.)

분야	온실가스 배출량						1990년 대비 2014년 증감률	2013년 대비 2014년 증감률
	1990	2000	2010	2012	2013	2014		
에너지	241.4	410.4	565.2	597.7	606.7	599.3	148.3%	−1.2%
산업공정	19.7	49.6	54.0	51.7	52.0	54.6	177.3%	5.0%
농업	21.6	21.8	22.4	21.9	21.9	21.3	−1.5%	−2.7%
LULUCF	−34.1	−58.8	−54.3	−44.7	−42.8	−42.5	24.5%	−0.7%
폐기물	10.4	18.9	15.1	15.8	16.0	15.4	47.8%	−3.3%
총배출량 (LULUCF 제외)	293.1	500.6	656.6	687.1	696.5	690.6	135.6%	−0.8%
순배출량 (LULUCF 포함)	259.0	441.8	602.3	642.4	653.8	648.1	150.2%	−0.9%
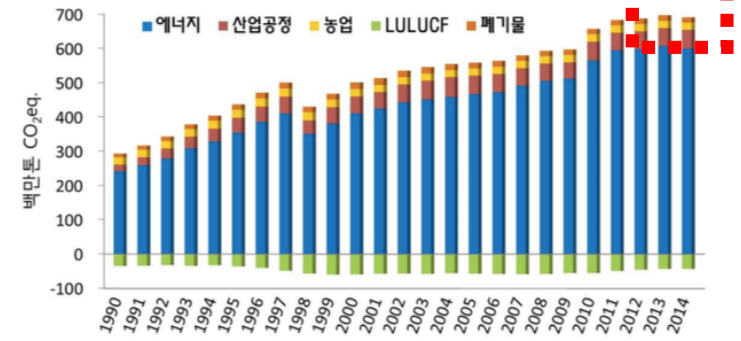
| 그림-1 | 분야별 온실가스 배출량 및 흡수량(1990-2014)

3 ACCOUNTING : Target evaluation / improvement

Sector	Key Indicators
Transformation (Power Supply)	• Energy intensity • Carbon intensity • Share of renewables • Generation capacity
Industry	• Energy intensity • Carbon intensity • Fuel substitution rate
Transport	• Energy intensity • Carbon intensity • Enhanced fuel economy standard • Share of green car • Share of public transportation use
Building	• Energy intensity • Carbon intensity • Enhanced insulation code • Enhanced appliance energy efficiency code • Share of LED lighting

NIR 2011

NIR 2012

NIR 2013

NIR 2014

NIR 2015

NIR 2016

ROADMAP 2011

ROADMAP 2014

ROADMAP 2016

제1차 기후변화대응 기본계획 및
2030 국가온실가스감축 기본로드맵
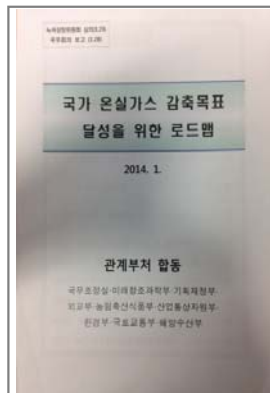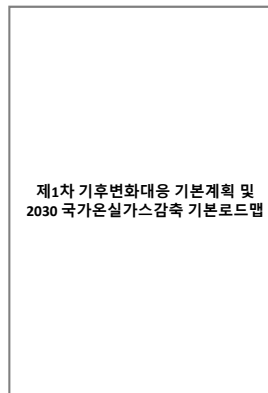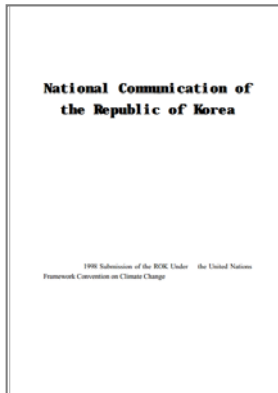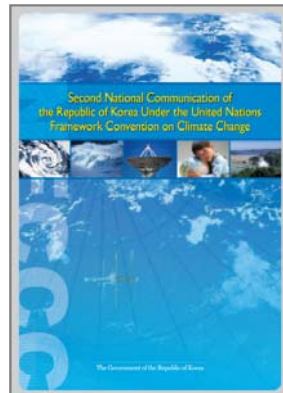
ACCOUNTING : Target evaluation / improvement

NC1 (FEB 12, 1998)	NC2 (DEC 1, 2003)	NC3 (MAR 20, 2012)	BUR1 (DEC 29, 2014)	BUR2 (OCT 31, 2017)
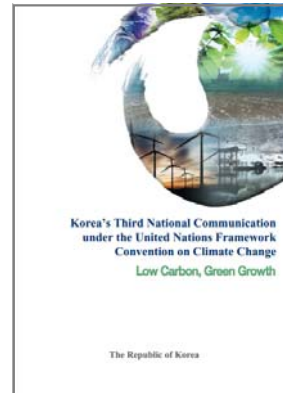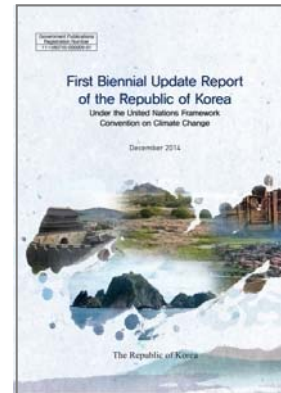
4 **MORE THOUGHTS & WAY FORWARD**

(1) Accounting for National Target or Sectoral P&Ms?
- If national target only? Then, NIR is the most important component to be accounted.
  (P&Ms are supplementary information for mutual learning? Cost information?)
- If both?, but, reduction level for each P&M is difficult to be estimated. (some can be estimated)
  -> CTF Table No.3

(2) Accounting for reduction rate (or level) or emission level in target year?
- For PA, are we going to account for reduction rate, "37% compared to the BAU"?
                                  or reduction level, "316 MTCO2-eq."?
                                  or emission level, "536 MTCO2-eq."?
  * Korea states 851 as the baseline emission level for target year (2030) in its INDC

(3) Qs for 3 major target type?
- Qs for absolute target type (base year emission level changing through recalculation or fixed?)
- Qs for BAU target type (dynamic or static?, base year for modeling analysis -> What is existing P&Ms?)
- Qs for intensity target type (GDP or Pop. clarified and stated? with intensity reduction rate?)

(4) Target (incl. base year or baseline emission) quantification & record for better Transparency?

(5) MPGs negotiations : APA until 2018 vs. SBSTA from 2019?, Interlinkage? (NDC?, Market?)

감사합니다
THANK YOU

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