

Korea's Green Growth Initiative

Yong Sung KIM, Ph.D
Program Manager
Global Green Growth Institute





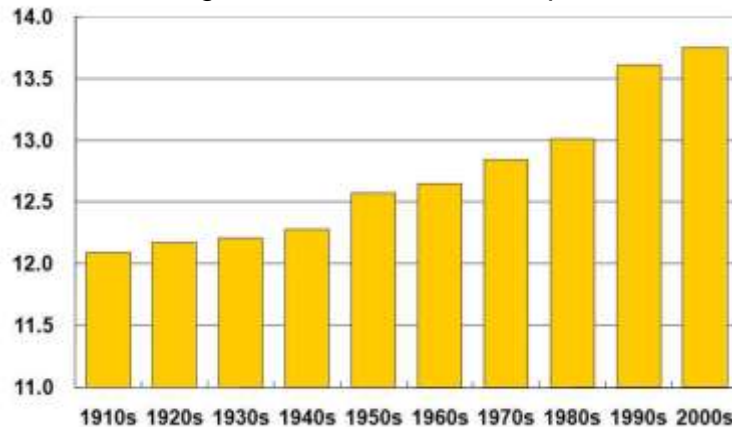
I. Why Green Growth?



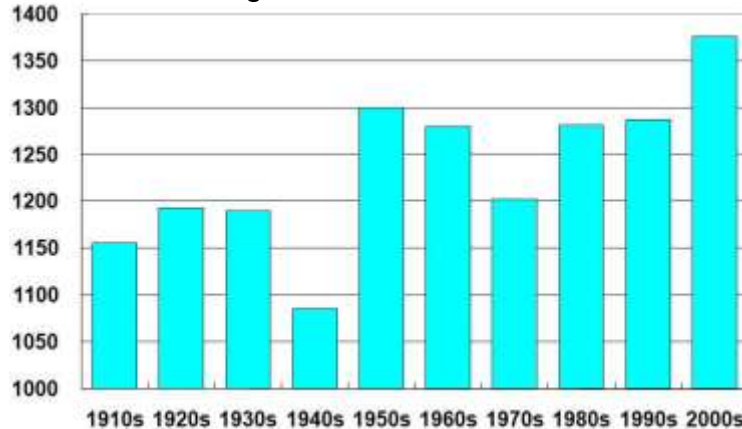
□ Background

(1) Climate Change in Korea

< Changes in Mean Annual Temperature >



< Changes in Mean Annual Rainfall >



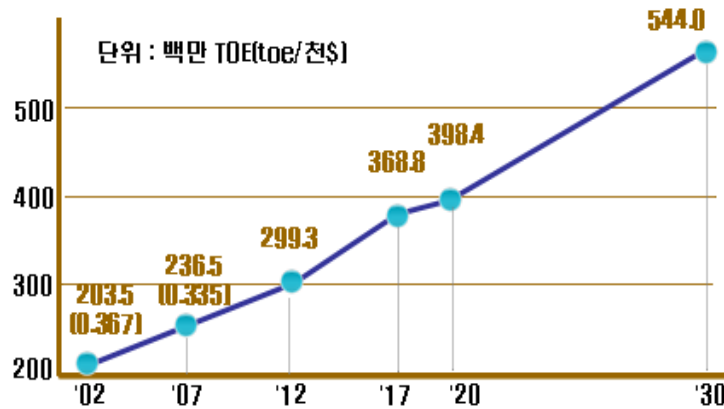
- **1.7 degree Celsius increase in average annual temperature*** observed across the nation over the last century
 - * global average is 0.7 degree Celsius
- **22cm rise in sea-water level*** observed in Cheju Island over the last 40 years
 - * 3 times the global average
- **19% increase in rainfall (over the last 10 years)** with greater frequency of extreme climatic events
- **Variation in seasonal length**, with shorter winter days (22-49 days) and longer summer days (13-17 days)



□ Background

(2) Energy Insecurity

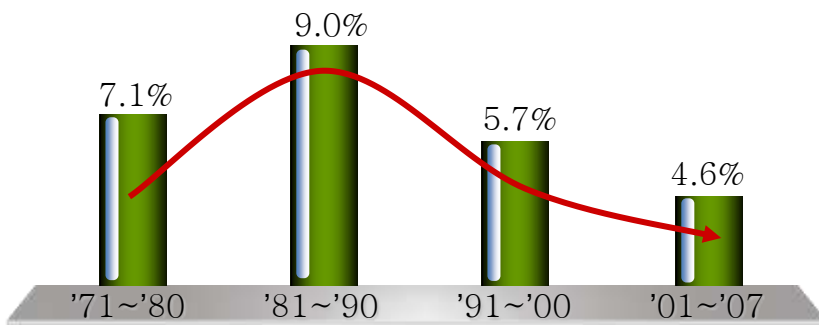
< Energy Usage Forecast >



- In 2007, Korea had **96.5% overseas energy dependence**.
- Recognizing its high dependency on external sources, Korea has been trying to diversify its energy.
- The importance of nuclear power & renewable source of energy is growing to ensure security and diversity of energy supply. **Shift from fossil fuels source to non-fossil fuels will also help to reduce the dependence of energy industry on import.**

(3) Economic Growth

< Changes in GDP Growth >



- Korea's GDP volume has continued to be placed at world's 13th -15th over the last 15 years.
- The economic growth pattern has not shifted from the resource-extensive growth pattern, and the **quality and efficiency of the economic growth are not high.**

Green Growth as a New Development Paradigm

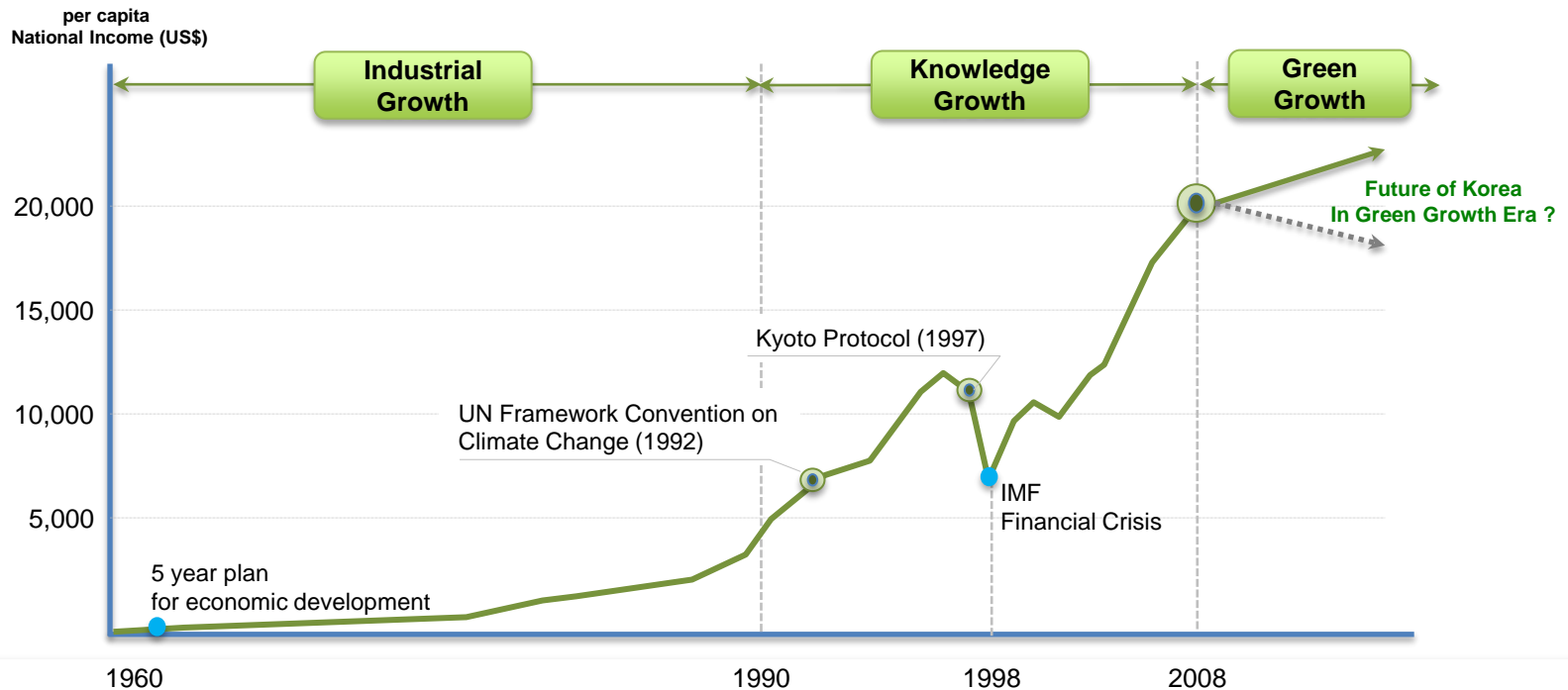


□ Solving the Triple Crunch



□ Declaration of a New Vision (2008.8.15)

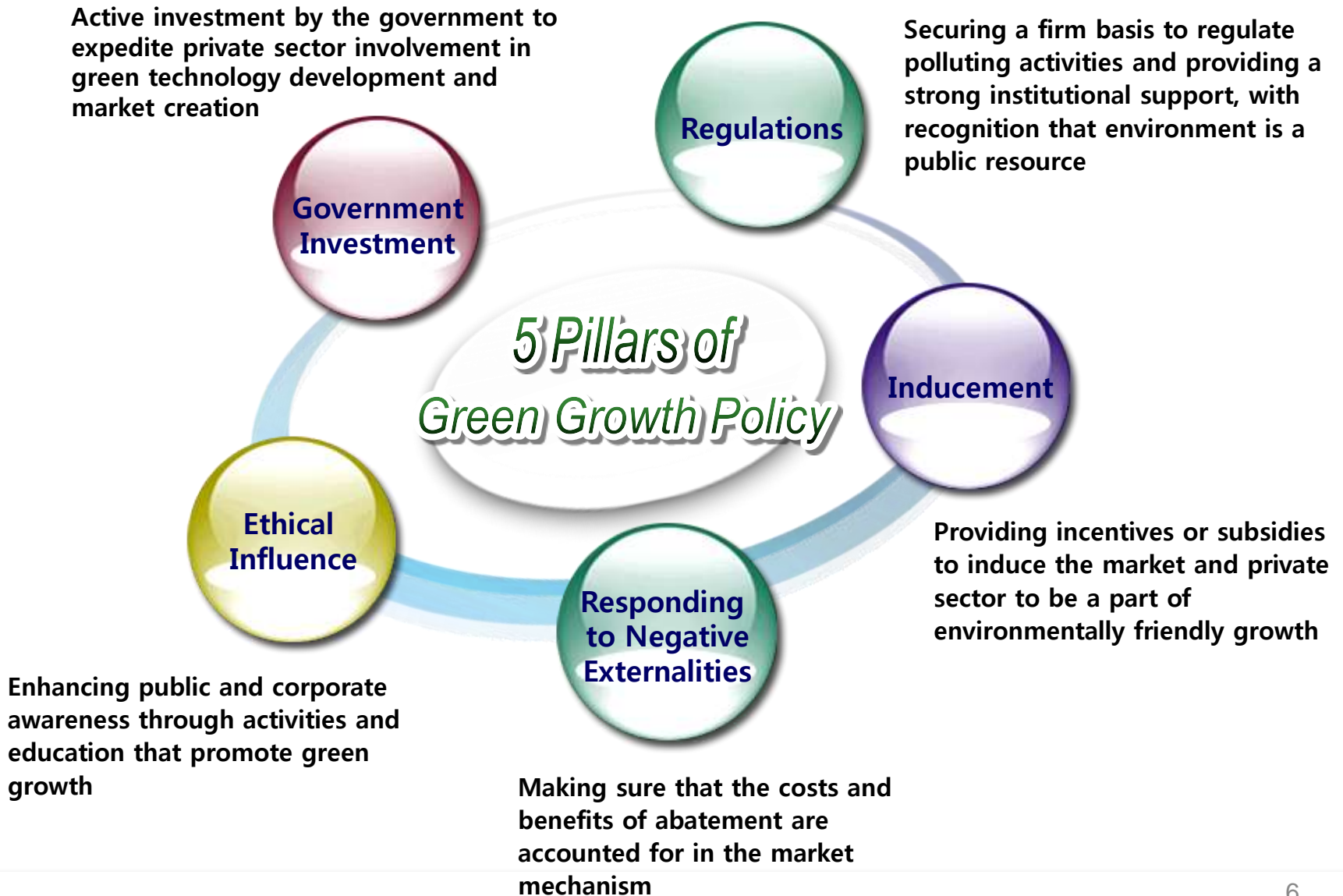
“Low Carbon, Green Growth” as a new paradigm of development





II. Institutional and Policy Development

5 Pillars of the Green Growth Policy





2008

New & Bold Initiative: Low Carbon Green Growth

2009

Institutional Foundation for Green Growth Policies





National Strategy

5 Year Action Plan

Legal Basis

- **Framework Act on Low Carbon Green Growth, Article 9**

The Government **shall establish and enforce the national strategy for low carbon, green growth** (hereinafter referred to as "national strategy for green growth"), which shall include the target of the State's policies for low carbon, green growth, the strategy for promotion, and maintain tasks of promotion.

Contents

- Climate Change Adaptation Policy, Sustainable Growth related Policies (i.e., Energy Policy)
- Green Technology & Industry, Green Finance, Green County & Transportation
- International Negotiation & Cooperation

National Strategy
2009~2050



2009~2013
Mid-term Strategy



Formulation

- Started as a multi-agency + research institute collaboration project at the national level
- Strategy circulated to line agencies, local governments, NGOs, expert panels for review

Key Framework

Vision

A Model Green Nation - Creating a virtuous harmony of environment & economy

Objectives

Increasing Energy Security & Adaptive Capacity to CC

Fostering New Engines of Growth

Enhancing the Quality of Life & Int'l Leadership

10 Key Agenda Items

- Building a Low Carbon Society (4)
- Enhancing Energy Security (4)
- Strengthening Climate Actions(7)

- Developing Green Technologies (6)
- Fostering Green Industry (4)
- “Greening” of Existing Industrial Structure (2)
- Laying the Foundations for Green Economy (9)

- Green Transportation & Land Management (5)
- Green Life Revolution (5)
- Global Green Leader (4)

5-Year Action Plan: Strategy into Practice



1 Vision

3 Objectives

10 Key Agenda

50 Items*

802 Projects

A Model Green Nation

▪ **Increasing Energy Security & Climate Adaptation Capacity**

▪ **Fostering New Drivers of Growth**

▪ **Enhancing Quality of Life & Int'l Leadership**

1. Build a Low Carbon Society (4)
2. Enhance Energy Security (4)
3. Strengthening Climate Actions (7)

4. Develop Green Tech. (6)
5. Foster Green Industry (4)
6. "Greening" of Existing Industrial Structure (2)
7. Lay Foundations for Green Economy (9)

8. Green Transportation & Land Management (5)
9. Green Life Revolution (5)
10. Global Green Leader (4)

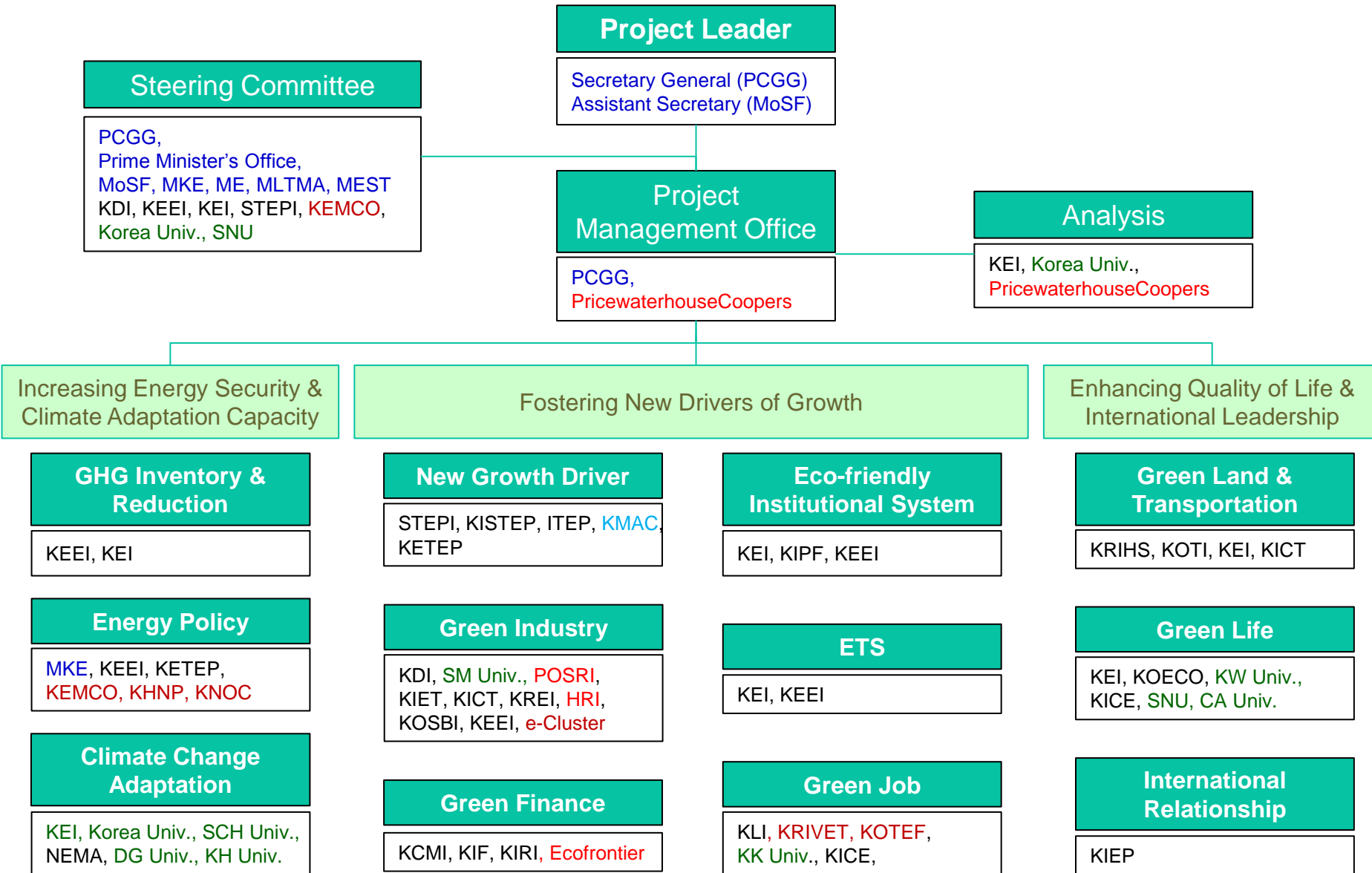
- 1-① Carbon Visible Society
....
- 2-① Efficient Use of Energy
....
- 3-① Climate Monitoring, Forecasting, and Early Response Schemes
....
- 4-① Strategic Expansion of Green Tech. R&D and Investment
....
- 5-① Resource Re-cycling Economy and Industrial Structure
....
- 6-① Fostering Advanced Convergence Industries
....
- 7-① Fostering Policy Finance for Green Tech. and Industry
....
- 8-① Building Green Land and Cities
....
- 9-① Education on Green Growth
....
- 10-① Cooperative Country for Realization of Global Green Growth
....

Strategy

5-year Action Plan

* 50 items providing a criteria for prioritizing green growth projects.

5-Year Action Plan: Project Team



Identifying the 50 Items of Priorities



Green project criteria drawing from background analysis

Case : '2. Enhance Energy Security'

SWOT Analysis		Strategic Directions
Strength	Weakness	
<ul style="list-style-type: none"> Government's strong policy of energy independence Weakened momentum of energy demand increasing Concrete industrial base related area – semi-con, electronics, heavy industry, and so on Increasing interest of investment in green growth and natural resource development among private sector 	<ul style="list-style-type: none"> High level import rate of energy Manufacturing focused industry structure. (Energy consuming structure) Lack of infrastructure especially professionals High foreign dependent rate of core technologies and parts 	<ul style="list-style-type: none"> Developing low energy and high efficiency society → 2-① Less and High Efficient Use of Energy Expanding clean energy providing → 2-② Enhancing Clean Energy Supply Capability Expanding nuclear energy providing capability → 2-③ Enhancing Nuclear Power / Energy Capability Expanding overseas natural resource development capability → 2-④ Enhancing Overseas Resource Development Capability
Opportunity	Threat	
<ul style="list-style-type: none"> Setting up green industry as a new growth driver Regarding energy efficiency, and clean energy development and providing as core energy strategic directions 	<ul style="list-style-type: none"> Economic shrink possibility from global financial crisis Deepening competition to get secure energy source High oil price policy by OECD Unsecure future by high policy dependency (not market oriented) 	

Re-arranging and Prioritizing Plans and Pipeline Projects



Fundamental Plan of National Climate Change Adaptation (Dec. 24, 2008)	Government-wide	1, 3, 5, 8, 9, 10	1. Build a Low Carbon Society
Green IT Strategy (Jan. 15, 2009)	Ministry of Knowledge Economy	5, 7	
Green Standard Plan (Jan. 9, 2009)	Ministry of Knowledge Economy	7	
Strategic Roadmap of Green Energy Technology Development (Jan. 22, 2009)	Ministry of Knowledge Economy	2, 4	2. Enhance Energy Security
Development Strategy of Green Energy Industry (Sep. 11, 2008)	Ministry of Knowledge Economy	2, 4, 5	
Long-term Master Plan of National Research Development for Climate Change Adaptation (Dec. 24, 2008)	Government-wide	1, 2, 3, 9, 10	3. Strengthening Climate Actions
Master Plan of Climate Change Adaptation - Detail Action Plan (Dec. 24, 2008)	Government-wide	1, 2, 3, 5, 8, 9, 10	
Master Plan of Climate Change Adaptation (Sep. 19, 2008)	Government-wide	1, 2, 3, 4, 5, 8, 9, 10	
Comprehensive Plan of Green Tech. R&D (Jan. 13, 2009)	Government-wide	1, 2, 3, 4, 5, 6, 7, 8, 9	4. Develop Green Tech.
Green Information Strategic Plan (Jan. 15, 2009)	Ministry of Public Administration and Security	3, 9	5. Foster Green Industry
Strengthening Plan of the Agricultural Competitiveness (Jan. 29, 2009)	Ministry for Food, Agriculture, Forestry and Fisheries	4	
Mid and Long-term Development Plan of Broadcasting Network (Jan. 30, 2009)	Korea Communications Commission	9	6. "Green" Existing Industrial Structure
Invigoration Plan of Ecological Tour (Dec. 12, 2008)	Ministry of Culture, Sports and Tourism, Ministry of Environment	9	7. Lay Foundations for Green Economy
Vision and Strategy of New Growth Driver (Jan. 13, 2009)	Government-wide	4, 5, 6, 7	
National Action Plan of GHG Reduction (Jul. 16, 2008)	Ministry of Environment	1, 9	8. Green Transportation & Land Management
Driving Plan of Green New Deal for Job Creation (Jan. 6, 2009)	Government-wide	5, 7, 8, 9	
The First Fundamental National Energy Plan(Aug. 27, 2008)	Ministry of Knowledge Economy	2, 4, 6, 9	9. Green Life Revolution
The Third Fundamental Plan of R&D and Use of Renewal Energy (Dec. 31, 2008)	Ministry of Knowledge Economy	2, 4, 7, 9	
The Forth Fundamental Rationalization Plan of Use of Energy (Dec. 15, 2008)	Ministry of Knowledge Economy	2, 4, 9	
Knowledge and Revolution Oriented Industrial Development Strategy (Dec. 2, 2008)	Ministry of Knowledge Economy	4, 5, 6	10. Global Green Leader
Energy Measure for Wasted Resource and Bio-Mass(Oct. 15, 2008)	Ministry of Environment	1, 2	
Green Growth Action Plan of Environmental Area (Jan. 6, 2009)	Ministry of Environment	1, 2, 3, 4, 5, 7, 8, 9	

Projects by Ministry



Ministry / Agency	10 Key Agenda										total
	1	2	3	4	5	6	7	8	9	10	
Ministry of Education, Science and Technology		6	3	35		33	5	1	10		93
Ministry of National Defense				4				2	1		7
Ministry of Land, Transport and Maritime Affairs	2	3	11	32	1			55			104
Financial Service Commission							2				2
Korea Meteorological Administration			12	1						1	14
Ministry of Employment and Labor							7				7
Ministry for Food, Agriculture, Forestry and Fisheries	1	1	9	10	7	7			7		42
Rural Development Administration	5		15	3		5					28
Ministry of Culture, Sports and Tourism						26			3		29
Cultural Heritage Administration									2		2
National Emergency Management Agency			11								11
Korea Communications Commission		1		1	1	24					27
Ministry of Health and Welfare			15	4	21			1	1		42
Korea Forest Service	10		14	2				1	1	1	29
Ministry Gender Equality and Family									1		1
Ministry of Foreign Affairs and Trade										2	2
Ministry of Strategy and Finance							1			1	2
Small and Medium Business Administration					16	1	1				18
Ministry of Knowledge Economy	5	47		20	32	73	8	2	1	2	190
Statistics Korea	1								1		2
Ministry of Unification	4										4
Korean Intellectual Property Office				2							2
Ministry of Public Administration and Security		2		3	1			3	1		10
Ministry of Environment	8	9	36	22	22	1	8	4	20	4	134
total	36	69	126	139	101	170	32	69	49	11	



A total of 107.4 T KRW of the government budget over 5 Years



(UN's Recommendation : Green Investments at 1% of GDP)

(trillion, KRW)

	2009	2010	2011	2012	2013
GDP	1,065.0	1,172.8	1,240.7	1,339.3*	-
Government Total Expenditure	301.8	292.8	309.1	325.4*	-
Green Budget	17.5	23.6	24.7	20.4	21.1
% GDP	1.6 %	2.0%	2.0%	1.5%	
% Expenditure	5.8%	8.1%	8.0%	6.3%	

* estimated GDP and Expenditure

Expected Impacts



Inter Industry Relation Analysis

CGE (Computable General Equilibrium) Analysis

* trillion KRW,
** 10 K Headcount

Scenario I

	Production Inducement*	Value Added Inducement*	Employment Inducement**	Job Finding Inducement**
total	181.7	75.0	118.0	156.1
annual average	36.3	15.0	23.6	31.2
	3.4% of 2009 GDP	1.4% of 2009 GDP	26.0% of unemployed # (1 st Q, 2009)	34.4% of unemployed # (1 st Q, 2009)

Scenario II

total	206.0	94.9	146.9	180.5
annual average	41.2	19.0	29.4	36.1
	3.9% of 2009 GDP	1.8% of 2009 GDP	32.4% of unemployed # (1 st Q, 2009)	39.8% of unemployed # (1 st Q, 2009)

Scenario I : assumption – maintaining of current productivity of technologies and industries

Scenario II : assumption – productivity increasing by investment and R&D



III. Lessons Learned



1. High-level Political Engagement

- Decisive resolution for transformational changes & reforms in institution, incentive systems, organization, etc.
- Power to coordinate various views and different interests

2. Active Government Intervention

“Long-term perspectives and balanced approaches”

- Build strong legal & institutional framework for green growth
- Introduce consistent policies and regulatory schemes to spur real changes
- Active upfront investment to trigger private sector engagement
- Maximize the power and influence of market in green growth
- Appropriate incentive systems for private sector engagement
- Inter-ministerial cooperation needs to be effective and efficient



3. Comprehensive Approach (Top-down)

- Shared Vision and clear mid-to-long term goals for green growth
- Consultation and coordination to persuade stakeholders
- Efficient inter-ministerial coordination among relevant authorities

4. Active Participation from the Public (Bottom-up)

- Increase public awareness on green growth
- Policies need to translate into action through public participation
- Take active measures to lead behavioral changes of people
- Support toward dissemination of green growth to the grass-roots level

5. Mobilizing Global and Local Partnership

- Considering trans-boundary effects on climate change
- Mobilizing resources from various partners overseas
- Sharing Knowledge among regional neighbors and global leaders
- Disseminating best practices & case studies



IV. GGGI



Vision

dedicated to promoting and disseminating green growth worldwide, grounded upon partnerships between developing and developed countries & public and private sectors

Mission

1. Provide and facilitate technical and financial support to assist developing countries in their efforts to establish fact-based, analytically sound green growth strategies that are feasible and well-aligned to their national goals

2. Promote green growth through research in theory and practice.

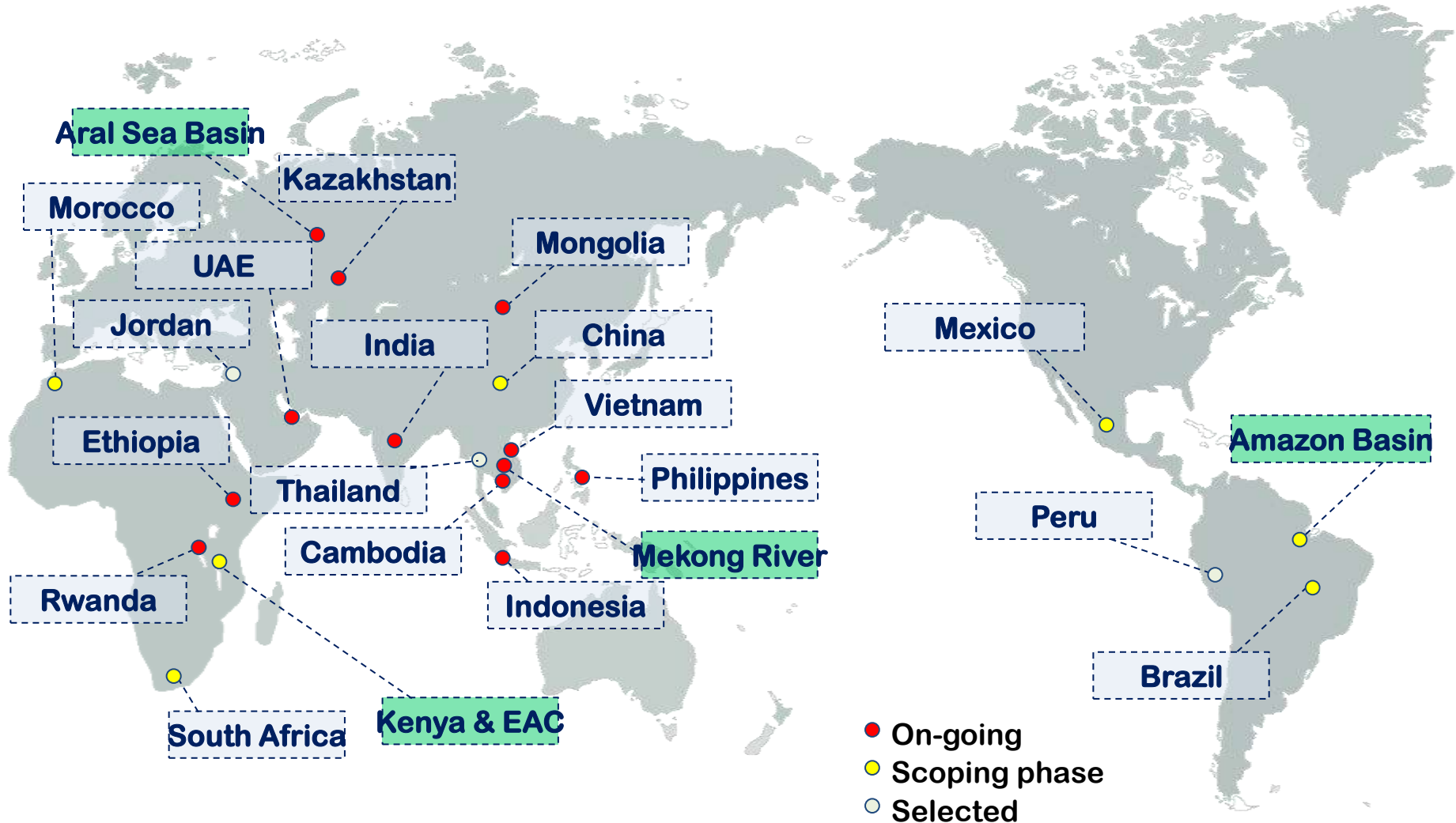
3. Disseminate the results of our research and activity on green growth globally for capacity-building and knowledge sharing



GGP&I Portfolio 2013



18 Countries, 4 Region, 28 Projects



GGP&I Country Projects



☐ Management and Monitoring Phase (On-going)

Country/Region	Description
Common (BMU)	<ul style="list-style-type: none"> ▪ GGP for Ethiopia and 3 countries component 1: GGP for Ethiopia component 2: selection of 3 countries (Jordan, Peru, Thailand selected) component 3: GGP for Jordan, Peru, Thailand
Ethiopia	<ul style="list-style-type: none"> ▪ Climate Resilience ▪ Investment Plans
Indonesia	<ul style="list-style-type: none"> ▪ Provincial Support to East and Central Kalimantan (REDD+ Readiness) ▪ Green Industry Mapping
Kazakhstan	<ul style="list-style-type: none"> ▪ Kazakhstan National Green Growth Plan with two subtasks: Water Supply and Waste Water Management Development Program and National Sustainable Energy Plan
Cambodia	<ul style="list-style-type: none"> ▪ Cambodia Green Growth Implementation Plan
Mongolia	<ul style="list-style-type: none"> ▪ Green Growth Master Planning in Selected Areas and Capacity Building
Philippines	<ul style="list-style-type: none"> ▪ Demonstration of Eco-Town Framework
Viet Nam	<ul style="list-style-type: none"> ▪ Developing Vietnamese GG Strategy
India	<ul style="list-style-type: none"> ▪ Karnataka - State-level Green Growth Plan and Financing Options ▪ UNIDO - Policy Advice for Manufacturing Sector
UAE	<ul style="list-style-type: none"> ▪ National Level GGP Development – Capacity Building Program and Micro-grids PPP

GGP&I Country Projects



Scoping Phase

Country/Region	Description
Amazon Basin	<ul style="list-style-type: none">Climate Finance for Forest and Clean Energy Projects
Brazil	<ul style="list-style-type: none">Defining low-carbon options for key GHG emitting sectors, developing a climate adaptation strategy and supporting the development of a carbon financing framework
South Africa	<ul style="list-style-type: none">Support to Planning Commission/Ministry of the Economy on Green Growth Plan
China	<ul style="list-style-type: none">Development of Green Growth Project in Yunnan Province
Indonesia	<ul style="list-style-type: none">Green Industry Mapping Strategy
Rwanda	<ul style="list-style-type: none">National Territorial Strategy for Green Growth & Energy Efficient Housing
Viet Nam	<ul style="list-style-type: none">Green Growth Planning (National and Provincial level) and Capacity Building
Morocco	<ul style="list-style-type: none">Green Growth Planning or Assessment of PPP Model – Smart-grids and Solar



Thank you!