



Paving the way to Green Economy: Low carbon economy

**Presented by
Dana A. Kartakusuma
Assistant Minister
Economy and Sustainable Development
Ministry of Environment, INDONESIA
Green Jobs Asia Project – Foundation Training
Jakarta, Indonesia
8-9 August 2011**

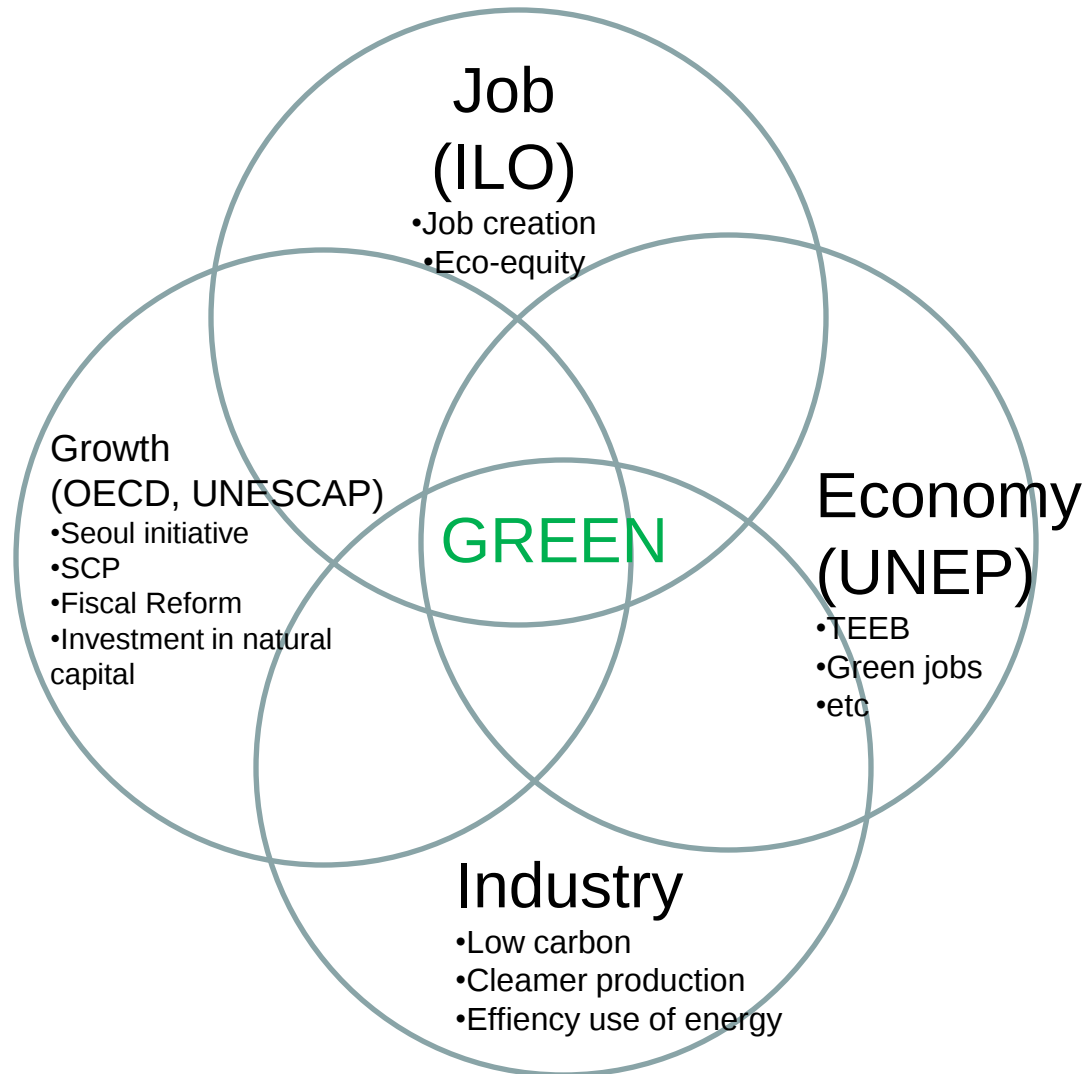
*Green Economy
is a tool for
achieving the objective of
Sustainable Development*

Key Questions

- **Why **Green** (Economy) matters for Indonesia?**
- **How does GE fit into Indonesia's National Policies and Regulation ?**
- **What are the Needs and Strategies towards GE?**

Why Green Economy matters for Indonesia ?

Green..Green..Green..

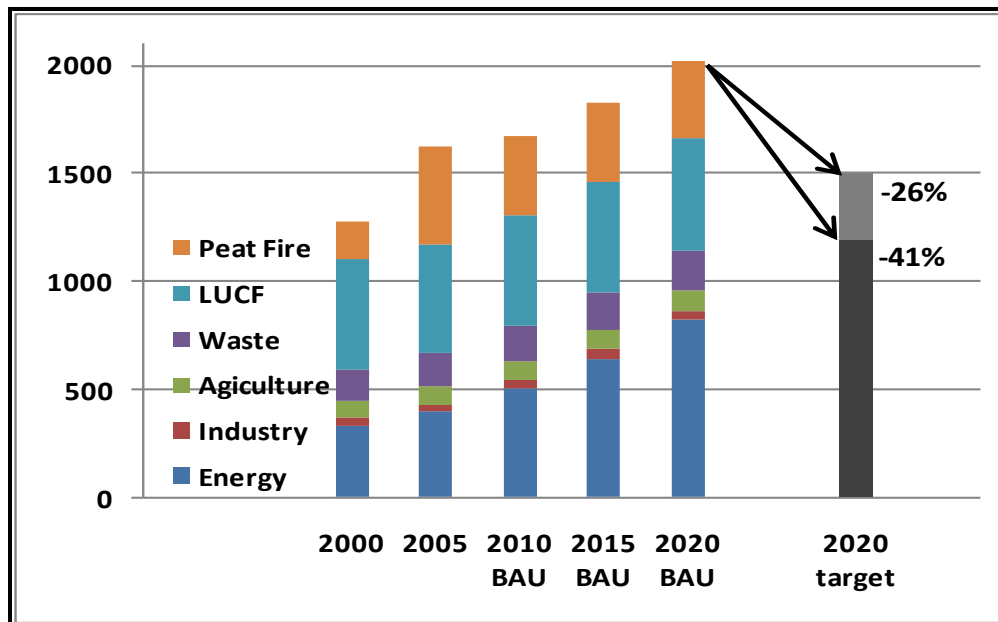


Why GE matters? for Indonesia

- Depletion of natural resources including fossil energy resources;
- Environment disasters, flood, erosion and landslides, leading to environment degradation and social disruptions → pursuing economic growth that is unsustainable ;
- Environment degradation including forest degradation, coastal and marine ecosystem degradation, marine resource depletion, water shortage
- Water and air quality degradation due to land-use change and industrial pollution
- Sectoral and short term range in decision making process, in line with political interests (five-year election cycle), leading to unsustainable pattern of production and consumption;

Why GE matters? for Indonesia

- Environmental condition is alarming, furthermore GHG emission tends to increase;
- Absence of market and economic value on environment/climate friendly investment and technology;
- Lack of priority, both politically and technically, and limited options of policy instruments, incl. Legal basis to develop various incentives;



- Unsustainable consumption and production pattern requires proactive roles of various stakeholders

Indonesia's 2020 carbon challenges

Environmental Quality Index of Islands (av. 2006 – 2008)

Main Islands		EQI
1.	Papua	75,29
2.	Sulawesi	73,66
3.	Bali dan Nusa Tenggara	68,96
4.	Sumatera	64,63
5.	Kalimantan	62,01
6.	Jawa	53,50
Indonesia		60,07

Based on 3 indicators: surface water quality, air quality and land coverage

Source: MoE, ESP2 DANIDA, 2009

GREEN ECONOMY

“ **Indonesia** is of the view that Green Economy is a development paradigm based on **resource efficiency** approach with strong emphasizes on **internalizing cost of natural resource depletion on environmental degradation**, efforts in **alleviating poverty, creating decent jobs**, and ensuring sustainable economic growth”

(Indonesian Delegation/DELRI, UNEP 11th G SS, February, 2010)

Indonesian Views



„We are devising an energy mix policy ... that will reduce our emission by 26 percent by 2020. With international support, we are confidence we can reduce emission by as much as 41 percent “.

„We are also looking into the distinct possibility of committing a billion tons of CO2 reduction by 2050. We will change the status of our forests from that of a net emitter sector to a net (carbon) sink sector by 2030”.

**Susilo Bambang Yudhoyono,
President of Republic of Indonesia, 2009**

What are Needs and Strategy ?

How GE Fit With Environmental Policy & Regulation? In Indonesia

National Development → pro-poor, pro-growth, pro-jobs and pro-environment

Long Term National Development Plan
(Law 17/2007)

Medium Term NDP
(National Priorities)

Programs at
Ministries/ Agencies

Other
government/local
government
regulations

Other
related
Laws

Environmental
Protection and
Management
(Law 32/2009)

- Emphasizes on RE & internalization of externalities
- Promotes various instruments:
 - SEA/EIA
 - Environmental Standards
 - **Economic instruments,**
 - Green budget;
- Stronger commitment and more stringent enforcement

What are Needs and Strategies towards GE?

LONG TERM DEVELOPMENT MISSION, 2005-2025



National Priority and Action Plan 2010-2014

11 + 3 National
Priority
2010-2014

- 1 Bureaucracy Reform and Good Governance
- 2 Education
- 3 Health
- 4 Poverty Alleviation
- 5 **Food Security**
- 6 Infrastructure
- 7 Investment Climate
- 8 **Energy**
- 9 **Environment and Disaster Management (incl. Climate Change)**
- 10 Culture, Creativity and Technology Innovation
- 11 Disadvantaged, Borders and Post-Conflict Areas
- 12 Politic, Law and Security
- 13 Economic Development
- 14 Social Welfare

TRANSFORMATION PARADIGM OF NATIONAL ENERGY MANAGEMENT

ENERGY SUPPLY SIDE MANAGEMENT

SUPPLY

DEMAND

Supplied by Fossil Energy,
at any cost
(Subsidize)

Inefficient Sectoral
Energy Demand:
Household
Transport
Industry
Commercial

Renewable Energy as an
alternative

Current condition:

1. Energy needs has not been efficient
2. Energy needs are met with fossil energy at a cost of whatever and even subsidized
3. Renewable energy as an alternative only
4. Renewable energy sources that are not utilized is wasted God's gift

ENERGY DEMAND SIDE MANAGEMENT

DEMAND

SUPPLY

Efficient Sectoral Energy
Demand:
Household
Transport
Industry
Commercial
(CONSERVATION)

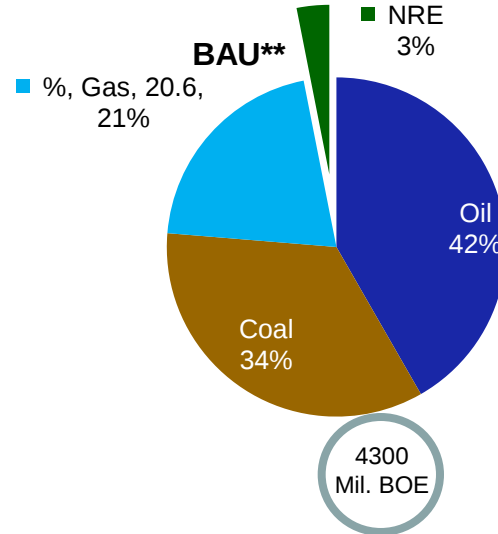
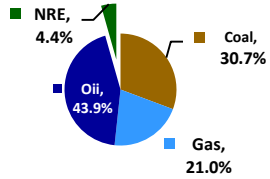
Maximize the supply and
utilization of New
Renewable Energy, with
Avoided Fossil Energy
Costs
(DISVERSIFICATION)

Fossil Energy
as balancing factor

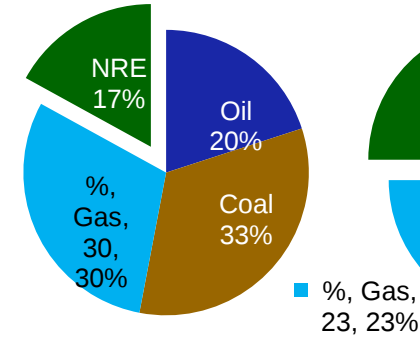
Future Condition:

1. Minimize the energy requirements
2. Maximize the provision and utilization of renewable energy, at least with the price of fossil energy avoided cost, if necessary, subsidized
3. Fossil energy is used as a counterweight
4. Fossil energy sources are not utilized as a legacy for their children and grandchildren / exported

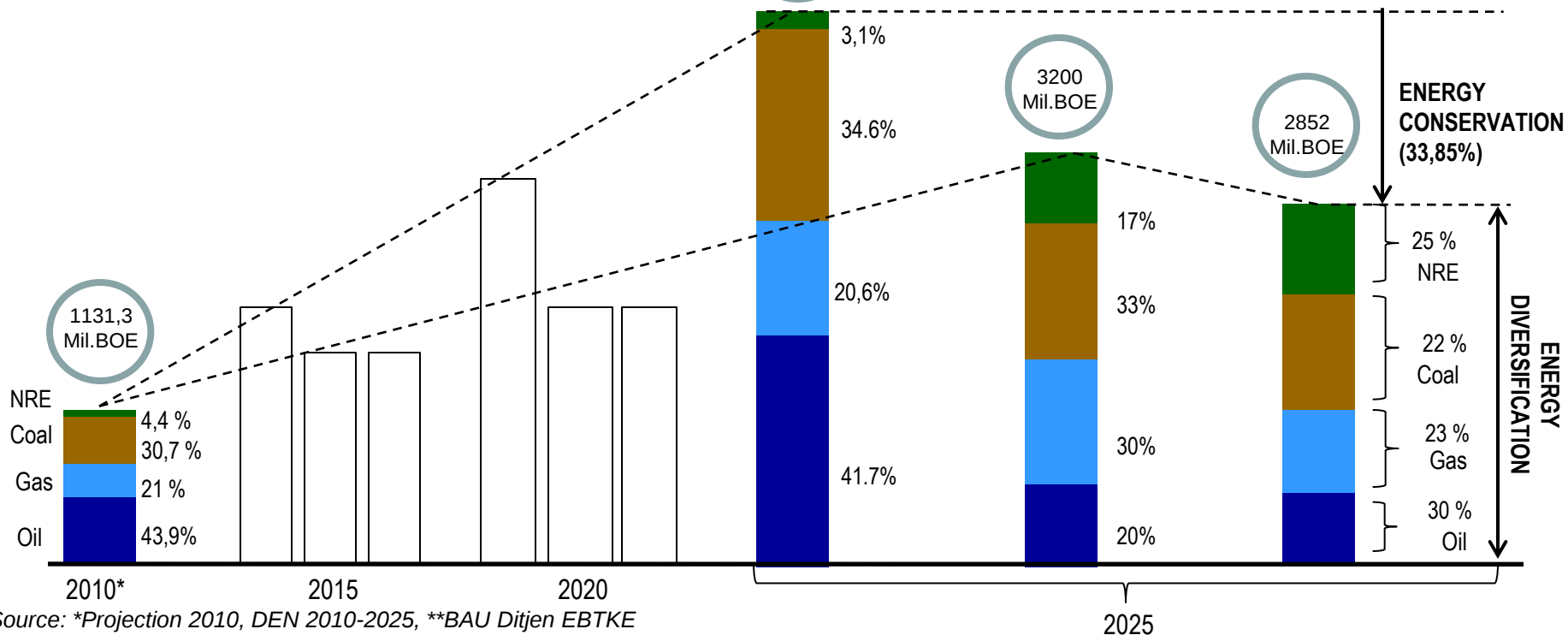
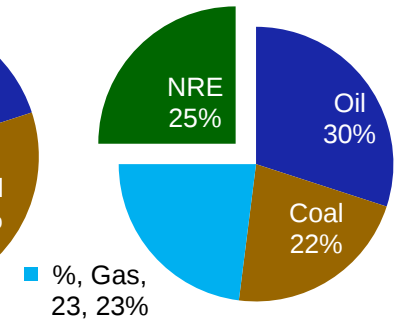
POLICY DIRECTION



PERPRES 5/2006



VISION 25/25



Source: *Projection 2010, DEN 2010-2025, **BAU Ditjen EBTKE

MAIN POLICIES

1. **Energy Conservation** to improve efficiency in energy utilization from up-stream up to down-stream (***Demand Side***) i.e industrial, transportation, household and commercial sector

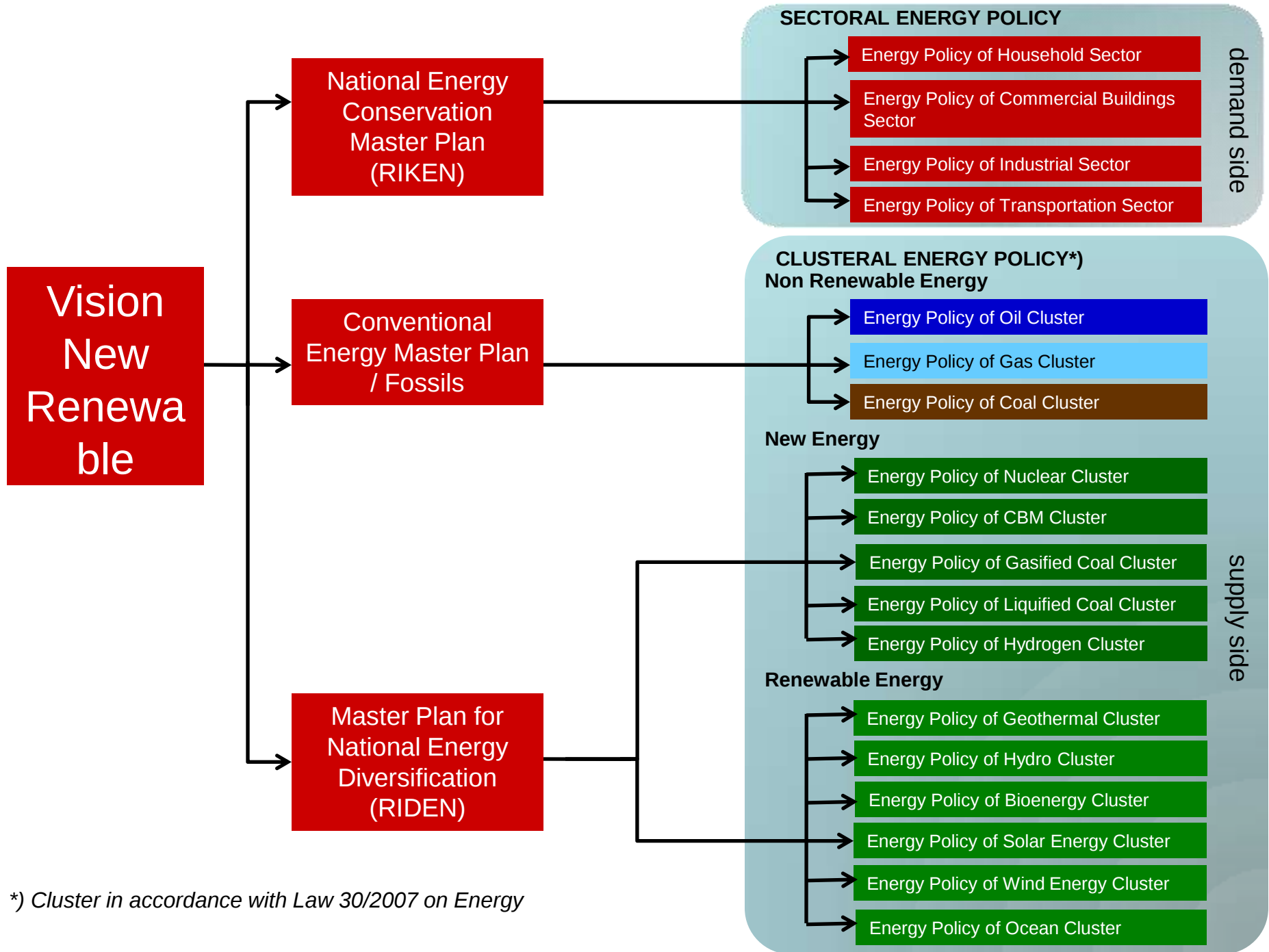
2. **Energy Diversification** to increase new renewable energy share in national energy mix (***Supply Side***). i.e

New Energy

- a. Liquefied Coal,
- b. Coal Bed Methane,
- c. Gasified Coal,
- d. Nuclear,
- e. Hydrogen,
- f. Other Methanes.

Renewable Energy

- a. Geothermal,
- b. Bioenergy,
- c. Hydro,
- d. Solar,
- e. Wind,
- f. Ocean.



*) Cluster in accordance with Law 30/2007 on Energy

**What are Needs and Strategies
Towards GE ?**

Efforts being initiated by the MOE towards GE

POLICIES as well as **MARKET FAILURES**

(subsidized growth, distorted energy prices, no internalized pollution cost)
are main causes of the current environmental problems.

**INTERVENTIONS
FOR
MARKET CORRECTIONS
AND
CHANGING BEHAVIORS**

POLICY INITIATIVES



include **INCENTIVE/DISINCENTIVE SCHEMES**

Overview of available incentive instruments for the environment

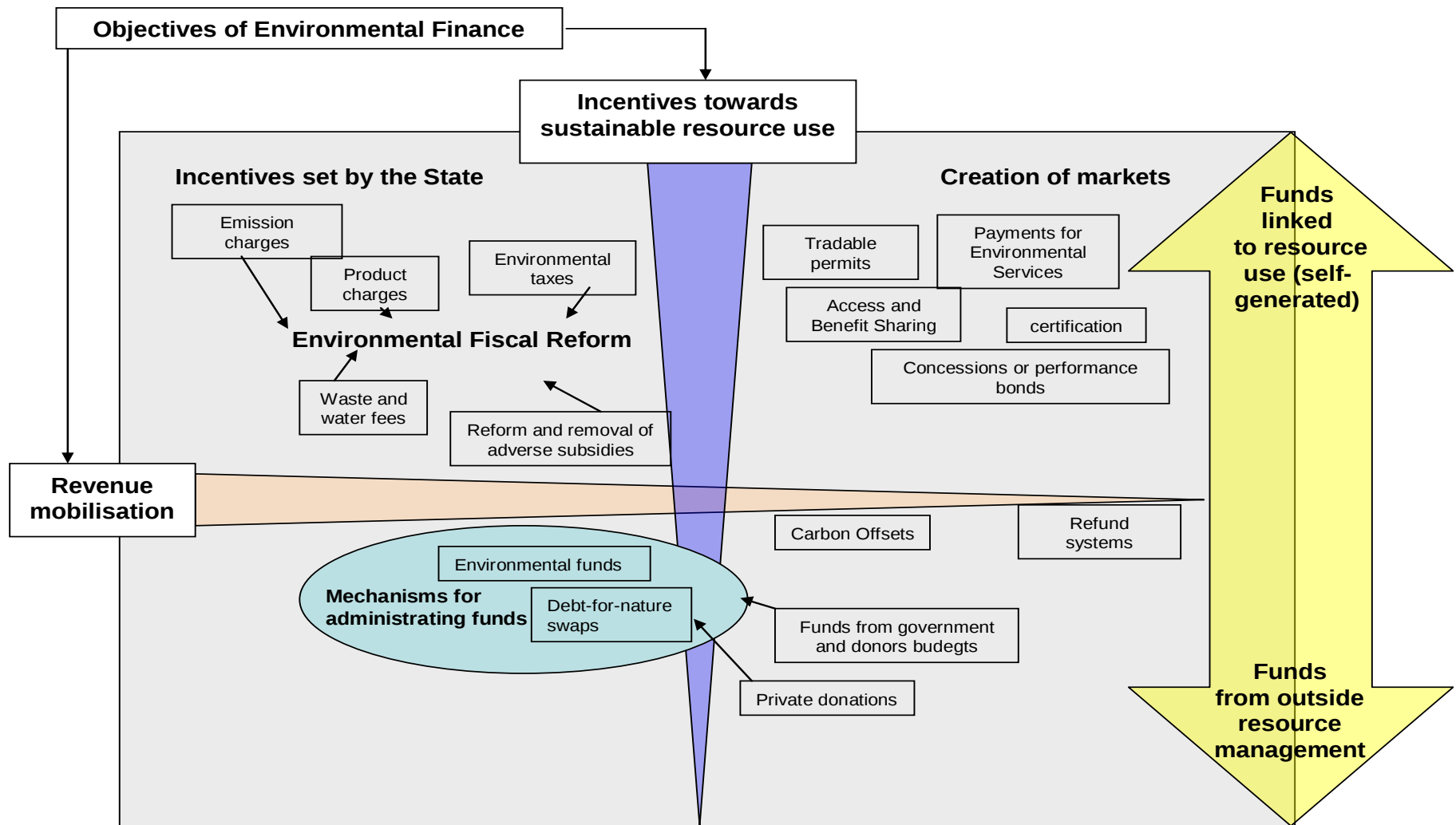


Diagram based on Emerton, L. et al. (2006) Sustainable Financing of Protected Areas, IUCN and Fischer, A. / Petersen, L. / Hubbert, W. (2004): Natural Resources and Governance: Incentives for Sustainable Resource Use, GTZ).

Legal and Policy Framework of GEI in Indonesia

Long Term National Development Plan
(Law 17/2007)

Medium Term NDP
(National Priorities)

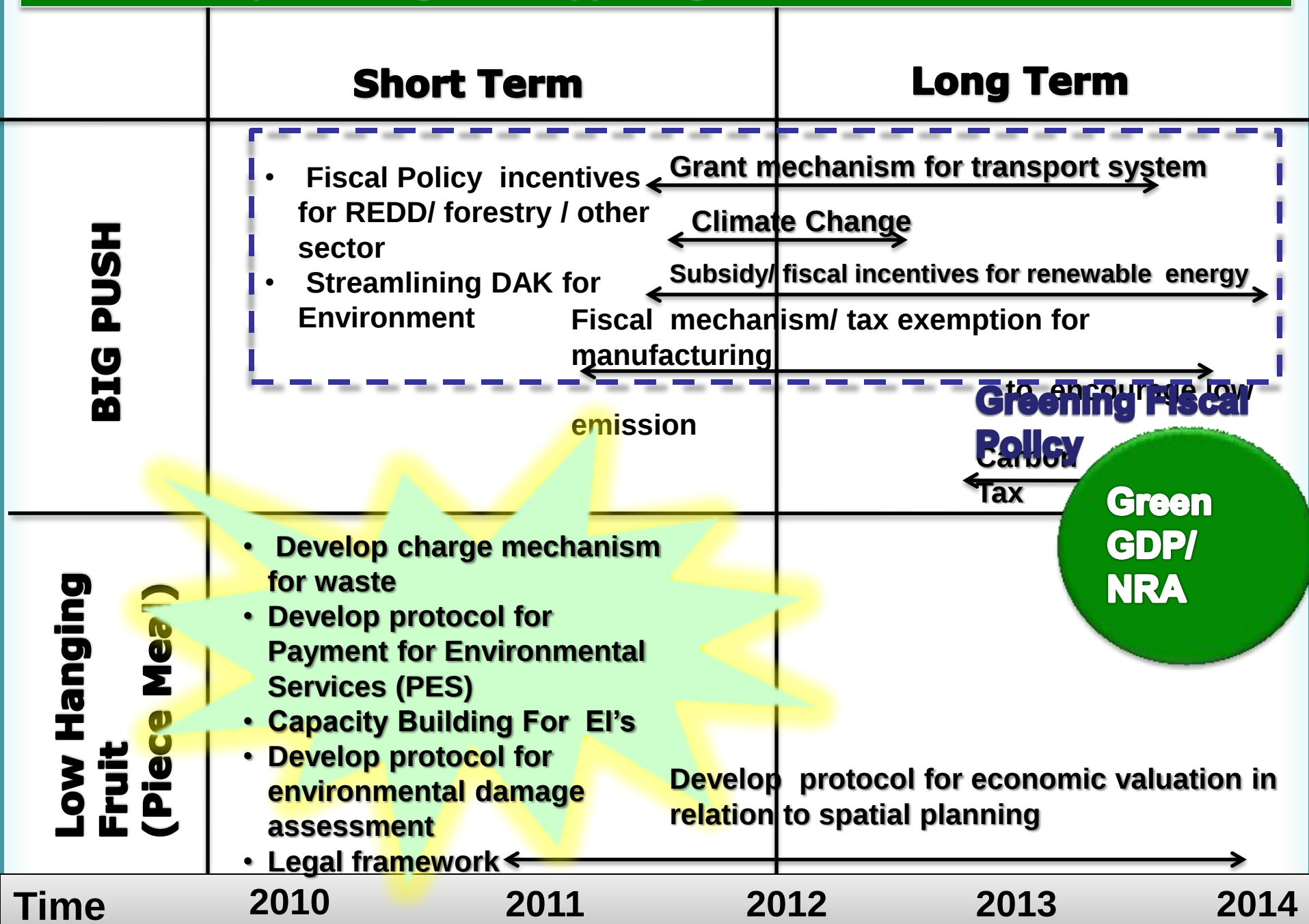
Law
32/2009

Programs at
Ministries

Other government
regulations

**Draft of
Government
Decree (economic
instruments)**

Matrix of Proposed Program/ supporting activities of Economic Instrument



Environmental Subsidies

Illustration :

- **Revolving Fund (Debt for Nature Swap): US\$ 40 M phase 1-2, and DNS (Germany)**
- **Revolving Fund for Geothermal IDR 1.2 T eq. US\$ 120M (2011)**
- **Incentive for Bio Fuel US\$ 50M (2011)**

Options: Energy pricing reform <=> Environmental fiscal reform

Table 1: Simulated impact of removing energy subsidies (% relative to the baseline)

	Long run			Short run adjustment		
	Fuel	electricity	Fuel and Electricity	Fuel	Electricity	Fuel and Electricity
CO2 emissions	-5.79	-0.92	-6.66	-1.71	-1.24	-2.92
Hydroelectric	0.00	0.00	0.00	0.00	0.00	0.00
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00
Coal	4.07	-1.89	2.30	-0.50	-2.68	-3.13
Natural Gas	0.33	-0.18	0.14	5.35	-0.20	5.12
Fuel	-12.27	-0.49	-12.73	-3.48	-0.59	-4.04
GDP	0.44	0.00	0.43	-0.44	-0.06	-0.50
Energy Consumption	-13.55	-0.54	-14.12	-3.18	-0.61	-3.79
Energy Intensity	-13.99	-0.54	-14.55	-2.75	-0.55	-3.29

Source: Yusuf et al (Forthcoming), IRSA Book Series

Rp 100 trillion a year can be used to invest in green economy

Options: De-incentivize deforestation

- A subsidy that cost as much as Rp 3-4 trillion /year may be enough to reduce 379 millions tones CO2/year (26% BAU) from avoiding deforestation.

	Simulation Set A: 26% Emissions Reduction Using Domestic Resources				
	Sim-A1	Sim-A2	Sim-A3	Sim-A4	Sim-A5
Parametric assumptions					
Sigma-Crops	0.750	0.600	0.900	0.750	0.750
Sigma-Forest-Crops	0.500	0.500	0.500	0.300	0.700
Changes in CO2 emissions resulting from land use change					
% change	-26.0	-26.0	-26.0	-26.0	-26.0
Million tonnes CO2	-379.3	-379.3	-379.3	-379.3	-379.3
Subsidy to forestry use of land					
Rate of subsidy (%)	55.7	55.8	55.6	60.8	53.4
Subsidy cost (billion Rp)					
Sumatra	387.8	388.9	386.9	448.4	361.9
Java-Bali	49.3	49.3	49.2	57.0	46.0
Kalimantan	1,426.7	1,430.7	1,423.9	1,639.7	1,335.5
Sulawesi	188.2	188.8	187.9	217.3	175.8
Eastern Indonesia	1,660.1	1,664.8	1,656.8	1,906.8	1,554.4
INDONESIA	3,712.14	3,722.47	3,704.64	4,269.26	3,473.67
Subsidy per tonne of CO2 abated – Indonesia					
Rp. / tonne	9,786	9,813	9,766	11,254	9,157
\$US/tonne (at Rp. 9,091=\$US1)	1.08	1.08	1.07	1.24	1.01

Source: Warr & Yusuf (Forthcoming), Australian Journal of Agricultural and Resource Economics

Roadmap to Green Growth

(Rae Kwon Chung)

1. Shifting focus to quality growth
2. Integrating Ecological Price through Ecological Tax and Fiscal Reform
3. Design infrastructure for Eco-efficiency: creating new built environment
4. Green as a source of profit: turning “green” into a business opportunity
5. Innovation: turning climate crisis into an economic opportunity

1. From quantity to quality of growth

Social Quality

- Inclusive, income equity, quality of life, happiness, well-being

Economic Quality

- Low unemployment, high value-added, competitiveness, resilience
- against outside oil price & financial shocks, low stocks and real estate
- bubble

Ecological Quality

- Eco-efficient growth, decoupling growth with energy consumption,
- Resilience to climate change, dynamic eco-system, water security

2. Internalizing Ecological Prices

- Changing tax base from Labor to Pollution
- Making Market Driver of GE/EE
- Revenue Neutrality
- Double Dividend
- Explore potential for Double Dividend & applicability to DCs
- Leapfrogging Strategy for DCs

3. Promoting Sustainable Infrastructure

- Transport: public transport > private car, road to rail, minimize congestion,
 - Losing 3-5% GDP from traffic congestion
- City design for People not for Car, Walkable street
- Buildings for energy efficiency

4. Turning 'green' into business opportunity

- Ecology has price: green is economic opportunity
- Business: need to grasp
 - Green Ocean, not resist transition
- Governments needs to support
 - Green R&D, technology
 - New Market Development
 - Closing long & short term time gap
 - Market & ecological Price gap

5. Low Carbon Economics

- Nicklaus Stern: 2% investment could save 5-20% global GDP loss by 2050
- Low Carbon Economics: 2% investment could increase global GDP by XX % by 2050
- What are the conditions for mitigation actions to result in GDP growth and job creation?



ECONOMY →

ENVIRONMENT →

FUTURE →

Terima kasih

Merci

Xie xie

Arigato

Danke

Grazie

Gracias

Kamsai Hamida

Khop Khun Khruub

Thank you